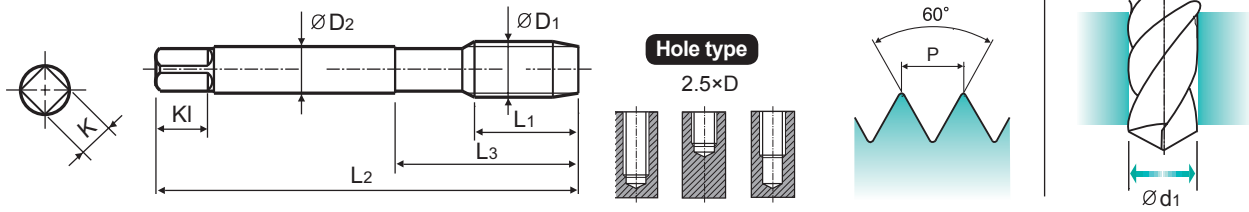


M ISO Metric coarse threads DIN 13

- 🇩🇪 **Metrisches ISO-Gewinde DIN 13**
- 🇫🇷 **ISO MÉTRIQUE DIN13**
- 🇮🇹 **ISO Metrico passo grosso DIN 13**

► For using multi-purpose and correct thread profiles & long tool life due to special tap geometry. YG-1 company has a patent.

► Für vielfältigen Einsatz, genaue Gewindeprofile und lange Standzeit dank einer besonderen Schneidengeometrie. Von YG-1 patentiert.



Machine taps
Maschinengewindebohrer

Recommended Cutting Page : P.114

Unit : mm

| SIZE | Pitch | EDP No. | | | Thread Length | Overall Length | Neck Length | Shank Diameter | Square Size | Square Length | No. of Flute | Tapping Drill Diameter |
|-------------|-------|----------|----------|----------|---------------|----------------|-------------|----------------|-------------|---------------|--------------|------------------------|
| | | Vap | Bright | TiN | | | | | | | | |
| ØD1 | P | | | | L1 | L2 | L3 | ØD2 | K | KI | Z | Ød1 |
| M2 × 0.4 | | TB804136 | TC804136 | TD804136 | 8 | 45 | 13 | 2.8 | 2.1 | 5 | 3 | 1.6 |
| M2.2 × 0.45 | | TB804156 | TC804156 | TD804156 | 8 | 45 | 13 | 2.8 | 2.1 | 5 | 3 | 1.75 |
| M2.3 × 0.4 | | TB804196 | TC804196 | TD804196 | 8 | 45 | 13 | 2.8 | 2.1 | 5 | 3 | 1.9 |
| M2.5 × 0.45 | | TB804176 | TC804176 | TD804176 | 9 | 50 | 15 | 2.8 | 2.1 | 5 | 3 | 2.05 |
| M2.6 × 0.45 | | TB804496 | TC804496 | TD804496 | 9 | 50 | 15 | 2.8 | 2.1 | 5 | 3 | 2.1 |
| M3 × 0.5 | | TB804206 | TC804206 | TD804206 | 6 | 56 | 18 | 3.5 | 2.7 | 6 | 3 | 2.5 |
| M3.5 × 0.6 | | TB804226 | TC804226 | TD804226 | 7 | 56 | 20 | 4 | 3 | 6 | 3 | 2.9 |
| M4 × 0.7 | | TB804246 | TC804246 | TD804246 | 7 | 63 | 21 | 4.5 | 3.4 | 6 | 3 | 3.3 |
| M4.5 × 0.75 | | TB804266 | TC804266 | TD804266 | 8 | 70 | 25 | 6 | 4.9 | 8 | 3 | 3.7 |
| M5 × 0.8 | | TB804286 | TC804286 | TD804286 | 8 | 70 | 25 | 6 | 4.9 | 8 | 3 | 4.2 |
| M6 × 1 | | TB804316 | TC804316 | TD804316 | 10 | 80 | 30 | 6 | 4.9 | 8 | 3 | 5 |
| M7 × 1 | | TB804346 | TC804346 | TD804346 | 10 | 80 | 30 | 7 | 5.5 | 8 | 3 | 6 |
| M8 × 1.25 | | TB804366 | TC804366 | TD804366 | 13 | 90 | 35 | 8 | 6.2 | 9 | 3 | 6.8 |
| M9 × 1.25 | | TB804396 | TC804396 | TD804396 | 13 | 90 | 35 | 9 | 7 | 10 | 3 | 7.8 |
| M10 × 1.5 | | TB804426 | TC804426 | TD804426 | 15 | 100 | 39 | 10 | 8 | 11 | 3 | 8.5 |
| M11 × 1.5 | | TB804466 | TC804466 | TD804466 | 17 | 100 | 40 | 8 | 6.2 | 9 | 3 | 9.5 |
| M12 × 1.75 | | TB804506 | TC804506 | TD804506 | 18 | 110 | 44 | 9 | 7 | 10 | 3 | 10.2 |
| M14 × 2 | | TB804546 | TC804546 | TD804546 | 20 | 110 | 44 | 11 | 9 | 12 | 3 | 12 |
| M16 × 2 | | TB804606 | TC804606 | TD804606 | 20 | 110 | 44 | 12 | 9 | 12 | 3 | 14 |
| M18 × 2.5 | | TB804656 | TC804656 | TD804656 | 25 | 125 | 50 | 14 | 11 | 14 | 4 | 15.5 |
| M20 × 2.5 | | TB804706 | TC804706 | TD804706 | 25 | 140 | 54 | 16 | 12 | 15 | 4 | 17.5 |
| M22 × 2.5 | | TB804746 | TC804746 | TD804746 | 25 | 140 | 54 | 18 | 14.5 | 17 | 4 | 19.5 |
| M24 × 3 | | TB804786 | TC804786 | TD804786 | 30 | 160 | 60 | 18 | 14.5 | 17 | 4 | 21 |
| M27 × 3 | | TB804866 | TC804866 | TD804866 | 30 | 160 | 60 | 20 | 16 | 19 | 4 | 24 |
| M30 × 3.5 | | TB804946 | TC804946 | TD804946 | 35 | 180 | 70 | 22 | 18 | 21 | 4 | 26.5 |

