

NPA

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New Product Announcement No. 2015-07



TWIN RUSH

New Large Diameter Drilling Solution with
an Interchangeable Head and Inserts



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TWIN•RUSH

TaeguTec, the market leader for indexable drills, is pleased to introduce the TWINRUSH for large diameter hole machining – a new product that guarantees excellent performance and high productivity.

On first glance, the noticeable feature of the TWINRUSH joins together a centering insert with a pair of precise square inserts on either side in order to combine two different drill types onto one drill body and protects them with TaeguTec's TT9080 PVD multi-layered coated grade.

The centering insert is TaeguTec's revolutionary and highly popular DRILLRUSH indexable head which enables precision self-centered machining for achieving hole concentricity.

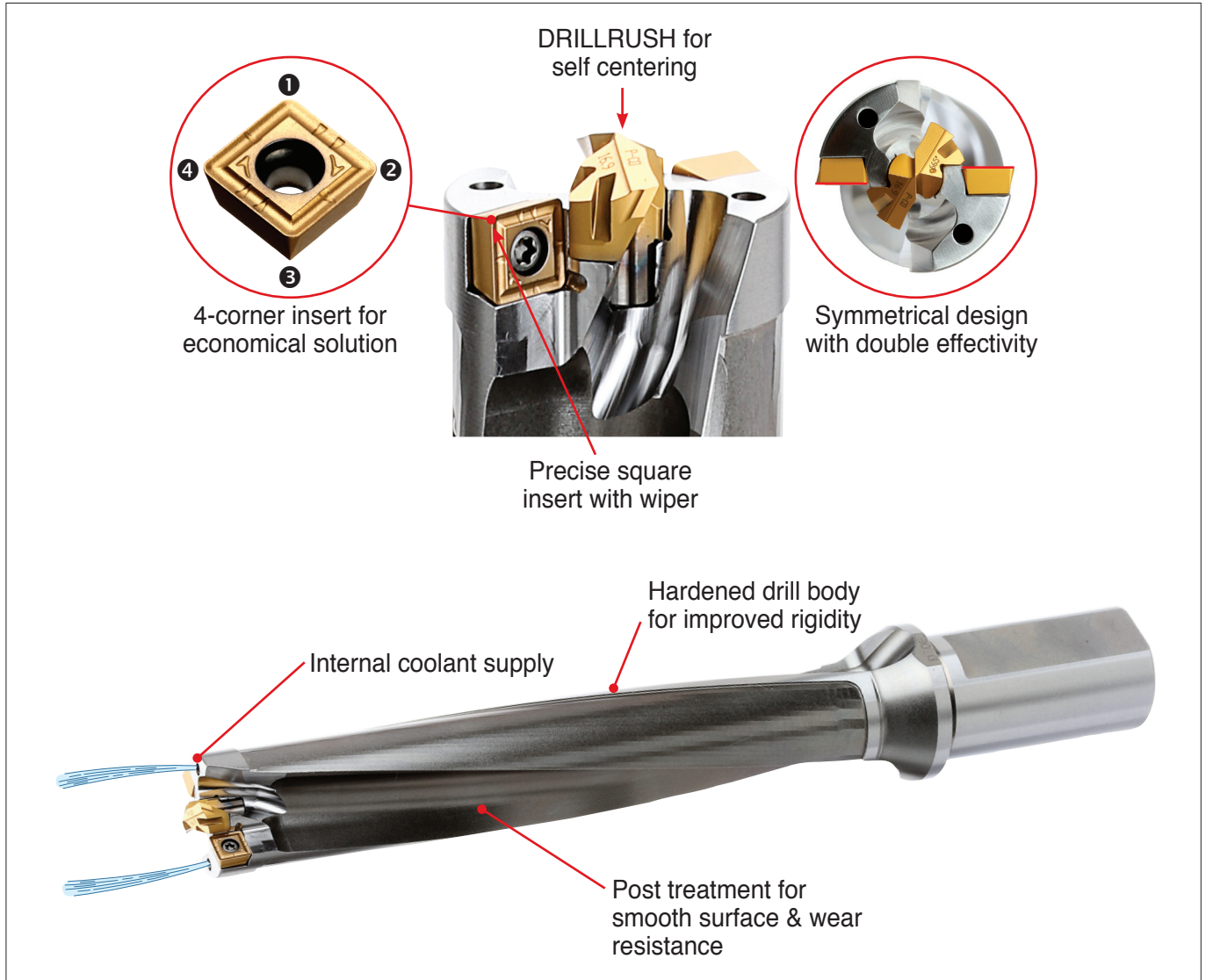
Both outer inserts are a newly designed economical 4-corner SPGX type that comes equipped with a wiper ground area that promotes improved surface roughness. When compared to conventional inner/outer indexable type drills, the SPGX type inserts offer double the productivity because of their symmetrical alignment.

