Cutting tools: PCD, PCBN, diamond and carbide

Cutting tools: PCD, PCBN, diamond and carbide: complete programme retaining separate source variants.



EHWA Europe GmbH

www.ehwadia.de

Contents

Programme and specification 18
Complete cutting-tool programme 2022 19
Cutting tools: complete programme 19
EHWA: corporate history 20
Tool expertise and international cooperation 21
Long-term partnership 22
The cutting-tool programme 23
Tooling service: improve the machining process 23
Input data and tool analysis 24
HBN: hybrid cutting material for cast iron 26
HBN: insert shapes and applications 27
EBC190: coated PCBN for hardened workpieces 29
CF: cutter with directed chip and coolant flow 32
PCD, PCBN, CVD and single-crystal diamond 34
Cutting-material structure and manufacturing benefits 37
PCD: grain size, diamond content and grade selection 38
PCD: workpieces and machining ranges 41
PCBN: CBN content, binder and application 43
PCBN: cutting data and application groups 46
Diamond: PCD, CVD and mono compared 48
Single-crystal diamond for precision edges 50
Coatings: properties and applications 52
PCD/CVD chipbreakers ER and EX 53
PCD/CVD chipbreakers EF and ES 54
PCBN chipbreakers ER, EF and ES 56
PCD chipbreakers: aluminium application examples 59
PCBN chipbreakers: SCM420 application examples 61
Turning tools 64
Turning: PCD/CVD and PCBN inserts 64
Turning insert designation: metric 65

Turning inserts: size, edge and hand 68
Turning insert designation: inch system 70
Turning inserts: size, edge and hand 72
PCD/CVD turning inserts 75
CNGA / CNGX 75
CNGA: inserts 75
CNGX: inserts 76
CCGW / CCGT 78
CCGW: inserts 78
CCGT: inserts 82
CPGW / CPGT 84
CPGW: inserts 84
CPGT: inserts 86
DNGA / DNGX 88
DNGA: inserts 88
DNGX: inserts 89
DCGW / DCGT 91
DCGW: inserts 91
DCGT: inserts 93
DPGW / DPGT 95
DPGW: inserts 95
DPGT: inserts 97
SNGA / SNGX / SNGN 99
SNGA: inserts 99
SNGX: inserts 100
SNGN: inserts 101
SCGW / SCGT / SPGN 103
SCGW: inserts 103
SCGT: inserts 104
SPGN: inserts 105
SPGW / SPGT / SEGN 107
SPGW: inserts 107
SPGT: inserts 108

SEGN: inserts 110
TNGA / TNGX / TBGN 111
TNGA: inserts 111
TNGX: inserts 113
TBGN: inserts 114
PCD inserts: design example 116
TCGW 116
TCGW: inserts 116
TCGT 120
TCGT: inserts 120
TPGN / TPGN (L) / TPGN (R) 122
TPGN: inserts 122
TPGN (L): inserts 125
TPGN (R): inserts 125
TPGW 126
TPGW: inserts 126
TPGT / VNGA / VNGX 131
TPGT: inserts 131
VNGA: inserts 134
VNGX: inserts 136
VBGW / VBGT 137
VBGW: inserts 137
VBGT: inserts 140
VCGW / VCGT 143
VCGW: inserts 143
VCGT: inserts 145
RNGN / RCGW / RPGW 148
RNGN: inserts 148
RCGW: inserts 148
RPGW: inserts 149
PCBN turning inserts 151
CNGA / CNGN / CNGN (solid) 151
CNGA: inserts 151

CNGN: inserts 154
CNGN (solid): inserts 154
CCGW / CPGW 155
CCGW: inserts 155
CPGW: inserts 159
DNGA 162
DNGA: inserts 162
DCGW / SNGA 166
DCGW: inserts 166
SNGA: inserts 169
SNGN / SNGN (solid) 172
SNGN: inserts 172
SNGN (solid): inserts 175
SPGN / TBGN 176
SPGN: inserts 176
TBGN: inserts 179
PCBN inserts: design example 181
TNGA / TNGN / TNGN (solid) 181
TNGA: inserts 181
TNGN: inserts 183
TNGN (solid): inserts 185
TCGW / TPGN 187
TCGW: inserts 187
TPGN: inserts 190
TPGW 192
TPGW: inserts 192
VNGA / VBGW 197
VNGA: inserts 197
VBGW: inserts 198
VCGW / RNGN / RNGN (solid) 201
VCGW: inserts 201
RNGN: inserts 203
RNGN (solid): inserts 204

RCGX: backed and solid dimensions 205
External holders: clamping systems 207
External holders: designation and basic forms 208
External holders: hand, shank dimensions and insert size 213
Double and lever clamping: assembly 218
Multi locking and screw clamping: assembly 219
External holders: positions and selection I 220
External holders: positions and selection II 221
External holder programme 222
DCLN / DDJN 223
DCLN: holder and dimensions 223
DDJN: holder and dimensions 224
DDJN: holder and dimensions 226
DDJN: holder and dimensions 227
DSBN / DSDNN / DSKN 230
DSBN: holder and dimensions 230
DSBN: holder and dimensions 231
DSDNN: holder and dimensions 233
DSDNN: holder and dimensions 233
DSKN: holder and dimensions 235
DSKN: holder and dimensions 235
DSSN / DTFN / DTGN 239
DSSN: holder and dimensions 239
DSSN: holder and dimensions 240
DTFN: holder and dimensions 241
DTFN: holder and dimensions 243
DTGN: holder and dimensions 244
DTGN: holder and dimensions 245
DVJN / DVWNN / DWLN 249
DVJN: holder and dimensions 249
DVWNN: holder and dimensions 250
DWLN: holder and dimensions 251
DWLN: holder and dimensions 252

PCLN / PDJN 256
PCLN: holder and dimensions 256
PCLN: holder and dimensions 257
PDJN: holder and dimensions 259
PDJN: holder and dimensions 260
PDJN: holder and dimensions 261
PDNN / PSBN / PSDNN 264
PDNN: holder and dimensions 264
PDNN: holder and dimensions 265
PSBN: holder and dimensions 267
PSBN: holder and dimensions 268
PSDNN: holder and dimensions 269
PSDNN: holder and dimensions 270
PSSN / PTFN / PTTN 274
PSSN: holder and dimensions 274
PSSN: holder and dimensions 275
PTFN: holder and dimensions 276
PTFN: holder and dimensions 277
PTTN: holder and dimensions 278
PTTN: holder and dimensions 279
MCMNN / PTGN / PWLN 282
MCMNN: holder and dimensions 282
PTGN: holder and dimensions 283
PTGN: holder and dimensions 285
PTGN: holder and dimensions 286
PWLN: holder and dimensions 287
PWLN: holder and dimensions 288
MCLN / MDNNN / MDQN 292
MCLN: holder and dimensions 292
MCLN: holder and dimensions 293
MDNNN: holder and dimensions 294
MDNNN: holder and dimensions 294
MDQN: holder and dimensions 295

MDQN: holder and dimensions 296
MDJN / MSBN / MSKN 299
MDJN: holder and dimensions 299
MDJN: holder and dimensions 300
MDJN: holder and dimensions 301
MSBN: holder and dimensions 302
MSKN: holder and dimensions 302
MSKN: holder and dimensions 303
MSRN / MSSN / MTENN 307
MSRN: holder and dimensions 307
MSRN: holder and dimensions 307
MSSN: holder and dimensions 308
MSSN: holder and dimensions 309
MTENN: holder and dimensions 310
MTENN: holder and dimensions 310
MTFN / MTGN / MTJN 313
MTFN: holder and dimensions 313
MTFN: holder and dimensions 314
MTGN: holder and dimensions 315
MTGN: holder and dimensions 316
MTJN: holder and dimensions 316
MTJN: holder and dimensions 317
MVJN / MVQN / MVWNN 321
MVJN: holder and dimensions 321
MVQN: holder and dimensions 321
MVWNN: holder and dimensions 322
MWLN / SCAC / SCLC 326
MWLN: holder and dimensions 326
MWLN: holder and dimensions 326
SCAC: holder and dimensions 327
SCAC: holder and dimensions 328
SCLC: holder and dimensions 328
SCLC: holder and dimensions 329

SCLC: holder and dimensions 330
SDAC / SDJC / SDNCN 333
SDAC: holder and dimensions 333
SDAC: holder and dimensions 334
SDJC: holder and dimensions 334
SDJC: holder and dimensions 335
SDNCN: holder and dimensions 336
SDNCN: holder and dimensions 337
SDNCN: holder and dimensions 338
SRDCN / SRGC 341
SRDCN: holder and dimensions 341
SRDCN: holder and dimensions 342
SRDCN: holder and dimensions 343
SRDCN: holder and dimensions 344
SRGC: holder and dimensions 344
SRGC: holder and dimensions 345
SRGC: holder and dimensions 346
SRGC: holder and dimensions 347
SSBC / SSDCN / SSKC 350
SSBC: holder and dimensions 350
SSBC: holder and dimensions 350
SSDCN: holder and dimensions 351
SSKC: holder and dimensions 351
SSSC / STAC / STFC 354
SSSC: holder and dimensions 354
SSSC: holder and dimensions 355
STAC: holder and dimensions 355
STAC: holder and dimensions 356
STFC: holder and dimensions 357
STFC: holder and dimensions 357
STFC: holder and dimensions 358
STGC / STTC / SVAB 361
STGC: holder and dimensions 361

STGC: holder and dimensions 362
STGC: holder and dimensions 362
STTC: holder and dimensions 363
STTC: holder and dimensions 364
SVAB: holder and dimensions 364
SVHB / SVJB / SVVBN 367
SVHB: holder and dimensions 367
SVJB: holder and dimensions 368
SVJB: holder and dimensions 369
SVVBN: holder and dimensions 370
SVVBN: holder and dimensions 371
SVVCN 374
SVVCN: holder and dimensions 374
SVVCN: holder and dimensions 375
SVVCN: holder and dimensions 376
Boring tools 379
Boring: steel and carbide bodies 379
BS types and SLV holders 380
BR types 383
Boring holders: clamping systems 387
Boring holders: shank, diameter and length 387
Boring holders: insert, tool style and hand 388
Boring holders: double clamping and multi locking 389
Boring holders: lever locking and screw clamping 390
Boring holders: lever- and multi-locking applications 390
Boring holders: screw-clamping applications 392
PCLN / PDSN 393
PCLN: holder and dimensions 393
PDSN: holder and dimensions 395
PDUN / PSKN 398
PDUN: holder and dimensions 398
PSKN: holder and dimensions 402
PTFN / PWLN 404

PTFN: holder and dimensions 404
PWLN: holder and dimensions 407
MTFN / MVUN / MWLN 409
MTFN: holder and dimensions 409
MVUN: holder and dimensions 410
MWLN: holder and dimensions 411
SCLC / SCLP 414
SCLC: holder and dimensions 414
SCLP: holder and dimensions 418
SDQC / SDUC 420
SDQC: holder and dimensions 420
SDUC: holder and dimensions 423
SDZC / SSKC 427
SDZC: holder and dimensions 427
SSKC: holder and dimensions 429
SSKP / STFC 432
SSKP: holder and dimensions 432
STFC: holder and dimensions 433
STFP / STWP / SVJC 437
STFP: holder and dimensions 437
STWP: holder and dimensions 440
SVJC: holder and dimensions 440
SVQB / SVQC / SVUB 442
SVQB: holder and dimensions 442
SVQC: holder and dimensions 443
SVUB: holder and dimensions 445
SVUC 447
SVUC: holder and dimensions 447
MCLN / MDUN / MSKN 449
MCLN: holder and dimensions 449
MDUN: holder and dimensions 451
MSKN: holder and dimensions 452
Grooving and parting 455

Grooving and parting 455
ES: standard grooving system 456
ESG and ESR: dimensions and grades 457
ED: narrow grooves with high rigidity 458
EDG and EDR: dimensions and grades 459
ET: narrow grooves and easy setting 460
ETG and ETR: dimensions and grades 461
EM: micro grooving for automatic lathes 462
EMG: dimensions and grades 463
Custom designs for piston rings 464
Further custom grooving forms 465
Custom tools for facing, grooving, chamfering and profiling 467
Custom inserts and holder examples 469
Grooving holders: clamping systems 470
Grooving holders: dimensional programme 471
ESEH: holder and dimensions 471
ESEH 477
ESEH: holder and dimensions 477
ESEH-T00 / ESEV 481
ESEH-T00: holder and dimensions 481
ESEV: holder and dimensions 483
ESFV / ESFH 487
ESFV: holder and dimensions 487
ESFH: holder and dimensions 488
ESEU 492
ESEU: holder and dimensions 492
ESIU 496
ESIU: holder and dimensions 496
ESIV 500
ESIV: holder and dimensions 500
EDEH / EDEV 504
EDEH: holder and dimensions 504
EDEV: holder and dimensions 505

ETEH / ETEV 508
ETEH: holder and dimensions 508
ETEV: holder and dimensions 509
EMEH 513
EMEH: holder and dimensions 513
Milling tools 515
Milling tools: cutting material and design 515
Milling insert designation: metric 516
Milling inserts: size, edge and hand 516
Milling insert designation: inch system 518
Milling inserts: size, edge and hand 519
APKT and CDEW: PCD milling inserts 521
SPGN, SEGN and SFGN: PCD milling inserts 524
SNEW and SNEW(W): PCD milling inserts 526
TPGN, TEGN and LDCN: PCD milling inserts 528
PCD milling inserts: design examples 530
LFCN, GDCN and YDEN: PCD milling inserts 531
SD and high-feed cartridges 533
CF cartridges and customised designs 535
PCBN milling inserts 537
PCBN milling inserts: dimensions and designs 537
PCBN milling inserts: dimensions and designs 540
Tool designs 543
Aluminium cutter bodies 543
CF: cutter body and spare parts 544
CF: cartridge setting 547
SD: cutter body and spare parts 548
SD: cartridge setting 552
HF: cutter body and spare parts 553
HF: cartridge setting 556
Aluminium cutter bodies: additional types 557
Made-to-order milling tools 559
Tool designs 560

Steel cutter bodies and PCBN inserts 560
Tool designs 563
Rotating tools 564
Tool designs 565
Rotating tools: design examples 565
Tool designs 566
PCD/CVD square and ball-nose end mills 566
EBEB: PCBN ball-nose end mills 570
EDEM: monoblock end mills 572
EDEH: helical PCD end mills 573
End mills to customer requirements 574
Tool designs 578
PCD reamers: standard and chip-breaker types 579
Tool designs 582
Tool designs 583
Customised reamers and combination tools 583
Tool designs 585
Helical PCD drills: HELIX E, S and D 586
EDDS: straight-flute PCD drills 589
EDTMS: drill thread milling 591
Tool designs 597
PCD saws, V-cutters and bevel cutters 597
Customised disc cutters and combination tools 599
Wearless: backing plates and V-blocks 600
Wear parts: shoes, centres and gauges 601
Guide and support blades 603
Application programme 604
Aluminium cylinder head: valve areas and faces 604
Aluminium cylinder head: bores and bottom face 606
Cast-iron cylinder block 607
Aluminium-alloy transmission housing 608
Aluminium-alloy valve bodies 609
Gears and clutch 611

Transmission shafts 612
Differential gear and case 613
Planetary transmission 614
Ball and tapered-roller bearings 615
Brake discs 618
Pistons 619
Compressor piston and housing 621
Steering housing 622
Pump housing 623
Steel-roll machining 624
Ophthalmic lenses: roughing and finishing 626
Ophthalmic lenses: edge machining 627
Turning tools: cutting geometry and terminology 628
Turning: edge position, chip thickness and forces 630
Turning: nose radius, rake angle and formulas 632
Turning: wear patterns and process checks 633
Milling: tool geometry and angles 634
Milling: axial and radial rake combinations 636
Endmills: geometry, flute count and overhang 637
Reaming: margin, lead and troubleshooting 639
Drilling: geometry, drill types and formulas 642
Fundamentals: cutting edge, brazing, heat and built-up edge 643
Endmill design-enquiry sheet 647
Reamer design-enquiry sheet 648
Drill design-enquiry sheet 648
Tool-test information 649
Global network: 2022 source edition 649
HQ contact in the 04/2022 edition 650
Programme variants from the 2026 overview 650
PCD end mills for scroll compressors 650
PCD end mills for electric vehicles 650
Special boring tool for motor housings 651
EBC52X: PCBN for CV joints 654

PCBN end mills for CV joints 655
XF face milling cutters for aluminium alloys 657
Carbide drills for aluminium alloys 659
Solid carbide drills and coatings 661
PCD grades EP20, EP55 and EP59 662
Transmission and differential gears 664
AF, BF, CF and XF face milling cutters 666
PCD inserts and chipbreakers 668
Bearings: internal turning and drilling 670
Grooving, parting, whirling and pistons 674
Whirling: geometry, grades and coatings 676
Precision tools for automatic lathes 677
PCBN grades: steel and cast iron 680
EBC16S: coated PCBN for bearing steel 689
EB319: coated PCBN for hardened steel 692
Single-crystal diamond cutting tools 695
Wear parts for grinding machines 696
Gauges: diamond and ruby 698
Stationary diamond dressers 699
Wear parts for grinding and measuring machines 703
Wood-cutting special tools 06/2024 705
Special tools for wood cutting 705
Wood-cutting special tools: product lines 707
Wiper inserts for finishing 708
EBC76S: PCBN grade for gears and bearings 710
PCD tools for the 3C industry 712
H1 to H4: coatings for carbide tools 713
Micro boring from Ø4 mm 716
PCD and TCT tools for wood-based panels 718
Thread whirling with PCBN 721
Tools for Swiss turning and automatic lathes 725
Tool selection with EHWA Europe 731
Sources and technical attribution 731

Three micro-insert geometries from the 2023 exhibition programme 732
H1/H2: cutting data in the 2023 source context 732
PCBN ordering references from the 2025 document 733
PCBN ball-track milling cutters for CV joints 741
Ball-track geometry and tool enquiry 743
Additional PCBN inserts for hard turning 745
Your tool specification 747
Your tooling enquiry 747
Sources and editorial edition 747

Programme and specification

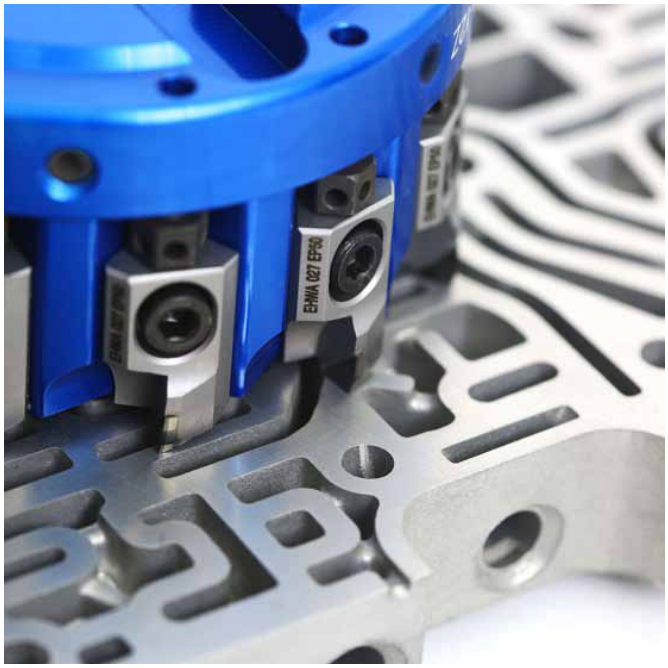
The programme covers cutting materials, turning inserts and holders, grooving systems, milling tools, drills, reamers, wear parts and application examples. Designs from the complete 2022 programme, variants from the 2026 overview and wood-cutting special tools dated 06/2024 occupy separate sections.

Complete cutting-tool programme 2022

Cutting tools: complete programme



Cutting tools: complete programme: Component and machining view.



Cutting tools: complete programme: Component and machining view.



Cutting tools: complete programme: Component and machining view.



Cutting tools: complete programme: Component and machining view.



Cutting tools: complete programme: Component and machining view.

EHWA: corporate history

Since its foundation in 1975, EHWA has developed diamond tools and international partnerships. The following history retains the milestones in the 2022 cutting-tool edition. Certifications and awards are recorded with their historical year; the illustrated TÜV document is the historical certificate in that edition.

Year	Development
1975	EHWA founded in Seoul, Korea.
1981	Exports to the USA begin.
1985	Headquarters and production relocated to Osan.
1988	Research and development centre established.
1993	ISO 9001 certification by German TÜV; plant established in Fujian, China.
1995	Sales subsidiary opened in Japan; Gold Industrial Medal received on National Trade Day.
1997	Plant established in Weihai, China.
2000	Presidential Productivity Award received.
2002	Plant established in Shanghai, China.
2003	Historically recorded oSa recognition for the safety of abrasives.
2004	Sales subsidiary opened in Germany.
2008	Presidential Export Award for US$100 million in exports received.

Year	Development
2011	Selected by the Korean government as a “World Class 300” company in the first round.
2012	Plant in Jakarta, Indonesia.
2013	New Dongtan facility opened for R&D and new business development.
2015	Subsidiaries established in India, Mexico and Italy.
2016	KOSHA 18001 certification for occupational safety and health management.
2017	Plants established in Bac Ninh and Hai Duong, Vietnam.
2020	“Time-honored Business” recognition from the Korean Ministry of SMEs and Startups.
2021	Subsidiary established in Alabama, USA.
2022	ISO 45001 certification by German TÜV.

Tool expertise and international cooperation

EHWA combines industrial diamond-tool development with adaptation to changing markets and different customer requirements. Quality, technical information and application service underpin cooperation. Since 1975, the company has expanded its international presence and tool programme, with customer success as the objective.

Reliable raw-material suppliers and partnerships with customers and technology companies support this development. The edition describes joint research and development with manufacturers in Europe, Japan and the USA for high-precision diamond tools, rotary dressers and precision electroplated diamond tools. The illustrated tools exemplify this manufacturing and application expertise.



Tool expertise and international cooperation: Tool view.



Tool expertise and international cooperation: Tool view.



Tool expertise and international cooperation: Tool view.

Long-term partnership

EHWA’s corporate philosophy associates its name with cooperation: “E” represents the two parties - EHWA and the people around the company, including customers, employees, partners and society. “HWA” means cooperation. This supports the aim of developing long-term customer relationships through tool quality and shared technical work. Since 1975, EHWA has focused its development on quality and dependable partnership.

The cutting-tool programme

The programme covers application-based tooling service, HBN and coated PCBN tools, PCD/PCBN/CVD/SCD cutting materials and chipbreakers, plus inserts and holders for turning, boring, grooving/parting and milling. Rotating tools include endmills, reamers, drills and special cutters. Wear parts, application examples, technical fundamentals and design-enquiry sheets complete the programme.

Product variants from the 2026 edition and specialised woodworking tools from the 2024 edition are presented in separate, fully attributed sections. A newer illustration does not automatically replace an older specification.

Tooling service: improve the machining process

Tooling Improvement Service starts with the existing process. Typical opportunities include bottlenecks, long cycle times, short tool life, inefficient setup, high cost per unit and defects. Process analysis examines bottlenecks and can involve 3D-simulation review, process changes, different PCD/PCBN raw materials or targeted cost reduction.

Following analysis, samples are evaluated in internal tests and customer field trials. Feedback identifies whether the result is suitable or requires further development; after successful agreement, the tool is adopted in mass production. The OP10 → OP20 → OP30 → OP40 → OP50 illustration marks OP20 and OP40 as example bottlenecks. Each step and its feedback connection is retained.



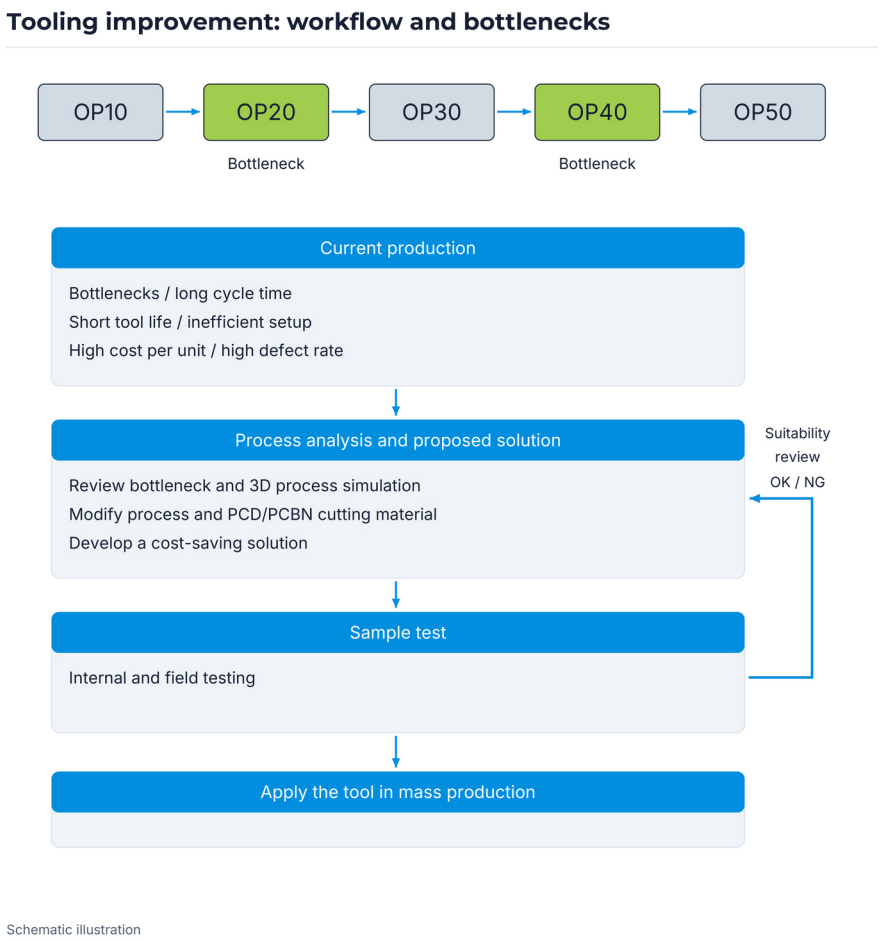
Tooling service: improve the machining process: Component and machining view.



Tooling service: improve the machining process: Component and machining view.



Tooling service: improve the machining process: Component and machining view.



Tooling improvement: workflow and bottlenecks.

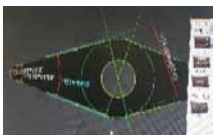
Input data and tool analysis

Technical review records workpiece material, hardness and roughness. Tool data include specification and cutting material; process data include application and production layout. Working conditions cover wet/dry operation, cutting speed, feed and depth of cut.

Tool analysis has three areas: tool shape - dimensions and edge preparation; wear - optical review of pattern, location, amount, chipping and cracks; cutting material - SEM examination of grain arrangement and EDAX composition analysis. Measurement and microscopy images retain their original scales and image information.



Input data and tool analysis: Tool view.



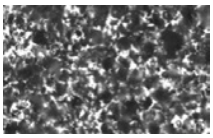
Input data and tool analysis: Tool view.



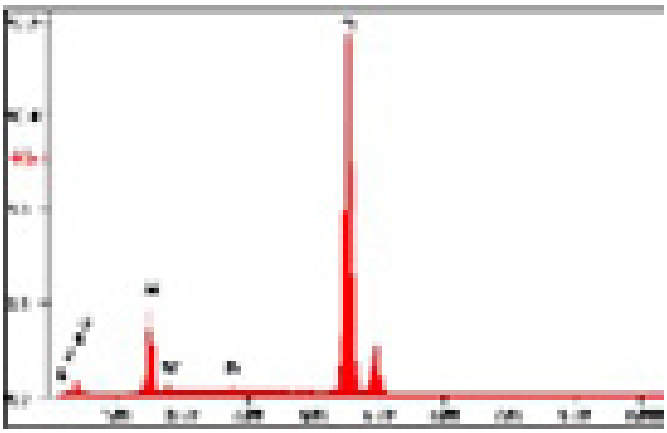
Input data and tool analysis: Tool view.



Input data and tool analysis: Tool view.

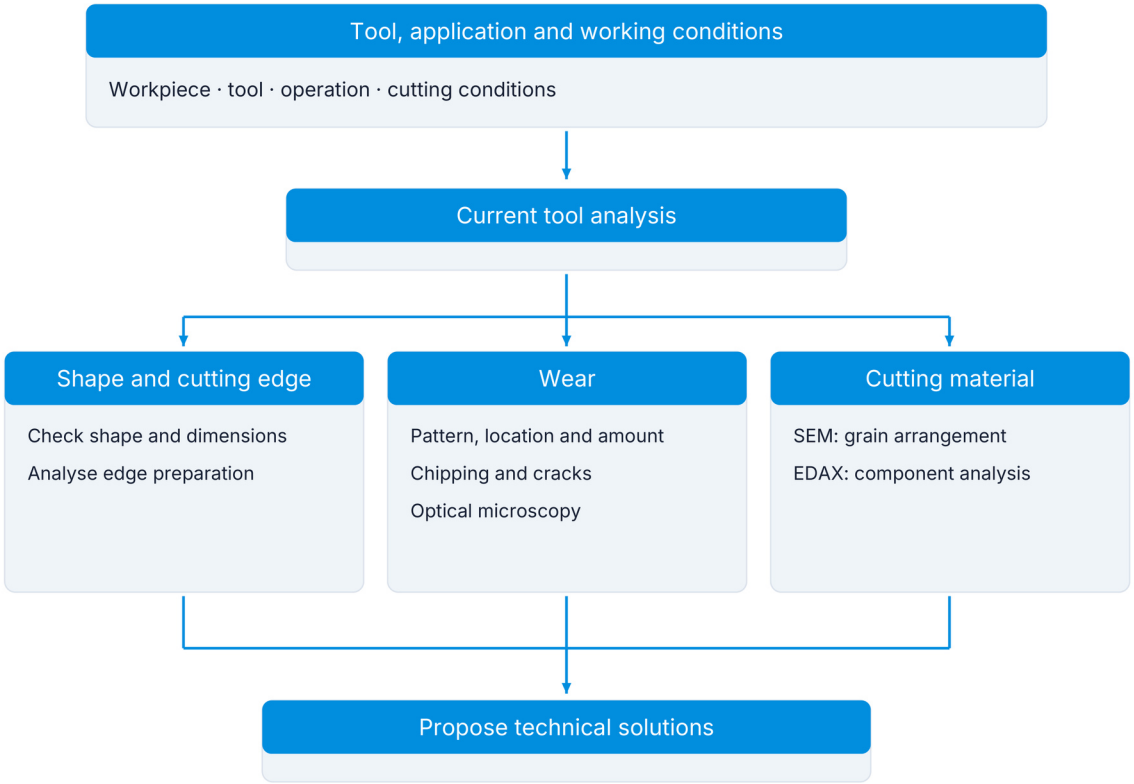


Input data and tool analysis: Microstructure image with the shown scale.



Input data and tool analysis: Measurement image with the shown values.

Technical analysis: three complementary checks



Schematic illustration

Technical analysis: three complementary checks.

HBN: hybrid cutting material for cast iron

HBN is EHWA's hybrid cutting material based on CBN and a ceramic binder. The source describes a special sintering process for a solid design and positions HBN between ceramic cutting materials and conventional PCBN. Here HBN names an EHWA product family, not hexagonal boron nitride.

The development targets an economical alternative to conventional PCBN with greater wear resistance and toughness than the illustrated ceramic comparison. Applications include cast-iron roughing and finishing. The qualitative hardness/toughness plot and property ratings are retained as relative source comparisons.

HBN: relative property comparison

Property	PCBN	HBN	Ceramic
Chemical reaction	2	2	3
Wear resistance	5	4	1
Impact resistance	3	3	1

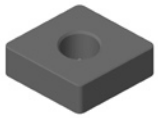
Number of rating symbols in this comparison; no physical unit.



HBN: hybrid cutting material for cast iron: Tool view.



HBN: hybrid cutting material for cast iron: Tool view.

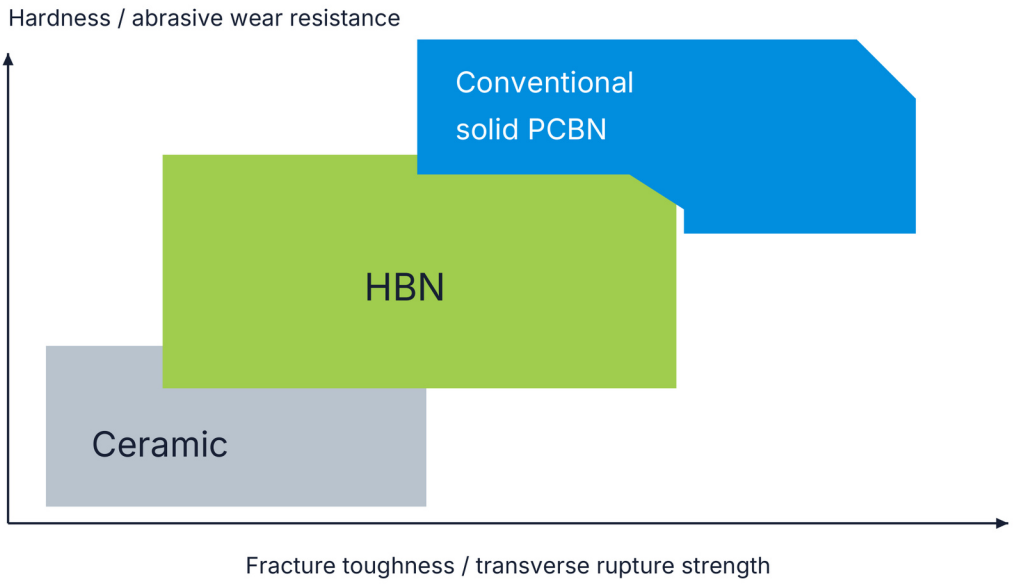


HBN: hybrid cutting material for cast iron: Tool view.



HBN: hybrid cutting material for cast iron: Tool view.

HBN: property regions



Schematic illustration

HBN: property regions.

HBN: insert shapes and applications

The HBN range includes ISO shapes C, D, T, S and R plus six illustrated special shapes. Application examples are brake discs, brake drums, cast-iron engine blocks, pump impellers, slurry pumps and iron rolls for rolling mills.

The source gives a qualitative price comparison for ceramic, HBN and PCBN: ceramic is lower, HBN intermediate and PCBN higher in this comparison. HBN tool life is shown between the illustrated ceramic

and PCBN results. Bars without numerical axis values retain the source comparison; no unprinted piece counts or costs are added.

HBN: shapes and ISO designations

Shape	Designation	ISO sizes (metric/inch)
C	CNGN	0903 (32); 0904 (33); 1204 (43); 1207 (45)
D	DNGN	1104 (33)
T	TNGN	1103 (22); 1104 (23); 1604 (33); 2204 (43)
S	SNGN	0903 (32); 0904 (33); 1204 (43); 1207 (45)
R	RNGN	0603 (22); 0904 (33); 1204 (43); 1207 (45)



HBN: insert shapes and applications: Tool view.



HBN: insert shapes and applications: Tool view.



HBN: insert shapes and applications: Tool view.



HBN: insert shapes and applications: Tool view.



HBN: insert shapes and applications: Tool view.



HBN: insert shapes and applications: Component and machining view.



HBN: insert shapes and applications: Component and machining view.



HBN: insert shapes and applications: Tool view.



HBN: insert shapes and applications: Tool view.



HBN: insert shapes and applications: Tool view.



HBN: insert shapes and applications: Tool view.



HBN: insert shapes and applications: Tool view.

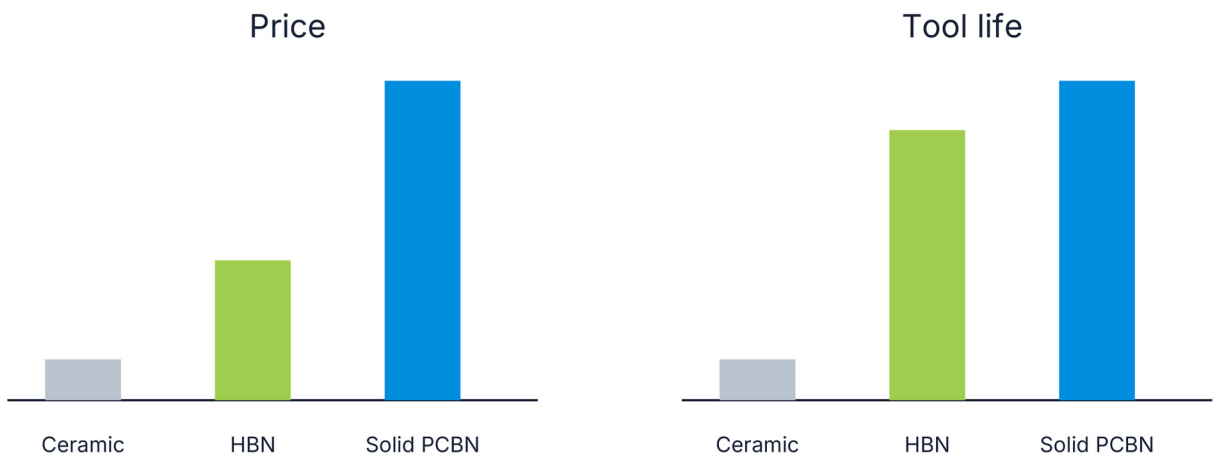


HBN: insert shapes and applications: Component and machining view.



HBN: insert shapes and applications: Component and machining view.

HBN: price and tool-life comparison



Relative comparison without numerical results or axis unit.

Schematic illustration

HBN: price and tool-life comparison.

EBC190: coated PCBN for hardened workpieces

EBC190 combines wear resistance and toughness for bearing steel and other hardened steels in continuous or interrupted cuts. The edition shows two machining examples using SCR420HB and SUJ3, each with its own cutting data, workpiece images and comparison chart.

Differences between the two trials are retained. Charts keep their original axis labels and relative bar heights; precise tool-life values are not calculated from unlabelled bars.

EBC190: comparison conditions

Parameter	Example 1	Example 2
Workpiece	SCR420HB	SUJ3
Cutting speed Vc	200 m/min	170~220 m/min
Feed f	0.08~0.12 mm/rev	0.1~0.2 mm/rev
Depth of cut ap	0.15~0.20 mm	0.08~0.15 mm
Coolant	Coolant	Coolant
Cut	Interrupted	Continuous



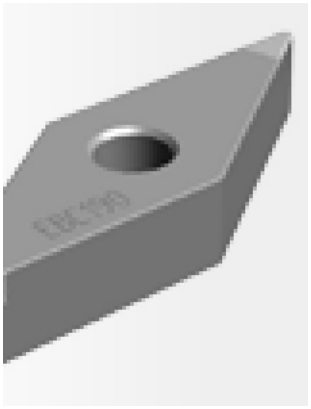
EBC190: coated PCBN for hardened workpieces: Tool view.



EBC190: coated PCBN for hardened workpieces: Component and machining view.



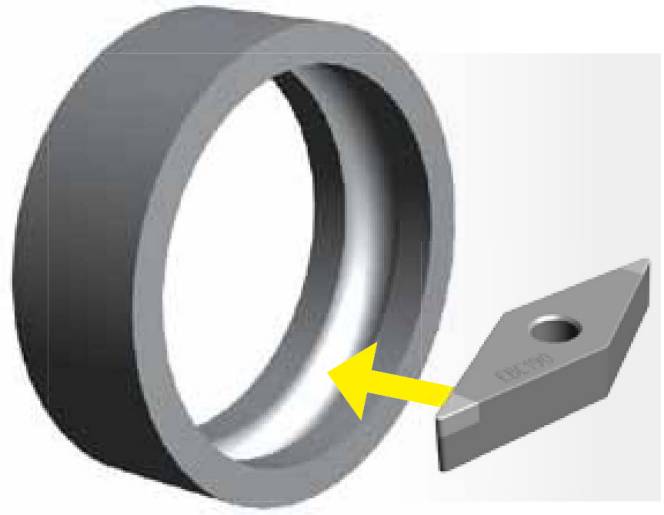
EBC190: coated PCBN for hardened workpieces: Component and machining view.



EBC190: coated PCBN for hardened workpieces: Tool view.

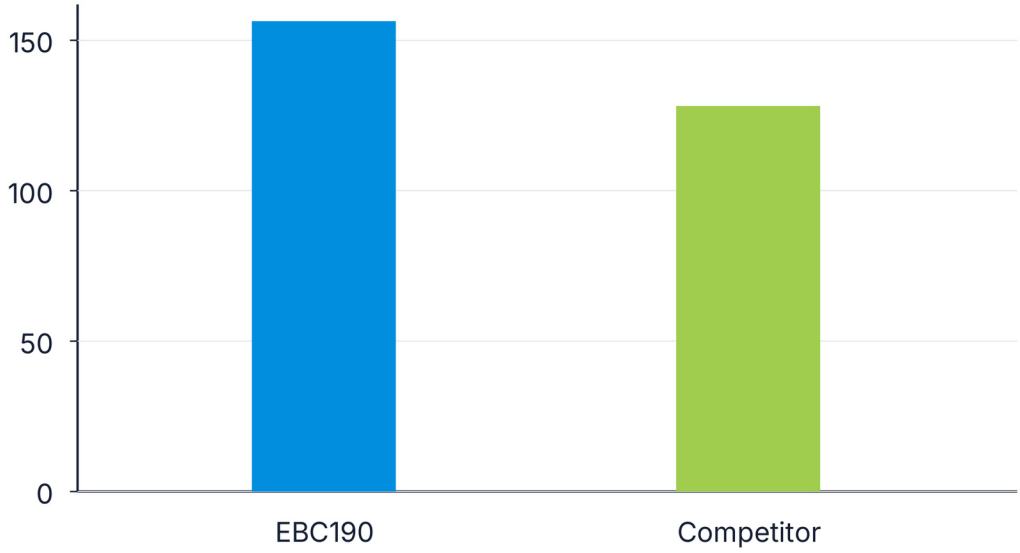


EBC190: coated PCBN for hardened workpieces: Component and machining view.



EBC190: coated PCBN for hardened workpieces: Component and machining view.

EBC190: SCR420HB

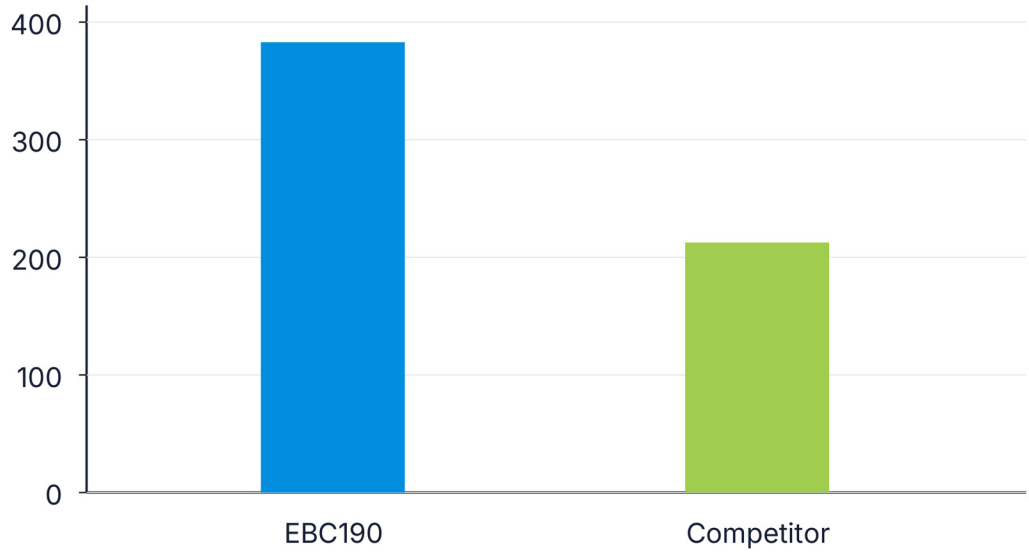


Comparison under the associated trial conditions.
The source gives no axis unit and no numerical bar values.

Schematic illustration

EBC190: SCR420HB.

EBC190: SUJ3



Comparison under the associated trial conditions.
The source gives no axis unit and no numerical bar values.

Schematic illustration

EBC190: SUJ3.

CF: cutter with directed chip and coolant flow

The CF cutter directs coolant to the cutting edge and supports chip flow. Stable insert mounting is designed for tool life and process reliability. The source also identifies good surface finish, easier handling with an aluminium body and a durable design with low cutting load.

More cutting edges can enable higher feed and shorter cycle times with suitable setup, improving productivity and process stability. Detail images show insert mounting and directed coolant supply; existing target annotations are retained.



CF: cutter with directed chip and coolant flow: Tool view.



CF: cutter with directed chip and coolant flow: Tool view.



CF: cutter with directed chip and coolant flow: Tool view.



CF: cutter with directed chip and coolant flow: Component and machining view.



CF: cutter with directed chip and coolant flow: Component and machining view.

PCD, PCBN, CVD and single-crystal diamond

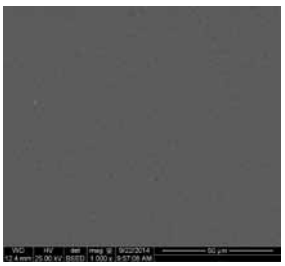
Polycrystalline diamond is produced by sintering diamond particles with a metal matrix at high pressure and temperature. High-precision, productive machining and difficult-to-cut materials extend the demands on conventional cutting materials such as high-speed steel, carbide, cermet and ceramic.

The overview distinguishes PCD for non-ferrous metals, wood and composites; PCBN for cast iron and hardened steel, and for selected superalloys with the appropriate grade and process design; polycrystalline CVD diamond for non-ferrous uses similar to PCD; and synthetic or natural single-crystal diamond for high edge quality. Micrographs and the qualitative hardness/toughness plot position natural diamond, mono, CVD, PCD, PCBN, oxide/nitride ceramics, ultra-fine and conventional carbide, and high-speed steel.

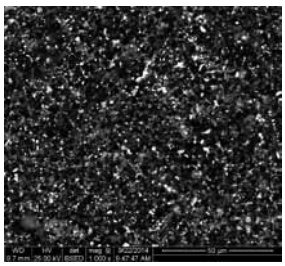
Cutting materials: definition and applications

Material	Definition	Application	Hardness [GPa]
PCD	Polycrystalline diamond	Non-ferrous metals (Al, Cu), wood, advanced composites	50~70
PCBN	Polycrystalline cubic boron nitride	Cast iron and hardened steel; selected superalloys according to grade and process	30~40
CVD	Polycrystalline chemical -vapour-deposited diamond	Non-ferrous metals, similar to PCD	70~80
Mono / Natural diamond	Single-crystal diamond	Suitable non-ferrous metals, such as Al and Cu, and suitable non-metallic materials requiring high edge quality	80~100

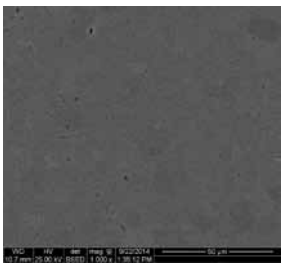
Superalloys are not a uniform group of ferrous materials: they also include nickel- and cobalt-based alloys. PCBN selection therefore depends on the specific alloy, grade and machining task. Material suitability and cutting-edge geometry for single-crystal diamond are likewise determined for the application.



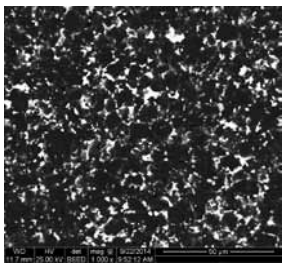
PCD, PCBN, CVD and single-crystal diamond: Microstructure image with the shown scale.



PCD, PCBN, CVD and single-crystal diamond: Microstructure image with the shown scale.



PCD, PCBN, CVD and single-crystal diamond: Microstructure image with the shown scale.

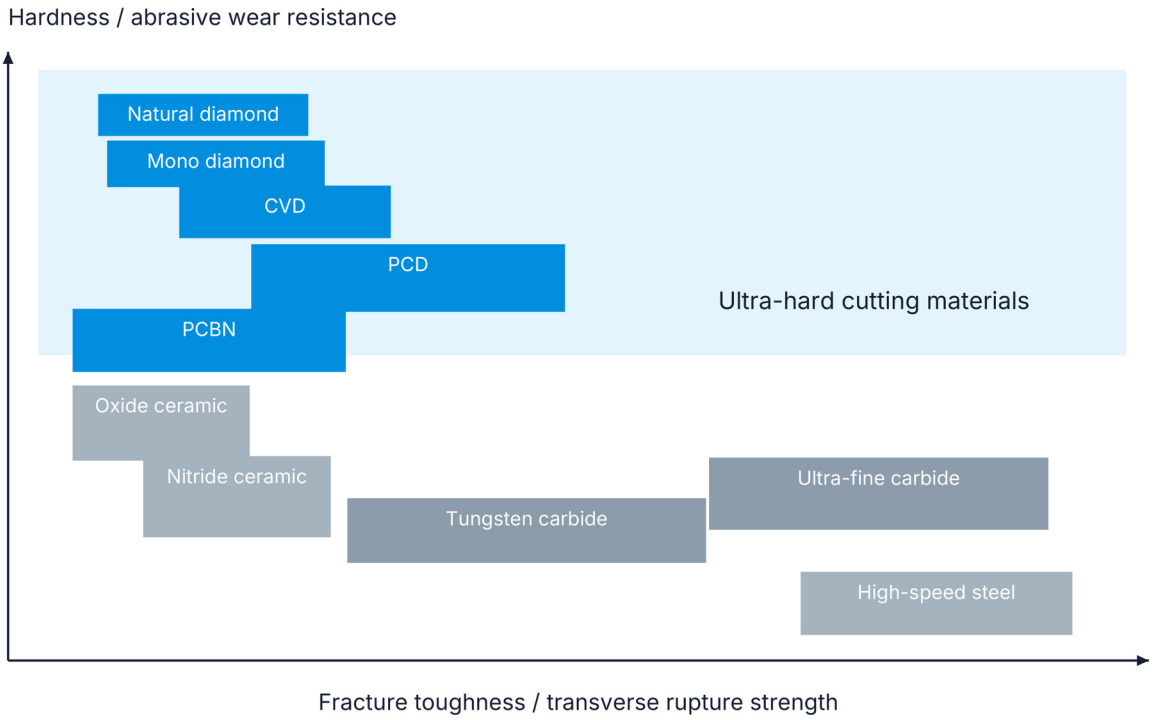


PCD, PCBN, CVD and single-crystal diamond: Microstructure image with the shown scale.



PCD, PCBN, CVD and single-crystal diamond: Tool view.

Cutting materials: hardness and toughness



Qualitative material regions; no numerical scale.

Schematic illustration

Cutting materials: hardness and toughness.

Cutting-material structure and manufacturing benefits

PCD contains diamond grains with different crystal orientations. This produces more uniform directional properties and supports wear resistance, resistance to chemical attack and impact loading. It does not establish a universal tool-life advantage over natural diamond; application and crystal orientation remain relevant.

PCBN is a synthetic cutting material with high hardness and heat resistance. The source describes thermal stability up to approximately 1000 °C. This material statement is not a permissible operating temperature for every complete insert, coating or brazed joint.

The source lists seven manufacturing objectives: precise surfaces, dimensional accuracy, long tool life, reduced tool-inventory effort, fast material removal, lower energy demand and resource-efficient production. Achievable benefits depend on a coordinated tool and process.



Cutting-material structure and manufacturing benefits: Tool view.

PCD: grain size, diamond content and grade selection

Selection spans ultra-fine, fine, medium and coarse through multi-modal structures. The five micrographs show EP20, EP51, EP55, EP58 and EP29 at ×1000. The source associates finer structures with better surfaces and coarser/multi-modal structures with higher wear resistance; the grade table retains diamond content, grain size, W+Co binder and applications.

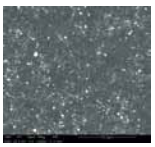
The application bands distinguish wood/copper, rubber/acrylic glass, aluminium-silicon alloys with Si <13% or Si >13% and carbide, sintered/unsintered ceramics, and MMC/CFRP/glass fibre. General use lies in the fine-to-medium region. Band boundaries are retained as shown; intermediate positions are not converted into invented fixed grade assignments. WEDM means wire electrical-discharge machining.

PCD: five grain-size classes

Class	Grade	Grain size [µm]	Diamond content [%]	Type
Ultra-fine	EP20	0.5	85	Carbide-backed
Fine	EP51	3~4	90	Carbide-backed
Medium	EP55	8~10	90	Carbide-backed
Coarse	EP58	20~25	94	Carbide-backed
Multi-modal	EP29	30+2	94	Carbide-backed

PCD grades

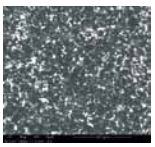
Grade	Diamond content [%]	Grain size [µm]	Binder	Application
EP10	85	1.5	W+Co	Sharp cutting edge
EP20	85	0.5	W+Co	Ultra-fine grain for finishing
EP51	90	3~4	W+Co	Fine grain for finishing
EP13	92	5~6	W+Co	General purpose; WEDM
EP55	90	8~10	W+Co	General purpose
EP75	90	6~8	W+Co	General purpose; WEDM
EP750	90	8+2	W+Co	Multi-modal, wear resistance
EP58	94	20~25	W+Co	Wear resistance
EP59	95	25+2	W+Co	Multi-modal, wear resistance
EP29	94	30+2	W+Co	Multi-modal, wear resistance; difficult-to-cut materials
EP69	95	50+α	W+Co	Multi-modal, wear resistance; difficult-to-cut materials



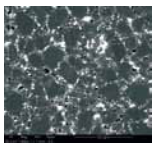
PCD: grain size, diamond content and grade selection: Microstructure image with the shown scale.



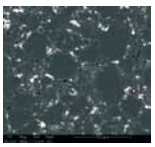
PCD: grain size, diamond content and grade selection: Microstructure image with the shown scale.



PCD: grain size, diamond content and grade selection: Microstructure image with the shown scale.

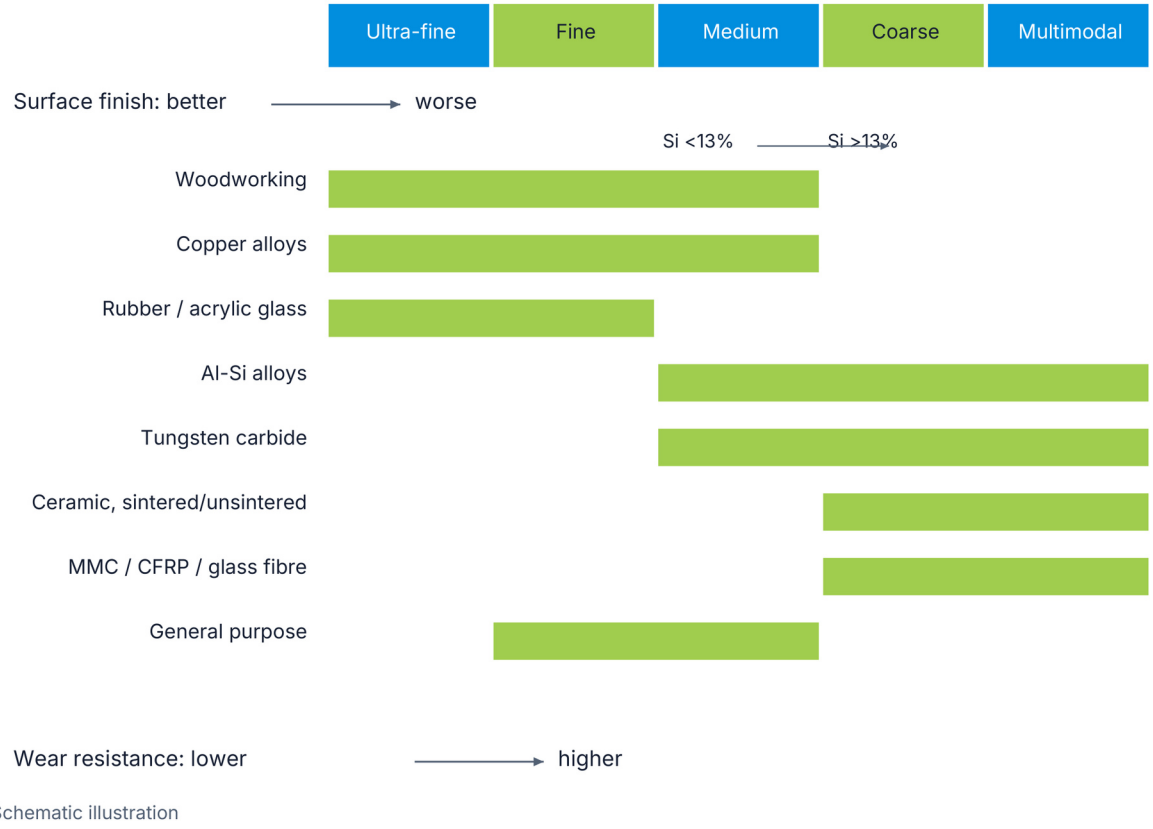


PCD: grain size, diamond content and grade selection: Microstructure image with the shown scale.



PCD: grain size, diamond content and grade selection: Microstructure image with the shown scale.

PCD: grain size and application bands



Schematic illustration

PCD: grain size and application bands.

PCD: workpieces and machining ranges

The parameter table connects material, grade class, cutting speed, feed and depth of cut. Aluminium-silicon alloys, copper, carbide/ceramic, engineering plastics, wood and the specific titanium application remain separate. The qualitative application diagram relates wrought aluminium, Al-Si <13 vol%, Al-Si >13 vol% and MMC to superfinishing cuts, finishing, general finishing and roughing.

Non-ferrous workpieces: high-silicon Al alloys (Si >13%), low-/medium-silicon Al alloys (Si <13%), MMC, copper, brass, bronze, zinc, sintered/unsintered carbide and titanium alloys.

Non-metallic workpieces: wood and boards such as HDF, chipboard, hardboard and laminate; graphite, epoxy, CFRP, GFRP and engineering plastics; sintered/unsintered ceramics, granite, imitation marble and quartz. Cutting data relate to the respective source application.

PCD: working parameters

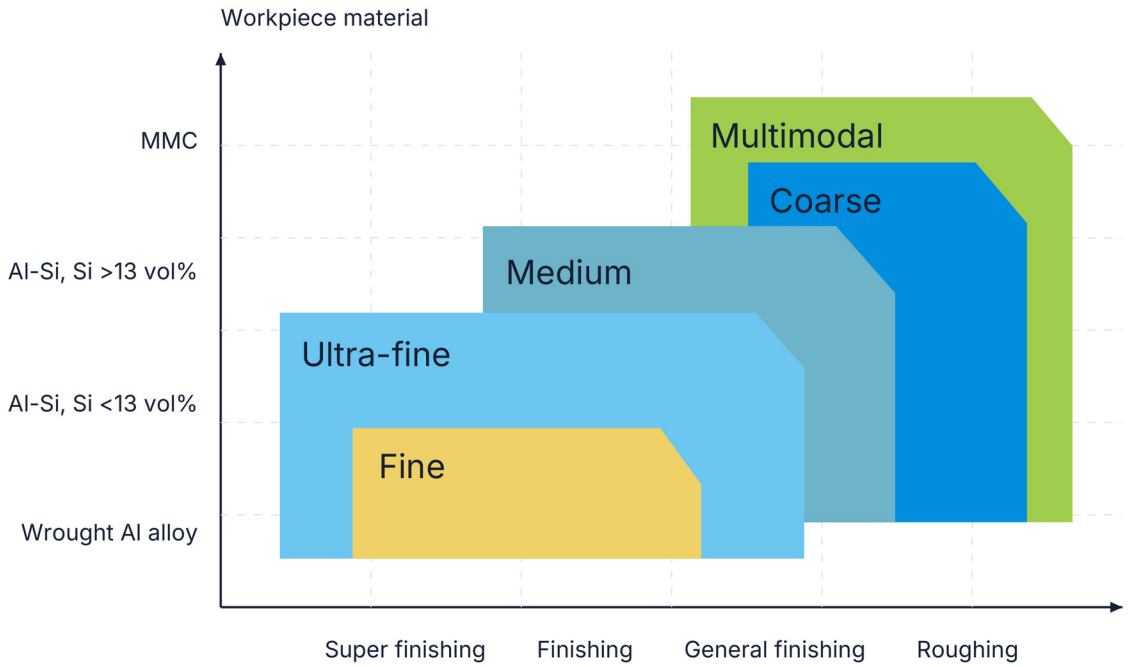
Material	Vc [m/min]	f [mm/rev]	ap [mm]
Al-Si alloy (Si <13%)	~3000	~0.2	~3
Al-Si alloy (Si >13%)	~3000	~0.2	~3
Cu alloy	~1000	~0.2	~3
Tungsten carbide / ceramic	10~30	~0.2	~0.5
Engineering plastic	~1000	~0.4	~2
Wood	~4000	~0.4	-
Ti alloy	50~100	~0.3	~0.5

A leading ~ is retained as printed and is not reinterpreted as a confirmed maximum.

PCD: grades assigned in the parameter table

Material	Ultra-fine	Fine	Medium	Coarse	Multi-modal
Al-Si alloy (Si <13%)	EP10; EP20	-	EP13; EP55; EP75	-	-
Al-Si alloy (Si >13%)	-	-	EP750	EP58	EP29; EP59; EP69
Cu alloy	EP10; EP20	EP51	EP13	-	-
Tungsten carbide / ceramic	-	-	EP55; EP75; EP750	EP58	EP29; EP59; EP69
Engineering plastic	EP10; EP20	-	EP13; EP55; EP75	-	EP29; EP59; EP69
Wood	-	EP51	EP55; EP75; EP750	-	-
Ti alloy	EP20	-	-	-	-

PCD grades: machining ranges



Qualitative regions from the 2022 edition; see table for cutting data.
Schematic illustration

PCD grades: machining ranges.

PCBN: CBN content, binder and application

Low CBN content is illustrated with ceramic binders such as TiC and TiN, and high content with metal binders such as Co and WC. The source compares strength, heat/chemical resistance and wear resistance using relative ratings. Its general property table and grade arrows use different content ranges and remain separate.

Interruption levels extend from H05 (continuous) through H15 (light) and H25 (medium) to H35 (heavy interruption). Seven section models H05, H10, H15, H20, H25, H30 and H35 show the progression. Grades are described as carbide-backed, solid or double-sided. P/M here denotes powder-metallurgy materials.

PCBN: low- and high-CBN-content properties

Property	Low CBN content	High CBN content
CBN content	40~70%	70~95%
Grain size	0.5~5 μm	1~20 μm
Binder	Ceramic (TiC, TiN...)	Metal (Co, WC...)
Strength (rating)	2/4	4/4
Thermal resistance (rating)	2/4	4/4
Chemical resistance (rating)	4/4	1/4
Wear resistance (rating)	3/4	4/4

PCBN: low-CBN-content grades

Grade	Type	Application
EB319X	Carbide-backed	H05, high speed
EB29X (EB29S)	Carbide-backed / solid	H05, high speed
EB28X (EB28S)	Carbide-backed / solid	H05, standard
EB180	Carbide-backed	H05~H15
EB570 (EB57S)	Carbide-backed / solid	H05~H15, bearing steel
EB160 (EB16S)	Carbide-backed / solid	H05~H15
EB560 (EB56S)	Carbide-backed / solid	H05~H20
EB550 (EB55S)	Carbide-backed / solid	H15~H25
EB150 (EB15S)	Carbide-backed / solid	H15~H25
EB190 (EB19S)	Carbide-backed / solid	H05~H30
EB73	Carbide-backed	H25~H35
EB54X	Solid	H25~H35
EB170	Carbide-backed	Powder metal, valve seat
EB14	Carbide-backed	Powder metal, valve seat

The shared source arrow 40→70% does not specify an individual percentage for each grade.

PCBN: high-CBN-content grades

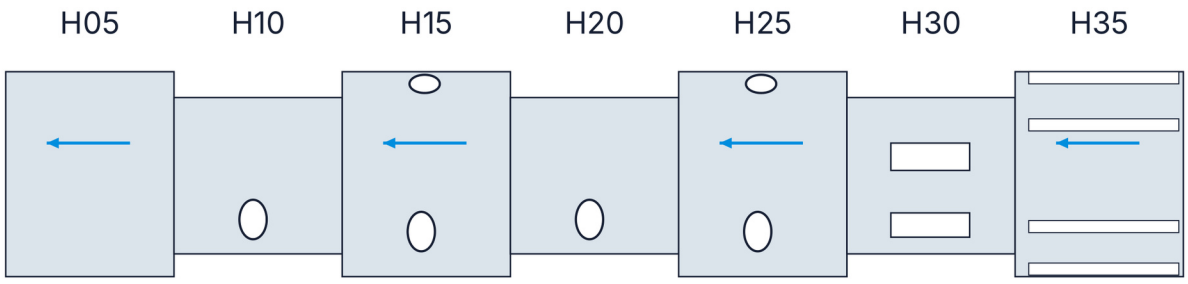
Grade	Type	Application
EB130	Carbide-backed	Low-alloy powder metal
EB710	Carbide-backed	Chilled iron; low-alloy powder metal
EB120	Carbide-backed	Ductile / chilled iron
EB22	Carbide-backed	Chilled iron; low-alloy powder metal
EB11	Carbide-backed	Cast iron standard, heavy interruption
EB51	Carbide-backed	Cast iron standard
EB71	Carbide-backed / double-sided	Cast iron standard
EB210	Carbide-backed	Cast iron, high interruption
EB71X	Carbide-backed	Chilled iron; low-alloy powder metal
EB100X	Solid	White iron; heavy milling of cast iron
EB50	Solid	Grey cast iron, roughing
EB1000	Solid	Grey cast iron, roughing / finishing
HBN	Solid	Grey cast iron, standard
HBN-W	Solid	Grey cast iron, roughing
HBN-N	Solid	Grey cast iron, roughing
HBN-R	Solid	Iron roll

The grade arrow 75→95% is separate from the general property range 70~95%.



PCBN: CBN content, binder and application: Tool view.

Hard turning: interruption levels



H05: continuous · H15: light · H25: medium · H35: heavy interruption

Schematic illustration

Hard turning: interruption levels.

PCBN: cutting data and application groups

The cutting-data table distinguishes hardened steel, cast iron and high-/low-alloy powder-metallurgy materials. Grades, cutting speed, feed and depth of cut are fully assigned. The qualitative application plot adds interruption from continuous through light/medium to heavy.

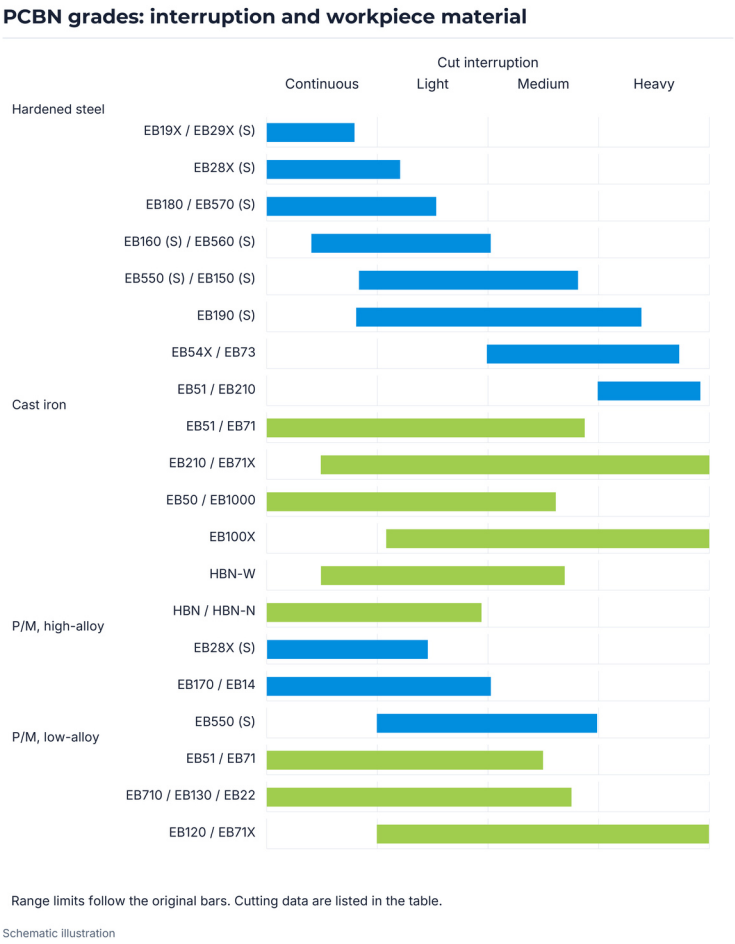
Low CBN content: tool/die steel, hardened steel, bearing steel and high-chromium/molybdenum steel for gears, transmission shafts, bearings, dies and punches. Sintered powder-metallurgy materials are listed for valve seats/guides, connecting rods and oil-pump gears.

High CBN content: grey, Ni-hard, alloy, chilled and nodular iron for engine blocks, brake discs/drums, clutch plates, rolls, pumps and impellers. Superalloy examples Inconel 718/901/600, Rene 76/77/95 and Stellite are associated with turbine discs, blades and vanes.

PCBN: working parameters

Material group	Grade	Vc [m/min]	f [mm/rev]	ap [mm]
Hardened steel	EB19X / EB29X (S)	150~300	0.05~0.15	0.05~0.15
Hardened steel	EB28X (S)	120~280	0.05~0.2	0.05~0.2
Hardened steel	EB180 / EB570 (S)	100~230	0.05~0.15	0.05~0.2
Hardened steel	EB160 (S) / EB560 (S)	80~200	0.05~0.2	0.05~0.2
Hardened steel	EB550 (S) / EB150 (S)	80~180	0.05~0.2	0.05~0.3

Material group	Grade	Vc [m/min]	f [mm/rev]	ap [mm]
Hardened steel	EB190 (S)	70~170	0.05~0.2	0.05~0.3
Hardened steel	EB54X / EB73	70~120	0.05~0.15	0.05~0.2
Hardened steel	EB51 / EB210	50~100	0.05~0.15	0.05~0.2
Cast iron	EB51 / EB71	300~1000	0.1~0.5	0.1~2
Cast iron	EB210 / EB71X	300~1500	0.05~0.3	0.1~2
Cast iron	EB50 / EB1000	150~1500	0.1~0.5	0.1~4
Cast iron	EB100X	150~1000	0.1~0.3	0.1~4
Cast iron	HBN-W	300~1000	0.1~0.5	0.1~4
Cast iron	HBN / HBN-N	300~1000	0.1~0.5	0.1~4
High-alloy powder metal	EB28X (S)	100~250	0.05~0.2	0.05~0.2
High-alloy powder metal	EB170 / EB14	100~200	0.05~0.2	0.05~0.2
High-alloy powder metal	EB550 (S)	50~150	0.05~0.25	0.05~0.2
Low-alloy powder metal	EB51 / EB71	50~150	0.05~0.3	0.05~0.2
Low-alloy powder metal	EB710 / EB130 / EB22	50~150	0.05~0.3	0.05~0.2
Low-alloy powder metal	EB120 / EB71X	50~150	0.05~0.3	0.05~0.2



PCBN grades: interruption and workpiece material.

Diamond: PCD, CVD and mono compared

The three micrographs show PCD, polycrystalline CVD diamond and single-crystal mono diamond at ×1000. The property table retains thermal conductivity, hardness, toughness and tensile strength with their actual printed numbers and units. The tensile-strength unit is explained locally at the table.

Three qualitative diagrams compare hardness/toughness, wear resistance against price/surface finish, and hardness against chemical/thermal resistance. ED501 and ED502 are distinguished by relative wear/toughness ratings.

Applications: high- and low-silicon Al alloys, MMC, copper, brass, bronze, zinc and sintered/unsintered carbide; wood/HDF/chipboard/hardboard/laminate, graphite/epoxy/CFRP/GFRP/engineering plastics, and sintered/unsintered ceramics, granite, imitation marble and quartz.

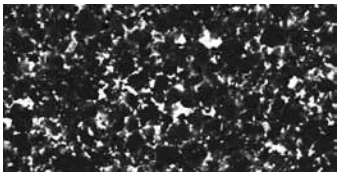
Diamond: material properties in the 2022 edition

Property	PCD	CVD (polycrystalline)	Mono (single-crystal)
Thermal conductivity (unit not printed)	560	560	2,000
Hardness [GPa]	50~70	70~80	80~100
Toughness [MPa·$m^{1/2}$]	8~9	8~9	3~4
Tensile strength (source heading: Gpa)	1,260	1,260	2,000

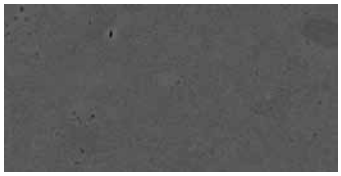
Tensile-strength numbers and the printed unit heading are retained. The unit is unconfirmed and no silent conversion is made. No unit is printed for thermal conductivity.

CVD grades: relative comparison

Grade	Wear resistance	Toughness
ED501	3/4	3/4
ED502	4/4	2/4



Diamond: PCD, CVD and mono compared: Microstructure image with the shown scale.

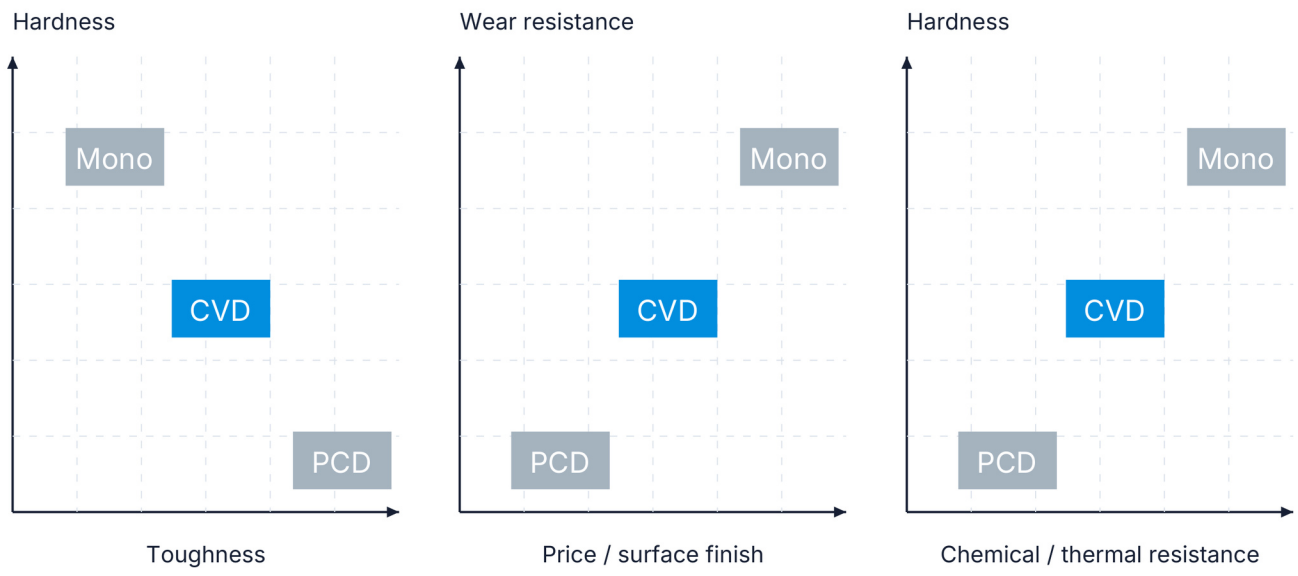


Diamond: PCD, CVD and mono compared: Microstructure image with the shown scale.



Diamond: PCD, CVD and mono compared: Microstructure image with the shown scale.

Diamond types: property comparison



Qualitative comparison; no numerical axis scale.
Schematic illustration

Diamond types: property comparison.

Single-crystal diamond for precision edges

Natural diamond, synthetic mono diamond and single-crystal CVD diamond enable sharp, uniform cutting edges. Listed applications include non-ferrous metals, acrylic lenses, micro-patterns and flat-panel display/backlight components (FPD/BLU).

Natural diamond is illustrated as colourless and described for finishing, wear resistance and heat resistance. Yellow mono diamond is produced by HPHT and provides a consistent synthetic alternative. Colourless single-crystal CVD diamond combines precision edge quality with reproducible properties for ultra-precision machining. Crystal orientation and the specific application determine tool benefit.

The Knoop-hardness chart retains natural diamond, mono and single CVD categories and printed ticks 2,000 / 4,000 / 6,000 / 8,000. Bars have no individual numerical labels, so no exact hardness values are added.



Single-crystal diamond for precision edges: Tool view.

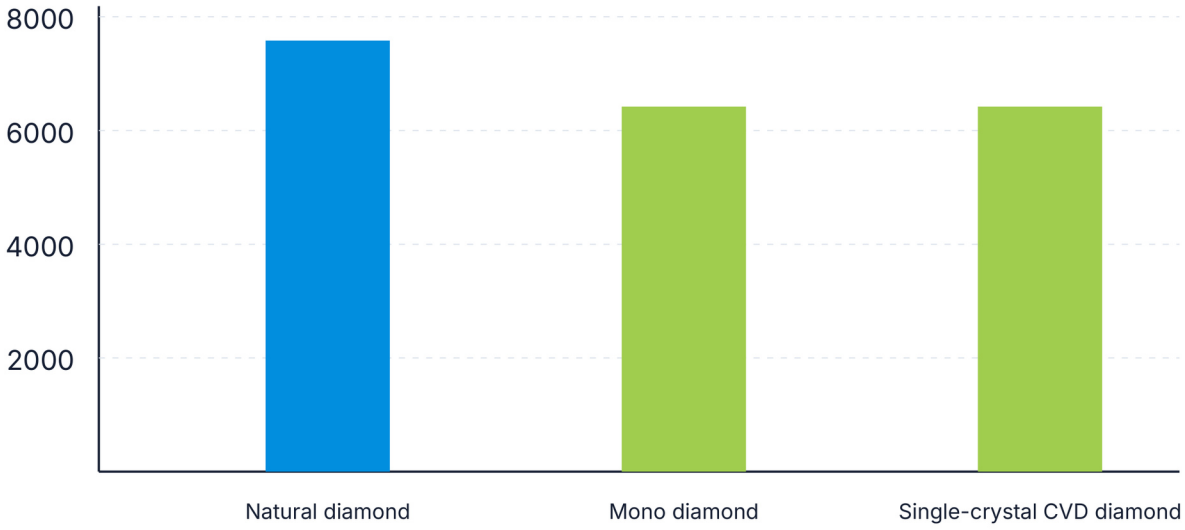


Single-crystal diamond for precision edges: Tool view.



Single-crystal diamond for precision edges: Tool view.

Single-crystal diamond: Knoop hardness



Schematic illustration

Single-crystal diamond: Knoop hardness.

Coatings: properties and applications

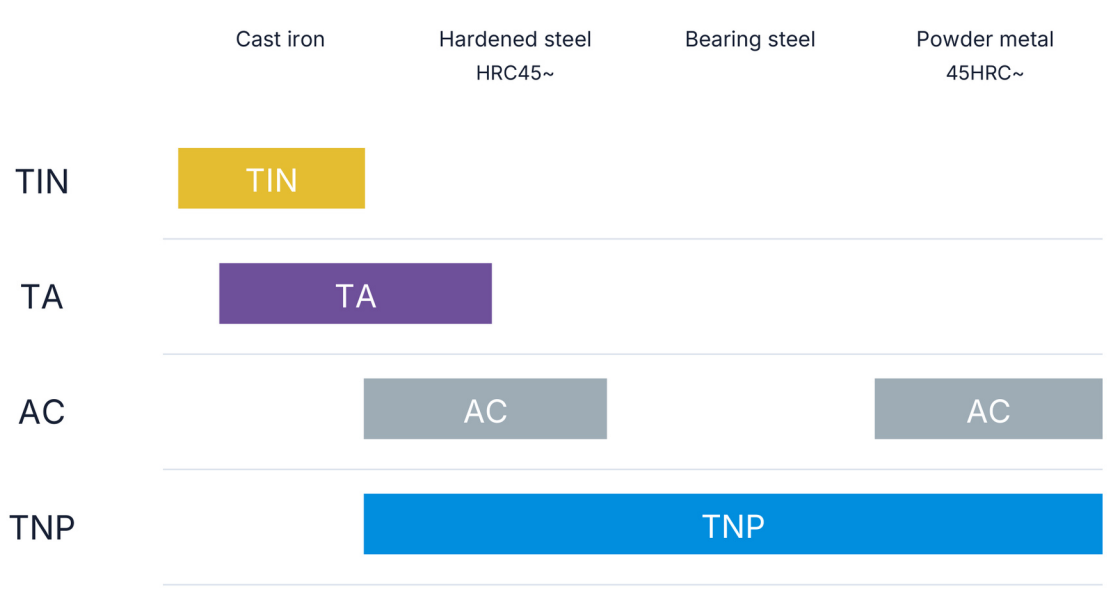
Coatings complement the cutting material and are selected for wear, heat and application. The 2022 edition lists TIN, TA, AC and TNP with colour, hardness, temperature data and use. The application bands distinguish cast iron, hardened steel from HRC 45, bearing steel and powder-metallurgy materials from HRC 45. Their partial ranges retain the source geometry.

The supplementary 2026 edition has its own coating variants and different property values. Both variant sets remain separate with their respective tables and source attribution.

Coatings in the 2022 edition

Coating	Colour	Hardness [HV]	Temperature [°C]	Properties / application
TIN	Gold	2300	600	Mono / wear parts; identifies used cutting edges
TA	Purple-grey	3400	900	Heat and wear resistance; conventional cutting
AC	Silver-grey	3200	1100	Hot hardness, heat and oxidation resistance
TNP	Light dark-grey	3500	1000	Wear resistance, surface finish and heat resistance; hardened / bearing steel

Coatings: application bands



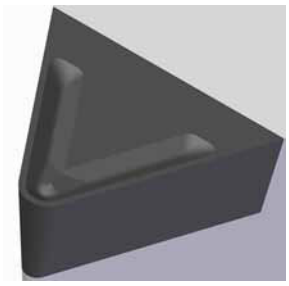
Schematic illustration

Coatings: application bands.

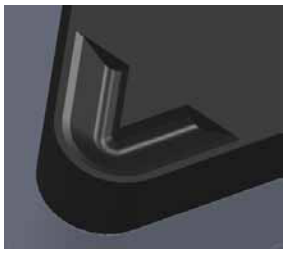
PCD/CVD chipbreakers ER and EX

Chipbreakers support controlled breaking of long chips and a more stable machining process. The source lists use under different conditions and at low or high feeds. Illustrated ISO forms include CCGW, DCGW, VBGW and TCGW.

ER is designed for greater depths of cut with robust cutting-edge geometry. EX combines edge strength with medium depths of cut in roughing and semi-finishing. The application plot shows ER, EX and EF against feed f [mm/rev] and depth of cut ap [mm]. Closed range curves are retained as shown, without deriving rectangular approval ranges.

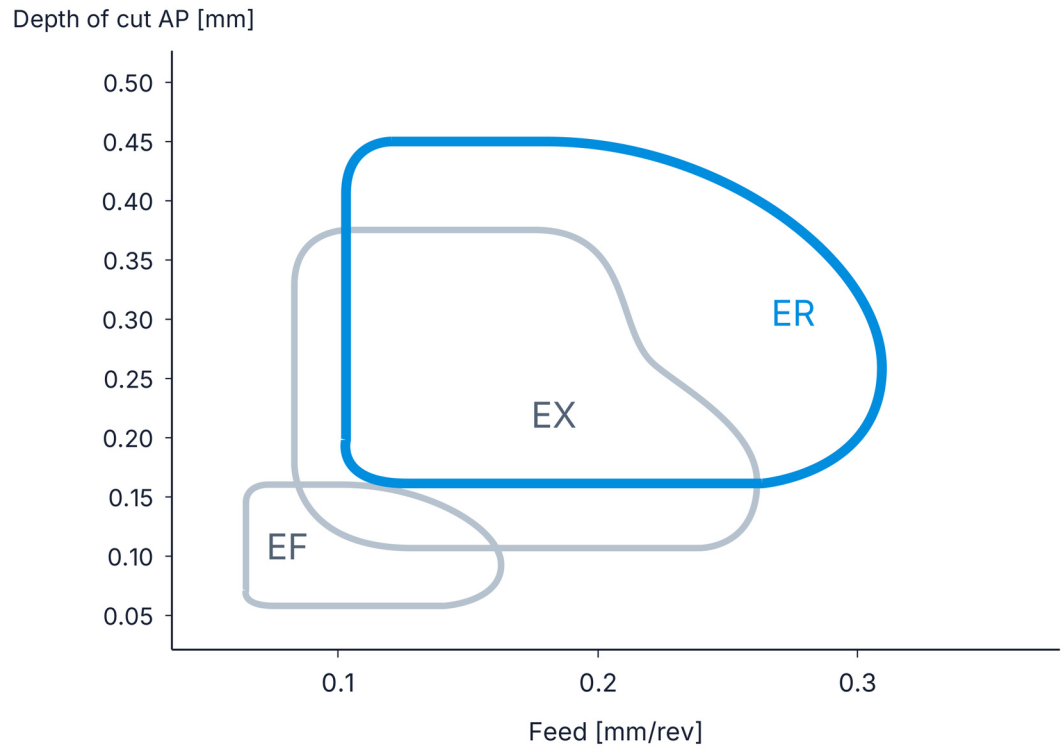


PCD/CVD chipbreakers ER and EX: Tool view.



PCD/CVD chipbreakers ER and EX: Tool view.

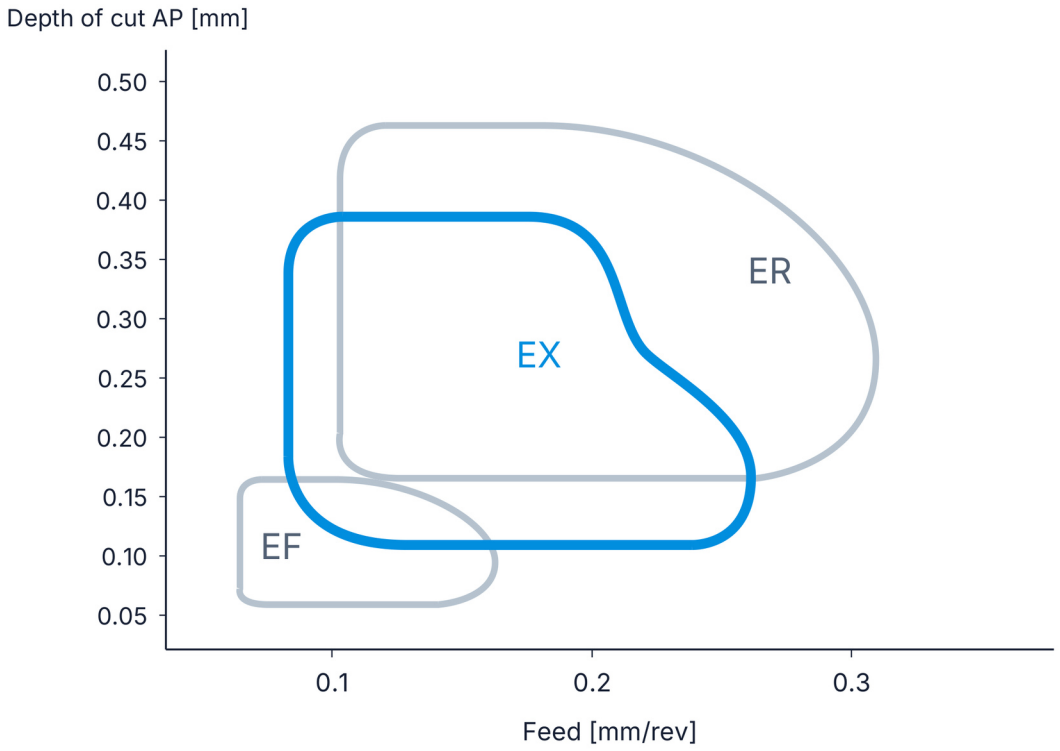
PCD/CVD: chipbreaker ER



Schematic illustration

PCD/CVD: chipbreaker ER.

PCD/CVD: chipbreaker EX



Schematic illustration

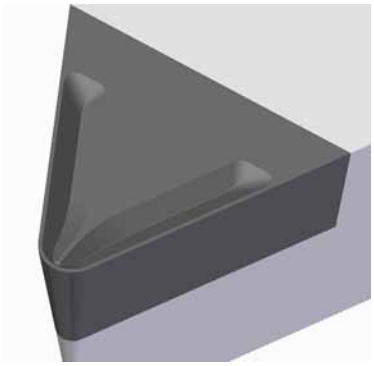
PCD/CVD: chipbreaker EX.

PCD/CVD chipbreakers EF and ES

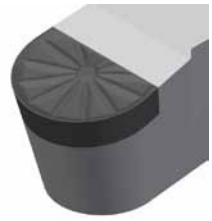
EF is designed for small depths of cut in finishing. ES denotes application-specific chipbreakers; the four illustrated special geometries are retained as design examples. Selection depends on tool, holder, component, material and actual cutting conditions. The aluminium-wheel enquiry example combines VCGW160408 and SVVCN2525-16 with the stated cutting data.

PCD chipbreaker: design-enquiry example

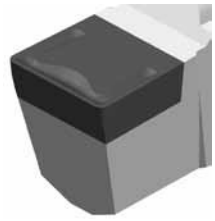
Parameter	Data
Tool	VCGW160408
Holder	SVVCN2525-16
Workpiece	Aluminium wheel
Material	ADC12
Cutting speed Vc	1800 m/min
Spindle speed N	2500 rev/min
Feed f	0.15 mm/rev
Depth of cut ap	0.3 mm



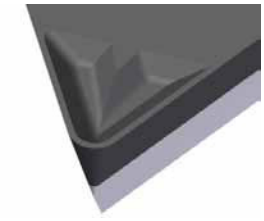
PCD/CVD chipbreakers EF and ES: Tool view.



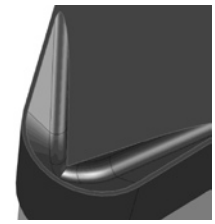
PCD/CVD chipbreakers EF and ES: Tool view.



PCD/CVD chipbreakers EF and ES: Tool view.

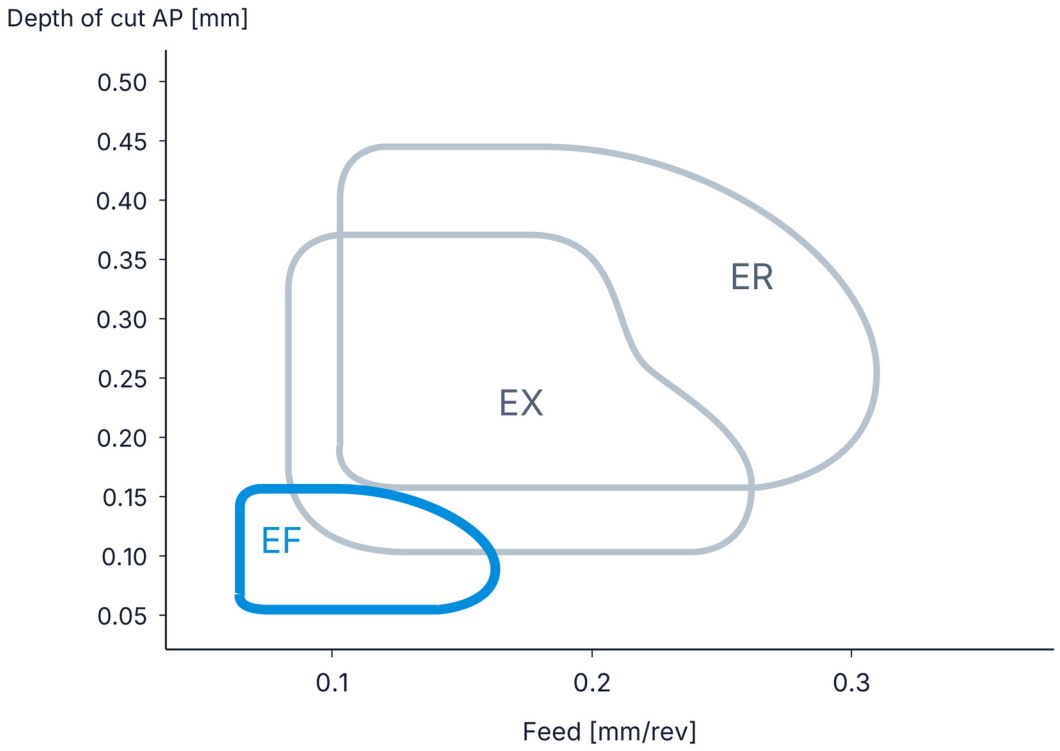


PCD/CVD chipbreakers EF and ES: Tool view.



PCD/CVD chipbreakers EF and ES: Tool view.

PCD/CVD: chipbreaker EF



Schematic illustration

PCD/CVD: chipbreaker EF.

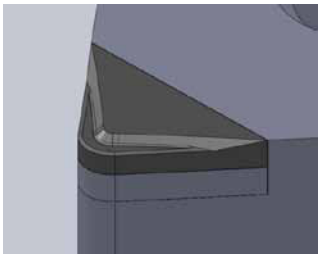
PCBN chipbreakers ER, EF and ES

ER is designed for greater depths of cut; rounded, reinforced edge geometry supports edge strength and chip control. EF serves finishing at small depth of cut. ES covers the four illustrated custom forms.

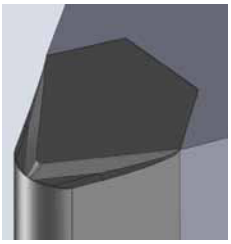
The range chart retains ER and EF against feed and depth of cut with the actual tick sequence. The design table lists a brake-disc example using CNGA120408, DCLN R/L 3232 and FC250. Associated images and their tool/workpiece assignments are fully retained.

PCBN chipbreaker: design-enquiry example

Parameter	Data
Tool	CNGA120408
Holder	DCLN R/L 3232
Workpiece	Brake disc
Material	FC250
Cutting speed Vc	850 m/min
Spindle speed N	1000 rev/min
Feed f	0.3 mm/rev
Depth of cut ap	0.4 mm



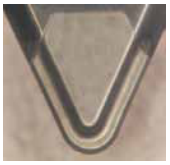
PCBN chipbreakers ER, EF and ES: Tool view.



PCBN chipbreakers ER, EF and ES: Tool view.



PCBN chipbreakers ER, EF and ES: Tool view.



PCBN chipbreakers ER, EF and ES: Tool view.

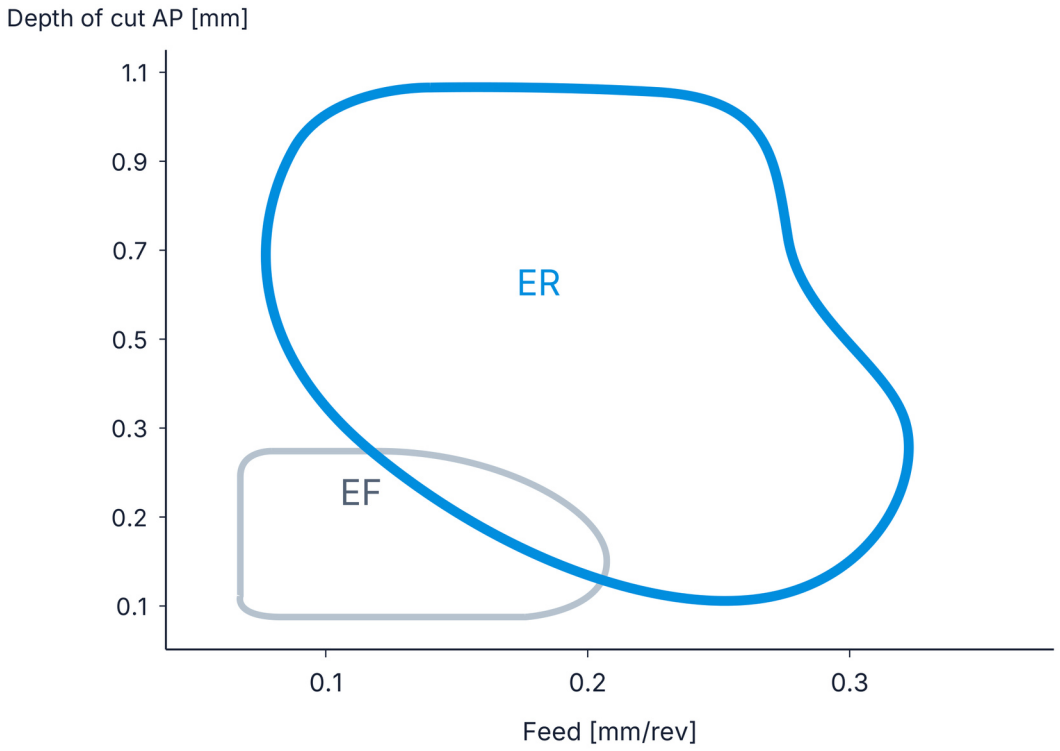


PCBN chipbreakers ER, EF and ES: Tool view.



PCBN chipbreakers ER, EF and ES: Tool view.

PCBN: chipbreaker ER

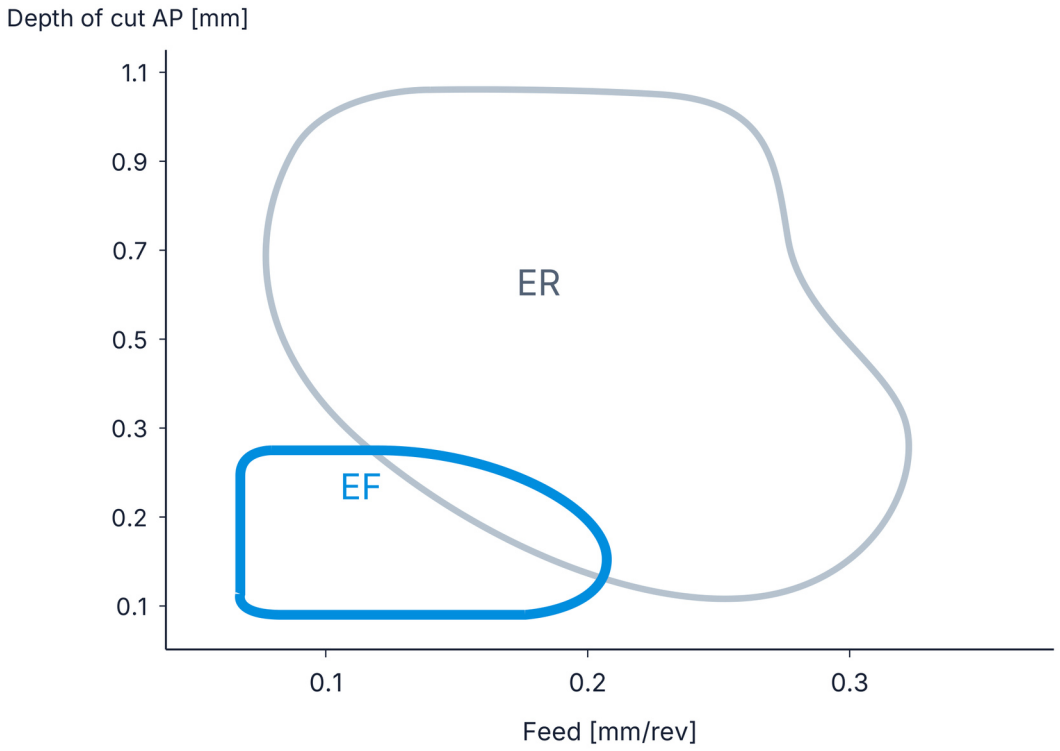


Vertical ticks retain the non-linear source arrangement.

Schematic illustration

PCBN: chipbreaker ER.

PCBN: chipbreaker EF



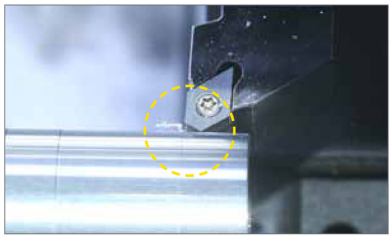
PCBN: chipbreaker EF.

PCD chipbreakers: aluminium application examples

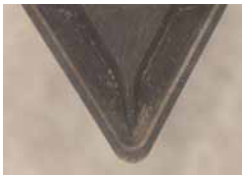
The four application examples associate DCGW11T308_ER, VCGW110302_EF, DCGW11T304_EX and VBGW160408_ES with aluminium alloys and their respective cutting data. Workpiece photos retain marked machining locations; drawings and insert images show the associated design. The ≈ symbol denotes the approximate source cutting speeds.

PCD chipbreaker: four application examples

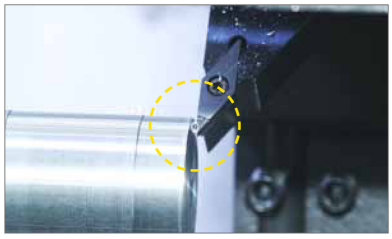
Insert	Material	Vc [m/min]	ap [mm]	f [mm/rev]
DCGW11T308_ER	Aluminium alloy	≈500	0.5	0.15
VCGW110302_EF	Aluminium alloy	≈500	0.1	0.1
DCGW11T304_EX	Aluminium alloy	≈800	0.2	0.15
VBGW160408_ES	Aluminium alloy	≈1500	0.2	0.3



PCD chipbreakers: aluminium application examples: Component and machining view.



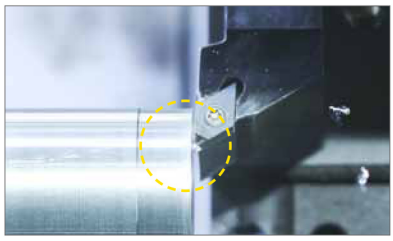
PCD chipbreakers: aluminium application examples: Tool view.



PCD chipbreakers: aluminium application examples: Component and machining view.



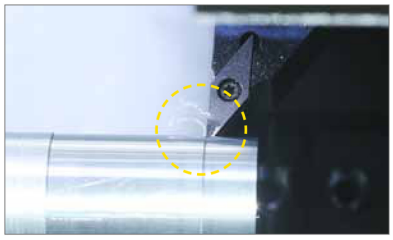
PCD chipbreakers: aluminium application examples: Tool view.



PCD chipbreakers: aluminium application examples: Component and machining view.



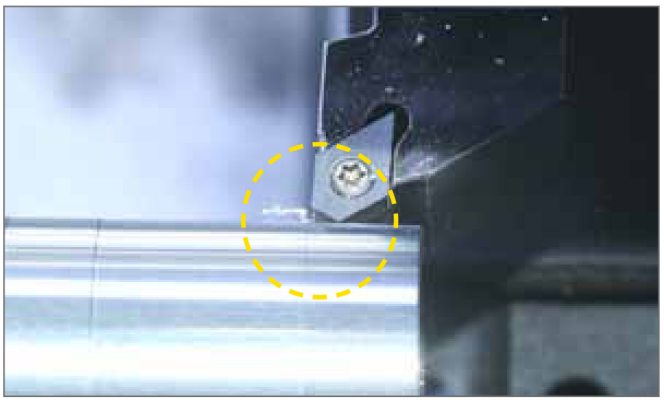
PCD chipbreakers: aluminium application examples: Tool view.



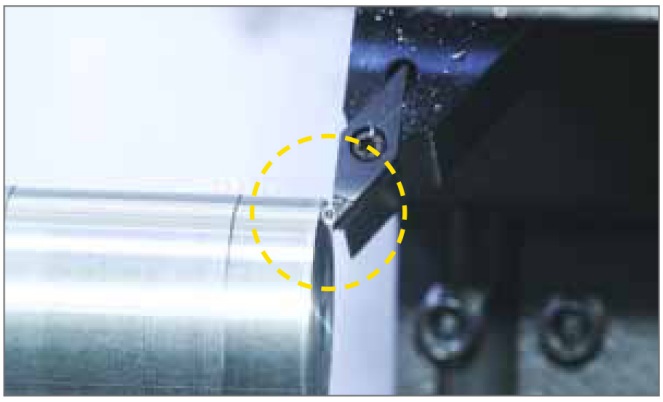
PCD chipbreakers: aluminium application examples: Component and machining view.



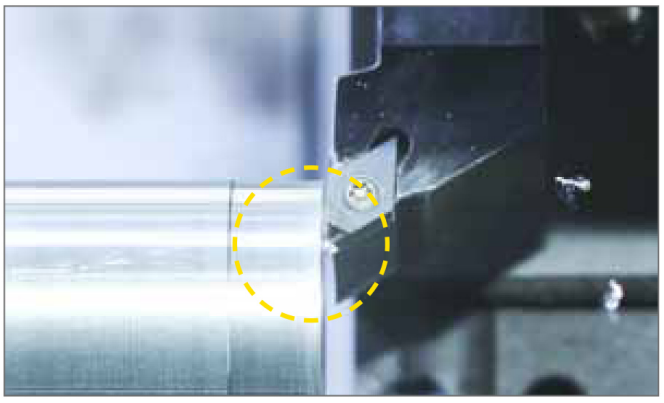
PCD chipbreakers: aluminium application examples: Tool view.



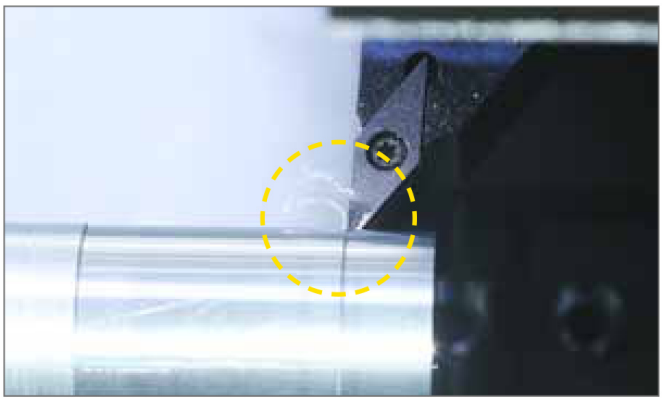
PCD chipbreakers: aluminium application examples: Component and machining view.



PCD chipbreakers: aluminium application examples: Component and machining view.



PCD chipbreakers: aluminium application examples: Component and machining view.



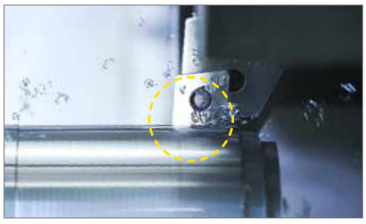
PCD chipbreakers: aluminium application examples: Component and machining view.

PCBN chipbreakers: SCM420 application examples

The four examples associate CNGA120408_ER, CNGA120408_EF, CNGA120408_ES and WNGA080408_ES with SCM420. Cutting speed, depth and feed remain separate for each trial. Existing workpiece annotations and corresponding edge forms are retained; results are not presented as a general promise for other components.

PCBN chipbreaker: four application examples

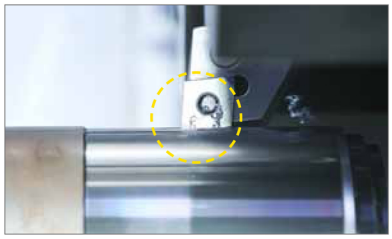
Insert	Material	Vc [m/min]	ap [mm]	f [mm/rev]
CNGA120408_ER	SCM420	≈150	0.25	0.1
CNGA120408_EF	SCM420	≈150	0.1	0.1
CNGA120408_ES	SCM420	≈150	0.2	0.1
WNGA080408_ES	SCM420	≈100	0.15	0.1



PCBN chipbreakers: SCM420 application examples: Component and machining view.



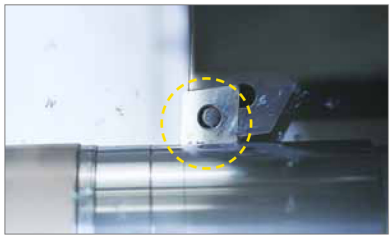
PCBN chipbreakers: SCM420 application examples: Tool view.



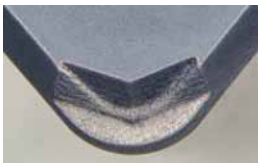
PCBN chipbreakers: SCM420 application examples: Component and machining view.



PCBN chipbreakers: SCM420 application examples: Tool view.



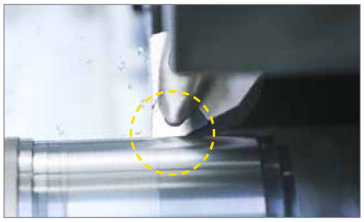
PCBN chipbreakers: SCM420 application examples: Component and machining view.



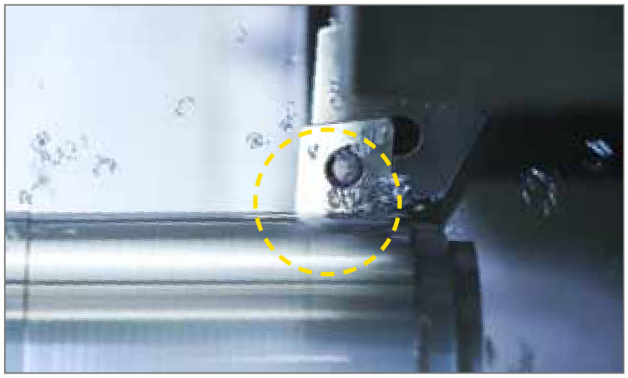
PCBN chipbreakers: SCM420 application examples: Tool view.



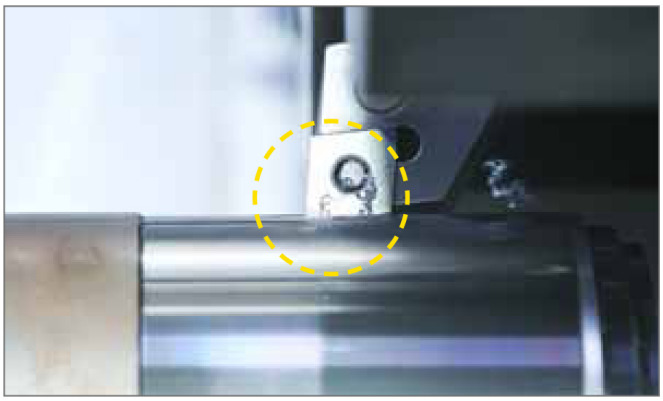
PCBN chipbreakers: SCM420 application examples: Tool view.



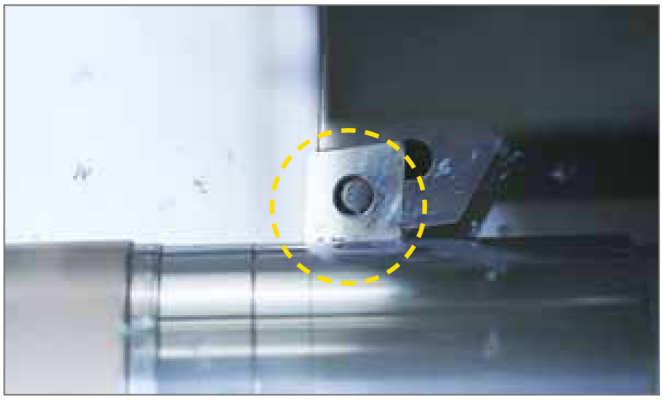
PCBN chipbreakers: SCM420 application examples: Component and machining view.



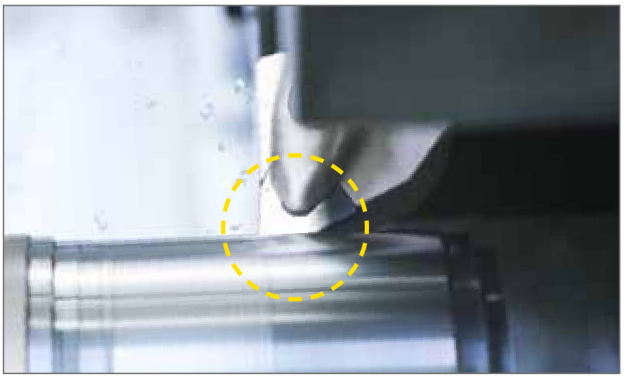
PCBN chipbreakers: SCM420 application examples: Component and machining view.



PCBN chipbreakers: SCM420 application examples: Component and machining view.



PCBN chipbreakers: SCM420 application examples: Component and machining view.



PCBN chipbreakers: SCM420 application examples: Component and machining view.

Turning tools



Turning tools: Component and machining view.

Turning: PCD/CVD and PCBN inserts

The turning programme combines inserts and matching holders for coordinated machining tasks. Its objectives are fast material removal and productivity, wear resistance and tool life, good surface finish and precise tolerances. Insert tables retain ISO designation, metric/inch size, dimensions, cutting-material grades and the illustrated construction. Standard, mini-tip, multi-tip, vertical-tip, solid and chipbreaker designs remain distinct.



Turning: PCD/CVD and PCBN inserts: Tool view.



Turning: PCD/CVD and PCBN inserts: Component and machining view.

Turning insert designation: metric

The CNMG example divides the first four positions into insert shape, clearance, tolerance class and seating/rake-face features. Shapes C, D, E, K, R, S, T, V and W and clearances N, A, B, C, P, D, E and F retain their geometric references in the overview. Dimension sketches identify m, t and I.C. Classes A, F, C, H, E and G refer to I.C. sizes 6.35, 9.525, 12.7, 15.875, 19.05, 25.4 and 31.75 mm or inch symbols 2, 3, 4, 5, 6, 8 and 10. M and U retain their separate size-dependent values.

Seating/rake-face diagrams distinguish A, G, M, R, B/W, T/H and N; Z/X identifies special designs. Views retain their illustrated feature assignments.

ISO designation: shape symbols

Symbol	Shape / angle
C	80°
D	55°
E	75°
K	55°
R	Round
S	Square
T	Triangle
V	35°
W	80°

ISO designation: clearance angle

Symbol	Clearance angle
N	0°
A	3°
B	5°
C	7°
P	11°
D	15°
E	20°
F	25°

Metric tolerance classes A/F/C/H/E/G

Class	m [mm]	t [mm]	l.C [mm]
A	±0.005	±0.025	±0.025
F	±0.005	±0.025	±0.013
C	±0.013	±0.025	±0.025
H	±0.013	±0.025	±0.013
E	±0.025	±0.025	±0.025
G	±0.025	±0.13	±0.025

The shared l.C-size list is 6.35, 9.525, 12.7, 15.875, 19.05, 25.4, 31.75 mm; these sizes are not tied row by row to the six classes.

Metric tolerance class M

l.C [mm]	m [mm]	t [mm]	l.C tolerance [mm]
6.35	±0.08	±0.13	±0.05
9.525	±0.08	±0.13	±0.05
12.7	±0.13	±0.13	±0.08
15.875	±0.15	±0.13	±0.1
19.05	±0.15	±0.13	±0.1
25.4	±0.18	±0.13	±0.13
31.75	±0.18	±0.13	±0.13

Metric tolerance class U

I.C [mm]	m [mm]	t [mm]	I.C tolerance [mm]
6.36	±0.13	±0.13	±0.08
9.525	±0.13	±0.13	±0.08
12.7	±0.2	±0.13	±0.13
15.875	±0.27	±0.13	±0.13
19.05	±0.27	±0.13	±0.18
25.4	±0.38	±0.13	±0.25
31.75	±0.38	±0.13	±0.25

The first size 6.36 is retained as printed in the U table.

Turning inserts: size, edge and hand

The continuation 12 04 08 T2501(R) identifies insert size, thickness and corner radius together with edge preparation and hand. The size overview retains the respective C, D, E, R, S, T, V, W and K shape assignments; blank size fields remain blank. F, E, T and S identify the drawn edge preparations. R means right-hand and L left-hand cutting.

Metric thickness symbols

Symbol	Thickness [mm]
01	1.59
T1	1.98
02	2.38
T2	2.78
03	3.18
T3	3.97
04	4.76
05	5.56
06	6.35
07	7.94
09	9.52

Metric radius symbols

Symbol	Corner radius [mm]
01	0.1
02	0.2
04	0.4
05	0.5
08	0.8
12	1.2
16	1.6
20	2
24	2.4
32	3.2

Metric shape sizes and I.C

Shape symbol with size symbol	I.C [mm]
C03; D04; S03; T06	3.97
C05; D06; S05; T09; V09; W03	5.56
C06; D07; S06; T11; V11; W04	6.35
C08; D09; S07; T13; V13; W05	7.94
R08	8
C09; D11; R09; S09; T16; V16; W06; K16	9.525
R10	10
R12	12
C12; D15; E13; R12.7; S12; T22; V22; W08	12.7
C16; D19; R15; S15; T27; V27; W10	15.875
R16	16
C19; D23; R19; S19; T33; V33; W13	19.05
R20	20
R25	25
C25; D31; R25; S25; T44	25.4
R32	32

Shape symbols and numbers reproduce individual assignments in the original matrix; shapes not listed have no source value in that row.

Turning insert designation: inch system

The CNMG example divides the first four positions into insert shape, clearance, tolerance class and seating/rake-face features. Shapes C, D, E, K, R, S, T, V and W and clearances N, A, B, C, P, D, E and F retain their geometric references in the overview. Dimension sketches identify m, t and I.C. Classes A, F, C, H, E and G refer to I.C. sizes 6.35, 9.525, 12.7, 15.875, 19.05, 25.4 and 31.75 mm or inch symbols 2, 3, 4, 5, 6, 8 and 10. M and U retain their separate size-dependent values.

Seating/rake-face diagrams distinguish A, G, M, R, B/W, T/H and N; Z/X identifies special designs. Views retain their illustrated feature assignments.

Inch tolerance classes A/F/C/H/E/G

Class	m [inch]	t [inch]	l.C [inch]
A	±0.002	±0.001	±0.001
F	±0.002	±0.001	±0.0005
C	±0.0005	±0.001	±0.001
H	±0.0005	±0.001	±0.0005
E	±0.001	±0.001	±0.001
G	±0.001	±0.005	±0.001

The shared l.C-symbol range is 2, 3, 4, 5, 6, 8, 10. A/F m=±0.002 is retained as printed; the inch table is not computed from the metric table.

Inch tolerance class M

l.C symbol	m [inch]	t [inch]	l.C tolerance [inch]
2	±0.003	±0.005	±0.002
3	±0.003	±0.005	±0.002
4	±0.005	±0.005	±0.003
5	±0.006	±0.005	±0.004
6	±0.006	±0.005	±0.004
8	±0.007	±0.005	±0.005
10	±0.007	±0.005	±0.005

Inch tolerance class U

I.C symbol	m [inch]	t [inch]	I.C tolerance [inch]
2	±0.007	±0.005	±0.003
3	±0.007	±0.005	±0.003
4	±0.008	±0.005	±0.005
5	±0.01	±0.005	±0.005
6	±0.01	±0.005	±0.007
8	±0.015	±0.005	±0.01
10	±0.015	±0.005	±0.01

Turning inserts: size, edge and hand

The continuation 4 3 2 T2501(R) identifies insert size, thickness and corner radius together with edge preparation and hand. The size overview retains the respective C, D, E, R, S, T, V, W and K shape assignments; blank size fields remain blank. F, E, T and S identify the drawn edge preparations. R means right-hand and L left-hand cutting.

Inch thickness symbols

Symbol	Thickness [inch]
1	1/16
1.2	5/64
1.5	3/32
1.75	7/64
2	1/8
2.5	5/32
3	3/16
3.5	7/32
4	1/4
5	5/16
6	3/8

Inch radius symbols

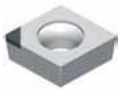
Symbol	Corner radius [inch]
0	0.004
0.5	0.008
1	1/64
2	1/32
3	3/64
4	1/16
5	5/64
6	3/32
7	7/64
8	1/8

Shape sizes and inch I.C

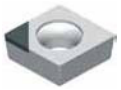
Shape symbol with size symbol	Symbol	I.C [inch]
C03; D04; S03; T06	1.2	5/32
C05; D06; S05; T09; V09; W03	1.8	7/32
C06; D07; S06; T11; V11; W04	2	1/4
C08; D09; S07; T13; V13; W05	2.5	5/16
R08	-	-
C09; D11; R09; S09; T16; V16; W06; K16	3	3/8
R10	-	-
R12	-	-
C12; D15; E13; R12.7; S12; T22; V22; W08	4	1/2
C16; D19; R15; S15; T27; V27; W10	5	5/8
R16	-	-
C19; D23; R19; S19; T33; V33; W13	6	3/4
R20	-	-
R25	-	-
C25; D31; R25; S25; T44; V44; W17	8	1
R32	10	1-1/4

For symbol 8, the inch matrix additionally lists V44 and W17; these entries are not copied into the metric matrix.

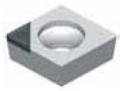
PCD/CVD turning inserts



PCD/CVD turning inserts: Tool view.



PCD/CVD turning inserts: Tool view.



PCD/CVD turning inserts: Tool view.

CNGA / CNGX

CNGA: inserts

Standard

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
CNGA 120402	CNGA 43(0.5)	12.7	4.76	0.2	5.16
CNGA 120404	CNGA 431	12.7	4.76	0.4	5.16
CNGA 120408	CNGA 432	12.7	4.76	0.8	5.16
CNGA 120412	CNGA 433	12.7	4.76	1.2	5.16

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
CNGA 120402	CNGA 43(0.5)	4.3
CNGA 120404	CNGA 431	4.3
CNGA 120408	CNGA 432	4.2
CNGA 120412	CNGA 433	4.1

Mini tip

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
CNGA 120402	CNGA 43(0.5)	12.7	4.76	0.2	5.16
CNGA 120404	CNGA 431	12.7	4.76	0.4	5.16
CNGA 120408	CNGA 432	12.7	4.76	0.8	5.16
CNGA 120412	CNGA 433	12.7	4.76	1.2	5.16

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
CNGA 120402	CNGA 43(0.5)	2.8
CNGA 120404	CNGA 431	2.8
CNGA 120408	CNGA 432	2.7
CNGA 120412	CNGA 433	3.1

Cutting material/grade overview: PCD / CVD; EP10, EP20, EP13, EP51, EP55, EP750, EP58, EP59, EP29, EP69, ED501, ED502.

Grade cells for the listed items are unmarked.

CNGX: inserts

Standard

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
CNGX 120402	CNGX 43(0.5)	12.7	4.76	0.2	5.16
CNGX 120404	CNGX 431	12.7	4.76	0.4	5.16
CNGX 120408	CNGX 432	12.7	4.76	0.8	5.16
CNGX 120412	CNGX 433	12.7	4.76	1.2	5.16

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
CNGX 120402	CNGX 43(0.5)	4.3
CNGX 120404	CNGX 431	4.3
CNGX 120408	CNGX 432	4.2
CNGX 120412	CNGX 433	4.1

Mini tip

Dimension/data block 1.

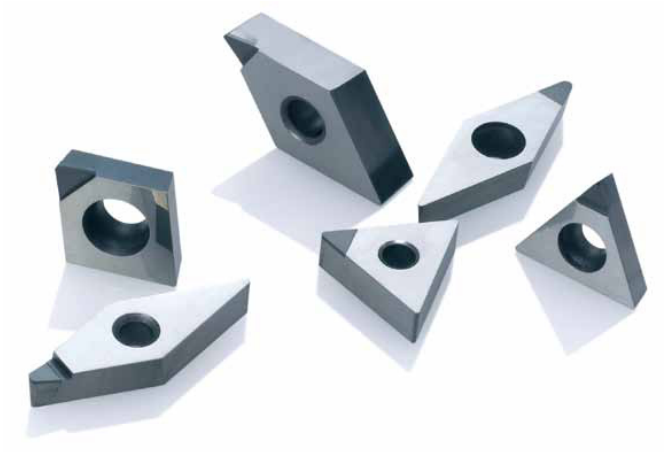
Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
CNGX 120402	CNGX 43(0.5)	12.7	4.76	0.2	5.16
CNGX 120404	CNGX 431	12.7	4.76	0.4	5.16
CNGX 120408	CNGX 432	12.7	4.76	0.8	5.16
CNGX 120412	CNGX 433	12.7	4.76	1.2	5.16

Dimension/data block 2.

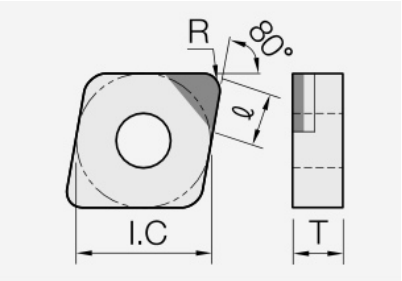
Metric ISO	Inch ISO	ℓ [mm]
CNGX 120402	CNGX 43(0.5)	2.8
CNGX 120404	CNGX 431	2.8
CNGX 120408	CNGX 432	2.7
CNGX 120412	CNGX 433	3.1

Cutting material/grade overview: PCD / CVD; EP10, EP20, EP13, EP51, EP55, EP750, EP58, EP59, EP29, EP69, ED501, ED502.

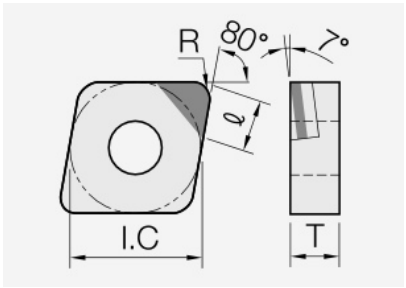
Grade cells for the listed items are unmarked.



CNGA / CNGX: Tool view.



CNGA (PCD / CVD): insert dimension drawing with the corresponding geometry symbols.



CNGX (PCD / CVD): insert dimension drawing with the corresponding geometry symbols.

CCGW / CCGT

CCGW: inserts

Standard

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
CCGW 09T302	CCGW 3(2.5)0.5	9.525	3.97	0.2	4.4
CCGW 09T304	CCGW 3(2.5)1	9.525	3.97	0.4	4.4
CCGW 09T308	CCGW 3(2.5)2	9.525	3.97	0.8	4.4
CCGW 120402	CCGW 430	12.7	4.76	0.2	5.5
CCGW 120404	CCGW 431	12.7	4.76	0.4	5.5
CCGW 120408	CCGW 432	12.7	4.76	0.8	5.5
CCGW 120412	CCGW 433	12.7	4.76	1.2	5.5

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
CCGW 09T302	CCGW 3(2.5)0.5	4.3
CCGW 09T304	CCGW 3(2.5)1	4.3
CCGW 09T308	CCGW 3(2.5)2	4.2
CCGW 120402	CCGW 430	4.3
CCGW 120404	CCGW 431	4.3
CCGW 120408	CCGW 432	4.2
CCGW 120412	CCGW 433	4.1

Mini tip

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
CCGW 060202	CCGW 2(1.5)0.5	6.35	2.38	0.2	2.8
CCGW 060204	CCGW 2(1.5)1	6.35	2.38	0.4	2.8
CCGW 060208	CCGW 2(1.5)2	6.35	2.38	0.8	2.8
CCGW 09T302	CCGW 3(2.5)0.5	9.525	3.97	0.2	4.4
CCGW 09T304	CCGW 3(2.5)1	9.525	3.97	0.4	4.4
CCGW 09T308	CCGW 3(2.5)2	9.525	3.97	0.8	4.4
CCGW 120402	CCGW 430	12.7	4.76	0.2	5.5
CCGW 120404	CCGW 431	12.7	4.76	0.4	5.5
CCGW 120408	CCGW 432	12.7	4.76	0.8	5.5
CCGW 120412	CCGW 433	12.7	4.76	1.2	5.5

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
CCGW 060202	CCGW 2(1.5)0.5	2.8
CCGW 060204	CCGW 2(1.5)1	2.8
CCGW 060208	CCGW 2(1.5)2	2.7
CCGW 09T302	CCGW 3(2.5)0.5	2.8
CCGW 09T304	CCGW 3(2.5)1	2.8
CCGW 09T308	CCGW 3(2.5)2	2.7
CCGW 120402	CCGW 430	2.8
CCGW 120404	CCGW 431	2.8
CCGW 120408	CCGW 432	2.7
CCGW 120412	CCGW 433	3.1

Chipbreaker

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
CCGW 060202	CCGW 2(1.5)0.5	6.35	2.38	0.2	2.8
CCGW 060204	CCGW 2(1.5)1	6.35	2.38	0.4	2.8
CCGW 060208	CCGW 2(1.5)2	6.35	2.38	0.8	2.8
CCGW 09T302	CCGW 3(2.5)0.5	9.525	3.97	0.2	4.4
CCGW 09T304	CCGW 3(2.5)1	9.525	3.97	0.4	4.4
CCGW 09T308	CCGW 3(2.5)2	9.525	3.97	0.8	4.4
CCGW 120402	CCGW 430	12.7	4.76	0.2	5.5
CCGW 120404	CCGW 431	12.7	4.76	0.4	5.5
CCGW 120408	CCGW 432	12.7	4.76	0.8	5.5
CCGW 120412	CCGW 433	12.7	4.76	1.2	5.5

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
CCGW 060202	CCGW 2(1.5)0.5	2.8
CCGW 060204	CCGW 2(1.5)1	2.8
CCGW 060208	CCGW 2(1.5)2	2.7
CCGW 09T302	CCGW 3(2.5)0.5	4.3
CCGW 09T304	CCGW 3(2.5)1	4.3
CCGW 09T308	CCGW 3(2.5)2	4.2
CCGW 120402	CCGW 430	4.3
CCGW 120404	CCGW 431	4.3
CCGW 120408	CCGW 432	4.2
CCGW 120412	CCGW 433	4.1

Cutting material/grade overview: PCD / CVD; EP10, EP20, EP13, EP51, EP55, EP750, EP58, EP59, EP29, EP69, ED501, ED502.

Grade cells for the listed items are unmarked.

CCGT: inserts

Standard

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
CCGT 09T302	CCGT 3(2.5)0.5	9.525	3.97	0.2	4.4
CCGT 09T304	CCGT 3(2.5)1	9.525	3.97	0.4	4.4
CCGT 09T308	CCGT 3(2.5)2	9.525	3.97	0.8	4.4
CCGT 120402	CCGT 430	12.7	4.76	0.2	5.5
CCGT 120404	CCGT 431	12.7	4.76	0.4	5.5
CCGT 120408	CCGT 432	12.7	4.76	0.8	5.5
CCGT 120412	CCGT 433	12.7	4.76	1.2	5.5

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
CCGT 09T302	CCGT 3(2.5)0.5	4.3
CCGT 09T304	CCGT 3(2.5)1	4.3
CCGT 09T308	CCGT 3(2.5)2	4.2
CCGT 120402	CCGT 430	4.3
CCGT 120404	CCGT 431	4.3
CCGT 120408	CCGT 432	4.2
CCGT 120412	CCGT 433	4.1

Mini tip

Dimension/data block 1.

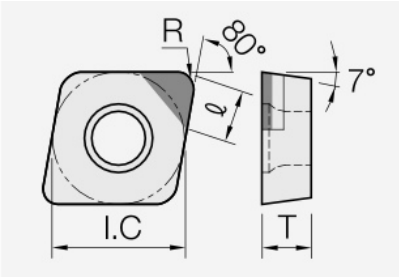
Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
CCGT 060202	CCGT 2(1.5)0.5	6.35	2.38	0.2	2.8
CCGT 060204	CCGT 2(1.5)1	6.35	2.38	0.4	2.8
CCGT 060208	CCGT 2(1.5)2	6.35	2.38	0.8	2.8
CCGT 09T302	CCGT 3(2.5)0.5	9.525	3.97	0.2	4.4
CCGT 09T304	CCGT 3(2.5)1	9.525	3.97	0.4	4.4
CCGT 09T308	CCGT 3(2.5)2	9.525	3.97	0.8	4.4
CCGT 120402	CCGT 430	12.7	4.76	0.2	5.5
CCGT 120404	CCGT 431	12.7	4.76	0.4	5.5
CCGT 120408	CCGT 432	12.7	4.76	0.8	5.5
CCGT 120412	CCGT 433	12.7	4.76	1.2	5.5

Dimension/data block 2.

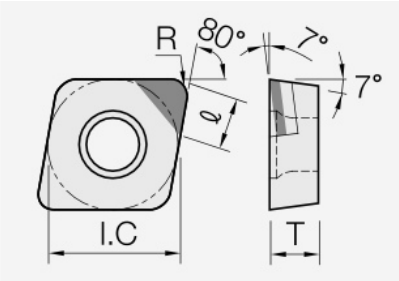
Metric ISO	Inch ISO	ℓ [mm]
CCGT 060202	CCGT 2(1.5)0.5	2.8
CCGT 060204	CCGT 2(1.5)1	2.8
CCGT 060208	CCGT 2(1.5)2	2.7
CCGT 09T302	CCGT 3(2.5)0.5	2.8
CCGT 09T304	CCGT 3(2.5)1	2.8
CCGT 09T308	CCGT 3(2.5)2	2.7
CCGT 120402	CCGT 430	2.8
CCGT 120404	CCGT 431	2.8
CCGT 120408	CCGT 432	2.7
CCGT 120412	CCGT 433	3.1

Cutting material/grade overview: PCD / CVD; EP10, EP20, EP13, EP51, EP55, EP750, EP58, EP59, EP29, EP69, ED501, ED502.

Grade cells for the listed items are unmarked.



CCGW (PCD / CVD): insert dimension drawing with the corresponding geometry symbols.



CCGT (PCD / CVD): insert dimension drawing with the corresponding geometry symbols.

CPGW / CPGT

CPGW: inserts

Standard

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
CPGW 090302	CPGW 320.5	9.525	3.18	0.2	4.4
CPGW 090304	CPGW 321	9.525	3.18	0.4	4.4
CPGW 090308	CPGW 322	9.525	3.18	0.8	4.4

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
CPGW 090302	CPGW 320.5	4.3
CPGW 090304	CPGW 321	4.3
CPGW 090308	CPGW 322	4.2

Mini tip

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
CPGW 080202	CPGW 2.5(1.5)0.5	7.94	2.38	0.2	3.4
CPGW 080204	CPGW 2.5(1.5)1	7.94	2.38	0.4	3.4
CPGW 090302	CPGW 320.5	9.525	3.18	0.2	4.4
CPGW 090304	CPGW 321	9.525	3.18	0.4	4.4
CPGW 090308	CPGW 322	9.525	3.18	0.8	4.4

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
CPGW 080202	CPGW 2.5(1.5)0.5	2.8
CPGW 080204	CPGW 2.5(1.5)1	2.8
CPGW 090302	CPGW 320.5	2.8
CPGW 090304	CPGW 321	2.8
CPGW 090308	CPGW 322	2.7

Chipbreaker

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
CPGW 080202	CPGW 2.5(1.5)0.5	7.94	2.38	0.2	3.4
CPGW 080204	CPGW 2.5(1.5)1	7.94	2.38	0.4	3.4
CPGW 090302	CPGW 320.5	9.525	3.18	0.2	4.4
CPGW 090304	CPGW 321	9.525	3.18	0.4	4.4
CPGW 090308	CPGW 322	9.525	3.18	0.8	4.4

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
CPGW 080202	CPGW 2.5(1.5)0.5	4.3
CPGW 080204	CPGW 2.5(1.5)1	4.3
CPGW 090302	CPGW 320.5	4.3
CPGW 090304	CPGW 321	4.3
CPGW 090308	CPGW 322	4.2

Cutting material/grade overview: PCD / CVD; EP10, EP20, EP13, EP51, EP55, EP750, EP58, EP59, EP29, EP69, ED501, ED502.

Grade cells for the listed items are unmarked.

CPGT: inserts

Standard

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
CPGT 090302	CPGT 320.5	9.525	3.18	0.2	4.4
CPGT 090304	CPGT 321	9.525	3.18	0.4	4.4
CPGT 090308	CPGT 322	9.525	3.18	0.8	4.4

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
CPGT 090302	CPGT 320.5	4.3
CPGT 090304	CPGT 321	4.3
CPGT 090308	CPGT 322	4.2

Mini tip

Dimension/data block 1.

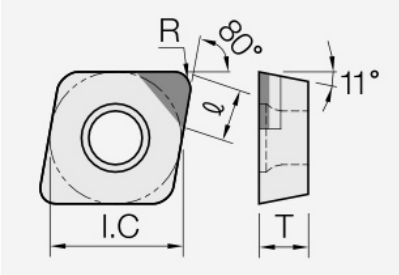
Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
CPGT 080202	CPGT 2.5(1.5)0.5	7.94	2.38	0.2	3.4
CPGT 080204	CPGT 2.5(1.5)1	7.94	2.38	0.4	3.4
CPGT 090302	CPGT 320.5	9.525	3.18	0.2	4.4
CPGT 090304	CPGT 321	9.525	3.18	0.4	4.4
CPGT 090308	CPGT 322	9.525	3.18	0.8	4.4

Dimension/data block 2.

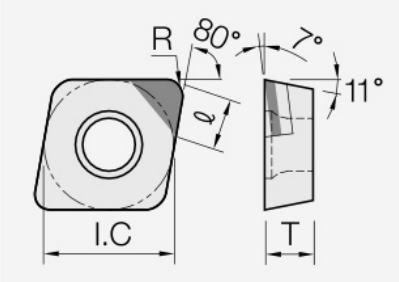
Metric ISO	Inch ISO	ℓ [mm]
CPGT 080202	CPGT 2.5(1.5)0.5	2.8
CPGT 080204	CPGT 2.5(1.5)1	2.8
CPGT 090302	CPGT 320.5	2.8
CPGT 090304	CPGT 321	2.8
CPGT 090308	CPGT 322	2.7

Cutting material/grade overview: PCD / CVD; EP10, EP20, EP13, EP51, EP55, EP750, EP58, EP59, EP29, EP69, ED501, ED502.

Grade cells for the listed items are unmarked.



CPGW (PCD / CVD): insert dimension drawing with the corresponding geometry symbols.



CPGT (PCD / CVD): insert dimension drawing with the corresponding geometry symbols.

DNGA / DNGX

DNGA: inserts

Standard

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
DNGA 110404	DNGA 331	9.525	4.76	0.4	3.81
DNGA 110408	DNGA 332	9.525	4.76	0.8	3.81
DNGA 150404	DNGA 431	12.7	4.76	0.4	5.16
DNGA 150408	DNGA 432	12.7	4.76	0.8	5.16
DNGA 150412	DNGA 433	12.7	4.76	1.2	5.16

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
DNGA 110404	DNGA 331	3.9
DNGA 110408	DNGA 332	3.5
DNGA 150404	DNGA 431	3.9
DNGA 150408	DNGA 432	3.5
DNGA 150412	DNGA 433	3.1

Mini tip

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
DNGA 110404	DNGA 331	9.525	4.76	0.4	3.81
DNGA 110408	DNGA 332	9.525	4.76	0.8	3.81
DNGA 150404	DNGA 431	12.7	4.76	0.4	5.16
DNGA 150408	DNGA 432	12.7	4.76	0.8	5.16
DNGA 150412	DNGA 433	12.7	4.76	1.2	5.16

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
DNGA 110404	DNGA 331	2.4
DNGA 110408	DNGA 332	2
DNGA 150404	DNGA 431	2.4
DNGA 150408	DNGA 432	2
DNGA 150412	DNGA 433	2.1

Cutting material/grade overview: PCD / CVD; EP10, EP20, EP13, EP51, EP55, EP750, EP58, EP59, EP29, EP69, ED501, ED502.

Grade cells for the listed items are unmarked.

DNGX: inserts

Standard

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
DNGX 110404	DNGX 331	9.525	4.76	0.4	3.81
DNGX 110408	DNGX 332	9.525	4.76	0.8	3.81
DNGX 150404	DNGX 431	12.7	4.76	0.4	5.16
DNGX 150408	DNGX 432	12.7	4.76	0.8	5.16
DNGX 150412	DNGX 433	12.7	4.76	1.2	5.16

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
DNGX 110404	DNGX 331	3.9
DNGX 110408	DNGX 332	3.5
DNGX 150404	DNGX 431	3.9
DNGX 150408	DNGX 432	3.5
DNGX 150412	DNGX 433	3.1

Mini tip

Dimension/data block 1.

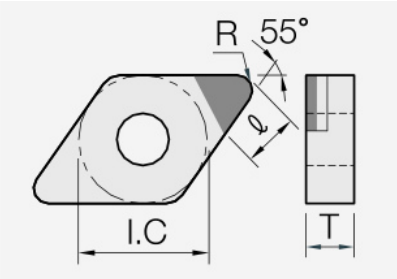
Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
DNGX 110404	DNGX 331	9.525	4.76	0.4	3.81
DNGX 110408	DNGX 332	9.525	4.76	0.8	3.81
DNGX 150404	DNGX 431	12.7	4.76	0.4	5.16
DNGX 150408	DNGX 432	12.7	4.76	0.8	5.16
DNGX 150412	DNGX 433	12.7	4.76	1.2	5.16

Dimension/data block 2.

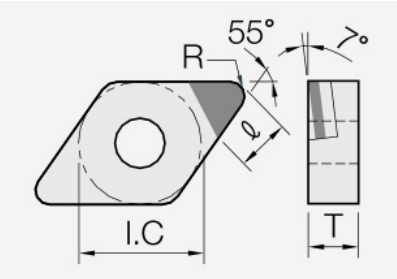
Metric ISO	Inch ISO	ℓ [mm]
DNGX 110404	DNGX 331	2.4
DNGX 110408	DNGX 332	2
DNGX 150404	DNGX 431	2.4
DNGX 150408	DNGX 432	2
DNGX 150412	DNGX 433	2.1

Cutting material/grade overview: PCD / CVD; EP10, EP20, EP13, EP51, EP55, EP750, EP58, EP59, EP29, EP69, ED501, ED502.

Grade cells for the listed items are unmarked.



DNGA (PCD / CVD): insert dimension drawing with the corresponding geometry symbols.



DNGX (PCD / CVD): insert dimension drawing with the corresponding geometry symbols.

DCGW / DCGT

DCGW: inserts

Standard

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
DCGW 11T302	DCGW 3(2.5)0.5	9.525	3.97	0.4	4.4
DCGW 11T304	DCGW 3(2.5)1	9.525	3.97	0.4	4.4
DCGW 11T308	DCGW 3(2.5)2	9.525	3.97	0.8	4.4
DCGW 150404	DCGW 431	12.7	4.76	0.4	5.16
DCGW 150408	DCGW 432	12.7	4.76	0.8	5.16

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
DCGW 11T302	DCGW 3(2.5)0.5	4
DCGW 11T304	DCGW 3(2.5)1	3.9
DCGW 11T308	DCGW 3(2.5)2	3.5
DCGW 150404	DCGW 431	3.9
DCGW 150408	DCGW 432	3.5

Mini tip

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
DCGW 070202	DCGW 2(1.5)0.5	6.35	2.38	0.2	2.8
DCGW 070204	DCGW 2(1.5)1	6.35	2.38	0.4	2.8
DCGW 11T302	DCGW 3(2.5)0.5	9.525	3.97	0.4	4.4
DCGW 11T304	DCGW 3(2.5)1	9.525	3.97	0.4	4.4
DCGW 11T308	DCGW 3(2.5)2	9.525	3.97	0.8	4.4

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
DCGW 070202	DCGW 2(1.5)0.5	2.5
DCGW 070204	DCGW 2(1.5)1	2.4
DCGW 11T302	DCGW 3(2.5)0.5	2.5
DCGW 11T304	DCGW 3(2.5)1	2.4
DCGW 11T308	DCGW 3(2.5)2	2

Chipbreaker

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
DCGW 070202	DCGW 2(1.5)0.5	6.35	2.38	0.2	2.8
DCGW 070204	DCGW 2(1.5)1	6.35	2.38	0.4	2.8
DCGW 11T302	DCGW 3(2.5)0.5	9.525	3.97	0.4	4.4
DCGW 11T304	DCGW 3(2.5)1	9.525	3.97	0.4	4.4
DCGW 11T308	DCGW 3(2.5)2	9.525	3.97	0.8	4.4

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
DCGW 070202	DCGW 2(1.5)0.5	2.5
DCGW 070204	DCGW 2(1.5)1	2.4
DCGW 11T302	DCGW 3(2.5)0.5	4
DCGW 11T304	DCGW 3(2.5)1	3.9
DCGW 11T308	DCGW 3(2.5)2	3.5

Cutting material/grade overview: PCD / CVD; EP10, EP20, EP13, EP51, EP55, EP750, EP58, EP59, EP29, EP69, ED501, ED502.

Grade cells for the listed items are unmarked.

DCGT: inserts

Standard

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
DCGT 11T302	DCGT 3(2.5)0.5	9.525	3.97	0.4	4.4
DCGT 11T304	DCGT 3(2.5)1	9.525	3.97	0.4	4.4
DCGT 11T308	DCGT 3(2.5)2	9.525	3.97	0.8	4.4
DCGT 150404	DCGT 431	12.7	4.76	0.4	5.16
DCGT 150408	DCGT 432	12.7	4.76	0.8	5.16

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
DCGT 11T302	DCGT 3(2.5)0.5	4
DCGT 11T304	DCGT 3(2.5)1	3.9
DCGT 11T308	DCGT 3(2.5)2	3.5
DCGT 150404	DCGT 431	3.9
DCGT 150408	DCGT 432	3.5

Mini tip

Dimension/data block 1.

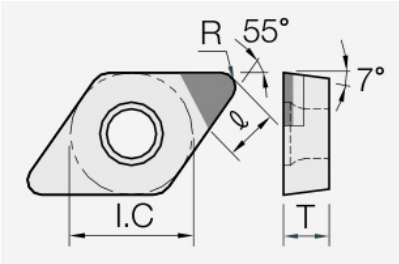
Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
DCGT 070202	DCGT 2(1.5)0.5	6.35	2.38	0.2	2.8
DCGT 070204	DCGT 2(1.5)1	6.35	2.38	0.4	2.8
DCGT 11T302	DCGT 3(2.5)0.5	9.525	3.97	0.4	4.4
DCGT 11T304	DCGT 3(2.5)1	9.525	3.97	0.4	4.4
DCGT 11T308	DCGT 3(2.5)2	9.525	3.97	0.8	4.4

Dimension/data block 2.

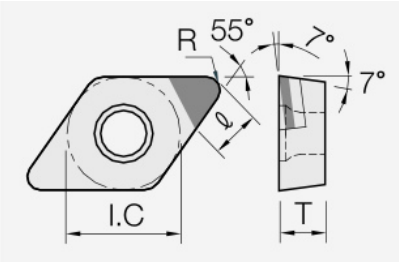
Metric ISO	Inch ISO	ℓ [mm]
DCGT 070202	DCGT 2(1.5)0.5	2.5
DCGT 070204	DCGT 2(1.5)1	2.4
DCGT 11T302	DCGT 3(2.5)0.5	2.5
DCGT 11T304	DCGT 3(2.5)1	2.4
DCGT 11T308	DCGT 3(2.5)2	2

Cutting material/grade overview: PCD / CVD; EP10, EP20, EP13, EP51, EP55, EP750, EP58, EP59, EP29, EP69, ED501, ED502.

Grade cells for the listed items are unmarked.



DCGW (PCD / CVD): insert dimension drawing with the corresponding geometry symbols.



DCGT (PCD / CVD): insert dimension drawing with the corresponding geometry symbols.

DPGW / DPGT

DPGW: inserts

Standard

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
DPGW 11T302	DPGW 3(2.5)0.5	9.525	3.97	0.4	4.4
DPGW 11T304	DPGW 3(2.5)1	9.525	3.97	0.4	4.4
DPGW 11T308	DPGW 3(2.5)2	9.525	3.97	0.8	4.4

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
DPGW 11T302	DPGW 3(2.5)0.5	4
DPGW 11T304	DPGW 3(2.5)1	3.9
DPGW 11T308	DPGW 3(2.5)2	3.5

Mini tip

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
DPGW 070202	DPGW 2(1.5)0.5	6.35	2.38	0.2	2.8
DPGW 070204	DPGW 2(1.5)1	6.35	2.38	0.4	2.8
DPGW 11T302	DPGW 3(2.5)0.5	9.525	3.97	0.4	4.4
DPGW 11T304	DPGW 3(2.5)1	9.525	3.97	0.4	4.4
DPGW 11T308	DPGW 3(2.5)2	9.525	3.97	0.8	4.4

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
DPGW 070202	DPGW 2(1.5)0.5	2.5
DPGW 070204	DPGW 2(1.5)1	2.4
DPGW 11T302	DPGW 3(2.5)0.5	2.5
DPGW 11T304	DPGW 3(2.5)1	2.4
DPGW 11T308	DPGW 3(2.5)2	2

Chipbreaker

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
DPGW 070202	DPGW 2(1.5)0.5	6.35	2.38	0.2	2.8
DPGW 070204	DPGW 2(1.5)1	6.35	2.38	0.4	2.8
DPGW 11T302	DPGW 3(2.5)0.5	9.525	3.97	0.4	4.4
DPGW 11T304	DPGW 3(2.5)1	9.525	3.97	0.4	4.4
DPGW 11T308	DPGW 3(2.5)2	9.525	3.97	0.8	4.4

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
DPGW 070202	DPGW 2(1.5)0.5	2.5
DPGW 070204	DPGW 2(1.5)1	2.4
DPGW 11T302	DPGW 3(2.5)0.5	4
DPGW 11T304	DPGW 3(2.5)1	3.9
DPGW 11T308	DPGW 3(2.5)2	3.5

Cutting material/grade overview: PCD / CVD; EP10, EP20, EP13, EP51, EP55, EP750, EP58, EP59, EP29, EP69, ED501, ED502.

Grade cells for the listed items are unmarked.

DPGT: inserts

Standard

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
DPGT 11T302	DPGT 3(2.5)0.5	9.525	3.97	0.4	4.4
DPGT 11T304	DPGT 3(2.5)1	9.525	3.97	0.4	4.4
DPGT 11T308	DPGT 3(2.5)2	9.525	3.97	0.8	4.4

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
DPGT 11T302	DPGT 3(2.5)0.5	4
DPGT 11T304	DPGT 3(2.5)1	3.9
DPGT 11T308	DPGT 3(2.5)2	3.5

Mini tip

Dimension/data block 1.

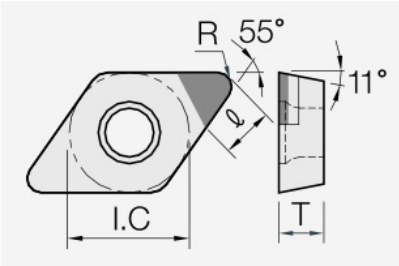
Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
DPGT 070202	DPGT 2(1.5)0.5	6.35	2.38	0.2	2.8
DPGT 070204	DPGT 2(1.5)1	6.35	2.38	0.4	2.8
DPGT 11T302	DPGT 3(2.5)0.5	9.525	3.97	0.4	4.4
DPGT 11T304	DPGT 3(2.5)1	9.525	3.97	0.4	4.4
DPGT 11T308	DPGT 3(2.5)2	9.525	3.97	0.8	4.4

Dimension/data block 2.

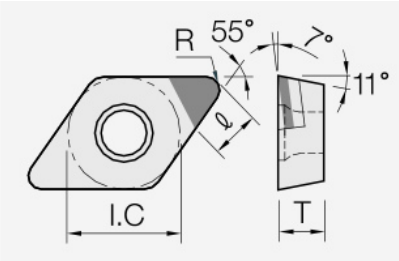
Metric ISO	Inch ISO	ℓ [mm]
DPGT 070202	DPGT 2(1.5)0.5	2.5
DPGT 070204	DPGT 2(1.5)1	2.4
DPGT 11T302	DPGT 3(2.5)0.5	2.5
DPGT 11T304	DPGT 3(2.5)1	2.4
DPGT 11T308	DPGT 3(2.5)2	2

Cutting material/grade overview: PCD / CVD; EP10, EP20, EP13, EP51, EP55, EP750, EP58, EP59, EP29, EP69, ED501, ED502.