►DIN 371(M2~M10) and DIN 376(M11~M30)

* The other coating(TiCN or TiAlN) is available on your request.

◎ : Excellent ○ : Good

| ISO | P | | | | | | | | | | M | | | | K | | | | | | |
|-------------|------------------------|-----|-----|------------------------|-----|-----------------|---|-----|-----|------------------------|------------------------------------|-----|-----------------------------|-----|----------------|-----------------|-------------------|-----|---------------------|-------------------|--------------------|
| | Non-alloy steel | | | | | Low alloy steel | | | | | High alloyed steel, and tool steel | | Stainless steel | | Grey cast iron | | Nodular cast iron | | Malleable cast iron | | |
| VDI 3323 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | |
| HRC | | 13 | 25 | 28 | 32 | 10 | 29 | 32 | 38 | 15 | 35 | 15 | 23 | 10 | 10 | 26 | 3 | 25 | | 21 | |
| HB | 125 | 190 | 250 | 270 | 300 | 180 | 275 | 300 | 350 | 200 | 325 | 200 | 240 | 180 | 180 | 260 | 160 | 250 | 130 | 230 | |
| Recommended | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ○ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | |
| ISO | N | | | | | | | | | S | | | | | | H | | | | | |
| | Aluminum-wrought alloy | | | Aluminum-cast, alloyed | | | Copper and Copper Alloys (Bronze / Brass) | | | Non Metallic Materials | | | Heat Resistant Super Alloys | | | Titanium Alloys | | | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| HRC | | | | | | | | | | | 15 | 30 | 25 | 38 | 34 | | | 55 | 60 | 42 | 55 |
| HB | 60 | 100 | 75 | 90 | 130 | 110 | 90 | 100 | | | 200 | 280 | 250 | 350 | 320 | 400Rm | 1050Rm | 550 | 630 | 400 | 550 |
| Recommended | | | ◎ | | | ◎ | ◎ | ◎ | | | | | | | | | | | | | |



