

TAKEOFF 02.22

valid until 30.06.2022



ATORN

Solid carbide high-performance drill bit
TiAlNplus HPC with internal cooling



3

ATORN

Shoulder milling cutter 90°



15

ATORN

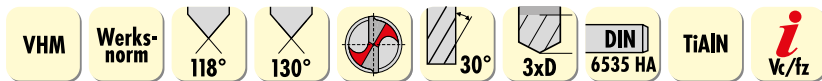
MM-G NC high-pressure machine vice



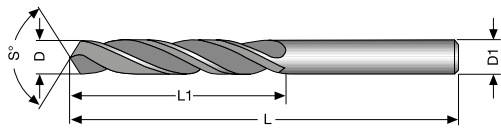
24

ATORN Solid carbide TiAlNplus HPC MICRO drill

Ø 0.1 - 3.0 mm



- $S^\circ = 130^\circ$ point angle, 118° up to Ø 0.35 mm
- **Cutting material, solid carbide ultra-fine grain TiAlNplus**
- Tolerance D = 0.004 mm



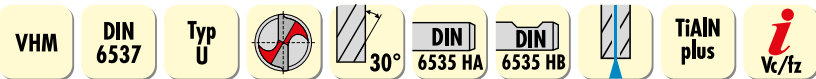
| D mm | D1 h6 mm | L mm | L1 mm | Feed f steel < 1000 N/mm ² mm/rev | Art.no. | € |
|------|----------|------|-------|--|-------------|-------|
| 0.10 | 3.0 | 38 | 1.0 | 0.01 | 111550 0010 | 19.90 |
| 0.15 | 3.0 | 38 | 2.0 | 0.01 | 111550 0015 | 17.75 |
| 0.20 | 3.0 | 38 | 2.5 | 0.01 | 111550 0020 | 15.40 |
| 0.25 | 3.0 | 38 | 4.0 | 0.01 | 111550 0025 | 10.40 |
| 0.30 | 3.0 | 38 | 5.5 | 0.01 | 111550 0030 | 10.40 |
| 0.35 | 3.0 | 38 | 5.5 | 0.01 | 111550 0035 | 10.40 |
| 0.40 | 3.0 | 38 | 6.0 | 0.01 | 111550 0040 | 10.40 |
| 0.45 | 3.0 | 38 | 6.0 | 0.01 | 111550 0045 | 10.40 |
| 0.50 | 3.0 | 38 | 6.0 | 0.01 | 111550 0050 | 10.40 |
| 0.55 | 3.0 | 38 | 8.0 | 0.01 | 111550 0055 | 10.40 |
| 0.60 | 3.0 | 38 | 8.0 | 0.01 | 111550 0060 | 10.40 |
| 0.65 | 3.0 | 38 | 8.0 | 0.01 | 111550 0065 | 10.40 |
| 0.70 | 3.0 | 38 | 8.0 | 0.01 | 111550 0070 | 10.40 |
| 0.75 | 3.0 | 38 | 8.0 | 0.01 | 111550 0075 | 10.40 |
| 0.80 | 3.0 | 38 | 8.0 | 0.01 | 111550 0080 | 10.40 |
| 0.85 | 3.0 | 38 | 8.0 | 0.01 | 111550 0085 | 10.40 |
| 0.90 | 3.0 | 38 | 8.0 | 0.01 | 111550 0090 | 10.40 |
| 0.95 | 3.0 | 38 | 8.0 | 0.01 | 111550 0095 | 10.40 |
| 0.97 | 3.0 | 38 | 8.0 | 0.02 | 111550 0097 | 10.40 |
| 0.98 | 3.0 | 38 | 8.0 | 0.02 | 111550 0098 | 10.40 |
| 0.99 | 3.0 | 38 | 8.0 | 0.02 | 111550 0099 | 10.40 |
| 1.00 | 3.0 | 38 | 10.0 | 0.02 | 111550 0100 | 10.40 |
| 1.01 | 3.0 | 38 | 10.0 | 0.02 | 111550 0101 | 10.40 |
| 1.02 | 3.0 | 38 | 10.0 | 0.03 | 111550 0102 | 10.40 |
| 1.03 | 3.0 | 38 | 10.0 | 0.03 | 111550 0103 | 10.40 |
| 1.05 | 3.0 | 38 | 10.0 | 0.03 | 111550 0105 | 10.40 |
| 1.10 | 3.0 | 38 | 10.0 | 0.03 | 111550 0110 | 10.40 |
| 1.15 | 3.0 | 38 | 10.0 | 0.03 | 111550 0115 | 10.40 |
| 1.20 | 3.0 | 38 | 10.0 | 0.03 | 111550 0120 | 10.40 |
| 1.25 | 3.0 | 38 | 10.0 | 0.03 | 111550 0125 | 10.40 |
| 1.30 | 3.0 | 38 | 10.0 | 0.03 | 111550 0130 | 10.40 |
| 1.35 | 3.0 | 38 | 10.0 | 0.03 | 111550 0135 | 10.40 |
| 1.40 | 3.0 | 38 | 10.0 | 0.03 | 111550 0140 | 10.40 |
| 1.45 | 3.0 | 38 | 10.0 | 0.03 | 111550 0145 | 10.40 |
| 1.47 | 3.0 | 38 | 10.0 | 0.03 | 111550 0147 | 10.40 |
| 1.48 | 3.0 | 38 | 10.0 | 0.03 | 111550 0148 | 10.40 |
| 1.49 | 3.0 | 38 | 10.0 | 0.03 | 111550 0149 | 10.40 |
| 1.50 | 3.0 | 38 | 12.0 | 0.03 | 111550 0150 | 10.40 |
| 1.51 | 3.0 | 38 | 12.0 | 0.03 | 111550 0151 | 10.40 |
| 1.52 | 3.0 | 38 | 12.0 | 0.03 | 111550 0152 | 10.40 |
| 1.53 | 3.0 | 38 | 12.0 | 0.03 | 111550 0153 | 10.40 |
| 1.55 | 3.0 | 38 | 12.0 | 0.03 | 111550 0155 | 10.40 |

| D mm | D1 h6 mm | L mm | L1 mm | Feed f steel < 1000 N/mm ² mm/rev | Art.no. | € |
|------|----------|------|-------|--|-------------|-------|
| 1.60 | 3.0 | 38 | 12.0 | 0.03 | 111550 0160 | 10.40 |
| 1.65 | 3.0 | 38 | 12.0 | 0.03 | 111550 0165 | 10.40 |
| 1.70 | 3.0 | 38 | 12.0 | 0.03 | 111550 0170 | 10.40 |
| 1.75 | 3.0 | 38 | 12.0 | 0.03 | 111550 0175 | 10.40 |
| 1.80 | 3.0 | 38 | 12.0 | 0.03 | 111550 0180 | 10.40 |
| 1.85 | 3.0 | 38 | 12.0 | 0.03 | 111550 0185 | 10.40 |
| 1.90 | 3.0 | 38 | 12.0 | 0.03 | 111550 0190 | 10.40 |
| 1.95 | 3.0 | 38 | 12.0 | 0.03 | 111550 0195 | 10.40 |
| 1.97 | 3.0 | 38 | 12.0 | 0.03 | 111550 0197 | 10.40 |
| 1.98 | 3.0 | 38 | 12.0 | 0.03 | 111550 0198 | 10.40 |
| 1.99 | 3.0 | 38 | 12.0 | 0.03 | 111550 0199 | 10.40 |
| 2.00 | 3.0 | 38 | 12.0 | 0.05 | 111550 0200 | 10.60 |
| 2.01 | 3.0 | 38 | 12.0 | 0.05 | 111550 0201 | 10.60 |
| 2.02 | 3.0 | 38 | 12.0 | 0.05 | 111550 0202 | 10.60 |
| 2.03 | 3.0 | 38 | 12.0 | 0.05 | 111550 0203 | 10.60 |
| 2.05 | 3.0 | 38 | 12.0 | 0.05 | 111550 0205 | 10.60 |
| 2.10 | 3.0 | 38 | 12.0 | 0.05 | 111550 0210 | 10.60 |
| 2.15 | 3.0 | 38 | 12.0 | 0.05 | 111550 0215 | 10.60 |
| 2.20 | 3.0 | 38 | 12.0 | 0.05 | 111550 0220 | 10.70 |
| 2.25 | 3.0 | 38 | 12.0 | 0.05 | 111550 0225 | 10.70 |
| 2.30 | 3.0 | 38 | 12.0 | 0.05 | 111550 0230 | 10.70 |
| 2.35 | 3.0 | 38 | 12.0 | 0.05 | 111550 0235 | 10.70 |
| 2.40 | 3.0 | 38 | 12.0 | 0.05 | 111550 0240 | 10.70 |
| 2.45 | 3.0 | 38 | 12.0 | 0.05 | 111550 0245 | 10.70 |
| 2.50 | 3.0 | 38 | 12.0 | 0.05 | 111550 0250 | 10.70 |
| 2.51 | 3.0 | 38 | 12.0 | 0.06 | 111550 0251 | 10.70 |
| 2.52 | 3.0 | 38 | 12.0 | 0.06 | 111550 0252 | 10.70 |
| 2.53 | 3.0 | 38 | 12.0 | 0.06 | 111550 0253 | 10.70 |
| 2.55 | 3.0 | 38 | 12.0 | 0.06 | 111550 0255 | 13.30 |
| 2.60 | 3.0 | 38 | 12.0 | 0.06 | 111550 0260 | 13.30 |
| 2.65 | 3.0 | 38 | 12.0 | 0.06 | 111550 0265 | 13.30 |
| 2.70 | 3.0 | 38 | 12.0 | 0.06 | 111550 0270 | 13.30 |
| 2.75 | 3.0 | 38 | 12.0 | 0.06 | 111550 0275 | 13.30 |
| 2.80 | 3.0 | 38 | 12.0 | 0.06 | 111550 0280 | 13.30 |
| 2.85 | 3.0 | 38 | 12.0 | 0.06 | 111550 0285 | 13.30 |
| 2.90 | 3.0 | 38 | 12.0 | 0.06 | 111550 0290 | 13.30 |
| 2.95 | 3.0 | 38 | 12.0 | 0.06 | 111550 0295 | 13.30 |
| 2.96 | 3.0 | 38 | 12.0 | 0.06 | 111550 0296 | 13.30 |
| 2.97 | 3.0 | 38 | 12.0 | 0.06 | 111550 0297 | 13.30 |
| 2.98 | 3.0 | 38 | 12.0 | 0.06 | 111550 0298 | 13.30 |
| 2.99 | 3.0 | 38 | 12.0 | 0.06 | 111550 0299 | 13.30 |
| 3.00 | 3.0 | 38 | 12.0 | 0.06 | 111550 0300 | 13.30 |

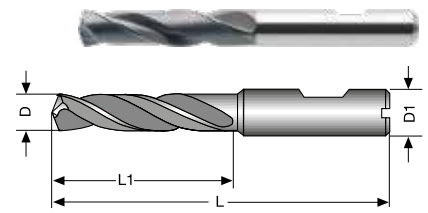
| Material | ● very well suited | Steel | | | Stainless steel | | | Cast iron | | Titanium alloys | Super alloys Fe/NiCo-based | | Aluminium | | Copper Cu alloy | Graphite GRP/CF/Thermo. | Hardened steel | | | |
|----------|--------------------|-------------------------|--------------------------|--------------------------|------------------|------------|--------|-----------|-------|-----------------|----------------------------|----------|-----------|----------|-----------------|-------------------------|----------------|----------|----------|--|
| | ○ well suited | < 700 N/mm ² | < 1000 N/mm ² | < 1400 N/mm ² | ferrit./martens. | austenitic | duplex | GG/GTS | GGG | | < 30 HRc | ≥ 30 HRc | < 8 % Si | ≥ 8 % Si | | | < 55 HRc | < 60 HRc | ≥ 60 HRc | |
| | | ● | ● | ● | ○ | ● | ○ | ● | ● | ○ | ○ | ○ | ● | ● | ● | ○ | | | | |
| | | 50-75 | 50-70 | 20-25 | 20-35 | 20-35 | 20-35 | 60-100 | 60-80 | 10-30 | 10-30 | 10-20 | 150-220 | 100-160 | 80-130 | 60-95 | | | | |

Cutting speed Vc m/min. Please adjust these guidelines according to clamping operation and machine set-up!

ATORN Solid carbide high-performance drill bit **TiAlNplus HPC** with internal cooling



- Optimised shank diameter tolerance for use as a holding fixture in power chucks and hydraulic expansion chucks
- **Cutting material: ultra-fine grain solid carbide TiAlNplus**
- Efficient drilling in different materials
- Newly developed geometry in conjunction with a customised multilayer coating for enhanced output
- Special cutting edge finishing reduces micro-nicks and increases service life



3xD, HB

| D1 h7 mm | D1 h6 mm | L mm | L1 mm | Feed f steel < 1000 N/mm ² mm/rev | Art.no. | € |
|----------|----------|------|-------|--|--------------------|--------------|
| 3 | 6 | 62 | 20 | 0.08 | 111565 0300 | 37.20 |
| 3.2 | 6 | 62 | 20 | 0.08 | 111565 0320 | 39.10 |
| 3.3 | 6 | 62 | 20 | 0.08 | 111565 0330 | 39.10 |
| 3.5 | 6 | 62 | 20 | 0.09 | 111565 0350 | 39.10 |
| 3.8 | 6 | 66 | 24 | 0.10 | 111565 0380 | 39.10 |
| 4 | 6 | 66 | 24 | 0.10 | 111565 0400 | 39.10 |
| 4.2 | 6 | 66 | 24 | 0.11 | 111565 0420 | 39.10 |
| 4.5 | 6 | 66 | 24 | 0.11 | 111565 0450 | 39.10 |
| 4.8 | 6 | 66 | 28 | 0.12 | 111565 0480 | 39.10 |
| 5 | 6 | 66 | 28 | 0.13 | 111565 0500 | 39.10 |
| 5.1 | 6 | 66 | 28 | 0.13 | 111565 0510 | 39.10 |
| 5.5 | 6 | 66 | 28 | 0.14 | 111565 0550 | 39.10 |
| 5.8 | 6 | 66 | 28 | 0.15 | 111565 0580 | 39.10 |
| 6 | 6 | 66 | 28 | 0.15 | 111565 0600 | 39.10 |
| 6.2 | 8 | 79 | 34 | 0.16 | 111565 0620 | 50.70 |
| 6.5 | 8 | 79 | 34 | 0.16 | 111565 0650 | 50.70 |
| 6.8 | 8 | 79 | 34 | 0.17 | 111565 0680 | 50.70 |
| 7 | 8 | 79 | 34 | 0.18 | 111565 0700 | 50.70 |
| 7.5 | 8 | 79 | 41 | 0.19 | 111565 0750 | 50.70 |
| 8 | 8 | 79 | 41 | 0.20 | 111565 0800 | 50.70 |
| 8.2 | 10 | 89 | 47 | 0.21 | 111565 0820 | 59.10 |
| 8.5 | 10 | 89 | 47 | 0.21 | 111565 0850 | 59.10 |
| 8.8 | 10 | 89 | 47 | 0.22 | 111565 0880 | 59.10 |
| 9 | 10 | 89 | 47 | 0.23 | 111565 0900 | 59.10 |

| D1 h7 mm | D1 h6 mm | L mm | L1 mm | Feed f steel < 1000 N/mm ² mm/rev | Art.no. | € |
|----------|----------|------|-------|--|-------------|---------------|
| 9.5 | 10 | 89 | 47 | 0.24 | 111565 0950 | 59.10 |
| 10 | 10 | 89 | 47 | 0.25 | 111565 1000 | 59.10 |
| 10.2 | 12 | 102 | 55 | 0.26 | 111565 1020 | 88.50 |
| 10.5 | 12 | 102 | 55 | 0.26 | 111565 1050 | 88.50 |
| 11 | 12 | 102 | 55 | 0.28 | 111565 1100 | 88.50 |
| 11.5 | 12 | 102 | 55 | 0.29 | 111565 1150 | 88.50 |
| 12 | 12 | 102 | 55 | 0.30 | 111565 1200 | 88.50 |
| 12.5 | 14 | 107 | 60 | 0.31 | 111565 1250 | 119.00 |
| 13 | 14 | 107 | 60 | 0.33 | 111565 1300 | 119.00 |
| 13.5 | 14 | 107 | 60 | 0.34 | 111565 1350 | 119.00 |
| 14 | 14 | 107 | 60 | 0.35 | 111565 1400 | 119.00 |
| 14.5 | 16 | 115 | 65 | 0.36 | 111565 1450 | 141.00 |
| 15 | 16 | 115 | 65 | 0.38 | 111565 1500 | 141.00 |
| 15.5 | 16 | 115 | 65 | 0.39 | 111565 1550 | 141.00 |
| 16 | 16 | 115 | 65 | 0.40 | 111565 1600 | 141.00 |
| 16.5 | 18 | 123 | 73 | 0.41 | 111565 1650 | 197.50 |
| 17 | 18 | 123 | 73 | 0.43 | 111565 1700 | 197.50 |
| 17.5 | 18 | 123 | 73 | 0.44 | 111565 1750 | 197.50 |
| 18 | 18 | 123 | 73 | 0.45 | 111565 1800 | 197.50 |
| 18.5 | 20 | 131 | 79 | 0.46 | 111565 1850 | 247.50 |
| 19 | 20 | 131 | 79 | 0.48 | 111565 1900 | 247.50 |
| 19.5 | 20 | 131 | 79 | 0.49 | 111565 1950 | 247.50 |
| 20 | 20 | 131 | 79 | 0.50 | 111565 2000 | 247.50 |



5xD, HB

| D h7 mm | D1 h6 mm | L mm | L1 mm | Feed f steel < 1000 N/mm ² mm/rev | Art.no. | € |
|---------|----------|------|-------|--|--------------------|--------------|
| 3 | 6 | 66 | 28 | 0.08 | 111569 0300 | 48.70 |
| 3.2 | 6 | 66 | 28 | 0.08 | 111569 0320 | 48.70 |
| 3.3 | 6 | 66 | 28 | 0.08 | 111569 0330 | 48.70 |
| 3.5 | 6 | 66 | 28 | 0.09 | 111569 0350 | 48.70 |
| 3.8 | 6 | 74 | 36 | 0.10 | 111569 0380 | 48.70 |
| 4 | 6 | 74 | 36 | 0.10 | 111569 0400 | 48.70 |
| 4.2 | 6 | 74 | 36 | 0.11 | 111569 0420 | 49.30 |
| 4.5 | 6 | 74 | 36 | 0.11 | 111569 0450 | 49.30 |
| 4.8 | 6 | 82 | 44 | 0.12 | 111569 0480 | 49.30 |
| 5 | 6 | 82 | 44 | 0.13 | 111569 0500 | 49.30 |
| 5.1 | 6 | 82 | 44 | 0.13 | 111569 0510 | 49.30 |
| 5.5 | 6 | 82 | 44 | 0.14 | 111569 0550 | 49.30 |
| 5.8 | 6 | 82 | 44 | 0.15 | 111569 0580 | 49.30 |
| 6 | 6 | 82 | 44 | 0.15 | 111569 0600 | 49.30 |
| 6.2 | 8 | 91 | 53 | 0.16 | 111569 0620 | 54.60 |
| 6.5 | 8 | 91 | 53 | 0.16 | 111569 0650 | 54.60 |
| 6.8 | 8 | 91 | 53 | 0.17 | 111569 0680 | 54.60 |
| 7 | 8 | 91 | 53 | 0.18 | 111569 0700 | 54.60 |
| 7.5 | 8 | 91 | 53 | 0.19 | 111569 0750 | 54.60 |
| 8 | 8 | 91 | 53 | 0.20 | 111569 0800 | 54.60 |
| 8.2 | 10 | 103 | 61 | 0.21 | 111569 0820 | 63.90 |
| 8.5 | 10 | 103 | 61 | 0.21 | 111569 0850 | 63.90 |
| 8.8 | 10 | 103 | 61 | 0.22 | 111569 0880 | 63.90 |
| 9 | 10 | 103 | 61 | 0.23 | 111569 0900 | 63.90 |

| D h7 mm | D1 h6 mm | L mm | L1 mm | Feed f steel < 1000 N/mm ² mm/rev | Art.no. | € |
|---------|----------|------|-------|--|-------------|---------------|
| 9.5 | 10 | 103 | 61 | 0.24 | 111569 0950 | 63.90 |
| 10 | 10 | 103 | 61 | 0.25 | 111569 1000 | 63.90 |
| 10.2 | 12 | 118 | 71 | 0.26 | 111569 1020 | 91.20 |
| 10.5 | 12 | 118 | 71 | 0.26 | 111569 1050 | 91.20 |
| 11 | 12 | 118 | 71 | 0.28 | 111569 1100 | 91.20 |
| 11.5 | 12 | 118 | 71 | 0.29 | 111569 1150 | 91.20 |
| 12 | 12 | 118 | 71 | 0.30 | 111569 1200 | 91.20 |
| 12.5 | 14 | 124 | 77 | 0.31 | 111569 1250 | 121.50 |
| 13 | 14 | 124 | 77 | 0.33 | 111569 1300 | 121.50 |
| 13.5 | 14 | 124 | 77 | 0.34 | 111569 1350 | 121.50 |
| 14 | 14 | 124 | 77 | 0.35 | 111569 1400 | 121.50 |
| 14.5 | 16 | 133 | 83 | 0.36 | 111569 1450 | 143.50 |
| 15 | 16 | 133 | 83 | 0.38 | 111569 1500 | 143.50 |
| 15.5 | 16 | 133 | 83 | 0.39 | 111569 1550 | 143.50 |
| 16 | 16 | 133 | 83 | 0.40 | 111569 1600 | 143.50 |
| 16.5 | 18 | 143 | 93 | 0.41 | 111569 1650 | 228.00 |
| 17 | 18 | 143 | 93 | 0.43 | 111569 1700 | 228.00 |
| 17.5 | 18 | 143 | 93 | 0.44 | 111569 1750 | 228.00 |
| 18 | 18 | 143 | 93 | 0.45 | 111569 1800 | 228.00 |
| 18.5 | 20 | 153 | 101 | 0.46 | 111569 1850 | 240.00 |
| 19 | 20 | 153 | 101 | 0.48 | 111569 1900 | 240.00 |
| 19.5 | 20 | 153 | 101 | 0.49 | 111569 1950 | 250.00 |
| 20 | 20 | 153 | 101 | 0.50 | 111569 2000 | 250.00 |