Further benefits include an internal through hole coolant system, a hardened body for rigidity, smooth surface and wear resistance due to the drill's post-treatment process.

The TWINRUSH comes in a diameter range from 26.0 to 45.0mm and 5xD drilling depth of cut and is available as standard items.

FEATURES

- **Double effective design means higher productivity**
- **Precise 4-corner insert with wiper**
- **High hole accuracy (IT10-11) & premium surface finish**
- **Excellent chip control**
- **Improved body rigidity**
- **Direct drilling without a pilot hole**
- **Cost effective solution**
- **Drill diameter : 26.0-45.0mm (in 1.0mm increments) / Drilling depth : 5xD**
- **Capable of deep hole drilling and large hole diameter machining**



Availability

In stock

Price

Available in the GAL system

Sincerely,
TaeguTec

Park Hong-sik

Rotating & Non-Rotating Product Manager

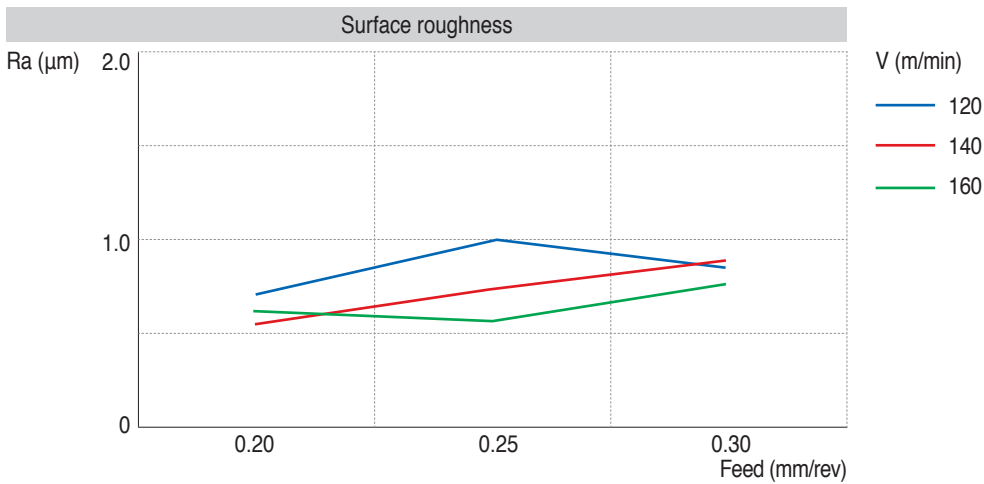
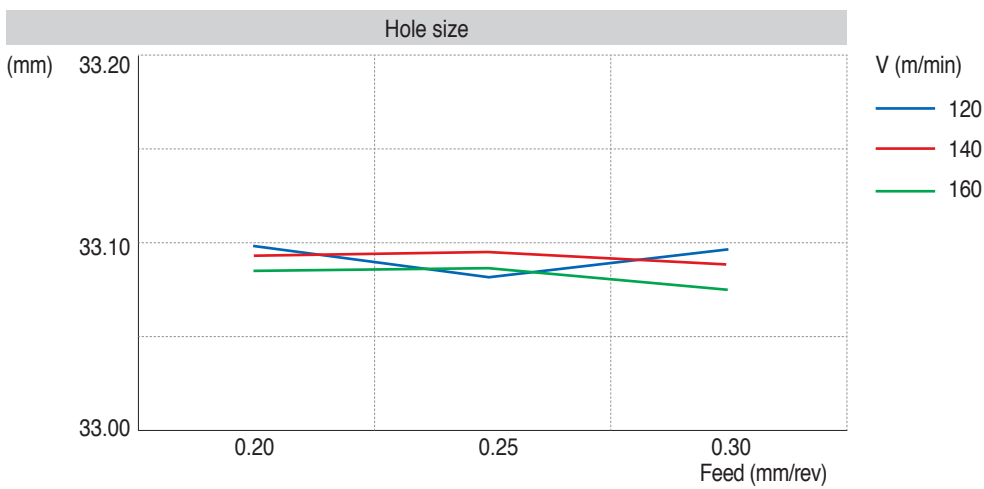
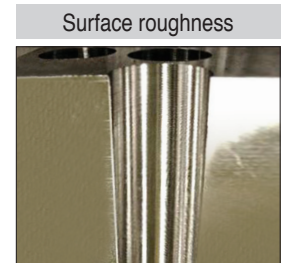
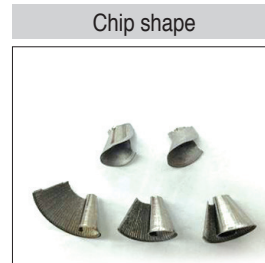
Sincerely,
TaeguTec