COMBO TAPS

RECOMMENDED CUTTING CONDITIONS EMPFOHLENE SCHNEIDKONDITIONEN

| ISO | VDI 3323 | Material Description | HB | HRc | TC804 | TD804 | TB804 | TCE05 | TDE05 | TBE05 | TCE06 | TDE06 |
|--|---|----------------------|-------|-------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------|-------|-------|
| | | | | | TC844 TC824 TC864 | TD844 TD824 TD864 | TB844 TB824 TB864 | TCE09 TCE01 TCE02 | TDE09 TDE01 TDE02 | | | |
| | | | | | Vc (m/min) | | | | | | | |
| COMBO TAPS YG TAP GENERAL YG TAP STEEL YG TAP HARDENED YG TAP INOX | P | Non-alloy steel | 125 | | 15-20 | 20-25 | 15-20 | 15-20 | 20-25 | 15-20 | 15-20 | 20-25 |
| | | | 190 | 13 | 15-20 | 20-25 | 15-20 | 15-20 | 20-25 | 15-20 | 15-20 | 20-25 |
| | | | 250 | 25 | 12-18 | 18-24 | 12-18 | 12-18 | 18-24 | 12-18 | 12-18 | 18-24 |
| | | | 270 | 28 | 10-15 | 15-20 | 10-15 | 10-15 | 15-20 | 10-15 | 10-15 | 15-20 |
| | | | 300 | 32 | 6-10 | 10-14 | 6-10 | 6-10 | 10-14 | 6-10 | 6-10 | 10-14 |
| | Low alloy steel | 180 | 10 | 10-15 | 15-20 | 10-15 | 10-15 | 10-15 | 15-20 | 10-15 | 10-15 | 15-20 |
| | | 275 | 29 | 10-15 | 15-20 | 10-15 | 10-15 | 10-15 | 15-20 | 10-15 | 10-15 | 15-20 |
| | | 300 | 32 | 6-10 | 10-14 | 6-10 | 6-10 | 10-14 | 6-10 | 6-10 | 10-14 | |
| | | 350 | 38 | 3-5 | 5-7 | 3-5 | 3-5 | 5-7 | 3-5 | 3-5 | 5-7 | |
| | | 200 | 15 | 3-5 | 5-7 | 3-5 | 3-5 | 5-7 | 3-5 | 3-5 | 5-7 | |
| | | 325 | 35 | | | | | | | | | |
| M | Stainless steel | 200 | 15 | 7-10 | 10-15 | 7-10 | 7-10 | 10-15 | 7-10 | 7-10 | 10-15 | |
| | | 240 | 23 | 5-8 | 8-11 | 5-8 | 5-8 | 8-11 | 5-8 | 5-8 | 8-11 | |
| | | 180 | 10 | 4-6 | 6-8 | 4-6 | 4-6 | 6-8 | 4-6 | 4-6 | 6-8 | |
| K | Grey cast iron | 180 | 10 | 10-15 | 15-20 | 10-15 | 10-15 | 15-20 | 10-15 | 10-15 | 15-20 | |
| | | 260 | 26 | 5-8 | 8-11 | 5-8 | 5-8 | 8-11 | 5-8 | 5-8 | 8-11 | |
| | Nodular cast iron | 160 | 3 | 10-15 | 15-20 | 10-15 | 10-15 | 15-20 | 10-15 | 10-15 | 15-20 | |
| | | 250 | 25 | 5-8 | 8-11 | 5-8 | 5-8 | 8-11 | 5-8 | 5-8 | 8-11 | |
| | Malleable cast iron | 130 | | | | | | | | | | |
| 230 | 21 | | | | | | | | | | | |
| N | Aluminum-wrought alloy | 60 | | | | | | | | | | |
| | | 100 | | | | | | | | | | |
| | Aluminum-cast, alloyed | 75 | | 15-20 | 20-25 | 15-20 | 15-20 | 20-25 | 15-20 | 15-20 | 20-25 | |
| | | 90 | | | | | | | | | | |
| | 130 | | | | | | | | | | | |
| | Copper and Copper Alloys (Bronze / Brass) | 110 | | 25-35 | 35-40 | 25-35 | 25-35 | 35-40 | 25-35 | 25-35 | 35-40 | |
| | | 90 | | 8-12 | 12-17 | 8-12 | 8-12 | 12-17 | 8-12 | 8-12 | 12-17 | |
| | 100 | | 15-20 | 20-25 | 15-20 | 15-20 | 20-25 | 15-20 | 15-20 | 20-25 | | |
| | Non Metallic Materials | | | | | | | | | | | |
| | | | | | | | | | | | | |
| S | Heat Resistant Super Alloys | 200 | 15 | | | | | | | | | |
| | | 280 | 30 | | | | | | | | | |
| | | 250 | 25 | | | | | | | | | |
| | | 350 | 38 | | | | | | | | | |
| | | 320 | 34 | | | | | | | | | |
| | Titanium Alloys | 400 Rm | | | | | | | | | | |
| | | 1050 Rm | | | | | | | | | | |
| H | Hardened steel | 550 | 55 | | | | | | | | | |
| | | 630 | 60 | | | | | | | | | |
| | Chilled Cast Iron | 400 | 42 | | | | | | | | | |
| | Hardened Cast Iron | 550 | 55 | | | | | | | | | |

SURFACE TREATMENT AND COATING

The applied High Speed Steels holds a grant of good wear resistance and toughness. Therefore YG-1 normally delivers taps with bright and unfinished surface. For certain materials, various surface treatments provide higher advantage in machining.

