YU-PT25 AMERICAS

BEST VALUE IN THE WORLD OF CUTTING TOOLS

# YG TAP PRIME

**HSS-PM(Powder Metallurgy) Premium Taps**

- Spiral Point, Spiral Flute, and Forming Taps for CNC Machines
- High and Reliable Performance in Various Ductile Materials

## Prime X-Coated Tap for CNC Machining in Various Ductile Materials

The special grinding process provides a unique geometry for spiral flute and spiral point taps to optimize chip evacuation, while Forming Taps form threads through material displacement without chip evacuation, resulting in stronger threads and improved surface finish.

Spiral Flute

Spiral Point

## GUIDE TO ICONS

**Working Material**

Material groups MU — Multi-Purpose

**Helix Angle**

R45

**Tool Raw Material**

HSS PM — YG-1 Premium Powder Metallurgy HSS

**Cutting Condition**

**Tap Limits**

H D

**Finish**

X Coating — YG-1 X-Coating

**Thread Angle**

60°

**Chamfer Type**

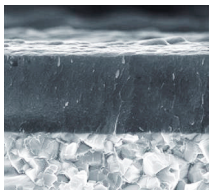
1P~2P 2P~3P 4P~5P

**Thread Designation**

UNC UNF M/MF

# FEATURES & BENEFITS

## High and Reliable Performance on Various Ductile Materials



### YG-1's X-Coating

- **YG-1's High Performance Coating for high heat and wear resistance**

### YG-1 Special Thread Structure

- **Reduction in torque, wear, and the risk of over feeding** as compared to conventional taps

### Extra Short Threaded Body and Recess

- **Minimize bird nesting, reduced chipping, improved thread finish**


### Optimized Edge Preparation

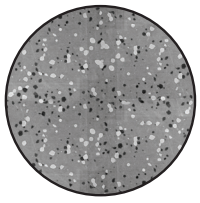
- **Consistent performance and process stability** to prevent chipping

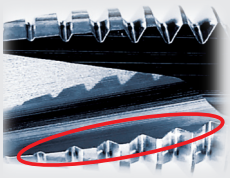
### Optimized Flute Geometry for Excellent Chip Flow

- **Increased tool life as a result of an optimum combination of material, geometry,** and coating which gives unrestricted chip flow

## HSS-PM(Powder Metallurgy) Premium Taps

Powdered Metal Technology for a tough-chipping resistant cutting edge for long tool life and reliable thread finish





## Premium Cutting Edge Strength

- More controlled structure with high wear resistance
- Consistent performance and process stability with chipping resistance

# CASE STUDY

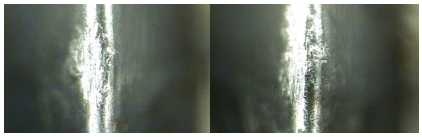
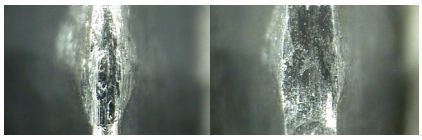
## TEST I FORMING TAP (M6x1.0)

### Cutting Condition

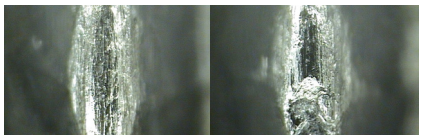
| | |
|---|---|
| **Tool** | Forming Tap |
| **Size** | M6x1.0 |
| **Work Material** | - JIS: SCM440(HRc35)<br>- DIN : 42CrMo4<br>- WR : 1.7225 |
| **SFM** | 22 |
| **Vc** | 33ft/min. |

| | |
|---|---|
| **Feed** | 1.0mm/rev. |
| **Tap Drill Size** | .2161" |
| **Tapping depth** | .4724" |
| **Tapping holes** | 1,000 |
| **Machine** | Machining Center (Horizontal) |

### RESULT 1

| | |
|---|---|
| **YG-1** (1,000 Holes) |  |
| **Competitor** (1,000 Holes) |  |

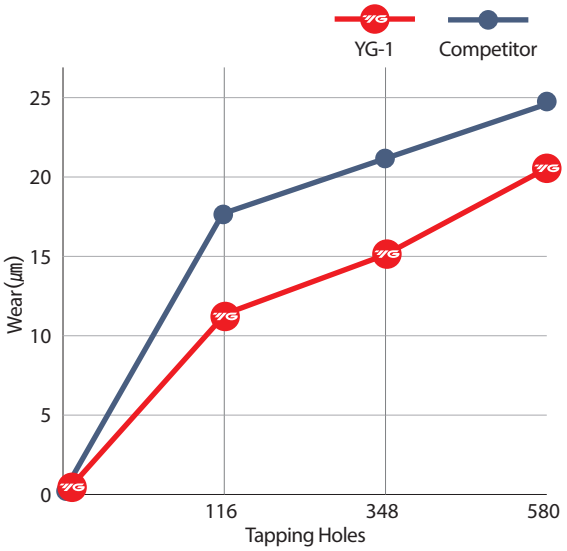
### RESULT 2

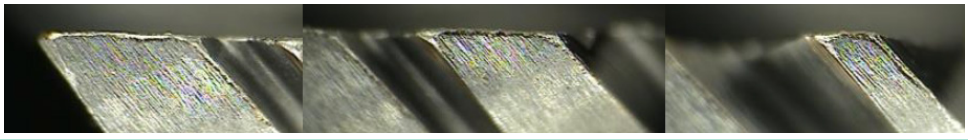
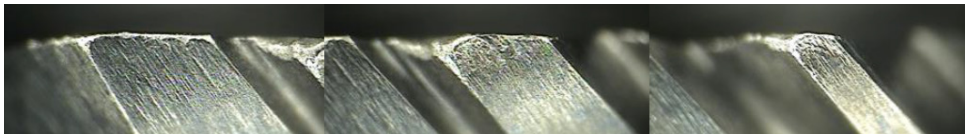
| | |
|---|---|
| **YG-1** (1,000 Holes) |  |
| **Competitor** (1,000 Holes) |  |

## TEST II SPIRAL FLUTE TAP (M4x0.7)

### Cutting Condition

| | |
|---|---|
| **Tool** | Spiral Flute Tap |
| **Size** | M4x0.7 |
| **Work Material** | JIS: SCM440(HRc30) / DIN : 42CrMo4 / WR : 1.7225 |
| **SFM** | 98 |
| **Vc** | 98ft/min |
| **Feed** | 0.7 mm/rev. |
| **Tap Drill Size** | .1299" |
| **Tapping depth** | .3150" |
| **Tapping holes** | 580 |
| **Coolant** | Wet Cut |




| | |
|---|---|
| **YG-1** (580 Holes) |  |
| **Competitor** (580 Holes) |  |

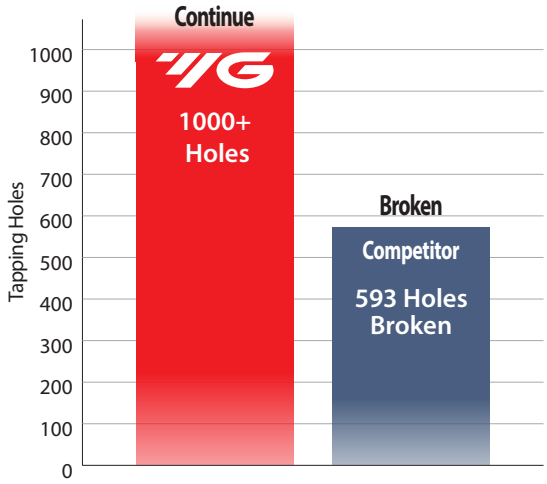

Phone: 800-765-8665 | Technical Support : 888-868-5988 | yg1usa.com

# CASE STUDY

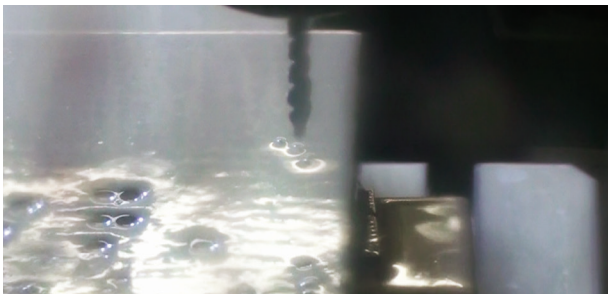
## TEST Ⅲ SPIRAL FLUTE TAP (M6x1.0)

### Cutting Condition

| | |
|---|---|
| Tool | Sprial Flute Tap |
| Size | M6x1.0 |
| Work Material | JIS: SUS304 / DIN: X16CrNi1810 / WR: 1.4350 |
| SFM | 33 |
| Vc | 33ft/min |
| Feed | 1.0mm/rev. |
| Tap Drill Size | .2008" |
| Tapping Depth | .4724" |
| Tapping Holes | YG-1: 1,000+ / Competitor: 593 |
| Coolant | Wet Cut |




**Prime Taps** (1000 Holes+α)

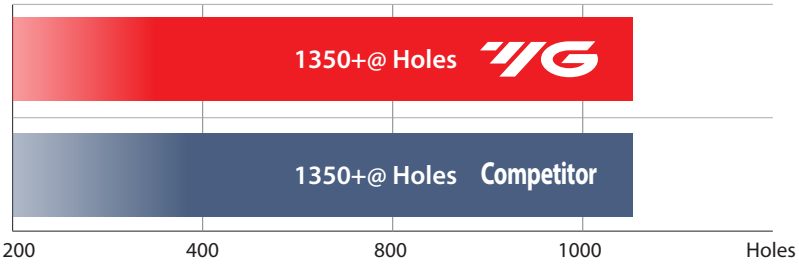


**Competitor** (593 Holes, Broken)

## TEST Ⅳ SPIRAL FLUTE TAP (M8x1.25)

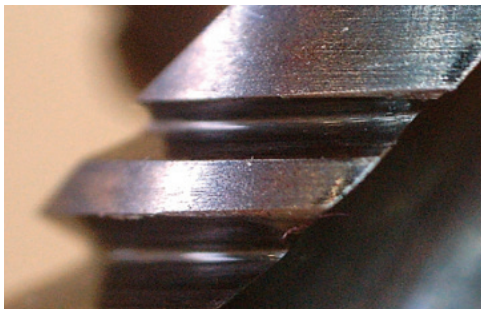
### Cutting Condition

| | |
|---|---|
| Tool | Sprial Flute Tap |
| Size | M8x1.25 |
| Work Material | JIS: S45C / DIN: CK45 / WR: 1.1191 |
| SFM | 66 |
| Vc | 66ft/min |
| Feed | 1.25mm/rev. |
| Tap Drill Size | .2677" |
| Tapping Depth | .6693" |
| Tapping Holes | YG-1: 1,350+@ / Competitor: 1,350+@ |
| Coolant | Wet Cut |

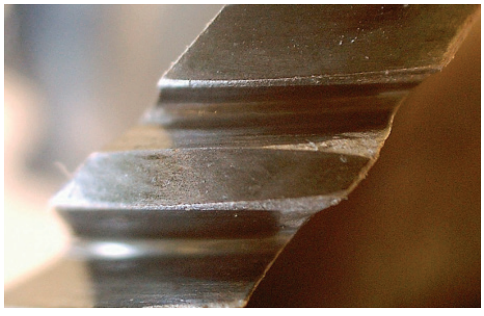



### Comparison of Wear Resistance

YG PRIME TAP



**Competitor**



# SELECTION GUIDE

YG THREADING TOOLS

## HSS-PM

# PRIME TAP

Premium Spiral Point, Spiral Flute, and Forming Taps
High Performance in Various Ductile Materials