Sung Chang-ho

Hole Making Product Manager

Case study 1 - Performance test

| | | |
|-----------------|--|----------------|
| Machine | Vertical machining center (Spindle : BT50) | |
| Coolant | Internal (10bar) | |
| Material | SAE 4340 | |
| Drill | TCD 330-165-32T2-5D (Ø33.0) | |
| Head | TCD-169-P-CO TT9080 SPXG 090408 DW TT9080 | |
| Cutting speed | V (m/min) | 120/140/160 |
| Feed rate | f (mm/rev) | 0.20/0.25/0.30 |
| Hole depth (mm) | 150 (Through hole) | |

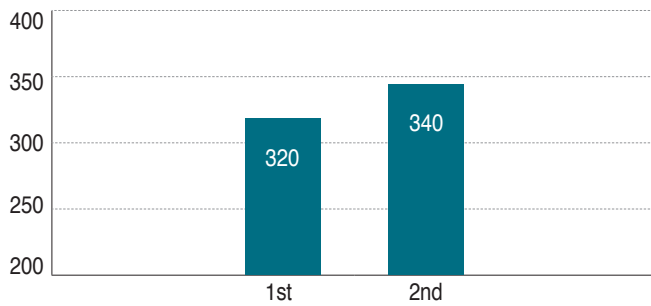


• Results may vary according to machine and cutting conditions

Case study 2 - Tool life on alloy steel

| | | |
|-----------------|--|------|
| Machine | Vertical machining center (Spindle : BT50) | |
| Coolant | Internal (10bar) | |
| Material | Alloy steel (AISI 4140) | |
| Drill | TCD 330-165-32T2-5D (Ø33.0) | |
| Head | TCD-169-P-CO TT9080 SPXG 090408 DW TT9080 | |
| Cutting speed | V (m/min) | 140 |
| Feed rate | f (mm/rev) | 0.25 |
| Hole depth (mm) | 150 (Through hole) | |

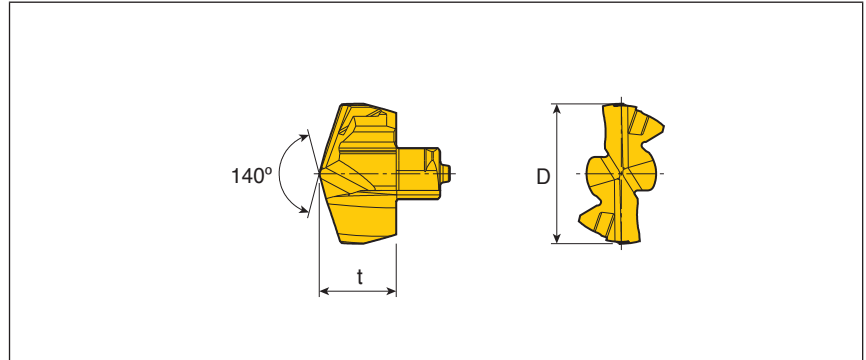
Tool life
(holes/insert)



