

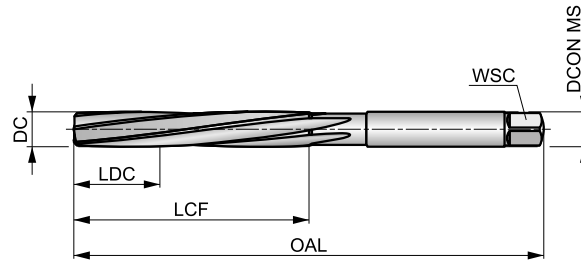


B100



HSS Straight Shank Hand Reamer with H7 Accuracy, Bright and ST Finish

Primarily designed for reaming by hand. It has a precision ground, left-hand helix with right-hand (clockwise) cutting for smooth reaming, creating a more accurate hole size and good surface finish. Suitable for reaming many materials, including steels.



| | | |
|-----|-----------|---------|
| HSS | Bright ST | DIN 206 |
| R | | B |
| H7 | | |

Workpiece material group suitability, starting values for cutting speed (m/min) and feed Alpha Code. Tables with feed per revolution can be found starting from page 251.

| | | | | | | | | | | | | | |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| P1.1 | P1.2 | P1.3 | P2.1 | P2.2 | P2.3 | P3.1 | P3.2 | P3.3 | P4.1 | P4.2 | P4.3 | M1.1 | M1.2 |
| ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| M2.1 | K1.1 | K1.2 | K1.3 | K2.1 | K2.2 | K2.3 | K3.1 | K3.2 | N1.1 | N1.2 | N1.3 | N2.1 | N2.2 |
| ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| N2.3 | N3.1 | N3.2 | N3.3 | N4.1 | N4.2 | | | | | | | | |
| ■ | ■ | ■ | ■ | ■ | ■ | | | | | | | | |

DCON MS tolerance e9.

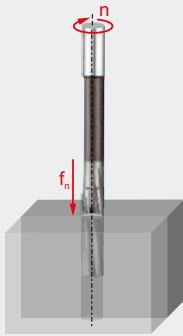
| Product | DC [inch] | DC [mm] | OAL [mm] | LCF [mm] | LDC [mm] | NOF | WSC [mm] | DCON MS [mm] |
|-----------|-----------|---------|----------|----------|----------|-----|----------|--------------|
| B1001.5 | – | 1.50 | 41.0 | 20.0 | 5.00 | 3 | 1.12 | 1.50 |
| B1001/16 | 1/16 | 1.59 | 41.0 | 20.0 | 5.00 | 3 | 1.12 | 1.59 |
| B1001.6 | – | 1.60 | 44.0 | 21.0 | 5.00 | 3 | 1.25 | 1.60 |