Please visit globalyg1.com/mat for material search

◎ : Excellent ○ : Good

| HOLE TYPE | | Max. 2.5xD Blind Hole | | Max. 3.0xD Through Hole |
|---|---|---|---|---|
| TOOL MATERIAL | | HSS-PM | | |
| CHAMFER LEAD ACC. TO DIN2197 | | 2P~3P | 1P~2P | 4P~5P |
| FLUTE TYPE | | Spiral Flute | | Spiral Point |
| SPIRAL FLUTE ANGLE | | R45 | | - |
| M | USCTI 302A | | | |
| M/MF | USCTI 302A | | | |
| | DIN Length-ANSI Shank | **TRF04** | **TRF24** | **TRK04** |
| UNC | USCTI Long Shank | | | |
| UNC/UNF | USCTI 302 | | | |
| | USCTI 302A | | | |
| | DIN Length-ANSI Shank | **TRF14** | **TRF34** | **TRK14** |
| SURFACE TREATMENT / COATING | | **X-coating** | | |
| MODEL | |  |  |  |

| ISO | VDI 3323 | Material Description | Composition / Structure / Heat Treatment | | HB | HRC | Examples | Recommended cutting conditions SFM | | |
|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Non-alloy steel | About 0.15% C | Annealed | 125 | | S15C, C15, 1015 | ○ (16-66) | ○ (16-66) | ◎ **(49-148)** |
| | 2 | | About 0.45% C | Annealed | 190 | 13 | S45C, C45, 1045 | ◎ **(33-164)** | ◎ **(33-164)** | ◎ **(33-180)** |
| | 3 | | About 0.45% C | Quenched & tempered | 250 | 25 | | ◎ **(33-164)** | ◎ **(33-164)** | ◎ **(33-180)** |
| | 4 | | About 0.75% C | Annealed | 270 | 28 | SK5, Ck75, 1080 | ◎ **(49-131)** | ◎ **(49-131)** | ◎ **(49-164)** |
| | 5 | | About 0.75% C | Quenched & tempered | 300 | 32 | | ◎ **(49-131)** | ◎ **(49-131)** | ◎ **(49-164)** |
| | 6 | Low alloy steel | | Annealed | 180 | 10 | SCM440, 42CrMo4, 410 | ◎ **(26-98)** | ◎ **(26-98)** | ◎ **(26-98)** |
| | 7 | | | Quenched & tempered | 275 | 29 | | ◎ **(26-98)** | ◎ **(26-98)** | ◎ **(26-98)** |
| | 8 | | | Quenched & tempered | 300 | 32 | | ◎ **(26-98)** | ◎ **(26-98)** | ◎ **(26-98)** |
| | 9 | | | Quenched & tempered | 350 | 38 | | ○ (26-98) | ○ (26-98) | ◎ **(26-98)** |
| | 10 | High alloyed steel, and tool steel | | Annealed | 200 | 15 | SKD, D2 | ○ (26-98) | ○ (26-98) | ○ (26-98) |
| | 11 | | | Quenched & Tempered | 325 | 35 | SKH, SUH, M42 | ○ (26-98) | ○ (26-98) | ○ (26-98) |
| M | 12 | Stainless steel | Ferritic / Martensitic | Annealed | 200 | 15 | SUS 420, X40Cr13, 420 | ◎ **(16-49)** | ◎ **(16-49)** | ◎ **(26-66)** |
| | 13 | | Martensitic | Quenched & Tempered | 240 | 23 | | ◎ **(16-49)** | ◎ **(16-49)** | ◎ **(26-66)** |
| | 14 | | | Austenitic | 180 | 10 | SUS 316, 316, X5CrNiMo 17 12 2 | ◎ **(16-49)** | ◎ **(16-49)** | ◎ **(26-66)** |
| K | 15 | Grey cast iron | Pearlitic / ferritic | | 180 | 10 | | ○ (49-115) | ○ (49-115) | ◎ **(49-115)** |
| | 16 | | Pearlitic (Martensitic) | | 260 | 26 | | ○ (49-115) | ○ (49-115) | ◎ **(49-115)** |
| | 17 | Nodular cast iron | Ferritic | | 160 | 3 | FCD, GGG, EN-GJS-500-7 | ◎ **(49-115)** | ◎ **(49-115)** | ◎ **(49-115)** |
| | 18 | | Pearlitic | | 250 | 25 | | ◎ **(49-115)** | ◎ **(49-115)** | ◎ **(49-115)** |
| | 19 | Malleable cast iron | Ferritic | | 130 | | FCMW, FCMP, GTS, GJMB350-10 | | | |
| | 20 | | Pearlitic | | 230 | 21 | | | | |
| N | 21 | Aluminum-wrought alloy | Not Curable | | 60 | | SAE 1000, AlMg 1, 3.3315 | ○ (49-115) | ○ (49-115) | ○ (49-115) |
| | 22 | | Curable | Hardened | 100 | | SAE 7050, AlCuMg 1, 3.1325 | ○ (49-115) | ○ (49-115) | ○ (49-115) |
| | 23 | Aluminum-cast, alloyed | ≤ 12% Si, Not Curable | | 75 | | ADC12, G-AlSi12, 3.2581 | ◎ **(49-115)** | ◎ **(49-115)** | ◎ **(49-115)** |
| | 24 | | ≤ 12% Si, Curable | Hardened | 90 | | C4BS, G-AlSi10Mg, 3.2381 | ◎ **(49-115)** | ◎ **(49-115)** | ◎ **(49-115)** |
| | 25 | | > 12% Si, Not Curable | | 130 | | | ○ (49-115) | ○ (49-115) | ○ (49-115) |
| | 26 | Copper and Copper Alloys (Bronze / Brass) | Cutting Alloys, PB>1% | | 110 | | CuZn36Pb 3, 2.0375 | ◎ **(49-115)** | ◎ **(49-115)** | ◎ **(49-115)** |
| | 27 | | CuZn, CuSnZn (Brass) | | 90 | | CuZn 15, 2.0240 | ◎ **(49-115)** | ◎ **(49-115)** | ◎ **(49-115)** |
| | 28 | | CuSn, lead-free copper and electrolytic copper | | 100 | | G-CuZn40Fe, 2.0590 | ◎ **(49-115)** | ◎ **(49-115)** | ◎ **(49-115)** |
| | 29 | Non Metallic Materials | Duroplastic, Fiber Reinforced Plastic | | | | CFRP | | | |
| | 30 | | Rubber, Wood, etc. | | | | | | | |
| S | 31 | Heat Resistant Super Alloys | Fe Based | Annealed | 200 | 15 | X12 NiCrSi 36-16, 1.4864 | | | |
| | 32 | | | Cured | 280 | 30 | | | | |
| | 33 | | Ni or Co Based | Annealed | 250 | 25 | Inconel 718, NiCr20TiAl, 2.4631 | | | |
| | 34 | | | Cured | 350 | 38 | NiCu30Al, 2.4375 | | | |
| | 35 | | | Cast | 320 | 34 | G-X120Mn12, 1.3401 | | | |
| | 36 | Titanium Alloys | Pure Titanium | | 400 Rm | | | | | |
| | 37 | | Alpha + Beta Alloys | Hardened | 1050 Rm | | TiAl6V4, 3.7165 | | | |
| H | 38 | Hardened steel | | Hardened | 550 | 55 | SK3 | | | |
| | 39 | | | Hardened | 630 | 60 | | | | |
| | 40 | Chilled Cast Iron | | Cast | 400 | 42 | | | | |
| | 41 | Hardened Cast Iron | | Hardened | 550 | 55 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| |  Max. 3.0xD Blind/Through Hole | | | | |
| | HSS-PM | | | | |
| | 1P~2P | 2P~3P | 1P~2P | 2P~3P | |
| | Forming | | | | |
| | - | - | - | - | |
| | | | | | |
| | | | | | |
| | **TRR13** | **TRR12** | **TRR17** | **TRR16** | |
| | | | | | |
| | | | | | |
| | | | | | |
| | **TRR11** | **TRR10** | **TRR15** | **TRR14** | |
| | **X-coating** | | | | |
| |  |  |  |  | |
| | Recommended cutting conditions SFM | | | | |
| 1 | ◎ (49-131) | ◎ (49-131) | ◎ (49-131) | ◎ (49-131) | P |
| 2 | ◎ (49-98) | ◎ (49-98) | ◎ (49-98) | ◎ (49-98) | P |
| 3 | ◎ (49-98) | ◎ (49-98) | ◎ (49-98) | ◎ (49-98) | P |
| 4 | ◎ (49-98) | ◎ (49-98) | ◎ (49-98) | ◎ (49-98) | P |
| 5 | ◎ (49-98) | ◎ (49-98) | ◎ (49-98) | ◎ (49-98) | P |
| 6 | ◎ (49-98) | ◎ (49-98) | ◎ (49-98) | ◎ (49-98) | P |
| 7 | ◎ (49-98) | ◎ (49-98) | ◎ (49-98) | ◎ (49-98) | P |
| 8 | ◎ (16-65) | ◎ (16-65) | ◎ (16-65) | ◎ (16-65) | P |
| 9 | ◎ (16-65) | ◎ (16-65) | ◎ (16-65) | ◎ (16-65) | P |
| 10 | ◎ (16-65) | ◎ (16-65) | ◎ (16-65) | ◎ (16-65) | P |
| 11 | ◎ (16-65) | ◎ (16-65) | ◎ (16-65) | ◎ (16-65) | P |
| 12 | ◎ (16-49) | ◎ (16-49) | ◎ (16-49) | ◎ (16-49) | M |
| 13 | ◎ (16-49) | ◎ (16-49) | ◎ (16-49) | ◎ (16-49) | M |
| 14 | ◎ (10-30) | ◎ (10-30) | ◎ (10-30) | ◎ (10-30) | M |
| 15 | | | | | K |
| 16 | | | | | K |
| 17 | | | | | K |
| 18 | | | | | K |
| 19 | | | | | K |
| 20 | | | | | K |
| 21 | ◎ (65-164) | ◎ (65-164) | ◎ (65-164) | ◎ (65-164) | N |
| 22 | ◎ (65-164) | ◎ (65-164) | ◎ (65-164) | ◎ (65-164) | N |
| 23 | ◎ (65-131) | ◎ (65-131) | ◎ (65-131) | ◎ (65-131) | N |
| 24 | ◎ (65-131) | ◎ (65-131) | ◎ (65-131) | ◎ (65-131) | N |
| 25 | ◎ (65-131) | ◎ (65-131) | ◎ (65-131) | ◎ (65-131) | N |
| 26 | ◎ (32-98) | ◎ (32-98) | ◎ (32-98) | ◎ (32-98) | N |
| 27 | ◎ (32-98) | ◎ (32-98) | ◎ (32-98) | ◎ (32-98) | N |
| 28 | ◎ (32-98) | ◎ (32-98) | ◎ (32-98) | ◎ (32-98) | N |
| 29 | | | | | N |
| 30 | | | | | N |
| 31 | | | | | S |
| 32 | | | | | S |
| 33 | | | | | S |
| 34 | | | | | S |
| 35 | | | | | S |
| 36 | | | | | S |
| 37 | | | | | S |
| 38 | | | | | H |
| 39 | | | | | H |
| 40 | | | | | H |
| 41 | | | | | H |

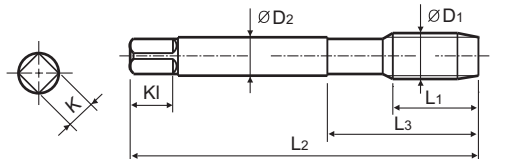
X-Coating, HSS-PM

# Spiral Flute Taps for Multipurpose

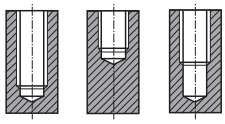
## TRF14 SERIES

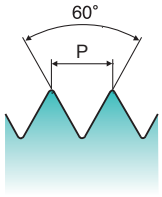
▶ High performance on various ductile materials
▶ Special design to prevent oversized threads and reduce gauging problems