8xD, HA

| D h7 mm | D1 h6 mm | L mm | L1 mm | Feed f steel < 1000 N/mm ² mm/rev | Art.no. | € |
|------------|-------------|---------|----------|--|-------------|--------|
| 3 | 6 | 72 | 34 | 0.08 | 111570 0300 | 107.50 |
| 3.2 | 6 | 72 | 34 | 0.08 | 111570 0320 | 107.50 |
| 3.3 | 6 | 72 | 34 | 0.08 | 111570 0330 | 107.50 |
| 3.5 | 6 | 72 | 34 | 0.09 | 111570 0350 | 107.50 |
| 3.8 | 6 | 81 | 43 | 0.10 | 111570 0380 | 107.50 |
| 4 | 6 | 81 | 43 | 0.10 | 111570 0400 | 107.50 |
| 4.2 | 6 | 81 | 43 | 0.11 | 111570 0420 | 107.50 |
| 4.5 | 6 | 81 | 43 | 0.11 | 111570 0450 | 107.50 |
| 4.8 | 6 | 95 | 57 | 0.12 | 111570 0480 | 107.50 |
| 5 | 6 | 95 | 57 | 0.13 | 111570 0500 | 107.50 |
| 5.1 | 6 | 95 | 57 | 0.13 | 111570 0510 | 107.50 |
| 5.5 | 6 | 95 | 57 | 0.14 | 111570 0550 | 107.50 |
| 5.8 | 6 | 95 | 57 | 0.15 | 111570 0580 | 107.50 |
| 6 | 6 | 95 | 57 | 0.15 | 111570 0600 | 107.50 |
| 6.2 | 8 | 114 | 76 | 0.16 | 111570 0620 | 133.00 |
| 6.5 | 8 | 114 | 76 | 0.16 | 111570 0650 | 133.00 |
| 6.8 | 8 | 114 | 76 | 0.17 | 111570 0680 | 133.00 |
| 7 | 8 | 114 | 76 | 0.18 | 111570 0700 | 133.00 |
| 7.5 | 8 | 114 | 76 | 0.19 | 111570 0750 | 133.00 |
| 8 | 8 | 114 | 76 | 0.20 | 111570 0800 | 133.00 |
| 8.2 | 10 | 142 | 95 | 0.21 | 111570 0820 | 169.00 |
| 8.5 | 10 | 142 | 95 | 0.21 | 111570 0850 | 169.00 |
| 8.8 | 10 | 142 | 95 | 0.22 | 111570 0880 | 169.00 |
| 9 | 10 | 142 | 95 | 0.23 | 111570 0900 | 169.00 |



| D h7 mm | D1 h6 mm | L mm | L1 mm | Feed f steel < 1000 N/mm ² mm/rev | Art.no. | € |
|------------|-------------|---------|----------|--|-------------|--------|
| 9.5 | 10 | 142 | 95 | 0.24 | 111570 0950 | 169.00 |
| 10 | 10 | 142 | 95 | 0.25 | 111570 1000 | 169.00 |
| 10.2 | 12 | 162 | 114 | 0.26 | 111570 1020 | 216.00 |
| 10.5 | 12 | 162 | 114 | 0.26 | 111570 1050 | 216.00 |
| 11 | 12 | 162 | 114 | 0.28 | 111570 1100 | 216.00 |
| 11.5 | 12 | 162 | 114 | 0.29 | 111570 1150 | 216.00 |
| 12 | 12 | 162 | 114 | 0.30 | 111570 1200 | 216.00 |
| 12.5 | 14 | 178 | 131 | 0.31 | 111570 1250 | 270.00 |
| 13 | 14 | 178 | 131 | 0.33 | 111570 1300 | 270.00 |
| 13.5 | 14 | 178 | 131 | 0.34 | 111570 1350 | 270.00 |
| 14 | 14 | 178 | 131 | 0.35 | 111570 1400 | 270.00 |
| 14.5 | 16 | 203 | 152 | 0.36 | 111570 1450 | 372.00 |
| 15 | 16 | 203 | 152 | 0.38 | 111570 1500 | 372.00 |
| 15.5 | 16 | 203 | 152 | 0.39 | 111570 1550 | 372.00 |
| 16 | 16 | 203 | 152 | 0.40 | 111570 1600 | 372.00 |
| 16.5 | 18 | 222 | 171 | 0.41 | 111570 1650 | 449.00 |
| 17 | 18 | 222 | 171 | 0.43 | 111570 1700 | 449.00 |
| 17.5 | 18 | 222 | 171 | 0.44 | 111570 1750 | 449.00 |
| 18 | 18 | 222 | 171 | 0.45 | 111570 1800 | 449.00 |
| 18.8 | 20 | 243 | 190 | 0.46 | 111570 1850 | 509.00 |
| 19 | 20 | 243 | 190 | 0.48 | 111570 1900 | 539.00 |
| 19.5 | 20 | 243 | 190 | 0.49 | 111570 1950 | 539.00 |
| 20 | 20 | 243 | 190 | 0.50 | 111570 2000 | 539.00 |

12xD, HA

| D h7 mm | D1 h6 mm | L mm | L1 mm | Feed f steel < 1000 N/mm ² mm/rev | Art.no. | € |
|------------|-------------|---------|----------|--|-------------|--------|
| 3 | 6 | 92 | 54 | 0.08 | 111572 0300 | 124.50 |
| 3.2 | 6 | 92 | 54 | 0.08 | 111572 0320 | 124.50 |
| 3.3 | 6 | 92 | 54 | 0.08 | 111572 0330 | 124.50 |
| 3.5 | 6 | 92 | 54 | 0.09 | 111572 0350 | 124.50 |
| 3.8 | 6 | 102 | 64 | 0.10 | 111572 0380 | 124.50 |
| 4 | 6 | 102 | 64 | 0.10 | 111572 0400 | 124.50 |
| 4.2 | 6 | 102 | 64 | 0.11 | 111572 0420 | 124.50 |
| 4.5 | 6 | 102 | 64 | 0.11 | 111572 0450 | 124.50 |
| 4.8 | 6 | 116 | 78 | 0.12 | 111572 0480 | 124.50 |
| 5 | 6 | 116 | 78 | 0.13 | 111572 0500 | 124.50 |
| 5.5 | 6 | 116 | 78 | 0.14 | 111572 0550 | 124.50 |
| 5.8 | 6 | 116 | 78 | 0.15 | 111572 0580 | 124.50 |
| 6 | 6 | 116 | 78 | 0.15 | 111572 0600 | 124.50 |
| 6.5 | 8 | 146 | 108 | 0.16 | 111572 0650 | 171.50 |
| 6.8 | 8 | 146 | 108 | 0.17 | 111572 0680 | 171.50 |
| 7 | 8 | 146 | 108 | 0.18 | 111572 0700 | 171.50 |



| D h7 mm | D1 h6 mm | L mm | L1 mm | Feed f steel < 1000 N/mm ² mm/rev | Art.no. | € |
|------------|-------------|---------|----------|--|-------------|--------|
| 7.5 | 8 | 146 | 108 | 0.19 | 111572 0750 | 171.50 |
| 7.8 | 8 | 146 | 108 | 0.20 | 111572 0780 | 171.50 |
| 8 | 8 | 146 | 108 | 0.20 | 111572 0800 | 171.50 |
| 8.5 | 10 | 162 | 120 | 0.21 | 111572 0850 | 206.00 |
| 8.8 | 10 | 162 | 120 | 0.22 | 111572 0880 | 206.00 |
| 9 | 10 | 162 | 120 | 0.23 | 111572 0900 | 206.00 |
| 9.5 | 10 | 162 | 120 | 0.24 | 111572 0950 | 219.00 |
| 9.8 | 10 | 162 | 120 | 0.25 | 111572 0980 | 219.00 |
| 10 | 10 | 162 | 120 | 0.25 | 111572 1000 | 219.00 |
| 10.2 | 12 | 204 | 156 | 0.26 | 111572 1020 | 278.00 |
| 10.5 | 12 | 204 | 156 | 0.26 | 111572 1050 | 278.00 |
| 10.8 | 12 | 204 | 156 | 0.27 | 111572 1080 | 278.00 |
| 11 | 12 | 204 | 156 | 0.28 | 111572 1100 | 278.00 |
| 11.5 | 12 | 204 | 156 | 0.29 | 111572 1150 | 278.00 |
| 11.8 | 12 | 204 | 156 | 0.30 | 111572 1180 | 278.00 |
| 12 | 12 | 204 | 156 | 0.30 | 111572 1200 | 278.00 |

| Material | ● very well suited ○ well suited | Steel | | | Stainless steel | | | Cast iron | | Titanium alloys | Super alloys Fe/NiCo-based | | Aluminium | | Copper Cu-alloy | Graphite GRP/CFP/thermo | Hardened steel | | |
|-----------|-------------------------------------|-------------------------|--------------------------|--------------------------|------------------|------------|--------|-----------|-----|-----------------|----------------------------|---------|-----------|----------|-----------------|-------------------------|----------------|----------|---|
| | | < 700 N/mm ² | < 1000 N/mm ² | < 1400 N/mm ² | ferrit./martens. | austenitic | duplex | GG/GTS | GGG | < 30 HRc | ≥ 30 HRc | < 8% Si | ≥ 8% Si | Cu-alloy | GRP/CFP/thermo | < 55 HRc | < 60 HRc | ≥ 60 HRc | |
| 111565... | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 111569... | ○ | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 111570... | ○ | ● | ● | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 111572... | ○ | ● | ● | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

Cutting speed Vc m/min. Please adjust these guidelines according to clamping operation and machine set-up!



16xD, HA

| D h7 mm | D1 h6 mm | L mm | L1 mm | Feed f steel < 1000 N/mm ² mm/rev | Art.no. | € |
|------------|-------------|---------|----------|--|-------------|--------|
| 3 | 6 | 100 | 60 | 0.08 | 111574 0300 | 139.50 |
| 3.2 | 6 | 100 | 60 | 0.08 | 111574 0320 | 139.50 |
| 3.3 | 6 | 100 | 60 | 0.08 | 111574 0330 | 139.50 |
| 3.5 | 6 | 100 | 60 | 0.08 | 111574 0350 | 139.50 |
| 3.8 | 6 | 115 | 75 | 0.08 | 111574 0380 | 144.00 |
| 4 | 6 | 115 | 75 | 0.08 | 111574 0400 | 144.00 |
| 4.2 | 6 | 115 | 75 | 0.08 | 111574 0420 | 155.50 |
| 4.5 | 6 | 130 | 90 | 0.08 | 111574 0450 | 155.50 |
| 4.8 | 6 | 130 | 90 | 0.08 | 111574 0480 | 164.00 |
| 5 | 6 | 130 | 90 | 0.08 | 111574 0500 | 164.00 |
| 5.5 | 6 | 150 | 108 | 0.12 | 111574 0550 | 173.50 |
| 5.8 | 6 | 150 | 108 | 0.12 | 111574 0580 | 173.50 |
| 6 | 6 | 150 | 108 | 0.12 | 111574 0600 | 173.50 |
| 6.5 | 8 | 165 | 125 | 0.12 | 111574 0650 | 184.00 |
| 6.8 | 8 | 165 | 125 | 0.12 | 111574 0680 | 197.50 |
| 7 | 8 | 165 | 125 | 0.12 | 111574 0700 | 197.50 |

| D h7 mm | D1 h6 mm | L mm | L1 mm | Feed f steel < 1000 N/mm ² mm/rev | Art.no. | € |
|------------|-------------|---------|----------|--|-------------|--------|
| 7.5 | 8 | 180 | 140 | 0.12 | 111574 0750 | 219.00 |
| 7.8 | 8 | 180 | 140 | 0.12 | 111574 0780 | 219.00 |
| 8 | 8 | 180 | 140 | 0.12 | 111574 0800 | 219.00 |
| 8.5 | 10 | 205 | 160 | 0.15 | 111574 0850 | 241.00 |
| 8.8 | 10 | 205 | 160 | 0.15 | 111574 0880 | 269.50 |
| 9 | 10 | 205 | 160 | 0.15 | 111574 0900 | 269.50 |
| 9.5 | 10 | 205 | 160 | 0.15 | 111574 0950 | 269.50 |
| 9.8 | 10 | 225 | 180 | 0.15 | 111574 0980 | 269.50 |
| 10 | 10 | 225 | 180 | 0.15 | 111574 1000 | 269.50 |
| 10.2 | 12 | 240 | 190 | 0.15 | 111574 1020 | 301.50 |
| 10.5 | 12 | 240 | 190 | 0.15 | 111574 1050 | 301.50 |
| 10.8 | 12 | 240 | 190 | 0.15 | 111574 1080 | 301.50 |
| 11 | 12 | 240 | 190 | 0.15 | 111574 1100 | 301.50 |
| 11.5 | 12 | 240 | 190 | 0.15 | 111574 1150 | 301.50 |
| 11.8 | 12 | 265 | 215 | 0.15 | 111574 1180 | 301.50 |
| 12 | 12 | 265 | 215 | 0.15 | 111574 1200 | 301.50 |



20xD, HA

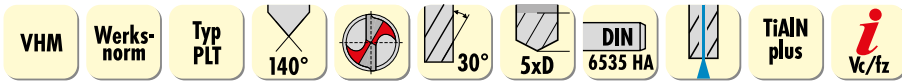
| D h7 mm | D1 h6 mm | L mm | L1 mm | Feed f steel < 1000 N/mm ² mm/rev | Art.no. | € |
|------------|-------------|---------|----------|--|-------------|--------|
| 2 | 6 | 92 | 50 | 0.05 | 111575 0200 | 103.50 |
| 2.2 | 6 | 92 | 50 | 0.05 | 111575 0220 | 103.50 |
| 2.3 | 6 | 92 | 50 | 0.05 | 111575 0230 | 103.50 |
| 2.4 | 6 | 112 | 70 | 0.05 | 111575 0240 | 115.00 |
| 2.5 | 6 | 112 | 70 | 0.05 | 111575 0250 | 115.00 |
| 2.7 | 6 | 112 | 70 | 0.05 | 111575 0270 | 115.00 |
| 2.8 | 6 | 112 | 70 | 0.05 | 111575 0280 | 115.00 |
| 2.9 | 6 | 112 | 70 | 0.05 | 111575 0290 | 115.00 |
| 3 | 6 | 120 | 80 | 0.08 | 111575 0300 | 157.50 |
| 3.2 | 6 | 120 | 80 | 0.08 | 111575 0320 | 157.50 |
| 3.3 | 6 | 120 | 80 | 0.08 | 111575 0330 | 157.50 |
| 3.5 | 6 | 120 | 80 | 0.08 | 111575 0350 | 157.50 |
| 3.8 | 6 | 130 | 90 | 0.08 | 111575 0380 | 162.50 |
| 4 | 6 | 130 | 90 | 0.08 | 111575 0400 | 162.50 |
| 4.2 | 6 | 160 | 110 | 0.08 | 111575 0420 | 177.00 |
| 4.5 | 6 | 160 | 110 | 0.08 | 111575 0450 | 177.00 |
| 4.6 | 6 | 160 | 120 | 0.08 | 111575 0460 | 177.00 |
| 4.8 | 6 | 160 | 120 | 0.08 | 111575 0480 | 186.50 |
| 5 | 6 | 160 | 120 | 0.08 | 111575 0500 | 186.50 |
| 5.5 | 6 | 185 | 140 | 0.12 | 111575 0550 | 194.00 |
| 5.8 | 6 | 185 | 140 | 0.12 | 111575 0580 | 194.00 |

| D h7 mm | D1 h6 mm | L mm | L1 mm | Feed f steel < 1000 N/mm ² mm/rev | Art.no. | € |
|------------|-------------|---------|----------|--|-------------|--------|
| 6 | 6 | 185 | 140 | 0.12 | 111575 0600 | 194.00 |
| 6.5 | 8 | 210 | 160 | 0.12 | 111575 0650 | 207.00 |
| 6.8 | 8 | 210 | 160 | 0.12 | 111575 0680 | 222.00 |
| 7 | 8 | 210 | 160 | 0.12 | 111575 0700 | 222.00 |
| 7.5 | 8 | 230 | 180 | 0.12 | 111575 0750 | 246.50 |
| 7.8 | 8 | 230 | 180 | 0.12 | 111575 0780 | 246.50 |
| 8 | 8 | 230 | 180 | 0.12 | 111575 0800 | 246.50 |
| 8.5 | 10 | 260 | 195 | 0.15 | 111575 0850 | 272.00 |
| 8.8 | 10 | 290 | 230 | 0.15 | 111575 0880 | 304.00 |
| 9 | 10 | 290 | 230 | 0.15 | 111575 0900 | 304.00 |
| 9.5 | 10 | 290 | 230 | 0.15 | 111575 0950 | 304.00 |
| 9.8 | 10 | 290 | 230 | 0.15 | 111575 0980 | 304.00 |
| 10 | 10 | 290 | 230 | 0.15 | 111575 1000 | 304.00 |
| 10.2 | 12 | 315 | 268 | 0.15 | 111575 1020 | 333.00 |
| 10.5 | 12 | 315 | 268 | 0.15 | 111575 1050 | 333.00 |
| 10.8 | 12 | 315 | 268 | 0.15 | 111575 1080 | 333.00 |
| 11 | 12 | 315 | 268 | 0.15 | 111575 1100 | 333.00 |
| 11.5 | 12 | 315 | 268 | 0.15 | 111575 1150 | 333.00 |
| 11.8 | 12 | 315 | 268 | 0.15 | 111575 1180 | 333.00 |
| 12 | 12 | 315 | 268 | 0.15 | 111575 1200 | 333.00 |

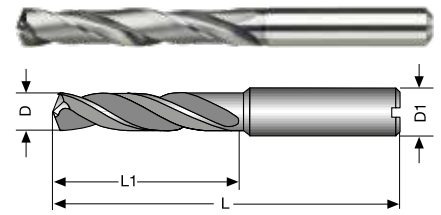
| Material | Steel | | | Stainless steel | | | Cast iron | | Titanium alloys | Super alloys Fe/NiCo-based | | Aluminium | | Copper | Graphite | Hardened steel | | |
|-----------|-------------------------------------|-------------------------|--------------------------|--------------------------|------------------|------------|-----------|--------|-----------------|----------------------------|----------|-----------|----------|----------|-----------------|----------------|----------|----------|
| | ● very well suited ○ well suited | < 700 N/mm ² | < 1000 N/mm ² | < 1400 N/mm ² | ferrit./martens. | austenitic | duplex | GG/GTS | GGG | < 30 HRc | ≥ 30 HRc | < 8 % Si | ≥ 8 % Si | Cu-alloy | GRP/CFP/thermo. | < 55 HRc | < 60 HRc | ≥ 60 HRc |
| 111574... | ● | ● | ● | | ○ | ○ | | ○ | | | | | | | | | | |
| 111575... | | 90 | 75 | 65 | 35 | 30 | | | | | | | | | | | | |

Cutting speed Vc m/min. Please adjust these guidelines according to clamping operation and machine set-up!