Grade cells for the listed items are unmarked.



DPGW (PCD / CVD): insert dimension drawing with the corresponding geometry symbols.



DPGT (PCD / CVD): insert dimension drawing with the corresponding geometry symbols.

SNGA / SNGX / SNGN

SNGA: inserts

Standard

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
SNGA 090304	SNGA 321	9.525	3.18	0.4	3.81
SNGA 090308	SNGA 322	9.525	3.18	0.8	3.81
SNGA 120404	SNGA 431	12.7	4.76	0.4	5.16
SNGA 120408	SNGA 432	12.7	4.76	0.8	5.16
SNGA 120412	SNGA 433	12.7	4.76	1.2	5.16

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
SNGA 090304	SNGA 321	4.4
SNGA 090308	SNGA 322	4.4
SNGA 120404	SNGA 431	4.4
SNGA 120408	SNGA 432	4.4
SNGA 120412	SNGA 433	4.4

Mini tip

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
SNGA 090304	SNGA 321	9.525	3.18	0.4	3.81
SNGA 090308	SNGA 322	9.525	3.18	0.8	3.81
SNGA 120404	SNGA 431	12.7	4.76	0.4	5.16
SNGA 120408	SNGA 432	12.7	4.76	0.8	5.16
SNGA 120412	SNGA 433	12.7	4.76	1.2	5.16

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
SNGA 090304	SNGA 321	2.9
SNGA 090308	SNGA 322	2.9
SNGA 120404	SNGA 431	2.9
SNGA 120408	SNGA 432	2.9
SNGA 120412	SNGA 433	3.4

Cutting material/grade overview: PCD / CVD; EP10, EP20, EP13, EP51, EP55, EP750, EP58, EP59, EP29, EP69, ED501, ED502.

Grade cells for the listed items are unmarked.

SNGX: inserts

Standard

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
SNGX 090304	SNGX 321	9.525	3.18	0.4	3.81
SNGX 090308	SNGX 322	9.525	3.18	0.8	3.81
SNGX 120404	SNGX 431	12.7	4.76	0.4	5.16
SNGX 120408	SNGX 432	12.7	4.76	0.8	5.16
SNGX 120412	SNGX 433	12.7	4.76	1.2	5.16

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
SNGX 090304	SNGX 321	4.4
SNGX 090308	SNGX 322	4.4
SNGX 120404	SNGX 431	4.4
SNGX 120408	SNGX 432	4.4
SNGX 120412	SNGX 433	4.4

Mini tip

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
SNGX 090304	SNGX 321	9.525	3.18	0.4	3.81
SNGX 090308	SNGX 322	9.525	3.18	0.8	3.81
SNGX 120404	SNGX 431	12.7	4.76	0.4	5.16
SNGX 120408	SNGX 432	12.7	4.76	0.8	5.16
SNGX 120412	SNGX 433	12.7	4.76	1.2	5.16

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
SNGX 090304	SNGX 321	2.9
SNGX 090308	SNGX 322	2.9
SNGX 120404	SNGX 431	2.9
SNGX 120408	SNGX 432	2.9
SNGX 120412	SNGX 433	3.4

Cutting material/grade overview: PCD / CVD; EP10, EP20, EP13, EP51, EP55, EP750, EP58, EP59, EP29, EP69, ED501, ED502.

Grade cells for the listed items are unmarked.

SNGN: inserts

Standard

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
SNGN 090304	SNGN 321	9.525	3.18	0.4	3.81
SNGN 090308	SNGN 322	9.525	3.18	0.8	3.81
SNGN 120404	SNGN 431	12.7	4.76	0.4	5.16
SNGN 120408	SNGN 432	12.7	4.76	0.8	5.16
SNGN 120412	SNGN 433	12.7	4.76	1.2	5.16

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
SNGN 090304	SNGN 321	4.4
SNGN 090308	SNGN 322	4.4
SNGN 120404	SNGN 431	4.4
SNGN 120408	SNGN 432	4.4
SNGN 120412	SNGN 433	4.4

Mini tip

Dimension/data block 1.

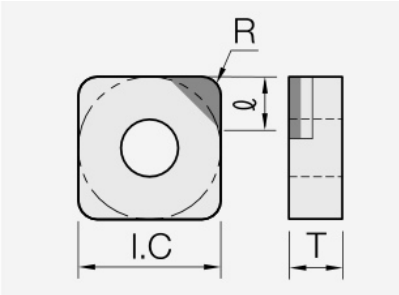
Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
SNGN 090304	SNGN 321	9.525	3.18	0.4	3.81
SNGN 090308	SNGN 322	9.525	3.18	0.8	3.81
SNGN 120404	SNGN 431	12.7	4.76	0.4	5.16
SNGN 120408	SNGN 432	12.7	4.76	0.8	5.16
SNGN 120412	SNGN 433	12.7	4.76	1.2	5.16

Dimension/data block 2.

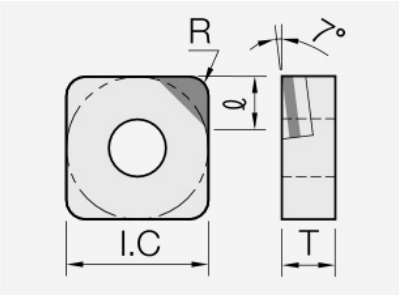
Metric ISO	Inch ISO	ℓ [mm]
SNGN 090304	SNGN 321	2.9
SNGN 090308	SNGN 322	2.9
SNGN 120404	SNGN 431	2.9
SNGN 120408	SNGN 432	2.9
SNGN 120412	SNGN 433	3.4

Cutting material/grade overview: PCD / CVD; EP10, EP20, EP13, EP51, EP55, EP750, EP58, EP59, EP29, EP69, ED501, ED502.

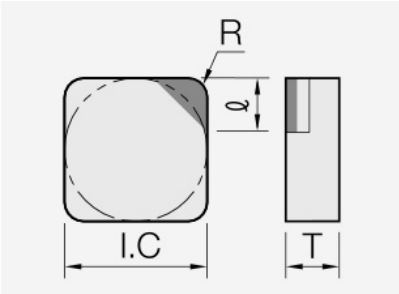
Grade cells for the listed items are unmarked.



SNGA (PCD / CVD): insert dimension drawing with the corresponding geometry symbols.



SNGX (PCD / CVD): insert dimension drawing with the corresponding geometry symbols.



SNGN (PCD / CVD): insert dimension drawing with the corresponding geometry symbols.

SCGW / SCGT / SPGN

SCGW: inserts

Standard

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
SCGW 120404	SCGW 431	12.7	4.76	0.4	5.5
SCGW 120408	SCGW 432	12.7	4.76	0.8	5.5
SCGW 120412	SCGW 433	12.7	4.76	1.2	5.5

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
SCGW 120404	SCGW 431	4.4
SCGW 120408	SCGW 432	4.4
SCGW 120412	SCGW 433	4.4

Mini tip

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
SCGW 120404	SCGW 431	12.7	4.76	0.4	5.5
SCGW 120408	SCGW 432	12.7	4.76	0.8	5.5
SCGW 120412	SCGW 433	12.7	4.76	1.2	5.5

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
SCGW 120404	SCGW 431	2.9
SCGW 120408	SCGW 432	2.9
SCGW 120412	SCGW 433	3.4

Cutting material/grade overview: PCD / CVD; EP10, EP20, EP13, EP51, EP55, EP750, EP58, EP59, EP29, EP69, ED501, ED502.

Grade cells for the listed items are unmarked.

SCGT: inserts

Standard

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
SCGT 120404	SCGT 431	12.7	4.76	0.4	5.5
SCGT 120408	SCGT 432	12.7	4.76	0.8	5.5
SCGT 120412	SCGT 433	12.7	4.76	1.2	5.5

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
SCGT 120404	SCGT 431	4.4
SCGT 120408	SCGT 432	4.4
SCGT 120412	SCGT 433	4.4

Mini tip

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
SCGT 120404	SCGT 431	12.7	4.76	0.4	5.5
SCGT 120408	SCGT 432	12.7	4.76	0.8	5.5
SCGT 120412	SCGT 433	12.7	4.76	1.2	5.5

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
SCGT 120404	SCGT 431	2.9
SCGT 120408	SCGT 432	2.9
SCGT 120412	SCGT 433	3.4

Cutting material/grade overview: PCD / CVD; EP10, EP20, EP13, EP51, EP55, EP750, EP58, EP59, EP29, EP69, ED501, ED502.

Grade cells for the listed items are unmarked.

SPGN: inserts

Standard

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
SPGN 090304	SPGN 321	9.525	3.18	0.4	
SPGN 090308	SPGN 322	9.525	3.18	0.8	
SPGN 120304	SPGN 421	12.7	4.76	0.4	
SPGN 120308	SPGN 422	12.7	4.76	0.8	

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
SPGN 090304	SPGN 321	4.4
SPGN 090308	SPGN 322	4.4
SPGN 120304	SPGN 421	4.4
SPGN 120308	SPGN 422	4.4

Mini tip

Dimension/data block 1.

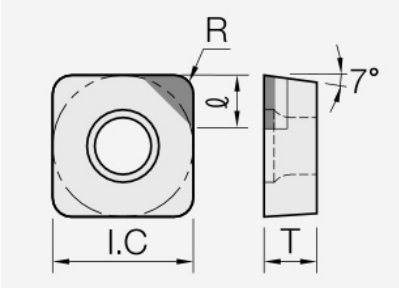
Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
SPGN 090304	SPGN 321	9.525	3.18	0.4	
SPGN 090308	SPGN 322	9.525	3.18	0.8	
SPGN 120304	SPGN 421	12.7	4.76	0.4	
SPGN 120308	SPGN 422	12.7	4.76	0.8	

Dimension/data block 2.

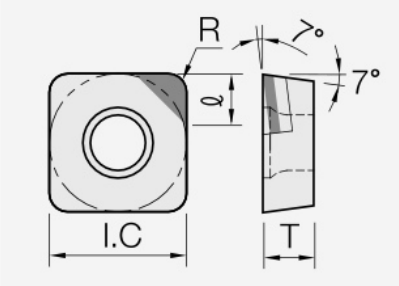
Metric ISO	Inch ISO	ℓ [mm]
SPGN 090304	SPGN 321	2.9
SPGN 090308	SPGN 322	2.9
SPGN 120304	SPGN 421	2.9
SPGN 120308	SPGN 422	2.9

Cutting material/grade overview: PCD / CVD; EP10, EP20, EP13, EP51, EP55, EP750, EP58, EP59, EP29, EP69, ED501, ED502.

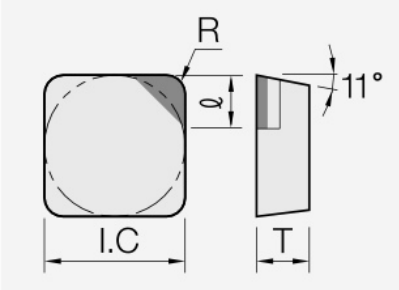
Grade cells for the listed items are unmarked.



SCGW (PCD / CVD): insert dimension drawing with the corresponding geometry symbols.



SCGT (PCD / CVD): insert dimension drawing with the corresponding geometry symbols.



SPGN (PCD / CVD): insert dimension drawing with the corresponding geometry symbols.

SPGW / SPGT / SEGN

SPGW: inserts

Standard

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
SPGW 090304	SPGW 321	12.7	4.76	0.4	4.4
SPGW 090308	SPGW 322	12.7	4.76	0.8	4.4
SPGW 120404	SPGW 431	12.7	4.76	0.4	5.5
SPGW 120408	SPGW 432	12.7	4.76	0.8	5.5
SPGW 120412	SPGW 433	12.7	4.76	1.2	5.5

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
SPGW 090304	SPGW 321	4.4
SPGW 090308	SPGW 322	4.4
SPGW 120404	SPGW 431	4.4
SPGW 120408	SPGW 432	4.4
SPGW 120412	SPGW 433	4.4

Mini tip

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
SPGW 090304	SPGW 321	12.7	4.76	0.4	4.4
SPGW 090308	SPGW 322	12.7	4.76	0.8	4.4
SPGW 120404	SPGW 431	12.7	4.76	0.4	5.5
SPGW 120408	SPGW 432	12.7	4.76	0.8	5.5
SPGW 120412	SPGW 433	12.7	4.76	1.2	5.5

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
SPGW 090304	SPGW 321	2.9
SPGW 090308	SPGW 322	2.9
SPGW 120404	SPGW 431	2.9
SPGW 120408	SPGW 432	2.9
SPGW 120412	SPGW 433	3.4

Cutting material/grade overview: PCD / CVD; EP10, EP20, EP13, EP51, EP55, EP750, EP58, EP59, EP29, EP69, ED501, ED502.

Grade cells for the listed items are unmarked.

SPGT: inserts

Standard

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
SPGT 090304	SPGT 321	12.7	4.76	0.4	4.4
SPGT 090308	SPGT 322	12.7	4.76	0.8	4.4
SPGT 120404	SPGT 431	12.7	4.76	0.4	5.5
SPGT 120408	SPGT 432	12.7	4.76	0.8	5.5
SPGT 120412	SPGT 433	12.7	4.76	1.2	5.5

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
SPGT 090304	SPGT 321	4.4
SPGT 090308	SPGT 322	4.4
SPGT 120404	SPGT 431	4.4
SPGT 120408	SPGT 432	4.4
SPGT 120412	SPGT 433	4.4

Mini tip

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
SPGT 090304	SPGT 321	12.7	4.76	0.4	4.4
SPGT 090308	SPGT 322	12.7	4.76	0.8	4.4
SPGT 120404	SPGT 431	12.7	4.76	0.4	5.5
SPGT 120408	SPGT 432	12.7	4.76	0.8	5.5
SPGT 120412	SPGT 433	12.7	4.76	1.2	5.5

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
SPGT 090304	SPGT 321	2.9
SPGT 090308	SPGT 322	2.9
SPGT 120404	SPGT 431	2.9
SPGT 120408	SPGT 432	2.9
SPGT 120412	SPGT 433	3.4

Cutting material/grade overview: PCD / CVD; EP10, EP20, EP13, EP51, EP55, EP750, EP58, EP59, EP29, EP69, ED501, ED502.

Grade cells for the listed items are unmarked.

SEGN: inserts

Standard

Dimension/data block 1.

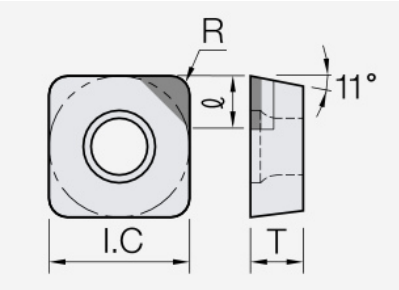
Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
SEGN 120304	SEGN 431	12.7	3.18	0.4	
SEGN 120308	SEGN 432	12.7	3.18	0.8	

Dimension/data block 2.

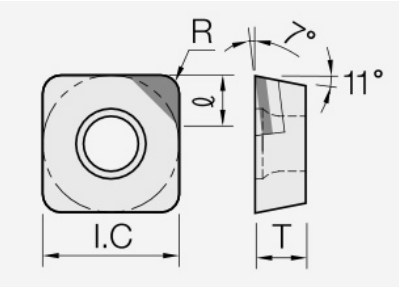
Metric ISO	Inch ISO	ℓ [mm]
SEGN 120304	SEGN 431	4.4
SEGN 120308	SEGN 432	4.4

Cutting material/grade overview: PCD / CVD; EP10, EP20, EP13, EP51, EP55, EP750, EP58, EP59, EP29, EP69, ED501, ED502.

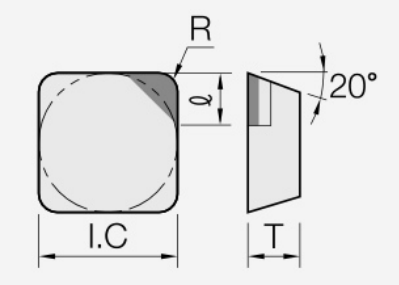
Grade cells for the listed items are unmarked.



SPGW (PCD / CVD): insert dimension drawing with the corresponding geometry symbols.



SPGT (PCD / CVD): insert dimension drawing with the corresponding geometry symbols.



SEGN (PCD / CVD): insert dimension drawing with the corresponding geometry symbols.

TNGA / TNGX / TBGN

TNGA: inserts

Standard

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
TNGA 110302	TNGA 22(0.5)	6.35	3.18	0.2	2.4
TNGA 110304	TNGA 221	6.35	3.18	0.4	2.4
TNGA 160402	TNGA 33(0.5)	9.525	4.76	0.2	3.81
TNGA 160404	TNGA 331	9.525	4.76	0.4	3.81
TNGA 160408	TNGA 332	9.525	4.76	0.8	3.81
TNGA 220404	TNGA 431	12.7	4.76	0.4	5.16
TNGA 220408	TNGA 432	12.7	4.76	0.8	5.16

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
TNGA 110302	TNGA 22(0.5)	4.1
TNGA 110304	TNGA 221	4
TNGA 160402	TNGA 33(0.5)	4.1
TNGA 160404	TNGA 331	4
TNGA 160408	TNGA 332	3.7
TNGA 220404	TNGA 431	4
TNGA 220408	TNGA 432	3.7

Mini tip

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
TNGA 110302	TNGA 22(0.5)	6.35	3.18	0.2	2.4
TNGA 110304	TNGA 221	6.35	3.18	0.4	2.4
TNGA 160402	TNGA 33(0.5)	9.525	4.76	0.2	3.81
TNGA 160404	TNGA 331	9.525	4.76	0.4	3.81
TNGA 160408	TNGA 332	9.525	4.76	0.8	3.81

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
TNGA 110302	TNGA 22(0.5)	2.6
TNGA 110304	TNGA 221	2.5
TNGA 160402	TNGA 33(0.5)	2.6
TNGA 160404	TNGA 331	2.5
TNGA 160408	TNGA 332	2.2

Cutting material/grade overview: PCD / CVD; EP10, EP20, EP13, EP51, EP55, EP750, EP58, EP59, EP29, EP69, ED501, ED502.

Grade cells for the listed items are unmarked.

TNGX: inserts

Standard

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
TNGX 110302	TNGX 22(0.5)	6.35	3.18	0.2	2.4
TNGX 110304	TNGX 221	6.35	3.18	0.4	2.4
TNGX 160402	TNGX 33(0.5)	9.525	4.76	0.2	3.81
TNGX 160404	TNGX 331	9.525	4.76	0.4	3.81
TNGX 160408	TNGX 332	9.525	4.76	0.8	3.81
TNGX 220404	TNGX 431	12.7	4.76	0.4	5.16
TNGX 220408	TNGX 432	12.7	4.76	0.8	5.16

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
TNGX 110302	TNGX 22(0.5)	4.1
TNGX 110304	TNGX 221	4
TNGX 160402	TNGX 33(0.5)	4.1
TNGX 160404	TNGX 331	4
TNGX 160408	TNGX 332	3.7
TNGX 220404	TNGX 431	4
TNGX 220408	TNGX 432	3.7

Mini tip

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
TNGX 110302	TNGX 22(0.5)	6.35	3.18	0.2	2.4
TNGX 110304	TNGX 221	6.35	3.18	0.4	2.4
TNGX 160402	TNGX 33(0.5)	9.525	4.76	0.2	3.81
TNGX 160404	TNGX 331	9.525	4.76	0.4	3.81
TNGX 160408	TNGX 332	9.525	4.76	0.8	3.81

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
TNGX 110302	TNGX 22(0.5)	2.6
TNGX 110304	TNGX 221	2.5
TNGX 160402	TNGX 33(0.5)	2.6
TNGX 160404	TNGX 331	2.5
TNGX 160408	TNGX 332	2.2

Cutting material/grade overview: PCD / CVD; EP10, EP20, EP13, EP51, EP55, EP750, EP58, EP59, EP29, EP69, ED501, ED502.

Grade cells for the listed items are unmarked.

TBGN: inserts

Standard

Dimension/data block 1.

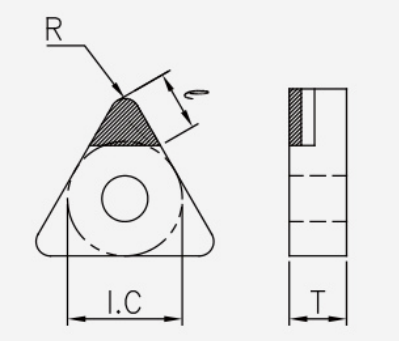
Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
TBGN 060102	TBGN (1.2)10.5	3.97	1.59	0.2	
TBGN 060104	TBGN (1.2)11	3.97	1.59	0.4	
TBGN 080202	TBGN 1.5(1.5)0.5	4.76	2.38	0.2	
TBGN 080204	TBGN 1.5(1.5)1	4.76	2.38	0.4	

Dimension/data block 2.

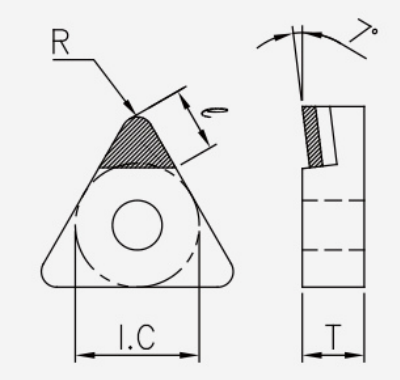
Metric ISO	Inch ISO	ℓ [mm]
TBGN 060102	TBGN (1.2)10.5	2.1
TBGN 060104	TBGN (1.2)11	2
TBGN 080202	TBGN 1.5(1.5)0.5	2.6
TBGN 080204	TBGN 1.5(1.5)1	2.5

Cutting material/grade overview: PCD / CVD; EP10, EP20, EP13, EP51, EP55, EP750, EP58, EP59, EP29, EP69, ED501, ED502.

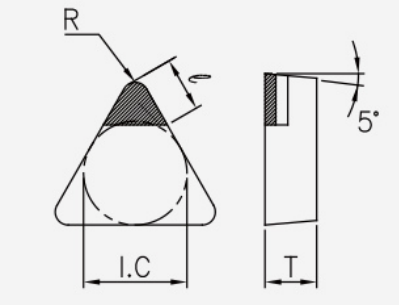
Grade cells for the listed items are unmarked.



TNGA (PCD / CVD): insert dimension drawing with the corresponding geometry symbols.



TNGX (PCD / CVD): insert dimension drawing with the corresponding geometry symbols.



TBGN (PCD / CVD): insert dimension drawing with the corresponding geometry symbols.

PCD inserts: design example



PCD insert with a tipped cutting edge.

TCGW

TCGW: inserts

Standard

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
TCGW 090202	TCGW 2(1.5)0.5	5.56	2.38	0.2	2.5
TCGW 090204	TCGW 2(1.5)1	5.56	2.38	0.4	2.5
TCGW 110202	TCGW 2(1.5)0.5	6.35	2.38	0.2	2.8
TCGW 110204	TCGW 2(1.5)1	6.35	2.38	0.4	2.8
TCGW 110208	TCGW 2(1.5)2	6.35	2.38	0.8	2.8
TCGW 16T302	TCGW 3(2.5)0.5	9.525	3.97	0.2	4.4
TCGW 16T304	TCGW 3(2.5)1	9.525	3.97	0.4	4.4
TCGW 16T308	TCGW 3(2.5)2	9.525	3.97	0.8	4.4

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
TCGW 090202	TCGW 2(1.5)0.5	3.6
TCGW 090204	TCGW 2(1.5)1	3.5
TCGW 110202	TCGW 2(1.5)0.5	4.1
TCGW 110204	TCGW 2(1.5)1	4
TCGW 110208	TCGW 2(1.5)2	3.7
TCGW 16T302	TCGW 3(2.5)0.5	4.1
TCGW 16T304	TCGW 3(2.5)1	4
TCGW 16T308	TCGW 3(2.5)2	3.7

Mini tip

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
TCGW 090202	TCGW 2(1.5)0.5	5.56	2.38	0.2	2.5
TCGW 090204	TCGW 2(1.5)1	5.56	2.38	0.4	2.5
TCGW 110202	TCGW 2(1.5)0.5	6.35	2.38	0.2	2.8
TCGW 110204	TCGW 2(1.5)1	6.35	2.38	0.4	2.8
TCGW 110208	TCGW 2(1.5)2	6.35	2.38	0.8	2.8
TCGW 16T302	TCGW 3(2.5)0.5	9.525	3.97	0.2	4.4
TCGW 16T304	TCGW 3(2.5)1	9.525	3.97	0.4	4.4
TCGW 16T308	TCGW 3(2.5)2	9.525	3.97	0.8	4.4

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
TCGW 090202	TCGW 2(1.5)0.5	2.6
TCGW 090204	TCGW 2(1.5)1	2.5
TCGW 110202	TCGW 2(1.5)0.5	2.6
TCGW 110204	TCGW 2(1.5)1	2.5
TCGW 110208	TCGW 2(1.5)2	2.2
TCGW 16T302	TCGW 3(2.5)0.5	2.6
TCGW 16T304	TCGW 3(2.5)1	2.5
TCGW 16T308	TCGW 3(2.5)2	2.2

Chipbreaker

Dimension/data block 1.

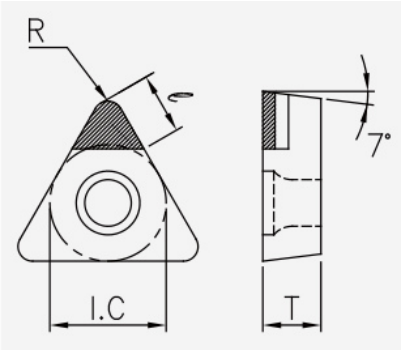
Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
TCGW 090202	TCGW 2(1.5)0.5	5.56	2.38	0.2	2.5
TCGW 090204	TCGW 2(1.5)1	5.56	2.38	0.4	2.5
TCGW 110202	TCGW 2(1.5)0.5	6.35	2.38	0.2	2.8
TCGW 110204	TCGW 2(1.5)1	6.35	2.38	0.4	2.8
TCGW 110208	TCGW 2(1.5)2	6.35	2.38	0.8	2.8
TCGW 16T302	TCGW 3(2.5)0.5	9.525	3.97	0.2	4.4
TCGW 16T304	TCGW 3(2.5)1	9.525	3.97	0.4	4.4
TCGW 16T308	TCGW 3(2.5)2	9.525	3.97	0.8	4.4

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
TCGW 090202	TCGW 2(1.5)0.5	3.6
TCGW 090204	TCGW 2(1.5)1	3.5
TCGW 110202	TCGW 2(1.5)0.5	4.1
TCGW 110204	TCGW 2(1.5)1	4
TCGW 110208	TCGW 2(1.5)2	3.7
TCGW 16T302	TCGW 3(2.5)0.5	4.1
TCGW 16T304	TCGW 3(2.5)1	4
TCGW 16T308	TCGW 3(2.5)2	3.7

Cutting material/grade overview: PCD / CVD; EP10, EP20, EP13, EP51, EP55, EP750, EP58, EP59, EP29, EP69, ED501, ED502.

Grade cells for the listed items are unmarked.



TCGW (PCD / CVD): insert dimension drawing with the corresponding geometry symbols.

TCGT

TCGT: inserts

Standard

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
TCGT 090202	TCGT 2(1.5)0.5	5.56	2.38	0.2	2.5
TCGT 090204	TCGT 2(1.5)1	5.56	2.38	0.4	2.5
TCGT 110202	TCGT 2(1.5)0.5	6.35	2.38	0.2	2.8
TCGT 110204	TCGT 2(1.5)1	6.35	2.38	0.4	2.8
TCGT 110208	TCGT 2(1.5)2	6.35	2.38	0.8	2.8
TCGT 16T302	TCGT 3(2.5)0.5	9.525	3.97	0.2	4.4
TCGT 16T304	TCGT 3(2.5)1	9.525	3.97	0.4	4.4
TCGT 16T308	TCGT 3(2.5)2	9.525	3.97	0.8	4.4

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
TCGT 090202	TCGT 2(1.5)0.5	3.6
TCGT 090204	TCGT 2(1.5)1	3.5
TCGT 110202	TCGT 2(1.5)0.5	4.1
TCGT 110204	TCGT 2(1.5)1	4
TCGT 110208	TCGT 2(1.5)2	3.7
TCGT 16T302	TCGT 3(2.5)0.5	4.1
TCGT 16T304	TCGT 3(2.5)1	4
TCGT 16T308	TCGT 3(2.5)2	3.7

Mini tip

Dimension/data block 1.

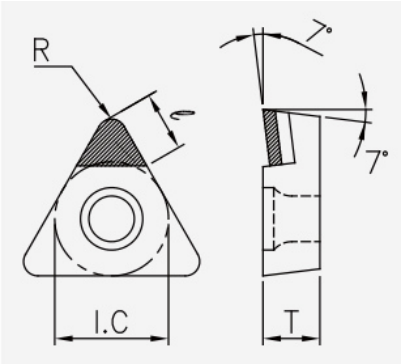
Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
TCGT 090202	TCGT 2(1.5)0.5	5.56	2.38	0.2	2.5
TCGT 090204	TCGT 2(1.5)1	5.56	2.38	0.4	2.5
TCGT 110202	TCGT 2(1.5)0.5	6.35	2.38	0.2	2.8
TCGT 110204	TCGT 2(1.5)1	6.35	2.38	0.4	2.8
TCGT 110208	TCGT 2(1.5)2	6.35	2.38	0.8	2.8
TCGT 16T302	TCGT 3(2.5)0.5	9.525	3.97	0.2	4.4
TCGT 16T304	TCGT 3(2.5)1	9.525	3.97	0.4	4.4
TCGT 16T308	TCGT 3(2.5)2	9.525	3.97	0.8	4.4

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
TCGT 090202	TCGT 2(1.5)0.5	2.6
TCGT 090204	TCGT 2(1.5)1	2.5
TCGT 110202	TCGT 2(1.5)0.5	2.6
TCGT 110204	TCGT 2(1.5)1	2.5
TCGT 110208	TCGT 2(1.5)2	2.2
TCGT 16T302	TCGT 3(2.5)0.5	2.6
TCGT 16T304	TCGT 3(2.5)1	2.5
TCGT 16T308	TCGT 3(2.5)2	2.2

Cutting material/grade overview: PCD / CVD; EP10, EP20, EP13, EP51, EP55, EP750, EP58, EP59, EP29, EP69, ED501, ED502.

Grade cells for the listed items are unmarked.



TCGT (PCD / CVD): insert dimension drawing with the corresponding geometry symbols.

TPGN / TPGN (L) / TPGN (R)

TPGN: inserts

Standard

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
TPGN 110302	TPGN 22(0.5)	6.35	3.18	0.2	
TPGN 110304	TPGN 221	6.35	3.18	0.4	
TPGN 110308	TPGN 222	6.35	3.18	0.8	
TPGN 160302	TPGN 32(0.5)	9.525	3.18	0.2	
TPGN 160304	TPGN 321	9.525	3.18	0.4	
TPGN 160308	TPGN 322	9.525	3.18	0.8	

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
TPGN 110302	TPGN 22(0.5)	4.1
TPGN 110304	TPGN 221	4
TPGN 110308	TPGN 222	3.7
TPGN 160302	TPGN 32(0.5)	4.1
TPGN 160304	TPGN 321	4
TPGN 160308	TPGN 322	3.7

Mini tip

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
TPGN 110302	TPGN 22(0.5)	6.35	3.18	0.2	
TPGN 110304	TPGN 221	6.35	3.18	0.4	
TPGN 110308	TPGN 222	6.35	3.18	0.8	
TPGN 160302	TPGN 32(0.5)	9.525	3.18	0.2	
TPGN 160304	TPGN 321	9.525	3.18	0.4	
TPGN 160308	TPGN 322	9.525	3.18	0.8	

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
TPGN 110302	TPGN 22(0.5)	2.6
TPGN 110304	TPGN 221	2.5
TPGN 110308	TPGN 222	2.2
TPGN 160302	TPGN 32(0.5)	2.6
TPGN 160304	TPGN 321	2.5
TPGN 160308	TPGN 322	2.2

Chipbreaker

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
TPGN 110302	TPGN 22(0.5)	6.35	3.18	0.2	
TPGN 110304	TPGN 221	6.35	3.18	0.4	
TPGN 110308	TPGN 222	6.35	3.18	0.8	
TPGN 160302	TPGN 32(0.5)	9.525	3.18	0.2	
TPGN 160304	TPGN 321	9.525	3.18	0.4	
TPGN 160308	TPGN 322	9.525	3.18	0.8	

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
TPGN 110302	TPGN 22(0.5)	4.1
TPGN 110304	TPGN 221	4
TPGN 110308	TPGN 222	3.7
TPGN 160302	TPGN 32(0.5)	4.1
TPGN 160304	TPGN 321	4
TPGN 160308	TPGN 322	3.7

Cutting material/grade overview: PCD / CVD; EP10, EP20, EP13, EP51, EP55, EP750, EP58, EP59, EP29, EP69, ED501, ED502.

Grade cells for the listed items are unmarked.

TPGN (L): inserts

Standard

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
TPGN 160304L	TPGN 331L	9.525	3.18	0.4	
TPGN 160308L	TPGN 332L	9.525	3.18	0.8	

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
TPGN 160304L	TPGN 331L	
TPGN 160308L	TPGN 332L	

Cutting material/grade overview: PCD / CVD; EP10, EP20, EP13, EP51, EP55, EP750, EP58, EP59, EP29, EP69, ED501, ED502.

Grade cells for the listed items are unmarked.

TPGN (R): inserts

Standard

Dimension/data block 1.

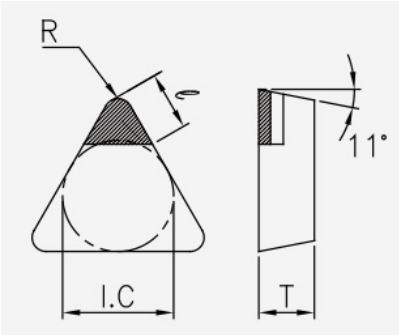
Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
TPGN 160304R	TPGN 331R	9.525	3.18	0.4	
TPGN 160308R	TPGN 332R	9.525	3.18	0.8	

Dimension/data block 2.

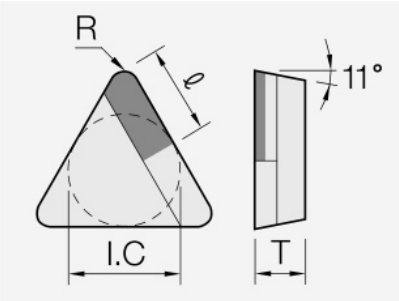
Metric ISO	Inch ISO	ℓ [mm]
TPGN 160304R	TPGN 331R	
TPGN 160308R	TPGN 332R	

Cutting material/grade overview: PCD / CVD; EP10, EP20, EP13, EP51, EP55, EP750, EP58, EP59, EP29, EP69, ED501, ED502.

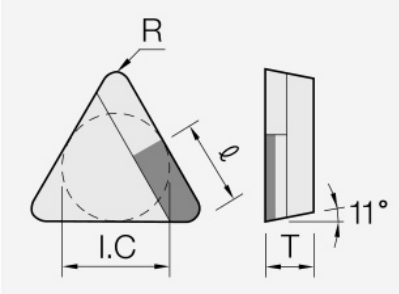
Grade cells for the listed items are unmarked.



TPGN (PCD / CVD): insert dimension drawing with the corresponding geometry symbols.



TPGN (L) (PCD / CVD): insert dimension drawing with the corresponding geometry symbols.



TPGN (R) (PCD / CVD): insert dimension drawing with the corresponding geometry symbols.

TPGW

TPGW: inserts

Standard

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
TPGW 110202	TPGW 210.5	6.35	2.38	0.2	2.8
TPGW 110204	TPGW 211	6.35	2.38	0.4	2.8
TPGW 110304	TPGW 221	6.35	3.18	0.4	3.4
TPGW 110308	TPGW 222	6.35	3.18	0.8	3.4
TPGW 160302	TPGW 32(0.5)	9.525	3.18	0.2	4.4
TPGW 160304	TPGW 321	9.525	3.18	0.4	4.4
TPGW 160308	TPGW 322	9.525	3.18	0.8	4.4
TPGW 160404	TPGW 331	9.525	4.76	0.4	4.4
TPGW 160408	TPGW 332	9.525	4.76	0.8	4.4

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
TPGW 110202	TPGW 210.5	4.1
TPGW 110204	TPGW 211	4
TPGW 110304	TPGW 221	4
TPGW 110308	TPGW 222	3.7
TPGW 160302	TPGW 32(0.5)	4.1
TPGW 160304	TPGW 321	4
TPGW 160308	TPGW 322	3.7
TPGW 160404	TPGW 331	4
TPGW 160408	TPGW 332	3.7

Mini tip

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
TPGW 080202	TPGW 1.5(1.5)0.5	4.76	2.38	0.2	2.3
TPGW 080204	TPGW 1.5(1.5)1	4.76	2.38	0.4	2.3
TPGW 110202	TPGW 210.5	6.35	2.38	0.2	2.8
TPGW 110204	TPGW 211	6.35	2.38	0.4	2.8
TPGW 110304	TPGW 221	6.35	3.18	0.4	3.4
TPGW 110308	TPGW 222	6.35	3.18	0.8	3.4
TPGW 160302	TPGW 32(0.5)	9.525	3.18	0.2	4.4
TPGW 160304	TPGW 321	9.525	3.18	0.4	4.4
TPGW 160308	TPGW 322	9.525	3.18	0.8	4.4
TPGW 160404	TPGW 331	9.525	4.76	0.4	4.4
TPGW 160408	TPGW 332	9.525	4.76	0.8	4.4

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
TPGW 080202	TPGW 1.5(1.5)0.5	2.6
TPGW 080204	TPGW 1.5(1.5)1	2.5
TPGW 110202	TPGW 210.5	2.6
TPGW 110204	TPGW 211	2.5
TPGW 110304	TPGW 221	2.5
TPGW 110308	TPGW 222	2.2
TPGW 160302	TPGW 32(0.5)	2.6
TPGW 160304	TPGW 321	2.5
TPGW 160308	TPGW 322	2.2
TPGW 160404	TPGW 331	2.5
TPGW 160408	TPGW 332	2.2

Chipbreaker

Dimension/data block 1.

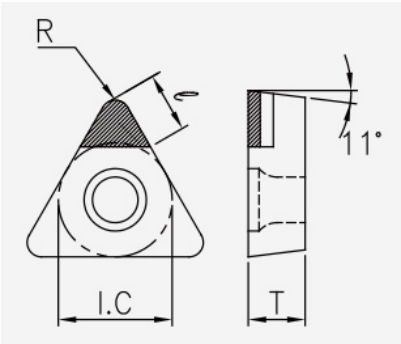
Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
TPGW 080202	TPGW 1.5(1.5)0.5	4.76	2.38	0.2	2.3
TPGW 080204	TPGW 1.5(1.5)1	4.76	2.38	0.4	2.3
TPGW 110202	TPGW 210.5	6.35	2.38	0.2	2.8
TPGW 110204	TPGW 211	6.35	2.38	0.4	2.8
TPGW 110304	TPGW 221	6.35	3.18	0.4	3.4
TPGW 110308	TPGW 222	6.35	3.18	0.8	3.4
TPGW 160302	TPGW 32(0.5)	9.525	3.18	0.2	4.4
TPGW 160304	TPGW 321	9.525	3.18	0.4	4.4
TPGW 160308	TPGW 322	9.525	3.18	0.8	4.4
TPGW 160404	TPGW 331	9.525	4.76	0.4	4.4
TPGW 160408	TPGW 332	9.525	4.76	0.8	4.4

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
TPGW 080202	TPGW 1.5(1.5)0.5	2.6
TPGW 080204	TPGW 1.5(1.5)1	2.5
TPGW 110202	TPGW 210.5	4.1
TPGW 110204	TPGW 211	4
TPGW 110304	TPGW 221	4
TPGW 110308	TPGW 222	3.7
TPGW 160302	TPGW 32(0.5)	4.1
TPGW 160304	TPGW 321	4
TPGW 160308	TPGW 322	3.7
TPGW 160404	TPGW 331	4
TPGW 160408	TPGW 332	3.7

Cutting material/grade overview: PCD / CVD; EP10, EP20, EP13, EP51, EP55, EP750, EP58, EP59, EP29, EP69, ED501, ED502.

Grade cells for the listed items are unmarked.



TPGW (PCD / CVD): insert dimension drawing with the corresponding geometry symbols.

TPGT / VNGA / VNGX

TPGT: inserts

Standard

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
TPGT 110202	TPGT 210.5	6.35	2.38	0.2	2.8
TPGT 110204	TPGT 211	6.35	2.38	0.4	2.8
TPGT 110304	TPGT 221	6.35	3.18	0.4	3.3
TPGT 110308	TPGT 222	6.35	3.18	0.8	3.3
TPGT 160302	TPGT 32(0.5)	9.525	3.18	0.2	4.4
TPGT 160304	TPGT 321	9.525	3.18	0.4	4.4
TPGT 160308	TPGT 322	9.525	3.18	0.8	4.4
TPGT 160404	TPGT 331	9.525	4.76	0.4	4.4
TPGT 160408	TPGT 332	9.525	4.76	0.8	4.4

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
TPGT 110202	TPGT 210.5	4.1
TPGT 110204	TPGT 211	4
TPGT 110304	TPGT 221	4
TPGT 110308	TPGT 222	3.7
TPGT 160302	TPGT 32(0.5)	4.1
TPGT 160304	TPGT 321	4
TPGT 160308	TPGT 322	3.7
TPGT 160404	TPGT 331	4
TPGT 160408	TPGT 332	3.7

Mini tip

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
TPGT 080202	TPGT 1.5(1.5)0.5	4.76	2.38	0.2	2.3
TPGT 080204	TPGT 1.5(1.5)1	4.76	2.38	0.4	2.3
TPGT 110202	TPGT 210.5	6.35	2.38	0.2	2.8
TPGT 110204	TPGT 211	6.35	2.38	0.4	2.8
TPGT 110304	TPGT 221	6.35	3.18	0.4	3.3
TPGT 110308	TPGT 222	6.35	3.18	0.8	3.3
TPGT 160302	TPGT 32(0.5)	9.525	3.18	0.2	4.4
TPGT 160304	TPGT 321	9.525	3.18	0.4	4.4
TPGT 160308	TPGT 322	9.525	3.18	0.8	4.4
TPGT 160404	TPGT 331	9.525	4.76	0.4	4.4
TPGT 160408	TPGT 332	9.525	4.76	0.8	4.4

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
TPGT 080202	TPGT 1.5(1.5)0.5	2.6
TPGT 080204	TPGT 1.5(1.5)1	2.5
TPGT 110202	TPGT 210.5	2.6
TPGT 110204	TPGT 211	2.5
TPGT 110304	TPGT 221	2.5
TPGT 110308	TPGT 222	2.2
TPGT 160302	TPGT 32(0.5)	2.6
TPGT 160304	TPGT 321	2.5
TPGT 160308	TPGT 322	2.2
TPGT 160404	TPGT 331	2.5
TPGT 160408	TPGT 332	2.2

Cutting material/grade overview: PCD / CVD; EP10, EP20, EP13, EP51, EP55, EP750, EP58, EP59, EP29, EP69, ED501, ED502.

Grade cells for the listed items are unmarked.

VNGA: inserts

Standard

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
VNGA 160402	VNGA 33(0.5)	9.525	4.76	0.2	3.81
VNGA 160404	VNGA 331	9.525	4.76	0.4	3.81
VNGA 160408	VNGA 332	9.525	4.76	0.8	3.81

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
VNGA 160402	VNGA 33(0.5)	5
VNGA 160404	VNGA 331	4.5
VNGA 160408	VNGA 332	3.7

Mini tip

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
VNGA 160402	VNGA 33(0.5)	9.525	4.76	0.2	3.81
VNGA 160404	VNGA 331	9.525	4.76	0.4	3.81
VNGA 160408	VNGA 332	9.525	4.76	0.8	3.81

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
VNGA 160402	VNGA 33(0.5)	3
VNGA 160404	VNGA 331	2.5
VNGA 160408	VNGA 332	2.2

Chipbreaker

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
VNGA 160402	VNGA 33(0.5)	9.525	4.76	0.2	3.81
VNGA 160404	VNGA 331	9.525	4.76	0.4	3.81
VNGA 160408	VNGA 332	9.525	4.76	0.8	3.81

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
VNGA 160402	VNGA 33(0.5)	5
VNGA 160404	VNGA 331	4.5
VNGA 160408	VNGA 332	3.7

Cutting material/grade overview: PCD / CVD; EP10, EP20, EP13, EP51, EP55, EP750, EP58, EP59, EP29, EP69, ED501, ED502.

Grade cells for the listed items are unmarked.

VNGX: inserts

Standard

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
VNGX 160402	VNGX 33(0.5)	9.525	4.76	0.2	3.81
VNGX 160404	VNGX 331	9.525	4.76	0.4	3.81
VNGX 160408	VNGX 332	9.525	4.76	0.8	3.81

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
VNGX 160402	VNGX 33(0.5)	5
VNGX 160404	VNGX 331	4.5
VNGX 160408	VNGX 332	3.7

Mini tip

Dimension/data block 1.

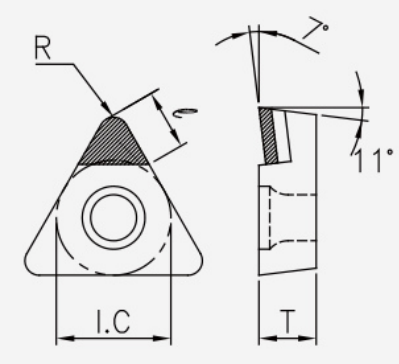
Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
VNGX 160402	VNGX 33(0.5)	9.525	4.76	0.2	3.81
VNGX 160404	VNGX 331	9.525	4.76	0.4	3.81
VNGX 160408	VNGX 332	9.525	4.76	0.8	3.81

Dimension/data block 2.

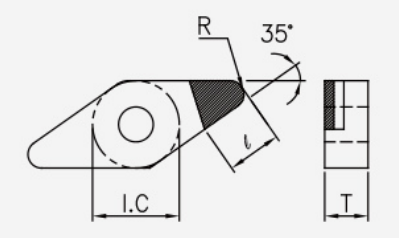
Metric ISO	Inch ISO	ℓ [mm]
VNGX 160402	VNGX 33(0.5)	3
VNGX 160404	VNGX 331	2.5
VNGX 160408	VNGX 332	2.2

Cutting material/grade overview: PCD / CVD; EP10, EP20, EP13, EP51, EP55, EP750, EP58, EP59, EP29, EP69, ED501, ED502.

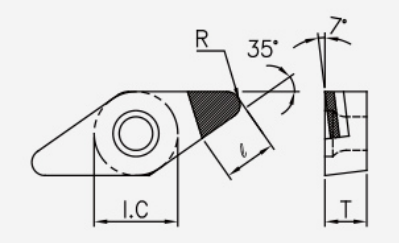
Grade cells for the listed items are unmarked.



TPGT (PCD / CVD): insert dimension drawing with the corresponding geometry symbols.



VNGA (PCD / CVD): insert dimension drawing with the corresponding geometry symbols.



VNGX (PCD / CVD): insert dimension drawing with the corresponding geometry symbols.

VBGW / VBGT

VBGW: inserts

Standard

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
VBGW 110302	VBGW 220.5	6.35	3.18	0.2	2.8
VBGW 110304	VBGW 221	6.35	3.18	0.4	2.8
VBGW 110308	VBGW 222	6.35	3.18	0.8	2.8
VBGW 160402	VBGW 32(0.5)	9.525	4.76	0.2	4.4
VBGW 160404	VBGW 331	9.525	4.76	0.4	4.4
VBGW 160408	VBGW 332	9.525	4.76	0.8	4.4
VBGW 160412	VBGW 333	9.525	4.76	1.2	4.4

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
VBGW 110302	VBGW 220.5	5
VBGW 110304	VBGW 221	4.5
VBGW 110308	VBGW 222	3.7
VBGW 160402	VBGW 32(0.5)	5
VBGW 160404	VBGW 331	4.5
VBGW 160408	VBGW 332	3.7
VBGW 160412	VBGW 333	3.3

Mini tip

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
VBGW 110302	VBGW 220.5	6.35	3.18	0.2	2.8
VBGW 110304	VBGW 221	6.35	3.18	0.4	2.8
VBGW 110308	VBGW 222	6.35	3.18	0.8	2.8
VBGW 160402	VBGW 32(0.5)	9.525	4.76	0.2	4.4
VBGW 160404	VBGW 331	9.525	4.76	0.4	4.4
VBGW 160408	VBGW 332	9.525	4.76	0.8	4.4
VBGW 160412	VBGW 333	9.525	4.76	1.2	4.4

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
VBGW 110302	VBGW 220.5	3
VBGW 110304	VBGW 221	2.5
VBGW 110308	VBGW 222	2.2
VBGW 160402	VBGW 32(0.5)	3
VBGW 160404	VBGW 331	2.5
VBGW 160408	VBGW 332	2.2
VBGW 160412	VBGW 333	1.8

Chipbreaker

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
VBGW 110302	VBGW 220.5	6.35	3.18	0.2	2.8
VBGW 110304	VBGW 221	6.35	3.18	0.4	2.8
VBGW 110308	VBGW 222	6.35	3.18	0.8	2.8
VBGW 160402	VBGW 32(0.5)	9.525	4.76	0.2	4.4
VBGW 160404	VBGW 331	9.525	4.76	0.4	4.4
VBGW 160408	VBGW 332	9.525	4.76	0.8	4.4
VBGW 160412	VBGW 333	9.525	4.76	1.2	4.4

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
VBGW 110302	VBGW 220.5	5
VBGW 110304	VBGW 221	4.5
VBGW 110308	VBGW 222	3.7
VBGW 160402	VBGW 32(0.5)	5
VBGW 160404	VBGW 331	4.5
VBGW 160408	VBGW 332	3.7
VBGW 160412	VBGW 333	3.3

Cutting material/grade overview: PCD / CVD; EP10, EP20, EP13, EP51, EP55, EP750, EP58, EP59, EP29, EP69, ED501, ED502.

Grade cells for the listed items are unmarked.

VBGT: inserts

Standard

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
VBGT 110302	VBGT 220.5	6.35	3.18	0.2	2.8
VBGT 110304	VBGT 221	6.35	3.18	0.4	2.8
VBGT 110308	VBGT 222	6.35	3.18	0.8	2.8
VBGT 160402	VBGT 32(0.5)	9.525	4.76	0.2	4.4
VBGT 160404	VBGT 331	9.525	4.76	0.4	4.4
VBGT 160408	VBGT 332	9.525	4.76	0.8	4.4
VBGT 160412	VBGT 333	9.525	4.76	1.2	4.4

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
VBGT 110302	VBGT 220.5	5
VBGT 110304	VBGT 221	4.5
VBGT 110308	VBGT 222	3.7
VBGT 160402	VBGT 32(0.5)	5
VBGT 160404	VBGT 331	4.5
VBGT 160408	VBGT 332	3.7
VBGT 160412	VBGT 333	3.3

Mini tip

Dimension/data block 1.

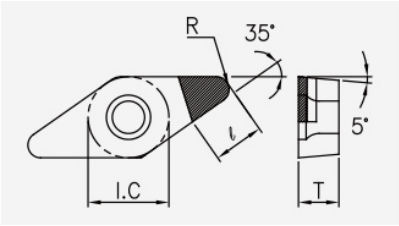
Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
VBGT 110302	VBGT 220.5	6.35	3.18	0.2	2.8
VBGT 110304	VBGT 221	6.35	3.18	0.4	2.8
VBGT 110308	VBGT 222	6.35	3.18	0.8	2.8
VBGT 160402	VBGT 32(0.5)	9.525	4.76	0.2	4.4
VBGT 160404	VBGT 331	9.525	4.76	0.4	4.4
VBGT 160408	VBGT 332	9.525	4.76	0.8	4.4
VBGT 160412	VBGT 333	9.525	4.76	1.2	4.4

Dimension/data block 2.

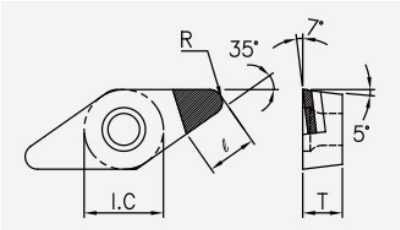
Metric ISO	Inch ISO	ℓ [mm]
VBGT 110302	VBGT 220.5	3
VBGT 110304	VBGT 221	2.5
VBGT 110308	VBGT 222	2.2
VBGT 160402	VBGT 32(0.5)	3
VBGT 160404	VBGT 331	2.5
VBGT 160408	VBGT 332	2.2
VBGT 160412	VBGT 333	1.8

Cutting material/grade overview: PCD / CVD; EP10, EP20, EP13, EP51, EP55, EP750, EP58, EP59, EP29, EP69, ED501, ED502.

Grade cells for the listed items are unmarked.



VBGW (PCD / CVD): insert dimension drawing with the corresponding geometry symbols.



VBGT (PCD / CVD): insert dimension drawing with the corresponding geometry symbols.

VCGW / VCGT

VCGW: inserts

Standard

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
VCGW 110302	VCGW 220.5	6.35	3.18	0.2	2.8
VCGW 110304	VCGW 221	6.35	3.18	0.4	2.8
VCGW 110308	VCGW 222	6.35	3.18	0.8	2.8
VCGW 160402	VCGW 32(0.5)	9.525	4.76	0.2	4.4
VCGW 160404	VCGW 331	9.525	4.76	0.4	4.4
VCGW 160408	VCGW 332	9.525	4.76	0.8	4.4
VCGW 160412	VCGW 333	9.525	4.76	1.2	4.4
VCGW 220512	VCGW 4(3.5)3	12.7	5.56	1.2	5.5
VCGW 220520	VCGW 4(3.5)5	12.7	5.56	2	5.5

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
VCGW 110302	VCGW 220.5	5
VCGW 110304	VCGW 221	4.5
VCGW 110308	VCGW 222	3.7
VCGW 160402	VCGW 32(0.5)	5
VCGW 160404	VCGW 331	4.5
VCGW 160408	VCGW 332	3.7
VCGW 160412	VCGW 333	3.3
VCGW 220512	VCGW 4(3.5)3	3.3
VCGW 220520	VCGW 4(3.5)5	3.1

Mini tip

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
VCGW 110302	VCGW 220.5	6.35	3.18	0.2	2.8
VCGW 110304	VCGW 221	6.35	3.18	0.4	2.8
VCGW 110308	VCGW 222	6.35	3.18	0.8	2.8
VCGW 160402	VCGW 32(0.5)	9.525	4.76	0.2	4.4
VCGW 160404	VCGW 331	9.525	4.76	0.4	4.4
VCGW 160408	VCGW 332	9.525	4.76	0.8	4.4
VCGW 160412	VCGW 333	9.525	4.76	1.2	4.4

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
VCGW 110302	VCGW 220.5	3
VCGW 110304	VCGW 221	2.5
VCGW 110308	VCGW 222	2.2
VCGW 160402	VCGW 32(0.5)	3
VCGW 160404	VCGW 331	2.5
VCGW 160408	VCGW 332	2.2
VCGW 160412	VCGW 333	1.8

Chipbreaker

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
VCGW 110302	VCGW 220.5	6.35	3.18	0.2	2.8
VCGW 110304	VCGW 221	6.35	3.18	0.4	2.8
VCGW 110308	VCGW 222	6.35	3.18	0.8	2.8
VCGW 160402	VCGW 32(0.5)	9.525	4.76	0.2	4.4
VCGW 160404	VCGW 331	9.525	4.76	0.4	4.4
VCGW 160408	VCGW 332	9.525	4.76	0.8	4.4
VCGW 160412	VCGW 333	9.525	4.76	1.2	4.4

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
VCGW 110302	VCGW 220.5	5
VCGW 110304	VCGW 221	4.5
VCGW 110308	VCGW 222	3.7
VCGW 160402	VCGW 32(0.5)	5
VCGW 160404	VCGW 331	4.5
VCGW 160408	VCGW 332	3.7
VCGW 160412	VCGW 333	3.3

Cutting material/grade overview: PCD / CVD; EP10, EP20, EP13, EP51, EP55, EP750, EP58, EP59, EP29, EP69, ED501, ED502.

Grade cells for the listed items are unmarked.

VCGT: inserts

Standard

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
VCGT 110302	VCGT 220.5	6.35	3.18	0.2	2.8
VCGT 110304	VCGT 221	6.35	3.18	0.4	2.8
VCGT 110308	VCGT 222	6.35	3.18	0.8	2.8
VCGT 160402	VCGT 32(0.5)	9.525	4.76	0.2	4.4
VCGT 160404	VCGT 331	9.525	4.76	0.4	4.4
VCGT 160408	VCGT 332	9.525	4.76	0.8	4.4
VCGT 160412	VCGT 333	9.525	4.76	1.2	4.4
VCGT 220512	VCGT 4(3.5)3	12.7	5.56	1.2	5.5
VCGT 220520	VCGT 4(3.5)5	12.7	5.56	2	5.5

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
VCGT 110302	VCGT 220.5	5
VCGT 110304	VCGT 221	4.5
VCGT 110308	VCGT 222	3.7
VCGT 160402	VCGT 32(0.5)	5
VCGT 160404	VCGT 331	4.5
VCGT 160408	VCGT 332	3.7
VCGT 160412	VCGT 333	3.3
VCGT 220512	VCGT 4(3.5)3	3.3
VCGT 220520	VCGT 4(3.5)5	3.1

Mini tip

Dimension/data block 1.

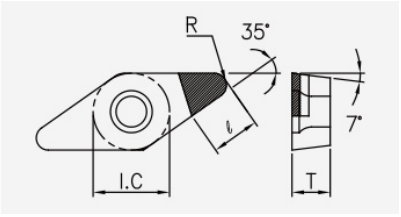
Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
VCGT 110302	VCGT 220.5	6.35	3.18	0.2	2.8
VCGT 110304	VCGT 221	6.35	3.18	0.4	2.8
VCGT 110308	VCGT 222	6.35	3.18	0.8	2.8
VCGT 160402	VCGT 32(0.5)	9.525	4.76	0.2	4.4
VCGT 160404	VCGT 331	9.525	4.76	0.4	4.4
VCGT 160408	VCGT 332	9.525	4.76	0.8	4.4
VCGT 160412	VCGT 333	9.525	4.76	1.2	4.4

Dimension/data block 2.

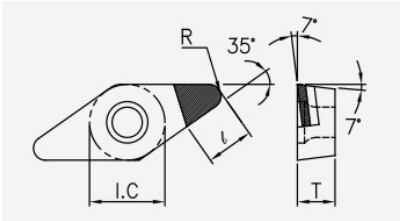
Metric ISO	Inch ISO	ℓ [mm]
VCGT 110302	VCGT 220.5	3
VCGT 110304	VCGT 221	2.5
VCGT 110308	VCGT 222	2.2
VCGT 160402	VCGT 32(0.5)	3
VCGT 160404	VCGT 331	2.5
VCGT 160408	VCGT 332	2.2
VCGT 160412	VCGT 333	1.8

Cutting material/grade overview: PCD / CVD; EP10, EP20, EP13, EP51, EP55, EP750, EP58, EP59, EP29, EP69, ED501, ED502.

Grade cells for the listed items are unmarked.



VCGW (PCD / CVD): insert dimension drawing with the corresponding geometry symbols.



VCGT (PCD / CVD): insert dimension drawing with the corresponding geometry symbols.

RNGN / RCGW / RPGW

RNGN: inserts

Standard

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
RNGN 090300	RNGN 320	9.525	3.18		
RNGN 090400	RNGN 330	9.525	4.76		
RNGN 120300	RNGN 420	12.7	3.18		
RNGN 120400	RNGN 430	12.7	4.76		
RNGN 150400	RNGN 530	15.875	4.76		

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
RNGN 090300	RNGN 320	
RNGN 090400	RNGN 330	
RNGN 120300	RNGN 420	
RNGN 120400	RNGN 430	
RNGN 150400	RNGN 530	

Cutting material/grade overview: PCD / CVD; EP10, EP20, EP13, EP51, EP55, EP750, EP58, EP59, EP29, EP69.

Grade cells for the listed items are unmarked.

RCGW: inserts

Standard

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
RCGW 060200	RCGW 21.5	6.35	2.38		2.8
RCGW 080300	RCGW -	8.0	3.18		3.4
RCGW 10T300	RCGW -	10	3.18		4.4
RCGW 12T300	RCGW 42.5	12.7	3.97		4.4

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
RCGW 060200	RCGW 21.5	
RCGW 080300	RCGW -	
RCGW 10T300	RCGW -	
RCGW 12T300	RCGW 42.5	

Cutting material/grade overview: PCD / CVD; EP10, EP20, EP13, EP51, EP55, EP750, EP58, EP59, EP29, EP69.

Grade cells for the listed items are unmarked.

RPGW: inserts

Standard

Dimension/data block 1.

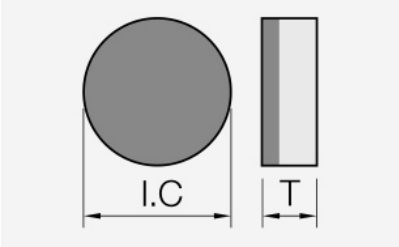
Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
RPGW 060200	RPGW 21.5	6.35	2.38		2.8
RPGW 080300	RPGW -	8.0	3.18		3.4
RPGW 10T300	RPGW -	10	3.18		4.4
RPGW 12T300	RPGW 42.5	12.7	3.97		4.4

Dimension/data block 2.

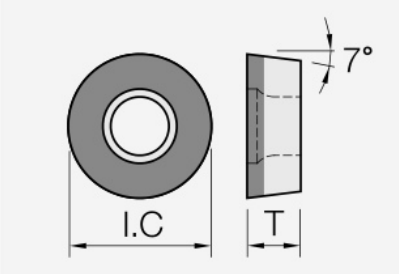
Metric ISO	Inch ISO	ℓ [mm]
RPGW 060200	RPGW 21.5	
RPGW 080300	RPGW -	
RPGW 10T300	RPGW -	
RPGW 12T300	RPGW 42.5	

Cutting material/grade overview: PCD / CVD; EP10, EP20, EP13, EP51, EP55, EP750, EP58, EP59, EP29, EP69.

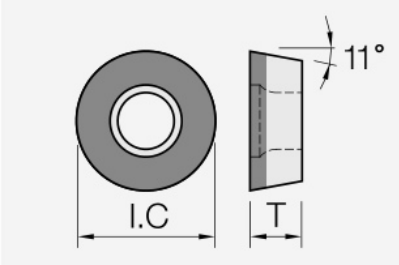
Grade cells for the listed items are unmarked.



RNGN (PCD / CVD): insert dimension drawing with the corresponding geometry symbols.

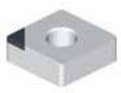


RCGW (PCD / CVD): insert dimension drawing with the corresponding geometry symbols.

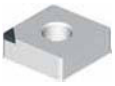


RPGW (PCD / CVD): insert dimension drawing with the corresponding geometry symbols.

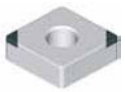
PCBN turning inserts



PCBN turning inserts: Tool view.



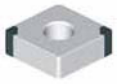
PCBN turning inserts: Tool view.



PCBN turning inserts: Tool view.



PCBN turning inserts: Tool view.



PCBN turning inserts: Tool view.



PCBN turning inserts: Tool view.

CNGA / CNGN / CNGN (solid)

CNGA: inserts

Standard

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
CNGA 120402	CNGA 43(0.5)	12.7	4.76	0.2	5.16
CNGA 120404	CNGA 431	12.7	4.76	0.4	5.16
CNGA 120408	CNGA 432	12.7	4.76	0.8	5.16
CNGA 120412	CNGA 433	12.7	4.76	1.2	5.16

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
CNGA 120402	CNGA 43(0.5)	4.3
CNGA 120404	CNGA 431	4.3
CNGA 120408	CNGA 432	4.2
CNGA 120412	CNGA 433	4.1

Mini tip

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
CNGA 120402	CNGA 43(0.5)	12.7	4.76	0.2	5.16
CNGA 120404	CNGA 431	12.7	4.76	0.4	5.16
CNGA 120408	CNGA 432	12.7	4.76	0.8	5.16
CNGA 120412	CNGA 433	12.7	4.76	1.2	5.16

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
CNGA 120402	CNGA 43(0.5)	2.8
CNGA 120404	CNGA 431	2.8
CNGA 120408	CNGA 432	2.7
CNGA 120412	CNGA 433	3.1

2mt

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
CNGA 120402	CNGA 43(0.5)	12.7	4.76	0.2	5.16
CNGA 120404	CNGA 431	12.7	4.76	0.4	5.16
CNGA 120408	CNGA 432	12.7	4.76	0.8	5.16
CNGA 120412	CNGA 433	12.7	4.76	1.2	5.16

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
CNGA 120402	CNGA 43(0.5)	2.8
CNGA 120404	CNGA 431	2.8
CNGA 120408	CNGA 432	2.7
CNGA 120412	CNGA 433	3.1

4mt

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
CNGA 120402	CNGA 43(0.5)	12.7	4.76	0.2	5.16
CNGA 120404	CNGA 431	12.7	4.76	0.4	5.16
CNGA 120408	CNGA 432	12.7	4.76	0.8	5.16
CNGA 120412	CNGA 433	12.7	4.76	1.2	5.16

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
CNGA 120402	CNGA 43(0.5)	2.8
CNGA 120404	CNGA 431	2.8
CNGA 120408	CNGA 432	2.7
CNGA 120412	CNGA 433	3.1

4vt-solid

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
CNGA 120402	CNGA 43(0.5)	12.7	4.76	0.2	5.16
CNGA 120404	CNGA 431	12.7	4.76	0.4	5.16
CNGA 120408	CNGA 432	12.7	4.76	0.8	5.16
CNGA 120412	CNGA 433	12.7	4.76	1.2	5.16

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
CNGA 120402	CNGA 43(0.5)	2.7
CNGA 120404	CNGA 431	2.6
CNGA 120408	CNGA 432	2.5
CNGA 120412	CNGA 433	2.5

Cutting material/grade overview: PCBN; EB28X (S), EB570 (S), EB160 (S), EB560 (S), EB150 (S), EB550 (S), EB190 (S), EB170, EB73, EB54X, EB51, EB710, EB210, EB100X.

Grade cells for the listed items are unmarked.

CNGN: inserts

Standard

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
CNGN 120408	CNGN 432	12.7	4.76	0.8	
CNGN 120412	CNGN 433	12.7	4.76	1.2	

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
CNGN 120408	CNGN 432	4.2
CNGN 120412	CNGN 433	4.1

Cutting material/grade overview: PCBN; EB28X (S), EB570 (S), EB160 (S), EB560 (S), EB150 (S), EB550 (S), EB190 (S), EB170, EB73, EB54X, EB51, EB710, EB210, EB100X.

Grade cells for the listed items are unmarked.

CNGN (solid): inserts

Solid

Dimension/data block 1.

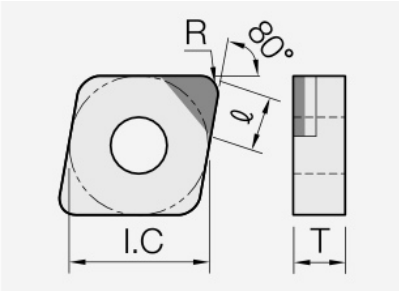
Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
CNGN 120408	CNGN 432	12.7	4.76	0.8	
CNGN 120412	CNGN 433	12.7	4.76	1.2	

Dimension/data block 2.

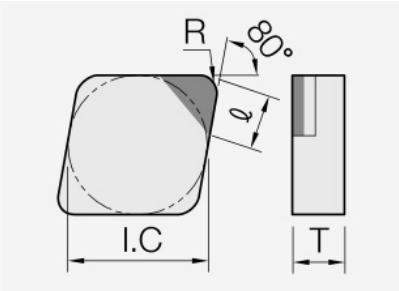
Metric ISO	Inch ISO	ℓ [mm]
CNGN 120408	CNGN 432	
CNGN 120412	CNGN 433	

Cutting material/grade overview: PCBN; EB1000, EB50, EB100X, HBN, HBN-W, HBN-N.

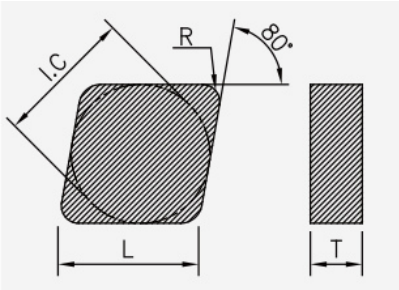
Grade cells for the listed items are unmarked.



CNGA (PCBN): insert dimension drawing with the corresponding geometry symbols.



CNGN (PCBN): insert dimension drawing with the corresponding geometry symbols.



CNGN (solid) (PCBN): insert dimension drawing with the corresponding geometry symbols.

CCGW / CPGW

CCGW: inserts

Standard

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
CCGW 060208	CCGW 2(1.5)2	6.35	2.38	0.8	2.8
CCGW 09T302	CCGW 3(2.5)0.5	9.525	3.97	0.2	4.4
CCGW 09T304	CCGW 3(2.5)1	9.525	3.97	0.4	4.4
CCGW 09T308	CCGW 3(2.5)2	9.525	3.97	0.8	4.4
CCGW 120402	CCGW 430	12.7	4.76	0.2	5.5
CCGW 120404	CCGW 431	12.7	4.76	0.4	5.5
CCGW 120408	CCGW 432	12.7	4.76	0.8	5.5
CCGW 120412	CCGW 433	12.7	4.76	1.2	5.5

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
CCGW 060208	CCGW 2(1.5)2	3.2
CCGW 09T302	CCGW 3(2.5)0.5	4.3
CCGW 09T304	CCGW 3(2.5)1	4.3
CCGW 09T308	CCGW 3(2.5)2	4.2
CCGW 120402	CCGW 430	4.3
CCGW 120404	CCGW 431	4.3
CCGW 120408	CCGW 432	4.2
CCGW 120412	CCGW 433	4.1

Mini tip

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
CCGW 060202	CCGW 2(1.5)0.5	6.35	2.38	0.2	2.8
CCGW 060204	CCGW 2(1.5)1	6.35	2.38	0.4	2.8
CCGW 060208	CCGW 2(1.5)2	6.35	2.38	0.8	2.8
CCGW 09T302	CCGW 3(2.5)0.5	9.525	3.97	0.2	4.4
CCGW 09T304	CCGW 3(2.5)1	9.525	3.97	0.4	4.4
CCGW 09T308	CCGW 3(2.5)2	9.525	3.97	0.8	4.4
CCGW 120402	CCGW 430	12.7	4.76	0.2	5.5
CCGW 120404	CCGW 431	12.7	4.76	0.4	5.5
CCGW 120408	CCGW 432	12.7	4.76	0.8	5.5
CCGW 120412	CCGW 433	12.7	4.76	1.2	5.5

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
CCGW 060202	CCGW 2(1.5)0.5	2.8
CCGW 060204	CCGW 2(1.5)1	2.8
CCGW 060208	CCGW 2(1.5)2	2.7
CCGW 09T302	CCGW 3(2.5)0.5	2.8
CCGW 09T304	CCGW 3(2.5)1	2.8
CCGW 09T308	CCGW 3(2.5)2	2.7
CCGW 120402	CCGW 430	2.8
CCGW 120404	CCGW 431	2.8
CCGW 120408	CCGW 432	2.7
CCGW 120412	CCGW 433	3.1

2mt

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
CCGW 060202	CCGW 2(1.5)0.5	6.35	2.38	0.2	2.8
CCGW 060204	CCGW 2(1.5)1	6.35	2.38	0.4	2.8
CCGW 060208	CCGW 2(1.5)2	6.35	2.38	0.8	2.8
CCGW 09T302	CCGW 3(2.5)0.5	9.525	3.97	0.2	4.4
CCGW 09T304	CCGW 3(2.5)1	9.525	3.97	0.4	4.4
CCGW 09T308	CCGW 3(2.5)2	9.525	3.97	0.8	4.4
CCGW 120402	CCGW 430	12.7	4.76	0.2	5.5
CCGW 120404	CCGW 431	12.7	4.76	0.4	5.5
CCGW 120408	CCGW 432	12.7	4.76	0.8	5.5
CCGW 120412	CCGW 433	12.7	4.76	1.2	5.5

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
CCGW 060202	CCGW 2(1.5)0.5	2.8
CCGW 060204	CCGW 2(1.5)1	2.8
CCGW 060208	CCGW 2(1.5)2	2.7
CCGW 09T302	CCGW 3(2.5)0.5	2.8
CCGW 09T304	CCGW 3(2.5)1	2.8
CCGW 09T308	CCGW 3(2.5)2	2.7
CCGW 120402	CCGW 430	2.8
CCGW 120404	CCGW 431	2.8
CCGW 120408	CCGW 432	2.7
CCGW 120412	CCGW 433	3.1

Cutting material/grade overview: PCBN; EB28X (S), EB570 (S), EB160 (S), EB560 (S), EB150 (S), EB550 (S), EB190 (S), EB170, EB73, EB54X, EB51, EB710, EB210, EB100X.

Grade cells for the listed items are unmarked.

CPGW: inserts

Standard

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
CPGW 090302	CPGW 320.5	9.525	3.18	0.2	4.4
CPGW 090304	CPGW 321	9.525	3.18	0.4	4.4
CPGW 090308	CPGW 322	9.525	3.18	0.8	4.4

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
CPGW 090302	CPGW 320.5	4.3
CPGW 090304	CPGW 321	4.3
CPGW 090308	CPGW 322	4.2

Mini tip

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
CPGW 080202	CPGW 2.5(1.5)0.5	7.94	2.38	0.2	3.4
CPGW 080204	CPGW 2.5(1.5)1	7.94	2.38	0.4	3.4
CPGW 090302	CPGW 320.5	9.525	3.18	0.2	4.4
CPGW 090304	CPGW 321	9.525	3.18	0.4	4.4
CPGW 090308	CPGW 322	9.525	3.18	0.8	4.4

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
CPGW 080202	CPGW 2.5(1.5)0.5	2.8
CPGW 080204	CPGW 2.5(1.5)1	2.8
CPGW 090302	CPGW 320.5	2.8
CPGW 090304	CPGW 321	2.8
CPGW 090308	CPGW 322	2.7

2mt

Dimension/data block 1.

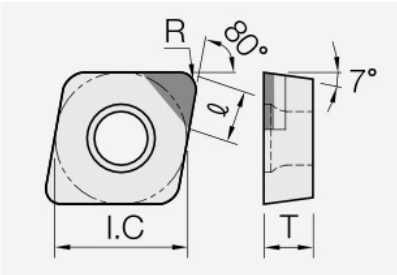
Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
CPGW 080202	CPGW 2.5(1.5)0.5	7.94	2.38	0.2	3.4
CPGW 080204	CPGW 2.5(1.5)1	7.94	2.38	0.4	3.4
CPGW 090302	CPGW 320.5	9.525	3.18	0.2	4.4
CPGW 090304	CPGW 321	9.525	3.18	0.4	4.4
CPGW 090308	CPGW 322	9.525	3.18	0.8	4.4

Dimension/data block 2.

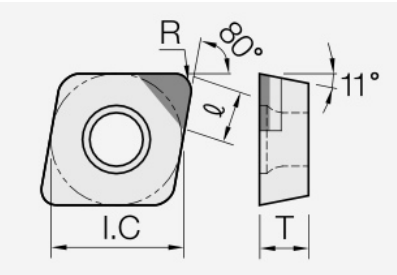
Metric ISO	Inch ISO	ℓ [mm]
CPGW 080202	CPGW 2.5(1.5)0.5	2.8
CPGW 080204	CPGW 2.5(1.5)1	2.8
CPGW 090302	CPGW 320.5	2.8
CPGW 090304	CPGW 321	2.8
CPGW 090308	CPGW 322	2.7

Cutting material/grade overview: PCBN; EB28X (S), EB570 (S), EB160 (S), EB560 (S), EB150 (S), EB550 (S), EB190 (S), EB170, EB73, EB54X, EB51, EB710, EB210, EB100X.

Grade cells for the listed items are unmarked.



CCGW (PCBN): insert dimension drawing with the corresponding geometry symbols.



CPGW (PCBN): insert dimension drawing with the corresponding geometry symbols.

DNGA

DNGA: inserts

Standard

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
DNGA 110404	DNGA 331	9.525	4.76	0.4	3.81
DNGA 110408	DNGA 332	9.525	4.76	0.8	3.81
DNGA 150404	DNGA 431	12.7	4.76	0.4	5.16
DNGA 150408	DNGA 432	12.7	4.76	0.8	5.16
DNGA 150412	DNGA 433	12.7	4.76	1.2	5.16
DNGA 150604	DNGA 441	12.7	6.35	0.4	5.16
DNGA 150608	DNGA 442	12.7	6.35	0.8	5.16
DNGA 150612	DNGA 443	12.7	6.35	1.2	5.16

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
DNGA 110404	DNGA 331	3.9
DNGA 110408	DNGA 332	3.5
DNGA 150404	DNGA 431	3.9
DNGA 150408	DNGA 432	3.5
DNGA 150412	DNGA 433	3.1
DNGA 150604	DNGA 441	3.9
DNGA 150608	DNGA 442	3.5
DNGA 150612	DNGA 443	3.1

Mini tip

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
DNGA 110404	DNGA 331	9.525	4.76	0.4	3.81
DNGA 110408	DNGA 332	9.525	4.76	0.8	3.81
DNGA 150404	DNGA 431	12.7	4.76	0.4	5.16
DNGA 150408	DNGA 432	12.7	4.76	0.8	5.16
DNGA 150412	DNGA 433	12.7	4.76	1.2	5.16
DNGA 150604	DNGA 441	12.7	6.35	0.4	5.16
DNGA 150608	DNGA 442	12.7	6.35	0.8	5.16
DNGA 150612	DNGA 443	12.7	6.35	1.2	5.16

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
DNGA 110404	DNGA 331	2.4
DNGA 110408	DNGA 332	2
DNGA 150404	DNGA 431	2.4
DNGA 150408	DNGA 432	2
DNGA 150412	DNGA 433	2.1
DNGA 150604	DNGA 441	2.4
DNGA 150608	DNGA 442	2
DNGA 150612	DNGA 443	2.1

2mt

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
DNGA 110404	DNGA 331	9.525	4.76	0.4	3.81
DNGA 110408	DNGA 332	9.525	4.76	0.8	3.81
DNGA 150404	DNGA 431	12.7	4.76	0.4	5.16
DNGA 150408	DNGA 432	12.7	4.76	0.8	5.16
DNGA 150412	DNGA 433	12.7	4.76	1.2	5.16
DNGA 150604	DNGA 441	12.7	6.35	0.4	5.16
DNGA 150608	DNGA 442	12.7	6.35	0.8	5.16
DNGA 150612	DNGA 443	12.7	6.35	1.2	5.16

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
DNGA 110404	DNGA 331	2.4
DNGA 110408	DNGA 332	2
DNGA 150404	DNGA 431	2.4
DNGA 150408	DNGA 432	2
DNGA 150412	DNGA 433	2.1
DNGA 150604	DNGA 441	2.4
DNGA 150608	DNGA 442	2
DNGA 150612	DNGA 443	2.1

4mt

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
DNGA 110404	DNGA 331	9.525	4.76	0.4	3.81
DNGA 110408	DNGA 332	9.525	4.76	0.8	3.81
DNGA 150404	DNGA 431	12.7	4.76	0.4	5.16
DNGA 150408	DNGA 432	12.7	4.76	0.8	5.16
DNGA 150412	DNGA 433	12.7	4.76	1.2	5.16
DNGA 150604	DNGA 441	12.7	6.35	0.4	5.16
DNGA 150608	DNGA 442	12.7	6.35	0.8	5.16
DNGA 150612	DNGA 443	12.7	6.35	1.2	5.16

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
DNGA 110404	DNGA 331	2.4
DNGA 110408	DNGA 332	2
DNGA 150404	DNGA 431	2.4
DNGA 150408	DNGA 432	2
DNGA 150412	DNGA 433	2.1
DNGA 150604	DNGA 441	2.4
DNGA 150608	DNGA 442	2
DNGA 150612	DNGA 443	2.1

4vt-solid

Dimension/data block 1.

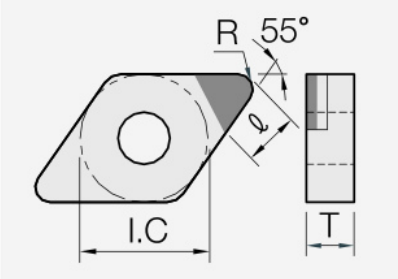
Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
DNGA 110404	DNGA 331	9.525	4.76	0.4	3.81
DNGA 110408	DNGA 332	9.525	4.76	0.8	3.81
DNGA 150404	DNGA 431	12.7	4.76	0.4	5.16
DNGA 150408	DNGA 432	12.7	4.76	0.8	5.16
DNGA 150412	DNGA 433	12.7	4.76	1.2	5.16

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
DNGA 110404	DNGA 331	2.7
DNGA 110408	DNGA 332	2.3
DNGA 150404	DNGA 431	2.7
DNGA 150408	DNGA 432	2.3
DNGA 150412	DNGA 433	2

Cutting material/grade overview: PCBN; EB28X (S), EB570 (S), EB160 (S), EB560 (S), EB150 (S), EB550 (S), EB190 (S), EB170, EB73, EB54X, EB51, EB710, EB210, EB100X.

Grade cells for the listed items are unmarked.



DNGA (PCBN): insert dimension drawing with the corresponding geometry symbols.

DCGW / SNGA

DCGW: inserts

Standard

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
DCGW 11T302	DCGW 3(2.5)0.5	9.525	3.97	0.4	4.4
DCGW 11T304	DCGW 3(2.5)1	9.525	3.97	0.4	4.4
DCGW 11T308	DCGW 3(2.5)2	9.525	3.97	0.8	4.4
DCGW 150404	DCGW 431	12.7	4.76	0.4	5.16
DCGW 150408	DCGW 432	12.7	4.76	0.8	5.16

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
DCGW 11T302	DCGW 3(2.5)0.5	4
DCGW 11T304	DCGW 3(2.5)1	3.9
DCGW 11T308	DCGW 3(2.5)2	3.5
DCGW 150404	DCGW 431	3.9
DCGW 150408	DCGW 432	3.5

Mini tip

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
DCGW 11T302	DCGW 3(2.5)0.5	9.525	3.97	0.4	4.4
DCGW 11T304	DCGW 3(2.5)1	9.525	3.97	0.4	4.4
DCGW 11T308	DCGW 3(2.5)2	9.525	3.97	0.8	4.4
DCGW 150404	DCGW 431	12.7	4.76	0.4	5.16
DCGW 150408	DCGW 432	12.7	4.76	0.8	5.16

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
DCGW 11T302	DCGW 3(2.5)0.5	2.5
DCGW 11T304	DCGW 3(2.5)1	2.4
DCGW 11T308	DCGW 3(2.5)2	2
DCGW 150404	DCGW 431	2.4
DCGW 150408	DCGW 432	2

2mt

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
DCGW 11T302	DCGW 3(2.5)0.5	9.525	3.97	0.4	4.4
DCGW 11T304	DCGW 3(2.5)1	9.525	3.97	0.4	4.4
DCGW 11T308	DCGW 3(2.5)2	9.525	3.97	0.8	4.4
DCGW 150404	DCGW 431	12.7	4.76	0.4	5.16
DCGW 150408	DCGW 432	12.7	4.76	0.8	5.16

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
DCGW 11T302	DCGW 3(2.5)0.5	2.5
DCGW 11T304	DCGW 3(2.5)1	2.4
DCGW 11T308	DCGW 3(2.5)2	2
DCGW 150404	DCGW 431	2.4
DCGW 150408	DCGW 432	2

Cutting material/grade overview: PCBN; EB28X (S), EB570 (S), EB160 (S), EB560 (S), EB150 (S), EB550 (S), EB190 (S), EB170, EB73, EB54X, EB51, EB710, EB210, EB100X.

Grade cells for the listed items are unmarked.

SNGA: inserts

Standard

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
SNGA 090304	SNGA 321	9.525	3.18	0.4	3.81
SNGA 090308	SNGA 322	9.525	3.18	0.8	3.81
SNGA 120404	SNGA 431	12.7	4.76	0.4	5.16
SNGA 120408	SNGA 432	12.7	4.76	0.8	5.16
SNGA 120412	SNGA 433	12.7	4.76	1.2	5.16

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
SNGA 090304	SNGA 321	4.4
SNGA 090308	SNGA 322	4.4
SNGA 120404	SNGA 431	4.4
SNGA 120408	SNGA 432	4.4
SNGA 120412	SNGA 433	4.4

Mini tip

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
SNGA 090304	SNGA 321	9.525	3.18	0.4	3.81
SNGA 090308	SNGA 322	9.525	3.18	0.8	3.81
SNGA 120404	SNGA 431	12.7	4.76	0.4	5.16
SNGA 120408	SNGA 432	12.7	4.76	0.8	5.16
SNGA 120412	SNGA 433	12.7	4.76	1.2	5.16

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
SNGA 090304	SNGA 321	2.9
SNGA 090308	SNGA 322	2.9
SNGA 120404	SNGA 431	2.9
SNGA 120408	SNGA 432	2.9
SNGA 120412	SNGA 433	3.4

2mt

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
SNGA 090304	SNGA 321	9.525	3.18	0.4	3.81
SNGA 090308	SNGA 322	9.525	3.18	0.8	3.81
SNGA 120404	SNGA 431	12.7	4.76	0.4	5.16
SNGA 120408	SNGA 432	12.7	4.76	0.8	5.16
SNGA 120412	SNGA 433	12.7	4.76	1.2	5.16

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
SNGA 090304	SNGA 321	2.9
SNGA 090308	SNGA 322	2.9
SNGA 120404	SNGA 431	2.9
SNGA 120408	SNGA 432	2.9
SNGA 120412	SNGA 433	3.4

4mt

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
SNGA 120404	SNGA 431	12.7	4.76	0.4	5.16
SNGA 120408	SNGA 432	12.7	4.76	0.8	5.16
SNGA 120412	SNGA 433	12.7	4.76	1.2	5.16

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
SNGA 120404	SNGA 431	2.9
SNGA 120408	SNGA 432	2.9
SNGA 120412	SNGA 433	3.4

8vt-solid

Dimension/data block 1.

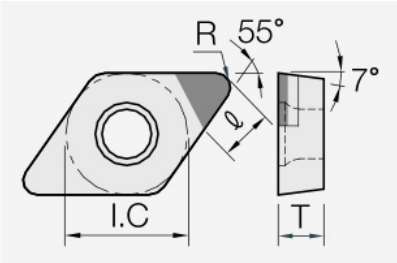
Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
SNGA 120404	SNGA 431	12.7	4.76	0.4	5.16
SNGA 120408	SNGA 432	12.7	4.76	0.8	5.16
SNGA 120412	SNGA 433	12.7	4.76	1.2	5.16

Dimension/data block 2.

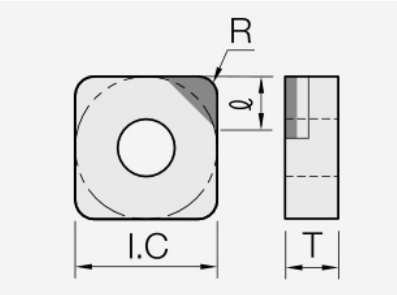
Metric ISO	Inch ISO	ℓ [mm]
SNGA 120404	SNGA 431	2.2
SNGA 120408	SNGA 432	2.2
SNGA 120412	SNGA 433	2.2

Cutting material/grade overview: PCBN; EB28X (S), EB570 (S), EB160 (S), EB560 (S), EB150 (S), EB550 (S), EB190 (S), EB170, EB73, EB54X, EB51, EB710, EB210, EB100X.

Grade cells for the listed items are unmarked.



DCGW (PCBN): insert dimension drawing with the corresponding geometry symbols.



SNGA (PCBN): insert dimension drawing with the corresponding geometry symbols.

SNGN / SNGN (solid)

SNGN: inserts

Standard

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
SNGN 090304	SNGN 321	9.525	3.18	0.4	
SNGN 090308	SNGN 322	9.525	3.18	0.8	
SNGN 120404	SNGN 431	12.7	4.76	0.4	
SNGN 120408	SNGN 432	12.7	4.76	0.8	
SNGN 120412	SNGN 433	12.7	4.76	1.2	

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
SNGN 090304	SNGN 321	4.4
SNGN 090308	SNGN 322	4.4
SNGN 120404	SNGN 431	4.4
SNGN 120408	SNGN 432	4.4
SNGN 120412	SNGN 433	4.4

Mini tip

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
SNGN 090304	SNGN 321	9.525	3.18	0.4	
SNGN 090308	SNGN 322	9.525	3.18	0.8	
SNGN 120404	SNGN 431	12.7	4.76	0.4	
SNGN 120408	SNGN 432	12.7	4.76	0.8	
SNGN 120412	SNGN 433	12.7	4.76	1.2	

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
SNGN 090304	SNGN 321	2.9
SNGN 090308	SNGN 322	2.9
SNGN 120404	SNGN 431	2.9
SNGN 120408	SNGN 432	2.9
SNGN 120412	SNGN 433	3.4

2mt

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
SNGN 090304	SNGN 321	9.525	3.18	0.4	
SNGN 090308	SNGN 322	9.525	3.18	0.8	
SNGN 120404	SNGN 431	12.7	4.76	0.4	
SNGN 120408	SNGN 432	12.7	4.76	0.8	
SNGN 120412	SNGN 433	12.7	4.76	1.2	

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
SNGN 090304	SNGN 321	2.9
SNGN 090308	SNGN 322	2.9
SNGN 120404	SNGN 431	2.9
SNGN 120408	SNGN 432	2.9
SNGN 120412	SNGN 433	3.4

4mt

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
SNGN 120404	SNGN 431	12.7	4.76	0.4	
SNGN 120408	SNGN 432	12.7	4.76	0.8	
SNGN 120412	SNGN 433	12.7	4.76	1.2	

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
SNGN 120404	SNGN 431	2.9
SNGN 120408	SNGN 432	2.9
SNGN 120412	SNGN 433	3.4

8vt-solid

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
SNGN 120404	SNGN 431	12.7	4.76	0.4	
SNGN 120408	SNGN 432	12.7	4.76	0.8	
SNGN 120412	SNGN 433	12.7	4.76	1.2	

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
SNGN 120404	SNGN 431	2.2
SNGN 120408	SNGN 432	2.2
SNGN 120412	SNGN 433	2.2

Cutting material/grade overview: PCBN; EB28X (S), EB570 (S), EB160 (S), EB560 (S), EB150 (S), EB550 (S), EB190 (S), EB170, EB73, EB54X, EB51, EB710, EB210, EB100X.

Grade cells for the listed items are unmarked.

SNGN (solid): inserts

Solid

Dimension/data block 1.

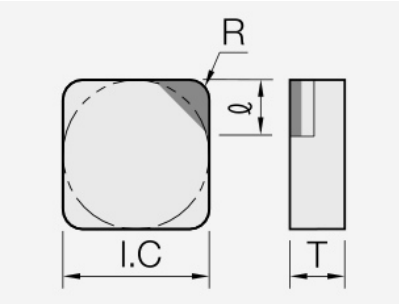
Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
SNGN 090304	SNGN 321	9.525	3.18	0.4	
SNGN 090308	SNGN 322	9.525	3.18	0.8	
SNGN 120404	SNGN 431	12.7	4.76	0.4	
SNGN 120408	SNGN 432	12.7	4.76	0.8	
SNGN 120412	SNGN 433	12.7	4.76	1.2	

Dimension/data block 2.

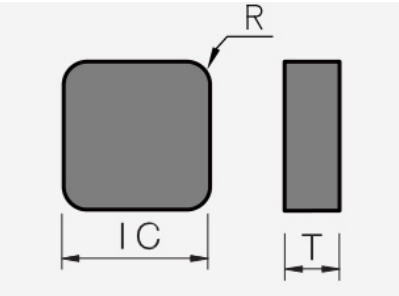
Metric ISO	Inch ISO	ℓ [mm]
SNGN 090304	SNGN 321	
SNGN 090308	SNGN 322	
SNGN 120404	SNGN 431	
SNGN 120408	SNGN 432	
SNGN 120412	SNGN 433	

Cutting material/grade overview: PCBN; EB1000, EB50, EB100X, HBN, HBN-W, HBN-N.

Grade cells for the listed items are unmarked.



SNGN (PCBN): insert dimension drawing with the corresponding geometry symbols.



SNGN (solid) (PCBN): insert dimension drawing with the corresponding geometry symbols.

SPGN / TBGN

SPGN: inserts

Standard

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
SPGN 090304	SPGN 321	9.525	3.18	0.4	
SPGN 090308	SPGN 322	9.525	3.18	0.8	
SPGN 120404	SPGN 431	12.7	4.76	0.4	
SPGN 120408	SPGN 432	12.7	4.76	0.8	
SPGN 120412	SPGN 433	12.7	4.76	1.2	

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
SPGN 090304	SPGN 321	4.4
SPGN 090308	SPGN 322	4.4
SPGN 120404	SPGN 431	4.4
SPGN 120408	SPGN 432	4.4
SPGN 120412	SPGN 433	4.4

Mini tip

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
SPGN 090304	SPGN 321	9.525	3.18	0.4	
SPGN 090308	SPGN 322	9.525	3.18	0.8	
SPGN 120404	SPGN 431	12.7	4.76	0.4	
SPGN 120408	SPGN 432	12.7	4.76	0.8	
SPGN 120412	SPGN 433	12.7	4.76	1.2	

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
SPGN 090304	SPGN 321	2.9
SPGN 090308	SPGN 322	2.9
SPGN 120404	SPGN 431	2.9
SPGN 120408	SPGN 432	2.9
SPGN 120412	SPGN 433	3.4

2mt

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
SPGN 090304	SPGN 321	9.525	3.18	0.4	
SPGN 090308	SPGN 322	9.525	3.18	0.8	
SPGN 120404	SPGN 431	12.7	4.76	0.4	
SPGN 120408	SPGN 432	12.7	4.76	0.8	
SPGN 120412	SPGN 433	12.7	4.76	1.2	

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
SPGN 090304	SPGN 321	2.9
SPGN 090308	SPGN 322	2.9
SPGN 120404	SPGN 431	2.9
SPGN 120408	SPGN 432	2.9
SPGN 120412	SPGN 433	3.4

4mt

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
SPGN 120404	SPGN 431	12.7	4.76	0.4	
SPGN 120408	SPGN 432	12.7	4.76	0.8	
SPGN 120412	SPGN 433	12.7	4.76	1.2	

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
SPGN 120404	SPGN 431	2.9
SPGN 120408	SPGN 432	2.9
SPGN 120412	SPGN 433	3.4

full-face

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
SPGN 090304	SPGN 321	9.525	3.18	0.4	
SPGN 090308	SPGN 322	9.525	3.18	0.8	
SPGN 120404	SPGN 431	12.7	4.76	0.4	
SPGN 120408	SPGN 432	12.7	4.76	0.8	
SPGN 120412	SPGN 433	12.7	4.76	1.2	

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
SPGN 090304	SPGN 321	
SPGN 090308	SPGN 322	
SPGN 120404	SPGN 431	
SPGN 120408	SPGN 432	
SPGN 120412	SPGN 433	

Cutting material/grade overview: PCBN; EB28X (S), EB570 (S), EB160 (S), EB560 (S), EB150 (S), EB550 (S), EB190 (S), EB170, EB73, EB54X, EB51, EB710, EB210, EB100X.

Grade cells for the listed items are unmarked.

TBGN: inserts

full-face

Dimension/data block 1.

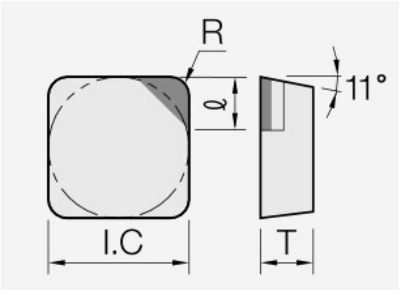
Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
TBGN 060102	TBGN (1.2)10.5	3.97	1.59	0.2	
TBGN 060104	TBGN (1.2)11	3.97	1.59	0.4	
TBGN 060108	TBGN (1.2)12	3.97	1.59	0.8	
TBGN 080202	TBGN 1.5(1.5)0.5	4.76	2.38	0.2	
TBGN 080204	TBGN 1.5(1.5)1	4.76	2.38	0.4	
TBGN 080208	TBGN 1.5(1.5)2	4.76	2.38	0.8	
TBGN 080212	TBGN 1.5(1.5)3	4.76	2.38	1.2	

Dimension/data block 2.

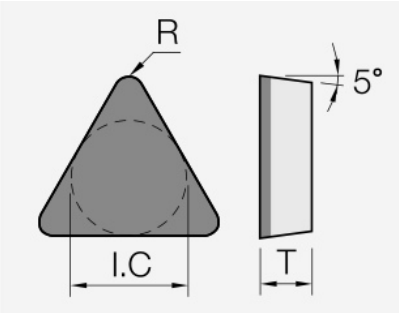
Metric ISO	Inch ISO	ℓ [mm]
TBGN 060102	TBGN (1.2)10.5	
TBGN 060104	TBGN (1.2)11	
TBGN 060108	TBGN (1.2)12	
TBGN 080202	TBGN 1.5(1.5)0.5	
TBGN 080204	TBGN 1.5(1.5)1	
TBGN 080208	TBGN 1.5(1.5)2	
TBGN 080212	TBGN 1.5(1.5)3	

Cutting material/grade overview: PCBN; EB28X, EB570, EB160, EB560, EB150, EB550, EB190, EB170, EB73, EB51, EB710, EB210.

Grade cells for the listed items are unmarked.



SPGN (PCBN): insert dimension drawing with the corresponding geometry symbols.



TBGN (PCBN): insert dimension drawing with the corresponding geometry symbols.

PCBN inserts: design example



PCBN inserts: design example: Tool view.

TNGA / TNGN / TNGN (solid)

TNGA: inserts

Standard

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
TNGA 110304	TNGA 221	6.35	3.18	0.4	2.4
TNGA 160404	TNGA 331	9.525	4.76	0.4	3.81
TNGA 160408	TNGA 332	9.525	4.76	0.8	3.81
TNGA 220404	TNGA 431	12.7	4.76	0.4	5.16
TNGA 220408	TNGA 432	12.7	4.76	0.8	5.16

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
TNGA 110304	TNGA 221	4
TNGA 160404	TNGA 331	4
TNGA 160408	TNGA 332	3.7
TNGA 220404	TNGA 431	4
TNGA 220408	TNGA 432	3.7

Mini tip

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
TNGA 110304	TNGA 221	6.35	3.18	0.4	2.4
TNGA 160404	TNGA 331	9.525	4.76	0.8	3.81
TNGA 160408	TNGA 332	9.525	4.76	0.4	3.81

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
TNGA 110304	TNGA 221	2.5
TNGA 160404	TNGA 331	2.5
TNGA 160408	TNGA 332	2.2

3mt

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
TNGA 110304	TNGA 221	6.35	3.18	0.4	2.4
TNGA 160404	TNGA 331	9.525	4.76	0.4	3.81
TNGA 160408	TNGA 332	9.525	4.76	0.8	3.81
TNGA 220404	TNGA 431	12.7	4.76	0.4	5.16
TNGA 220408	TNGA 432	12.7	4.76	0.8	5.16

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
TNGA 110304	TNGA 221	2.5
TNGA 160404	TNGA 331	2.5
TNGA 160408	TNGA 332	2.2
TNGA 220404	TNGA 431	2.5
TNGA 220408	TNGA 432	2.2

6vt-solid

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
TNGA 160404	TNGA 331	9.525	4.76	0.4	3.81
TNGA 160408	TNGA 332	9.525	4.76	0.8	3.81

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
TNGA 160404	TNGA 331	2.9
TNGA 160408	TNGA 332	2.6

Cutting material/grade overview: PCBN; EB28X (S), EB570 (S), EB160 (S), EB560 (S), EB150 (S), EB550 (S), EB190 (S), EB170, EB73, EB54X, EB51, EB710, EB210, EB100X.

Grade cells for the listed items are unmarked.

TNGN: inserts

Standard

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
TNGN 160404	TNGN 331	9.525	4.76	0.4	
TNGN 160408	TNGN 332	9.525	4.76	0.8	
TNGN 160412	TNGN 333	9.525	4.76	1.2	

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
TNGN 160404	TNGN 331	4
TNGN 160408	TNGN 332	3.7
TNGN 160412	TNGN 333	3.4

Mini tip

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
TNGN 160404	TNGN 331	9.525	4.76	0.4	
TNGN 160408	TNGN 332	9.525	4.76	0.8	
TNGN 160412	TNGN 333	9.525	4.76	1.2	

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
TNGN 160404	TNGN 331	2.5
TNGN 160408	TNGN 332	2.2
TNGN 160412	TNGN 333	2.4

3mt

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
TNGN 160404	TNGN 331	9.525	4.76	0.4	
TNGN 160408	TNGN 332	9.525	4.76	0.8	
TNGN 160412	TNGN 333	9.525	4.76	1.2	

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
TNGN 160404	TNGN 331	2.5
TNGN 160408	TNGN 332	2.2
TNGN 160412	TNGN 333	2.4

6vt-solid

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
TNGN 160404	TNGN 331	9.525	4.76	0.4	
TNGN 160408	TNGN 332	9.525	4.76	0.8	
TNGN 160412	TNGN 333	9.525	4.76	1.2	

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
TNGN 160404	TNGN 331	2.9
TNGN 160408	TNGN 332	2.6
TNGN 160412	TNGN 333	2.3

Cutting material/grade overview: PCBN; EB28X (S), EB570 (S), EB160 (S), EB560 (S), EB150 (S), EB550 (S), EB190 (S), EB170, EB73, EB54X, EB51, EB710, EB210, EB100X.

Grade cells for the listed items are unmarked.

TNGN (solid): inserts

Solid

Dimension/data block 1.

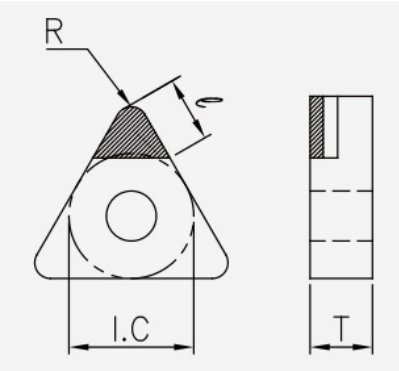
Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
TNGN 110304	TNGN 221	6.35	3.18	0.4	
TNGN 110308	TNGN 222	6.35	3.18	0.8	
TNGN 160408	TNGN 332	9.525	4.76	0.8	
TNGN 160412	TNGN 333	9.525	4.76	1.2	

Dimension/data block 2.

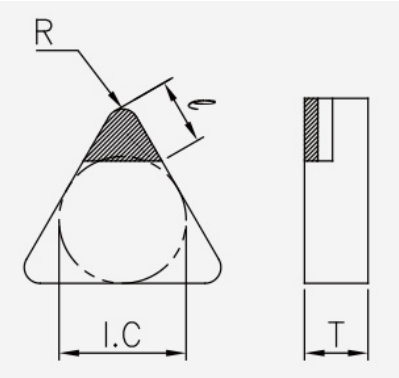
Metric ISO	Inch ISO	ℓ [mm]
TNGN 110304	TNGN 221	
TNGN 110308	TNGN 222	
TNGN 160408	TNGN 332	
TNGN 160412	TNGN 333	

Cutting material/grade overview: PCBN; EB1000, EB50, EB100X, HBN, HBN-W, HBN-N.

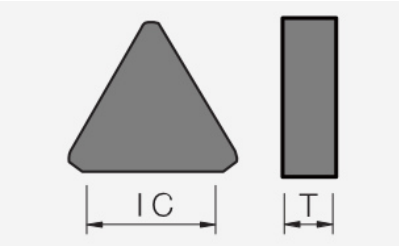
Grade cells for the listed items are unmarked.



TNGA (PCBN): insert dimension drawing with the corresponding geometry symbols.



TNGN (PCBN): insert dimension drawing with the corresponding geometry symbols.



TNGN (solid) (PCBN): insert dimension drawing with the corresponding geometry symbols.

TCGW / TPGN

TCGW: inserts

Standard

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
TCGW 16T302	TCGW 3(2.5)0.5	9.525	3.97	0.2	4.4
TCGW 16T304	TCGW 3(2.5)1	9.525	3.97	0.4	4.4
TCGW 16T308	TCGW 3(2.5)2	9.525	3.97	0.8	4.4

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
TCGW 16T302	TCGW 3(2.5)0.5	4.1
TCGW 16T304	TCGW 3(2.5)1	4
TCGW 16T308	TCGW 3(2.5)2	3.7

Mini tip

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
TCGW 090202	TCGW 2(1.5)0.5	5.56	2.38	0.2	2.5
TCGW 090204	TCGW 2(1.5)1	5.56	2.38	0.4	2.5
TCGW 110202	TCGW 2(1.5)0.5	6.35	2.38	0.2	2.8
TCGW 110204	TCGW 2(1.5)1	6.35	2.38	0.4	2.8
TCGW 110208	TCGW 2(1.5)2	6.35	2.38	0.8	2.8
TCGW 16T302	TCGW 3(2.5)0.5	9.525	3.97	0.2	4.4
TCGW 16T304	TCGW 3(2.5)1	9.525	3.97	0.4	4.4
TCGW 16T308	TCGW 3(2.5)2	9.525	3.97	0.8	4.4

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
TCGW 090202	TCGW 2(1.5)0.5	2.6
TCGW 090204	TCGW 2(1.5)1	2.5
TCGW 110202	TCGW 2(1.5)0.5	2.6
TCGW 110204	TCGW 2(1.5)1	2.5
TCGW 110208	TCGW 2(1.5)2	2.2
TCGW 16T302	TCGW 3(2.5)0.5	2.6
TCGW 16T304	TCGW 3(2.5)1	2.5
TCGW 16T308	TCGW 3(2.5)2	2.2

3mt

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
TCGW 090202	TCGW 2(1.5)0.5	5.56	2.38	0.2	2.5
TCGW 090204	TCGW 2(1.5)1	5.56	2.38	0.4	2.5
TCGW 110202	TCGW 2(1.5)0.5	6.35	2.38	0.2	2.8
TCGW 110204	TCGW 2(1.5)1	6.35	2.38	0.4	2.8
TCGW 110208	TCGW 2(1.5)2	6.35	2.38	0.8	2.8
TCGW 16T302	TCGW 3(2.5)0.5	9.525	3.97	0.2	4.4
TCGW 16T304	TCGW 3(2.5)1	9.525	3.97	0.4	4.4
TCGW 16T308	TCGW 3(2.5)2	9.525	3.97	0.8	4.4

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
TCGW 090202	TCGW 2(1.5)0.5	2.6
TCGW 090204	TCGW 2(1.5)1	2.5
TCGW 110202	TCGW 2(1.5)0.5	2.6
TCGW 110204	TCGW 2(1.5)1	2.5
TCGW 110208	TCGW 2(1.5)2	2.2
TCGW 16T302	TCGW 3(2.5)0.5	2.6
TCGW 16T304	TCGW 3(2.5)1	2.5
TCGW 16T308	TCGW 3(2.5)2	2.2

Cutting material/grade overview: PCBN; EB28X (S), EB570 (S), EB160 (S), EB560 (S), EB150 (S), EB550 (S), EB190 (S), EB170, EB73, EB54X, EB51, EB710, EB210, EB100X.

Grade cells for the listed items are unmarked.

TPGN: inserts

Standard

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
TPGN 160304	TPGN 321	9.525	3.18	0.4	
TPGN 160308	TPGN 322	9.525	3.18	0.8	
TPGN 220404	TPGN 431	12.7	4.76	0.4	
TPGN 220408	TPGN 432	12.7	4.76	0.8	
TPGN 220412	TPGN 433	12.7	4.76	1.2	

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
TPGN 160304	TPGN 321	4
TPGN 160308	TPGN 322	3.7
TPGN 220404	TPGN 431	4
TPGN 220408	TPGN 432	3.7
TPGN 220412	TPGN 433	3.4

Mini tip

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
TPGN 160304	TPGN 321	9.525	3.18	0.4	
TPGN 160308	TPGN 322	9.525	3.18	0.8	

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
TPGN 160304	TPGN 321	2.5
TPGN 160308	TPGN 322	2.2

3mt

Dimension/data block 1.

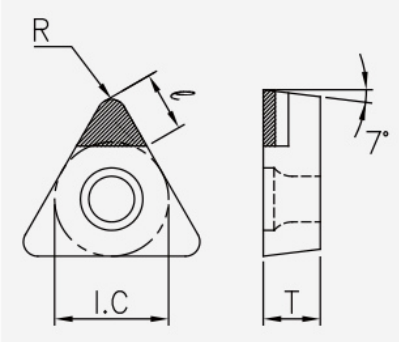
Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
TPGN 160304	TPGN 321	9.525	3.18	0.4	
TPGN 160308	TPGN 322	9.525	3.18	0.8	

Dimension/data block 2.

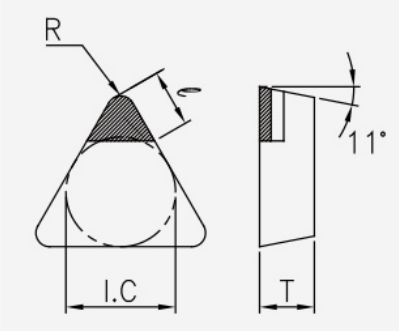
Metric ISO	Inch ISO	ℓ [mm]
TPGN 160304	TPGN 321	2.5
TPGN 160308	TPGN 322	2.2

Cutting material/grade overview: PCBN; EB28X (S), EB570 (S), EB160 (S), EB560 (S), EB150 (S), EB550 (S), EB190 (S), EB170, EB73, EB54X, EB51, EB710, EB210, EB100X.

Grade cells for the listed items are unmarked.



TCGW (PCBN): insert dimension drawing with the corresponding geometry symbols.



TPGN (PCBN): insert dimension drawing with the corresponding geometry symbols.

TPGW

TPGW: inserts

Standard

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
TPGW 160302	TPGW 32(0.5)	9.525	3.18	0.2	4.4
TPGW 160304	TPGW 321	9.525	3.18	0.4	4.4
TPGW 160308	TPGW 322	9.525	3.18	0.8	4.4
TPGW 160404	TPGW 331	9.525	4.76	0.4	4.4
TPGW 160408	TPGW 332	9.525	4.76	0.8	4.4

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
TPGW 160302	TPGW 32(0.5)	4.1
TPGW 160304	TPGW 321	4
TPGW 160308	TPGW 322	3.7
TPGW 160404	TPGW 331	4
TPGW 160408	TPGW 332	3.7

Mini tip

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
TPGW 080202	TPGW 1.5(1.5)0.5	4.76	2.38	0.2	2.3
TPGW 080204	TPGW 1.5(1.5)1	4.76	2.38	0.4	2.3
TPGW 090202	TPGW 1.5)0.5	5.56	2.38	0.2	2.5
TPGW 090204	TPGW 1.5)1	5.56	2.38	0.4	2.5
TPGW 110202	TPGW 21(0.5)	6.35	2.38	0.2	2.8
TPGW 110204	TPGW 211	6.35	2.38	0.4	2.8
TPGW 110302	TPGW 22(0.5)	6.35	3.18	0.2	3.4
TPGW 110304	TPGW 221	6.35	3.18	0.4	3.4
TPGW 110308	TPGW 222	6.35	3.18	0.8	3.4
TPGW 160302	TPGW 32(0.5)	9.525	3.18	0.2	4.4
TPGW 160304	TPGW 321	9.525	3.18	0.4	4.4
TPGW 160308	TPGW 322	9.525	3.18	0.8	4.4
TPGW 160404	TPGW 331	9.525	4.76	0.4	4.4
TPGW 160408	TPGW 332	9.525	4.76	0.8	4.4

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
TPGW 080202	TPGW 1.5(1.5)0.5	2.6
TPGW 080204	TPGW 1.5(1.5)1	2.5
TPGW 090202	TPGW 1.5)0.5	2.6
TPGW 090204	TPGW 1.5)1	2.5
TPGW 110202	TPGW 21(0.5)	2.6
TPGW 110204	TPGW 211	2.5
TPGW 110302	TPGW 22(0.5)	2.6
TPGW 110304	TPGW 221	2.5
TPGW 110308	TPGW 222	2.2
TPGW 160302	TPGW 32(0.5)	2.6
TPGW 160304	TPGW 321	2.5
TPGW 160308	TPGW 322	2.2
TPGW 160404	TPGW 331	2.5
TPGW 160408	TPGW 332	2.2

3mt

Dimension/data block 1.

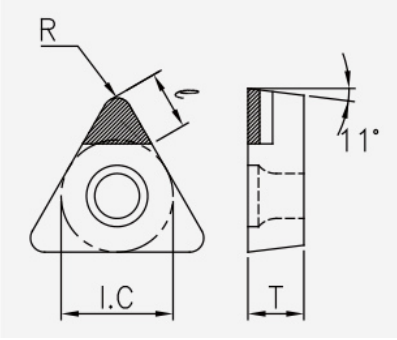
Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
TPGW 080202	TPGW 1.5(1.5)0.5	4.76	2.38	0.2	2.3
TPGW 080204	TPGW 1.5(1.5)1	4.76	2.38	0.4	2.3
TPGW 090202	TPGW 1.5)0.5	5.56	2.38	0.2	2.5
TPGW 090204	TPGW 1.5)1	5.56	2.38	0.4	2.5
TPGW 110202	TPGW 21(0.5)	6.35	2.38	0.2	2.8
TPGW 110204	TPGW 211	6.35	2.38	0.4	2.8
TPGW 110302	TPGW 22(0.5)	6.35	3.18	0.2	3.4
TPGW 110304	TPGW 221	6.35	3.18	0.4	3.4
TPGW 110308	TPGW 222	6.35	3.18	0.8	3.4
TPGW 160302	TPGW 32(0.5)	9.525	3.18	0.2	4.4
TPGW 160304	TPGW 321	9.525	3.18	0.4	4.4
TPGW 160308	TPGW 322	9.525	3.18	0.8	4.4
TPGW 160404	TPGW 331	9.525	4.76	0.4	4.4
TPGW 160408	TPGW 332	9.525	4.76	0.8	4.4

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
TPGW 080202	TPGW 1.5(1.5)0.5	2.6
TPGW 080204	TPGW 1.5(1.5)1	2.5
TPGW 090202	TPGW 1.5)0.5	2.6
TPGW 090204	TPGW 1.5)1	2.5
TPGW 110202	TPGW 21(0.5)	2.6
TPGW 110204	TPGW 211	2.5
TPGW 110302	TPGW 22(0.5)	2.6
TPGW 110304	TPGW 221	2.5
TPGW 110308	TPGW 222	2.2
TPGW 160302	TPGW 32(0.5)	2.6
TPGW 160304	TPGW 321	2.5
TPGW 160308	TPGW 322	2.2
TPGW 160404	TPGW 331	2.5
TPGW 160408	TPGW 332	2.2

Cutting material/grade overview: PCBN; EB28X (S), EB570 (S), EB160 (S), EB560 (S), EB150 (S), EB550 (S), EB190 (S), EB170, EB73, EB54X, EB51, EB710, EB210, EB100X.

Grade cells for the listed items are unmarked.



TPGW (PCBN): insert dimension drawing with the corresponding geometry symbols.

VNGA / VBGW

VNGA: inserts

Standard

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
VNGA 160402	VNGA 33(0.5)	9.525	4.76	0.2	3.81
VNGA 160404	VNGA 331	9.525	4.76	0.4	3.81
VNGA 160408	VNGA 332	9.525	4.76	0.8	3.81

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
VNGA 160402	VNGA 33(0.5)	5
VNGA 160404	VNGA 331	4.5
VNGA 160408	VNGA 332	3.7

Mini tip

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
VNGA 160402	VNGA 33(0.5)	9.525	4.76	0.2	3.81
VNGA 160404	VNGA 331	9.525	4.76	0.4	3.81
VNGA 160408	VNGA 332	9.525	4.76	0.8	3.81

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
VNGA 160402	VNGA 33(0.5)	3
VNGA 160404	VNGA 331	2.5
VNGA 160408	VNGA 332	2.2

2mt

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
VNGA 160402	VNGA 33(0.5)	9.525	4.76	0.2	3.81
VNGA 160404	VNGA 331	9.525	4.76	0.4	3.81
VNGA 160408	VNGA 332	9.525	4.76	0.8	3.81

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
VNGA 160402	VNGA 33(0.5)	3
VNGA 160404	VNGA 331	2.5
VNGA 160408	VNGA 332	2.2

4vt-solid

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
VNGA 160402	VNGA 33(0.5)	9.525	4.76	0.2	3.81
VNGA 160404	VNGA 331	9.525	4.76	0.4	3.81
VNGA 160408	VNGA 332	9.525	4.76	0.8	3.81

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
VNGA 160402	VNGA 33(0.5)	2.6
VNGA 160404	VNGA 331	2.2
VNGA 160408	VNGA 332	2.3

Cutting material/grade overview: PCBN; EB28X (S), EB570 (S), EB160 (S), EB560 (S), EB150 (S), EB550 (S), EB190 (S), EB170, EB73, EB54X, EB51, EB710, EB210, EB100X.

Grade cells for the listed items are unmarked.

VBGW: inserts

Standard

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
VBGW 110302	VBGW 22(0.5)	6.35	3.18	0.2	2.8
VBGW 110304	VBGW 221	6.35	3.18	0.4	2.8
VBGW 160402	VBGW 33(0.5)	9.525	4.76	0.2	2.8
VBGW 160404	VBGW 331	9.525	4.76	0.4	4.4
VBGW 160408	VBGW 332	9.525	4.76	0.8	4.4
VBGW 160412	VBGW 333	9.525	4.76	1.2	4.4

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
VBGW 110302	VBGW 22(0.5)	5
VBGW 110304	VBGW 221	4.5
VBGW 160402	VBGW 33(0.5)	5
VBGW 160404	VBGW 331	4.5
VBGW 160408	VBGW 332	3.7
VBGW 160412	VBGW 333	3.3

Mini tip

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
VBGW 110302	VBGW 22(0.5)	6.35	3.18	0.2	2.8
VBGW 110304	VBGW 221	6.35	3.18	0.4	2.8
VBGW 160402	VBGW 33(0.5)	9.525	4.76	0.2	2.8
VBGW 160404	VBGW 331	9.525	4.76	0.4	4.4
VBGW 160408	VBGW 332	9.525	4.76	0.8	4.4
VBGW 160412	VBGW 333	9.525	4.76	1.2	4.4

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
VBGW 110302	VBGW 22(0.5)	3
VBGW 110304	VBGW 221	2.5
VBGW 160402	VBGW 33(0.5)	3
VBGW 160404	VBGW 331	2.5
VBGW 160408	VBGW 332	2.2
VBGW 160412	VBGW 333	1.8

2mt

Dimension/data block 1.

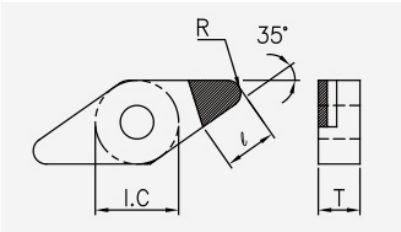
Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
VBGW 110302	VBGW 22(0.5)	6.35	3.18	0.2	2.8
VBGW 110304	VBGW 221	6.35	3.18	0.4	2.8
VBGW 160402	VBGW 33(0.5)	9.525	4.76	0.2	2.8
VBGW 160404	VBGW 331	9.525	4.76	0.4	4.4
VBGW 160408	VBGW 332	9.525	4.76	0.8	4.4
VBGW 160412	VBGW 333	9.525	4.76	1.2	4.4

Dimension/data block 2.

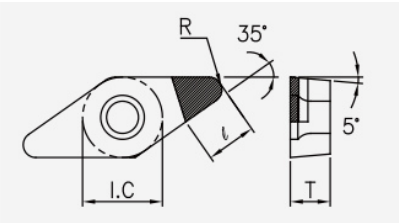
Metric ISO	Inch ISO	ℓ [mm]
VBGW 110302	VBGW 22(0.5)	3
VBGW 110304	VBGW 221	2.5
VBGW 160402	VBGW 33(0.5)	3
VBGW 160404	VBGW 331	2.5
VBGW 160408	VBGW 332	2.2
VBGW 160412	VBGW 333	1.8

Cutting material/grade overview: PCBN; EB28X (S), EB570 (S), EB160 (S), EB560 (S), EB150 (S), EB550 (S), EB190 (S), EB170, EB73, EB54X, EB51, EB710, EB210, EB100X.

Grade cells for the listed items are unmarked.



VNGA (PCBN): insert dimension drawing with the corresponding geometry symbols.



VBGW (PCBN): insert dimension drawing with the corresponding geometry symbols.

VCGW / RNGN / RNGN (solid)

VCGW: inserts

Standard

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
VCGW 110302	VCGW 22(0.5)	6.35	3.18	0.2	2.8
VCGW 110304	VCGW 221	6.35	3.18	0.4	2.8
VCGW 160402	VCGW 33(0.5)	9.525	4.76	0.2	4.4
VCGW 160404	VCGW 331	9.525	4.76	0.4	4.4
VCGW 160408	VCGW 332	9.525	4.76	0.8	4.4
VCGW 160412	VCGW 333	9.525	4.76	1.2	4.4

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
VCGW 110302	VCGW 22(0.5)	5
VCGW 110304	VCGW 221	4.5
VCGW 160402	VCGW 33(0.5)	5
VCGW 160404	VCGW 331	4.5
VCGW 160408	VCGW 332	3.7
VCGW 160412	VCGW 333	3.3

Mini tip

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
VCGW 110302	VCGW 22(0.5)	6.35	3.18	0.2	2.8
VCGW 110304	VCGW 221	6.35	3.18	0.4	2.8
VCGW 160402	VCGW 33(0.5)	9.525	4.76	0.2	4.4
VCGW 160404	VCGW 331	9.525	4.76	0.4	4.4
VCGW 160408	VCGW 332	9.525	4.76	0.8	4.4
VCGW 160412	VCGW 333	9.525	4.76	1.2	4.4

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
VCGW 110302	VCGW 22(0.5)	3
VCGW 110304	VCGW 221	2.5
VCGW 160402	VCGW 33(0.5)	3
VCGW 160404	VCGW 331	2.5
VCGW 160408	VCGW 332	2.2
VCGW 160412	VCGW 333	1.8

2mt

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
VCGW 110302	VCGW 22(0.5)	6.35	3.18	0.2	2.8
VCGW 110304	VCGW 221	6.35	3.18	0.4	2.8
VCGW 160402	VCGW 33(0.5)	9.525	4.76	0.2	4.4
VCGW 160404	VCGW 331	9.525	4.76	0.4	4.4
VCGW 160408	VCGW 332	9.525	4.76	0.8	4.4
VCGW 160412	VCGW 333	9.525	4.76	1.2	4.4

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
VCGW 110302	VCGW 22(0.5)	3
VCGW 110304	VCGW 221	2.5
VCGW 160402	VCGW 33(0.5)	3
VCGW 160404	VCGW 331	2.5
VCGW 160408	VCGW 332	2.2
VCGW 160412	VCGW 333	1.8

Cutting material/grade overview: PCBN; EB28X (S), EB570 (S), EB160 (S), EB560 (S), EB150 (S), EB550 (S), EB190 (S), EB170, EB73, EB54X, EB51, EB710, EB210, EB100X.

Grade cells for the listed items are unmarked.

RNGN: inserts

carbide-backed

Dimension/data block 1.

Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
RNGN 060300	RNGN 220	6.35	3.18		
RNGN 090300	RNGN 320	9.525	3.18		
RNGN 090400	RNGN 330	9.525	4.76		
RNGN 120300	RNGN 420	12.7	3.18		
RNGN 120400	RNGN 430	12.7	4.76		

Dimension/data block 2.

Metric ISO	Inch ISO	ℓ [mm]
RNGN 060300	RNGN 220	
RNGN 090300	RNGN 320	
RNGN 090400	RNGN 330	
RNGN 120300	RNGN 420	
RNGN 120400	RNGN 430	

Cutting material/grade overview: PCBN; EB28X, EB570, EB550, EB190, EB73, EB51, EB710, EB120, EB210.

Grade cells for the listed items are unmarked.

RNGN (solid): inserts

Solid

Dimension/data block 1.

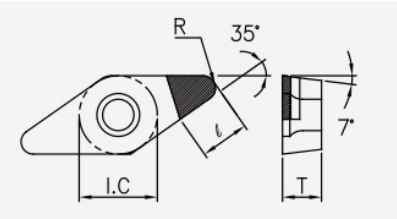
Metric ISO	Inch ISO	I.C. [mm]	T [mm]	R [mm]	Hole [mm]
RNGN 060300	RNGN 220	6.35	3.18		
RNGN 090300	RNGN 320	9.525	3.18		
RNGN 090400	RNGN 330	9.525	4.76		
RNGN 120300	RNGN 420	12.7	3.18		
RNGN 120400	RNGN 430	12.7	4.76		

Dimension/data block 2.

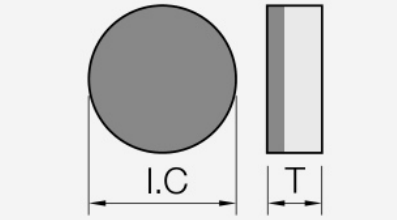
Metric ISO	Inch ISO	ℓ [mm]
RNGN 060300	RNGN 220	
RNGN 090300	RNGN 320	
RNGN 090400	RNGN 330	
RNGN 120300	RNGN 420	
RNGN 120400	RNGN 430	

Cutting material/grade overview: PCBN; EB28S, EB57S, EB55S, EB54X, EB50, EB1000, EB100X, HBN, HBN-R, HBN-N, HBN-W.

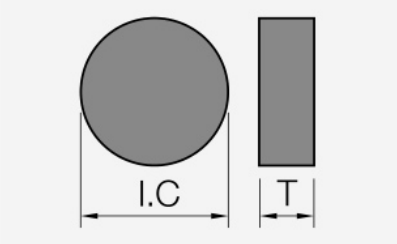
Grade cells for the listed items are unmarked.



VCGW (PCBN): insert dimension drawing with the corresponding geometry symbols.



RNGN (PCBN): insert dimension drawing with the corresponding geometry symbols.



RNGN (solid) (PCBN): insert dimension drawing with the corresponding geometry symbols.

RCGX: backed and solid dimensions

RCGX: backed and solid dimensions

Type	Metric ISO	Inch ISO	I.C [mm]	t [mm]	T [mm]
Carbide-backed	RCGX 060300	RCGX 220	6.35	3.18	3.32
Carbide-backed	RCGX 090300	RCGX 320	9.525	3.18	3.32
Carbide-backed	RCGX 090700	RCGX 3(-)	9.525	7.7	7.94
Carbide-backed	RCGX 120400	RCGX 430	12.7	4.76	4.94
Carbide-backed	RCGX 120700	RCGX 4(-)	12.7	7.7	7.94
Carbide-backed	RCGX 191000	RCGX (-)	19.05	9.77	10
Solid	RCGX 060300	RCGX 220	6.35	3.18	3.32
Solid	RCGX 090300	RCGX 320	9.525	3.18	3.32
Solid	RCGX 090700	RCGX 3(-)	9.525	7.7	7.94
Solid	RCGX 120400	RCGX 430	12.7	4.76	4.94
Solid	RCGX 120700	RCGX 4(-)	12.7	7.7	7.94
Solid	RCGX 191000	RCGX (-)	19.05	9.77	10

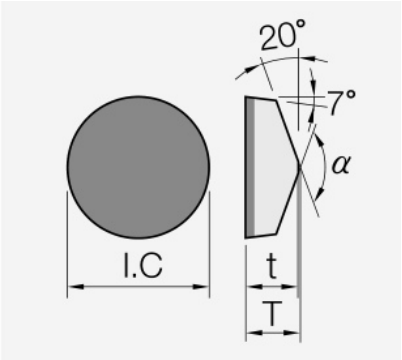
RCGX: angle α

Metric ISO	α (both types)
RCGX 060300	140°
RCGX 090300	140°
RCGX 090700	120°
RCGX 120400	140°
RCGX 120700	140°
RCGX 191000	120°

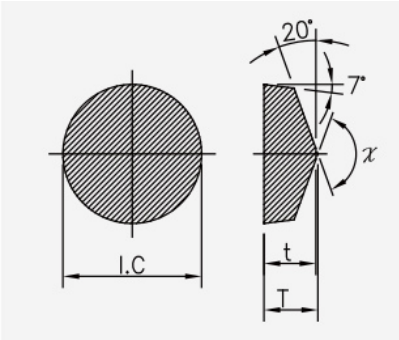
The corresponding drawings additionally show 20° and 7°. Carbide-backed: EB51, EB71, EB71X. Solid: HBN-R, HBN-N. Both source grade matrices have no individual cell markings.



RCGX: backed and solid dimensions: Tool view.



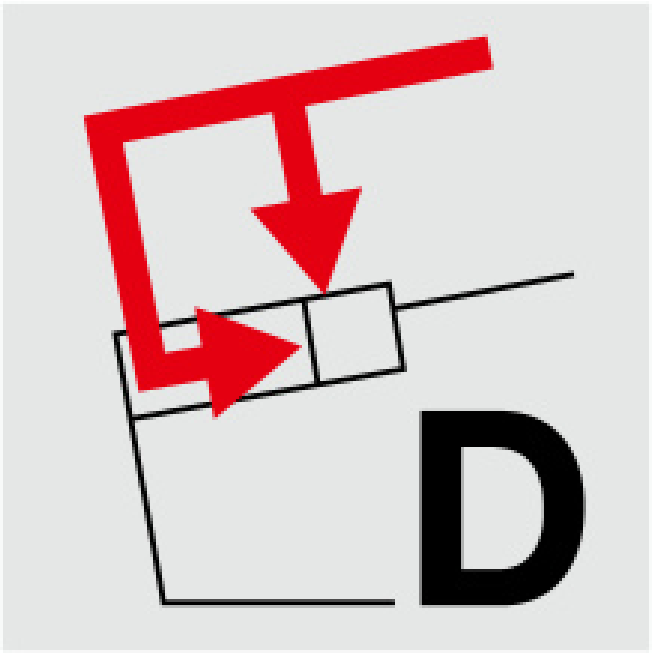
Insert: isolated dimensioned drawing with unchanged geometry symbols.



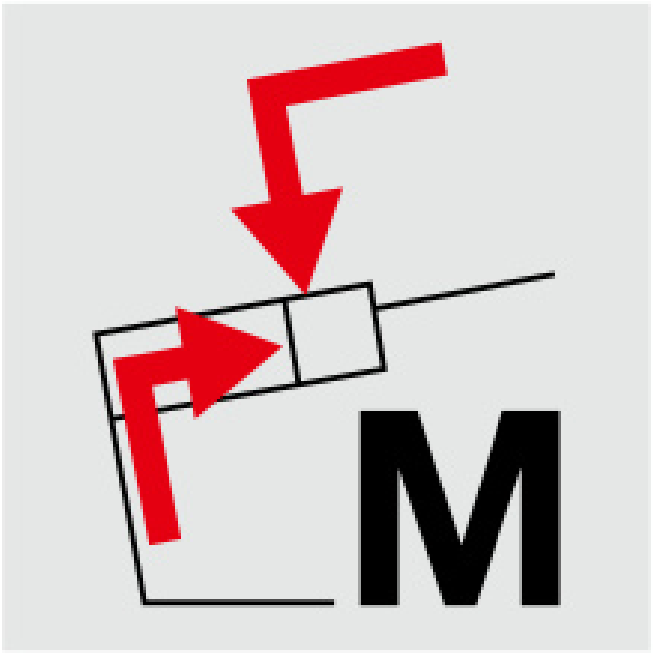
Insert: isolated dimensioned drawing with unchanged geometry symbols.

External holders: clamping systems

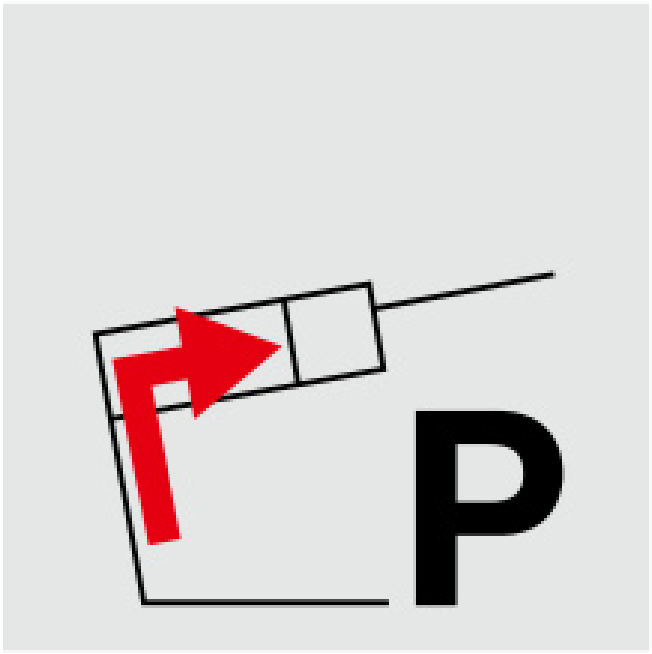
Four systems identify how the holder clamps the insert: D - double clamping, M - multi locking, P - lever locking and S - screw clamping. The diagrams show the respective force directions at the insert seat. Tool form, insert seating and required spare parts are specified separately for each type in the following drawings and tables.



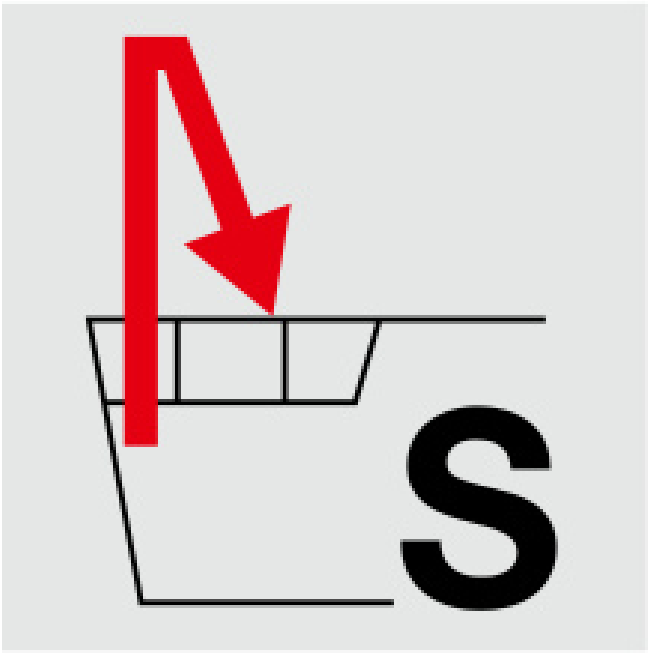
Clamping principle D: unchanged arrow directions.



Clamping principle M: unchanged arrow directions.



Clamping principle P: unchanged arrow directions.



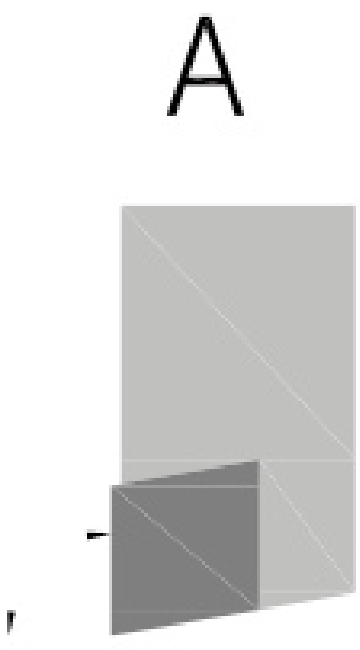
Clamping principle S: unchanged arrow directions.

External holders: designation and basic forms

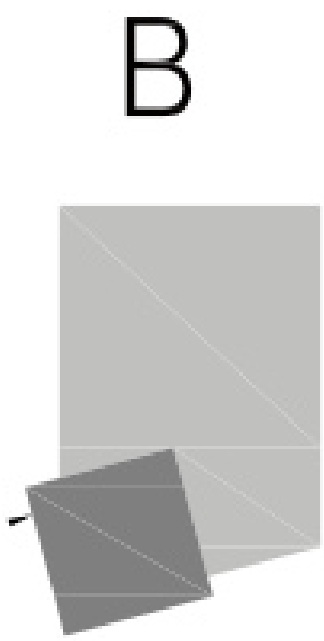
The example D S K D separates clamping system, insert shape, tool style and clearance angle. D identifies double clamping; S a square insert; K the illustrated holder style; and D a 15° clearance angle.

Insert shapes: C - 80° diamond; D - 55° diamond; E - 75° diamond; L - rectangle; R - round; S - square; T - triangle; V - 35° diamond; W - 80° trigon. Holder styles A, B, D, E, F, G, H, J, K, L, N, Q, R, S, T and V are illustrated with their respective positions and feed directions.

Clearance symbols: N = 0°, A = 3°, B = 5°, C = 7°, P = 11°, D = 15°, E = 20°, F = 25°. The shape and angle drawings complement the article designation rather than being inferred from a similar-looking tool.

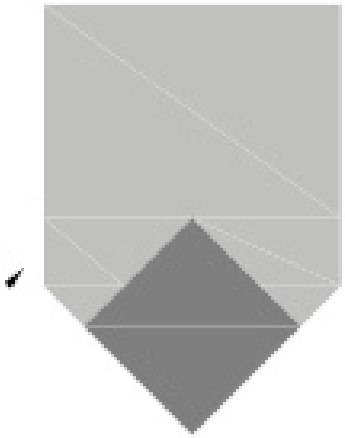


Holder style A: geometric view.



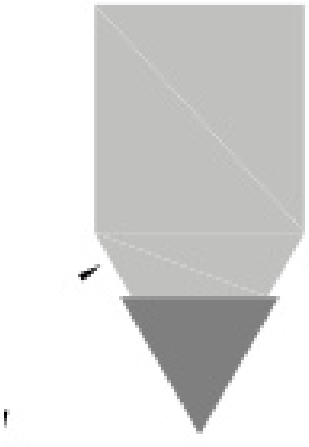
Holder style B: geometric view.

D



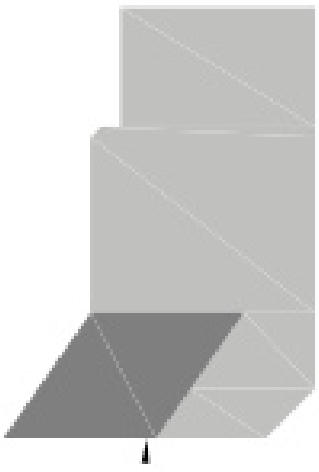
Holder style D: geometric view.

E



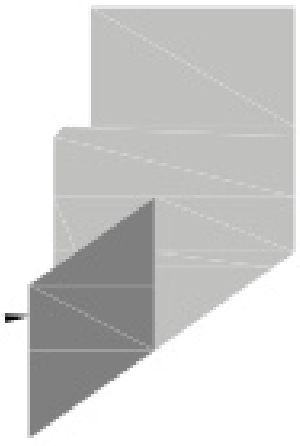
Holder style E: geometric view.

F



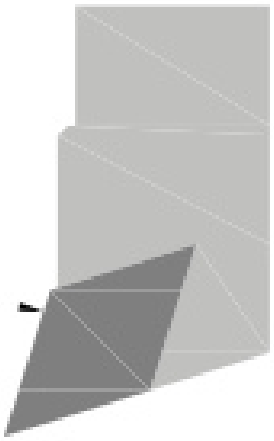
Holder style F: geometric view.

G



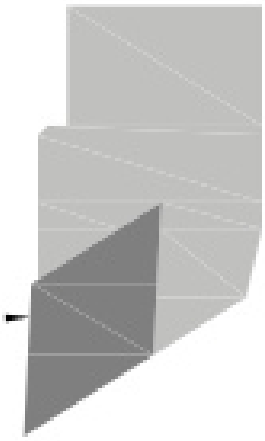
Holder style G: geometric view.

H



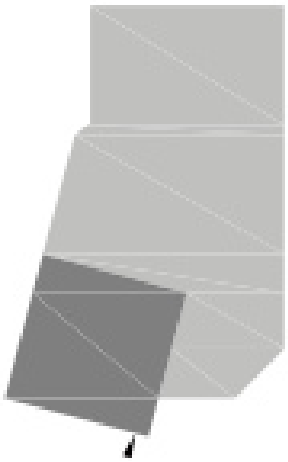
Holder style H: geometric view.

J



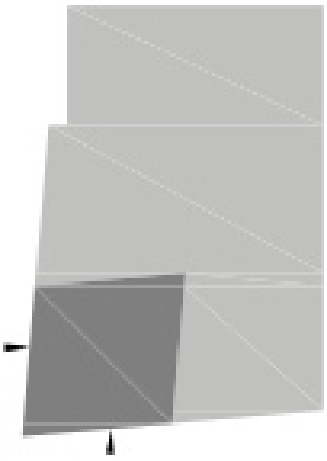
Holder style J: geometric view.

K



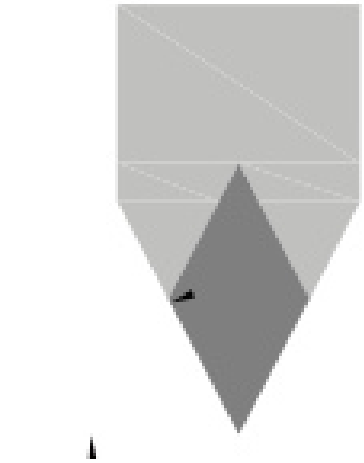
Holder style K: geometric view.

L



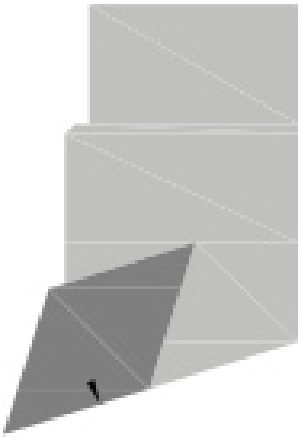
Holder style L: geometric view.

N



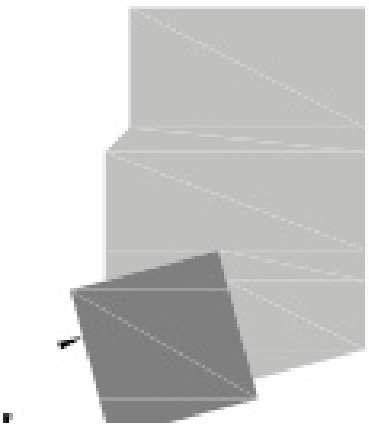
Holder style N: geometric view.

Q



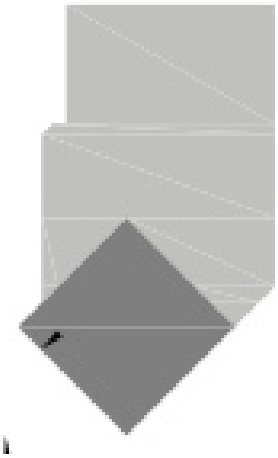
Holder style Q: geometric view.

R

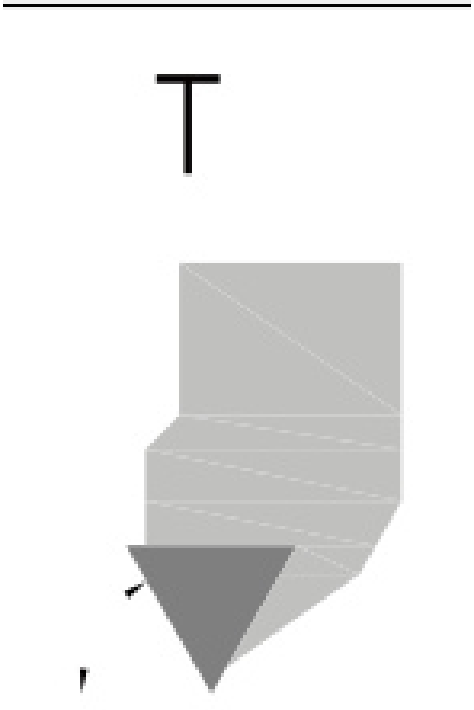


Holder style R: geometric view.

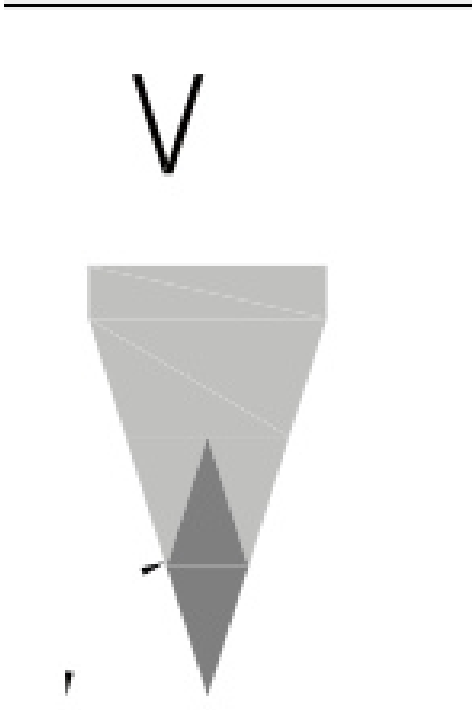
S



Holder style S: geometric view.



Holder style T: geometric view.



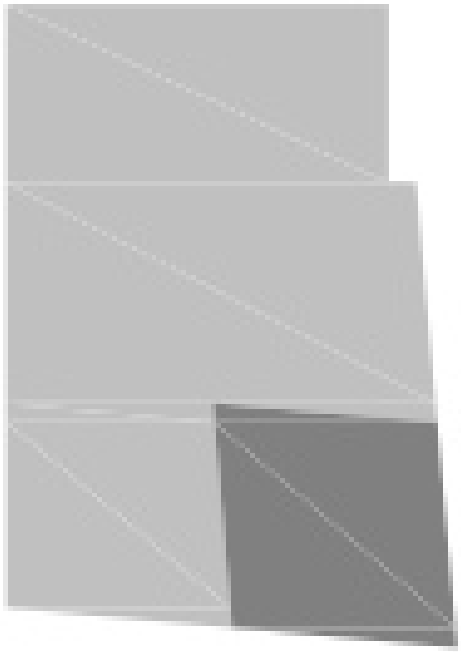
Holder style V: geometric view.

External holders: hand, shank dimensions and insert size

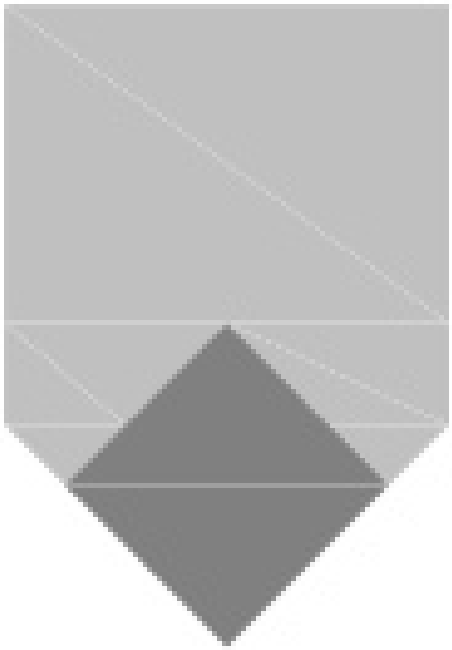
R identifies a right-hand, L a left-hand and N a neutral tool. In the continued example R 25 25 12, the two 25 values identify shank height H and width W in millimetres; 12 identifies the insert size.

Both H and W use symbols 12, 16, 20, 25, 32, 40 and 50 with the corresponding millimetre dimensions. The insert-size table maps shape-dependent codes to I.C. dimensions. These metric mappings also appear in the ISO insert designation section.

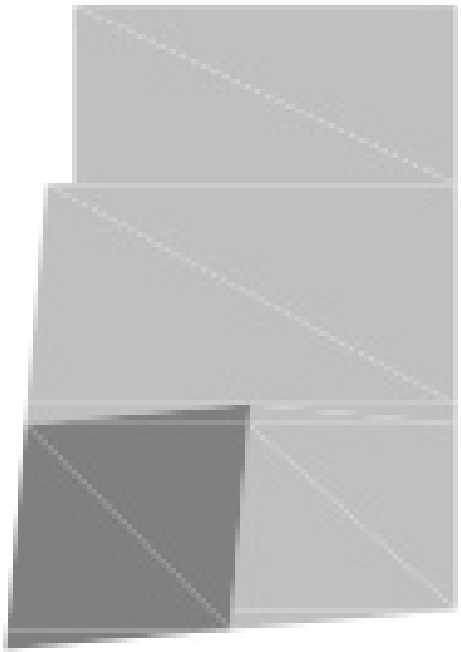
Metric shape sizes and I.C



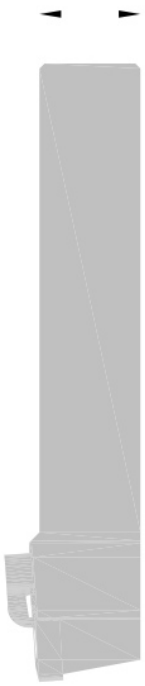
Cutting direction R: tool geometry.



Cutting direction N: tool geometry.

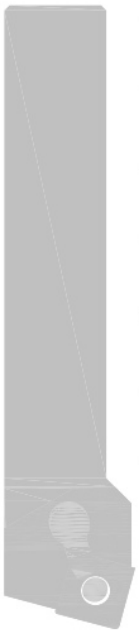


Cutting direction L: tool geometry.



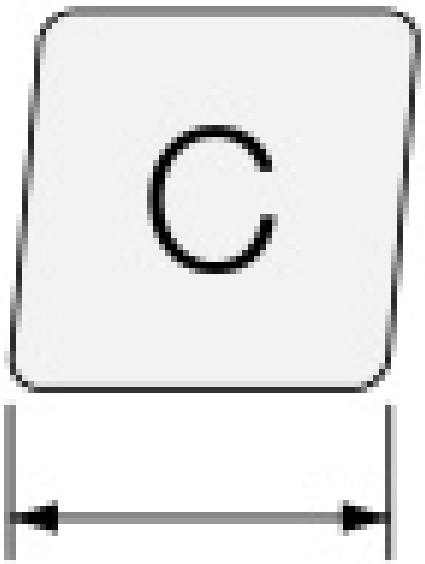
	H size (mm)
12	12
16	16
20	20
25	25
32	32
40	40
50	50

Turning holder: geometry for the specified dimension reference.