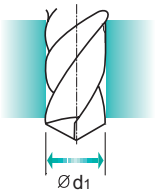
DIN/ANSI




Hole type 2.5×D






Material groups **MU** | HSS PM | UNC UNF | H | 60° | 2P~3P | R45 | X Coating

p.6

## Machine Taps

Unit: Inch

| Size ØD1 | TPI | EDP No. | Limits | Thread Length L1 | Overall Length L2 | Neck Length L3 | Shank Diameter ØD2 | Square Size K | Square Length Kl | No. of Flute Z | Tapping Drill Diameter (Ød1) Inch | Metric |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| #4 | - 40 | TRF14162GS | H2 | .200 | 2.21 | .708 | .141 | .110 | .19 | 2 | - | 2.3 |
| #4 | - 48 | TRF14182GS | H2 | .200 | 2.21 | .708 | .141 | .110 | .19 | 2 | 3/32 | - |
| #5 | - 40 | TRF14202GS | H2 | .200 | 2.21 | .708 | .141 | .110 | .19 | 3 | - | 2.6 |
| #6 | - 32 | TRF14242GS | H2 | .248 | 2.21 | .783 | .141 | .110 | .19 | 3 | - | 2.8 |
| #6 | - 32 | TRF14243GS | H3 | .248 | 2.21 | .783 | .141 | .110 | .19 | 3 | - | 2.8 |
| #6 | - 40 | TRF14262GS | H2 | .248 | 2.21 | .783 | .141 | .110 | .19 | 3 | - | 2.9 |
| #8 | - 32 | TRF14282GS | H2 | .251 | 2.48 | .826 | .168 | .131 | .25 | 3 | - | 3.4 |
| #8 | - 32 | TRF14283GS | H3 | .251 | 2.48 | .826 | .168 | .131 | .25 | 3 | - | 3.4 |
| #8 | - 36 | TRF14302GS | H2 | .251 | 2.48 | .826 | .168 | .131 | .25 | 3 | - | 3.5 |
| #10 | - 24 | TRF14323GS | H3 | .326 | 2.75 | .976 | .194 | .152 | .25 | 3 | - | 3.9 |
| #10 | - 32 | TRF14342GS | H2 | .326 | 2.75 | .976 | .194 | .152 | .25 | 3 | - | 4.1 |
| #10 | - 32 | TRF14343GS | H3 | .326 | 2.75 | .976 | .194 | .152 | .25 | 3 | - | 4.1 |
| #12 | - 24 | TRF14363GS | H3 | .330 | 3.15 | 1.177 | .220 | .165 | .28 | 3 | - | 4.5 |
| #12 | - 28 | TRF14383GS | H3 | .330 | 3.15 | 1.177 | .220 | .165 | .28 | 3 | - | 4.7 |
| 1/4 | - 20 | TRF14403GS | H3 | .397 | 3.15 | 1.177 | .255 | .191 | .31 | 3 | - | 5.2 |
| 1/4 | - 20 | TRF14405GS | H5 | .397 | 3.15 | 1.177 | .255 | .191 | .31 | 3 | - | 5.2 |
| 1/4 | - 28 | TRF14423GS | H3 | .397 | 3.15 | 1.177 | .255 | .191 | .31 | 3 | - | 5.5 |
| 1/4 | - 28 | TRF14424GS | H4 | .397 | 3.15 | 1.177 | .255 | .191 | .31 | 3 | - | 5.5 |
| 5/16 | - 18 | TRF14443GS | H3 | .556 | 3.54 | 1.377 | .318 | .238 | .38 | 3 | - | 6.7 |
| 5/16 | - 18 | TRF14445GS | H5 | .556 | 3.54 | 1.377 | .318 | .238 | .38 | 3 | - | 6.7 |
| 5/16 | - 24 | TRF14463GS | H3 | .417 | 3.54 | 1.377 | .318 | .238 | .38 | 3 | - | 7.0 |
| 5/16 | - 24 | TRF14464GS | H4 | .417 | 3.54 | 1.377 | .318 | .238 | .38 | 3 | - | 7.0 |

▶ NEXT PAGE

◎ : Excellent ○ : Good

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | 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 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | 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 | ○ | ○ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | | | | | | | | | | | | | |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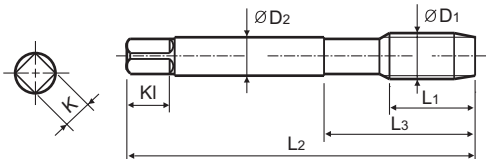
X-Coating, HSS-PM

# Spiral Flute Taps for Multipurpose

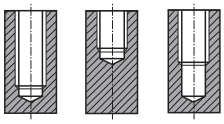
**TRF14 SERIES**

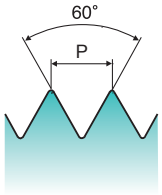
- ▶ High performance on various ductile materials
- ▶ Special design to prevent oversized threads and reduce gauging problems

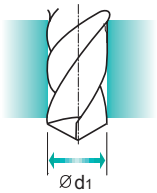
DIN/ANSI




Hole type 2.5×D






Material groups **MU** | HSS PM | UNC UNF | H | 60° | 2P~3P | R45 | X Coating

p.6

## Machine Taps

Unit: Inch

| Size ØD1 | TPI | EDP No. | Limits | Thread Length L1 | Overall Length L2 | Neck Length L3 | Shank Diameter ØD2 | Square Size K | Square Length Kl | No. of Flute Z | Tapping Drill Diameter (Ød1) Inch | Metric |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3/8 | 16 | TRF14483GS | H3 | .625 | 3.94 | 1.535 | .381 | .286 | .44 | 3 | - | 8.1 |
| 3/8 | 16 | TRF14485GS | H5 | .625 | 3.94 | 1.535 | .381 | .286 | .44 | 3 | - | 8.1 |
| 3/8 | 24 | TRF14503GS | H3 | .417 | 3.94 | 1.377 | .381 | .286 | .44 | 3 | - | 8.6 |
| 3/8 | 24 | TRF14504GS | H4 | .417 | 3.94 | 1.377 | .381 | .286 | .44 | 3 | - | 8.6 |
| 7/16 | 14 | TRF14523GS | H3 | .714 | 3.94 | 1.712 | .323 | .242 | .41 | 3 | - | 9.5 |
| 7/16 | 14 | TRF14525GS | H5 | .714 | 3.94 | 1.712 | .323 | .242 | .41 | 3 | - | 9.5 |
| 7/16 | 20 | TRF14543GS | H3 | .500 | 3.94 | 1.712 | .323 | .242 | .41 | 3 | - | 10.0 |
| 7/16 | 20 | TRF14545GS | H5 | .500 | 3.94 | 1.712 | .323 | .242 | .41 | 3 | - | 10.0 |
| 1/2 | 13 | TRF14563GS | H3 | .769 | 4.33 | 1.933 | .367 | .275 | .44 | 3 | - | 11.0 |
| 1/2 | 13 | TRF14565GS | H5 | .769 | 4.33 | 1.933 | .367 | .275 | .44 | 3 | - | 11.0 |
| 1/2 | 20 | TRF14583GS | H3 | .500 | 3.94 | 1.933 | .367 | .275 | .44 | 3 | - | 11.6 |
| 1/2 | 20 | TRF14585GS | H5 | .500 | 3.94 | 1.933 | .367 | .275 | .44 | 3 | - | 11.6 |
| 9/16 | 12 | TRF14603GS | H3 | .833 | 4.33 | 1.972 | .429 | .322 | .50 | 3 | - | 12.5 |
| 9/16 | 12 | TRF14605GS | H5 | .833 | 4.33 | 1.972 | .429 | .322 | .50 | 3 | - | 12.5 |
| 9/16 | 18 | TRF14623GS | H3 | .556 | 3.94 | 1.972 | .429 | .322 | .50 | 3 | - | 13.0 |
| 9/16 | 18 | TRF14625GS | H5 | .556 | 3.94 | 1.972 | .429 | .322 | .50 | 3 | - | 13.0 |
| 5/8 | 11 | TRF14643GS | H3 | .909 | 4.33 | 2.125 | .480 | .360 | .56 | 3 | - | 13.9 |
| 5/8 | 11 | TRF14645GS | H5 | .909 | 4.33 | 2.125 | .480 | .360 | .56 | 3 | - | 13.9 |
| 5/8 | 18 | TRF14663GS | H3 | .556 | 3.94 | 2.125 | .480 | .360 | .56 | 3 | - | 14.6 |
| 5/8 | 18 | TRF14665GS | H5 | .556 | 3.94 | 2.125 | .480 | .360 | .56 | 3 | - | 14.6 |
| 3/4 | 10 | TRF14703GS | H3 | 1.000 | 4.92 | 2.433 | .590 | .442 | .69 | 4 | - | 16.9 |
| 3/4 | 10 | TRF14705GS | H5 | 1.000 | 4.92 | 2.433 | .590 | .442 | .69 | 4 | - | 16.9 |

▶ NEXT PAGE

◎ : Excellent ○ : Good

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | 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 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | 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 | ○ | ○ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | | | | | | | | | | | | | |

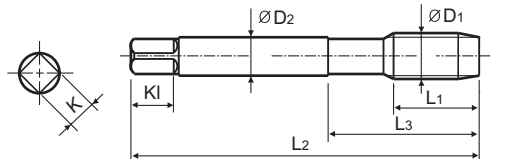
X-Coating, HSS-PM

# Spiral Flute Taps for Multipurpose

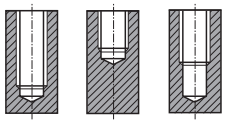
## TRF14 SERIES

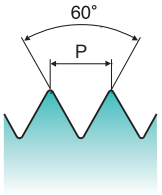
▶ High performance on various ductile materials
▶ Special design to prevent oversized threads and reduce gauging problems

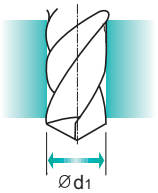
DIN/ANSI




Hole type 2.5×D






Material groups **MU** | HSS PM | UNC UNF | H | 60° | 2P~3P | R45 | X Coating

p.6

## Machine Taps

Unit: Inch

| Size ØD1 | TPI | EDP No. | Limits | Thread Length L1 | Overall Length L2 | Neck Length L3 | Shank Diameter ØD2 | Square Size K | Square Length Kl | No. of Flute Z | Tapping Drill Diameter (Ød1) Inch | Metric |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3/4 - | 16 | TRF14723GS | H3 | .625 | 4.33 | 2.433 | .590 | .442 | .69 | 4 | - | 17.7 |
| 3/4 - | 16 | TRF14725GS | H5 | .625 | 4.33 | 2.433 | .590 | .442 | .69 | 4 | - | 17.7 |
| 7/8 - | 9 | TRF14744GS | H4 | 1.111 | 5.51 | 2.653 | 697 | .523 | .75 | 4 | - | 19.8 |
| 7/8 - | 9 | TRF14746GS | H6 | 1.111 | 5.51 | 2.653 | 697 | .523 | .75 | 4 | - | 19.8 |
| 7/8 - | 14 | TRF14764GS | H4 | .714 | 4.92 | 2.653 | 697 | .523 | .75 | 4 | - | 20.5 |
| 7/8 - | 14 | TRF14766GS | H6 | .714 | 4.92 | 2.653 | 697 | .523 | .75 | 4 | - | 20.5 |
| 1" - | 8 | TRF14786GS | H6 | 1.251 | 6.30 | 3.012 | .800 | .600 | .81 | 4 | - | 22.7 |
| 1" - | 8 | TRF14784GS | H4 | 1.251 | 6.30 | 3.012 | .800 | .600 | .81 | 4 | - | 22.7 |
| 1" - | 12 | TRF14804GS | H4 | .833 | 5.51 | 3.012 | .800 | .600 | .81 | 4 | - | 23.5 |
| 1" - | 12 | TRF14806GS | H6 | .833 | 5.51 | 3.012 | .800 | .600 | .81 | 4 | - | 23.5 |
| 1" - | 14 | TRF14816GS | H6 | .714 | 5.51 | 3.012 | .800 | .600 | .81 | 4 | - | 23.7 |
| 1-1/8 - | 7 | TRF14829GS | H9 | 1.429 | 7.08 | 3.818 | .896 | .672 | .88 | 4 | - | 25.5 |
| 1-1/8 - | 8 | TRF14839GS | H9 | 1.250 | 7.08 | 3.818 | .896 | .672 | .88 | 4 | - | 25.7 |
| 1-1/8 - | 12 | TRF14848GS | H8 | .833 | 5.90 | 3.070 | .896 | .672 | .88 | 4 | 1-3/64 | - |
| 1-1/4 - | 7 | TRF14860GS | H10 | 1.429 | 7.08 | 3.937 | 1.021 | .766 | 1.00 | 4 | - | 28.5 |
| 1-1/4 - | 8 | TRF14879GS | H9 | 1.250 | 7.08 | 3.937 | 1.021 | .766 | 1.00 | 4 | - | 29.0 |
| 1-1/4 - | 12 | TRF14888GS | H8 | .833 | 5.90 | 3.070 | 1.021 | .766 | 1.00 | 4 | 1-11/64 | - |
| 1-3/8 - | 6 | TRF14900GS | H10 | 1.667 | 7.87 | 4.527 | 1.108 | .831 | 1.06 | 4 | - | 31.0 |
| 1-3/8 - | 8 | TRF14919GS | H9 | 1.250 | 7.87 | 4.527 | 1.108 | .831 | 1.06 | 4 | - | 32.0 |
| 1-3/8 - | 12 | TRF14928GS | H8 | .833 | 6.69 | 3.582 | 1.108 | .831 | 1.06 | 4 | - | 33.0 |
| 1-1/2 - | 6 | TRF14940GS | H10 | 1.667 | 7.87 | 4.527 | 1.233 | .925 | 1.13 | 4 | 1-11/32 | - |
| 1-1/2 - | 8 | TRF14959GS | H9 | 1.250 | 7.87 | 4.527 | 1.233 | .925 | 1.13 | 4 | - | 35.0 |
| 1-1/2 - | 12 | TRF14968GS | H8 | .833 | 6.69 | 3.582 | 1.233 | .925 | 1.13 | 4 | - | 36.0 |