ATORN Solid carbide pilot drill bit **TiAlNplus HPC**



- For setting a pilot bore for deep-hole drill bits from 1.2xD
- **Cutting material: ultra-fine grain solid carbide TiAlNplus**
- Precision-ground for extreme boring accuracy to meet high dimensional demands
- High guidance accuracy thanks to innovative geometry
- High-performance coating guarantees high cutting data and service life
- The tools are coordinated by geometry and diameter.



| D h7 mm | D1 h6 mm | L mm | L1 mm | Feed f steel < 1000 N/mm ² mm/rev | Art.no. | € |
|---------|----------|------|-------|--|-------------|-------|
| 2.02 | 4 | 57 | 21 | 0.08 | 111573 0202 | 30.60 |
| 2.22 | 4 | 57 | 21 | 0.08 | 111573 0222 | 30.60 |
| 2.32 | 4 | 57 | 21 | 0.08 | 111573 0232 | 30.60 |
| 2.42 | 4 | 57 | 21 | 0.08 | 111573 0242 | 30.60 |
| 2.52 | 4 | 57 | 21 | 0.08 | 111573 0252 | 30.60 |
| 2.62 | 4 | 57 | 21 | 0.08 | 111573 0262 | 30.60 |
| 2.72 | 4 | 57 | 21 | 0.08 | 111573 0272 | 30.60 |
| 2.82 | 4 | 57 | 21 | 0.08 | 111573 0282 | 30.60 |
| 2.92 | 4 | 57 | 21 | 0.08 | 111573 0292 | 30.60 |
| 3.02 | 6 | 66 | 28 | 0.08 | 111573 0302 | 41.60 |
| 3.22 | 6 | 66 | 28 | 0.08 | 111573 0322 | 41.60 |
| 3.32 | 6 | 66 | 28 | 0.08 | 111573 0332 | 41.60 |
| 3.52 | 6 | 66 | 28 | 0.08 | 111573 0352 | 41.60 |
| 3.82 | 6 | 74 | 36 | 0.15 | 111573 0382 | 41.60 |
| 4.02 | 6 | 74 | 36 | 0.15 | 111573 0402 | 41.60 |
| 4.22 | 6 | 74 | 36 | 0.15 | 111573 0422 | 41.60 |
| 4.52 | 6 | 74 | 36 | 0.15 | 111573 0452 | 41.60 |
| 4.82 | 6 | 82 | 44 | 0.15 | 111573 0482 | 41.60 |
| 5.02 | 6 | 82 | 44 | 0.15 | 111573 0502 | 41.60 |
| 5.52 | 6 | 82 | 44 | 0.15 | 111573 0552 | 41.60 |

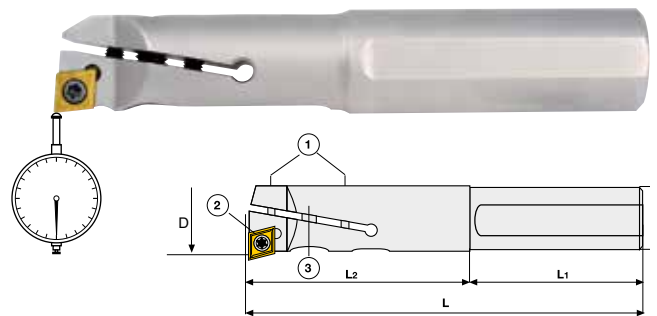
| D h7 mm | D1 h6 mm | L mm | L1 mm | Feed f steel < 1000 N/mm ² mm/rev | Art.no. | € |
|---------|----------|------|-------|--|-------------|--------|
| 5.82 | 6 | 82 | 44 | 0.25 | 111573 0582 | 41.60 |
| 6.02 | 6 | 82 | 44 | 0.25 | 111573 0602 | 41.60 |
| 6.52 | 8 | 91 | 53 | 0.25 | 111573 0652 | 55.10 |
| 6.82 | 8 | 91 | 53 | 0.25 | 111573 0682 | 55.10 |
| 7.02 | 8 | 91 | 53 | 0.25 | 111573 0702 | 55.10 |
| 7.52 | 8 | 91 | 53 | 0.25 | 111573 0752 | 55.10 |
| 7.82 | 8 | 91 | 53 | 0.25 | 111573 0782 | 55.10 |
| 8.02 | 8 | 91 | 53 | 0.25 | 111573 0802 | 55.10 |
| 8.52 | 10 | 103 | 61 | 0.27 | 111573 0852 | 80.90 |
| 8.82 | 10 | 103 | 61 | 0.27 | 111573 0882 | 80.90 |
| 9.02 | 10 | 103 | 61 | 0.27 | 111573 0902 | 80.90 |
| 9.52 | 10 | 103 | 61 | 0.27 | 111573 0952 | 80.90 |
| 9.82 | 10 | 103 | 61 | 0.27 | 111573 0982 | 80.90 |
| 10.02 | 10 | 103 | 61 | 0.27 | 111573 1002 | 80.90 |
| 10.22 | 12 | 118 | 71 | 0.27 | 111573 1022 | 106.50 |
| 10.82 | 12 | 118 | 71 | 0.27 | 111573 1082 | 106.50 |
| 11.02 | 12 | 118 | 71 | 0.27 | 111573 1102 | 106.50 |
| 11.52 | 12 | 118 | 71 | 0.27 | 111573 1152 | 106.50 |
| 11.82 | 12 | 118 | 71 | 0.27 | 111573 1182 | 106.50 |
| 12.02 | 12 | 118 | 71 | 0.27 | 111573 1202 | 106.50 |

ATORN Precision boring bar, adjustable



- Nickel-plated version
- Adjusting range, from 2 - 5 mm
- **For ISO indexable cutting inserts CCMT and CCGT**
- Cost-efficient alternative to spindle tools
- **Other diameters and versions available on request**

Cost-efficient alternative to spindle tools



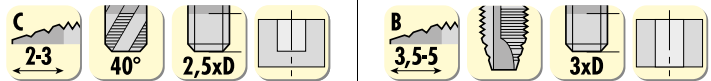
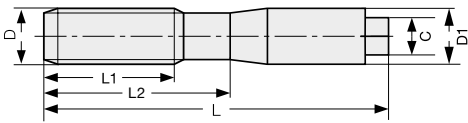
1 = adjusting screw, 2 = indexable insert screw, 3 = counter screw

| D min. mm | D max. mm | L mm | L1 mm | L2 mm | d mm | Suitable indexable inserts | Suitable regulation screw | Suitable lock screw | Art.no. | € |
|-----------|-----------|------|-------|-------|------|----------------------------|---------------------------|---------------------|-------------|--------|
| 10 | 12 | 100 | 70 | 30 | 10 | CC..0602.. | RE 1 | BL 0 | 323001 1012 | 159.00 |
| 12 | 15 | 105 | 65 | 40 | 12 | CC..0602.. | RE 1 | BL 1 | 323001 1215 | 169.00 |
| 15 | 20 | 110 | 60 | 50 | 16 | CC..0602.. | RE 2 | BL 2 | 323001 1520 | 172.50 |
| 20 | 25 | 120 | 60 | 60 | 20 | CC..0602.. | RE 3 | BL 3 | 323001 2025 | 189.00 |
| 25 | 30 | 140 | 70 | 70 | 25 | CC..09T3.. | RE 4 | BL 4 | 323001 2530 | 195.00 |
| 30 | 35 | 160 | 70 | 90 | 25 | CC..09T3.. | RE 5 | BL 5 | 323001 3035 | 209.00 |
| 35 | 40 | 170 | 70 | 100 | 32 | CC..09T3.. | RE 6 | BL 6 | 323001 3540 | 249.00 |
| 40 | 45 | 190 | 70 | 120 | 32 | CC..09T3.. | RE 7 | BL 7 | 323001 4045 | 265.00 |
| 45 | 50 | 220 | 70 | 150 | 32 | CC..09T3.. | RE 8 | BL 8 | 323001 4550 | 299.00 |

ATORN Universal machine taps



- For universal applications
- Available from just M1



| D mm | Pitch mm | L mm | L1 mm | L2 mm | D1 mm | C mm | Tapping hole Ø mm | Vapour-treated | | TiN | | Vapour-treated | | TiN | |
|---------|-------------|---------|----------|----------|----------|---------|----------------------|----------------|-------|-------------|-------|----------------|-------|-------------|-------|
| | | | | | | | | Art.no. | € | Art.no. | € | Art.no. | € | Art.no. | € |
| M 3 | 0.5 | 56 | 10 | 18 | 3.5 | 2.7 | 2.50 | 134710 0030 | 7.65 | 134715 0030 | 11.90 | 134700 0030 | 7.65 | 134705 0030 | 11.90 |
| M 4 | 0.7 | 63 | 12 | 21 | 4.5 | 3.4 | 3.30 | 134710 0040 | 7.65 | 134715 0040 | 11.90 | 134700 0040 | 7.60 | 134705 0040 | 11.90 |
| M 5 | 0.8 | 70 | 14 | 25 | 6 | 4.9 | 4.20 | 134710 0050 | 7.90 | 134715 0050 | 12.15 | 134700 0050 | 7.90 | 134705 0050 | 12.15 |
| M 6 | 1.0 | 80 | 16 | 30 | 6 | 4.9 | 5.00 | 134710 0060 | 7.90 | 134715 0060 | 12.40 | 134700 0060 | 7.90 | 134705 0060 | 12.40 |
| M 8 | 1.25 | 90 | 18 | 35 | 8 | 6.2 | 6.80 | 134710 0080 | 10.00 | 134715 0080 | 14.90 | 134700 0080 | 10.00 | 134705 0080 | 14.90 |
| M 10 | 1.5 | 100 | 20 | 39 | 10 | 8 | 8.50 | 134710 0100 | 11.85 | 134715 0100 | 17.45 | 134700 0100 | 11.85 | 134705 0100 | 17.45 |
| M 12 | 1.75 | 110 | 22 | - | 9 | 7 | 10.25 | 134710 0120 | 17.25 | 134715 0120 | 23.90 | 134700 0120 | 17.25 | 134705 0120 | 23.90 |
| M 16 | 2.0 | 110 | 28 | - | 12 | 9 | 14.00 | 134710 0160 | 25.20 | 134715 0160 | 35.80 | 134700 0160 | 24.80 | 134705 0160 | 35.80 |
| M 20 | 2.5 | 140 | 32 | - | 16 | 12 | 17.50 | 134710 0200 | 41.10 | 134715 0200 | 58.20 | 134700 0200 | 40.40 | 134705 0200 | 58.20 |

| Material | ● very well suited ○ well suited | Steel | | | Stainless steel | | | Cast iron | | Titanium alloys | Super alloys Fe/NiCo-based | | Aluminium | | Copper Cu-alloy | Graphite GRP/CFP/thermo. | Hardened steel | | |
|--------------------------|-------------------------------------|-------------|--------------|--------------|------------------|------------|--------|-----------|--------|-----------------|----------------------------|----------|-----------|----------|-----------------|--------------------------|----------------|----------|--|
| | | < 700 N/mm² | < 1000 N/mm² | < 1400 N/mm² | ferrit./martens. | austenitic | duplex | GG/GTS | GGG | < 30 HRc | ≥ 30 HRc | < 8 % Si | ≥ 8 % Si | Cu-alloy | GRP/CFP/thermo. | < 55 HRc | < 60 HRc | ≥ 60 HRc | |
| 134700.... 134710.... | ● ○ | ● ● | ● ● | | ○ ○ | ○ ○ | | | ○ ○ | | | | ○ ○ | ○ ○ | | | | | |
| 134705.... 134715.... | ● ○ | ● ● | ● ● | | ● ● | ● ● | | | ○ ○ | | | | ○ ○ | ○ ○ | | | | | |

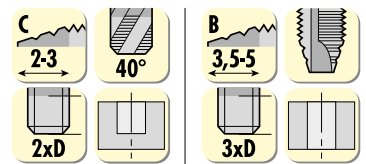
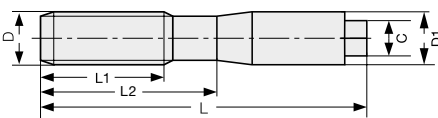
Cutting speed Vc m/min. Please adjust these guidelines according to clamping operation and machine set-up!

ATORN Universal machine tap ULTRA-HL

BALINIT® HARDLUBE



- Cutting material HSS-E and Hardlube coating
- **BALINIT® HARDLUBE:** The high level of hardness and temperature resistance of the TiAlN layer effectively protects cutting edges from wear, while the excellent sliding and lubricating properties of the WC/C ensure smooth chip flow. The result: Greater production reliability thanks to reliable, reproducible performance.



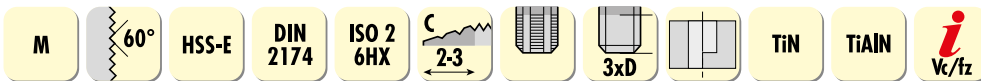
| D mm | Pitch mm | L mm | L1 mm | L2 mm | C mm | D1 mm | Tapping hole Ø mm | Art.no. | | € | |
|---------|-------------|---------|----------|----------|---------|----------|----------------------|-------------|-------|-------------|-------|
| | | | | | | | | Art.no. | € | Art.no. | € |
| M 3 | 0.5 | 56 | 10 | 18 | 2.7 | 3.5 | 2.50 | 134750 0030 | 14.00 | 134755 0030 | 14.00 |
| M 4 | 0.7 | 63 | 12 | 21 | 3.4 | 4.5 | 3.30 | 134750 0040 | 14.00 | 134755 0040 | 14.00 |
| M 5 | 0.8 | 70 | 14 | 25 | 4.9 | 6 | 4.20 | 134750 0050 | 14.70 | 134755 0050 | 14.70 |
| M 6 | 1.0 | 80 | 16 | 30 | 4.9 | 6 | 5.00 | 134750 0060 | 14.85 | 134755 0060 | 14.85 |
| M 8 | 1.25 | 90 | 18 | 35 | 6.2 | 8 | 6.80 | 134750 0080 | 18.15 | 134755 0080 | 18.15 |
| M 10 | 1.5 | 100 | 20 | 39 | 8 | 10 | 8.50 | 134750 0100 | 21.20 | 134755 0100 | 21.20 |
| M 12 | 1.75 | 110 | 22 | - | 7 | 9 | 10.25 | 134750 0120 | 26.90 | 134755 0120 | 26.90 |
| M 16 | 2.0 | 110 | 28 | - | 9 | 12 | 14.00 | 134750 0160 | 39.70 | 134755 0160 | 39.70 |
| M 20 | 2.5 | 140 | 32 | - | 12 | 16 | 17.50 | 134750 0200 | 60.90 | 134755 0200 | 60.90 |

| Material | ● very well suited ○ well suited | Steel | | | Stainless steel | | | Cast iron | | Titanium alloys | Super alloys Fe/NiCo-based | | Aluminium | | Copper Cu-alloy | Graphite GRP/CFP/thermo. | Hardened steel | | |
|--------------------------|-------------------------------------|-------------|--------------|--------------|------------------|------------|--------|-----------|--------|-----------------|----------------------------|----------|-----------|----------|-----------------|--------------------------|----------------|----------|--|
| | | < 700 N/mm² | < 1000 N/mm² | < 1400 N/mm² | ferrit./martens. | austenitic | duplex | GG/GTS | GGG | < 30 HRc | ≥ 30 HRc | < 8 % Si | ≥ 8 % Si | Cu-alloy | GRP/CFP/thermo. | < 55 HRc | < 60 HRc | ≥ 60 HRc | |
| 134750.... 134755.... | ● ○ | ● ● | ● ● | | ● ● | ● ● | | | ○ ○ | | | | ● ● | ○ ○ | | | | | |

Cutting speed Vc m/min. Please adjust these guidelines according to clamping operation and machine set-up!

ATORN Machine forming taps

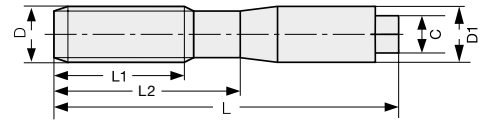
With oil grooves



- **Metric ISO 6HX thread**
- Type C, 2-3 thread chamfer
- With oil grooves
- Constructional dimensions DIN 2174
- **Cutting material: HSS-E TiN; HSS-E TiAlN**
- For blind-hole and through-hole threads
- For materials with good cold-forming properties and a min. expansion of 8 %
- Possible thread depth 3 x D



| D mm | Pitch mm | L mm | L1 mm | L2 mm | D1 mm | C mm | Tapping hole Ø mm | TiN | | TiAlN | |
|---------|-------------|---------|----------|----------|----------|---------|----------------------|-------------|-------|-------------|-------|
| | | | | | | | | Art.no. | € | Art.no. | € |
| M 3 | 0.5 | 56 | 10 | 18 | 3.5 | 2.7 | 2.75 | 135240 0030 | 18.50 | 135245 0030 | 19.40 |
| M 4 | 0.7 | 63 | 12 | 21 | 4.5 | 3.4 | 3.65 | 135240 0040 | 15.40 | 135245 0040 | 16.10 |
| M 5 | 0.8 | 70 | 14 | 25 | 6 | 4.9 | 4.60 | 135240 0050 | 16.10 | 135245 0050 | 17.00 |
| M 6 | 1.0 | 80 | 16 | 30 | 6 | 4.9 | 5.55 | 135240 0060 | 16.75 | 135245 0060 | 17.50 |
| M 8 | 1.25 | 90 | 18 | 35 | 8 | 6.2 | 7.40 | 135240 0080 | 19.80 | 135245 0080 | 20.70 |
| M 10 | 1.5 | 100 | 20 | 39 | 10 | 8 | 9.30 | 135240 0100 | 28.10 | 135245 0100 | 29.60 |
| M 12 | 1.75 | 110 | 24 | - | 9 | 7 | 11.10 | 135240 0120 | 44.90 | 135245 0120 | 47.00 |



| Material | ● very well suited | Steel | | | Stainless steel | | | Cast iron | | Titanium alloys | Super alloys Fe/NiCo-based | | Aluminium | | Copper Cu-alloy | Graphite | Hardened steel | | |
|----------|--------------------|-------------------------|--------------------------|--------------------------|------------------|------------|--------|-----------|-------|-----------------|----------------------------|----------|-----------|----------|-----------------|----------|----------------|----------|--|
| | ○ well suited | < 700 N/mm ² | < 1000 N/mm ² | < 1400 N/mm ² | ferrit./martens. | austenitic | duplex | GG/GTS | GGG | < 30 HRC | ≥ 30 HRC | < 8 % Si | ≥ 8 % Si | Cu-alloy | GRP/CFP/thermo. | < 55 HRC | < 60 HRC | ≥ 60 HRC | |
| | | ● | ● | | ● | ● | ● | | ○ | | ○ | ● | | ○ | | | | | |
| | | 8-60 | 8-45 | | 8-30 | 8-36 | 8-22 | | 12-45 | | 3-9 | 45-90 | | 15-30 | | | | | |

Cutting speed Vc m/min. Please adjust these guidelines according to clamping operation and machine set-up!