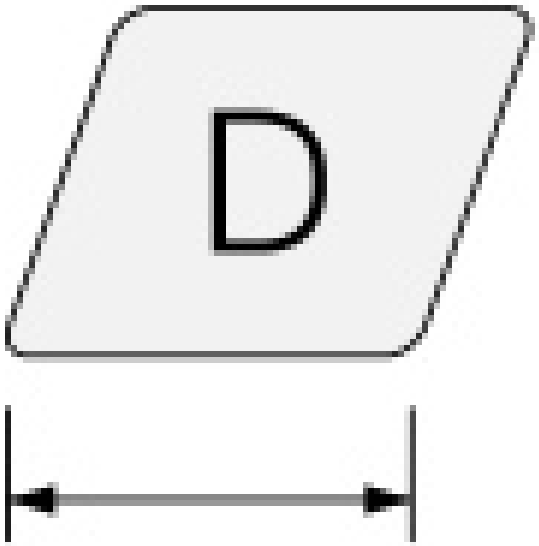


	W (mm)
12	12
16	16
20	20
25	25
32	32
40	40
50	50

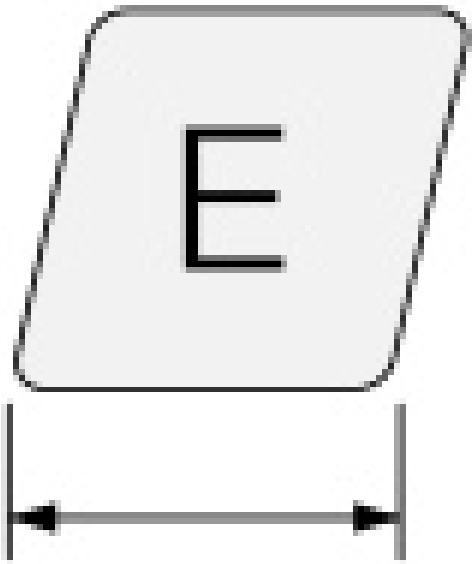
Turning holder: geometry for the specified dimension reference.



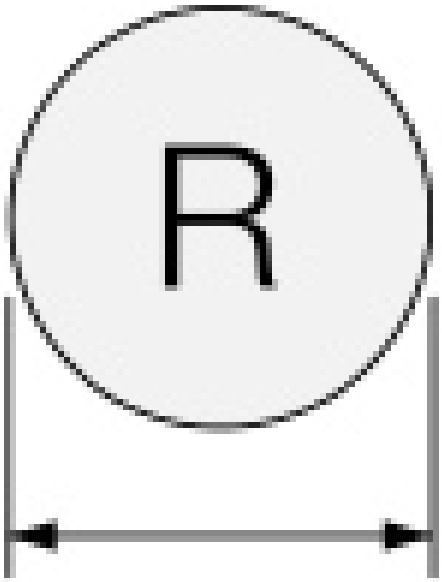
Insert shape C: cutting-edge length reference.



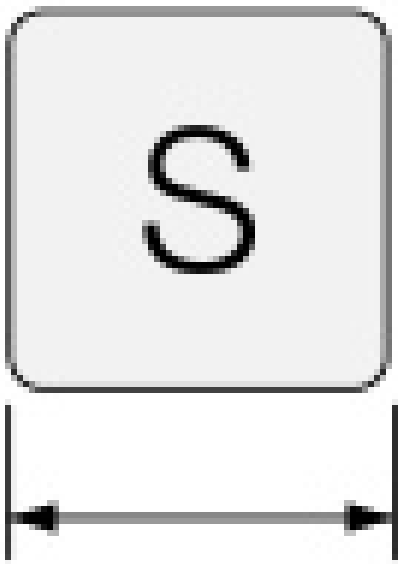
Insert shape D: cutting-edge length reference.



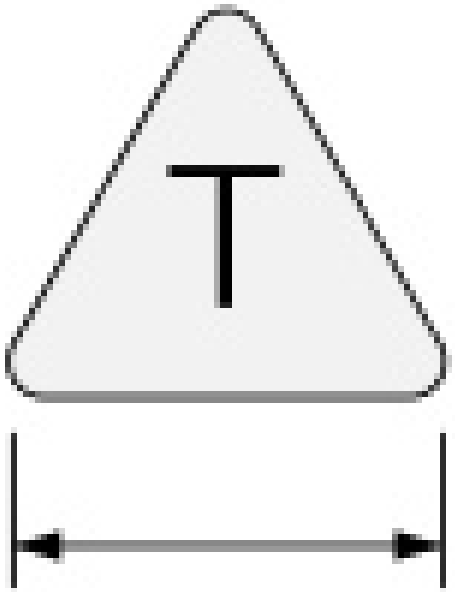
Insert shape E: cutting-edge length reference.



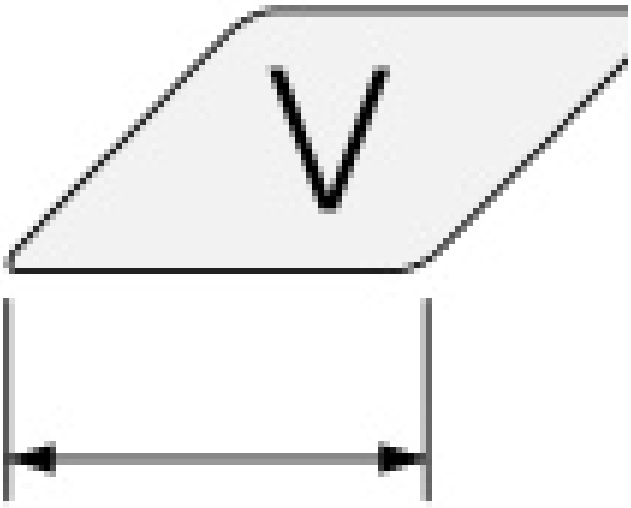
Insert shape R: cutting-edge length reference.



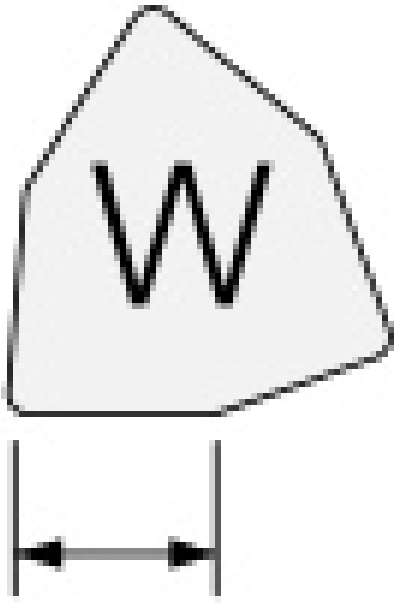
Insert shape S: cutting-edge length reference.



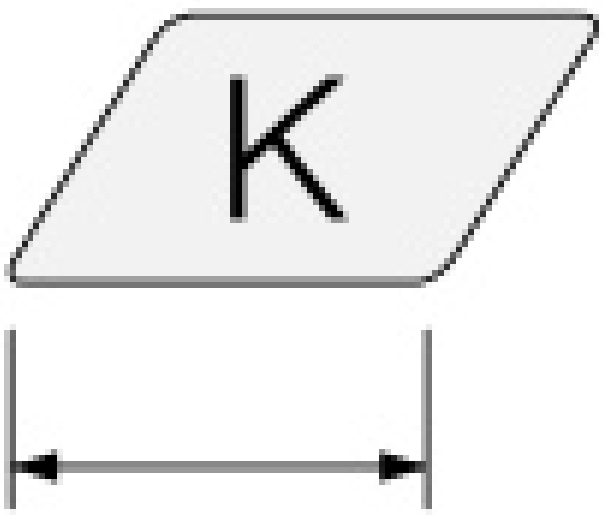
Insert shape T: cutting-edge length reference.



Insert shape V: cutting-edge length reference.



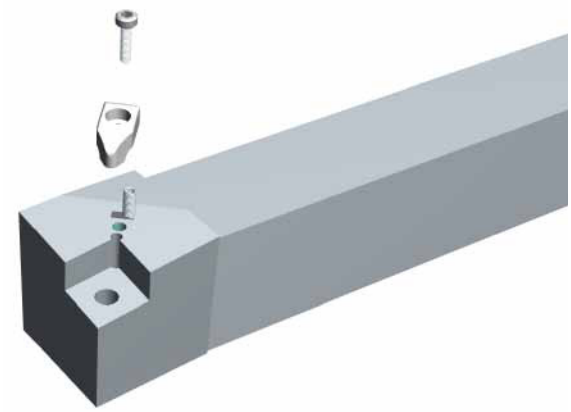
Insert shape W: cutting-edge length reference.



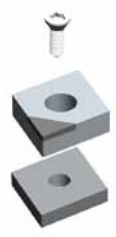
Insert shape K: cutting-edge length reference.

Double and lever clamping: assembly

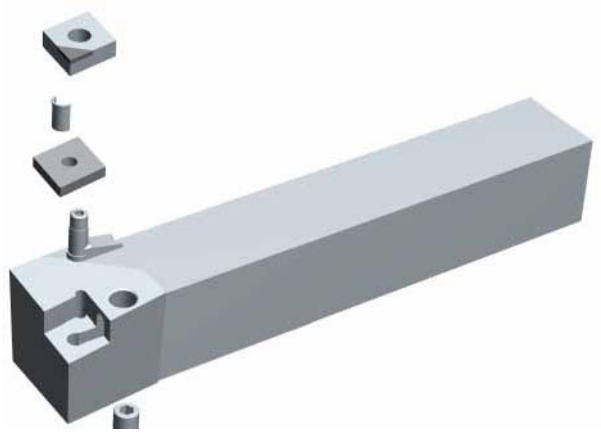
The double-clamping exploded view shows the insert screw, insert and shim at the seat, together with the clamp, clamp screw and spring. The lever-locking view separates insert, shim pin, shim, lever and screw. Callout targets remain attached to the corresponding components; spare-part numbers follow in the type tables.



Double and lever clamping: assembly: Tool view.



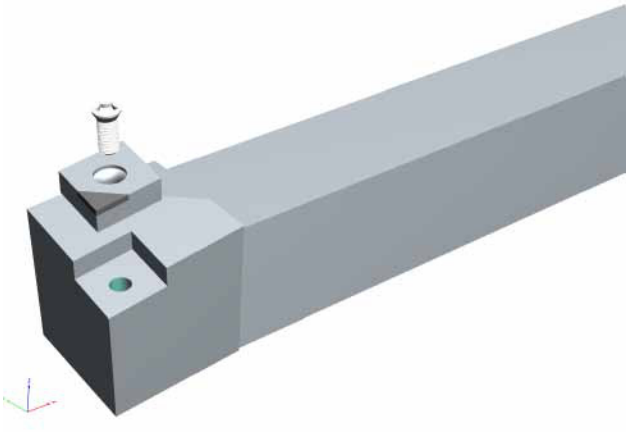
Double and lever clamping: assembly: Tool view.



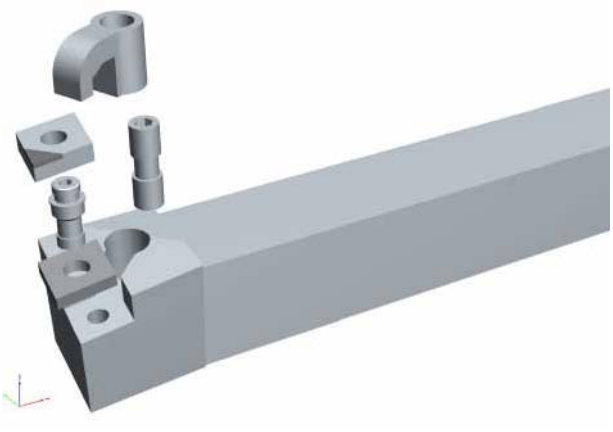
Double and lever clamping: assembly: Tool view.

Multi locking and screw clamping: assembly

The multi-locking view identifies clamp, screw, insert, shim pin and shim. The screw-clamping view shows the screw and insert at the holder seat. The illustrations explain assembly; the required spare parts are determined by the individual article row.



Multi locking and screw clamping: assembly: Tool view.



Multi locking and screw clamping: assembly: Tool view.

External holders: positions and selection I

The overview maps the illustrated cutting profiles and approach angles to clamping systems D, P, M and S. An empty field means that this overview lists no holder at that position. Article references lead to the corresponding dimensional tables; the drawn profiles and feed arrows remain part of the selection guide.

Dimension/data block 1.

Clamping	75° SN..	75° SC..	90° TN..	90° TC..	95° CN..
D			DTFN:77		DCLN:75
P			PTFN:81		PCLN:79
M	MSKN:119		MTFN:86		MCCN:83
S		SSKC:91		STFC:92	

Dimension/data block 2.

Clamping	95° WN..
D	DWLN:78
P	PWLN:82
M	MWLN:88
S	

Dimension/data block 1.

Clamping	90° WC..	107.5° SC..	117.5° VN..	RC.. I	RC.. II
D					
P					
M		MDQN:83	MVQN:87		
S				SRCG:90	SRDCN:90

Dimension/data block 2.

Clamping	45° SN..
D	DSDNN:76
P	PSDNN:80
M	
S	

External holders: positions and selection II

The second overview adds positions for triangular, square and diamond inserts. Different approach angles and clamping systems remain separate. Select the named holder type and its drawing, then the compatible insert group and specified dimensions.

Dimension/data block 1.

Clamping	60° TC..	75° SN..	75° SC..	93° TN..	90° TN..
D		DSBN:76			DTGN:77
P		PSBN:80			PTGN:82
M		MSRN:85		MTJN:86	
S	STTC:93		SSBC:91		

Dimension/data block 2.

Clamping	90° TC..
D	
P	
M	
S	STGC:93

Dimension/data block 1.

Clamping	45° SN..	75° SN..	93° DN..	93° VN..	62.5° DN..
D	DSSN:77	DSKN:76	DDJN:75	DVJN:78	
P	PSSN:81		PDJN:79		PDMN:80
M	MSSN:85	MSKN:84	MDJN:84	MVJN:87	MDNNN:61
S					

Dimension/data block 2.

Clamping	72.5° VN..
D	DVWNN:78
P	
M	MVWNN:87
S	

External holder programme

The programme covers double-clamping, lever-locking, multi-locking and screw-clamping holders. Each group specifies insert compatibility, article numbers, dimensions H/W/L/S/h/ℓ and corresponding spare parts where that type provides these fields. All dimensions in the following external-holder tables are in millimetres. Empty cells and dashes remain distinct as a blank source cell and a printed dash; neither is treated as a stock promise.



External holder programme: Tool view.

DCLN / DDJN

DCLN: holder and dimensions

Dimensions in mm. Tool approach: 95°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-DCLN R/L 2020-12	CN□□1204□□	20	20	125	25
EH-DCLN R/L 2525-12	CN□□1204□□	25	25	150	32
EH-DCLN R/L 3225-12	CN□□1204□□	32	25	170	32
EH-DCLN R/L 3232-12	CN□□1204□□	32	32	170	40

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-DCLN R/L 2020-12	CN□□1204□□	20	30
EH-DCLN R/L 2525-12	CN□□1204□□	25	30
EH-DCLN R/L 3225-12	CN□□1204□□	32	30
EH-DCLN R/L 3232-12	CN□□1204□□	32	30

Spare parts

Dimension/data block 1.

Item	Clamp	Clamp screw	Shim	Shim screw	Spring
EH-DCLN R/L 2020-12	DCL4	DCS0518	DSC44	DSCR0410	DSPR0714
EH-DCLN R/L 2525-12	DCL4	DCS0518	DSC44	DSCR0410	DSPR0714
EH-DCLN R/L 3225-12	DCL4	DCS0518	DSC44	DSCR0410	DSPR0714
EH-DCLN R/L 3232-12	DCL4	DCS0518	DSC44	DSCR0410	DSPR0714

Dimension/data block 2.

Item	Wrench
EH-DCLN R/L 2020-12	W30P
EH-DCLN R/L 2525-12	W30P
EH-DCLN R/L 3225-12	W30P
EH-DCLN R/L 3232-12	W30P

DDJN: holder and dimensions

Dimensions in mm. Tool approach: 93°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-DDJN R/L 2020-11	DN□□1104□□	20	20	125	25
EH-DDJN R/L 2525-11	DN□□1104□□	25	25	150	32
EH-DDJN R/L 3225-11	DN□□1104□□	32	25	170	32
EH-DDJN R/L 3232-11	DN□□1104□□	32	32	170	40

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-DDJN R/L 2020-11	DN□□1104□□	20	30
EH-DDJN R/L 2525-11	DN□□1104□□	25	30
EH-DDJN R/L 3225-11	DN□□1104□□	32	30
EH-DDJN R/L 3232-11	DN□□1104□□	32	30

Spare parts

Dimension/data block 1.

Item	Clamp	Clamp screw	Shim	Shim screw	Spring
EH-DDJN R/L 2020-11	DCL3	DCS0415	DSD32	DSCR0307	DSPR0510
EH-DDJN R/L 2525-11	DCL3	DCS0415	DSD32	DSCR0307	DSPR0510
EH-DDJN R/L 3225-11	DCL3	DCS0415	DSD32	DSCR0307	DSPR0510
EH-DDJN R/L 3232-11	DCL3	DCS0415	DSD32	DSCR0307	DSPR0510

Dimension/data block 2.

Item	Wrench
EH-DDJN R/L 2020-11	W25P
EH-DDJN R/L 2525-11	W25P
EH-DDJN R/L 3225-11	W25P
EH-DDJN R/L 3232-11	W25P

DDJN: holder and dimensions

Dimensions in mm. Tool approach: 93°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-DDJN R/L 2020-15-3	DN□□1504□□	20	20	125	25
EH-DDJN R/L 2525-15-3	DN□□1504□□	25	25	150	32
EH-DDJN R/L 3232-15-3	DN□□1504□□	32	32	170	40

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-DDJN R/L 2020-15-3	DN□□1504□□	20	35
EH-DDJN R/L 2525-15-3	DN□□1504□□	25	35
EH-DDJN R/L 3232-15-3	DN□□1504□□	32	35

Spare parts

Dimension/data block 1.

Item	Clamp	Clamp screw	Shim	Shim screw	Spring
EH-DDJN R/L 2020-15-3	DCL4	DCS0518	DSD44	DSCR0410	DSPR0714
EH-DDJN R/L 2525-15-3	DCL4	DCS0518	DSD44	DSCR0410	DSPR0714
EH-DDJN R/L 3232-15-3	DCL4	DCS0518	DSD44	DSCR0410	DSPR0714

Dimension/data block 2.

Item	Wrench
EH-DDJN R/L 2020-15-3	W30P
EH-DDJN R/L 2525-15-3	W30P
EH-DDJN R/L 3232-15-3	W30P

DDJN: holder and dimensions

Dimensions in mm. Tool approach: 93°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-DDJN R/L 2020-15	DN□□1506□□	20	20	125	25
EH-DDJN R/L 2525-15	DN□□1506□□	25	25	150	32
EH-DDJN R/L 3225-15	DN□□1506□□	32	25	170	32
EH-DDJN R/L 3232-15	DN□□1506□□	32	32	170	40

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-DDJN R/L 2020-15	DN□□1506□□	20	35
EH-DDJN R/L 2525-15	DN□□1506□□	25	35
EH-DDJN R/L 3225-15	DN□□1506□□	32	35
EH-DDJN R/L 3232-15	DN□□1506□□	32	35

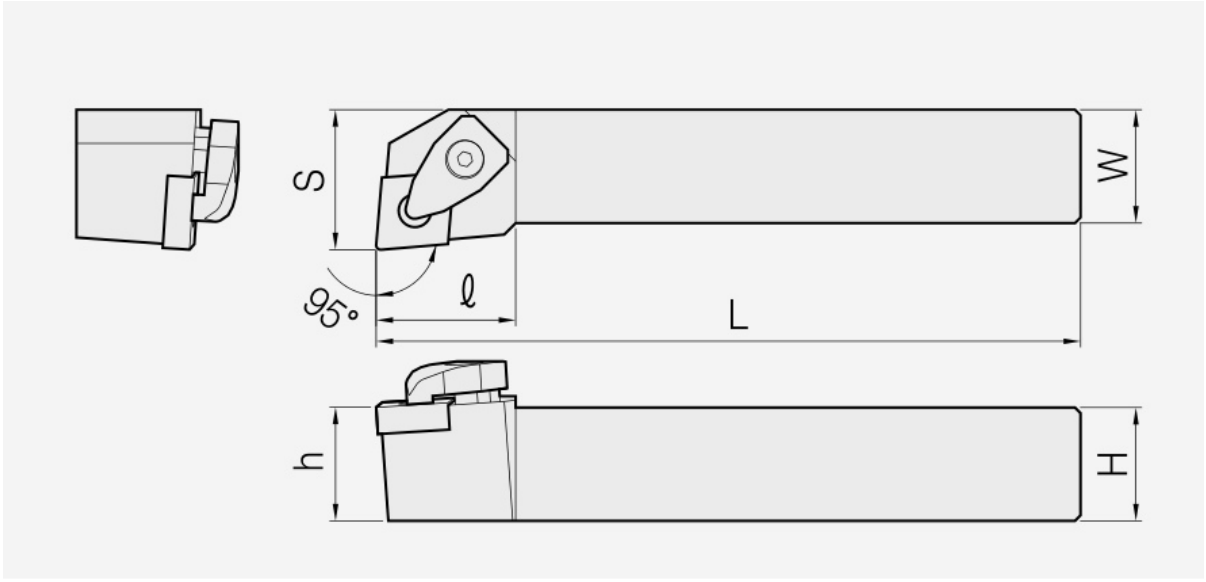
Spare parts

Dimension/data block 1.

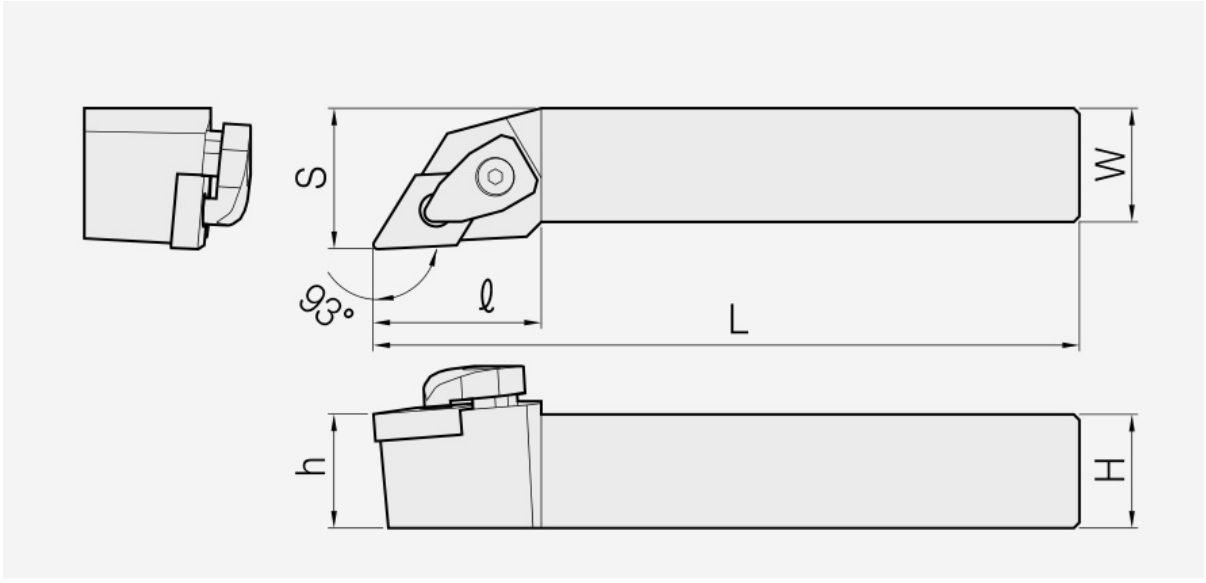
Item	Clamp	Clamp screw	Shim	Shim screw	Spring
EH-DDJN R/L 2020-15	DCL4	DCS0518	DSD43	DSCR0410	DSPR0714
EH-DDJN R/L 2525-15	DCL4	DCS0518	DSD43	DSCR0410	DSPR0714
EH-DDJN R/L 3225-15	DCL4	DCS0518	DSD43	DSCR0410	DSPR0714
EH-DDJN R/L 3232-15	DCL4	DCS0518	DSD43	DSCR0410	DSPR0714

Dimension/data block 2.

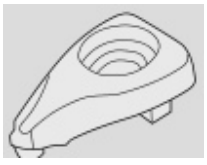
Item	Wrench
EH-DDJN R/L 2020-15	W30P
EH-DDJN R/L 2525-15	W30P
EH-DDJN R/L 3225-15	W30P
EH-DDJN R/L 3232-15	W30P



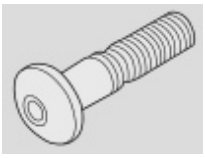
DCLN: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.



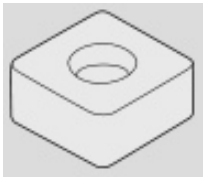
DDJN: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.



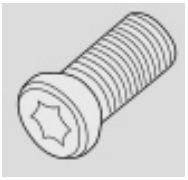
DCLN: Clamp - spare-part form.



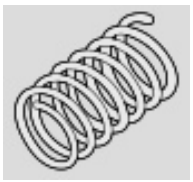
DCLN: Clamp screw - spare-part form.



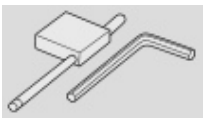
DCLN: Shim - spare-part form.



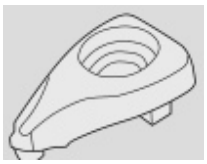
DCLN: Shim screw - spare-part form.



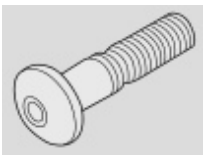
DCLN: Spring - spare-part form.



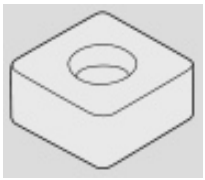
DCLN: Wrench - spare-part form.



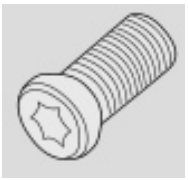
DDJN: Clamp - spare-part form.



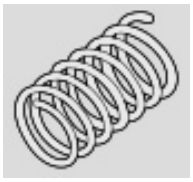
DDJN: Clamp screw - spare-part form.



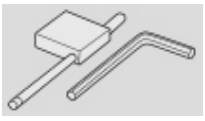
DDJN: Shim - spare-part form.



DDJN: Shim screw - spare-part form.



DDJN: Spring - spare-part form.



DDJN: Wrench - spare-part form.

DSBN / DSDNN / DSKN

DSBN: holder and dimensions

Dimensions in mm. Tool approach: 75°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-DSBN R/L 2020-09	SN□□0903□□	20	20	125	17
EH-DSBN R/L 2525-09	SN□□0903□□	25	25	150	22

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-DSBN R/L 2020-09	SN□□0903□□	20	25
EH-DSBN R/L 2525-09	SN□□0903□□	25	25

Spare parts

Dimension/data block 1.

Item	Clamp	Clamp screw	Shim	Shim screw	Spring
EH-DSBN R/L 2020-09	DCL3	DCS0415	DSS32	DSCR0307	DSPR0510
EH-DSBN R/L 2525-09	DCL3	DCS0415	DSS32	DSCR0307	DSPR0510

Dimension/data block 2.

Item	Wrench
EH-DSBN R/L 2020-09	W25P
EH-DSBN R/L 2525-09	W25P

DSBN: holder and dimensions

Dimensions in mm. Tool approach: 75°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-DSBN R/L 2020-12	SN□□1204□□	20	20	125	17
EH-DSBN R/L 2525-12	SN□□1204□□	25	25	150	22
EH-DSBN R/L 3225-12	SN□□1204□□	32	25	170	22
EH-DSBN R/L 3232-12	SN□□1204□□	32	32	170	27

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-DSBN R/L 2020-12	SN□□1204□□	20	32
EH-DSBN R/L 2525-12	SN□□1204□□	25	32
EH-DSBN R/L 3225-12	SN□□1204□□	32	32
EH-DSBN R/L 3232-12	SN□□1204□□	32	32

Spare parts

Dimension/data block 1.

Item	Clamp	Clamp screw	Shim	Shim screw	Spring
EH-DSBN R/L 2020-12	DCL4	DCS0518	DSS44	DSCR0410	DSPR0714
EH-DSBN R/L 2525-12	DCL4	DCS0518	DSS44	DSCR0410	DSPR0714
EH-DSBN R/L 3225-12	DCL4	DCS0518	DSS44	DSCR0410	DSPR0714
EH-DSBN R/L 3232-12	DCL4	DCS0518	DSS44	DSCR0410	DSPR0714

Dimension/data block 2.

Item	Wrench
EH-DSBN R/L 2020-12	W30P
EH-DSBN R/L 2525-12	W30P
EH-DSBN R/L 3225-12	W30P
EH-DSBN R/L 3232-12	W30P

DSDNN: holder and dimensions

Dimensions in mm. Tool approach: 45°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-DSDNN 2020-09	SN□□0903□□	20	20	125	10

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-DSDNN 2020-09	SN□□0903□□	20	26.5

Spare parts

Dimension/data block 1.

Item	Clamp	Clamp screw	Shim	Shim screw	Spring
EH-DSDNN 2020-09	DCL3	DCS0415	DSS32	DSCR0307	DSPR0510

Dimension/data block 2.

Item	Wrench
EH-DSDNN 2020-09	W25P

DSDNN: holder and dimensions

Dimensions in mm. Tool approach: 45°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-DSDNN 2020-12	SN□□1204□□	20	20	125	10
EH-DSDNN 2525-12	SN□□1204□□	25	25	150	12.5
EH-DSDNN 3225-12	SN□□1204□□	32	25	170	12.5
EH-DSDNN 3232-12	SN□□1204□□	32	32	170	16

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-DSDNN 2020-12	SN□□1204□□	20	33
EH-DSDNN 2525-12	SN□□1204□□	25	33
EH-DSDNN 3225-12	SN□□1204□□	32	33
EH-DSDNN 3232-12	SN□□1204□□	32	33

Spare parts

Dimension/data block 1.

Item	Clamp	Clamp screw	Shim	Shim screw	Spring
EH-DSDNN 2020-12	DCL4	DCS0518	DSS44	DSCR0410	DSPR0714
EH-DSDNN 2525-12	DCL4	DCS0518	DSS44	DSCR0410	DSPR0714
EH-DSDNN 3225-12	DCL4	DCS0518	DSS44	DSCR0410	DSPR0714
EH-DSDNN 3232-12	DCL4	DCS0518	DSS44	DSCR0410	DSPR0714

Dimension/data block 2.

Item	Wrench
EH-DSDNN 2020-12	W30P
EH-DSDNN 2525-12	W30P
EH-DSDNN 3225-12	W30P
EH-DSDNN 3232-12	W30P

DSKN: holder and dimensions

Dimensions in mm. Tool approach: 75°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-DSKN R/L 2020-09	SN□□0903□□	20	20	125	25

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-DSKN R/L 2020-09	SN□□0903□□	20	20

Spare parts

Dimension/data block 1.

Item	Clamp	Clamp screw	Shim	Shim screw	Spring
EH-DSKN R/L 2020-09	DCL3	DCS0415	DSS32	DSCR0307	DSPR0510

Dimension/data block 2.

Item	Wrench
EH-DSKN R/L 2020-09	W25P

DSKN: holder and dimensions

Dimensions in mm. Tool approach: 75°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-DSKN R/L 2020-12	SN□□1204□□	20	20	125	25
EH-DSKN R/L 2525-12	SN□□1204□□	25	25	150	32
EH-DSKN R/L 3232-12	SN□□1204□□	32	32	170	40

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-DSKN R/L 2020-12	SN□□1204□□	20	23
EH-DSKN R/L 2525-12	SN□□1204□□	25	23
EH-DSKN R/L 3232-12	SN□□1204□□	32	23

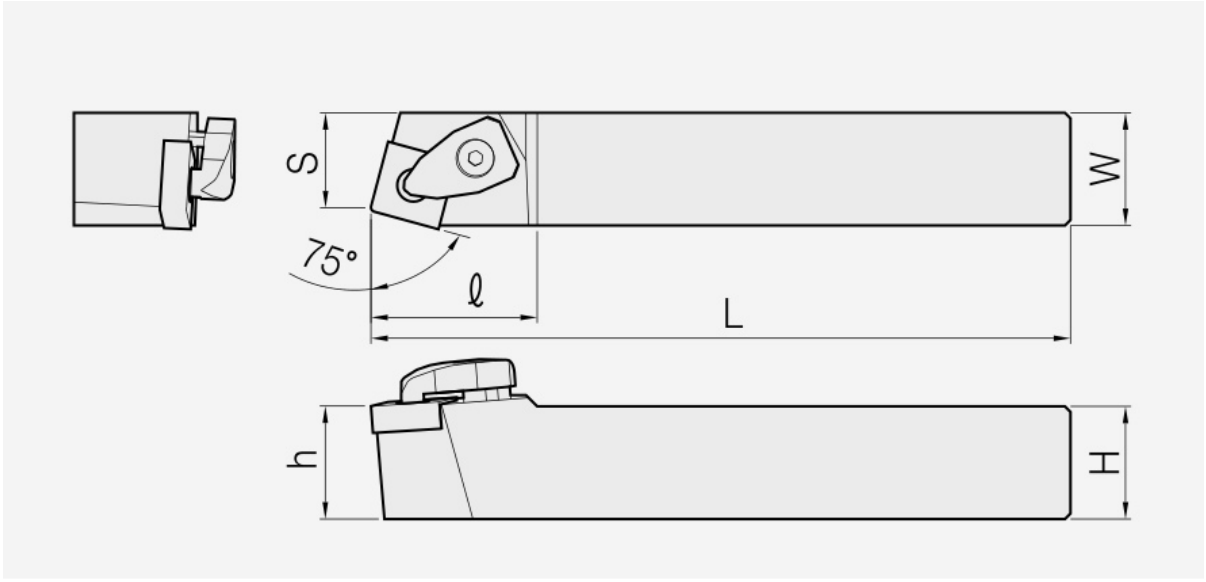
Spare parts

Dimension/data block 1.

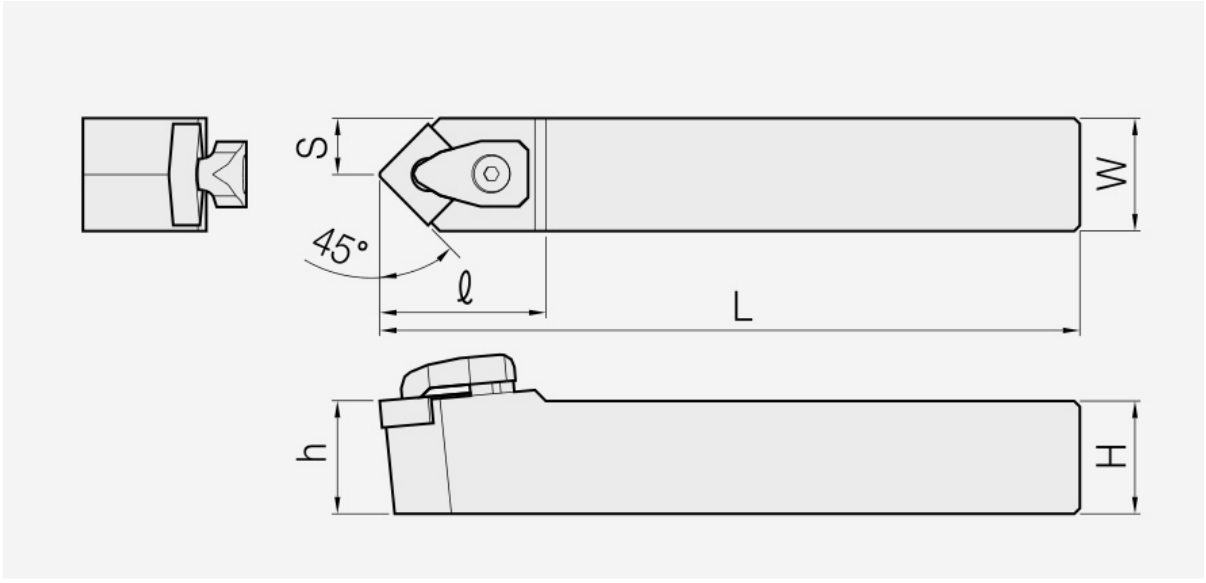
Item	Clamp	Clamp screw	Shim	Shim screw	Spring
EH-DSKN R/L 2020-12	DCL4	DCS0518	DSS44	DSCR0410	DSPR0714
EH-DSKN R/L 2525-12	DCL4	DCS0518	DSS44	DSCR0410	DSPR0714
EH-DSKN R/L 3232-12	DCL4	DCS0518	DSS44	DSCR0410	DSPR0714

Dimension/data block 2.

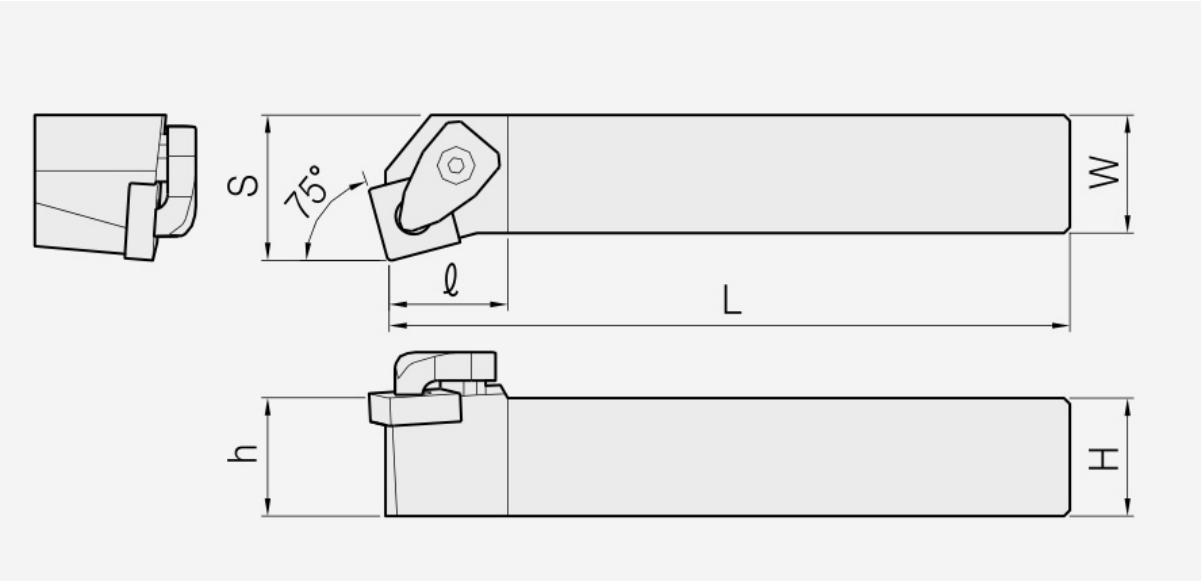
Item	Wrench
EH-DSKN R/L 2020-12	W30P
EH-DSKN R/L 2525-12	W30P
EH-DSKN R/L 3232-12	W30P



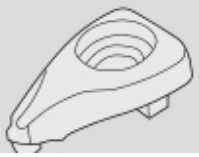
Tool: isolated dimensioned drawing; views and dimension references unchanged.



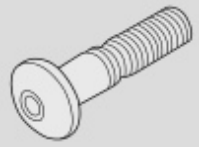
Tool: isolated dimensioned drawing; views and dimension references unchanged.



Tool: isolated dimensioned drawing; views and dimension references unchanged.



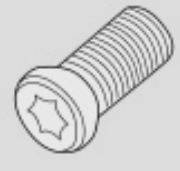
DSBN: Clamp - spare-part form.



DSBN: Clamp screw - spare-part form.



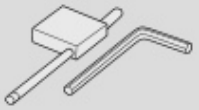
DSBN: Shim - spare-part form.



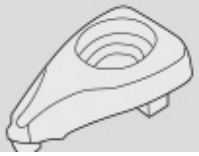
DSBN: Shim screw - spare-part form.



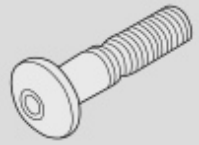
DSBN: Spring - spare-part form.



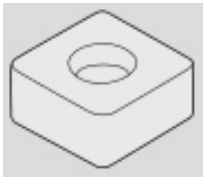
DSBN: Wrench - spare-part form.



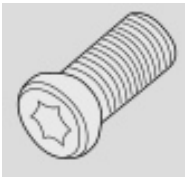
DSBN: Clamp - spare-part form.



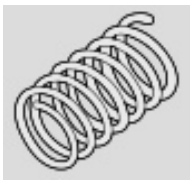
DSBN: Clamp screw - spare-part form.



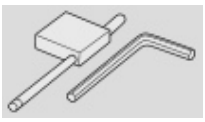
DSBN: Shim - spare-part form.



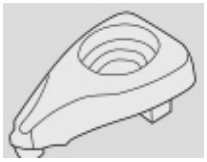
DSBN: Shim screw - spare-part form.



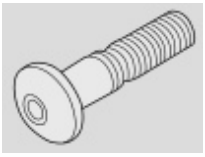
DSBN: Spring - spare-part form.



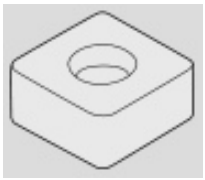
DSBN: Wrench - spare-part form.



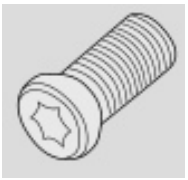
DSDNN: Clamp - spare-part form.



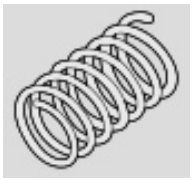
DSDNN: Clamp screw - spare-part form.



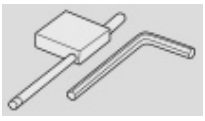
DSDNN: Shim - spare-part form.



DSDNN: Shim screw - spare-part form.



DSDNN: Spring - spare-part form.



DSDNN: Wrench - spare-part form.

DSSN / DTFN / DTGN

DSSN: holder and dimensions

Dimensions in mm. Tool approach: 45°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-DSSN R/L 2020-09	SN□□0903□□	20	20	125	25

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-DSSN R/L 2020-09	SN□□0903□□	20	28.5

Spare parts

Dimension/data block 1.

Item	Clamp	Clamp screw	Shim	Shim screw	Spring
EH-DSSN R/L 2020-09	DCL3	DCS0415	DSS32	DSCR0307	DSPR0510

Dimension/data block 2.

Item	Wrench
EH-DSSN R/L 2020-09	W25P

DSSN: holder and dimensions

Dimensions in mm. Tool approach: 45°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-DSSN R/L 2020-12	SN□□1204□□	20	20	125	25
EH-DSSN R/L 2525-12	SN□□1204□□	25	25	150	32
EH-DSSN R/L 3225-12	SN□□1204□□	32	25	170	32
EH-DSSN R/L 3232-12	SN□□1204□□	32	32	170	40

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-DSSN R/L 2020-12	SN□□1204□□	20	35
EH-DSSN R/L 2525-12	SN□□1204□□	25	35
EH-DSSN R/L 3225-12	SN□□1204□□	32	35
EH-DSSN R/L 3232-12	SN□□1204□□	32	35

Spare parts

Dimension/data block 1.

Item	Clamp	Clamp screw	Shim	Shim screw	Spring
EH-DSSN R/L 2020-12	DCL4	DCS0518	DSS44	DSCR0410	DSPR0714
EH-DSSN R/L 2525-12	DCL4	DCS0518	DSS44	DSCR0410	DSPR0714
EH-DSSN R/L 3225-12	DCL4	DCS0518	DSS44	DSCR0410	DSPR0714
EH-DSSN R/L 3232-12	DCL4	DCS0518	DSS44	DSCR0410	DSPR0714

Dimension/data block 2.

Item	Wrench
EH-DSSN R/L 2020-12	W30P
EH-DSSN R/L 2525-12	W30P
EH-DSSN R/L 3225-12	W30P
EH-DSSN R/L 3232-12	W30P

DTFN: holder and dimensions

Dimensions in mm. Tool approach: 90°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-DTFN R/L 2020-16	TN□□1604□□	20	20	125	25
EH-DTFN R/L 2525-16	TN□□1604□□	25	25	150	32
EH-DTFN R/L 3232-16	TN□□1604□□	32	32	170	40

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-DTFN R/L 2020-16	TN□□1604□□	20	24.5
EH-DTFN R/L 2525-16	TN□□1604□□	25	24.5
EH-DTFN R/L 3232-16	TN□□1604□□	32	23.5

Spare parts

Dimension/data block 1.

Item	Clamp	Clamp screw	Shim	Shim screw	Spring
EH-DTFN R/L 2020-16	DCL3	DCS0415	DST32	DSCR0307	DSPR0510
EH-DTFN R/L 2525-16	DCL3	DCS0415	DST32	DSCR0307	DSPR0510
EH-DTFN R/L 3232-16	DCL3	DCS0415	DST32	DSCR0307	DSPR0510

Dimension/data block 2.

Item	Wrench
EH-DTFN R/L 2020-16	W25P
EH-DTFN R/L 2525-16	W25P
EH-DTFN R/L 3232-16	W25P

DTFN: holder and dimensions

Dimensions in mm. Tool approach: 90°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-DTFN R/L 2525-22	TN□□2204□□	25	25	150	32
EH-DTFN R/L 3225-22	TN□□2204□□	32	25	170	32
EH-DTFN R/L 3232-22	TN□□2204□□	32	32	170	40

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-DTFN R/L 2525-22	TN□□2204□□	25	33
EH-DTFN R/L 3225-22	TN□□2204□□	32	33
EH-DTFN R/L 3232-22	TN□□2204□□	32	33

Spare parts

Dimension/data block 1.

Item	Clamp	Clamp screw	Shim	Shim screw	Spring
EH-DTFN R/L 2525-22	DCL4	DCS0518	DST44	DSCR0410	DSPR0714
EH-DTFN R/L 3225-22	DCL4	DCS0518	DST44	DSCR0410	DSPR0714
EH-DTFN R/L 3232-22	DCL4	DCS0518	DST44	DSCR0410	DSPR0714

Dimension/data block 2.

Item	Wrench
EH-DTFN R/L 2525-22	W30P
EH-DTFN R/L 3225-22	W30P
EH-DTFN R/L 3232-22	W30P

DTGN: holder and dimensions

Dimensions in mm. Tool approach: 90°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-DTGN R/L 2020-16	TN□□1604□□	20	20	125	25
EH-DTGN R/L 2525-16	TN□□1604□□	25	25	150	32
EH-DTGN R/L 3232-16	TN□□1604□□	32	32	170	40

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-DTGN R/L 2020-16	TN□□1604□□	20	24.5
EH-DTGN R/L 2525-16	TN□□1604□□	25	24.5
EH-DTGN R/L 3232-16	TN□□1604□□	32	23.5

Spare parts

Dimension/data block 1.

Item	Clamp	Clamp screw	Shim	Shim screw	Spring
EH-DTGN R/L 2020-16	DCL3	DCS0415	DST32	DSCR0307	DSPR0510
EH-DTGN R/L 2525-16	DCL3	DCS0415	DST32	DSCR0307	DSPR0510
EH-DTGN R/L 3232-16	DCL3	DCS0415	DST32	DSCR0307	DSPR0510

Dimension/data block 2.

Item	Wrench
EH-DTGN R/L 2020-16	W25P
EH-DTGN R/L 2525-16	W25P
EH-DTGN R/L 3232-16	W25P

DTGN: holder and dimensions

Dimensions in mm. Tool approach: 90°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-DTGN R/L 2525-22	TN□□2204□□	25	25	150	32
EH-DTGN R/L 3225-22	TN□□2204□□	32	25	170	32
EH-DTGN R/L 3232-22	TN□□2204□□	32	32	170	40

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-DTGN R/L 2525-22	TN□□2204□□	25	32.6
EH-DTGN R/L 3225-22	TN□□2204□□	32	32.6
EH-DTGN R/L 3232-22	TN□□2204□□	32	32.6

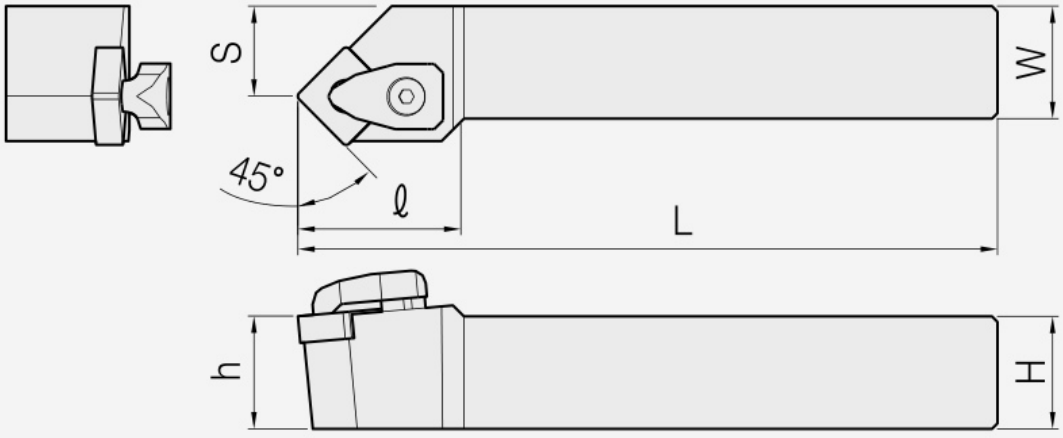
Spare parts

Dimension/data block 1.

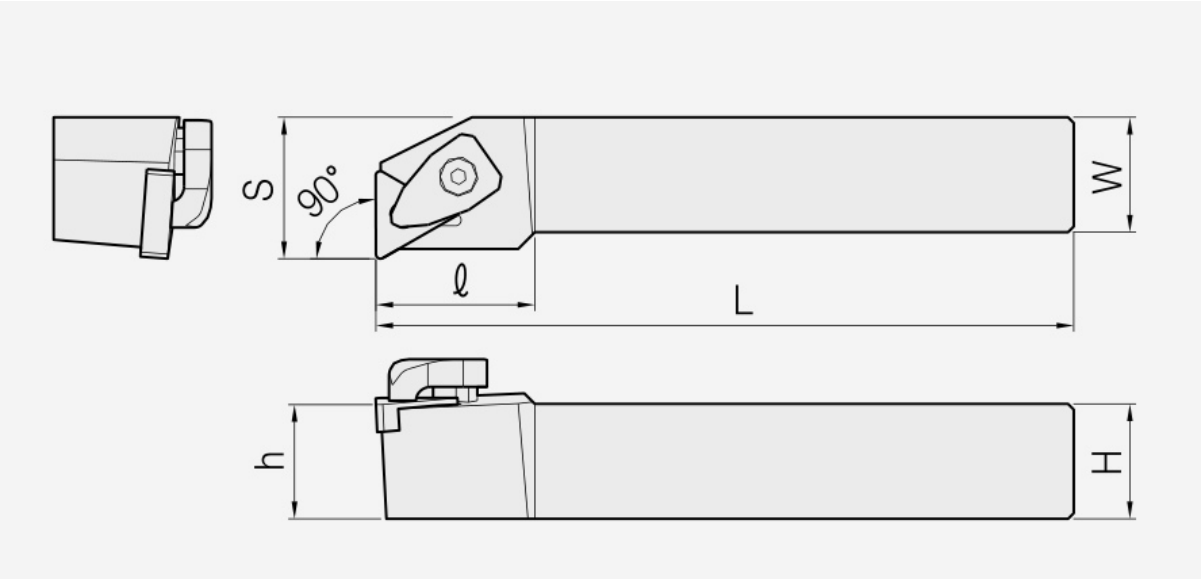
Item	Clamp	Clamp screw	Shim	Shim screw	Spring
EH-DTGN R/L 2525-22	DCL4	DCS0518	DST44	DSCR0410	DSPR0714
EH-DTGN R/L 3225-22	DCL4	DCS0518	DST44	DSCR0410	DSPR0714
EH-DTGN R/L 3232-22	DCL4	DCS0518	DST44	DSCR0410	DSPR0714

Dimension/data block 2.

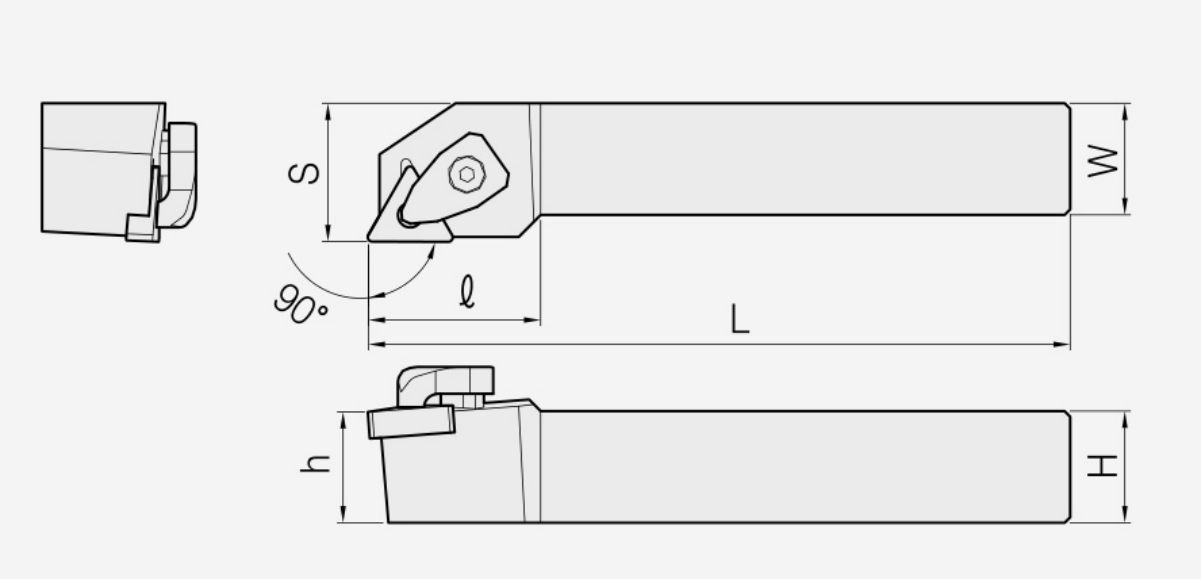
Item	Wrench
EH-DTGN R/L 2525-22	W30P
EH-DTGN R/L 3225-22	W30P
EH-DTGN R/L 3232-22	W30P



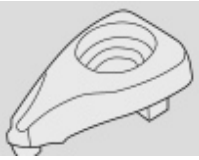
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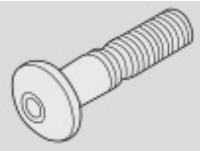
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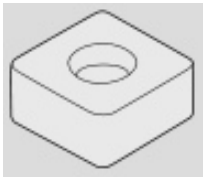
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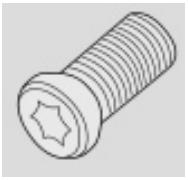
DSSN: Clamp - spare-part form.



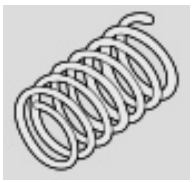
DSSN: Clamp screw - spare-part form.



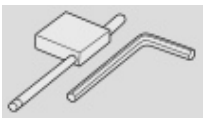
DSSN: Shim - spare-part form.



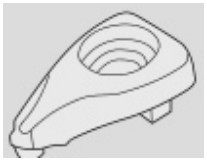
DSSN: Shim screw - spare-part form.



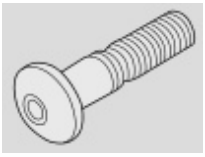
DSSN: Spring - spare-part form.



DSSN: Wrench - spare-part form.



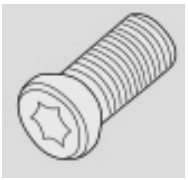
DTFN: Clamp - spare-part form.



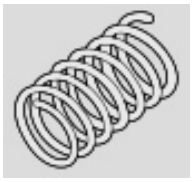
DTFN: Clamp screw - spare-part form.



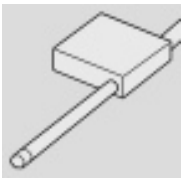
DTFN: Shim - spare-part form.



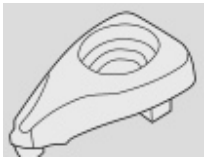
DTFN: Shim screw - spare-part form.



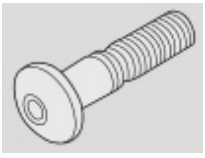
DTFN: Spring - spare-part form.



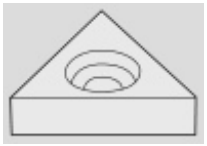
DTFN: Wrench - spare-part form.



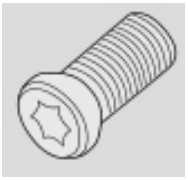
DTFN: Clamp - spare-part form.



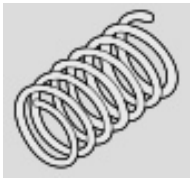
DTFN: Clamp screw - spare-part form.



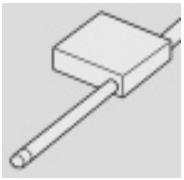
DTFN: Shim - spare-part form.



DTFN: Shim screw - spare-part form.



DTFN: Spring - spare-part form.



DTFN: Wrench - spare-part form.

DVJN / DVWNN / DWLN

DVJN: holder and dimensions

Dimensions in mm. Tool approach: 93°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-DVJN R/L 2020-16	VN□□1604□□	20	20	125	25
EH-DVJN R/L 2525-16	VN□□1604□□	25	25	150	32
EH-DVJN R/L 3232-16	VN□□1604□□	32	32	170	40

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-DVJN R/L 2020-16	VN□□1604□□	20	41.5
EH-DVJN R/L 2525-16	VN□□1604□□	25	41.5
EH-DVJN R/L 3232-16	VN□□1604□□	32	41.5

Spare parts

Dimension/data block 1.

Item	Clamp	Clamp screw	Shim	Shim screw	Spring
EH-DVJN R/L 2020-16	DCL3	DCS0518	DSV32	DSCR-03508	DSPR0714
EH-DVJN R/L 2525-16	DCL3	DCS0518	DSV32	DSCR-03508	DSPR0714
EH-DVJN R/L 3232-16	DCL3	DCS0518	DSV32	DSCR-03508	DSPR0714

Dimension/data block 2.

Item	Wrench
EH-DVJN R/L 2020-16	W30P
EH-DVJN R/L 2525-16	W30P
EH-DVJN R/L 3232-16	W30P

DVWNN: holder and dimensions

Dimensions in mm. Tool approach: 72.5°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-DVWNN 2020-16	VN□□1604□□	20	20	125	10
EH-DVWNN 2525-16	VN□□1604□□	25	25	150	12.5
EH-DVWNN 3232-16	VN□□1604□□	32	32	170	16

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-DVWNN 2020-16	VN□□1604□□	20	40
EH-DVWNN 2525-16	VN□□1604□□	25	40
EH-DVWNN 3232-16	VN□□1604□□	32	40

Spare parts

Dimension/data block 1.

Item	Clamp	Clamp screw	Shim	Shim screw	Spring
EH-DVWNN 2020-16	DCL3	DCS0518	DSV32	DSCR-03508	DSPR0714
EH-DVWNN 2525-16	DCL3	DCS0518	DSV32	DSCR-03508	DSPR0714
EH-DVWNN 3232-16	DCL3	DCS0518	DSV32	DSCR-03508	DSPR0714

Dimension/data block 2.

Item	Wrench
EH-DVWNN 2020-16	W30P
EH-DVWNN 2525-16	W30P
EH-DVWNN 3232-16	W30P

DWLN: holder and dimensions

Dimensions in mm. Tool approach: 95°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-DWLN R/L 2020-06	WN□□0604□□	20	20	125	25
EH-DWLN R/L 2525-06	WN□□0604□□	25	25	150	32

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-DWLN R/L 2020-06	WN□□0604□□	20	26
EH-DWLN R/L 2525-06	WN□□0604□□	25	26

Spare parts

Dimension/data block 1.

Item	Clamp	Clamp screw	Shim	Shim screw	Spring
EH-DWLN R/L 2020-06	DCL3	DCS0415	DSW32	DSCR0307	DSPR0510
EH-DWLN R/L 2525-06	DCL3	DCS0415	DSW32	DSCR0307	DSPR0510

Dimension/data block 2.

Item	Wrench
EH-DWLN R/L 2020-06	W25P
EH-DWLN R/L 2525-06	W25P

DWLN: holder and dimensions

Dimensions in mm. Tool approach: 95°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-DWLN R/L 2020-08	WN□□0804□□	20	20	125	25
EH-DWLN R/L 2525-08	WN□□0804□□	25	25	150	32

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-DWLN R/L 2020-08	WN□□0804□□	20	32
EH-DWLN R/L 2525-08	WN□□0804□□	25	32

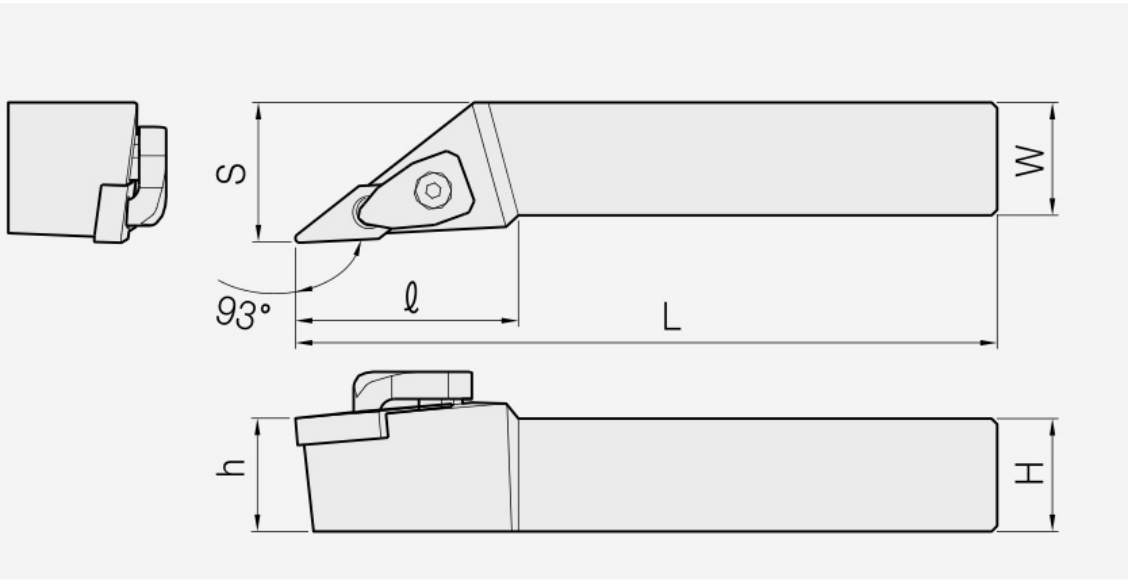
Spare parts

Dimension/data block 1.

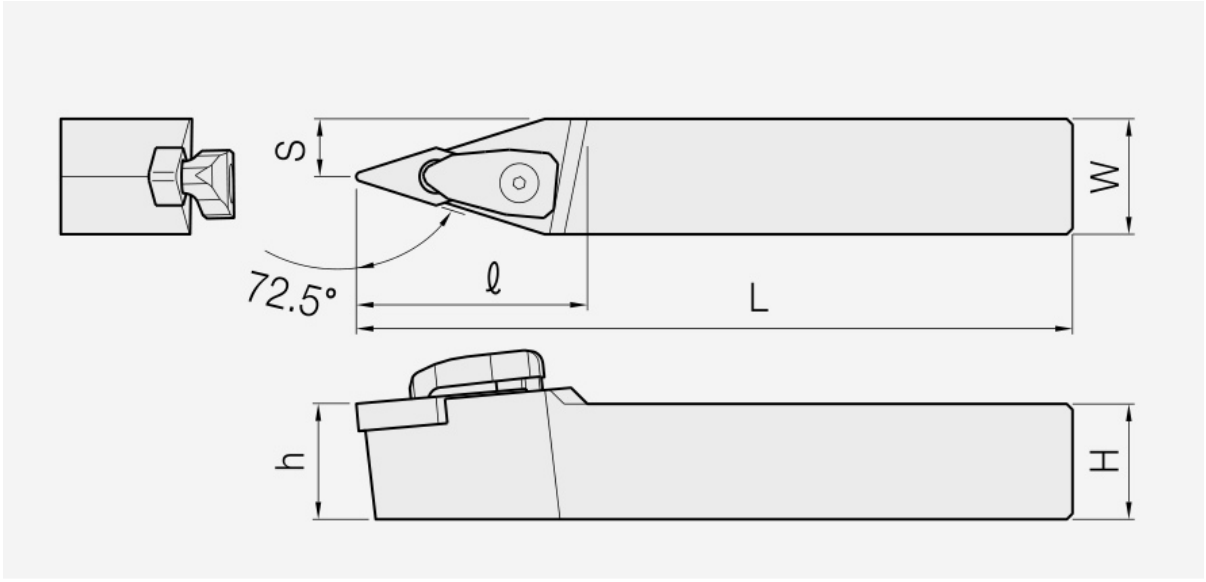
Item	Clamp	Clamp screw	Shim	Shim screw	Spring
EH-DWLN R/L 2020-08	DCL4	DCS0518	DSW44	DSCR0410	DSPR0714
EH-DWLN R/L 2525-08	DCL4	DCS0518	DSW44	DSCR0410	DSPR0714

Dimension/data block 2.

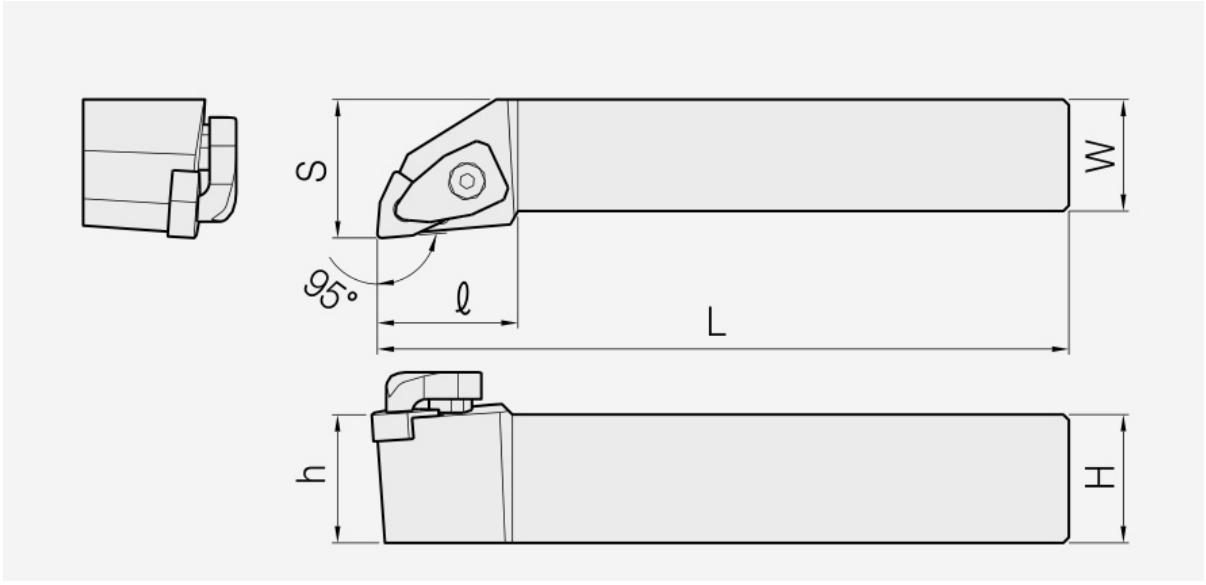
Item	Wrench
EH-DWLN R/L 2020-08	W30P
EH-DWLN R/L 2525-08	W30P



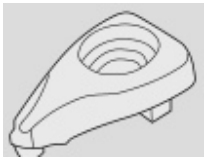
DVJN: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.



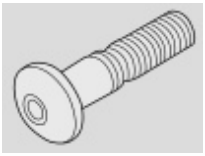
DVWNN: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.



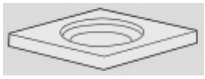
DWLN: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.



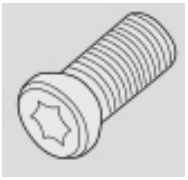
DVJN: Clamp - spare-part form.



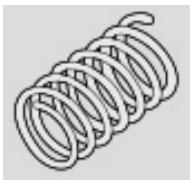
DVJN: Clamp screw - spare-part form.



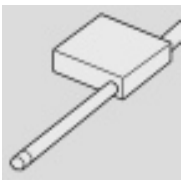
DVJN: Shim - spare-part form.



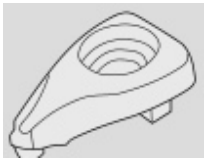
DVJN: Shim screw - spare-part form.



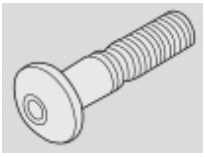
DVJN: Spring - spare-part form.



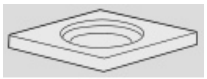
DVJN: Wrench - spare-part form.



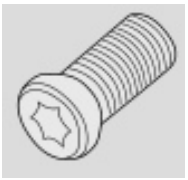
DVWNN: Clamp - spare-part form.



DVWNN: Clamp screw - spare-part form.



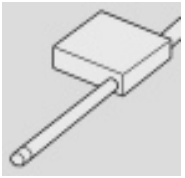
DVWNN: Shim - spare-part form.



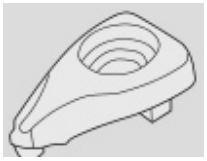
DVWNN: Shim screw - spare-part form.



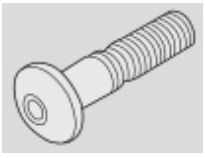
DVWNN: Spring - spare-part form.



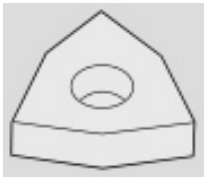
DVWNN: Wrench - spare-part form.



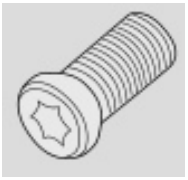
DWLN: Clamp - spare-part form.



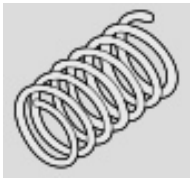
DWLN: Clamp screw - spare-part form.



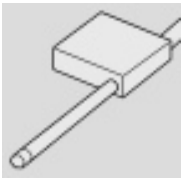
DWLN: Shim - spare-part form.



DWLN: Shim screw - spare-part form.



DWLN: Spring - spare-part form.



DWLN: Wrench - spare-part form.

PCLN / PDJN

PCLN: holder and dimensions

Dimensions in mm. Tool approach: 95°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-PCLN R/L 1616-09	CN□□0903□□	16	16	100	20
EH-PCLN R/L 2020-09	CN□□0903□□	20	20	125	25
EH-PCLN R/L 2525-09	CN□□0903□□	25	25	150	32

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-PCLN R/L 1616-09	CN□□0903□□	16	20
EH-PCLN R/L 2020-09	CN□□0903□□	20	22
EH-PCLN R/L 2525-09	CN□□0903□□	25	22

Spare parts

Dimension/data block 1.

Item	Lever	Screw	Shim	Shim pin	Wrench
EH-PCLN R/L 1616-09	LV3	LVSCR-0617	LVSC32	LVSP3	W25L
EH-PCLN R/L 2020-09	LV3	LVSCR-0617	LVSC32	LVSP3	W25L
EH-PCLN R/L 2525-09	LV3	LVSCR-0617	LVSC32	LVSP3	W25L

Dimension/data block 2.

Item	Shim-pin punch
EH-PCLN R/L 1616-09	LVSPS3
EH-PCLN R/L 2020-09	LVSPS3
EH-PCLN R/L 2525-09	LVSPS3

PCLN: holder and dimensions

Dimensions in mm. Tool approach: 95°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-PCLN R/L 1616-12	CN□□1204□□	16	16	100	20
EH-PCLN R/L 2020-12	CN□□1204□□	20	20	125	25
EH-PCLN R/L 2525-12	CN□□1204□□	25	25	150	32
EH-PCLN R/L 3225-12	CN□□1204□□	32	25	170	32
EH-PCLN R/L 3232-12	CN□□1204□□	32	32	170	40

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-PCLN R/L 1616-12	CN□□1204□□	16	28
EH-PCLN R/L 2020-12	CN□□1204□□	20	28
EH-PCLN R/L 2525-12	CN□□1204□□	25	28
EH-PCLN R/L 3225-12	CN□□1204□□	32	28
EH-PCLN R/L 3232-12	CN□□1204□□	32	28

Spare parts

Dimension/data block 1.

Item	Lever	Screw	Shim	Shim pin	Wrench
EH-PCLN R/L 1616-12	LV4	LVSCR-0821	LVSC42	LVSP4	W30L
EH-PCLN R/L 2020-12	LV4	LVSCR-0821	LVSC42	LVSP4	W30L
EH-PCLN R/L 2525-12	LV4	LVSCR-0821	LVSC42	LVSP4	W30L
EH-PCLN R/L 3225-12	LV4	LVSCR-0821	LVSC42	LVSP4	W30L
EH-PCLN R/L 3232-12	LV4	LVSCR-0821	LVSC42	LVSP4	W30L

Dimension/data block 2.

Item	Shim-pin punch
EH-PCLN R/L 1616-12	LVSPS4
EH-PCLN R/L 2020-12	LVSPS4
EH-PCLN R/L 2525-12	LVSPS4
EH-PCLN R/L 3225-12	LVSPS4
EH-PCLN R/L 3232-12	LVSPS4

PDJN: holder and dimensions

Dimensions in mm. Tool approach: 93°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-PDJN R/L 1616-11	DN□□1104□□	16	16	100	20
EH-PDJN R/L 2020-11	DN□□1104□□	20	20	125	25
EH-PDJN R/L 2525-11	DN□□1104□□	25	25	150	32

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-PDJN R/L 1616-11	DN□□1104□□	16	25
EH-PDJN R/L 2020-11	DN□□1104□□	20	25
EH-PDJN R/L 2525-11	DN□□1104□□	25	30

Spare parts

Dimension/data block 1.

Item	Lever	Screw	Shim	Shim pin	Wrench
EH-PDJN R/L 1616-11	LV3	LVSCR-0617	LVSD317	LVSP3	W25L
EH-PDJN R/L 2020-11	LV3	LVSCR-0617	LVSD317	LVSP3	W25L
EH-PDJN R/L 2525-11	LV3	LVSCR-0617	LVSD317	LVSP3	W25L

Dimension/data block 2.

Item	Shim-pin punch
EH-PDJN R/L 1616-11	LVSPS3
EH-PDJN R/L 2020-11	LVSPS3
EH-PDJN R/L 2525-11	LVSPS3

PDJN: holder and dimensions

Dimensions in mm. Tool approach: 93°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-PDJN R/L 2020-15-3	DN□□1504□□	20	20	125	25
EH-PDJN R/L 2525-15-3	DN□□1504□□	25	25	150	32
EH-PDJN R/L 3232-15-3	DN□□1504□□	32	32	170	40

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-PDJN R/L 2020-15-3	DN□□1504□□	20	35
EH-PDJN R/L 2525-15-3	DN□□1504□□	25	35
EH-PDJN R/L 3232-15-3	DN□□1504□□	32	35

Spare parts

Dimension/data block 1.

Item	Lever	Screw	Shim	Shim pin	Wrench
EH-PDJN R/L 2020-15-3	LV4	LVSCR-0821	LVSD42	LVSP4	W30L
EH-PDJN R/L 2525-15-3	LV4	LVSCR-0821	LVSD42	LVSP4	W30L
EH-PDJN R/L 3232-15-3	LV4	LVSCR-0821	LVSD42	LVSP4	W30L

Dimension/data block 2.

Item	Shim-pin punch
EH-PDJN R/L 2020-15-3	LVSPS4
EH-PDJN R/L 2525-15-3	LVSPS4
EH-PDJN R/L 3232-15-3	LVSPS4

PDJN: holder and dimensions

Dimensions in mm. Tool approach: 93°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-PDJN R/L 2020-15	DN□□1506□□	20	20	125	25
EH-PDJN R/L 2525-15	DN□□1506□□	25	25	150	32
EH-PDJN R/L 3225-15	DN□□1506□□	32	25	170	32
EH-PDJN R/L 3232-15	DN□□1506□□	32	32	170	40

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-PDJN R/L 2020-15	DN□□1506□□	20	35
EH-PDJN R/L 2525-15	DN□□1506□□	25	35
EH-PDJN R/L 3225-15	DN□□1506□□	32	35
EH-PDJN R/L 3232-15	DN□□1506□□	32	35

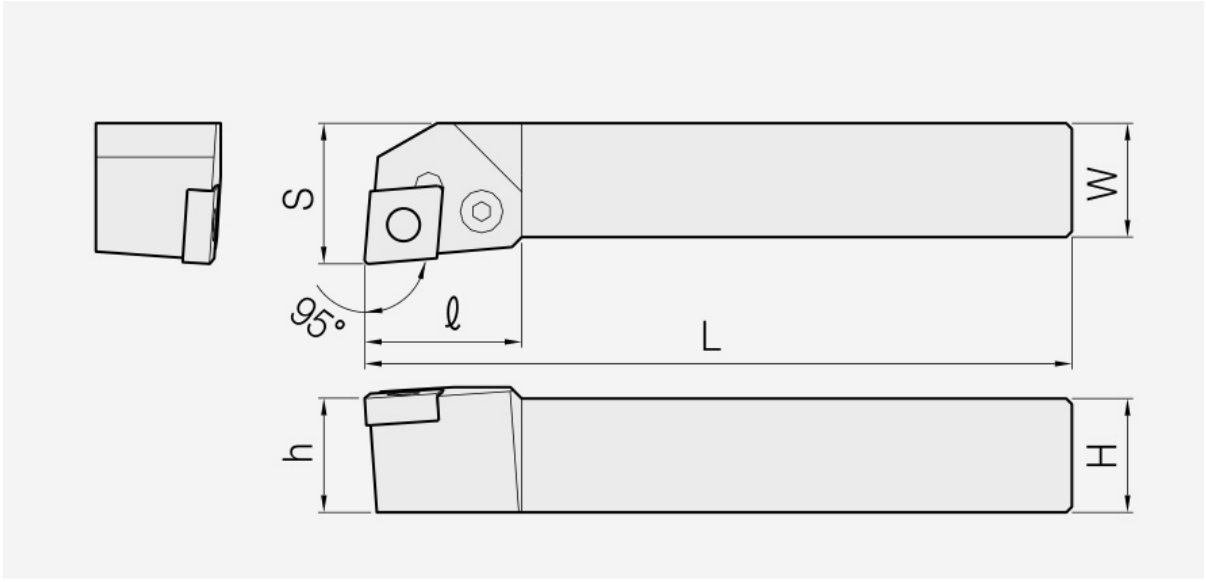
Spare parts

Dimension/data block 1.

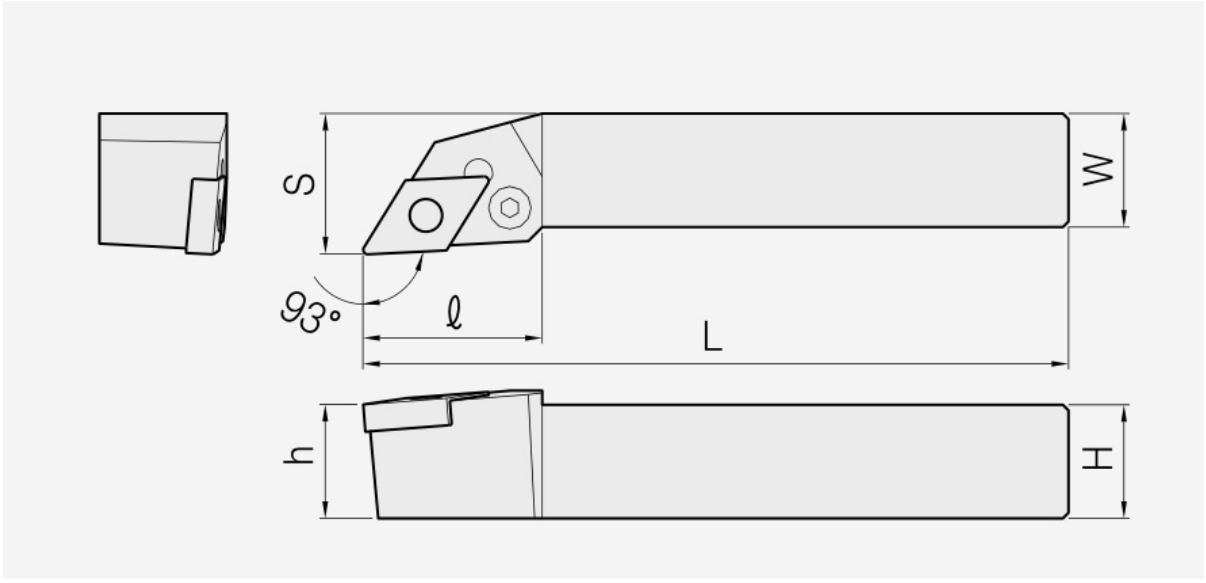
Item	Lever	Screw	Shim	Shim pin	Wrench
EH-PDJN R/L 2020-15	LV4B	LVSCR-0821	LVSD42	LVSP4	W30L
EH-PDJN R/L 2525-15	LV4B	LVSCR-0821	LVSD42	LVSP4	W30L
EH-PDJN R/L 3225-15	LV4B	LVSCR-0821	LVSD42	LVSP4	W30L
EH-PDJN R/L 3232-15	LV4B	LVSCR-0821	LVSD42	LVSP4	W30L

Dimension/data block 2.

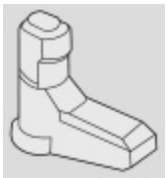
Item	Shim-pin punch
EH-PDJN R/L 2020-15	LVSPS4
EH-PDJN R/L 2525-15	LVSPS4
EH-PDJN R/L 3225-15	LVSPS4
EH-PDJN R/L 3232-15	LVSPS4



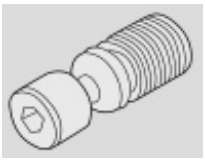
PCLN: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.



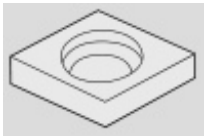
PDJN: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.



PCLN: Lever - spare-part form.



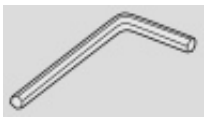
PCLN: Screw - spare-part form.



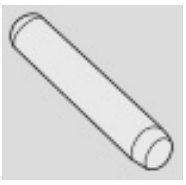
PCLN: Shim - spare-part form.



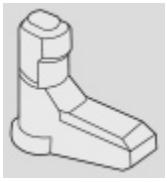
PCLN: Shim pin - spare-part form.



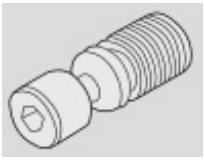
PCLN: Wrench - spare-part form.



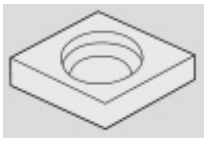
PCLN: Shim-pin punch - spare-part form.



PCLN: Lever - spare-part form.



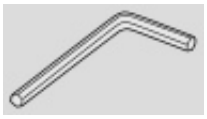
PCLN: Screw - spare-part form.



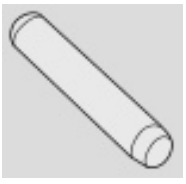
PCLN: Shim - spare-part form.



PCLN: Shim pin - spare-part form.



PCLN: Wrench - spare-part form.



PCLN: Shim-pin punch - spare-part form.

PDNN / PSBN / PSDNN

PDNN: holder and dimensions

Dimensions in mm. Tool approach: 62.5°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-PDNN R/L 2525-15-3	DN□□1504□□	25	25	150	12.5
EH-PDNN R/L 4025-15-3	DN□□1504□□	40	25	150	12.5

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-PDNN R/L 2525-15-3	DN□□1504□□	25	37
EH-PDNN R/L 4025-15-3	DN□□1504□□	25	37

Spare parts

Dimension/data block 1.

Item	Lever	Screw	Shim	Shim pin	Wrench
EH-PDNN R/L 2525-15-3	LV4	LVSCR-0821	LVSD42	LVSP4	W30L
EH-PDNN R/L 4025-15-3	LV4	LVSCR-0821	LVSD42	LVSP4	W30L

Dimension/data block 2.

Item	Shim-pin punch
EH-PDNN R/L 2525-15-3	LVSPS4
EH-PDNN R/L 4025-15-3	LVSPS4

PDNN: holder and dimensions

Dimensions in mm. Tool approach: 62.5°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-PDNN R/L 2020-15	DN□□1506□□	20	20	125	8
EH-PDNN R/L 2525-15	DN□□1506□□	25	25	150	12.5
EH-PDNN R/L 3232-15	DN□□1506□□	32	32	150	16
EH-PDNN R/L 4025-15	DN□□1506□□	40	25	170	12.5

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-PDNN R/L 2020-15	DN□□1506□□	20	37
EH-PDNN R/L 2525-15	DN□□1506□□	25	37
EH-PDNN R/L 3232-15	DN□□1506□□	32	37
EH-PDNN R/L 4025-15	DN□□1506□□	32	37

Spare parts

Dimension/data block 1.

Item	Lever	Screw	Shim	Shim pin	Wrench
EH-PDNN R/L 2020-15	LV4B	LVSCR-0821	LVSD42	LVSP4	W30L
EH-PDNN R/L 2525-15	LV4B	LVSCR-0821	LVSD42	LVSP4	W30L
EH-PDNN R/L 3232-15	LV4B	LVSCR-0821	LVSD42	LVSP4	W30L
EH-PDNN R/L 4025-15	LV4B	LVSCR-0821	LVSD42	LVSP4	W30L

Dimension/data block 2.

Item	Shim-pin punch
EH-PDNN R/L 2020-15	LVSPS4
EH-PDNN R/L 2525-15	LVSPS4
EH-PDNN R/L 3232-15	LVSPS4
EH-PDNN R/L 4025-15	LVSPS4

PSBN: holder and dimensions

Dimensions in mm. Tool approach: 75°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-PSBN R/L 1616-09	SN□□0903□□	16	16	100	13
EH-PSBN R/L 2020-09	SN□□0903□□	20	20	125	17

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-PSBN R/L 1616-09	SN□□0903□□	16	21
EH-PSBN R/L 2020-09	SN□□0903□□	20	23

Spare parts

Dimension/data block 1.

Item	Lever	Screw	Shim	Shim pin	Wrench
EH-PSBN R/L 1616-09	LV3	LVSCR-0617	LVSS32	LVSP3	W25L
EH-PSBN R/L 2020-09	LV3	LVSCR-0617	LVSS32	LVSP3	W25L

Dimension/data block 2.

Item	Shim-pin punch
EH-PSBN R/L 1616-09	LVSPS3
EH-PSBN R/L 2020-09	LVSPS3

PSBN: holder and dimensions

Dimensions in mm. Tool approach: 75°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-PSBN R/L 2020-12	SN□□1204□□	20	20	125	17
EH-PSBN R/L 2525-12	SN□□1204□□	25	25	150	22
EH-PSBN R/L 3225-12	SN□□1204□□	32	32	170	22
EH-PSBN R/L 3232-12	SN□□1204□□	32	32	170	27

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-PSBN R/L 2020-12	SN□□1204□□	20	28
EH-PSBN R/L 2525-12	SN□□1204□□	25	28
EH-PSBN R/L 3225-12	SN□□1204□□	32	28
EH-PSBN R/L 3232-12	SN□□1204□□	32	28

Spare parts

Dimension/data block 1.

Item	Lever	Screw	Shim	Shim pin	Wrench
EH-PSBN R/L 2020-12	LV4	LVSCR-0821	LVSS42	LVSP4	W30L
EH-PSBN R/L 2525-12	LV4	LVSCR-0821	LVSS42	LVSP4	W30L
EH-PSBN R/L 3225-12	LV4	LVSCR-0821	LVSS42	LVSP4	W30L
EH-PSBN R/L 3232-12	LV4	LVSCR-0821	LVSS42	LVSP4	W30L

Dimension/data block 2.

Item	Shim-pin punch
EH-PSBN R/L 2020-12	LVSPS4
EH-PSBN R/L 2525-12	LVSPS4
EH-PSBN R/L 3225-12	LVSPS4
EH-PSBN R/L 3232-12	LVSPS4

PSDNN: holder and dimensions

Dimensions in mm. Tool approach: 45°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-PSDNN 1616-09	SN□□0903□□	16	16	100	13

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-PSDNN 1616-09	SN□□0903□□	16	21

Spare parts

Dimension/data block 1.

Item	Lever	Screw	Shim	Shim pin	Wrench
EH-PSDNN 1616-09	LV3	LVSCR0617	LVSS32	LVSP3	W25L

Dimension/data block 2.

Item	Shim-pin punch
EH-PSDNN 1616-09	LVSPS3

PSDNN: holder and dimensions

Dimensions in mm. Tool approach: 45°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-PSDNN 2020-12	SN□□1204□□	20	20	125	10
EH-PSDNN 2525-12	SN□□1204□□	25	25	150	12.5
EH-PSDNN 3232-12	SN□□1204□□	32	32	170	16

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-PSDNN 2020-12	SN□□1204□□	20	30
EH-PSDNN 2525-12	SN□□1204□□	25	30
EH-PSDNN 3232-12	SN□□1204□□	32	40

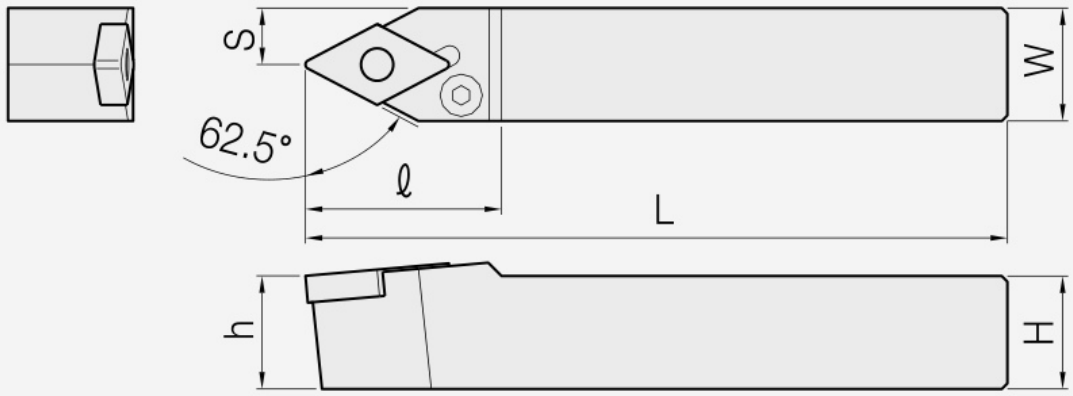
Spare parts

Dimension/data block 1.

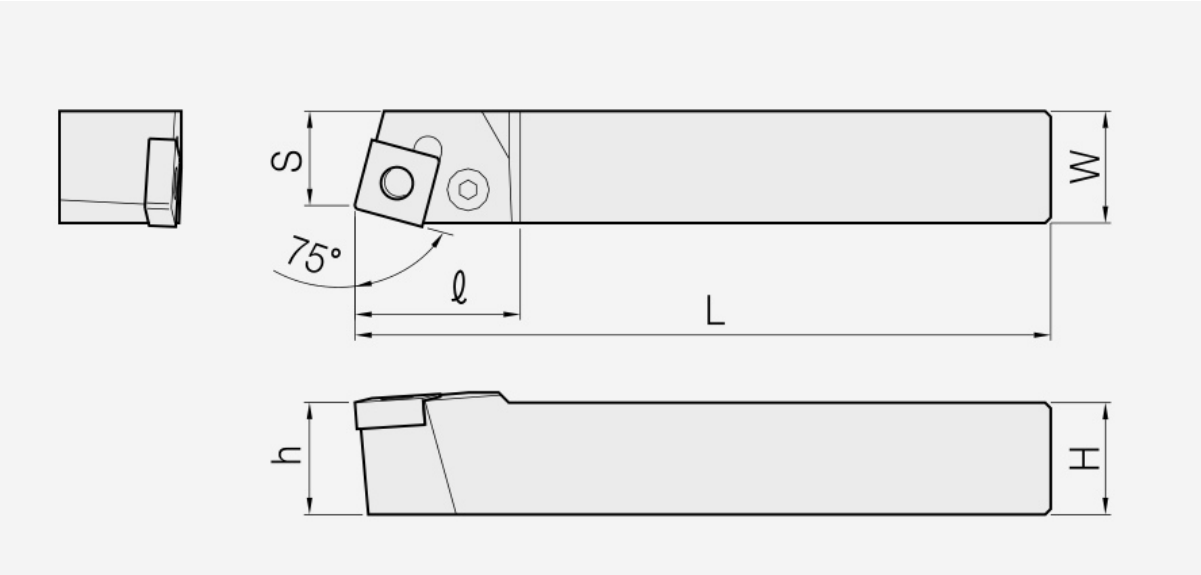
Item	Lever	Screw	Shim	Shim pin	Wrench
EH-PSDNN 2020-12	LV4	LVSCR-0821	LVSS42	LVSP4	W30L
EH-PSDNN 2525-12	LV4	LVSCR-0821	LVSS42	LVSP4	W30L
EH-PSDNN 3232-12	LV4	LVSCR-0821	LVSS42	LVSP4	W30L

Dimension/data block 2.

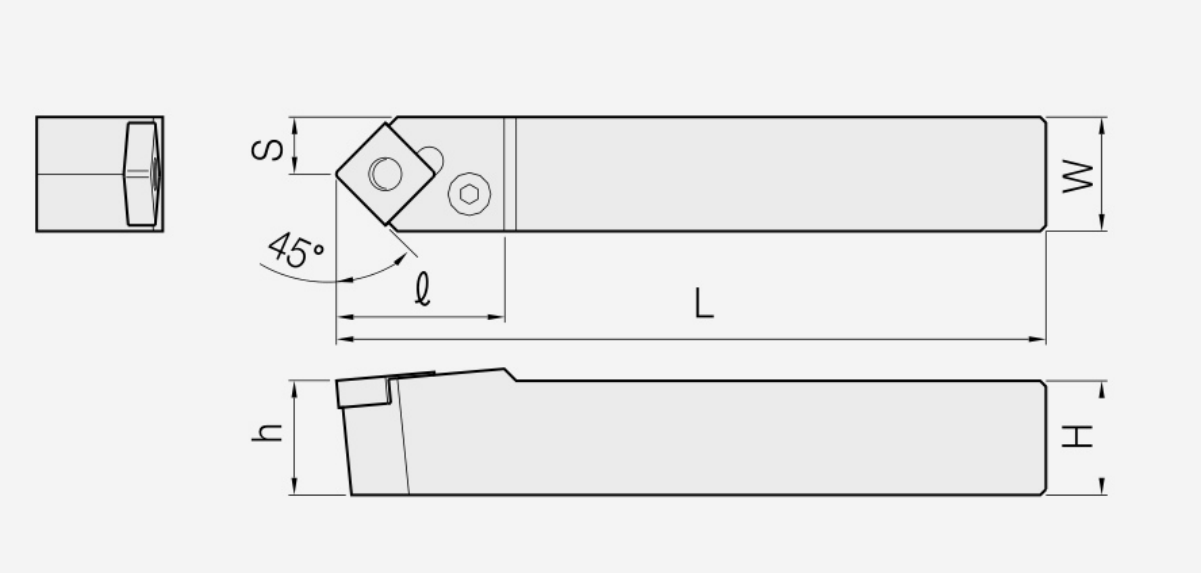
Item	Shim-pin punch
EH-PSDNN 2020-12	LVSPS4
EH-PSDNN 2525-12	LVSPS4
EH-PSDNN 3232-12	LVSPS4



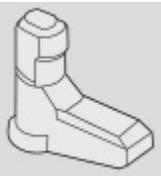
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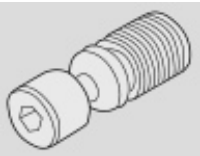
Tool: isolated dimensioned drawing; views and dimension references unchanged.



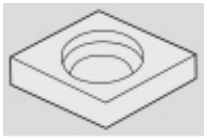
Tool: isolated dimensioned drawing; views and dimension references unchanged.



PDNN: Lever - spare-part form.



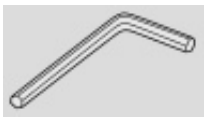
PDNN: Screw - spare-part form.



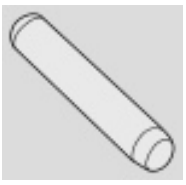
PDNN: Shim - spare-part form.



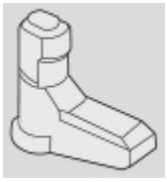
PDNN: Shim pin - spare-part form.



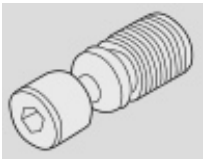
PDNN: Wrench - spare-part form.



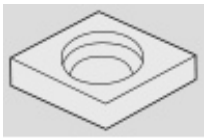
PDNN: Shim-pin punch - spare-part form.



PDNN: Lever - spare-part form.



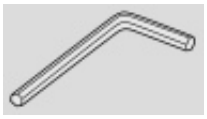
PDNN: Screw - spare-part form.



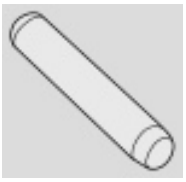
PDNN: Shim - spare-part form.



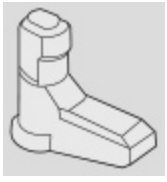
PDNN: Shim pin - spare-part form.



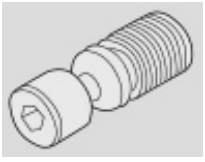
PDNN: Wrench - spare-part form.



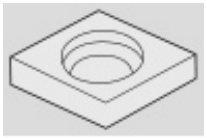
PDNN: Shim-pin punch - spare-part form.



PSBN: Lever - spare-part form.



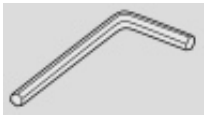
PSBN: Screw - spare-part form.



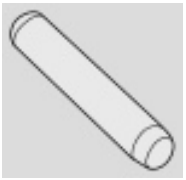
PSBN: Shim - spare-part form.



PSBN: Shim pin - spare-part form.



PSBN: Wrench - spare-part form.



PSBN: Shim-pin punch - spare-part form.

PSSN / PTFN / PTTN

PSSN: holder and dimensions

Dimensions in mm. Tool approach: 45°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-PSSN R/L 1616-09	SN□□0903□□	16	18	100	20

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-PSSN R/L 1616-09	SN□□0903□□	16	25

Spare parts

Dimension/data block 1.

Item	Lever	Screw	Shim	Shim pin	Wrench
EH-PSSN R/L 1616-09	LV3	LVSCR0617	LVSS32	LVSP10	W25L

Dimension/data block 2.

Item	Shim-pin punch
EH-PSSN R/L 1616-09	LVSPS3

PSSN: holder and dimensions

Dimensions in mm. Tool approach: 45°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-PSSN R/L 2020-12	SN□□1204□□	20	20	125	25
EH-PSSN R/L 2525-12	SN□□1204□□	25	25	150	32
EH-PSSN R/L 3232-12	SN□□1204□□	32	32	170	40

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-PSSN R/L 2020-12	SN□□1204□□	20	30
EH-PSSN R/L 2525-12	SN□□1204□□	25	36
EH-PSSN R/L 3232-12	SN□□1204□□	32	40

Spare parts

Dimension/data block 1.

Item	Lever	Screw	Shim	Shim pin	Wrench
EH-PSSN R/L 2020-12	LV4	LVSCR-0821	LVSS42	LVSP4	W30L
EH-PSSN R/L 2525-12	LV4	LVSCR-0821	LVSS42	LVSP4	W30L
EH-PSSN R/L 3232-12	LV4	LVSCR-0821	LVSS42	LVSP4	W30L

Dimension/data block 2.

Item	Shim-pin punch
EH-PSSN R/L 2020-12	LVSPS4
EH-PSSN R/L 2525-12	LVSPS4
EH-PSSN R/L 3232-12	LVSPS4

PTFN: holder and dimensions

Dimensions in mm. Tool approach: 90°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-PTFN R/L 1616-16	TN□□1604□□	16	16	100	20
EH-PTFN R/L 2020-16	TN□□1604□□	20	20	125	25
EH-PTFN R/L 2525-16	TN□□1604□□	25	25	150	32

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-PTFN R/L 1616-16	TN□□1604□□	16	20
EH-PTFN R/L 2020-16	TN□□1604□□	20	20
EH-PTFN R/L 2525-16	TN□□1604□□	25	20

Spare parts

Dimension/data block 1.

Item	Lever	Screw	Shim	Shim pin	Wrench
EH-PTFN R/L 1616-16	LV3	LVSCR-0617	LVST317	LVSP3	W25L
EH-PTFN R/L 2020-16	LV3	LVSCR-0617	LVST317	LVSP3	W25L
EH-PTFN R/L 2525-16	LV3	LVSCR-0617	LVST317	LVSP3	W25L

Dimension/data block 2.

Item	Shim-pin punch
EH-PTFN R/L 1616-16	LVSPS3
EH-PTFN R/L 2020-16	LVSPS3
EH-PTFN R/L 2525-16	LVSPS3

PTFN: holder and dimensions

Dimensions in mm. Tool approach: 90°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-PTFN R/L 2525-22	TN□□2204□□	25	25	150	32
EH-PTFN R/L 3232-22	TN□□2204□□	32	32	170	40

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-PTFN R/L 2525-22	TN□□2204□□	25	25
EH-PTFN R/L 3232-22	TN□□2204□□	32	25

Spare parts

Dimension/data block 1.

Item	Lever	Screw	Shim	Shim pin	Wrench
EH-PTFN R/L 2525-22	LV4	LVSCR-0821	LVST42	LVSP4	W30L
EH-PTFN R/L 3232-22	LV4	LVSCR-0821	LVST42	LVSP4	W30L

Dimension/data block 2.

Item	Shim-pin punch
EH-PTFN R/L 2525-22	LVSPS4
EH-PTFN R/L 3232-22	LVSPS4

PTTN: holder and dimensions

Dimensions in mm. Tool approach: 60°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-PTTN R/L 1616-16	TN□□1604□□	16	16	100	13
EH-PTTN R/L 2020-16	TN□□1604□□	20	20	125	17
EH-PTTN R/L 2525-16	TN□□1604□□	25	25	150	22

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-PTTN R/L 1616-16	TN□□1604□□	16	25
EH-PTTN R/L 2020-16	TN□□1604□□	20	25
EH-PTTN R/L 2525-16	TN□□1604□□	25	32

Spare parts

Dimension/data block 1.

Item	Lever	Screw	Shim	Shim pin	Wrench
EH-PTTN R/L 1616-16	LV3	LVSCR-0617	LVST317	LVSP3	W25L
EH-PTTN R/L 2020-16	LV3	LVSCR-0617	LVST317	LVSP3	W25L
EH-PTTN R/L 2525-16	LV3	LVSCR-0617	LVST317	LVSP3	W25L

Dimension/data block 2.

Item	Shim-pin punch
EH-PTTN R/L 1616-16	LVSPS3
EH-PTTN R/L 2020-16	LVSPS3
EH-PTTN R/L 2525-16	LVSPS3

PTTN: holder and dimensions

Dimensions in mm. Tool approach: 60°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-PTTN R/L 2525-22	TN□□2204□□	25	25	150	22

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-PTTN R/L 2525-22	TN□□2204□□	25	32

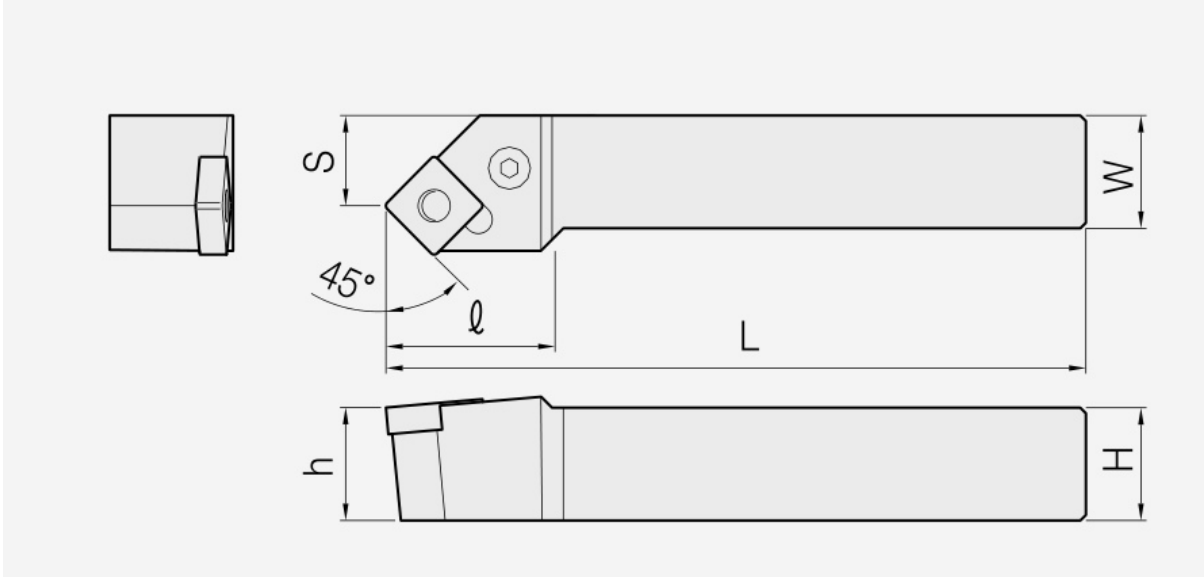
Spare parts

Dimension/data block 1.

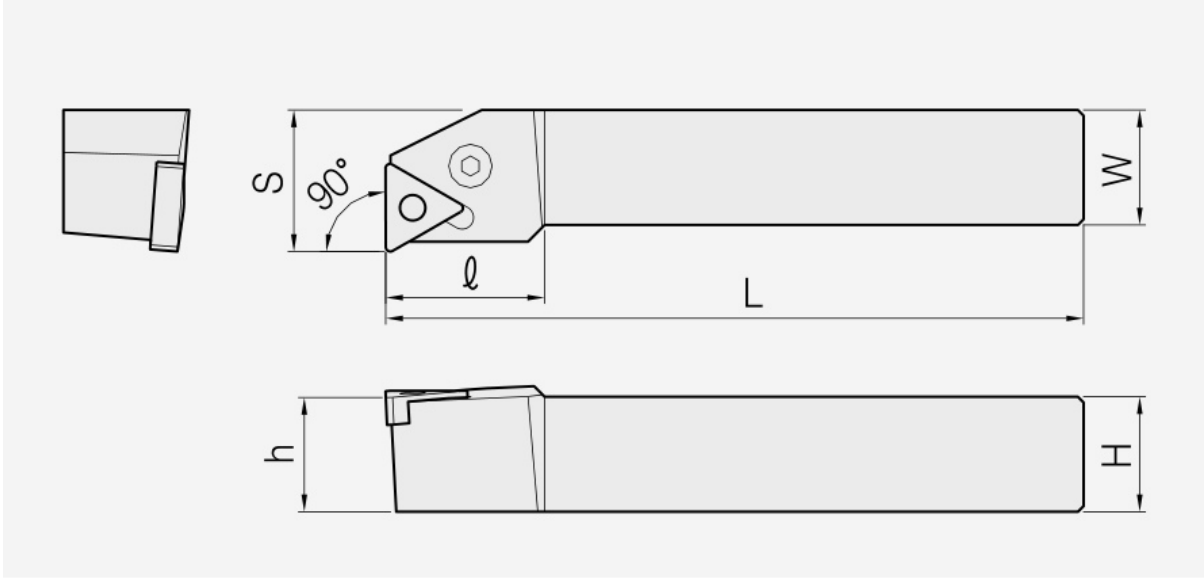
Item	Lever	Screw	Shim	Shim pin	Wrench
EH-PTTN R/L 2525-22	LV4	LVSCR-0821	LVST42	LVSP4	W30L

Dimension/data block 2.

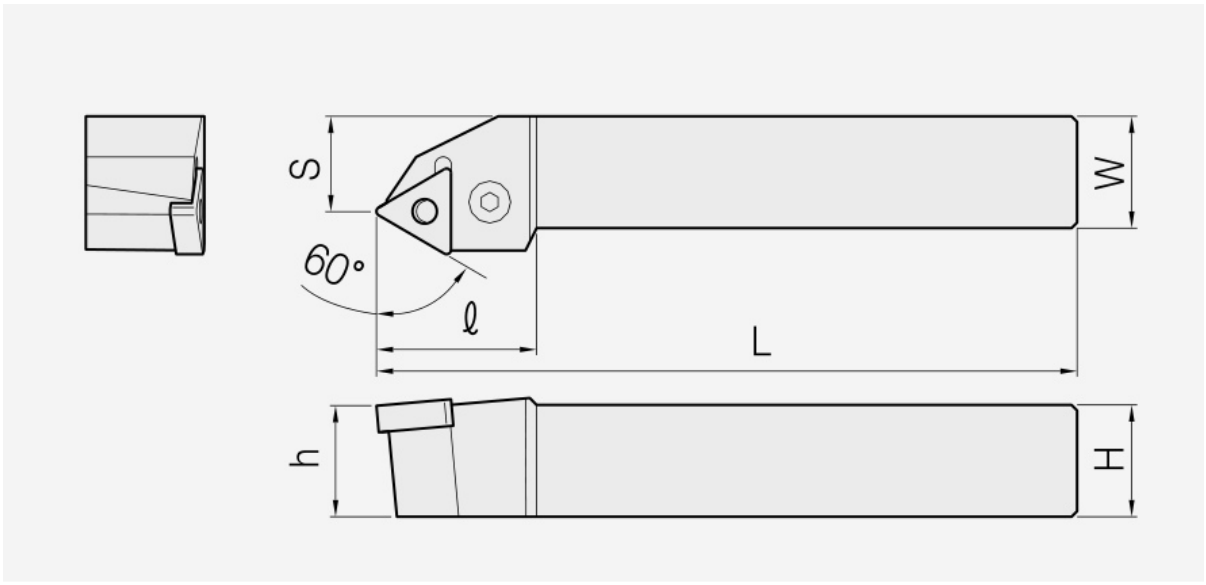
Item	Shim-pin punch
EH-PTTN R/L 2525-22	LVSPS4



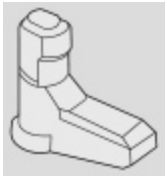
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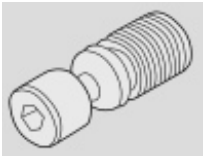
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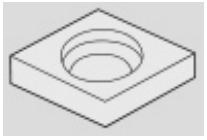
Tool: isolated dimensioned drawing; views and dimension references unchanged.



PSSN: Lever - spare-part form.



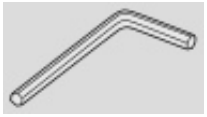
PSSN: Screw - spare-part form.



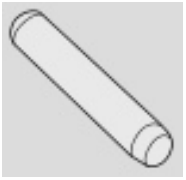
PSSN: Shim - spare-part form.



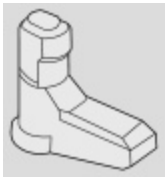
PSSN: Shim pin - spare-part form.



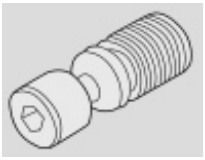
PSSN: Wrench - spare-part form.



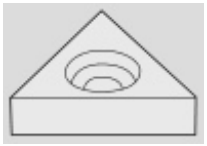
PSSN: Shim-pin punch - spare-part form.



PTFN: Lever - spare-part form.



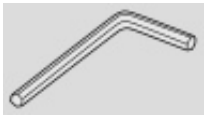
PTFN: Screw - spare-part form.



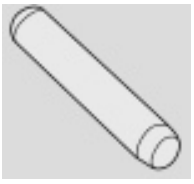
PTFN: Shim - spare-part form.



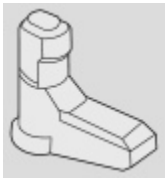
PTFN: Shim pin - spare-part form.



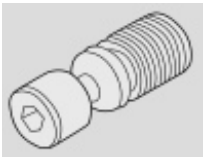
PTFN: Wrench - spare-part form.



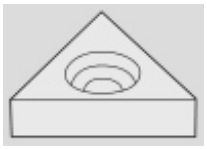
PTFN: Shim-pin punch - spare-part form.



PTFN: Lever - spare-part form.



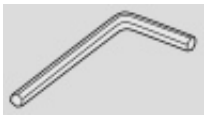
PTFN: Screw - spare-part form.



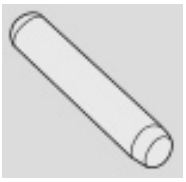
PTFN: Shim - spare-part form.



PTFN: Shim pin - spare-part form.



PTFN: Wrench - spare-part form.



PTFN: Shim-pin punch - spare-part form.

MCMNN / PTGN / PWLN

MCMNN: holder and dimensions

Dimensions in mm. Tool approach: 50°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-MCMNN 2020-12	CN□□1204□□	20	20	125	10
EH-MCMNN 2525-12	CN□□1204□□	25	25	150	12.5
EH-MCMNN 3232-12	CN□□1204□□	32	32	170	16

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-MCMNN 2020-12	CN□□1204□□	20	32
EH-MCMNN 2525-12	CN□□1204□□	25	32
EH-MCMNN 3232-12	CN□□1204□□	32	32

Spare parts

Item	Clamp	Clamp screw	Shim	Shim pin	Wrench
EH-MCMNN 2020-12	MCL6N	MCSR-1/4-25	MSC43	MSP4D	W31.8L / W23.8L
EH-MCMNN 2525-12	MCL6N	MCSR-1/4-25	MSC43	MSP4D	W31.8L / W23.8L
EH-MCMNN 3232-12	MCL6N	MCSR-1/4-25	MSC43	MSP4D	W31.8L / W23.8L

PTGN: holder and dimensions

Dimensions in mm. Tool approach: 90°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-PTGN R/L 1212-11	TN□□1103□□	12	12	80	16
EH-PTGN R/L 1616-11	TN□□1103□□	16	16	100	20
EH-PTGN R/L 2020-11	TN□□1103□□	20	20	125	25
EH-PTGN R/L 2525-11	TN□□1103□□	25	25	150	32

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-PTGN R/L 1212-11	TN□□1103□□	12	16
EH-PTGN R/L 1616-11	TN□□1103□□	16	18
EH-PTGN R/L 2020-11	TN□□1103□□	20	19
EH-PTGN R/L 2525-11	TN□□1103□□	25	20

Spare parts

Dimension/data block 1.

Item	Lever	Screw	Shim	Shim pin	Wrench
EH-PTGN R/L 1212-11	LV2	LVSCR-0509B	-	-	W20L
EH-PTGN R/L 1616-11	LV2	LVSCR-0509B	-	-	W20L
EH-PTGN R/L 2020-11	LV2	LVSCR-0509B	-	-	W20L
EH-PTGN R/L 2525-11	LV2	LVSCR-0509B	-	-	W20L

Dimension/data block 2.

Item	Shim-pin punch
EH-PTGN R/L 1212-11	-
EH-PTGN R/L 1616-11	-
EH-PTGN R/L 2020-11	-
EH-PTGN R/L 2525-11	-

PTGN: holder and dimensions

Dimensions in mm. Tool approach: 90°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-PTGN R/L 1616-16	TN□□1604□□	16	16	100	20
EH-PTGN R/L 2020-16	TN□□1604□□	20	20	125	25
EH-PTGN R/L 2525-16	TN□□1604□□	25	25	150	32
EH-PTGN R/L 3232-16	TN□□1604□□	32	32	170	40

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-PTGN R/L 1616-16	TN□□1604□□	16	20
EH-PTGN R/L 2020-16	TN□□1604□□	20	20
EH-PTGN R/L 2525-16	TN□□1604□□	25	20
EH-PTGN R/L 3232-16	TN□□1604□□	32	20

Spare parts

Dimension/data block 1.

Item	Lever	Screw	Shim	Shim pin	Wrench
EH-PTGN R/L 1616-16	LV3	LVSCR-0617	LVST317	LVSP3	W25L
EH-PTGN R/L 2020-16	LV3	LVSCR-0617	LVST317	LVSP3	W25L
EH-PTGN R/L 2525-16	LV3	LVSCR-0617	LVST317	LVSP3	W25L
EH-PTGN R/L 3232-16	LV3	LVSCR-0617	LVST317	LVSP3	W25L

Dimension/data block 2.

Item	Shim-pin punch
EH-PTGN R/L 1616-16	LVSPS3
EH-PTGN R/L 2020-16	LVSPS3
EH-PTGN R/L 2525-16	LVSPS3
EH-PTGN R/L 3232-16	LVSPS3

PTGN: holder and dimensions

Dimensions in mm. Tool approach: 90°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-PTGN R/L 2525-22	TN□□2204□□	25	25	150	32
EH-PTGN R/L 3232-22	TN□□2204□□	32	32	170	40

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-PTGN R/L 2525-22	TN□□2204□□	25	28
EH-PTGN R/L 3232-22	TN□□2204□□	32	28

Spare parts

Dimension/data block 1.

Item	Lever	Screw	Shim	Shim pin	Wrench
EH-PTGN R/L 2525-22	LV4	LVSCR-0821	LVST42	LVSP4	W30L
EH-PTGN R/L 3232-22	LV4	LVSCR-0821	LVST42	LVSP4	W30L

Dimension/data block 2.

Item	Shim-pin punch
EH-PTGN R/L 2525-22	LVSPS4
EH-PTGN R/L 3232-22	LVSPS4

PWLN: holder and dimensions

Dimensions in mm. Tool approach: 95°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-PWLN R/L 1616-06	WN□□0604□□	16	16	100	20
EH-PWLN R/L 2020-06	WN□□0604□□	20	20	125	25
EH-PWLN R/L 2525-06	WN□□0604□□	25	25	150	32

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-PWLN R/L 1616-06	WN□□0604□□	16	20
EH-PWLN R/L 2020-06	WN□□0604□□	20	20
EH-PWLN R/L 2525-06	WN□□0604□□	25	20

Spare parts

Dimension/data block 1.

Item	Lever	Screw	Shim	Shim pin	Wrench
EH-PWLN R/L 1616-06	LV3	LVSCR-0617	LVSW-317	LVSP3	W25L
EH-PWLN R/L 2020-06	LV3	LVSCR-0617	LVSW-317	LVSP3	W25L
EH-PWLN R/L 2525-06	LV3	LVSCR-0617	LVSW-317	LVSP3	W25L

Dimension/data block 2.

Item	Shim-pin punch
EH-PWLN R/L 1616-06	LVSPS3
EH-PWLN R/L 2020-06	LVSPS3
EH-PWLN R/L 2525-06	LVSPS3

PWLN: holder and dimensions

Dimensions in mm. Tool approach: 95°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-PWLN R/L 2020-08	WN□□0804□□	20	20	125	25
EH-PWLN R/L 2525-08	WN□□0804□□	25	25	150	32

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-PWLN R/L 2020-08	WN□□0804□□	20	26
EH-PWLN R/L 2525-08	WN□□0804□□	25	26

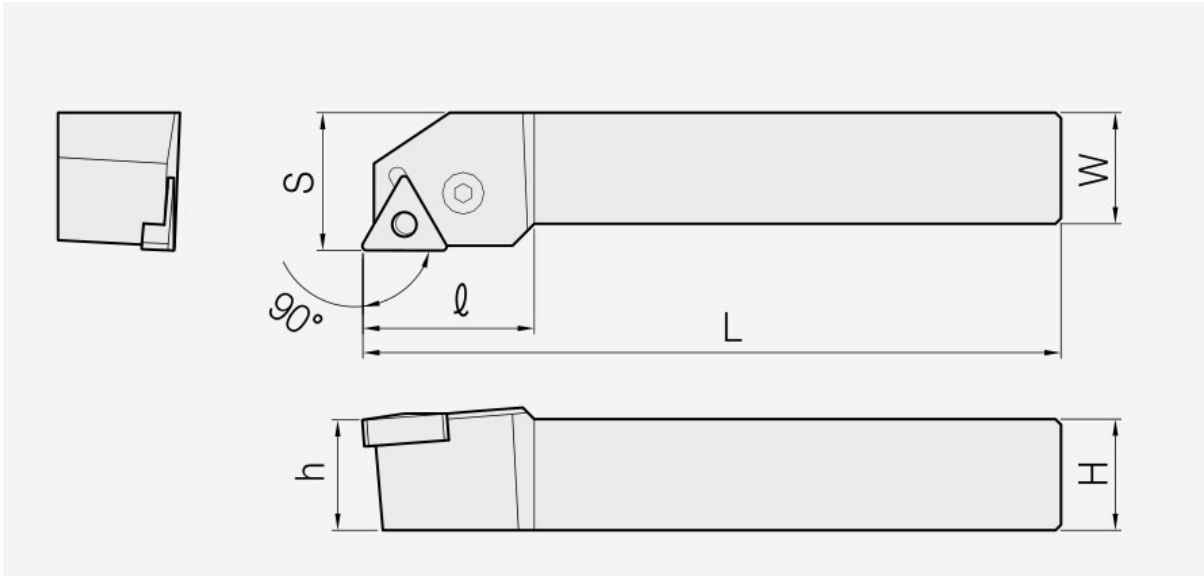
Spare parts

Dimension/data block 1.

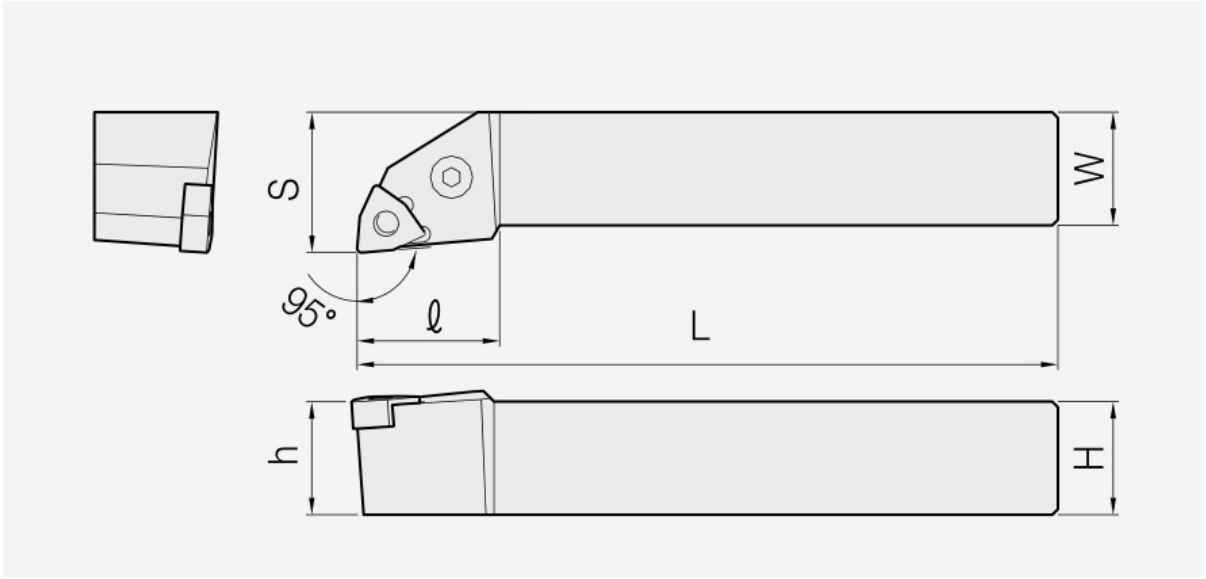
Item	Lever	Screw	Shim	Shim pin	Wrench
EH-PWLN R/L 2020-08	LV4	LVSCR-0821	LVSW42	LVSP4	W30L
EH-PWLN R/L 2525-08	LV4	LVSCR-0821	LVSW42	LVSP4	W30L

Dimension/data block 2.

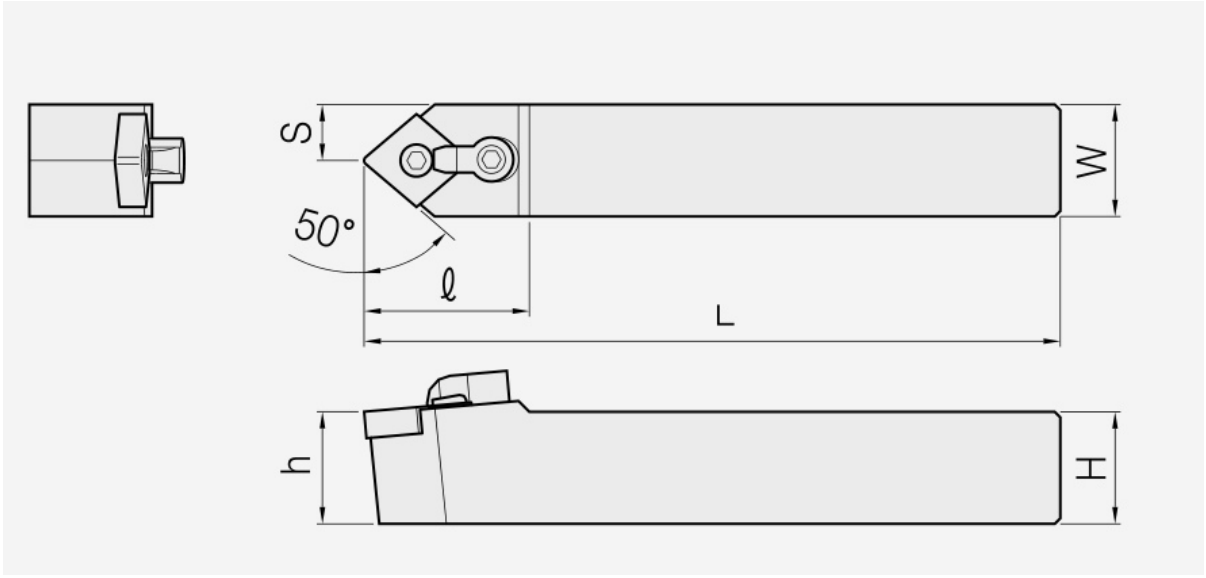
Item	Shim-pin punch
EH-PWLN R/L 2020-08	LVSPS4
EH-PWLN R/L 2525-08	LVSPS4



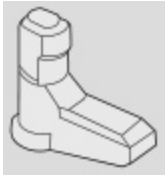
PTGN: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.



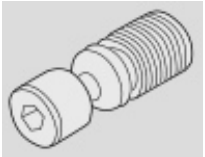
PWLN: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.



MCMNN: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.



PTGN: Lever - spare-part form.



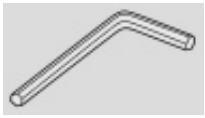
PTGN: Screw - spare-part form.



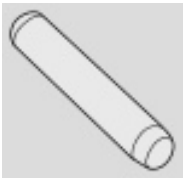
PTGN: Shim - spare-part form.



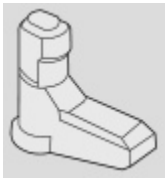
PTGN: Shim pin - spare-part form.



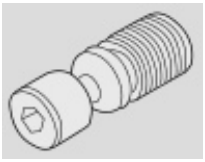
PTGN: Wrench - spare-part form.



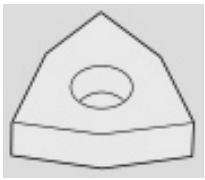
PTGN: Shim-pin punch - spare-part form.



PTGN: Lever - spare-part form.



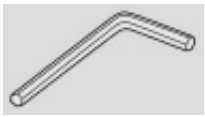
PTGN: Screw - spare-part form.



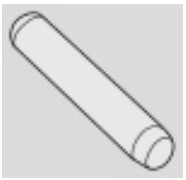
PTGN: Shim - spare-part form.



PTGN: Shim pin - spare-part form.



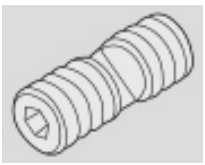
PTGN: Wrench - spare-part form.



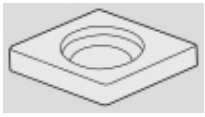
PTGN: Shim-pin punch - spare-part form.



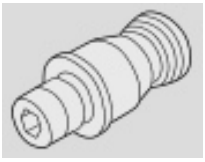
PTGN: Lever - spare-part form.



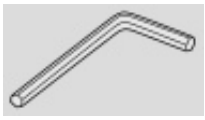
PTGN: Screw - spare-part form.



PTGN: Shim - spare-part form.



PTGN: Shim pin - spare-part form.



PTGN: Wrench - spare-part form.

MCLN / MDNNN / MDQN

MCLN: holder and dimensions

Dimensions in mm. Tool approach: 95°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-MCLN R/L 1616-09	CN□□0903□□	16	16	100	20
EH-MCLN R/L 2020-09	CN□□0903□□	20	20	125	25
EH-MCLN R/L 2525-09	CN□□0903□□	25	25	150	32

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-MCLN R/L 1616-09	CN□□0903□□	16	25
EH-MCLN R/L 2020-09	CN□□0903□□	20	25
EH-MCLN R/L 2525-09	CN□□0903□□	25	25

Spare parts

Item	Clamp	Clamp screw	Shim	Shim pin	Wrench
EH-MCLN R/L 1616-09	MCL7N	MCSR-10-32-19	MSC32	MSP3DS	W23.8L / W19.8L
EH-MCLN R/L 2020-09	MCL7N	MCSR-10-32-19	MSC32	MSP3DS	W23.8L / W19.8L
EH-MCLN R/L 2525-09	MCL7N	MCSR-10-32-19	MSC32	MSP3DS	W23.8L / W19.8L

MCLN: holder and dimensions

Dimensions in mm. Tool approach: 95°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-MCLN R/L 2020-12	CN□□1204□□	20	20	125	25
EH-MCLN R/L 2525-12	CN□□1204□□	25	25	150	32
EH-MCLN R/L 3225-12	CN□□1204□□	32	25	170	32
EH-MCLN R/L 3232-12	CN□□1204□□	32	32	170	40

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-MCLN R/L 2020-12	CN□□1204□□	20	32
EH-MCLN R/L 2525-12	CN□□1204□□	25	32
EH-MCLN R/L 3225-12	CN□□1204□□	32	32
EH-MCLN R/L 3232-12	CN□□1204□□	32	32

Spare parts

Item	Clamp	Clamp screw	Shim	Shim pin	Wrench
EH-MCLN R/L 2020-12	MCL6N	MCSR-1/4-25	MSC43	MSP4D	W31.8L / W23.8L
EH-MCLN R/L 2525-12	MCL6N	MCSR-1/4-25	MSC43	MSP4D	W31.8L / W23.8L
EH-MCLN R/L 3225-12	MCL6N	MCSR-1/4-25	MSC43	MSP4D	W31.8L / W23.8L
EH-MCLN R/L 3232-12	MCL6N	MCSR-1/4-25	MSC43	MSP4D	W31.8L / W23.8L

MDNNN: holder and dimensions

Dimensions in mm. Tool approach: 62.5°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-MDNNN 2525-15-3	DN□□1504□□	25	25	150	12.5

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-MDNNN 2525-15-3	DN□□1504□□	25	41

Spare parts

Item	Clamp	Clamp screw	Shim	Shim pin	Wrench
EH-MDNNN 2525-15-3	MCL8N	MCSR-5/16-32	MSD43	MSP4D	W39.7L / W23.8L

MDNNN: holder and dimensions

Dimensions in mm. Tool approach: 62.5°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-MDNNN 2525-15	DN□□1506□□	25	25	150	12.5

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-MDNNN 2525-15	DN□□1506□□	25	41

Spare parts

Item	Clamp	Clamp screw	Shim	Shim pin	Wrench
EH-MDNNN 2525-15	MCL8N	MCSR-5/16-32	MSD43	MSP4DL	W39.7L / W23.8L

MDQN: holder and dimensions

Dimensions in mm. Tool approach: 107.5°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-MDQN R/L 2525-15-3	DN□□1504□□	25	25	150	32
EH-MDQN R/L 3232-15-3	DN□□1504□□	32	32	170	40

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-MDQN R/L 2525-15-3	DN□□1504□□	25	36
EH-MDQN R/L 3232-15-3	DN□□1504□□	32	36

Spare parts

Item	Clamp	Clamp screw	Shim	Shim pin	Wrench
EH-MDQN R/L 2525-15-3	MCL6N	MCSR-1/4-25	MSD43	MSP4D	W31.8L / W23.8L
EH-MDQN R/L 3232-15-3	MCL6N	MCSR-1/4-25	MSD43	MSP4D	W31.8L / W23.8L

MDQN: holder and dimensions

Dimensions in mm. Tool approach: 107.5°.

Dimension/data block 1.

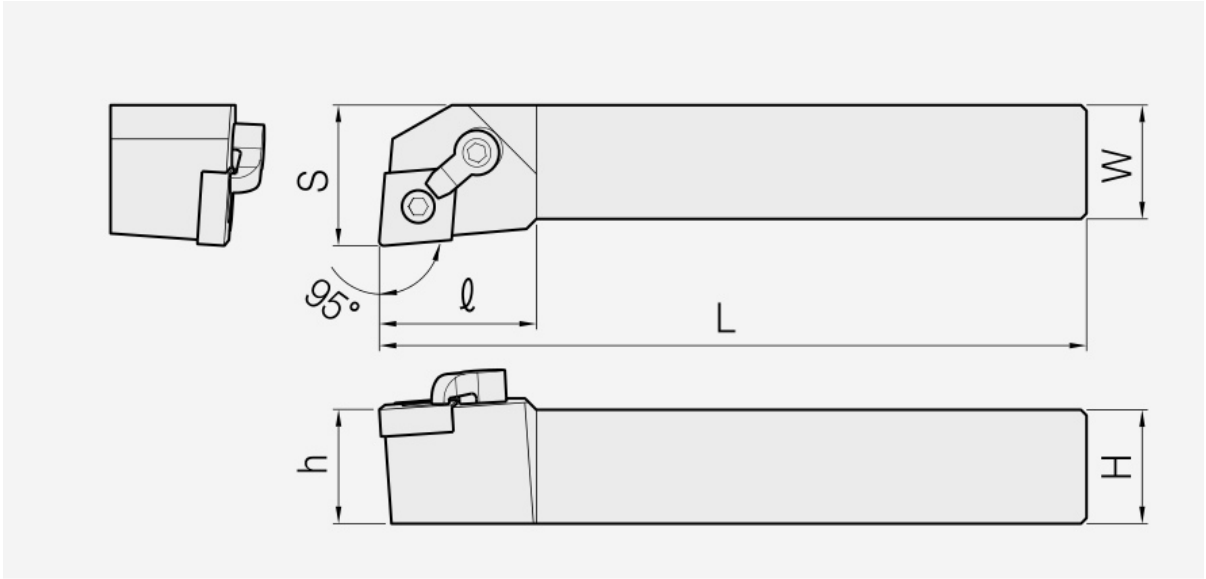
Item	Insert assignment	H	W	L	S
EH-MDQN R/L 2525-15	DN□□1506□□	25	25	150	32
EH-MDQN R/L 3232-15	DN□□1506□□	32	32	170	40

Dimension/data block 2.

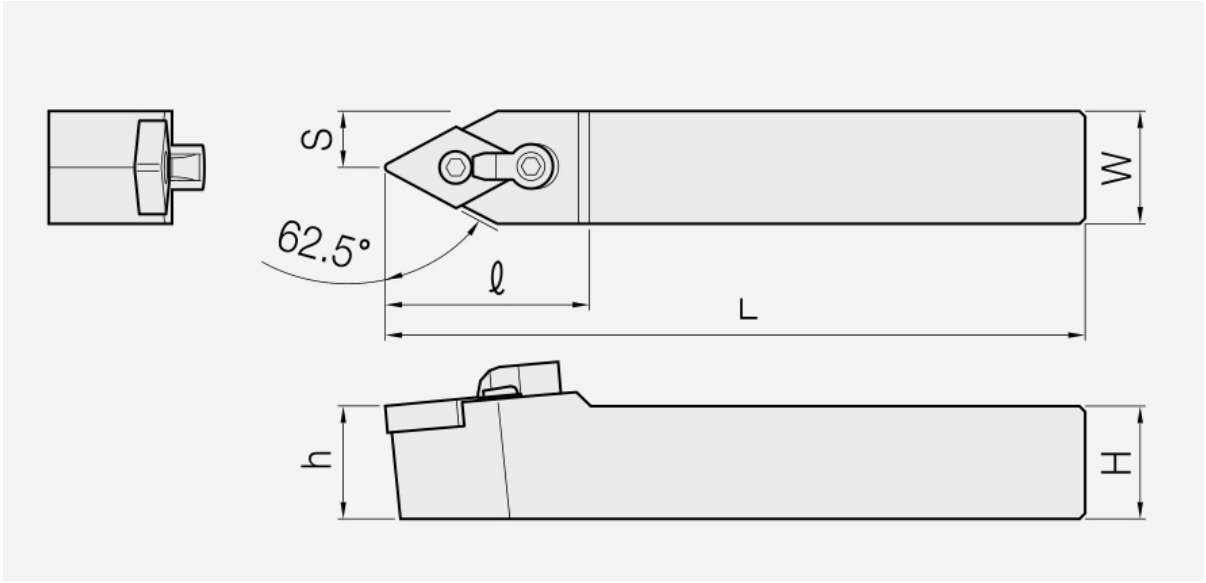
Item	Insert assignment	h	ℓ
EH-MDQN R/L 2525-15	DN□□1506□□	25	36
EH-MDQN R/L 3232-15	DN□□1506□□	32	36

Spare parts

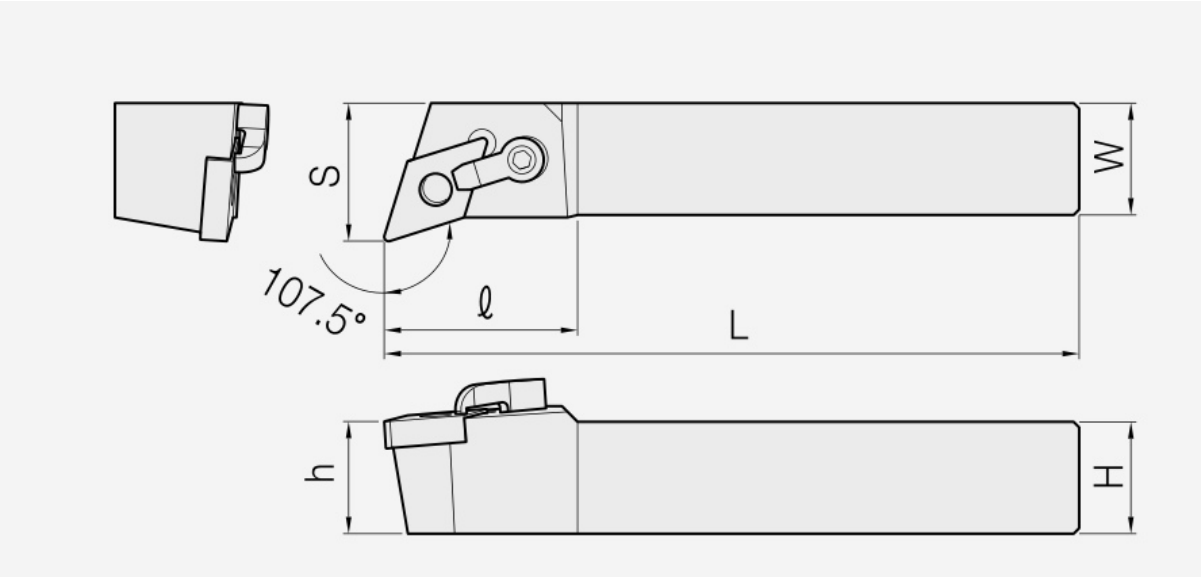
Item	Clamp	Clamp screw	Shim	Shim pin	Wrench
EH-MDQN R/L 2525-15	MCL6N	MCSR-1/4-25	MSD43	MSP4DL	W31.8L / W23.8L
EH-MDQN R/L 3232-15	MCL6N	MCSR-1/4-25	MSD43	MSP4DL	W31.8L / W23.8L



MCLN: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.



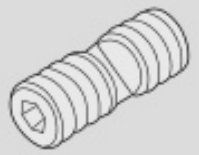
MDNNN: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.



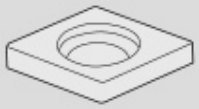
MDQN: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.



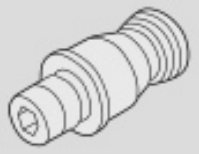
MCLN: Clamp - spare-part form.



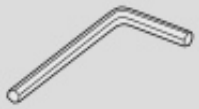
MCLN: Clamp screw - spare-part form.



MCLN: Shim - spare-part form.



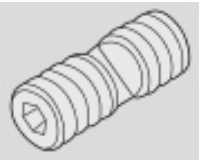
MCLN: Shim pin - spare-part form.



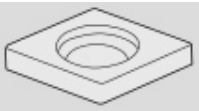
MCLN: Wrench - spare-part form.



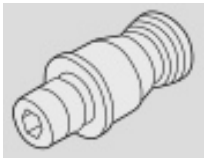
MCLN: Clamp - spare-part form.



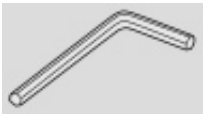
MCLN: Clamp screw - spare-part form.



MCLN: Shim - spare-part form.



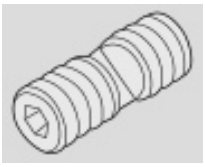
MCLN: Shim pin - spare-part form.



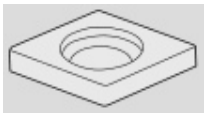
MCLN: Wrench - spare-part form.



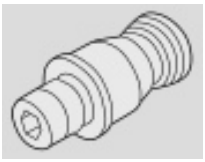
MDNNN: Clamp - spare-part form.



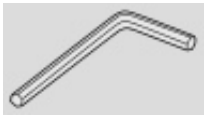
MDNNN: Clamp screw - spare-part form.



MDNNN: Shim - spare-part form.



MDNNN: Shim pin - spare-part form.



MDNNN: Wrench - spare-part form.

MDJN / MSBN / MSKN

MDJN: holder and dimensions

Dimensions in mm. Tool approach: 93°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-MDJN R/L 2020-11	DN□□1104□□	20	20	125	25
EH-MDJN R/L 2525-11	DN□□1104□□	25	25	150	32

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-MDJN R/L 2020-11	DN□□1104□□	20	32
EH-MDJN R/L 2525-11	DN□□1104□□	25	32

Spare parts

Item	Clamp	Clamp screw	Shim	Shim pin	Wrench
EH-MDJN R/L 2020-11	MCL6N	MCSR-1/4-19	MSD32	MSP3D	W31.8L / W19.8L
EH-MDJN R/L 2525-11	MCL6N	MCSR-1/4-19	MSD32	MSP3D	W31.8L / W19.8L

MDJN: holder and dimensions

Dimensions in mm. Tool approach: 93°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-MDJN R/L 2020-15-3	DN□□1504□□	20	20	125	25
EH-MDJN R/L 2525-15-3	DN□□1504□□	25	25	150	32
EH-MDJN R/L 3232-15-3	DN□□1504□□	32	32	170	40

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-MDJN R/L 2020-15-3	DN□□1504□□	20	36
EH-MDJN R/L 2525-15-3	DN□□1504□□	25	36
EH-MDJN R/L 3232-15-3	DN□□1504□□	32	36

Spare parts

Item	Clamp	Clamp screw	Shim	Shim pin	Wrench
EH-MDJN R/L 2020-15-3	MCL6N	MCSR-1/4-25	MSD43	MSP4D	W31.8L / W23.8L
EH-MDJN R/L 2525-15-3	MCL6N	MCSR-1/4-25	MSD43	MSP4D	W31.8L / W23.8L
EH-MDJN R/L 3232-15-3	MCL6N	MCSR-1/4-25	MSD43	MSP4D	W31.8L / W23.8L

MDJN: holder and dimensions

Dimensions in mm. Tool approach: 93°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-MDJN R/L 2020-15	DN□□1506□□	20	20	125	25
EH-MDJN R/L 2525-15	DN□□1506□□	25	25	150	32
EH-MDJN R/L 3232-15	DN□□1506□□	32	32	170	40

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-MDJN R/L 2020-15	DN□□1506□□	20	36
EH-MDJN R/L 2525-15	DN□□1506□□	25	36
EH-MDJN R/L 3232-15	DN□□1506□□	32	36

Spare parts

Item	Clamp	Clamp screw	Shim	Shim pin	Wrench
EH-MDJN R/L 2020-15	MCL6N	MCSR-1/4-25	MSD43	MSP4D	W31.8L / W23.8L
EH-MDJN R/L 2525-15	MCL6N	MCSR-1/4-25	MSD43	MSP4D	W31.8L / W23.8L
EH-MDJN R/L 3232-15	MCL6N	MCSR-1/4-25	MSD43	MSP4D	W31.8L / W23.8L

MSBN: holder and dimensions

Dimensions in mm. Tool approach: 75°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-MSBN R/L 2020-12	SN□□1204□□	20	20	125	17
EH-MSBN R/L 2525-12	SN□□1204□□	25	25	150	22

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-MSBN R/L 2020-12	SN□□1204□□	20	32
EH-MSBN R/L 2525-12	SN□□1204□□	25	32

Spare parts

Item	Clamp	Clamp screw	Shim	Shim pin	Wrench
EH-MSBN R/L 2020-12	MCL8N1	MCSR-5/16-32	MSS43	MSP4D	W39.7L / W23.8L
EH-MSBN R/L 2525-12	MCL8N1	MCSR-5/16-32	MSS43	MSP4D	W39.7L / W23.8L

MSKN: holder and dimensions

Dimensions in mm. Tool approach: 75°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-MSKN R/L 1616-09	SN□□0903□□	16	16	100	20
EH-MSKN R/L 2020-09	SN□□0903□□	20	20	125	22

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-MSKN R/L 1616-09	SN□□0903□□	16	28
EH-MSKN R/L 2020-09	SN□□0903□□	20	28

Spare parts

Item	Clamp	Clamp screw	Shim	Shim pin	Wrench
EH-MSKN R/L 1616-09	MCL7N	MCSR-10-32-19	MSS32	MSP3DS	W19.8L / W23.8L
EH-MSKN R/L 2020-09	MCL7N	MCSR-10-32-19	MSS32	MSP3DS	W19.8L / W23.8L

MSKN: holder and dimensions

Dimensions in mm. Tool approach: 75°.

Dimension/data block 1.

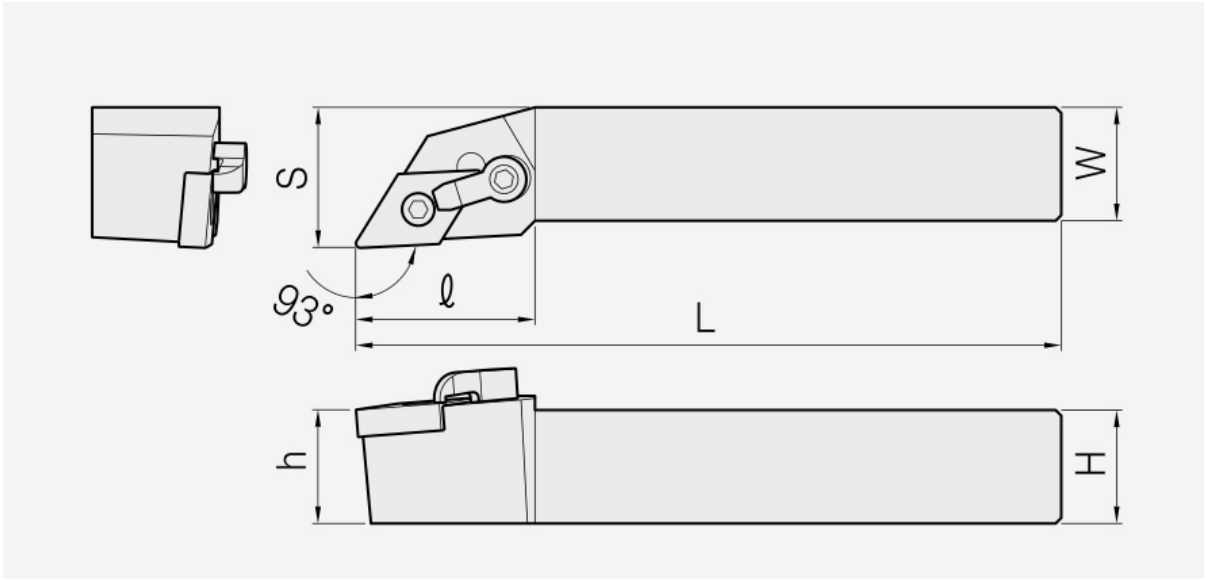
Item	Insert assignment	H	W	L	S
EH-MSKN R/L 2020-12	SN□□1204□□	20	20	125	25
EH-MSKN R/L 2525-12	SN□□1204□□	25	25	150	32
EH-MSKN R/L 3225-12	SN□□1204□□	32	32	170	32

Dimension/data block 2.