◎ : Excellent ○ : Good

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | 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 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | 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 | ○ | ○ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | | | | | | | | | | | | | |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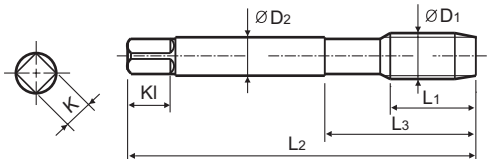
# Spiral Flute Taps for Multipurpose

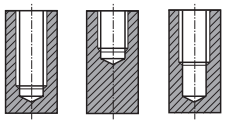
**TRF04 SERIES**

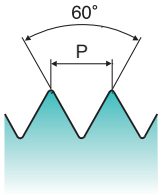
- ▶ High performance on various ductile materials
- ▶ Special design to prevent oversized threads and reduce gauging problems

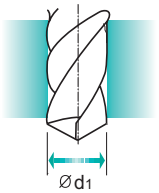
DIN/ANSI




**Hole type** 2.5×D






Material groups **MU** | HSS PM | M/MF | D | 60° | 2P~3P | R45 | X Coating

p.6

## Machine Taps

Unit: Inch

| Size ØD1 | Pitch P | EDP No. | Limits | Thread Length L1 | Overall Length L2 | Neck Length L3 | Shank Diameter ØD2 | Square Size K | Square Length Kl | No. of Flute Z | Tapping Drill Diameter (Ød1) Inch | Metric |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| M2 | x 0.4 | TRF04132GS | D2 | .126 | 1.77 | .393 | .141 | .110 | .19 | 2 | - | 1.6 |
| M2.5 | x 0.45 | TRF04173GS | D3 | .126 | 1.97 | .511 | .141 | .110 | .19 | 2 | - | 2.1 |
| M3 | x 0.5 | TRF04203GS | D3 | .158 | 2.21 | .708 | .141 | .110 | .19 | 3 | - | 2.5 |
| M3.5 | x 0.6 | TRF04224GS | D4 | .189 | 2.21 | .787 | .141 | .110 | .19 | 3 | - | 2.9 |
| M4 | x 0.7 | TRF04244GS | D4 | .221 | 2.48 | .823 | .168 | .131 | .25 | 3 | - | 3.4 |
| M5 | x 0.8 | TRF04284GS | D4 | .252 | 2.75 | .988 | .194 | .152 | .25 | 3 | - | 4.3 |
| M6 | x 1.0 | TRF04315GS | D5 | .315 | 3.15 | 1.177 | .255 | .191 | .31 | 3 | - | 5.1 |
| M6 | x 0.75 | TRF04324GS | D4 | .315 | 3.15 | 1.177 | .255 | .191 | .31 | 3 | - | 5.3 |
| M7 | x 1.0 | TRF04345GS | D5 | .394 | 3.15 | 1.181 | .318 | .238 | .38 | 3 | - | 6.1 |
| M8 | x 1.25 | TRF04365GS | D5 | .492 | 3.54 | 1.378 | .318 | .238 | .38 | 3 | - | 6.9 |
| M8 | x 1.0 | TRF04375GS | D5 | .394 | 3.54 | 1.378 | .318 | .238 | .38 | 3 | - | 7.1 |
| M9 | x 1.25 | TRF04395GS | D5 | .492 | 3.54 | 1.378 | .381 | .286 | .44 | 3 | - | 7.9 |
| M9 | x 1.0 | TRF04405GS | D5 | .394 | 3.54 | 1.378 | .381 | .286 | .44 | 3 | - | 8.1 |
| M10 | x 1.5 | TRF04426GS | D6 | .591 | 3.94 | 1.535 | .381 | .286 | .44 | 3 | - | 8.7 |
| M10 | x 1.25 | TRF04435GS | D5 | .492 | 3.94 | 1.535 | .381 | .286 | .44 | 3 | - | 8.9 |
| M10 | x 1.0 | TRF04445GS | D5 | .394 | 3.54 | 1.378 | .381 | .286 | .44 | 3 | - | 9.1 |
| M12 | x 1.75 | TRF04506GS | D6 | .689 | 4.33 | 1.933 | .367 | .275 | .44 | 3 | - | 10.5 |
| M12 | x 1.5 | TRF04516GS | D6 | .591 | 3.94 | 1.933 | .367 | .275 | .44 | 3 | - | 10.7 |
| M12 | x 1.25 | TRF04525GS | D5 | .492 | 3.94 | 1.933 | .367 | .275 | .44 | 3 | - | 10.9 |

▶ NEXT PAGE

◎ : Excellent ○ : Good

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | 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 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | 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 | ○ | ○ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | | | | | | | | | | | | | |

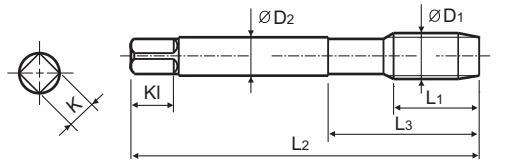
X-Coating, HSS-PM

# Spiral Flute Taps for Multipurpose

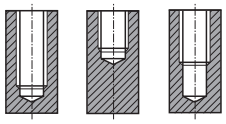
**TRF04** SERIES

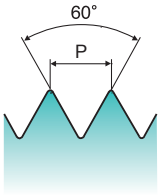
- ▶ High performance on various ductile materials
- ▶ Special design to prevent oversized threads and reduce gauging problems

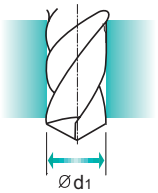
DIN/ANSI




**Hole type** 2.5×D






Material groups **MU** | HSS PM | M/MF | D | 60° | 2P~3P | R45 | X Coating

p.6

## Machine Taps

Unit: Inch

| Size | Pitch | EDP No. | Limits | Thread Length | Overall Length | Neck Length | Shank Diameter | Square Size | Square Length | No. of Flute | Tapping Drill Diameter (Ød1) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ØD1 | P | | | L1 | L2 | L3 | ØD2 | K | Kl | Z | Inch | Metric |
| M14 x | 2.0 | TRF04547GS | D7 | .787 | 4.33 | 1.972 | .429 | .322 | .50 | 3 | - | 12.3 |
| M14 x | 1.5 | TRF04556GS | D6 | .591 | 3.94 | 1.972 | .429 | .322 | .50 | 3 | - | 12.7 |
| M14 x | 1.25 | TRF04566GS | D6 | .492 | 3.94 | 1.972 | .429 | .322 | .50 | 3 | - | 12.9 |
| M16 x | 2.0 | TRF04607GS | D7 | .787 | 4.33 | 2.126 | .480 | .360 | .56 | 3 | - | 14.3 |
| M16 x | 1.5 | TRF04616GS | D6 | .591 | 3.94 | 2.126 | .480 | .360 | .56 | 3 | - | 14.7 |
| M18 x | 2.5 | TRF04657GS | D7 | .984 | 4.92 | 2.165 | .542 | .406 | .63 | 4 | - | 15.8 |
| M18 x | 1.5 | TRF04676GS | D6 | .591 | 4.33 | 2.165 | .542 | .406 | .63 | 4 | - | 16.7 |
| M20 x | 2.5 | TRF04708GS | D8 | .984 | 5.51 | 2.433 | .652 | .489 | .69 | 4 | - | 17.8 |
| M20 x | 1.5 | TRF04726GS | D6 | .591 | 4.92 | 2.433 | .652 | .489 | .69 | 4 | - | 18.7 |
| M22 x | 2.5 | TRF04748GS | D8 | .984 | 5.51 | 2.653 | .697 | .523 | .75 | 4 | - | 19.8 |
| M22 x | 1.5 | TRF04766GS | D6 | .591 | 4.92 | 2.653 | .697 | .523 | .75 | 4 | - | 20.7 |
| M24 x | 3.0 | TRF04788GS | D8 | 1.181 | 6.30 | 2.693 | .760 | .570 | .75 | 4 | 27/32 | - |
| M24 x | 1.5 | TRF04806GS | D6 | .591 | 5.51 | 2.693 | .760 | .570 | .75 | 4 | - | 22.7 |
| M27 x | 3.0 | TRF04868GS | D8 | 1.181 | 6.30 | 3.150 | .896 | .672 | .88 | 4 | - | 24.4 |
| M27 x | 1.5 | TRF04886GS | D6 | .591 | 5.51 | 2.362 | .896 | .672 | .88 | 4 | - | 25.7 |
| M30 x | 3.5 | TRF04949GS | D9 | 1.378 | 7.08 | 3.937 | 1.021 | .766 | 1.00 | 4 | - | 27.0 |
| M30 x | 1.5 | TRF04976GS | D6 | .591 | 5.90 | 2.756 | 1.021 | .766 | 1.00 | 4 | 61/64 | - |

◎ : Excellent ○ : Good

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | 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 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | 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 | ○ | ○ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | | | | | | | | | | | | | |



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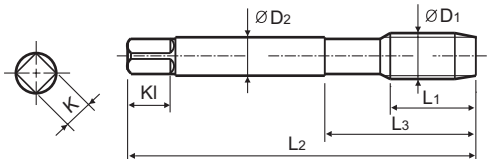
X-Coating, HSS-PM

# Spiral Flute Taps for Multipurpose

**TRF34 SERIES**

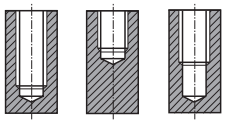
- ▶ High performance on various ductile materials
- ▶ Special design to prevent oversized threads and reduce gauging problems