ATORN Tap wrench, adjustable

NEW

Reinforced version

DIN 1814

- Adjustable tap wrench in accordance with DIN 1814
- **Tool body made of zinc die-casting alloy with increased tensile strength**
- **Clamping jaws made of tool steel: precision-eroded and hardened**
- Up to 120% higher torque compared to conventional holding tools
- Handles refined by burnishing-nitriding process, can be unscrewed on one side
- Handle with working hole to increase leverage
- Guide slot for stabilising the jaw
- Holding of tools with square



| No. | For square mm | L mm | Art.no. | € |
|-------|---------------|------|-------------|-------|
| 0 | 2,0 - 5,0 | 125 | 138120 0001 | 7.75 |
| 1 | 2,0 - 6,0 | 180 | 138120 0002 | 8.30 |
| 1 1/2 | 2,5 - 8,0 | 200 | 138120 0003 | 9.35 |
| 2 | 4,0 - 9,0 | 280 | 138120 0004 | 12.95 |

| No. | For square mm | L mm | Art.no. | € |
|-----|---------------|------|-------------|-------|
| 3 | 4,9 - 12,0 | 375 | 138120 0005 | 18.50 |
| 4 | 5,5 - 16,0 | 500 | 138120 0006 | 32.40 |
| 5 | 7,0 - 20,0 | 750 | 138120 0007 | 54.10 |
| 6 | 9,0 - 25,0 | 1000 | 138120 0008 | 63.20 |

ATORN All-steel tap wrench with centring lug

NEW

With centring lug for perpendicular cutting

DIN 1814

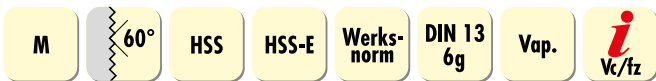
- Adjustable tap wrench in accordance with DIN 1814
- **High-strength tool body made of stainless steel with centring lug for perpendicular cutting**
- **Clamping jaws made of tool steel: precision-eroded and hardened**
- Handles refined by burnishing-nitriding process, can be unscrewed on one side
- Working hole to hold spindle toggle for maximum traction
- Holding of tools with square



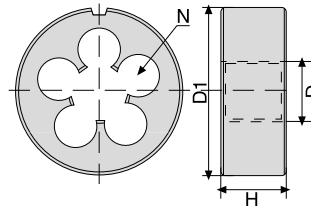
| No. | For square mm | L mm | Art.no. | € |
|-------|---------------|------|-------------|-------|
| 0 | 2,0 - 5,0 | 125 | 138121 0001 | 9.95 |
| 1 | 2,0 - 6,0 | 180 | 138121 0002 | 11.00 |
| 1 1/2 | 2,5 - 8,0 | 200 | 138121 0003 | 11.40 |
| 2 | 4,0 - 9,0 | 280 | 138121 0004 | 14.95 |
| 3 | 4,9 - 12,0 | 375 | 138121 0005 | 23.50 |

| No. | For square mm | L mm | Art.no. | € |
|-----|---------------|------|-------------|--------|
| 4 | 5,5 - 16,0 | 500 | 138121 0006 | 35.60 |
| 5 | 7,0 - 20,0 | 750 | 138121 0007 | 56.20 |
| 6 | 9,0 - 25,0 | 1000 | 138121 0008 | 87.00 |
| 7 | 16,0 - 32,0 | 1250 | 138121 0009 | 127.00 |
| 8 | 16,0 - 40,0 | 1250 | 138121 0010 | 134.00 |

ATORN Threading dies, measuring unit



- Threading dies 25 x 9 mm
- For DIN 13 ISO metric thread
- Two-sided spiral point for good chip removal
- Larger chamfer diameter, chamfering of the bolt not necessary
- Thread lapped for smoother, burr-free cutting edges
- **Cutting material: HSS and HSS-E, vapour-treated**
- Increased surface hardness (nitriding process)
- Particularly suitable for mechanical applications due to the one-size-fits-all design



NEW

Suitable for threading die holder 25 x 9 mm



| D mm | Pitch mm | D1 mm | H mm | N mm | HSS | | HSS-E | |
|---------|-------------|----------|---------|---------|-------------|-------|-------------|-------|
| | | | | | Art.no. | € | Art.no. | € |
| M 3 | 0.5 | 25 | 9 | 3 | 136101 0030 | 14.35 | 136105 0030 | 28.90 |
| M 4 | 0.7 | 25 | 9 | 3 | 136101 0040 | 14.35 | 136105 0040 | 28.00 |
| M 5 | 0.8 | 25 | 9 | 4 | 136101 0050 | 14.35 | 136105 0050 | 26.10 |
| M 6 | 1.0 | 25 | 9 | 4 | 136101 0060 | 14.35 | 136105 0060 | 26.10 |
| M 8 | 1.25 | 25 | 9 | 4 | 136101 0080 | 15.85 | 136105 0080 | 31.20 |
| M 10 | 1.5 | 25 | 9 | 5 | 136101 0100 | 20.50 | 136105 0100 | 37.10 |
| M 12 | 1.75 | 25 | 9 | 5 | 136101 0120 | 25.40 | 136105 0120 | 49.40 |

Sets

| Contents | HSS | | HSS-E | |
|--|-------------|-------|-------------|--------|
| | Art.no. | € | Art.no. | € |
| Threading dies M 3 - 4 - 5 - 6 - 8 - 10 - 12 (1 of each) | 136101 0312 | 99.90 | 136105 0312 | 179.00 |

| Material | Steel | | | Stainless steel | | | Cast iron | | Titanium alloys | Super alloys Fe/NiCo-based | | Aluminium | | Copper Cu-alloy | Graphite GFR/CFR/thermo | Hardened steel | | |
|------------|-------------------------------------|-------------------------|--------------------------|--------------------------|------------------|------------|-----------|--------|-----------------|----------------------------|----------|-----------|----------|-----------------|-------------------------|----------------|----------|----------|
| | ● very well suited ○ well suited | < 700 N/mm ² | < 1000 N/mm ² | < 1400 N/mm ² | ferrit./martens. | austenitic | duplex | GG/GTS | | GGG | < 30 HRc | ≥ 30 HRc | < 8 % Si | | | ≥ 8 % Si | < 55 HRc | < 60 HRc |
| 136101.... | ● | ● | ● | ○ | ○ | | ○ | ○ | | | | ● | ● | ● | | | | |
| 136105.... | ● | ● | ● | ● | ● | | ○ | ○ | | | | ● | ● | ● | | | | |

ATORN Threading die holder

DIN 22568

- For threading dies in accordance with DIN EN 22568 (DIN 225)
- **Tool body made of fine die-cast zinc in accordance with DIN 1743**
- Four attachment screws for small diameters, five screws for larger diameters
- Burnished attachment screws with a 90° pointed tip, for centring in the threading die
- Handles refined by burnishing-nitriding process with fine knurling for increased grip
- **Revised support structure for increased load capacity**

NEW

Reinforced version



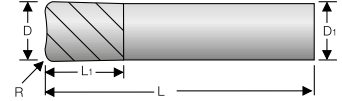
| D mm | H mm | Suitable for threading die | L mm | Art.no. | € |
|---------|---------|----------------------------|---------|-------------|------|
| 16 | 5 | M 1 - 2.6 | 160 | 138130 0001 | 2.79 |
| 20 | 5 | M 3 - 4 | 195 | 138130 0002 | 2.79 |
| 20 | 7 | M 4.5 - 6 | 195 | 138130 0003 | 2.79 |
| 25 | 9 | M 7 - 9 | 215 | 138130 0004 | 3.10 |
| 30 | 11 | M 10 - 11 | 260 | 138130 0005 | 4.59 |
| 38 | 10 | MF 12 - 15 | 315 | 138130 0016 | 6.25 |
| 38 | 14 | M 12 - 14 | 315 | 138130 0006 | 6.25 |

| D mm | H mm | Suitable for threading die | L mm | Art.no. | € |
|---------|---------|----------------------------|---------|-------------|-------|
| 45 | 14 | MF 16 - 20 | 445 | 138130 0014 | 9.70 |
| 45 | 18 | M 16 - 20 | 445 | 138130 0007 | 9.70 |
| 55 | 16 | MF 22 - 26 | 495 | 138130 0012 | 13.25 |
| 55 | 22 | M 22 - 24 | 495 | 138130 0008 | 13.25 |
| 65 | 18 | MF 27 - 36 | 630 | 138130 0017 | 16.65 |
| 65 | 25 | M 27 - 36 | 630 | 138130 0009 | 16.65 |

ATORN RockTec 52 torus cutter



- For machining materials **up to 52 HRc or 65 HRc**
- Radius tolerance: 0/0.01 mm
- **Solid carbide ultra-fine grain cutting material**
- Rake angle 3° at 52 HRc
- Rake angle -5° to -7° at 65 HRc



| D mm | L1 mm | L mm | D1 mm | R mm | RT52, feed fz steel < 1400 N/mm ² mm/Z | | Art.no. | € |
|---------|----------|---------|----------|---------|---|-------|--------------------|---------------|
| | | | | | RT65, feed fz hardened steel ≥ 60 HRc mm/Z | | | |
| 3.0 | 9 | 50 | 6.0 | 0.3 | 0.02 | 0.015 | 257015 0001 | 34.30 |
| 3.0 | 9 | 50 | 6.0 | 0.5 | 0.02 | 0.015 | 257015 0002 | 34.30 |
| 4.0 | 12 | 50 | 6.0 | 0.3 | 0.02 | 0.015 | 257015 0003 | 34.30 |
| 4.0 | 12 | 50 | 6.0 | 0.5 | 0.02 | 0.015 | 257015 0004 | 34.30 |
| 4.0 | 12 | 50 | 6.0 | 1.0 | 0.02 | 0.015 | 257015 0005 | 34.30 |
| 5.0 | 15 | 50 | 6.0 | 0.5 | 0.03 | 0.025 | 257015 0006 | 34.50 |
| 5.0 | 15 | 50 | 6.0 | 1.0 | 0.03 | 0.025 | 257015 0007 | 34.50 |
| 6.0 | 20 | 60 | 6.0 | 0.3 | 0.03 | 0.025 | 257015 0008 | 35.30 |
| 6.0 | 20 | 60 | 6.0 | 0.5 | 0.03 | 0.025 | 257015 0009 | 35.30 |
| 6.0 | 20 | 60 | 6.0 | 1.0 | 0.03 | 0.025 | 257015 0010 | 35.30 |
| 8.0 | 20 | 64 | 8.0 | 0.5 | 0.04 | 0.05 | 257015 0011 | 39.40 |
| 8.0 | 20 | 64 | 8.0 | 1.0 | 0.04 | 0.05 | 257015 0012 | 39.40 |
| 8.0 | 20 | 64 | 8.0 | 2.0 | 0.04 | 0.05 | 257015 0014 | 39.40 |
| 10.0 | 22 | 75 | 10.0 | 0.5 | 0.05 | 0.05 | 257015 0015 | 46.60 |
| 10.0 | 22 | 75 | 10.0 | 1.0 | 0.05 | 0.05 | 257015 0028 | 46.60 |
| 10.0 | 22 | 75 | 10.0 | 1.5 | 0.05 | 0.05 | 257015 0016 | 46.60 |
| 10.0 | 22 | 75 | 10.0 | 2.0 | 0.05 | 0.05 | 257015 0017 | 46.60 |
| 12.0 | 25 | 75 | 12.0 | 1.0 | 0.06 | 0.06 | 257015 0018 | 73.80 |
| 12.0 | 25 | 75 | 12.0 | 2.0 | 0.06 | 0.06 | 257015 0019 | 73.80 |
| 12.0 | 25 | 75 | 12.0 | 3.0 | 0.06 | 0.06 | 257015 0020 | 73.80 |
| 16.0 | 32 | 90 | 16.0 | 1.0 | 0.08 | 0.07 | 257015 0021 | 110.50 |
| 16.0 | 32 | 90 | 16.0 | 2.0 | 0.08 | 0.07 | 257015 0022 | 112.50 |
| 16.0 | 32 | 90 | 16.0 | 3.0 | 0.08 | 0.07 | 257015 0023 | 113.50 |

| Material | ● very well suited | Steel | | | Stainless steel | | | Cast iron | | Titanium alloys | Super alloys Fe/NiCo-based | Aluminium | | Copper Co-alloy | Graphite GRP/CFP/therma | Hardened steel | | |
|----------|--------------------|-------------------------|--------------------------|--------------------------|------------------|------------|--------|-----------|---------|-----------------|----------------------------|-----------|----------|-----------------|-------------------------|----------------|----------|----------|
| | ○ well suited | < 700 N/mm ² | < 1000 N/mm ² | < 1400 N/mm ² | ferrit./martens. | austenitic | duplex | GG/GTS | GGG | | < 30 HRc | ≥ 30 HRc | < 8 % Si | ≥ 8 % Si | | < 55 HRc | < 60 HRc | ≥ 60 HRc |
| | | ● | ● | ● | ● | ● | ○ | ● | ● | ● | ● | ● | | | | ● | | |
| | | 140-160 | 130-150 | 120-140 | 100-120 | 100-120 | 80-100 | 100-120 | 100-120 | 80-100 | 80-100 | 70-90 | | | | 60-80 | | |

Cutting speed Vc m/min. Please adjust these guidelines according to clamping operation and machine set-up!

WE'RE THERE WHEN YOU NEED US. NO MATTER WHERE: 24-HOUR DELIVERY ACROSS EUROPE THAT'S POWER TO PRODUCE

ATORN HPC SERIES

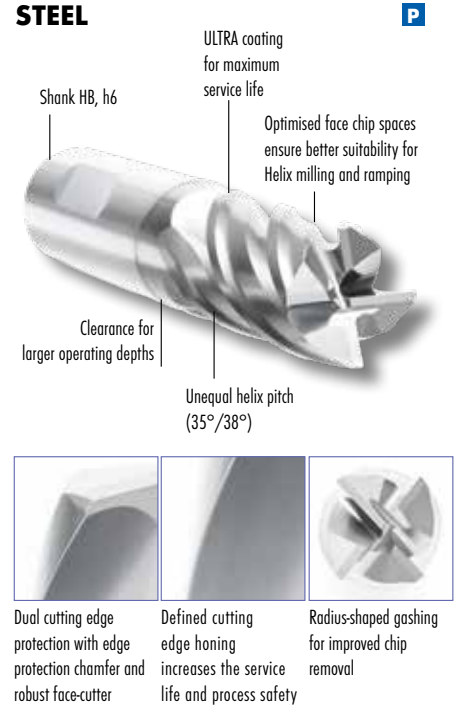
Tough on everything!

Significantly higher material removal rates in machining are the result of various spiral angles in conjunction with newly developed, robust face and surface cutting edges. Even with extreme cutting data, the tools impress with their ultra-smooth operation, high process safety and low machine loads. Plunge milling and ramping processes are enhanced by the optimised face geometries. The new solid carbide with an innovative PVD high-performance coating also contributes to improved service life and safer chip removal.

Advantages:

- Increased productivity – roughing and finishing with the same tool
- Excellent surface quality even with high feed rates
- Long service life thanks to optimised cutting edge geometries and high-performance coatings
- Machining methods such as plunge milling/drilling or ramping possible
- Low machine load thanks to smooth operation, long service life
- Comprehensive possible uses and efficient machining of tough materials
- Suitable for all modern milling strategies e.g. trochoidal milling

STEEL



ATORN HPC Power end milling cutter, steel

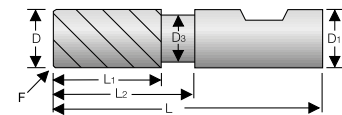


- **Irregular helix angle and pitch for low-vibration milling**
- With protective chamfer F for improved tool life and stable face cutter, double protected
- Optimised face-cutter geometry with large chip spaces
- Radius-shaped face gashing for improved chip removal
- Defined cutting-edge rounding
- **With clearance**
- ULTRA coated for maximum service life



Long

| D | L1 | L2 | L | D3 | D1 | F x 45° | Feed fz | Feed fz | DIN 6535-HB | € |
|----|----|----|-----|------|----|---------|--------------------|--------------------|-------------|--------|
| mm | mm | mm | mm | mm | mm | mm | steel < 1000 N/mm² | steel < 1000 N/mm² | Art.no. | |
| 4 | 8 | 12 | 54 | 3.8 | 6 | 0.1 | 0.04 | 0.06 | 254511 0040 | 29.90 |
| 5 | 10 | 15 | 54 | 4.8 | 6 | 0.15 | 0.06 | 0.08 | 254511 0050 | 29.90 |
| 6 | 13 | 21 | 57 | 5.7 | 6 | 0.2 | 0.07 | 0.1 | 254511 0060 | 29.90 |
| 8 | 19 | 27 | 63 | 7.7 | 8 | 0.2 | 0.09 | 0.12 | 254511 0080 | 33.10 |
| 10 | 22 | 32 | 72 | 9.7 | 10 | 0.2 | 0.11 | 0.14 | 254511 0100 | 47.20 |
| 12 | 26 | 38 | 83 | 11.6 | 12 | 0.2 | 0.13 | 0.18 | 254511 0120 | 69.20 |
| 14 | 26 | 38 | 83 | 13.6 | 14 | 0.3 | 0.18 | 0.2 | 254511 0140 | 99.00 |
| 16 | 32 | 44 | 92 | 15.6 | 16 | 0.3 | 0.18 | 0.2 | 254511 0160 | 108.00 |
| 18 | 32 | 44 | 92 | 17.6 | 18 | 0.3 | 0.22 | 0.26 | 254511 0180 | 139.90 |
| 20 | 38 | 54 | 104 | 19.6 | 20 | 0.3 | 0.22 | 0.26 | 254511 0200 | 165.00 |



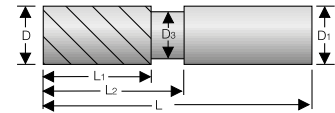
| Material | ● very well suited | ○ well suited | Steel | | | Stainless steel | | | Cast iron | | Titanium alloys | Super alloys Fe/NiCo-based | | Aluminium | | Copper | Graphite | Hardened steel | | | |
|----------|--------------------|---------------|-------------|--------------|--------------|------------------|------------|--------|-----------|---------|-----------------|----------------------------|----------|-----------|----------|----------|-----------------|----------------|----------|----------|--|
| | | | < 700 N/mm² | < 1000 N/mm² | < 1400 N/mm² | ferrit./martens. | austenitic | duplex | GG/GTS | GGG | | < 30 HRc | ≥ 30 HRc | < 8 % Si | ≥ 8 % Si | Cu-alloy | GRP/CFP/thermo. | < 55 HRc | < 60 HRc | ≥ 60 HRc | |
| | | | ● | ● | ● | | | | ● | ● | | | | | | | | | | | |
| | | | 220-270 | 180-220 | 140-180 | | | | 150-180 | 130-170 | | | | | | | | | | | |

Cutting speed Vc m/min. Please adjust these guidelines according to clamping operation and machine set-up!