| B1005/64 | 5/64 | 1.98 | 47.0 | 23.0 | 6.00 | 4 | 1.40 | 1.98 |
| B1002.0 | – | 2.00 | 50.0 | 25.0 | 6.00 | 4 | 1.60 | 2.00 |
| B1003/32 | 3/32 | 2.38 | 54.0 | 27.0 | 7.00 | 4 | 1.80 | 2.38 |
| B1002.5 | – | 2.50 | 58.0 | 29.0 | 7.00 | 4 | 2.10 | 2.50 |
| B1007/64 | 7/64 | 2.78 | 62.0 | 31.0 | 8.00 | 6 | 2.10 | 2.78 |
| B1003.0 | – | 3.00 | 62.0 | 31.0 | 8.00 | 6 | 2.40 | 3.00 |
| B1001/8 | 1/8 | 3.18 | 66.0 | 33.0 | 8.00 | 6 | 2.40 | 3.18 |
| B1003.2 | – | 3.20 | 66.0 | 33.0 | 8.00 | 6 | 2.40 | 3.20 |
| B1003.5 | – | 3.50 | 71.0 | 35.0 | 9.00 | 6 | 2.70 | 3.50 |
| B1009/64 | 9/64 | 3.57 | 71.0 | 35.0 | 9.00 | 6 | 2.70 | 3.57 |
| B1005/32 | 5/32 | 3.97 | 76.0 | 38.0 | 10.00 | 6 | 3.00 | 3.97 |
| B1004.0 | – | 4.00 | 76.0 | 38.0 | 10.00 | 6 | 3.00 | 4.00 |
| B10011/64 | 11/64 | 4.37 | 81.0 | 41.0 | 10.00 | 6 | 3.40 | 4.37 |
| B1004.5 | – | 4.50 | 81.0 | 41.0 | 10.00 | 6 | 3.40 | 4.50 |
| B1003/16 | 3/16 | 4.76 | 87.0 | 44.0 | 11.00 | 6 | 3.80 | 4.76 |
| B1005.0 | – | 5.00 | 87.0 | 44.0 | 11.00 | 6 | 3.80 | 5.00 |
| B10013/64 | 13/64 | 5.16 | 87.0 | 44.0 | 11.00 | 6 | 3.80 | 5.16 |
| B1005.5 | – | 5.50 | 93.0 | 47.0 | 12.00 | 6 | 4.30 | 5.50 |
| B1007/32 | 7/32 | 5.56 | 93.0 | 47.0 | 12.00 | 6 | 4.30 | 5.56 |
| B10015/64 | 15/64 | 5.95 | 93.0 | 47.0 | 12.00 | 6 | 4.90 | 5.95 |
| B1006.0 | – | 6.00 | 93.0 | 47.0 | 12.00 | 6 | 4.90 | 6.00 |
| B1001/4 | 1/4 | 6.35 | 100.0 | 50.0 | 13.00 | 6 | 4.90 | 6.35 |
| B1006.5 | – | 6.50 | 100.0 | 50.0 | 13.00 | 6 | 4.90 | 6.50 |
| B10017/64 | 17/64 | 6.75 | 107.0 | 54.0 | 14.00 | 6 | 5.50 | 6.75 |