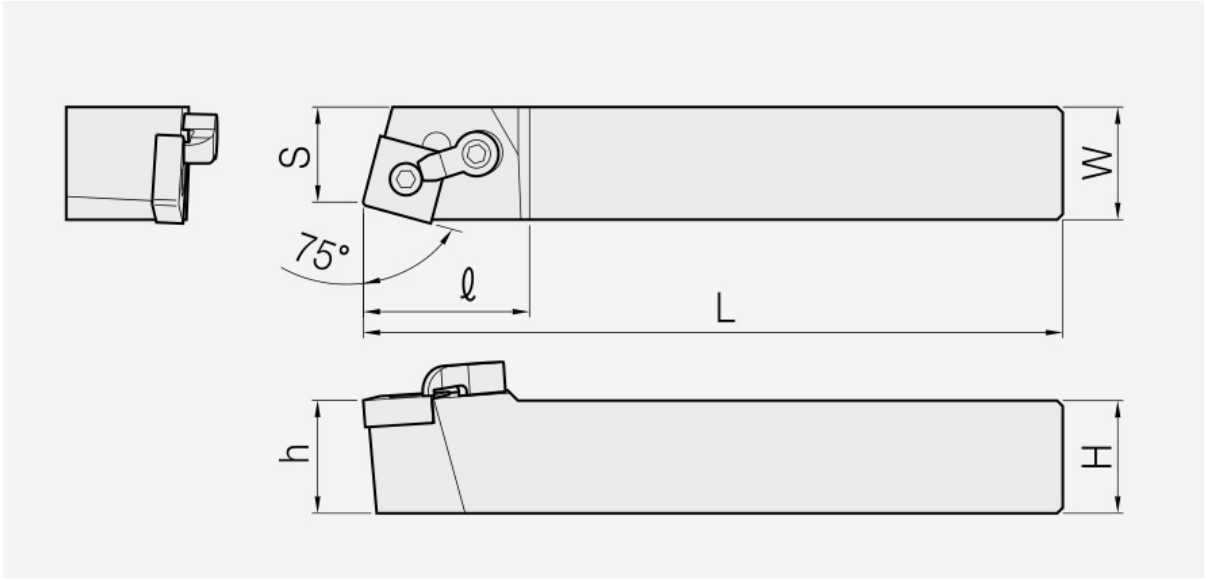
Item	Insert assignment	h	ℓ
EH-MSKN R/L 2020-12	SN□□1204□□	20	32
EH-MSKN R/L 2525-12	SN□□1204□□	25	32
EH-MSKN R/L 3225-12	SN□□1204□□	32	32

Spare parts

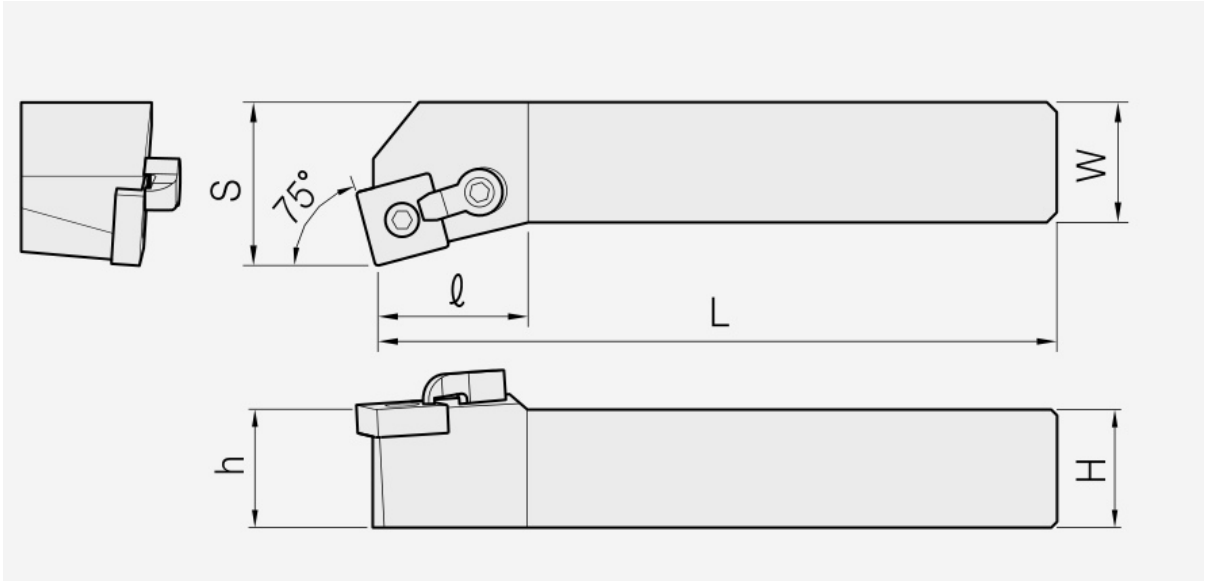
Item	Clamp	Clamp screw	Shim	Shim pin	Wrench
EH-MSKN R/L 2020-12	MCL8N1	MCSR-5/16-32	MSS43	MSP4D	W39.7L / W23.8L
EH-MSKN R/L 2525-12	MCL8N1	MCSR-5/16-32	MSS43	MSP4D	W39.7L / W23.8L
EH-MSKN R/L 3225-12	MCL8N1	MCSR-5/16-32	MSS43	MSP4D	W39.7L / W23.8L



MDJN: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.



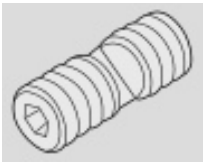
MSBN: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.



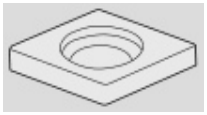
MSKN: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.



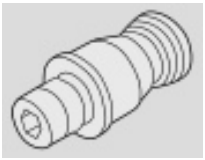
MDJN: Clamp - spare-part form.



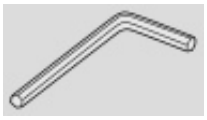
MDJN: Clamp screw - spare-part form.



MDJN: Shim - spare-part form.



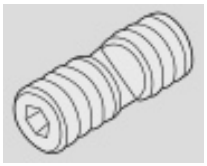
MDJN: Shim pin - spare-part form.



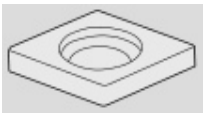
MDJN: Wrench - spare-part form.



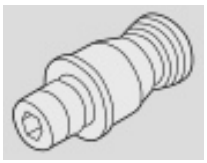
MDJN: Clamp - spare-part form.



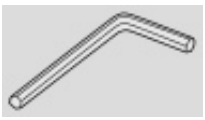
MDJN: Clamp screw - spare-part form.



MDJN: Shim - spare-part form.



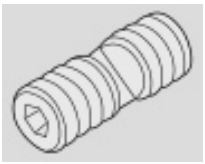
MDJN: Shim pin - spare-part form.



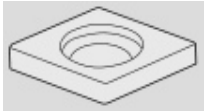
MDJN: Wrench - spare-part form.



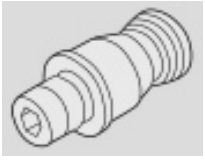
MDJN: Clamp - spare-part form.



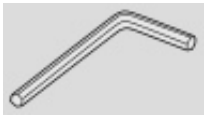
MDJN: Clamp screw - spare-part form.



MDJN: Shim - spare-part form.



MDJN: Shim pin - spare-part form.



MDJN: Wrench - spare-part form.

MSRN / MSSN / MTENN

MSRN: holder and dimensions

Dimensions in mm. Tool approach: 75°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-MSRN R/L 1616-09	SN□□0903□□	16	16	100	17
EH-MSRN R/L 2020-09	SN□□0903□□	20	20	125	22

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-MSRN R/L 1616-09	SN□□0903□□	16	28
EH-MSRN R/L 2020-09	SN□□0903□□	20	28

Spare parts

Item	Clamp	Clamp screw	Shim	Shim pin	Wrench
EH-MSRN R/L 1616-09	MCL7N	MCSR-10-32-19	MSS32	MSP3DS	W19.8L / W23.8L
EH-MSRN R/L 2020-09	MCL7N	MCSR-10-32-19	MSS32	MSP3DS	W19.8L / W23.8L

MSRN: holder and dimensions

Dimensions in mm. Tool approach: 75°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-MSRN R/L 2020-12	SN□□1204□□	20	20	125	22
EH-MSRN R/L 2525-12	SN□□1204□□	25	25	150	27

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-MSRN R/L 2020-12	SN□□1204□□	20	32
EH-MSRN R/L 2525-12	SN□□1204□□	25	32

Spare parts

Item	Clamp	Clamp screw	Shim	Shim pin	Wrench
EH-MSRN R/L 2020-12	MCL8N1	MCSR-5/16-32	MSS43	MSP4D	W39.7L / W23.8L
EH-MSRN R/L 2525-12	MCL8N1	MCSR-5/16-32	MSS43	MSP4D	W39.7L / W23.8L

MSSN: holder and dimensions

Dimensions in mm. Tool approach: 45°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-MSSN R/L 1616-09	SN□□0903□□	16	16	100	20
EH-MSSN R/L 2020-09	SN□□0903□□	20	20	125	25

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-MSSN R/L 1616-09	SN□□0903□□	16	28
EH-MSSN R/L 2020-09	SN□□0903□□	20	28

Spare parts

Item	Clamp	Clamp screw	Shim	Shim pin	Wrench
EH-MSSN R/L 1616-09	MCL7N	MCSR-10-32-19	MSS32	MSP3DS	W19.8L / W23.8L
EH-MSSN R/L 2020-09	MCL7N	MCSR-10-32-19	MSS32	MSP3DS	W19.8L / W23.8L

MSSN: holder and dimensions

Dimensions in mm. Tool approach: 45°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-MSSN R/L 2020-12	SN□□1204□□	20	20	125	25
EH-MSSN R/L 2525-12	SN□□1204□□	25	25	150	32

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-MSSN R/L 2020-12	SN□□1204□□	20	32
EH-MSSN R/L 2525-12	SN□□1204□□	25	32

Spare parts

Item	Clamp	Clamp screw	Shim	Shim pin	Wrench
EH-MSSN R/L 2020-12	MCL8N1	MCSR-5/16-32	MSS43	MSP4D	W39.7L / W23.8L
EH-MSSN R/L 2525-12	MCL8N1	MCSR-5/16-32	MSS43	MSP4D	W39.7L / W23.8L

MTENN: holder and dimensions

Dimensions in mm. Tool approach: 60°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-MTENN 2020-16	TN□□1604□□	20	20	125	10
EH-MTENN 2525-16	TN□□1604□□	25	25	150	12.5

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-MTENN 2020-16	TN□□1604□□	20	32
EH-MTENN 2525-16	TN□□1604□□	25	32

Spare parts

Item	Clamp	Clamp screw	Shim	Shim pin	Wrench
EH-MTENN 2020-16	MCL7N	MCSR-10-32-19	MST32	MSP3D	W23.8L / W19.8L
EH-MTENN 2525-16	MCL7N	MCSR-10-32-19	MST32	MSP3D	W23.8L / W19.8L

MTENN: holder and dimensions

Dimensions in mm. Tool approach: 60°.

Dimension/data block 1.

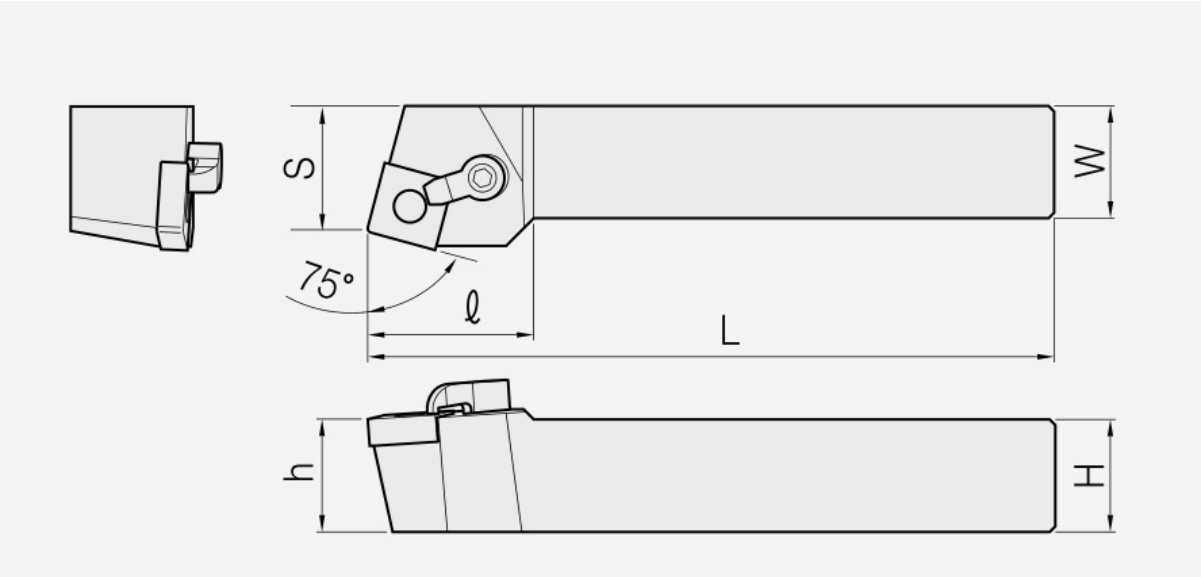
Item	Insert assignment	H	W	L	S
EH-MTENN 2525-22	TN□□2204□□	25	25	150	12.5

Dimension/data block 2.

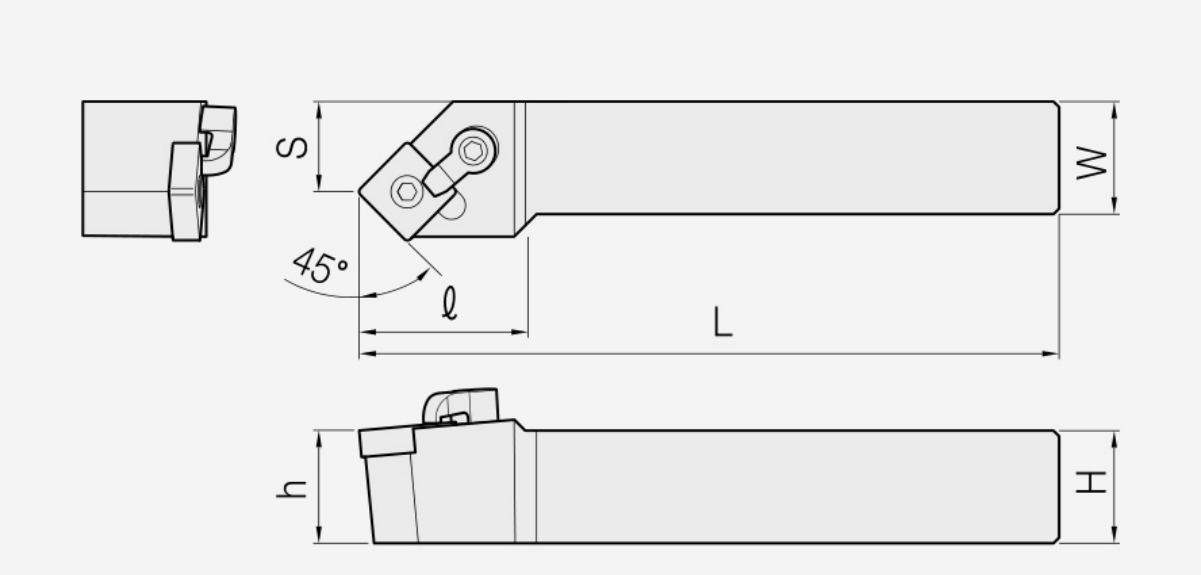
Item	Insert assignment	h	ℓ
EH-MTENN 2525-22	TN□□2204□□	25	35

Spare parts

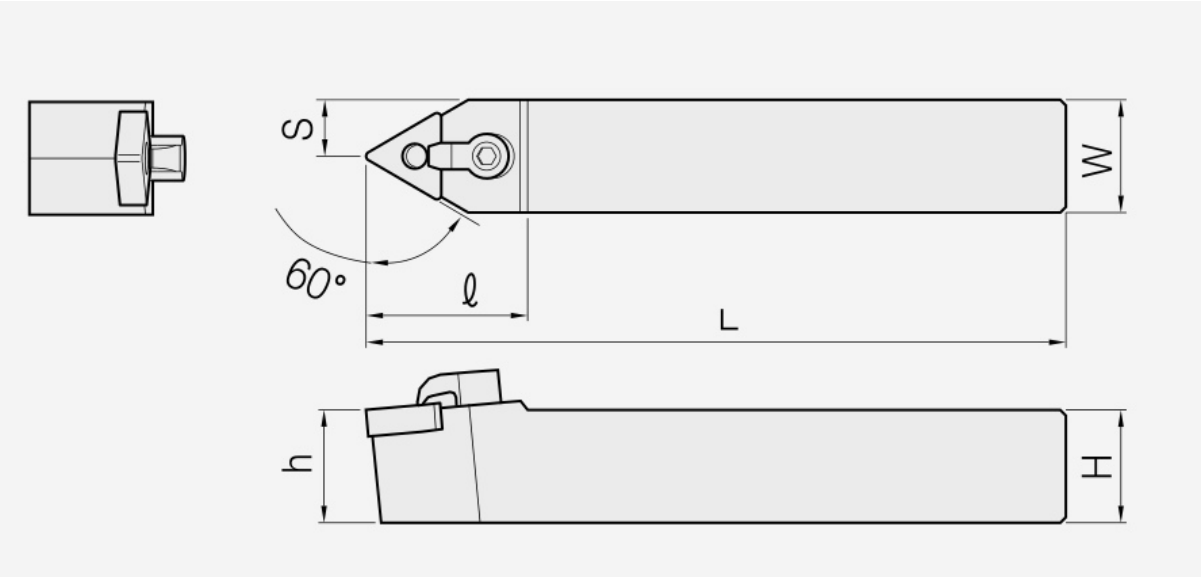
Item	Clamp	Clamp screw	Shim	Shim pin	Wrench
EH-MTENN 2525-22	MCL8N1	MCSR-5/16-32	MST43	MSP4D	W39.7L / W23.8L



MSRN: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.



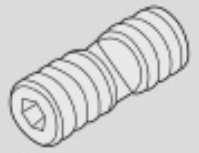
MSSN: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.



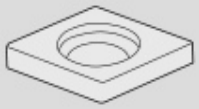
MTENN: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.



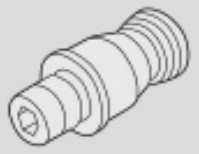
MSRN: Clamp - spare-part form.



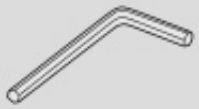
MSRN: Clamp screw - spare-part form.



MSRN: Shim - spare-part form.



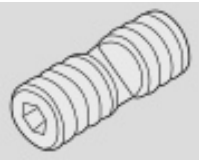
MSRN: Shim pin - spare-part form.



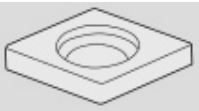
MSRN: Wrench - spare-part form.



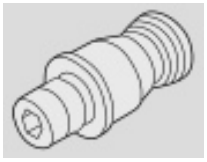
MSRN: Clamp - spare-part form.



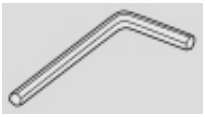
MSRN: Clamp screw - spare-part form.



MSRN: Shim - spare-part form.



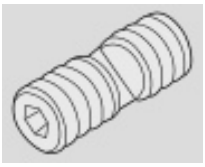
MSRN: Shim pin - spare-part form.



MSRN: Wrench - spare-part form.



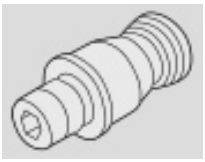
MSSN: Clamp - spare-part form.



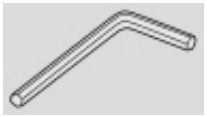
MSSN: Clamp screw - spare-part form.



MSSN: Shim - spare-part form.



MSSN: Shim pin - spare-part form.



MSSN: Wrench - spare-part form.

MTFN / MTGN / MTJN

MTFN: holder and dimensions

Dimensions in mm. Tool approach: 90°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-MTFN R/L 1616-16	TN□□1604□□	16	16	100	20
EH-MTFN R/L 2020-16	TN□□1604□□	20	20	125	25
EH-MTFN R/L 2525-16	TN□□1604□□	25	25	150	32

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-MTFN R/L 1616-16	TN□□1604□□	16	32
EH-MTFN R/L 2020-16	TN□□1604□□	20	32
EH-MTFN R/L 2525-16	TN□□1604□□	25	32

Spare parts

Item	Clamp	Clamp screw	Shim	Shim pin	Wrench
EH-MTFN R/L 1616-16	MCL7N	MCSR-10-32-19	MST32	MSP3D	W23.8L / W19.8L
EH-MTFN R/L 2020-16	MCL7N	MCSR-10-32-19	MST32	MSP3D	W23.8L / W19.8L
EH-MTFN R/L 2525-16	MCL7N	MCSR-10-32-19	MST32	MSP3D	W23.8L / W19.8L

MTFN: holder and dimensions

Dimensions in mm. Tool approach: 90°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-MTFN R/L 2525-22	TN□□2204□□	25	25	150	32
EH-MTFN R/L 3232-22	TN□□2204□□	32	32	170	40
EH-MTFN R/L 4040-22	TN□□2204□□	40	40	250	50

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-MTFN R/L 2525-22	TN□□2204□□	25	32
EH-MTFN R/L 3232-22	TN□□2204□□	32	32
EH-MTFN R/L 4040-22	TN□□2204□□	40	32

Spare parts

Item	Clamp	Clamp screw	Shim	Shim pin	Wrench
EH-MTFN R/L 2525-22	MCL8N1	MCSR-5/16-32	MST43	MSP4D	W39.7L / W23.8L
EH-MTFN R/L 3232-22	MCL8N1	MCSR-5/16-32	MST43	MSP4D	W39.7L / W23.8L
EH-MTFN R/L 4040-22	MCL8N1	MCSR-5/16-32	MST43	MSP4D	W39.7L / W23.8L

MTGN: holder and dimensions

Dimensions in mm. Tool approach: 90°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-MTGN R/L 1616-16	TN□□1604□□	16	16	100	20
EH-MTGN R/L 2020-16	TN□□1604□□	20	20	125	25
EH-MTGN R/L 2525-16	TN□□1604□□	25	25	150	32

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-MTGN R/L 1616-16	TN□□1604□□	16	32
EH-MTGN R/L 2020-16	TN□□1604□□	20	32
EH-MTGN R/L 2525-16	TN□□1604□□	25	32

Spare parts

Item	Clamp	Clamp screw	Shim	Shim pin	Wrench
EH-MTGN R/L 1616-16	MCL7N	MCSR-10-32-19	MST32	MSP3D	W23.8L / W19.8L
EH-MTGN R/L 2020-16	MCL7N	MCSR-10-32-19	MST32	MSP3D	W23.8L / W19.8L
EH-MTGN R/L 2525-16	MCL7N	MCSR-10-32-19	MST32	MSP3D	W23.8L / W19.8L

MTGN: holder and dimensions

Dimensions in mm. Tool approach: 90°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-MTGN R/L 2525-22	TN□□2204□□	25	25	150	32
EH-MTGN R/L 3232-22	TN□□2204□□	32	32	170	40

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-MTGN R/L 2525-22	TN□□2204□□	25	32
EH-MTGN R/L 3232-22	TN□□2204□□	32	32

Spare parts

Item	Clamp	Clamp screw	Shim	Shim pin	Wrench
EH-MTGN R/L 2525-22	MCL8N1	MCSR-5/16-32	MST43	MSP4D	W39.7L / W23.8L
EH-MTGN R/L 3232-22	MCL8N1	MCSR-5/16-32	MST43	MSP4D	W39.7L / W23.8L

MTJN: holder and dimensions

Dimensions in mm. Tool approach: 93°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-MTJN R/L 2020-16	TN□□1604□□	20	20	125	25
EH-MTJN R/L 2525-16	TN□□1604□□	25	25	150	32

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-MTJN R/L 2020-16	TN□□1604□□	20	32
EH-MTJN R/L 2525-16	TN□□1604□□	25	32

Spare parts

Item	Clamp	Clamp screw	Shim	Shim pin	Wrench
EH-MTJN R/L 2020-16	MCL7N	MCSR-10-32-19	MST32	MSP3D	W23.8L / W19.8L
EH-MTJN R/L 2525-16	MCL7N	MCSR-10-32-19	MST32	MSP3D	W23.8L / W19.8L

MTJN: holder and dimensions

Dimensions in mm. Tool approach: 93°.

Dimension/data block 1.

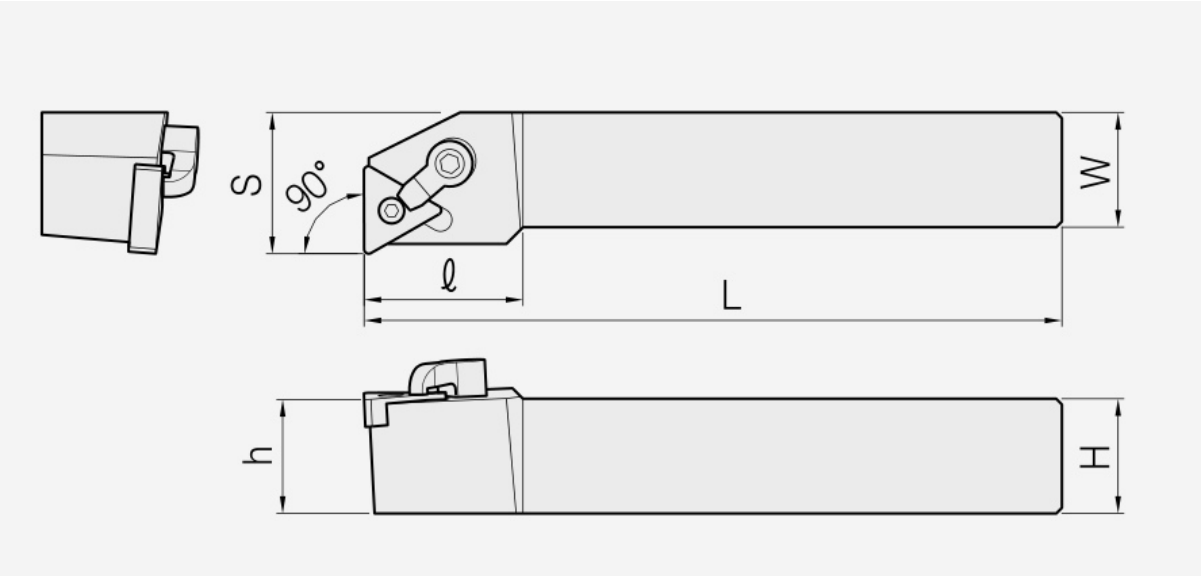
Item	Insert assignment	H	W	L	S
EH-MTJN R/L 2525-22	TN□□2204□□	25	25	150	32
EH-MTJN R/L 3232-22	TN□□2204□□	32	32	170	40

Dimension/data block 2.

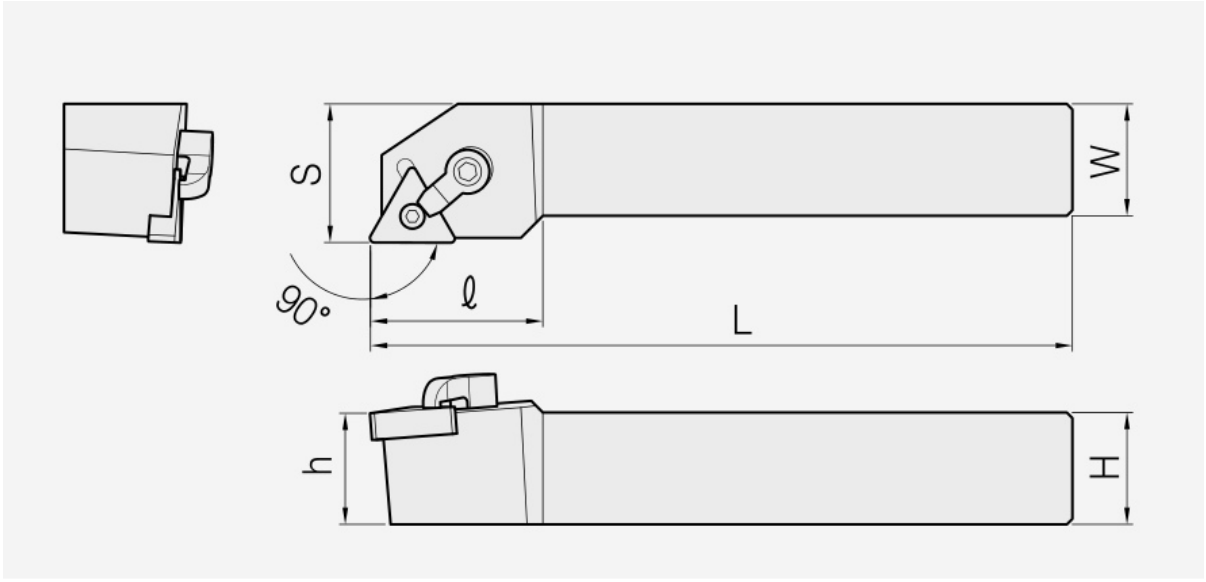
Item	Insert assignment	h	ℓ
EH-MTJN R/L 2525-22	TN□□2204□□	25	32
EH-MTJN R/L 3232-22	TN□□2204□□	32	32

Spare parts

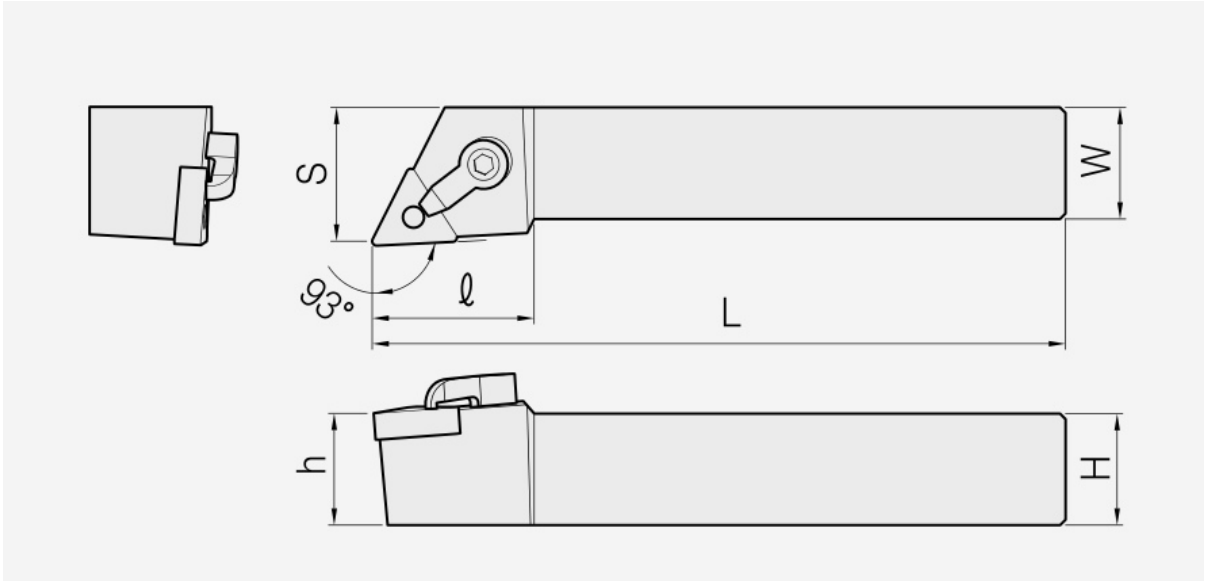
Item	Clamp	Clamp screw	Shim	Shim pin	Wrench
EH-MTJN R/L 2525-22	MCL8N1	MCSR-5/16-32	MST43	MSP4D	W39.7L / W23.8L
EH-MTJN R/L 3232-22	MCL8N1	MCSR-5/16-32	MST43	MSP4D	W39.7L / W23.8L



MTFN: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.



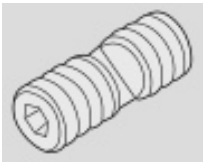
MTGN: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.



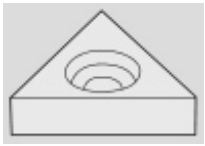
MTJN: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.



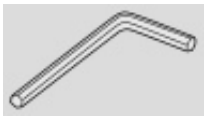
MTFN: Clamp - spare-part form.



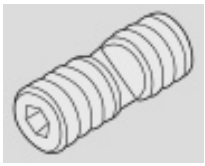
MTFN: Clamp screw - spare-part form.



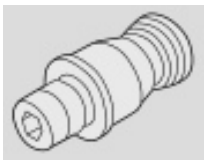
MTFN: Shim - spare-part form.



MTFN: Wrench - spare-part form.



MTFN: Clamp screw - spare-part form.



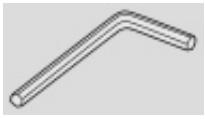
MTFN: Shim pin - spare-part form.



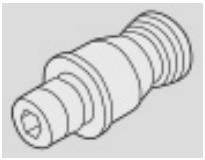
MTGN: Clamp - spare-part form.



MTGN: Shim - spare-part form.



MTGN: Wrench - spare-part form.



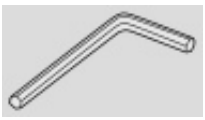
MTFN: Shim pin - spare-part form.



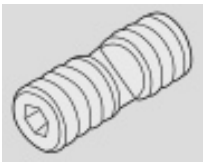
MTFN: Clamp - spare-part form.



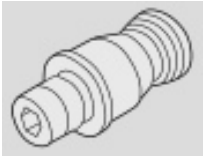
MTFN: Shim - spare-part form.



MTFN: Wrench - spare-part form.



MTGN: Clamp screw - spare-part form.



MTGN: Shim pin - spare-part form.

MVJN / MVQN / MVWNN

MVJN: holder and dimensions

Dimensions in mm. Tool approach: 93°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-MVJN R/L 2020-16	VN□□1604□□	20	20	125	25
EH-MVJN R/L 2525-16	VN□□1604□□	25	25	150	32
EH-MVJN R/L 3232-16	VN□□1604□□	32	32	170	40

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-MVJN R/L 2020-16	VN□□1604□□	20	37
EH-MVJN R/L 2525-16	VN□□1604□□	25	37
EH-MVJN R/L 3232-16	VN□□1604□□	32	37

Spare parts

Item	Clamp	Clamp screw	Shim	Shim pin	Wrench
EH-MVJN R/L 2020-16	MCL8N1	MCSR-5/16-32	MSV32	MSP3D	W39.7L / W23.8L
EH-MVJN R/L 2525-16	MCL8N1	MCSR-5/16-32	MSV32	MSP3D	W39.7L / W23.8L
EH-MVJN R/L 3232-16	MCL8N1	MCSR-5/16-32	MSV32	MSP3D	W39.7L / W23.8L

MVQN: holder and dimensions

Dimensions in mm. Tool approach: 117.5°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-MVQN R/L 2020-16	VN□□1604□□	20	20	125	25
EH-MVQN R/L 2525-16	VN□□1604□□	25	25	150	32
EH-MVQN R/L 3232-16	VN□□1604□□	32	32	170	40

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-MVQN R/L 2020-16	VN□□1604□□	20	42
EH-MVQN R/L 2525-16	VN□□1604□□	25	42
EH-MVQN R/L 3232-16	VN□□1604□□	32	37

Spare parts

Item	Clamp	Clamp screw	Shim	Shim pin	Wrench
EH-MVQN R/L 2020-16	MCL8N2		MSV32	MSP3D	W39.7L / W19.8L
EH-MVQN R/L 2525-16	MCL8N2		MSV32	MSP3D	W39.7L / W19.8L
EH-MVQN R/L 3232-16	MCL8N2		MSV32	MSP3D	W39.7L / W19.8L

MVWNN: holder and dimensions

Dimensions in mm. Tool approach: 72.5°.

Dimension/data block 1.

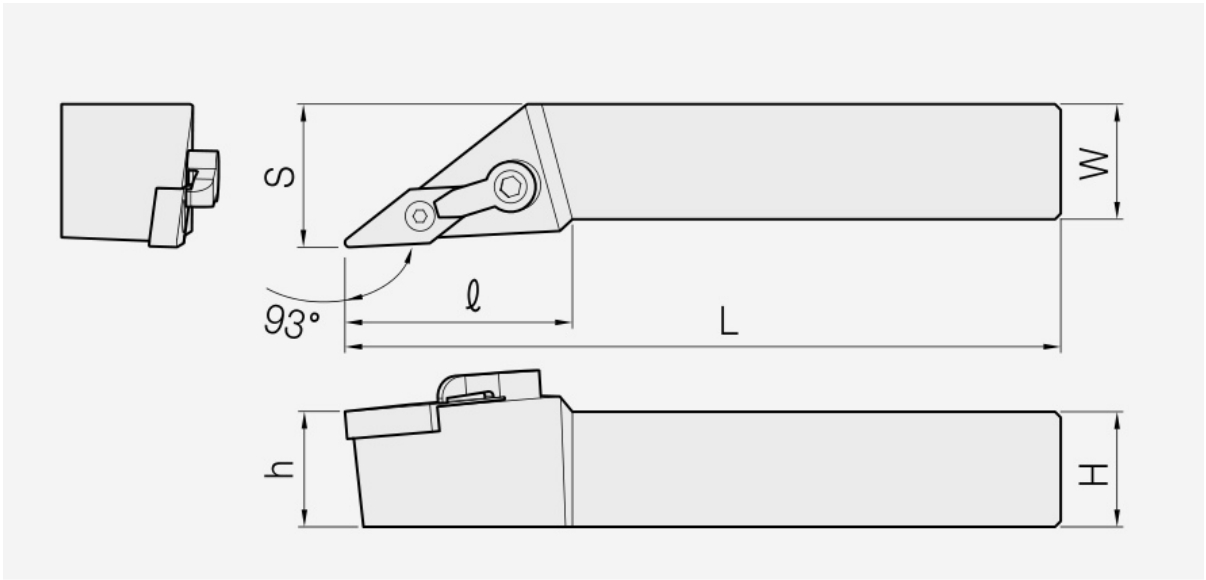
Item	Insert assignment	H	W	L	S
EH-MVWNN 2020-16	VN□□1604□□	20	20	125	25
EH-MVWNN 2525-16	VN□□1604□□	25	25	150	32

Dimension/data block 2.

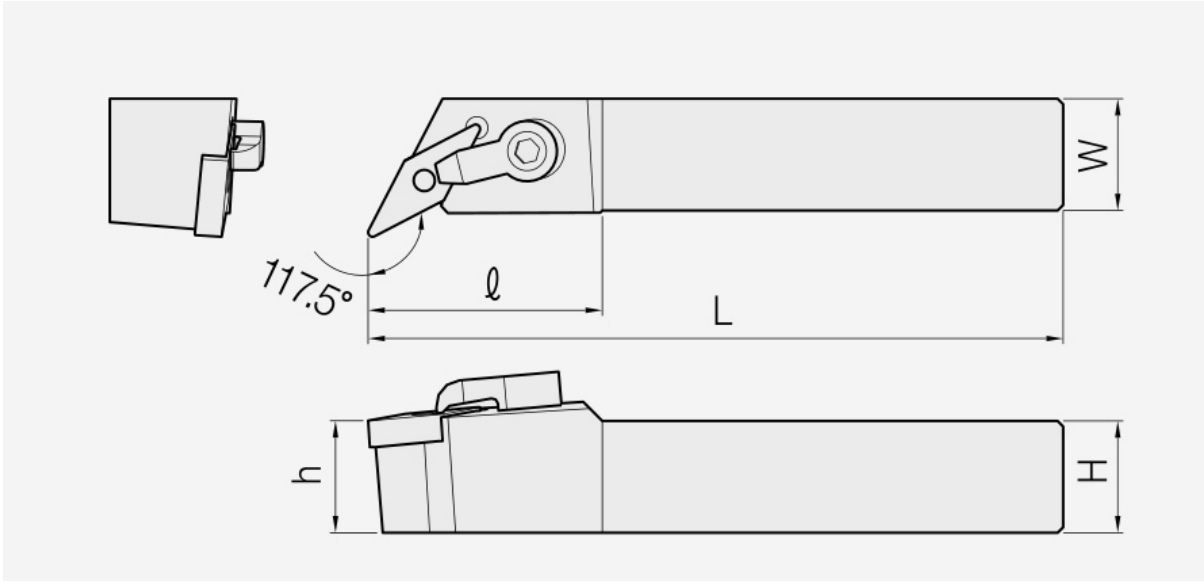
Item	Insert assignment	h	ℓ
EH-MVWNN 2020-16	VN□□1604□□	20	42
EH-MVWNN 2525-16	VN□□1604□□	25	42

Spare parts

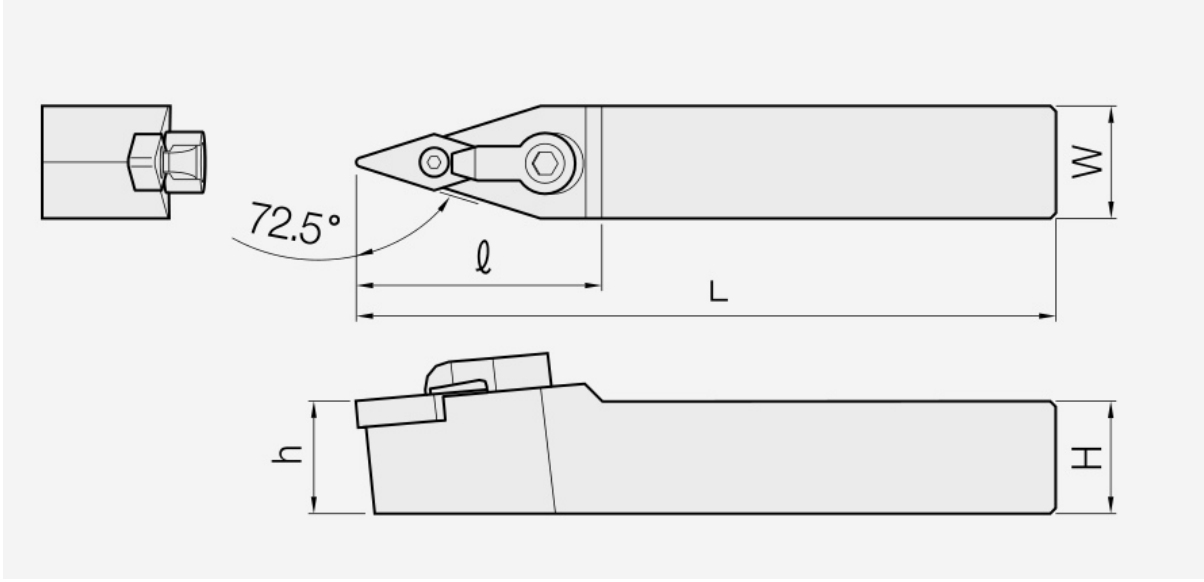
Item	Clamp	Clamp screw	Shim	Shim pin	Wrench
EH-MVWNN 2020-16	MCL8N2		MSV32	MSP3D	W39.7L / W19.8L
EH-MVWNN 2525-16	MCL8N2		MSV32	MSP3D	W39.7L / W19.8L



MVJN: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.



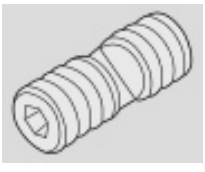
MVQN: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.



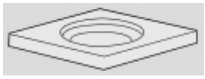
MVWNN: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.



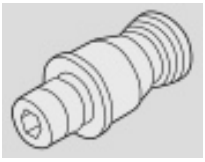
MVJN: Clamp - spare-part form.



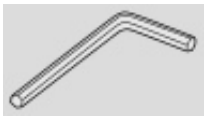
MVJN: Clamp screw - spare-part form.



MVJN: Shim - spare-part form.



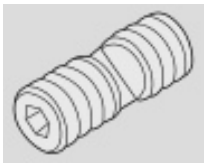
MVJN: Shim pin - spare-part form.



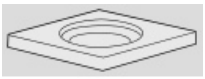
MVJN: Wrench - spare-part form.



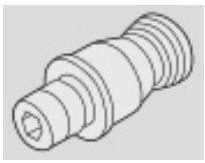
MVQN: Clamp - spare-part form.



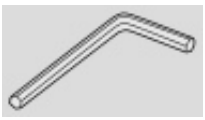
MVQN: Clamp screw - spare-part form.



MVQN: Shim - spare-part form.



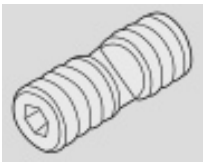
MVQN: Shim pin - spare-part form.



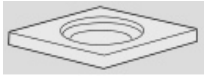
MVQN: Wrench - spare-part form.



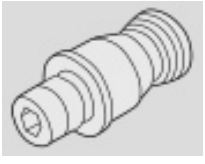
MVWNN: Clamp - spare-part form.



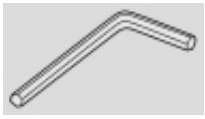
MVWNN: Clamp screw - spare-part form.



MVWNN: Shim - spare-part form.



MVWNN: Shim pin - spare-part form.



MVWNN: Wrench - spare-part form.

MWLN / SCAC / SCLC

MWLN: holder and dimensions

Dimensions in mm. Tool approach: 95°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-MWLN R/L 2020-06	WN□□0604□□	20	20	125	25
EH-MWLN R/L 2525-06	WN□□0604□□	25	25	150	32
EH-MWLN R/L 3232-06	WN□□0604□□	32	32	170	40

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-MWLN R/L 2020-06	WN□□0604□□	20	32
EH-MWLN R/L 2525-06	WN□□0604□□	25	32
EH-MWLN R/L 3232-06	WN□□0604□□	32	32

Spare parts

Item	Clamp	Clamp screw	Shim	Shim pin	Wrench
EH-MWLN R/L 2020-06	MCL7N	MCSR-10-32-19	MSW32	MSP3D	W23.8L / W19.8L
EH-MWLN R/L 2525-06	MCL7N	MCSR-10-32-19	MSW32	MSP3D	W23.8L / W19.8L
EH-MWLN R/L 3232-06	MCL7N	MCSR-10-32-19	MSW32	MSP3D	W23.8L / W19.8L

MWLN: holder and dimensions

Dimensions in mm. Tool approach: 95°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-MWLN R/L 2020-08	WN□□0804□□	20	20	125	25
EH-MWLN R/L 2525-08	WN□□0804□□	25	25	150	32
EH-MWLN R/L 3232-08	WN□□0804□□	32	32	170	40

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-MWLN R/L 2020-08	WN□□0804□□	20	32
EH-MWLN R/L 2525-08	WN□□0804□□	25	32
EH-MWLN R/L 3232-08	WN□□0804□□	32	32

Spare parts

Item	Clamp	Clamp screw	Shim	Shim pin	Wrench
EH-MWLN R/L 2020-08	MCL6N	MCSR-1/4-21	MSW43	MSP4D	HW31.8L / HW23.8L
EH-MWLN R/L 2525-08	MCL6N	MCSR-1/4-21	MSW43	MSP4D	HW31.8L / HW23.8L
EH-MWLN R/L 3232-08	MCL6N	MCSR-1/4-21	MSW43	MSP4D	HW31.8L / HW23.8L

SCAC: holder and dimensions

Dimensions in mm. Tool approach: 90°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-SCAC R/L 1010-06	CC□□0602□□	10	10	70	10.5

Dimension/data block 2.

Item	Insert assignment	h
EH-SCAC R/L 1010-06	CC□□0602□□	10

Spare parts

Item	Screw	Shim	Shim screw	Wrench
EH-SCAC R/L 1010-06	SCR02565	-	-	TW07P

SCAC: holder and dimensions

Dimensions in mm. Tool approach: 90°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-SCAC R/L 1212-09	CC□□09T3□□	12	12	80	12.5

Dimension/data block 2.

Item	Insert assignment	h
EH-SCAC R/L 1212-09	CC□□09T3□□	12

Spare parts

Item	Screw	Shim	Shim screw	Wrench
EH-SCAC R/L 1212-09	SCR03058	-	-	TW15P

SCLC: holder and dimensions

Dimensions in mm. Tool approach: 95°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-SCLC R/L 0808-06	CC□□0602□□	08	08	60	10
EH-SCLC R/L 1010-06	CC□□0602□□	10	10	70	16

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-SCLC R/L 0808-06	CC□□0602□□	08	10
EH-SCLC R/L 1010-06	CC□□0602□□	10	10

Spare parts

Item	Screw	Shim	Shim screw	Wrench
EH-SCLC R/L 0808-06	SCR02565	-	-	TW07P
EH-SCLC R/L 1010-06	SCR02565	-	-	TW07P

SCLC: holder and dimensions

Dimensions in mm. Tool approach: 95°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-SCLC R/L 1212-09	CC□□09T3□□	12	12	80	20
EH-SCLC R/L 1616-09	CC□□09T3□□	16	16	100	20
EH-SCLC R/L 2020-09	CC□□09T3□□	20	20	125	25

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-SCLC R/L 1212-09	CC□□09T3□□	12	16
EH-SCLC R/L 1616-09	CC□□09T3□□	16	16
EH-SCLC R/L 2020-09	CC□□09T3□□	20	16

Spare parts

Item	Screw	Shim	Shim screw	Wrench
EH-SCLC R/L 1212-09	SCR03058	-	-	TW15P
EH-SCLC R/L 1616-09	SCR03058	-	-	TW15P
EH-SCLC R/L 2020-09	SCR03058	-	-	TW15P

SCLC: holder and dimensions

Dimensions in mm. Tool approach: 95°.

Dimension/data block 1.

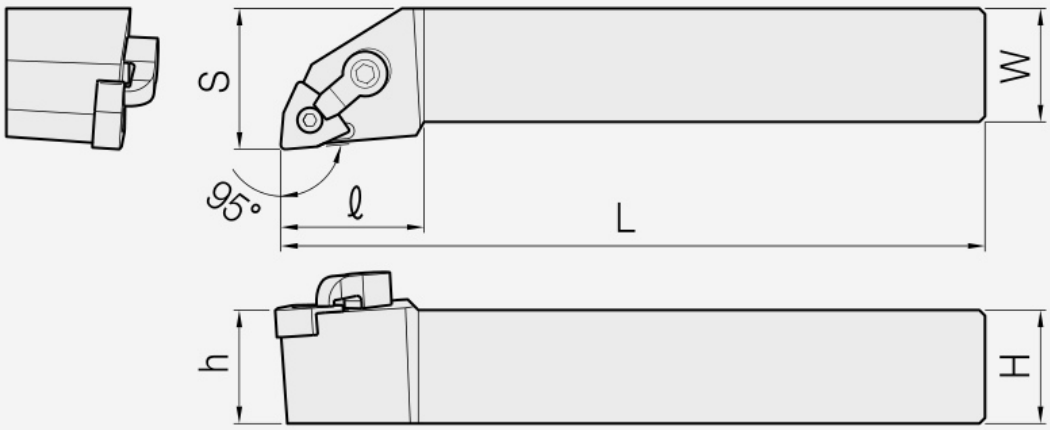
Item	Insert assignment	H	W	L	S
EH-SCLC R/L 2020-12	CC□□1204□□	20	20	125	25
EH-SCLC R/L 2525-12	CC□□1204□□	25	25	150	32

Dimension/data block 2.

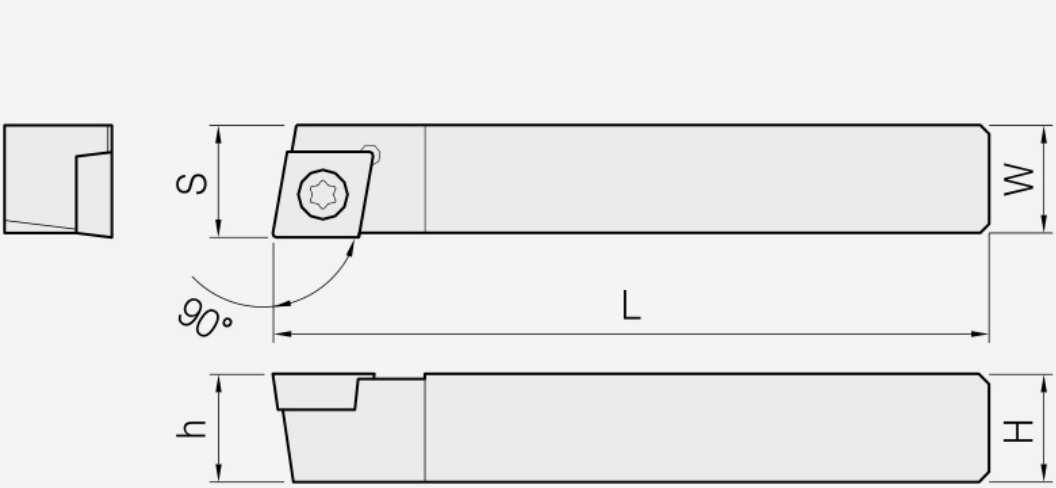
Item	Insert assignment	h	ℓ
EH-SCLC R/L 2020-12	CC□□1204□□	20	25
EH-SCLC R/L 2525-12	CC□□1204□□	25	26

Spare parts

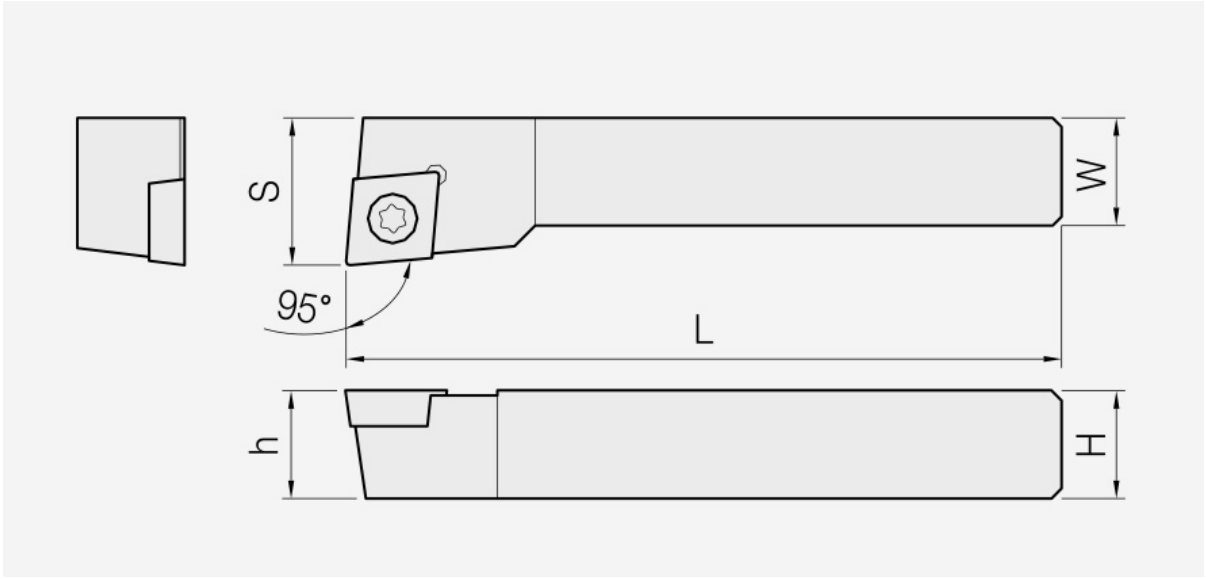
Item	Screw	Shim	Shim screw	Wrench
EH-SCLC R/L 2020-12	SCR0411F	SSC42	SSCR0610	TW15P / W40L
EH-SCLC R/L 2525-12	SCR0411F	SSC42	SSCR0610	TW15P / W40L



Tool: isolated dimensioned drawing; views and dimension references unchanged.



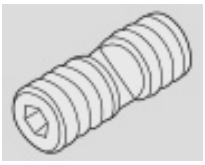
Tool: isolated dimensioned drawing; views and dimension references unchanged.



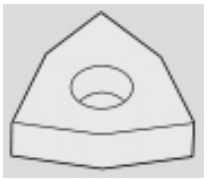
Tool: isolated dimensioned drawing; views and dimension references unchanged.



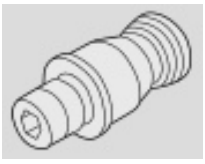
MWLN: Clamp - spare-part form.



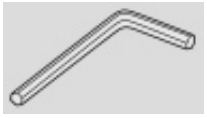
MWLN: Clamp screw - spare-part form.



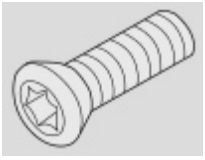
MWLN: Shim - spare-part form.



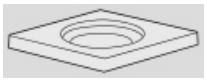
MWLN: Shim pin - spare-part form.



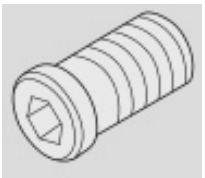
MWLN: Wrench - spare-part form.



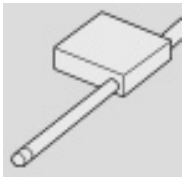
MWLN: Clamp - spare-part form.



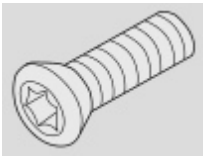
MWLN: Clamp screw - spare-part form.



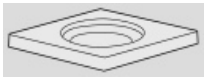
MWLN: Shim - spare-part form.



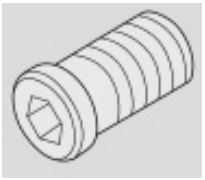
MWLN: Shim pin - spare-part form.



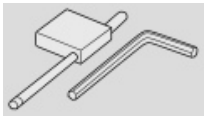
SCAC: Screw - spare-part form.



SCAC: Shim - spare-part form.



SCAC: Shim screw - spare-part form.



SCAC: Wrench - spare-part form.

SDAC / SDJC / SDNCN

SDAC: holder and dimensions

Dimensions in mm. Tool approach: 90°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-SDAC R/L 1010-07	DC□□0702□□	10	10	70	10.5

Dimension/data block 2.

Item	Insert assignment	h
EH-SDAC R/L 1010-07	DC□□0702□□	10

Spare parts

Item	Screw	Shim	Shim screw	Wrench
EH-SDAC R/L 1010-07	SCR02565	-	-	TW07P

SDAC: holder and dimensions

Dimensions in mm. Tool approach: 90°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-SDAC R/L 1212-11	DC□□11T3□□	12	12	80	12.5
EH-SDAC R/L 1616-11	DC□□11T3□□	16	16	100	16.5

Dimension/data block 2.

Item	Insert assignment	h
EH-SDAC R/L 1212-11	DC□□11T3□□	12
EH-SDAC R/L 1616-11	DC□□11T3□□	16

Spare parts

Item	Screw	Shim	Shim screw	Wrench
EH-SDAC R/L 1212-11	SCR03058	-	-	TW15P
EH-SDAC R/L 1616-11	SCR03512	SSD32	SSCR0509	TW15P / W35L

SDJC: holder and dimensions

Dimensions in mm. Tool approach: 93°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-SDJC R/L 1010-07	DC□□0702□□	10	10	70	12
EH-SDJC R/L 1212-07	DC□□0702□□	12	12	80	16
EH-SDJC R/L 1616-07	DC□□0702□□	16	16	100	20
EH-SDJC R/L 2020-07	DC□□0702□□	20	20	125	25

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-SDJC R/L 1010-07	DC□□0702□□	10	15
EH-SDJC R/L 1212-07	DC□□0702□□	12	15
EH-SDJC R/L 1616-07	DC□□0702□□	16	18
EH-SDJC R/L 2020-07	DC□□0702□□	20	15

Spare parts

Item	Screw	Shim	Shim screw	Wrench
EH-SDJC R/L 1010-07	SCR02565	-	-	TW07P
EH-SDJC R/L 1212-07	SCR02565	-	-	TW07P
EH-SDJC R/L 1616-07	SCR02565	-	-	TW07P
EH-SDJC R/L 2020-07	SCR02565	-	-	TW07P

SDJC: holder and dimensions

Dimensions in mm. Tool approach: 93°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-SDJC R/L 1212-11	DC□□11T3□□	12	12	80	16
EH-SDJC R/L 1616-11	DC□□11T3□□	16	16	100	20
EH-SDJC R/L 2020-11	DC□□11T3□□	20	20	125	25
EH-SDJC R/L 2525-11	DC□□11T3□□	25	25	150	32

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-SDJC R/L 1212-11	DC□□11T3□□	12	15
EH-SDJC R/L 1616-11	DC□□11T3□□	16	24
EH-SDJC R/L 2020-11	DC□□11T3□□	20	24
EH-SDJC R/L 2525-11	DC□□11T3□□	25	29

Spare parts

Item	Screw	Shim	Shim screw	Wrench
EH-SDJC R/L 1212-11	SCR03512	SSD32	SSCR0509	TW15P / W35L
EH-SDJC R/L 1616-11	SCR03512	SSD32	SSCR0509	TW15P / W35L
EH-SDJC R/L 2020-11	SCR03512	SSD32	SSCR0509	TW15P / W35L
EH-SDJC R/L 2525-11	SCR03512	SSD32	SSCR0509	TW15P / W35L

SDNCN: holder and dimensions

Dimensions in mm. Tool approach: 62.5°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-SDNCN 1010-07	DC□□0702□□	10	10	70	5
EH-SDNCN 1212-07	DC□□0702□□	12	12	80	6

Dimension/data block 2.

Item	Insert assignment	h
EH-SDNCN 1010-07	DC□□0702□□	10
EH-SDNCN 1212-07	DC□□0702□□	12

Spare parts

Item	Screw	Shim	Shim screw	Wrench
EH-SDNCN 1010-07	SCR02565	-	-	TW07P
EH-SDNCN 1212-07	SCR02565	-	-	TW07P

SDNCN: holder and dimensions

Dimensions in mm. Tool approach: 62.5°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-SDNCN 1616-11	DC□□11T3□□	16	16	100	8
EH-SDNCN 2020-11	DC□□11T3□□	20	20	125	10

Dimension/data block 2.

Item	Insert assignment	h
EH-SDNCN 1616-11	DC□□11T3□□	16
EH-SDNCN 2020-11	DC□□11T3□□	20

Spare parts

Item	Screw	Shim	Shim screw	Wrench
EH-SDNCN 1616-11	SCR03512	SSD32	SSCR0509	TW15P / W35L
EH-SDNCN 2020-11	SCR03512	SSD32	SSCR0509	TW15P / W35L

SDNCN: holder and dimensions

Dimensions in mm. Tool approach: 62.5°.

Dimension/data block 1.

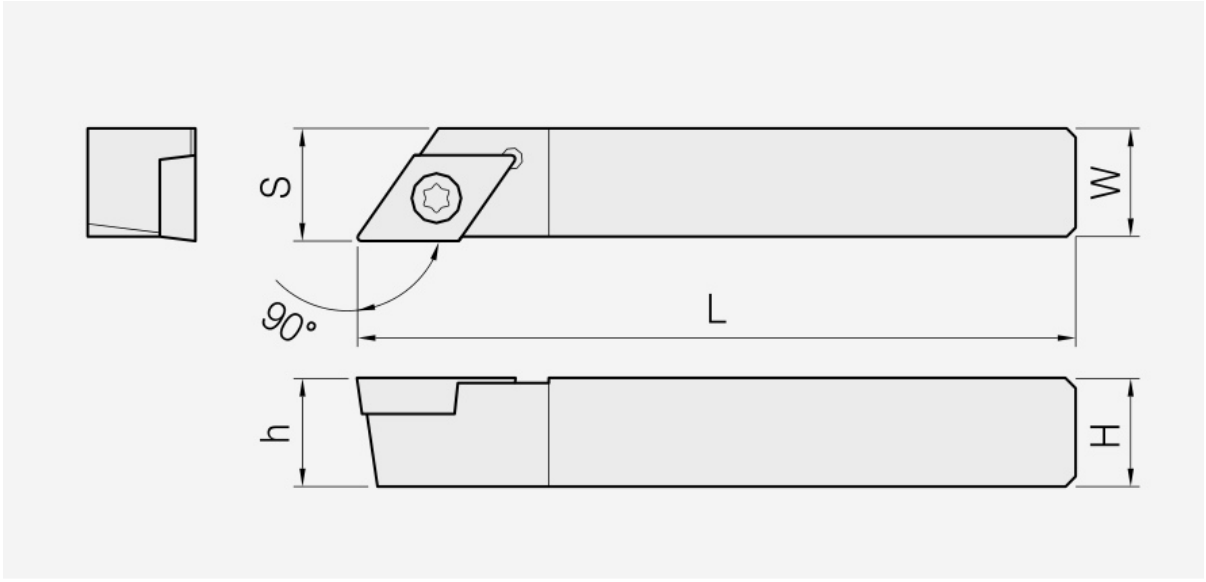
Item	Insert assignment	H	W	L	S
EH-SDNCN 1212-11	DC□□11T3□□	12	12	100	6

Dimension/data block 2.

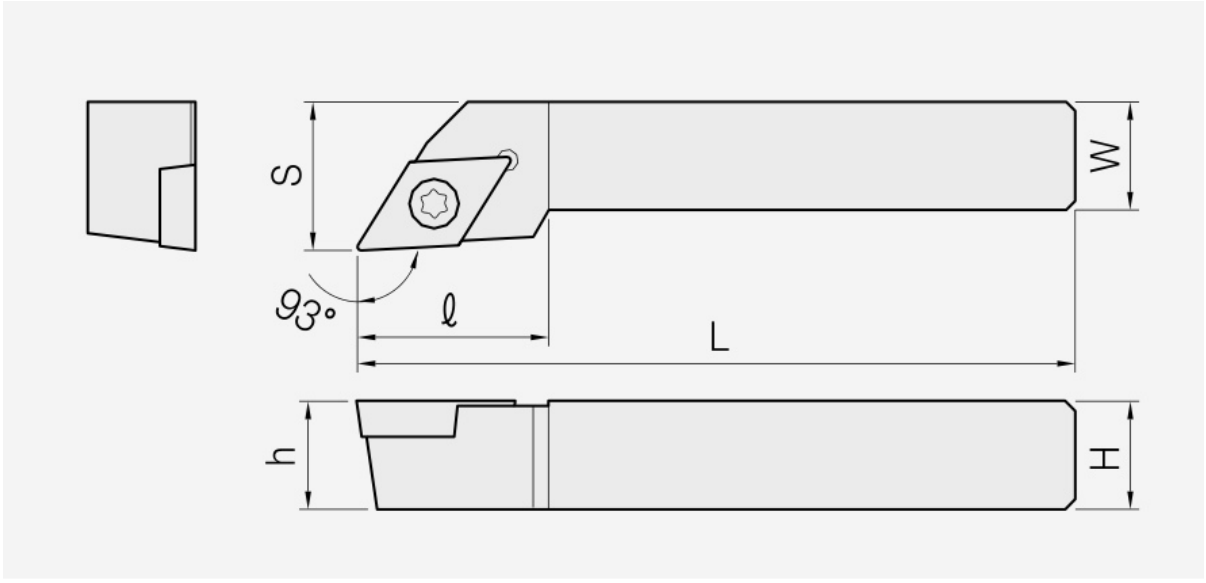
Item	Insert assignment	h
EH-SDNCN 1212-11	DC□□11T3□□	12

Spare parts

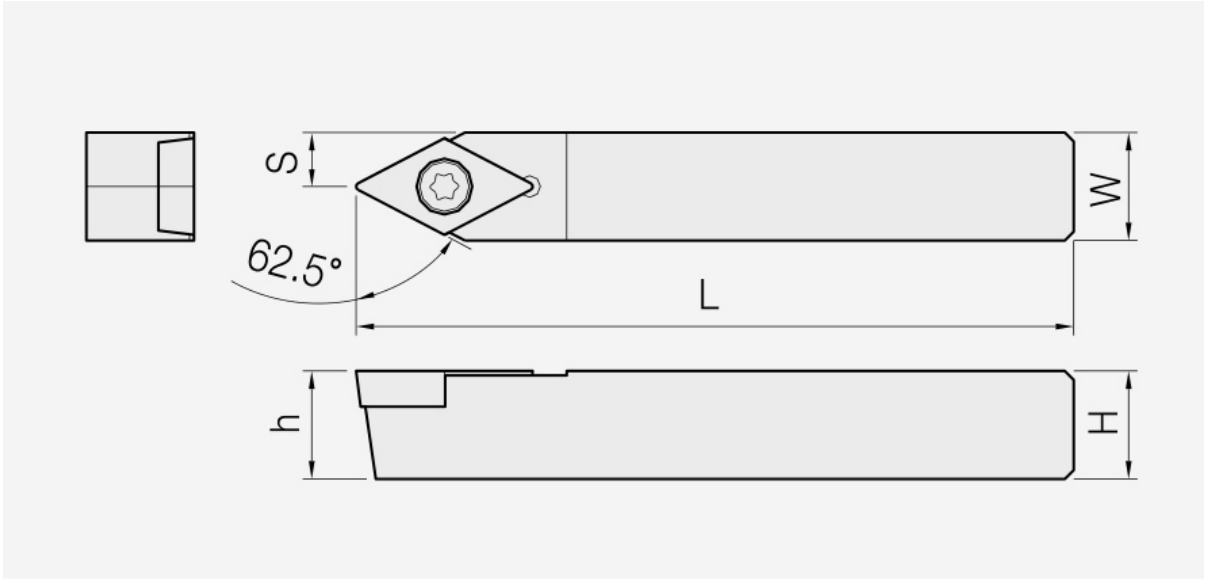
Item	Screw	Shim	Shim screw	Wrench
EH-SDNCN 1212-11	SCR03058	-	-	TW15P



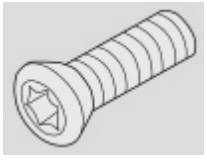
Tool: isolated dimensioned drawing; views and dimension references unchanged.



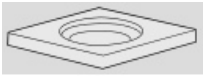
Tool: isolated dimensioned drawing; views and dimension references unchanged.



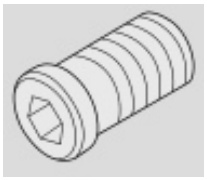
Tool: isolated dimensioned drawing; views and dimension references unchanged.



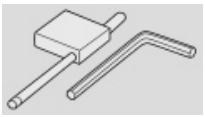
SDAC: Screw - spare-part form.



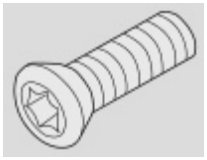
SDAC: Shim - spare-part form.



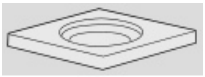
SDAC: Shim screw - spare-part form.



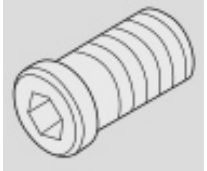
SDAC: Wrench - spare-part form.



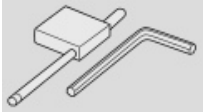
SDJC: Screw - spare-part form.



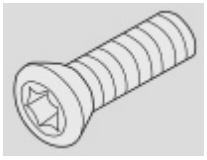
SDJC: Shim - spare-part form.



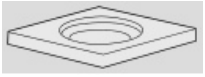
SDJC: Shim screw - spare-part form.



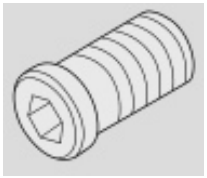
SDJC: Wrench - spare-part form.



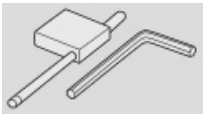
SDJC: Screw - spare-part form.



SDJC: Shim - spare-part form.



SDJC: Shim screw - spare-part form.



SDJC: Wrench - spare-part form.

SRDCN / SRGC

SRDCN: holder and dimensions

Dimensions in mm.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-SRDCN 1010-06	RCGT0602M0	10	10	70	5
EH-SRDCN 1212-06	RCGT0602M0	12	12	80	6
EH-SRDCN 1616-06	RCGT0602M0	16	16	100	8
EH-SRDCN 2525-06	RCGT0602M0	25	25	150	12.5

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-SRDCN 1010-06	RCGT0602M0	10	10
EH-SRDCN 1212-06	RCGT0602M0	12	12
EH-SRDCN 1616-06	RCGT0602M0	16	12
EH-SRDCN 2525-06	RCGT0602M0	25	20

Spare parts

Item	Screw	Shim	Shim screw	Wrench
EH-SRDCN 1010-06	SCR02565	-	-	TW07P
EH-SRDCN 1212-06	SCR02565	-	-	TW07P
EH-SRDCN 1616-06	SCR02565	-	-	TW07P
EH-SRDCN 2525-06	SCR02565	-	-	TW07P

SRDCN: holder and dimensions

Dimensions in mm.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-SRDCN 1616-08	RCGT0803M0	16	16	100	8
EH-SRDCN 2020-08	RCGT0803M0	20	20	125	10
EH-SRDCN 2525-08	RCGT0803M0	25	25	150	12.5

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-SRDCN 1616-08	RCGT0803M0	16	16
EH-SRDCN 2020-08	RCGT0803M0	20	20
EH-SRDCN 2525-08	RCGT0803M0	25	20

Spare parts

Item	Screw	Shim	Shim screw	Wrench
EH-SRDCN 1616-08	SCR0307	-	-	TW09P
EH-SRDCN 2020-08	SCR0307	-	-	TW09P
EH-SRDCN 2525-08	SCR0307	-	-	TW09P

SRDCN: holder and dimensions

Dimensions in mm.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-SRDCN 1616-10	RCGT1003M0	16	16	100	8
EH-SRDCN 2020-10	RCGT1003M0	20	20	125	10
EH-SRDCN 2525-10	RCGT1003M0	25	25	150	12.5

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-SRDCN 1616-10	RCGT1003M0	16	25
EH-SRDCN 2020-10	RCGT1003M0	20	25
EH-SRDCN 2525-10	RCGT1003M0	25	25

Spare parts

Item	Screw	Shim	Shim screw	Wrench
EH-SRDCN 1616-10	SCR03511A	SSR10	SSCR0509	TW15P / W35L
EH-SRDCN 2020-10	SCR03511A	SSR10	SSCR0509	TW15P / W35L
EH-SRDCN 2525-10	SCR03511A	SSR10	SSCR0509	TW15P / W35L

SRDCN: holder and dimensions

Dimensions in mm.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-SRDCN 2020-12	RCGT1204M0	20	20	125	10
EH-SRDCN 2525-12	RCGT1204M0	25	25	150	12.5

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-SRDCN 2020-12	RCGT1204M0	20	28
EH-SRDCN 2525-12	RCGT1204M0	25	28

Spare parts

Item	Screw	Shim	Shim screw	Wrench
EH-SRDCN 2020-12	SCR03512	SSR12	SSCR0509	TW15P / W35L
EH-SRDCN 2525-12	SCR03512	SSR12	SSCR0509	TW15P / W35L

SRGC: holder and dimensions

Dimensions in mm.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-SRGC R/L 1010-06	RCGT0602M0	10	10	70	12
EH-SRGC R/L 1212-06	RCGT0602M0	12	12	80	16
EH-SRGC R/L 1616-06	RCGT0602M0	16	16	100	20

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-SRGC R/L 1010-06	RCGT0602M0	10	-
EH-SRGC R/L 1212-06	RCGT0602M0	12	-
EH-SRGC R/L 1616-06	RCGT0602M0	16	-

Spare parts

Item	Screw	Shim	Shim screw	Wrench
EH-SRGC R/L 1010-06	SCR02565	-	-	TW07P
EH-SRGC R/L 1212-06	SCR02565	-	-	TW07P
EH-SRGC R/L 1616-06	SCR02565	-	-	TW07P

SRGC: holder and dimensions

Dimensions in mm.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-SRGC R/L 1616-08	RCGT0803M0	16	16	100	20
EH-SRGC R/L 2020-08	RCGT0803M0	20	20	125	25
EH-SRGC R/L 2525-08	RCGT0803M0	25	25	150	32

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-SRGC R/L 1616-08	RCGT0803M0	16	-
EH-SRGC R/L 2020-08	RCGT0803M0	20	-
EH-SRGC R/L 2525-08	RCGT0803M0	25	-

Spare parts

Item	Screw	Shim	Shim screw	Wrench
EH-SRGC R/L 1616-08	SCR0307	-	-	TW09P
EH-SRGC R/L 2020-08	SCR0307	-	-	TW09P
EH-SRGC R/L 2525-08	SCR0307	-	-	TW09P

SRGC: holder and dimensions

Dimensions in mm.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-SRGC R/L 1616-10	RCGT1003M0	16	16	100	20
EH-SRGC R/L 2020-10	RCGT1003M0	20	20	125	25
EH-SRGC R/L 2525-10	RCGT1003M0	25	25	150	32

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-SRGC R/L 1616-10	RCGT1003M0	16	-
EH-SRGC R/L 2020-10	RCGT1003M0	20	-
EH-SRGC R/L 2525-10	RCGT1003M0	25	-

Spare parts

Item	Screw	Shim	Shim screw	Wrench
EH-SRGC R/L 1616-10	SCR03511A	SSR10	SSCR0509	TW15P / W35L
EH-SRGC R/L 2020-10	SCR03511A	SSR10	SSCR0509	TW15P / W35L
EH-SRGC R/L 2525-10	SCR03511A	SSR10	SSCR0509	TW15P / W35L

SRGC: holder and dimensions

Dimensions in mm.

Dimension/data block 1.

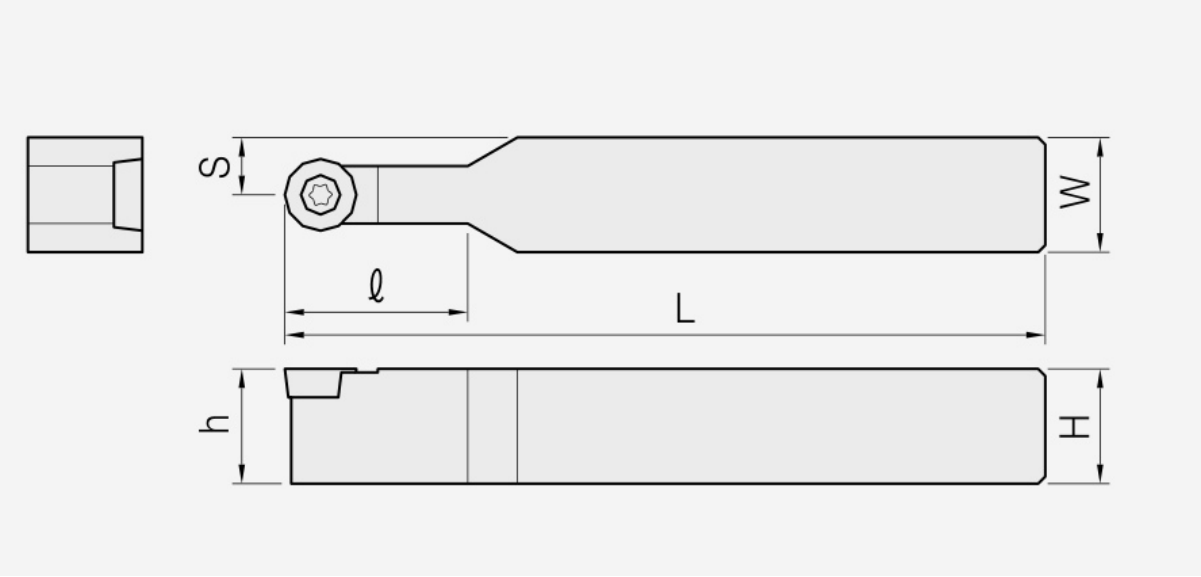
Item	Insert assignment	H	W	L	S
EH-SRGC R/L 2020-12	RCGT1204M0	20	20	125	25
EH-SRGC R/L 2525-12	RCGT1204M0	25	25	150	32

Dimension/data block 2.

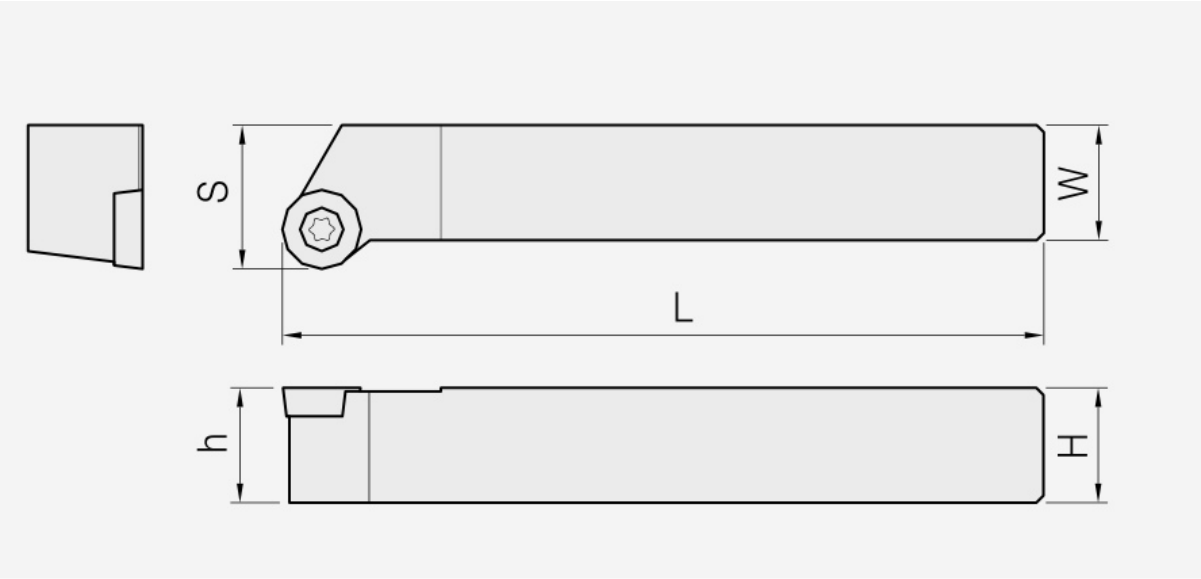
Item	Insert assignment	h	ℓ
EH-SRGC R/L 2020-12	RCGT1204M0	20	-
EH-SRGC R/L 2525-12	RCGT1204M0	25	-

Spare parts

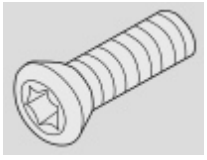
Item	Screw	Shim	Shim screw	Wrench
EH-SRGC R/L 2020-12	SCR03512	SSR12	SSCR0509	TW15P / W35L
EH-SRGC R/L 2525-12	SCR03512	SSR12	SSCR0509	TW15P / W35L



SRDCN: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.



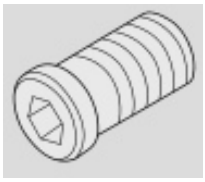
SRGC: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.



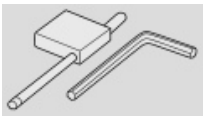
SRDCN: Screw - spare-part form.



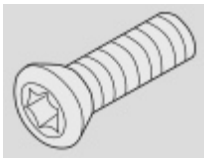
SRDCN: Shim - spare-part form.



SRDCN: Shim screw - spare-part form.



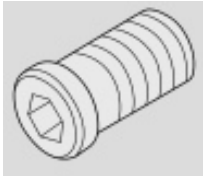
SRDCN: Wrench - spare-part form.



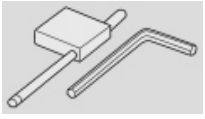
SRDCN: Screw - spare-part form.



SRDCN: Shim - spare-part form.



SRDCN: Shim screw - spare-part form.



SRDCN: Wrench - spare-part form.

SSBC / SSDCN / SSKC

SSBC: holder and dimensions

Dimensions in mm. Tool approach: 75°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-SSBC R/L 1212-09	SC□□09T3□□	12	12	80	11
EH-SSBC R/L 1616-09	SC□□09T3□□	16	16	100	13

Dimension/data block 2.

Item	Insert assignment	h
EH-SSBC R/L 1212-09	SC□□09T3□□	12
EH-SSBC R/L 1616-09	SC□□09T3□□	16

Spare parts

Item	Screw	Shim	Shim screw	Wrench
EH-SSBC R/L 1212-09	SCR03058	SSS32	SSCR0509	TW15P
EH-SSBC R/L 1616-09	SCR03512	SSS32	SSCR0509	TW15P / W35L

SSBC: holder and dimensions

Dimensions in mm. Tool approach: 75°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-SSBC R/L 2020-12	SC□□1204□□	20	20	125	17

Dimension/data block 2.

Item	Insert assignment	h
EH-SSBC R/L 2020-12	SC□□1204□□	20

Spare parts

Item	Screw	Shim	Shim screw	Wrench
EH-SSBC R/L 2020-12	SCR0411F	SSS42	SSCR0610	TW15P / W35L

SSDCN: holder and dimensions

Dimensions in mm. Tool approach: 45°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-SSDCN 1212-09	SC□□09T3□□	12	12	80	6
EH-SSDCN 1616-09	SC□□09T3□□	16	16	100	8

Dimension/data block 2.

Item	Insert assignment	h
EH-SSDCN 1212-09	SC□□09T3□□	12
EH-SSDCN 1616-09	SC□□09T3□□	16

Spare parts

Item	Screw	Shim	Shim screw	Wrench
EH-SSDCN 1212-09	SCR03058	-	-	TW15P
EH-SSDCN 1616-09	SCR03512	SSS32	SSCR0509	TW15P / W35L

SSKC: holder and dimensions

Dimensions in mm. Tool approach: 75°.

Dimension/data block 1.

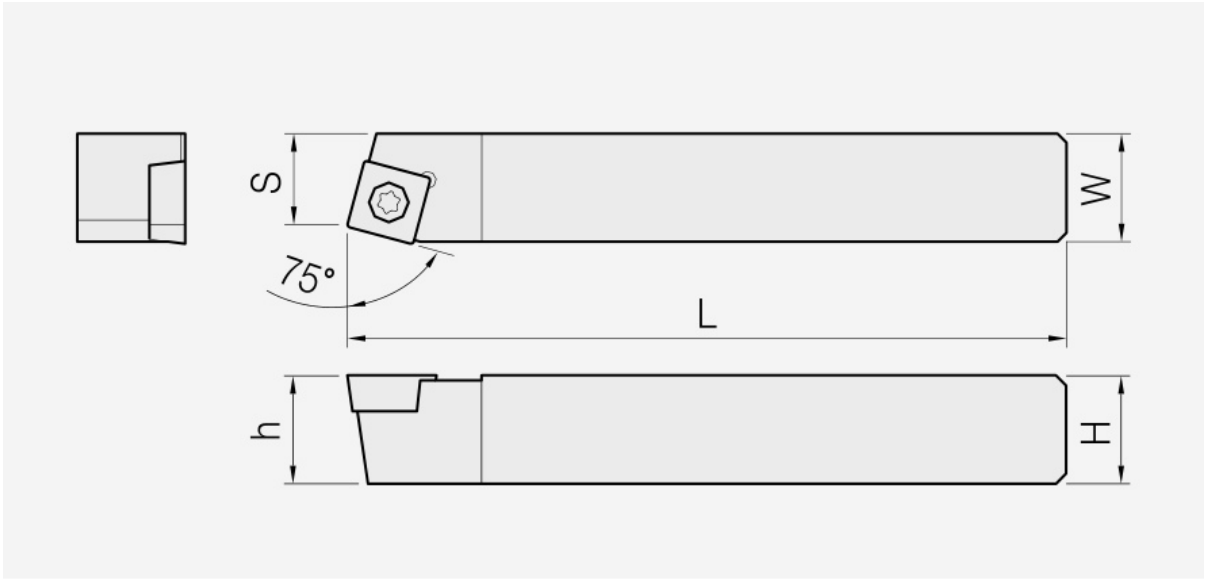
Item	Insert assignment	H	W	L	S
EH-SSKC R/L 1616-09	SC□□09T3□□	16	16	100	20

Dimension/data block 2.

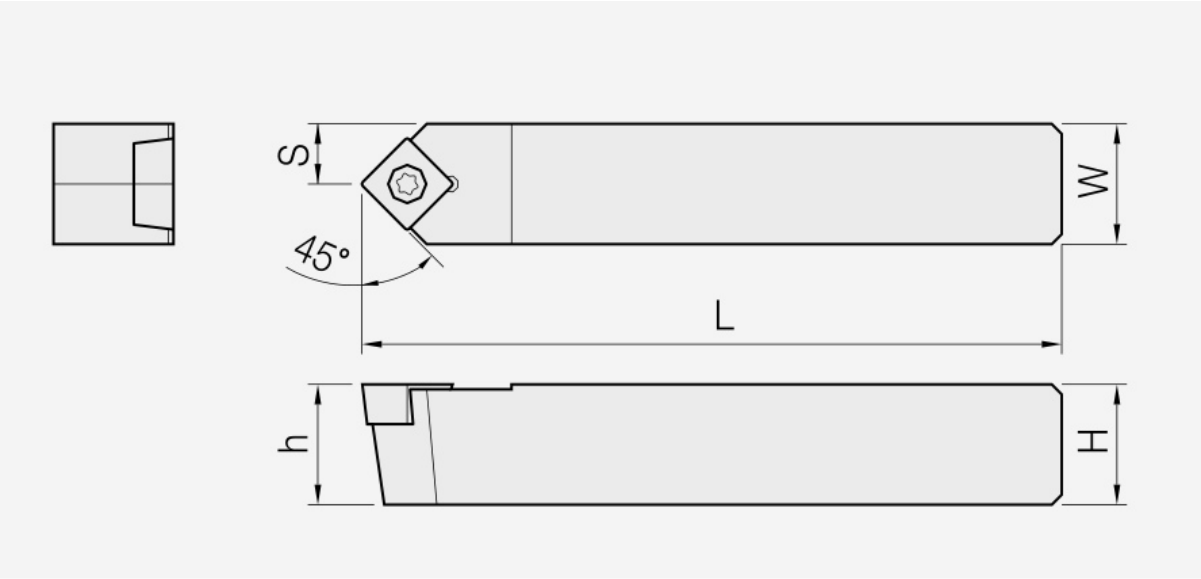
Item	Insert assignment	h	ℓ
EH-SSKC R/L 1616-09	SC□□09T3□□	16	13

Spare parts

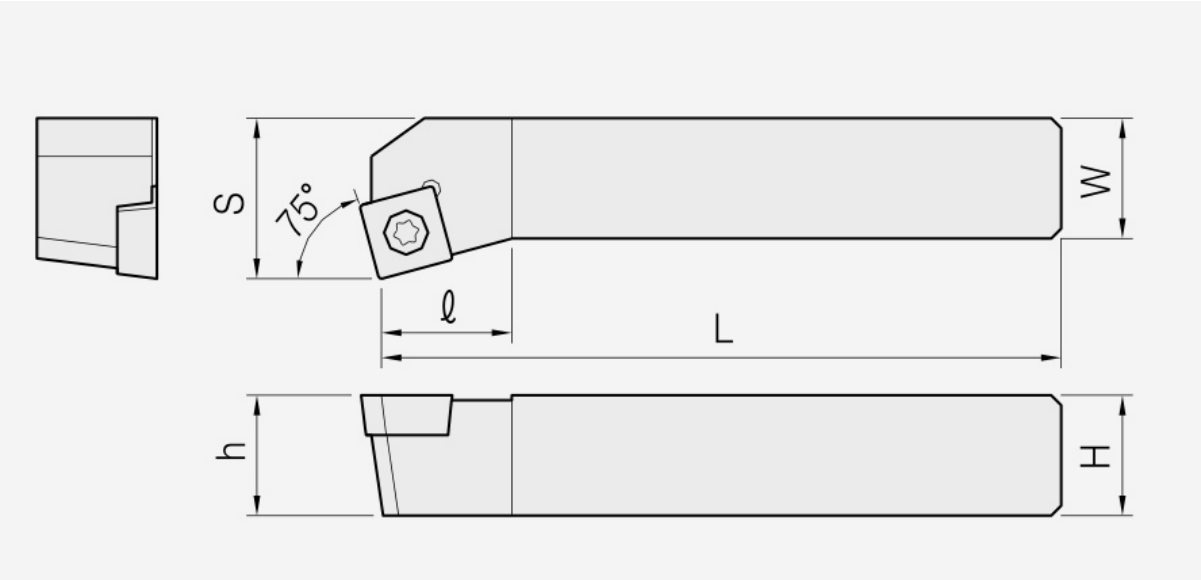
Item	Screw	Shim	Shim screw	Wrench
EH-SSKC R/L 1616-09	SCR03512	SSS32	SSCR0509	TW15P / W35L



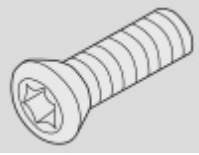
Tool: isolated dimensioned drawing; views and dimension references unchanged.



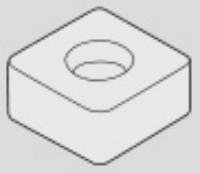
Tool: isolated dimensioned drawing; views and dimension references unchanged.



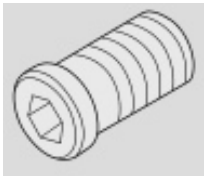
Tool: isolated dimensioned drawing; views and dimension references unchanged.



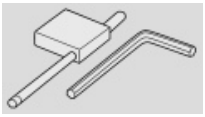
SSBC: Screw - spare-part form.



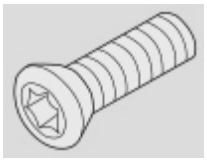
SSBC: Shim - spare-part form.



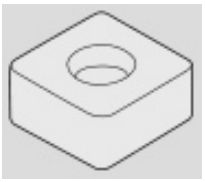
SSBC: Shim screw - spare-part form.



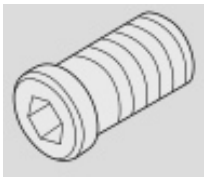
SSBC: Wrench - spare-part form.



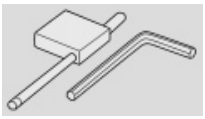
SSDCN: Screw - spare-part form.



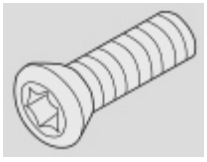
SSDCN: Shim - spare-part form.



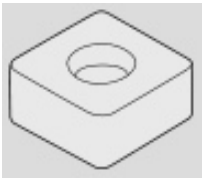
SSDCN: Shim screw - spare-part form.



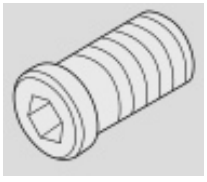
SSDCN: Wrench - spare-part form.



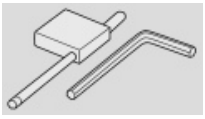
Clamping component or spare part: individual technical form.



Clamping component or spare part: individual technical form.



Clamping component or spare part: individual technical form.



Clamping component or spare part: individual technical form.

SSSC / STAC / STFC

SSSC: holder and dimensions

Dimensions in mm. Tool approach: 45°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-SSSC R/L 1616-09	SC□□09T3□□	16	16	100	17

Dimension/data block 2.

Item	Insert assignment	h
EH-SSSC R/L 1616-09	SC□□09T3□□	16

Spare parts

Item	Screw	Shim	Shim screw	Wrench
EH-SSSC R/L 1616-09	SCR03512	SSS32	SSCR0509	TW15P / W35L

SSSC: holder and dimensions

Dimensions in mm. Tool approach: 45°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-SSSC R/L 2020-12	SC□□1204□□	20	20	125	21

Dimension/data block 2.

Item	Insert assignment	h
EH-SSSC R/L 2020-12	SC□□1204□□	20

Spare parts

Item	Screw	Shim	Shim screw	Wrench
EH-SSSC R/L 2020-12	SCR0411F	SSS42	SSCR0610	TW15P / W40L

STAC: holder and dimensions

Dimensions in mm. Tool approach: 90°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-STAC R/L 1010-09	TC□□0902□□	10	10	70	10.5

Dimension/data block 2.

Item	Insert assignment	h
EH-STAC R/L 1010-09	TC□□0902□□	10

Spare parts

Item	Screw	Shim	Shim screw	Wrench
EH-STAC R/L 1010-09	SCR02206	-	-	TW06P

STAC: holder and dimensions

Dimensions in mm. Tool approach: 90°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-STAC R/L 1212-11	TC□□1102□□	12	12	80	12.5

Dimension/data block 2.

Item	Insert assignment	h
EH-STAC R/L 1212-11	TC□□1102□□	12

Spare parts

Item	Screw	Shim	Shim screw	Wrench
EH-STAC R/L 1212-11	SCR02565	-	-	TW07P

STFC: holder and dimensions

Dimensions in mm. Tool approach: 90°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-STFC R/L 1010-09	TC□□0902□□	10	10	70	12

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-STFC R/L 1010-09	TC□□0902□□	10	10

Spare parts

Item	Screw	Shim	Shim screw	Wrench
EH-STFC R/L 1010-09	SCR02206	-	-	TW06P

STFC: holder and dimensions

Dimensions in mm. Tool approach: 90°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-STFC R/L 1212-11	TC□□1102□□	12	12	80	16
EH-STFC R/L 1616-11	TC□□1102□□	16	16	100	20

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-STFC R/L 1212-11	TC□□1102□□	12	14
EH-STFC R/L 1616-11	TC□□1102□□	16	14

Spare parts

Item	Screw	Shim	Shim screw	Wrench
EH-STFC R/L 1212-11	SCR02565	-	-	W07P
EH-STFC R/L 1616-11	SCR02565	-	-	W07P

STFC: holder and dimensions

Dimensions in mm. Tool approach: 90°.

Dimension/data block 1.

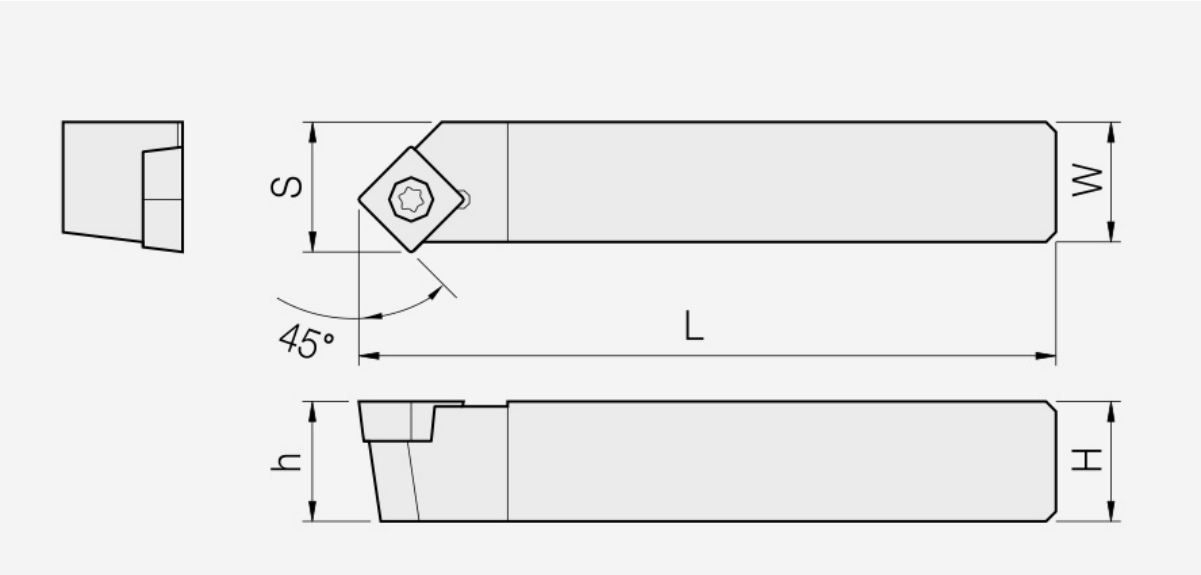
Item	Insert assignment	H	W	L	S
EH-STFC R/L 1616-16	TC□□16T3□□	16	16	100	20
EH-STFC R/L 2020-16	TC□□16T3□□	20	20	125	25

Dimension/data block 2.

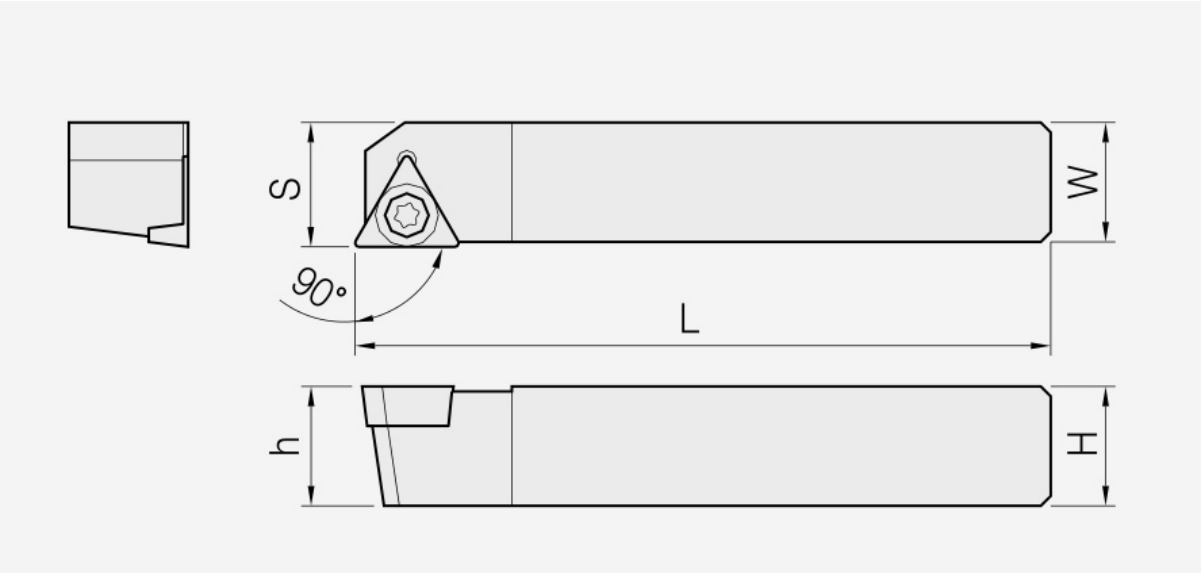
Item	Insert assignment	h	ℓ
EH-STFC R/L 1616-16	TC□□16T3□□	16	19
EH-STFC R/L 2020-16	TC□□16T3□□	20	19

Spare parts

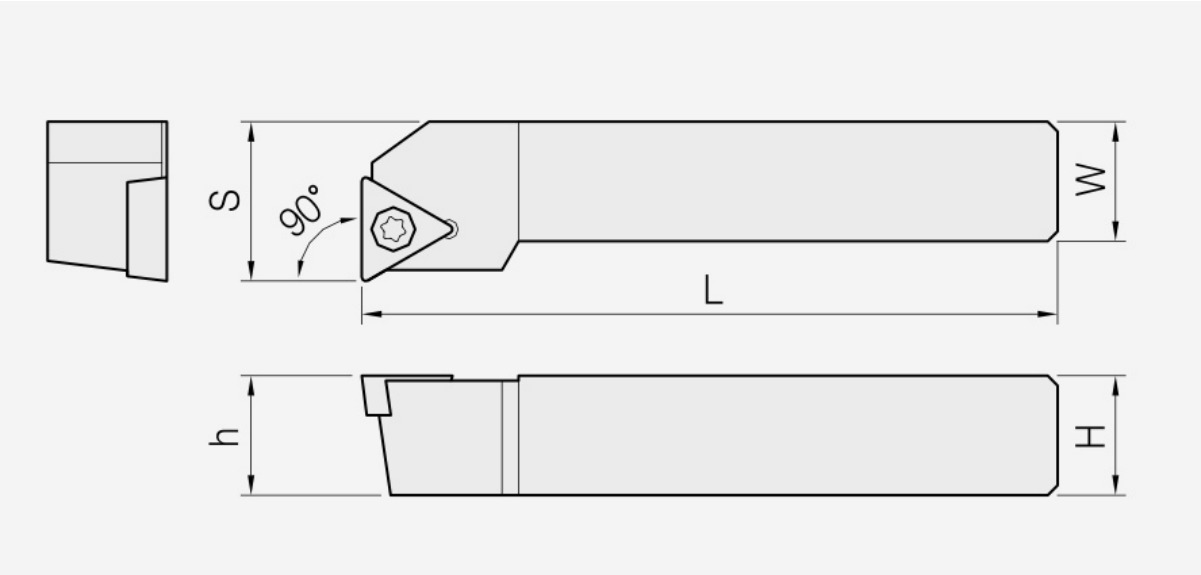
Item	Screw	Shim	Shim screw	Wrench
EH-STFC R/L 1616-16	SCR03512	SST32	SSCR0509	TW15P / W35L
EH-STFC R/L 2020-16	SCR03512	SST32	SSCR0509	TW15P / W35L



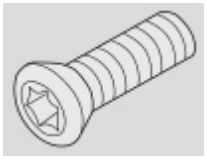
Tool: isolated dimensioned drawing; views and dimension references unchanged.



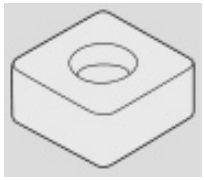
Tool: isolated dimensioned drawing; views and dimension references unchanged.



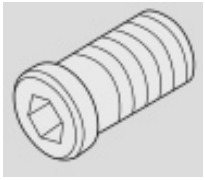
Tool: isolated dimensioned drawing; views and dimension references unchanged.



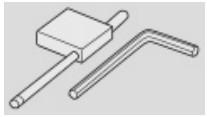
SSSC: Screw - spare-part form.



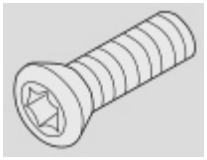
SSSC: Shim - spare-part form.



SSSC: Shim screw - spare-part form.



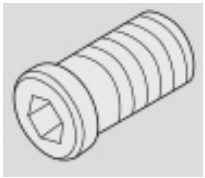
SSSC: Wrench - spare-part form.



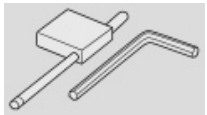
STAC: Screw - spare-part form.



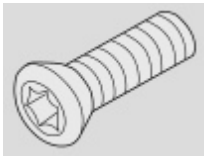
STAC: Shim - spare-part form.



STAC: Shim screw - spare-part form.



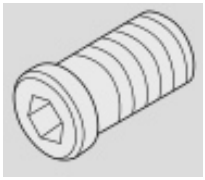
STAC: Wrench - spare-part form.



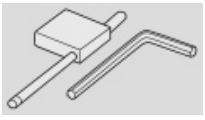
STFC: Screw - spare-part form.



STFC: Shim - spare-part form.



STFC: Shim screw - spare-part form.



STFC: Wrench - spare-part form.

STGC / STTC / SVAB

STGC: holder and dimensions

Dimensions in mm. Tool approach: 90°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-STGC R/L 0808-09	TC□□0902□□	8	8	60	10
EH-STGC R/L 1010-09	TC□□0902□□	10	10	70	12

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-STGC R/L 0808-09	TC□□0902□□	8	11
EH-STGC R/L 1010-09	TC□□0902□□	10	11

Spare parts

Item	Screw	Shim	Shim screw	Wrench
EH-STGC R/L 0808-09	SCR02206	-	-	TW06P
EH-STGC R/L 1010-09	SCR02206	-	-	TW06P

STGC: holder and dimensions

Dimensions in mm. Tool approach: 90°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-STGC R/L 1212-11	TC□□1102□□	12	12	80	16
EH-STGC R/L 1616-11	TC□□1102□□	16	16	100	20

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-STGC R/L 1212-11	TC□□1102□□	12	14
EH-STGC R/L 1616-11	TC□□1102□□	16	16

Spare parts

Item	Screw	Shim	Shim screw	Wrench
EH-STGC R/L 1212-11	SCR02565	-	-	TW07P
EH-STGC R/L 1616-11	SCR02565	-	-	TW07P

STGC: holder and dimensions

Dimensions in mm. Tool approach: 90°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-STGC R/L 2020-16	TC□□16T3□□	20	20	125	25
EH-STGC R/L 2525-16	TC□□16T3□□	25	25	150	32

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-STGC R/L 2020-16	TC□□16T3□□	20	21
EH-STGC R/L 2525-16	TC□□16T3□□	25	21

Spare parts

Item	Screw	Shim	Shim screw	Wrench
EH-STGC R/L 2020-16	SCR03512	SST32	SSCR0509	TW15P / W35L
EH-STGC R/L 2525-16	SCR03512	SST32	SSCR0509	TW15P / W35L

STTC: holder and dimensions

Dimensions in mm. Tool approach: 60°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-STTC R/L 1010-09	TC□□1102□□	16	16	100	13

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-STTC R/L 1010-09	TC□□1102□□	16	14

Spare parts

Item	Screw	Shim	Shim screw	Wrench
EH-STTC R/L 1010-09	SCR02565	-	-	TW07P

STTC: holder and dimensions

Dimensions in mm. Tool approach: 60°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-STTC R/L 1212-11	TC□□16T3□□	16	16	100	13
EH-STTC R/L 1616-11	TC□□16T3□□	20	20	125	17

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-STTC R/L 1212-11	TC□□16T3□□	16	19
EH-STTC R/L 1616-11	TC□□16T3□□	20	19

Spare parts

Item	Screw	Shim	Shim screw	Wrench
EH-STTC R/L 1212-11	SCR03512	SST32	SSCR0509	TW15P / W35L
EH-STTC R/L 1616-11	SCR03512	SST32	SSCR0509	TW15P / W35L

SVAB: holder and dimensions

Dimensions in mm. Tool approach: 90°.

Dimension/data block 1.

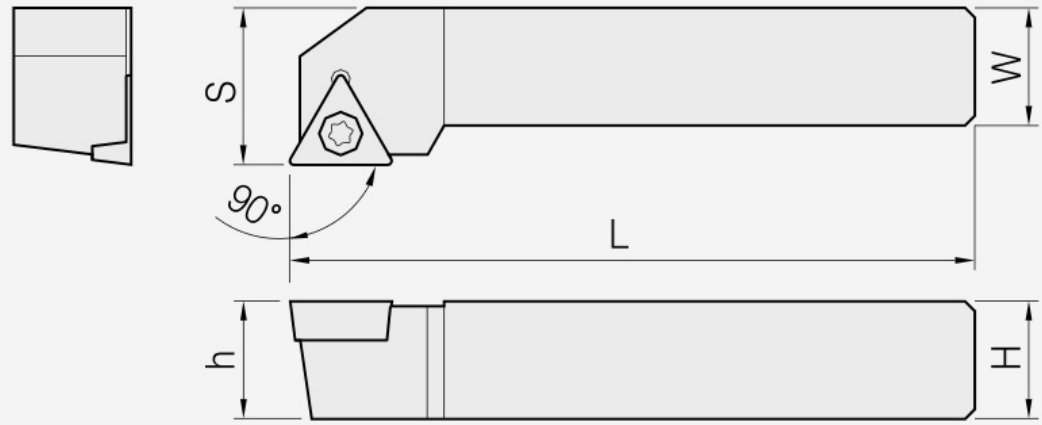
Item	Insert assignment	H	W	L	S
EH-SVAB R/L 1616-16	VB□□1604□□	16	16	100	16.5
EH-SVAB R/L 2020-16	VB□□1604□□	20	20	125	20.5

Dimension/data block 2.

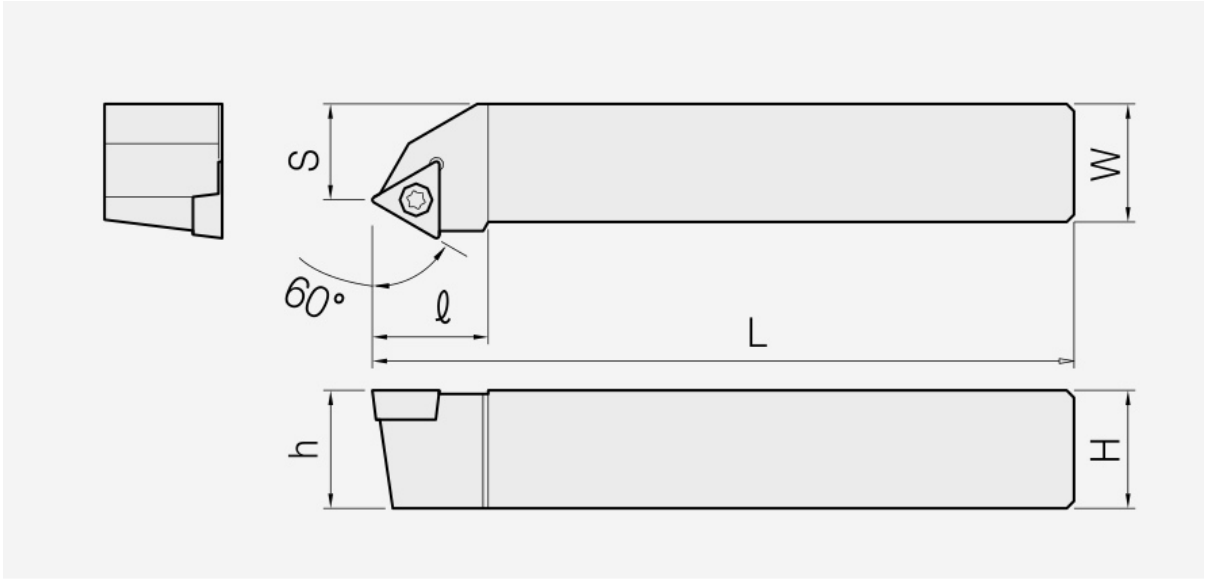
Item	Insert assignment	h
EH-SVAB R/L 1616-16	VB□□1604□□	16
EH-SVAB R/L 2020-16	VB□□1604□□	20

Spare parts

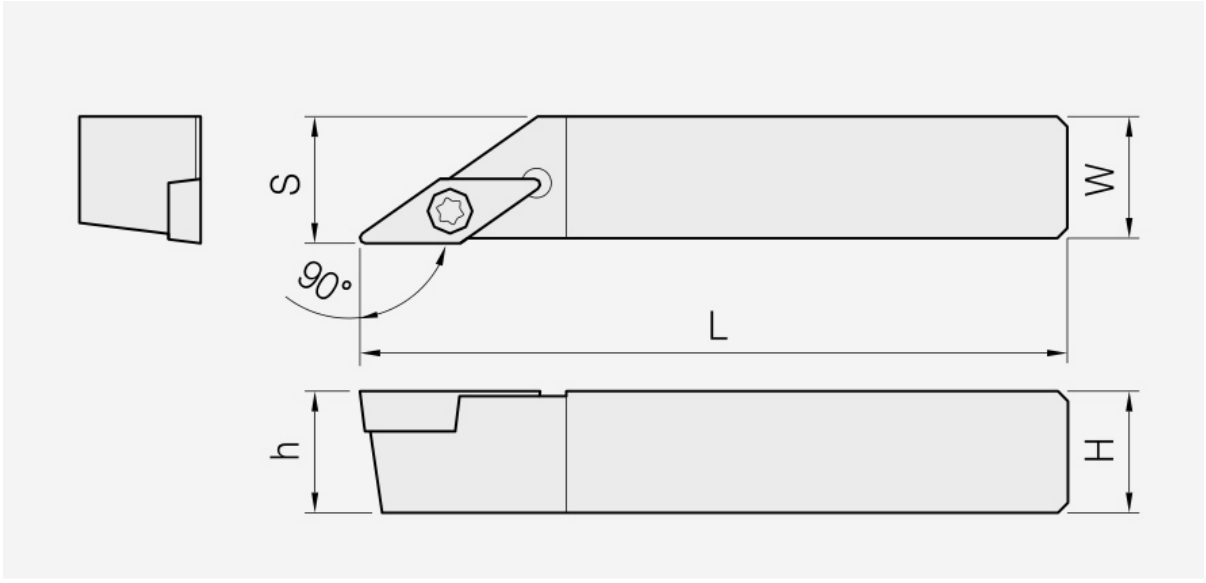
Item	Screw	Shim	Shim screw	Wrench
EH-SVAB R/L 1616-16	SCR03512	SSV32	SSCR0509	TW15P / W35L
EH-SVAB R/L 2020-16	SCR03512	SSV32	SSCR0509	TW15P / W35L



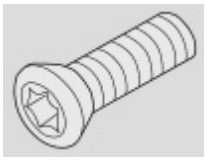
Tool: isolated dimensioned drawing; views and dimension references unchanged.



Tool: isolated dimensioned drawing; views and dimension references unchanged.



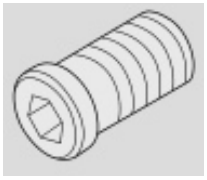
Tool: isolated dimensioned drawing; views and dimension references unchanged.



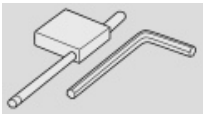
STGC: Screw - spare-part form.



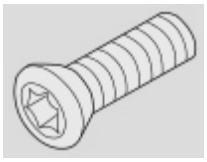
STGC: Shim - spare-part form.



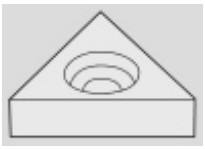
STGC: Shim screw - spare-part form.



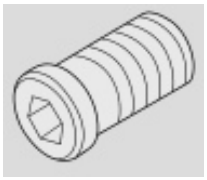
STGC: Wrench - spare-part form.



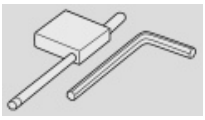
STGC: Screw - spare-part form.



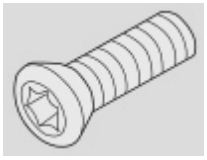
STGC: Shim - spare-part form.



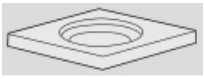
STGC: Shim screw - spare-part form.



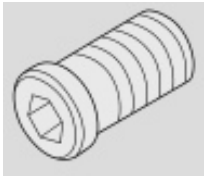
STGC: Wrench - spare-part form.



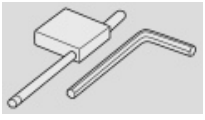
STGC: Screw - spare-part form.



STGC: Shim - spare-part form.



STGC: Shim screw - spare-part form.



STGC: Wrench - spare-part form.

SVHB / SVJB / SVVBN

SVHB: holder and dimensions

Dimensions in mm. Tool approach: 107.5°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-SVHB R/L 2525-16	VB□□1604□□	25	25	150	32
EH-SVHB R/L 3225-16	VB□□1604□□	32	32	170	32

Dimension/data block 2.

Item	Insert assignment	h
EH-SVHB R/L 2525-16	VB□□1604□□	25
EH-SVHB R/L 3225-16	VB□□1604□□	32

Spare parts

Item	Screw	Shim	Shim screw	Wrench
EH-SVHB R/L 2525-16	SCR03512	SSV32	SSCR0509	TW15P / W35L
EH-SVHB R/L 3225-16	SCR03512	SSV32	SSCR0509	TW15P / W35L

SVJB: holder and dimensions

Dimensions in mm. Tool approach: 93°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-SVJB R/L 1212-11	VB□□1102□□	12	12	80	16
EH-SVJB R/L 1616-11	VB□□1102□□	16	16	100	20
EH-SVJB R/L 2020-11	VB□□1102□□	20	20	125	25

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-SVJB R/L 1212-11	VB□□1102□□	12	27
EH-SVJB R/L 1616-11	VB□□1102□□	16	27
EH-SVJB R/L 2020-11	VB□□1102□□	20	27

Spare parts

Item	Screw	Shim	Shim screw	Wrench
EH-SVJB R/L 1212-11	SCR02565	-	-	TW07P
EH-SVJB R/L 1616-11	SCR02565	-	-	TW07P
EH-SVJB R/L 2020-11	SCR02565	-	-	TW07P

SVJB: holder and dimensions

Dimensions in mm. Tool approach: 93°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-SVJB R/L 1616-16	VB□□1604□□	16	16	100	20
EH-SVJB R/L 2020-16	VB□□1604□□	20	20	125	25
EH-SVJB R/L 2525-16	VB□□1604□□	25	25	150	32
EH-SVJB R/L 3225-16	VB□□1604□□	32	25	170	32

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-SVJB R/L 1616-16	VB□□1604□□	16	36
EH-SVJB R/L 2020-16	VB□□1604□□	20	41
EH-SVJB R/L 2525-16	VB□□1604□□	25	41
EH-SVJB R/L 3225-16	VB□□1604□□	32	55

Spare parts

Item	Screw	Shim	Shim screw	Wrench
EH-SVJB R/L 1616-16	SCR03512	SSV32	SSCR0509	TW15P / W35L
EH-SVJB R/L 2020-16	SCR03512	SSV32	SSCR0509	TW15P / W35L
EH-SVJB R/L 2525-16	SCR03512	SSV32	SSCR0509	TW15P / W35L
EH-SVJB R/L 3225-16	SCR03512	SSV32	SSCR0509	TW15P / W35L

SVVBN: holder and dimensions

Dimensions in mm. Tool approach: 72.5°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-SVBNN 1212-11	VB□□1102□□	12	12	80	6
EH-SVBNN 1616-11	VB□□1102□□	16	16	100	8
EH-SVBNN 2020-11	VB□□1102□□	20	20	125	10

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-SVBNN 1212-11	VB□□1102□□	12	
EH-SVBNN 1616-11	VB□□1102□□	16	
EH-SVBNN 2020-11	VB□□1102□□	20	

Spare parts

Item	Screw	Shim	Shim screw	Wrench
EH-SVBNN 1212-11	SCR02565	-	-	TW07P
EH-SVBNN 1616-11	SCR02565	-	-	TW07P
EH-SVBNN 2020-11	SCR02565	-	-	TW07P

SVVBN: holder and dimensions

Dimensions in mm. Tool approach: 72.5°.

Dimension/data block 1.

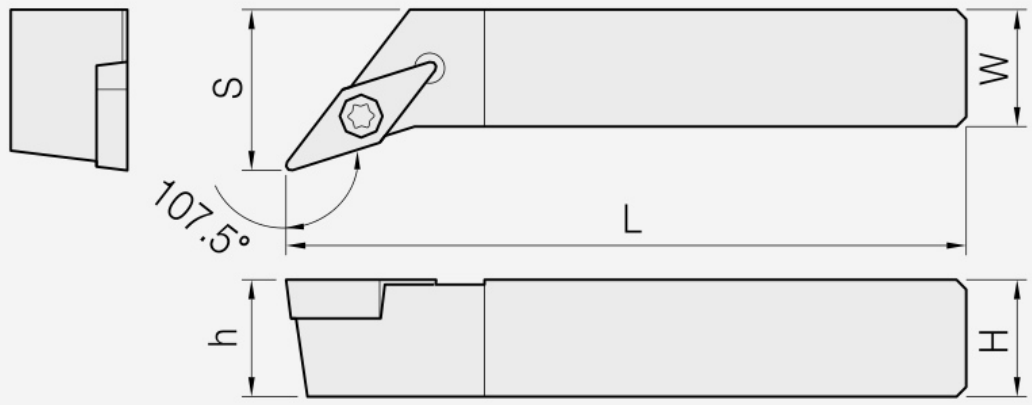
Item	Insert assignment	H	W	L	S
EH-SVBNN 1616-16	VB□□1604□□	16	16	100	8
EH-SVBNN 2020-16	VB□□1604□□	20	20	125	10
EH-SVBNN 2525-16	VB□□1604□□	25	25	150	12.5
EH-SVBNN 3225-16	VB□□1604□□	32	25	170	12.5

Dimension/data block 2.

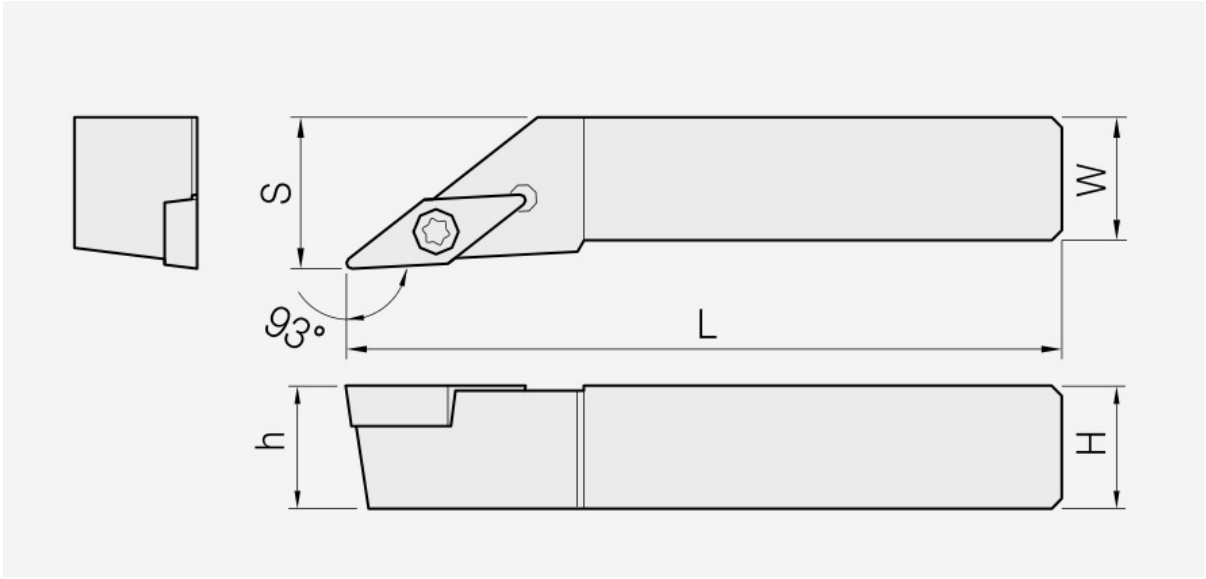
Item	Insert assignment	h	ℓ
EH-SVBNN 1616-16	VB□□1604□□	16	
EH-SVBNN 2020-16	VB□□1604□□	20	
EH-SVBNN 2525-16	VB□□1604□□	25	
EH-SVBNN 3225-16	VB□□1604□□	32	

Spare parts

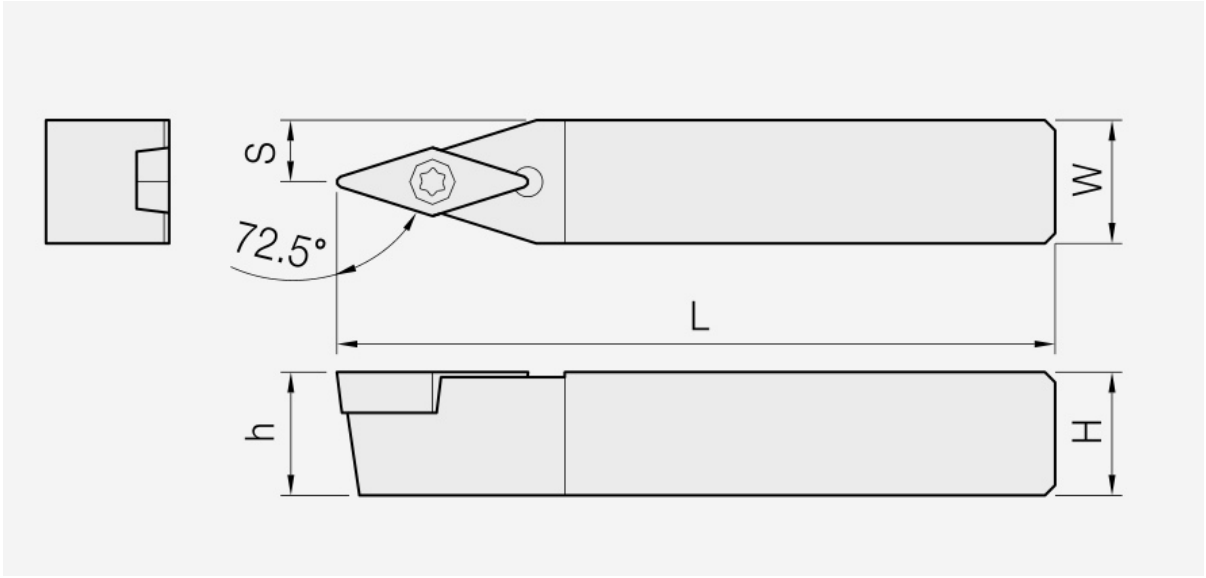
Item	Screw	Shim	Shim screw	Wrench
EH-SVBNN 1616-16	SCR03512	SSV32	SSCR0509	TW15P / W35L
EH-SVBNN 2020-16	SCR03512	SSV32	SSCR0509	TW15P / W35L
EH-SVBNN 2525-16	SCR03512	SSV32	SSCR0509	TW15P / W35L
EH-SVBNN 3225-16	SCR03512	SSV32	SSCR0509	TW15P / W35L



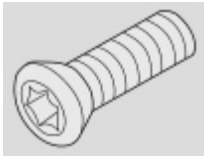
SVHB: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.



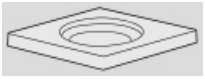
SVJB: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.



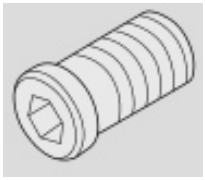
SVVBN: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.



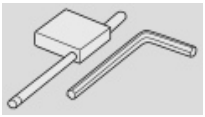
SVHB: Screw - spare-part form.



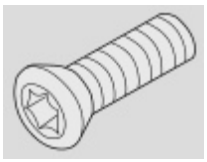
SVHB: Shim - spare-part form.



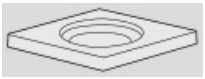
SVHB: Shim screw - spare-part form.



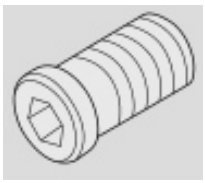
SVHB: Wrench - spare-part form.



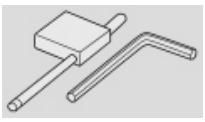
SVJB: Screw - spare-part form.



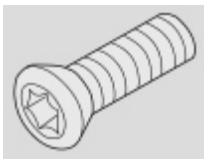
SVJB: Shim - spare-part form.



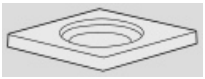
SVJB: Shim screw - spare-part form.



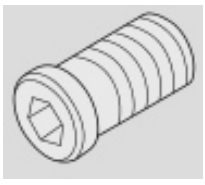
SVJB: Wrench - spare-part form.



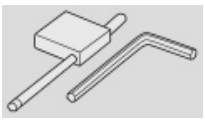
SVJB: Screw - spare-part form.



SVJB: Shim - spare-part form.



SVJB: Shim screw - spare-part form.



SVJB: Wrench - spare-part form.

SVVCN

SVVCN: holder and dimensions

Dimensions in mm. Tool approach: 72.5°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-SVVCN 1212-11	VC□□1103□□	12	12	80	6
EH-SVVCN 1616-11	VC□□1103□□	16	16	100	8
EH-SVVCN 2020-11	VC□□1103□□	20	20	125	10

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-SVVCN 1212-11	VC□□1103□□	12	-
EH-SVVCN 1616-11	VC□□1103□□	16	-
EH-SVVCN 2020-11	VC□□1103□□	20	-

Spare parts

Item	Screw	Shim	Shim screw	Wrench
EH-SVVCN 1212-11	SCR02565	-	-	TW07P
EH-SVVCN 1616-11	SCR02565	-	-	TW07P
EH-SVVCN 2020-11	SCR02565	-	-	TW07P

SVVCN: holder and dimensions

Dimensions in mm. Tool approach: 72.5°.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
EH-SVVCN 1212-13	VC□□1303□□	12	12	80	6
EH-SVVCN 1616-13	VC□□1303□□	16	16	100	8
EH-SVVCN 2020-13	VC□□1303□□	20	20	125	10

Dimension/data block 2.

Item	Insert assignment	h	ℓ
EH-SVVCN 1212-13	VC□□1303□□	12	-
EH-SVVCN 1616-13	VC□□1303□□	16	-
EH-SVVCN 2020-13	VC□□1303□□	20	-

Spare parts

Item	Screw	Shim	Shim screw	Wrench
EH-SVVCN 1212-13	SCR0307	-	-	TW09P
EH-SVVCN 1616-13	SCR0307	-	-	TW09P
EH-SVVCN 2020-13	SCR0307	-	-	TW09P

SVVCN: holder and dimensions

Dimensions in mm. Tool approach: 72.5°.

Dimension/data block 1.

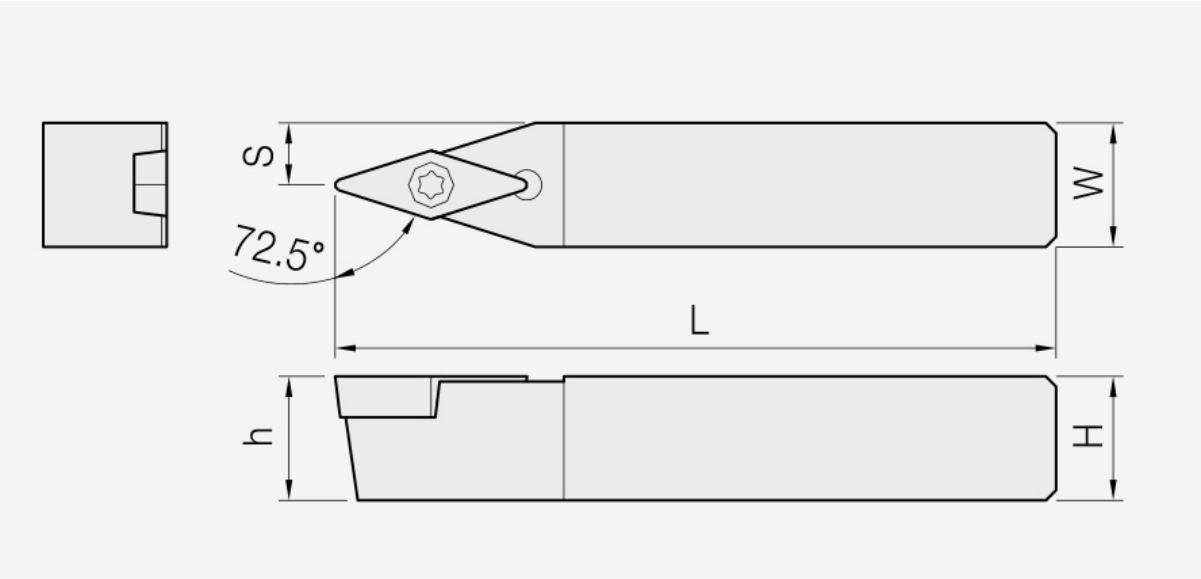
Item	Insert assignment	H	W	L	S
EH-SVVCN 1616-16	VC□□1604□□	16	16	100	6
EH-SVVCN 2020-16	VC□□1604□□	20	20	125	8
EH-SVVCN 2525-16	VC□□1604□□	25	25	150	12.5

Dimension/data block 2.

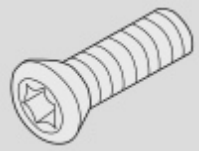
Item	Insert assignment	h	ℓ
EH-SVVCN 1616-16	VC□□1604□□	16	-
EH-SVVCN 2020-16	VC□□1604□□	20	-
EH-SVVCN 2525-16	VC□□1604□□	25	-

Spare parts

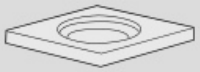
Item	Screw	Shim	Shim screw	Wrench
EH-SVVCN 1616-16	SCR03512	SSV32	SSCR0509	TW15P / W35L
EH-SVVCN 2020-16	SCR03512	SSV32	SSCR0509	TW15P / W35L
EH-SVVCN 2525-16	SCR03512	SSV32	SSCR0509	TW15P / W35L



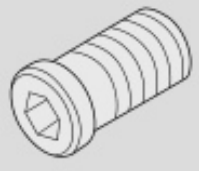
SVVCN: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.



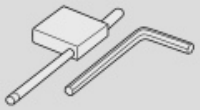
SVVCN: Screw - spare-part form.



SVVCN: Shim - spare-part form.



SVVCN: Shim screw - spare-part form.



SVVCN: Wrench - spare-part form.

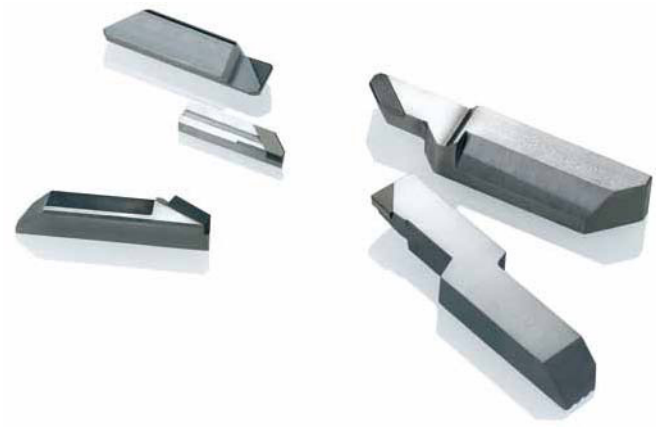
Boring tools



Boring tools: Component and machining view.

Boring: steel and carbide bodies

EHWA boring tools support precise hole machining. Steel and carbide bodies cover applications including precision micro boring. BS and BR types are listed as PCD or PCBN tools, with grades, dimensions and cutting-edge positions specified separately.



Boring: steel and carbide bodies: Tool view.



Boring: steel and carbide bodies: Component and machining view.

BS types and SLV holders

BSR and BSL have separate mirrored drawings with R, V1, V2, L, D and Dm references. The SLV holder is illustrated separately with d, L, H and D. The tables retain every article designation. Dimensional and angular references follow the respective drawings; the grade headings list EP20/EP55 for PCD and EB190/EB51 for PCBN.

BSR: boring tools

Dimension/data block 1.

Item	R	V1	V2	L	D
BSR 25 60 005	0.05	15	15	60	2.5
BSR 25 60 01	0.1	15	15	60	2.5
BSR 30 60 005	0.05	15	15	60	3
BSR 30 60 01	0.1	15	15	60	3
BSR 40 60 01	0.1	15	15	60	4
BSR 40 60 02	0.2	15	15	60	4
BSR 50 60 01	0.1	15	15	60	5
BSR 50 60 02	0.2	15	15	60	5
BSR 60 80 01	0.1	15	15	80	6
BSR 60 80 02	0.2	15	15	80	6

Dimension/data block 2.

Item	Dm
BSR 25 60 005	3
BSR 25 60 01	3
BSR 30 60 005	3.5
BSR 30 60 01	3.5
BSR 40 60 01	4.5
BSR 40 60 02	4.5
BSR 50 60 01	5.5
BSR 50 60 02	5.5
BSR 60 80 01	7
BSR 60 80 02	7

Both types have separate drawings and article designations. Grades: PCD EP20/EP55, PCBN EB190/EB51; individual source matrix cells are unmarked.

BSL: boring tools

Dimension/data block 1.

Item	R	V1	V2	L	D
BSL 25 60 005	0.05	15	15	60	2.5
BSL 25 60 01	0.1	15	15	60	2.5
BSL 30 60 005	0.05	15	15	60	3
BSL 30 60 01	0.1	15	15	60	3
BSL 40 60 01	0.1	15	15	60	4
BSL 40 60 02	0.2	15	15	60	4
BSL 50 60 01	0.1	15	15	60	5
BSL 50 60 02	0.2	15	15	60	5
BSL 60 80 01	0.1	15	15	80	6
BSL 60 80 02	0.2	15	15	80	6

Dimension/data block 2.

Item	Dm
BSL 25 60 005	3
BSL 25 60 01	3
BSL 30 60 005	3.5
BSL 30 60 01	3.5
BSL 40 60 01	4.5
BSL 40 60 02	4.5
BSL 50 60 01	5.5
BSL 50 60 02	5.5
BSL 60 80 01	7
BSL 60 80 02	7

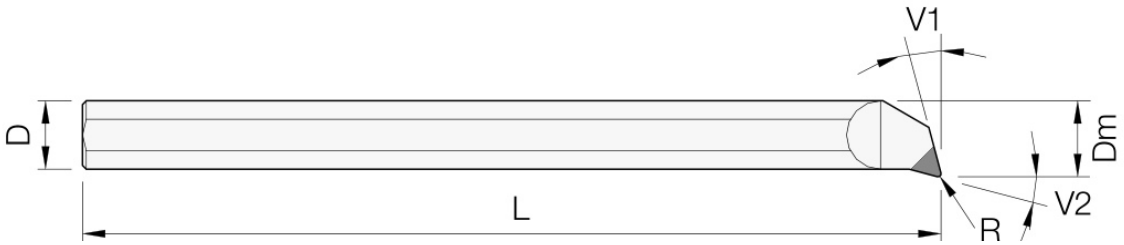
Both types have separate drawings and article designations. Grades: PCD EP20/EP55, PCBN EB190/EB51; individual source matrix cells are unmarked.

SLV: holder

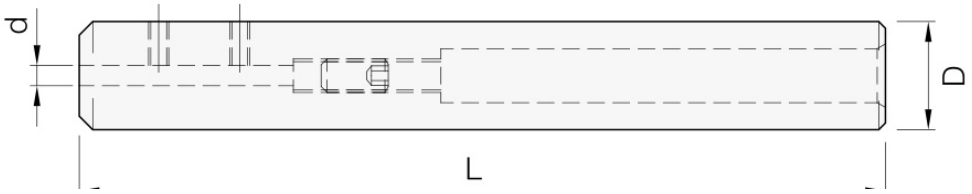
Item	d	L	H	D
SLV 16 025	2.5	100	14	16
SLV 16 03	3	100	14	16
SLV 16 04	4	100	14	16
SLV 16 05	5	100	14	16
SLV 16 06	6	100	14	16



Tool: isolated dimensioned drawing; views and dimension references unchanged.



Tool: isolated dimensioned drawing; views and dimension references unchanged.



Tool: isolated dimensioned drawing; views and dimension references unchanged.

BR types

BRC, BRR and BRL differ in edge position and dimensional reference. BRC lists R, V1, V2, L and D; BRR and BRL list R, V1, E, L, D and T. Side views and mirrored edge positions are retained. Grades include PCD EP20/EP55 and PCBN EB190/EB51; the source does not mark individual grade cells per article.

BRC: boring tools

Item	R	V1	V2	L	D
BRC 40 15 02	0.2	45	45	15	4
BRC 40 15 04	0.4	45	45	15	4
BRC 50 15 02	0.2	45	45	15	5
BRC 50 15 04	0.4	45	45	15	5
BRC 60 20 02	0.2	45	45	20	6
BRC 60 20 04	0.4	45	45	20	6
BRC 80 30 04	0.4	45	45	30	8
BRC 80 30 08	0.8	45	45	30	8

BRR: boring tools

Dimension/data block 1.

Item	R	V1	E	L	D
BRR 40 15 02	0.2	15	15	15	4
BRR 40 15 04	0.4	15	15	15	4
BRR 50 15 02	0.2	15	15	15	5
BRR 50 15 04	0.4	15	15	15	5
BRR 60 20 02	0.2	20	20	20	6
BRR 60 20 04	0.4	20	20	20	6
BRR 80 30 04	0.4	30	30	30	8
BRR 80 30 08	0.8	30	30	30	8

Dimension/data block 2.

Item	T
BRR 40 15 02	3.5
BRR 40 15 04	3.5
BRR 50 15 02	4.5
BRR 50 15 04	4.5
BRR 60 20 02	5.5
BRR 60 20 04	5.5
BRR 80 30 04	7
BRR 80 30 08	7

BR types: PCD EP20/EP55 and PCBN EB190/EB51. Individual grade cells are unmarked in all three source tables. Drawings and the distinct V1/V2/E fields remain specific to each type.

BRL: boring tools

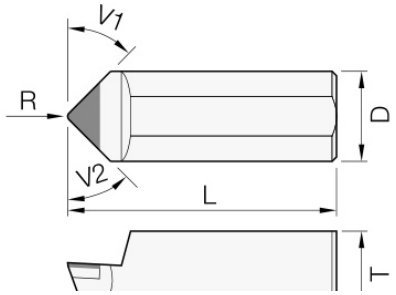
Dimension/data block 1.

Item	R	V1	E	L	D
BRL 40 15 02	0.2	15	15	15	4
BRL 40 15 04	0.4	15	15	15	4
BRL 50 15 02	0.2	15	15	15	5
BRL 50 15 04	0.4	15	15	15	5
BRL 60 20 02	0.2	20	20	20	6
BRL 60 20 04	0.4	20	20	20	6
BRL 80 30 04	0.4	30	30	30	8
BRL 80 30 08	0.8	30	30	30	8

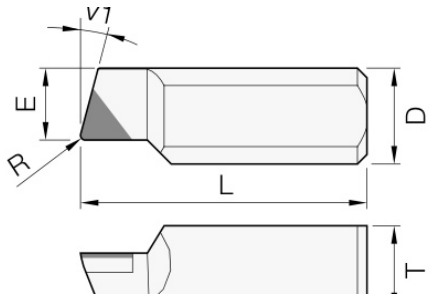
Dimension/data block 2.

Item	T
BRL 40 15 02	3.5
BRL 40 15 04	3.5
BRL 50 15 02	4.5
BRL 50 15 04	4.5
BRL 60 20 02	5.5
BRL 60 20 04	5.5
BRL 80 30 04	7
BRL 80 30 08	7

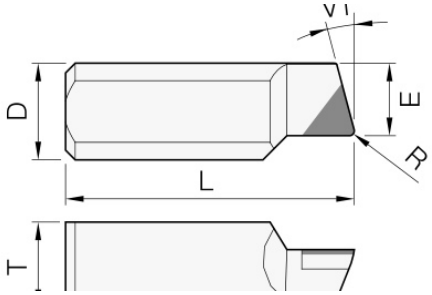
BR types: PCD EP20/EP55 and PCBN EB190/EB51. Individual grade cells are unmarked in all three source tables. Drawings and the distinct V1/V2/E fields remain specific to each type.



Tool: isolated dimensioned drawing; views and dimension references unchanged.



Tool: isolated dimensioned drawing; views and dimension references unchanged.



Tool: isolated dimensioned drawing; views and dimension references unchanged.

Boring holders: clamping systems

Boring holders use D - double clamping, M - multi locking, P - lever locking and S - screw clamping. Force arrows show the respective action at the insert seat. The following sections add shank material, diameter, length, insert shape and tool style.

Boring holders: shank, diameter and length

The example E 25 R-M maps shank material, diameter D, tool length and clamping system. Shank symbols: A - steel shank with coolant hole; E - carbide shank with coolant hole; C - carbide shank; S - steel shank; X - special. The diameter drawing and L reference show the corresponding dimensions on the body. R corresponds to 200 mm in the length table; M identifies multi locking. All illustrated length symbols remain in the table.

Boring holders: length symbols

Symbol	L [mm]
H	100
J	110
K	125
M	150
N	160
Q	180
R	200
S	250
T	300
U	350
V	400
W	450
Y	500

Boring holders: insert, tool style and hand

The second designation fragment S K D R-12 maps insert shape, tool style, clearance angle, hand and cutting-edge size. The shapes in this overview are C, D, K, S, T, V and W. Here K identifies the illustrated parallelogram. R and L distinguish right- and left-hand tools.

Tool styles are L = 95°, F = 90°, U = 93°, K = 75°, Q = 108°, Z = 93°, J = 142° and W = 60°. The clearance overview lists N = 0°, B = 5°, C = 7° and P = 11°; further clearance symbols appear in the basic external-holder designation. The metric cutting-edge size table retains its shape-dependent I.C. mappings.

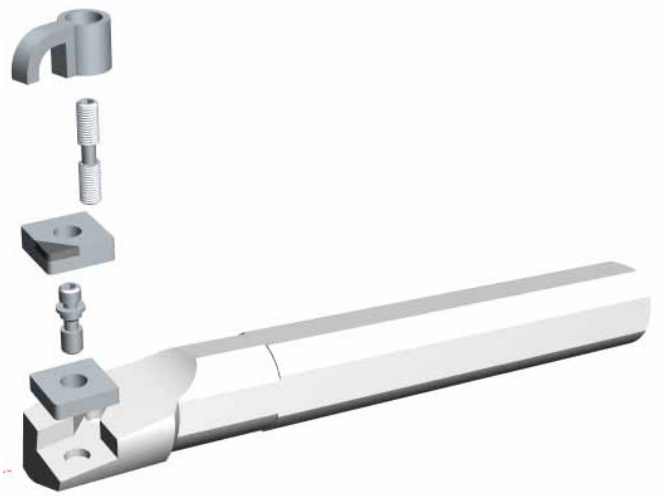
Metric shape sizes and I.C

Boring holders: clearance symbols

Symbol	Clearance angle
N	0°
B	5°
C	7°
P	11°

Boring holders: double clamping and multi locking

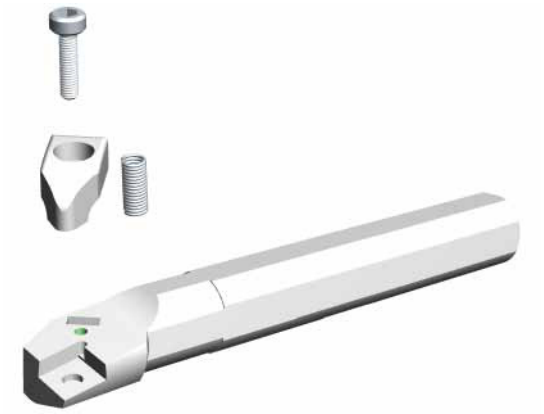
Double clamping is illustrated with insert screw, insert, shim, clamp, clamp screw and spring. Multi locking shows clamp, screw, insert, shim pin and shim. The exploded views retain the positions of all components and their corresponding callout targets.



Boring holders: double clamping and multi locking: Tool view.



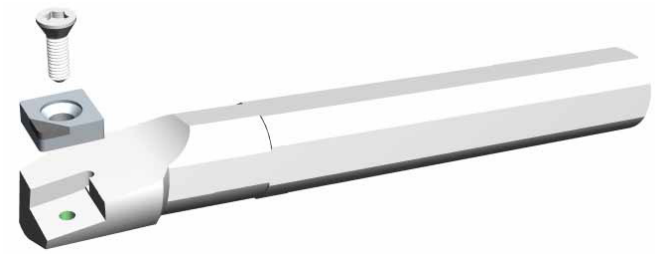
Boring holders: double clamping and multi locking: Tool view.



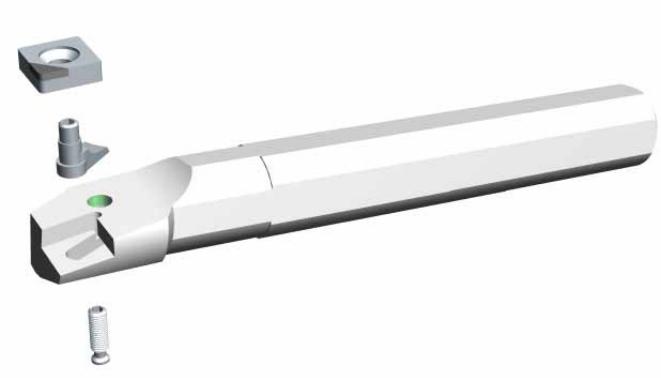
Boring holders: double clamping and multi locking: Tool view.

Boring holders: lever locking and screw clamping

The lever-locking exploded view identifies insert, lever and screw. Screw clamping connects screw and insert to the seat. The dimensional tables identify the listed spare parts for each type; the overview does not replace selection by article number.



Boring holders: lever locking and screw clamping: Tool view.



Boring holders: lever locking and screw clamping: Tool view.

Boring holders: lever- and multi-locking applications

The application matrices distinguish copying, facing, back turning and turning. Marked cells show the assignments in this edition; empty fields are not a universal statement about other types. Tool style, approach angle and the illustrated cutting profile complement the holder designation.

Clamping system P

Dimension/data block 1.

Tool	Approach [°]	Source reference	Copying	Facing	Back turning
PCLN	95	108		●	
PDSN	62.5	108	●		●
PDUN	93	109	●		●
PSKN	75	109			
PTFN	90	110			
PWLN	95	110		●	●

Dimension/data block 2.

Tool	Turning
PCLN	●
PDSN	●
PDUN	●
PSKN	●
PTFN	●
PWLN	●

Clamping system M

Dimension/data block 1.

Tool	Approach [°]	Source reference	Copying	Facing	Back turning
MTFN	90	111			
MVUN	93	111	●		●
MWLN	95	111		●	
MCLN	95	119		●	
MDUN	93	119	●		●
MSKN	75	119			

Dimension/data block 2.

Tool	Turning
MTFN	●
MVUN	●
MWLN	●
MCLN	●
MDUN	●
MSKN	●

Boring holders: screw-clamping applications

The two matrices add all illustrated screw-clamping types. The selection contains eight styles per block with their approach angles and marked assignments for copying, facing, back turning and turning.

Clamping system S

Dimension/data block 1.

Tool	Approach [°]	Source reference	Copying	Facing	Back turning
SCLC	95	112		●	
SCLP	95	112		●	
SDQC	107.5	113	●		●
SDUC	93	113	●		●
SDZC	3	114			●
SSKC	75	114			
SSKP	75	115			
STFC	90	115			

Dimension/data block 2.

Tool	Turning
SCLC	●
SCLP	●
SDQC	●
SDUC	●
SDZC	●
SSKC	●
SSKP	●
STFC	●

Clamping system S

Dimension/data block 1.

Tool	Approach [°]	Source reference	Copying	Facing	Back turning
STFP	90	116			
STWP	60	114			
SVJC	142	116	●		
SVQB	108	117	●		●
SVQC	108	117	●		●
SVUB	93	117	●		●
SVUC	93	118	●		●
SWLC	95	118	●		●

Dimension/data block 2.

Tool	Turning
STFP	●
STWP	●
SVJC	●
SVQB	●
SVQC	●
SVUB	●
SVUC	●
SWLC	●

PCLN / PDSN

PCLN: holder and dimensions

Dimensions in mm. Tool approach: 95°.

Dimension/data block 1.