• Results may vary according to machine and cutting conditions

TCD...P-CO

Drill head

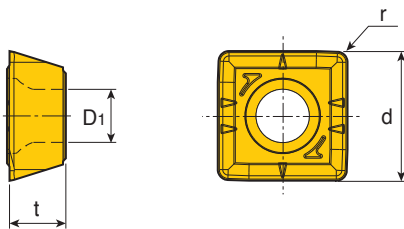


| Designation | Dimension (mm) | | | Grade TT9080 |
|-----------------------|----------------|------|-------------|-----------------|
| | D | t | Pocket size | |
| TCD - 159-P-CO | 15.9 | 8.7 | 15 | ● |
| 169-P-CO | 16.9 | 9.3 | 16 | ● |
| 179-P-CO | 17.9 | 9.9 | 17 | ● |
| 189-P-CO | 18.9 | 10.5 | 18 | ● |
| 199-P-CO | 19.9 | 11.0 | 19 | ● |
| 209-P-CO | 20.9 | 11.6 | 20 | ● |
| 219-P-CO | 21.9 | 12.1 | 21 | ● |
| 229-P-CO | 22.9 | 12.7 | 22 | ● |
| 239-P-CO | 23.9 | 13.3 | 23 | ● |
| 249-P-CO | 24.9 | 13.7 | 24 | ● |

● : Standard items

SPGX...DW

Insert



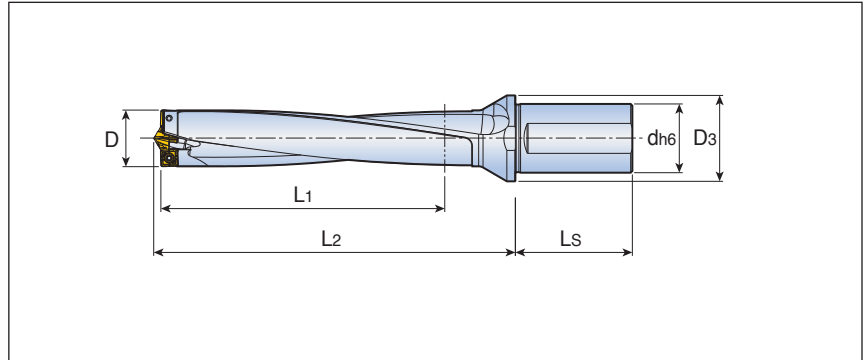
| Size | Dimension (mm) | | | |
|-----------|----------------|------|-----|------|
| | d | t | r | D1 |
| 06 | 6.07 | 2.38 | 0.4 | 2.61 |
| 07 | 8.02 | 3.97 | 0.8 | 2.85 |
| 09 | 9.91 | 4.30 | 0.8 | 4.05 |
| 11 | 11.62 | 4.80 | 0.8 | 4.45 |
| 14 | 14.41 | 5.20 | 1.2 | 5.75 |
| | | | | |

| Insert | Designation | Coated |
|--------|-----------------------|--------|
| | | TT9080 |
| | SPGX 060204 DW | ● |
| | 07T308 DW | ● |
| | 090408 DW | ● |
| | 110408 DW | ● |
| | 140512 DW | ● |