| Product | DC | DC | OAL | LCF | LDC | NOF | WSC | DCON MS |
|-----------|--------|-------|-------|-------|-------|-----|-------|---------|
| | [inch] | [mm] | [mm] | [mm] | [mm] | | [mm] | [mm] |
| B1007.0 | – | 7.00 | 107.0 | 54.0 | 14.00 | 6 | 5.50 | 7.00 |
| B1009/32 | 9/32 | 7.14 | 107.0 | 54.0 | 14.00 | 6 | 6.20 | 7.14 |
| B1007.5 | – | 7.50 | 107.0 | 54.0 | 14.00 | 6 | 6.20 | 7.50 |
| B10019/64 | 19/64 | 7.54 | 115.0 | 58.0 | 15.00 | 6 | 6.20 | 7.54 |
| B1005/16 | 5/16 | 7.94 | 115.0 | 58.0 | 15.00 | 6 | 6.20 | 7.94 |
| B1008.0 | – | 8.00 | 115.0 | 58.0 | 15.00 | 6 | 6.20 | 8.00 |
| B10021/64 | 21/64 | 8.33 | 115.0 | 58.0 | 15.00 | 6 | 7.00 | 8.33 |
| B1008.5 | – | 8.50 | 115.0 | 58.0 | 15.00 | 6 | 7.00 | 8.50 |
| B10011/32 | 11/32 | 8.73 | 124.0 | 62.0 | 16.00 | 6 | 7.00 | 8.73 |
| B1009.0 | – | 9.00 | 124.0 | 62.0 | 16.00 | 6 | 7.00 | 9.00 |
| B10023/64 | 23/64 | 9.13 | 124.0 | 62.0 | 16.00 | 6 | 8.00 | 9.13 |
| B1009.5 | – | 9.50 | 124.0 | 62.0 | 16.00 | 6 | 8.00 | 9.50 |
| B1003/8 | 3/8 | 9.52 | 124.0 | 62.0 | 17.00 | 6 | 8.00 | 9.52 |
| B10025/64 | 25/64 | 9.92 | 133.0 | 66.0 | 17.00 | 6 | 8.00 | 9.92 |
| B10010.0 | – | 10.00 | 133.0 | 66.0 | 17.00 | 6 | 8.00 | 10.00 |
| B10013/32 | 13/32 | 10.32 | 133.0 | 66.0 | 17.00 | 6 | 8.00 | 10.32 |
| B10010.5 | – | 10.50 | 133.0 | 66.0 | 17.00 | 6 | 8.00 | 10.50 |
| B10011.0 | – | 11.00 | 142.0 | 71.0 | 18.00 | 6 | 9.00 | 11.00 |
| B1007/16 | 7/16 | 11.11 | 142.0 | 71.0 | 18.00 | 6 | 9.00 | 11.11 |
| B10011.5 | – | 11.50 | 142.0 | 71.0 | 18.00 | 6 | 9.00 | 11.50 |
| B10012.0 | – | 12.00 | 152.0 | 76.0 | 19.00 | 6 | 9.00 | 12.00 |
| B10012.5 | – | 12.50 | 152.0 | 76.0 | 19.00 | 6 | 10.00 | 12.50 |
| B1001/2 | 1/2 | 12.70 | 152.0 | 76.0 | 19.00 | 6 | 10.00 | 12.70 |
| B10013.0 | – | 13.00 | 152.0 | 76.0 | 19.00 | 6 | 10.00 | 13.00 |
| B10017/32 | 17/32 | 13.49 | 163.0 | 81.0 | 20.00 | 8 | 11.00 | 13.49 |
| B10013.5 | – | 13.50 | 163.0 | 81.0 | 20.00 | 8 | 11.00 | 13.50 |
| B10014.0 | – | 14.00 | 163.0 | 81.0 | 20.00 | 8 | 11.00 | 14.00 |
| B1009/16 | 9/16 | 14.29 | 163.0 | 81.0 | 20.00 | 8 | 11.00 | 14.29 |
| B10014.5 | – | 14.50 | 163.0 | 81.0 | 20.00 | 8 | 11.00 | 14.50 |
| B10015.0 | – | 15.00 | 163.0 | 81.0 | 20.00 | 8 | 12.00 | 15.00 |
| B10019/32 | 19/32 | 15.08 | 163.0 | 81.0 | 22.00 | 8 | 12.00 | 15.08 |