ATORN Multi-flute milling cutter sets 90° RockTec PRO



- For machining materials from 47 to 65 HRc
- Optimised geometry for hard machining
- **Solid carbide ultra-fine grain cutting material**
- State-of-the-art coating technology for reduced wear and extreme hardness
- Including 4 organisation magnets 36 x 8.5 mm (ATORN 20 years)



| D mm | D1 mm | D3 mm | L mm | L1 mm | Z | Feed fz hardened steel < 60 HRc mm/Z | Art.no. | € |
|------|-------|-------|------|-------|---|--------------------------------------|-------------|--------|
| 6 | 6 | - | 57 | 15 | 6 | 0.040 | 257175 1001 | 199.00 |
| 8 | 8 | - | 63 | 19 | 6 | 0.050 | | |
| 10 | 10 | - | 72 | 24 | 6 | 0.055 | | |
| 12 | 12 | - | 83 | 28 | 6 | 0.065 | | |

With corner radius

| D mm | D1 mm | D3 mm | L mm | L1 mm | L2 mm | Z | R mm | Feed fz hardened steel < 60 HRc mm/Z | Art.no. | € |
|------|-------|-------|------|-------|-------|---|------|--------------------------------------|-------------|--------|
| 6 | 6 | - | 57 | 15 | - | 6 | 0.5 | 0.040 | 257160 1011 | 199.00 |
| 8 | 8 | - | 63 | 19 | - | 6 | 0.5 | 0.050 | | |
| 10 | 10 | - | 72 | 24 | - | 6 | 0.5 | 0.055 | | |
| 12 | 12 | - | 83 | 28 | - | 6 | 0.5 | 0.065 | | |

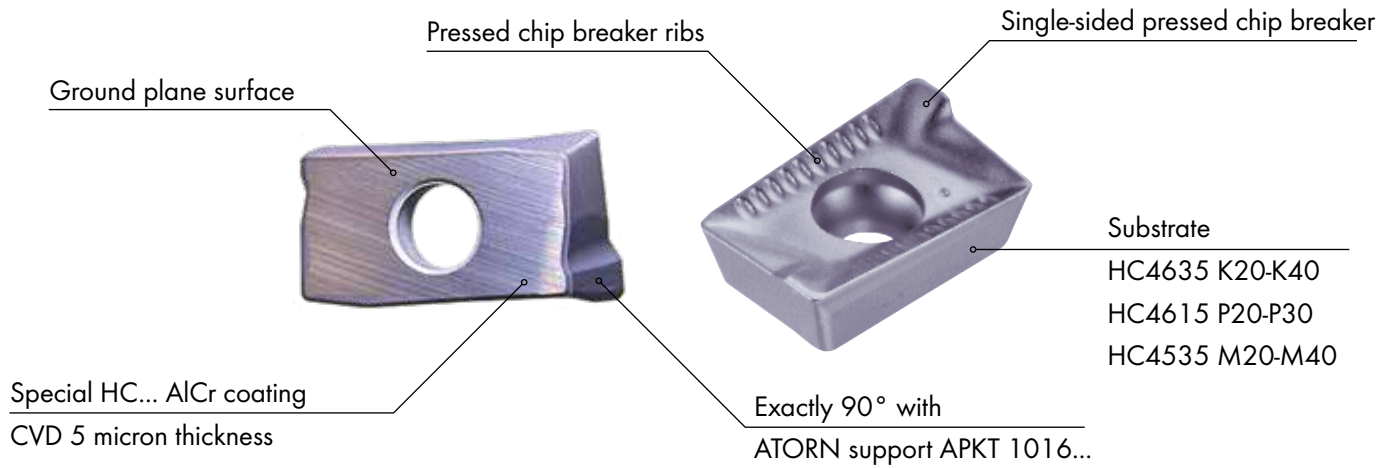


| Material | ● very well suited | Steel | | | Stainless steel | | | Cast iron | | Titanium alloys | Super alloys Fe/NiCo-based | | Aluminium | | Copper | Graphite | Hardened steel | | |
|----------|--------------------|-------------|--------------|--------------|------------------|------------|--------|-----------|-----|-----------------|----------------------------|----------|-----------|----------|-----------------|-----------|----------------|----------|--|
| | ○ well suited | < 700 N/mm² | < 1000 N/mm² | < 1400 N/mm² | ferrit./martens. | austenitic | duplex | GG/GTS | GGG | < 30 HRc | ≥ 30 HRc | < 8 % Si | ≥ 8 % Si | Cu-alloy | GRP/CFP/thermo. | < 55 HRc | < 60 HRc | ≥ 60 HRc | |
| | | | | ● 100-180 | | | | | | | | | | | | ● 100-140 | ● 90-130 | ● 80-120 | |

Cutting speed Vc m/min. Please adjust these guidelines according to clamping operation and machine set-up!

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ISO MILLING INSERTS, APKT
Perfect geometry



APKT

| F finishing | M medium | R roughing | ATORN | ISO P | ISO M | ISO K | ISO N | ISO S | ISO H | Quality | Art.no. | € |
|------------------------------|-------------|---------------|------------------|-------|-------|-------|-------|-------|-------|---------|----------------|------|
| • | • | • | ISO designation | | | | | | | | | |
| <p>Universal application</p> | | | APKT 1604 PDER-S | ● | | ● | | | | HC 4615 | 10 281514 3205 | 7.49 |
| | | | | ● | ● | | | | | HC 4535 | 10 281514 3207 | 7.49 |
| | | | | ● | ● | ● | | | | HC 4635 | 10 281514 3209 | 7.49 |

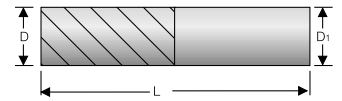
| ISO | HC 4535 | HC 4615 | HC 4635 |
|--|--|----------------|----------------|
| ISO P Steel | Vc = 100 - 170 | Vc = 180 - 280 | Vc = 110 - 220 |
| ISO M Stainless steel | Vc = 70 - 130 | | Vc = 90 - 160 |
| ISO K Cast iron | | Vc = 160 - 270 | Vc = 120 - 250 |
| Vc = [m/min] fz = [mm/Z] ap = [mm] | fz = 0.1 - 0.4 per cutting edge ap = max. 0.7 x cutting edge length | | |

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24-HOUR DELIVERY ACROSS EUROPE
THAT'S POWER TO PRODUCE

ATORN Deburring tools



- Ideal for chamfering and deburring workpiece edges, and for contour milling



| D mm | L mm | D1 mm | Z | 60° | | 90° | | 120° | |
|---------|---------|----------|---|-------------|--------|-------------|--------|-------------|--------|
| | | | | Art.no. | € | Art.no. | € | Art.no. | € |
| 1.0 | 38 | 3 | 3 | 251550 0010 | 21.30 | 251551 0010 | 21.30 | 251552 0010 | 21.30 |
| 2.0 | 38 | 3 | 3 | 251550 0020 | 21.30 | 251551 0020 | 21.30 | 251552 0020 | 21.30 |
| 3.0 | 38 | 3 | 3 | 251550 0030 | 21.30 | 251551 0030 | 21.30 | 251552 0030 | 21.30 |
| 4.0 | 51 | 4 | 4 | 251550 0040 | 22.60 | 251551 0040 | 22.60 | 251552 0040 | 22.60 |
| 6.0 | 64 | 6 | 4 | 251550 0060 | 28.00 | 251551 0060 | 28.00 | 251552 0060 | 28.00 |
| 8.0 | 64 | 8 | 5 | 251550 0080 | 34.80 | 251551 0080 | 34.80 | 251552 0080 | 34.80 |
| 10.0 | 70 | 10 | 6 | 251550 0100 | 41.20 | 251551 0100 | 41.20 | 251552 0100 | 41.20 |
| 12.0 | 78 | 12 | 6 | 251550 0120 | 60.50 | 251551 0120 | 60.50 | 251552 0120 | 60.50 |
| 16.0 | 89 | 16 | 6 | 251550 0160 | 103.00 | 251551 0160 | 103.00 | 251552 0160 | 103.00 |

| Material | ● very well suited | Steel | | | Stainless steel | | | Cast iron | | Titanium alloys | Super alloys Fe/NiCo-based | | Aluminium | | Copper | Graphite | Hardened steel | | | |
|----------|--------------------|-------------|--------------|--------------|------------------|------------|--------|-----------|---------|-----------------|----------------------------|----------|-----------|----------|----------|-----------------|----------------|----------|----------|--|
| | ○ well suited | < 700 N/mm² | < 1000 N/mm² | < 1400 N/mm² | ferrit./martens. | austenitic | duplex | GG/GTS | GGG | | < 30 HRc | ≥ 30 HRc | < 8 % Si | ≥ 8 % Si | Cu-alloy | GRP/CFP/thermo. | < 55 HRc | < 60 HRc | ≥ 60 HRc | |
| | | ● | ● | ● | ● | ○ | ○ | ● | ● | ○ | ○ | ○ | | | | | | | | |
| | | 160-180 | 120-140 | 100-120 | 80-100 | 60-80 | 60-80 | 140-160 | 140-160 | 80-100 | 80-100 | 60-80 | | | | | | | | |

Cutting speed Vc m/min. Please adjust these guidelines according to clamping operation and machine set-up!

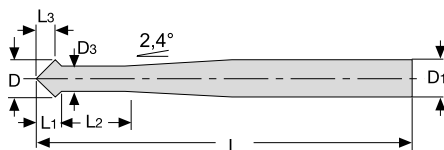
ATORN Front and rear-side deburring tool



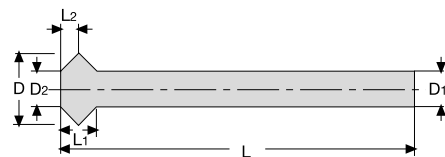
- For linear and circular front and rear-side deburring or chamfering



250004 0040
250004 0060



250004 0080
250004 0100
250004 0120



| D mm | D1 h6 mm | D2 mm | L mm | L1 mm | L3 mm | L2 mm | D3 mm | Art.no. | € |
|---------|-------------|----------|---------|----------|----------|----------|----------|-------------|--------|
| 3.9 | 4 | - | 75 | 2.95 | 1.95 | 10 | 1.9 | 250004 0040 | 56.20 |
| 5.8 | 6 | - | 100 | 3.8 | 1.9 | 15 | 4 | 250004 0060 | 62.50 |
| 7.8 | 6 | 6.0 | 100 | 1.8 | - | 0.9 | - | 250004 0080 | 81.50 |
| 9.8 | 6 | 6.0 | 100 | 3.8 | - | 1.9 | - | 250004 0100 | 99.50 |
| 11.8 | 6 | 6.0 | 100 | 5.8 | - | 2.9 | - | 250004 0120 | 120.00 |

| Material | ● very well suited | Steel | | | Stainless steel | | | Cast iron | | Titanium alloys | Super alloys Fe/NiCo-based | | Aluminium | | Copper | Graphite | Hardened steel | | | |
|----------|--------------------|-------------|--------------|--------------|------------------|------------|--------|-----------|-------|-----------------|----------------------------|----------|-----------|----------|----------|-----------------|----------------|----------|----------|--|
| | ○ well suited | < 700 N/mm² | < 1000 N/mm² | < 1400 N/mm² | ferrit./martens. | austenitic | duplex | GG/GTS | GGG | | < 30 HRc | ≥ 30 HRc | < 8 % Si | ≥ 8 % Si | Cu-alloy | GRP/CFP/thermo. | < 55 HRc | < 60 HRc | ≥ 60 HRc | |
| | | ● | ● | ● | ● | ○ | ○ | ● | ● | ○ | ○ | ○ | ○ | ○ | | | ● | | | |
| | | 60-120 | 60-90 | 50-80 | 70-100 | 60-90 | 60-90 | 40-80 | 40-80 | 20-40 | 20-40 | 20-30 | 100-200 | 60-140 | 60-100 | | 50-60 | | | |

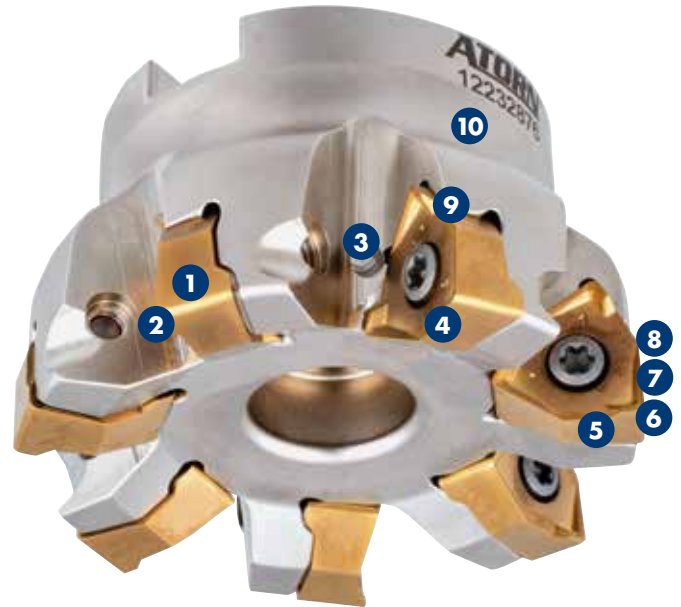
Cutting speed Vc m/min. Please adjust these guidelines according to clamping operation and machine set-up!

ATORN

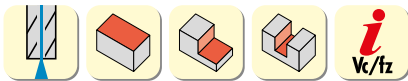
Corner milling

Corner milling is used to produce a peripheral surface with a flat surface. The main requirement is the production of a shoulder at an exact 90° angle.

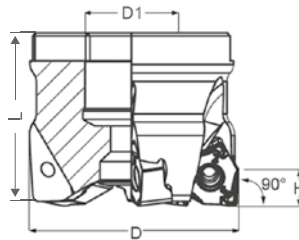
- 1 Large indexable insert thickness for optimum process reliability
- 2 Positive cutting edge geometry
- 3 Internal coolant supply
- 4 Six effective cutting edges
- 5 Optimised face edge cutting for high surface quality
- 6 Special chip shape geometry for very low power consumption and reduced vibrations
- 7 Defined edge rounding
- 8 Exact 90° angle for shoulder milling without offset
- 9 Optimum insert seat
- 10 Wear-resistant, nickel-plated tool holder



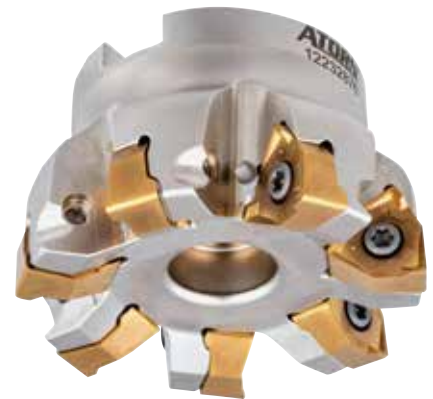
ATORN 90° corner milling cutter



- **For milling inserts, type WNE.. 0806**
- Wear-resistant, nickel-plated design
- Positive indexable insert basic form
- Very low power consumption thanks to special chip shape geometry
- Six cutting edges per indexable insert
- Double-sided indexable insert
- Large insert thickness
- **Internal coolant supply**
- Supplied with clamping screw and wrench

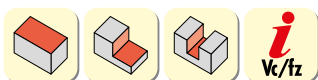


6 cutting edges

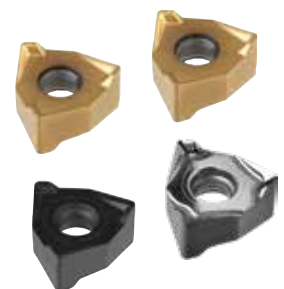


| D mm | L mm | D1 mm | Z | H mm | Tightening torque max. N·m | Art.no. | € |
|------|------|-------|---|------|----------------------------|-------------|--------|
| 63 | 40 | 22 | 6 | 7 | 3.0 | 262565 0063 | 239.00 |
| 63 | 40 | 22 | 7 | 7 | 3.0 | 262565 1063 | 299.00 |
| 80 | 50 | 27 | 7 | 7 | 3.0 | 262565 0080 | 275.00 |
| 80 | 50 | 27 | 9 | 7 | 3.0 | 262565 1080 | 329.00 |

ATORN Milling inserts WNE.. 08



| | | ISO P K | | ISO P M | | ISO P M K | | ISO N | |
|-----------------|---------|---------------|-------|----------------|-------|----------------|-------|-----------------|-------|
| ISO designation | Art.no. | Coated HC4620 | € | Coated HC4630 | € | Coated HC4430 | € | Uncoated HW4415 | € |
| WNEX 080608-ALU | | | | | | | | 10 295833 0001 | 14.95 |
| WNEX 080608-M | 10 | 295827 0001 | 13.95 | 10 295828 0001 | 13.50 | 10 295829 0001 | 13.50 | | |

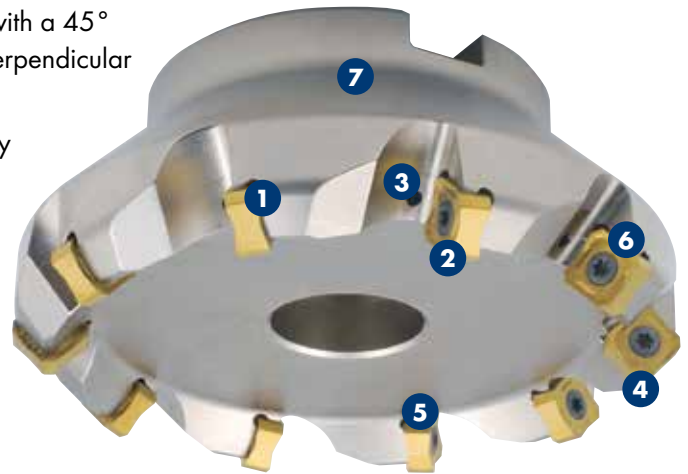


ATORN

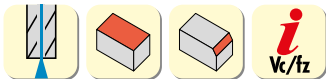
Face milling

Face milling is the most common type of milling and can be done with different tools. The most commonly used indexable insert tools are those with a 45° angle. It has a straight feed movement which is predominantly perpendicular to the rotational movement of the tool.

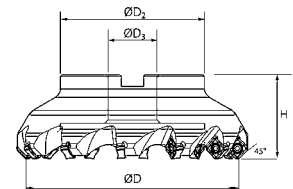
- 1 Large indexable insert thickness for optimum process reliability
- 2 Positive cutting edge geometry
- 3 Internal coolant supply
- 4 Special chip shape geometry for very low power consumption and reduced vibrations
- 5 8 or 16 effective cutting edges
- 6 Optimum insert seat
- 7 Wear-resistant, nickel-plated tool holder



ATORN Face milling cutters 45°



- For ISO milling inserts, **SN.X 1206, SNMU 1260, ONMU1205**
- Innovative double-sided indexable cutting inserts with large rake angle, use of eight cutting edges (SN_X, SNMU)
- Innovative double-sided indexable cutting inserts, use of sixteen cutting edges (ONMU)
- Easy cutting action with low machining force
- Excellent surface finish
- Very broad range of applications
- Use on many metals including steel, stainless steel, cast iron and aluminium
- Supplied with clamping screw and wrench
- ap max. 5.5 mm (SN_X, SNMU)
- ap max. 3.0 mm (ONMU)



Standard

| D mm | D2 mm | D3 mm | H mm | Z | Tightening torque max. N-m | Art.no. | € |
|---------|----------|----------|---------|---|-------------------------------|--------------------|---------------|
| 63.0 | 48 | 22 | 40 | 6 | 4.01 | 262555 0063 | 179.00 |
| 80.0 | 57 | 27 | 50 | 7 | 4.01 | 262555 0080 | 219.00 |

Milling inserts

| ISO designation | ISO P | ISO M | ISO P M K | ISO N | ISO P M K |
|-------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------|
| Coated HC4630 | Coated HC4535 | Coated HC4410 | HW4310 | Coated HC4635 | |
| Art.no. | Art.no. | Art.no. | Art.no. | Art.no. | Art.no. |
| € | € | € | € | € | € |
| SNEX 1206 ANN-MA | | | 10 295730 0101 11.80 | | |
| SNKX 1206 ANN-MM1 | | | | 10 295734 0101 11.30 | |
| SNMX 1206 ANN-MM | 10 295732 0101 12.95 | 10 295731 0101 12.95 | 10 295733 0101 12.95 | | |

Milling insert with chip breaker

- For particularly good surface quality

| ISO designation | ISO P M K | ISO P K |
|-----------------|-----------------------------|-----------------------------|
| Coated HC4535 | Coated HC4410 | |
| Art.no. | Art.no. | |
| € | € | |
| SNMU 1206 ANER | 10 295735 0101 12.85 | 10 295737 0101 12.85 |



Double-sided, 8 cutting edges, with chip breaker

Milling insert with 16 cutting edges

| ISO designation | ISO P M K | ISO P M | ISO P K |
|-----------------|-----------------------------|-----------------------------|-----------------------------|
| Coated HC4630 | Coated HC4535 | Coated HC4410 | |
| Art.no. | Art.no. | Art.no. | |
| € | € | € | |
| ONMU 1205 ANN | 10 295738 0101 12.85 | 10 295739 0101 12.85 | 10 295740 0101 12.85 |



Double-sided, 16 cutting edges

Tangential milling

- **Process reliability due to tangential installation position**

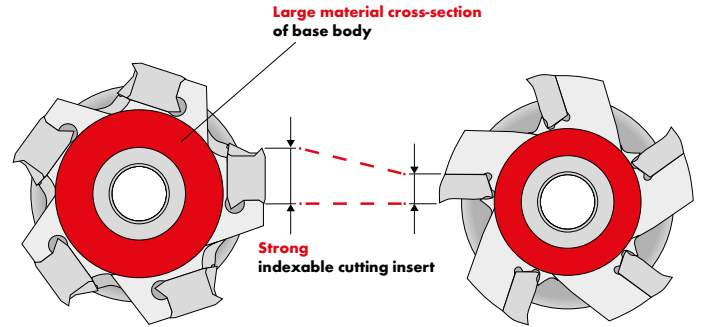
The tangential installation position of the indexable cutting inserts provides some special features. The favourable contact surface and clamping force conditions ensure maximum stability. The tools are therefore extremely reliable even at high cutting performance.