● : Standard items

TND...T2-5D

Head changeable drill holder - Weldon type shank





- Drilling depth: 5xdiameter

| Designation | Dimension (mm) | | | | | | Clamping key | Insert | |
|----------------------------|----------------|----|----|-----|-------|----|--------------|--------------|---------------|
| | D | d | D3 | L1 | L2 | Ls | | Center | Outer |
| TND 260-130-32T2-5D | 26 | 32 | 40 | 130 | 167.7 | 60 | K TCD D15-CO | TCD-159-P-CO | SPGX 06...DW |
| 270-135-32T2-5D | 27 | 32 | 40 | 135 | 173.8 | 60 | K TCD D16-CO | TCD-169-P-CO | |
| 280-140-32T2-5D | 28 | 32 | 40 | 140 | 179.9 | 60 | K TCD D17-CO | TCD-179-P-CO | |
| 290-145-32T2-5D | 29 | 32 | 40 | 145 | 184.2 | 60 | K TCD D15-CO | TCD-159-P-CO | SPGX 07... DW |
| 300-150-32T2-5D | 30 | 32 | 40 | 150 | 190.3 | 60 | K TCD D16-CO | TCD-169-P-CO | |
| 310-155-32T2-5D | 31 | 32 | 40 | 155 | 196.4 | 60 | K TCD D17-CO | TCD-179-P-CO | |
| 320-160-32T2-5D | 32 | 32 | 40 | 160 | 202.5 | 60 | K TCD D18-CO | TCD-189-P-CO | SPGX 09... DW |
| 330-165-40T2-5D | 33 | 40 | 50 | 165 | 210.2 | 68 | K TCD D15-CO | TCD-159-P-CO | |
| 340-170-40T2-5D | 34 | 40 | 50 | 170 | 216.3 | 68 | K TCD D16-CO | TCD-169-P-CO | |
| 350-175-40T2-5D | 35 | 40 | 50 | 175 | 222.4 | 68 | K TCD D17-CO | TCD-179-P-CO | SPGX 11... DW |
| 360-180-40T2-5D | 36 | 40 | 50 | 180 | 228.5 | 68 | K TCD D18-CO | TCD-189-P-CO | |
| 370-185-40T2-5D | 37 | 40 | 50 | 185 | 232.8 | 68 | K TCD D16-CO | TCD-169-P-CO | |
| 380-190-40T2-5D | 38 | 40 | 50 | 190 | 238.9 | 68 | K TCD D17-CO | TCD-179-P-CO | SPGX 11... DW |
| 390-195-40T2-5D | 39 | 40 | 50 | 195 | 245.0 | 68 | K TCD D18-CO | TCD-189-P-CO | |
| 400-200-40T2-5D | 40 | 40 | 50 | 200 | 251.0 | 68 | K TCD D19-CO | TCD-199-P-CO | |
| 410-205-40T2-5D | 41 | 40 | 50 | 205 | 257.1 | 68 | K TCD D20-CO | TCD-209-P-CO | SPGX 11... DW |
| 420-210-40T2-5D | 42 | 40 | 50 | 210 | 263.1 | 68 | K TCD D21-CO | TCD-219-P-CO | |
| 430-215-40T2-5D | 43 | 40 | 50 | 215 | 269.2 | 68 | K TCD D22-CO | TCD-229-P-CO | |
| 440-220-40T2-5D | 44 | 40 | 50 | 220 | 275.3 | 68 | K TCD D23-CO | TCD-239-P-CO | SPGX 11... DW |
| 450-225-40T2-5D | 45 | 40 | 50 | 225 | 281.2 | 68 | K TCD D24-CO | TCD-249-P-CO | |

- Intermediate sizes are available upon request

Spare parts

| Designation | Screw | Wrench | | | |
|-----------------------|---|---|--|--|--|
| |  |  | | | |
| TND 260-280-5D | TS 22052I/HG | TD 7 | | | |
| TND 290-320-5D | TS 25064I | TD 8 | | | |
| TND 330-360-5D | TS 35088I | TD 10 | | | |
| TND 370-450-5D | TS 40093I | TD 15 | | | |
| | | | | | |
| | | | | | |