| B1005/8 | 5/8 | 15.88 | 175.0 | 87.0 | 22.00 | 8 | 12.00 | 15.88 |
| B10016.0 | – | 16.00 | 175.0 | 87.0 | 22.00 | 8 | 12.00 | 16.00 |
| B10017.0 | – | 17.00 | 175.0 | 87.0 | 22.00 | 8 | 13.00 | 17.00 |
| B10011/16 | 11/16 | 17.46 | 188.0 | 93.0 | 23.00 | 8 | 14.50 | 17.46 |
| B10018.0 | – | 18.00 | 188.0 | 93.0 | 23.00 | 8 | 14.50 | 18.00 |
| B10019.0 | – | 19.00 | 188.0 | 93.0 | 23.00 | 8 | 14.50 | 19.00 |
| B1003/4 | 3/4 | 19.05 | 188.0 | 93.0 | 25.00 | 8 | 14.50 | 19.05 |
| B10020.0 | – | 20.00 | 201.0 | 100.0 | 25.00 | 8 | 16.00 | 20.00 |
| B10013/16 | 13/16 | 20.64 | 201.0 | 100.0 | 25.00 | 8 | 16.00 | 20.64 |
| B10021.0 | – | 21.00 | 201.0 | 100.0 | 25.00 | 8 | 16.00 | 21.00 |
| B10022.0 | – | 22.00 | 215.0 | 107.0 | 27.00 | 8 | 18.00 | 22.00 |
| B1007/8 | 7/8 | 22.22 | 215.0 | 107.0 | 27.00 | 8 | 18.00 | 22.22 |
| B10023.0 | – | 23.00 | 215.0 | 107.0 | 27.00 | 8 | 18.00 | 23.00 |
| B10024.0 | – | 24.00 | 231.0 | 115.0 | 29.00 | 8 | 18.00 | 24.00 |
| B10025.0 | – | 25.00 | 231.0 | 115.0 | 29.00 | 8 | 20.00 | 25.00 |
| B1001 | 1" | 25.40 | 231.0 | 115.0 | 29.00 | 8 | 20.00 | 25.40 |
| B10026.0 | – | 26.00 | 231.0 | 115.0 | 29.00 | 8 | 20.00 | 26.00 |
| B10027.0 | – | 27.00 | 247.0 | 124.0 | 31.00 | 10 | 22.00 | 27.00 |
| B10028.0 | – | 28.00 | 247.0 | 124.0 | 31.00 | 10 | 22.00 | 28.00 |
| B10029.0 | – | 29.00 | 247.0 | 124.0 | 31.00 | 10 | 22.00 | 29.00 |
| B10030.0 | – | 30.00 | 247.0 | 124.0 | 31.00 | 10 | 24.00 | 30.00 |
| B10031.0 | – | 31.00 | 265.0 | 133.0 | 33.00 | 10 | 24.00 | 31.00 |
| B10032.0 | – | 32.00 | 265.0 | 133.0 | 33.00 | 10 | 24.00 | 32.00 |
| B10033.0 | – | 33.00 | 265.0 | 133.0 | 33.00 | 10 | 26.00 | 33.00 |
| B10034.0 | – | 34.00 | 284.0 | 142.0 | 36.00 | 10 | 26.00 | 34.00 |
| B10035.0 | – | 35.00 | 284.0 | 142.0 | 36.00 | 10 | 29.00 | 35.00 |
| B10036.0 | – | 36.00 | 284.0 | 142.0 | 36.00 | 10 | 29.00 | 36.00 |
| B10037.0 | – | 37.00 | 284.0 | 142.0 | 36.00 | 10 | 29.00 | 37.00 |
| B10038.0 | – | 38.00 | 305.0 | 152.0 | 38.00 | 10 | 29.00 | 38.00 |
| B10039.0 | – | 39.00 | 305.0 | 152.0 | 38.00 | 10 | 32.00 | 39.00 |
| B10040.0 | – | 40.00 | 305.0 | 152.0 | 38.00 | 10 | 32.00 | 40.00 |
| B10045.0 | – | 45.00 | 326.0 | 163.0 | 41.00 | 12 | 35.00 | 45.00 |
| B10050.0 | – | 50.00 | 347.0 | 174.0 | 44.00 | 12 | 39.00 | 50.00 |