- **Efficiency due to good cutting properties**

The stable indexable cutting inserts have a positive rake angle, resulting in excellent cutting performance and low power consumption of the machine. This significantly increases the service life of the cutting edge. This has a direct and positive effect on tool costs.

- **Cost savings thanks to reduced cycle times**

The ratio of tool diameter to the number of teeth, combined with high achievable feed rates, facilitates enormous removal rates. This results in significantly shorter cycle times, which considerably reduces the total process costs and cost per part.



ATORN Tangential shoulder milling cutter 90°

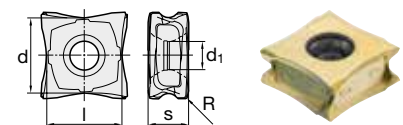
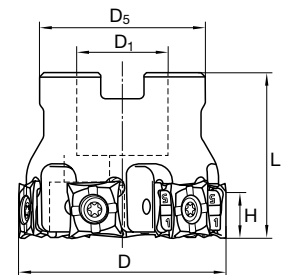


- Process reliability due to tangential installation position
- **8-blade indexable insert for high efficiency**
- Efficiency due to good cutting properties
- Cost savings thanks to reduced cycle times
- For roughing and semi-finishing operations / steel and cast iron machining
- **Infeed depth ap max. = 10 mm**
- up to Ø 125 mm with internal cooling

Tangential



| D mm | L mm | D5 mm | D1 mm | H mm | Z | Tightening torque max. N·m | Designation | Art.no. | € |
|------|------|-------|-------|------|----|----------------------------|---------------------|-------------|--------|
| 63 | 40 | 50 | 22 | 10 | 8 | 5.2 | FMP90T X12.063AN-IF | 262566 0064 | 349.00 |
| 80 | 50 | 60 | 27 | 10 | 8 | 5.2 | FMP90T X12.080AN-I | 262566 0080 | 389.00 |
| 80 | 50 | 60 | 27 | 10 | 10 | 5.2 | FMP90T X12.080AN-IF | 262566 0081 | 429.00 |
| 100 | 50 | 65 | 32 | 10 | 12 | 5.2 | FMP90T X12.100AN-IF | 262566 0101 | 519.00 |
| 125 | 63 | 90 | 40 | 10 | 16 | 5.2 | FMP90T X12.125AN-IF | 262566 0126 | 629.00 |
| 160 | 63 | 130 | 40 | 10 | 13 | 5.2 | FMP90T X12.160AN | 262566 0160 | 689.00 |
| 160 | 63 | 130 | 40 | 10 | 20 | 5.2 | FMP90T X12.160AN-F | 262566 0161 | 829.00 |






XNMM

| ISO designation | l mm | d mm | S mm | d1 mm | R mm | ISO K | ISO P/K | ISO P | ISO M |
|-----------------|------|---------|------|---------|------|-------------------|-------------------|-------------------|-------------------|
| | | | | | | HC4420 | HC4430 | HC4640 | HC4544 |
| Art.no. | € | Art.no. | € | Art.no. | € | Art.no. | € | | |
| XNMM 120508ER | 12 | 12 | 5.56 | 4.4 | 0.8 | 283320 0120 15.95 | 283321 0130 15.95 | 283322 0140 15.95 | 283323 0144 15.95 |

ISO indexable cutting inserts CC.. ISO P

- 80° rhombic, positive 7°

Chip breaker FU1 positive

| F finishing | M medium | R roughing |  ISO designation | ISO P | ISO M | ISO K | ISO N | ISO S | ISO H | Quality |  Art.no. | € |
|---|-------------|-----------------|--|-------|-------|-------|-------|-------|---------|----------------|---|------|
| | | | | • | - | - | - | - | - | | | |
|  Finishing 18° | | | CCGT 060201-FU1 | • | • | | | • | | HC 7820 | 10 311530 1312 | 8.40 |
| | | | CCGT 060202-FU1 | • | • | | | • | | HC 7810 | 10 311530 1411 | 8.40 |
| | | | CCGT 060204-FU1 | • | • | | | • | | HC 7820 | 10 311530 1412 | 8.40 |
| | | | CCGT 09T301-FU1 | • | • | | | • | | HC 7810 | 10 311530 1511 | 8.40 |
| | | | CCGT 09T302-FU1 | • | • | | | • | | HC 7820 | 10 311530 1512 | 8.40 |
| | | | CCGT 09T304-FU1 | • | • | | | • | | HC 7820 | 10 311530 1612 | 9.70 |
| | | | CCGT 09T302-FU1 | • | • | | | • | | HC 7810 | 10 311530 1711 | 9.70 |
| | | | CCGT 09T302-FU1 | • | • | | | • | | HC 7820 | 10 311530 1712 | 9.70 |
| | | CCGT 09T304-FU1 | • | • | | | • | | HC 7810 | 10 311530 1811 | 9.70 | |
| | | CCGT 09T304-FU1 | • | • | | | • | | HC 7820 | 10 311530 1812 | 9.70 | |
| | | CCGT 09T308-FU1 | • | • | | | • | | HC 7810 | 10 311530 1911 | 9.70 | |
| | | CCGT 09T308-FU1 | • | • | | | • | | HC 7820 | 10 311530 1912 | 9.70 | |

Excellent
chip control




ISO P

| ISO | HC 7810 | HC 7820 |
|---|------------------------------------|------------------------------------|
| ISO P Steel | Vc = 80 - 160 | Vc = 50 - 130 |
| ISO M Stainless steel | Vc = 130 - 220 | Vc = 100 - 210 |
| ISO S Superalloy | Vc = 40 - 70 | Vc = 40 - 60 |
| Vc = [m/min] f = [mm/rev] ap = [mm] | f = 0.05 - 0.30 ap = 0.20 - 3.0 | f = 0.02 - 0.30 ap = 0.10 - 3.0 |

ISO indexable cutting inserts DC.. ISO P

- 55° rhombic, positive 7°

Chip breaker FU1

| F finishing | M medium | R roughing |  ISO designation | ISO P | ISO M | ISO K | ISO N | ISO S | ISO H | Quality |  Art.no. | € |
|---|-------------|-----------------|--|-------|-------|-------|-------|-------|---------|----------------|---|------|
| | | | | • | - | - | - | - | - | | | |
|  Finishing 18° | | | DCGT 070101-FU1 | • | • | | | • | | HC 7820 | 10 311530 2012 | 8.10 |
| | | | DCGT 070202-FU1 | • | • | | | • | | HC 7810 | 10 311530 2111 | 8.10 |
| | | | DCGT 070204-FU1 | • | • | | | • | | HC 7820 | 10 311530 2112 | 8.10 |
| | | | DCGT 070204-FU1 | • | • | | | • | | HC 7810 | 10 311530 2211 | 8.10 |
| | | | DCGT 11T301-FU1 | • | • | | | • | | HC 7820 | 10 311530 2212 | 8.10 |
| | | | DCGT 11T302-FU1 | • | • | | | • | | HC 7820 | 10 311530 2312 | 9.50 |
| | | | DCGT 11T302-FU1 | • | • | | | • | | HC 7810 | 10 311530 2411 | 9.50 |
| | | | DCGT 11T302-FU1 | • | • | | | • | | HC 7820 | 10 311530 2412 | 9.50 |
| | | DCGT 11T304-FU1 | • | • | | | • | | HC 7810 | 10 311530 2511 | 9.50 | |
| | | DCGT 11T304-FU1 | • | • | | | • | | HC 7820 | 10 311530 2512 | 9.50 | |
| | | DCGT 11T308-FU1 | • | • | | | • | | HC 7810 | 10 311530 2611 | 9.50 | |
| | | DCGT 11T308-FU1 | • | • | | | • | | HC 7820 | 10 311530 2612 | 9.50 | |

Excellent
chip control




ISO P

| ISO | HC 7810 | HC 7820 |
|---|------------------------------------|------------------------------------|
| ISO P Steel | Vc = 80 - 160 | Vc = 80 - 130 |
| ISO M Stainless steel | Vc = 130 - 220 | Vc = 100 - 210 |
| ISO S Superalloy | Vc = 40 - 70 | Vc = 40 - 60 |
| Vc = [m/min] f = [mm/rev] ap = [mm] | f = 0.05 - 0.30 ap = 0.20 - 3.0 | f = 0.02 - 0.30 ap = 0.10 - 3.0 |

ISO indexable cutting inserts VC.. ISO P

- 35° rhombic, positive 7°

Chip breaker FU1

| F finishing | M medium | R roughing |  ISO designation | ISO P | ISO M | ISO K | ISO N | ISO S | ISO H | Quality |  Art.no. | € |
|---|-------------|-----------------|--|-------|-------|-------|-------|-------|---------|----------------|---|-------|
| | | | | • | - | - | - | - | - | | | |
|  Finishing 18° | | | VCGT 110301-FU1 | • | • | | | • | | HC 7820 | 10 311530 2712 | 11.20 |
| | | | VCGT 110302-FU1 | • | • | | | • | | HC 7810 | 10 311530 2811 | 11.20 |
| | | | VCGT 110302-FU1 | • | • | | | • | | HC 7820 | 10 311530 2812 | 11.20 |
| | | | VCGT 110304-FU1 | • | • | | | • | | HC 7810 | 10 311530 2911 | 11.20 |
| | | | VCGT 110304-FU1 | • | • | | | • | | HC 7820 | 10 311530 2912 | 11.20 |
| | | | VCGT 160402-FU1 | • | • | | | • | | HC 7810 | 10 311530 3011 | 12.90 |
| | | | VCGT 160402-FU1 | • | • | | | • | | HC 7820 | 10 311530 3012 | 12.90 |
| | | | VCGT 160404-FU1 | • | • | | | • | | HC 7810 | 10 311530 3111 | 12.90 |
| | | VCGT 160404-FU1 | • | • | | | • | | HC 7820 | 10 311530 3112 | 12.90 | |

Excellent
chip control

ISO P

| ISO | HC 7810 | HC 7820 |
|---|------------------------------------|-------------------------------------|
| ISO P Steel | Vc = 80 - 160 | Vc = 60 - 130 |
| ISO M Stainless steel | Vc = 130 - 220 | Vc = 110 - 210 |
| ISO S Superalloy | Vc = 40 - 70 | Vc = 40 - 60 |
| Vc = [m/min] f = [mm/rev] ap = [mm] | f = 0.05 - 0.25 ap = 0.20 - 2.5 | f = 0.02 - 0.25 ap = 0.10 - 2.50 |

ATORN Recessing inserts AD neutral GROOVE

- The feed rates must be adjusted to the respective cutting edge width
- Cutting edge accuracy $W \pm 0.02$ mm
- AD = double-edged cutting insert **max. 24 mm punching depth**
- AE = single-edged cutting insert **punching depth can be extended up to 50 mm depending on blade overhang**

Chip breaker M - medium, universal

- For grooving
- Recessing insert with slightly negative edge rounding
- Appropriate for almost all areas of application
- Main application area steel and cast iron

| ISO designation | Width mm | r mm | Max. depth mm | ISO | | | | | | Quality | Art.no. | € |
|-----------------|----------|------|---------------|-------|-------|-------|-------|-------|-------|----------|----------------|-------|
| | | | | ISO P | ISO M | ISO K | ISO N | ISO S | ISO H | | | |
| AD 2.00-0.2 N-M | 2.00 | 0.2 | 24 | ● | ○ | ● | | | | ACP 20 G | 10 388000 2035 | 13.60 |
| | 2.00 | 0.2 | 24 | ● | ● | ● | | | | APU 40 G | 10 388000 2040 | 13.60 |
| | 2.00 | 0.2 | 24 | ○ | ● | | | ● | | APM 45 G | 10 388000 2045 | 13.60 |
| AD 3.00-0.2 N-M | 3.00 | 0.2 | 24 | ● | ○ | ● | | | | ACP 20 G | 10 388000 3035 | 14.95 |
| | 3.00 | 0.2 | 24 | ● | ● | ● | | | | APU 40 G | 10 388000 3040 | 14.95 |
| | 3.00 | 0.2 | 24 | ○ | ● | | | ● | | APM 45 G | 10 388000 3045 | 14.95 |
| AD 4.00-0.3 N-M | 4.00 | 0.3 | 24 | ● | ○ | ● | | | | ACP 20 G | 10 388000 4035 | 16.75 |
| | 4.00 | 0.3 | 24 | ● | ● | ● | | | | APU 40 G | 10 388000 4040 | 16.75 |
| | 4.00 | 0.3 | 24 | ○ | ● | | | ● | | APM 45 G | 10 388000 4045 | 16.75 |

| ISO | ACP 20 G | APM 45 G | APU 40 G |
|------------------------------|-----------------|---------------|---------------|
| ISO P Steel | Vc = 50 - 240 | Vc = 40 - 120 | Vc = 50 - 240 |
| ISO M Stainless steel | Vc = 50 - 180 | Vc = 60 - 180 | Vc = 50 - 200 |
| ISO K Cast iron | Vc = 80 - 200 | | Vc = 80 - 200 |
| ISO S Superalloy | | Vc = 15 - 120 | |
| Vc = [m/min] f = [mm/rev] | f = 0.05 - 0.35 | | |

Chip breaker ET - extra

- For grooving
- Specially for stainless materials
- "Problem-solver" for materials that are difficult to machine such as titanium or duplex
- Extremely soft cutting

| ISO designation | Width mm | r mm | Max. depth mm | ISO | | | | | | Quality | Art.no. | € |
|------------------|----------|------|---------------|-------|-------|-------|-------|-------|-------|----------|----------------|-------|
| | | | | ISO P | ISO M | ISO K | ISO N | ISO S | ISO H | | | |
| AD 2.00-0.2 N-ET | 2.00 | 0.2 | 24 | ● | ○ | ● | | | | ACP 20 G | 10 388012 2035 | 13.60 |
| | 2.00 | 0.2 | 24 | ● | ● | ● | | | | APU 40 G | 10 388012 2040 | 13.60 |
| | 2.00 | 0.2 | 24 | ○ | ● | | | ● | | APM 45 G | 10 388012 2045 | 13.60 |
| AD 3.00-0.2 N-ET | 3.00 | 0.2 | 24 | ● | ○ | ● | | | | ACP 20 G | 10 388012 3035 | 14.95 |
| | 3.00 | 0.2 | 24 | ● | ● | ● | | | | APU 40 G | 10 388012 3040 | 14.95 |
| | 3.00 | 0.2 | 24 | ○ | ● | | | ● | | APM 45 G | 10 388012 3045 | 14.95 |
| AD 4.00-0.3 N-ET | 4.00 | 0.3 | 24 | ● | ○ | ● | | | | ACP 20 G | 10 388012 4035 | 16.75 |
| | 4.00 | 0.3 | 24 | ● | ● | ● | | | | APU 40 G | 10 388012 4040 | 16.75 |
| | 4.00 | 0.3 | 24 | ○ | ● | | | ● | | APM 45 G | 10 388012 4045 | 16.75 |

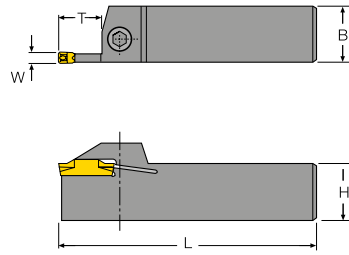
| ISO | ACP 20 G | APM 45 G | APU 40 G |
|------------------------------|-----------------|---------------|---------------|
| ISO P Steel | Vc = 50 - 240 | Vc = 40 - 120 | Vc = 50 - 240 |
| ISO M Stainless steel | Vc = 50 - 180 | Vc = 60 - 180 | Vc = 50 - 200 |
| ISO K Cast iron | Vc = 80 - 200 | | Vc = 80 - 200 |
| ISO S Superalloy | | Vc = 15 - 120 | |
| Vc = [m/min] f = [mm/rev] | f = 0.06 - 0.27 | | |

WE'RE THERE WHEN
YOU NEED US.
NO MATTER WHERE:
24-HOUR DELIVERY ACROSS EUROPE

THAT'S POWER TO PRODUCE

ATORN Recess clamp mounting GROOVE

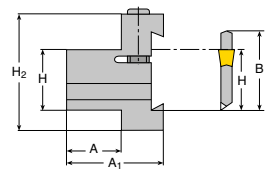
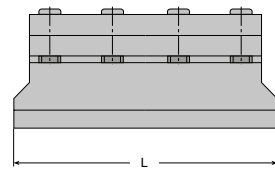
- For recessing inserts system AD / AE
- For longitudinal turning and grooving
- Supplied with chuck key



Clamp mounting AMER/L

| ISO designation | H mm | B mm | L mm | W mm | Max. depth mm | Suitable cutting inserts | Tightening torque max. N·m | Right-hand | | Left-hand | |
|---------------------|---------|---------|---------|---------|------------------|--------------------------|-------------------------------|--------------------|--------------|--------------------|--------------|
| | | | | | | | | Art.no. | € | Art.no. | € |
| AMER-L 12 ADE02-T13 | 12 | 12 | 125 | 2.0 | 13 | System AD/AE 2.0 | 3.2 | 356001 2001 | 64.50 | 356002 2001 | 64.50 |
| AMER-L 12 ADE03-T13 | 12 | 12 | 125 | 3.0 | 13 | System AD/AE 3.0 | 3.2 | 356001 3001 | 64.50 | 356002 3001 | 64.50 |
| AMER-L 16 ADE02-T13 | 16 | 16 | 125 | 2.0 | 13 | System AD/AE 2.0 | 4.0 | 356001 2002 | 72.00 | 356002 2002 | 72.00 |
| AMER-L 16 ADE03-T13 | 16 | 16 | 125 | 3.0 | 13 | System AD/AE 3.0 | 4.0 | 356001 3002 | 72.00 | 356002 3002 | 72.00 |
| AMER-L 16 ADE03-T25 | 16 | 16 | 125 | 3.0 | 25 | System AD/AE 3.0 | 4.0 | 356001 3008 | 87.50 | 356002 3008 | 87.50 |
| AMER-L 16 ADE04-T25 | 16 | 16 | 125 | 4.0 | 25 | System AD/AE 4.0 | 4.0 | 356001 4001 | 87.50 | 356002 4001 | 87.50 |
| AMER-L 20 ADE02-T13 | 20 | 20 | 125 | 2.0 | 13 | System AD/AE 2.0 | 4.0 | 356001 2003 | 82.50 | 356002 2003 | 82.50 |
| AMER-L 20 ADE03-T13 | 20 | 20 | 125 | 3.0 | 13 | System AD/AE 3.0 | 4.0 | 356001 3004 | 84.00 | 356002 3004 | 84.00 |
| AMER-L 20 ADE03-T25 | 20 | 20 | 125 | 3.0 | 25 | System AD/AE 3.0 | 4.0 | 356001 3005 | 90.00 | 356002 3005 | 90.00 |
| AMER-L 20 ADE04-T25 | 20 | 20 | 125 | 4.0 | 25 | System AD/AE 4.0 | 4.0 | 356001 4002 | 89.00 | 356002 4002 | 89.00 |
| AMER-L 25 ADE03-T13 | 25 | 25 | 125 | 3.0 | 13 | System AD/AE 3.0 | 4.8 | 356001 3006 | 87.50 | 356002 3006 | 87.50 |
| AMER-L 25 ADE03-T25 | 25 | 25 | 125 | 3.0 | 25 | System AD/AE 3.0 | 4.8 | 356001 3007 | 96.00 | 356002 3007 | 96.00 |
| AMER-L 25 ADE04-T25 | 25 | 25 | 125 | 4.0 | 25 | System AD/AE 4.0 | 4.8 | 356001 4003 | 95.00 | 356002 4003 | 95.00 |