Item	Insert assignment	ØD	Ød	H	L
EH-S16R-PCLN R/L-09	CN□□0903□□	20	16	15	200
EH-S20S-PCLN R/L-09	CN□□0903□□	25	20	18	250
EH-S25R-PCLN R/L-09	CN□□0903□□	32	25	23	200
EH-S25R-PCLN R/L-12	CN□□1204□□	32	25	23	200
EH-S32S-PCLN R/L-12	CN□□1204□□	40	32	30	250
EH-S40T-PCLN R/L-12	CN□□1204□□	50	40	37	300
EH-S50U-PCLN R/L-12	CN□□1204□□	63	50	47	350

Dimension/data block 2.

Item	Insert assignment	S	ℓ
EH-S16R-PCLN R/L-09	CN□□0903□□	11	28
EH-S20S-PCLN R/L-09	CN□□0903□□	19	32
EH-S25R-PCLN R/L-09	CN□□0903□□	17	36
EH-S25R-PCLN R/L-12	CN□□1204□□	17	40
EH-S32S-PCLN R/L-12	CN□□1204□□	22	50
EH-S40T-PCLN R/L-12	CN□□1204□□	27	55
EH-S50U-PCLN R/L-12	CN□□1204□□	35	55

Spare parts

Dimension/data block 1.

Item	Lever	Screw	Shim	Shim pin	Shim-pin punch
EH-S16R-PCLN R/L-09	LV3C	LVSCR0509B	-	-	-
EH-S20S-PCLN R/L-09	LV3C	LVSCR0509B	-	-	-
EH-S25R-PCLN R/L-09	LV3C	LVSCR0509B	-	-	-
EH-S25R-PCLN R/L-12	LV4A	LVSCR0613A	-	-	-
EH-S32S-PCLN R/L-12	LV4	LVSCR0821	LVSC42B	LVSP4	LVSP4
EH-S40T-PCLN R/L-12	LV4	LVSCR0821	LVSC42B	LVSP4	LVSP4
EH-S50U-PCLN R/L-12	LV4	LVSCR0821	LVSC42B	LVSP4	LVSP4

Dimension/data block 2.

Item	Wrench
EH-S16R-PCLN R/L-09	W20L
EH-S20S-PCLN R/L-09	W20L
EH-S25R-PCLN R/L-09	W20L
EH-S25R-PCLN R/L-12	W25L
EH-S32S-PCLN R/L-12	W30L
EH-S40T-PCLN R/L-12	W30L
EH-S50U-PCLN R/L-12	W30L

PDSN: holder and dimensions

Dimensions in mm. Tool approach: 62.5°.

Dimension/data block 1.

Item	Insert assignment	ØD	Ød	H	L
EH-S32S-PDSN R/L-15	DN□□1506□□	40	32	30	250
EH-S40T-PDSN R/L-15	DN□□1506□□	50	40	37	300
EH-S32S-PDSN R/L-15-3	DN□□1504□□	40	32	30	450
EH-S40T-PDSN R/L-15-3	DN□□1504□□	50	40	37	300
EH-A32S-PDSN R/L-15	DN□□1506□□	40	32	31	250
EH-A32S-PDSN R/L-15-3	DN□□1504□□	40	32	31	250

Dimension/data block 2.

Item	Insert assignment	S	ℓ
EH-S32S-PDSN R/L-15	DN□□1506□□	22	45
EH-S40T-PDSN R/L-15	DN□□1506□□	27	43
EH-S32S-PDSN R/L-15-3	DN□□1504□□	22	45
EH-S40T-PDSN R/L-15-3	DN□□1504□□	27	43
EH-A32S-PDSN R/L-15	DN□□1506□□	22	45
EH-A32S-PDSN R/L-15-3	DN□□1504□□	22	45

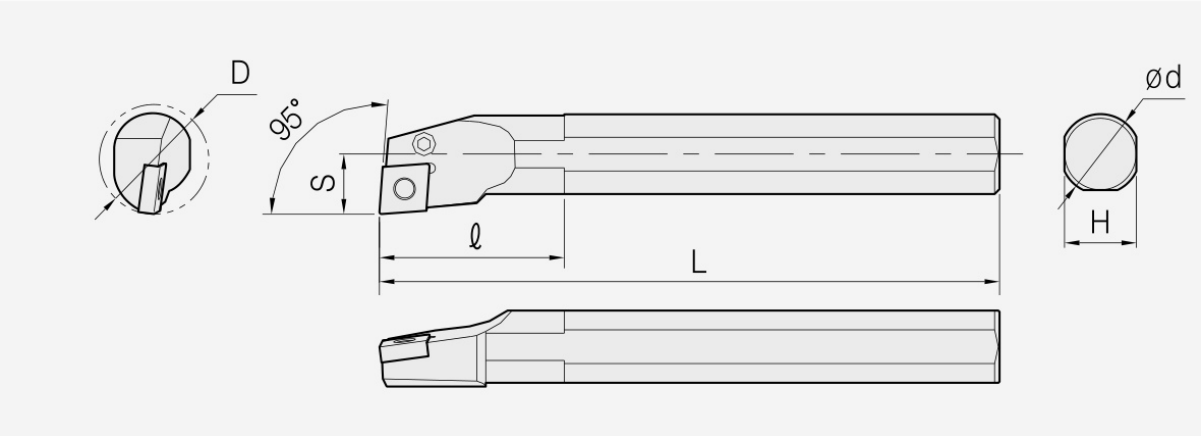
Spare parts

Dimension/data block 1.

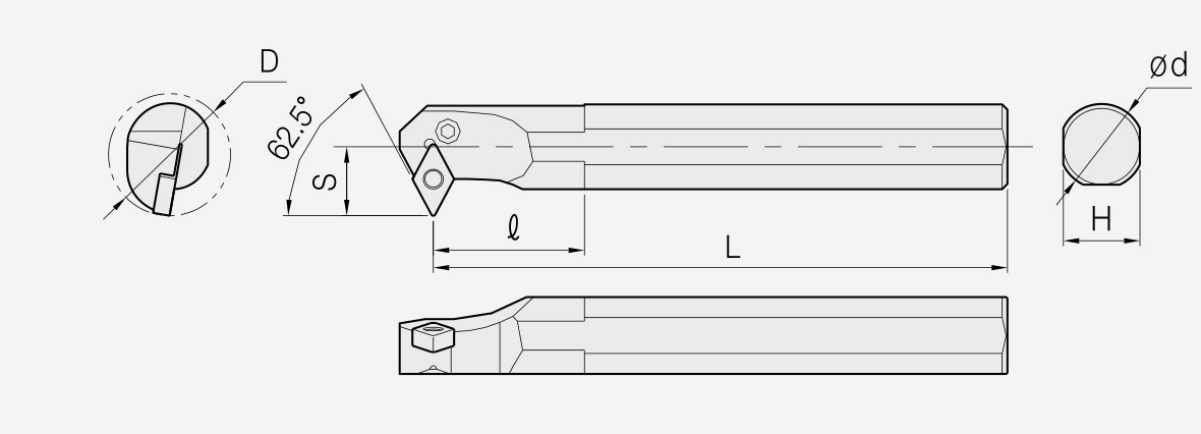
Item	Lever	Screw	Shim	Shim pin	Shim-pin punch
EH-S32S-PDSN R/L-15	LV4B	LVSCR0821	LVSD42	LVSP4	LVSP4
EH-S40T-PDSN R/L-15	LV4B	LVSCR0821	LVSD42	LVSP4	LVSP4
EH-S32S-PDSN R/L-15-3	LV4	LVSCR0821	LVSD42	LVSP4	LVSP4
EH-S40T-PDSN R/L-15-3	LV4	LVSCR0821	LVSD42	LVSP4	LVSP4
EH-A32S-PDSN R/L-15	LV4B	LVSCR0821	LVSD42	LVSP4	LVSP4
EH-A32S-PDSN R/L-15-3	LV4	LVSCR0821	LVSD42	LVSP4	LVSP4

Dimension/data block 2.

Item	Wrench
EH-S32S-PDSN R/L-15	W30L
EH-S40T-PDSN R/L-15	W30L
EH-S32S-PDSN R/L-15-3	W30L
EH-S40T-PDSN R/L-15-3	W30L
EH-A32S-PDSN R/L-15	W30L
EH-A32S-PDSN R/L-15-3	W30L



PCLN: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.



PDSN: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.

PDUN / PSKN

PDUN: holder and dimensions

Dimensions in mm. Tool approach: 93°.

Dimension/data block 1.

Item	Insert assignment	ØD	Ød	H	L
EH-S20S-PDUN R/L-11	DN□□1104□□	25	20	18	250
EH-S25R-PDUN R/L-11	DN□□1104□□	32	25	23	200
EH-S32S-PDUN R/L-11	DN□□1104□□	40	32	30	250
EH-S32S-PDUN R/L-15	DN□□1506□□	40	32	30	250
EH-S40T-PDUN R/L-15	DN□□1506□□	50	40	37	300
EH-S50U-PDUN R/L-15	DN□□1506□□	63	50	47	350
EH-S32S-PDUN R/L-15-3	DN□□1504□□	40	32	30	250
EH-S40T-PDUN R/L-15-3	DN□□1504□□	50	40	37	300
EH-A32S-PDUN R/L-15	DN□□1506□□	40	32	31	250
EH-A32S-PDUN R/L-15-3	DN□□1504□□	40	32	31	250

Dimension/data block 2.

Item	Insert assignment	S	ℓ
EH-S20S-PDUN R/L-11	DN□□1104□□	13	30
EH-S25R-PDUN R/L-11	DN□□1104□□	17	35
EH-S32S-PDUN R/L-11	DN□□1104□□	22	40
EH-S32S-PDUN R/L-15	DN□□1506□□	22	50
EH-S40T-PDUN R/L-15	DN□□1506□□	27	50
EH-S50U-PDUN R/L-15	DN□□1506□□	35	63
EH-S32S-PDUN R/L-15-3	DN□□1504□□	22	50
EH-S40T-PDUN R/L-15-3	DN□□1504□□	27	50
EH-A32S-PDUN R/L-15	DN□□1506□□	22	50
EH-A32S-PDUN R/L-15-3	DN□□1504□□	22	50

Spare parts

Dimension/data block 1.

Item	Lever	Screw	Shim	Shim pin	Shim-pin punch
EH-S20S-PDUN R/L-11	LV3D	LVSCR0512B	-	-	-
EH-S25R-PDUN R/L-11	LV3D	LVSCR0512B	-	-	-
EH-S32S-PDUN R/L-11	LV3	LVSCR0617	LVSD317	LVSP3	LVSP3
EH-S32S-PDUN R/L-15	LV4B	LVSCR0821	LVSD42	LVSP4	LVSP4
EH-S40T-PDUN R/L-15	LV4B	LVSCR0821	LVSD42	LVSP4	LVSP4
EH-S50U-PDUN R/L-15	LV4B	LVSCR0821	LVSD42	LVSP4	LVSP4
EH-S32S-PDUN R/L-15-3	LV4	LVSCR0821	LVSD42	LVSP4	LVSP4
EH-S40T-PDUN R/L-15-3	LV4	LVSCR0821	LVSD42	LVSP4	LVSP4
EH-A32S-PDUN R/L-15	LV4B	LVSCR0821	LVSD42	LVSP4	LVSP4
EH-A32S-PDUN R/L-15-3	LV4	LVSCR0821	LVSD42	LVSP4	LVSP4

Dimension/data block 2.

Item	Wrench
EH-S20S-PDUN R/L-11	W20L
EH-S25R-PDUN R/L-11	W20L
EH-S32S-PDUN R/L-11	W25L
EH-S32S-PDUN R/L-15	W30L
EH-S40T-PDUN R/L-15	W30L
EH-S50U-PDUN R/L-15	W30L
EH-S32S-PDUN R/L-15-3	W30L
EH-S40T-PDUN R/L-15-3	W30L
EH-A32S-PDUN R/L-15	W30L
EH-A32S-PDUN R/L-15-3	W30L

PSKN: holder and dimensions

Dimensions in mm. Tool approach: 75°.

Dimension/data block 1.

Item	Insert assignment	ØD	Ød	H	L
EH-S25R-PSKN R/L-12	SN□□1204□□	32	25	23	200
EH-S32S-PSKN R/L-12	SN□□1204□□	40	32	30	250
EH-S40T-PSKN R/L-12	SN□□1204□□	50	40	37	300
EH-A25R-PSKN R/L-12	SN□□1204□□	32	25	23	200
EH-A32S-PSKN R/L-12	SN□□1204□□	40	32	30	250

Dimension/data block 2.

Item	Insert assignment	S	ℓ
EH-S25R-PSKN R/L-12	SN□□1204□□	17	42
EH-S32S-PSKN R/L-12	SN□□1204□□	22	45
EH-S40T-PSKN R/L-12	SN□□1204□□	27	50
EH-A25R-PSKN R/L-12	SN□□1204□□	17	42
EH-A32S-PSKN R/L-12	SN□□1204□□	22	50

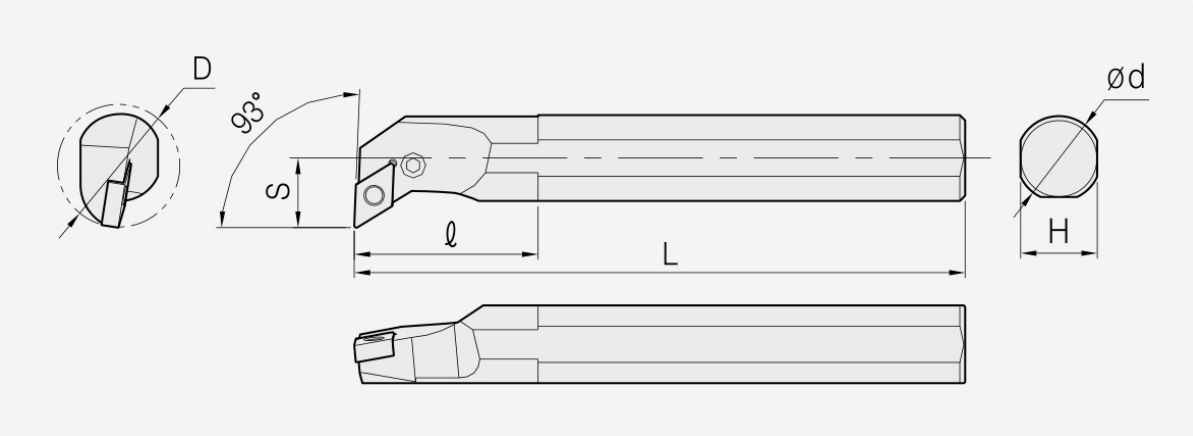
Spare parts

Dimension/data block 1.

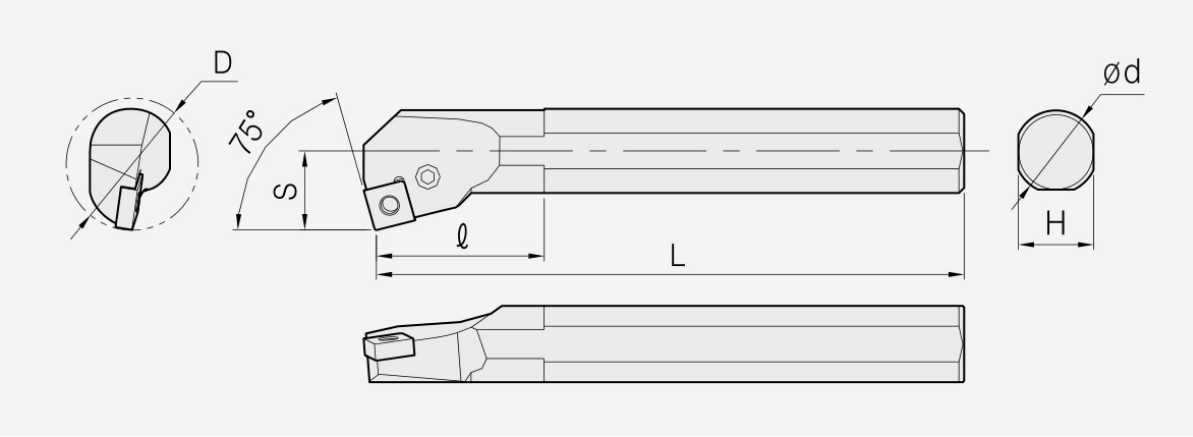
Item	Lever	Screw	Shim	Shim pin	Shim-pin punch
EH-S25R-PSKN R/L-12	LV4A	LVSCR0613A	-	-	-
EH-S32S-PSKN R/L-12	LV4	LVSCR0821	LVSS42B	LVSP4	LVSP4
EH-S40T-PSKN R/L-12	LV4	LVSCR0821	LVSS42B	LVSP4	LVSP4
EH-A25R-PSKN R/L-12	LV4A	LVSCR0613A	-	LVSP4	-
EH-A32S-PSKN R/L-12	LV4	LVSCR0821	LVSS42B	LVSP4	LVSP4

Dimension/data block 2.

Item	Wrench
EH-S25R-PSKN R/L-12	W25L
EH-S32S-PSKN R/L-12	W30L
EH-S40T-PSKN R/L-12	W30L
EH-A25R-PSKN R/L-12	W25L
EH-A32S-PSKN R/L-12	W30L



PDUN: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.



PSKN: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.

PTFN / PWLN

PTFN: holder and dimensions

Dimensions in mm. Tool approach: 90°.

Dimension/data block 1.

Item	Insert assignment	ØD	Ød	H	L
EH-S16R-PTFN R/L-11	TN□□1103□□	20	16	15	200
EH-S20S-PTFN R/L-11	TN□□1103□□	25	20	18	250
EH-S25R-PTFN R/L-11	TN□□1103□□	32	25	23	200
EH-S25R-PTFN R/L-16	TN□□1604□□	32	25	23	200
EH-S32S-PTFN R/L-16	TN□□1604□□	44	32	30	250
EH-S40T-PTFN R/L-16	TN□□1604□□	54	40	37	300
EH-A25R-PTFN R/L-16	TN□□1604□□	32	25	24	200
EH-A32S-PTFN R/L-16	TN□□1604□□	40	32	31	250

Dimension/data block 2.

Item	Insert assignment	S	ℓ
EH-S16R-PTFN R/L-11	TN□□1103□□	11	28
EH-S20S-PTFN R/L-11	TN□□1103□□	13	33
EH-S25R-PTFN R/L-11	TN□□1103□□	17	36
EH-S25R-PTFN R/L-16	TN□□1604□□	17	42
EH-S32S-PTFN R/L-16	TN□□1604□□	22	50
EH-S40T-PTFN R/L-16	TN□□1604□□	27	55
EH-A25R-PTFN R/L-16	TN□□1604□□	17	40
EH-A32S-PTFN R/L-16	TN□□1604□□	22	50

Spare parts

Dimension/data block 1.

Item	Lever	Screw	Shim	Shim pin	Shim-pin punch
EH-S16R-PTFN R/L-11	LV2	LVSCR0509B	-	-	-
EH-S20S-PTFN R/L-11	LV2	LVSCR0509B	-	-	-
EH-S25R-PTFN R/L-11	LV2	LVSCR0509B	-	-	-
EH-S25R-PTFN R/L-16	LV3B	LVSCR0512B	-	-	-
EH-S32S-PTFN R/L-16	LV3	LVSCR0617	LVST317B	LVSP3	LVSP3
EH-S40T-PTFN R/L-16	LV3	LVSCR0617	LVST317B	LVSP3	LVSP3
EH-A25R-PTFN R/L-16	LV3	LVSCR0617	LVST317B	LVSP3	LVSP3
EH-A32S-PTFN R/L-16	LV3	LVSCR0617	LVST317B	LVSP3	LVSP3

Dimension/data block 2.

Item	Wrench
EH-S16R-PTFN R/L-11	W25L
EH-S20S-PTFN R/L-11	W25L
EH-S25R-PTFN R/L-11	W25L
EH-S25R-PTFN R/L-16	W20L
EH-S32S-PTFN R/L-16	W25L
EH-S40T-PTFN R/L-16	W25L
EH-A25R-PTFN R/L-16	W25L
EH-A32S-PTFN R/L-16	W25L

PWLN: holder and dimensions

Dimensions in mm. Tool approach: 95°.

Dimension/data block 1.

Item	Insert assignment	ØD	Ød	H	L
EH-S20S-PWLN R/L-06	WN□□0604□□	25	20	18	250
EH-S25R-PWLN R/L-06	WN□□0604□□	32	25	23	200
EH-S32S-PWLN R/L-06	WN□□0604□□	44	32	30	250
EH-S25R-PWLN R/L-08	WN□□0804□□	32	25	23	200
EH-S32S-PWLN R/L-08	WN□□0804□□	44	32	30	250

Dimension/data block 2.

Item	Insert assignment	S	ℓ
EH-S20S-PWLN R/L-06	WN□□0604□□	13	40
EH-S25R-PWLN R/L-06	WN□□0604□□	17	40
EH-S32S-PWLN R/L-06	WN□□0604□□	22	45
EH-S25R-PWLN R/L-08	WN□□0804□□	17	45
EH-S32S-PWLN R/L-08	WN□□0804□□	22	50

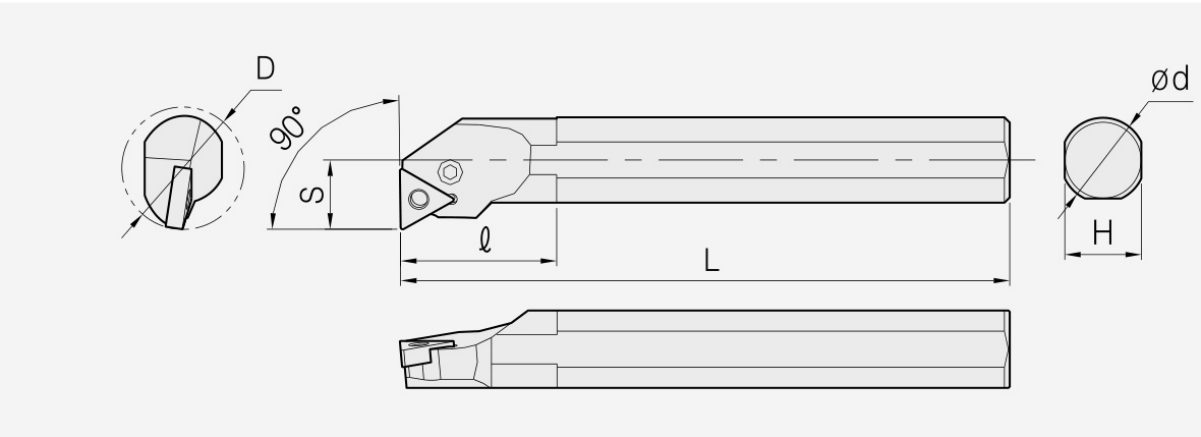
Spare parts

Dimension/data block 1.

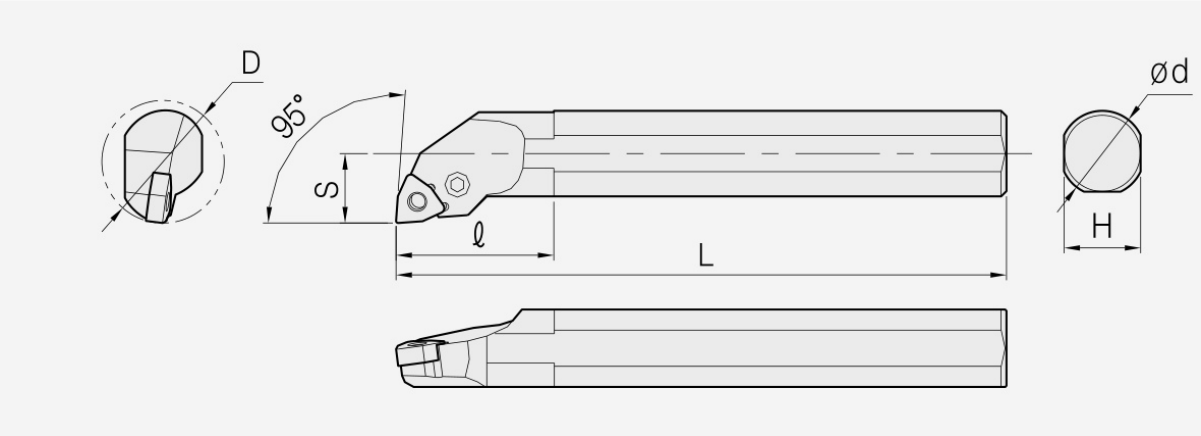
Item	Lever	Screw	Shim	Shim pin	Shim-pin punch
EH-S20S-PWLN R/L-06	LV3B	LVSCR0512B	-	-	-
EH-S25R-PWLN R/L-06	LV3B	LVSCR0512B	-	-	-
EH-S32S-PWLN R/L-06	LV3B	LVSCR0613B	LVSW317	LVSP3	LVSP3
EH-S25R-PWLN R/L-08	LV4A	LVSCR0613A	-	-	-
EH-S32S-PWLN R/L-08	LV4	LVSCR0821	LVSW42	LVSP4	LVSP3

Dimension/data block 2.

Item	Wrench
EH-S20S-PWLN R/L-06	W20L
EH-S25R-PWLN R/L-06	W20L
EH-S32S-PWLN R/L-06	W25L
EH-S25R-PWLN R/L-08	W25L
EH-S32S-PWLN R/L-08	W30L



PTFN: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.



PWLN: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.

MTFN / MVUN / MWLN

MTFN: holder and dimensions

Dimensions in mm. Tool approach: 90°.

Dimension/data block 1.

Item	Insert assignment	ØD	Ød	H	L
EH-S25R-MTFN R/L-16	TN□□1604□□	32	25	23	200
EH-S32S-MTFN R/L-16	TN□□1604□□	40	32	30	250
EH-S40T-MTFN R/L-16	TN□□1604□□	50	40	37	300
EH-A25R-MTFN R/L-16	TN□□1604□□	32	25	23	200
EH-A32S-MTFN R/L-16	TN□□1604□□	40	32	30	250

Dimension/data block 2.

Item	Insert assignment	S	ℓ
EH-S25R-MTFN R/L-16	TN□□1604□□	17	36
EH-S32S-MTFN R/L-16	TN□□1604□□	22	50
EH-S40T-MTFN R/L-16	TN□□1604□□	27	60
EH-A25R-MTFN R/L-16	TN□□1604□□	17	40
EH-A32S-MTFN R/L-16	TN□□1604□□	22	50

Spare parts

Item	Clamp	Clamp screw	Shim	Shim pin	Wrench
EH-S25R-MTFN R/L-16	MCL7N1	MCSCR10-32-19	-	MSP3D3	W23.8L / W19.8L
EH-S32S-MTFN R/L-16	MCL7N1	MCSCR10-32-19	MST32D	MSP3D	W23.8L / W19.8L
EH-S40T-MTFN R/L-16	MCL7N1	MCSCR10-32-19	MST32D	MSP3D	W23.8L / W19.8L
EH-A25R-MTFN R/L-16	MCL7N1	MCSCR10-32-19	-	MSP3D3	W23.8L / W19.8L
EH-A32S-MTFN R/L-16	MCL7N1	MCSCR10-32-19	MST32D	MSP3D	W23.8L / W19.8L

MVUN: holder and dimensions

Dimensions in mm. Tool approach: 93°.

Dimension/data block 1.

Item	Insert assignment	ØD	Ød	H	L
EH-S32S-MVUN R/L-16	VN□□1604□□	40	32	30	250
EH-S40T-MVUN R/L-16	VN□□1604□□	50	40	37	300
EH-A32S-MVUN R/L-16	VN□□1604□□	40	32	30	250
EH-A40T-MVUN R/L-16	VN□□1604□□	50	40	37	300

Dimension/data block 2.

Item	Insert assignment	S	ℓ
EH-S32S-MVUN R/L-16	VN□□1604□□	22	50
EH-S40T-MVUN R/L-16	VN□□1604□□	27	60
EH-A32S-MVUN R/L-16	VN□□1604□□	22	50
EH-A40T-MVUN R/L-16	VN□□1604□□	27	60

Spare parts

Item	Clamp	Clamp screw	Shim	Shim pin	Wrench
EH-S32S-MVUN R/L-16	MCL8N2	MCSCR5/16-28	MSV32	MSP3D	W39.7L / W19.8L
EH-S40T-MVUN R/L-16	MCL8N2	MCSCR5/16-28	MSV32	MSP3D	W39.7L / W19.8L
EH-A32S-MVUN R/L-16	MCL8N2	MCSCR5/16-28	MSV32	MSP3D	W39.7L / W19.8L
EH-A40T-MVUN R/L-16	MCL8N2	MCSCR5/16-28	MSV32	MSP3D	W39.7L / W19.8L

MWLN: holder and dimensions

Dimensions in mm. Tool approach: 95°.

Dimension/data block 1.

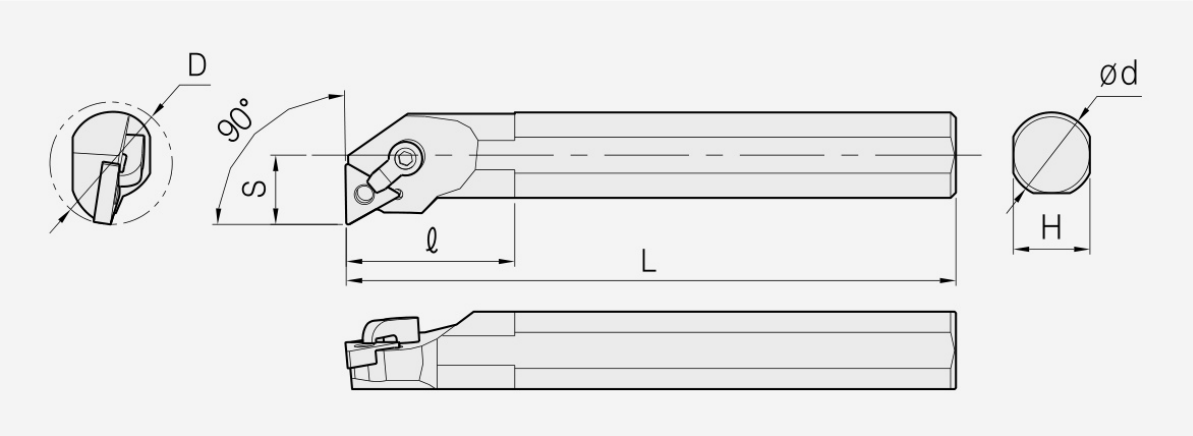
Item	Insert assignment	ØD	Ød	H	L
EH-S25R-MWLN R/L-06	WN□□0604□□	32	25	23	200
EH-S32S-MWLN R/L-06	WN□□0604□□	40	32	30	250
EH-S40T-MWLN R/L-06	WN□□0604□□	50	40	37	300
EH-S25R-MWLN R/L-08	WN□□0804□□	32	25	23	200
EH-S32S-MWLN R/L-08	WN□□0804□□	40	32	30	250
EH-S40T-MWLN R/L-08	WN□□0804□□	50	40	37	300

Dimension/data block 2.

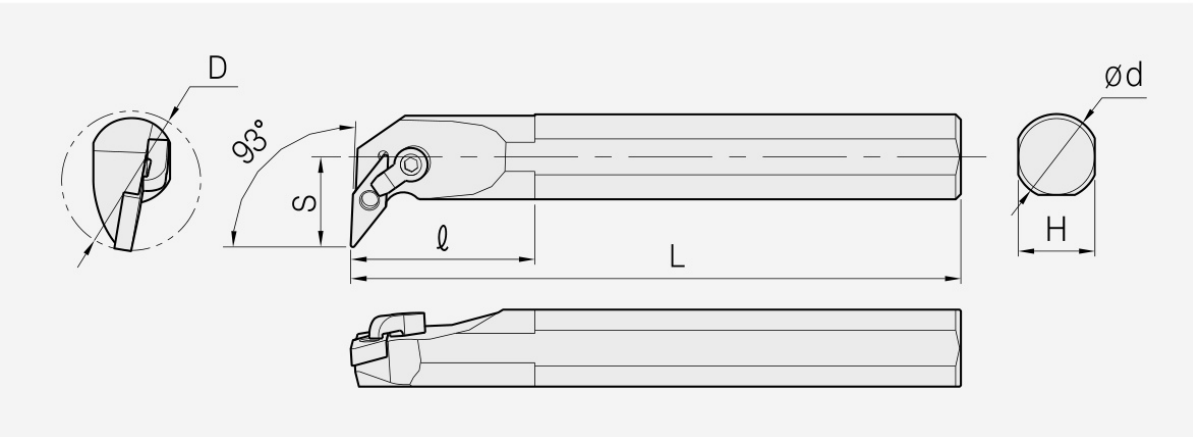
Item	Insert assignment	S	ℓ
EH-S25R-MWLN R/L-06	WN□□0604□□	17	36
EH-S32S-MWLN R/L-06	WN□□0604□□	22	50
EH-S40T-MWLN R/L-06	WN□□0604□□	27	60
EH-S25R-MWLN R/L-08	WN□□0804□□	17	36
EH-S32S-MWLN R/L-08	WN□□0804□□	22	50
EH-S40T-MWLN R/L-08	WN□□0804□□	27	60

Spare parts

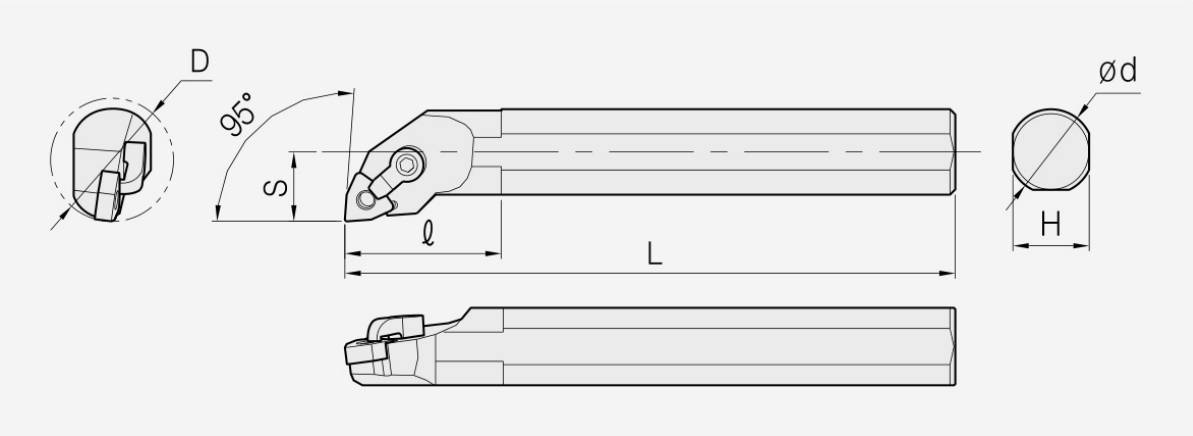
Item	Clamp	Clamp screw	Shim	Shim pin	Wrench
EH-S25R-MWLN R/L-06	MCL7N	MCSCR10/32-19	-	MSP3D3	W23.8L / W19.8L
EH-S32S-MWLN R/L-06	MCL7N	MCSCR10/32-19	MSW32	MSP3D	W23.8L / W19.8L
EH-S40T-MWLN R/L-06	MCL7N	MCSCR10/32-19	MSW32	MSP3D	W23.8L / W19.8L
EH-S25R-MWLN R/L-08	MCL6N	MCSCR1/4-21	-	MSP4DS	W31.8L / W23.8L
EH-S32S-MWLN R/L-08	MCL6N	MCSCR1/4-21	MSW43	MSP4D	W31.8L / W23.8L
EH-S40T-MWLN R/L-08	MCL6N	MCSCR1/4-21	MSW43	MSP4D	W31.8L / W23.8L



MTFN: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.



MVUN: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.



MWLN: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.

SCLC / SCLP

SCLC: holder and dimensions

Dimensions in mm. Tool approach: 95°.

Dimension/data block 1.

Item	Insert assignment	ØD	Ød	H	L
EH-S08K SCLC R/L 06	CC□□0602□□	10	8	7	125
EH-S10K SCLC R/L 06	CC□□0602□□	12	10	9	125
EH-S10M SCLC R/L 06	CC□□0602□□	12	10	9	150
EH-S12M SCLC R/L 06	CC□□0602□□	16	12	11	150
EH-S16R SCLC R/L 06	CC□□0602□□	20	16	15	200
EH-S12M SCLC R/L 09	CC□□09T3□□	16	12	11	150
EH-S16R SCLC R/L 09	CC□□09T3□□	20	16	15	200
EH-S20S SCLC R/L 09	CC□□09T3□□	25	20	18	250

Item	Insert assignment	ØD	Ød	H	L
EH-S25R SCLC R/L 09	CC□□09T3□□	32	25	23	200
EH-S25R SCLC R/L 12	CC□□1204□□	32	25	23	200
EH-S32S SCLC R/L 12	CC□□1204□□	40	32	30	250
EH-S40T SCLC R/L 12	CC□□1204□□	50	40	37	300
EH-A08F SCLC R/L 06	CC□□0602□□	10	8	7.5	80
EH-A10H SCLC R/L 06	CC□□0602□□	12	10	9.5	100
EH-A12K SCLC R/L 06	CC□□0602□□	16	12	11	125
EH-A12K SCLC R/L 09	CC□□09T3□□	16	12	11	125
EH-A16M SCLC R/L 09	CC□□09T3□□	20	16	15	150
EH-A20Q SCLC R/L 09	CC□□09T3□□	25	20	19	180
EH-A25R SCLC R/L 09	CC□□09T3□□	32	25	24	200
EH-A25R SCLC R/L 12	CC□□1204□□	32	25	24	200
EH-A32S SCLC R/L 12	CC□□1204□□	40	32	31	250

Dimension/data block 2.

Item	Insert assignment	S	ℓ
EH-S08K SCLC R/L 06	CC□□0602□□	5	14
EH-S10K SCLC R/L 06	CC□□0602□□	6	14

Item	Insert assignment	S	ℓ
EH-S10M SCLC R/L 06	CC□□0602□□	6	14
EH-S12M SCLC R/L 06	CC□□0602□□	9	25
EH-S16R SCLC R/L 06	CC□□0602□□	11	32
EH-S12M SCLC R/L 09	CC□□09T3□□	9	25
EH-S16R SCLC R/L 09	CC□□09T3□□	11	32.5
EH-S20S SCLC R/L 09	CC□□09T3□□	13	38
EH-S25R SCLC R/L 09	CC□□09T3□□	17	45
EH-S25R SCLC R/L 12	CC□□1204□□	17	45
EH-S32S SCLC R/L 12	CC□□1204□□	22	50
EH-S40T SCLC R/L 12	CC□□1204□□	27	60
EH-A08F SCLC R/L 06	CC□□0602□□	5	14
EH-A10H SCLC R/L 06	CC□□0602□□	6	14
EH-A12K SCLC R/L 06	CC□□0602□□	9	25
EH-A12K SCLC R/L 09	CC□□09T3□□	9	25
EH-A16M SCLC R/L 09	CC□□09T3□□	11	32.5
EH-A20Q SCLC R/L 09	CC□□09T3□□	13	-
EH-A25R SCLC R/L 09	CC□□09T3□□	17	45
EH-A25R SCLC R/L 12	CC□□1204□□	17	45
EH-A32S SCLC R/L 12	CC□□1204□□	32	50

Spare parts

Item	Screw	Shim	Shim screw	Wrench
EH-S08K SCLC R/L 06	SCR02555	-	-	TW07P
EH-S10K SCLC R/L 06	SCR02565	-	-	TW07P

Item	Screw	Shim	Shim screw	Wrench
EH-S10M SCLC R/L 06	SCR02565	-	-	TW07P
EH-S12M SCLC R/L 06	SCR02565	-	-	TW07P
EH-S16R SCLC R/L 06	SCR02565	-	-	TW07P
EH-S12M SCLC R/L 09	SCR03058	-	-	TW15P
EH-S16R SCLC R/L 09	SCR03058	-	-	TW15P
EH-S20S SCLC R/L 09	SCR03058	-	-	TW15P
EH-S25R SCLC R/L 09	SCR03510	-	-	TW15P
EH-S25R SCLC R/L 12	SCR0411F	-	-	TW15P
EH-S32S SCLC R/L 12	SCR0411F	SSC42	SSCR0610	W40L / TW15P
EH-S40T SCLC R/L 12	SCR0411F	SSC42	SSCR0610	W40L / TW15P
EH-A08F SCLC R/L 06	SCR02555	-	-	TW07P
EH-A10H SCLC R/L 06	SCR02565	-	-	TW07P
EH-A12K SCLC R/L 06	SCR02565	-	-	TW07P
EH-A12K SCLC R/L 09	SCR03058	-	-	TW15P
EH-A16M SCLC R/L 09	SCR03058	-	-	TW15P
EH-A20Q SCLC R/L 09	SCR03058	-	-	TW15P

Item	Screw	Shim	Shim screw	Wrench
EH-A25R SCLC R/L 09	SCR03510	-	-	TW15P
EH-A25R SCLC R/L 12	SCR0411F	-	-	TW15P
EH-A32S SCLC R/L 12	SCR0411F	SSC42	SSCR0610	W40L / TW15P

SCLP: holder and dimensions

Dimensions in mm. Tool approach: 95°.

Dimension/data block 1.

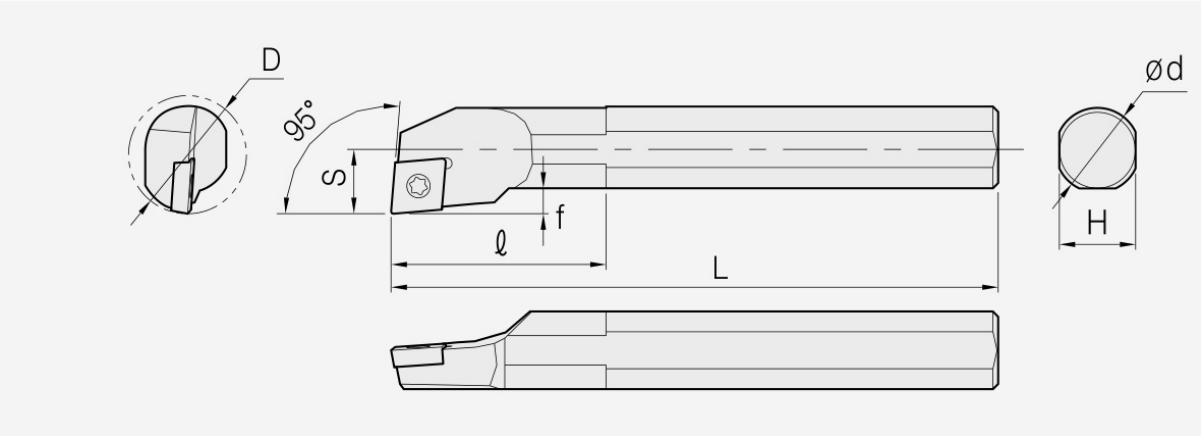
Item	Insert assignment	ØD	Ød	H	L
EH-S10M SCLP R/L 08	CP□□0802□□	12	10	9	150
EH-S12M SCLP R/L 08	CP□□0802□□	16	12	11	150
EH-S16N SCLP R/L 09	CP□□0903□□	20	16	15	160
EH-S16R SCLP R/L 09	CP□□0903□□	20	16	15	200
EH-S20N SCLP R/L 09	CP□□0903□□	25	20	18	160
EH-S20S SCLP R/L 09	CP□□0903□□	25	20	15	250
EH-A10H SCLP R/L 08	CP□□0802□□	12	10	9.5	100
EH-A12K SCLP R/L 08	CP□□0802□□	16	12	11	125
EH-A16M SCLP R/L 09	CP□□0903□□	20	16	15	150
EH-A20Q SCLP R/L 09	CP□□0903□□	25	20	19	180

Dimension/data block 2.

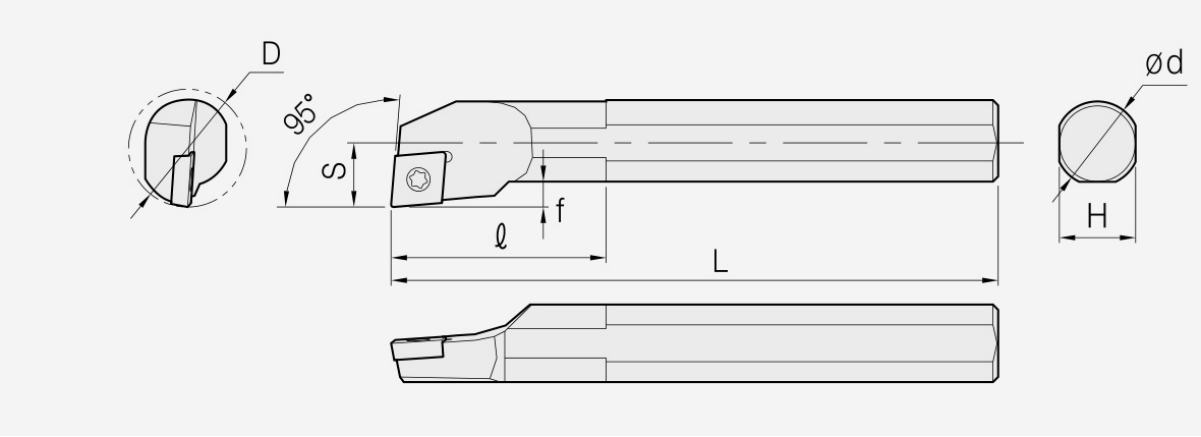
Item	Insert assignment	S	ℓ
EH-S10M SCLP R/L 08	CP□□0802□□	6	-
EH-S12M SCLP R/L 08	CP□□0802□□	8	15
EH-S16N SCLP R/L 09	CP□□0903□□	10	15
EH-S16R SCLP R/L 09	CP□□0903□□	11	35
EH-S20N SCLP R/L 09	CP□□0903□□	12.5	20
EH-S20S SCLP R/L 09	CP□□0903□□	12.5	20
EH-A10H SCLP R/L 08	CP□□0802□□	9	-
EH-A12K SCLP R/L 08	CP□□0802□□	8	20
EH-A16M SCLP R/L 09	CP□□0903□□	10	25
EH-A20Q SCLP R/L 09	CP□□0903□□	12.5	28

Spare parts

Item	Screw	Wrench
EH-S10M SCLP R/L 08	SCR0305	TW09P
EH-S12M SCLP R/L 08	SCR0307	TW09P
EH-S16N SCLP R/L 09	SCR0408	TW15P
EH-S16R SCLP R/L 09	SCR0408	TW15P
EH-S20N SCLP R/L 09	SCR0408	TW15P
EH-S20S SCLP R/L 09	SCR0408	TW15P
EH-A10H SCLP R/L 08	SCR0305	TW09P
EH-A12K SCLP R/L 08	SCR0307	TW09P
EH-A16M SCLP R/L 09	SCR0408	TW15P
EH-A20Q SCLP R/L 09	SCR0408	TW15P



SCLC: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.



SCLP: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.

SDQC / SDUC

SDQC: holder and dimensions

Dimensions in mm. Tool approach: 107.5°.

Dimension/data block 1.

Item	Insert assignment	ØD	Ød	H	L
EH-S10M-SDQ CR R/L-07	DC□□0702□□	13	10	9	150
EH-S12M-SDQ CR R/L-07	DC□□0702□□	16	12	11	150
EH-S16R-SDQ CR R/L-07	DC□□0702□□	20	16	15	200
EH-S16R-SDQ CR R/L-11	DC□□11T3□□	20	16	15	200
EH-S20S-SDQ CR R/L-11	DC□□11T3□□	25	20	18	250
EH-S25R-SDQ CR R/L-11	DC□□11T3□□	32	25	23	200
EH-A10H-SDQ CR R/L-07	DC□□0702□□	13	10	9.5	100
EH-A12K-SDQ CR R/L-07	DC□□0702□□	16	12	11	125
EH-A16M-SDQ CR R/L-11	DC□□11T3□□	20	16	15	150
EH-A20Q-SDQ CR R/L-11	DC□□11T3□□	25	20	19	180
EH-A25R-SDQ CR R/L-11	DC□□11T3□□	32	25	24	200

Dimension/data block 2.

Item	Insert assignment	S	ℓ	f
EH-S10M-SDQCR R/L-07	DC□□0702□□	7	20	2.5
EH-S12M-SDQCR R/L-07	DC□□0702□□	9	22	3.5
EH-S16R-SDQCR R/L-07	DC□□0702□□	11	27	4
EH-S16R-SDQCR R/L-11	DC□□11T3□□	11	32	4
EH-S20S-SDQCR R/L-11	DC□□11T3□□	13	32	4.5
EH-S25R-SDQCR R/L-11	DC□□11T3□□	17	32	7
EH-A10H-SDQCR R/L-07	DC□□0702□□	7	20	2
EH-A12K-SDQCR R/L-07	DC□□0702□□	9	22	3
EH-A16M-SDQCR R/L-11	DC□□11T3□□	11	27	3
EH-A20Q-SDQCR R/L-11	DC□□11T3□□	13	32	3
EH-A25R-SDQCR R/L-11	DC□□11T3□□	17	32	4

Spare parts

Item	Screw	Wrench
EH-S10M-SDQCR R/L-07	SCR02555	TW07P
EH-S12M-SDQCR R/L-07	SCR02565	TW07P
EH-S16R-SDQCR R/L-07	SCR02565	TW07P
EH-S16R-SDQCR R/L-11	SCR03058	TW15P
EH-S20S-SDQCR R/L-11	SCR03058	TW15P
EH-S25R-SDQCR R/L-11	SCR03510	TW15P
EH-A10H-SDQCR R/L-07	SCR02555	TW07P
EH-A12K-SDQCR R/L-07	SCR02565	TW07P
EH-A16M-SDQCR R/L-11	SCR03058	TW15P
EH-A20Q-SDQCR R/L-11	SCR03058	TW15P
EH-A25R-SDQCR R/L-11	SCR03510	TW15P

SDUC: holder and dimensions

Dimensions in mm. Tool approach: 93°.

Dimension/data block 1.

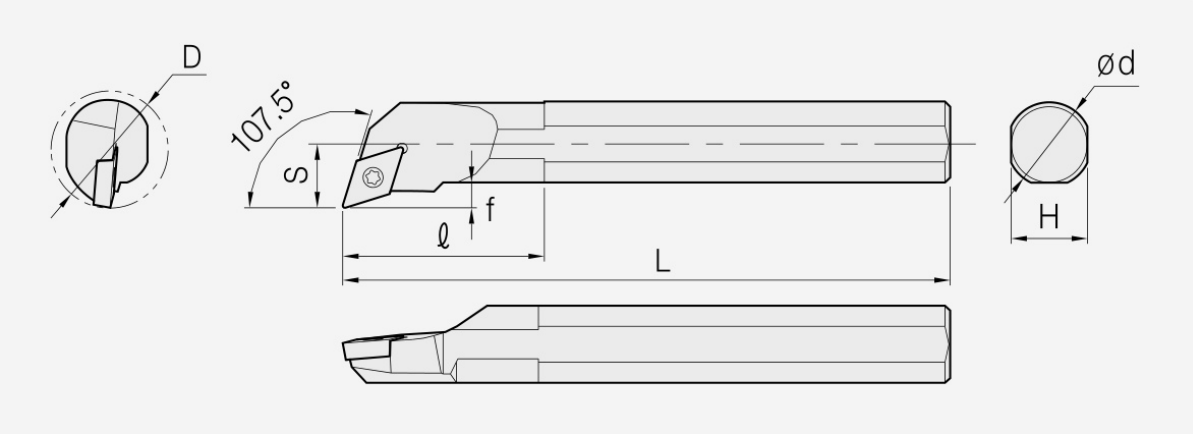
Item	Insert assignment	ØD	Ød	H	L
EH-S10M-SDU CR R/L-07	DC□□0702□□	13	10	9	150
EH-S12M-SDU CR R/L-07	DC□□0702□□	16	12	11	150
EH-S16R-SDU CR R/L-07	DC□□0702□□	20	16	15	200
EH-S16R-SDU CR R/L-11	DC□□11T3□□	20	16	15	200
EH-S20S-SDU CR R/L-11	DC□□11T3□□	25	20	18	250
EH-S25R-SDU CR R/L-11	DC□□11T3□□	32	25	23	200
EH-S32S-SDU CR R/L-11	DC□□11T3□□	40	32	30	250
EH-A10H-SDU CR R/L-07	DC□□0702□□	13	10	9.5	100
EH-A12K-SDU CR R/L-07	DC□□0702□□	16	12	11	125
EH-A16M-SDU CR R/L-07	DC□□11T3□□	20	16	15	150
EH-A20Q-SDU CR R/L-11	DC□□11T3□□	25	20	19	180
EH-A25R-SDU CR R/L-11	DC□□11T3□□	32	25	24	200

Dimension/data block 2.

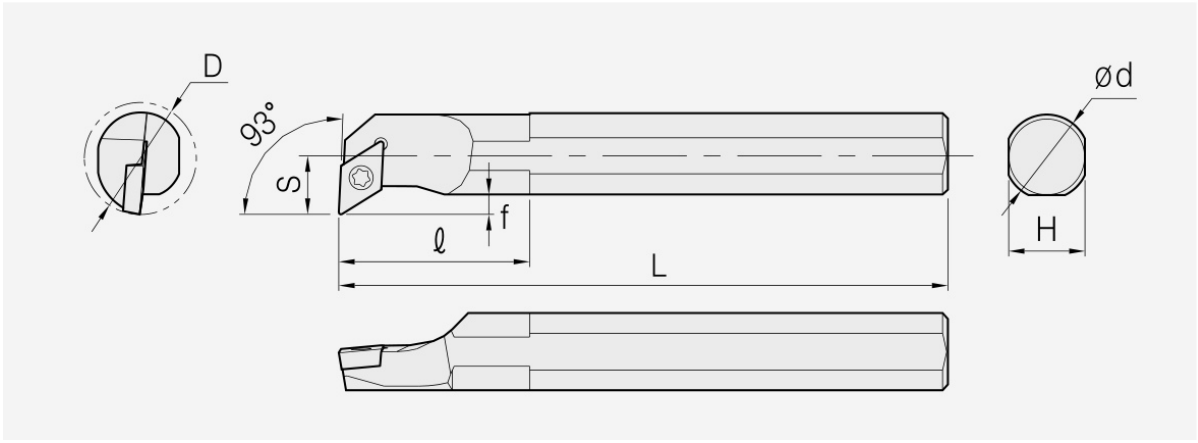
Item	Insert assignment	S	ℓ	f
EH-S10M-SDUCR R/L-07	DC□□0702□□	7	0	2.5
EH-S12M-SDUCR R/L-07	DC□□0702□□	9	22	3.5
EH-S16R-SDUCR R/L-07	DC□□0702□□	11	27	4
EH-S16R-SDUCR R/L-11	DC□□11T3□□	11	27	4
EH-S20S-SDUCR R/L-11	DC□□11T3□□	13	35	4.3
EH-S25R-SDUCR R/L-11	DC□□11T3□□	17	46	6.8
EH-S32S-SDUCR R/L-11	DC□□11T3□□	22	50	8.4
EH-A10H-SDUCR R/L-07	DC□□0702□□	7	0	2
EH-A12K-SDUCR R/L-07	DC□□0702□□	9	22	3
EH-A16M-SDUCR R/L-07	DC□□11T3□□	11	27	3
EH-A20Q-SDUCR R/L-11	DC□□11T3□□	13	35	3
EH-A25R-SDUCR R/L-11	DC□□11T3□□	17	46	4.5

Spare parts

Item	Screw	Wrench
EH-S10M-SDUCR R/L-07	SCR02555	TW07P
EH-S12M-SDUCR R/L-07	SCR02565	TW07P
EH-S16R-SDUCR R/L-07	SCR02565	TW07P
EH-S16R-SDUCR R/L-11	SCR03058	TW15P
EH-S20S-SDUCR R/L-11	SCR03058	TW15P
EH-S25R-SDUCR R/L-11	SCR03510	TW15P
EH-S32S-SDUCR R/L-11	SCR03510	TW15P
EH-A10H-SDUCR R/L-07	SCR02555	TW07P
EH-A12K-SDUCR R/L-07	SCR02565	TW07P
EH-A16M-SDUCR R/L-07	SCR02565	TW07P
EH-A20Q-SDUCR R/L-11	SCR03058	TW15P
EH-A25R-SDUCR R/L-11	SCR03510	TW15P



SDQC: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.



SDUC: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.

SDZC / SSKC

SDZC: holder and dimensions

Dimensions in mm. Tool approach: 3°.

Dimension/data block 1.

Item	Insert assignment	ØD	Ød	H	L
EH-S16R SDZC R/L 07	DC□□0702□□	20	16	15	200
EH-S20S SDZC R/L 07	DC□□0702□□	25	20	18	250
EH-S25R SDZC R/L 11	DC□□11T3□□	32	25	23	200
EH-S32S SDZC R/L 11	DC□□11T3□□	40	32	30	250
EH-S40T SDZC R/L 11	DC□□11T3□□	50	40	37	300
EH-A25R SDZC R/L 11	DC□□11T3□□	32	25	24	200
EH-A32S SDZC R/L 11	DC□□11T3□□	40	32	31	250

Dimension/data block 2.

Item	Insert assignment	S	ℓ	f
EH-S16R SDZC R/L 07	DC□□0702□□	11	29	4
EH-S20S SDZC R/L 07	DC□□0702□□	13	36.5	4.5
EH-S25R SDZC R/L 11	DC□□11T3□□	17	30	6.9
EH-S32S SDZC R/L 11	DC□□11T3□□	22	39	8.4
EH-S40T SDZC R/L 11	DC□□11T3□□	27	47	9.4
EH-A25R SDZC R/L 11	DC□□11T3□□	17	30	4.5
EH-A32S SDZC R/L 11	DC□□11T3□□	22	39	6

Spare parts

Item	Screw	Shim	Shim screw	Wrench
EH-S16R SDZC R/L 07	SCR02565	-	-	TW07P
EH-S20S SDZC R/L 07	SCR02565	-	-	TW07P
EH-S25R SDZC R/L 11	SCR03510	-	-	TW15P
EH-S32S SDZC R/L 11	SCR03512	SSD32	SSCR0509	TW15P / W35L
EH-S40T SDZC R/L 11	SCR03512	SSD32	SSCR0509	TW15P / W35L
EH-A25R SDZC R/L 11	SCR03510	-	-	TW15P
EH-A32S SDZC R/L 11	SCR03512	SSD32	SSCR0509	TW15P / W35L

SSKC: holder and dimensions

Dimensions in mm. Tool approach: 75°.

Dimension/data block 1.

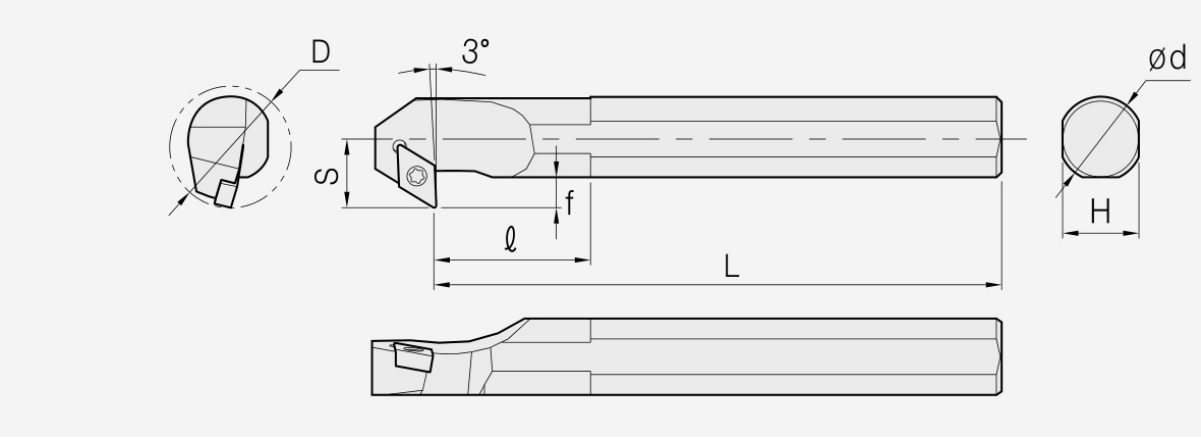
Item	Insert assignment	ØD	Ød	H	L
EH-S12M SSKC R/L 09	SC□□09T3□□	16	20	11	150
EH-S16R SSKC R/L 09	SC□□09T3□□	20	16	15	200
EH-S20S SSKC R/L 09	SC□□09T3□□	25	20	18	250
EH-S25R SSKC R/L 12	SC□□1204□□	32	25	23	200
EH-S32S SSKC R/L 12	SC□□1204□□	40	32	30	250
EH-A12K SSKC R/L 09	SC□□09T3□□	16	12	11	125
EH-A16M SSKC R/L 09	SC□□09T3□□	20	16	15	150
EH-A20Q SSKC R/L 09	SC□□09T3□□	25	20	19	180
EH-A25R SSKC R/L 12	SC□□1204□□	32	25	24	200
EH-A32S SSKC R/L 12	SC□□1204□□	40	32	31	250

Dimension/data block 2.

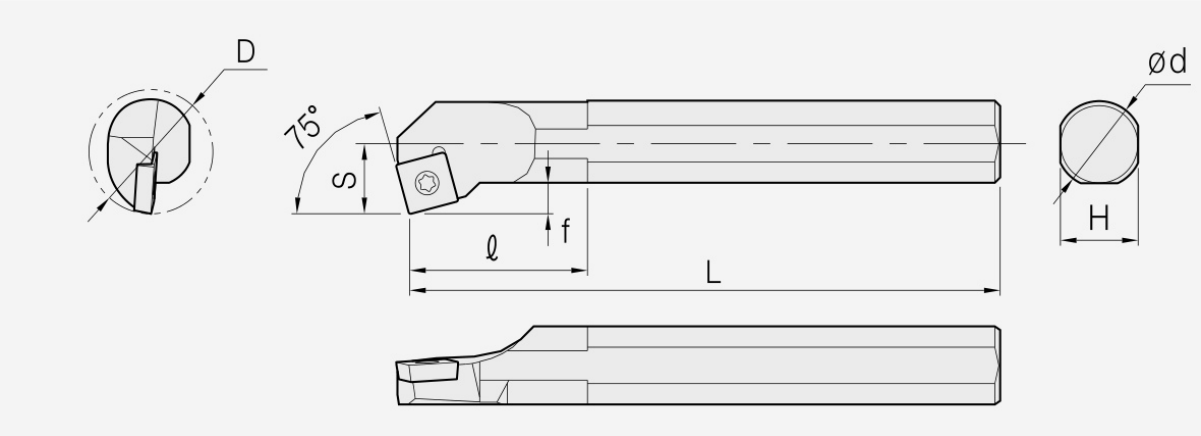
Item	Insert assignment	S	ℓ
EH-S12M SSKC R/L 09	SC□□09T3□□	9	26
EH-S16R SSKC R/L 09	SC□□09T3□□	11	40
EH-S20S SSKC R/L 09	SC□□09T3□□	13	46
EH-S25R SSKC R/L 12	SC□□1204□□	17	36
EH-S32S SSKC R/L 12	SC□□1204□□	22	43
EH-A12K SSKC R/L 09	SC□□09T3□□	9	26
EH-A16M SSKC R/L 09	SC□□09T3□□	11	32
EH-A20Q SSKC R/L 09	SC□□09T3□□	13	34
EH-A25R SSKC R/L 12	SC□□1204□□	17	36
EH-A32S SSKC R/L 12	SC□□1204□□	22	43

Spare parts

Item	Screw	Shim	Shim screw	Wrench
EH-S12M SSKC R/L 09	SCR03057	-	-	TW15P
EH-S16R SSKC R/L 09	SCR03058	-	-	TW15P
EH-S20S SSKC R/L 09	SCR03058	-	-	TW15P
EH-S25R SSKC R/L 12	SCR0411F	-	-	TW15P
EH-S32S SSKC R/L 12	SCR0411F	SSC42	SSCR0610	TW15P / W40L
EH-A12K SSKC R/L 09	SCR03057	-	-	TW15P
EH-A16M SSKC R/L 09	SCR03058	-	-	TW15P
EH-A20Q SSKC R/L 09	SCR03058	-	-	TW15P
EH-A25R SSKC R/L 12	SCR0411F	-	-	TW15P
EH-A32S SSKC R/L 12	SCR0411F	SSC42	SSCR0610	TW15P / W40L



SDZC: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.



SSKC: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.

SSKP / STFC

SSKP: holder and dimensions

Dimensions in mm. Tool approach: 75°.

Dimension/data block 1.

Item	Insert assignment	ØD	Ød	H	L
EH-S12M SSKP R/L 09	SP□□0903□□	16	12	11	150
EH-S16N SSKP R/L 09	SP□□0903□□	20	16	15	160
EH-S16R SSKP R/L 09	SP□□0903□□	20	16	15	200
EH-S20N SSKP R/L 09	SP□□0903□□	25	20	18	160
EH-S20S SSKP R/L 09	SP□□0903□□	25	20	18	250
EH-A12K SSKP R/L 09	SP□□0903□□	16	12	11	125
EH-A16M SSKP R/L 09	SP□□0903□□	20	16	15	150
EH-A20Q SSKP R/L 09	SP□□0903□□	25	20	19	180

Dimension/data block 2.

Item	Insert assignment	S	ℓ
EH-S12M SSKP R/L 09	SP□□0903□□	8	18
EH-S16N SSKP R/L 09	SP□□0903□□	10	30
EH-S16R SSKP R/L 09	SP□□0903□□	10	32
EH-S20N SSKP R/L 09	SP□□0903□□	12.5	32
EH-S20S SSKP R/L 09	SP□□0903□□	12.5	35
EH-A12K SSKP R/L 09	SP□□0903□□	8	21
EH-A16M SSKP R/L 09	SP□□0903□□	10	30
EH-A20Q SSKP R/L 09	SP□□0903□□	12.5	32

Spare parts

Item	Screw	Wrench
EH-S12M SSKP R/L 09	SCR0307	TW09P
EH-S16N SSKP R/L 09	SCR0307	TW09P
EH-S16R SSKP R/L 09	SCR0307	TW09P
EH-S20N SSKP R/L 09	SCR0307	TW09P
EH-S20S SSKP R/L 09	SCR0307	TW09P
EH-A12K SSKP R/L 09	SCR03058	TW09P
EH-A16M SSKP R/L 09	SCR0307	TW09P
EH-A20Q SSKP R/L 09	SCR0307	TW09P

STFC: holder and dimensions

Dimensions in mm. Tool approach: 90°.

Dimension/data block 1.

Item	Insert assignment	ØD	Ød	H	L
EH-S10M STFC R/L 09	TC□□0902□□	13	10	9	150
EH-S12M STFC R/L 09	TC□□0902□□	16	12	11	150
EH-S12M STFC R/L 11	TC□□1102□□	16	12	11	150
EH-S16R STFC R/L 11	TC□□1102□□	20	16	15	200
EH-S20S STFC R/L 11	TC□□1102□□	25	20	18	250
EH-S20S STFC R/L 16	TC□□16T3□□	25	20	18	250
EH-S25R STFC R/L 16	TC□□16T3□□	32	25	23	200
EH-S32S STFC R/L 16	TC□□16T3□□	40	32	30	250
EH-S40T STFC R/L 16	TC□□16T3□□	50	40	37	300
EH-A10M STFC R/L 09	TC□□0902□□	13	10	9.5	100
EH-A12K STFC R/L 09	TC□□0902□□	16	12	11	125
EH-A12K STFC R/L 11	TC□□1102□□	16	12	11	125
EH-A16M STFC R/L 11	TC□□1102□□	20	16	15	150
EH-A20Q STFC R/L 11	TC□□1102□□	25	20	19	180
EH-A25R STFC R/L 16	TC□□16T3□□	32	25	24	200
EH-A32S STFC R/L 16	TC□□16T3□□	40	32	31	250

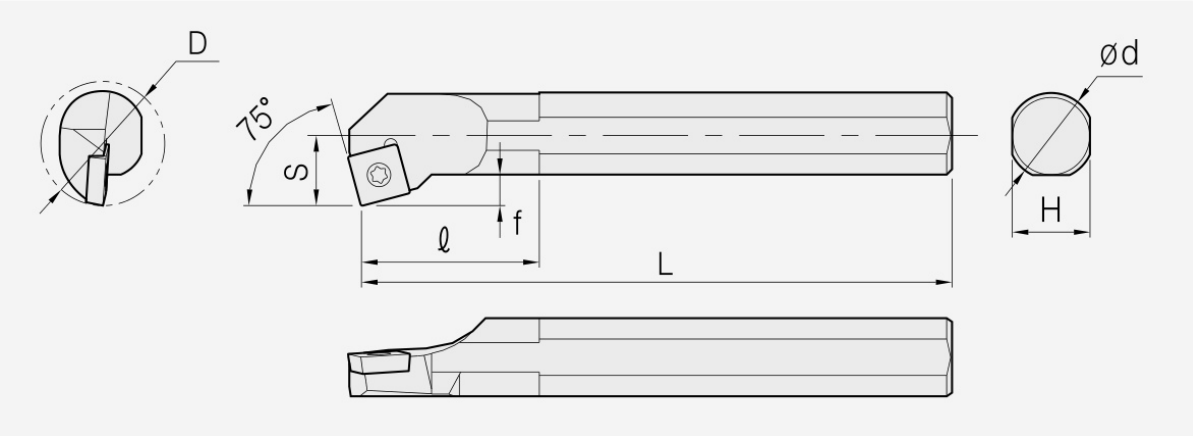
Dimension/data block 2.

Item	Insert assignment	S	ℓ
EH-S10M STFC R/L 09	TC□□0902□□	7	23
EH-S12M STFC R/L 09	TC□□0902□□	9	28
EH-S12M STFC R/L 11	TC□□1102□□	9	30
EH-S16R STFC R/L 11	TC□□1102□□	11	35
EH-S20S STFC R/L 11	TC□□1102□□	13	36
EH-S20S STFC R/L 16	TC□□16T3□□	13	36
EH-S25R STFC R/L 16	TC□□16T3□□	17	49
EH-S32S STFC R/L 16	TC□□16T3□□	22	50
EH-S40T STFC R/L 16	TC□□16T3□□	27	60
EH-A10M STFC R/L 09	TC□□0902□□	7	23
EH-A12K STFC R/L 09	TC□□0902□□	9	23
EH-A12K STFC R/L 11	TC□□1102□□	9	30
EH-A16M STFC R/L 11	TC□□1102□□	11	30
EH-A20Q STFC R/L 11	TC□□1102□□	13	36
EH-A25R STFC R/L 16	TC□□16T3□□	17	49
EH-A32S STFC R/L 16	TC□□16T3□□	22	50

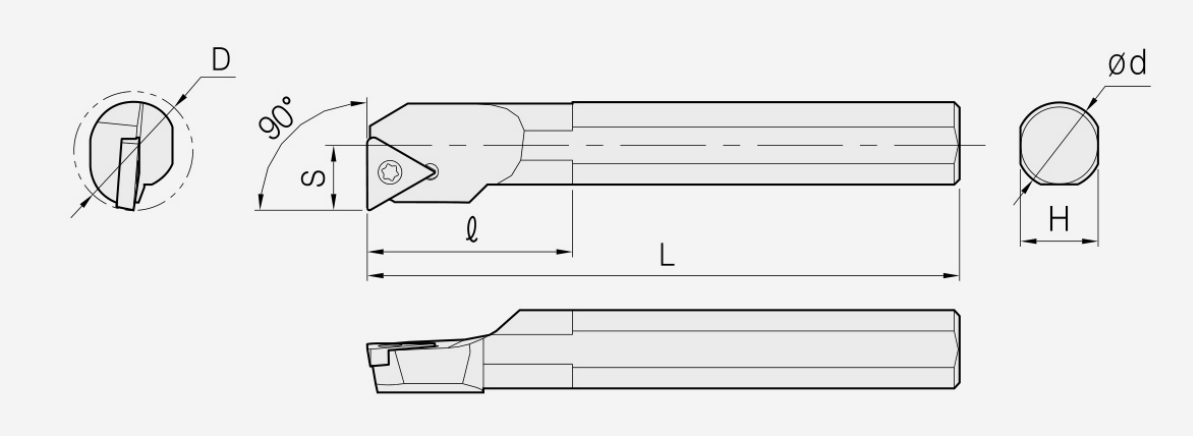
Spare parts

Item	Screw	Shim	Shim screw	Wrench
EH-S10M STFC R/L 09	SCR02206	-	-	TW06P
EH-S12M STFC R/L 09	SCR02206	-	-	TW06P
EH-S12M STFC R/L 11	SCR02565	-	-	TW07P

Item	Screw	Shim	Shim screw	Wrench
EH-S16R STFC R/L 11	SCR02565	-	-	TW07P
EH-S20S STFC R/L 11	SCR02565	-	-	TW07P
EH-S20S STFC R/L 16	SCR03510	-	-	TW15P
EH-S25R STFC R/L 16	SCR03510	-	-	TW15P
EH-S32S STFC R/L 16	SCR03512	SST32	SSCR0509	TW15P / W35L
EH-S40T STFC R/L 16	SCR03512	SST32	SSCR0509	TW15P / W35L
EH-A10M STFC R/L 09	SCR02206	-	-	TW06P
EH-A12K STFC R/L 09	SCR02206	-	-	TW06P
EH-A12K STFC R/L 11	SCR02565	-	-	TW07P
EH-A16M STFC R/L 11	SCR02565	-	-	TW07P
EH-A20Q STFC R/L 11	SCR02565	-	-	TW07P
EH-A25R STFC R/L 16	SCR03510	-	-	TW15P
EH-A32S STFC R/L 16	SCR03512	SSCR0509	SST32	TW15P / W35L



SSKP: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.



STFC: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.

STFP / STWP / SVJC

STFP: holder and dimensions

Dimensions in mm. Tool approach: 90°.

Dimension/data block 1.

Item	Insert assignment	ØD	Ød	H	L
EH-S10M STFP R/L 11	TP□□1103□□	12	10	9	150
EH-S12M STFP R/L 11	TP□□1103□□	16	12	11	150
EH-S16N STFP R/L 11	TP□□1103□□	20	16	15	160
EH-S16R STFP R/L 11	TP□□1103□□	20	16	15	200
EH-S20N STFP R/L 16	TP□□1604□□	25	20	18	160
EH-S20S STFP R/L 16	TP□□1604□□	25	20	18	250
EH-A10H STFP R/L 11	TP□□1103□□	12	10	9.5	100
EH-A12K STFP R/L 11	TP□□1103□□	16	12	11	125
EH-A16M STFP R/L 11	TP□□1103□□	20	16	15	150
EH-A20Q STFP R/L 16	TP□□1604□□	25	20	19	180

Dimension/data block 2.

Item	Insert assignment	S	ℓ
EH-S10M STFP R/L 11	TP□□1103□□	6	-
EH-S12M STFP R/L 11	TP□□1103□□	8	10
EH-S16N STFP R/L 11	TP□□1103□□	10	12
EH-S16R STFP R/L 11	TP□□1103□□	10	12
EH-S20N STFP R/L 16	TP□□1604□□	12.5	32
EH-S20S STFP R/L 16	TP□□1604□□	12.5	14
EH-A10H STFP R/L 11	TP□□1103□□	6	-
EH-A12K STFP R/L 11	TP□□1103□□	8	10
EH-A16M STFP R/L 11	TP□□1103□□	10	23
EH-A20Q STFP R/L 16	TP□□1604□□	12.5	41

Spare parts

Item	Screw	Wrench
EH-S10M STFP R/L 11	SCR030508	TW09P
EH-S12M STFP R/L 11	SCR0307	TW09P
EH-S16N STFP R/L 11	SCR0307	TW09P
EH-S16R STFP R/L 11	SCR0307	TW09P
EH-S20N STFP R/L 16	SCR0408	TW15P
EH-S20S STFP R/L 16	SCR0408	TW15P
EH-A10H STFP R/L 11	SCR030508	TW09P
EH-A12K STFP R/L 11	SCR0307	TW09P
EH-A16M STFP R/L 11	SCR0307	TW09P
EH-A20Q STFP R/L 16	SCR0408	TW15P

STWP: holder and dimensions

Dimensions in mm. Tool approach: 60°.

Dimension/data block 1.

Item	Insert assignment	ØD	Ød	H	L
EH-S10M STWP R/L 11	TPGH1102□□	12	10	9	150
EH-S12M STWP R/L 11	TPGH1103□□	16	12	11	150
EH-S16R STWP R/L 11	TPGH1103□□	20	16	15	180
EH-S20R STWP R/L 11	TPGH1103□□	25	20	19	200

Dimension/data block 2.

Item	Insert assignment	S	ℓ
EH-S10M STWP R/L 11	TPGH1102□□	6	23
EH-S12M STWP R/L 11	TPGH1103□□	8	30
EH-S16R STWP R/L 11	TPGH1103□□	10	35
EH-S20R STWP R/L 11	TPGH1103□□	12.5	40

Spare parts

Item	Screw	Wrench
EH-S10M STWP R/L 11	SCR030508	TW09P
EH-S12M STWP R/L 11	SCR0306	TW09P
EH-S16R STWP R/L 11	SCR0306	TW09P
EH-S20R STWP R/L 11	SCR0306	TW09P

SVJC: holder and dimensions

Dimensions in mm. Tool approach: 142°.

Dimension/data block 1.

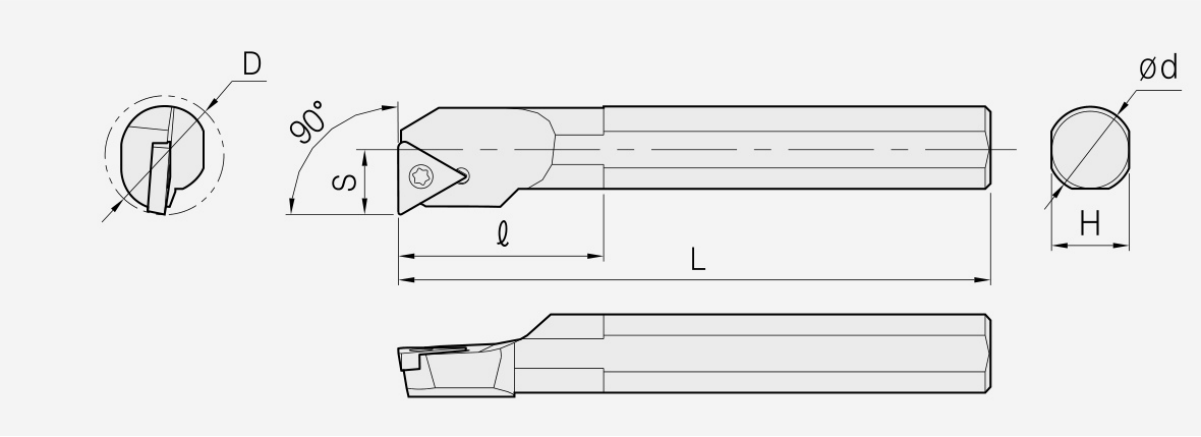
Item	Insert assignment	ØD	Ød	H	L
EH-S12M SVJC R/L 08	VCMT0802□□	16	12	11	150
EH-S16Q SVJC R/L 08	VCMT0802□□	20	16	15	180

Dimension/data block 2.

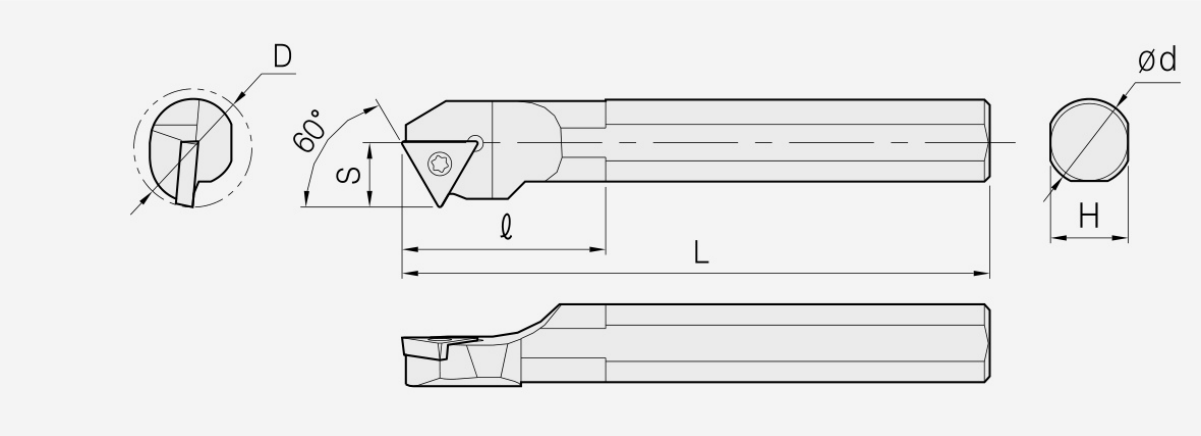
Item	Insert assignment	S	ℓ
EH-S12M SVJC R/L 08	VCMT0802□□	2	26
EH-S16Q SVJC R/L 08	VCMT0802□□	2	36

Spare parts

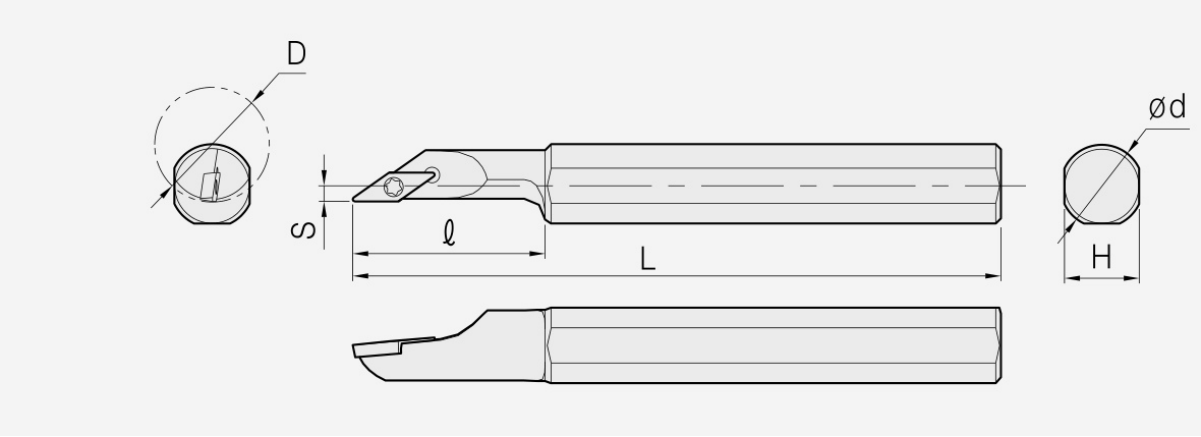
Item	Screw	Wrench
EH-S12M SVJC R/L 08	SCR0204	TW06P
EH-S16Q SVJC R/L 08	SCR0204	TW06P



STFP: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.



STWP: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.



SVJC: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.

SVQB / SVQC / SVUB

SVQB: holder and dimensions

Dimensions in mm. Tool approach: 108°.

Dimension/data block 1.

Item	Insert assignment	ØD	Ød	H	L
EH-S32S SVQB R/L 16	VB□□1604□□	40	32	30	250
EH-S40T SVQB R/L 16	VB□□1604□□	50	40	37	300
EH-A32S SVQB R/L 16	VB□□1604□□	40	32	31	250

Dimension/data block 2.

Item	Insert assignment	S	ℓ
EH-S32S SVQB R/L 16	VB□□1604□□	22	56
EH-S40T SVQB R/L 16	VB□□1604□□	27	64
EH-A32S SVQB R/L 16	VB□□1604□□	22	56

Spare parts

Item	Screw	Shim	Shim screw	Wrench
EH-S32S SVQB R/L 16	SCR03512	SSV32	SSCR0509	TW15P / W35L
EH-S40T SVQB R/L 16	SCR03512	SSV32	SSCR0509	TW15P / W35L
EH-A32S SVQB R/L 16	SCR03512	SSV32	SSCR0509	TW15P / W35L

SVQC: holder and dimensions

Dimensions in mm. Tool approach: 108°.

Dimension/data block 1.

Item	Insert assignment	ØD	Ød	H	L
EH-S16R SVQC R/L 11	VC□□1103□□	20	16	15	200
EH-S20S SVQC R/L 11	VC□□1103□□	25	20	18	250
EH-S25R SVQC R/L 11	VC□□1103□□	32	25	23	200
EH-S20S SVQC R/L 13	VC□□1303□□	25	20	18	250
EH-S25R SVQC R/L 13	VC□□1303□□	32	25	23	200
EH-S25R SVQC R/L 16	VC□□1604□□	32	25	23	200
EH-S32S SVQC R/L 16	VC□□1604□□	40	32	30	250
EH-S40T SVQC R/L 16	VC□□1604□□	50	40	37	300

Dimension/data block 2.

Item	Insert assignment	S	ℓ
EH-S16R SVQC R/L 11	VC□□1103□□	11	35
EH-S20S SVQC R/L 11	VC□□1103□□	13	38
EH-S25R SVQC R/L 11	VC□□1103□□	17	42
EH-S20S SVQC R/L 13	VC□□1303□□	13	42
EH-S25R SVQC R/L 13	VC□□1303□□	17	45
EH-S25R SVQC R/L 16	VC□□1604□□	17	50
EH-S32S SVQC R/L 16	VC□□1604□□	22	56
EH-S40T SVQC R/L 16	VC□□1604□□	27	64

Spare parts

Item	Screw	Shim	Shim screw	Wrench
EH-S16R SVQC R/L 11	SCR02565	-	-	TW07P
EH-S20S SVQC R/L 11	SCR02565	-	-	TW07P
EH-S25R SVQC R/L 11	SCR02565	-	-	TW07P
EH-S20S SVQC R/L 13	SCR0307	-	-	TW07P
EH-S25R SVQC R/L 13	SCR0307	-	-	TW07P
EH-S25R SVQC R/L 16	SCR03510	-	-	TW15P
EH-S32S SVQC R/L 16	SCR03512	SSV32	SSCR0509	TW15P / W35L
EH-S40T SVQC R/L 16	SCR03512	SSV32	SSCR0509	TW15P / W35L

SVUB: holder and dimensions

Dimensions in mm. Tool approach: 93°.

Dimension/data block 1.

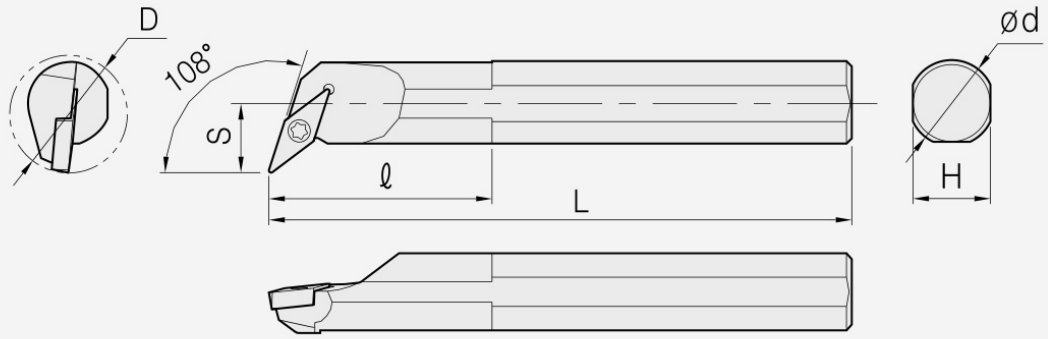
Item	Insert assignment	ØD	Ød	H	L
EH-S32S SVUB R/L 16	VB□□1604□□	40	32	30	250
EH-S40T SVUB R/L 16	VB□□1604□□	50	40	37	300
EH-A32S SVUB R/L 16	VB□□1604□□	40	32	31	250

Dimension/data block 2.

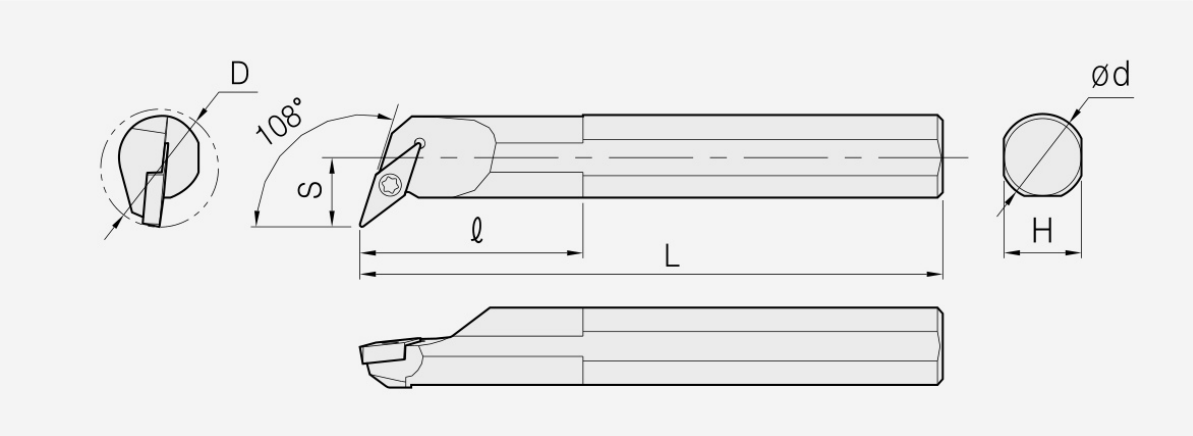
Item	Insert assignment	S	ℓ
EH-S32S SVUB R/L 16	VB□□1604□□	22	56
EH-S40T SVUB R/L 16	VB□□1604□□	27	64
EH-A32S SVUB R/L 16	VB□□1604□□	22	56

Spare parts

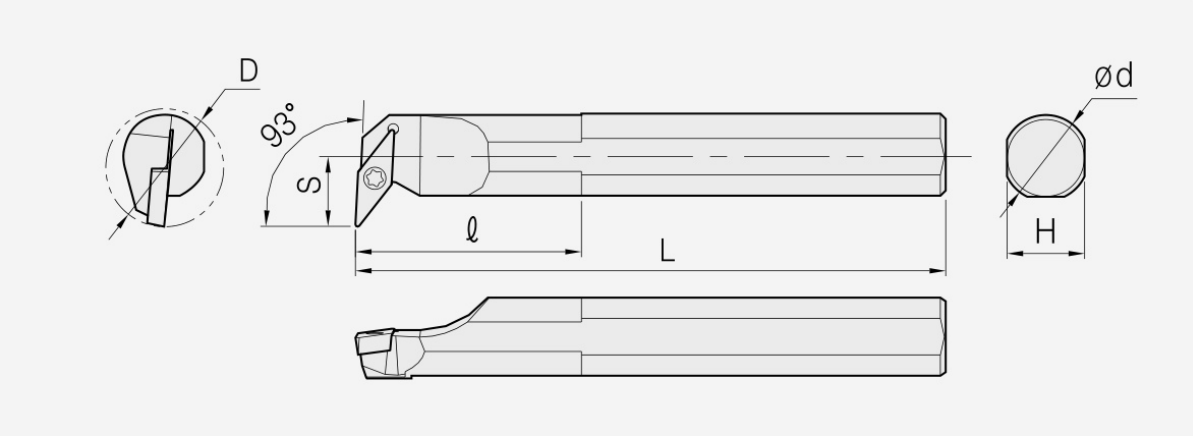
Item	Screw	Shim	Shim screw	Wrench
EH-S32S SVUB R/L 16	SCR03510	SSV32	SSCR0509	TW15P / W35L
EH-S40T SVUB R/L 16	SCR03510	SSV32	SSCR0509	TW15P / W35L
EH-A32S SVUB R/L 16	SCR03510	SSV32	SSCR0509	TW15P / W35L



SVQB: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.



SVQC: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.



SVUB: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.

SVUC

SVUC: holder and dimensions

Dimensions in mm. Tool approach: 93°.

Dimension/data block 1.

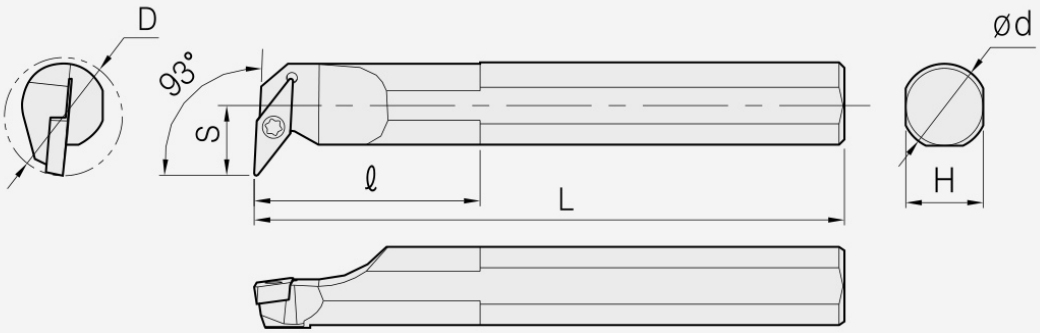
Item	Insert assignment	ØD	Ød	H	L
EH-S16R SVUC R/L 11	VC□□1103□□	22	16	15	200
EH-S20S SVUC R/L 11	VC□□1103□□	25	20	18	250
EH-S25T SVUC R/L 11	VC□□1103□□	32	25	23	300
EH-S20S SVUC R/L 13	VC□□1303□□	28	20	18	250
EH-S25R SVUC R/L 13	VC□□1303□□	32	25	23	200
EH-S25R SVUC R/L 16	VC□□1604□□	32	25	23	200
EH-S32S SVUC R/L 16	VC□□1604□□	40	32	30	250
EH-S40T SVUC R/L 16	VC□□1604□□	50	40	37	300

Dimension/data block 2.

Item	Insert assignment	S	ℓ
EH-S16R SVUC R/L 11	VC□□1103□□	13	30
EH-S20S SVUC R/L 11	VC□□1103□□	14	33
EH-S25T SVUC R/L 11	VC□□1103□□	17	38
EH-S20S SVUC R/L 13	VC□□1303□□	16	35
EH-S25R SVUC R/L 13	VC□□1303□□	17	40
EH-S25R SVUC R/L 16	VC□□1604□□	19	50
EH-S32S SVUC R/L 16	VC□□1604□□	22	56
EH-S40T SVUC R/L 16	VC□□1604□□	27	64

Spare parts

Item	Screw	Shim	Shim screw	Wrench
EH-S16R SVUC R/L 11	SCR02565	-	-	TW07P
EH-S20S SVUC R/L 11	SCR02565	-	-	TW07P
EH-S25T SVUC R/L 11	SCR02565	-	-	TW07P
EH-S20S SVUC R/L 13	SCR0307	-	-	TW09P
EH-S25R SVUC R/L 13	SCR0307	-	-	TW09P
EH-S25R SVUC R/L 16	SCR03510	-	-	TW15P
EH-S32S SVUC R/L 16	SCR03512	SSV32	SSCR0509	TW15P / W35L
EH-S40T SVUC R/L 16	SCR03512	SSV32	SSCR0509	TW15P / W35L



SVUC: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.

MCLN / MDUN / MSKN

MCLN: holder and dimensions

Dimensions in mm. Tool approach: 95°.

Dimension/data block 1.

Item	Insert assignment	ØD	Ød	H	L
EH-S20S-MCLN R/L-09	CN□□0903□□	25	20	18	250
EH-S25R-MCLN R/L-09	CN□□0903□□	32	25	23	200
EH-S25R-MCLN R/L-12	CN□□1204□□	32	25	23	200
EH-S32S-MCLN R/L-12	CN□□1204□□	40	32	30	250
EH-S40T-MCLN R/L-12	CN□□1204□□	50	40	37	300
EH-A25R-MCLN R/L-12	CN□□1204□□	32	25	23	200
EH-A32S-MCLN R/L-12	CN□□1204□□	40	32	30	250

Dimension/data block 2.

Item	Insert assignment	S	ℓ
EH-S20S-MCLN R/L-09	CN□□0903□□	13	30
EH-S25R-MCLN R/L-09	CN□□0903□□	17	36
EH-S25R-MCLN R/L-12	CN□□1204□□	17	36
EH-S32S-MCLN R/L-12	CN□□1204□□	22	50
EH-S40T-MCLN R/L-12	CN□□1204□□	27	60
EH-A25R-MCLN R/L-12	CN□□1204□□	17	40
EH-A32S-MCLN R/L-12	CN□□1204□□	22	50

Spare parts

Item	Clamp	Clamp screw	Shim	Shim pin	Wrench
EH-S20S-MCL N R/L-09	MCL7N	MCSCR10-32-19	-	MSP3D3	W19.8L / W23.8L
EH-S25R-MCL N R/L-09	MCL7N	MCSCR10-32-19	-	MSP3D3	W19.8L / W23.8L
EH-S25R-MCL N R/L-12	MCL6N	MCSCR1/4-21	-	MSP4DS	W31.8L / W23.8L
EH-S32S-MCL N R/L-12	MCL6N	MCSCR1/4-21	MSC43	MSP4D	W31.8L / W23.8L
EH-S40T-MCL N R/L-12	MCL6N	MCSCR1/4-21	MSC43	MSP4D	W31.8L / W23.8L
EH-A25R-MCL N R/L-12	MCL6N	MCSCR1/4-21	-	MSP4DS	W31.8L / W23.8L
EH-A32S-MCL N R/L-12	MCL6N	MCSCR1/4-21	MSC43	MSP4D	W31.8L / W23.8L

MDUN: holder and dimensions

Dimensions in mm. Tool approach: 93°.

Dimension/data block 1.

Item	Insert assignment	ØD	Ød	H	L
EH-S32S-MDU N R/L-15-3	DN□□1504□□	40	32	30	250
EH-S40T-MDU N R/L-15-3	DN□□1504□□	50	40	37	300
EH-A32S-MDU N R/L-15-3	DN□□1504□□	40	32	30	250

Dimension/data block 2.

Item	Insert assignment	S	ℓ
EH-S32S-MDUN R/L-15-3	DN□□1504□□	22	50
EH-S40T-MDUN R/L-15-3	DN□□1504□□	27	60
EH-A32S-MDUN R/L-15-3	DN□□1504□□	22	50

Spare parts

Item	Clamp	Clamp screw	Shim	Shim pin	Wrench
EH-S32S-MDUN R/L-15-3	MCL6N	MCSCR1/4-21	MSD43	MSP4D	W31.8L / W23.8L
EH-S40T-MDUN R/L-15-3	MCL6N	MCSCR1/4-21	MSD43	MSP4D	W31.8L / W23.8L
EH-A32S-MDUN R/L-15-3	MCL6N	MCSCR1/4-21	MSD43	MSP4D	W31.8L / W23.8L

MSKN: holder and dimensions

Dimensions in mm. Tool approach: 75°.

Dimension/data block 1.

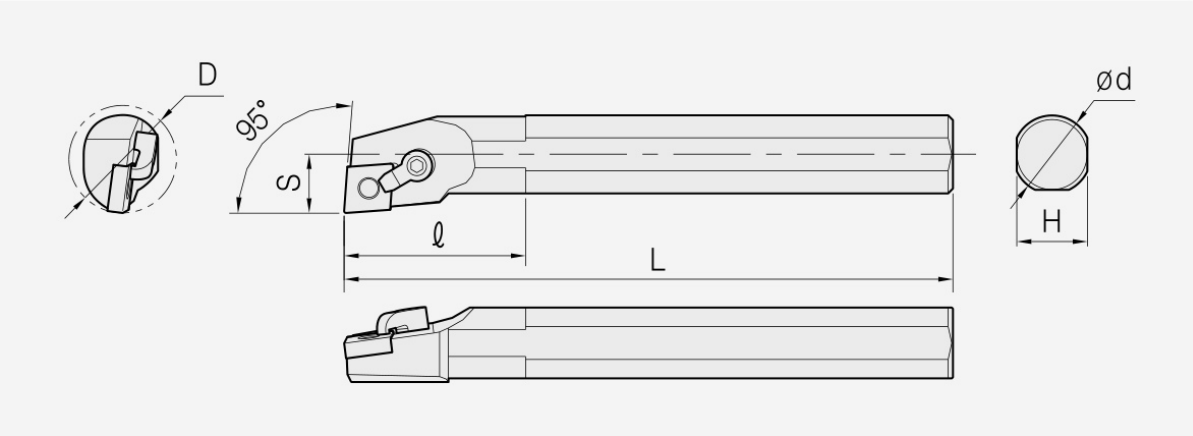
Item	Insert assignment	ØD	Ød	H	L
EH-S25R-MSKN R/L-12	SN□□1204□□	32	25	23	200
EH-S32S-MSKN R/L-12	SN□□1204□□	40	32	30	250
EH-S40T-MSKN R/L-12	SN□□1204□□	50	40	37	300
EH-A25R-MSKN R/L-12	SN□□1204□□	32	25	23	200
EH-A32S-MSKN R/L-12	SN□□1204□□	40	32	30	250
EH-A40T-MSKN R/L-12	SN□□1204□□	50	40	37	300

Dimension/data block 2.

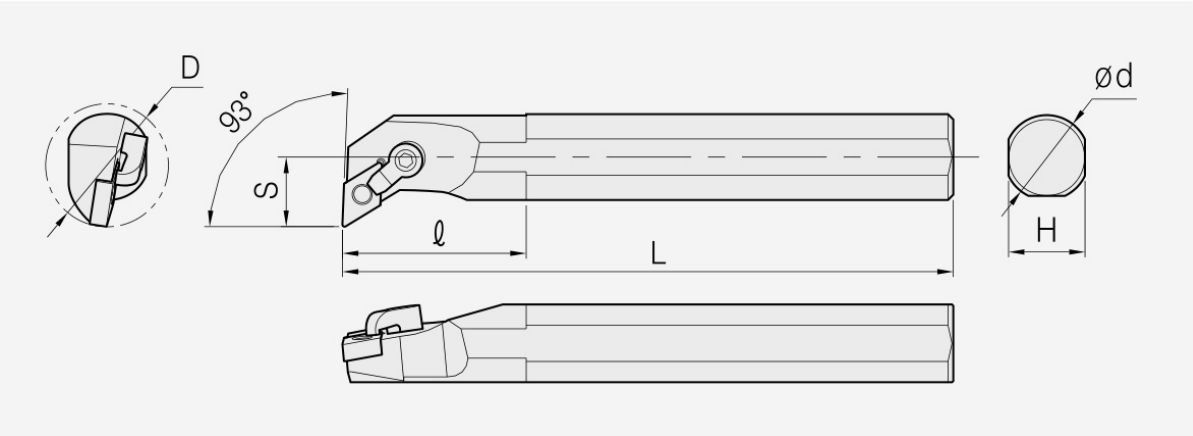
Item	Insert assignment	S	ℓ
EH-S25R-MSKN R/L-12	SN□□1204□□	17	36
EH-S32S-MSKN R/L-12	SN□□1204□□	22	50
EH-S40T-MSKN R/L-12	SN□□1204□□	27	60
EH-A25R-MSKN R/L-12	SN□□1204□□	17	40
EH-A32S-MSKN R/L-12	SN□□1204□□	22	50
EH-A40T-MSKN R/L-12	SN□□1204□□	27	60

Spare parts

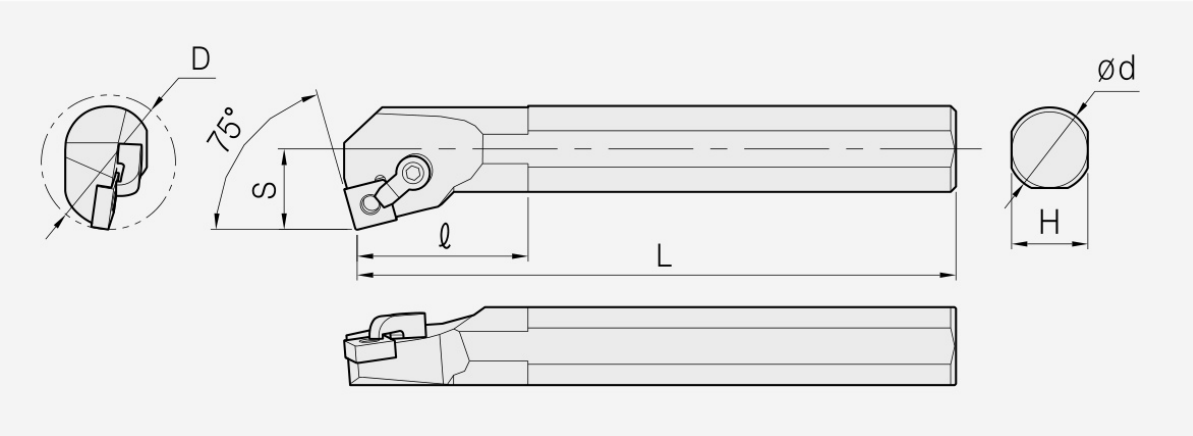
Item	Clamp	Clamp screw	Shim	Shim pin	Wrench
EH-S25R-MSKN R/L-12	MCL8N1	MCSCR5/16-28	-	MSP4DS	W39.7L / W23.8L
EH-S32S-MSKN R/L-12	MCL8N1	MCSCR5/16-28	MSS43	MSP4D	W39.7L / W23.8L
EH-S40T-MSKN R/L-12	MCL8N1	MCSCR5/16-28	MSS43	MSP4D	W39.7L / W23.8L
EH-A25R-MSKN R/L-12	MCL8N1	MCSCR5/16-28	-	MSP4DS	W39.7L / W23.8L
EH-A32S-MSKN R/L-12	MCL8N1	MCSCR5/16-28	MSS43	MSP4D	W39.7L / W23.8L
EH-A40T-MSKN R/L-12	MCL8N1	MCSCR5/16-28	MSS43	MSP4D	W39.7L / W23.8L



MCLN: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.



MDUN: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.



MSKN: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.

Grooving and parting



Grooving and parting: Component and machining view.

Grooving and parting

EHWA grooving tools suit precise grooves and parting cuts. PCD, PCBN and carbide grades are adapted to the application to support effective cutting and long tool life. The programme includes different edge profiles and holder types for workpieces with demanding groove and profile geometries.



Grooving and parting: Component and machining view.



Grooving and parting: Tool view.



Grooving and parting: Tool view.

ES: standard grooving system

The example ESG 30 04 R/L combines insert shape, width, corner radius and right-/left-hand type. ESG identifies the illustrated straight groove profile, ESR the round profile and ESX a special type. The drawings mark width W and radius R and distinguish right- and left-hand edge positions.

ES is EHWA's standard system for different machining operations, groove widths and depths. The 120° tapered seat supports high clamping strength; the four force arrows illustrate the contact positions. Select tool type and holder for the groove geometry.



ES: standard grooving system: Tool view.



ES: standard grooving system: Tool view.



ES: standard grooving system: Tool view.

ESG and ESR: dimensions and grades

The ESG and ESR drawings retain W, R, M, L and H references with the illustrated edge and side views. ESG provides the listed straight profiles, widths and radii; ESR the listed round profiles. Request special designs by specifying W1, radius R and PCD/PCBN material. Compatible holders are listed in the grooving-holder programme of this edition.

ESG: grooving inserts

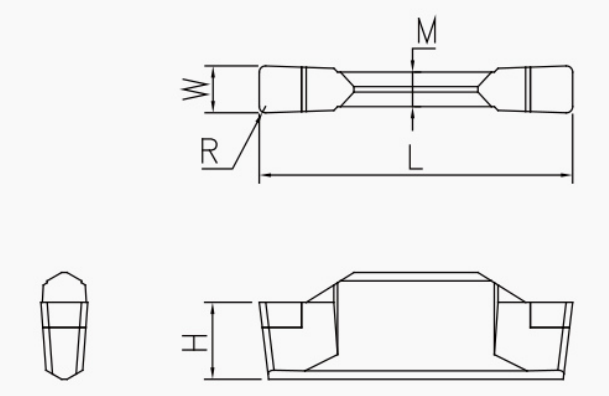
Item	W	R	M	L	H
ESG2002-R/L	2	0.2	1.7	20	7
ESG3002-R/L	3	0.2	2.2	20	7
ESG4002-R/L	4	0.2	3.0	20	7
ESG4004-R/L	4	0.4	3.0	20	7
ESG6002-R/L	6	0.2	5.0	25	7.5
ESG6004-R/L	6	0.4	5.0	25	7.5
ESG8002-R/L	8	0.2	6.0	30	8.7
ESG8004-R/L	8	0.4	6.0	30	8.7

Dimensions in mm. Grade headings: PCD EP20, EP55, EP750; PCBN EB29X, EB190, EB570, EB51. Individual grade cells are unmarked.

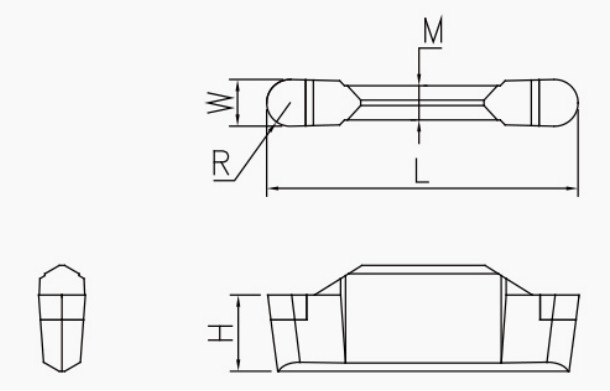
ESR: round-profile inserts

Item	W	R	M	L	H
ESR2010	2	1	1.7	20	7
ESR3015	3	1.5	2.2	20	7
ESR4020	4	2	3.0	20	7
ESR6030	6	3	5.0	25	7.5
ESR8040	8	4	6.0	30	8.7

Dimensions in mm. The same seven grade headings as ESG; grade cells are unmarked. Special design according to W1, R and PCD/PCBN material.



Insert: isolated dimensioned drawing with unchanged geometry symbols.



Insert: isolated dimensioned drawing with unchanged geometry symbols.

ED: narrow grooves with high rigidity

The example EDG 30 04 R/L separates insert shape, width, corner radius and hand. EDG and EDR illustrate straight and rounded groove profiles; EDX identifies a special type. Drawings mark W and R and distinguish right- and left-hand edge positions.

ED is designed for narrow grooves and high-rigidity requirements. Screw and clamp provide double clamping to support a rigid insert seat. The tool image shows the double-sided edge design.



ED: narrow grooves with high rigidity: Tool view.



ED: narrow grooves with high rigidity: Tool view.



ED: narrow grooves with high rigidity: Tool view.



ED: narrow grooves with high rigidity: Tool view.



ED: narrow grooves with high rigidity: Tool view.

EDG and EDR: dimensions and grades

Drawings specify W1, X1, R, W and I.C., together with the 55° shape angle. EDG and EDR remain separate types with their respective radii. Specify W1, X1, R and PCD/PCBN material for special designs; the source refers to its grooving holder on page 143.

EDG: grooving inserts

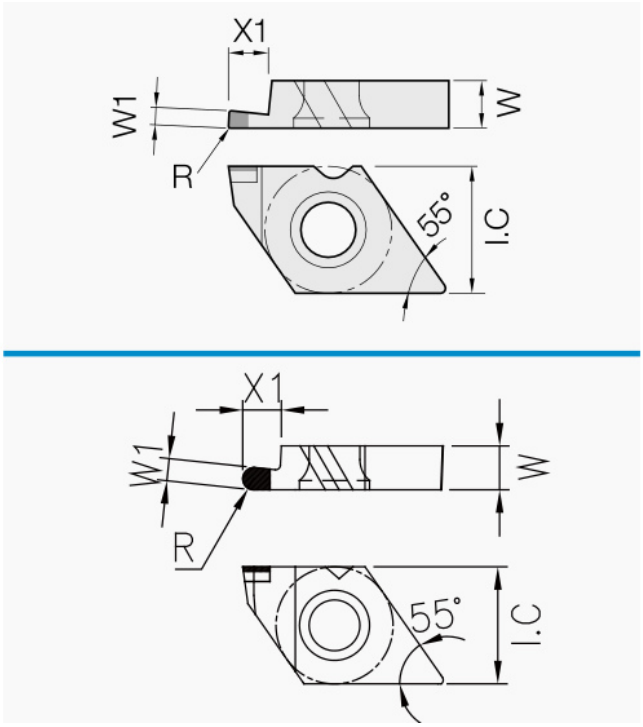
Item	W1	X1	R	W	I.C.
EDG 1502-R/L	1.5	2.6	0.2	4.76	12.7
EDG 2002-R/L	2	3	0.2	4.76	12.7
EDG 3002-R/L	3	4.5	0.2	4.76	12.7
EDG 4002-R/L	4	4.5	0.2	4.76	12.7

Dimensions in mm. Grade headings: PCD EP20, EP55, EP750; PCBN EB28X, EB190, EB570, EB51. Individual grade cells are unmarked. Special design according to W1, X1, R and cutting material.

EDR: grooving inserts

Item	W1	X1	R	W	I.C.
EDR 1502-R/L	1.5	2.6	0.75	4.76	12.7
EDR 2002-R/L	2	3	1.0	4.76	12.7
EDR 3002-R/L	3	4.5	1.5	4.76	12.7
EDR 4002-R/L	4	4.5	2.0	4.76	12.7

Dimensions in mm. Grade headings: PCD EP20, EP55, EP750; PCBN EB28X, EB190, EB570, EB51. Individual grade cells are unmarked. Special design according to W1, X1, R and cutting material.



Insert: isolated dimensioned drawing with unchanged geometry symbols.

ET: narrow grooves and easy setting

The example ETG 30 04 R/L separates insert shape, width, corner radius and hand. ETG identifies the straight groove profile, ETR the round profile and ETX a special type. Drawings mark width W, radius R and mirrored right-/left-hand edge positions. ET suits narrow grooves and allows easy tool setting.



ET: narrow grooves and easy setting: Tool view.



ET: narrow grooves and easy setting: Tool view.



ET: narrow grooves and easy setting: Tool view.



ET: narrow grooves and easy setting: Tool view.



ET: narrow grooves and easy setting: Tool view.

ETG and ETR: dimensions and grades

Drawings show W1, X1, R, W and I.C., together with the 60° shape angle. ETG and ETR retain their different radii and right-/left-hand types. Specify W1, X1, R and cutting material for special designs. The source refers to its grooving holder on page 144.

ETG: grooving inserts

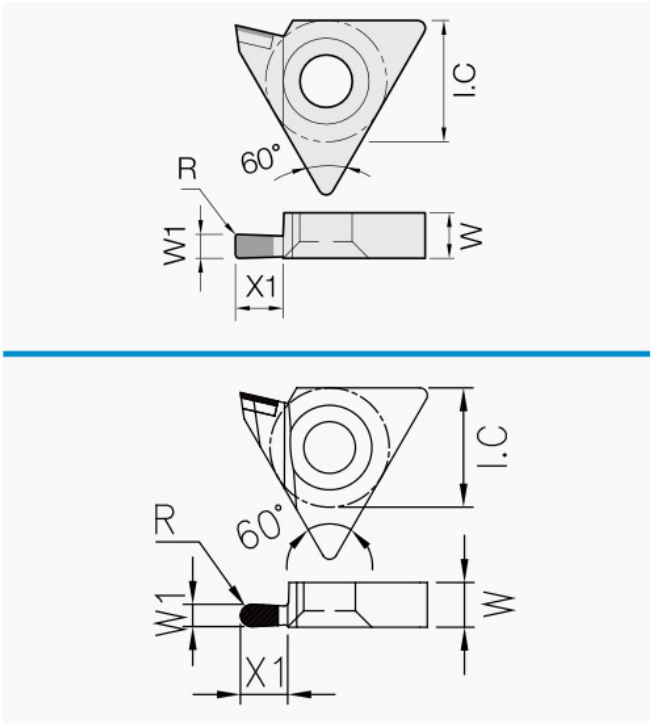
Item	W1	X1	R	W	I.C.
ETG 1502-R/L	1.5	3	0.2	4.76	12.7
ETG 2002-R/L	2	3.5	0.2	4.76	12.7
ETG 3002-R/L	3	4.5	0.2	4.76	12.7
ETG 4002-R/L	4	4.5	0.2	4.76	12.7

Dimensions in mm. Grade headings: PCD EP20, EP55, EP750; PCBN EB28X, EB190, EB570, EB51. Individual grade cells are unmarked. Special design according to W1, X1, R and cutting material.

ETR: grooving inserts

Item	W1	X1	R	W	I.C.
ETR 1502-R/L	1.5	3	0.75	4.76	12.7
ETR 2002-R/L	2	3.5	1.0	4.76	12.7
ETR 3002-R/L	3	4.5	1.5	4.76	12.7
ETR 4002-R/L	4	4.5	2.0	4.76	12.7

Dimensions in mm. Grade headings: PCD EP20, EP55, EP750; PCBN EB28X, EB190, EB570, EB51. Individual grade cells are unmarked. Special design according to W1, X1, R and cutting material.



Insert: isolated dimensioned drawing with unchanged geometry symbols.

EM: micro grooving for automatic lathes

The example EMG 30 04 R/L separates insert shape, width, corner radius and hand. EMG identifies the illustrated straight type; EMX identifies a special design. Drawings mark W and R and show right- and left-hand edge positions. EM is a micro-grooving tool for automatic lathes and suits small, precise grooves.



EM: micro grooving for automatic lathes: Tool view.



EM: micro grooving for automatic lathes: Tool view.



EM: micro grooving for automatic lathes: Tool view.

EMG: dimensions and grades

The dimensional drawing locates W1, X1, R, W, L and T on the narrow grooving insert. Article designations in this table retain L/R in that order. Specify W1, X1, R and PCD/PCBN material for special types; the holder appears on source page 145.

EMG: micro-grooving inserts

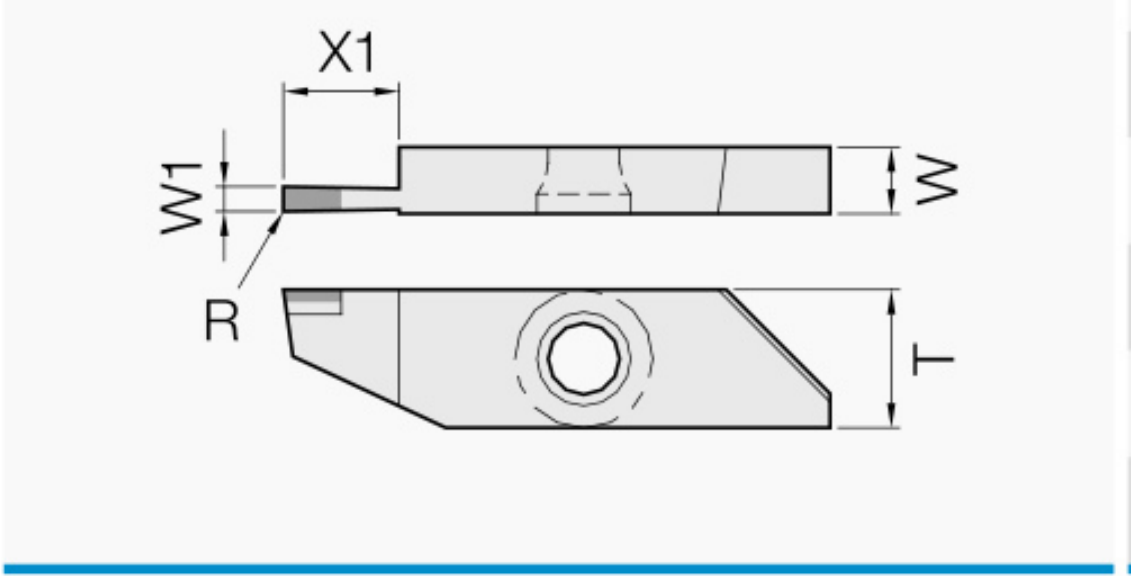
Dimension/data block 1.

Item	W1	X1	R	W	L
EMG 05000-L/R	0.5	3.0	0.00	2.7	22.2
EMG 10005-L/R	1.0	3.5	0.00	2.7	22.2
EMG 15005-L/R	1.5	3.5	0.05	2.7	22.2
EMG 2001-L/R	2.0	4.0	0.10	2.7	22.2
EMG 2501-L/R	2.5	4.0	0.10	2.7	22.2

Dimension/data block 2.

Item	T
EMG 05000-L/R	5.6
EMG 10005-L/R	5.6
EMG 15005-L/R	5.6
EMG 2001-L/R	5.6
EMG 2501-L/R	5.6

Dimensions in mm. Grade headings: PCD EP20, EP55, EP750; PCBN EB570, EB22, EB51. Individual grade cells are unmarked. The 2022 edition explicitly lists R = 0.00 for EMG 10005-L/R. Special design according to W1, X1, R and cutting material.

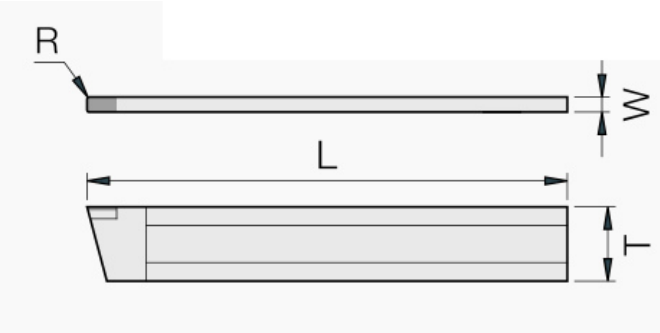


Insert: isolated dimensioned drawing with unchanged geometry symbols.

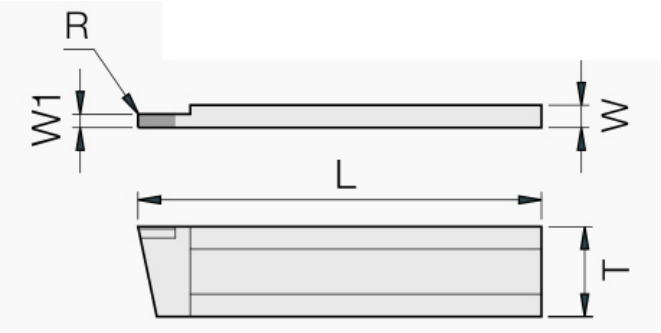
Custom designs for piston rings

PCD/PCBN piston-ring designs comprise GC, GR, GL, one-side taper and two-side taper types. All five drawings retain their respective edge positions. GC shows W, R, L and T; GR and GL add W1. The one-side taper adds V1 and the two-side taper V1 and V2.

For an enquiry, specify the workpiece, W, W1, R, L, T and required V angles. This edition lists PCD EP13, EP750 and EP59, plus PCBN EB51 and EB710. The following design fields remain open for customer-specific dimensions and article information.



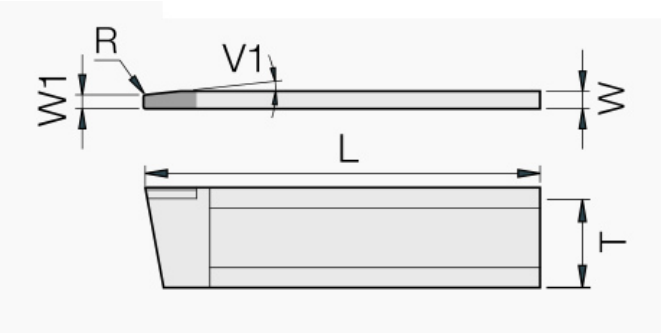
Custom shape: both tool views with their dimension references.



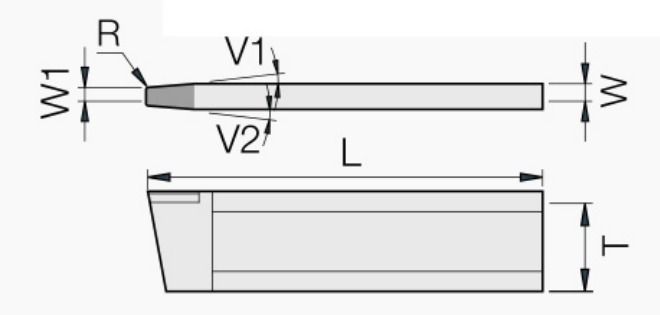
Custom shape: both tool views with their dimension references.



Custom shape: both tool views with their dimension references.



Custom shape: both tool views with their dimension references.

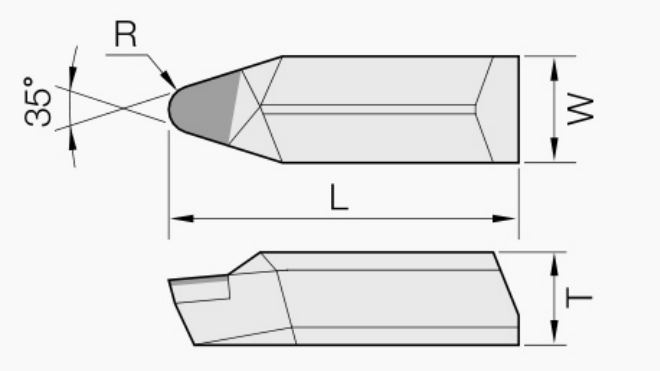


Custom shape: both tool views with their dimension references.

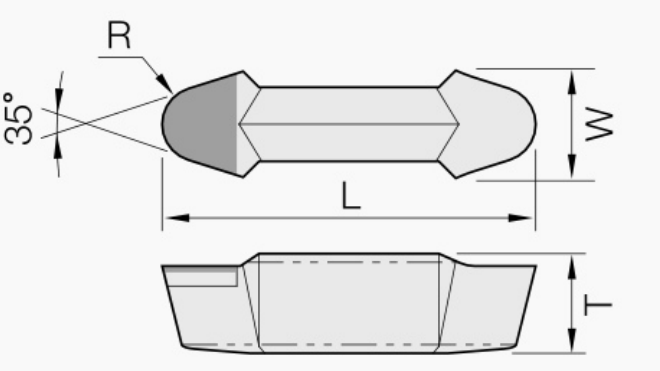
Further custom grooving forms

Eight different edge and body shapes extend the custom programme. The first two show a 35° profile reference; further types use straight, rounded, one-sided or stepped edge positions. Each type retains its own front and side view.

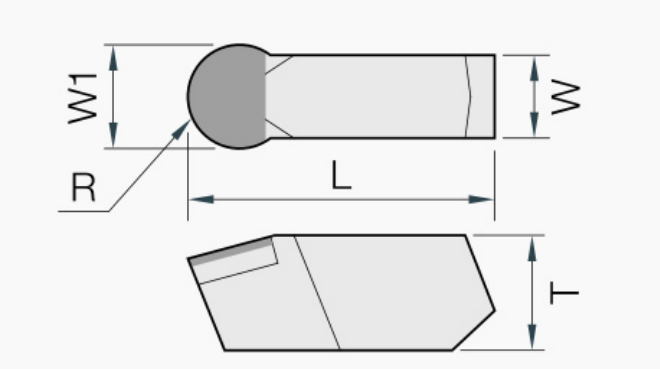
For design, specify the workpiece, W, W1, R, X1, L and T. Grade headings list PCD EP20, EP55 and EP750, plus PCBN EB28X, EB570, EB190 and EB51. Dimension fields are completed for the application; this illustration does not prescribe additional article dimensions.



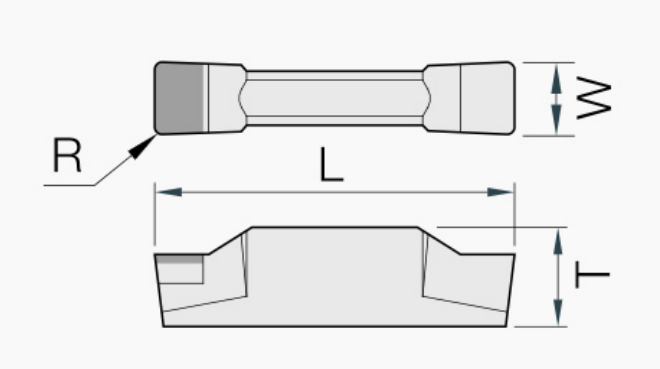
Custom shape: both tool views with their dimension references.



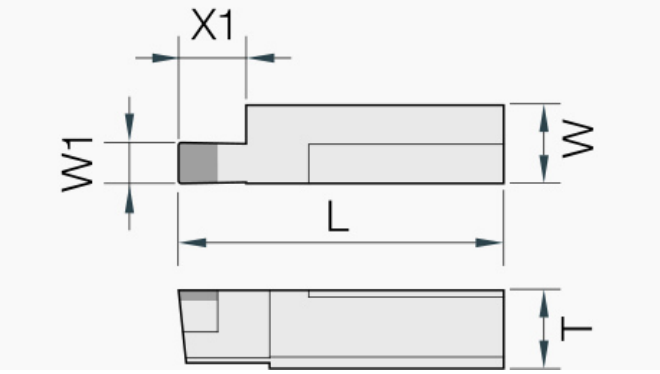
Custom shape: both tool views with their dimension references.



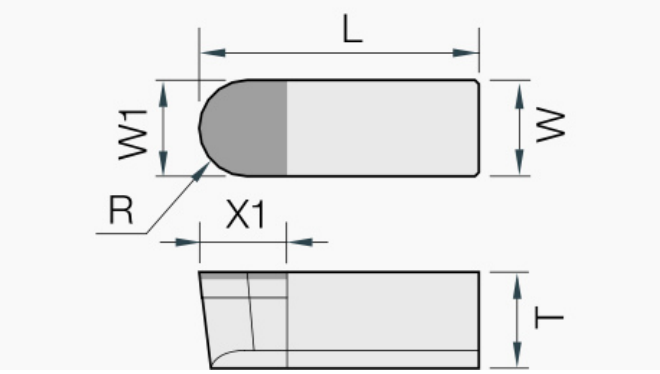
Custom shape: both tool views with their dimension references.



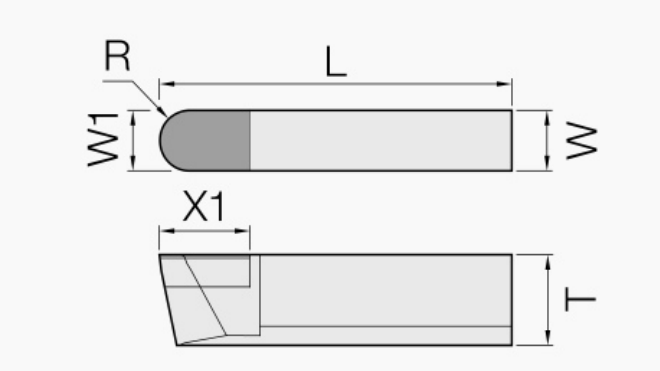
Custom shape: both tool views with their dimension references.



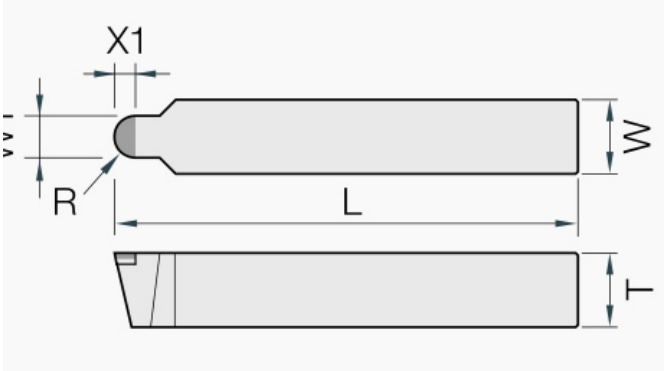
Custom shape: both tool views with their dimension references.



Custom shape: both tool views with their dimension references.



Custom shape: both tool views with their dimension references.



Custom shape: both tool views with their dimension references.

Custom tools for facing, grooving, chamfering and profiling

The custom programme covers faces, grooves, chamfers and profiles. Tooling service and design are adapted to your machining requirements. Four product groups illustrate different body forms and PCD/PCBN edge positions, from compact profile inserts to longer tool bars. Workpiece drawing, target profile, machine, material and process data guide technical selection.



Custom tools for facing, grooving, chamfering and profiling: Tool view.



Custom tools for facing, grooving, chamfering and profiling: Tool view.



Custom tools for facing, grooving, chamfering and profiling: Tool view.



Custom tools for facing, grooving, chamfering and profiling: Tool view.



Custom tools for facing, grooving, chamfering and profiling: Tool view.



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Custom tools for facing, grooving, chamfering and profiling: Tool view.



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Custom tools for facing, grooving, chamfering and profiling: Tool view.



Custom tools for facing, grooving, chamfering and profiling: Tool view.



Custom tools for facing, grooving, chamfering and profiling: Tool view.



Custom tools for facing, grooving, chamfering and profiling: Tool view.



Custom tools for facing, grooving, chamfering and profiling: Tool view.



Custom tools for facing, grooving, chamfering and profiling: Tool view.



Custom tools for facing, grooving, chamfering and profiling: Tool view.



Custom tools for facing, grooving, chamfering and profiling: Tool view.

Custom inserts and holder examples

Further PCD/PCBN custom inserts extend facing, grooving, chamfering and profiling. The two insert groups illustrate different body and edge forms; four holder views show how compact profile inserts are seated. Design is adapted to your workpiece and process requirements.



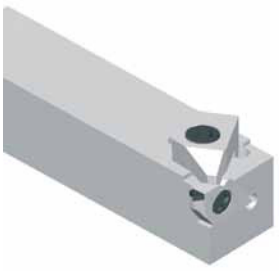
Custom inserts and holder examples: Tool view.



Custom inserts and holder examples: Tool view.



Custom inserts and holder examples: Tool view.



Custom inserts and holder examples: Tool view.


Custom inserts and holder examples: Tool view.


Custom inserts and holder examples: Tool view.


Custom inserts and holder examples: Tool view.


Custom inserts and holder examples: Tool view.

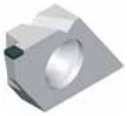

Custom inserts and holder examples: Tool view.


Custom inserts and holder examples: Tool view.


Custom inserts and holder examples: Tool view.


Custom inserts and holder examples: Tool view.

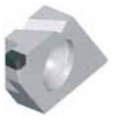

Custom inserts and holder examples: Tool view.


Custom inserts and holder examples: Tool view.


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Custom inserts and holder examples: Tool view.


Custom inserts and holder examples: Tool view.

Grooving holders: clamping systems

C identifies clamp-on clamping for ESG inserts, D double clamping for EDG inserts and S screw clamping for ETG and EMG inserts. The force arrows show the clamping directions. The following holder groups retain their own insert assignments, dimensional drawings and spare-part numbers.

Grooving holders: dimensional programme

ES holder groups ESEH, ESEH-T00, ESEV, ESFV, ESFH, ESEU, ESIU and ESIV differ in tool style and dimensional reference. The source additionally shows ED/ET/EM types EDEH, EDEV, ETEH, ETEV and EMEH. Product views, front/side views and specified fields remain type-specific; tabulated dimensions are in millimetres.

ESEH has H, W, L, S, H1 and Tmax; its T00 type and ESEV add ØDmin. ESFV and ESFH specify ØDmin/ØDmax limits. ESEU shows the 45° angular reference. ESIU and ESIV add ØD, Ød and ℓ on the round body; the ESIU drawing also shows 45°. EDEH, ETEH and EMEH specify T/W/L/S/H; EDEV and ETEV specify ØDmin and Tmax. Required clamping and screw parts are assigned directly to their article rows.

ESEH: holder and dimensions

Dimensions in mm.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
ESEH-R/L 1212-2-T08	ES□20□□	12	12	100	12.2
ESEH-R/L 1616-2-T08	ES□20□□	16	16	100	16.2
ESEH-R/L 2020-2-T08	ES□20□□	20	20	125	20.2
ESEH-R/L 2525-2-T08	ES□20□□	25	25	150	25.2
ESEH-R/L 1616-2-T12	ES□20□□	16	16	100	16.2
ESEH-R/L 2020-2-T12	ES□20□□	20	20	125	20.2
ESEH-R/L 2525-2-T12	ES□20□□	25	25	150	25.2
ESEH-R/L 1616-2-T17	ES□20□□	16	16	100	16.2
ESEH-R/L 2020-2-T17	ES□20□□	20	20	125	20.2

Item	Insert assignment	H	W	L	S
ESEH-R/L 2525-2-T17	ES□20□□	25	25	150	25.2
ESEH-R/L 1616-3-T10	ES□30□□	16	16	100	16.4
ESEH-R/L 2020-3-T10	ES□30□□	20	20	125	20.4
ESEH-R/L 2525-3-T10	ES□30□□	25	25	150	25.4
ESEH-R/L 3232-3-T10	ES□30□□	32	32	170	32.4
ESEH-R/L 1616-3-T13	ES□30□□	16	16	100	16.4
ESEH-R/L 2020-3-T13	ES□30□□	20	20	125	20.4
ESEH-R/L 2525-3-T13	ES□30□□	25	25	150	25.4
ESEH-R/L 1616-3-T20	ES□30□□	16	16	100	16.4
ESEH-R/L 2020-3-T20	ES□30□□	20	20	125	20.4
ESEH-R/L 2525-3-T20	ES□30□□	25	25	150	25.4
ESEH-R/L 3232-3-T20	ES□30□□	32	32	170	32.4
ESEH-R/L 2525-3-T25	ES□30□□	25	25	150	25.4
ESEH-R/L 1616-4-T10	ES□40□□	16	16	100	16.4
ESEH-R/L 2020-4-T10	ES□40□□	20	20	125	20.4
ESEH-R/L 2525-4-T10	ES□40□□	25	25	150	25.4

Item	Insert assignment	H	W	L	S
ESEH-R/L 3232-4-T10	ES□40□□	32	32	150	32.4
ESEH-R/L 1616-4-T15	ES□40□□	16	16	100	16.4
ESEH-R/L 2020-4-T15	ES□40□□	20	20	125	20.4
ESEH-R/L 2525-4-T15	ES□40□□	25	25	150	25.4
ESEH-R/L 1616-4-T20	ES□40□□	16	16	100	16.4
ESEH-R/L 2020-4-T20	ES□40□□	20	20	125	20.4
ESEH-R/L 2525-4-T20	ES□40□□	25	25	150	25.4
ESEH-R/L 3232-4-T20	ES□40□□	32	32	170	32.4
ESEH-R/L 1616-4-T25	ES□40□□	16	16	100	16.4
ESEH-R/L 2020-4-T25	ES□40□□	20	20	125	20.4
ESEH-R/L 2525-4-T25	ES□40□□	25	25	150	25.4

Dimension/data block 2.

Item	Insert assignment	H1	Tmax
ESEH-R/L 1212-2-T08	ES□20□□		8
ESEH-R/L 1616-2-T08	ES□20□□		8
ESEH-R/L 2020-2-T08	ES□20□□		8
ESEH-R/L 2525-2-T08	ES□20□□		8
ESEH-R/L 1616-2-T12	ES□20□□		12

Item	Insert assignment	H1	Tmax
ESEH-R/L 2020-2-T12	ES□20□□		12
ESEH-R/L 2525-2-T12	ES□20□□		12
ESEH-R/L 1616-2-T17	ES□20□□		17
ESEH-R/L 2020-2-T17	ES□20□□		17
ESEH-R/L 2525-2-T17	ES□20□□		17
ESEH-R/L 1616-3-T10	ES□30□□		10
ESEH-R/L 2020-3-T10	ES□30□□		10
ESEH-R/L 2525-3-T10	ES□30□□		10
ESEH-R/L 3232-3-T10	ES□30□□		10
ESEH-R/L 1616-3-T13	ES□30□□		13
ESEH-R/L 2020-3-T13	ES□30□□		13
ESEH-R/L 2525-3-T13	ES□30□□		13
ESEH-R/L 1616-3-T20	ES□30□□		20
ESEH-R/L 2020-3-T20	ES□30□□		20
ESEH-R/L 2525-3-T20	ES□30□□		20
ESEH-R/L 3232-3-T20	ES□30□□		20
ESEH-R/L 2525-3-T25	ES□30□□		25
ESEH-R/L 1616-4-T10	ES□40□□		10
ESEH-R/L 2020-4-T10	ES□40□□		10
ESEH-R/L 2525-4-T10	ES□40□□		10
ESEH-R/L 3232-4-T10	ES□40□□		10
ESEH-R/L 1616-4-T15	ES□40□□		15
ESEH-R/L 2020-4-T15	ES□40□□		15
ESEH-R/L 2525-4-T15	ES□40□□		15

Item	Insert assignment	H1	Tmax
ESEH-R/L 1616-4-T20	ES□40□□		20
ESEH-R/L 2020-4-T20	ES□40□□		20
ESEH-R/L 2525-4-T20	ES□40□□		20
ESEH-R/L 3232-4-T20	ES□40□□		20
ESEH-R/L 1616-4-T25	ES□40□□		25
ESEH-R/L 2020-4-T25	ES□40□□		25
ESEH-R/L 2525-4-T25	ES□40□□		25

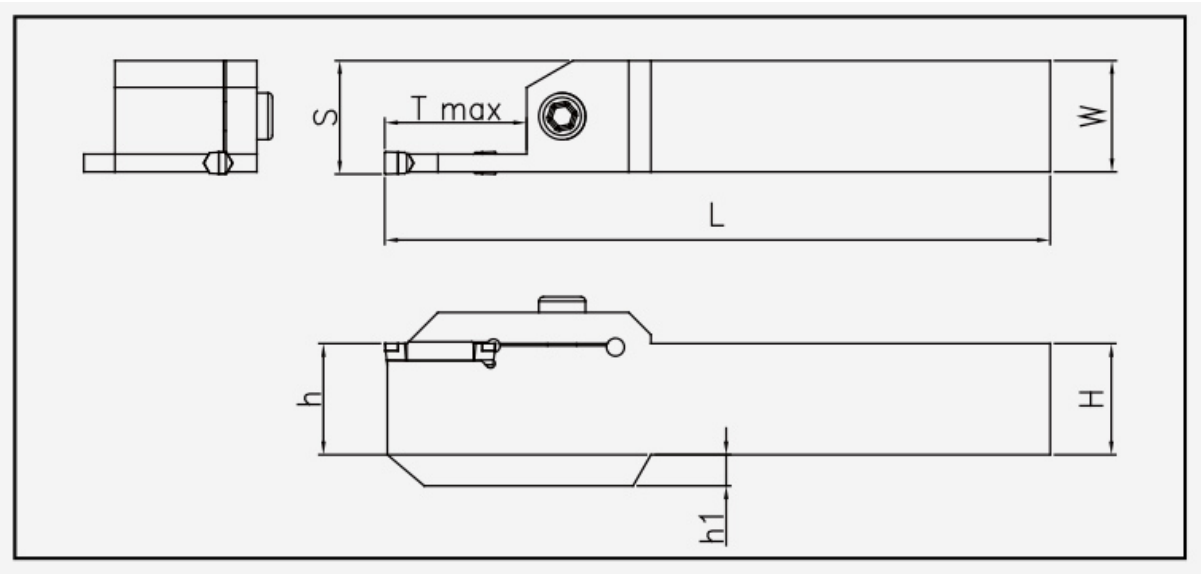
Spare parts

Item	Clamp screw	Wrench
ESEH-R/L 1212-2-T08	HCR0512	W40L
ESEH-R/L 1616-2-T08	HCR0512	W40L
ESEH-R/L 2020-2-T08	HCR0512	W40L
ESEH-R/L 2525-2-T08	HCR0512	W40L
ESEH-R/L 1616-2-T12	HCR0512	W40L
ESEH-R/L 2020-2-T12	HCR0512	W40L
ESEH-R/L 2525-2-T12	HCR0512	W40L
ESEH-R/L 1616-2-T17	HCR0512	W40L
ESEH-R/L 2020-2-T17	HCR0512	W40L
ESEH-R/L 2525-2-T17	HCR0512	W40L
ESEH-R/L 1616-3-T10	HCR0512	W40L
ESEH-R/L 2020-3-T10	HCR0512	W40L
ESEH-R/L 2525-3-T10	HCR0512	W40L
ESEH-R/L 3232-3-T10	HCR0512	W40L
ESEH-R/L 1616-3-T13	HCR0512	W40L

Item	Clamp screw	Wrench
ESEH-R/L 2020-3-T13	HCR0512	W40L
ESEH-R/L 2525-3-T13	HCR0512	W40L
ESEH-R/L 1616-3-T20	HCR0512	W40L
ESEH-R/L 2020-3-T20	HCR0512	W40L
ESEH-R/L 2525-3-T20	HCR0512	W40L
ESEH-R/L 3232-3-T20	HCR0512	W40L
ESEH-R/L 2525-3-T25	HCR0512	W40L
ESEH-R/L 1616-4-T10	HCR0616	W50L
ESEH-R/L 2020-4-T10	HCR0616	W50L
ESEH-R/L 2525-4-T10	HCR0616	W50L
ESEH-R/L 3232-4-T10	HCR0616	W50L
ESEH-R/L 1616-4-T15	HCR0616	W50L
ESEH-R/L 2020-4-T15	HCR0616	W50L
ESEH-R/L 2525-4-T15	HCR0616	W50L
ESEH-R/L 1616-4-T20	HCR0616	W50L
ESEH-R/L 2020-4-T20	HCR0616	W50L
ESEH-R/L 2525-4-T20	HCR0616	W50L
ESEH-R/L 3232-4-T20	HCR0616	W50L
ESEH-R/L 1616-4-T25	HCR0616	W50L
ESEH-R/L 2020-4-T25	HCR0616	W50L
ESEH-R/L 2525-4-T25	HCR0616	W50L



Grooving holders: dimensional programme: Tool view.



ESEH: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.

ESEH

ESEH: holder and dimensions

Dimensions in mm.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
ESEH-R/L 2020-5-T12	ES□50□□	20	20	125	20.5
ESEH-R/L 2525-5-T12	ES□50□□	25	25	150	25.5
ESEH-R/L 2020-5-T15	ES□50□□	20	20	125	20.55
ESEH-R/L 2525-5-T15	ES□50□□	25	25	150	25.55

Item	Insert assignment	H	W	L	S
ESEH-R/L 3232-5-T15	ES□50□□	32	32	170	32.55
ESEH-R/L 2020-5-T20	ES□50□□	20	20	125	20.5
ESEH-R/L 2525-5-T20	ES□50□□	25	25	150	25.5
ESEH-R/L 3232-5-T20	ES□50□□	32	32	170	32.5
ESEH-R/L 2525-5-T32	ES□50□□	25	25	150	25.5
ESEH-R/L 2020-6-T12	ES□60□□	20	20	125	20.5
ESEH-R/L 2525-6-T12	ES□60□□	25	25	150	25.5
ESEH-R/L 2525-6-T15	ES□60□□	25	25	150	25.55
ESEH-R/L 3232-6-T15	ES□60□□	32	32	170	32.55
ESEH-R/L 2020-6-T20	ES□60□□	20	20	125	20.5
ESEH-R/L 2525-6-T20	ES□60□□	25	25	150	25.5
ESEH-R/L 3232-6-T20	ES□60□□	32	32	170	32.5
ESEH-R/L 2525-6-T32	ES□60□□	25	25	150	25.5
ESEH-R/L 2525-8-T16	ES□80□□	25	25	150	26
ESEH-R/L 3232-8-T16	ES□80□□	32	32	170	33.05
ESEH-R/L 2525-8-T25	ES□80□□	25	25	150	26

Item	Insert assignment	H	W	L	S
ESEH-R/L 3232-8-T25	ES□80□□	32	32	170	33
ESEH-R/L 2525-8-T36	ES□80□□	25	25	150	26
ESEH-R/L 3232-8-T36	ES□80□□	32	32	170	33

Dimension/data block 2.

Item	Insert assignment	H1	Tmax
ESEH-R/L 2020-5-T12	ES□50□□		12
ESEH-R/L 2525-5-T12	ES□50□□		12
ESEH-R/L 2020-5-T15	ES□50□□		15
ESEH-R/L 2525-5-T15	ES□50□□		15
ESEH-R/L 3232-5-T15	ES□50□□		15
ESEH-R/L 2020-5-T20	ES□50□□		20
ESEH-R/L 2525-5-T20	ES□50□□		20
ESEH-R/L 3232-5-T20	ES□50□□		20
ESEH-R/L 2525-5-T32	ES□50□□	7	32
ESEH-R/L 2020-6-T12	ES□60□□		12
ESEH-R/L 2525-6-T12	ES□60□□		12
ESEH-R/L 2525-6-T15	ES□60□□		15
ESEH-R/L 3232-6-T15	ES□60□□		15
ESEH-R/L 2020-6-T20	ES□60□□		20
ESEH-R/L 2525-6-T20	ES□60□□		20
ESEH-R/L 3232-6-T20	ES□60□□		20
ESEH-R/L 2525-6-T32	ES□60□□	7	32

Item	Insert assignment	H1	Tmax
ESEH-R/L 2525-8-T16	ES□80□□		16
ESEH-R/L 3232-8-T16	ES□80□□		16
ESEH-R/L 2525-8-T25	ES□80□□		25
ESEH-R/L 3232-8-T25	ES□80□□		25
ESEH-R/L 2525-8-T36	ES□80□□	7	36
ESEH-R/L 3232-8-T36	ES□80□□		36

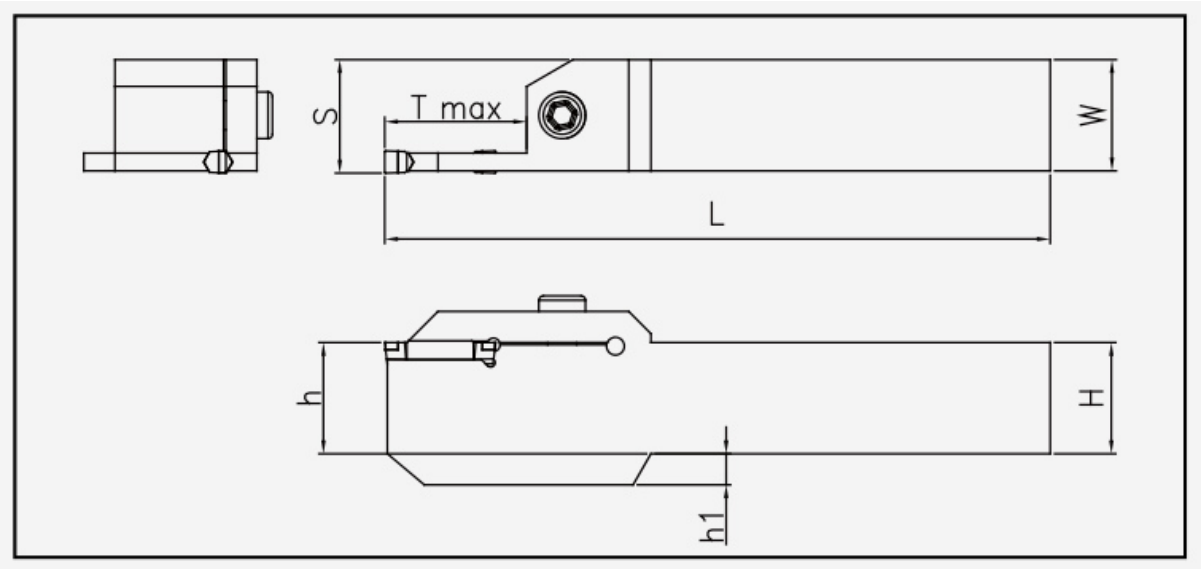
Spare parts

Item	Clamp screw	Wrench
ESEH-R/L 2020-5-T12	HCR0616	W50L
ESEH-R/L 2525-5-T12	HCR0616	W50L
ESEH-R/L 2020-5-T15	HCR0616	W50L
ESEH-R/L 2525-5-T15	HCR0616	W50L
ESEH-R/L 3232-5-T15	HCR0616	W50L
ESEH-R/L 2020-5-T20	HCR0616	W50L
ESEH-R/L 2525-5-T20	HCR0616	W50L
ESEH-R/L 3232-5-T20	HCR0616	W50L
ESEH-R/L 2525-5-T32	HCR0620	W50L
ESEH-R/L 2020-6-T12	HCR0616	W50L
ESEH-R/L 2525-6-T12	HCR0616	W50L
ESEH-R/L 2525-6-T15	HCR0616	W50L
ESEH-R/L 3232-6-T15	HCR0616	W50L
ESEH-R/L 2020-6-T20	HCR0616	W50L
ESEH-R/L 2525-6-T20	HCR0616	W50L
ESEH-R/L 3232-6-T20	HCR0616	W50L

Item	Clamp screw	Wrench
ESEH-R/L 2525-6-T32	HCR0620	W50L
ESEH-R/L 2525-8-T16	HCR0616	W50L
ESEH-R/L 3232-8-T16	HCR0616	W50L
ESEH-R/L 2525-8-T25	HCR0616	W50L
ESEH-R/L 3232-8-T25	HCR0616	W50L
ESEH-R/L 2525-8-T36	HCR0620	W50L
ESEH-R/L 3232-8-T36	HCR0620	W50L



ESEH: Tool view.