STEAM TEMPERED - Vap

Steam Tempered is a Fe₃O₄-oxyd-coating which reduces friction between the tool and workpiece, also preventing cold welding.

NITRIDING - NI

Recommend surface treatment for machining materials that affect wear abrasion, such as grey cast iron, alu-alloys with high Si-percentages (more than 10%).

Below are the various surface treatments for excellent finish surfaces suitable for many applications. The surface treatments are produced and developed within the company.

TiN-COATING

TiN-coating yields a hardness of approx. 2,300 HV and also a heat resistant up to approx. 600°C. The current coating is an excellent all-round coating for normal applications.

Colour : Golden Coefficient of friction against steel : 0.4

TiCN-COATING

TiCN takes place of TiN when the conditions require the coating to have a different hardness and toughness.

The TiCN brings advantages for machining very difficult steels or cutting interrupted bores.

The TiCN-coating has a hardness of approx. 3,000 HV, but is heat resistance only holds up to approx. 400°C, meaning that the TiCN needs an excellent cooling system for a long service life.

Colour : Blue-Grey Coefficient of friction against steel : 0.4

TiAlN-COATING

A special coating for machining abrasive materials such as grey cast iron, alu-alloys with silicon, fiber reinforced plastics, etc., or machining at high temperatures with insufficient cooling, or at high speeds ≥ 600 m/min. TiAlN has a hardness of approx. 3,000 HV and is heat resistant up to approx. 800°C.

Colour : Violet-Grey Coefficient of friction against steel : 0.4

Hardslick-COATING

Hardslick combines the advantages of an extremely hard, thermally stable TiAlN-coating with the sliding and lubricating properties of an outer WC/C(Tungsten carbide/carbon)-coating in a novel way. The Hardslick coating has a hardness of approx. 3,000 HV and is temperature-resistant up to approx. 800°C.

Colour : Violet-Grey Coefficient of friction against steel : 0.2

SELECTION GUIDE



HSS-E & HSS-PM COMBO TAPS

For Multi Purpose Tapping
YG-1's Patent

| HOLE TYPE | | Max. 2.5xD Blind Hole | | | | | | |
|------------------------------|------------|--------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| TOOL MATERIAL | | HSS-E | | | | | | |
| CHAMFER LEAD ACC. TO DIN2197 | | C | C | C | C | C | C | |
| FLUTE TYPE | | Spiral Flute | Spiral Flute | Spiral Flute | Spiral Flute | Spiral Flute | Spiral Flute | |
| SPIRAL FLUTE ANGLE | | R40 | R40 | R40 | R40 | R40 | R40 | |
| SERIES | M | DIN371/376 | TC804 (P.76) | TD804 (P.76) | TB804 (P.76) | TCE05 (P.77) | TDE05 (P.77) | TBE05 (P.77) |
| | | DIN352 | | | | | | |
| | | DIN357/LONG | | | | | | |
| | MF | DIN374 | TC844 (P.81) | TD844 (P.81) | TB844 (P.81) | TCE09 (P.83) | TDE09 (P.83) | |
| | | DIN2181 | | | | | | |
| | UNC | DIN371/376 | TC824 (P.91) | TD824 (P.91) | TB824 (P.91) | TCE01 (P.92) | TDE01 (P.92) | |
| | | DIN351 | | | | | | |
| | UNF | DIN371/374 | TC864 (P.93) | TD864 (P.93) | TB864 (P.93) | TCE02 (P.94) | TDE02 (P.94) | |
| | | DIN2181 | | | | | | |
| | BSW | DIN2182/2183 | | | | | | |
| | | DIN351 | | | | | | |
| | G(BSP) | DIN5156/5157 | | | | | | |
| | EG-M | DIN371/376 | | | | | | |
| | EG-UNC | DIN371/376 | | | | | | |
| EG-UNF | DIN371/374 | | | | | | | |
| SURFACE TREATMENT | | Bright | TiN | VAP | Bright | TiN | VAP | |
| MODEL | | | | | | | | |