ATORN Recessing blade mount AD / AE / ASS GROOVE



Recessing blade holder AEB

- For recessing blade ABE ASS without internal cooling
- For recessing blade ABE AD without internal cooling

| ISO designation | H mm | A mm | B mm | L mm | A1 mm | H2 mm | Suitable cutting edge holder | Art.no. | € |
|-----------------|---------|---------|---------|---------|----------|----------|------------------------------|--------------------|---------------|
| AEB26-2020 | 20 | 20 | 26 | 90 | 37 | 43 | Dimension B = 26 | 356101 2620 | 142.50 |
| AEB32-2525 | 25 | 20 | 32 | 110 | 38 | 49 | Dimension B = 32 | 356101 3225 | 155.00 |



Recessing blade holder AEB with internal cooling

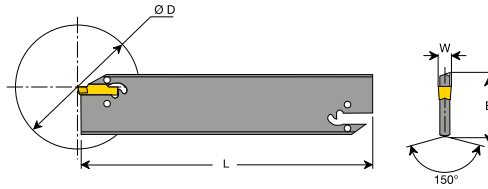
- For recessing blade ABE AD with internal cooling

| ISO designation | H mm | A mm | B mm | L mm | A1 mm | H2 mm | Suitable cutting edge holder | Art.no. | € |
|-----------------|---------|---------|---------|---------|----------|----------|------------------------------|--------------------|---------------|
| AEB26-2020 IK | 20 | 20 | 26 | 82 | 40 | 43 | Dimension B = 26 | 356100 2620 | 255.00 |
| AEB32-2525 IK | 25 | 25 | 32 | 95 | 44.5 | 49 | Dimension B = 32 | 356100 3225 | 260.00 |



ATORN Recessing blades GROOVE

- For recessing inserts system AD / AE
- For parting-off and deep grooving
- Supplied without chuck key



Recessing blade ABE R/L

| ISO designation | B mm | L mm | W mm | Suitable cutting inserts | D max. mm | Suitable wrench | Right-hand | | Left-hand | |
|-----------------|---------|---------|---------|--------------------------|--------------|-----------------|--------------------|--------------|--------------------|--------------|
| | | | | | | | Art.no. | € | Art.no. | € |
| ABE N 26-ADE02 | 26 | 150 | 2.00 | System AD/AE 2.0 | 42 | 3565000030 | 356006 2602 | 95.00 | 356007 2602 | 95.00 |
| ABE N 32-ADE02 | 32 | 150 | 2.00 | System AD/AE 2.0 | 42 | 3565000030 | 356006 3202 | 95.00 | 356007 3202 | 95.00 |



Recessing blade ABE neutral

| ISO designation | B mm | L mm | W mm | Suitable cutting inserts | D max. mm | Suitable wrench | Art.no. | € |
|-----------------|---------|---------|---------|--------------------------|--------------|-----------------|----------------|--------------|
| | | | | | | | ABE N 26-ADE02 | 26 |
| ABE N 26-ADE03 | 26 | 150 | 3.0 | System AD/AE 3.0 | 70 | 3565000030 | 356005 2603 | 78.50 |
| ABE N 26-ADE04 | 26 | 150 | 4.0 | System AD/AE 4.0 | 80 | 3565000040 | 356005 2604 | 85.50 |
| ABE N 32-ADE02 | 32 | 150 | 2.0 | System AD/AE 2.0 | 50 | 3565000030 | 356005 3202 | 92.00 |
| ABE N 32-ADE03 | 32 | 150 | 3.0 | System AD/AE 3.0 | 100 | 3565000030 | 356005 3203 | 78.50 |
| ABE N 32-ADE04 | 32 | 150 | 4.0 | System AD/AE 4.0 | 100 | 3565000040 | 356005 3204 | 86.00 |



Recessing blade ABE with internal cooling

| ISO designation | B mm | L mm | W mm | Suitable cutting inserts | D max. mm | Suitable wrench | Art.no. | € |
|------------------|---------|---------|---------|--------------------------|--------------|-----------------|------------------|---------------|
| | | | | | | | ABE N 26-ADE02-C | 26 |
| ABE N 26-ADE03-C | 26 | 150 | 3.0 | System AD/AE 3.0 | 70 | 3565000030 | 356050 2603 | 145.50 |
| ABE N 26-ADE04-C | 26 | 150 | 4.0 | System AD/AE 4.0 | 80 | 3565000040 | 356050 2604 | 172.50 |
| ABE N 32-ADE02-C | 32 | 150 | 2.0 | System AD/AE 2.0 | 50 | 3565000030 | 356050 3202 | 143.00 |
| ABE N 32-ADE03-C | 32 | 150 | 3.0 | System AD/AE 3.0 | 100 | 3565000030 | 356050 3203 | 149.00 |
| ABE N 32-ADE04-C | 32 | 150 | 4.0 | System AD/AE 4.0 | 100 | 3565000040 | 356050 3204 | 168.50 |



Recessing blade ABE R/L with internal cooling

| ISO designation | B mm | L mm | W mm | Suitable cutting inserts | D max. mm | Suitable wrench | Right-hand | | Left-hand | |
|--------------------|---------|---------|---------|--------------------------|--------------|-----------------|--------------------|---------------|--------------------|---------------|
| | | | | | | | Art.no. | € | Art.no. | € |
| ABE-R/L 26-ADE02-C | 26 | 150 | 2.0 | System AD/AE 2.0 | 50 | 3565000030 | 356008 2602 | 168.50 | 356009 2602 | 168.50 |
| ABE-R/L 32-ADE02-C | 32 | 150 | 2.0 | System AD/AE 2.0 | 50 | 3565000030 | 356008 3202 | 208.50 | 356009 3202 | 208.50 |

Chuck key

| ISO designation | Wrench | |
|--|--------------------|--------------|
| | Art.no. | € |
| Wrench blade 2-3 mm system ASS/ABE/AD/AE | 356500 0030 | 29.90 |
| Wrench blade 4-6 mm system ASS/ABE/AD/AE | 356500 0040 | 29.90 |



SARA® Square transverse holding fixture

- Surface hardness 58-60 HRC
- Core strength HV 950 N/mm²
- Hardness depth 0.8 mm ± 0.2 mm
- Fully burnished and precision-ground

Form B1, right-hand, short

| Shank | d1 mm | b1 mm | b2 mm | h1 mm | b3 mm | h5 mm | h6 mm | l1 mm | l2 mm | Art.no. | € |
|--------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-------------|-------|
| VDI 20 | 20 | 55 | 30 | 16 | 7 | 25 | 30 | 30 | 16 | 446005 0020 | 51.00 |
| VDI 30 | 30 | 70 | 35 | 20 | 10 | 28 | 38 | 40 | 22 | 446005 0030 | 56.50 |
| VDI 40 | 40 | 85 | 42.5 | 25 | 12.5 | 32.5 | 48 | 44 | 22 | 446005 0040 | 63.50 |
| VDI 50 | 50 | 100 | 50 | 32 | 16 | 35 | 60 | 55 | 30 | 446005 0050 | 83.50 |

Form B2, left-hand, short

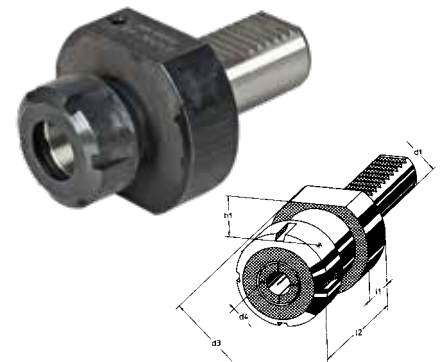
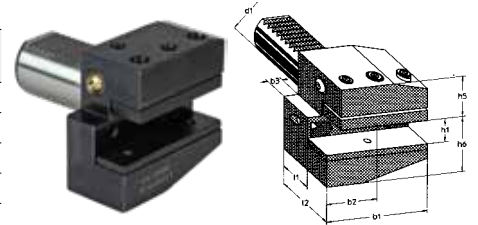
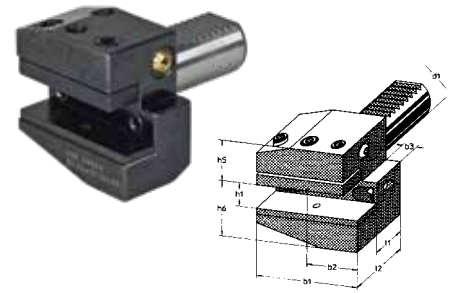
| Shank | d1 mm | b1 mm | b2 mm | h1 mm | b3 mm | h5 mm | h6 mm | l1 mm | l2 mm | Art.no. | € |
|--------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-------------|-------|
| VDI 20 | 20 | 55 | 30 | 16 | 7 | 25 | 30 | 30 | 16 | 446007 0020 | 51.00 |
| VDI 30 | 30 | 70 | 35 | 20 | 10 | 28 | 38 | 40 | 22 | 446007 0030 | 56.50 |
| VDI 40 | 40 | 85 | 42.5 | 25 | 12.5 | 32.5 | 48 | 44 | 22 | 446007 0040 | 63.50 |
| VDI 50 | 50 | 100 | 50 | 32 | 16 | 35 | 60 | 55 | 30 | 446007 0050 | 83.50 |

Form E4, cylindrical holding fixture with collet

| Shank | Designation | Clamping range mm | d1 mm | h1 mm | l2 mm | l1 mm | d3 mm | Art.no. | € |
|--------|-------------|-------------------------|----------|----------|----------|----------|----------|-------------|--------|
| VDI 20 | ER16 426E | 1 - 10 | 20 | 23 | 40 | 16 | 50 | 446036 2016 | 76.00 |
| VDI 20 | ER25 430E | 2 - 16 | 20 | 23 | 50 | 16 | 50 | 446036 2025 | 76.00 |
| VDI 20 | ER32 470E | 2 - 20 | 20 | 23 | 50 | 16 | 50 | 446036 2032 | 76.00 |
| VDI 30 | ER25 430E | 2 - 16 | 30 | 28 | 57 | 22 | 68 | 446036 3025 | 78.50 |
| VDI 30 | ER32 470E | 2 - 20 | 30 | 28 | 62 | 22 | 68 | 446036 3032 | 78.50 |
| VDI 30 | ER40 472E | 3 - 26 | 30 | 28 | 75 | 22 | 68 | 446036 3040 | 78.50 |
| VDI 40 | ER25 430E | 2 - 16 | 40 | 32.5 | 75 | 22 | 83 | 446036 4025 | 78.50 |
| VDI 40 | ER32 470E | 2 - 20 | 40 | 32.5 | 62 | 22 | 83 | 446036 4032 | 78.50 |
| VDI 40 | ER40 472E | 3 - 26 | 40 | 32.5 | 75 | 22 | 83 | 446036 4040 | 78.50 |
| VDI 50 | ER40 472E | 3 - 26 | 50 | 35 | 75 | 30 | 98 | 446036 5040 | 114.00 |

Form E2, for straight shank turning tools with an internal and external coolant supply

| Shank | d1 mm | d4 mm | d3 mm | h1 mm | l1 mm | l2 mm | d2 mm | l3 mm | Art.no. | € |
|--------|----------|----------|----------|----------|----------|----------|----------|----------|-------------|-------|
| VDI 20 | 20 | 8 | 50 | 23 | 18 | 50 | 40 | 32 | 446033 2008 | 59.50 |
| VDI 20 | 20 | 10 | 50 | 23 | 18 | 50 | 40 | 32 | 446033 2010 | 59.50 |
| VDI 20 | 20 | 12 | 50 | 23 | 18 | 50 | 40 | 32 | 446033 2012 | 59.50 |
| VDI 20 | 20 | 16 | 50 | 23 | 18 | 50 | 40 | 32 | 446033 2016 | 59.50 |
| VDI 20 | 20 | 20 | 50 | 23 | 18 | 50 | 50 | 32 | 446033 2020 | 59.50 |
| VDI 20 | 20 | 25 | 50 | 23 | 18 | 60 | 50 | 42 | 446033 2025 | 59.50 |
| VDI 30 | 30 | 8 | 68 | 28 | 22 | 60 | 55 | 38 | 446033 3008 | 59.50 |
| VDI 30 | 30 | 10 | 68 | 28 | 22 | 60 | 55 | 38 | 446033 3010 | 59.50 |
| VDI 30 | 30 | 12 | 68 | 28 | 22 | 60 | 55 | 38 | 446033 3012 | 59.50 |
| VDI 30 | 30 | 16 | 68 | 28 | 22 | 60 | 55 | 38 | 446033 3016 | 59.50 |
| VDI 30 | 30 | 20 | 68 | 28 | 22 | 60 | 55 | 38 | 446033 3020 | 59.50 |
| VDI 30 | 30 | 25 | 68 | 28 | 22 | 60 | 55 | 38 | 446033 3025 | 59.50 |
| VDI 30 | 30 | 32 | 68 | 28 | 22 | 75 | 68 | 53 | 446033 3032 | 59.50 |
| VDI 30 | 30 | 40 | 68 | 28 | 22 | 90 | 68 | 68 | 446033 3040 | 59.50 |
| VDI 40 | 40 | 8 | 83 | 32.5 | 22 | 75 | 55 | 53 | 446033 4008 | 60.50 |
| VDI 40 | 40 | 10 | 83 | 32.5 | 22 | 75 | 55 | 53 | 446033 4010 | 60.50 |
| VDI 40 | 40 | 12 | 83 | 32.5 | 22 | 75 | 55 | 53 | 446033 4012 | 60.50 |
| VDI 40 | 40 | 16 | 83 | 32.5 | 22 | 75 | 55 | 53 | 446033 4016 | 60.50 |
| VDI 40 | 40 | 20 | 83 | 32.5 | 22 | 75 | 55 | 53 | 446033 4020 | 60.50 |
| VDI 40 | 40 | 25 | 83 | 32.5 | 22 | 75 | 55 | 53 | 446033 4025 | 60.50 |
| VDI 40 | 40 | 32 | 83 | 32.5 | 22 | 75 | 83 | 53 | 446033 4032 | 60.50 |
| VDI 40 | 40 | 40 | 83 | 32.5 | 22 | 90 | 83 | 68 | 446033 4040 | 60.50 |
| VDI 50 | 50 | 12 | 98 | 35 | 30 | 90 | 68 | 60 | 446033 5012 | 83.50 |
| VDI 50 | 50 | 16 | 98 | 35 | 30 | 90 | 68 | 60 | 446033 5016 | 83.50 |
| VDI 50 | 50 | 20 | 98 | 35 | 30 | 90 | 68 | 60 | 446033 5020 | 83.50 |
| VDI 50 | 50 | 25 | 98 | 35 | 30 | 90 | 68 | 60 | 446033 5025 | 83.50 |
| VDI 50 | 50 | 32 | 98 | 35 | 30 | 90 | 68 | 60 | 446033 5032 | 83.50 |
| VDI 50 | 50 | 40 | 98 | 35 | 30 | 90 | 98 | 60 | 446033 5040 | 83.50 |
| VDI 50 | 50 | 50 | 98 | 35 | 30 | 100 | 98 | 70 | 446033 5050 | 83.50 |



ATORN Quick-change tool holder

- Profile-ground, toothed central body attached to the lathe support along with the base body
- The base body can accommodate an unlimited number of interchangeable holders for turning or drilling tools, one after the other.
- 40 different steel holder angle settings possible
- Repetition precision ± 0.01 mm

Quick-change D lathe tool holder

- Flat tool support
- Supplied with lockable height-adjustment screw and clamping screws

| Suitable for holder size | D mm | Total length mm | Suitable square-head bolt | Art.no. | € |
|--------------------------|------|-----------------|---------------------------|--------------------|---------------|
| AA | 12 | 50 | M5 x 0.8 x 18 | 446505 0012 | 67.80 |
| A | 16 | 75 | M7 x 1 x 23 | 446505 1116 | 67.80 |
| A | 16 | 90 | M7 x 1 x 23 | 446505 1117 | 67.80 |
| A | 20 | 75 | M7 x 1 x 23 | 446505 1120 | 69.00 |
| A | 20 | 90 | M7 x 1 x 23 | 446505 1121 | 69.00 |
| B | 25 | 120 | M11 x 1 x 30 | 446505 2225 | 106.50 |
| B | 25 | 140 | M11 x 1 x 30 | 446505 2226 | 106.50 |
| B | 32 | 120 | M11 x 1 x 30 | 446505 2232 | 108.00 |
| B | 32 | 140 | M11 x 1 x 30 | 446505 2233 | 108.00 |
| C | 32 | 150 | M14 x 1.5 x 40 | 446505 3332 | 167.50 |
| C | 32 | 170 | M14 x 1.5 x 40 | 446505 3333 | 167.50 |
| C | 40 | 150 | M14 x 1.5 x 40 | 446505 3340 | 182.50 |
| C | 40 | 170 | M14 x 1.5 x 40 | 446505 3341 | 182.50 |
| C | 45 | 170 | M14 x 1.5 x 40 | 446505 3345 | 190.00 |
| D1 | 40 | 180 | M14 x 1.5 x 40 | 446505 4440 | 275.00 |
| D1 | 50 | 180 | M14 x 1.5 x 40 | 446505 4450 | 290.00 |
| D1 | 63 | 180 | M14 x 1.5 x 40 | 446505 4463 | 310.00 |



Quick-change BS boring bar holder

- With straight bore for Morse taper sleeves and for direct attachment of boring bars
- Supplied with lockable height-adjustment screw and clamping screws
- Tool holder blanks available on request

| Suitable for holder size | For boring bar \varnothing mm | Total length mm | Art.no. | € |
|--------------------------|---------------------------------|-----------------|--------------------|---------------|
| AA | 15 | 50 | 446520 0015 | 88.40 |
| A | 30 | 80 | 446520 1130 | 105.50 |
| B | 40 | 120 | 446520 2240 | 159.50 |
| C | 40 | 160 | 446520 3340 | 265.00 |
| C | 50 | 160 | 446520 3350 | 270.00 |
| D1 | 63 | 180 | 446520 4463 | 555.00 |



Morse taper sleeve, type H

- With jacking screw
- For mounting in BS quick-release boring bar holders, cylindrical outer diameter
- For tools with a Morse taper shank

| Suitable for holder size | Shank \varnothing mm | Shank design interior | Art.no. | € |
|--------------------------|------------------------|-----------------------|--------------------|---------------|
| A | 30 | MK 1 | 446525 1101 | 36.80 |
| A | 30 | MK 2 | 446525 1102 | 39.00 |
| B | 40 | MK 3 | 446525 2203 | 47.70 |
| B | 40 | MK 4 | 446525 2204 | 53.60 |
| C | 40 | MK 3 | 446525 3303 | 47.70 |
| C | 40 | MK 4 | 446525 3304 | 53.60 |
| C | 50 | MK 3 | 446525 3313 | 60.40 |
| C | 50 | MK 4 | 446525 3314 | 64.10 |
| C | 50 | MK 5 | 446525 3315 | 86.70 |
| D1 | 63 | MK 5 | 446525 4405 | 125.50 |



CLAMPING TECHNOLOGY

Our premium vice

The NC compact clamp is particularly suitable for use on machining centres and milling machines. This vice features a stable and compact design for the highest clamping accuracy and best workpiece accessibility. It is easy to achieve a clamping force of up to 40 kN by rotating the clamp force adjuster. Force boosting can be deactivated for workpieces that are sensitive to deformation.