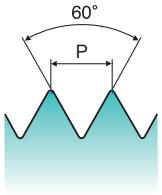
DIN/ANSI

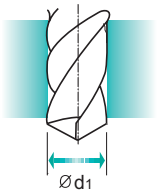



**Short Chamfer**

**Hole type** 2.5×D






Material groups **MU** | HSS PM | UNC UNF | H | 60° | 1P~2P | R45 | X Coating

p.6

## Machine Taps

Unit: Inch

| Size ØD1 | TPI | EDP No. | Limits | Thread Length L1 | Overall Length L2 | Neck Length L3 | Shank Diameter ØD2 | Square Size K | Square Length Kl | No. of Flute Z | Tapping Drill Diameter (Ød1) Inch | Metric |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| #4 | - 40 | TRF34162GS | H2 | .200 | 2.21 | .708 | .141 | .110 | .19 | 2 | - | 2.3 |
| #4 | - 48 | TRF34182GS | H2 | .200 | 2.21 | .708 | .141 | .110 | .19 | 2 | 3/32 | - |
| #5 | - 40 | TRF34202GS | H2 | .200 | 2.21 | .708 | .141 | .110 | .19 | 3 | - | 2.6 |
| #6 | - 32 | TRF34242GS | H2 | .248 | 2.21 | .783 | .141 | .110 | .19 | 3 | - | 2.8 |
| #6 | - 32 | TRF34243GS | H3 | .248 | 2.21 | .783 | .141 | .110 | .19 | 3 | - | 2.8 |
| #6 | - 40 | TRF34262GS | H2 | .248 | 2.21 | .783 | .141 | .110 | .19 | 3 | - | 2.9 |
| #8 | - 32 | TRF34282GS | H2 | .251 | 2.48 | .826 | .168 | .131 | .25 | 3 | - | 3.4 |
| #8 | - 32 | TRF34283GS | H3 | .251 | 2.48 | .826 | .168 | .131 | .25 | 3 | - | 3.4 |
| #8 | - 36 | TRF34302GS | H2 | .251 | 2.48 | .826 | .168 | .131 | .25 | 3 | - | 3.5 |
| #10 | - 24 | TRF34323GS | H3 | .326 | 2.75 | .976 | .194 | .152 | .25 | 3 | - | 3.9 |
| #10 | - 32 | TRF34342GS | H2 | .326 | 2.75 | .976 | .194 | .152 | .25 | 3 | - | 4.1 |
| #10 | - 32 | TRF34343GS | H3 | .326 | 2.75 | .976 | .194 | .152 | .25 | 3 | - | 4.1 |
| #12 | - 24 | TRF34363GS | H3 | .330 | 3.15 | 1.177 | .220 | .165 | .28 | 3 | - | 4.5 |
| #12 | - 28 | TRF34383GS | H3 | .330 | 3.15 | 1.177 | .220 | .165 | .28 | 3 | - | 4.7 |
| 1/4 | - 20 | TRF34403GS | H3 | .397 | 3.15 | 1.177 | .255 | .191 | .31 | 3 | - | 5.2 |
| 1/4 | - 20 | TRF34405GS | H5 | .397 | 3.15 | 1.177 | .255 | .191 | .31 | 3 | - | 5.2 |
| 1/4 | - 28 | TRF34423GS | H3 | .397 | 3.15 | 1.177 | .255 | .191 | .31 | 3 | - | 5.5 |
| 1/4 | - 28 | TRF34424GS | H4 | .397 | 3.15 | 1.177 | .255 | .191 | .31 | 3 | - | 5.5 |
| 5/16 | - 18 | TRF34443GS | H3 | .556 | 3.54 | 1.377 | .318 | .238 | .38 | 3 | - | 6.7 |
| 5/16 | - 18 | TRF34445GS | H5 | .556 | 3.54 | 1.377 | .318 | .238 | .38 | 3 | - | 6.7 |
| 5/16 | - 24 | TRF34463GS | H3 | .417 | 3.54 | 1.377 | .318 | .238 | .38 | 3 | - | 7.0 |
| 5/16 | - 24 | TRF34464GS | H4 | .417 | 3.54 | 1.377 | .318 | .238 | .38 | 3 | - | 7.0 |

▶ NEXT PAGE

◎ : Excellent ○ : Good

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | 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 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | 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 | ○ | ○ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | | | | | | | | | | | | | |

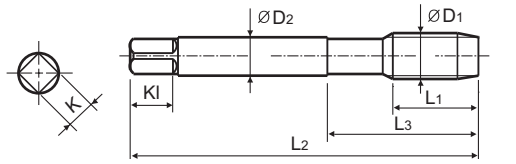
X-Coating, HSS-PM

# Spiral Flute Taps for Multipurpose

## TRF34 SERIES

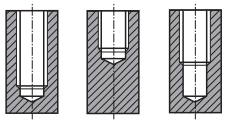
▶ High performance on various ductile materials
▶ Special design to prevent oversized threads and reduce gauging problems

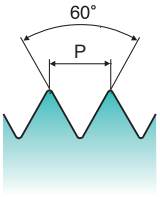
DIN/ANSI

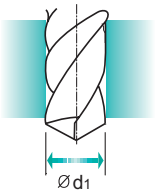



Short Chamfer

Hole type 2.5×D






Material groups **MU** | HSS PM | UNC UNF | H | 60° | 1P~2P | R45 | X Coating

p.6

## Machine Taps

Unit: Inch

| Size ØD1 | TPI | EDP No. | Limits | Thread Length L1 | Overall Length L2 | Neck Length L3 | Shank Diameter ØD2 | Square Size K | Square Length Kl | No. of Flute Z | Tapping Drill Diameter (Ød1) Inch | Metric |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3/8 | 16 | TRF34483GS | H3 | .625 | 3.94 | 1.535 | .381 | .286 | .44 | 3 | - | 8.1 |
| 3/8 | 16 | TRF34485GS | H5 | .625 | 3.94 | 1.535 | .381 | .286 | .44 | 3 | - | 8.1 |
| 3/8 | 24 | TRF34503GS | H3 | .417 | 3.94 | 1.377 | .381 | .286 | .44 | 3 | - | 8.6 |
| 3/8 | 24 | TRF34504GS | H4 | .417 | 3.94 | 1.377 | .381 | .286 | .44 | 3 | - | 8.6 |
| 7/16 | 14 | TRF34523GS | H3 | .714 | 3.94 | 1.712 | .323 | .242 | .41 | 3 | - | 9.5 |
| 7/16 | 14 | TRF34525GS | H5 | .714 | 3.94 | 1.712 | .323 | .242 | .41 | 3 | - | 9.5 |
| 7/16 | 20 | TRF34543GS | H3 | .500 | 3.94 | 1.712 | .323 | .242 | .41 | 3 | - | 10.0 |
| 7/16 | 20 | TRF34545GS | H5 | .500 | 3.94 | 1.712 | .323 | .242 | .41 | 3 | - | 10.0 |
| 1/2 | 13 | TRF34563GS | H3 | .769 | 4.33 | 1.933 | .367 | .275 | .44 | 3 | - | 11.0 |
| 1/2 | 13 | TRF34565GS | H5 | .769 | 4.33 | 1.933 | .367 | .275 | .44 | 3 | - | 11.0 |
| 1/2 | 20 | TRF34583GS | H3 | .500 | 3.94 | 1.933 | .367 | .275 | .44 | 3 | - | 11.6 |
| 1/2 | 20 | TRF34585GS | H5 | .500 | 3.94 | 1.933 | .367 | .275 | .44 | 3 | - | 11.6 |
| 9/16 | 12 | TRF34603GS | H3 | .833 | 4.33 | 1.972 | .429 | .322 | .50 | 3 | - | 12.5 |
| 9/16 | 12 | TRF34605GS | H5 | .833 | 4.33 | 1.972 | .429 | .322 | .50 | 3 | - | 12.5 |
| 9/16 | 18 | TRF34623GS | H3 | .556 | 3.94 | 1.972 | .429 | .322 | .50 | 3 | - | 13.0 |
| 9/16 | 18 | TRF34625GS | H5 | .556 | 3.94 | 1.972 | .429 | .322 | .50 | 3 | - | 13.0 |
| 5/8 | 11 | TRF34643GS | H3 | .909 | 4.33 | 2.125 | .480 | .360 | .56 | 3 | - | 13.9 |
| 5/8 | 11 | TRF34645GS | H5 | .909 | 4.33 | 2.125 | .480 | .360 | .56 | 3 | - | 13.9 |
| 5/8 | 18 | TRF34663GS | H3 | .556 | 3.94 | 2.125 | .480 | .360 | .56 | 3 | - | 14.6 |
| 5/8 | 18 | TRF34665GS | H5 | .556 | 3.94 | 2.125 | .480 | .360 | .56 | 3 | - | 14.6 |

◎ : Excellent ○ : Good

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | 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 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | 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 | ○ | ○ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | | | | | | | | | | | | | |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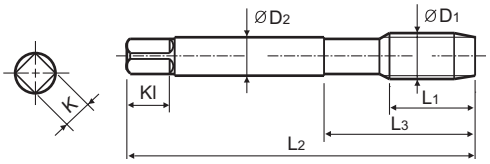
X-Coating, HSS-PM

# Spiral Flute Taps for Multipurpose

**TRF24 SERIES**

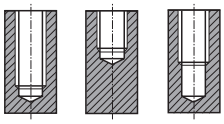
- ▶ High performance on various ductile materials
- ▶ Special design to prevent oversized threads and reduce gauging problems

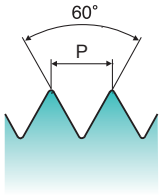
DIN/ANSI

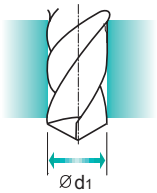



Short Chamfer

Hole type 2.5×D






Material groups **MU** | HSS PM | M/MF | D | 60° | 1P~2P | R45 | X Coating

p.6

## Machine Taps

Unit: Inch

| Size ØD1 | Pitch P | EDP No. | Limits | Thread Length L1 | Overall Length L2 | Neck Length L3 | Shank Diameter ØD2 | Square Size K | Square Length Kl | No. of Flute Z | Tapping Drill Diameter (Ød1) Inch | Metric |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| M3 x | 0.5 | TRF24203GS | D3 | .158 | 2.21 | .708 | .141 | .110 | .19 | 3 | - | 2.5 |
| M3.5 x | 0.6 | TRF24224GS | D4 | .189 | 2.21 | .787 | .141 | .110 | .19 | 3 | - | 2.9 |
| M4 x | 0.7 | TRF24244GS | D4 | .221 | 2.48 | .823 | .168 | .131 | .25 | 3 | - | 3.4 |
| M5 x | 0.8 | TRF24284GS | D4 | .252 | 2.75 | .988 | .194 | .152 | .25 | 3 | - | 4.3 |
| M6 x | 1.0 | TRF24315GS | D5 | .315 | 3.15 | 1.177 | .255 | .191 | .31 | 3 | - | 5.1 |
| M8 x | 1.25 | TRF24365GS | D5 | .492 | 3.54 | 1.378 | .318 | .238 | .38 | 3 | - | 6.9 |
| M9 x | 1.25 | TRF24395GS | D5 | .492 | 3.54 | 1.378 | .381 | .286 | .44 | 3 | - | 7.9 |
| M10 x | 1.5 | TRF24426GS | D6 | .591 | 3.94 | 1.535 | .381 | .286 | .44 | 3 | - | 8.7 |
| M10 x | 1.25 | TRF24435GS | D5 | .492 | 3.94 | 1.535 | .381 | .286 | .44 | 3 | - | 8.9 |
| M10 x | 1.0 | TRF24445GS | D5 | .394 | 3.54 | 1.378 | .381 | .286 | .44 | 3 | - | 9.1 |
| M12 x | 1.75 | TRF24506GS | D6 | .689 | 4.33 | 1.933 | .367 | .275 | .44 | 3 | - | 10.5 |
| M12 x | 1.5 | TRF24516GS | D6 | .591 | 3.94 | 1.933 | .367 | .275 | .44 | 3 | - | 10.7 |
| M12 x | 1.25 | TRF24525GS | D5 | .492 | 3.94 | 1.933 | .367 | .275 | .44 | 3 | - | 10.9 |
| M14 x | 2.0 | TRF24547GS | D7 | .787 | 4.33 | 1.972 | .429 | .322 | .50 | 3 | - | 12.3 |
| M14 x | 1.5 | TRF24556GS | D6 | .591 | 3.94 | 1.972 | .429 | .322 | .50 | 3 | - | 12.7 |
| M14 x | 1.25 | TRF24566GS | D6 | .492 | 3.94 | 1.972 | .429 | .322 | .50 | 3 | - | 12.9 |
| M16 x | 2.0 | TRF24607GS | D7 | .787 | 4.33 | 2.126 | .480 | .360 | .56 | 3 | - | 14.3 |
| M16 x | 1.5 | TRF24616GS | D6 | .591 | 3.94 | 2.126 | .480 | .360 | .56 | 3 | - | 14.7 |
| M18 x | 1.5 | TRF24676GS | D6 | .591 | 4.33 | 2.165 | .542 | .406 | .63 | 4 | - | 16.7 |