Please visit
globalyg1.com/mat
for material search

◎ : Excellent ○ : Good

Recommended cutting conditions : P.114

| ISO | VDI 3323 | Material Description | Composition / Structure / Heat Treatment | | HB | HRC | Bright | TiN | VAP | Bright | TiN | VAP | |
|-----|---------------------|---|--|---------------------|---------------------|---------|--------|-----|-----|--------|-----|-----|---|
| P | 1 | Non-alloy steel | About 0.15% C | Annealed | 125 | | ○ | ○ | ○ | ○ | ○ | ○ | |
| | 2 | | About 0.45% C | Annealed | 190 | 13 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | |
| | 3 | | About 0.45% C | Quenched & Tempered | 250 | 25 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | |
| | YG TAP Ti Ni | 4 | Low alloy steel | About 0.75% C | Annealed | 270 | 28 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | | 5 | | About 0.75% C | Quenched & Tempered | 300 | 32 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | YG TAP FORMING | 6 | Low alloy steel | | Annealed | 180 | 10 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| | | 7 | | Quenched & Tempered | 275 | 29 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | |
| | | 8 | | Quenched & Tempered | 300 | 32 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | |
| | | 9 | | Quenched & Tempered | 350 | 38 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | |
| | NUT TAPS | 10 | High alloyed steel, and tool steel | | Annealed | 200 | 15 | ○ | ○ | ○ | ○ | ○ | ○ |
| | | 11 | | Quenched & Tempered | 325 | 35 | | | | | | | |
| M | 12 | Stainless steel | Ferritic / Martensitic | Annealed | 200 | 15 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | |
| | 13 | | Martensitic | Quenched & Tempered | 240 | 23 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | |
| | 14 | | Austenitic | | 180 | 10 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | |
| K | 15 | Grey cast iron | Pearlitic / ferritic | | 180 | 10 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | |
| | 16 | | Pearlitic (Martensitic) | | 260 | 26 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | |
| | 17 | Nodular cast iron | Ferritic | | 160 | 3 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | |
| | 18 | | Pearlitic | | 250 | 25 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | |
| | 19 | | Ferritic | | 130 | | | | | | | | |
| 20 | Malleable cast iron | Pearlitic | | 230 | 21 | | | | | | | | |
| N | 21 | Aluminum-wrought alloy | | Not Curable | 60 | | | | | | | | |
| | 22 | | Curable | Hardened | 100 | | | | | | | | |
| | 23 | Aluminum-cast, alloyed | ≤ 12% Si, Not Curable | | 75 | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | |
| | 24 | | ≤ 12% Si, Curable | Hardened | 90 | | | | | | | | |
| | 25 | | > 12% Si, Not Curable | | 130 | | | | | | | | |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | Cutting Alloys, PB>1% | | 110 | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | |
| | 27 | | CuZn, CuSnZn (Brass) | | 90 | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | |
| | 28 | Non Metallic Materials | CuSn, lead-free copper and electrolytic copper | | 100 | | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | |
| | 29 | | Duroplastic, Fiber Reinforced Plastic | | | | | | | | | | |
| | 30 | | Rubber, Wood, etc. | | | | | | | | | | |
| S | 31 | Heat Resistant Super Alloys | Fe Based | Annealed | 200 | 15 | | | | | | | |
| | 32 | | | Cured | 280 | 30 | | | | | | | |
| | 33 | | Annealed | 250 | 25 | | | | | | | | |
| | 34 | | Cured | 350 | 38 | | | | | | | | |
| | 35 | Titanium Alloys | Ni or Co Based | Cast | 320 | 34 | | | | | | | |
| | 36 | | | Pure Titanium | 400 Rm | | | | | | | | |
| | 37 | | | Alpha + Beta Alloys | Hardened | 1050 Rm | | | | | | | |
| H | 38 | Hardened steel | | Hardened | 550 | 55 | | | | | | | |
| | 39 | | Hardened | 630 | 60 | | | | | | | | |
| | 40 | Hardened Cast Iron | | Cast | 400 | 42 | | | | | | | |
| | 41 | | Hardened | 550 | 55 | | | | | | | | |