ESEH: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.

ESEH-T00 / ESEV

ESEH-T00: holder and dimensions

Dimensions in mm.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
ESEH-R/L 1616-3-T00	ES□30□□	16	16	100	16.4
ESEH-R/L 2020-3-T00	ES□30□□	20	20	125	20.4
ESEH-R/L 2525-3-T00	ES□30□□	25	25	150	25.4
ESEH-R/L 1616-4-T00	ES□40□□	16	16	100	16.4
ESEH-R/L 2020-4-T00	ES□40□□	20	20	125	20.4
ESEH-R/L 2525-4-T00	ES□40□□	25	25	150	25.4
ESEH-R/L 2020-6-T00	ES□60□□	20	20	125	20.5
ESEH-R/L 2525-6-T00	ES□60□□	25	25	150	25.5

Dimension/data block 2.

Item	Insert assignment	ØDmin	Tmax
ESEH-R/L 1616-3-T00	ES□30□□	80	4.8
ESEH-R/L 2020-3-T00	ES□30□□	80	4.8
ESEH-R/L 2525-3-T00	ES□30□□	80	4.8
ESEH-R/L 1616-4-T00	ES□40□□	80	4.8
ESEH-R/L 2020-4-T00	ES□40□□	80	4.8
ESEH-R/L 2525-4-T00	ES□40□□	80	4.8
ESEH-R/L 2020-6-T00	ES□60□□	80	6.0
ESEH-R/L 2525-6-T00	ES□60□□	80	6.0

Spare parts

Item	Clamp screw	Wrench
ESEH-R/L 1616-3-T00	HCR0512	W40L
ESEH-R/L 2020-3-T00	HCR0512	W40L
ESEH-R/L 2525-3-T00	HCR0512	W40L
ESEH-R/L 1616-4-T00	HCR0616	W50L
ESEH-R/L 2020-4-T00	HCR0616	W50L
ESEH-R/L 2525-4-T00	HCR0616	W50L
ESEH-R/L 2020-6-T00	HCR0616	W50L
ESEH-R/L 2525-6-T00	HCR0616	W50L

ESEV: holder and dimensions

Dimensions in mm.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
ESEV-R/L 2020-2-T00	ES□20□□	20	20	125	23.5
ESEV-R/L 2525-2-T00	ES□20□□	25	25	150	28.5
ESEV-R/L 3232-2-T00	ES□20□□	32	32	170	35.5
ESEV-R/L 2020-3-T00	ES□30□□	20	20	125	25
ESEV-R/L 2525-3-T00	ES□30□□	25	25	150	30
ESEV-R/L 3232-3-T00	ES□30□□	32	32	170	37
ESEV-R/L 2020-4-T00	ES□40□□	20	20	125	25

Item	Insert assignment	H	W	L	S
ESEV-R/L 2525-4-T00	ES□40□□	25	25	150	30
ESEV-R/L 3232-4-T00	ES□40□□	32	32	170	37
ESEV-R/L 2020-5-T00	ES□50□□	20	20	125	29.5
ESEV-R/L 2525-5-T00	ES□50□□	25	25	150	31.5
ESEV-R/L 3232-5-T00	ES□50□□	32	32	170	38.5
ESEV-R/L 2020-6-T00	ES□60□□	20	20	125	26.5
ESEV-R/L 2525-6-T00	ES□60□□	25	25	150	31.5
ESEV-R/L 3232-6-T00	ES□60□□	32	32	170	38.5
ESEV-R/L 2525-8-T00	ES□80□□	25	25	150	33.5
ESEV-R/L 3232-8-T00	ES□80□□	32	32	170	38.5

Dimension/data block 2.

Item	Insert assignment	ØDmin	Tmax
ESEV-R/L 2020-2-T00	ES□20□□	120	3
ESEV-R/L 2525-2-T00	ES□20□□	120	3
ESEV-R/L 3232-2-T00	ES□20□□	120	3
ESEV-R/L 2020-3-T00	ES□30□□	80	4.8
ESEV-R/L 2525-3-T00	ES□30□□	80	4.8
ESEV-R/L 3232-3-T00	ES□30□□	80	4.8
ESEV-R/L 2020-4-T00	ES□40□□	80	4.8
ESEV-R/L 2525-4-T00	ES□40□□	80	4.8
ESEV-R/L 3232-4-T00	ES□40□□	80	4.8
ESEV-R/L 2020-5-T00	ES□50□□	60	5
ESEV-R/L 2525-5-T00	ES□50□□	60	5
ESEV-R/L 3232-5-T00	ES□50□□	60	5
ESEV-R/L 2020-6-T00	ES□60□□	60	6
ESEV-R/L 2525-6-T00	ES□60□□	80	6
ESEV-R/L 3232-6-T00	ES□60□□	60	6
ESEV-R/L 2525-8-T00	ES□80□□	50	8
ESEV-R/L 3232-8-T00	ES□80□□	50	8

Spare parts

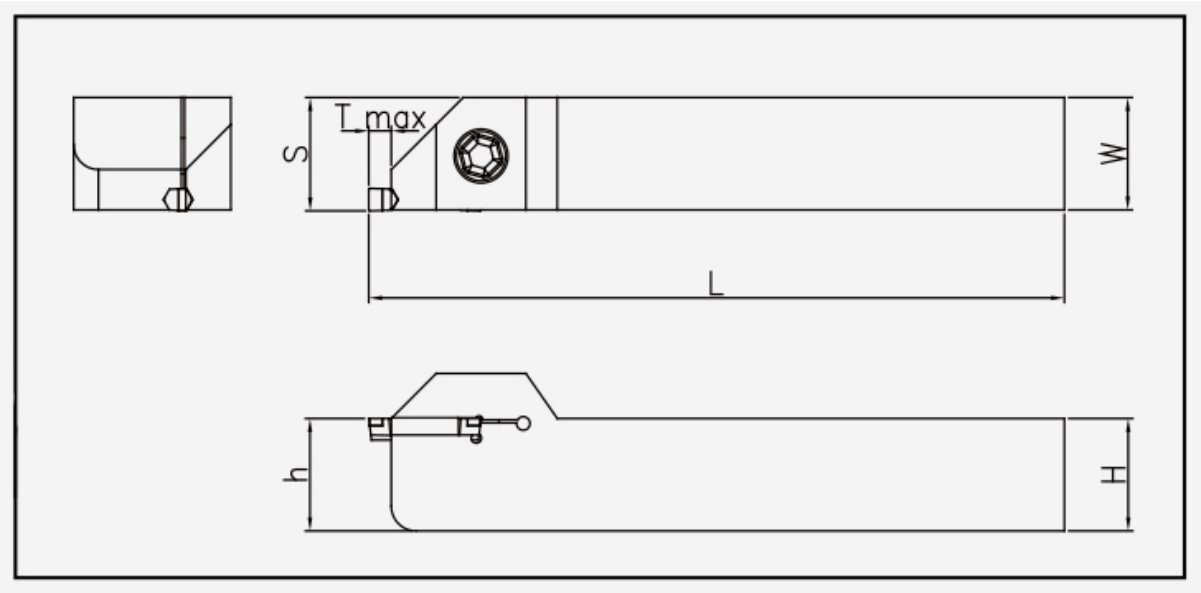
Item	Clamp screw	Wrench
ESEV-R/L 2020-2-T00	HCR0512	W40L
ESEV-R/L 2525-2-T00	HCR0512	W40L
ESEV-R/L 3232-2-T00	HCR0512	W40L
ESEV-R/L 2020-3-T00	HCR0512	W40L
ESEV-R/L 2525-3-T00	HCR0512	W40L
ESEV-R/L 3232-3-T00	HCR0512	W40L
ESEV-R/L 2020-4-T00	HCR0512	W40L
ESEV-R/L 2525-4-T00	HCR0512	W40L
ESEV-R/L 3232-4-T00	HCR0512	W40L
ESEV-R/L 2020-5-T00	HCR0616	W50L
ESEV-R/L 2525-5-T00	HCR0616	W50L
ESEV-R/L 3232-5-T00	HCR0616	W50L
ESEV-R/L 2020-6-T00	HCR0616	W50L
ESEV-R/L 2525-6-T00	HCR0616	W50L
ESEV-R/L 3232-6-T00	HCR0616	W50L
ESEV-R/L 2525-8-T00	HCR0616	W50L
ESEV-R/L 3232-8-T00	HCR0616	W50L



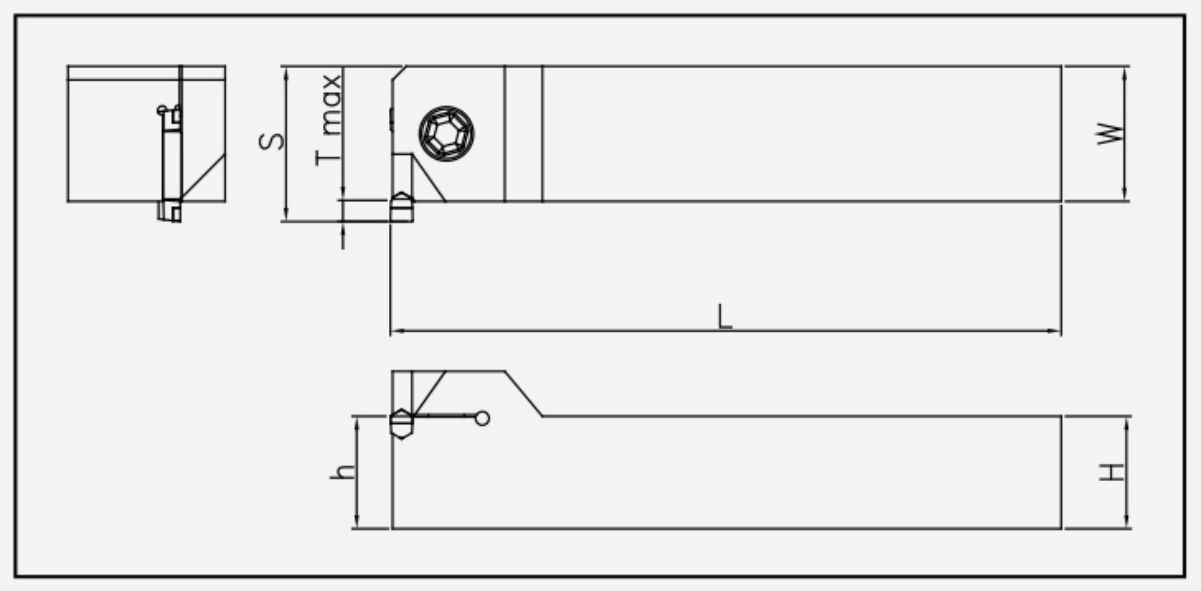
ESEH-T00 / ESEV: Tool view.



ESEH-T00 / ESEV: Tool view.



ESEH-T00: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.



ESEV: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.

ESFV / ESFH

ESFV: holder and dimensions

Dimensions in mm.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
ESFV-R/L 425-44/70-T20	ES□40□□	25	25	150	45.5
ESFV-R/L 425-60/120-T20	ES□40□□	25	25	150	45.5
ESFV-R/L 425-112/200-T20	ES□40□□	25	25	150	45.5

Dimension/data block 2.

Item	Insert assignment	Tmax	ØDmin	ØDmax
ESFV-R/L 425-44/70-T20	ES□40□□	20	44	70
ESFV-R/L 425-60/120-T20	ES□40□□	20	60	120
ESFV-R/L 425-112/200-T20	ES□40□□	20	112	200

Spare parts

Item	Clamp screw	Wrench
ESFV-R/L 425-44/70-T20	HCR0616	W50L
ESFV-R/L 425-60/120-T20	HCR0616	W50L
ESFV-R/L 425-112/200-T20	HCR0616	W50L

ESFH: holder and dimensions

Dimensions in mm.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
ESFH-325-34/50-T10	ES□30□□	25	25	150	25.5
ESFH-325-44/70-T15	ES□30□□	25	25	150	25.5
ESFH-325-64/100-T15	ES□30□□	25	25	150	25.5
ESFH-425-40/60-T10	ES□40□□	25	25	150	25.5
ESFH-425-44/70-T20	ES□40□□	25	25	150	25.5
ESFH-425-84/92-T20	ES□40□□	25	25	150	25.5
ESFH-425-60/120-T20	ES□40□□	25	25	150	25.5
ESFH-425-112/200-T20	ES□40□□	25	25	150	25.5
ESFH-525-190/220-T10	ES□50□□	25	25	150	25.5
ESFH-625-170/190-T10	ES□60□□	25	25	150	25.5
ESFH-625-190/220-T10	ES□60□□	25	25	150	25.5

Dimension/data block 2.

Item	Insert assignment	Tmax	ØDmin	ØDmax
ESFH-325-34/50-T10	ES□30□□	10	34	50
ESFH-325-44/70-T15	ES□30□□	15	44	70
ESFH-325-64/100-T15	ES□30□□	15	64	100
ESFH-425-40/60-T10	ES□40□□	10	40	60
ESFH-425-44/70-T20	ES□40□□	20	44	70
ESFH-425-84/92-T20	ES□40□□	20	84	92
ESFH-425-60/120-T20	ES□40□□	20	60	120
ESFH-425-112/200-T20	ES□40□□	20	112	200
ESFH-525-190/220-T10	ES□50□□	10	190	200
ESFH-625-170/190-T10	ES□60□□	10	170	190
ESFH-625-190/220-T10	ES□60□□	10	190	200

Spare parts

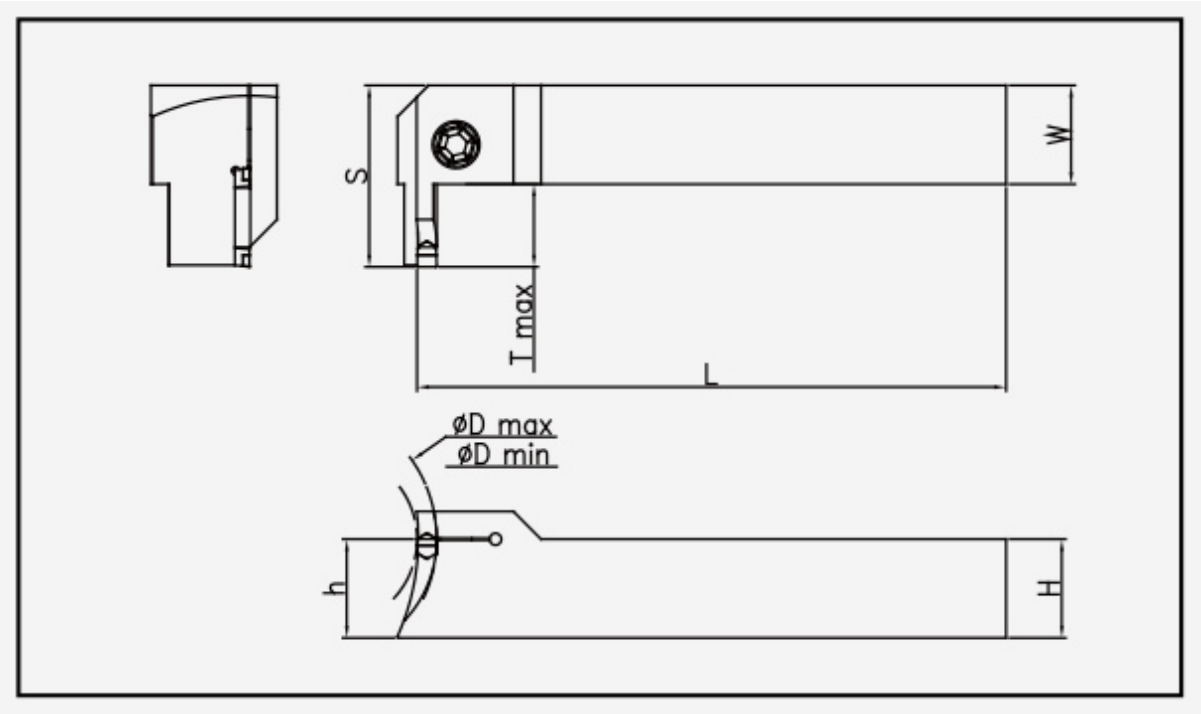
Item	Clamp screw	Wrench
ESFH-325-34/50-T10	HCRL0512	W40L
ESFH-325-44/70-T15	HCRL0512	W40L
ESFH-325-64/100-T15	HCRL0512	W40L
ESFH-425-40/60-T10	HCR0616	W50L
ESFH-425-44/70-T20	HCR0616	W50L
ESFH-425-84/92-T20	HCR0616	W50L
ESFH-425-60/120-T20	HCR0616	W50L
ESFH-425-112/200-T20	HCR0616	W50L
ESFH-525-190/220-T10	HCR0616	W50L
ESFH-625-170/190-T10	HCR0616	W50L
ESFH-625-190/220-T10	HCR0616	W50L



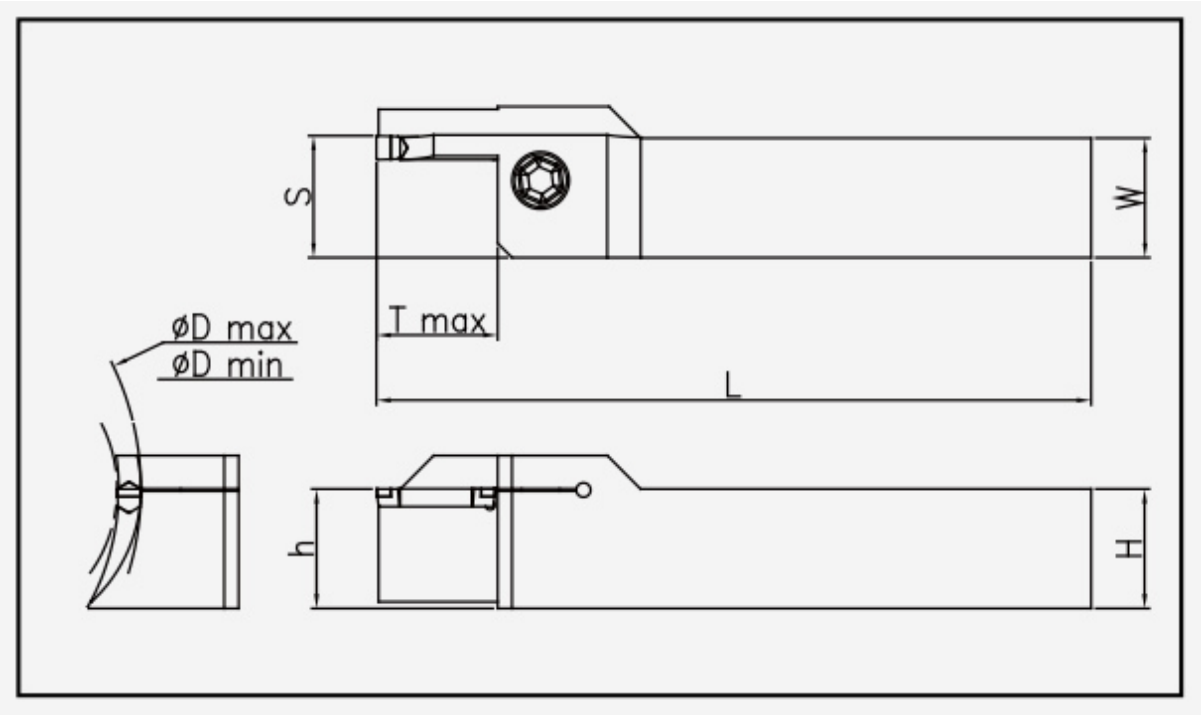
ESFV / ESFH: Tool view.



ESFV / ESFH: Tool view.



ESFV: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.



ESFH: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.

ESEU

ESEU: holder and dimensions

Dimensions in mm.

Dimension/data block 1.

Item	Insert assignment	H	W	L	S
ESEU-R/L 2020-3	ES□30□□	20	20	125	23
ESEU-R/L 2525-3	ES□30□□	25	25	150	28
ESEU-R/L 3232-3	ES□30□□	32	32	170	35
ESEU-R/L 2020-4	ES□40□□	20	20	125	23
ESEU-R/L 2525-4	ES□40□□	25	25	150	28
ESEU-R/L 3232-4	ES□40□□	32	32	170	35
ESEU-R/L 2020-5	ES□50□□	20	20	125	24
ESEU-R/L 2525-5	ES□50□□	25	25	150	29
ESEU-R/L 3232-5	ES□50□□	32	32	170	36
ESEU-R/L 2020-6	ES□60□□	20	20	125	24
ESEU-R/L 2525-6	ES□60□□	25	25	150	29
ESEU-R/L 3232-6	ES□60□□	32	32	170	36
ESEU-R/L 2525-8	ES□80□□	25	25	150	30
ESEU-R/L 3232-8	ES□80□□	32	32	170	37

Dimension/data block 2.

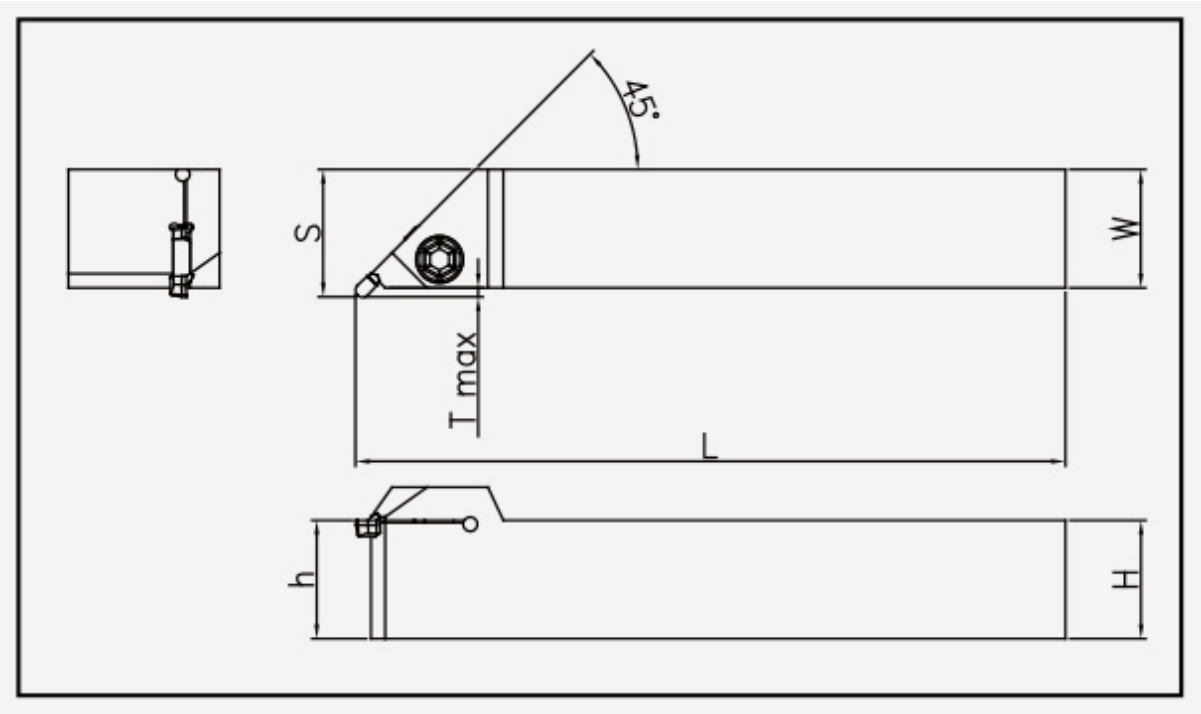
Item	Insert assignment	Tmax
ESEU-R/L 2020-3	ES□30□□	3
ESEU-R/L 2525-3	ES□30□□	3
ESEU-R/L 3232-3	ES□30□□	3
ESEU-R/L 2020-4	ES□40□□	3
ESEU-R/L 2525-4	ES□40□□	3
ESEU-R/L 3232-4	ES□40□□	3
ESEU-R/L 2020-5	ES□50□□	4
ESEU-R/L 2525-5	ES□50□□	4
ESEU-R/L 3232-5	ES□50□□	4
ESEU-R/L 2020-6	ES□60□□	4
ESEU-R/L 2525-6	ES□60□□	4
ESEU-R/L 3232-6	ES□60□□	4
ESEU-R/L 2525-8	ES□80□□	5
ESEU-R/L 3232-8	ES□80□□	5

Spare parts

Item	Clamp screw	Wrench
ESEU-R/L 2020-3	HCR0616	W50L
ESEU-R/L 2525-3	HCR0616	W50L
ESEU-R/L 3232-3	HCR0616	W50L
ESEU-R/L 2020-4	HCR0616	W50L
ESEU-R/L 2525-4	HCR0616	W50L
ESEU-R/L 3232-4	HCR0616	W50L
ESEU-R/L 2020-5	HCR0616	W50L
ESEU-R/L 2525-5	HCR0616	W50L
ESEU-R/L 3232-5	HCR0616	W50L
ESEU-R/L 2020-6	HCR0616	W50L
ESEU-R/L 2525-6	HCR0616	W50L
ESEU-R/L 3232-6	HCR0616	W50L
ESEU-R/L 2525-8	HCR0616	W50L
ESEU-R/L 3232-8	HCR0616	W50L



ESEU: Tool view.



ESEU: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.

ESIU

ESIU: holder and dimensions

Dimensions in mm.

Dimension/data block 1.

Item	Insert assignment	ØD	Ød	L	ℓ
ESIU-R/L 3520-3	ES□30□□	35	20	150	45
ESIU-R/L 4025-3	ES□30□□	40	25	200	45
ESIU-R/L 5032-3	ES□30□□	50	32	250	65
ESIU-R/L 3520-4	ES□40□□	35	20	150	45
ESIU-R/L 4025-4	ES□40□□	40	25	200	45
ESIU-R/L 5032-4	ES□40□□	50	32	250	65
ESIU-R/L 4025-5	ES□50□□	40	25	200	45
ESIU-R/L 5032-5	ES□50□□	50	32	250	65
ESIU-R/L 4025-6	ES□60□□	40	25	200	45
ESIU-R/L 5032-6	ES□60□□	50	32	250	65
ESIU-R/L 4025-8	ES□80□□	40	25	200	45
ESIU-R/L 5032-8	ES□80□□	50	32	250	65

Dimension/data block 2.

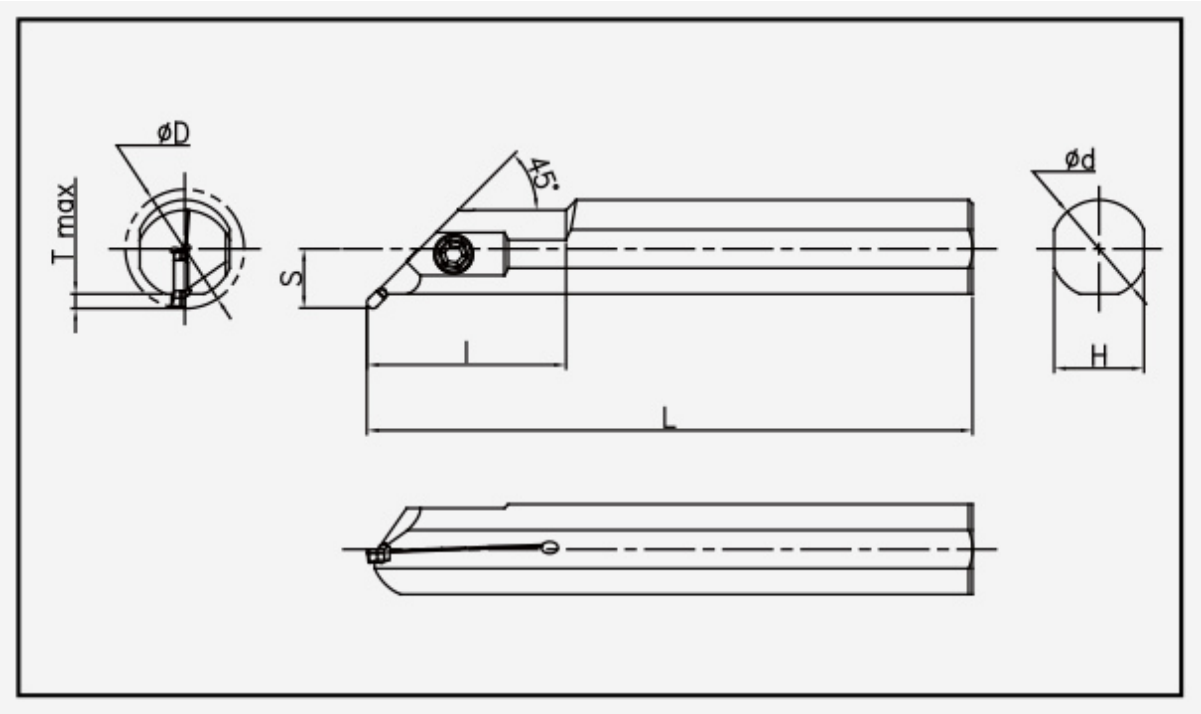
Item	Insert assignment	Tmax	H	S
ESIU-R/L 3520-3	ES□30□□	3.5	18	13
ESIU-R/L 4025-3	ES□30□□	3.5	23	15.5
ESIU-R/L 5032-3	ES□30□□	3.5	30	19
ESIU-R/L 3520-4	ES□40□□	3.5	18	13
ESIU-R/L 4025-4	ES□40□□	3.5	23	15.5
ESIU-R/L 5032-4	ES□40□□	3.5	30	19
ESIU-R/L 4025-5	ES□50□□	3.5	23	15.5
ESIU-R/L 5032-5	ES□50□□	3.5	30	19
ESIU-R/L 4025-6	ES□60□□	3.5	23	15.5
ESIU-R/L 5032-6	ES□60□□	3.5	30	19
ESIU-R/L 4025-8	ES□80□□	6.5	23	18.5
ESIU-R/L 5032-8	ES□80□□	6.5	30	22

Spare parts

Item	Clamp screw	Wrench
ESIU-R/L 3520-3	HCR0512	W40L
ESIU-R/L 4025-3	HCR0512	W40L
ESIU-R/L 5032-3	HCR0512	W40L
ESIU-R/L 3520-4	HCR0512	W40L
ESIU-R/L 4025-4	HCR0512	W40L
ESIU-R/L 5032-4	HCR0512	W40L
ESIU-R/L 4025-5	HCR0616	W50L
ESIU-R/L 5032-5	HCR0620	W50L
ESIU-R/L 4025-6	HCR0616	W50L
ESIU-R/L 5032-6	HCR0620	W50L
ESIU-R/L 4025-8	HCR0616	W50L
ESIU-R/L 5032-8	HCR0620	W50L



ESIU: Tool view.



ESIU: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.

ESIV

ESIV: holder and dimensions

Dimensions in mm.

Dimension/data block 1.

Item	Insert assignment	ØD	Ød	L	ℓ
ESIV-R/L 2516-2	ES□20□□	25	16	125	35
ESIV-R/L 2520-2	ES□20□□	25	20	150	45
ESIV-R/L 3225-2	ES□20□□	32	25	200	45
ESIV-R/L 2520-3	ES□30□□	25	20	150	45
ESIV-R/L 3225-3	ES□30□□	32	25	200	45

Item	Insert assignment	ØD	Ød	L	ℓ
ESIV-R/L 4032-3	ES□30□□	40	32	250	55
ESIV-R/L 2520-4	ES□40□□	25	20	150	45
ESIV-R/L 3225-4	ES□40□□	32	25	200	45
ESIV-R/L 4032-4	ES□40□□	40	32	250	55
ESIV-R/L 3225-5	ES□50□□	32	25	200	45
ESIV-R/L 4032-5	ES□50□□	40	32	250	55
ESIV-R/L 3225-6	ES□60□□	32	25	200	45
ESIV-R/L 4032-6	ES□60□□	40	32	250	55
ESIV-R/L 4032-8	ES□80□□	40	32	250	55
ESIV-R/L 4540-8	ES□80□□	45	40	300	70

Dimension/data block 2.

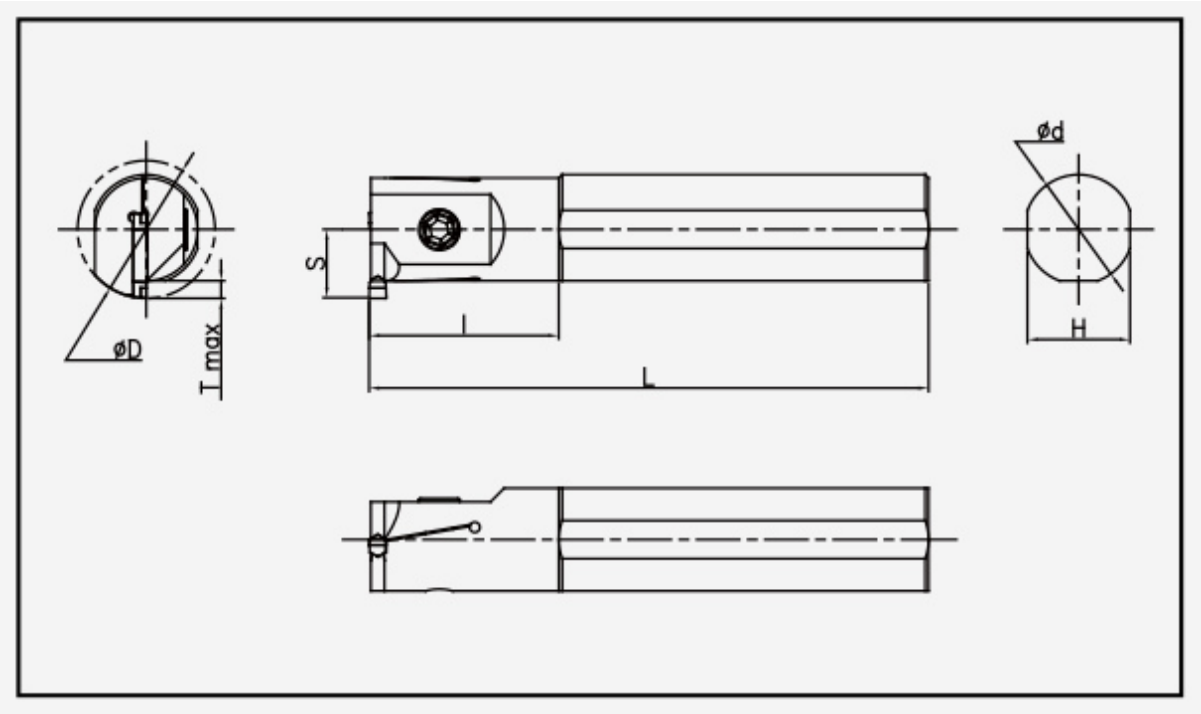
Item	Insert assignment	Tmax	H	S
ESIV-R/L 2516-2	ES□20□□	6.5	15	14
ESIV-R/L 2520-2	ES□20□□	6.5	18	15.5
ESIV-R/L 3225-2	ES□20□□	7	23	19
ESIV-R/L 2520-3	ES□30□□	6.5	18	15.5
ESIV-R/L 3225-3	ES□30□□	7	23	19
ESIV-R/L 4032-3	ES□30□□	7.5	30	22.5
ESIV-R/L 2520-4	ES□40□□	6.5	18	15.5
ESIV-R/L 3225-4	ES□40□□	7	23	19
ESIV-R/L 4032-4	ES□40□□	7.5	30	22.5
ESIV-R/L 3225-5	ES□50□□	7.5	23	19.5
ESIV-R/L 4032-5	ES□50□□	8.5	30	23.5
ESIV-R/L 3225-6	ES□60□□	7.5	23	19.5
ESIV-R/L 4032-6	ES□60□□	8.5	30	23.5
ESIV-R/L 4032-8	ES□80□□	8.5	30	23.5
ESIV-R/L 4540-8	ES□80□□	8.5	37	26.5

Spare parts

Item	Clamp screw	Wrench
ESIV-R/L 2516-2	HCR0410	W20L
ESIV-R/L 2520-2	HCR0512	W30L
ESIV-R/L 3225-2	HCR0410	W40L
ESIV-R/L 2520-3	HCR0410	W30L
ESIV-R/L 3225-3	HCR0512	W40L
ESIV-R/L 4032-3	HCR0616	W50L
ESIV-R/L 2520-4	HCRL0410	W30L
ESIV-R/L 3225-4	HCRL0512	W40L
ESIV-R/L 4032-4	HCR0616	W50L
ESIV-R/L 3225-5	HCRL0512	W40L
ESIV-R/L 4032-5	HCR0616	W50L
ESIV-R/L 3225-6	HCRL0512	W40L
ESIV-R/L 4032-6	HCR0616	W50L
ESIV-R/L 4032-8	HCR0616	W50L
ESIV-R/L 4540-8	HCR0616	W50L



ESIV: Tool view.



ESIV: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.

EDEH / EDEV

EDEH: holder and dimensions

Dimensions in mm.

Dimension/data block 1.

Item	Insert assignment	T	W	L	S
EDEH-R/L 2525-T00	EDG□□□□	25	25	130	30

Dimension/data block 2.

Item	Insert assignment	H
EDEH-R/L 2525-T00	EDG□□□□	25

Spare parts

Item	Clamp	Clamp screw	Screw	Wrench
EDEH-R/L 2525-T00	DCG4	HCRL0512	SCRL0512	W30L / T20L

EDEV: holder and dimensions

Dimensions in mm.

Dimension/data block 1.

Item	Insert assignment	T	W	L	S
EDEV-R/L 2525-1.5-T00	ED□15□□	25	25	150	28
EDEV-R/L 3232-1.5-T00	ED□15□□	32	32	170	35
EDEV-R/L 2020-2-T00	ED□20□□	20	20	125	23.5
EDEV-R/L 2525-2-T00	ED□20□□	25	25	150	28.5
EDEV-R/L 3232-2-T00	ED□20□□	32	32	170	35.5
EDEV-R/L 2020-3-T00	ED□30□□	20	20	125	25
EDEV-R/L 2525-3-T00	ED□30□□	25	25	150	30
EDEV-R/L 3232-3-T00	ED□30□□	32	32	170	37
EDEV-R/L 2020-4-T00	ED□40□□	20	20	125	25
EDEV-R/L 2525-4-T00	ED□40□□	25	25	150	30
EDEV-R/L 3232-4-T00	ED□40□□	32	32	170	37

Dimension/data block 2.

Item	Insert assignment	ØDmin	Tmax
EDEV-R/L 2525-1.5-T00	ED□15□□	120	2.6
EDEV-R/L 3232-1.5-T00	ED□15□□	120	2.6
EDEV-R/L 2020-2-T00	ED□20□□	120	3
EDEV-R/L 2525-2-T00	ED□20□□	120	3
EDEV-R/L 3232-2-T00	ED□20□□	120	3
EDEV-R/L 2020-3-T00	ED□30□□	80	4.5
EDEV-R/L 2525-3-T00	ED□30□□	80	4.5
EDEV-R/L 3232-3-T00	ED□30□□	80	4.5
EDEV-R/L 2020-4-T00	ED□40□□	80	4.5
EDEV-R/L 2525-4-T00	ED□40□□	80	4.5
EDEV-R/L 3232-4-T00	ED□40□□	80	4.5

Spare parts

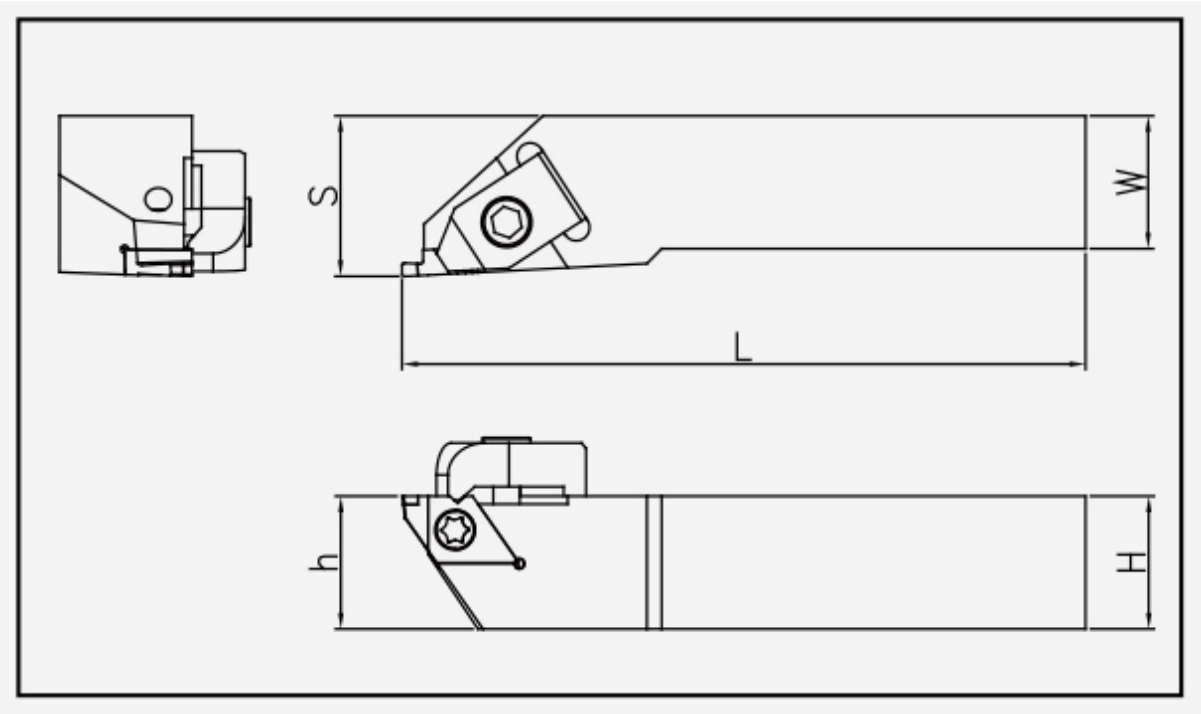
Item	Clamp	Clamp screw	Screw	Wrench
EDEV-R/L 2525-1.5-T00	DCG4	HCRL0512	SCRL0512	W30L / T20L
EDEV-R/L 3232-1.5-T00	DCG4	HCRL0512	SCRL0512	W30L / T20L
EDEV-R/L 2020-2-T00	DCG4	HCRL0512	SCRL0512	W30L / T20L
EDEV-R/L 2525-2-T00	DCG4	HCRL0512	SCRL0512	W30L / T20L
EDEV-R/L 3232-2-T00	DCG4	HCRL0512	SCRL0512	W30L / T20L
EDEV-R/L 2020-3-T00	DCG4	HCRL0512	SCRL0512	W30L / T20L
EDEV-R/L 2525-3-T00	DCG4	HCRL0512	SCRL0512	W30L / T20L
EDEV-R/L 3232-3-T00	DCG4	HCRL0512	SCRL0512	W30L / T20L
EDEV-R/L 2020-4-T00	DCG4	HCRL0512	SCRL0512	W30L / T20L
EDEV-R/L 2525-4-T00	DCG4	HCRL0512	SCRL0512	W30L / T20L
EDEV-R/L 3232-4-T00	DCG4	HCRL0512	SCRL0512	W30L / T20L



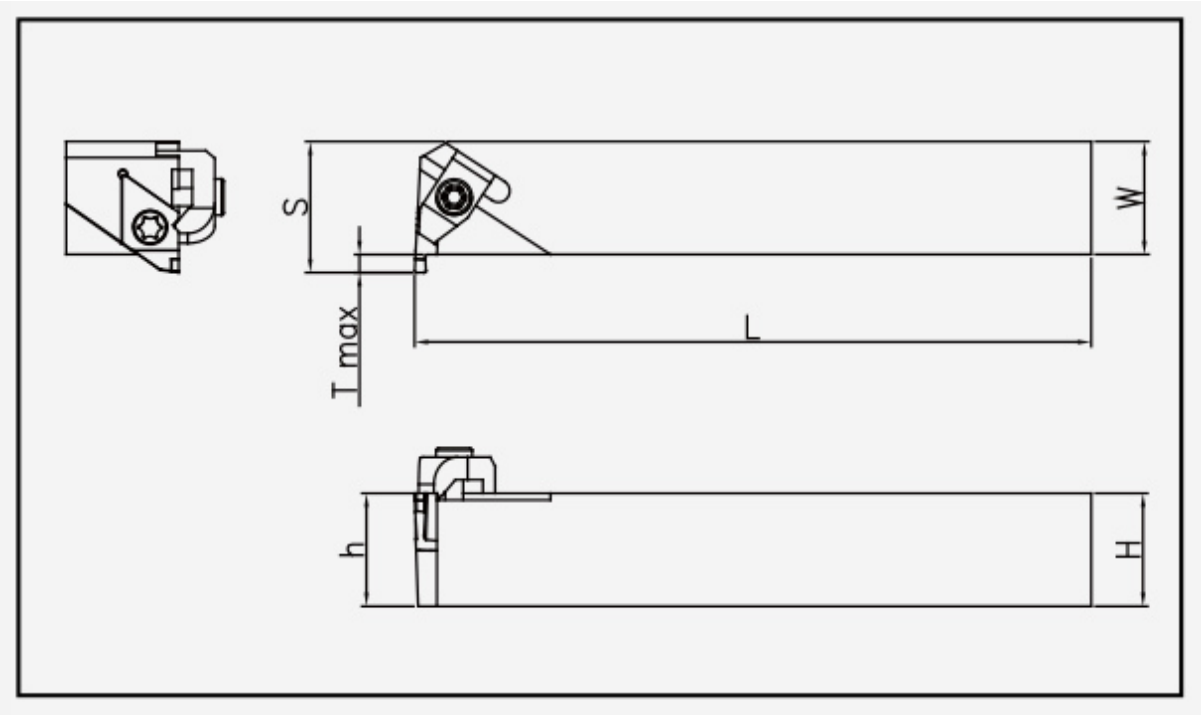
EDEH / EDEV: Tool view.



EDEH / EDEV: Tool view.



EDEH: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.



EDEV: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.

ETEH / ETEV

ETEH: holder and dimensions

Dimensions in mm.

Dimension/data block 1.

Item	Insert assignment	T	W	L	S
ETEH R/L 2525-T00	ETG□□□□	25	25	130	30

Dimension/data block 2.

Item	Insert assignment	H
ETEH R/L 2525-T00	ETG□□□□	25

Spare parts

Item	Screw	Wrench
ETEH R/L 2525-T00	SCR0511	T20L

ETEV: holder and dimensions

Dimensions in mm.

Dimension/data block 1.

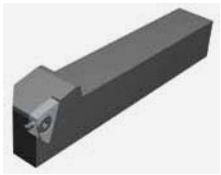
Item	Insert assignment	T	W	L	S
EDEV-R/L 2525-1.5-T00	ED□15□□	25	25	150	28.5
EDEV-R/L 3232-1.5-T00	ED□15□□	32	32	170	35.5
EDEV-R/L 2020-2-T00	ED□20□□	20	20	125	24
EDEV-R/L 2525-2-T00	ED□20□□	25	25	150	29
EDEV-R/L 3232-2-T00	ED□20□□	32	32	170	36
EDEV-R/L 2020-3-T00	ED□30□□	20	20	125	25
EDEV-R/L 2525-3-T00	ED□30□□	25	25	150	30
EDEV-R/L 3232-3-T00	ED□30□□	32	32	170	37
EDEV-R/L 2020-4-T00	ED□40□□	20	20	125	25
EDEV-R/L 2525-4-T00	ED□40□□	25	25	150	30
EDEV-R/L 3232-4-T00	ED□40□□	32	32	170	37

Dimension/data block 2.

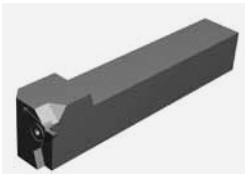
Item	Insert assignment	ØDmin	Tmax
EDEV-R/L 2525-1.5-T00	ED□15□□	120	3
EDEV-R/L 3232-1.5-T00	ED□15□□	120	3
EDEV-R/L 2020-2-T00	ED□20□□	120	3.5
EDEV-R/L 2525-2-T00	ED□20□□	120	3.5
EDEV-R/L 3232-2-T00	ED□20□□	120	3.5
EDEV-R/L 2020-3-T00	ED□30□□	80	4.5
EDEV-R/L 2525-3-T00	ED□30□□	80	4.5
EDEV-R/L 3232-3-T00	ED□30□□	80	4.5
EDEV-R/L 2020-4-T00	ED□40□□	80	4.5
EDEV-R/L 2525-4-T00	ED□40□□	80	4.5
EDEV-R/L 3232-4-T00	ED□40□□	80	4.5

Spare parts

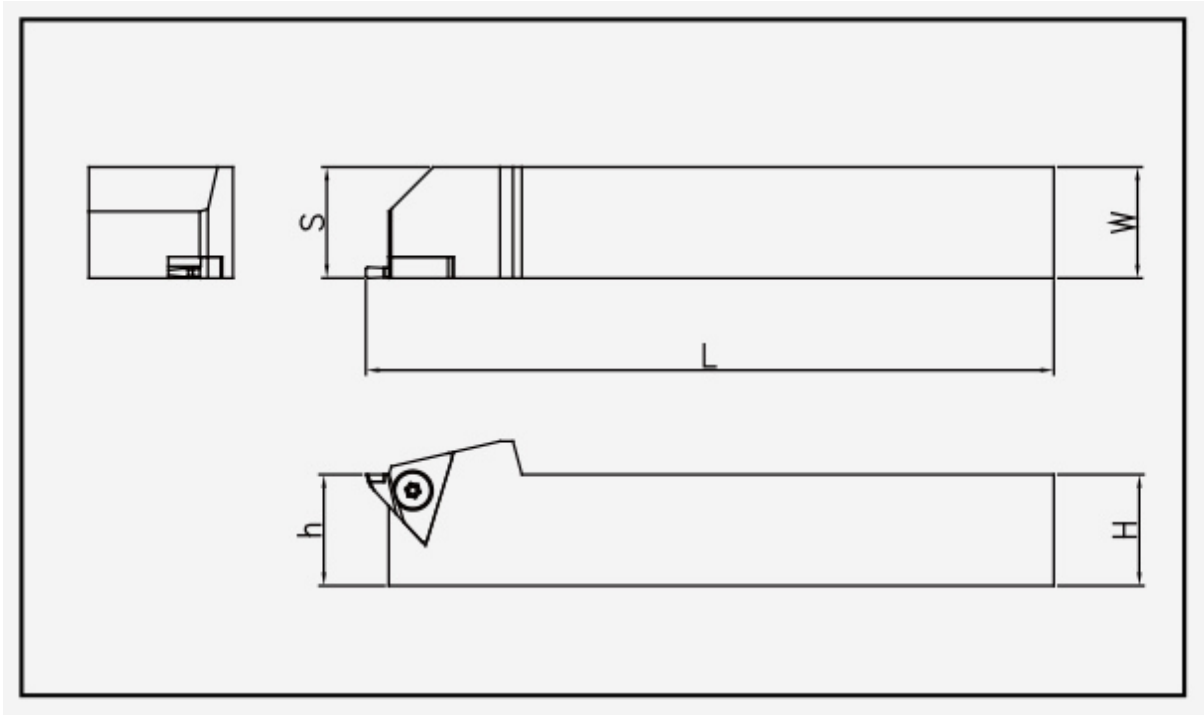
Item	Clamp screw	Wrench
EDEV-R/L 2525-1.5-T00	SCRL0511	T20L
EDEV-R/L 3232-1.5-T00	SCRL0511	T20L
EDEV-R/L 2020-2-T00	SCRL0511	T20L
EDEV-R/L 2525-2-T00	SCRL0511	T20L
EDEV-R/L 3232-2-T00	SCRL0511	T20L
EDEV-R/L 2020-3-T00	SCRL0511	T20L
EDEV-R/L 2525-3-T00	SCRL0511	T20L
EDEV-R/L 3232-3-T00	SCRL0511	T20L
EDEV-R/L 2020-4-T00	SCRL0511	T20L
EDEV-R/L 2525-4-T00	SCRL0511	T20L
EDEV-R/L 3232-4-T00	SCRL0511	T20L



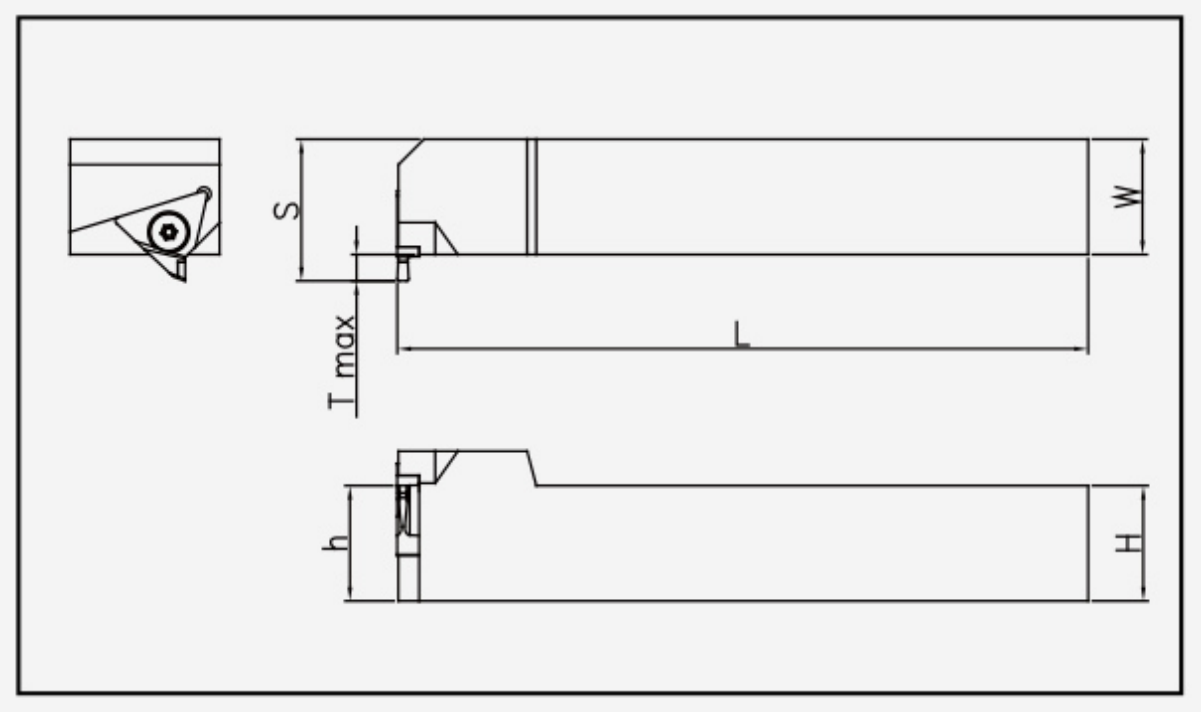
ETEH / ETEV: Tool view.



ETEH / ETEV: Tool view.



ETEH: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.



ETEV: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.

EMEH

EMEH: holder and dimensions

Dimensions in mm.

Dimension/data block 1.

Item	Insert assignment	T	W	L	S
EMEH-R/L 1010-T00	EMG□□□□	10	10	100	10

Dimension/data block 2.

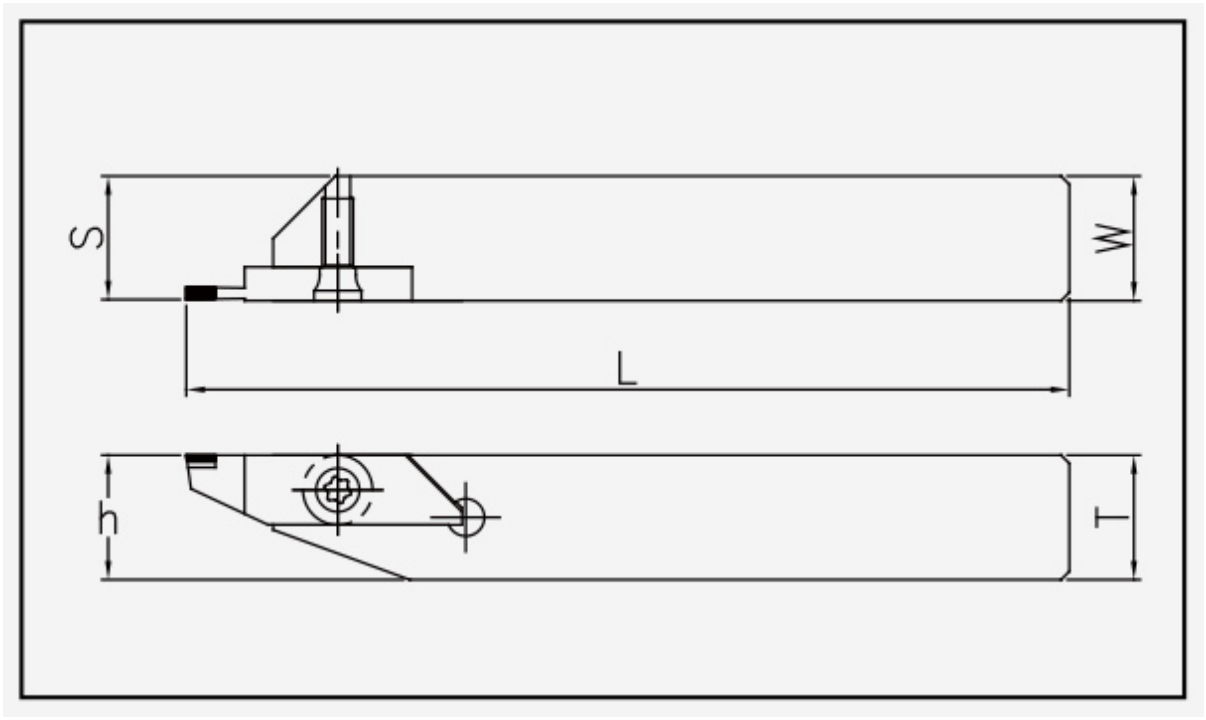
Item	Insert assignment	H
EMEH-R/L 1010-T00	EMG□□□□	10

Spare parts

Item	Screw	Wrench
EMEH-R/L 1010-T00	SCR02565	T07P



EMEH: Tool view.



EMEH: holder dimension drawing; item dimensions and spare parts are listed in the corresponding tables.

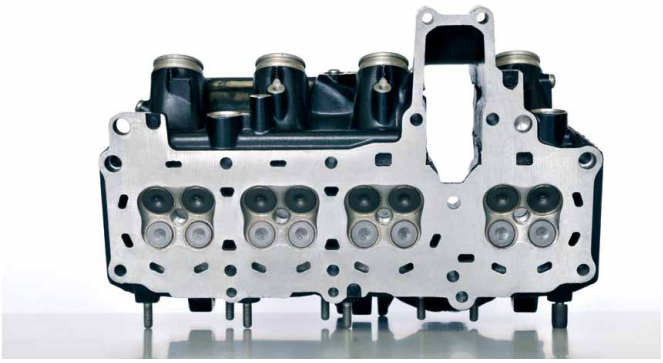
Milling tools



Milling tools: Component and machining view.

Milling tools: cutting material and design

EHWA offers special cutters and milling inserts for materials ranging from easy to difficult to machine. Ultra-fine, fine, medium, coarse and multimodal cutting-material grades enable application-specific selection. The tools support economical machining, consistent results, reliability and higher productivity. Appropriate design can increase tool life. Resharpening and retipping extend overall service life and can reduce tooling costs.



Milling tools: cutting material and design: Component and machining view.



Milling tools: cutting material and design: Tool view.

Milling insert designation: metric

The SPKN example divides the first four positions into insert shape, clearance, tolerance class and seating/rake-face features. Shape symbols: A 85°, B 82°, C 80°, H hexagon 120°, L rectangle, O octagon 135°, P pentagon 108°, R round, S square, T triangle, W trigon 80° and X special shape.

Clearance symbols: N 0°, A 3°, B 5°, C 7°, P 11°, D 15°, E 20°, F 25° and G 30°. Seating and rake-face features are identified by A, F, G, M, N, R, T, W and X in the corresponding shape diagrams. Tolerance classes A, C, G, H, K, M and U refer to m, t and I.C. as identified in the drawings.

Milling inserts: metric tolerances

Class	I.C. reference sizes [mm]	m [mm]	t [mm]	I.C. [mm]
A	6.35; 9.525; 12.7; 15.875; 19.05	±0.025	±0.025	±0.025
C	6.35; 9.525; 12.7; 15.875; 19.05	±0.025	±0.025	±0.025
G	6.35; 9.525; 12.7; 15.875; 19.05	±0.13	±0.13	±0.025
H	6.35; 9.525; 12.7; 15.875; 19.05	±0.025	±0.025	±0.013
K	6.35; 9.525; 12.7; 15.875; 19.05	±0.025	±0.025	±0.05~±0.15
M	6.35; 9.525; 12.7; 15.875; 19.05	±0.13	±0.13	±0.05~±0.15
U	6.35; 9.525; 12.7; 15.875; 19.05	±0.13	±0.13	±0.08~±0.25

Milling inserts: size, edge and hand

The continuation 12 03 [08 / ED] T(R) identifies insert size, thickness, corner radius or parallel land, edge preparation and hand. The parallel land is described by entering-angle symbols A 45°, D 60°, E 75°, F 85°, P 90° or Z special, and land-clearance symbols A 3°, B 5°, C 7°, D 15°, E 20°, F 25°, G 30°, N 0°, P 11° or Z special. Edge-preparation diagrams retain F, E, T and S. R identifies right-hand cutting, L left-hand cutting and N neutral.

Milling inserts: metric size symbols

C	R/S	T	H	O	I.C. [mm]
		09			5.56
06	06	11			6.35
		13			7.94
09	09	16			9.525
12	12	22		05	12.7
16	15	27	09		15.875
				07	17.94
19	19	33	10		19.05
25	25				25.4

Milling inserts: metric thickness

Symbol	t [mm]
01	1.59
02	2.38
03	3.18
T3	3.97
04	4.76
05	5.56
06	6.35
07	7.94
09	9.52

Milling inserts: metric corner radius

Symbol	R [mm]
00	Sharp
02	0.2
04	0.4
05	0.5
08	0.8
10	1.0
12	1.2
15	1.5
16	1.6
24	2.4
32	3.2
40	4.0

Milling insert designation: inch system

The SPKN example divides the first four positions into insert shape, clearance, tolerance class and seating/rake-face features. Shape symbols: A 85°, B 82°, C 80°, H hexagon 120°, L rectangle, O octagon 135°, P pentagon 108°, R round, S square, T triangle, W trigon 80° and X special shape.

Clearance symbols: N 0°, A 3°, B 5°, C 7°, P 11°, D 15°, E 20°, F 25° and G 30°. Seating and rake-face features are identified by A, F, G, M, N, R, T, W and X in the corresponding shape diagrams. Tolerance classes A, C, G, H, K, M and U refer to m, t and I.C. as identified in the drawings.

Milling inserts: tolerances in the inch edition

Class	I.C. reference sizes (source values)	m [inch]	t [inch]	I.C. [inch]
A	6.35; 9.525; 12.7; 15.875; 19.05	±0.0002	±0.001	±0.001
C	6.35; 9.525; 12.7; 15.875; 19.05	±0.0005	±0.001	±0.001
G	6.35; 9.525; 12.7; 15.875; 19.05	±0.001	±0.0005	±0.001
H	6.35; 9.525; 12.7; 15.875; 19.05	±0.0005	±0.001	±0.0005
K	6.35; 9.525; 12.7; 15.875; 19.05	±0.0005	±0.001	±0.002~±0.006
M	6.35; 9.525; 12.7; 15.875; 19.05	±0.003~±0.008	±0.005	±0.002~±0.006
U	6.35; 9.525; 12.7; 15.875; 19.05	±0.005~±0.015	±0.005	±0.003~±0.001

The source heading labels the I.C. reference sizes inch, but prints the same numbers as the metric table. The U row contains the descending raw range ±0.003~±0.001. Values are not silently converted or reversed; align the metric reference and tolerance for selection.

Milling inserts: size, edge and hand

The continuation 4 2 [2 / ED] T(R) identifies insert size, thickness, corner radius or parallel land, edge preparation and hand. The parallel land is described by entering-angle symbols A 45°, D 60°, E 75°, F 85°, P 90° or Z special, and land-clearance symbols A 3°, B 5°, C 7°, D 15°, E 20°, F 25°, G 30°, N 0°, P 11° or Z special. Edge-preparation diagrams retain F, E, T and S. R identifies right-hand cutting, L left-hand cutting and N neutral.

Milling inserts: size symbols in the inch edition

Dimension/data block 1.

C	R/S	T	H	O	Symbol
		9			1.8
06	06	11			2
09	09	16			3
12	12	22		05	4
16	15	27	09		5
19	19	33	10		6
25	25				8
					10

Dimension/data block 2.

C	I.C. [inch]
	7/23
06	1/4
09	3/8
12	1/2
16	5/8
19	3/4
25	1
	1-1/4

The first source cell prints 7/23 and is retained as the original assignment. The metric overview lists 5.56 mm for the corresponding small T size. Reconcile these conflicting entries before ordering.

Milling inserts: inch thickness

Symbol	t [inch]
1	1/16
1.5	3/32
2	1/8
2.5	5/32
3	3/16
3.5	7/32
4	1/4
5	5/16
6	3/8

Milling inserts: inch corner radius

Symbol	R [inch]
0	Sharp
1	1/64
2	1/32
3	3/64
4	1/16
6	3/32
8	1/8

APKT and CDEW: PCD milling inserts

Dimension drawings show the respective edge positions, views and dimensional references. Metric and printed inch designations occupy separate table columns. The PCD grade overview lists EP20, EP55, EP750, EP58 and EP29. Wiper types and large edge radii follow the illustrated geometry; unmarked grade cells receive no added availability symbol.

APKT: PCD milling inserts

Dimension/data block 1.

Metric ISO	Inch ISO	I.C.	Z	α	V
APKT 1604PDFR		9.525	2	11	

Dimension/data block 2.

Metric ISO	Inch ISO	R	T
APKT 1604PDFR			4.76

Dimensions in mm; α/V angular references follow the drawing. Grades: EP20, EP55, EP750, EP58, EP29; individual grade cells unmarked.

CDEW: PCD milling inserts

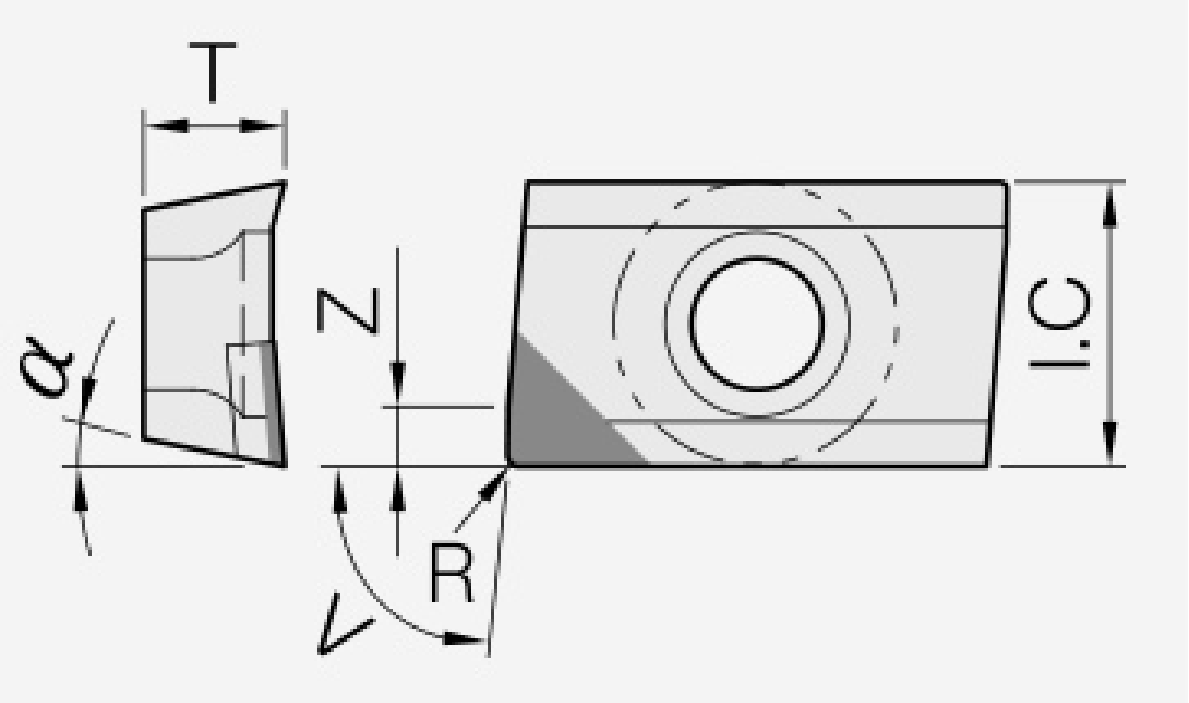
Dimension/data block 1.

Metric ISO	Inch ISO	I.C.	Z	α	V
CDEW 1204R-R		12.7	2.4	15	15
CDEW 1204R-F		12.7	4.5	15	15

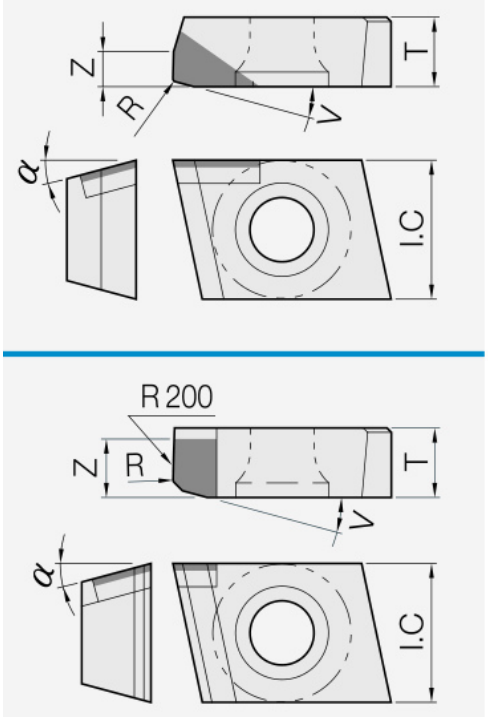
Dimension/data block 2.

Metric ISO	Inch ISO	R	T
CDEW 1204R-R		-	4.76
CDEW 1204R-F		200	4.76

The second drawing retains the R 200 reference. Grades: EP20, EP55, EP750, EP58, EP29; individual grade cells unmarked.



Insert: isolated dimensioned drawing with unchanged geometry symbols.



Insert: isolated dimensioned drawing with unchanged geometry symbols.

SPGN, SEGN and SFGN: PCD milling inserts

Dimension drawings show the respective edge positions, views and dimensional references. Metric and printed inch designations occupy separate table columns. The PCD grade overview lists EP20, EP55, EP750, EP58 and EP29. Wiper types and large edge radii follow the illustrated geometry; unmarked grade cells receive no added availability symbol.

SPGN: PCD milling inserts

Dimension/data block 1.

Metric ISO	Inch ISO	I.C.	Z	α	V
SPGN 1203EDR	SPGN 42EDR	12.7	1.4	11	15
SPGN 1203EDL	SPGN 42EDL	12.7	1.4	11	15
SPGN 1504EDR	SPGN 53EDR	15.875	1.4	11	15

Dimension/data block 2.

Metric ISO	Inch ISO	R	T
SPGN 1203EDR	SPGN 42EDR		3.18
SPGN 1203EDL	SPGN 42EDL		3.18
SPGN 1504EDR	SPGN 53EDR		3.18

This table explicitly lists T = 3.18 mm for SPGN 1504EDR; no value is inferred from the size code.

SEGN: PCD milling inserts

Dimension/data block 1.

Metric ISO	Inch ISO	I.C.	Z	α	V
SEGN 1203AFN	SEGN 42AFN	12.7	2	20	45
SEGN 1203EFR	SEGN 42EFR	12.7	2	20	15
SEGN 1504AFN	SEGN 53AFN	15.875	2	20	45
SEGN 1504EFR	SEGN 53EFR	15.875	2	20	15

Dimension/data block 2.

Metric ISO	Inch ISO	R	T
SEGN 1203AFN	SEGN 42AFN		3.18
SEGN 1203EFR	SEGN 42EFR		3.18
SEGN 1504AFN	SEGN 53AFN		4.76
SEGN 1504EFR	SEGN 53EFR		4.76

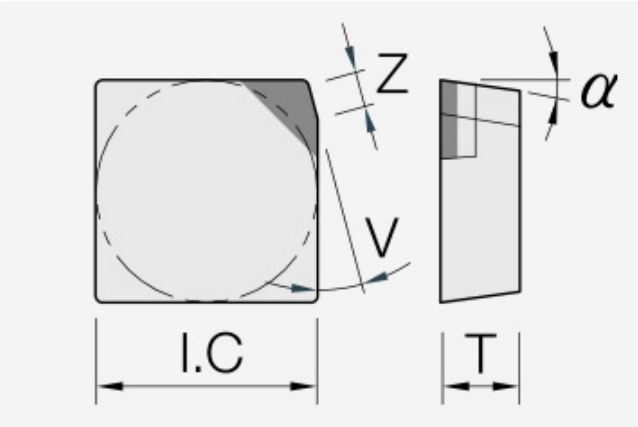
SFGN: PCD milling insert

Dimension/data block 1.

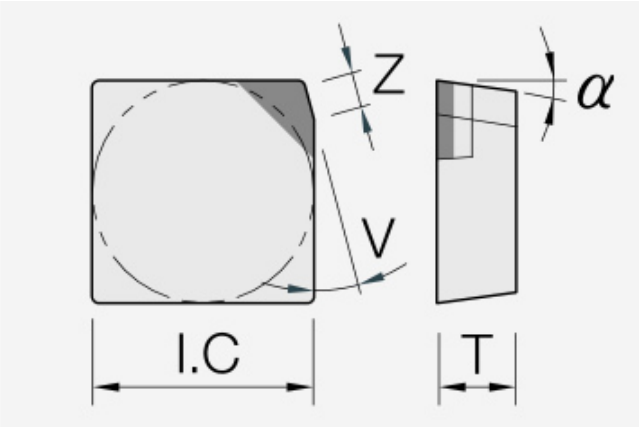
Metric ISO	Inch ISO	I.C.	Z	α	V
SFGN 1203EFR	SFGN 42EFR	12.7	2	25	15

Dimension/data block 2.

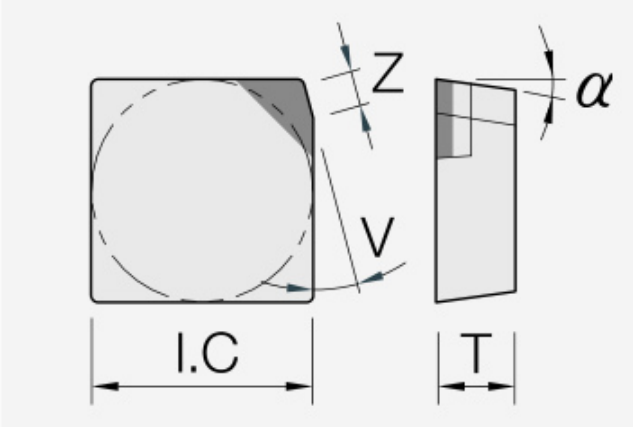
Metric ISO	Inch ISO	R	T
SFGN 1203EFR	SFGN 42EFR		3.18



Insert: isolated dimensioned drawing with unchanged geometry symbols.



Insert: isolated dimensioned drawing with unchanged geometry symbols.



Insert: isolated dimensioned drawing with unchanged geometry symbols.

SNEW and SNEW(W): PCD milling inserts

Dimension drawings show the respective edge positions, views and dimensional references. Metric and printed inch designations occupy separate table columns. The PCD grade overview lists EP20, EP55, EP750, EP58 and EP29. Wiper types and large edge radii follow the illustrated geometry; unmarked grade cells receive no added availability symbol.

SNEW: PCD milling inserts

Dimension/data block 1.

Metric ISO	Inch ISO	I.C.	Z	α	V
NF-SNEW 09T3ADTR		9.525	2.35	15	45
NF-SNEW 09T3ADTR-R		9.525	2.35	15	
NF-SNEW 1204AFTR		12.7	3.3	15	45
NF-SNEW 1204AFTR-R		12.7	3.3	15	

Dimension/data block 2.

Metric ISO	Inch ISO	R	T
NF-SNEW 09T3ADTR			3.97
NF-SNEW 09T3ADTR-R		0.5	3.97
NF-SNEW 1204AFTR			4.76
NF-SNEW 1204AFTR-R		1	4.76

Dimensions in mm; angular references follow the drawing. PCD grade headings EP20, EP55, EP750, EP58 and EP29; individual grade cells are unmarked.

SNEW(W): PCD wiper inserts

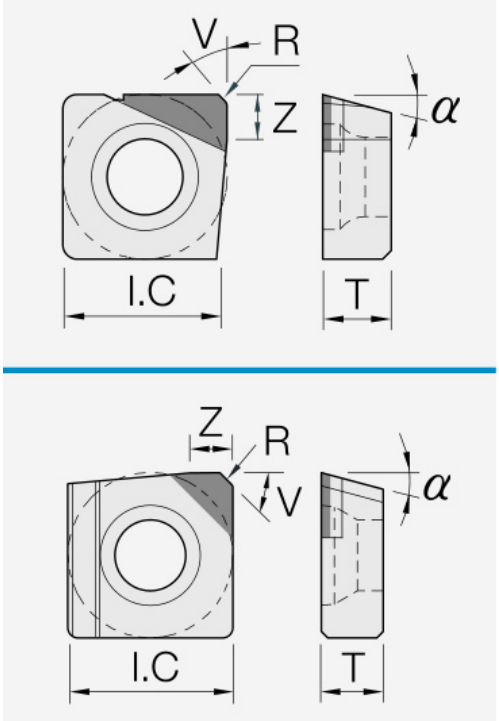
Dimension/data block 1.

Metric ISO	Inch ISO	I.C.	Z	α	V
NF-SNEW 09T3ADTR-W		9.525	2.6	15	45
NF-SNEW 1204ADFR-W		12.7	5	15	45

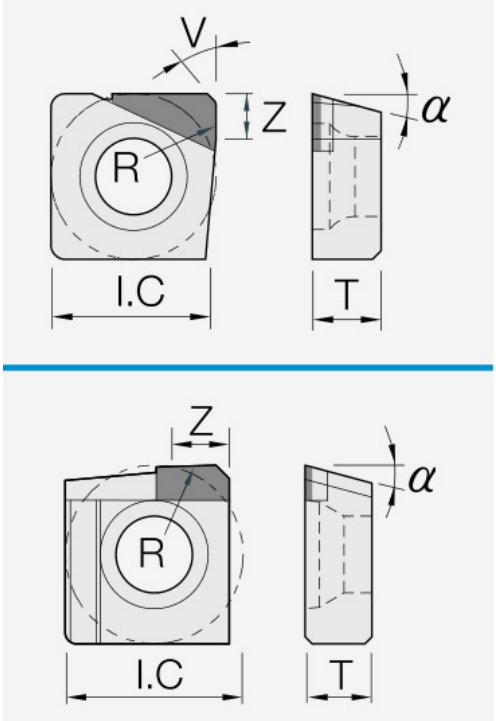
Dimension/data block 2.

Metric ISO	Inch ISO	R	T
NF-SNEW 09T3ADTR-W		100	3.97
NF-SNEW 1204ADFR-W		300	4.76

Dimensions in mm; angular references follow the drawing. PCD grade headings EP20, EP55, EP750, EP58 and EP29; individual grade cells are unmarked.



Insert: isolated dimensioned drawing with unchanged geometry symbols.



Insert: isolated dimensioned drawing with unchanged geometry symbols.

TPGN, TEGN and LDCN: PCD milling inserts

Dimension drawings show the respective edge positions, views and dimensional references. Metric and printed inch designations occupy separate table columns. The PCD grade overview lists EP20, EP55, EP750, EP58 and EP29. Wiper types and large edge radii follow the illustrated geometry; unmarked grade cells receive no added availability symbol.

TPGN: PCD milling inserts

Dimension/data block 1.

Metric ISO	Inch ISO	I.C.	Z	α	V
TPGN 1603PDR	TPGN 32PDR	12.7	1.2	11	30
TPGN 1603PDL	TPGN 32PDL	12.7	1.2	11	30
TPGN 2204PDR	TPGN 43PDR	15.88	1.4	11	30

Dimension/data block 2.

Metric ISO	Inch ISO	R	T
TPGN 1603PDR	TPGN 32PDR		3.18
TPGN 1603PDL	TPGN 32PDL		3.18
TPGN 2204PDR	TPGN 43PDR		4.76

Dimensions in mm; angular references follow the drawing. PCD grade headings EP20, EP55, EP750, EP58 and EP29; individual grade cells are unmarked.

TEGN: PCD milling inserts

Dimension/data block 1.

Metric ISO	Inch ISO	I.C.	Z	α	V
TEGN 1603PER	TEGN 32PER	12.7	1.2	20	30
TEGN 2204PER	TEGN 43PER	15.88	1.4	20	30

Dimension/data block 2.

Metric ISO	Inch ISO	R	T
TEGN 1603PER	TEGN 32PER	0.8	3.18
TEGN 2204PER	TEGN 43PER	0.8	4.76

Dimensions in mm; angular references follow the drawing. PCD grade headings EP20, EP55, EP750, EP58 and EP29; individual grade cells are unmarked.

LDCN: PCD milling inserts

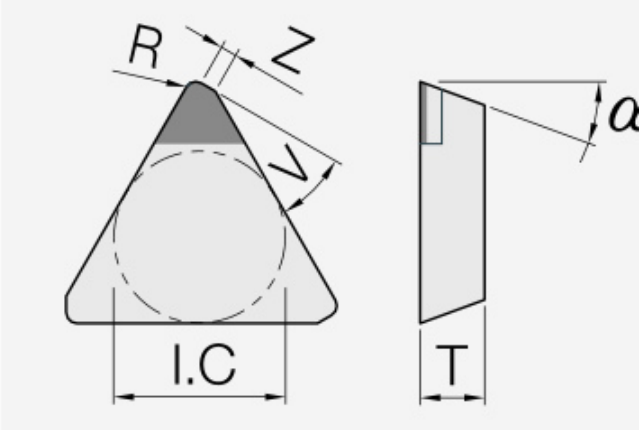
Dimension/data block 1.

Metric ISO	Inch ISO	I.C.	Z	α	L
LDCN 190412R	LDCN	12.7		15	19.05
LDCN 190412L		12.7		15	19.05

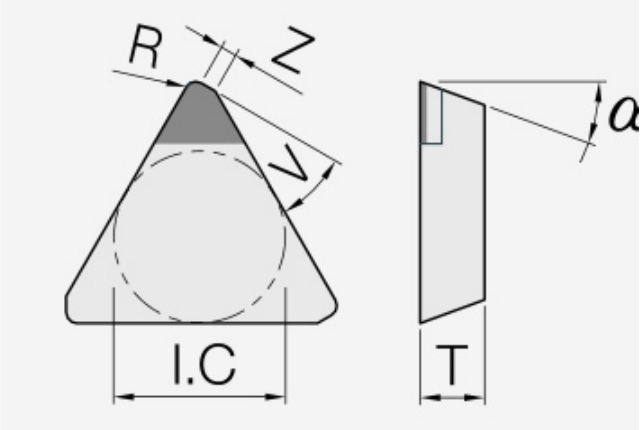
Dimension/data block 2.

Metric ISO	Inch ISO	R	T
LDCN 190412R	LDCN	1.2	4.76
LDCN 190412L		1.2	4.76

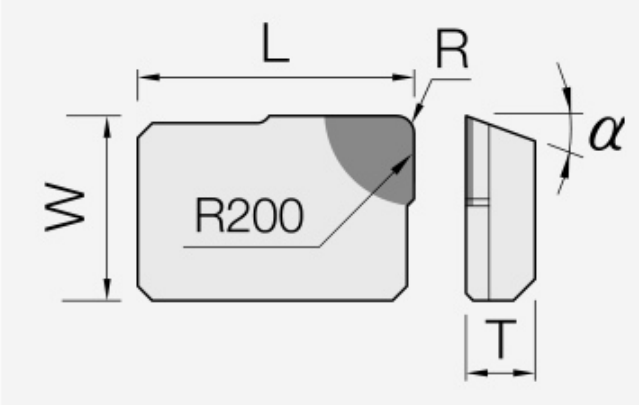
Dimensions in mm; angular references follow the drawing. PCD grade headings EP20, EP55, EP750, EP58 and EP29; individual grade cells are unmarked.



Insert: isolated dimensioned drawing with unchanged geometry symbols.



Insert: isolated dimensioned drawing with unchanged geometry symbols.



Insert: isolated dimensioned drawing with unchanged geometry symbols.

PCD milling inserts: design examples

Product images show different PCD edge positions, insert shapes and fastening designs for milling applications.



PCD milling inserts: design examples: Tool view.

LFCN, GDCN and YDEN: PCD milling inserts

Dimension drawings show the respective edge positions, views and dimensional references. Metric and printed inch designations occupy separate table columns. The PCD grade overview lists EP20, EP55, EP750, EP58 and EP29. Wiper types and large edge radii follow the illustrated geometry; unmarked grade cells receive no added availability symbol.

LFCN: PCD milling inserts

Dimension/data block 1.

Metric ISO	Inch ISO	W	Z	α	L
LFCN 190412R	LFCN	12.7		25	19.05
LFCN 190412L		12.7		25	19.05

Dimension/data block 2.

Metric ISO	Inch ISO	R	T
LFCN 190412R	LFCN	1.2	4.76
LFCN 190412L		1.2	4.76

Dimensions in mm; angular references follow the drawing. PCD grade headings EP20, EP55, EP750, EP58 and EP29; individual grade cells are unmarked.

GDCN: PCD milling inserts

Dimension/data block 1.

Metric ISO	Inch ISO	W	Z	α	L
GDCN 2004PDFR	GDCN	12.7		15	20
GDCN 2004PDFL		12.7		15	20

Dimension/data block 2.

Metric ISO	Inch ISO	R	T
GDCN 2004PDFR	GDCN	1.2	4.76
GDCN 2004PDFL		1.2	4.76

Dimensions in mm; angular references follow the drawing. PCD grade headings EP20, EP55, EP750, EP58 and EP29; individual grade cells are unmarked.

YDEN: PCD milling inserts

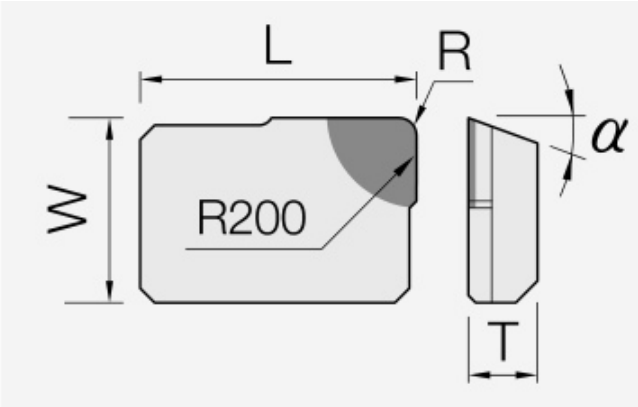
Dimension/data block 1.

Metric ISO	Inch ISO	I.C.	Z	α	V
YDEN 1505ADFR		12.7		15	15.875
YDEN 1505ADFR-WD		12.28		15	15.925

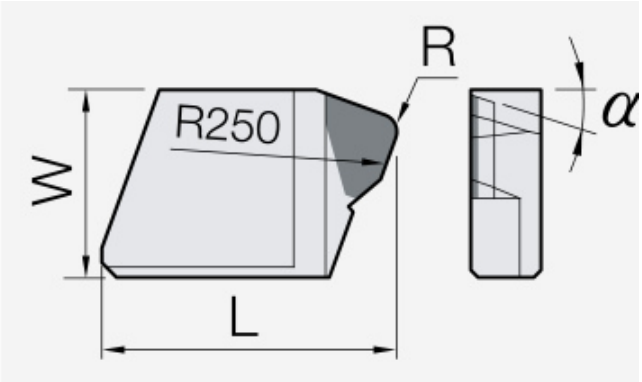
Dimension/data block 2.

Metric ISO	Inch ISO	R	T
YDEN 1505ADFR		1.6	5.675
YDEN 1505ADFR-WD		0.8	5.675

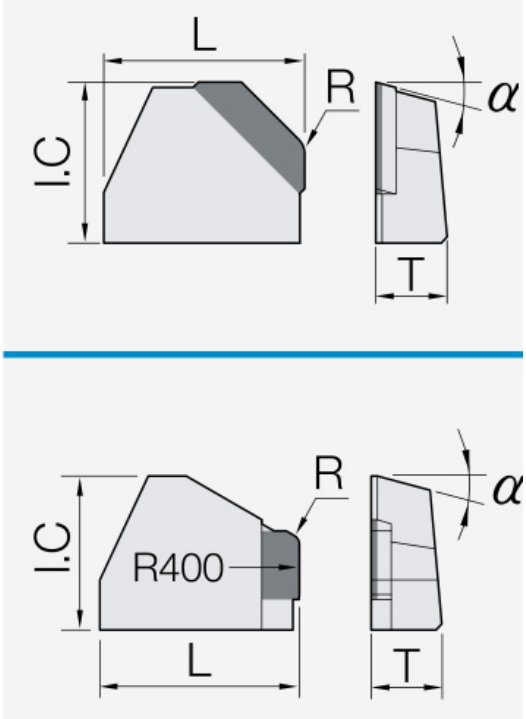
Dimensions in mm; angular references follow the drawing. PCD grade headings EP20, EP55, EP750, EP58 and EP29; individual grade cells are unmarked.



Insert: isolated dimensioned drawing with unchanged geometry symbols.



Insert: isolated dimensioned drawing with unchanged geometry symbols.



Insert: isolated dimensioned drawing with unchanged geometry symbols.

SD and high-feed cartridges

SDR identifies standard face rough milling, SDR-A corner rough milling, SDR-R standard face rough milling with a nose radius and SDR-ES roughing with an edge hone. SDW identifies the standard face-milling wiper type and SDW-ES its edge-honed version. CFR and CFW identify CF roughing and CF wiper cartridges. HFR and HFW belong to the high-feed type. Customised tools for faces, slots, chamfers and profiles are designed to your requirements.

SDR: PCD cartridges

Item	W	V	L	R	T
SDR	13.5	15	30		12
SDR-A	13.5	0	30		12
SDR-R	13.5	15	30	0.4	12
SDR-ES	13.5	15	30		12

Dimensions in mm; angular references follow the drawing. PCD grade headings EP20, EP55, EP750, EP58 and EP29; individual grade cells are unmarked.

HFR: PCD cartridges

Item	W	V	L	R	T
HFR	10	15	25		11
HFR-A	10	0	25		11
HFR-R	10	15	25	0.4	11
HFR-ES	10	15	25		11

Dimensions in mm; angular references follow the drawing. PCD grade headings EP20, EP55, EP750, EP58 and EP29; individual grade cells are unmarked.

SDW: PCD wiper cartridges

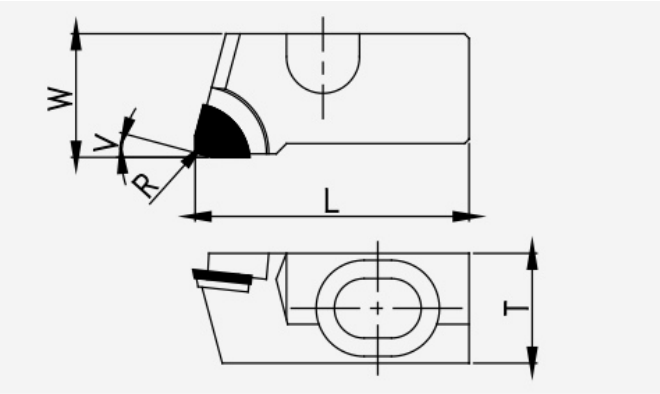
Item	W	L	R	T
SDW	13	30	400	12
SDW-ES	13	30	400	12

Dimensions in mm; angular references follow the drawing. PCD grade headings EP20, EP55, EP750, EP58 and EP29; individual grade cells are unmarked.

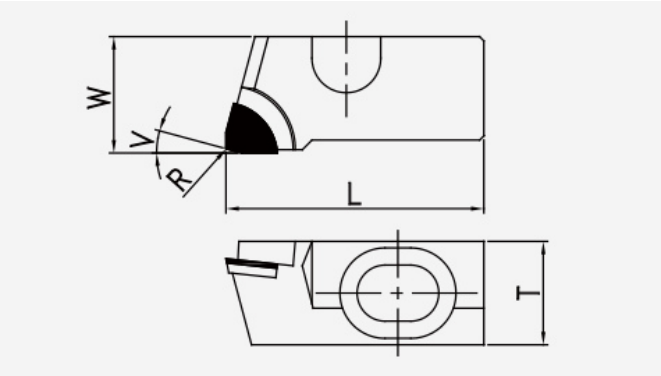
HFW: PCD wiper cartridges

Item	W	L	R	T
HFW	9.8	25	400	11
HFW-ES	9.8	25	400	11

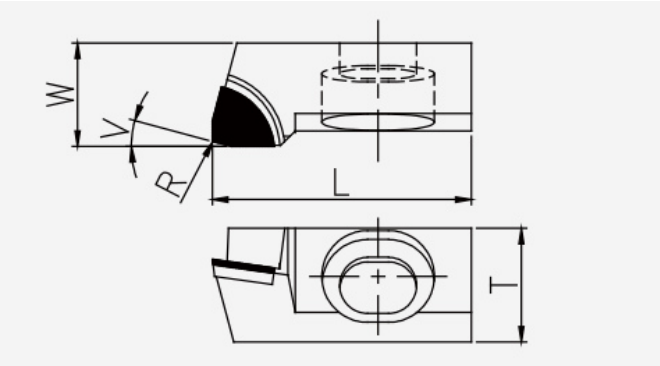
Dimensions in mm; angular references follow the drawing. PCD grade headings EP20, EP55, EP750, EP58 and EP29; individual grade cells are unmarked.



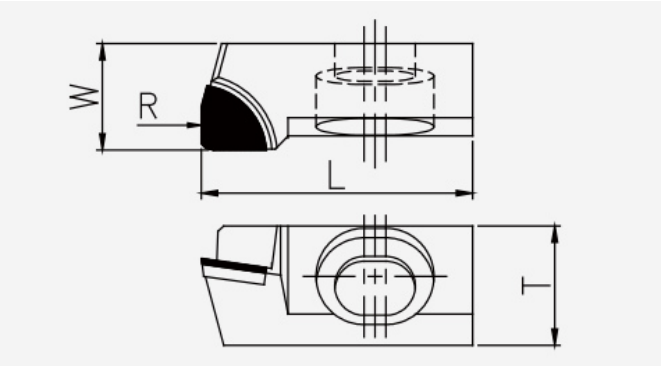
Insert: isolated dimensioned drawing with unchanged geometry symbols.



Insert: isolated dimensioned drawing with unchanged geometry symbols.



Insert: isolated dimensioned drawing with unchanged geometry symbols.



Insert: isolated dimensioned drawing with unchanged geometry symbols.

CF cartridges and customised designs

SDR identifies standard face rough milling, SDR-A corner rough milling, SDR-R standard face rough milling with a nose radius and SDR-ES roughing with an edge hone. SDW identifies the standard face-milling wiper type and SDW-ES its edge-honed version. CFR and CFW identify CF roughing and CF wiper cartridges. HFR and HFW belong to the high-feed type. Customised tools for faces, slots, chamfers and profiles are designed to your requirements.

CFR: PCD cartridges

Item	W	V	L	R	T
CFR	10.5	15	25		10
CFR-A	10.5	0	25		10
CFR-R	10.5	15	25	0.4	10
CFR-ES	10.5	15	25		10

Dimensions in mm; angular references follow the drawing. PCD grade headings EP20, EP55, EP750, EP58 and EP29; individual grade cells are unmarked.

CFW: PCD wiper cartridges

Item	W	L	R	T
CFW	10	25	400	10
CFW-ES	10	25	400	10

Dimensions in mm; angular references follow the drawing. PCD grade headings EP20, EP55, EP750, EP58 and EP29; individual grade cells are unmarked.



CF cartridges and customised designs: Tool view.



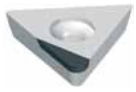
CF cartridges and customised designs: Tool view.



CF cartridges and customised designs: Tool view.



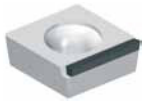
CF cartridges and customised designs: Tool view.



CF cartridges and customised designs: Tool view.



CF cartridges and customised designs: Tool view.



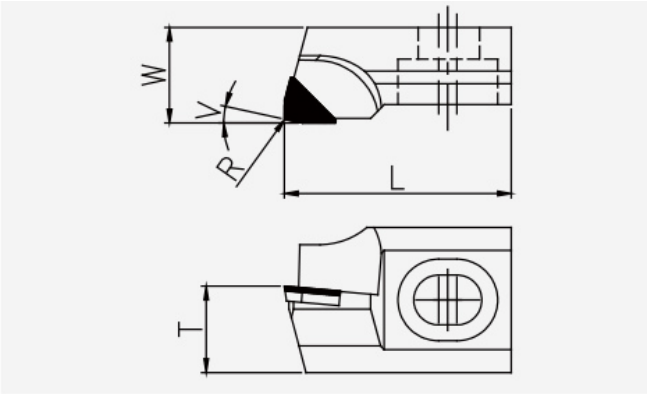
CF cartridges and customised designs: Tool view.



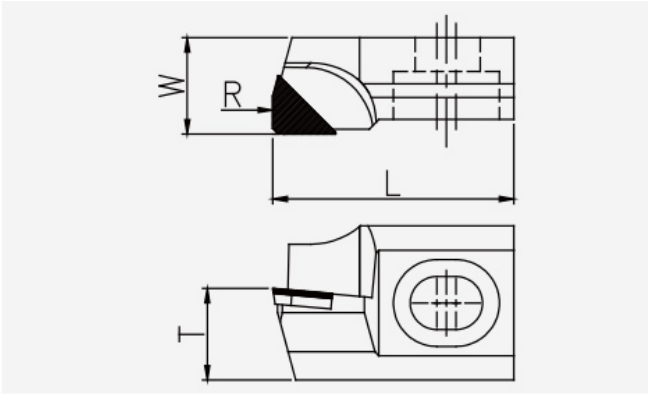
CF cartridges and customised designs: Tool view.



CF cartridges and customised designs: Tool view.



Insert: isolated dimensioned drawing with unchanged geometry symbols.



Insert: isolated dimensioned drawing with unchanged geometry symbols.

PCBN milling inserts

The PCBN milling programme includes the following insert shapes and customised designs.

PCBN milling inserts: dimensions and designs

Tables and dimension drawings retain the listed insert shapes, ISO designations, edge radii and dimensional references. The PCBN grade overview names EB11, EB210, EB51, EB71 and EB710. Customised designs for faces, slots, chamfers and profiles are adapted to your application.

SPGN: PCBN milling inserts

Dimension/data block 1.

Metric ISO	Inch ISO	I.C.	Z	α	V
SPGN 1203EDR	SPGN 42EDR	12.7	1.4	11	15
SPGN 1203EDL	SPGN 42EDL	12.7	1.4	11	15
SPGN 1504EDR	SPGN 53EDR	15.9	1.4	11	15

Dimension/data block 2.

Metric ISO	Inch ISO	R	T
SPGN 1203EDR	SPGN 42EDR		3.18
SPGN 1203EDL	SPGN 42EDL		3.18
SPGN 1504EDR	SPGN 53EDR		3.18

Dimensions in mm; angular references follow the drawing. PCBN grade headings EB11, EB210, EB51, EB71 and EB710; individual grade cells are unmarked.

SNGN: PCBN milling inserts

Dimension/data block 1.

Metric ISO	Inch ISO	W	Z	V	R
SNGN 1506APTR	SNGN 54APTR	12.7	2.5	30	250
SNGN 1506APTL	SNGN 54APTL	12.7	2.5	30	250

Dimension/data block 2.

Metric ISO	Inch ISO	T	L
SNGN 1506APTR	SNGN 54APTR	6.35	15.875
SNGN 1506APTL	SNGN 54APTL	6.35	15.875

Dimensions in mm; angular references follow the drawing. PCBN grade headings EB11, EB210, EB51, EB71 and EB710; individual grade cells are unmarked.

SNEW: PCBN milling inserts

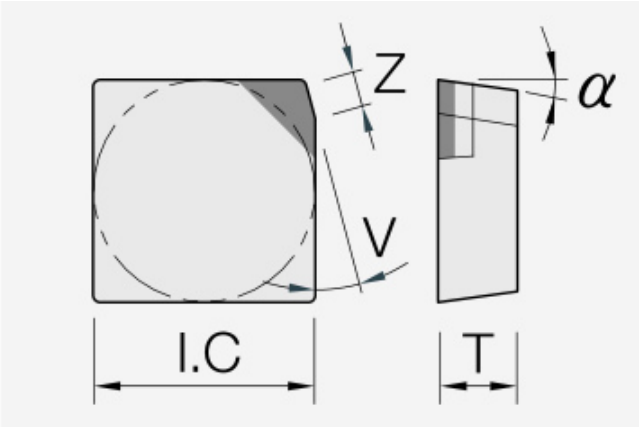
Dimension/data block 1.

Metric ISO	Inch ISO	I.C.	Z	α	V
SNEW 09T3ADFR	SNEW 3(2.5)ADFR	9.525	2.6	15	45
SNEW 1203ADTR	SNEW 42ADTR	12.7	7	15	45

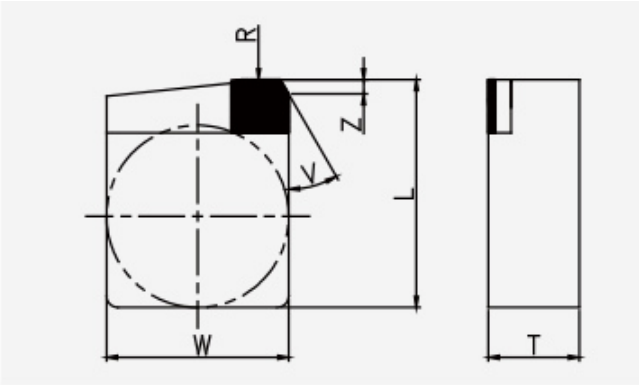
Dimension/data block 2.

Metric ISO	Inch ISO	R	T
SNEW 09T3ADFR	SNEW 3(2.5)ADFR		3.97
SNEW 1203ADTR	SNEW 42ADTR	300	3.18

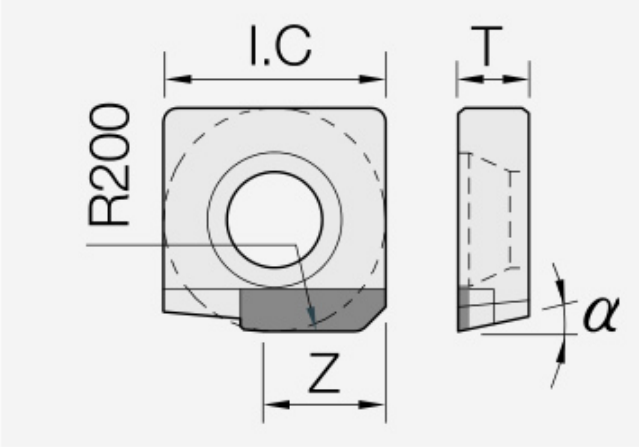
Dimensions in mm; angular references follow the drawing. PCBN grade headings EB11, EB210, EB51, EB71 and EB710; individual grade cells are unmarked.



Insert: isolated dimensioned drawing with unchanged geometry symbols.



Insert: isolated dimensioned drawing with unchanged geometry symbols.



Insert: isolated dimensioned drawing with unchanged geometry symbols.

PCBN milling inserts: dimensions and designs

Tables and dimension drawings retain the listed insert shapes, ISO designations, edge radii and dimensional references. The PCBN grade overview names EB11, EB210, EB51, EB71 and EB710. Customised designs for faces, slots, chamfers and profiles are adapted to your application.

LDCN: PCBN milling inserts

Dimension/data block 1.

Metric ISO	Inch ISO	W	Z	α	L
LDCN 190412R		12.7		15	19.1
LDCN 190412L		12.7		15	19.1

Dimension/data block 2.

Metric ISO	Inch ISO	R	T
LDCN 190412R		1.2	4.76
LDCN 190412L		1.2	4.76

Dimensions in mm; angular references follow the drawing. PCBN grade headings EB11, EB210, EB51, EB71 and EB710; individual grade cells are unmarked.

OPHX: PCBN milling inserts

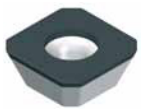
Dimension/data block 1.

Metric ISO	Inch ISO	I.C.	Z	α	V
OPHX 0504ZZN-R		12.7		11	
OPHX 0504ZZR		12.7		11	
OPHX 0504ZZL		12.7		11	

Dimension/data block 2.

Metric ISO	Inch ISO	R	T
OPHX 0504ZZN-R		-	4.76
OPHX 0504ZZR		300	4.76
OPHX 0504ZZL		300	4.76

Dimensions in mm; angular references follow the drawing. PCBN grade headings EB11, EB210, EB51, EB71 and EB710; individual grade cells are unmarked.



PCBN milling inserts: dimensions and designs: Tool view.



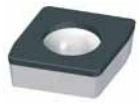
PCBN milling inserts: dimensions and designs: Tool view.



PCBN milling inserts: dimensions and designs: Tool view.



PCBN milling inserts: dimensions and designs: Tool view.



PCBN milling inserts: dimensions and designs: Tool view.



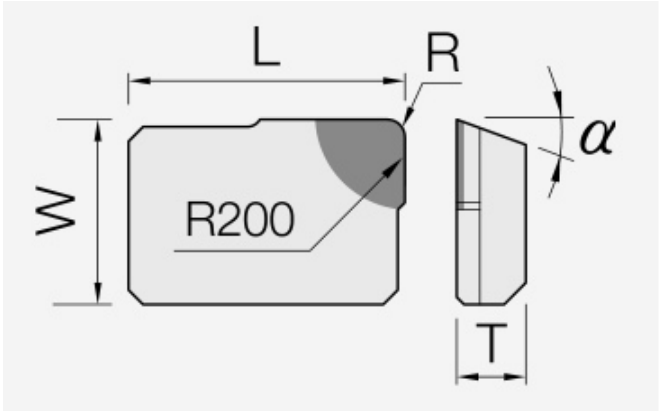
PCBN milling inserts: dimensions and designs: Tool view.



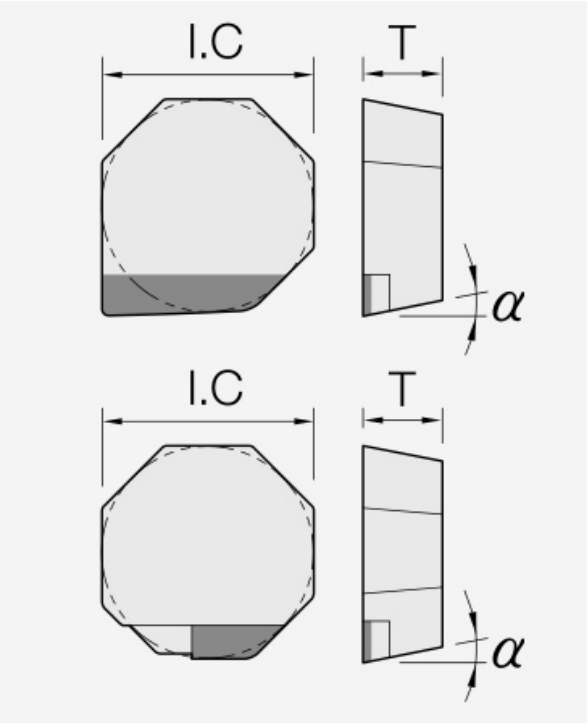
PCBN milling inserts: dimensions and designs: Tool view.



PCBN milling inserts: dimensions and designs: Tool view.



Insert: isolated dimensioned drawing with unchanged geometry symbols.



Insert: isolated dimensioned drawing with unchanged geometry symbols.

Tool designs



Tool designs: Tool view.

Aluminium cutter bodies

Aluminium bodies and special inserts are designed for high cutting speeds and precise machining. The lightweight body facilitates setting. The illustrated manufacturer comparison states 50% less weight than a steel body; this is a design-specific comparison. The design supports good milling performance and machining quality, long service life, low cutting resistance, high productivity and process stability.



Aluminium cutter bodies: Tool view.

CF: cutter body and spare parts

Section and exploded drawings show the body, cartridges and fasteners with their respective position numbers. Cutter bodies and cartridges are combined according to standard, wiper or high-feed design. Shoulder cartridges are available to customer requirements. Spare parts are charged separately.

CF: cutter bodies

Dimension/data block 1.

Standard item	High-feed item	ØD	Ød	A	B
CF 08050-6R(L)	CF 08050-10R(L)	80	25.4	9.5	6
CF 10063-10R(L)	CF 10063-12R(L)	100	31.75	12.7	8
CF 12563-12R(L)	CF 12563-16R(L)	125	38.1	15.9	10
CF 16063-16R(L)	CF 16063-18R(L)	160	50.8	19.0	11
CF 20063-20R(L)	CF 20063-24R(L)	200	47.625	25.4	14
CF 25063-24R(L)	CF 25063-30R(L)	250	47.625	25.4	14

Dimension/data block 2.

Standard item	T	Standard teeth	High-feed teeth	Weight [kg]	Arbor
CF 08050-6R(L)	50	6	10	0.7	FMA 25.4
CF 10063-10R(L)	63	10	12	1.0	FMA 31.75
CF 12563-12R(L)	63	12	16	1.8	FMA 38.1
CF 16063-16R(L)	63	16	18	2.9	FMA 50.8
CF 20063-20R(L)	63	20	24	4.5	FMA 47.625
CF 25063-24R(L)	63	24	30	7.0	FMA 47.625

Dimensions in mm. Roughing cartridges CFR(R), CFR(L); wiper cartridges CFW(R), CFW(L). Shoulder cartridges available to customer requirements.

CF: spare parts

Position	Component	Item/dimension
1	Cartridge (Rough)	CFR
1	Cartridge (Wiper)	CFW
2	Double Bolt	M8M5-7
3	Clamp Bolt	M5×12
4	Adjust Bolt	M5×8
	Coolant Bolt	

Spare parts are charged separately.



CF: cutter body and spare parts: Tool view.



CF: cutter body and spare parts: Tool view.



CF: cutter body and spare parts: Tool view.



CF: cutter body and spare parts: Tool view.



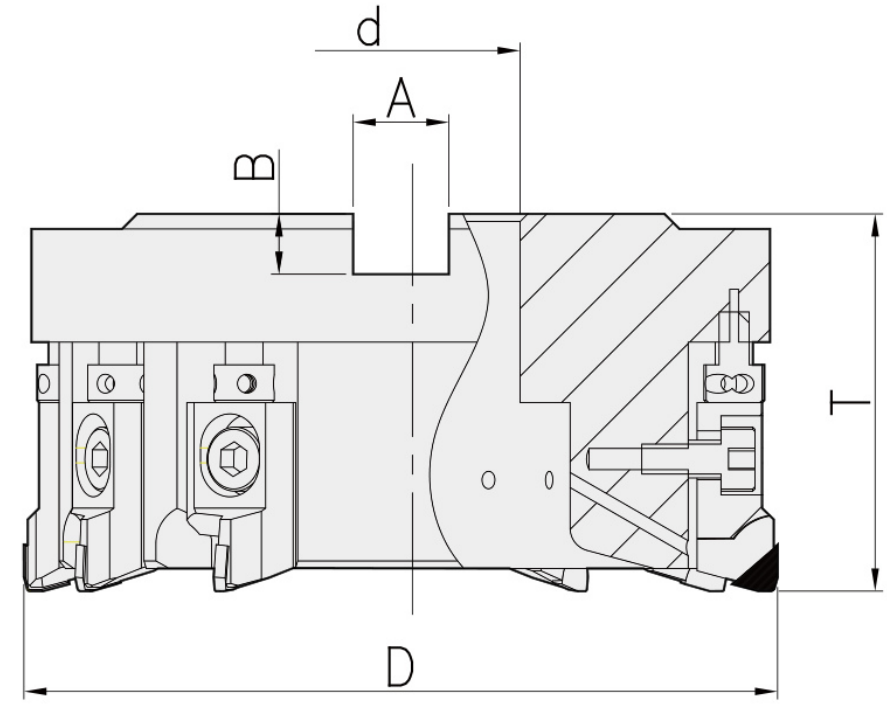
CF: cutter body and spare parts: Tool view.



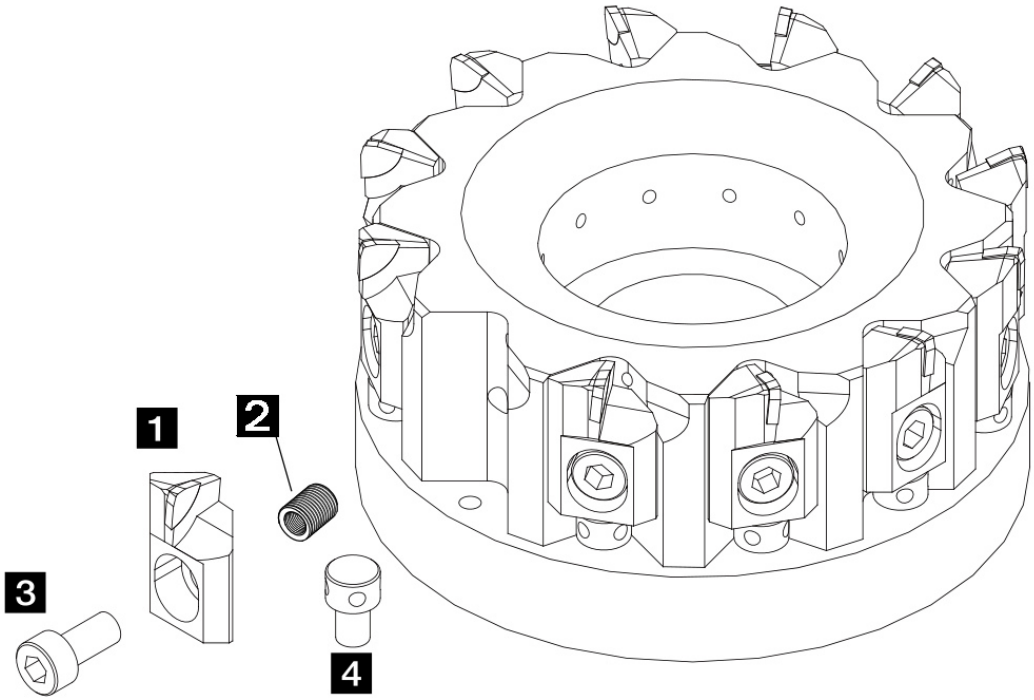
CF: cutter body and spare parts: Tool view.



CF: cutter body and spare parts: Tool view.



Tool: isolated dimensioned drawing; views and dimension references unchanged.



Tool: isolated dimensioned drawing; views and dimension references unchanged.

CF: cartridge setting

For CF/SD, A identifies the side clamp bolt, B the clamp bolt and C the adjustment bolt. First install the adjustment bolt in the cutter body and insert the cartridge. Gently tighten the clamp bolt and side clamp bolt. Press the cartridge down while clamping and temporarily tighten the bolts to 3 Nm with a torque wrench. Use the adjustment bolt to set the front cutting-edge height 10 µm below the target. Then tighten the clamp bolt and side clamp bolt to 10 Nm and use the adjustment bolt to set the edge to the target height. This setting sequence and these torques apply to the cartridge design illustrated here.

CFR: cartridges for the CF cutter body

Item	W	V	L	R	T
CFR	10.5	15	25		10
CFR-A	10.5	0	25		10
CFR-R	10.5	15	25	0.4	10
CFR-ES	10.5	15	25		10

Dimensions in mm; angular references follow the drawing. PCD grade headings EP20, EP55, EP750, EP58 and EP29; individual grade cells are unmarked.

CFW: wiper cartridge for the CF cutter body

Item	W	L	R	T
CFW	10	25	400	10

Dimensions in mm; angular references follow the drawing. PCD grade headings EP20, EP55, EP750, EP58 and EP29; individual grade cells are unmarked.



CF: cartridge setting: Tool view.

SD: cutter body and spare parts

Section and exploded drawings show the body, cartridges and fasteners with their respective position numbers. Cutter bodies and cartridges are combined according to standard, wiper or high-feed design. Shoulder cartridges are available to customer requirements. Spare parts are charged separately.

SD: cutter bodies

Dimension/data block 1.

Item, inch arbor	ØD	Ød	A	B	T
SD 08050-6R(L)	80	25.4	9.5	6	50
SD 10063-8R(L)	100	31.75	12.7	8	63
SD 12563-10R(L)	125	38.1	15.9	10	63
SD 16063-12R(L)	160	50.8	19.0	11	63
SD 20063-16R(L)	200	47.625	25.4	14	63
SD 25063-18R(L)	250	47.625	25.4	14	63

Dimension/data block 2.

Item, inch arbor	Teeth	Weight [kg]	Arbor
SD 08050-6R(L)	6	0.7	FMA 25.4
SD 10063-8R(L)	8	1.0	FMA 31.75
SD 12563-10R(L)	10	1.8	FMA 38.1
SD 16063-12R(L)	12	2.9	FMA 50.8
SD 20063-16R(L)	16	4.5	FMA 47.625
SD 25063-18R(L)	18	7.0	FMA 47.625

Dimensions in mm. Roughing cartridges SDR(R/L), wiper cartridges SDW(R/L). Shoulder cartridges available to customer requirements.

SD: spare parts

Position	Component	Item/dimension
1	Cartridge (Rough)	SDR
1	Cartridge (Wiper)	SDW
2	Double Bolt	M6×M10-8
3	Clamp Bolt	M6×15
4	Side Clamp Bolt	M6×10
5	Adjust Bolt	M5×0.8
6	Chip Cover	4×9.5×18
7	Chip Cover Bolt	M4×10
8	Balancing Bolt	M6×10
	Coolant Bolt	

Spare parts are charged separately.



SD: cutter body and spare parts: Tool view.



SD: cutter body and spare parts: Tool view.



SD: cutter body and spare parts: Tool view.



SD: cutter body and spare parts: Tool view.



SD: cutter body and spare parts: Tool view.



SD: cutter body and spare parts: Tool view.



SD: cutter body and spare parts: Tool view.



SD: cutter body and spare parts: Tool view.



SD: cutter body and spare parts: Tool view.

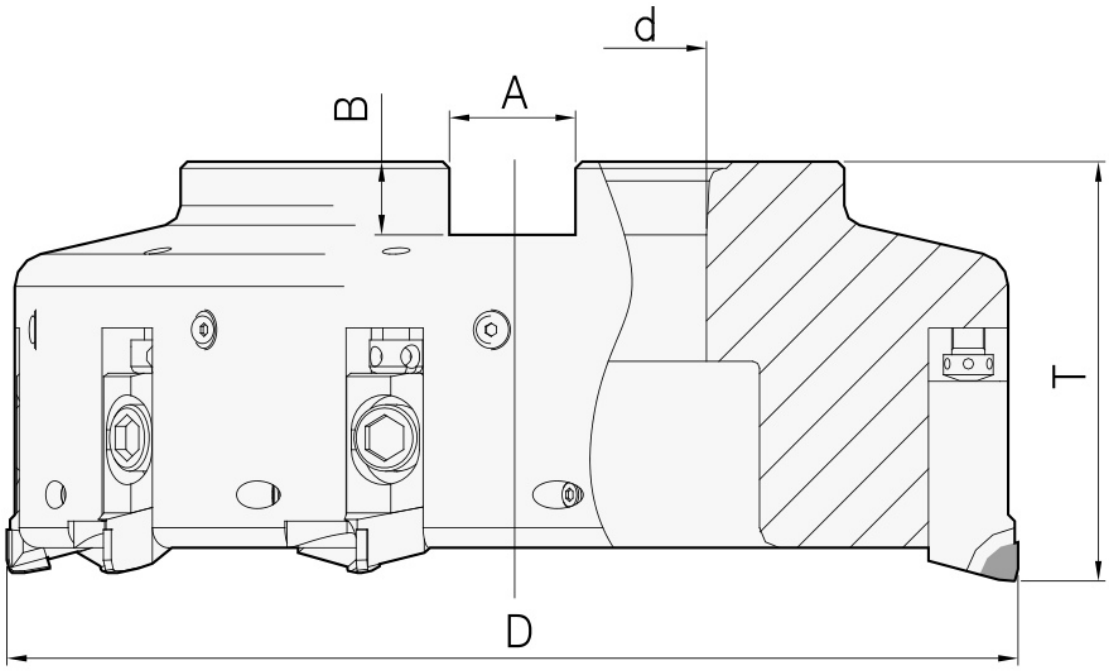


SD: cutter body and spare parts: Tool view.

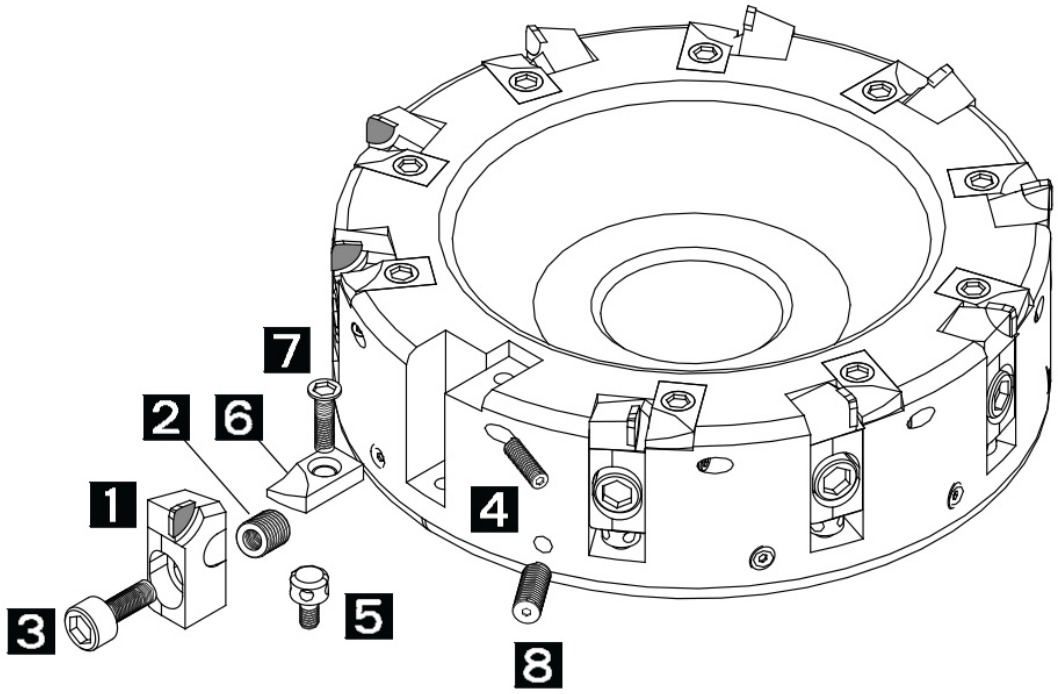


SD: cutter body and spare parts: Tool view.

SD: cutter body and spare parts: Tool view.



Tool: isolated dimensioned drawing; views and dimension references unchanged.



Tool: isolated dimensioned drawing; views and dimension references unchanged.

SD: cartridge setting

For CF/SD, A identifies the side clamp bolt, B the clamp bolt and C the adjustment bolt. First install the adjustment bolt in the cutter body and insert the cartridge. Gently tighten the clamp bolt and side clamp bolt. Press the cartridge down while clamping and temporarily tighten the bolts to 3 Nm with a torque wrench. Use the adjustment bolt to set the front cutting-edge height 10 µm below the target. Then tighten the clamp bolt and side clamp bolt to 10 Nm and use the adjustment bolt to set the edge to the target height. This setting sequence and these torques apply to the cartridge design illustrated here.

SDR: cartridges for the SD cutter body

Dimension/data block 1.

Item	W	V	α	L	R
SDR	13.5	15	11	30	
SDR-A	13.5	0	11	30	
SDR-R	13.5	15	11	30	0.4
SDR-ES (EDGE HONE)	13.5	15	11	30	

Dimension/data block 2.

Item	T
SDR	12
SDR-A	12
SDR-R	12
SDR-ES (EDGE HONE)	12

Dimensions in mm; angular references follow the drawing. PCD grade headings EP20, EP55, EP750, EP58 and EP29; individual grade cells are unmarked.

SDW: wiper cartridges for the SD cutter body

Dimension/data block 1.

Item	W	Z	α	L	R
SDW	13		11	30	400
SDW-ES (EDGE HONE)	13		11	30	400

Dimension/data block 2.

Item	T
SDW	12
SDW-ES (EDGE HONE)	12

Dimensions in mm; angular references follow the drawing. PCD grade headings EP20, EP55, EP750, EP58 and EP29; individual grade cells are unmarked.



SD: cartridge setting: Tool view.



SD: cartridge setting: Tool view.

HF: cutter body and spare parts

Section and exploded drawings show the body, cartridges and fasteners with their respective position numbers. Cutter bodies and cartridges are combined according to standard, wiper or high-feed design. Shoulder cartridges are available to customer requirements. Spare parts are charged separately.

HF: high-feed cutter bodies

Dimension/data block 1.

Item, inch arbor	ØD	Ød	A	B	T
HF 08050-10R(L)	80	25.4	9.5	6	50
HF 10063-12R(L)	100	31.75	12.7	8	63
HF 12563-15R(L)	125	38.1	15.9	10	63
HF 16063-18R(L)	160	50.8	19.0	11	63
HF 25063-24R(L)	200	47.625	25.4	14	63
HF 25063-30R(L)	250	47.625	25.4	14	63

Dimension/data block 2.

Item, inch arbor	Teeth	Weight [kg]	Arbor
HF 08050-10R(L)	10	0.7	FMA 25.4
HF 10063-12R(L)	12	1.0	FMA 31.75
HF 12563-15R(L)	15	1.8	FMA 38.1
HF 16063-18R(L)	18	2.9	FMA 50.8
HF 25063-24R(L)	24	4.5	FMA 47.625
HF 25063-30R(L)	30	7.0	FMA 47.625

Dimensions in mm. Roughing cartridges HFR(R/L), wiper cartridges HFW(R/L). The source assigns HF 25063-24R(L) to diameter 200 mm; confirm this combination before ordering. Shoulder cartridges available on request.

HF: spare parts

Position	Component	Item/dimension
1	Cartridge (Rough)	HFR
1	Cartridge (Wiper)	HFW
2	Double Bolt	M8M5-7
3	Clamp Bolt	M5×12
4	Adjust Bolt	M5×8
	Coolant Bolt	

Spare parts are charged separately.



HF: cutter body and spare parts: Tool view.



HF: cutter body and spare parts: Tool view.



HF: cutter body and spare parts: Tool view.



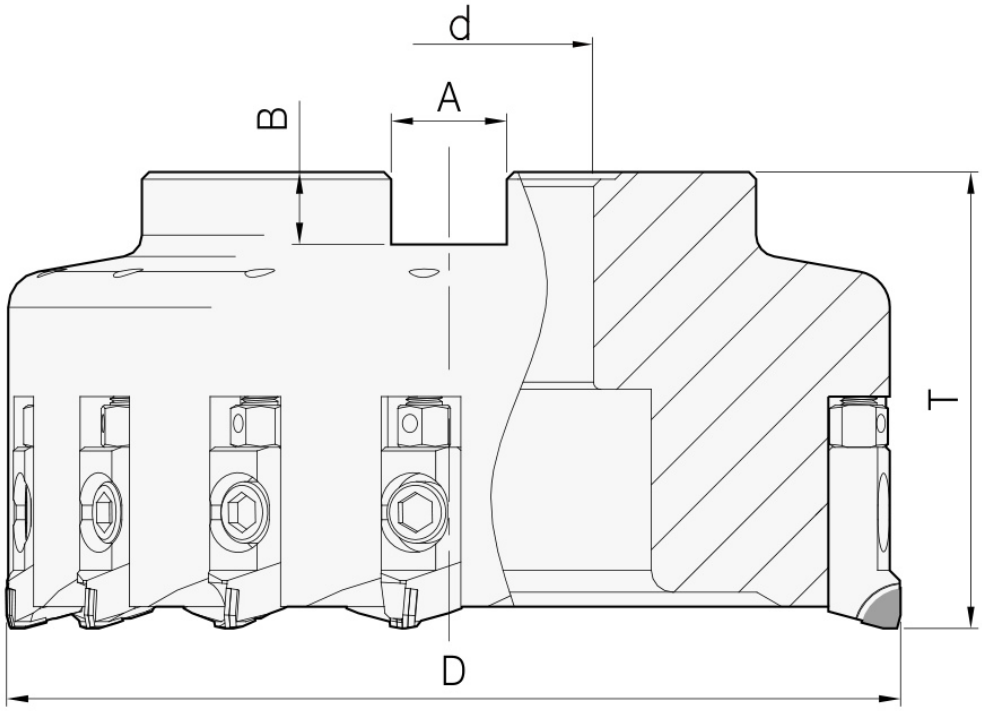
HF: cutter body and spare parts: Tool view.



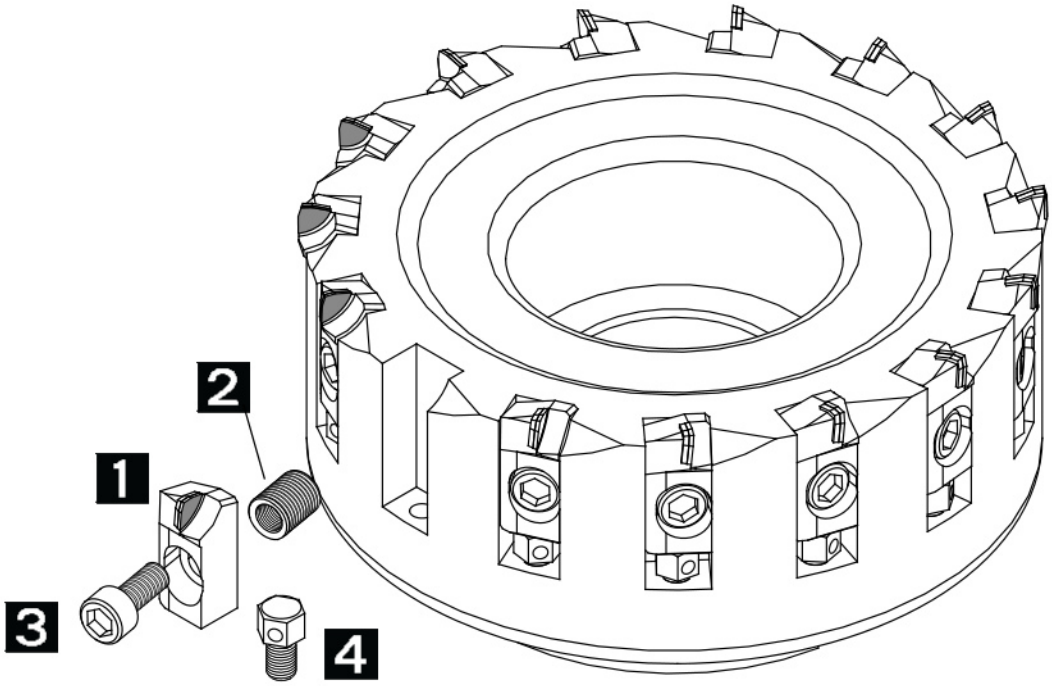
HF: cutter body and spare parts: Tool view.



HF: cutter body and spare parts: Tool view.



Tool: isolated dimensioned drawing; views and dimension references unchanged.



Tool: isolated dimensioned drawing; views and dimension references unchanged.

HF: cartridge setting

For HF, A identifies the clamp bolt and B the adjustment bolt. First install the adjustment bolt in the cutter body and insert the cartridge. Gently tighten the clamp bolt. Press the cartridge down while clamping and temporarily tighten the bolt to 3 Nm with a torque wrench. Use the adjustment bolt to set the front cutting-edge height 10 µm below the target. Then tighten the clamp bolt to 10 Nm and use the adjustment bolt to set the edge to the target height. This setting sequence and these torques apply to the cartridge design illustrated here.

HFR: cartridges for the HF cutter body

Dimension/data block 1.

Item	W	Z	α	L	R
HFR	10	15	11	25	
HFR-A	10	0	11	25	
HFR-R	10	15	11	25	0.4
HFR-ES	10	15	11	25	

Dimension/data block 2.

Item	T
HFR	11
HFR-A	11
HFR-R	11
HFR-ES	11

Dimensions in mm; angular references follow the drawing. PCD grade headings EP20, EP55, EP750, EP58 and EP29; individual grade cells are unmarked.

HFW: wiper cartridges for the HF cutter body

Dimension/data block 1.

Item	W	Z	α	L	R
HFW	9.8			25	400
HFW-ES	9.8			25	400

Dimension/data block 2.

Item	T
HFW	11
HFW-ES	11

Dimensions in mm; angular references follow the drawing. PCD grade headings EP20, EP55, EP750, EP58 and EP29; individual grade cells are unmarked.



HF: cartridge setting: Tool view.



HF: cartridge setting: Tool view.

Aluminium cutter bodies: additional types

Types distinguish diameter D, tooth count Z, mounting dimension H, body thickness T and right-/left-hand design. Views retain the original directional and dimensional references.

Aluminium cutter bodies: RH/LH types

Item	D	Z	H	T
120D-35T-24H-10 Z-RH	120	10	24	35
120D-35T-24H-10 Z-LH	120	10	24	35
158D-40T-70H-6Z -RH	158	6	70	40
158D-40T-70H-6Z -LH	158	6	70	40
198D-45T-40H-6Z -RH	198	6	40	45
198D-45T-40H-6Z -LH	198	6	40	45
220D-40T-65H-6 Z-RH	220	6	65	40
220D-40T-65H-6 Z-LH	220	6	65	40
248D-45T-40H-12 Z-RH	248	12	40	45
248D-45T-40H-12 Z-LH	248	12	40	45

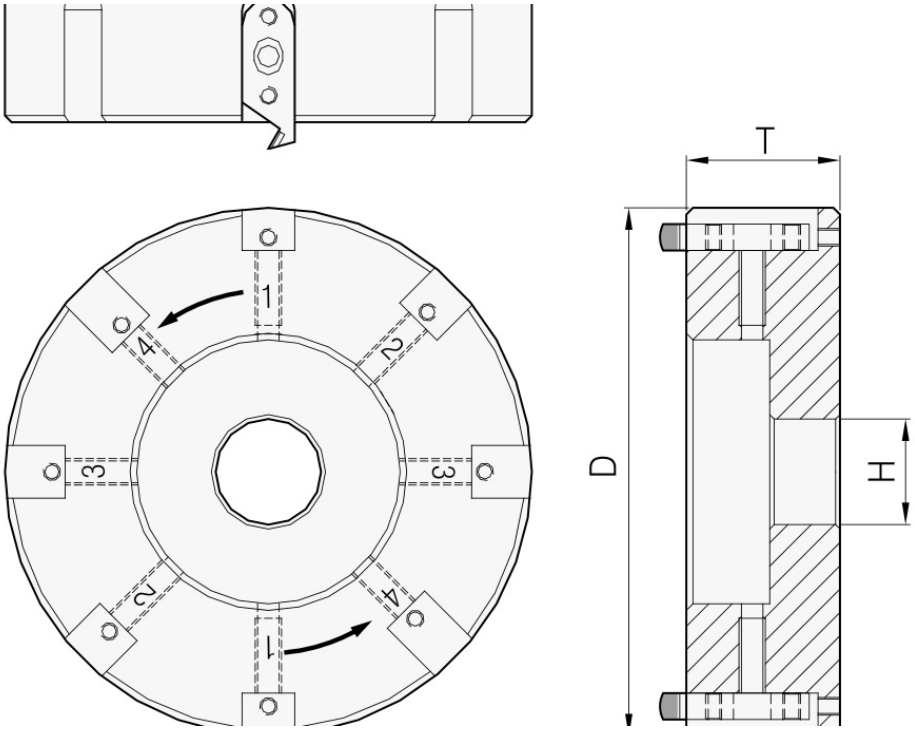
Dimensions in mm; Z identifies the number of teeth. The source lists the items under Inch type; dimension columns explicitly use mm.



Aluminium cutter bodies: additional types: Tool view.



Aluminium cutter bodies: additional types: Tool view.



Tool: isolated dimensioned drawing; views and dimension references unchanged.

Made-to-order milling tools

PCD inserts and cartridges can be customised. Samples are required for cartridge production. The section drawing retains D, T, A, B and H as references for specification.



Made-to-order milling tools: Tool view.



Made-to-order milling tools: Tool view.



Made-to-order milling tools: Tool view.



Made-to-order milling tools: Tool view.

Tool designs



Tool designs: Tool view.

Steel cutter bodies and PCBN inserts

The illustrated steel cutter bodies and SNGN inserts correspond to the types listed in the tables. Drawings retain D, H and T and the edge geometry. Customised PCBN inserts and cartridges require samples or drawings of the tool currently in use.

Steel cutter bodies

Item	D	Z	H	T
125D-63T-40H-16Z	125	16	40	63
160D-63T-40H-18Z	160	18	40	63
200D-63T-60H-12Z	200	12	60	63
250D-63T-50H-24Z	250	24	50	63
250D-45T-109.88H-16Z	250	16	109.88	45

Dimensions in mm; Z identifies the number of teeth.

SNGN: PCBN inserts for steel cutter bodies

Dimension/data block 1.

Metric ISO	Inch ISO	W	α	V	R
SNGN 1506APTR	SNGN 54APTR	12.7	11	45	250
SNGN 1506APTL	SNGN 54APTL	12.7	11	45	250

Dimension/data block 2.

Metric ISO	Inch ISO	T	L
SNGN 1506APTR	SNGN 54APTR	6.35	15.9
SNGN 1506APTL	SNGN 54APTL	6.35	15.9

Dimensions in mm; angular references follow the drawing. PCBN grade headings EB11, EB210, EB51, EB71 and EB710; individual grade cells are unmarked.



Steel cutter bodies and PCBN inserts: Tool view.



Steel cutter bodies and PCBN inserts: Tool view.



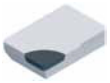
Steel cutter bodies and PCBN inserts: Tool view.



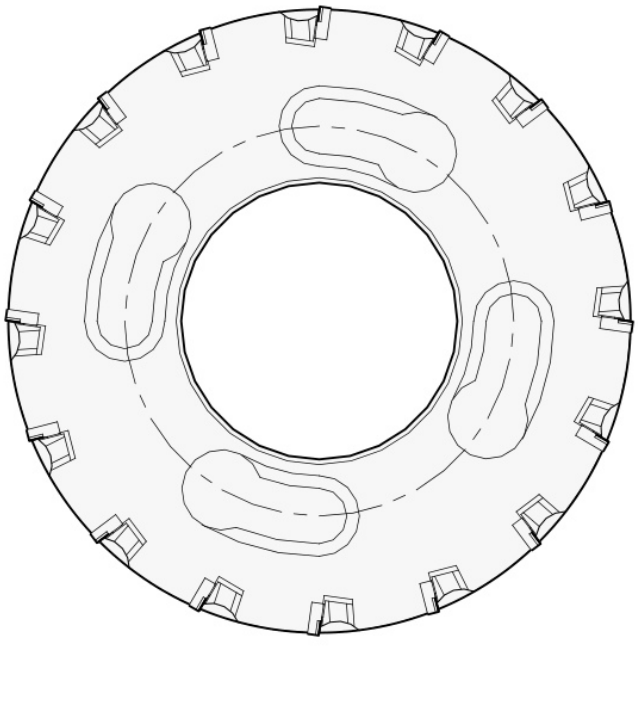
Steel cutter bodies and PCBN inserts: Tool view.



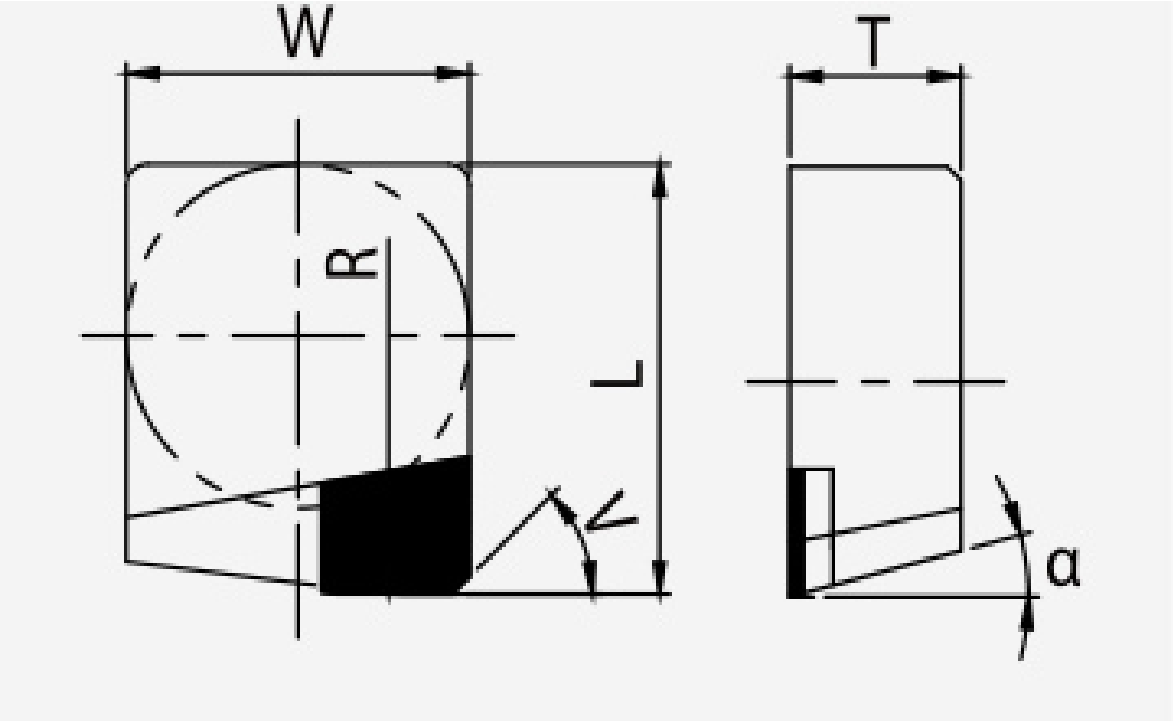
Steel cutter bodies and PCBN inserts: Tool view.



Steel cutter bodies and PCBN inserts: Tool view.



Tool: isolated dimensioned drawing; views and dimension references unchanged.



Tool: isolated dimensioned drawing; views and dimension references unchanged.

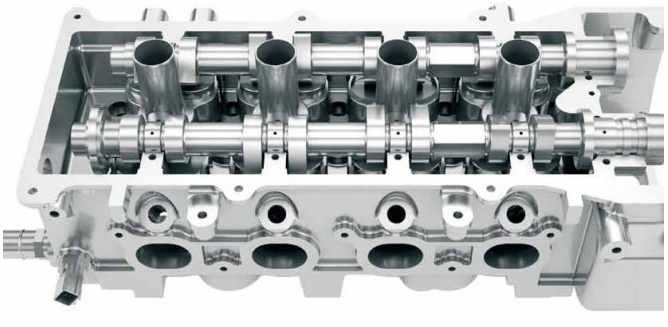
Tool designs



Tool designs: Component and machining view.

Rotating tools

The rotating-tool programme covers high-speed steel, solid carbide, carbide-tipped tools, cermet, PCD and PCBN, with or without internal coolant. Tool and workpiece examples show designs for different hole-making and machining tasks.



Rotating tools: Component and machining view.



Rotating tools: Tool view.



Rotating tools: Tool view.

Tool designs



Tool designs: Tool view.

Rotating tools: design examples



Rotating tools: design examples: Tool view.

Tool designs



Tool designs: Tool view.

PCD/CVD square and ball-nose end mills

EDES identifies PCD/CVD square end mills. Common designs cover diameters D3 to D20 with different edge lengths. Illustrated edges have a 0° axial angle; types with coolant supply and without internal supply are shown. Discuss over-centre cutting types and coolant holes separately with us.

EDEB identifies PCD/CVD ball-nose end mills. One or two teeth are selected to suit the diameter. The dimension drawing retains radius R and the shaft designation Ød h6. Coolant holes require separate discussion.

EDES: PCD/CVD square end mills

Dimension/data block 1.

Item	D	d	L1	L2	L
EDES 10303-0515-60	3	3	5	15	60
EDES 10404-0715-60	4	4	7	15	60
EDES 10505-1020-60	5	5	10	20	60
EDES 10606-1020-60	6	6	10	20	60
EDES 20808-1020-60	8	8	10	20	60
EDES 21010-1030-75	10	10	10	30	75
EDES 21212-1035-85	12	12	10	35	85
EDES 21616-1035-85	16	16	10	35	85
EDES 22020-1040-100	20	20	10	40	100

Dimension/data block 2.

Item	Z
EDES 10303-0515-60	1
EDES 10404-0715-60	1
EDES 10505-1020-60	1
EDES 10606-1020-60	1
EDES 20808-1020-60	2
EDES 21010-1030-75	2
EDES 21212-1035-85	2
EDES 21616-1035-85	2
EDES 22020-1040-100	2

EDEB: PCD/CVD ball-nose end mills

Dimension/data block 1.

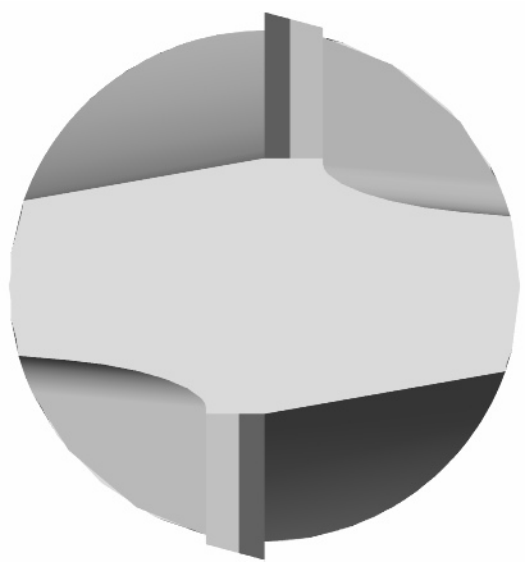
Item	D	d	L1	L2	L
EDEB 10303-0515-60	3	3	5	15	60
EDEB 10404-0715-60	4	4	7	15	60
EDEB 10505-1020-60	5	5	10	20	60
EDEB 10606-1020-60	6	6	10	20	60
EDEB 20606-1020-60	6	6	10	20	60
EDEB 20808-1020-60	8	8	10	20	60
EDEB 21010-1020-80	10	10	10	20	80
EDEB 21212-1020-80	12	12	10	20	80

Dimension/data block 2.

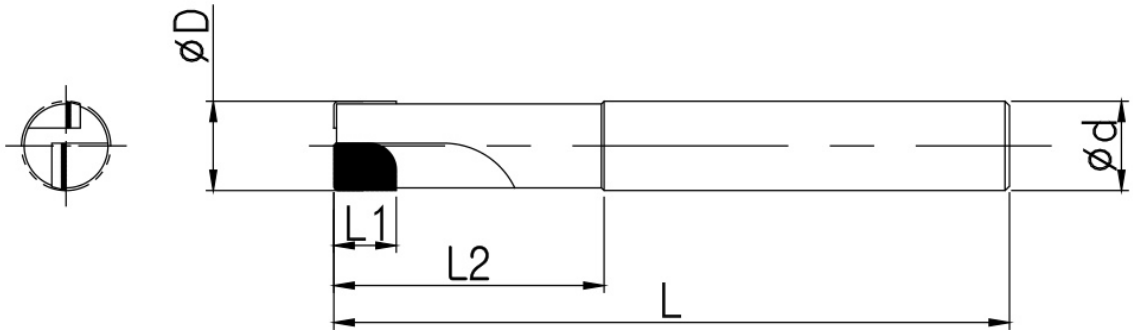
Item	Z
EDEB 10303-0515-60	1
EDEB 10404-0715-60	1
EDEB 10505-1020-60	1
EDEB 10606-1020-60	1
EDEB 20606-1020-60	2
EDEB 20808-1020-60	2
EDEB 21010-1020-80	2
EDEB 21212-1020-80	2



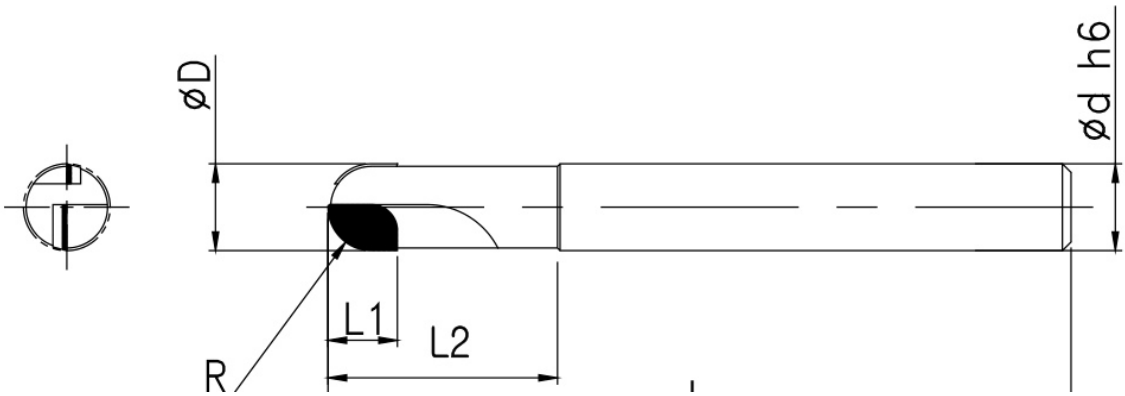
PCD/CVD square and ball-nose end mills: Tool view.



PCD/CVD square and ball-nose end mills: Tool view.



Tool: isolated dimensioned drawing; views and dimension references unchanged.



Tool: isolated dimensioned drawing; views and dimension references unchanged.