◎ : Excellent ○ : Good

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | 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 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | 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 | ○ | ○ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | | | | | | | | | | | | | |

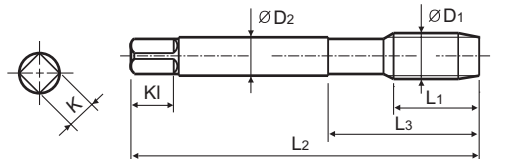
X-Coating, HSS-PM

# Spiral Point Taps for Multipurpose

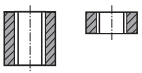
## TRK14 SERIES

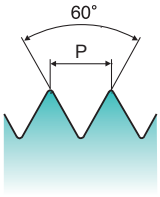
▶ High performance on various ductile materials

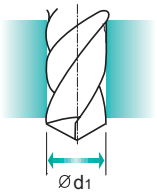
DIN/ANSI




Hole type 3.0×D






Material groups **MU** | HSS PM | UNC UNF | H | 60° | 4P~5P | X Coating

p.6

## Machine Taps

Unit: Inch

| Size ØD1 | TPI | EDP No. | Limits | Thread Length L1 | Overall Length L2 | Neck Length L3 | Shank Diameter ØD2 | Square Size K | Square Length Kl | No. of Flute Z | Tapping Drill Diameter (Ød1) Inch | Metric |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| #2 - | 56 | TRK14082GS | H2 | .437 | 1.77 | .476 | .141 | .110 | .19 | 2 | - | 1.8 |
| #2 - | 64 | TRK14102GS | H2 | .437 | 1.77 | .476 | .141 | .110 | .19 | 2 | - | 1.8 |
| #3 - | 48 | TRK14122GS | H2 | .500 | 1.97 | .539 | .141 | .110 | .19 | 2 | - | 2.0 |
| #3 - | 56 | TRK14142GS | H2 | .500 | 1.97 | .539 | .141 | .110 | .19 | 2 | - | 2.1 |
| #4 - | 40 | TRK14162GS | H2 | .335 | 2.21 | .708 | .141 | .110 | .19 | 2 | - | 2.3 |
| #4 - | 48 | TRK14182GS | H2 | .335 | 2.21 | .708 | .141 | .110 | .19 | 2 | 3/32 | - |
| #5 - | 40 | TRK14202GS | H2 | .374 | 2.21 | .708 | .141 | .110 | .19 | 3 | - | 2.6 |
| #5 - | 44 | TRK14222GS | H2 | .374 | 2.21 | .708 | .141 | .110 | .19 | 3 | - | 2.6 |
| #6 - | 32 | TRK14242GS | H2 | .413 | 2.21 | .787 | .141 | .110 | .19 | 3 | - | 2.8 |
| #6 - | 32 | TRK14243GS | H3 | .413 | 2.21 | .787 | .141 | .110 | .19 | 3 | - | 2.8 |
| #6 - | 40 | TRK14262GS | H2 | .413 | 2.21 | .787 | .141 | .110 | .19 | 3 | - | 2.9 |
| #8 - | 32 | TRK14282GS | H2 | .453 | 2.48 | .826 | .168 | .131 | .25 | 3 | - | 3.4 |
| #8 - | 32 | TRK14283GS | H3 | .453 | 2.48 | .826 | .168 | .131 | .25 | 3 | - | 3.4 |
| #8 - | 36 | TRK14302GS | H2 | .453 | 2.48 | .826 | .168 | .131 | .25 | 3 | - | 3.5 |
| #10 - | 24 | TRK14323GS | H3 | .531 | 2.75 | .984 | .194 | .152 | .25 | 3 | - | 3.9 |
| #10 - | 32 | TRK14342GS | H2 | .531 | 2.75 | .984 | .194 | .152 | .25 | 3 | - | 4.1 |
| #10 - | 32 | TRK14343GS | H3 | .531 | 2.75 | .984 | .194 | .152 | .25 | 3 | - | 4.1 |
| #12 - | 24 | TRK14363GS | H3 | .571 | 3.15 | 1.181 | .220 | .165 | .28 | 3 | - | 4.5 |
| #12 - | 28 | TRK14383GS | H3 | .571 | 3.15 | 1.181 | .220 | .165 | .28 | 3 | - | 4.7 |

▶ NEXT PAGE

◎ : Excellent ○ : Good

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | 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 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | 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 | ○ | ○ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | | | | | | | | | | | | | |



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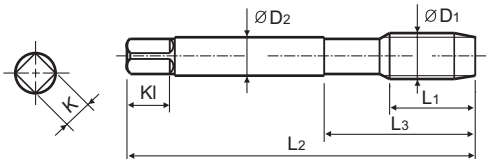
X-Coating, HSS-PM

# Spiral Point Taps for Multipurpose

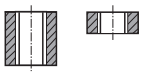
**TRK14 SERIES**

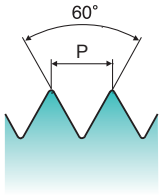
▶ High performance on various ductile materials

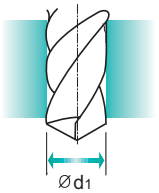
DIN/ANSI




Hole type 3.0×D






Material groups **MU** | HSS PM | UNC UNF | H | 60° | 4P~5P | X Coating

p.6

## Machine Taps

Unit: Inch

| Size ØD1 | TPI | EDP No. | Limits | Thread Length L1 | Overall Length L2 | Neck Length L3 | Shank Diameter ØD2 | Square Size K | Square Length Kl | No. of Flute Z | Tapping Drill Diameter (Ød1) Inch | Metric |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/4 | - 20 | TRK14403GS | H3 | .591 | 3.15 | 1.177 | .255 | .191 | .31 | 3 | - | 5.2 |
| 1/4 | - 20 | TRK14405GS | H5 | .591 | 3.15 | 1.177 | .255 | .191 | .31 | 3 | - | 5.2 |
| 1/4 | - 28 | TRK14423GS | H3 | .591 | 3.15 | 1.177 | .255 | .191 | .31 | 3 | - | 5.5 |
| 1/4 | - 28 | TRK14424GS | H4 | .591 | 3.15 | 1.177 | .255 | .191 | .31 | 3 | - | 5.5 |
| 5/16 | - 18 | TRK14443GS | H3 | .669 | 3.54 | 1.377 | .318 | .238 | .38 | 3 | - | 6.7 |
| 5/16 | - 18 | TRK14445GS | H5 | .669 | 3.54 | 1.377 | .318 | .238 | .38 | 3 | - | 6.7 |
| 5/16 | - 24 | TRK14463GS | H3 | .669 | 3.54 | 1.377 | .318 | .238 | .38 | 3 | - | 7.0 |
| 5/16 | - 24 | TRK14464GS | H4 | .669 | 3.54 | 1.377 | .318 | .238 | .38 | 3 | - | 7.0 |
| 3/8 | - 16 | TRK14483GS | H3 | .748 | 3.94 | 1.535 | .381 | .286 | .44 | 3 | - | 8.1 |
| 3/8 | - 16 | TRK14485GS | H5 | .748 | 3.94 | 1.535 | .381 | .286 | .44 | 3 | - | 8.1 |
| 3/8 | - 24 | TRK14503GS | H3 | .748 | 3.94 | 1.377 | .381 | .286 | .44 | 3 | - | 8.6 |
| 3/8 | - 24 | TRK14504GS | H4 | .748 | 3.94 | 1.377 | .381 | .286 | .44 | 3 | - | 8.6 |
| 7/16 | - 14 | TRK14523GS | H3 | .866 | 3.94 | 1.437 | .323 | .242 | .41 | 3 | - | 9.5 |
| 7/16 | - 14 | TRK14525GS | H5 | .866 | 3.94 | 1.437 | .323 | .242 | .41 | 3 | - | 9.5 |
| 7/16 | - 20 | TRK14543GS | H3 | .866 | 3.94 | 1.437 | .323 | .242 | .41 | 3 | - | 10.0 |
| 7/16 | - 20 | TRK14545GS | H5 | .866 | 3.94 | 1.437 | .323 | .242 | .41 | 3 | - | 10.0 |
| 1/2 | - 13 | TRK14563GS | H3 | .984 | 4.33 | 1.657 | .367 | .275 | .44 | 3 | - | 11.0 |
| 1/2 | - 13 | TRK14565GS | H5 | .984 | 4.33 | 1.657 | .367 | .275 | .44 | 3 | - | 11.0 |
| 1/2 | - 20 | TRK14583GS | H3 | .984 | 3.94 | 1.657 | .367 | .275 | .44 | 3 | - | 11.6 |

▶ NEXT PAGE

◎ : Excellent ○ : Good

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | 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 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | 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 | ○ | ○ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | | | | | | | | | | | | | |

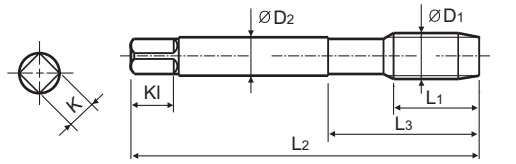
X-Coating, HSS-PM

# Spiral Point Taps for Multipurpose

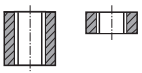
## TRK14 SERIES

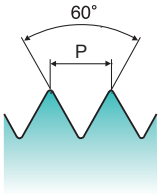
▶ High performance on various ductile materials

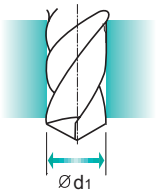
DIN/ANSI




Hole type 3.0×D






Material groups **MU** | HSS PM | UNC UNF | H | 60° | 4P~5P | X Coating

p.6

## Machine Taps

Unit: Inch

| Size ØD1 | TPI | EDP No. | Limits | Thread Length L1 | Overall Length L2 | Neck Length L3 | Shank Diameter ØD2 | Square Size K | Square Length Kl | No. of Flute Z | Tapping Drill Diameter (Ød1) Inch | Metric |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/2 | - 20 | TRK14585GS | H5 | .984 | 3.94 | 1.657 | .367 | .275 | .44 | 3 | - | 11.6 |
| 9/16 | - 12 | TRK14603GS | H3 | .984 | 4.33 | 1.657 | .429 | .322 | .50 | 3 | - | 12.5 |
| 9/16 | - 12 | TRK14605GS | H5 | .984 | 4.33 | 1.657 | .429 | .322 | .50 | 3 | - | 12.5 |
| 9/16 | - 18 | TRK14623GS | H3 | .984 | 3.94 | 1.657 | .429 | .322 | .50 | 3 | - | 13.0 |
| 9/16 | - 18 | TRK14625GS | H5 | .984 | 3.94 | 1.657 | .429 | .322 | .50 | 3 | - | 13.0 |
| 5/8 | - 11 | TRK14643GS | H3 | 1.083 | 4.33 | 1.811 | .480 | .360 | .56 | 3 | - | 13.9 |
| 5/8 | - 11 | TRK14645GS | H5 | 1.083 | 4.33 | 1.811 | .480 | .360 | .56 | 3 | - | 13.9 |
| 5/8 | - 18 | TRK14663GS | H3 | 1.083 | 3.94 | 1.811 | .480 | .360 | .56 | 3 | - | 14.6 |
| 5/8 | - 18 | TRK14665GS | H5 | 1.083 | 3.94 | 1.811 | .480 | .360 | .56 | 3 | - | 14.6 |
| 3/4 | - 10 | TRK14703GS | H3 | 1.201 | 4.92 | 2.000 | .590 | .442 | .69 | 3 | - | 16.9 |
| 3/4 | - 10 | TRK14705GS | H5 | 1.201 | 4.92 | 2.000 | .590 | .442 | .69 | 3 | - | 16.9 |
| 3/4 | - 16 | TRK14723GS | H3 | 1.201 | 4.33 | 2.000 | .590 | .442 | .69 | 3 | - | 17.7 |
| 3/4 | - 16 | TRK14725GS | H5 | 1.201 | 4.33 | 2.000 | .590 | .442 | .69 | 3 | - | 17.7 |
| 7/8 | - 9 | TRK14744GS | H4 | 1.339 | 5.51 | 2.224 | 697 | .523 | .75 | 3 | - | 19.8 |
| 7/8 | - 9 | TRK14746GS | H6 | 1.339 | 5.51 | 2.224 | 697 | .523 | .75 | 3 | - | 19.8 |
| 7/8 | - 14 | TRK14764GS | H4 | 1.339 | 4.92 | 2.224 | 697 | .523 | .75 | 3 | - | 20.5 |
| 7/8 | - 14 | TRK14766GS | H6 | 1.339 | 4.92 | 2.224 | 697 | .523 | .75 | 3 | - | 20.5 |
| 1" | - 8 | TRK14786GS | H6 | 1.496 | 6.30 | 2.500 | .800 | .600 | .81 | 3 | - | 22.7 |
| 1" | - 12 | TRK14806GS | H6 | 1.496 | 5.51 | 2.500 | .800 | .600 | .81 | 3 | - | 23.5 |
| 1" | - 14 | TRK14816GS | H6 | 1.496 | 5.51 | 2.500 | .800 | .600 | .81 | 3 | - | 23.7 |