Recommended cutting conditions

| ISO | Material | Condition | Tensile strength (N/mm ²) | Hardness HB | Material No. | Cutting speed Vc (m/min) | Feed (mm/rev) vs. drill diameter | | | | |
|-----------------------|--|--------------------------------|---------------------------------------|-------------|--------------|--------------------------|----------------------------------|-----------------|-----------------|-----------------|-----------------|
| | | | | | | | SPGX 06 Ø26-Ø28 | SPGX 07 Ø29-Ø32 | SPGX 09 Ø33-Ø36 | SPGX 11 Ø37-Ø43 | SPGX 11 Ø44-Ø45 |
| P | Non-alloy steel, cast steel, free cutting steel | <0.25%C Annealed | 420 | 125 | 1 | 120-200 | 0.20-0.35 | 0.25-0.35 | 0.2-0.40 | 0.25-0.40 | 0.28-0.45 |
| | | >=0.25%C Annealed | 650 | 190 | 2 | 120-200 | 0.20-0.35 | 0.25-0.35 | 0.2-0.40 | 0.25-0.40 | 0.28-0.45 |
| | | <0.55%C Quenched and tempered | 850 | 250 | 3 | 130-190 | 0.20-0.35 | 0.25-0.35 | 0.2-0.40 | 0.25-0.40 | 0.28-0.45 |
| | | >=0.55%C Annealed | 750 | 220 | 4 | 130-190 | 0.20-0.35 | 0.25-0.35 | 0.2-0.40 | 0.25-0.40 | 0.28-0.45 |
| | | >=0.55%C Quenched and tempered | 1000 | 300 | 5 | 130-190 | 0.20-0.35 | 0.25-0.35 | 0.2-0.40 | 0.25-0.40 | 0.28-0.45 |
| | Low alloy steel and cast steel (Less than 5% of alloying elements) | Annealed | 600 | 200 | 6 | 100-200 | 0.20-0.33 | 0.25-0.33 | 0.25-0.36 | 0.25-0.36 | 0.25-0.40 |
| | | Quenched and tempered | 930 | 275 | 7 | 100-200 | 0.20-0.33 | 0.25-0.33 | 0.25-0.36 | 0.25-0.36 | 0.25-0.40 |
| | | | 1000 | 300 | 8 | 100-200 | 0.20-0.33 | 0.25-0.33 | 0.25-0.36 | 0.25-0.36 | 0.25-0.40 |
| | | | 1200 | 350 | 9 | 100-200 | 0.20-0.33 | 0.25-0.33 | 0.25-0.36 | 0.25-0.36 | 0.25-0.40 |
| | High alloy steel, cast steel and tool steel | Annealed | 680 | 200 | 10 | 100-160 | 0.20-0.33 | 0.25-0.33 | 0.25-0.36 | 0.25-0.36 | 0.25-0.40 |
| Quenched and tempered | | 1100 | 325 | 11 | 100-160 | 0.20-0.33 | 0.25-0.33 | 0.25-0.36 | 0.25-0.36 | 0.25-0.40 | |
| M | Stainless steel and cast steel | Ferritic / martensitic | 680 | 200 | 12 | 80-140 | 0.12-0.24 | 0.15-0.24 | 0.16-0.25 | 0.18-0.28 | 0.18-0.30 |
| | | Martensitic | 820 | 240 | 13 | 80-140 | 0.12-0.24 | 0.15-0.24 | 0.16-0.25 | 0.18-0.28 | 0.18-0.30 |
| | | Austenitic | 600 | 180 | 14 | 80-140 | 0.12-0.24 | 0.15-0.24 | 0.16-0.25 | 0.18-0.28 | 0.18-0.30 |
| K | Gray cast iron (GG) | Ferritic | | 160 | 15 | 100-250 | 0.25-0.45 | 0.15-0.24 | 0.30-0.50 | 0.30-0.50 | 0.35-0.55 |
| | | Pearlitic | | 250 | 16 | 100-250 | 0.25-0.45 | 0.15-0.24 | 0.30-0.50 | 0.30-0.50 | 0.35-0.55 |