EBEB: PCBN ball-nose end mills

EBEB identifies PCBN ball-nose end mills. The specific design on this page states diameters of 2.0 to 3.0 mm, two teeth and a 35° helix angle. Types with coolant supply and without internal supply are illustrated. The table lists the corresponding neck and overall lengths. The source's general introductory sentence states D3 to D20; the examples listed here are therefore specified by their individual table dimensions.

EBEB: PCBN ball-nose end mills

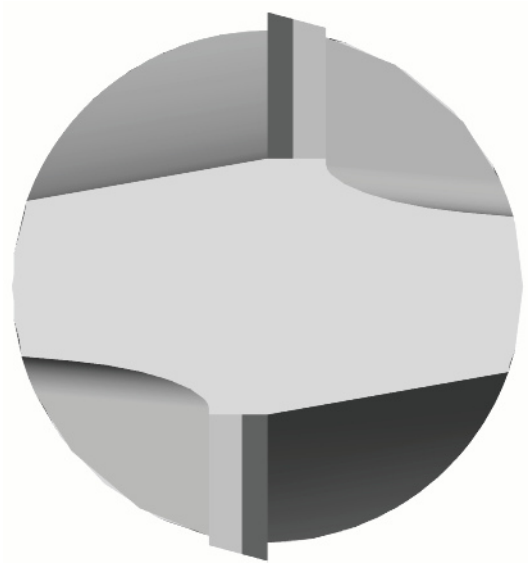
Dimension/data block 1.

Item	D	R	L1	L2	L
EBEB 20204-0104-50	2	1	1.2	4	50
EBEB 20204-0106-50	2	1	1.2	6	50
EBEB 20204-0108-50	2	1	1.2	8	50
EBEB 20204-0110-50	2	1	1.2	10	50
EBEB 20204-0112-50	2	1	1.2	12	50
EBEB 20204-0114-50	2	1	1.2	14	50
EBEB 20204-0116-50	2	1	1.2	16	50
EBEB 20204-0118-50	2	1	1.2	18	50
EBEB 20204-0120-50	2	1	1.2	20	50
EBEB 20306-1.508-66	3	1.5	1.8	8	66
EBEB 20306-1.510-66	3	1.5	1.8	10	66
EBEB 20306-1.512-66	3	1.5	1.8	12	66

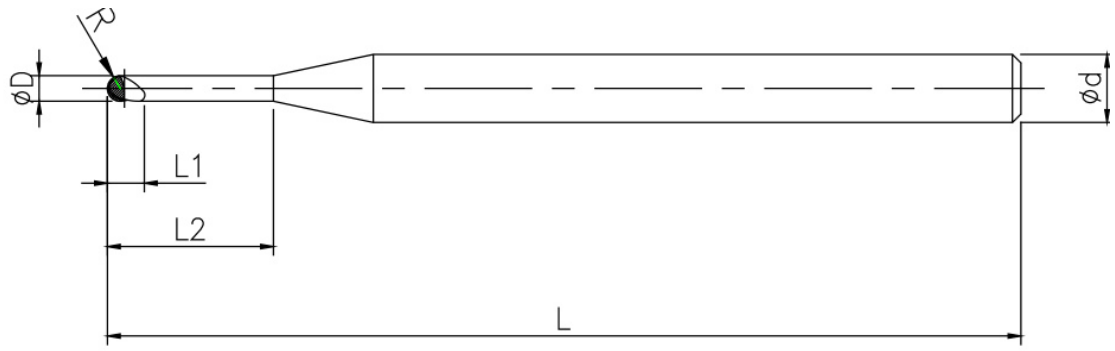
Item	D	R	L1	L2	L
EBEB 20306-1.516-66	3	1.5	1.8	16	66
EBEB 20306-1.520-66	3	1.5	1.8	20	66
EBEB 20306-1.525-66	3	1.5	1.8	25	66
EBEB 20306-1.530-66	3	1.5	1.8	30	66

Dimension/data block 2.

Item	d
EBEB 20204-0104-50	4
EBEB 20204-0106-50	4
EBEB 20204-0108-50	4
EBEB 20204-0110-50	4
EBEB 20204-0112-50	4
EBEB 20204-0114-50	4
EBEB 20204-0116-50	4
EBEB 20204-0118-50	4
EBEB 20204-0120-50	4
EBEB 20306-1.508-66	6
EBEB 20306-1.510-66	6
EBEB 20306-1.512-66	6
EBEB 20306-1.516-66	6
EBEB 20306-1.520-66	6
EBEB 20306-1.525-66	6
EBEB 20306-1.530-66	6



EBEB: PCBN ball-nose end mills: Tool view.



Tool: isolated dimensioned drawing; views and dimension references unchanged.

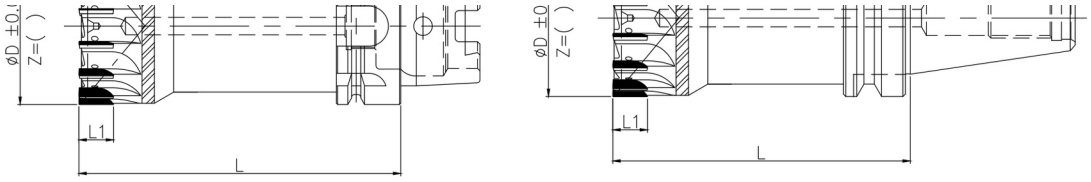
EDEM: monoblock end mills

EDEM identifies PCD/CVD monoblock end mills. Drawings show HSK and BT types with ØD ±0.05 and Z, L1 and L references. Available connections are HSK 32, 40, 50, 63 and 100, plus BT 30, 40 and 50, SK 30, 40 and 50 and CAT 30, 40 and 50. Specific table items retain their listed connections.

EDEM: PCD/CVD monoblock end mills

Item	ØD	d	L1	L	Type
EDEM 0832-HSKA63	30	8	14	150	HSKA63
EDEM 0840-HSKA63	40	8	14	150	HSKA63
EDEM 0850-HSKA63	50	8	14	150	HSKA63
EDEM 1463-HSKA63	63	14	14	150	HSKA63
EDEM 1463-HSKA100	63	14	14	150	HSKA100
EDEM 1463-BT40	63	14	14	150	BT40

The source lists EDEM 0832-HSKA63 with ØD = 30 mm; the code is not used to silently alter the dimension.



Tool: isolated dimensioned drawing; views and dimension references unchanged.

EDEH: helical PCD end mills

The special helical PCD end mill is designed for high cutting performance and long tool life. Its edge geometry supports favourable cutting forces and high removal rates. Illustrations distinguish the shown tooth counts, a positive axial angle and types with or without internal coolant supply.

EDEH: helical PCD end mills

Dimension/data block 1.

Item	D	d	L1	L2	L
EDEH 31616-30-120	16	16	30	50	120
EDEH 32020-30-120	20	20	30	50	120
EDEH 32525-30-120	25	25	30	50	120
EDEH 33032-30-120	30	32	30	50	120

Dimension/data block 2.

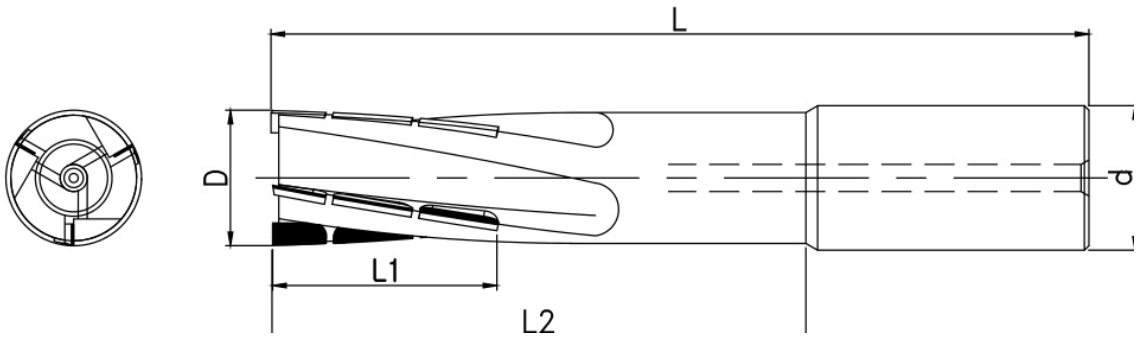
Item	F
EDEH 31616-30-120	3
EDEH 32020-30-120	3
EDEH 32525-30-120	3
EDEH 33032-30-120	4



EDEH: helical PCD end mills: Tool view.



EDEH: helical PCD end mills: Tool view.



Tool: isolated dimensioned drawing; views and dimension references unchanged.

End mills to customer requirements

The illustrated customised types cover faces, slots, chamfers and profiles. Tool geometry and edge arrangement are adapted to your machining task.



End mills to customer requirements: Tool view.



End mills to customer requirements: Tool view.



End mills to customer requirements: Tool view.



End mills to customer requirements: Tool view.



End mills to customer requirements: Tool view.



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End mills to customer requirements: Tool view.



End mills to customer requirements: Tool view.



End mills to customer requirements: Tool view.



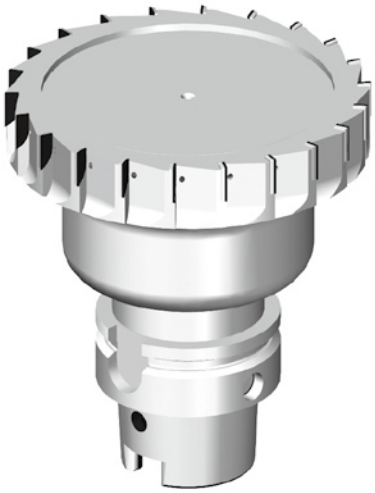
End mills to customer requirements: Tool view.



End mills to customer requirements: Tool view.



End mills to customer requirements: Tool view.



End mills to customer requirements: Tool view.



End mills to customer requirements: Tool view.

Tool designs



Tool designs: Tool view.

PCD reamers: standard and chip-breaker types

EDRS identifies straight-flute PCD reamers. EDRS CB identifies the corresponding chip-breaker type. Both dimension drawings retain Ød h6. Types with and without internal coolant supply are illustrated. Chip-breaker design varies with cutting conditions. Chip images illustrate long chips and shorter, broken chips; the source identifies the edge detail as the normal type.

EDRS: PCD reamers

Dimension/data block 1.

Item	ØD	Ød	L1	L2	L
EDRS 20406-15-60	4	6	15	45	60
EDRS 20506-15-60	5	6	15	45	60
EDRS 20606-25-80	6	6	25	55	80
EDRS 20808-25-80	8	8	25	55	80
EDRS 21010-40-100	10	10	40	60	100
EDRS 21212-40-100	12	12	40	60	100

Dimension/data block 2.

Item	Z
EDRS 20406-15-60	2
EDRS 20506-15-60	2
EDRS 20606-25-80	2
EDRS 20808-25-80	2
EDRS 21010-40-100	2
EDRS 21212-40-100	2

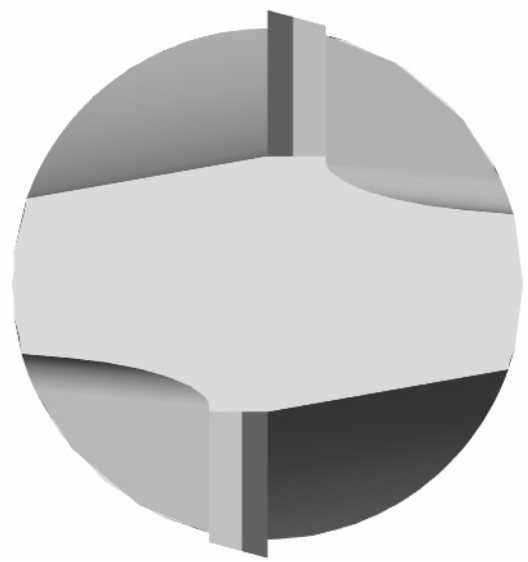
EDRS CB: PCD reamers

Dimension/data block 1.

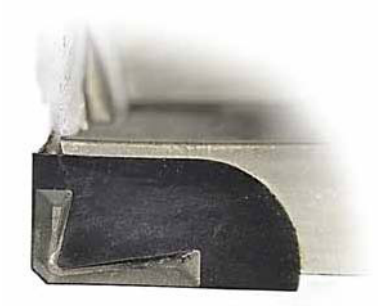
Item	ØD	Ød	L1	L2	L
EDRS CB 20406-15-60	4	6	15	45	60
EDRS CB 20506-15-60	5	6	15	45	60
EDRS CB 20606-25-80	6	6	25	55	80
EDRS CB 20808-25-80	8	8	25	55	80
EDRS CB 21010-40-100	10	10	40	60	100
EDRS CB 21212-40-100	12	12	40	60	100

Dimension/data block 2.

Item	Z
EDRS CB 20406-15-60	2
EDRS CB 20506-15-60	2
EDRS CB 20606-25-80	2
EDRS CB 20808-25-80	2
EDRS CB 21010-40-100	2
EDRS CB 21212-40-100	2



PCD reamers: standard and chip-breaker types: Tool view.



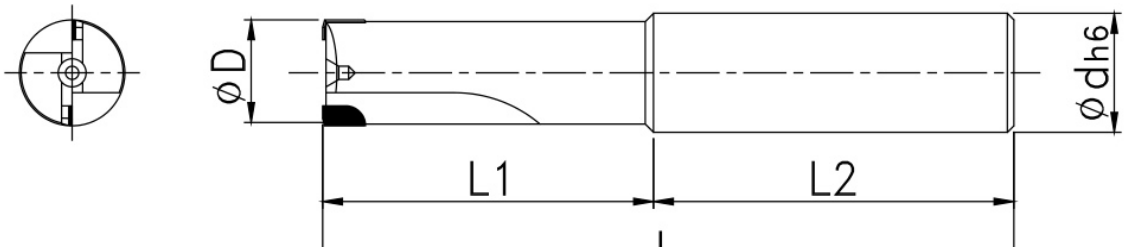
PCD reamers: standard and chip-breaker types: Tool view.



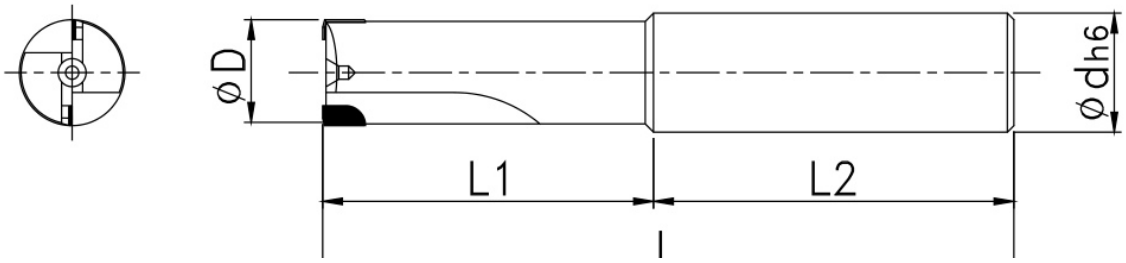
PCD reamers: standard and chip-breaker types: Tool view.



PCD reamers: standard and chip-breaker types: Tool view.



Tool: isolated dimensioned drawing; views and dimension references unchanged.



Tool: isolated dimensioned drawing; views and dimension references unchanged.

Tool designs



Tool designs: Tool view.

Tool designs



Tool designs: Tool view.

Customised reamers and combination tools

Product examples show different reamer and combination-tool geometries for faces, slots, chamfers and profiles. EHWA adapts the tool design to your requirements.



Customised reamers and combination tools: Tool view.



Customised reamers and combination tools: Tool view.



Customised reamers and combination tools: Tool view.



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Customised reamers and combination tools: Tool view.



Customised reamers and combination tools: Tool view.

Tool designs



Tool designs: Tool view.

Helical PCD drills: HELIX E, S and D

HELIX E identifies the Economic PCD design EDDHE; HELIX S the Sandwich PCD design EDDHS. HELIX D shows the Dom PCD design. End and side images retain their different cutting-material arrangements. Dimension drawings identify ØD, L1, L and Ød h6; item and dimension tables retain every listed size.

EDDHE(or S): helical PCD drills

Item	ØD	L1	L	Ød
EDDHE(or S) 20303-30-80	3	30	80	3
EDDHE(or S) 20404-30-80	4	30	80	4
EDDHE(or S) 20505-30-80	5	30	80	5
EDDHE(or S) 20606-30-80	6	30	80	6
EDDHE(or S) 20707-35-90	7	35	90	7
EDDHE(or S) 20808-35-90	8	35	90	8
EDDHE(or S) 20909-40-100	9	40	100	9
EDDHE(or S) 21010-40-100	10	40	100	10
EDDHE(or S) 21111-50-110	11	50	110	11
EDDHE(or S) 21212-50-110	12	50	110	12

EDHDD: helical PCD drills

Item	ØD	L1	L	Ød
EDHDD 20303-30-80	3	30	80	3
EDHDD 20404-30-80	4	30	80	4
EDHDD 20505-30-80	5	30	80	5
EDHDD 20606-30-80	6	30	80	6
EDHDD 20707-35-90	7	35	90	7
EDHDD 20808-35-90	8	35	90	8
EDHDD 20909-40-100	9	40	100	9
EDHDD 21010-40-100	10	40	100	10
EDHDD 21111-50-110	11	50	110	11
EDHDD 21212-50-110	12	50	110	12

Dimensions in mm. The second table prints EDHDD; its legend says EDDHD (Dom PCD). Confirm the ordering designation accordingly.



Helical PCD drills: HELIX E, S and D: Tool view.



Helical PCD drills: HELIX E, S and D: Tool view.



Helical PCD drills: HELIX E, S and D: Tool view.



Helical PCD drills: HELIX E, S and D: Tool view.



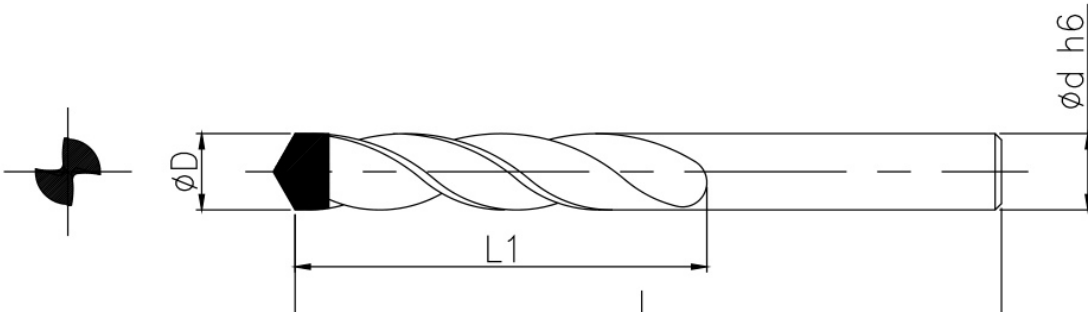
Helical PCD drills: HELIX E, S and D: Tool view.



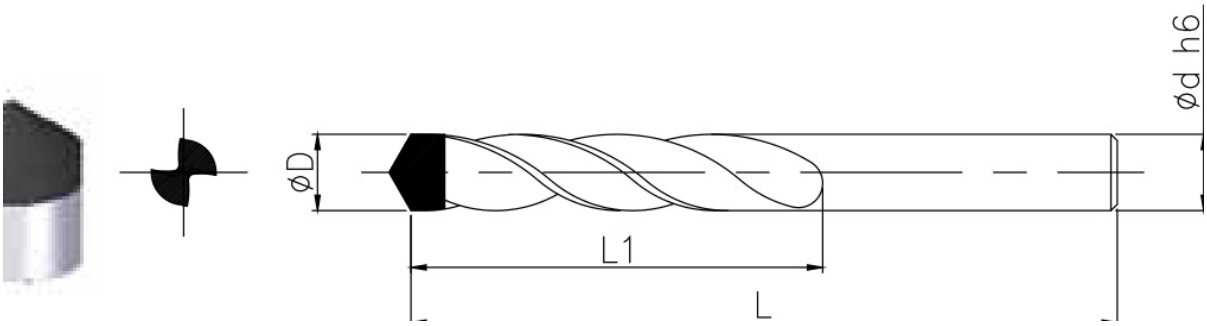
Helical PCD drills: HELIX E, S and D: Tool view.



Helical PCD drills: HELIX E, S and D: Tool view.



Tool: isolated dimensioned drawing; views and dimension references unchanged.



Tool: isolated dimensioned drawing; views and dimension references unchanged.

EDDS: straight-flute PCD drills

EDDS identifies straight-flute PCD drills listed under the source term burnishing drill. The dimension drawing retains ØD, L1, L and Ød h6. Customised designs for faces, slots, chamfers and profiles are adapted to your requirements.

EDDS: straight-flute PCD drills

Item	ØD	L1	L	Ød
EDDS 20505-30-80	5	30	80	5
EDDS 20606-30-80	6	30	80	6
EDDS 20707-35-90	7	35	90	7
EDDS 20808-35-90	8	35	90	8
EDDS 20909-40-100	9	40	100	9
EDDS 21010-40-100	10	40	100	10
EDDS 21111-50-110	11	50	110	11
EDDS 21212-50-110	12	50	110	12



EDDS: straight-flute PCD drills: Tool view.



EDDS: straight-flute PCD drills: Tool view.



EDDS: straight-flute PCD drills: Tool view.



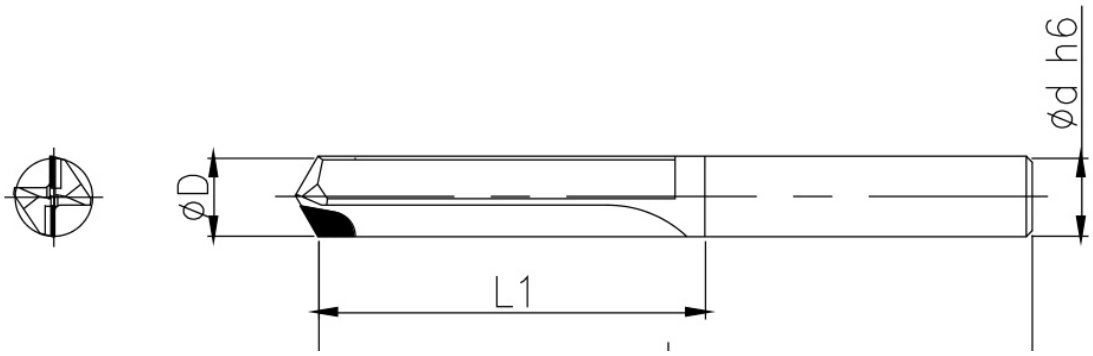
EDDS: straight-flute PCD drills: Tool view.



EDDS: straight-flute PCD drills: Tool view.



EDDS: straight-flute PCD drills: Tool view.



Tool: isolated dimensioned drawing; views and dimension references unchanged.

EDTMS: drill thread milling

EDTMS identifies straight-flute diamond thread milling tools. The tool drawing retains the 140° point angle, the illustrated 40° reference and D, D1, D2, Dc, d, W, Le, L1, L2, L3 and L. Types 1.5 × D, 2.0 × D and 2.5 × D retain their separate thread lengths.

The source's BGF thread reference names metric ISO threads according to DIN 13 and DIN 8140. In the hole drawing, BT means drill depth, EL thread engagement and TL full thread length; D, D1, D3.1 and D9 references and 140° and 90° are retained. Specify the required thread and, where applicable, the wire thread insert for the actual design.

EDTMS: drill thread milling tools

Dimension/data block 1.

Item	L	L3	L1	L2	W
EDTMS 1.5D M8-1.25	70.3	14.4	13.4	40	1.3
EDTMS 1.5D M10-1.5	74.5	18.9	17.6	45	1.5
EDTMS 1.5D M12-1.75	83.8	21.8	20.2	45	1.5
EDTMS 2.0D M8-1.25	74	18.2	17.1	40	1.3
EDTMS 2.0D M10-1.5	79	23.4	22.1	45	1.5
EDTMS 2.0D M12-1.75	89	27.1	25.5	45	1.5
EDTMS 2.0D M14-2.00	102	32.8	30.9	48	1.5
EDTMS 2.0D M16-2.00	102	37.1	35	48	1.5
EDTMS 2.5D M8-1.25	74	23.2	22.1	40	1.3
EDTMS 2.5D M10-1.50	79	27.9	26.6	45	1.5
EDTMS 2.5D M12-1.75	89	34.1	32.5	45	1.5

Item	L	L3	L1	L2	W
EDTMS 2.5D M14-2.00	102	38.8	36.9	48	1.5
EDTMS 2.5D M16-2.00	102	45.1	43	48	1.5

Dimension/data block 2.

Item	D	d	D1	Dc	D2
EDTMS 1.5D M8-1.25	6.8	10	9	8.3	6.45
EDTMS 1.5D M10-1.5	7.5	12	11	10.3	8.08
EDTMS 1.5D M12-1.75	10.3	14	13.5	12.3	9.74
EDTMS 2.0D M8-1.25	6.8	10	9	8.3	6.45
EDTMS 2.0D M10-1.5	8.5	12	11	10.3	8.08
EDTMS 2.0D M12-1.75	10.3	14	13.5	12.3	9.74
EDTMS 2.0D M14-2.00	12	16	15.5	14.3	11.35
EDTMS 2.0D M16-2.00	14	18	17.5	16.3	13.28
EDTMS 2.5D M8-1.25	6.8	10	9	8.3	6.45
EDTMS 2.5D M10-1.50	8.5	12	11	10.3	8.08
EDTMS 2.5D M12-1.75	10.3	14	13.5	12.3	9.74
EDTMS 2.5D M14-2.00	12	16	15.5	14.3	11.35
EDTMS 2.5D M16-2.00	14	18	17.5	16.3	13.28

Dimension/data block 3.

Item	Z
EDTMS 1.5D M8-1.25	2
EDTMS 1.5D M10-1.5	2
EDTMS 1.5D M12-1.75	2
EDTMS 2.0D M8-1.25	2
EDTMS 2.0D M10-1.5	2
EDTMS 2.0D M12-1.75	2
EDTMS 2.0D M14-2.00	2
EDTMS 2.0D M16-2.00	2
EDTMS 2.5D M8-1.25	2
EDTMS 2.5D M10-1.50	2
EDTMS 2.5D M12-1.75	2
EDTMS 2.5D M14-2.00	2
EDTMS 2.5D M16-2.00	2

1.5 × D: thread lengths

Dimension/data block 1.

Thread	D1	BT	D3.1	D9	EL
M8	6,75	13,35	8,30	8,41	12,15
M10	8,50	17,60	10,30	10,54	16,06
M12	10,30	20,25	12,30	12,65	18,45
M14	12,00	22,90	14,30	14,81	20,90
M16	14,00	27,00	16,30	16,88	25,00

Dimension/data block 2.

Thread	TL
M8	10,45
M10	14,00
M12	16,35
M14	18,60
M16	22,60

Dimensions in mm. BT: drill depth; EL: thread engagement; TL: full thread length. Source reference: metric ISO thread DIN 13 / DIN 8140.

2.0 × D: thread lengths

Dimension/data block 1.

Thread	D1	BT	D3.1	D9	EL
M8	6,75	17,10	8,30	8,41	15,90
M10	8,50	22,10	10,30	10,54	20,60
M12	10,30	25,50	12,30	12,65	23,70
M14	12,00	30,90	14,30	14,81	28,90
M16	14,00	35,00	16,30	16,88	33,00

Dimension/data block 2.

Thread	TL
M8	14,20
M10	18,50
M12	21,60
M14	26,60
M16	30,60

Dimensions in mm. BT: drill depth; EL: thread engagement; TL: full thread length. Source reference: metric ISO thread DIN 13 / DIN 8140.

2.5 × D: thread lengths

Dimension/data block 1.

Thread	D1	BT	D3.1	D9	EL
M8	6,75	22,10	8,30	8,41	20,90
M10	8,50	26,60	10,30	10,54	25,10
M12	10,30	32,50	12,30	12,65	30,70
M14	12,00	36,90	14,30	14,81	34,90
M16	14,00	43,00	16,30	16,88	41,00

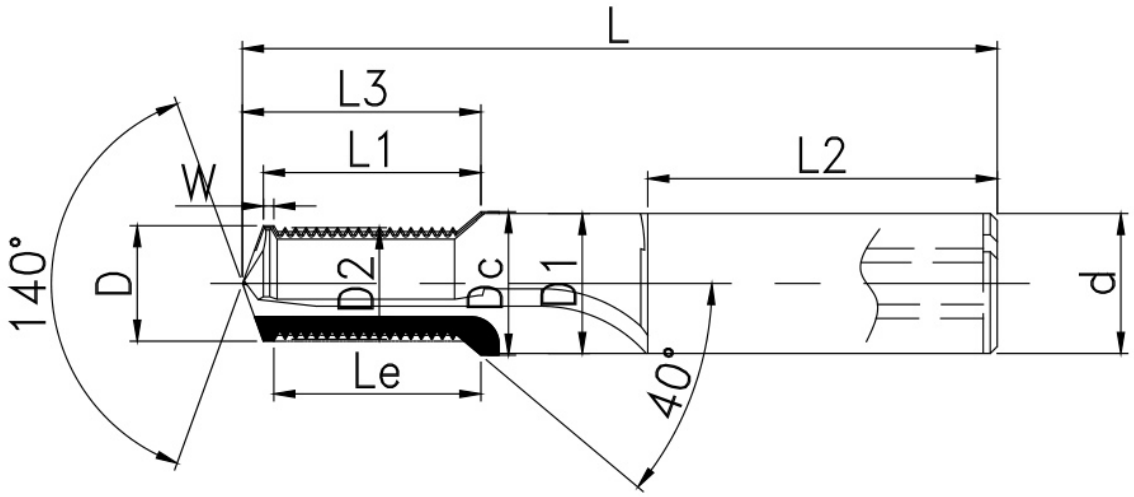
Dimension/data block 2.

Thread	TL
M8	19,20
M10	23,00
M12	28,60
M14	32,60
M16	38,60

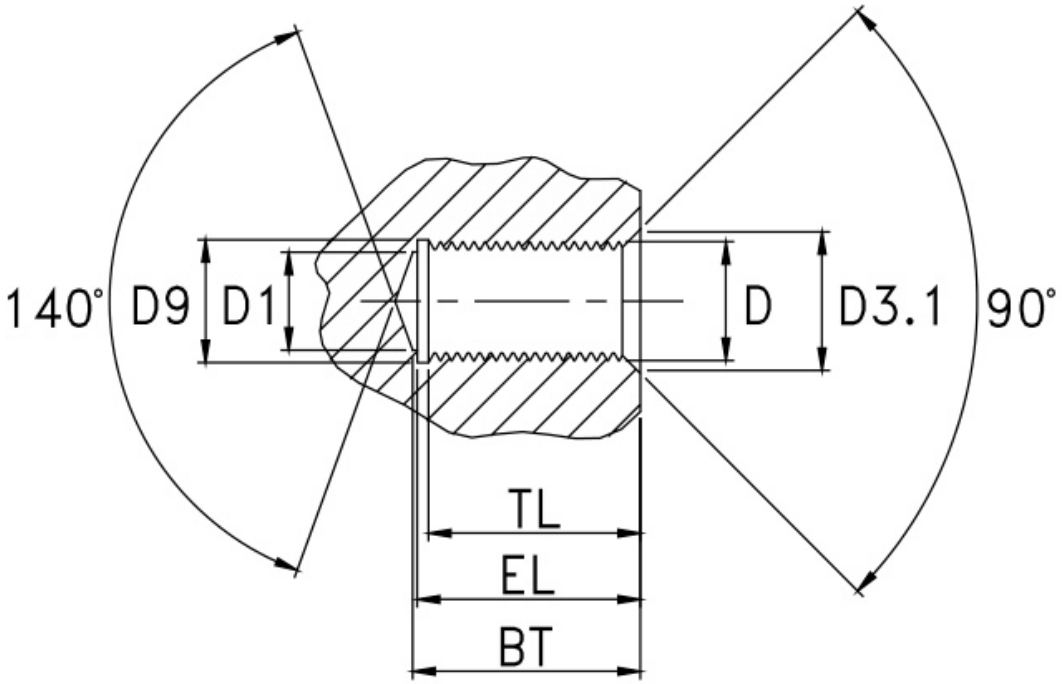
Dimensions in mm. BT: drill depth; EL: thread engagement; TL: full thread length. Source reference: metric ISO thread DIN 13 / DIN 8140.



EDTMS: drill thread milling: Tool view.



Tool: isolated dimensioned drawing; views and dimension references unchanged.



Tool: isolated dimensioned drawing; views and dimension references unchanged.

Tool designs



Tool designs: Tool view.

PCD saws, V-cutters and bevel cutters

EDSC saws retain diameter ØD, mounting bore Ød, edge/body thicknesses T1 and T2 and tooth count Z. EDVC V-cutters additionally distinguish the illustrated V angle. EDBC bevel cutters retain V, radius R and B angle according to the drawing. Tables show their sizes and selectable types; multiple entries in one cell remain alternatives.

EDSC: PCD saws

Item	ØD	Ød	T1	T2	Z
EDSC-255	255	25.4 / 31.75	2.2 / 2.5 / 3 / 3.2	2.2	40 / 60 / 80
EDSC-305	305	25.4 / 31.75	2.2 / 2.5 / 3 / 3.2	2.2	40 / 60 / 80
EDSC-355	355	25.4 / 31.75	2.2 / 2.5 / 3 / 3.2	2.2	40 / 60 / 80

EDVC: PCD V-cutters

Dimension/data block 1.

Item	ØD	Ød	T1	T2	V
EDVC 100-V	100	20 / 25.4	2	2	35° / 40° / 45°
EDVC 105-V	105	20 / 25.4	2	2	35° / 40° / 45°
EDVC 110-V	110	20 / 25.4	2	2	35° / 40° / 45°
EDVC 120-V	120	20 / 25.4	2	2	35° / 40° / 45°

Dimension/data block 2.

Item	Z
EDVC 100-V	20 / 30
EDVC 105-V	20 / 30
EDVC 110-V	20 / 30
EDVC 120-V	20 / 30

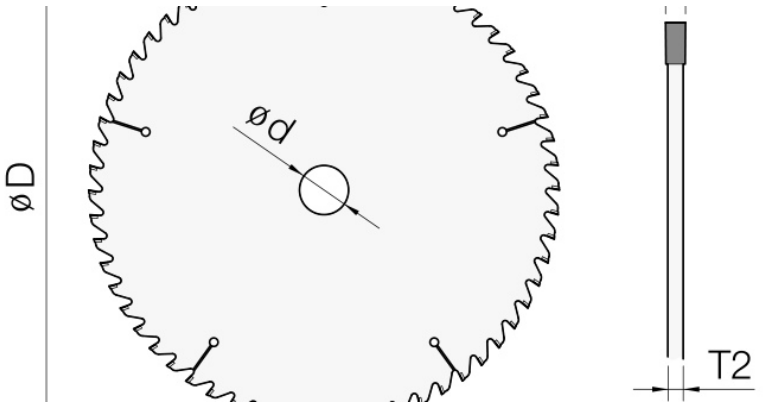
EDBC: PCD bevel cutters

Dimension/data block 1.

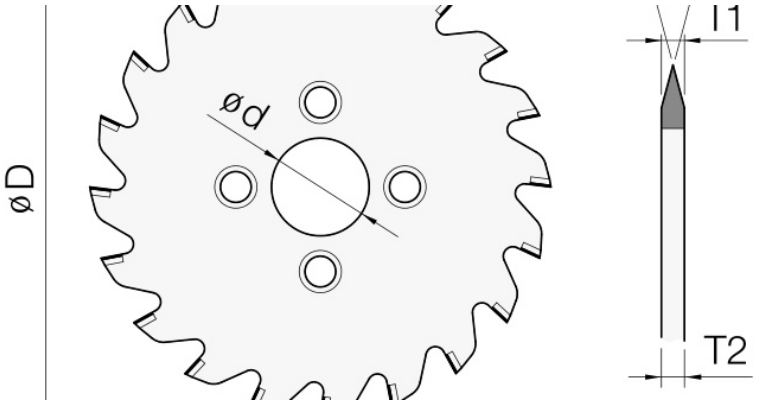
Item	ØD	Ød	T1	T2	V
EDBC 80-B	80	25.4	5	6.5 / 7 / 7.5	40° / 60° / 90°
EDBC 83-B	83	25.4	5	6.5 / 7 / 7.5	40° / 60° / 90°
EDBC 90-B	90	25.4	5	6.5 / 7 / 7.5	40° / 60° / 90°

Dimension/data block 2.

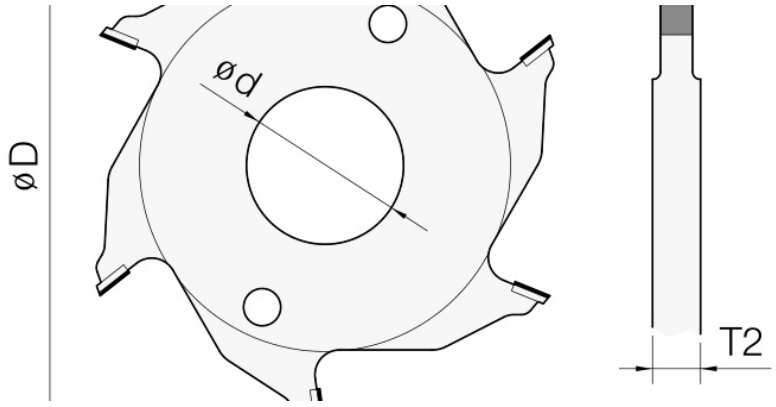
Item	R	B
EDBC 80-B	0.2 / 0.5 / 1	3° / 4° / 6° / 8°
EDBC 83-B	0.2 / 0.5 / 1	3° / 4° / 6° / 8°
EDBC 90-B	0.2 / 0.5 / 1	3° / 4° / 6° / 8°



Tool: isolated dimensioned drawing; views and dimension references unchanged.



Tool: isolated dimensioned drawing; views and dimension references unchanged.



Tool: isolated dimensioned drawing; views and dimension references unchanged.

Customised disc cutters and combination tools

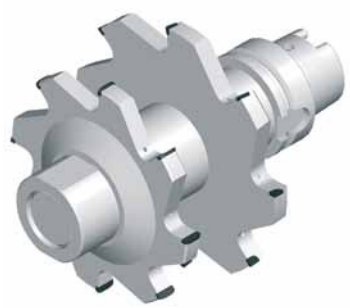
The illustrated customised types cover faces, slots, chamfers and profiles. Tool design is adapted to your machining task.



Customised disc cutters and combination tools: Tool view.



Customised disc cutters and combination tools: Tool view.



Customised disc cutters and combination tools: Tool view.



Customised disc cutters and combination tools: Tool view.



Customised disc cutters and combination tools: Tool view.

Wearless: backing plates and V-blocks

Design examples show backing plates for bearing machining and prismatic/block-shaped supports identified as V-blocks. Tools retain their illustrated contact surfaces and fastening geometries. Wearless is the programme name for these wear parts.



Wearless: backing plates and V-blocks: Tool view.



Wearless: backing plates and V-blocks: Tool view.



Wearless: backing plates and V-blocks: Tool view.



Wearless: backing plates and V-blocks: Tool view.



Wearless: backing plates and V-blocks: Tool view.



Wearless: backing plates and V-blocks: Tool view.



Wearless: backing plates and V-blocks: Tool view.



Wearless: backing plates and V-blocks: Tool view.



Wearless: backing plates and V-blocks: Tool view.



Wearless: backing plates and V-blocks: Tool view.



Wearless: backing plates and V-blocks: Tool view.



Wearless: backing plates and V-blocks: Tool view.

Wear parts: shoes, centres and gauges

Illustrated shoes/support elements, the dead centre and special gauges retain their respective shapes and contact surfaces. Selection follows the required workpiece guidance, centring or gauging task.



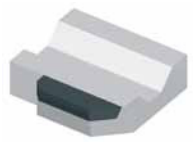
Wear parts: shoes, centres and gauges: Tool view.



Wear parts: shoes, centres and gauges: Tool view.



Wear parts: shoes, centres and gauges: Tool view.



Wear parts: shoes, centres and gauges: Tool view.



Wear parts: shoes, centres and gauges: Tool view.



Wear parts: shoes, centres and gauges: Tool view.



Wear parts: shoes, centres and gauges: Tool view.



Wear parts: shoes, centres and gauges: Tool view.



Wear parts: shoes, centres and gauges: Tool view.



Wear parts: shoes, centres and gauges: Tool view.



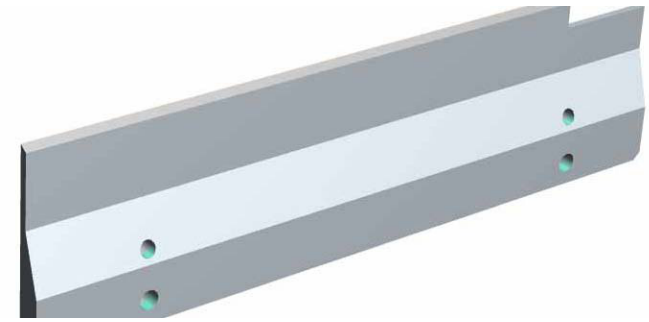
Wear parts: shoes, centres and gauges: Tool view.

Guide and support blades

The three illustrated blades retain their different contact surfaces, steps, holes and mounting cut-outs. Designs are matched to the particular guiding and supporting task.



Guide and support blades: Tool view.

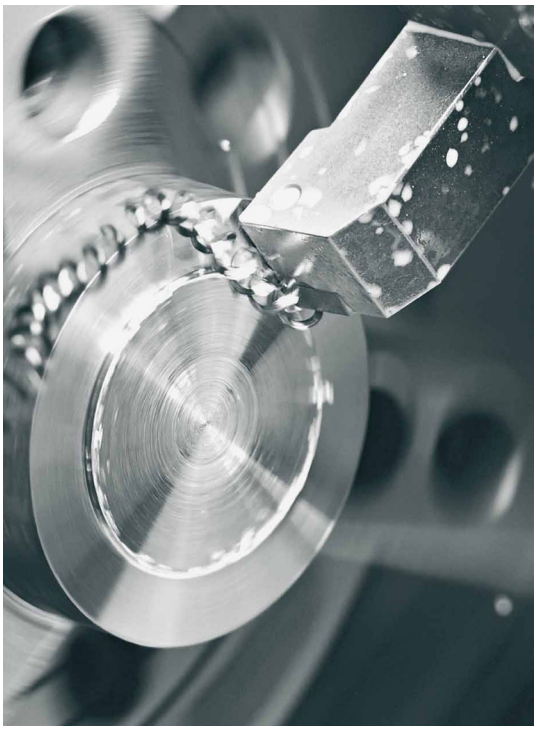


Guide and support blades: Tool view.



Guide and support blades: Tool view.

Application programme



Application programme: Tool view.

Aluminium cylinder head: valve areas and faces

The mapping associates PCBN with valve-seat chamfers and PCD tools with valve guides, port holes, faces and casting excess. Workpiece images identify the machining locations.

Aluminium cylinder head: machining operations

Tool	Application
PCBN tool	Valve seat chamfering
PCD reamer	Valve guide reaming
PCD endmill	Valve seat port hole cutting (rough)
PCD step reamer	Valve guide parent bore & valve seat spot machining
PCD cutter	Mold excess cutting
PCD milling cutter	Top face milling (rough & finish)
PCD milling cutter	Manifold face milling (rough & finish)



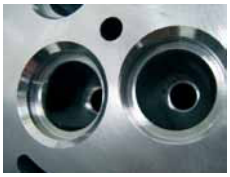
Aluminium cylinder head: valve areas and faces: Tool view.



Aluminium cylinder head: valve areas and faces: Tool view.



Aluminium cylinder head: valve areas and faces: Component and machining view.



Aluminium cylinder head: valve areas and faces: Component and machining view.



Aluminium cylinder head: valve areas and faces: Tool view.



Aluminium cylinder head: valve areas and faces: Tool view.



Aluminium cylinder head: valve areas and faces: Tool view.



Aluminium cylinder head: valve areas and faces: Tool view.



Aluminium cylinder head: valve areas and faces: Tool view.



Aluminium cylinder head: valve areas and faces: Tool view.



Aluminium cylinder head: valve areas and faces: Tool view.

Aluminium cylinder head: bores and bottom face

Examples associate PCD boring tools, milling cutters, step reamers and ball end mills with oil-seal, injector and camshaft-journal bores and the bottom face. Roughing and finishing tasks remain distinct.

Aluminium cylinder head: further machining

Tool	Application
PCD boring tool	Oil seal bore spot boring (rough & finish)
PCD milling cutter	Bottom face milling (rough & finish)
PCD step reamer	Injector hole reaming (finish)
PCD tool & insert	Cam bore journal (finish)
PCD ball endmill	Cam bore journal (rough)



Aluminium cylinder head: bores and bottom face: Component and machining view.



Aluminium cylinder head: bores and bottom face: Tool view.



Aluminium cylinder head: bores and bottom face: Tool view.



Aluminium cylinder head: bores and bottom face: Tool view.



Aluminium cylinder head: bores and bottom face: Component and machining view.



Aluminium cylinder head: bores and bottom face: Tool view.



Aluminium cylinder head: bores and bottom face: Tool view.



Aluminium cylinder head: bores and bottom face: Tool view.



Aluminium cylinder head: bores and bottom face: Tool view.



Aluminium cylinder head: bores and bottom face: Tool view.

Cast-iron cylinder block

PCBN milling cutters are assigned to finishing the top, front and rear faces; PCBN inserts to roughing and finishing cylinder bores.

Cast-iron cylinder block

Tool	Application
PCBN milling cutter	Top, front & rear face milling (finish)
PCBN insert	Cylinder boring (rough & finish)



Cast-iron cylinder block: Component and machining view.



Cast-iron cylinder block: Tool view.



Cast-iron cylinder block: Tool view.



Cast-iron cylinder block: Component and machining view.

Aluminium-alloy transmission housing

Tools illustrate reaming, face roughing/finishing and grooving. PCD reamers, face milling cutters and monoblock designs retain their illustrated tasks.

Aluminium-alloy transmission housing

Tool	Application
PCD reamer	Reaming
PCD milling cutter	Face milling (rough & finish)
PCD monoblock endmill	Face milling (rough & finish)
PCD monoblock cutter	Grooving



Aluminium-alloy transmission housing: Tool view.



Aluminium-alloy transmission housing: Tool view.



Aluminium-alloy transmission housing: Component and machining view.



Aluminium-alloy transmission housing: Tool view.



Aluminium-alloy transmission housing: Tool view.



Aluminium-alloy transmission housing: Tool view.



Aluminium-alloy transmission housing: Tool view.

Aluminium-alloy valve bodies

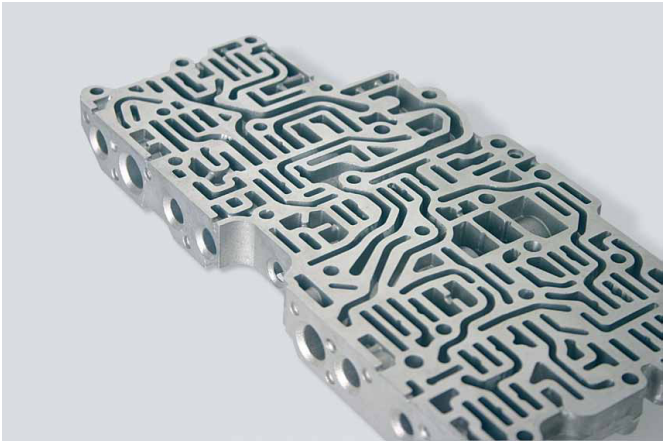
PCD inserts and reamers serve the illustrated bore-machining operations; PCD milling cutters rough and finish the top face.

Aluminium-alloy valve bodies

Tool	Application
PCD insert & reamer	Reaming (rough & finish)
PCD milling cutter	Top face milling (rough & finish)



Aluminium-alloy valve bodies: Tool view.



Aluminium-alloy valve bodies: Component and machining view.



Aluminium-alloy valve bodies: Tool view.



Aluminium-alloy valve bodies: Tool view.



Aluminium-alloy valve bodies: Tool view.



Aluminium-alloy valve bodies: Tool view.

Gears and clutch

The programme combines diamond burnishing tools, cermet reamers and PCBN inserts for the listed clutch, carrier and turning operations. Interrupted finishing cuts remain explicitly identified.

Gears and clutch

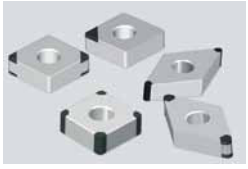
Tool	Application
D-burnishing tool	Auto clutch burnishing (finish)
Cermet reamer	Carrier reaming (finish)
PCBN insert	Turning (rough & finish)
PCBN insert	Interrupted turning/facing & inner diameter boring (finish)



Gears and clutch: Component and machining view.



Gears and clutch: Component and machining view.



Gears and clutch: Tool view.



Gears and clutch: Component and machining view.



Gears and clutch: Tool view.



Gears and clutch: Component and machining view.



Gears and clutch: Tool view.



Gears and clutch: Tool view.



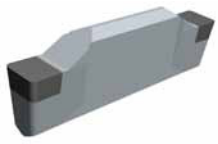
Gears and clutch: Tool view.

Transmission shafts

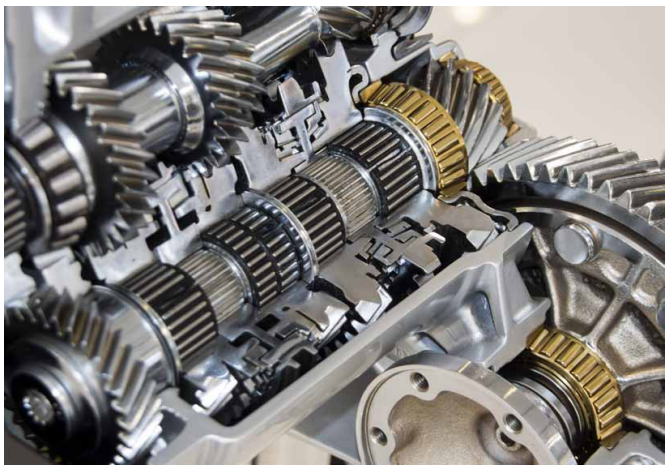
PCBN grooving tools and inserts are assigned to groove and main-shaft finishing. Product and transmission images illustrate the application.

Transmission shaft

Tool	Application
PCBN tool	Grooving (finish)
PCBN insert & tool	Main shaft turning (finish)



Transmission shafts: Tool view.



Transmission shafts: Component and machining view.



Transmission shafts: Tool view.



Transmission shafts: Tool view.



Transmission shafts: Tool view.



Transmission shafts: Tool view.



Transmission shafts: Tool view.



Transmission shafts: Component and machining view.

Differential gear and case

The illustrated PCBN inserts are assigned to the differential gear and case. Connections identify the shown component surfaces.

Differential: gear and case

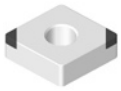
Tool	Application
PCBN insert	Differential gear & case



Differential gear and case: Component and machining view.



Differential gear and case: Component and machining view.



Differential gear and case: Tool view.



Differential gear and case: Tool view.



Differential gear and case: Tool view.

Planetary transmission

PCBN inserts are illustrated for the planetary gear, ring gear and sun gear. The transmission image shows the assembly context.

Planetary transmission

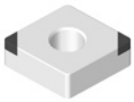
Tool	Application
PCBN insert	Planetary gear, ring gear and sun gear



Planetary transmission: Component and machining view.



Planetary transmission: Tool view.



Planetary transmission: Tool view.



Planetary transmission: Tool view.



Planetary transmission: Tool view.



Planetary transmission: Component and machining view.

Ball and tapered-roller bearings

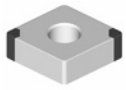
Examples show PCBN inserts for hub bearings, diamond gauges and PCD backing plates. Hub-bearing details retain their positions relative to the marked surfaces.

Ball and tapered-roller bearings

Tool	Application
PCBN insert	Hub bearing
D-gauge	Measuring/gauging example
PCD backing plate	Backing-plate example



Ball and tapered-roller bearings: Component and machining view.



Ball and tapered-roller bearings: Tool view.



Ball and tapered-roller bearings: Tool view.



Ball and tapered-roller bearings: Tool view.



Ball and tapered-roller bearings: Tool view.



Ball and tapered-roller bearings: Tool view.



Ball and tapered-roller bearings: Tool view.



Ball and tapered-roller bearings: Component and machining view.



Ball and tapered-roller bearings: Component and machining view.



Ball and tapered-roller bearings: Component and machining view.



Ball and tapered-roller bearings: Component and machining view.



Ball and tapered-roller bearings: Tool view.



Ball and tapered-roller bearings: Tool view.



Ball and tapered-roller bearings: Tool view.



Ball and tapered-roller bearings: Tool view.



Ball and tapered-roller bearings: Tool view.

Brake discs

Specific PCBN designations are assigned to the illustrated outer, inner, hub and friction surfaces and grooving operations. Roughing, finishing and chamfering remain separate tasks; friction surfaces here refer to disc faces.

Brake disc: machining surfaces

Tool	Application
CNGN120412 (PCBN)	Wheel outer diameter roughing
CNGN120412 (PCBN)	Hub face roughing
CNGA120408 (PCBN)	Inner diameter chamfering
VNGA160408 (PCBN)	Relief grooving (rough)
CNGA 120412 (PCBN)	Inner diameter roughing
PCBN GX, 6W	Grooving (rough)
CNGA 120412 (PCBN)	Wheel face roughing
CNGN120412 (PCBN)	Upper disc friction face roughing
CNGA120412 (PCBN)	Disc friction face finishing



Brake discs: Component and machining view.



Brake discs: Tool view.



Brake discs: Tool view.



Brake discs: Tool view.

Pistons

The mapping shows PCD and mono-diamond tools for turning, PCD grooving tools for ring grooves, special tools for the combustion chamber and reamers/cutters for the pin bore and circlip area.

Piston

Tool	Application
PCD, MONO insert & tool	Turning
PCD grooving tool	Ring grooving
PCD special tool	Combustion chamber cutting
PCD reamer	Pin boring & chamfering
PCD cutter	Circlip & R boss cutting



Pistons: Component and machining view.



Pistons: Tool view.



Pistons: Tool view.



Pistons: Tool view.



Pistons: Tool view.



Pistons: Tool view.



Pistons: Tool view.



Pistons: Tool view.



Pistons: Tool view.



Pistons: Tool view.



Pistons: Tool view.



Pistons: Tool view.

Compressor piston and housing

Applications associate PCD tools with outer-diameter turning, ball-seat machining, bore reaming, piston-side machining and housing face milling. The chip-breaker boring tool and double-cutter design remain distinct tool types.

Compressor piston and housing

Tool	Application
PCD boring tool (chip breaker)	Piston OD turning
PCD endmill	Piston ball-seat chamfer cutting
PCD ball endmill	Piston ball-seat cutting
PCD reamer & blade	Piston bore & shaft bore reaming
PCD double cutter	Piston side cutting
PCD milling cutter	Piston housing face milling



Compressor piston and housing: Tool view.



Compressor piston and housing: Tool view.



Compressor piston and housing: Component and machining view.



Compressor piston and housing: Tool view.



Compressor piston and housing: Tool view.



Compressor piston and housing: Tool view.



Compressor piston and housing: Tool view.



Compressor piston and housing: Tool view.



Compressor piston and housing: Tool view.



Compressor piston and housing: Tool view.

Steering housing

PCD step reamers serve the illustrated steering-housing reaming operation. Different tool lengths and stepped geometries are shown as design examples.

Steering housing

Tool	Application
PCD step reamer	Steering housing reaming



Steering housing: Tool view.



Steering housing: Component and machining view.

Pump housing

PCD step reamers and end mills are illustrated for pump-housing machining. Component and tool images retain their respective geometries.

Pump housing

Tool	Application
PCD step reamer, endmill	Pump housing machining



Pump housing: Component and machining view.



Pump housing: Tool view.



Pump housing: Tool view.



Pump housing: Tool view.



Pump housing: Tool view.

Steel-roll machining

Notching, grooving, turning and engraving tools belong to the illustrated roll applications. Select PCD, PCBN, carbide or ceramic to suit the actual roll material. The contact diagram retains its four tool positions and codes.

Steel-roll machining

Tool/cutting material	Application
Notch tool (PCD, PCBN, carbide)	Notching
PCD, PCBN, carbide, ceramic	Grooving & turning
RCGX1204	Illustrated roller-contact position 1
SNMN120408	Illustrated roller-contact position 2
RCGX1204	Illustrated roller-contact position 3
CNMA(N)120408	Illustrated roller-contact position 4
PCD, TC	Engraving

Material selection depends on the particular roll material and application; this overview is not a general PCD recommendation for every steel material.



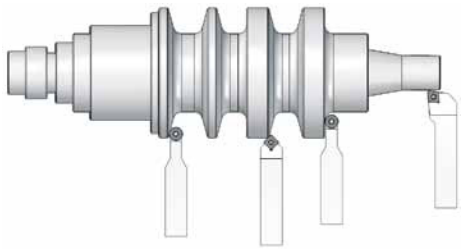
Steel-roll machining: Tool view.



Steel-roll machining: Tool view.



Steel-roll machining: Tool view.



Steel-roll machining: Tool view.



Steel-roll machining: Component and machining view.



Steel-roll machining: Component and machining view.



Steel-roll machining: Tool view.



Steel-roll machining: Tool view.



Steel-roll machining: Tool view.



Steel-roll machining: Tool view.



Steel-roll machining: Tool view.



Steel-roll machining: Tool view.



Steel-roll machining: Tool view.

Ophthalmic lenses: roughing and finishing

PCD milling cutters serve the illustrated roughing task; PCD inserts outer-diameter turning and finishing. Mono-diamond inserts are also assigned to finishing. The application image retains the illustrated contact locations.

Ophthalmic lenses

Tool	Application
PCD milling cutter	Milling (rough)
PCD insert	Outer diameter turning
PCD insert	Turning (finish)
MONO insert	Turning (finish)



Ophthalmic lenses: roughing and finishing: Tool view.



Ophthalmic lenses: roughing and finishing: Tool view.



Ophthalmic lenses: roughing and finishing: Component and machining view.



Ophthalmic lenses: roughing and finishing: Tool view.

Ophthalmic lenses: edge machining

The ten tool illustrations show different shaft, profile and edge geometries for ophthalmic-lens edge machining. Select the design according to the required contour and machining task.



Ophthalmic lenses: edge machining: Tool view.



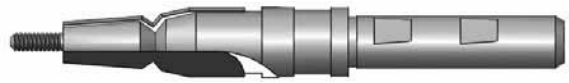
Ophthalmic lenses: edge machining: Tool view.



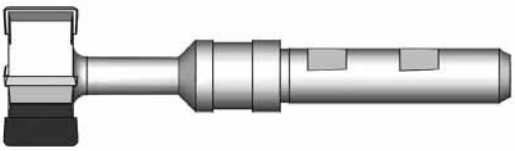
Ophthalmic lenses: edge machining: Tool view.



Ophthalmic lenses: edge machining: Tool view.



Ophthalmic lenses: edge machining: Tool view.



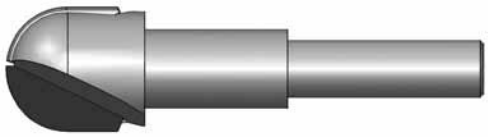
Ophthalmic lenses: edge machining: Tool view.



Ophthalmic lenses: edge machining: Tool view.



Ophthalmic lenses: edge machining: Tool view.



Ophthalmic lenses: edge machining: Tool view.

Ophthalmic lenses: edge machining: Tool view.

Turning tools: cutting geometry and terminology

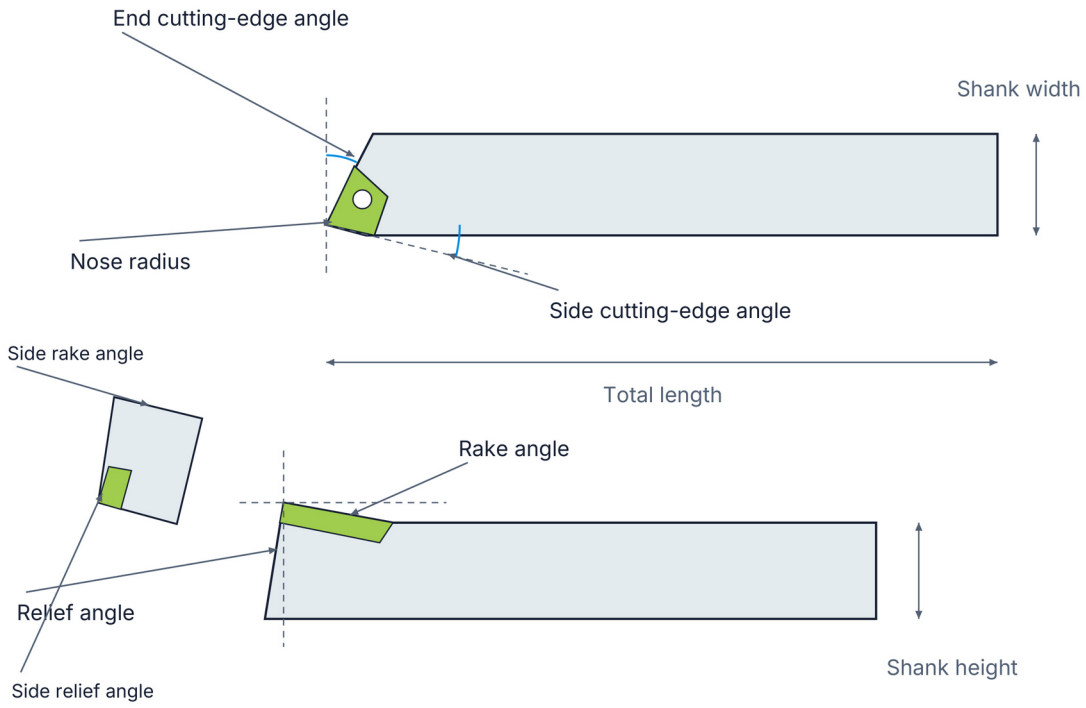
The tool illustration distinguishes side relief angle, side rake angle, rake angle, relief angle, cutting-edge height, nose radius, side cutting-edge angle, end cutting-edge angle, shank width, shank height and total length.

Rake angles influence cutting force, heat, chip flow and tool life. A positive rake angle reduces cutting load and suits easily machined or thin-walled workpieces, while reducing edge strength. A negative rake angle supports a stronger edge for mill scale or interrupted cuts. Relief angles prevent unwanted contact and are selected with edge strength and tool life in mind.

The side cutting-edge position controls chip dimensions and cutting direction. The end cutting-edge angle affects contact with the machined surface: a smaller angle can support the edge while increasing flank wear.

A larger relief angle can reduce flank wear but weakens the edge cross-section. Too little clearance promotes friction and chatter. The source associates smaller relief angles with hard workpieces and high edge-strength requirements; larger angles with soft or work-hardening materials. The comparison shows both cases at the same depth of cut.

Turning: tool geometry in three views

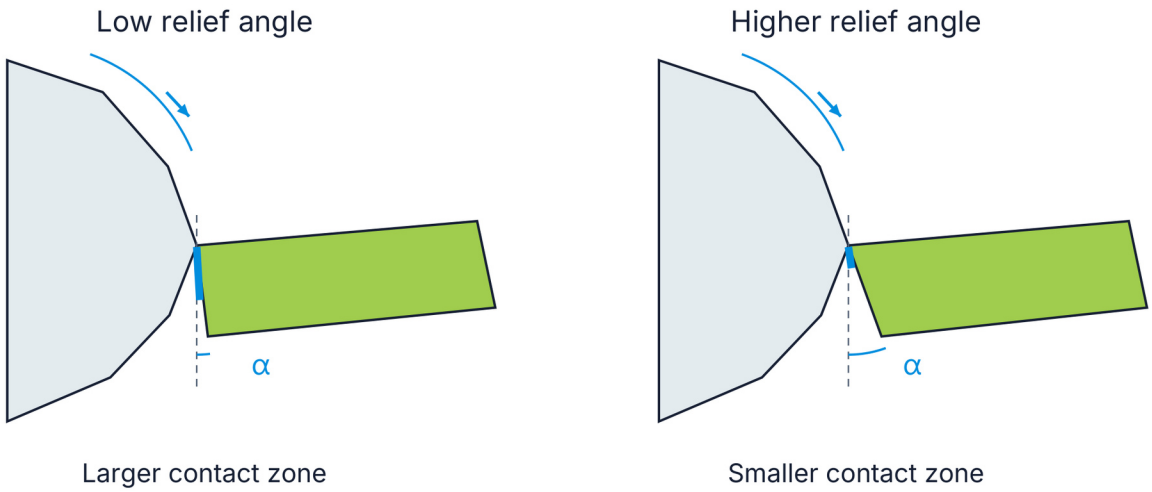


Views are schematic; angles and dimensions are not design specifications.

Schematic illustration

Turning: tool geometry in three views.

Relief angle: contact at the flank



Same depth of cut; increasing relief weakens the edge cross-section.
Schematic illustration

Relief angle: contact at the flank.

Turning: edge position, chip thickness and forces

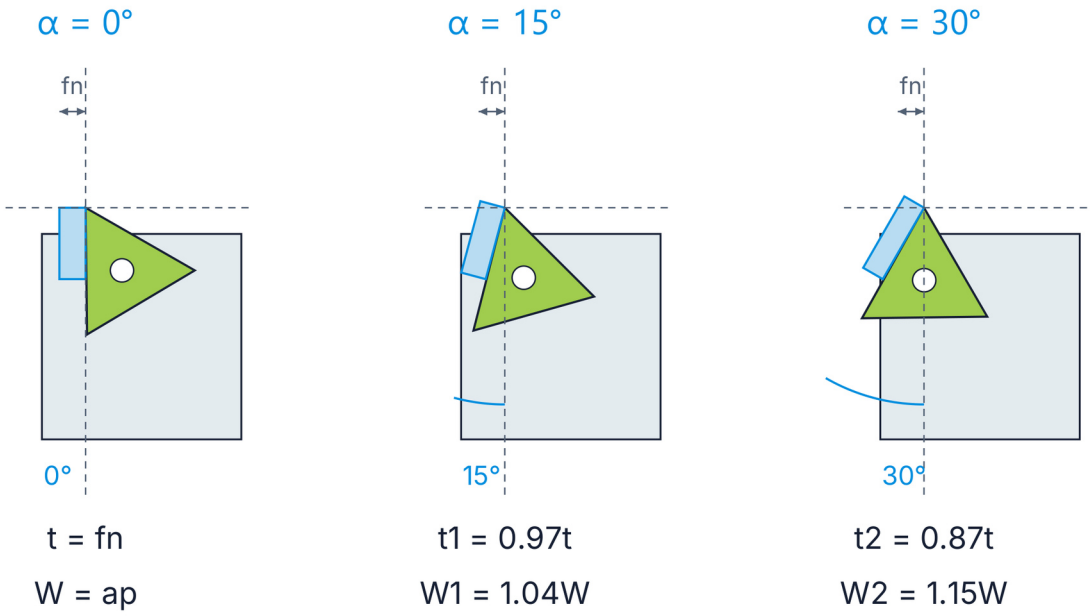
The end cutting-edge angle influences surface finish through clearance between the tool and the machined face. A small angle supports the edge but can increase cutting heat and force, raising the risk of chatter.

The following illustration uses the side lead angle α relative to its 0° position, which corresponds to an entering angle κr of 90°. At the same feed and depth of cut, α = 15° or 30° produces a thinner, wider chip. The source relationships are: at 0°, t = fn and W = ap; at 15°, t1 = 0.97t and W1 = 1.04W; at 30°, t2 = 0.87t and W2 = 1.15W. The diagrams retain their original reference lines. α is not equated with the complementary entering angle κr.

As α increases, the radial force component increases while the feed-force component decreases. The 0° illustration shows force P; at 30° it is resolved into P1 and P2.

The source compares low and high lead angles: lower angle - higher wear, easily cut materials, lower machine power, lower chatter tendency, finishing, long thin workpieces and lower machine rigidity. Higher angle - lower wear, difficult-to-cut materials, higher power, higher chatter tendency, roughing, thicker workpieces and higher machine rigidity. These associations describe the illustrated tool setup rather than independent guarantees.

Side lead angle: chip thickness and width



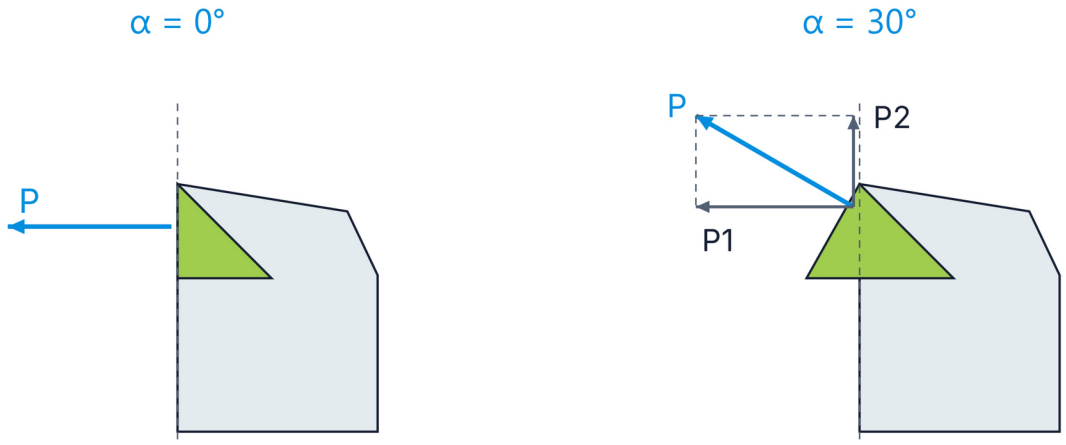
α is measured from the 0° position; entering angle κr is 90° there.

The three views use the same feed fn and depth of cut ap.

Schematic illustration

Side lead angle: chip thickness and width.

Side lead angle: resolution of cutting force



Increasing α raises the radial component and reduces the feed-force component.

Schematic illustration

Side lead angle: resolution of cutting force.

Turning: nose radius, rake angle and formulas

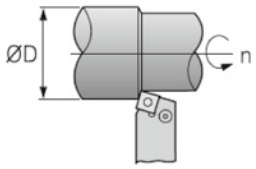
Nose radius affects surface finish and edge strength. The 2022 edition gives a general guide of approximately 2~3 times the feed per revolution. Larger radii can improve the surface, strengthen the edge and reduce flank and crater wear; excessive radii increase load and chatter tendency. Small depths of cut and long thin workpieces favour smaller radii; interrupted cuts, larger workpieces or roughing favour larger radii where rigidity and cutting data permit.

A more positive rake angle can improve surface finish and reduce cutting load, while weakening the edge. The source associates smaller rake angles with hard workpieces and interrupted cuts, and larger angles with soft or easily cut materials. Its approximately 1% spindle-power reduction per additional 1° of rake is a source rule of thumb; actual power changes also depend on material and chip thickness. The diagrams show positive and negative rake with their chip-flow directions and relief angles.

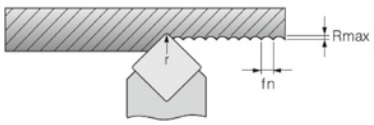
Cutting speed: $Vc = \pi \times D \times N / 1{,}000$ [m/min]. D: diameter [mm]; N: spindle speed [min^{-1}]; π: circular constant, given as 3.14 in the source.

Feed per revolution: $fn = Vf / N$ [mm/rev]. Vf: feed speed [mm/min].

Theoretical maximum roughness: $Rmax = fn^2 / (8r) \times 1{,}000$ [µm]. fn: feed [mm/rev]; r: nose radius [mm]. The edition gives practical-roughness guide factors of Rmax × (1.5~3) for steel and Rmax × (3~5) for cast iron. These factors do not replace measurement of the actual surface.

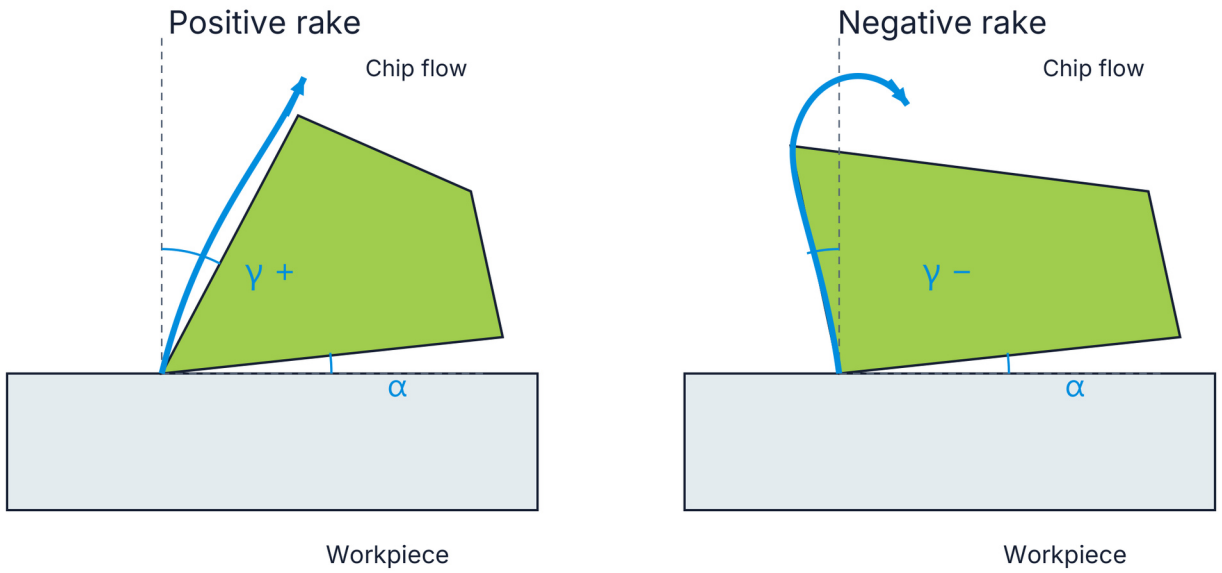


Turning: diameter D and spindle speed N in the cutting-speed model.



Theoretical roughness: feed fn, nose radius r and Rmax.

Turning: positive and negative rake angle



γ: rake angle · α: relief angle. The models show a schematic cutting zone.

Schematic illustration

Turning: positive and negative rake angle.

Turning: wear patterns and process checks

The illustration distinguishes crater wear, flank wear, notching, small chips, rake-face flaking and breakage. Cutting zone, chip, tool, workpiece, rake and relief angles are clearly identified. The edition lists the following possible process measures; the appropriate change is selected for the material, wear pattern and actual cutting edge.

• Crater wear: reduce cutting speed and feed; consider coating and coolant.

• Flank wear: increase cutting speed for grey cast iron or reduce it for hardened steel; increase feed and depth of cut; check tool centre height.

• Notching: increase cutting speed, reduce feed, increase side lead and chamfer angles; change depth of cut.

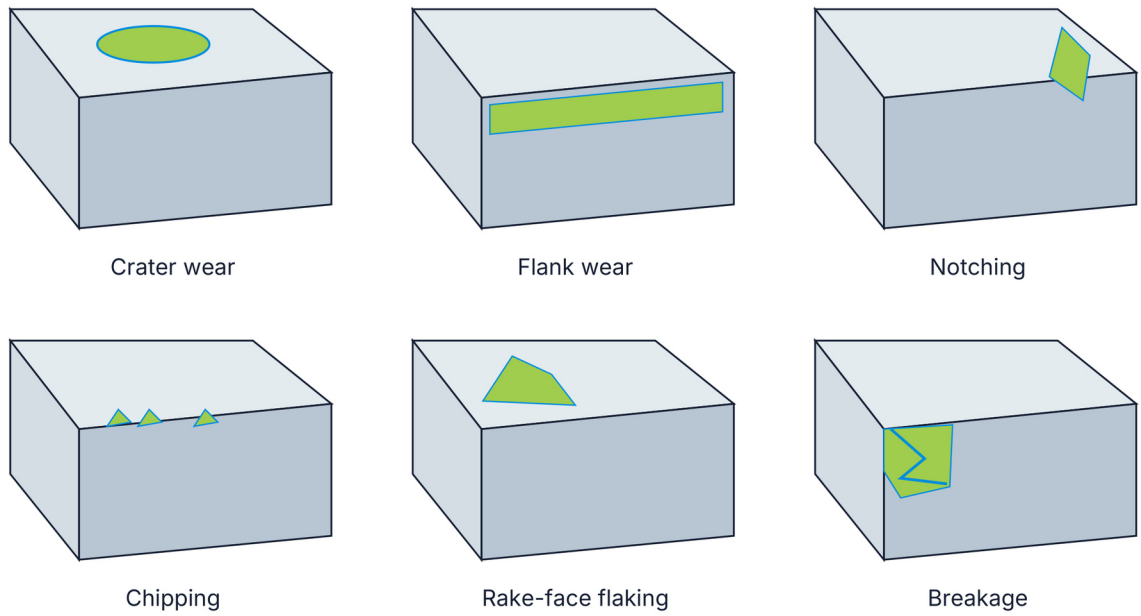
• Chipping: use a chamfered or rounded cutting edge; adjust cutting speed to avoid vibration.

• Flaking in continuous cuts: increase cutting speed and reduce feed; use a chamfered and rounded edge; reduce side lead angle; check centre height.

• Flaking in interrupted cuts: consider dry cutting; reduce feed; use a chamfered and rounded edge; reduce side lead angle; check centre height.

• Breakage: increase cutting speed; reduce feed; increase side lead angle; use a chamfered edge.

Wear: location and appearance



Highlighted regions are wear models; process measures are given in the text.

Schematic illustration

Wear: location and appearance.

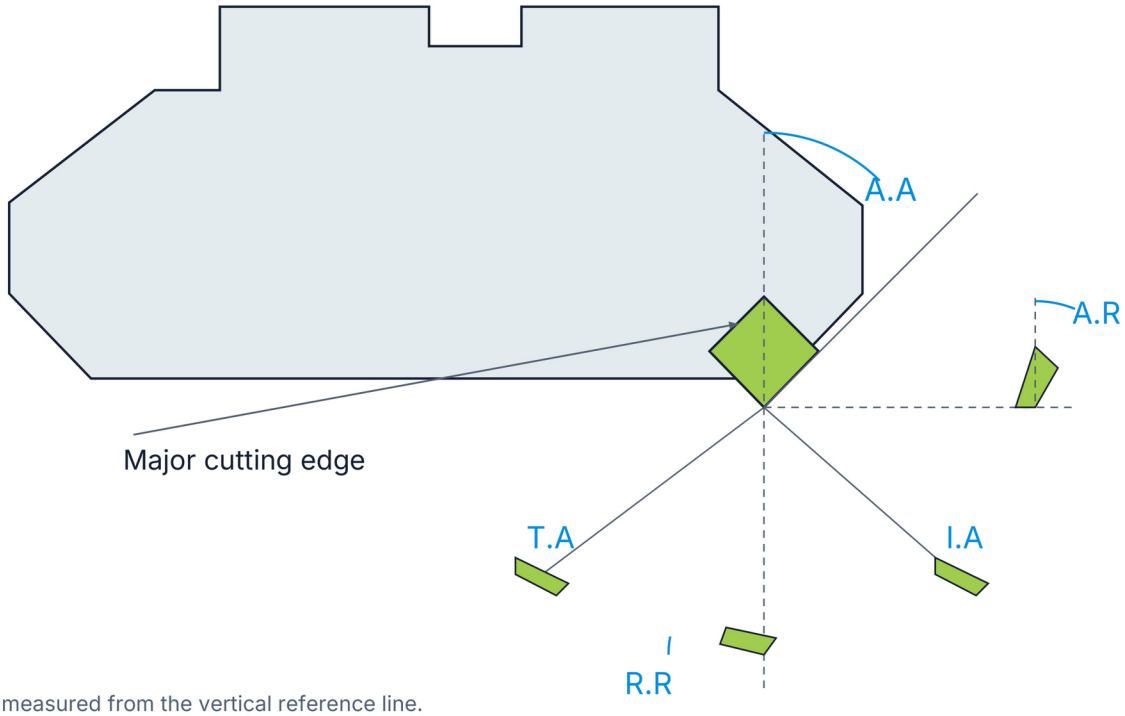
Milling: tool geometry and angles

The illustration shows the major cutting edge, axial rake A.R, radial rake R.R, approach angle A.A, true rake T.A and cutting-edge inclination I.A. A.A is shown relative to the vertical reference line and must not automatically be equated with an entering angle measured from the feed direction.

A.R and R.R affect chip flow and machinability. Increasing A.A in the illustrated convention reduces chip thickness and cutting load. A larger true rake T.A improves cutting action but weakens the edge; a smaller T.A strengthens the edge and raises load. Greater inclination I.A can improve chip flow and machinability while reducing edge strength. Face angle F.A affects the surface; the source describes better surface finish as it approaches 0°. Relief R.A influences edge strength, tool life and chatter.

With positive rake, the cutting edge leads the rake face in the illustrated direction of motion; with negative rake it follows. The three cross-sections show negative (−), neutral (0°) and positive (+) rake with the same direction of motion.

Milling: edge position and angle references

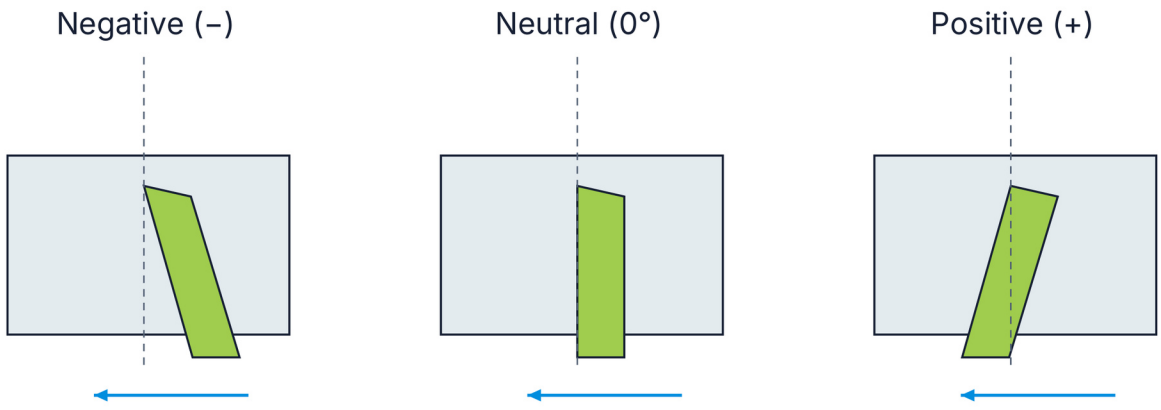


Here A.A is measured from the vertical reference line.

Schematic illustration

Milling: edge position and angle references.

Milling: rake angles with the same direction of motion



With positive rake the cutting edge leads the rake face.

Schematic illustration

Milling: rake angles with the same direction of motion.

Milling: axial and radial rake combinations

Double positive, A.R (+)/R.R (+): for steel, cast iron and stainless steel; for soft steel to reduce built-up edge and improve surface finish. Benefits include low cutting load, easy cutting, good chip flow and reduced built-up-edge tendency. The edge is weaker; the illustrated design is single-sided.

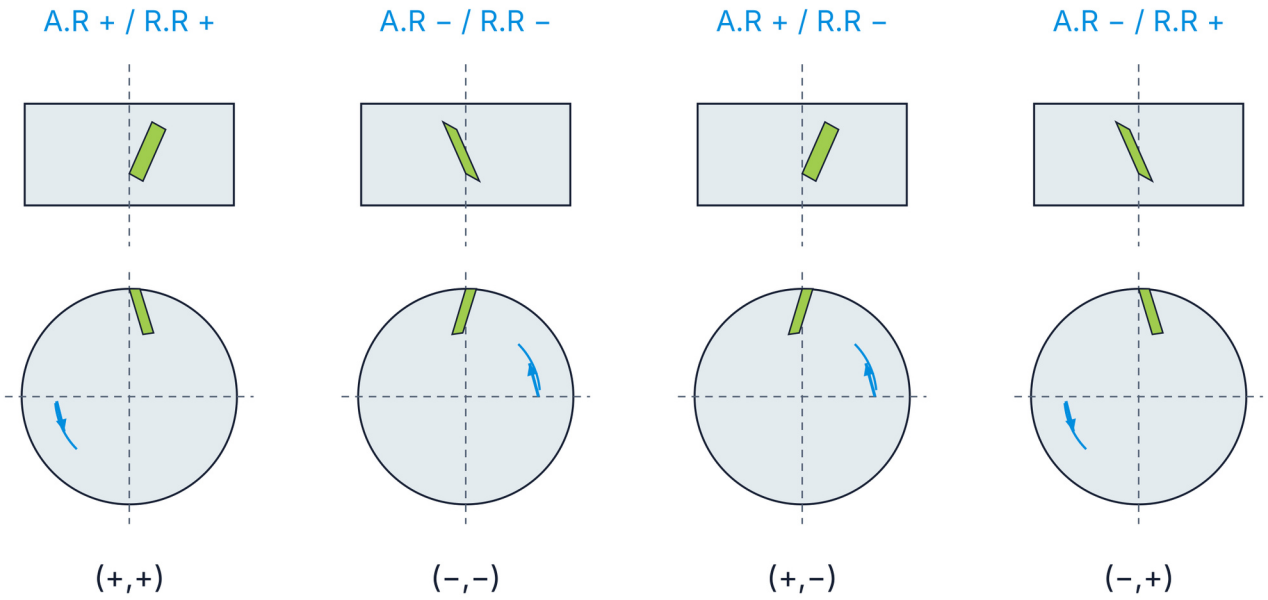
Double negative, A.R (−)/R.R (−): for interrupted cuts and roughing steel or cast iron. A strong edge supports machining mill scale and poor surfaces. Double-sided use can reduce tool cost. This design is less suitable for machines with low power or rigidity.

Positive/negative, A.R (+)/R.R (−): for difficult-to-cut materials and roughing steel or cast iron at greater depth of cut. Good chip flow and machinability combine with tailored geometry to reduce chatter. The illustrated design is single-sided.

Negative/positive, A.R (−)/R.R (+): the source assigns no separate application or advantage category; poor chip flow is listed as a disadvantage.

Cutting speed: $Vc = \pi \times D \times N / 1{,}000$ [m/min]. Feed per tooth: $fz = Vf / (N \times Z)$ [mm/tooth]. Vf is feed speed [mm/min] and Z the number of teeth. Machining time: $T = 60 \times Lt / Vf$ [s]; $Lt = Lw + D + 2R$ [mm]. Lw denotes workpiece length, D cutter-body diameter and R the approach/overrun length shown.

Axial and radial rake: four combinations



Top: axial position. Bottom: radial position and the source direction of rotation.
Schematic illustration

Axial and radial rake: four combinations.

Endmills: geometry, flute count and overhang

The illustration identifies radial relief, top rake 0°, cutting diameter, chamfer and chamfer relief, lead angle, dish angle, cutting length, flute length, shank length, shank diameter and overall length.

Increasing the flute count from 2 through 3 to 4 reduces chip space in the illustrated comparison while increasing tool rigidity. Two flutes are listed for holes, side machining and general use; three for side machining and finishing; four for hard materials, side machining and finishing. The table distinguishes “good” and “excellent”: four flutes receive the higher rating for torsional/bending rigidity, roughness, accuracy and surface finish in side milling. Two flutes receive the higher rating for chip-clogging control, chip evacuation, grooving and vibration behaviour in side milling.

$Vc = \pi \times D \times N / 1{,}000$ [m/min]. $fz = Vf / (N \times Z) = fn / Z$ [mm/tooth]. $fn = Vf / N = fz \times Z$ [mm/rev]. $Vf = N \times fz \times Z = N \times fn$ [mm/min]. D: endmill diameter; N: spindle speed; Z: flute count.

The aspect ratio ℓ/d is illustrated by 3d, 5d or 10d. The idealised bending model is $\delta = P\ell^3 / (3EI)$, $I = \pi d^4 / 64$. δ is deflection, P cutting force, ℓ free length, E elastic modulus and I second moment of area. At the same d and force, doubling the length from ℓ to 2ℓ produces eight times the deflection: $\delta 2 = 8\delta 1$. The practical section of a fluted tool can differ from the idealised round bar.



Technical tool geometry or measurement illustration.

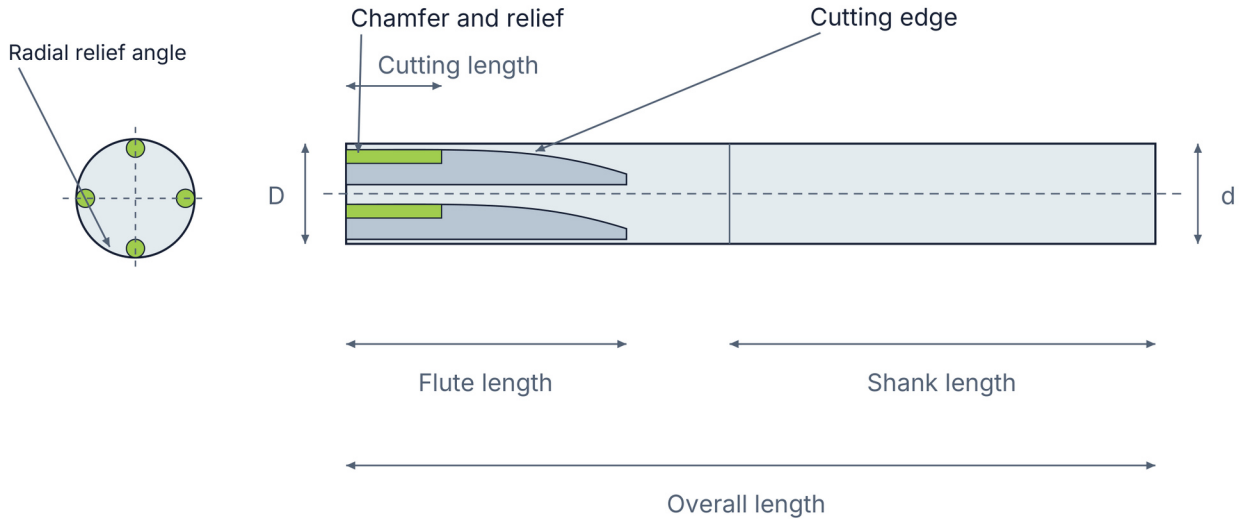


Technical tool geometry or measurement illustration.



Technical tool geometry or measurement illustration.

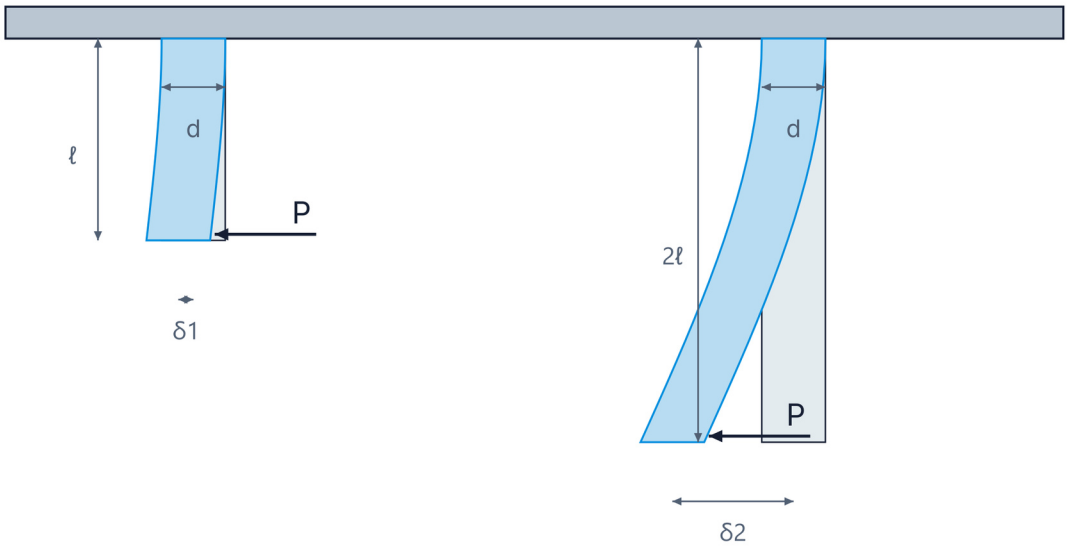
End mill: geometry and length references



Terminology model; actual dimensions are given in the corresponding item tables.
Schematic illustration

End mill: geometry and length references.

Overhang: idealised circular-bar bending model



$$\delta = P\ell^3 / (3EI) \qquad I = \pi d^4 / 64$$

Same force P and diameter d: twice the length → eight times the deflection.

Schematic illustration

Overhang: idealised circular-bar bending model.

Reaming: margin, lead and troubleshooting

The illustration identifies radial relief, margin, top rake 0°, diameter, chamfer, chamfer relief, lead angle, back taper, flute length, shank length, shank diameter and overall length.

The margin is a narrow cylindrical surface at the outer diameter supporting dimensional accuracy and finish. A smaller margin reduces cutting load and heat, but guidance and finish may be poorer. A larger margin increases load and heat while improving guidance and finish.

The source associates a smaller lead angle with better straightness, thicker chips and poorer guidance/finish; a larger angle with thinner chips, better guidance/finish and reduced straightness. Back taper limits unwanted friction between the tool diameter and workpiece: less taper favours finish and repeated refurbishment; more taper improves cutting action but limits refurbishments and can impair finish. Small relief supports the edge for hard materials; greater relief provides a sharper edge for softer materials.

Troubleshooting patterns and possible causes:

• Oversize hole: excessive tool diameter; cutting speed or feed too high; run-out error; uneven lead; unsuitable coolant.

• Undersize hole: tool wear; cutting speed or feed too low; elastic recovery of ductile material; insufficient allowance.

• Tapered hole: run-out error; incorrect lead; unsuitable pre-machining.

• Poor surface: unsuitable coolant; built-up edge; blunt or possibly chipped cutting edge; poor chip evacuation; excessive residual imbalance.

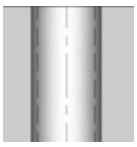
• Chatter marks: built-up edge; blunt tool; unsuitable coolant; run-out error; excessive residual imbalance; incorrect clamping.

• Feed grooves: blunt or possibly chipped cutting edge; built-up edge; unsuitable coolant.

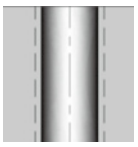
• Deformed hole: incorrect workpiece clamping.

• Curved hole: incorrect lead geometry or axial cutting-edge position.

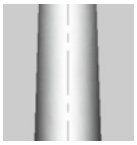
• Facets: centring error or insufficient back taper.



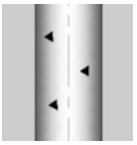
Technical tool geometry or measurement illustration.



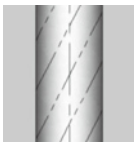
Technical tool geometry or measurement illustration.



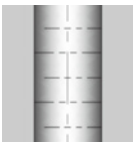
Technical tool geometry or measurement illustration.



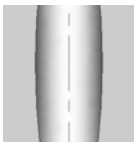
Technical tool geometry or measurement illustration.



Technical tool geometry or measurement illustration.



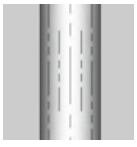
Technical tool geometry or measurement illustration.



Technical tool geometry or measurement illustration.

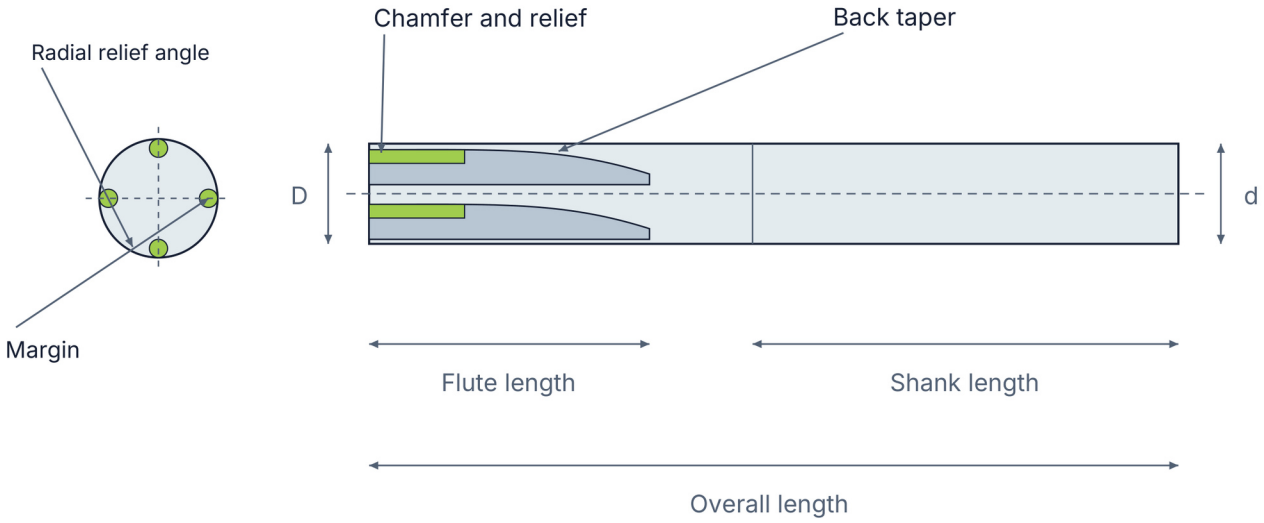


Technical tool geometry or measurement illustration.



Technical tool geometry or measurement illustration.

Reamer: geometry and margin



Terminology model; actual dimensions are given in the corresponding item tables.
Schematic illustration

Reamer: geometry and margin.

Drilling: geometry, drill types and formulas

The illustration identifies core diameter, chisel edge, main cutting edge, gash/thinning, drill diameter, point angle, flute and helix angle.

Point angle is matched to the workpiece material; the source gives 118° as a conventional standard design. A smaller angle is associated with lower thrust resistance, higher torque and greater exit burr in softer materials such as aluminium; a larger angle with higher thrust resistance, lower torque and smaller exit burr in harder materials. This describes the source geometry rather than specifying every modern drill.

Helix angle affects rake and chip evacuation. Greater helix can reduce cutting force and assist chip flow in softer materials, but excessive helix reduces rigidity. Smaller helix is associated with harder materials. Flute length and chip space allow chips and coolant to travel: excessively long flutes weaken the tool; short flutes restrict chip flow and can promote breakage.

Smaller relief supports the edge in hard materials; greater relief improves sharpness for softer materials. Chisel geometry depends on web thickness and chisel angle. Thinning can reduce thrust without indiscriminately reducing web thickness and weakening the drill.

The comparison associates helical drills with lower cutting load, good chip evacuation and lower heat generation, and lists deep holes and ferrous materials. Straight-fluted burnishing drills are listed for aluminium, non-ferrous metals and shallow holes with good finish; the comparison shows greater load and heat with less favourable chip flow.

Vc = π × D × N / 1,000 [m/min]. fn = Vf / N [mm/rev]. T = L / (N × fn) [min]. D: drill diameter [mm]; N: spindle speed [min^{-1}]; Vf: feed speed [mm/min]; L: drilling length [mm]. π is given as 3.14 in the source.

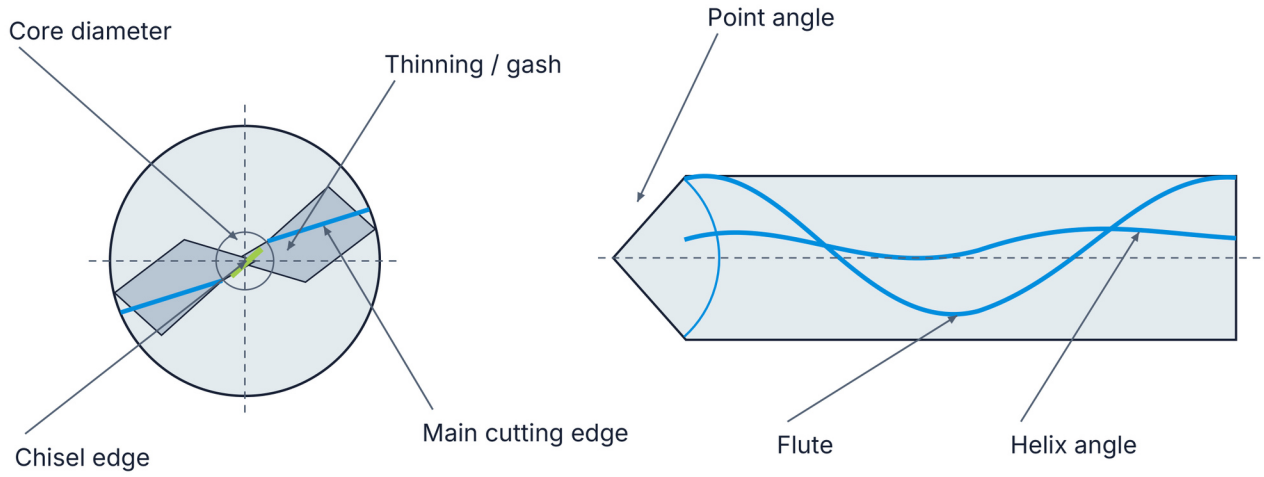


Technical tool geometry or measurement illustration.



Technical tool geometry or measurement illustration.

Drill: cutting edges, thinning and helix



The source gives 118° as a conventional standard point-angle example.

Schematic illustration

Drill: cutting edges, thinning and helix.

Fundamentals: cutting edge, brazing, heat and built-up edge

The shape sequence triangle, rhombus, square, hexagon and circle shows increasing edge rigidity, toughness and potential tool life, together with higher cutting load and vibration tendency. The edge-preparation sequence is sharp, sharp plus rounding, chamfer, and chamfer plus rounding. The source associates sharper edges more with PCD and more supported edges with PCBN; stronger preparation can raise load while supporting the edge.

For cast iron, the source compares eight individually tipped edges with one solid-PCBN or sandwich-PCBN insert. Solid construction improves mechanical strength, makes the full edge available and can reduce cost and material use per available edge. The 8:1 illustration compares construction types, not a universal tool-life ratio.

For active brazing, the source illustrates a smaller gap between the PCD/PCBN blank and carbide substrate and greater joint strength. The described vacuum process limits oxidation. The drawing retains the carbide substrate, PCBN component, brazing alloy and compared gaps.

The thermal model illustrates machining-heat distribution as chip 80%, tool 10% and workpiece 10%. Its isotherms are labelled 620, 630, 640, 650, 660, 670, 680, 690, 700, 710, 720, 720, 730, 740 and 750 °C. This is a source illustration, not a temperature promise for a particular application. Heat can impair rigidity and accuracy, accelerate wear and deform the tool.

The source associates built-up edge particularly with low cutting speed and very soft workpieces. Possible measures are higher cutting speed, higher feed and a sharper edge. The adherent layer can temporarily protect the tool surface, but it impairs workpiece finish, complicates dimensional control and can promote chipping or flaking. The cutting-zone model retains chip, tool, workpiece and residual adhesion on the chip and edge.



Technical tool geometry or measurement illustration.



Technical tool geometry or measurement illustration.



Technical tool geometry or measurement illustration.



Technical tool geometry or measurement illustration.



Technical tool geometry or measurement illustration.



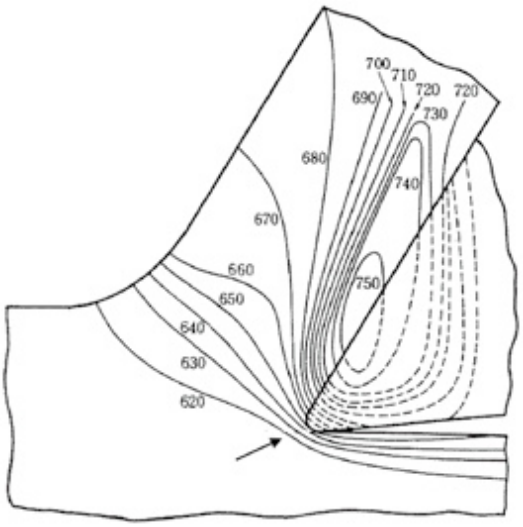
Technical tool geometry or measurement illustration.



Technical tool geometry or measurement illustration.

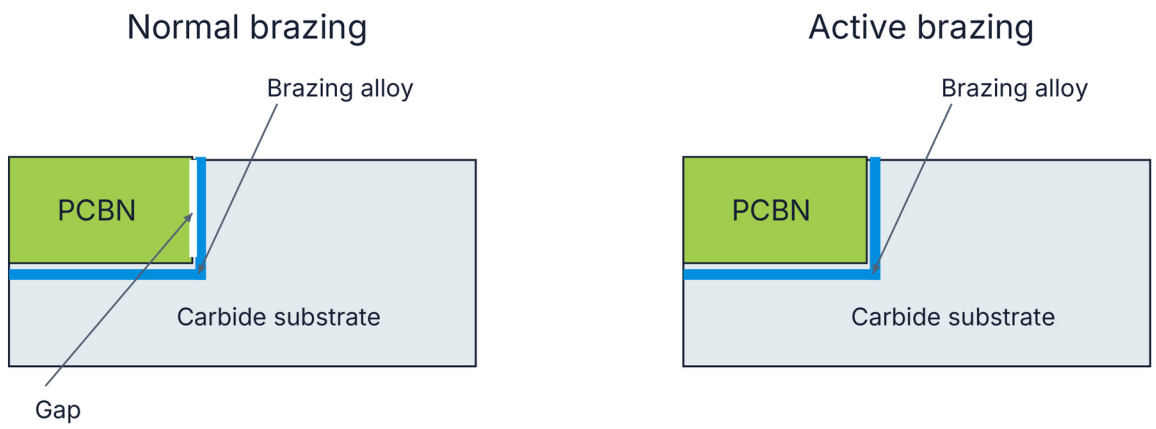


Technical tool geometry or measurement illustration.



Isotherms in the source illustration; temperature labels in °C.
Model image, not application-specific measurement.

Brazing: gap and joint in the source model

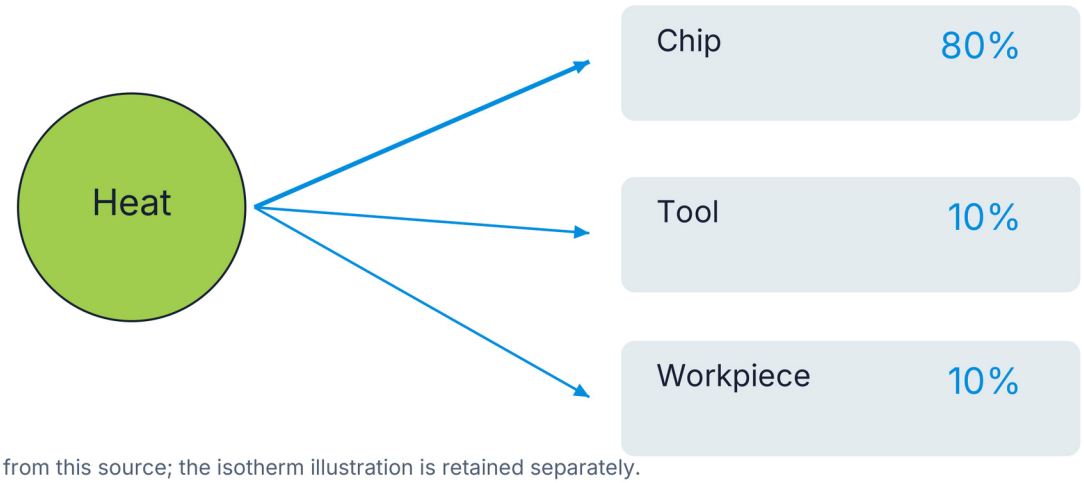


Active brazing: smaller gap and greater joint strength in the source comparison.

Schematic illustration

Brazing: gap and joint in the source model.

Machining heat: illustrative distribution

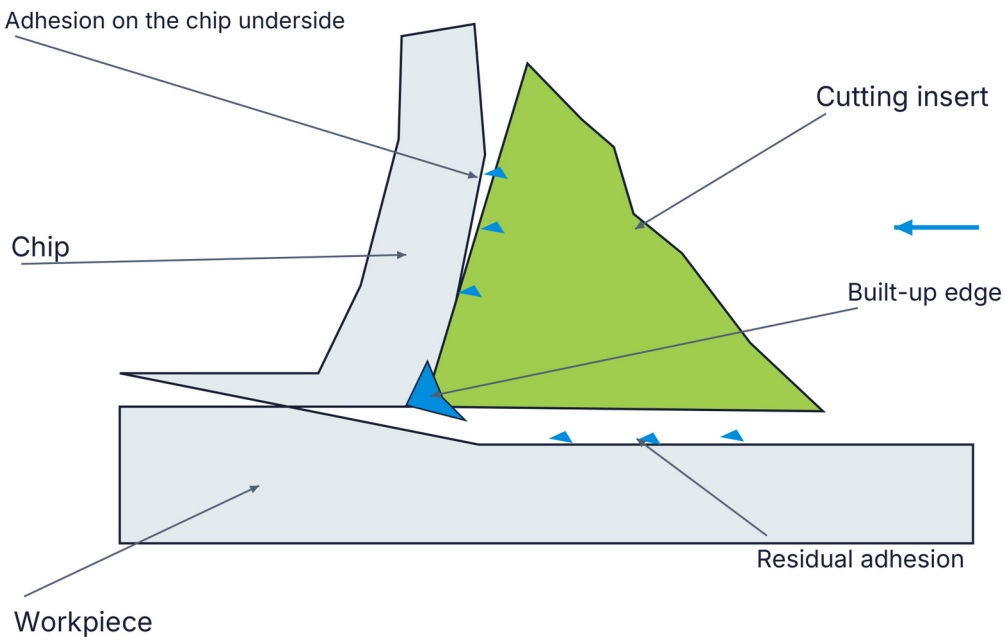


Model values from this source; the isotherm illustration is retained separately.

Schematic illustration

Machining heat: illustrative distribution.

Built-up edge: contact zone and residual adhesion



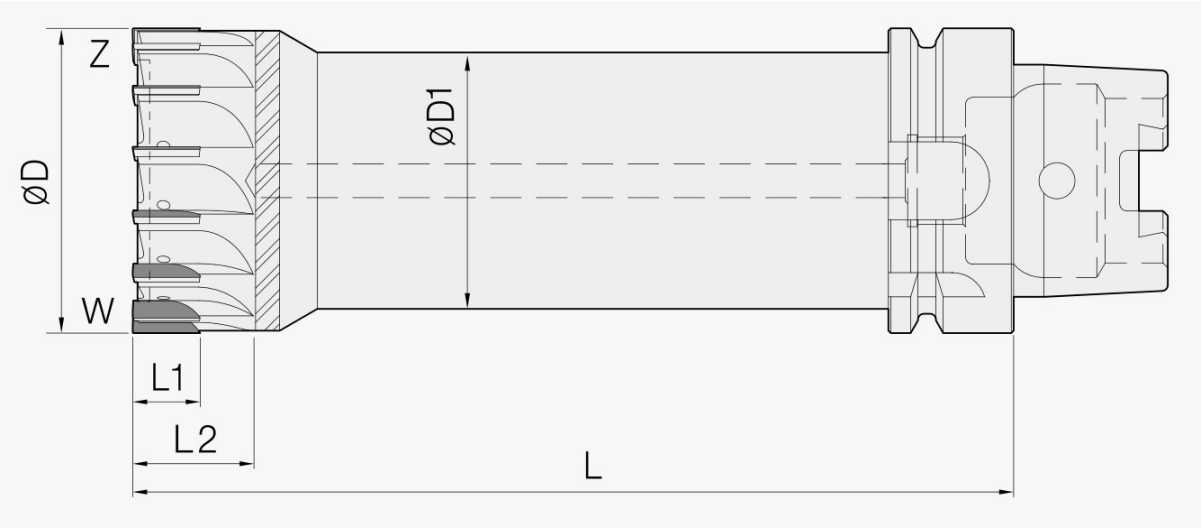
Adhesion can impair surface finish, dimensional accuracy and cutting-edge condition.
Schematic illustration

Built-up edge: contact zone and residual adhesion.

Endmill design-enquiry sheet

Design data include date, customer, end user, part name, material, hardness HRC/HRB and target roughness Ra/Rz/Rmax. The tool drawing uses ØD, ØD1, L1, L2, W, L and Z; the source legend additionally includes F. All printed fields are retained: D - diameter/tolerance [mm]; D1 - shank-body diameter [mm]; L1 - tip length [mm]; L2 - tip width [mm]; W - tool length [mm]; L - number of teeth [mm]; Z - number of flutes [pieces]; F - flute length [pieces]. Assignment of L2/W/L/Z/F and two units is inconsistent in the original form; the dimensioned tool drawing governs an order.

Shank options: solid carbide, solid carbide + steel, or steel. Coolant hole: yes/no. Interface options: HSKA 32, 40, 50, 63, 80, 100; BT or SK 30, 40, 50; alternatively a cylindrical interface with specified Ø [mm].

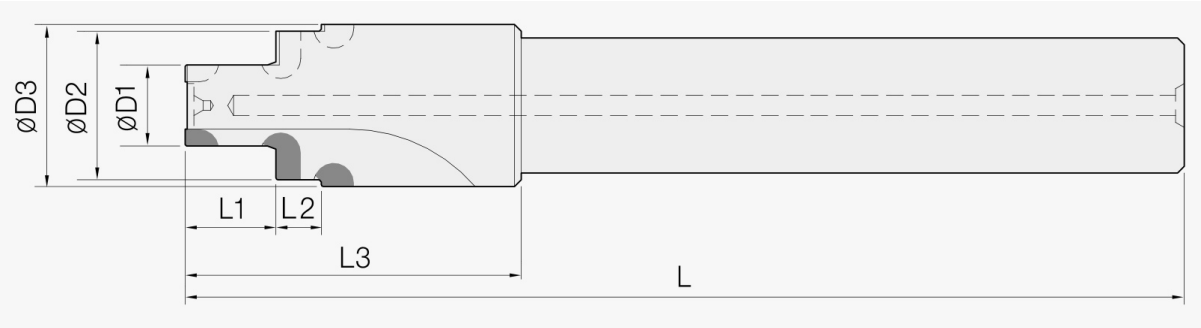


End mill: unchanged D, D1, L1, L2, W, L and Z references from the design-enquiry sheet.

Reamer design-enquiry sheet

General data: date, customer, end user, part name, material, hardness HRC/HRB and roughness Ra/Rz/Rmax. Tool data: D1/D2/D3 - diameter and tolerance [mm]; L1/L2 - step length [mm]; L3 - clearance length [mm]; L - tool length [mm]; F - flute count [pieces]. The drawing shows L2 as an individual section following L1.

Shank: solid carbide, solid carbide + steel, or steel. Coolant hole: Y-hole, through hole or none. Hole type: through or blind. Guide pads: yes/no. Interrupted cut: yes/no. Interface: HSKA 32, 40, 50, 63, 80, 100; BT/SK 30, 40, 50; module size 60 or 70; alternatively cylindrical interface Ø [mm].

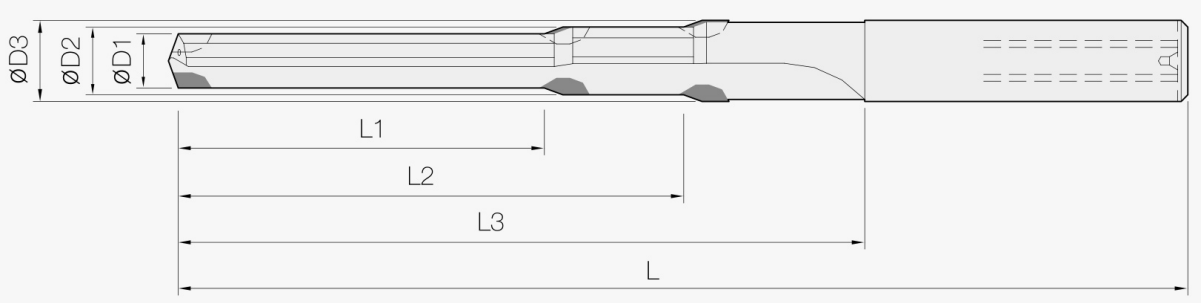


Reamer: L2 as an individual section after L1; separate step diameters and clearance length.

Drill design-enquiry sheet

General data: date, customer, end user, part name, material, hardness HRC/HRB and roughness Ra/Rz/Rmax. Tool data: D1/D2/D3 - diameter and tolerance [mm]; L1/L2 - step length [mm]; L3 - clearance length [mm]; L - tool length [mm]; F - flute count [pieces]. Unlike the reamer form, the drill drawing measures L1, L2 and L3 from the same front datum.

Shank: solid carbide, solid carbide + steel, or steel. Coolant hole: Y-hole, through hole or none. Hole type: through or blind. Guide pads: yes/no. Interrupted cut: yes/no. Interface: HSKA 32, 40, 50, 63, 80, 100; BT/SK 30, 40, 50; alternatively cylindrical interface Ø [mm].



Drill: L1, L2 and L3 from the same front datum; separate step diameters.

Tool-test information

The test sheet records date, customer and end user; part name, material, hardness HRC/HRB, roughness Ra/Rz/Rmax, workpiece view and drawing. Machine data cover machining centre (M.C.T), CNC turning/milling, manual machine and machine manufacturer.

Cutting data: speed V [m/min], spindle speed N [rev/min], feed F [mm/rev and mm/min], depth of cut D.O.C [mm] and number of passes. Cut: continuous or lightly, moderately or heavily interrupted. Coolant supply: dry, internal or external/wet. The original section symbols show the four interruption levels.

Tool data: PCD, PCBN, CVD, natural or mono-SCD, tungsten carbide (TC), cermet, ceramic or other cutting material. Shank: carbide, steel or carbide + steel; specify monoblock construction. Record specification, competitor tool and tool life in time and pieces. Operation: turning, milling, boring, grooving/parting, reaming, endmilling, drilling, wear-part application or to be determined. Source fields marked * are material, cut type, coolant, cutting material, specification, competitor tool, shank and operation.

Global network: 2022 source edition

The 2022 edition describes long-term customer partnerships worldwide and continuing product and service development. Its site overview at that time names Osan, Osan 2, Dongtan, Pyeongtaek, Seocheon and “Chengju” in Korea, retaining the printed spelling.

The overseas overview names Fujian, Weihai and Shanghai in China; Bac Ninh and Hai Duong in Vietnam; Indonesia, Germany and Japan; California, USA (identified as an affiliate), Alabama, USA; Italy, Thailand, India and Mexico. This list records the historical network in the source edition and is not a current site directory.

HQ contact in the 04/2022 edition

The edition carries printing date 04/2022. Its stated HQ contact is EHWA DIAMOND INDUSTRIAL CO. LTD., 374 Nambudae-ro, Osan-city, Gyeonggi-do, 18145, Korea; www.ehwadia.com, bkkim@ehwadia.co.kr, telephone +82 (31) 370-9220, fax +82 (31) 370-9840. The TÜV management-system mark belongs to the historical source edition. For a current European tooling enquiry, use the following EHWA Europe contact.

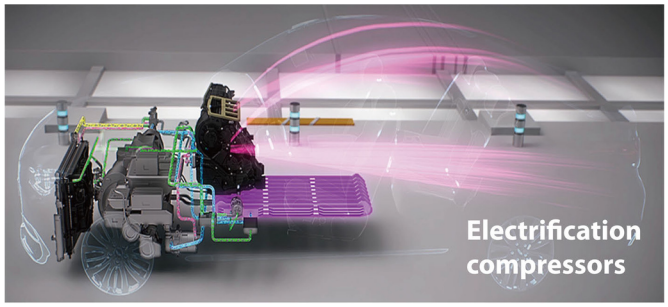
Programme variants from the 2026 overview

PCD end mills for scroll compressors

EHWA provides customer-optimised PCD end mills for aluminium scroll compressors. Precise machining supports production efficiency and high component quality. The application also includes compressors associated with electrification.



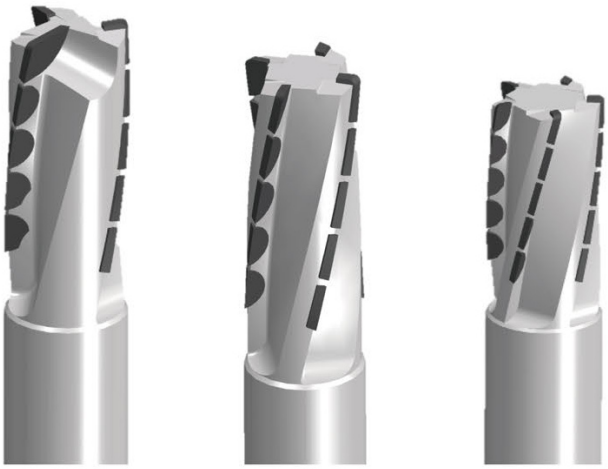
PCD end mills for scroll compressors: Tool view.



PCD end mills for scroll compressors: Component and machining view.

PCD end mills for electric vehicles

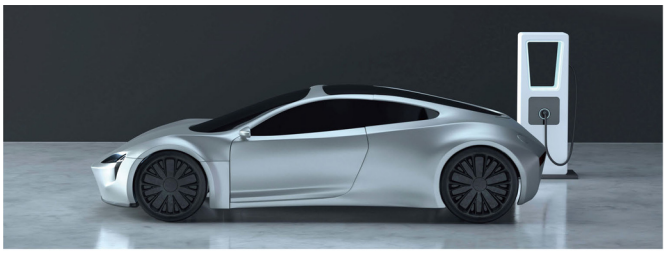
The helical design is intended for high removal rates when machining aluminium battery cases. A high rake angle supports low-burr or burr-free cutting under suitable conditions. High cutting speed and efficiency and improved surface roughness are the stated design objectives.



PCD end mills for electric vehicles: Tool view.



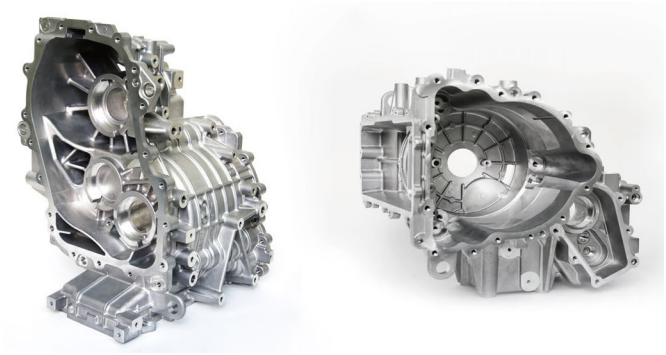
PCD end mills for electric vehicles: Component and machining view.



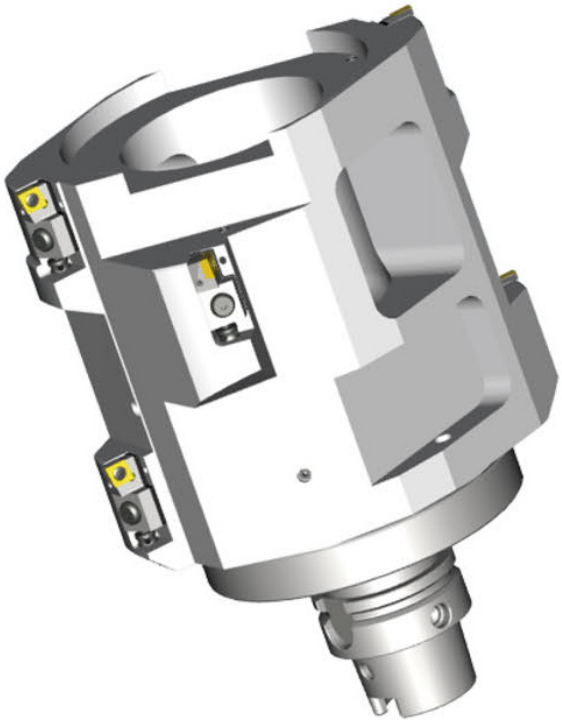
PCD end mills for electric vehicles: Component and machining view.

Special boring tool for motor housings

Electric motors are designed for high power and efficiency, large capacity and low weight. EHWA combines aluminium and CFRP in the illustrated tool to improve vibration damping. The tool illustration identifies the aluminium body; the application is motor-housing machining.



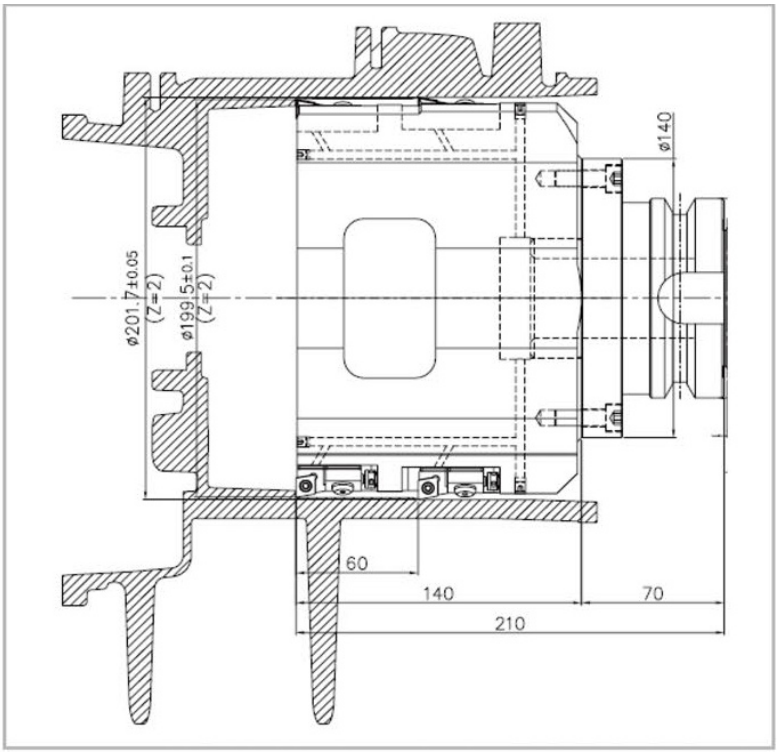
Special boring tool for motor housings: Component and machining view.



Special boring tool for motor housings: Tool view.



Special boring tool for motor housings: Tool view.



Motor housing: complete dimensioned drawing.



Special boring tool for motor housings: Tool view.

EBC52X: PCBN for CV joints

EBC52X is a high-CBN-content grade for continuous and interrupted cutting of heat-treated CV-joint components. Its design targets good performance even under demanding machining conditions. The two specific comparisons concern forged-steel outer and inner races; conditions and bar comparisons remain together for each trial.

EBC52X: comparison conditions

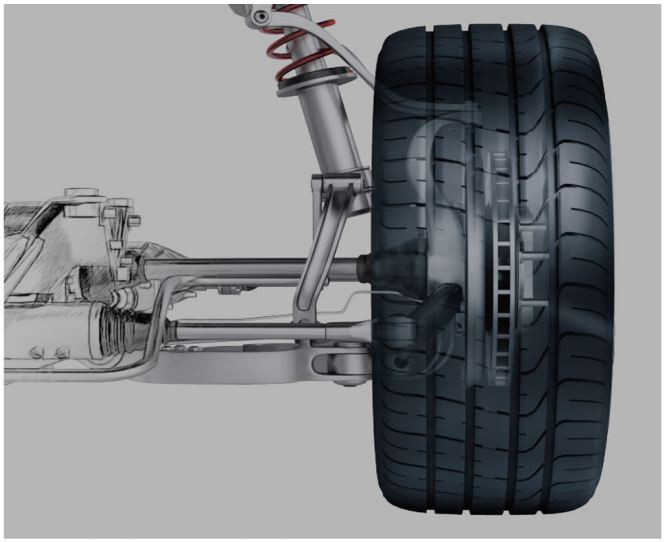
Parameter	Outer race	Inner race
Workpiece	Forged steel	Forged steel
Cutting speed	120 m/min	200 m/min
Feed rate	0.1~0.12 mm/rev	0.20 mm/rev
Depth of cut ap	0.10~0.20 mm	0.09~0.15 mm
Coolant	Dry	Dry
Cut	Interrupted	Interrupted



EBC52X: PCBN for CV joints: Component and machining view.



EBC52X: PCBN for CV joints: Component and machining view.



EBC52X: PCBN for CV joints: Component and machining view.



EBC52X: PCBN for CV joints: Component and machining view.

PCBN end mills for CV joints

CV-joint machining uses cutting as an alternative to grinding. EHWA develops precise PCBN end mills and customised tooling solutions for this task. The new six-flute design targets long tool life at high machining speeds. The HFS12 comparison shows four and six flutes; bar heights remain comparison illustrations without an invented unit or inferred performance guarantee.

HFS12: PCBN endmills

Parameter	Version 1	Version 2
Body type	HFS12	HFS12
Material	PCBN	PCBN
Flutes	4F	6F



PCBN end mills for CV joints: Component and machining view.



PCBN end mills for CV joints: Component and machining view.



PCBN end mills for CV joints: Tool view.



PCBN end mills for CV joints: Tool view.



PCBN end mills for CV joints: Tool view.

XF face milling cutters for aluminium alloys

XF types retain the complete dimension drawing, speed/depth overview and assignment of insert, cartridge and arbor. All dimensions can be customised to customer requirements. The source prints ØD 20 for XF 20063-18R(L); confirm this specific item/diameter assignment before ordering.

XF: maximum speed and cutting depth

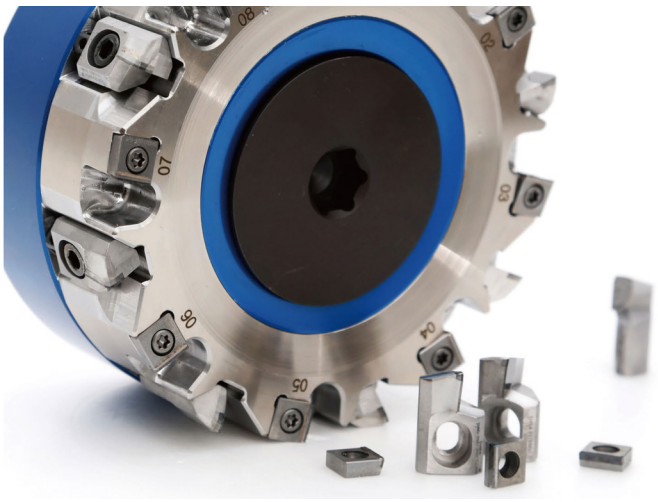
ØD	Max. speed [min^{-1}]	Cutting depth ap [mm]
100	11,000	3
125	9,000	3
160	7,000	3
200	5,500	3

XF: dimensions

Type	ØD	Ød	A	B	H
XF 10050-16R (L)	100	31.75	12.7	8	50
XF 12563-16R (L)	125	38.1	15.9	10	63
XF 16063-16R (L)	160	50.8	19.0	11	63
XF 20063-18R (L)	20	47.625	25.4	14	63
XF 25063-18R (L)	250	47.625	25.4	14	63

XF: teeth and components

Type	Teeth	Insert	Cartridge	Arbor
XF 10050-16R (L)	16	XF10 - SN	XF CF / XF SD	FMA 31.75
XF 12563-16R (L)	16	XF10 - SN	XF CF / XF SD	FMA 38.1
XF 16063-16R (L)	16	XF10 - SN	XF CF / XF SD	FMA 50.8
XF 20063-18R (L)	18	XF10 - SN	XF CF / XF SD	FMA 47.625
XF 25063-18R (L)	18	XF10 - SN	XF CF / XF SD	FMA 47.625



XF face milling cutters for aluminium alloys: Tool view.



XF face milling cutters for aluminium alloys: Tool view.

Carbide drills for aluminium alloys

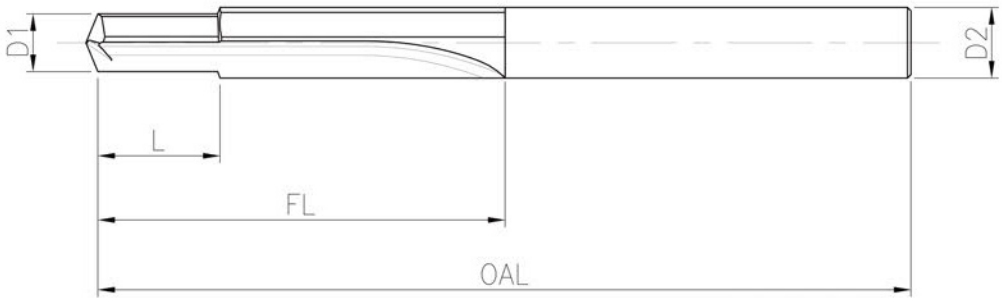
The designation example ET DB 40 60 050 100 2N combines EHWA, tungsten carbide T, drill type, diameters 1 and 2, step length, overall length and flute count/coolant hole. B identifies the straight-flute burnishing drill, H the helical drill. Drawings retain D1, D2, L, FL and OAL and the different stepped geometries.

ETDB: solid carbide drills

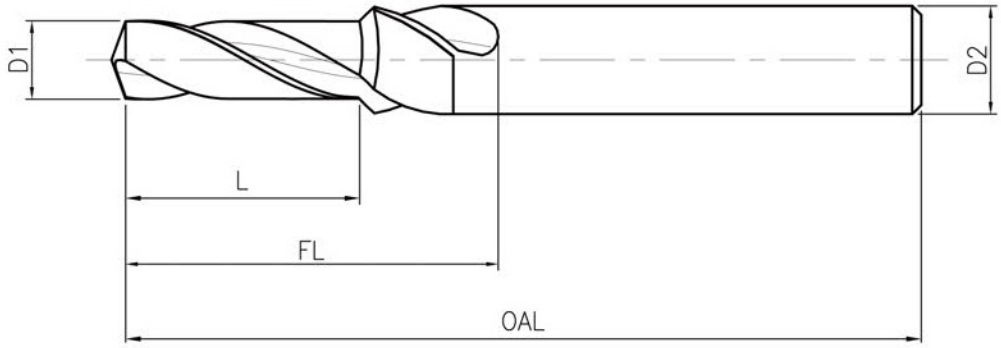
Item code	D1	D2	L	FL	OAL
ETDB 43 60 025 080 2N	4.3	6.0	25	40	80
ETDB 51 80 025 080 2N	5.1	8.0	25	40	80
ETDB 69 100 030 100 2N	6.9	10.0	30	50	100
ETDB 86 120 035 105 2N	8.6	12.0	35	55	105
ETDB 104 140 040 110 2N	10.4	14.0	40	60	110
ETDB 140 160 040 110 2N	14.0	16.0	40	60	110



Carbide drills for aluminium alloys: Tool view.



Burnishing drill: dimension scheme D1, D2, L, FL and OAL.



Helical drill: dimension scheme D1, D2, L, FL and OAL.

Solid carbide drills and coatings

ET220 identifies an ultra-fine material with high hardness and fracture toughness. Helical drills with two to three coolant holes are intended for steel. The coating overview distinguishes conventional coating TA and new coatings H1, H2 and H3 for interrupted cutting. The example ET DH 40 60 050 100 2N H3 adds the coating type to the drill designation. Drawings and dimension tables retain the specific types.

ETDH: solid carbide drills

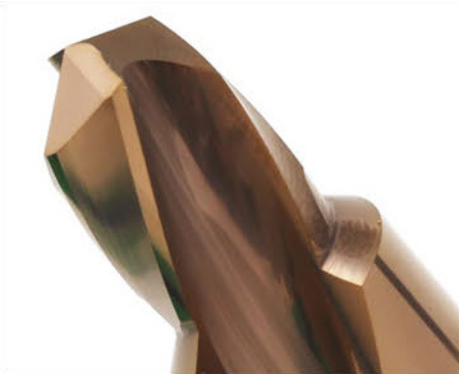
Item code	D1	D2	L	FL	OAL
ETDH 43 60 025 080 2N	4.3	6.0	25	40	80
ETDH 51 80 025 080 2N	5.1	8.0	25	40	80
ETDH 69 100 030 100 2N	6.9	10.0	30	50	100
ETDH 86 120 035 105 2N	8.6	12.0	35	55	105
ETDH 104 140 040 110 2N	10.4	14.0	40	60	110
ETDH 140 160 040 110 2N	14.0	16.0	40	60	110



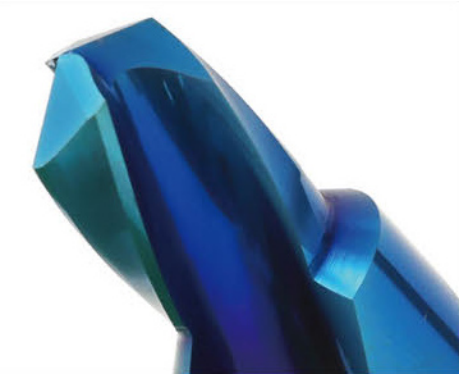
Solid carbide drills and coatings: Tool view.



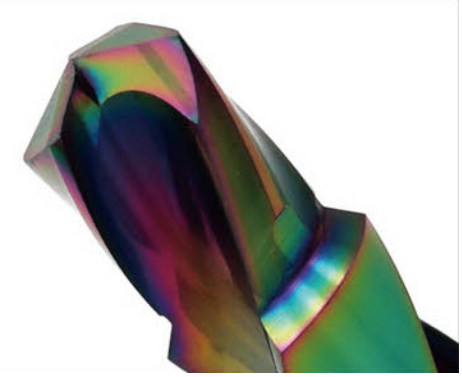
Solid carbide drills and coatings: Tool view.



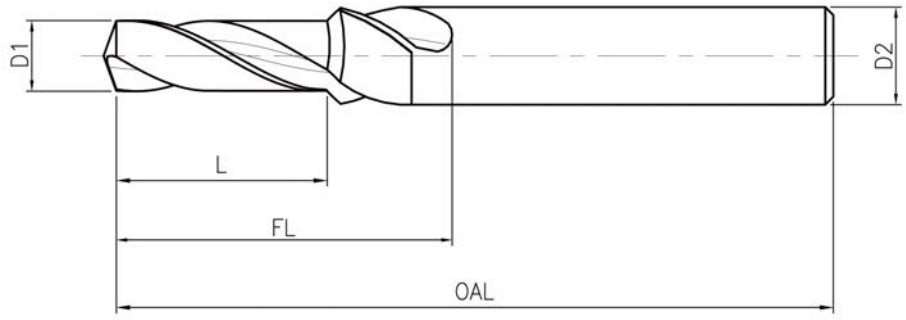
Solid carbide drills and coatings: Tool view.



Solid carbide drills and coatings: Tool view.



Solid carbide drills and coatings: Tool view.



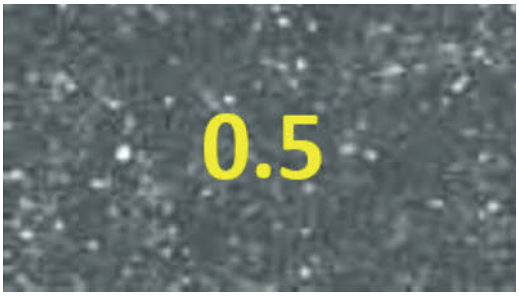
Helical drill: geometric dimension references.

PCD grades EP20, EP55 and EP59

EP20 uses densely packed submicron diamond grains for good wear and impact resistance. EP55 is identified as medium grain. Multimodal EP59, with more than 95% diamond content, supports high wear and impact resistance. The specific application matrix names copper/aluminium alloys, acrylic, engineering plastics, engine/transmission machining, wood, carbon, carbide, ceramic, glass and MMC by grade. The property diagram retains grain size, chipping resistance, wear resistance, surface roughness and edge sharpness. The three bar comparisons remain assigned to their respective grades.

PCD grades: grain and applications

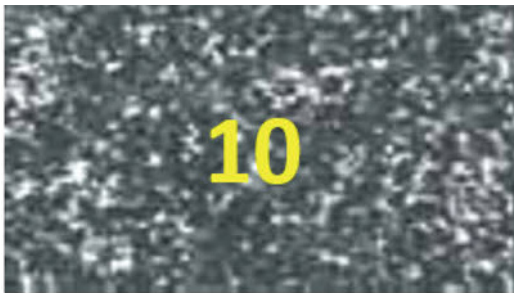
Grade	Grit size [µm]	Applications
EP20	0.5	Copper alloy / Al alloy / Acrylic / Engineering plastic
EP55	10	Automotive engine / T,M / Wood / Al alloy (Si<13%) / Carbon
EP59	25+2	Al alloy (Si>13%) / Tungsten carbide / Ceramic / Glass / MMC



PCD grades EP20, EP55 and EP59: Microstructure image with the shown scale.



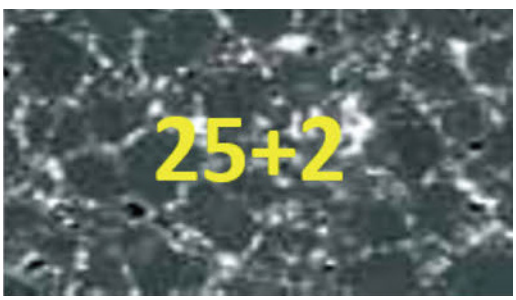
PCD grades EP20, EP55 and EP59: Component and machining view.



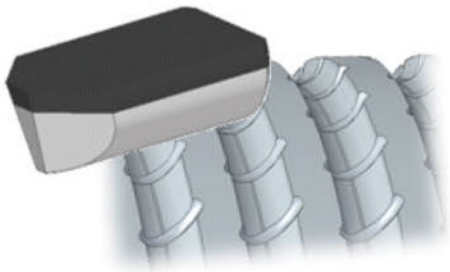
PCD grades EP20, EP55 and EP59: Microstructure image with the shown scale.



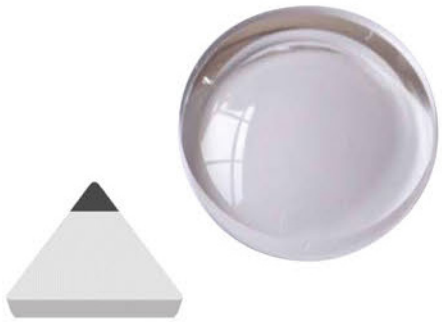
PCD grades EP20, EP55 and EP59: Component and machining view.



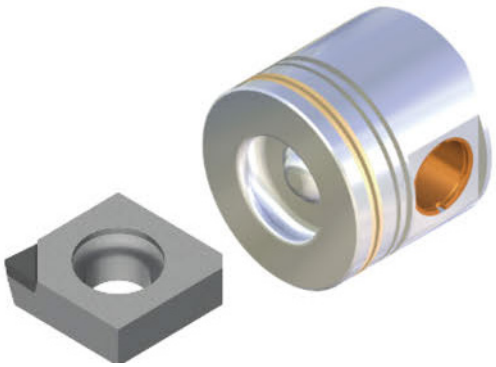
PCD grades EP20, EP55 and EP59: Microstructure image with the shown scale.



PCD grades EP20, EP55 and EP59: Component and machining view.



PCD grades EP20, EP55 and EP59: Component and machining view.



PCD grades EP20, EP55 and EP59: Component and machining view.



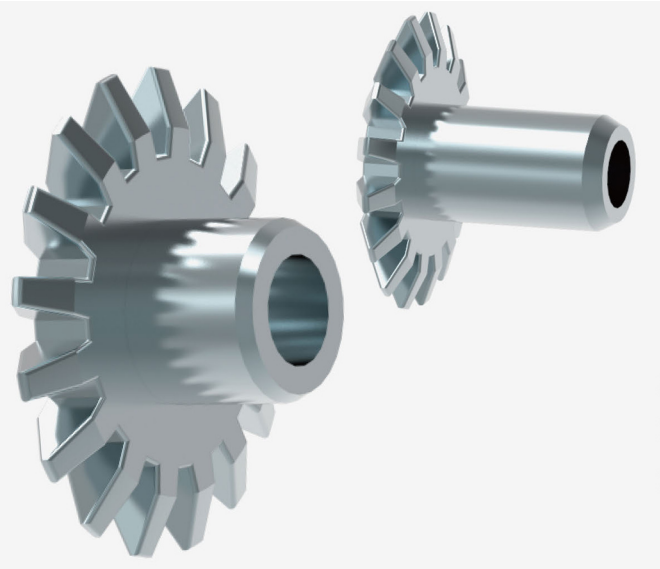
PCD grades EP20, EP55 and EP59: Component and machining view.

Transmission and differential gears

The illustrated comparison associates SCM418H with EB419 and EB454 under the listed cutting conditions. Workpiece and tool images show gear machining. The bar comparison against a competitor tool is a specific manufacturer example.

Gears: comparison conditions

Workpiece	Vc	f	ap	Grades
SCM418H	S 80~120 m/min	F 0.07~0.10 mm/rev	0.05~0.06 mm	EB419 / EB454



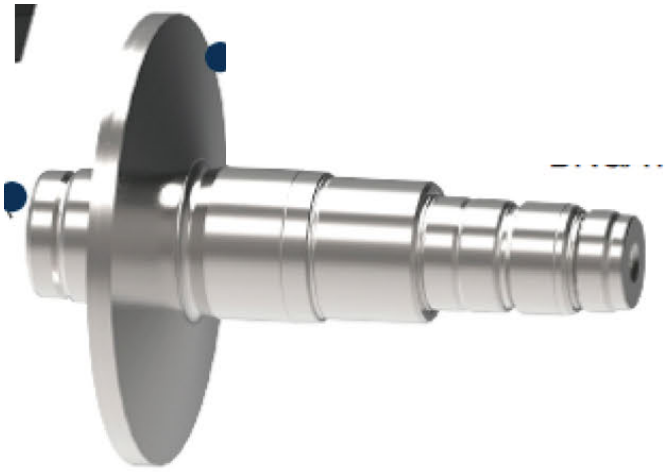
Transmission and differential gears: Component and machining view.



Transmission and differential gears: Tool view.

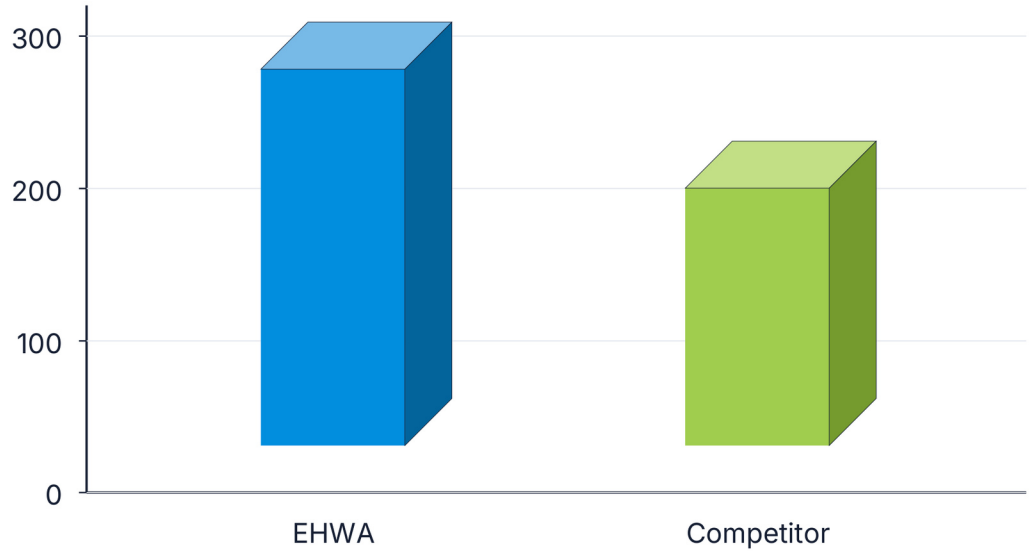


Transmission and differential gears: Tool view.



Transmission and differential gears: Component and machining view.

EHWA: SCM418H



Comparison under the associated trial conditions.
The source gives no axis unit and no numerical bar values.

Schematic illustration

EHWA: SCM418H.

AF, BF, CF and XF face milling cutters

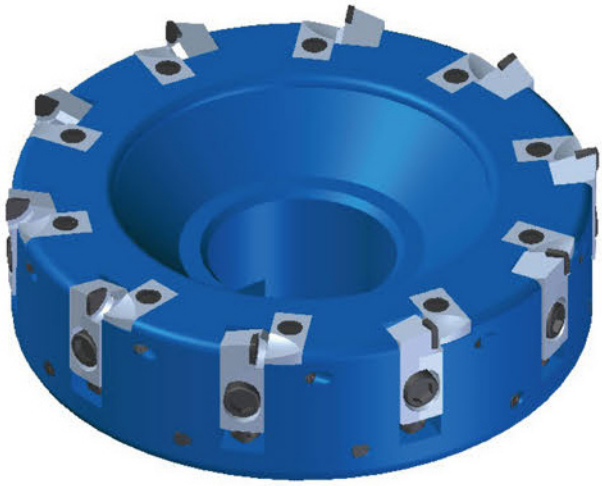
AF combines surface quality and tool life over 80D to 250D. BF targets low-burr or burr-free machining and long tool life over 125D to 250D. CF over 50D to 250D is EHWA's universal design. XF is intended for roughing and finishing. Insert and cartridge types retain their respective cutter assignments.

Face milling cutters: programme

Cutter	Range	Inserts	Features
AF	80D~250D	SNGN 1204 / SNGX 1204	Surface finish and tool life
BF	125D~250D	SNGX 1004-R / SNGX 1004-F	Burr-free cutting and tool life
CF	50D~250D	CFR / CFW	EHWA universal design
XF	Not specified	SNGX 1004-R / SNGX 1004-F / CFR / CFW	Roughing and finishing



AF, BF, CF and XF face milling cutters: Tool view.



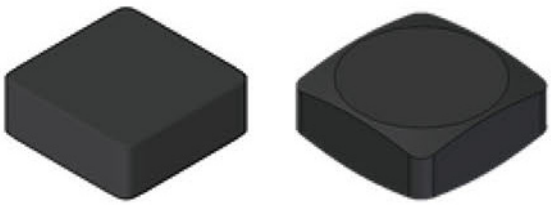
AF, BF, CF and XF face milling cutters: Tool view.



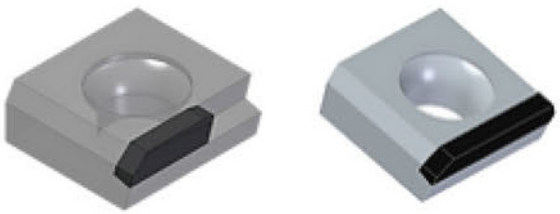
AF, BF, CF and XF face milling cutters: Tool view.



AF, BF, CF and XF face milling cutters: Tool view.



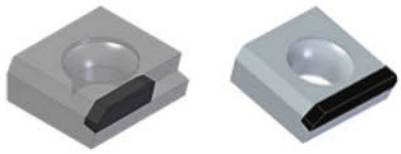
AF, BF, CF and XF face milling cutters: Tool view.



AF, BF, CF and XF face milling cutters: Tool view.



AF, BF, CF and XF face milling cutters: Tool view.