REAMERS FEED RATE CHART

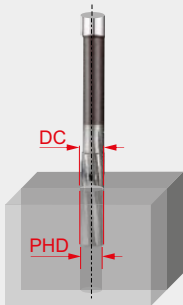


Feed per revolution (f_n in mm/rev)
Depending on the working conditions
it might be necessary to adjust these
values $\pm 15\%$.

How to use this table to find the feed per revolution (f_n):

1. Find your Alpha Code on the product page (example: 21C, "C" is the Alpha Code).
2. Find the closest diameter for your cutting application in the top row of the table.
3. Find your Alpha Code in the left column of the table.
4. The intersection (cell) of the Diameter and Alpha Code is the feed per revolution (f_n).

| | | \varnothing DC [mm] | | | | | | | | | | | | | | | | | | |
|------------|---|-----------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | | 1.00 | 1.50 | 2.00 | 3.00 | 4.00 | 5.00 | 6.00 | 7.00 | 8.00 | 10.00 | 12.00 | 15.00 | 16.00 | 20.00 | 25.00 | 30.00 | 40.00 | 50.00 | 80.00 |
| Feed rates | A | 0.030 | 0.045 | 0.055 | 0.078 | 0.090 | 0.100 | 0.125 | 0.137 | 0.150 | 0.170 | 0.185 | 0.210 | 0.220 | 0.250 | 0.280 | 0.320 | 0.390 | 0.440 | 0.500 |
| | B | 0.035 | 0.055 | 0.072 | 0.110 | 0.130 | 0.150 | 0.165 | 0.172 | 0.180 | 0.210 | 0.240 | 0.270 | 0.280 | 0.310 | 0.360 | 0.400 | 0.500 | 0.550 | 0.600 |
| | C | 0.040 | 0.065 | 0.085 | 0.135 | 0.160 | 0.185 | 0.200 | 0.210 | 0.220 | 0.260 | 0.285 | 0.325 | 0.335 | 0.390 | 0.440 | 0.480 | 0.600 | 0.680 | 0.750 |
| | D | 0.050 | 0.080 | 0.110 | 0.160 | 0.180 | 0.200 | 0.235 | 0.253 | 0.270 | 0.320 | 0.360 | 0.400 | 0.410 | 0.470 | 0.540 | 0.600 | 0.730 | 0.850 | 0.950 |
| | E | 0.065 | 0.100 | 0.140 | 0.180 | 0.215 | 0.250 | 0.300 | 0.325 | 0.350 | 0.390 | 0.430 | 0.485 | 0.500 | 0.530 | 0.640 | 0.750 | 0.910 | 1.100 | 1.200 |
| | F | 0.090 | 0.140 | 0.180 | 0.260 | 0.305 | 0.350 | 0.395 | 0.417 | 0.440 | 0.500 | 0.550 | 0.610 | 0.630 | 0.700 | 0.800 | 0.930 | 1.200 | 1.500 | 1.650 |



Machining allowance when using
a **machine reamer** (MA in mm)
Premachined hole diameter
 $PHD = DC - MA$.

How to use this table to get to the right premachined hole diameter (PHD):

1. Find the diameter range for your cutting application in the top row of the table.
2. Find your ISO Group Code in the left column of the table (example: For Stainless Steel the ISO Group Code is "M")
3. The intersection (cell) of the Diameter Range and ISO Group Code is the Machining Allowance (MA)
4. Subtract the Machining Allowance from the reaming diameter to get to the premachined hole diameter (PHD).

(example: for a 6mm hole in steel (P) the PHD is 5.85mm)

| | | \varnothing DC [mm] | | | | | | | | | | | | | | | |
|-----------|---|-----------------------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|------|--|--|------|
| | | 1.00 | 5.00 | 5.00 | 8.00 | 8.00 | 12.00 | 12.00 | 16.00 | 16.00 | 30.00 | 30.00 | 80.00 | | | | |
| ISO group | P | 0.10 | | | 0.15 | | | 0.20 | | | 0.20 | | | 0.30 | | | 0.30 |
| | M | 0.08 | | | 0.10 | | | 0.10 | | | 0.20 | | | 0.20 | | | 0.30 |
| | K | 0.10 | | | 0.15 | | | 0.20 | | | 0.20 | | | 0.30 | | | 0.30 |
| | N | 0.10 | | | 0.15 | | | 0.20 | | | 0.20 | | | 0.30 | | | 0.30 |
| | S | 0.05 | | | 0.10 | | | 0.10 | | | 0.15 | | | 0.20 | | | 0.20 |
| | H | 0.05 | | | 0.05 | | | 0.10 | | | 0.10 | | | 0.15 | | | 0.20 |

Be cautious with the machining tolerances of drills, the tool diameter is not the same as the hole diameter produced!

Note: The recommended allowance when using a hand reamer is 0.05 to 0.10 mm.