| | Cast iron nodular (GGG) | Ferritic | | 180 | 17 | 100-250 | 0.25-0.45 | 0.15-0.24 | 0.30-0.50 | 0.30-0.50 | 0.35-0.55 |
| | | Pearlitic | | 260 | 18 | 100-250 | 0.25-0.45 | 0.15-0.24 | 0.30-0.50 | 0.30-0.50 | 0.35-0.55 |
| | Malleable cast iron | Ferritic | | 130 | 19 | 100-250 | 0.25-0.45 | 0.15-0.24 | 0.30-0.50 | 0.30-0.50 | 0.35-0.55 |
| | | Pearlitic | | 230 | 20 | 100-250 | 0.25-0.45 | 0.15-0.24 | 0.30-0.50 | 0.30-0.50 | 0.35-0.55 |
| N | Aluminum - Wrought alloy | Not cureable | | 60 | 21 | 160-260 | 0.30-0.50 | 0.30-0.50 | 0.35-0.55 | 0.05-0.55 | 0.40-0.60 |
| | | Cured | | 100 | 22 | 160-260 | 0.30-0.50 | 0.30-0.50 | 0.35-0.55 | 0.05-0.55 | 0.40-0.60 |
| | Aluminum-cast, alloyed | <=12% Si Not cureable | | 75 | 23 | 160-260 | 0.30-0.50 | 0.30-0.50 | 0.35-0.55 | 0.05-0.55 | 0.40-0.60 |
| | | Cured | | 90 | 24 | 160-260 | 0.30-0.50 | 0.30-0.50 | 0.35-0.55 | 0.05-0.55 | 0.40-0.60 |
| | | >12% Si High temp. | | 130 | 25 | 160-260 | 0.30-0.50 | 0.30-0.50 | 0.35-0.55 | 0.05-0.55 | 0.40-0.60 |
| | Copper alloys | >1% Pb Free cutting | | 110 | 26 | 160-260 | 0.30-0.50 | 0.30-0.50 | 0.35-0.55 | 0.05-0.55 | 0.40-0.60 |
| | | Brass | | 90 | 27 | 160-260 | 0.30-0.50 | 0.30-0.50 | 0.35-0.55 | 0.05-0.55 | 0.40-0.60 |
| | | Electrolitic copper | | 100 | 28 | 160-260 | 0.30-0.50 | 0.30-0.50 | 0.35-0.55 | 0.05-0.55 | 0.40-0.60 |
| | Non-metallic | Duroplastics, fiber plastics | | | 29 | | | | | | |
| | | Hard rubber | | | 30 | | | | | | |
| S | High temp. alloys | Fe based Annealed | | 200 | 31 | 30-60 | 0.10-0.16 | 0.10-0.18 | 0.15-0.20 | 0.15-0.22 | 0.16-0.24 |
| | | Cured | | 280 | 32 | 30-80 | 0.10-0.16 | 0.10-0.18 | 0.15-0.20 | 0.15-0.22 | 0.16-0.24 |
| | | Ni or Co based Annealed | | 250 | 33 | 30-80 | 0.10-0.16 | 0.10-0.18 | 0.15-0.20 | 0.15-0.22 | 0.16-0.24 |
| | | Cured | | 350 | 34 | 30-80 | 0.10-0.16 | 0.10-0.18 | 0.15-0.20 | 0.15-0.22 | 0.16-0.24 |
| | | Cast | | 320 | 35 | 30-80 | 0.10-0.16 | 0.10-0.18 | 0.15-0.20 | 0.15-0.22 | 0.16-0.24 |
| | Titanium, Ti alloys | | Rm 400 | | 36 | 30-80 | 0.10-0.16 | 0.10-0.18 | 0.15-0.20 | 0.15-0.22 | 0.16-0.24 |
| | Alpha+beta alloys cured | | Rm 1050 | | 37 | 30-80 | 0.10-0.16 | 0.10-0.18 | 0.15-0.20 | 0.15-0.22 | 0.16-0.24 |
| H | Hardened steel | Hardened | | 55HRC | 38 | 20-50 | 0.10-0.16 | 0.12-0.18 | 0.14-0.20 | 0.14-0.20 | 0.16-0.22 |
| | | Hardened | | 60HRC | 39 | 20-50 | 0.10-0.16 | 0.12-0.18 | 0.14-0.20 | 0.14-0.20 | 0.16-0.22 |
| | Chilled cast iron | Cast | | 400 | 40 | | | | | | |
| | Cast iron nodular | Hardened | | 55HRC | 41 | | | | | | |

■ Steel
 ■ Stainless steel
 ■ Cast iron
 ■ Nonferrous
 ■ High temp. alloys
 ■ Hardened steel