◎ : Excellent ○ : Good

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | 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 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | 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 | ○ | ○ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | | | | | | | | | | | | | |



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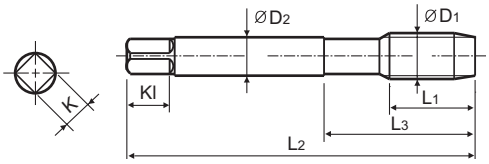
X-Coating, HSS-PM

# Spiral Point Taps for Multipurpose

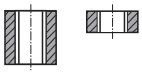
**TRK04 SERIES**

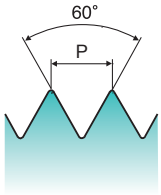
▶ High performance on various ductile materials

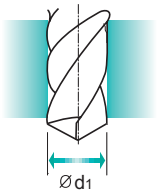
DIN/ANSI




Hole type 3.0×D






Material groups **MU** | HSS PM | M/MF | D | 60° | 4P~5P | X Coating

p.6

## Machine Taps

Unit: Inch

| Size ØD1 | Pitch P | EDP No. | Limits | Thread Length L1 | Overall Length L2 | Neck Length L3 | Shank Diameter ØD2 | Square Size K | Square Length Kl | No. of Flute Z | Tapping Drill Diameter (Ød1) Inch | Metric |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| M2 x | 0.4 | TRK04132GS | D2 | .433 | 1.77 | .472 | .141 | .110 | .19 | 2 | - | 1.6 |
| M2.5 x | 0.45 | TRK04173GS | D3 | .472 | 1.97 | .539 | .141 | .110 | .19 | 2 | - | 2.1 |
| M3 x | 0.5 | TRK04203GS | D3 | .374 | 2.21 | .705 | .141 | .110 | .19 | 3 | - | 2.5 |
| M3.5 x | 0.6 | TRK04224GS | D4 | .413 | 2.21 | .780 | .141 | .110 | .19 | 3 | - | 2.9 |
| M4 x | 0.7 | TRK04244GS | D4 | .453 | 2.48 | .819 | .168 | .131 | .25 | 3 | - | 3.4 |
| M5 x | 0.8 | TRK04284GS | D4 | .531 | 2.75 | .976 | .194 | .152 | .25 | 3 | - | 4.3 |
| M6 x | 1.0 | TRK04315GS | D5 | .591 | 3.15 | 1.169 | .255 | .191 | .31 | 3 | - | 5.1 |
| M6 x | 0.75 | TRK04324GS | D4 | .591 | 3.15 | 1.169 | .255 | .191 | .31 | 3 | - | 5.3 |
| M7 x | 1.0 | TRK04345GS | D5 | .669 | 3.15 | 1.169 | .318 | .238 | .38 | 3 | - | 6.1 |
| M8 x | 1.25 | TRK04365GS | D5 | .669 | 3.54 | 1.366 | .318 | .238 | .38 | 3 | - | 6.9 |
| M8 x | 1.0 | TRK04375GS | D5 | .669 | 3.54 | 1.366 | .318 | .238 | .38 | 3 | - | 7.1 |
| M9 x | 1.25 | TRK04395GS | D5 | .669 | 3.54 | 1.370 | .381 | .286 | .44 | 3 | - | 7.9 |
| M9 x | 1.0 | TRK04405GS | D5 | .669 | 3.54 | 1.370 | .381 | .286 | .44 | 3 | - | 8.1 |
| M10 x | 1.5 | TRK04426GS | D6 | .748 | 3.94 | 1.531 | .381 | .286 | .44 | 3 | - | 8.7 |
| M10 x | 1.25 | TRK04435GS | D5 | .748 | 3.94 | 1.531 | .381 | .286 | .44 | 3 | - | 8.9 |
| M10 x | 1.0 | TRK04445GS | D5 | .748 | 3.54 | 1.370 | .381 | .286 | .44 | 3 | - | 9.1 |
| M12 x | 1.75 | TRK04506GS | D6 | .984 | 4.33 | 1.657 | .367 | .275 | .44 | 3 | - | 10.5 |
| M12 x | 1.5 | TRK04516GS | D6 | .984 | 3.94 | 1.657 | .367 | .275 | .44 | 3 | - | 10.7 |
| M12 x | 1.25 | TRK04525GS | D5 | .984 | 3.94 | 1.657 | .367 | .275 | .44 | 3 | - | 10.9 |

▶ NEXT PAGE

◎ : Excellent ○ : Good

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | 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 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | 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 | ○ | ○ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | | | | | | | | | | | | | |

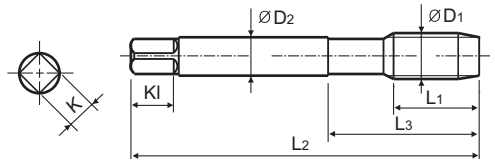
X-Coating, HSS-PM

# Spiral Point Taps for Multipurpose

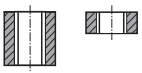
**TRK04** SERIES

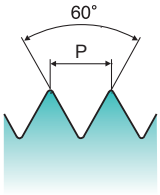
▶ High performance on various ductile materials

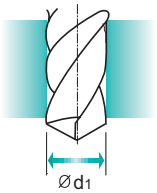
DIN/ANSI




Hole type 3.0×D






Material groups **MU** | HSS PM | M/MF | D | 60° | 4P~5P | X Coating

p.6

## Machine Taps

Unit: Inch

| Size ØD1 | Pitch P | EDP No. | Limits | Thread Length L1 | Overall Length L2 | Neck Length L3 | Shank Diameter ØD2 | Square Size K | Square Length Kl | No. of Flute Z | Tapping Drill Diameter (Ød1) Inch | Metric |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| M14 | 2.0 | TRK04547GS | D7 | .984 | 4.33 | 1.657 | .429 | .322 | .50 | 3 | - | 12.3 |
| M14 | 1.5 | TRK04556GS | D6 | .984 | 3.94 | 1.657 | .429 | .322 | .50 | 3 | - | 12.7 |
| M14 | 1.25 | TRK04566GS | D6 | .984 | 3.94 | 1.657 | .429 | .322 | .50 | 3 | - | 12.9 |
| M16 | 2.0 | TRK04607GS | D7 | 1.083 | 4.33 | 1.811 | .480 | .360 | .56 | 3 | - | 14.3 |
| M16 | 1.5 | TRK04616GS | D6 | 1.083 | 3.94 | 1.811 | .480 | .360 | .56 | 3 | - | 14.7 |
| M18 | 2.5 | TRK04657GS | D7 | 1.083 | 4.92 | 1.811 | .542 | .406 | .63 | 3 | - | 15.8 |
| M18 | 1.5 | TRK04676GS | D6 | 1.083 | 4.33 | 1.811 | .542 | .406 | .63 | 3 | - | 16.7 |
| M20 | 2.5 | TRK04708GS | D8 | 1.201 | 5.51 | 2.126 | .652 | .489 | .69 | 3 | - | 17.8 |
| M20 | 1.5 | TRK04726GS | D6 | 1.201 | 4.92 | 2.000 | .652 | .489 | .69 | 3 | - | 18.7 |
| M22 | 2.5 | TRK04748GS | D8 | 1.339 | 5.51 | 2.126 | .697 | .523 | .75 | 3 | - | 19.8 |
| M22 | 1.5 | TRK04766GS | D6 | 1.339 | 4.92 | 2.000 | .697 | .523 | .75 | 3 | - | 20.7 |
| M24 | 3.0 | TRK04788GS | D8 | 1.339 | 6.30 | 2.362 | .760 | .570 | .75 | 3 | 27/32 | - |
| M24 | 1.5 | TRK04806GS | D6 | 1.339 | 5.51 | 2.126 | .760 | .570 | .75 | 3 | - | 22.7 |

◎ : Excellent ○ : Good

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | 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 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | 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 | ○ | ○ | ◎ | ◎ | ○ | ◎ | ◎ | ◎ | | | | | | | | | | | | | |



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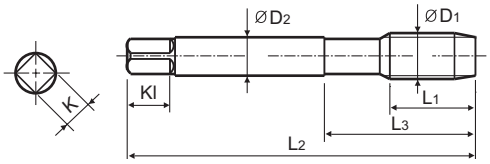
# Forming Taps for Multipurpose

## TRR11 SERIES

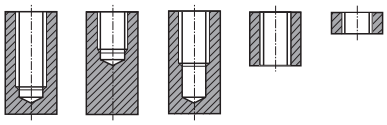
▶ High performance on various ductile materials

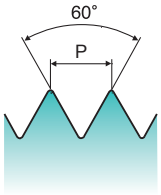
DIN/ANSI

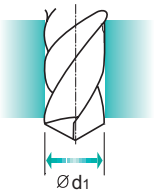
Short Chamfer




Hole type 3.0xD






Material groups **MU** | HSS PM | UNC UNF | H | 60° | 1P~2P | X Coating

p.7

## Machine Taps

Unit: Inch

| Size ØD1 | TPI | EDP No. | Limits | Thread Length L1 | Overall Length L2 | Neck Length L3 | Shank Diameter ØD2 | Square Size K | Square Length Kl | No. of Lobe Z | Tapping Drill Diameter (Ød1) Inch | Metric |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| #0 | - 80 | TRR11023GS | H3 | .315 | 1.57 | .362 | .141 | .110 | .19 | 4 | - | 1.4 |
| #1 | - 64 | TRR11043GS | H3 | .315 | 1.57 | .370 | .141 | .110 | .19 | 4 | - | 1.7 |
| #2 | - 56 | TRR11083GS | H3 | .386 | 1.77 | .425 | .141 | .110 | .19 | 4 | - | 2.0 |
| #2 | - 64 | TRR11103GS | H3 | .386 | 1.77 | .425 | .141 | .110 | .19 | 4 | - | 2.0 |
| #3 | - 48 | TRR11123GS | H3 | .386 | 1.97 | .453 | .141 | .110 | .19 | 4 | - | 2.3 |
| #3 | - 56 | TRR11143GS | H3 | .386 | 1.97 | .453 | .141 | .110 | .19 | 4 | - | 2.3 |
| #4 | - 40 | TRR11165GS | H5 | .299 | 2.21 | .709 | .141 | .110 | .19 | 4 | #38 | |
| #4 | - 48 | TRR11185GS | H5 | .299 | 2.21 | .709 | .141 | .110 | .19 | 4 | - | 2.6 |
| #5 | - 40 | TRR11205GS | H5 | .299 | 2.21 | .709 | .141 | .110 | .19 | 4 | - | 2.9 |
| #5 | - 44 | TRR11225GS | H5 | .299 | 2.21 | .709 | .141 | .110 | .19 | 4 | - | 2.9 |
| #6 | - 32 | TRR11245GS | H5 | .374 | 2.21 | .787 | .141 | .110 | .19 | 4 | 1/8 | |
| #6 | - 40 | TRR11265GS | H5 | .374 | 2.21 | .787 | .141 | .110 | .19 | 4 | - | 3.2 |
| #8 | - 32 | TRR11285GS | H5 | .374 | 2.48 | .827 | .168 | .131 | .25 | 4 | - | 3.8 |
| #8 | - 36 | TRR11305GS | H5 | .374 | 2.48 | .827 | .168 | .131 | .25 | 4 | #24 | |
| #10 | - 24 | TRR11326GS | H6 | .500 | 2.75 | .984 | .194 | .152 | .25 | 5 | - | 4.4 |
| #10 | - 32 | TRR11346GS | H6 | .500 | 2.75 | .984 | .194 | .152 | .25 | 5 | - | 4.5 |
| #12 | - 24 | TRR11367GS | H7 | .500 | 3.15 | 1.142 | .220 | .165 | .28 | 5 | -- | 5.0 |
| #12 | - 28 | TRR11387GS | H7 | .500 | 3.15 | 1.142 | .220 | .165 | .28 | 5 | - | 5.1 |
| 1/4 | - 20 | TRR11406GS | H6 | .500 | 3.15 | 1.181 | .255 | .191 | .31 | 5 | - | 5.8 |
| 1/4 | - 28 | TRR11426GS | H6 | .500 | 3.15 | 1.181 | .255 | .191 | .31 | 5 | 15/64 | |