WMG (WORK MATERIAL GROUP)

| ISO group | WMG (Work Material Group) | Hardness (HB or HRC) | Ultimate Tensile Strength (MPa) | | | |
|-----------|---------------------------|------------------------|---|--|---------------|---------------|
| P | P1 | P1.1 | Sulfurized | < 240 HB | ≤ 830 | |
| | | P1.2 | Free machining steel | Sulfurized and phosphorized | < 180 HB | ≤ 620 |
| | | P1.3 | (carbon steels with increased machinability) | Sulfurized/phosphorized and leaded | < 180 HB | ≤ 620 |
| | P2 | P2.1 | Plain carbon steel (steels comprised of mainly iron and carbon) | Containing <0.25 % C | < 180 HB | ≤ 620 |
| | | P2.2 | | Containing <0.55 % C | < 240 HB | ≤ 830 |
| | | P2.3 | | Containing >0.55 % C | < 300 HB | ≤ 1030 |
| | P3 | P3.1 | Alloy steel (carbon steels with an alloying content ≤ 10%) | Annealed | < 180 HB | ≤ 620 |
| | | P3.2 | | Hardened and tempered | 180 – 260 HB | > 620 ≤ 900 |
| | | P3.3 | | | 260 – 360 HB | > 900 ≤ 1240 |
| | P4 | P4.1 | Tool steel (special alloy steel for tools, dies and molds) | Annealed | < 26 HRC | ≤ 900 |
| P4.2 | | Hardened and tempered | | 26 – 39 HRC | > 900 ≤ 1240 | |
| P4.3 | | | | 39 – 45 HRC | > 1240 ≤ 1450 | |
| M | M1 | M1.1 | Ferritic stainless steel (straight chromium non-hardenable alloys) | < 160 HB | ≤ 520 | |
| | | M1.2 | | 160 – 220 HB | > 520 ≤ 700 | |
| | M2 | M2.1 | Martensitic stainless steel (straight chromium hardenable alloys) | Annealed | < 200 HB | ≤ 670 |
| | | M2.2 | | Quenched and tempered | 200 – 280 HB | > 670 ≤ 950 |
| | | M2.3 | | Precipitation-hardened | 280 – 380 HB | > 950 ≤ 1300 |
| | M3 | M3.1 | Austenitic stainless steel (chromium-nickel and chromium-nickel-manganese alloys) | < 200 HB | ≤ 750 | |
| | | M3.2 | | 200 – 260 HB | > 750 ≤ 870 | |
| | | M3.3 | | 260 – 300 HB | > 870 ≤ 1040 | |
| | M4 | M4.1 | Austenitic-ferritic (DUPLEX) or super-austenitic stainless steel | < 300 HB | ≤ 990 | |
| | | M4.2 | | Precipitation hardening austenitic stainless steel | 300 – 380 HB | ≤ 1320 |
| K | K1 | K1.1 | Gray iron or Automotive Gray iron (GG) (iron-carbon castings with a lamellar graphite microstructure) | Ferritic or ferritic-pearlitic | < 180 HB | ≤ 190 |
| | | K1.2 | | Ferritic-pearlitic or pearlitic | 180 – 240 HB | > 190 ≤ 310 |
| | | K1.3 | | Pearlitic | 240 – 280 HB | > 310 ≤ 390 |
| | K2 | K2.1 | Malleable iron (GTS/GTW) (iron-carbon castings with a graphite-free microstructure) | Ferritic | < 160 HB | ≤ 400 |
| | | K2.2 | | Ferritic or pearlitic | 160 – 200 HB | > 400 ≤ 550 |
| | | K2.3 | | Pearlitic | 200 – 240 HB | > 550 ≤ 660 |
| | K3 | K3.1 | Ductile iron (GGG) (iron-carbon castings with a nodular graphite microstructure) | Ferritic | < 180 HB | ≤ 560 |