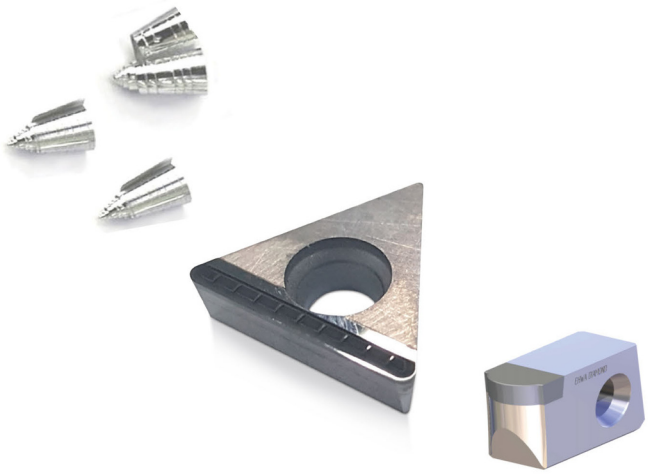
AF, BF, CF and XF face milling cutters: Tool view.



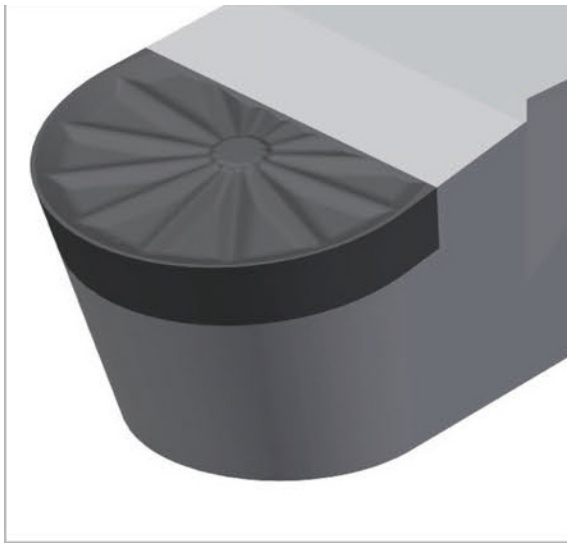
AF, BF, CF and XF face milling cutters: Tool view.

PCD inserts and chipbreakers

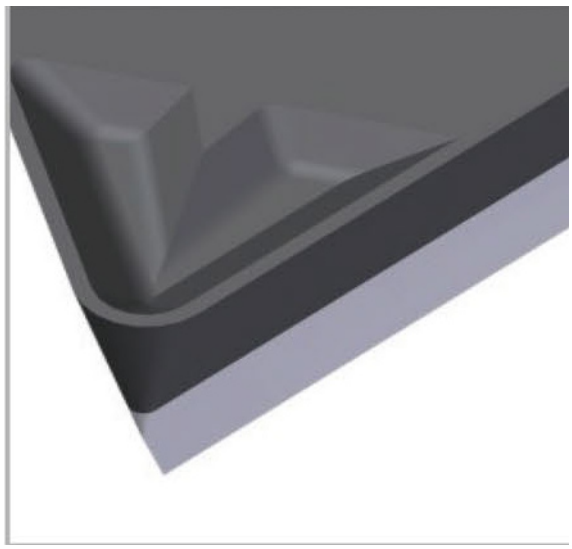
Customised chipbreaker geometries support chip control adapted to the machining operation. Design examples retain their different shapes and edge positions.



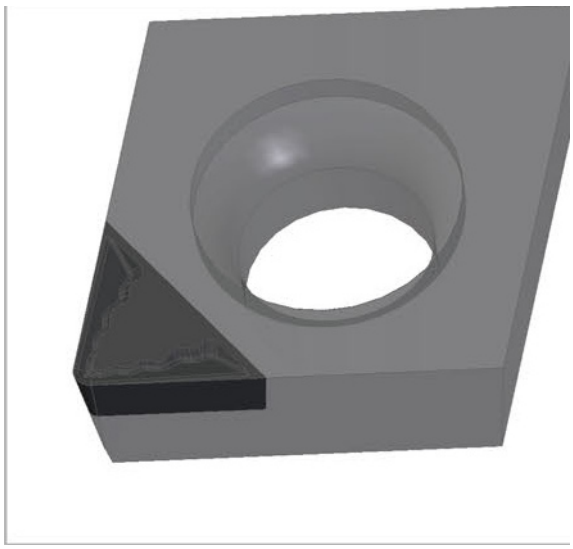
PCD inserts and chipbreakers: Tool view.



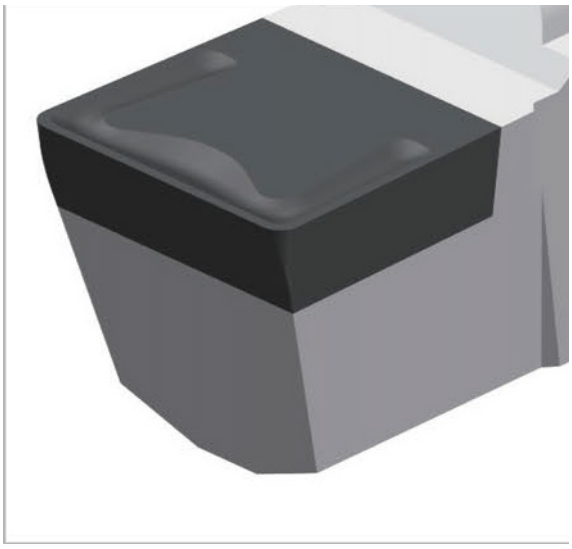
PCD inserts and chipbreakers: Tool view.



PCD inserts and chipbreakers: Tool view.

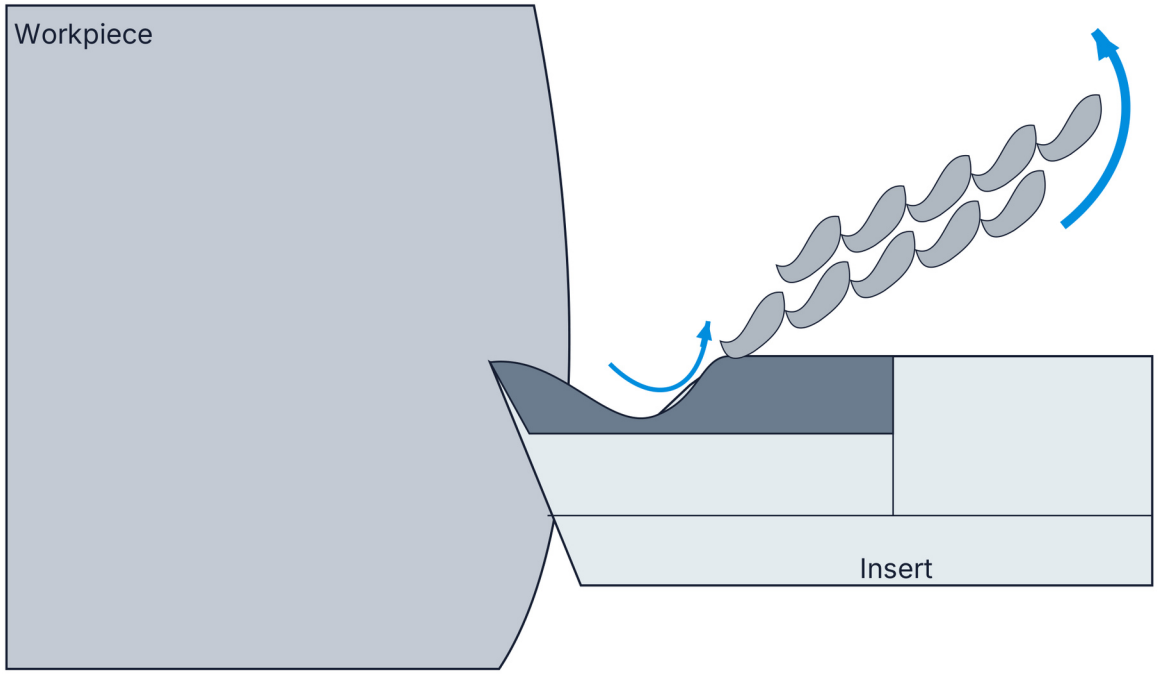


PCD inserts and chipbreakers: Tool view.



PCD inserts and chipbreakers: Tool view.

Chip control at the chipbreaker



Schematic illustration

Chip control at the chipbreaker.

Bearings: internal turning and drilling

Bearing manufacturing requires precise cutting tools and grinding wheels to produce suitable raceways. EHWA PCBN inserts target good machining performance and long tool life in internal turning. Illustrated codes and machining locations retain their complete assignments.

Bearings: tool codes and operation

Tool code	Operation
4VT-DNGA150408	Inside turning
TC-DRILL 10D	Drilling
4VT-VNGA160408	Inside turning



Bearings: internal turning and drilling: Component and machining view.



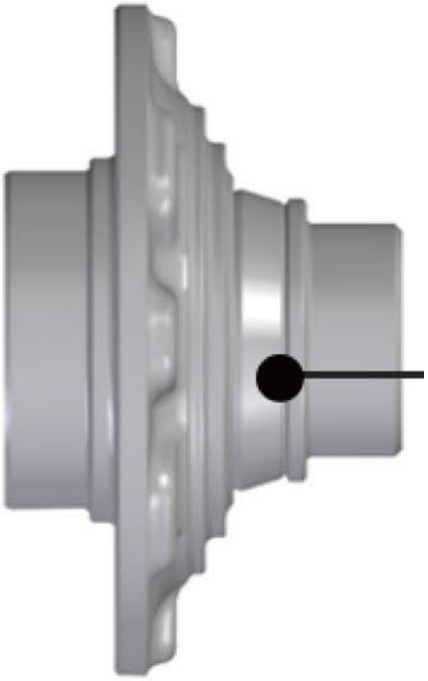
Bearings: internal turning and drilling: Component and machining view.



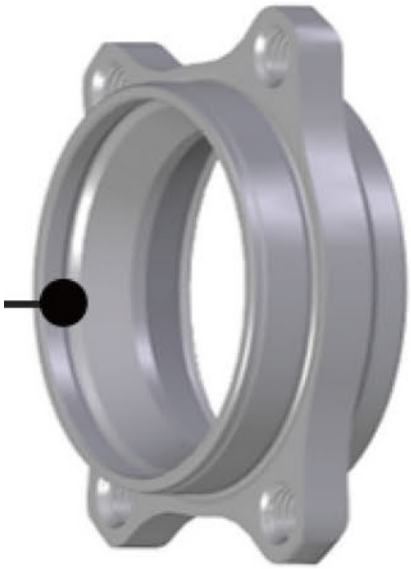
Bearings: internal turning and drilling: Tool view.



Bearings: internal turning and drilling: Component and machining view.



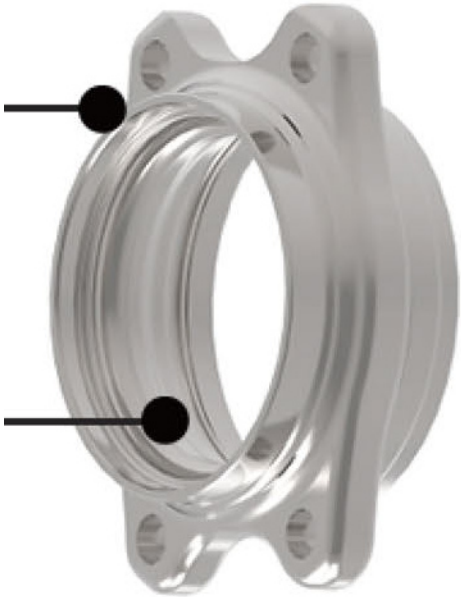
Bearings: internal turning and drilling: Component and machining view.



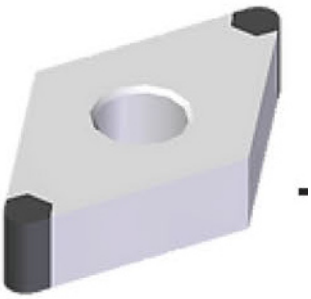
Bearings: internal turning and drilling: Component and machining view.



Bearings: internal turning and drilling: Component and machining view.



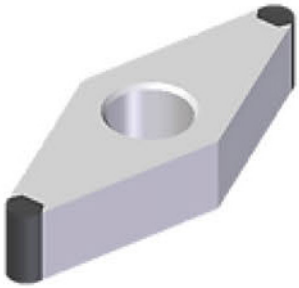
Bearings: internal turning and drilling: Component and machining view.



Bearings: internal turning and drilling: Tool view.

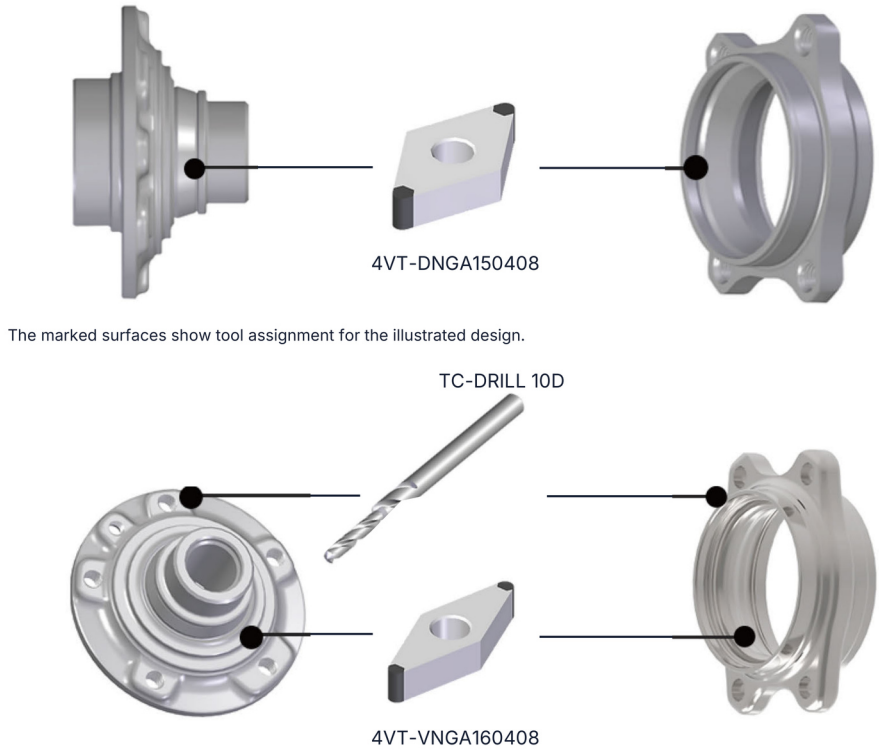


Bearings: internal turning and drilling: Tool view.



Bearings: internal turning and drilling: Tool view.

Bearing components: cutting-tool assignment



Bearing components: cutting-tool assignment.

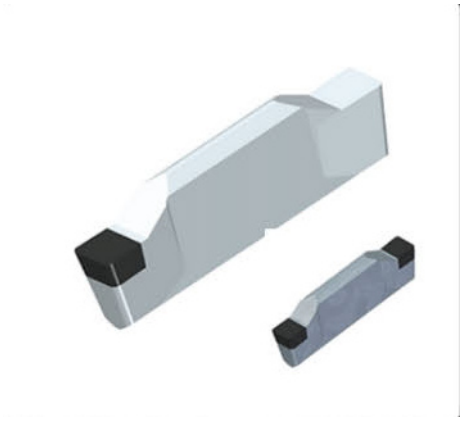
Grooving, parting, whirling and pistons

Precision grooving and parting tools are designed with PCD, PCBN or carbide grades to suit the operation, targeting good cutting performance and long tool life. ES, ED, ET and EM remain distinct standard systems.

Wear-resistant PCBN whirling tools support consistent, precise screw geometry. Piston machining offers customised designs using single-crystal diamond, PCD, PCBN or carbide.

Standard grooving and parting tools

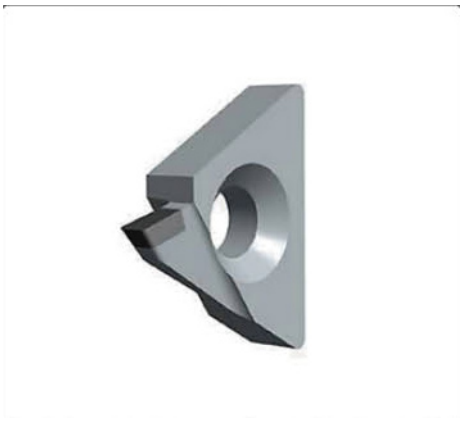
Type	Cutting materials
ES	PCD / PCBN
ED	PCD / PCBN
ET	PCD / PCBN
EM	PCD / PCBN



Grooving, parting, whirling and pistons: Tool view.



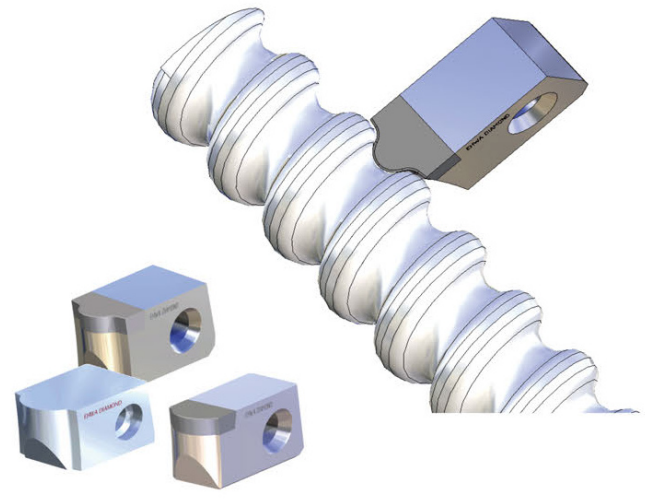
Grooving, parting, whirling and pistons: Tool view.



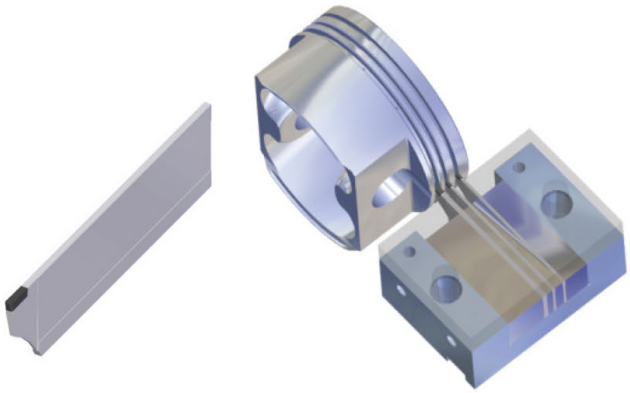
Grooving, parting, whirling and pistons: Tool view.



Grooving, parting, whirling and pistons: Tool view.



Grooving, parting, whirling and pistons: Tool view.



Grooving, parting, whirling and pistons: Component and machining view.

Whirling: geometry, grades and coatings

The design supports precise gothic-arch profiles and contact angles and consistent accuracy in CNC machining. Shapes can be customised. The EB510 and EB73 grade overview retains CBN content and its three property ratings. Filled and empty rating marks remain distinguishable.

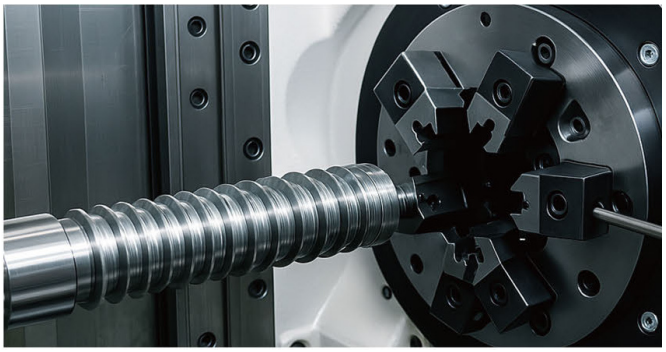
Coatings TN, H1, H2, H3 and TNP retain their colours, hardness values, temperature values and benefits. The printed heading provides no units for hardness or temperature; these values are therefore not presented as verified HV or °C limits.

Whirling: PCBN grades

Grade	CBN volume	Strength/toughness: filled marks out of 3	Chemical stability: filled marks out of 3	Wear resistance: filled marks out of 3
EB510	90%	3	2	3
EB73	75%	2	3	3

Whirling: coating characteristics

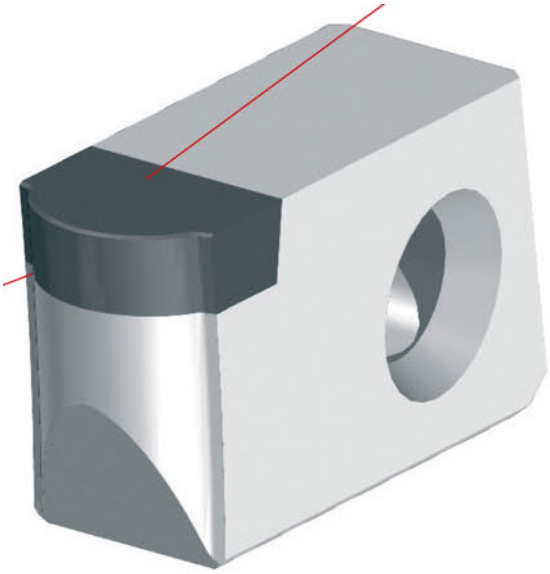
Grade	Colour	Hardness value	Maximum service temperature: value	Features
TN	Gold	2,300	600	Mono layer / Typically used for wear parts / Easy identification of used insert edges
H1	Copper	3,600	1,200	Multi-layer coating for interrupted cutting / Wear resistance / Oxidation resistance
H2	Blue	4,000	1,200	Multi-layer coating for interrupted cutting / Wear resistance / Oxidation resistance
H3	Rainbow	3,600	1,200	Multi-layer coating for interrupted cutting / Wear resistance / Oxidation resistance
TNP	Dark gray	3,600	1,100	Wear resistance / Surface finish / Heat resistance / Hardened and bearing steel



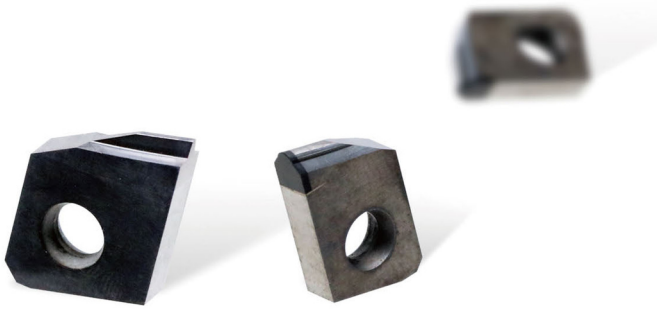
Whirling: geometry, grades and coatings: Component and machining view.



Whirling: geometry, grades and coatings: Component and machining view.



Whirling: geometry, grades and coatings: Tool view.



Whirling: geometry, grades and coatings: Tool view.

Precision tools for automatic lathes

BS and EMG types support precise, sharp cutting edges and low chipping. Depending on the application, they can achieve longer tool life than carbide tools; the manufacturer comparison is not generalised to every material and cutting condition. Custom edge shapes are available. Drawings and tables retain all dimensions including Dm and T.

BS: dimensions [mm]

Item no.	R	V1	V2	L	D
BSR 25 60 005	0.05	15	15	60	2.5
25 60 01	0.1	15	15	60	2.5
30 60 005	0.05	15	15	60	3
30 60 01	0.1	15	15	60	3
40 60 01	0.1	15	15	60	4
40 60 02	0.2	15	15	60	4
50 60 01	0.1	15	15	60	5
50 60 02	0.2	15	15	60	5

BS: Dm [mm]

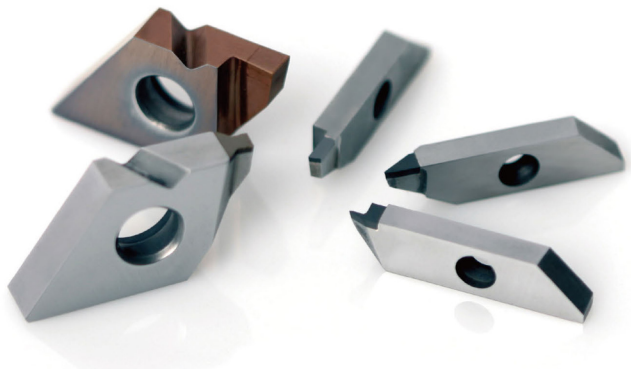
Item no.	Dm
BSR 25 60 005	3
25 60 01	3
30 60 005	3.5
30 60 01	3.5
40 60 01	4.5
40 60 02	4.5
50 60 01	5.5
50 60 02	5.5

EMG: dimensions [mm]

Item no.	W1	X1	R	W	L
EMG 05000-L/R	0.5	3.0	0.00	2.7	22.2
10005-L/R	1.0	3.5	0.00	2.7	22.2
15005-L/R	1.5	3.5	0.05	2.7	22.2
2001-L/R	2.0	4.0	0.10	2.7	22.2
2501-L/R	2.5	4.0	0.10	2.7	22.2

EMG: thickness [mm]

Item no.	T
EMG 05000-L/R	5.6
10005-L/R	5.6
15005-L/R	5.6
2001-L/R	5.6
2501-L/R	5.6



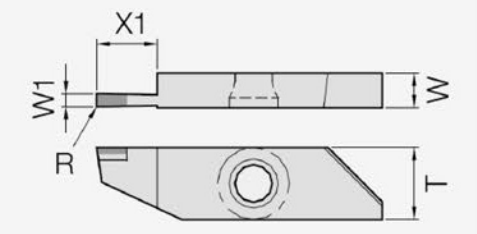
Precision tools for automatic lathes: Tool view.



Precision tools for automatic lathes: Tool view.



BS type: isolated dimension scheme.



EMG type: isolated dimension scheme.

PCBN grades: steel and cast iron

The hardened-steel application map states hardness > HRC 50, cutting speed and interruption classes H05, H15, H25 and H35. The cast-iron map distinguishes grey and ductile iron with the plotted grade regions.

EB419 serves continuous to moderately interrupted cutting of heat-treated steel and offers good wear resistance; TNP coating supports heat resistance. EB454 is designed for light to heavy interrupted cutting from medium to high speed; TNP supports heat resistance and edge sharpness. EB428 serves continuous high-speed cutting of heat-treated steel and ductile iron, with good wear resistance at elevated temperature; TNP supports heat resistance. EB210 is designed for heavily interrupted cutting of hard cast iron at high speed, combining impact and wear resistance. High-CBN-content EB71X is intended for cast iron.

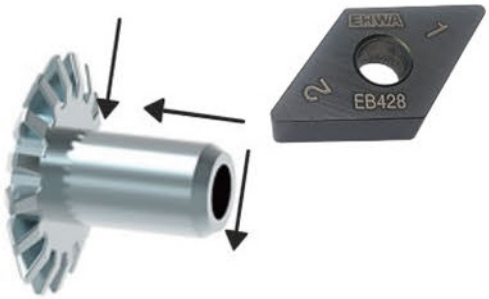
The six specific competitor comparisons retain their listed materials SCR420HB, SCM415H, FCD500, CF53 and FC170 and the actual bar/axis references. In the CF53 example, the section heading states EB210 while the bar legend states EB454; confirm the test grade before applying this comparison.



PCBN grades: steel and cast iron: Component and machining view.



PCBN grades: steel and cast iron: Component and machining view.



PCBN grades: steel and cast iron: Component and machining view.



PCBN grades: steel and cast iron: Component and machining view.

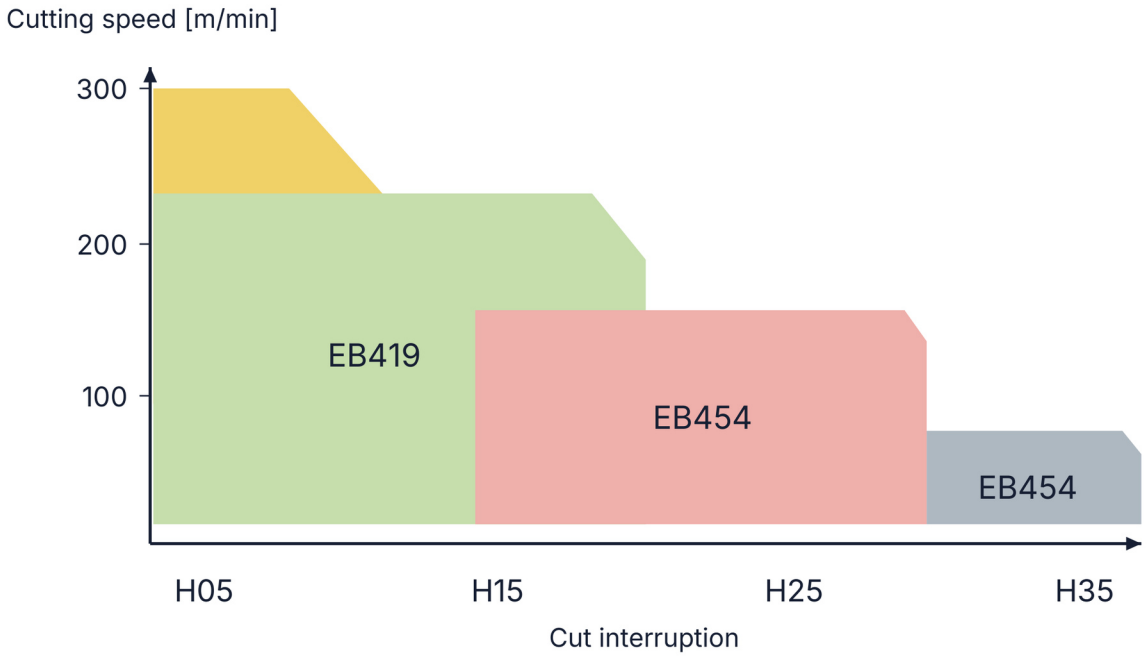


PCBN grades: steel and cast iron: Component and machining view.



PCBN grades: steel and cast iron: Component and machining view.

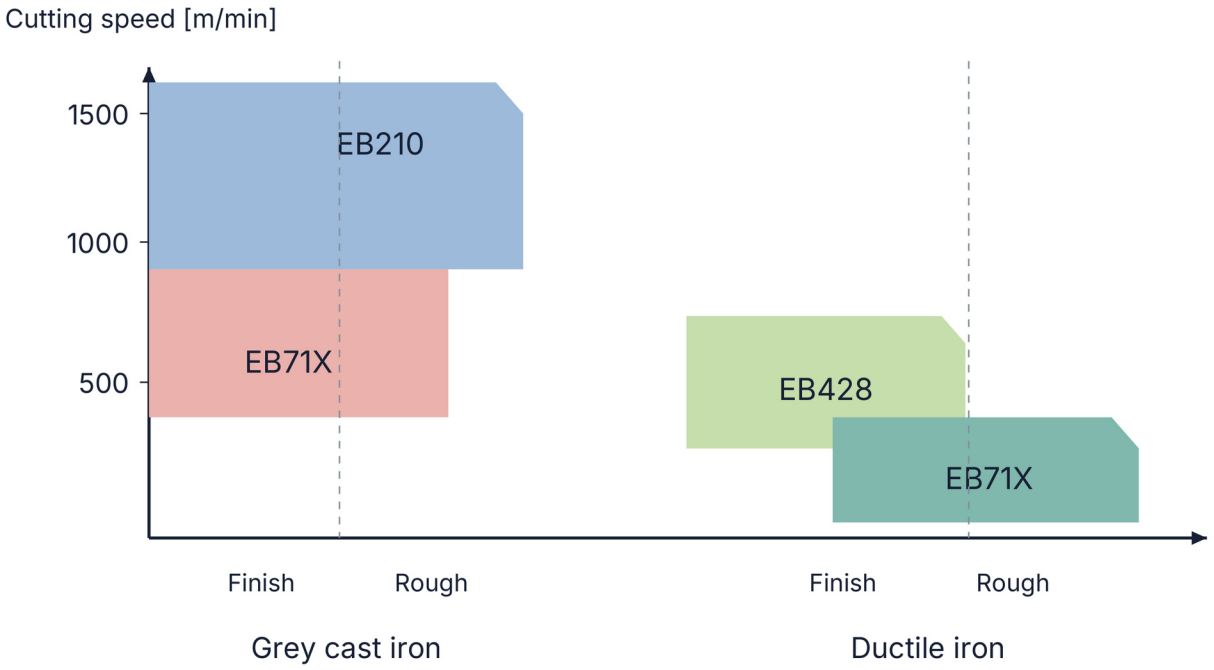
PCBN 2026: hardened steel > HRC 50



Schematic illustration

PCBN 2026: hardened steel > HRC 50.

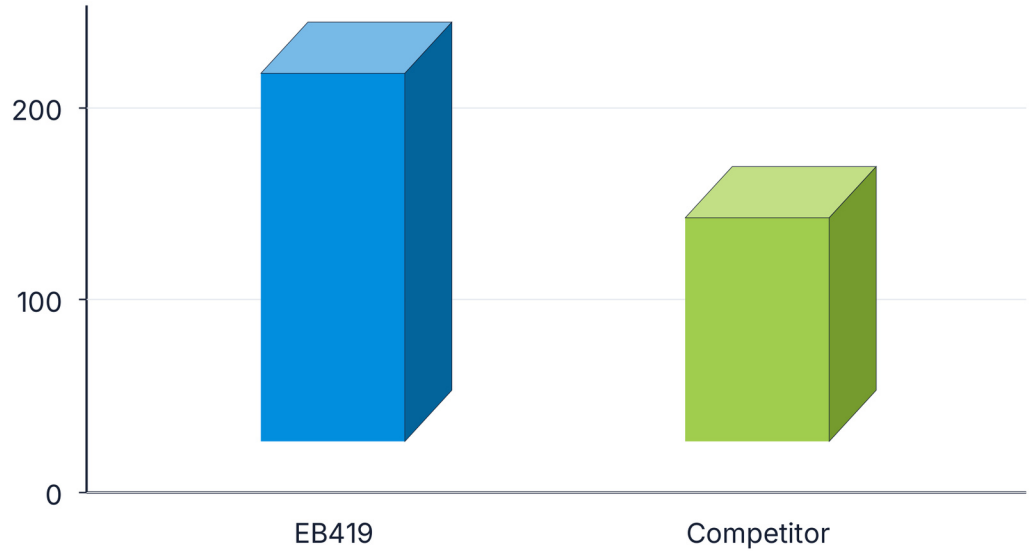
PCBN 2026: grey and ductile iron



Schematic illustration

PCBN 2026: grey and ductile iron.

EB419: SCR420HB

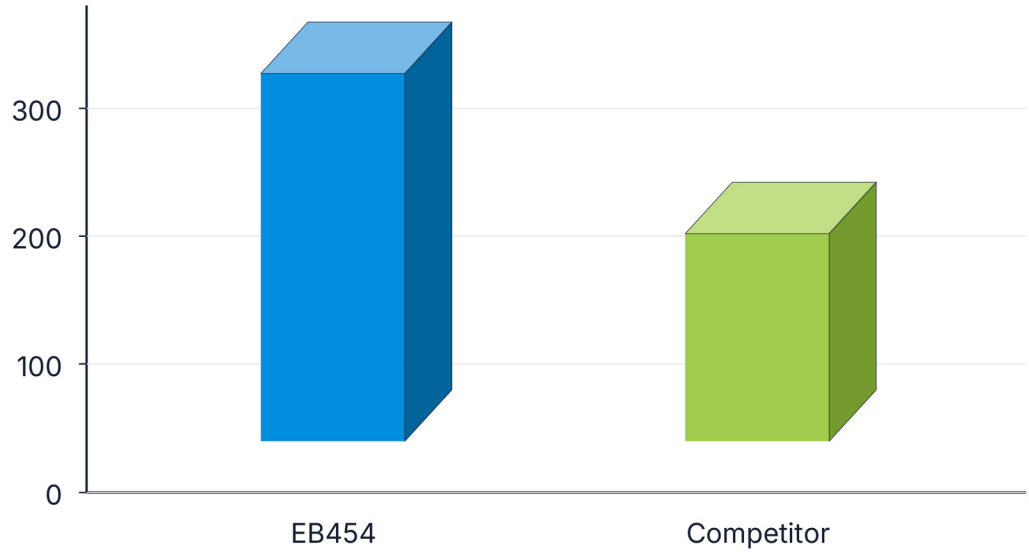


Comparison under the associated trial conditions.
The source gives no axis unit and no numerical bar values.

Schematic illustration

EB419: SCR420HB.

EB454: SCM415H

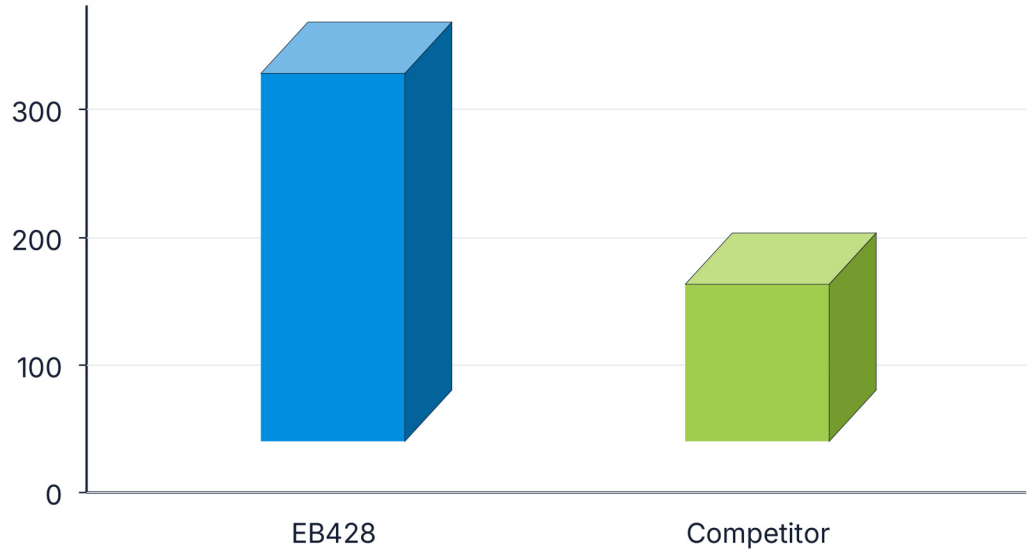


Comparison under the associated trial conditions.
The source gives no axis unit and no numerical bar values.

Schematic illustration

EB454: SCM415H.

EB428: SCM415H

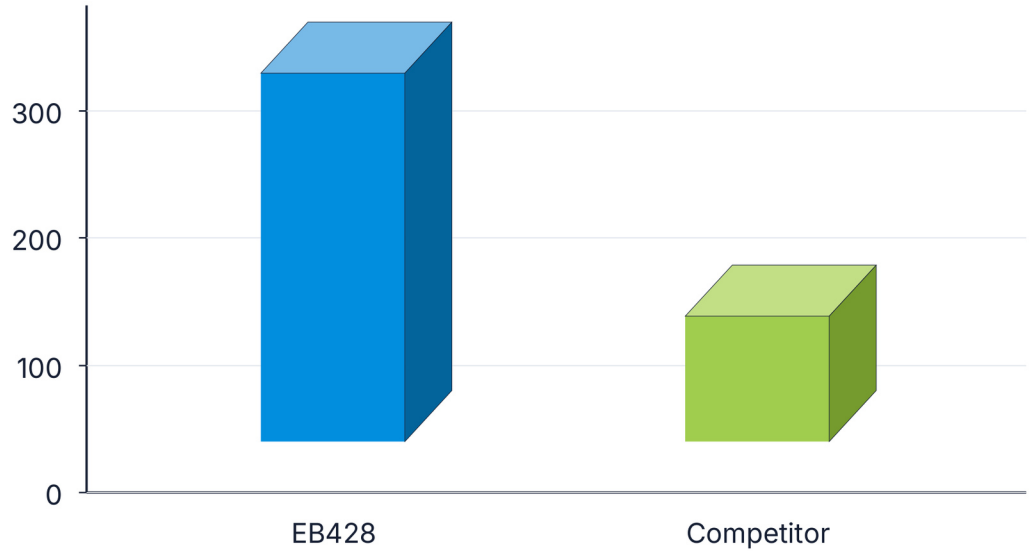


Comparison under the associated trial conditions.
The source gives no axis unit and no numerical bar values.

Schematic illustration

EB428: SCM415H.

EB428: FCD500

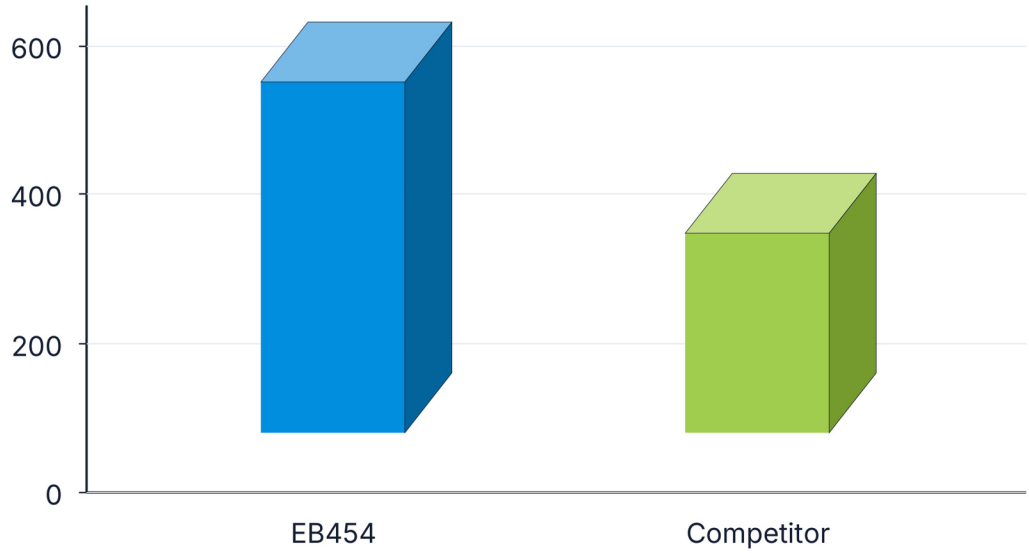


Comparison under the associated trial conditions.
The source gives no axis unit and no numerical bar values.

Schematic illustration

EB428: FCD500.

EB210: CF53 (bar legend EB454)

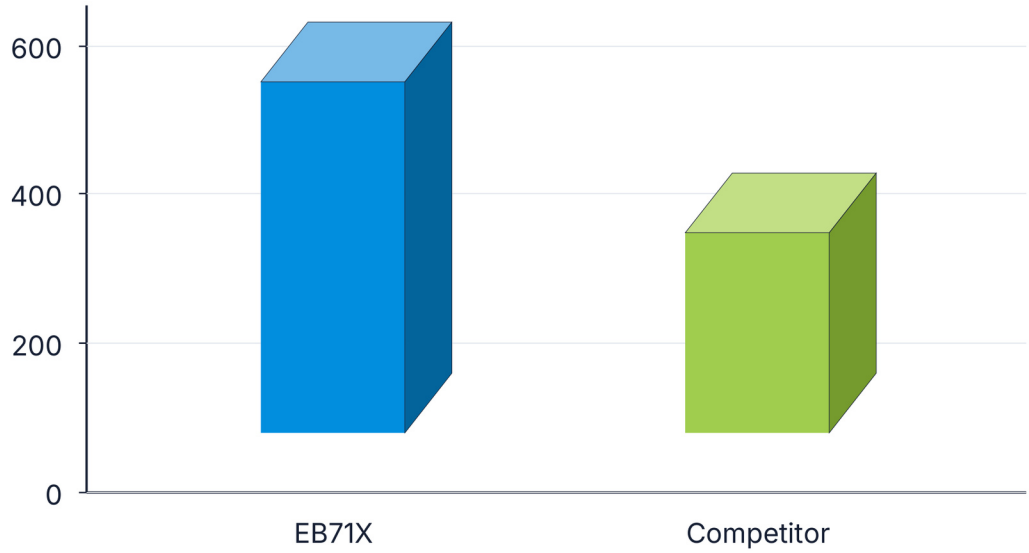


Comparison under the associated trial conditions.
The source gives no axis unit and no numerical bar values.

Schematic illustration

EB210: CF53 (bar legend EB454).

EB71X: FC170



Comparison under the associated trial conditions.
The source gives no axis unit and no numerical bar values.

Schematic illustration

EB71X: FC170.

EBC16S: coated PCBN for bearing steel

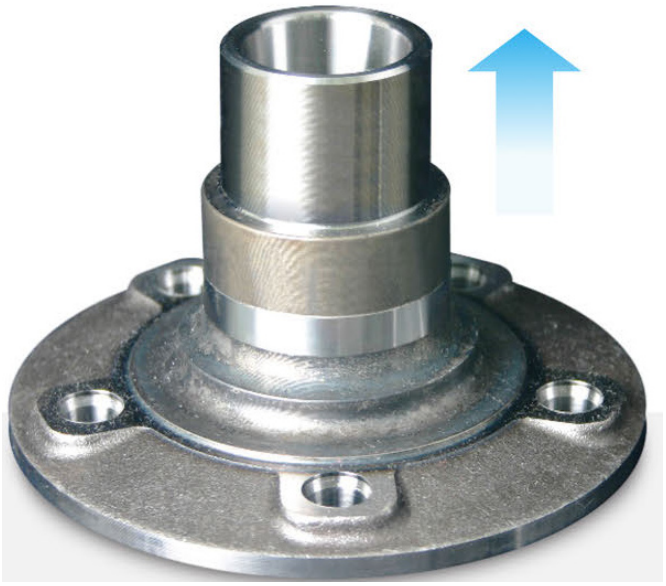
EBC16S is a coated low-CBN-content grade for continuous cutting of bearing steel. The design addresses materials including SUJ2 and 100Cr6, even under demanding conditions. The two SUJ2 comparisons retain their respective cutting data and coolant conditions.

EBC16S: comparison conditions

Parameter	Comparison 1	Comparison 2
Workpiece	SUJ2	SUJ2
Cutting speed	220 m/min	200 m/min
Feed rate	0.15~0.22 mm/rev	0.20 mm/rev
Depth of cut ap	0.10~0.20 mm	0.10~0.15 mm
Coolant	Wet	Wet
Cut	Continuous	Continuous



EBC16S: coated PCBN for bearing steel: Tool view.

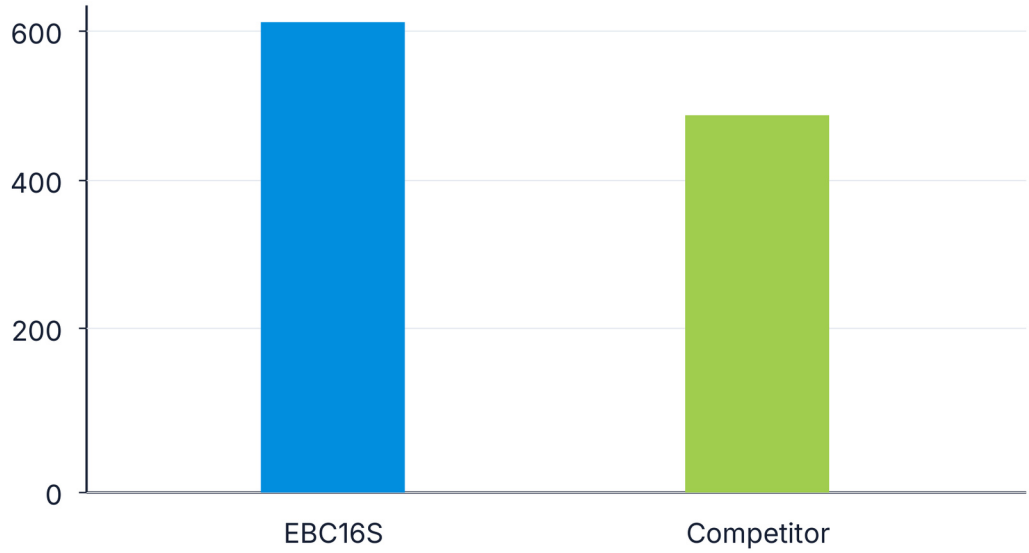


EBC16S: coated PCBN for bearing steel: Component and machining view.



EBC16S: coated PCBN for bearing steel: Component and machining view.

EBC16S: SUJ2 · 220 m/min

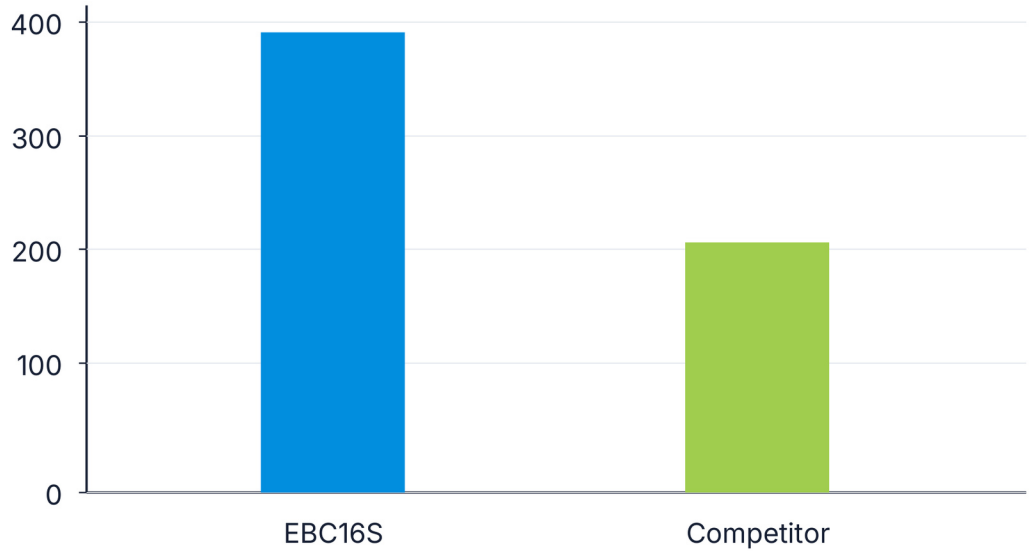


Comparison under the associated trial conditions.
The source gives no axis unit and no numerical bar values.

Schematic illustration

EBC16S: SUJ2 · 220 m/min.

EBC16S: SUJ2 · 200 m/min



Comparison under the associated trial conditions.
The source gives no axis unit and no numerical bar values.

Schematic illustration

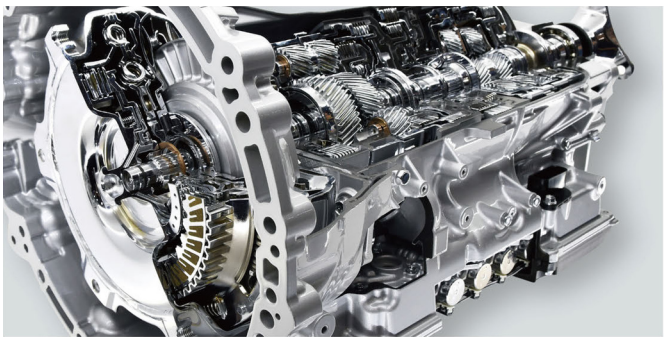
EBC16S: SUJ2 · 200 m/min.

EB319: coated PCBN for hardened steel

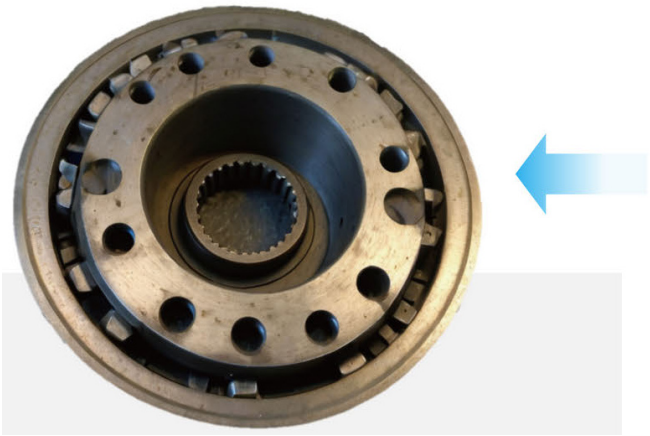
EB319 is a coated low-CBN-content grade for continuous cutting of heat-treated steels. It targets high cutting speeds in shafts, clutches and gears. The SCR420H and SCM45C trials retain separate conditions and competitor bars.

EB319: comparison conditions

Parameter	Comparison 1	Comparison 2
Workpiece	SCR420H	SCM45C
Cutting speed	220 m/min	200 m/min
Feed rate	0.05~0.12 mm/rev	0.22 mm/rev
Depth of cut ap	0.05~0.09 mm	0.10~0.15 mm
Coolant	Yes	Yes
Cut	Continuous	Continuous



EB319: coated PCBN for hardened steel: Component and machining view.

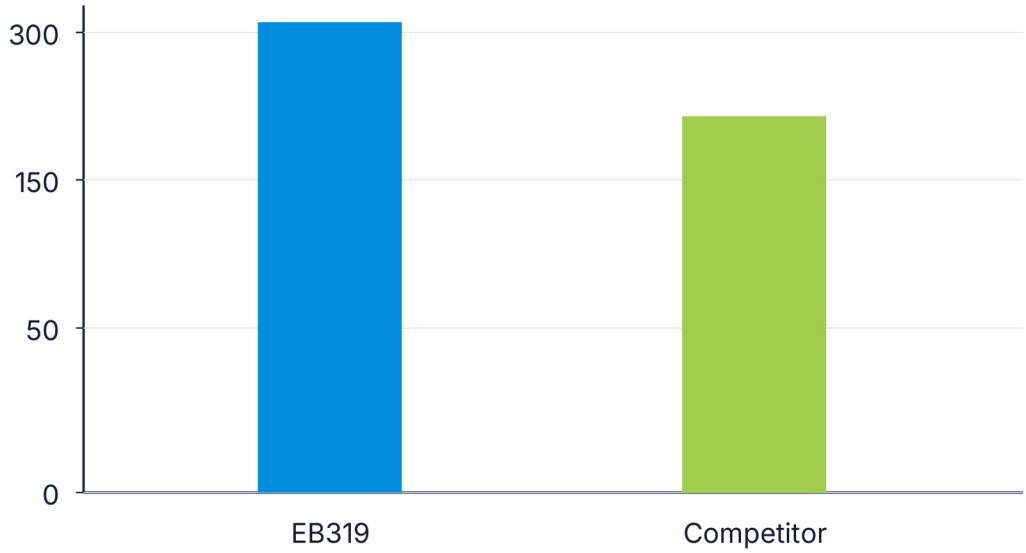


EB319: coated PCBN for hardened steel: Component and machining view.



EB319: coated PCBN for hardened steel: Component and machining view.

EB319: SCR420H

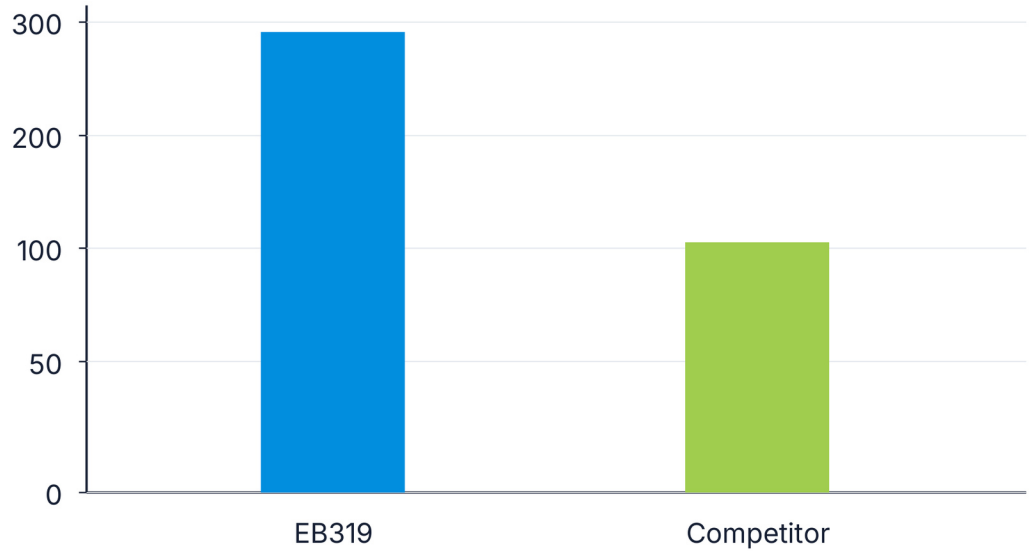


Comparison under the associated trial conditions.
The source gives no axis unit and no numerical bar values.

Schematic illustration

EB319: SCR420H.

EB319: SCM45C



Comparison under the associated trial conditions.
The source gives no axis unit and no numerical bar values.

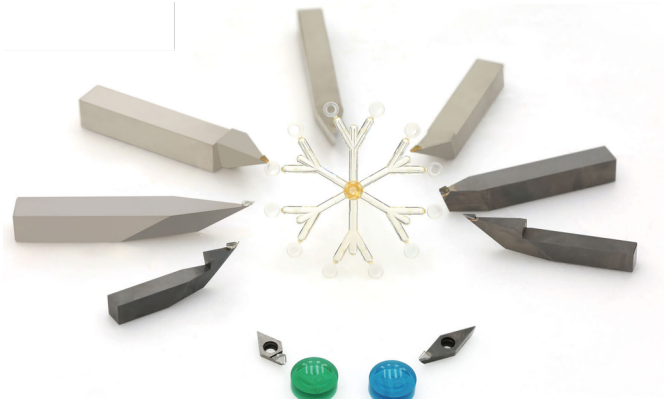
Schematic illustration

EB319: SCM45C.

Single-crystal diamond cutting tools

Precision tools use natural diamond, single-crystal CVD diamond or synthetic mono-diamond produced by HPHT. Precise cutting edges and high edge quality support consistent tool life and cutting quality. The design takes diamond's directional properties into account.

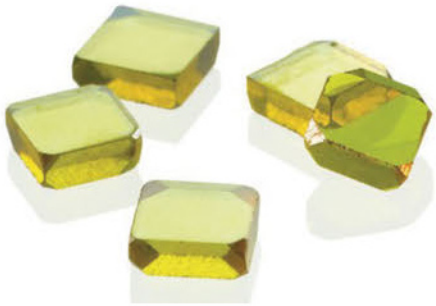
Applications include contact lenses and other ophthalmic lenses including IOLs, plastic aspheric lenses for electro-optic components and display components such as light-guide panels, polarising films and prism-pattern films.



Single-crystal diamond cutting tools: Tool view.



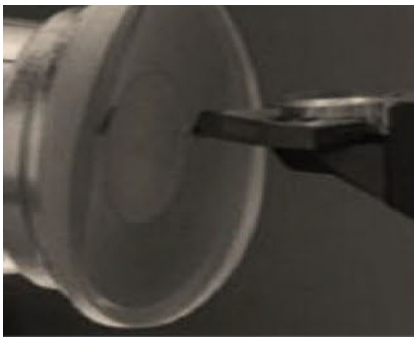
Single-crystal diamond cutting tools: Tool view.



Single-crystal diamond cutting tools: Tool view.



Single-crystal diamond cutting tools: Tool view.



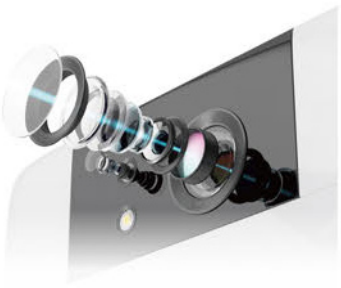
Single-crystal diamond cutting tools: Component and machining view.



Single-crystal diamond cutting tools: Component and machining view.



Single-crystal diamond cutting tools: Component and machining view.



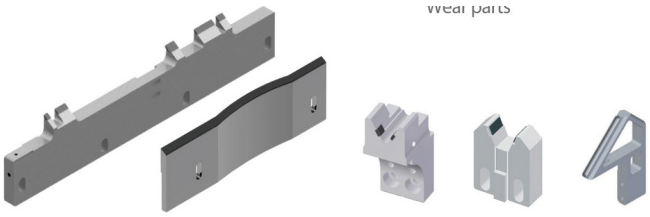
Single-crystal diamond cutting tools: Component and machining view.

Wear parts for grinding machines

For the bearing industry, highly polished contact surfaces support low friction and high wear resistance. General industrial applications benefit from wear-resistant, customised designs. Materials include PCD, PCBN, carbide and ceramics. The two contact diagrams retain the workpiece and wear parts in their original contact positions.

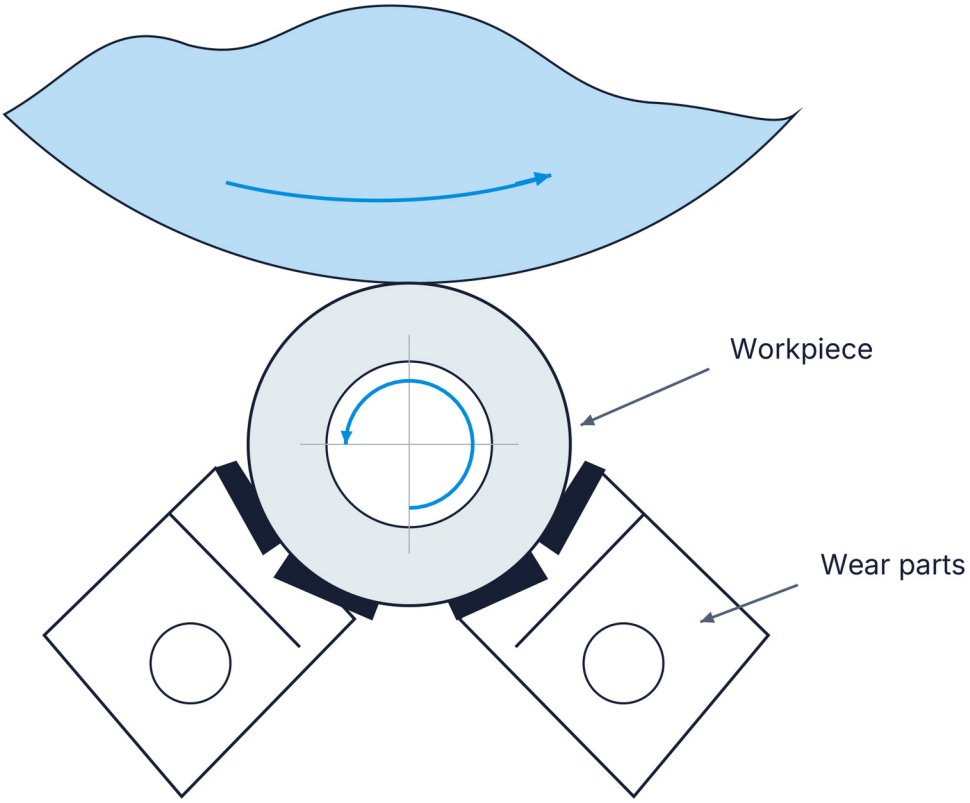


Wear parts for grinding machines: Tool view.



Wear parts for grinding machines: Tool view.

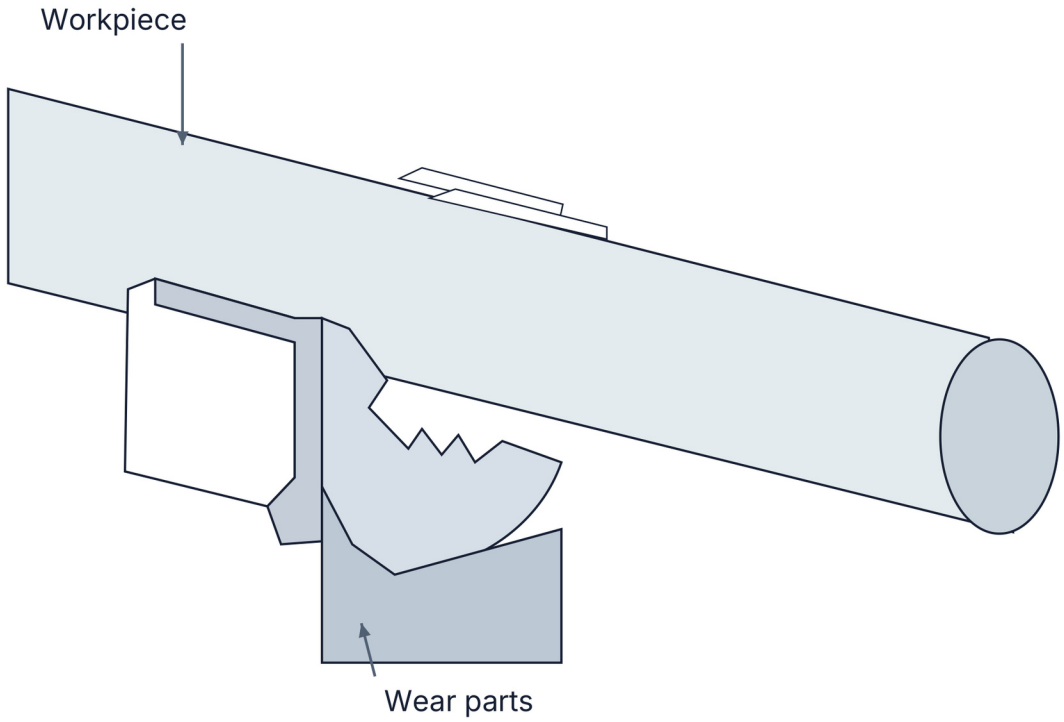
Workpiece support: bearing machining



Schematic illustration

Workpiece support: bearing machining.

Workpiece support: shaft



Schematic illustration

Workpiece support: shaft.

Gauges: diamond and ruby

Measuring tips can be made from natural diamond, mono-diamond, PCD or carbide. Diamond contacts support precise measurement and long service life through high wear resistance. The manufacturer states that natural-diamond contacts last many times longer than carbide, by tens of times in the described comparison; actual contact loading and application govern the design.

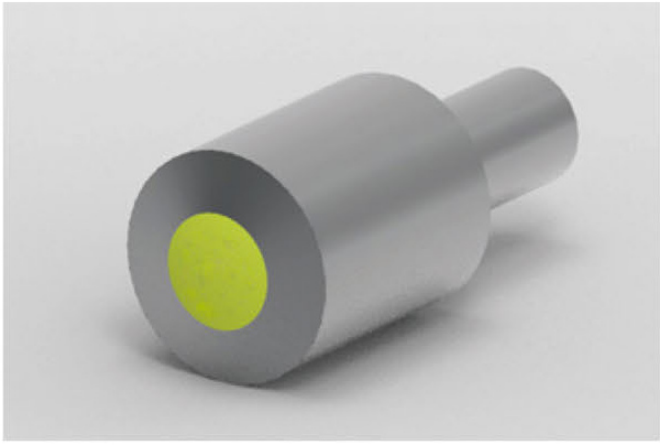
Ruby styli are mainly used for 3D measurement. Besides precision component inspection, they serve as touch probes in machines. Diamond contacts are custom-made; ruby codes remain complete.

Gauges: specifications

Product	Specification
Diamond contact gauge	Custom-made
Ruby stylus	1DT-08SD-16L-1Y
Ruby stylus	1.5DT-1SD-38L-M5
Ruby stylus	11D1-(7/47/61/8L)-0.8DS2-1.0DK



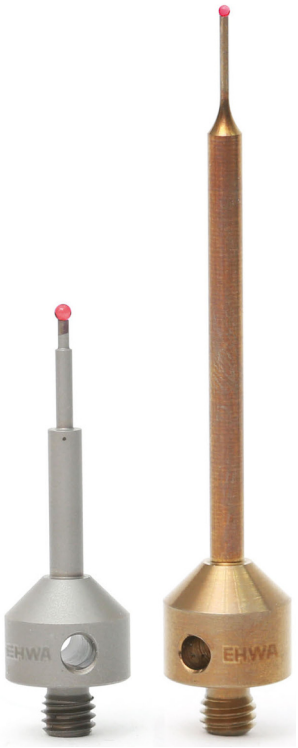
Gauges: diamond and ruby: Tool view.



Gauges: diamond and ruby: Tool view.



Gauges: diamond and ruby: Tool view.



Gauges: diamond and ruby: Tool view.

Stationary diamond dressers

SDD is the single-point diamond dresser: a selected diamond crystal is sintered with a metal matrix into a steel shank. FDD is the forming diamond dresser, manufactured by shaping a selected high-quality diamond. MDD is the multi-point dresser, with two or more selected diamonds sintered into a metal matrix. IDD is the impregnated dresser, with selected diamond particles in a sintered metal-powder matrix.

Application and shape mappings retain straight, tapered, convex, concave, angled and multi-angled forms. Carat classes, rod count or grit size remain assigned to their respective dresser types.

Stationary dressers: applications

Type	Application	Classification
SDD	Conventional abrasive wheels: straight shape/simple profile, thread and gear grinding	Carat: 1/30~1.5 CT
FDD	Conventional abrasive wheels: simple and complex profile, thread and gear grinding	Carat: 1/30~1.5 CT
MDD	Conventional abrasive wheels: straight shape and precise complex profile, especially angular profile	Number of diamond rods and diamond type: 2~10 rods
IDD	Larger/wider conventional abrasive wheels; conventional surface and centreless wheels	Grit size: #10~#120 mesh

Stationary dressers: grinding wheel shapes

Wheel shape	Dressers
Straight	SDD / MDD / IDD
Tapered	SDD / MDD / IDD
Convex	SDD / FDD / MDD
Concave	SDD / MDD / IDD
Angled	FDD / MDD
Multi-angled	FDD / MDD



Stationary diamond dressers: Tool view.



Stationary diamond dressers: Tool view.



Stationary diamond dressers: Tool view.



Stationary diamond dressers: Tool view.



Stationary diamond dressers: Tool view.



Stationary diamond dressers: Tool view.



Stationary diamond dressers: Tool view.



Stationary diamond dressers: Tool view.



Stationary diamond dressers: Tool view.



Stationary diamond dressers: Tool view.



Stationary diamond dressers: Tool view.

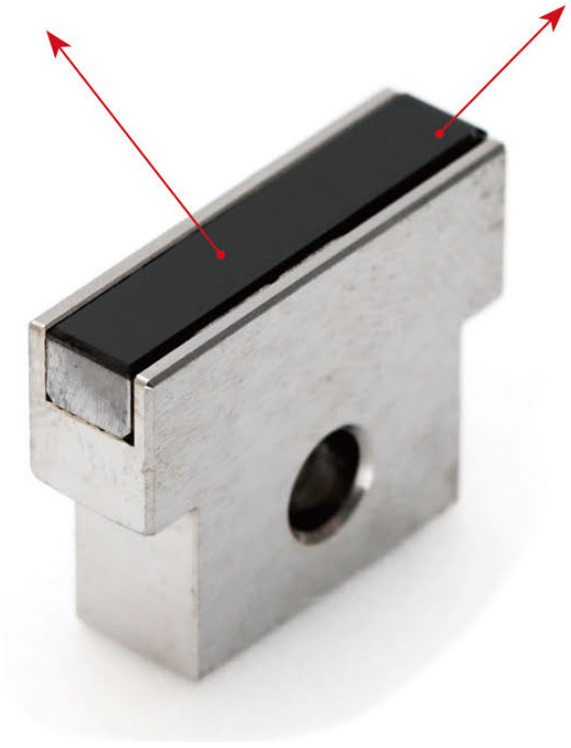
Wear parts for grinding and measuring machines

High wear resistance supports long service life; customised solutions are designed for the application. Uses include centreless and cylindrical grinding machines, measuring probes, bearing manufacturing and other machines. PCD workrest blades serve centreless grinding, sliding shoes and V-blocks support workpieces, backing plates serve bearing manufacturing and gauges serve measurement. Precise customised types are available on request.

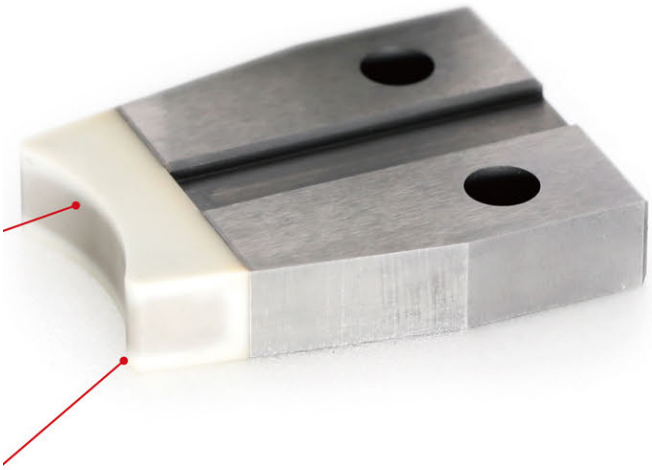
Polished PCD surfaces can reduce friction. The source states Ra 0.02 but prints no unit; agree both value and unit for the actual surface specification. Ceramics offer good chemical resistance and can thereby reduce chemical wear and scratches on the workpiece.



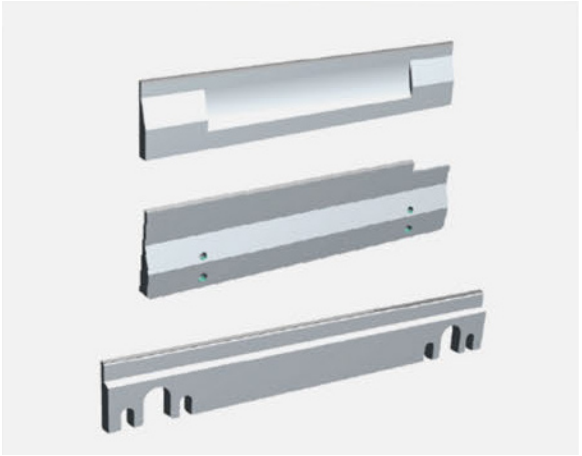
Wear parts for grinding and measuring machines: Tool view.



Wear parts for grinding and measuring machines: Tool view.



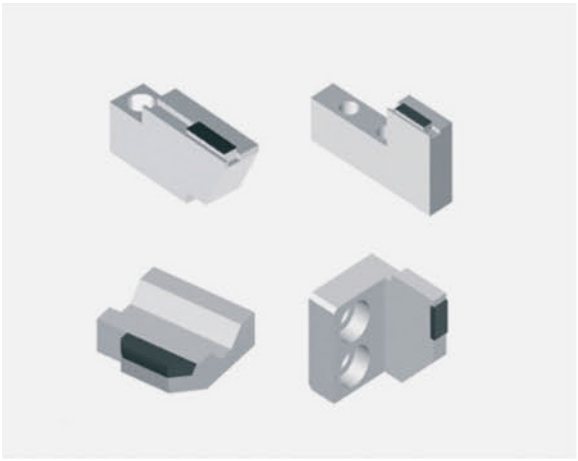
Wear parts for grinding and measuring machines: Tool view.



Wear parts for grinding and measuring machines: Tool view.



Wear parts for grinding and measuring machines: Tool view.



Wear parts for grinding and measuring machines: Tool view.



Wear parts for grinding and measuring machines: Tool view.

Wood-cutting special tools 06/2024

Special tools for wood cutting

EHWA develops tools for different woodworking processes: milling, cutting, end milling and grooving. The programme offers customised tools for edge banders and shipbuilding. The following product images show their respective designs.



Special tools for wood cutting: Component and machining view.



Special tools for wood cutting: Component and machining view.



Special tools for wood cutting: Component and machining view.



Special tools for wood cutting: Component and machining view.



Special tools for wood cutting: Component and machining view.



Special tools for wood cutting: Tool view.

Wood-cutting special tools: product lines

PCD pre-milling cutters serve pre-milling on edge-banding machines. PCD routers cover end milling and grooving as universal applications. PCD saws are listed for cutting, grooving and rebating; the additional source wording “Planning” requires specification of the actual machining task. PCD drills are illustrated for drilling insulation panels in LNG ships.

The source carries printing date 06/2024. Its HQ contact was EHWA DIAMOND IND. CO. LTD., 374 Nambudae-ro, Osan-city, Gyeonggi-do, 18145, Korea; www.ehwadia.com, bkkim@ehwadia.co.kr, telephone +82 (31) 370-9220, fax +82 (31) 370-9840. For European tool specification, contact EHWA Europe at the end of this edition.



Wood-cutting special tools: product lines: Component and machining view.



Wood-cutting special tools: product lines: Tool view.



Wood-cutting special tools: product lines: Tool view.



Wood-cutting special tools: product lines: Tool view.



Wood-cutting special tools: product lines: Tool view.



Wood-cutting special tools: product lines: Tool view.

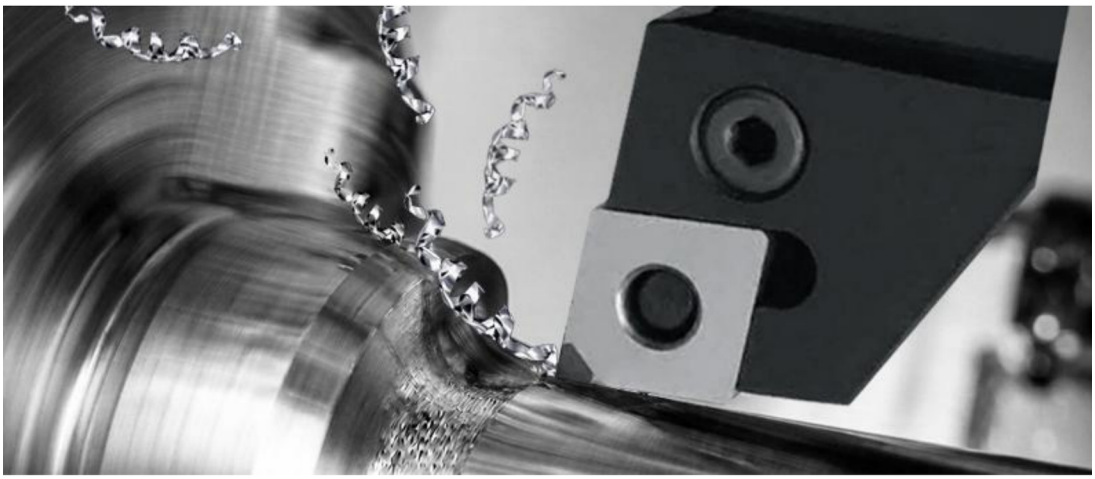
EHWA DIAMOND - since 1975

These additions connect cutting-edge geometries and cutting materials with specific machining tasks, from gears and small components to wood-based panels and thread whirling. Cutting conditions and test results remain tied to the relevant tool and application.

Editorial edition: 14 October 2026. Technical basis: EHWA AMB 2026 Machine and New Product.

Wiper inserts for finishing

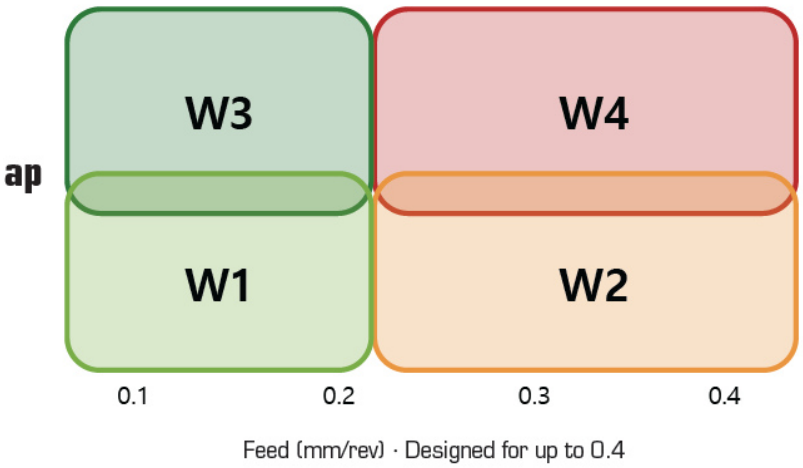
Wiper inserts use an adapted corner geometry to reduce feed marks during finishing. The PCBN versions are shown for hard-turning finishing of hardened steel, cast iron and sintered metals; PCD versions address aluminium, non-ferrous metals and composites, including high-feed and mirror finishing.



Wiper insert in a turning application.

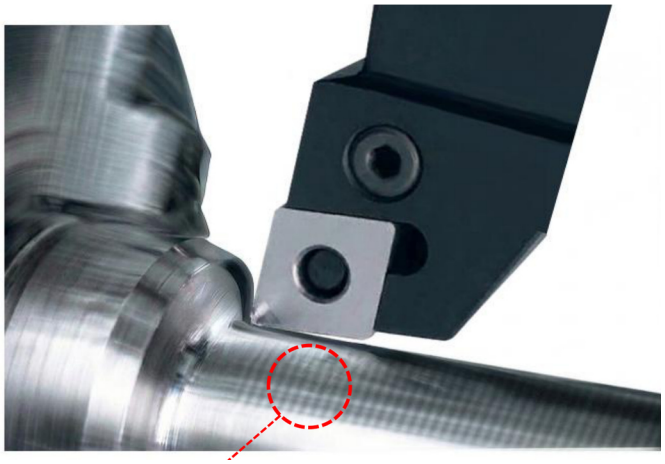
Type	Application and geometry
W1	Low feed; universal application; stable machining.
W2	High workpiece hardness and high-performance machining; high-feed finishing.
W3	Enhanced W1 geometry focused on lower cutting load and chatter.
W4	Enhanced W3 geometry focused on lower cutting load and chatter.

The schematic recommendation places W1/W3 in the lower and W2/W4 in the higher feed range. The horizontal axis is labelled from 0.1 to 0.4 mm/rev; the source states a design for up to 0.4 mm/rev. No numerical values are given for the vertical depth-of-cut axis ap. Select the geometry for the tool, holder, material and machine rigidity.

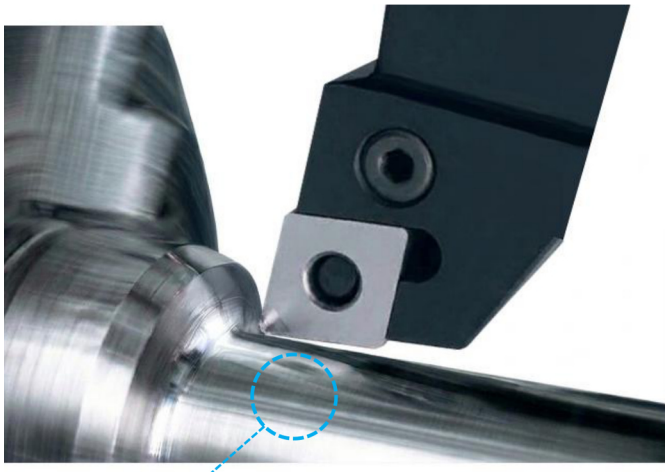


Schematic wiper selection by feed and depth of cut; no numerical ap scale.

The comparison without/with a wiper explicitly gives Ra 0.4 µm and Ra 0.2 µm under the same cutting conditions as **theoretical, illustrative roughness values**. The illustrations explain the principle; they are not a documented measurement series or a guarantee of the achievable component surface.



Illustrative machining view without a wiper.



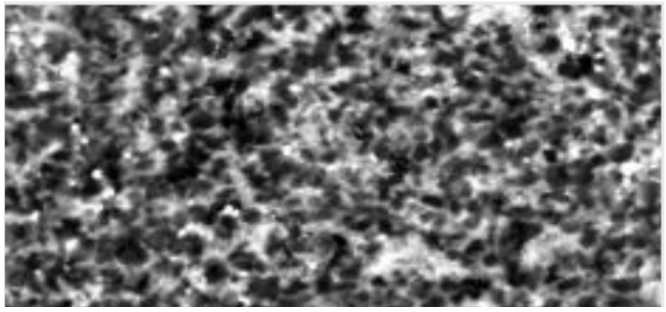
Illustrative machining view with a wiper.

EBC76S: PCBN grade for gears and bearings

EBC76S was developed for gear machining and is also described for bearing applications. The source gives a CBN grain size of 1 µm and a CBN volume content of 65%. The following two tests retain their individual component, hardness and cutting-condition context.



Gear machining application.



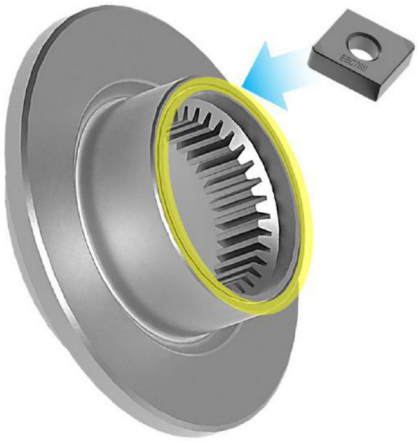
EBC76S microstructure; no scale bar is given in the source.



EBC76S inserts.

Manufacturer test: spline gear

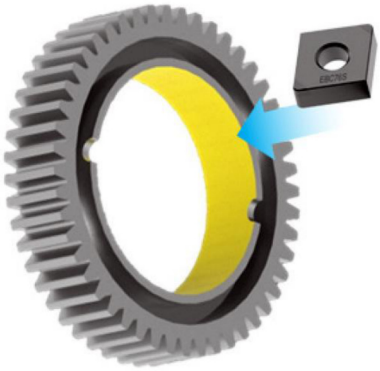
Parameter	EHWA	Comparison tool
Component	Spline gear	Spline gear
Hardness	HRC 60	HRC 60
Cut	Continuous	Continuous
Diameter	Ø50-55 mm	Ø50-55 mm
vc	160-200 m/min	160-200 m/min
ap	0.10-0.15 mm	0.10-0.15 mm
f	0.15 mm/rev	0.15 mm/rev
Grade	EBC76S	Not identified
Test result	400 pieces	220-290 pieces
Failure mode	Normal wear	Fracture



Machining position on the spline-gear test component.

Manufacturer test: spur gear inner machining

Parameter	EHWA	Comparison tool
Component	Spur gear inner	Spur gear inner
Hardness	HRC 58	HRC 58
Cut	Continuous to medium interrupted	Continuous to medium interrupted
Diameter	Ø65 mm	Ø65 mm
vc	160-180 m/min	160-180 m/min
ap	0.10-0.12 mm	0.10-0.12 mm
f	0.15-0.20 mm/rev	0.15-0.20 mm/rev
Grade	EBC76S	Not identified
Test result	500 pieces	150 pieces
Failure mode	Normal wear	Fracture



Inner machining position on the spur-gear test component.

These are application-specific manufacturer test results. The source does not identify the comparison grade, full machine configuration or statistical repeatability. They do not establish a general tool-life increase for other components.

PCD tools for the 3C industry

3C stands for computer, communication and consumer electronics. EHWA describes customised PCD cutting edges and tool forms for high feeds, high material removal and fine surfaces. High rake angles are aimed at reduced burr formation. Select the edge geometry and cutting conditions for the component; burr-free results are not guaranteed independently of process conditions.



Housing example from the 3C application group.



PCD edge geometry in detail.



Four customised cutting-edge forms.



PCD 3C tool versions.

H1 to H4: coatings for carbide tools

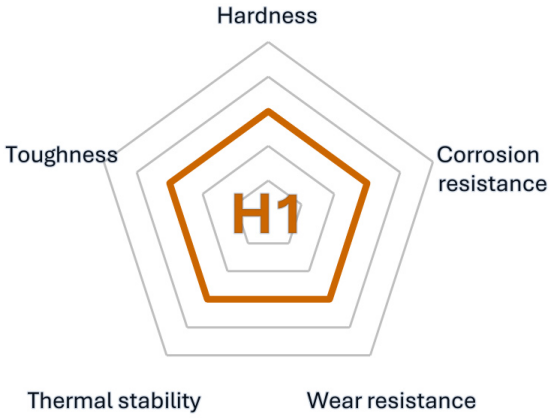
H4 adds a coating for machining very hard materials. The document describes higher hardness than H1 and resistance to oxidation and corrosion at high temperatures in wet and dry machining. The following hardness figures represent the AMB 2026 source edition; ~ denotes an approximate figure with no test method supplied.

Coating	Hardness in AMB 2026	Application and characteristics
H1	~3600 HV	High-speed dry machining of hardened steel ≥HRC 50 and gears.
H2	~3900 HV	Improved wear and corrosion resistance over H1; dry machining of very hard steel, source indication ≥HRC 50.
H3	~3800 HV	Higher toughness and chipping resistance than H1; additional functional layer for low friction; Inconel, titanium alloys and stainless steel.
H4	~4000 HV	Very hard materials; high hardness; intended for high temperatures in wet and dry machining.

Earlier EHWA tables give hardness figures of 4000 for H2 and 3600 for H3. These differing source editions are not merged as identical specifications. Define the applicable version when selecting the tool. The property diagrams qualitatively compare hardness, wear resistance, thermal stability, toughness and corrosion resistance; they contain no calibrated measurement scale.



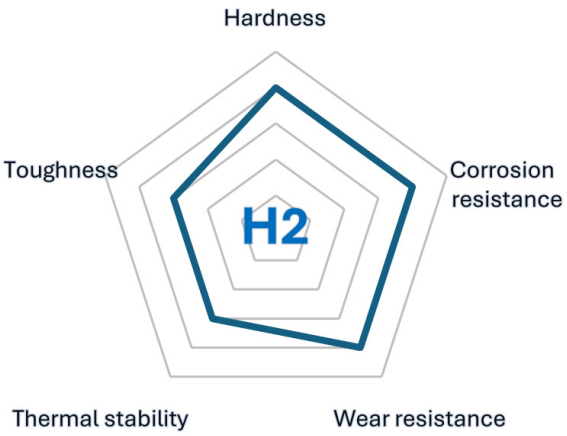
H1: coated tool tip.



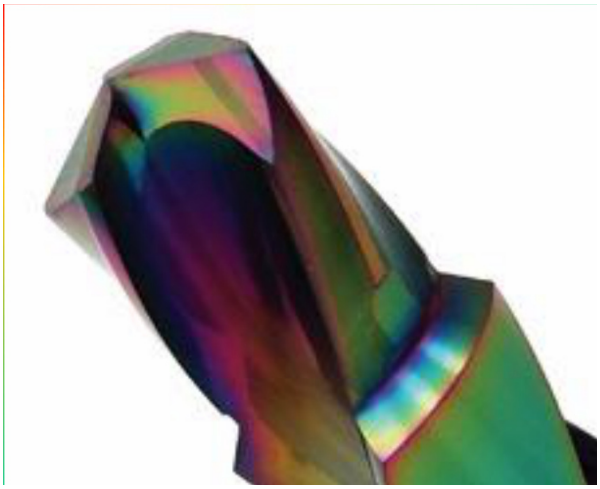
H1: qualitative manufacturer property profile; no measurement scale.



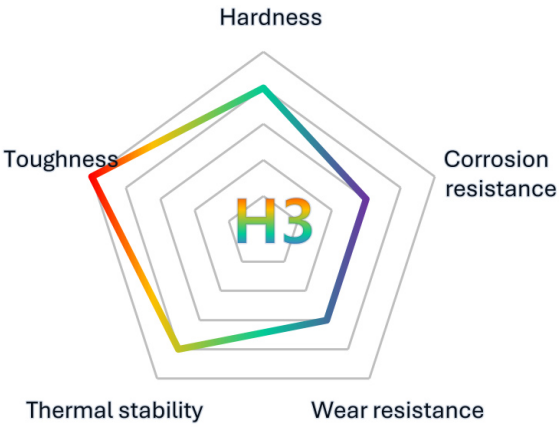
H2: coated tool tip.



H2: qualitative manufacturer property profile; no measurement scale.



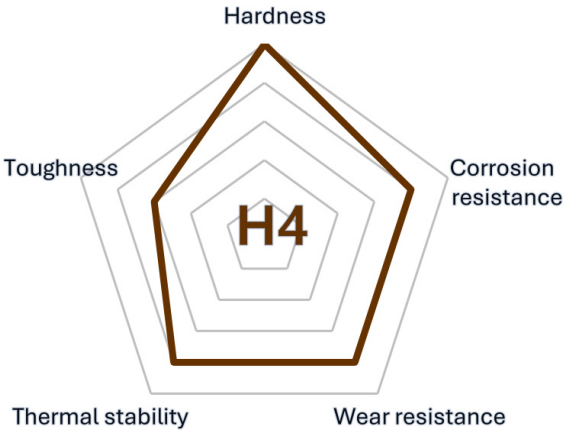
H3: coated tool tip.



H3: qualitative manufacturer property profile; no measurement scale.



H4: coated tool tip.



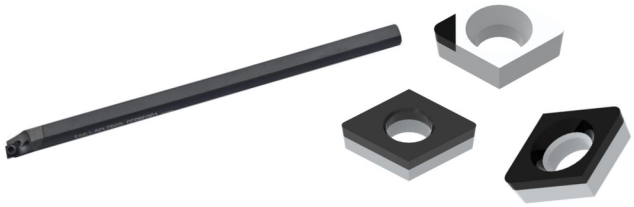
H4: qualitative manufacturer property profile; no measurement scale.

Micro boring from Ø4 mm

Micro boring inserts support internal machining of small precision components from a bore diameter of 4 mm. The programme includes full-face PCBN, full-face PCD and a version with one brazed PCD cutting tip. I.C. is the insert inscribed-circle diameter and must not be confused with the machinable bore diameter.



Small precision components for micro boring applications.

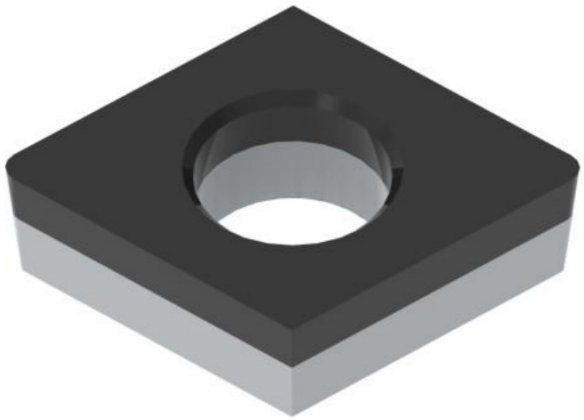


Boring tool and three micro insert forms.

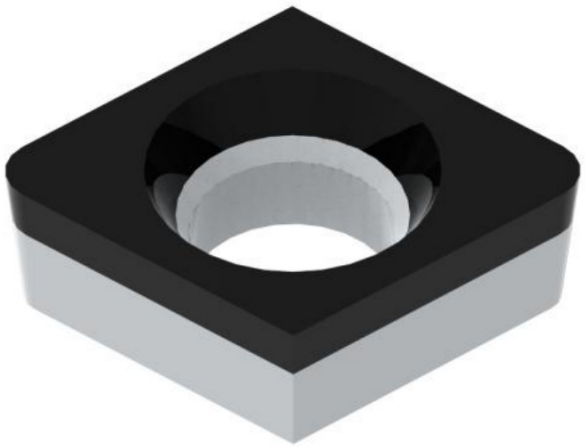
Product	Material and version	Geometry	R [mm]	I.C. [mm]
FF-ECXA030X02	PCBN, full face	75° rhombus; 7° clearance	0.2	3.31
FF-CCGW030104	PCD, full face	80° rhombus; 7° clearance	0.4	3.5
CCGW03X104	PCD, one brazed tip	80° rhombus; 7° clearance	0.4	3.5

FF-ECXA030X02 is described for hardened steel HRC 45-60, sintered metals and cast iron; its model description specifies small bores Ø4-6 mm. FF-CCGW030104 and CCGW03X104 address aluminium,

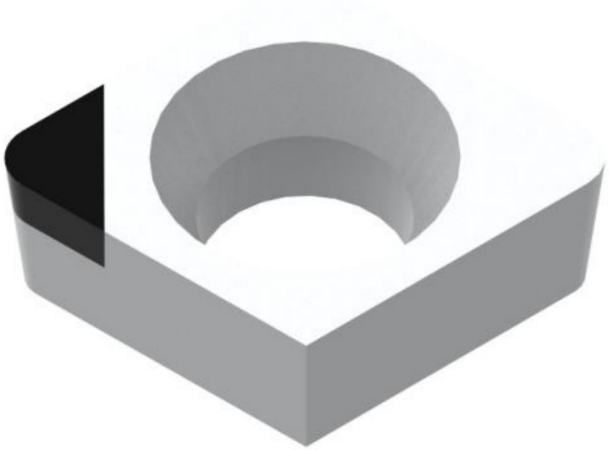
non-ferrous metals and composites. The full-face PCD version supports continuous precision finishing; the single-tip version is shown for high-feed and mirror finishing.



FF-ECXA030X02: model view.



FF-CCGW030104: model view.



CCGW03X104: model view.

Recommended cutting conditions: ECXA

Parameter	Source range
Spindle speed n	Over 2000 min^{-1}
Depth of cut ap	0.02-0.10 mm
Feed f	0.03-0.10 mm/rev
Programme range for small bores	From Ø4 mm

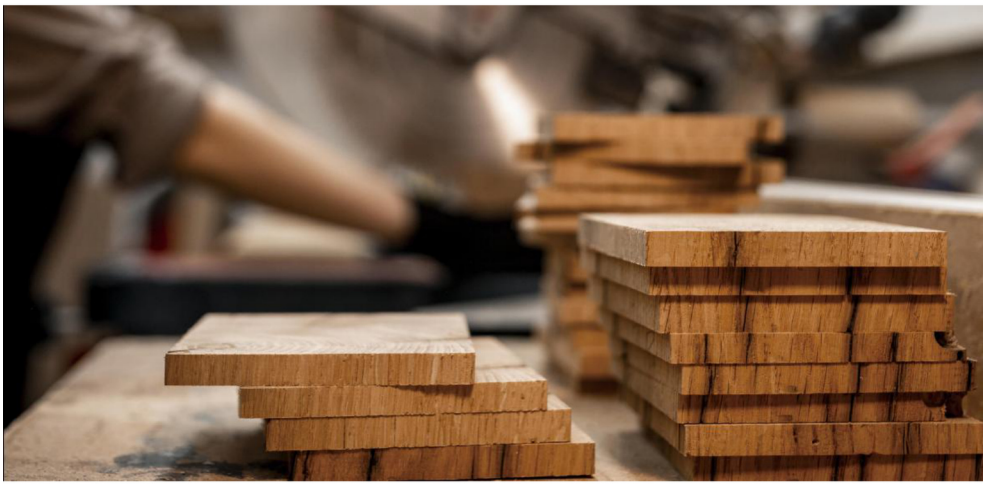
These cutting conditions apply to the ECXA standard specification and are not transferred to the two PCD models. Custom options concern thickness, inscribed-circle diameter, nose radius and grade.

Custom radii are shown from R0.1 mm. Two-corner versions are available only in PCBN according to the source; full-face (FF) versions in both PCD and PCBN.

Applications include small automotive components such as injectors and valves, small bearing races, hydraulic and pneumatic spools and bushings, mould and precision components such as cores and pins, and aluminium housings and connectors.

PCD and TCT tools for wood-based panels

The programme covers saw blades, hoggers, pre-milling cutters, router bits and drills for wood and wood-based panels. Customised versions are described for edge-banding machines and shipbuilding applications. TCT denotes tungsten-carbide-tipped tools.



Wood and wood-based panel machining.

Product group	Outer diameter	Task
TCT saw blade	Ø80-1300 mm	Sawing and grooving; tooth geometry matched to application, machine and horizontal or vertical feed direction.
PCD saw blade	Ø80-1300 mm	Wear-resistant version for volume production.
PCD hogger cutter	Ø220-260 mm	Rapid removal of surplus material at panel edges.
PCD A/T pre-milling cutter	Ø80-250 mm	Prepare edges before banding; reduce unevenness, ripple marks and burrs from previous machining.
PCD/TCT router bit	Ø3-100 mm	Shaping, trimming, grooving and edge profiling.
Boring/hinge bit	From Ø3 mm	Through holes and blind holes.

For PCD saw blades, the AMB document states 30 to 50 times the tool life of conventional TCT saw blades, depending on the application and operating conditions. This is a manufacturer statement without supplied comparison conditions; verify it for the material, cutting data and machine before an application-specific economic assessment.

Hoggers and A/T cutters are aimed at clean edges with reduced tear-out. An even pre-milled surface supports subsequent edge-band adhesion. Select the tool for the panel material, adhesive system and feed.



TCT saw blade.



PCD saw blade.



Wood-based panel machining.



PCD hogger cutter.



PCD A/T pre-milling cutter.



A/T cutter in edge preparation.



PCD/TCT router bits in different forms.



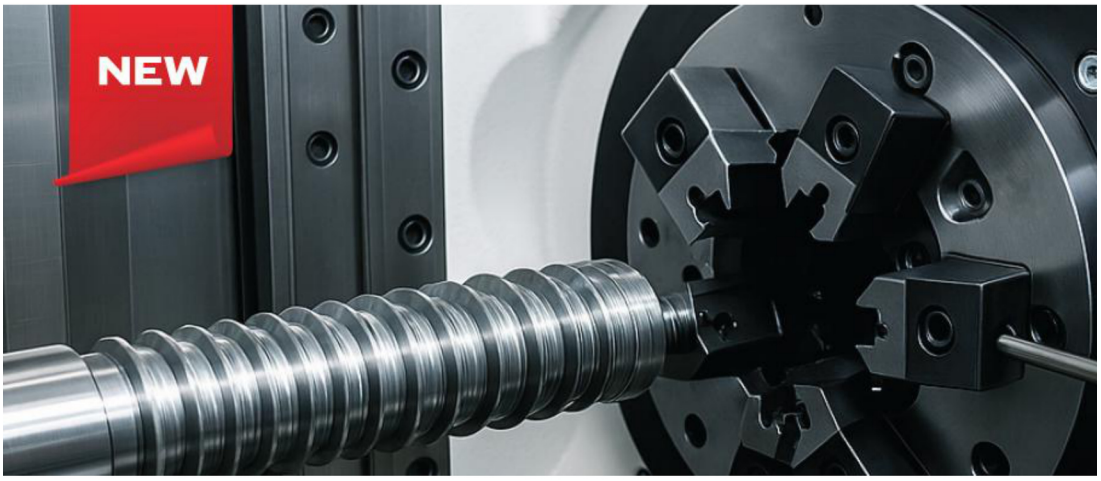
Boring and hinge bit versions.



Drilling wood-based panels.

Thread whirling with PCBN

EHWA describes tools for precise gothic-arch profiles and contact angles, repeatable CNC machining and custom forms. Relapping is presented as an option for economical reuse. Applications in the AMB document include ball screws and worm gears.



Thread whirling of a screw component.

Grade	Grain size	Application	AMB source description
EB510	2 µm	Ball screw	Toughness and wear resistance.
EB73	1 µm	Ball screw	Wear resistance.
EB12	2 µm	Worm gear	Wear resistance; solid form (Solid shape).

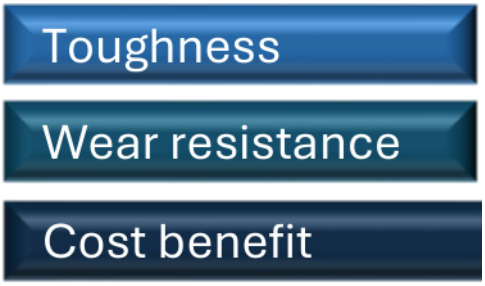
The associated bars indicate toughness, wear resistance and cost benefit qualitatively; without a numerical or test reference they do not establish a measured ranking. The source labels the microstructure images as ×1000 magnification.



EB510: qualitative manufacturer ratings for toughness, wear resistance and cost benefit; no numerical scale.



EB510: microstructure, source magnification ×1000.



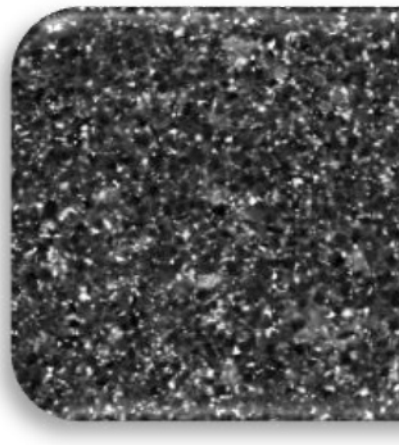
EB73: qualitative manufacturer ratings for toughness, wear resistance and cost benefit; no numerical scale.



EB73: microstructure, source magnification ×1000.



EB12: qualitative manufacturer ratings for toughness, wear resistance and cost benefit; no numerical scale.



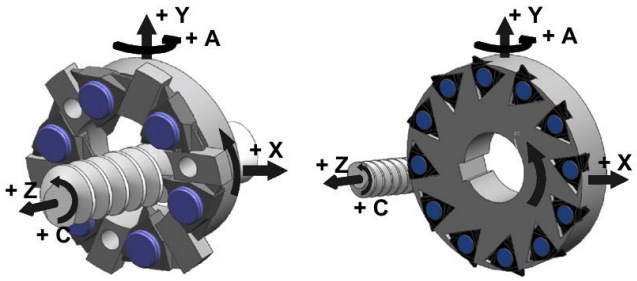
EB12: microstructure, source magnification ×1000.

One row of the AMB grade table remains unresolved: under the PCBN heading it reads “Diamond vol (%)” with EB510 = 95, EB73 = 70 and EB12 = 90. The earlier grade overview gives 90% CBN for EB510 and 75% for EB73. The AMB row is therefore retained as a source observation, **not as a confirmed diamond or CBN content for tool selection**. Silently relabelling or harmonising the values would not be supported.

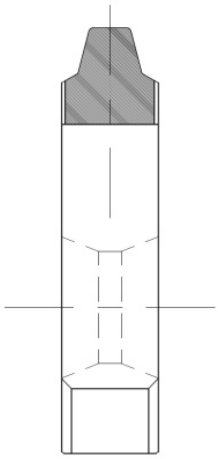
Manufacturer test: EB12

Parameter	EHWA	Comparison tool
Tool designation	16T-5W-(R), EB12 / 16T-5W-(F), EB12	Not identified
Cut	Continuous	Continuous
Spindle speed	4000 min^{-1}	4000 min^{-1}
Cutting material	EB12 (PCBN)	TC (carbide)
Test result	100 pieces	22 pieces
Failure mode	Normal wear	Normal wear

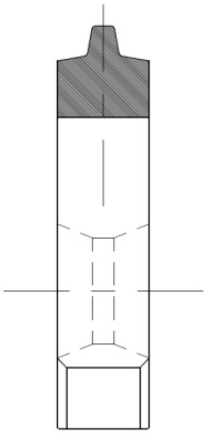
Workpiece material, component size and depth of cut are not given; the hardness field contains a dash. The feed field prints “25,000” under the unit mm/rev. The meaning of this notation is unconfirmed and it is not presented as a usable cutting setting. The test result remains tied to these incomplete conditions.



EB12 whirling tools with axis illustration.



First illustrated EB12 profile form.



Second illustrated EB12 profile form.

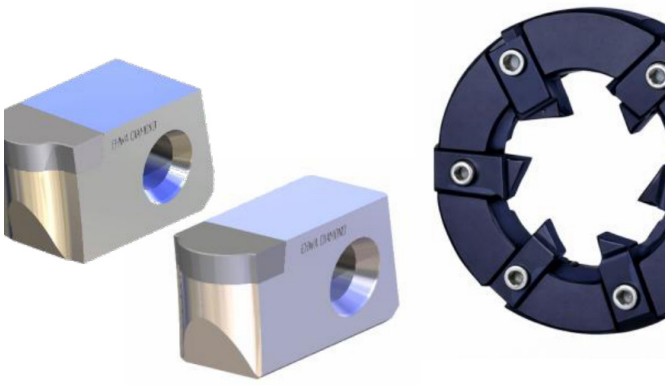
Manufacturer test: EB73

Parameter	EHWA	Comparison tool
Tool designation	13.5T-22.6L-5W-3.175D, EB73	Not identified
Workpiece	CF53	CF53
Hardness	HRC 57-63	HRC 57-63
Cut	Continuous	Continuous
Spindle speed	2000 min^{-1}	2000 min^{-1}
Cutting material	EB73 (PCBN)	PCBN
Test result	750 m	650 m
Failure mode	Normal wear	Normal wear

Component size, depth of cut and feed are not given in this test. The metre figures are reproduced as manufacturer test results; the source does not further define the underlying travel measurement. Both whirling tests apply to the described test setups and do not establish universal tool life.



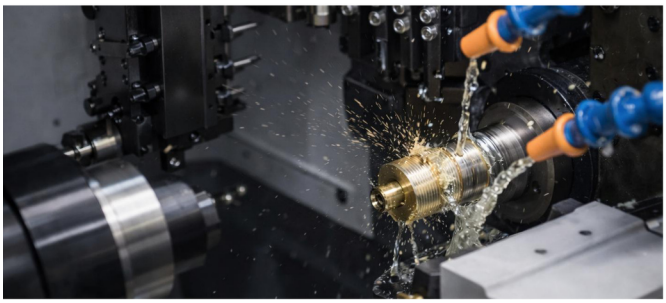
CF53 whirling application in the EB73 test.



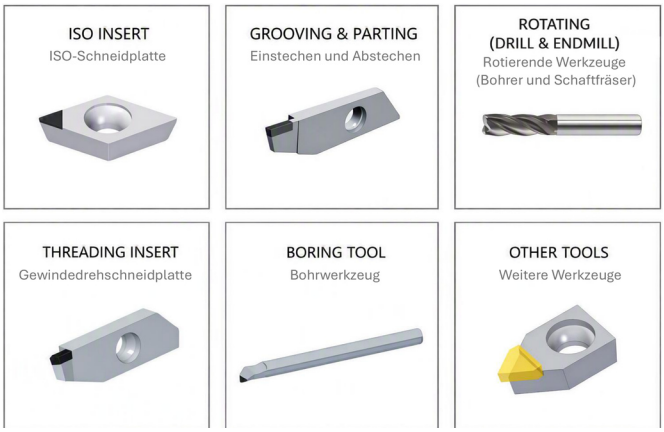
EB73 insert and whirling head.

Tools for Swiss turning and automatic lathes

The application programme distinguishes ISO inserts, grooving and parting tools, rotating drills and end mills, threading inserts, boring tools and custom tools. The following tables preserve article codes and dimensions from the AMB programme. L/R denotes left- and right-hand versions. Dimensions are in mm; angles follow the drawing.



Small-component machining on an automatic lathe.



Six tool groups in the Swiss-turning programme.

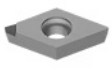
ISO inserts: V and D types

The PCD grades EP20 and EP75 are specified for all the following articles. I.C. is the inscribed-circle diameter, T the thickness and R the nose radius.

Product	I.C. [mm]	T [mm]	R [mm]
VCGT070201	3.97	2.38	0.1
VCGT070202	3.97	2.38	0.2
VCGT070204	3.97	2.38	0.4
VCGT080201	4.76	2.38	0.1
VCGT080202	4.76	2.38	0.2
VCGT080204	4.76	2.38	0.4
VCGT110301	6.35	3.18	0.1
VCGT110302	6.35	3.18	0.2
VCGT110304	6.35	3.18	0.4
VCGT110308	6.35	3.18	0.8
DCGT070201	6.35	2.38	0.1
DCGT070202	6.35	2.38	0.2
DCGT070204	6.35	2.38	0.4
DCGT11T301	9.525	3.97	0.1
DCGT11T302	9.525	3.97	0.2
DCGT11T304	9.525	3.97	0.4
DCGT11T308	9.525	3.97	0.8



V type: ISO insert model form.

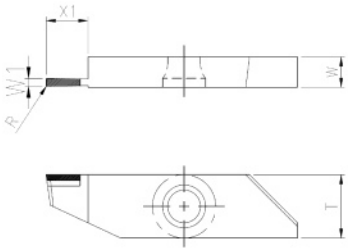


D type: ISO insert model form.

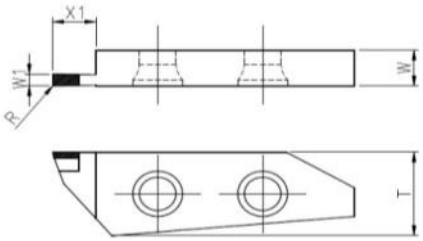
EMG, EMG2 and EMG3 grooving tools

All 15 versions are listed in TC, PCD and PCBN. W1, X1, R, W, L and T refer to the relevant dimensional drawing. The EMG dimensions agree with the earlier overview; EMG2 and EMG3 extend the programme.

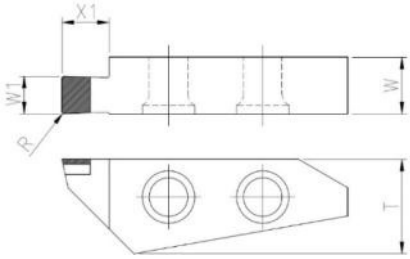
Product	W1	X1	R	W	L	T
EMG 05000-L/R	0.5	3.0	0.00	2.7	22.2	5.6
EMG 10005-L/R	1.0	3.5	0.00	2.7	22.2	5.6
EMG 15005-L/R	1.5	3.5	0.05	2.7	22.2	5.6
EMG 2001-L/R	2.0	4.0	0.10	2.7	22.2	5.6
EMG 2501-L/R	2.5	4.0	0.10	2.7	22.2	5.6
EMG2 05000-L/R	0.5	3.0	0.00	3.0	23.0	7.0
EMG2 10005-L/R	1.0	3.5	0.00	3.0	23.0	7.0
EMG2 15005-L/R	1.5	3.5	0.05	3.0	23.0	7.0
EMG2 2001-L/R	2.0	4.0	0.10	3.0	23.0	7.0
EMG2 2501-L/R	2.5	4.0	0.10	3.0	23.0	7.0
EMG3 3001-L/R	3.0	4	0.1	6.0	30.3	10.2
EMG3 3501-L/R	3.5	4	0.1	6.0	30.3	10.2
EMG3 4002-L/R	4.0	5	0.2	6.0	30.3	10.2
EMG3 4502-L/R	4.5	5	0.2	6.0	30.3	10.2
EMG3 5002-L/R	5.0	5	0.2	6.0	30.3	10.2



EMG: dimensional drawing.



EMG2: dimensional drawing.



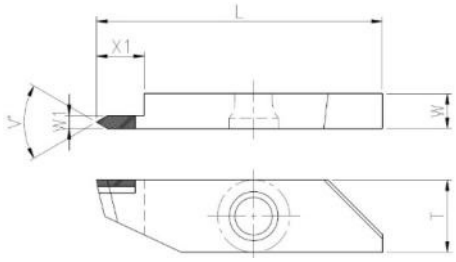
EMG3: dimensional drawing.

EMT versions

Product	W1	X1	T	W	L
EMT 10000-L/R	1.0	3.7	5.6	2.7	22.2
EMT 10005-L/R	1.0	3.7	5.6	2.7	22.2
EMT 15005-L/R	1.5	3.7	5.6	2.7	22.2
EMT 2001-L/R	2.0	3.7	5.6	2.7	22.2
EMT 2501-L/R	2.5	3.7	5.6	2.7	22.2

Product	V	Material/grade
EMT 10000-L/R	25-60	TC, PCD, PCBN, CVD
EMT 10005-L/R	25-60	EP20, EP75
EMT 15005-L/R	25-60	EP20, EP75
EMT 2001-L/R	25-60	EP20, EP75
EMT 2501-L/R	25-60	EP20, EP75

The source gives V = 25-60 and shows its angular position in the drawing, but does not state a unit in the table heading. The value remains tied to V; specify the angle from the drawing when ordering. TC denotes carbide and CVD the CVD diamond version.

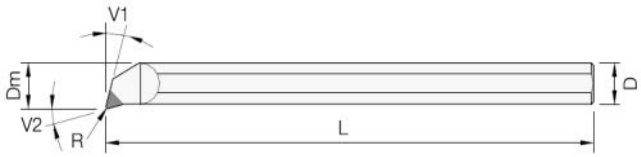


EMT: drawing with W1, X1, T, W, L and V.

BSR/L versions

The eight BS dimension sets agree with the existing BS table including Dm. The AMB edition additionally names the left/right versions and the TC, PCD, PCBN and CVD material group for all eight articles. The R field appears twice in the source with identical radius values and is listed once here.

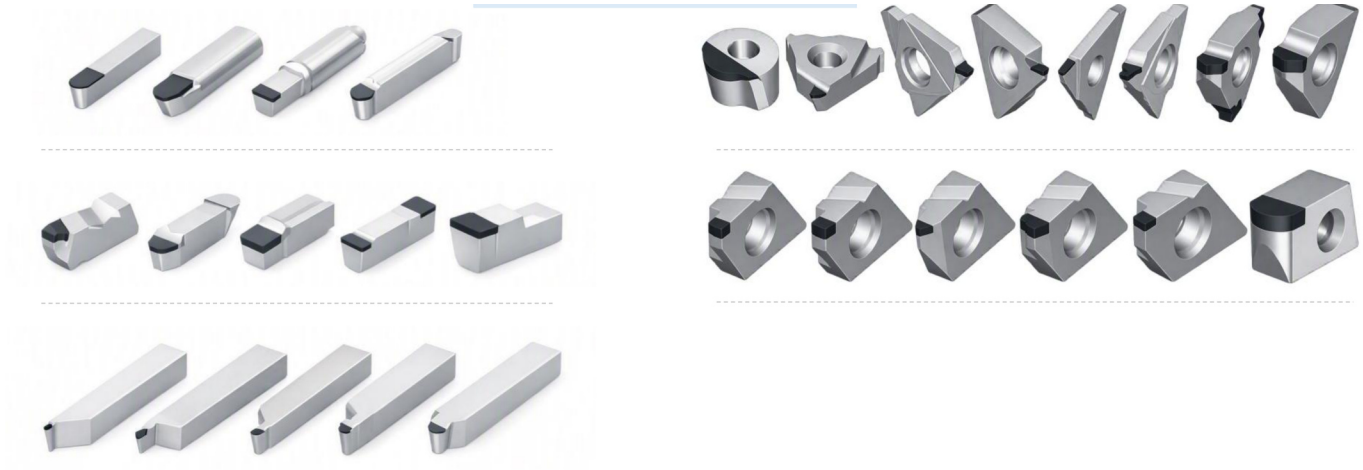
Product	R	V1	V2	L	D	Dm
BSR/L 25 60 005	0.05	15	15	60	2.5	3
BSR/L 25 60 01	0.1	15	15	60	2.5	3
BSR/L 30 60 005	0.05	15	15	60	3	3.5
BSR/L 30 60 01	0.1	15	15	60	3	3.5
BSR/L 40 60 01	0.1	15	15	60	4	4.5
BSR/L 40 60 02	0.2	15	15	60	4	4.5
BSR/L 50 60 01	0.1	15	15	60	5	5.5
BSR/L 50 60 02	0.2	15	15	60	5	5.5



BSR/L: boring-tool dimensional drawing.

Custom special tools

The form overview shows adapted cutting profiles, grooving tools and custom inserts. It is a version overview without individual article codes or a dimension table. For an enquiry, provide the component drawing, material, machine and holder, and the required surface and dimensional tolerances.



Overview of custom tool forms.

Tool selection with EHWA Europe

Please provide the component and material, machining process, bore or profile details, hardness, machine and tool holder, and the required tolerances, surface and tool life. Existing cutting conditions and the current wear pattern help when comparing an application.

EHWA Europe: info@ehwadia.de · +49 6173 997780.

Sources and technical attribution

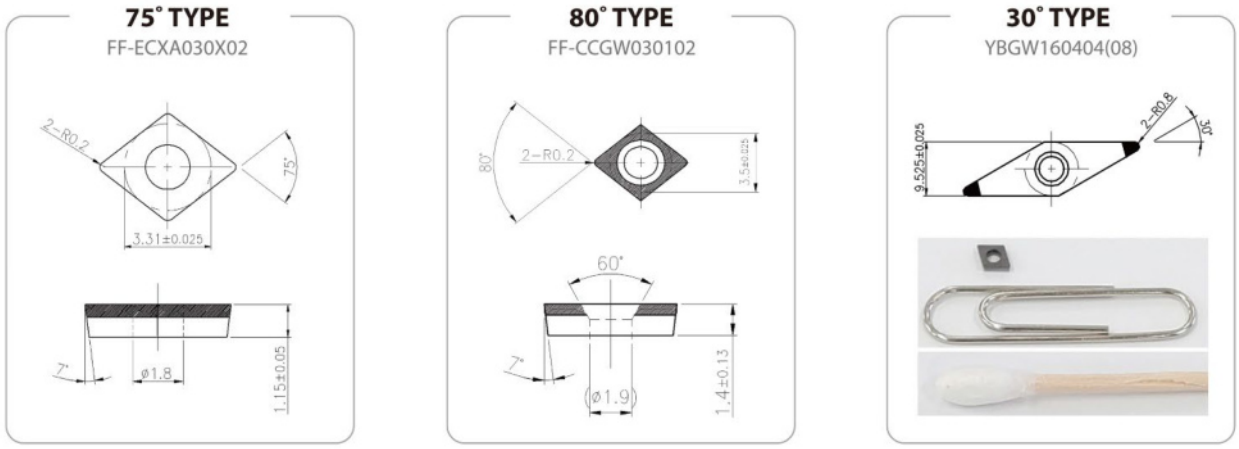
The technical basis is the 14-page AMB 2026 Machine document (Q298) and the 17-page New Product document (Q299). Repeated material from Cutting 2026 QR and existing product sheets is consolidated during integration; differing source figures remain identified. Editorial and German-English rewrite: 14 October 2026.

Three micro-insert geometries from the 2023 exhibition programme

The PCBN programme page shows three distinct geometries for small or demanding machining profiles. Angles, tolerances and hole dimensions remain tied to each model. These identifiers are not interchangeable with similarly named PCD models.

Model	Angle	I.C. (mm)	Drawing corner radius	Clearance	Hole	Thickness (mm)
FF-ECXA030X02	75°	3.31 ±0.025	2×R0.2	7°	Ø1.8	1.15 ±0.05
FF-CCGW030102	80°	3.5 ±0.025	2×R0.2	7°	(Ø1.9) reference	1.4 ±0.13
YBGW160404(08)	30°	9.525 ±0.025	2×R0.8	-	-	-

The FF-CCGW030102 drawing also shows a 60° countersink; Ø1.9 is a parenthesised reference dimension. The YBGW160404(08) drawing explicitly shows 2×R0.8; the “04” code is not used to invent a second, undrawn geometry.



Micro geometries with the complete dimensional and tolerance annotations.

H1/H2: cutting data in the 2023 source context

The accompanying diagram lists H1 and H2 under the source designation “TiSi+” for hardened steel in the H25-H35 range. It gives vc 80-140 m/min, f 0.05-0.15 mm/rev and ap 0.05-0.10 mm. These values describe the programme shown at the time; they are not blanket settings for every micro tool or subsequent PCD design. The exact coating chemistry is not inferred from “TiSi+”.

PCBN ordering references from the 2025 document

The following references preserve the printed combination of model, cutting-corner count, grade, edge designation and order code. An empty cell means that the document provides no order code for that combination. Availability and geometry are confirmed with your enquiry.

The manufacturer confirms CNGA120404 / EB02C020506004 as EB428 GS. The supplementary matrix also preserves the printed combinations for EB319, EB416 and EB454 HS. The repeated “2” and “3” values in the newer matrix’s radius field are not adopted as corner radii.

Part 1

Metric model	Inch ISO	Cutting corners	Grade / edge	Order code
CNGA120402	CNGA430.5	2	-	-
CNGA120404	CNGA431	2	EB428 GS	EB02C020506004
CNGA120404	CNGA431	2	EB416 GS	EB02C021106004
CNGA120404	CNGA431	2	EB419 GS	EB02C022406004
CNGA120404	CNGA431	2	EB454 GS	EB02C021806004
CNGA120404	CNGA431	2	EB454 HS	EB02C021807004
CNGA120404	CNGA431	2	EB210 MT	EB02C023003000
CNGA120408	CNGA432	2	EB428 GS	EB02C030506004
CNGA120408	CNGA432	2	EB416 GS	EB02C031106004
CNGA120408	CNGA432	2	EB419 GS	EB02C032406004
CNGA120408	CNGA432	2	EB454 GS	EB02C031806004
CNGA120408	CNGA432	2	EB454 HS	EB02C031807004
CNGA120408	CNGA432	2	EB71X LT	EB02C033301000
CNGA120408	CNGA432	2	EB210 MT	EB02C033003000
CNGA120412	CNGA433	2	EB428 GS	EB02C040506004
CNGA120412	CNGA433	2	EB416 GS	EB02C041106004
CNGA120412	CNGA433	2	EB419 GS	EB02C042406004
CNGA120412	CNGA433	2	EB454 GS	EB02C041806004
CNGA120412	CNGA433	2	EB454 HS	EB02C041807004
CNGA120412	CNGA433	2	EB71X LT	EB02C043301000
CNGA120412	CNGA433	2	EB210 MT	EB02C043003000
CCGW060202	CCGW2(1.5)0.5	2	EB428 GS	EB02C120506004
CCGW060202	CCGW2(1.5)0.5	2	EB419 GS	EB02C122406004
CCGW060202	CCGW2(1.5)0.5	2	EB454 GS	EB02C121806004

Metric model	Inch ISO	Cutting corners	Grade / edge	Order code
CCGW060204	CCGW2(1.5)1	2	EB428 GS	EB02C130506004
CCGW060204	CCGW2(1.5)1	2	EB419 GS	EB02C132406004
CCGW060204	CCGW2(1.5)1	2	EB454 GS	EB02C131806004
CCGW060204	CCGW2(1.5)1	2	EB71X LT	EB02C133301000
CCGW060208	CCGW2(1.5)2	2	EB419 GS	EB02C142406004
CCGW09T302	CCGW3(2.5)0.5	2	EB428 GS	EB02C150506004
CCGW09T302	CCGW3(2.5)0.5	2	EB419 GS	EB02C152406004
CCGW09T302	CCGW3(2.5)0.5	2	EB454 GS	EB02C151806004
CCGW09T302	CCGW3(2.5)0.5	2	EB71X LT	EB02C153301000
CCGW09T302	CCGW3(2.5)0.5	2	EB210 MT	EB02C163003000*
CCGW09T304	CCGW3(2.5)1	2	EB428 GS	EB02C160506004
CCGW09T304	CCGW3(2.5)1	2	EB419 GS	EB02C162406004
CCGW09T304	CCGW3(2.5)1	2	EB454 GS	EB02C161806004
CCGW09T304	CCGW3(2.5)1	2	EB454 HS	EB02C161807004
CCGW09T304	CCGW3(2.5)1	2	EB71X LT	EB02C163301000
CCGW09T308	CCGW3(2.5)2	2	EB428 GS	EB02C170506004
CCGW09T308	CCGW3(2.5)2	2	EB419 GS	EB02C172406004
CCGW09T308	CCGW3(2.5)2	2	EB454 GS	EB02C171806004
CCGW09T308	CCGW3(2.5)2	2	EB454 HS	EB02C171807004
CCGW09T308	CCGW3(2.5)2	2	EB71X LT	EB02C173301000
DNGA110404	DNGA331	2	-	-
DNGA110408	DNGA332	2	-	-
DNGA110412	DNGA333	2	-	-
DNGA150404	DNGA431	2	EB428 GS	EB02D060506004
DNGA150404	DNGA431	2	EB416 GS	EB02D061106004

Metric model	Inch ISO	Cutting corners	Grade / edge	Order code
DNGA150404	DNGA431	2	EB419 GS	EB02D062406004
DNGA150404	DNGA431	2	EB454 GS	EB02D061806004
DNGA150404	DNGA431	2	EB454 HS	EB02D061807004
DNGA150404	DNGA431	2	EB71X LT	EB02D063301000
DNGA150404	DNGA431	2	EB210 MT	EB02D063003000
DNGA150408	DNGA432	2	EB319 GS	EB02D070106003
DNGA150408	DNGA432	2	EB428 GS	EB02D070506004
DNGA150408	DNGA432	2	EB416 GS	EB02D071106004
DNGA150408	DNGA432	2	EB419 GS	EB02D072406004
DNGA150408	DNGA432	2	EB454 GS	EB02D071806004
DNGA150408	DNGA432	2	EB454 HS	EB02D071807004
DNGA150408	DNGA432	2	EB71X LT	EB02D073301000
DNGA150408	DNGA432	2	EB210 MT	EB02D073003000
DNGA150408	DNGA432	4	EB416 GS	EB04D071106004
DNGA150412	DNGA433	2	EB428 GS	EB02D080506004
DNGA150412	DNGA433	2	EB416 GS	EB02D081106004
DNGA150412	DNGA433	2	EB419 GS	EB02D082406004
DNGA150412	DNGA433	2	EB454 GS	EB02D081806004
DNGA150412	DNGA433	2	EB454 HS	EB02D081807004
DNGA150412	DNGA433	2	EB71X LT	EB02D083301000
DNGA150412	DNGA433	2	EB210 MT	EB02D083003000
DNGA150412	DNGA433	4	EB416 GS	EB04D081106004
DNGA150604	DNGA441	2	EB428 GS	EB02D100506004
DNGA150604	DNGA441	2	EB419 GS	EB02D102406004
DNGA150604	DNGA441	2	EB454 GS	EB02D101806004

Metric model	Inch ISO	Cutting corners	Grade / edge	Order code
DNGA150604	DNGA441	2	EB71X LT	EB02D103301000
DNGA150604	DNGA441	2	EB210 MT	EB02D103003000
DNGA150608	DNGA442	2	EB428 GS	EB02D110506004
DNGA150608	DNGA442	2	EB416 GS	EB02D111106004
DNGA150608	DNGA442	2	EB454 GS	EB02D111806004
DNGA150608	DNGA442	2	EB71X LT	EB02D113301000
DNGA150608	DNGA442	2	EB210 MT	EB02D113003000
DNGA150608	DNGA442	4	EB416 GS	EB04D111106004
DNGA150612	DNGA443	2	EB428 GS	EB02D120506004
DNGA150612	DNGA443	2	EB416 GS	EB02D121106004
DNGA150612	DNGA443	2	EB454 GS	EB02D121806004
DNGA150612	DNGA443	2	EB71X LT	EB02D123301000
DNGA150612	DNGA443	4	EB416 GS	EB04D121106004
DCGW070202	DCGW2(1.5)0.5	2	EB428 GS	EB02D150506004
DCGW070202	DCGW2(1.5)0.5	2	EB419 GS	EB02D152406004
DCGW070202	DCGW2(1.5)0.5	2	EB454 GS	EB02D151806004
DCGW070204	DCGW2(1.5)1	2	EB428 GS	EB02D160506004
DCGW070204	DCGW2(1.5)1	2	EB419 GS	EB02D162406004
DCGW070204	DCGW2(1.5)1	2	EB454 GS	EB02D161806004
DCGW070204	DCGW2(1.5)1	2	EB71X LT	EB02D163301000
DCGW070208	DCGW2(1.5)2	2	-	-
DCGW11T302	DCGW3(2.5)0.5	2	EB428 GS	EB02D180506004
DCGW11T302	DCGW3(2.5)0.5	2	EB419 GS	EB02D182406004
DCGW11T302	DCGW3(2.5)0.5	2	EB454 GS	EB02D181806004
DCGW11T302	DCGW3(2.5)0.5	2	EB71X LT	EB02D183301000

Metric model	Inch ISO	Cutting corners	Grade / edge	Order code
DCGW11T304	DCGW3(2.5)1	2	EB428 GS	EB02D190506004
DCGW11T304	DCGW3(2.5)1	2	EB419 GS	EB02D192406004
DCGW11T304	DCGW3(2.5)1	2	EB454 GS	EB02D191806004
DCGW11T304	DCGW3(2.5)1	2	EB454 HS	EB02D191807004
DCGW11T304	DCGW3(2.5)1	2	EB71X LT	EB02D193301000
DCGW11T304	DCGW3(2.5)1	2	EB210 MT	EB02D193003000
DCGW11T308	DCGW3(2.5)2	2	EB428 GS	EB02D200506004
DCGW11T308	DCGW3(2.5)2	2	EB419 GS	EB02D202406004
DCGW11T308	DCGW3(2.5)2	2	EB454 GS	EB02D201806004
DCGW11T308	DCGW3(2.5)2	2	EB454 HS	EB02D201807004
DCGW11T308	DCGW3(2.5)2	2	EB71X LT	EB02D203301000
DCGW11T308	DCGW3(2.5)2	2	EB210 MT	EB02D203003000
TNGA160404	TNGA331	3	EB419 GS	EB03T062406004
TNGA160404	TNGA331	3	EB210 MT	EB03T063003000
TNGA160408	TNGA332	3	EB428 GS	EB03T070506004
TNGA160408	TNGA332	3	EB454 GS	EB03T071806004
TNGA160408	TNGA332	3	EB71X LT	EB03T073301000
TNGA160412	TNGA333	3	EB210 MT	EB03T083003000
TCGW090202	TCGW1.8(1.5)0.5	3	-	-
TCGW090204	TCGW1.8(1.5)1	3	EB419 GS	EB03T202406004
TCGW090208	TCGW1.8(1.5)2	3	-	-

Part 2

Metric model	Inch ISO	Cutting corners	Grade / edge	Order code
TPGW110202	TPGW2(1.5)0.5	3	-	-
TPGW110204	TPGW2(1.5)1	3	EB428 GS	EB03T360506004
TPGW110208	TPGW2(1.5)2	3	-	-
TPGW110302	TPGW220.5	3	-	-
TPGW110304	TPGW221	3	EB428 GS	EB03T390506004
TPGW110304	TPGW221	3	EB419 GS	EB03T392406004
TPGW110304	TPGW221	3	EB454 GS	EB03T391806004
TPGW110304	TPGW221	3	EB210 MT	EB03T393003000
TPGW110308	TPGW222	3	EB428 GS	EB03T400506004
TPGW110308	TPGW222	3	EB71X LT	EB03T403301000
VNGA160402	VNGA330.5	2	-	-
VNGA160404	VNGA331	2	EB428 GS	EB02V020506004
VNGA160404	VNGA331	2	EB416 GS	EB02V021106004
VNGA160404	VNGA331	2	EB419 GS	EB02V022406004
VNGA160404	VNGA331	2	EB454 GS	EB02V021806004
VNGA160404	VNGA331	2	EB71X LT	EB02V023301000
VNGA160404	VNGA331	4	EB416 GS	EB04V021106004
VNGA160408	VNGA332	2	EB428 GS	EB02V030506004
VNGA160408	VNGA332	2	EB416 GS	EB02V031106004
VNGA160408	VNGA332	2	EB419 GS	EB02V032406004
VNGA160408	VNGA332	2	EB454 GS	EB02V031806004
VNGA160408	VNGA332	2	EB71X LT	EB02V033301000
VNGA160408	VNGA332	4	EB416 GS	EB04V031106004
VBGW110302	VBGW220.5	2	EB428 GS	EB02V050506004

Metric model	Inch ISO	Cutting corners	Grade / edge	Order code
VBGW110302	VBGW220.5	2	EB454 GS	EB02V051806004
VBGW110304	VBGW221	2	EB428 GS	EB02V060506004
VBGW110304	VBGW221	2	EB454 GS	EB02V061806004
VBGW110308	VBGW222	2	-	-
VBGW160402	VBGW330.5	2	EB428 GS	EB02V080506004
VBGW160402	VBGW330.5	2	EB419 GS	EB02V082406004
VBGW160402	VBGW330.5	2	EB454 GS	EB02V081806004
VBGW160402	VBGW330.5	2	EB71X LT	EB02V083301000
VBGW160402	VBGW330.5	2	EB210 MT	EB02V083003000
VBGW160404	VBGW331	2	EB428 GS	EB02V090506004
VBGW160404	VBGW331	2	EB416 GS	EB02V091106004
VBGW160404	VBGW331	2	EB419 GS	EB02V092406004
VBGW160404	VBGW331	2	EB454 GS	EB02V091806004
VBGW160404	VBGW331	2	EB71X LT	EB02V093301000
VBGW160404	VBGW331	2	EB210 MT	EB02V093003000
VBGW160408	VBGW332	2	EB428 GS	EB02V100506004
VBGW160408	VBGW332	2	EB416 GS	EB02V101106004
VBGW160408	VBGW332	2	EB419 GS	EB02V102406004
VBGW160408	VBGW332	2	EB454 GS	EB02V101806004
VBGW160408	VBGW332	2	EB71X LT	EB02V103301000
VBGW160408	VBGW332	2	EB210 MT	EB02V103003000
VCGW110302	VCGW220.5	2	-	-
VCGW110304	VCGW221	2	EB428 GS	EB02V150506004
VCGW110304	VCGW221	2	EB454 GS	EB02V151806004
VCGW110308	VCGW222	2	-	-

Metric model	Inch ISO	Cutting corners	Grade / edge	Order code
VCGW160402	VCGW330.5	2	EB428 GS	EB02V170506004
VCGW160402	VCGW330.5	2	EB419 GS	EB02V172406004
VCGW160402	VCGW330.5	2	EB454 GS	EB02V171806004
VCGW160404	VCGW331	2	EB428 GS	EB02V180506004
VCGW160404	VCGW331	2	EB419 GS	EB02V182406004
VCGW160404	VCGW331	2	EB454 GS	EB02V181806004
VCGW160408	VCGW332	2	EB428 GS	EB02V190506004
VCGW160408	VCGW332	2	EB419 GS	EB02V192406004
WNGA080404	WNGA431	2	-	-
WNGA080408	WNGA432	2	EB428 GS	EB03W070506004
WNGA080408	WNGA432	2	EB419 GS	EB03W072406004
WNGA080408	WNGA432	2	EB454 GS	EB03W071806004
WNGA080408	WNGA432	2	EB210 MT	EB03W073003000

*For CCGW09T302, EB02C163003000 is printed on the “02” source row. Confirm this model/code combination before ordering; the code is not silently moved to the “04” row.

Source and comparison: EHWA Q225/Q226, p.24; Q281, pp.8-9. Manufacturer verification: CNGA120404 EB428, PCBN programme. Source edition and current availability are separate matters.

The following tools and enquiry data supplement the CV-joint programme. Designs, cutting materials and contact geometry remain tied to the individual application.

PCBN ball-track milling cutters for CV joints

Constant-velocity joints transmit torque across variable shaft angles. Tool design considers the inner race, outer race, cage and ball tracks. The ball-track cutters described here use steel bodies with application-specific PCBN grades and edge preparations.



Ball-track milling in a CV joint.

Series	Body	Flutes Z	Material
EBEB-HF	HF10 / HF12 / HF14	4	PCBN
EBEB-HF	Customised	To be specified	PCBN
EBEB-ST	ST10 / ST12	4	PCBN
EBEB-ST	Customised	To be specified	PCBN

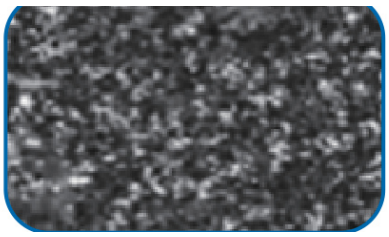


EBEB-HF ball-track cutter.

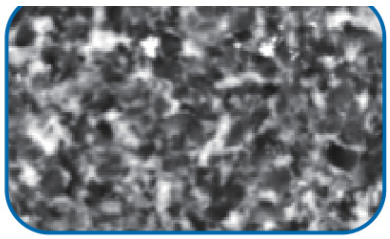


EBEB-ST ball-track cutter.

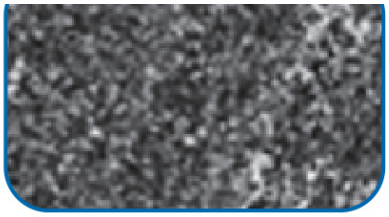
PCBN grade	Manufacturer property emphasis
EB37X	Chemical resistance and higher toughness.
EB11	Wear resistance and high toughness.
EB710	Chemical and wear resistance.



EB37X: microstructure with no supplied scale bar.



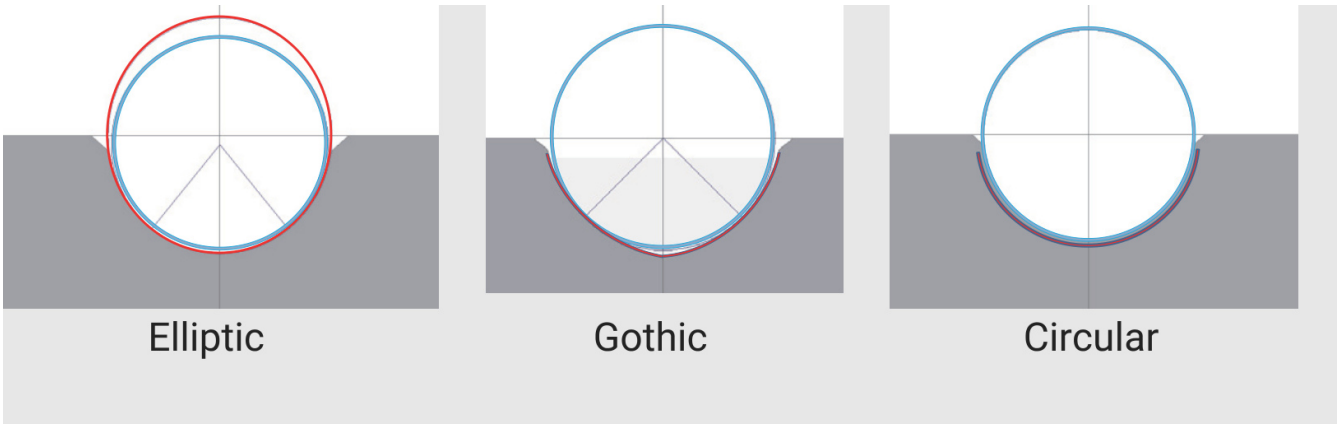
EB11: microstructure with no supplied scale bar.



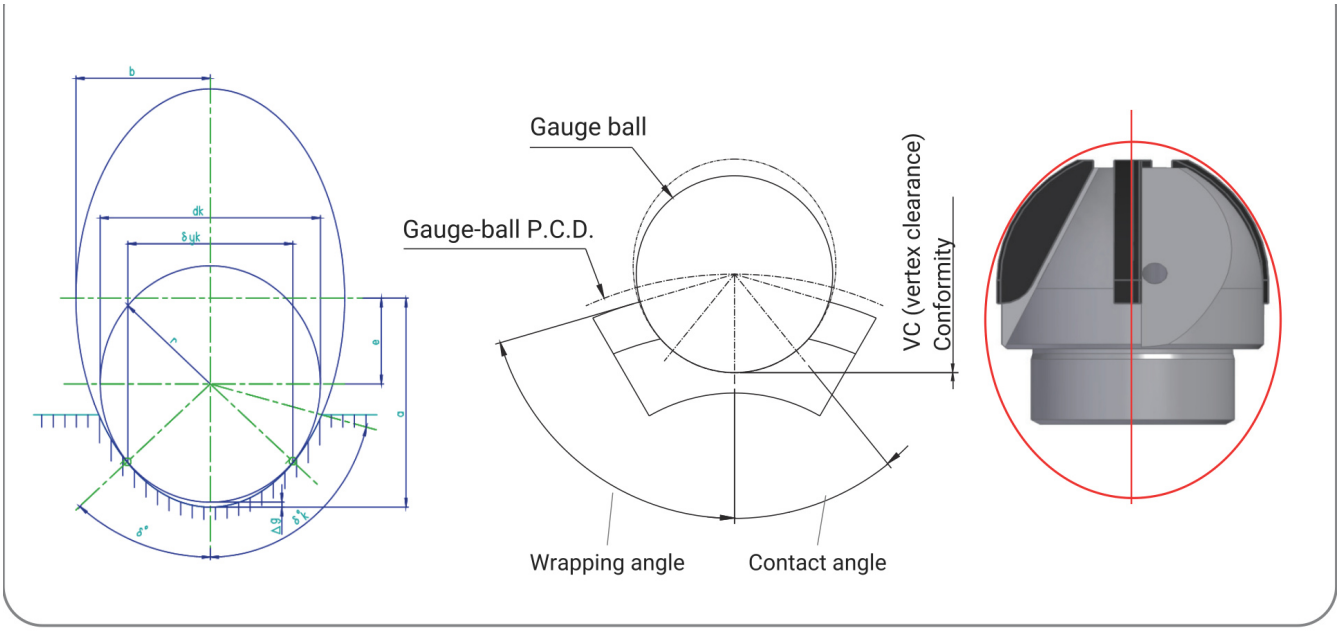
EB710: microstructure with no supplied scale bar.

Ball-track geometry and tool enquiry

The document lists AC, UF, SX, GI and DO joint types and elliptic, gothic and circular ball-track profiles. Consider the profile, gauge ball and contact geometry together. The following fields reproduce the complete technical content of the source questionnaire.



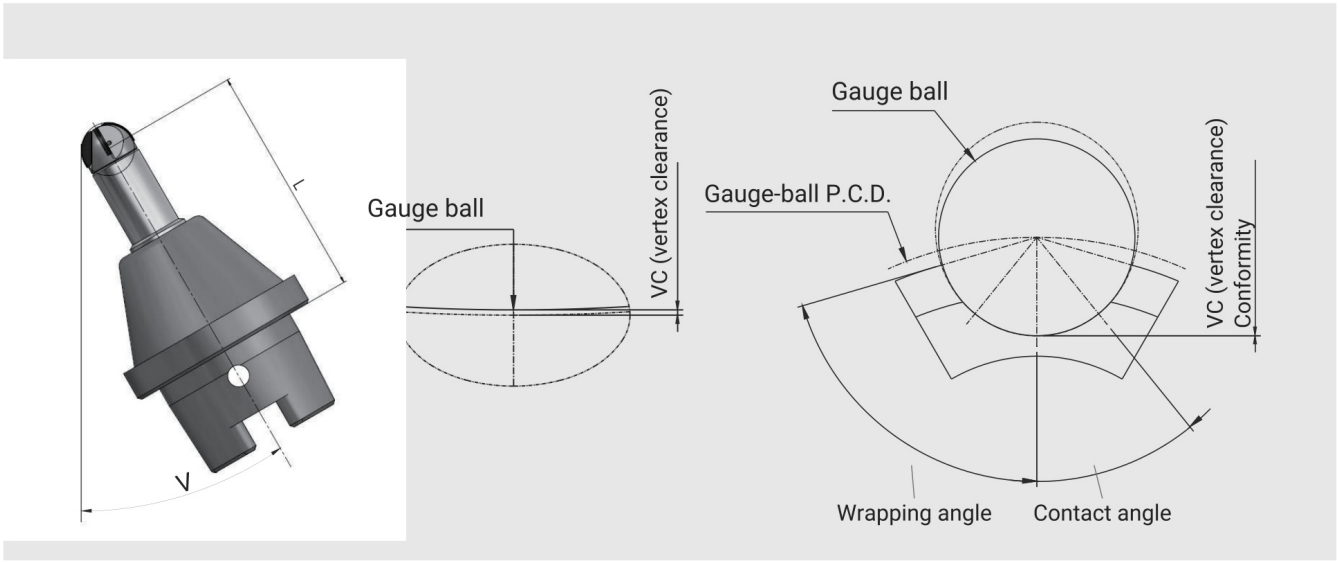
Elliptic, gothic and circular ball-track profiles.



Profile construction, gauge ball, P.C.D., vertex clearance, conformity, contact and wrapping angles, and adapted cutter form with complete original references.

Enquiry field	Selection/unit
Component	Inner race / outer race
Track geometry	Elliptic / gothic / circular
Gauge-ball diameter	mm
Ball-track diameter P.C.D.	mm
Contact angle	°
Vertex clearance	mm
Conformity	Source field: mm
Contact radius	mm
Wrapping angle	°
Tool length L	mm
Tool setting angle V	°
Machine interface	HSK63 / special

P.C.D. here denotes the ball-track or gauge-ball pitch-circle diameter; it is not the cutting material PCD. “Conformity” is assigned mm in the source form. Define whether it means a distance, profile dimension or ratio before drawing approval; the questionnaire does not replace an unambiguous contact-geometry definition.



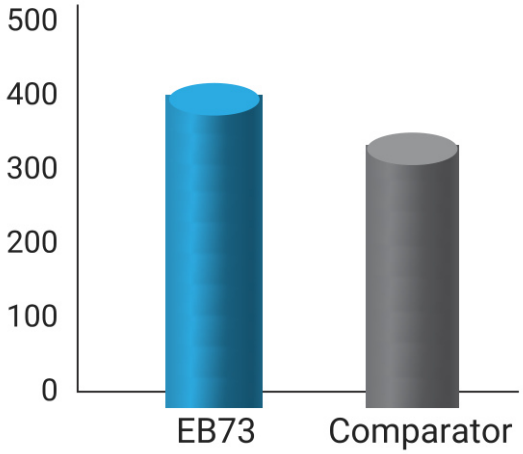
Complete enquiry drawings: tool length L, setting angle V, gauge ball, vertex clearance, P.C.D., and contact and wrapping angles.

Additional PCBN inserts for hard turning

The application concerns outer and inner races, cages and tripod components in interrupted cutting. The source overview identifies EB73 with an emphasis on chemical resistance and toughness, and EB210 on wear resistance and high toughness. These grades remain tied to this application; the earlier overview does not replace the newer EBC52X data.

Source code	Machining
TNGA160412(16)	Outer/inner race and cage, external and internal machining.
CNGA120408	Tripod joint shaft, outer diameter.
DCGW11T308	Tripod spider.

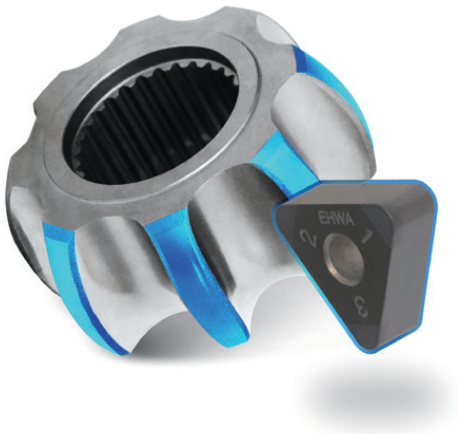
TNGA160412(16) remains as the printed combined designation; determine the specific radius/article version from the drawing. The EB73 comparison chart has no result unit or cutting conditions. It is not used to establish a quantitative tool-life benefit.



EB73 source comparison with a 0-500 scale; no result unit or cutting conditions are provided.



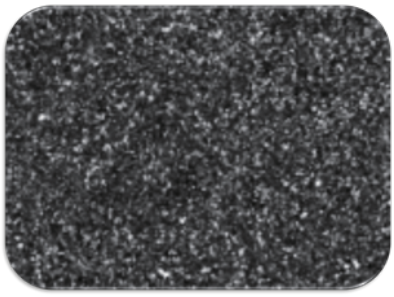
Outer-race hard turning.



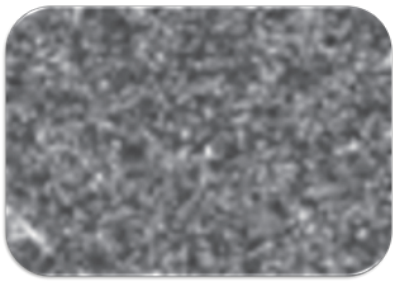
Inner-race hard turning.



Ball-cage hard turning.



EB73 microstructure.



EB210 microstructure.

Your tool specification

Grinding and rotary dressers are already covered by the grinding programme: B126M180VBTM for cage windows, B181M160VBTM for outer races, and rotary dressers for the inner race, cage and outer-race diameter. Those data are presented there once.

EHWA Europe: info@ehwadia.de · +49 6173 997780.

Your tooling enquiry

Please specify material, component drawing, machine and interface, operation, cutting data, coolant supply and required tolerances, surface finish and tool life. Samples or a dimensioned drawing help specify custom shapes.

EHWA Europe: info@ehwadia.de, telephone +49 6173 997780.

Sources and editorial edition

Technical basis: EHWA Cutting 2022 (240 pages), EHWA Cutting 2026 QR (24 pages) and Special Tools for Wood Cutting, printing date 06/2024 (2 pages). The editorial edition of this German and English redesign is dated 14 October 2026. Application and trial data are assigned to their respective product sections.