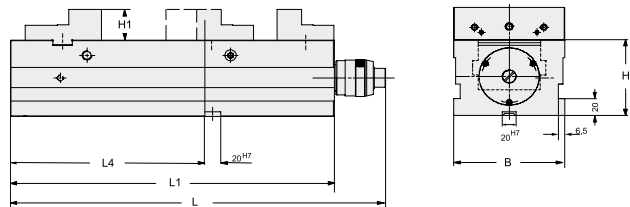
- Wide clamping range and precise positioning with fixed clamping jaw
- Stable and compact design for highest clamping accuracy
- Constant clamp force and highest repetition precision of 0.01 mm
- Stable base body of spheroidal graphite iron with ground guides
- Fixed clamping jaw for precise positioning
- Stable chip guard, prevents chips from entering inside the vice
- Drive spindle with pre-set clamping force



€1,399.00

ATORN MM-G NC high-pressure machine vice

- **Mechanical/mechanical**
- Base body made of spheroidal graphite iron
- Clamping on base
- Pull-down jaws and other accessories available on request
- Stepped jaws, reversible, hardened and ground
- Long clamping slide assembly including a transverse slot drive spindle with pre-set clamping force
- Mounting thread M12 for workpiece stop
- Clamping surfaces for clamping claws
- Stable chip guard, prevents chips from entering inside the body
- **Includes clamping fitting bore (pitch 200 mm) for ATORN zero-point clamping system**



Compact spanner

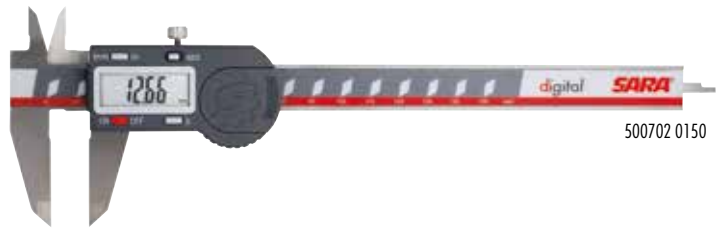
- Includes stepped jaws and regulator

| Jaw width mm | Clamp force kN | L mm | L1 mm | L2 mm | L3 mm | L4 mm | H mm | H1 mm | Clamping range mm | Weight kg | Art.no. | € |
|--------------|----------------|------|-------|-------|-------|-------|------|-------|-------------------|-----------|-------------|----------|
| 125 | 40 | 463 | 400 | 56.5 | 112.5 | 240 | 100 | 40 | 0-312 | 41 | 458800 0125 | 1,399.00 |

SARA® Digital Vernier calliper



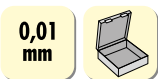
- Locking screw on top
- High-contrast, easily readable LCD display
- External, internal, depth and step measurements
- Thread table on the back
- Functions: ON/OFF, ZERO, mm/inch
- Supplied with CR2032 battery, No. 548079 6032



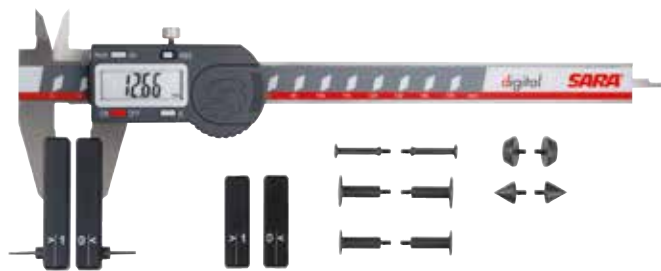
500702 0150

| Measurement range mm/inch | Jaw length mm | Error limit mm | Art.no. | € | DAkkS calibration | |
|------------------------------|------------------|-------------------|--------------------|---------------|-------------------|--------------|
| | | | | | Art.no. | € |
| 100/4 inch | 30 | 0.03 | 500702 0100 | 25.95 | 072008 D001 | 14.00 |
| 150/6 inch | 40 | 0.03 | 500702 0150 | 39.90 | 072008 D001 | 14.00 |
| 200/8 inch | 50 | 0.03 | 500702 0200 | 62.90 | 072008 D001 | 14.00 |
| 300/12 inch | 60 | 0.04 | 500702 0300 | 129.90 | 072008 D002 | 19.00 |

SARA® Universal accessory set for digital Vernier callipers



- Accessory set suitable for all digital pocket callipers with a measuring jaw thickness of max. 4.5 mm
- Supplied with:
 - 1 pair of measuring holders in each size, short and long
 - 1 pair of disc probes in each size, Ø 12.5 / 10 / 6 mm
 - 1 pair of 60° tapered probes in each size, Ø 12 / 9 mm
 - 1 pair of cylindrical probes in each size, Ø 1.5 x 9 mm
 - 1 spring system for constant measuring force
 - 1 hex key



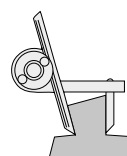
| Designation | Art.no. | € |
|--|--------------------|---------------|
| Universal accessory set for Vernier callipers up to jaw thickness 3.5 mm | 500190 0008 | 149.00 |
| Universal accessory set for Vernier callipers up to jaw thickness 4.5 mm | 500190 0009 | 169.00 |



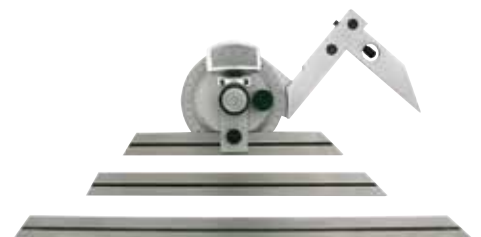
SARA® Universal protractor with magnifier and fine adjustment



- Reading parts matt chrome-plated
- Parallax-free reading with magnifier
- Scaling 4 x 90°, reading 1/12° = 5 min.
- 3 rails, 150, 200 and 300 mm, can be repositioned and locked
- 1 additional angle

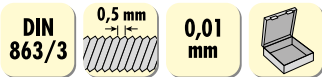


Application example with additional angle



| Rail length mm | Art.no. | € | DAkkS calibration | |
|-------------------|--------------------|--------------|-------------------|--------------|
| | | | Art.no. | € |
| 150, 200, 300 | 542025 0001 | 99.00 | 075007 D001 | 42.00 |

SARA® Special-purpose outside micrometers



- Precision design with ratchet
- Grip with safety guard
- Reading parts matt chrome-plated
- Scale barrel Ø: 17 mm
- Spindle Ø: 6.5 mm
- Calibration including setting gauge
- Supplied with adjustment key, versions over 25 mm include setting gauge



With Ø 20 mm disc measuring faces

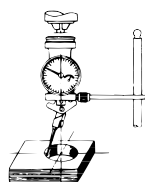
- For tooth width measurement

| Measurement range mm | Disc measurement face Ø mm | Art.no. | € | DakkS calibration | |
|-------------------------|-------------------------------|-------------|--------|-------------------|-------|
| | | | | Art.no. | € |
| 0-25 | 20 | 503524 0025 | 135.00 | 070160 D001 | 18.00 |
| 25-50 | 20 | 503524 0050 | 155.00 | 073103 D047 | 33.00 |
| 50-75 | 20 | 503524 0075 | 175.00 | 073103 D052 | 36.00 |
| 75-100 | 20 | 503524 0100 | 205.00 | 073103 D052 | 36.00 |

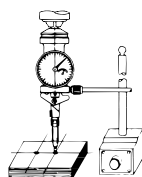
Precision centring device CO-AX



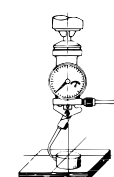
- For aligning workpieces on machine tools with vertically or horizontally rotating spindles
- Non-rotating, easily readable dial indicator
- Robust metal casing
- Wide display range
- Straight clamping shank Ø 10 mm
- With stanchion to hold the dial indicator in the desired position
- Replacement of the probe tips facilitates large working area inside and outside
- Dial indicator diameter Ø 40 mm with tolerance marks
- Functional range Ø 4 - 300 mm, inside and outside
- Optimum speed 150 rpm
- Supplied with stanchion 160 mm,
3 inner probes (50 / 100 / 150 mm),
3 outer probes (50 / 100 / 150 mm),
centre probe,
wooden storage box



Internal diameter



Centring



Outside diameter



| Display area mm | Reading mm | Art.no. | € | Factory calibration | |
|--------------------|---------------|-------------|--------|---------------------|-------|
| | | | | Art.no. | € |
| 5 | 0.01 | 530010 0070 | 219.00 | 073103 W162 | 58.00 |

SARA® Lever dial indicator



- Ideal for measuring deviations in shape and position, true running and axial run-out as well as alignment work
- Matt chrome-plated metal casing
- Casing and dovetail mounting V-blocks made in one piece for exceptionally rigid clamping
- Supplied with Ø 6 and 8 mm clamping shank

| Measurement range mm | Reading mm | Scale | Accuracy fe µm | External ring Ø mm | Sensor tip length mm | Art.no. | € | DAkkS calibration | |
|----------------------|------------|--------|----------------|--------------------|----------------------|-------------|-------|-------------------|-------|
| | | | | | | | | Art.no. | € |
| 0.8 | 0.01 | 0-40-0 | 10 | 29 | 14.3 | 525031 0029 | 54.50 | 071250 D001 | 18.00 |
| 0.8 | 0.01 | 0-40-0 | 10 | 40 | 14.3 | 525031 0040 | 56.50 | 071250 D001 | 18.00 |



ATORN 3D articulated measurement stand

- For quickly and precisely positioning dial indicators
- Mechanical central clamping mechanism that requires no maintenance
- Strong, switchable magnetic foot with prismatic sole, holds firm in any position!
- Combined dial indicator holding fixture with fine adjustment for dial indicators with a Ø 8 mm shank and for levers with a dovetail mount



| Total height mm | Action radius mm | Magnetic foot L x W x H mm | Retention force N | Art.no. | € |
|-----------------|------------------|----------------------------|-------------------|-------------|--------|
| 210 | 130 | 34 x 30 x 35 | 300 | 550520 0210 | 149.00 |
| 305 | 200 | 60 x 50 x 55 | 750 | 550520 0305 | 169.00 |
| 385 | 280 | 60 x 50 x 55 | 750 | 550520 0385 | 205.00 |



WE'RE THERE WHEN
YOU NEED US.
NO MATTER WHERE:
24-HOUR DELIVERY ACROSS EUROPE

THAT'S POWER TO PRODUCE

SARA® Emulsion mist separator **Ultra-Jet**

- **Mechanical, with patented X-Cyclone® agglomerator system**
- **Thanks to European ErP directives, energy savings of several thousand euros are possible**
- **compared to conventional air purifiers.**
- **No rotational speed regulation**
- **No disposable filters**
- Depending on size, suitable for processing machines of approx. 1 - 3 m³ Suitable for internal chamber volume and light-duty chip removal processes
- Compact design, direct mounting on the machine
- Up to four filter stages, can be retrofitted with a HEPA filter
- Dynamic-static combined filter system
- Dynamically balanced high-performance fan integrated into the filter unit
- Service opening with quick-release clamps
- ULTRA-JET is tested for flame resistance in accordance with DIN EN 16282
- Stainless steel housing powder-coated in RAL 7035 (light grey), high-performance X-Cyclone® separator profiles made of aluminium
- **Supplied with:** Ø 160/150 mm reducer with chip pre-filter insert, 3 m oil return hose
- **Pricing:** ex works, including packaging



Single units

| Model | Volume flow max. m ³ /h | Dimensions L x W x H mm | Connection Ø mm | Weight kg | Motor output kW | I(A) | Voltage V | Noise level dB | Art.no. | € |
|-------------|------------------------------------|-------------------------|-----------------|-----------|-----------------|------|-----------|----------------|--------------------|-----------------|
| Ultra-Jet 1 | 1000 | 410 x 410 x 480 | 150 | 20 | 0.25 | 0.74 | 400 | 69 | 909016 0010 | 2,349.00 |
| Ultra-Jet 2 | 1400 | 410 x 410 x 480 | 150 | 22 | 0.5 | 1.3 | 400 | 73 | 909016 0020 | 2,939.00 |

HEPA filter attachment

- Filters out smoke particulate that can occur during heavy machining
- For particle sizes < 1 µm

| Description | Suitable for | Art.no. | € |
|--|-----------------|--------------------|---------------|
| HEPA filter attachment incl. cartridge | Ultra-Jet 1 & 2 | 984901 3337 | 739.00 |
| Replacement cartridge DIN EN 60335-2-69:2008 H | Ultra-Jet 1 & 2 | 984901 3338 | 309.00 |



WE'RE THERE WHEN

YOU NEED US.

NO MATTER WHERE:

24-HOUR DELIVERY ACROSS EUROPE

THAT'S POWER TO PRODUCE

SARA® Chip and emulsion vacuum cleaner

NEW

- **Mobile vacuum cleaner for removing coarse particles from liquids as well as clearing up spills and wet chips**
- **A fully automatic bypass process is used to treat the liquid, with no staff intervention involved (simultaneous suction and drainage possible)**
- Removable chip basket for quick and easy disposal of foreign matter (Ø 3 mm perforated sheet)
- Permanent fill level monitoring by means of a viewing tube on the container
- Mechanical float device
- Safety filter cloth with ring – hydrophobic & oleophobic properties
- Fluid drained by an integrated immersion pump
- Colour: RAL 7035 (light grey)
- **Supplied with:** 3 m suction hose, 2 pcs. hand tube, floor nozzle with rubber edges, crevice nozzle, PEM pump hose with 1" ball valve, aluminium hose holder and utensil box
- **Pricing:** ex works, including packaging



Standard version

- Max. intake air: 360 m³/h

| Storage capacity l | Air quantity m ³ /h | Negative pressure mbar | Motor output kW | Voltage V | Dimensions L x W x H mm | Weight kg | Art.no. | € |
|-----------------------|-----------------------------------|---------------------------|--------------------|--------------|----------------------------|--------------|-------------|----------|
| 80 | 360 | 220 | 2 x 1.1 kW | 230 | 970 x 580 x 1300 | 55 | 908040 0001 | 3,389.00 |

SARA® Compressed air chip and wet vacuum cleaner

NEW

- **Mobile compressed air vacuum cleaner for removing coarse particles from liquids as well as clearing up spills and wet chips**
- Removable chip basket for quick and easy disposal of foreign matter (Ø 3 mm perforated sheet)
- Permanent fill level monitoring by means of a viewing tube on the container
- Mechanical float device
- Filter system with built-in stainless steel wire mesh Ø 200 mm x 100 mm as droplet separator
- Integrated separator funnel with cyclone pre-separator to protect the filter device
- Suspended silencer Sz. 4 with protective cover
- Chassis with stable release device to raise and lower the collection container beneath the filter container
- Colour: RAL 7035 (light grey)
- **Supplied with:** 3 m suction hose, 3 pcs. hand tube, aluminium floor nozzle, crevice nozzle, aluminium hose holder and utensil box
- **Pricing:** ex works, including packaging



Standard version

- Max. intake air: 280 m³/h
- Air requirement: 1.33 m³/h
- Air consumption: 80 Nm³/h

| Storage capacity l | Air quantity m ³ /h | Negative pressure mbar | Operating pressure bar | Compressed air connection bar | Dimensions L x W x H mm | Weight kg | Art.no. | € |
|-----------------------|-----------------------------------|---------------------------|---------------------------|----------------------------------|----------------------------|--------------|-------------|----------|
| 80 | 280 | 340 | 6 | 1/2" | 880 x 800 x 1500 | 75 | 908020 0001 | 3,499.00 |

SARA® High-performance lubricating coolant concentrate

- **Water-miscible**

UNI SC101

- With high additivation
- Universal for all materials
- Suitable for internal coolant supply and high pressure
- **Chlorine and formaldehyde-free**
- Application concentration 3 - 5%
- pH value at 5% concentration approx. 9.2
- Refractometer reading 1.4

| Description | Contents l | Art.no. | € |
|-------------|---------------|--------------------|-----------------|
| Canister | 5.0 | 943001 0005 | 68.50 |
| Canister | 10.0 | 943001 0010 | 128.00 |
| Canister | 25.0 | 943001 0025 | 219.00 |
| Canister | 60.0 | 943001 0060 | 519.00 |
| Barrel | 215.0 | 943001 0200 | 1,599.00 |

HEAVY SC201

- Especially for difficult-to-machine and high-strength materials, difficult aluminium alloys and non-ferrous metals
- **Free from chlorine, boric acid, amines and formaldehyde**
- Application concentration 5 - 9%
- pH value at 5% concentration approx. 8.5
- Refractometer reading 1.0

| Description | Contents l | Art.no. | € |
|-------------|---------------|--------------------|-----------------|
| Canister | 5.0 | 943002 0005 | 76.10 |
| Canister | 10.0 | 943002 0010 | 139.50 |
| Canister | 25.0 | 943002 0025 | 238.00 |
| Canister | 60.0 | 943002 0060 | 549.00 |
| Barrel | 215.0 | 943002 0200 | 1,719.00 |

HPC SC301

- **Ester-based**
- Especially for high-performance machining (HPC)
- Suitable for internal coolant supply and high pressure
- **Free from secondary amines, chlorine, mineral oil and formaldehyde**
- Application concentration 5 - 9%
- pH value at 5% concentration approx. 8.9 - 9.3
- Refractometer reading 1.56

| Description | Contents l | Art.no. | € |
|-------------|---------------|--------------------|-----------------|
| Canister | 5.0 | 943003 0005 | 77.10 |
| Canister | 10.0 | 943003 0010 | 143.50 |
| Canister | 25.0 | 943003 0025 | 245.00 |
| Canister | 60.0 | 943003 0060 | 569.00 |
| Barrel | 215.0 | 943003 0200 | 1,779.00 |

HI-GRIND SC401

- **Synthetic**
- Transparent
- Excellent rinsability, prevents smearing on tool surfaces
- High and stable corrosion protection
- **Free from chlorine, silicone, formaldehyde and boric acid**
- Application concentration 3 - 5%
- pH value at 5% concentration approx. 9.1
- Refractometer reading 2.75

| Description | Contents l | Art.no. | € |
|-------------|---------------|--------------------|-----------------|
| Canister | 5.0 | 943004 0005 | 77.10 |
| Canister | 10.0 | 943004 0010 | 143.50 |
| Canister | 25.0 | 943004 0025 | 245.00 |
| Canister | 60.0 | 943004 0060 | 569.00 |
| Barrel | 215.0 | 943004 0200 | 1,779.00 |

NEW

**Particularly appropriate
for NC and CNC centres**



If you want to change your cutting fluid, scan the QR code and create your requirement profile.

**Specially for grinding a
wide range
of substances**

Elephant mat

- **The durable mat, roll material**
- High wear and tear resistance
- Keeps walkways and standing areas clean and safe
- Absorbs oil, coolants, solvents and water
- **Price per pack**

**Extremely hard-wearing
and absorbent**



Roll material

| Type | Dimensions | Contents | Absorption capacity | Art.no. | € |
|---------|--------------|----------|---------------------|--------------------|---------------|
| MAT 234 | 84 cm x 46 m | 1 roll | 87 l | 910110 0006 | 250.00 |



Oil-Only mat (white)

- **The special white mat absorbs oil only, no water**
- Made of polypropylene, absorbs oil drops and leaks
- Water-resistant, which means it is also suitable for outdoor use. Absorption capacity is not affected by rain
- The exceptionally hard-wearing 4-in-1[®] mats (MAT484 and MAT435) can be used as an underlay, roll, wipe and absorbent sock
- **Price per pack**



Mats

| Type | Dimensions | Thickness | Contents | Absorption capacity | Art.no. | € |
|----------|------------|---------------------|-----------------|---------------------|--------------------|---------------|
| MAT 415 | 38 x 51 cm | Double thickness | 50 in box | 42 l | 911001 0010 | 56.00 |
| MAT 4101 | 41 x 51 cm | Quadruple thickness | 50 in box | 84 l | 911001 0013 | 114.50 |
| MAT 440 | 38 x 51 cm | Medium | 100 in box | 84 l | 918009 0013 | 114.00 |
| MAT 403 | 38 x 51 cm | Double thickness | 100 in box | 84 l | 911001 0011 | 107.00 |
| MAT 460 | 38 x 51 cm | Medium | 125 pcs. in bag | 83 l | 918009 0021 | 107.00 |
| MAT 423 | 38 x 51 cm | Single thickness | 200 in box | 84 l | 911001 0001 | 107.00 |



MAT 401

Roll material

| Type | Dimensions | Thickness | Contents | Absorption capacity | Art.no. | € |
|----------|--------------|---------------------|----------|---------------------|--------------------|---------------|
| MAT 401 | 76 cm x 46 m | Double thickness | 1 roll | 152 l | 911010 0012 | 182.00 |
| MAT 4102 | 81 cm x 23 m | Quadruple thickness | 1 roll | 152 l | 911010 0013 | 193.50 |
| MAT 461 | 76 cm x 61 m | Medium | 1 roll | 161 l | 918009 0022 | 182.00 |



MAT 484

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