| | | K3.2 | | Ferritic or pearlitic | 180 – 220 HB | > 560 ≤ 680 |
| | | K3.3 | | Pearlitic | 220 – 260 HB | > 680 ≤ 800 |
| | K4 | K4.1 | Austenitic gray iron (ASTM A436) (iron-carbon alloy castings with an austenitic lamellar graphite microstructure) | < 180 HB | ≤ 190 | |
| | | K4.2 | | Austenitic ductile iron (ASTM A439 or ASTM A571) (iron-carbon alloy castings with an austenitic nodular graphite microstructure) | < 240 HB | ≤ 740 |
| | | K4.3 | | | < 280 HB | > 840 ≤ 980 |
| | | K4.4 | | | 280 – 320 HB | > 980 ≤ 1130 |
| | | K4.5 | | | 320 – 360 HB | > 1130 ≤ 1280 |
| | K5 | K5.1 | Compacted graphite iron CGI (ASTM A842) (iron-carbon castings with a vermicular graphite structure) | Ferritic | < 180 HB | ≤ 400 |
| K5.2 | | Ferritic-pearlitic | | 180 – 220 HB | > 400 ≤ 450 | |
| K5.3 | | Pearlitic | | 220 – 260 HB | > 450 ≤ 500 | |
| N | N1 | N1.1 | Commercially pure wrought aluminium | < 60 HB | ≤ 240 | |
| | | N1.2 | | Half hard tempered | 60 – 100 HB | > 240 ≤ 400 |
| | | N1.3 | | Full hard tempered | 100 – 150 HB | > 400 ≤ 590 |
| | N2 | N2.1 | Cast aluminium alloys | < 75 HB | ≤ 240 | |
| | | N2.2 | | 75 – 90 HB | > 240 ≤ 270 | |
| | | N2.3 | | 90 – 140 HB | > 270 ≤ 440 | |
| | N3 | N3.1 | Free-cutting copper-alloys materials with excellent machining properties | – | – | |
| | | N3.2 | | Short-chip copper-alloys with good to moderate machining properties | – | – |
| | | N3.3 | | Electrolytic copper and long-chip copper-alloys with moderate to poor machining properties | – | – |
| | N4 | N4.1 | Reinforced polymers or composites | – | – | |
| | | N4.2 | | Thermoplastic polymers | – | – |
| | | N4.3 | | Thermosetting polymers | – | – |
| | N5 | N5.1 | Graphite | – | – | |
| | S | S1 | S1.1 | Titanium or titanium alloys | < 200 HB | ≤ 660 |
| | | | S1.2 | | 200 – 280 HB | > 660 ≤ 950 |
| S1.3 | | | 280 – 360 HB | | > 950 ≤ 1200 | |
| S2 | | S2.1 | Fe-based high-temperature alloys | < 200 HB | ≤ 690 | |
| | | S2.2 | | 200 – 280 HB | > 690 ≤ 970 | |
| S3 | | S3.1 | Ni-based high-temperature alloys | < 280 HB | ≤ 940 | |
| | | S3.2 | | 280 – 360 HB | > 940 ≤ 1200 | |
| S4 | | S4.1 | Co-based high-temperature alloys | < 240 HB | ≤ 800 | |
| | S4.2 | 240 – 320 HB | | > 800 ≤ 1070 | | |
| H | H1 | H1.1 | Chilled cast iron | < 440 HB | – | |
| | | H1.2 | | < 55 HRC | – | |
| | H2 | H2.1 | Hardened cast iron | > 55 HRC | – | |
| | | H2.2 | | < 51 HRC | – | |
| | H3 | H3.1 | Hardened steel <55 HRC | 51 – 55 HRC | – | |
| | | H3.2 | | < 55 HRC | – | |
| H4 | H4.1 | Hardened steel >55 HRC | 55 – 59 HRC | – | | |
| | H4.2 | | > 59 HRC | – | | |