▶ NEXT PAGE

◎ : Excellent ○ : Good

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | 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 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | 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 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | | | | | | | | | | | |

X-Coating, HSS-PM

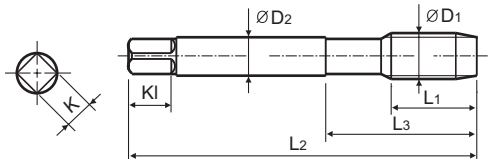
# Forming Taps for Multipurpose

## TRR11 SERIES

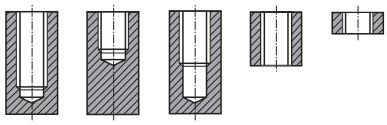
▶ High performance on various ductile materials

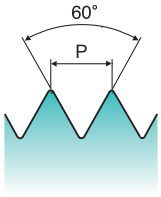
DIN/ANSI

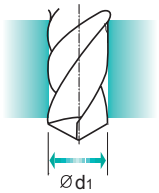
Short Chamfer




Hole type 3.0xD






Material groups **MU** | HSS PM | UNC UNF | H | 60° | 1P~2P | X Coating

p.7

## Machine Taps

Unit: Inch

| Size ØD1 | TPI | EDP No. | Limits | Thread Length L1 | Overall Length L2 | Neck Length L3 | Shank Diameter ØD2 | Square Size K | Square Length Kl | No. of Lobe Z | Tapping Drill Diameter (Ød1) Inch | Metric |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5/16 | - 18 | TRR11447GS | H7 | .555 | 3.54 | 1.378 | .318 | .238 | .38 | 5 | - | 7.3 |
| 5/16 | - 24 | TRR11467GS | H7 | .555 | 3.54 | 1.378 | .318 | .238 | .38 | 5 | - | 7.5 |
| 3/8 | - 16 | TRR11487GS | H7 | .626 | 3.94 | 1.575 | .381 | .286 | .44 | 8 | - | 8.8 |
| 3/8 | - 24 | TRR11507GS | H7 | .626 | 3.94 | 1.575 | .381 | .286 | .44 | 8 | - | 9.0 |
| 7/16 | - 14 | TRR11528GS | H8 | .713 | 3.94 | 1.693 | .323 | .242 | .41 | 8 | - | 10.3 |
| 7/16 | - 20 | TRR11548GS | H8 | .713 | 3.94 | 1.693 | .323 | .242 | .41 | 8 | - | 10.6 |
| 1/2 | - 13 | TRR11568GS | H8 | .768 | 4.33 | 1.929 | .367 | .275 | .44 | 8 | - | 11.8 |
| 1/2 | - 20 | TRR11588GS | H8 | .768 | 3.94 | 1.929 | .367 | .275 | .44 | 8 | - | 12.1 |
| 9/16 | - 12 | TRR11600GS | H10 | .835 | 4.33 | 1.969 | .429 | .322 | .50 | 8 | - | 13.4 |
| 9/16 | - 18 | TRR11620GS | H10 | .835 | 3.94 | 1.969 | .429 | .322 | .50 | 8 | - | 13.7 |
| 5/8 | - 11 | TRR11640GS | H10 | .909 | 4.33 | 2.126 | .480 | .360 | .56 | 8 | - | 14.9 |
| 5/8 | - 18 | TRR11660GS | H10 | .909 | 3.94 | 2.126 | .480 | .360 | .56 | 8 | - | 15.3 |
| 3/4 | - 10 | TRR11700GS | H10 | .799 | 4.92 | 2.441 | .590 | .442 | .69 | 8 | - | 17.9 |
| 3/4 | - 16 | TRR11720GS | H10 | .626 | 4.33 | 2.441 | .590 | .442 | .69 | 8 | - | 18.4 |
| 7/8 | - 9 | TRR1174AGS | H11 | .890 | 5.51 | 2.638 | .697 | .523 | .75 | 8 | - | 21.0 |
| 7/8 | - 14 | TRR1176AGS | H11 | .713 | 4.92 | 2.638 | .697 | .523 | .75 | 8 | - | 21.4 |
| 1" | - 8 | TRR1178AGS | H11 | 1.00 | 6.30 | 2.992 | .800 | .600 | .81 | 8 | - | 24.0 |
| 1" | - 12 | TRR1180AGS | H11 | .835 | 5.51 | 2.992 | .800 | .600 | .81 | 8 | - | 24.5 |

◎ : Excellent ○ : Good

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | 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 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | 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 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | | | | | | | | | | | |



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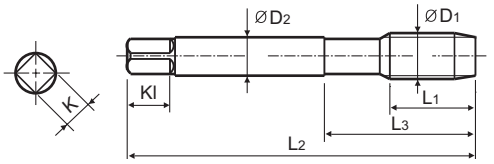
# Forming Taps for Multipurpose

## TRR13 SERIES

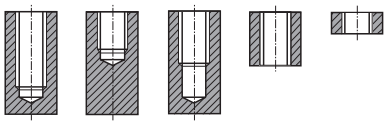
▶ High performance on various ductile materials

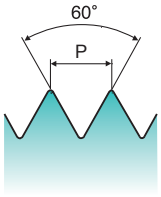
DIN/ANSI

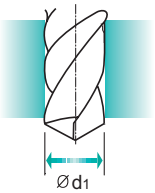
Short Chamfer




Hole type 3.0xD






Material groups **MU** | HSS PM | M/MF | D | 60° | 1P~2P | X Coating

p.7

## Machine Taps

Unit: Inch

| Size ØD1 | Pitch P | EDP No. | Limits | Thread Length L1 | Overall Length L2 | Neck Length L3 | Shank Diameter ØD2 | Square Size K | Square Length Kl | No. of Lobe Z | Tapping Drill Diameter (Ød1) Inch | Metric |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| M2 | x 0.4 | TRR13135GS | D5 | .315 | 1.77 | .362 | .141 | .110 | .19 | 4 | - | 1.8 |
| M2.5 | x 0.45 | TRR13175GS | D5 | .354 | 1.97 | .425 | .141 | .110 | .19 | 4 | - | 2.3 |
| M3 | x 0.5 | TRR13205GS | D5 | .236 | 2.21 | .709 | .141 | .110 | .19 | 4 | - | 2.8 |
| M3.5 | x 0.6 | TRR13226GS | D6 | .283 | 2.21 | .787 | .141 | .110 | .19 | 4 | - | 3.2 |
| M4 | x 0.7 | TRR13246GS | D6 | .331 | 2.48 | .827 | .168 | .131 | .25 | 4 | - | 3.7 |
| M4.5 | x 0.75 | TRR13266GS | D6 | .374 | 2.75 | .984 | .194 | .152 | .25 | 4 | - | 4.2 |
| M5 | x 0.8 | TRR13287GS | D7 | .378 | 2.75 | .984 | .194 | .152 | .25 | 5 | - | 4.6 |
| M6 | x 1.0 | TRR13318GS | D8 | .394 | 3.15 | 1.181 | .255 | .191 | .31 | 5 | - | 5.6 |
| M7 | x 1.0 | TRR13348GS | D8 | .394 | 3.15 | 1.181 | .318 | .238 | .38 | 5 | - | 6.6 |
| M8 | x 1.25 | TRR13369GS | D9 | .472 | 3.54 | 1.378 | .318 | .238 | .38 | 5 | - | 7.5 |
| M8 | x 1.0 | TRR13378GS | D8 | .472 | 3.54 | 1.378 | .318 | .238 | .38 | 5 | - | 7.6 |
| M10 | x 1.5 | TRR13420GS | D10 | .591 | 3.94 | 1.535 | .381 | .286 | .44 | 8 | - | 9.4 |
| M10 | x 1.25 | TRR13439GS | D9 | .591 | 3.94 | 1.535 | .381 | .286 | .44 | 8 | - | 9.5 |
| M12 | x 1.75 | TRR1350AGS | D11 | .669 | 4.33 | 1.929 | .367 | .275 | .44 | 8 | - | 11.2 |
| M12 | x 1.5 | TRR1351AGS | D11 | .669 | 3.94 | 1.929 | .367 | .275 | .44 | 8 | - | 11.3 |
| M14 | x 2.0 | TRR1354BGS | D12 | .787 | 4.33 | 1.969 | .429 | .322 | .50 | 8 | - | 13.1 |
| M14 | x 1.5 | TRR1355AGS | D11 | .787 | 3.94 | 1.969 | .429 | .322 | .50 | 8 | - | 13.3 |
| M16 | x 2.0 | TRR1360BGS | D12 | .787 | 4.33 | 2.126 | .480 | .360 | .56 | 8 | - | 15.1 |

▶ NEXT PAGE

◎ : Excellent ○ : Good

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | 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 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | 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 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | | | | | | | | | | | |

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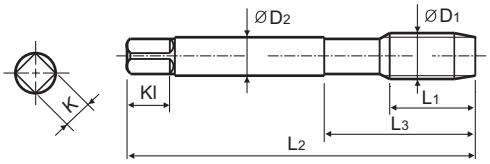
# Forming Taps for Multipurpose

## TRR13 SERIES

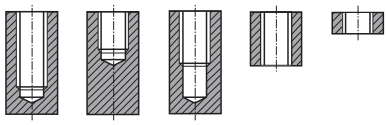
▶ High performance on various ductile materials

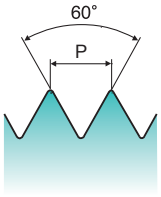
DIN/ANSI

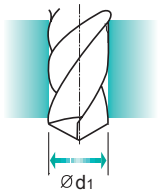
Short Chamfer




Hole type 3.0xD






Material groups **MU** | HSS PM | M/MF | D | 60° | 1P~2P | X Coating

p.7

## Machine Taps

Unit: Inch

| Size ØD1 | Pitch P | EDP No. | Limits | Thread Length L1 | Overall Length L2 | Neck Length L3 | Shank Diameter ØD2 | Square Size K | Square Length Kl | No. of Lobe Z | Tapping Drill Diameter (Ød1) Inch | Metric |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| M16 x | 1.5 | TRR1361AGS | D11 | .787 | 3.94 | 2.126 | .480 | .360 | .56 | 8 | - | 15.3 |
| M18 x | 2.5 | TRR1365BGS | D12 | .787 | 4.92 | 2.165 | .542 | .406 | .63 | 8 | - | 16.9 |
| M18 x | 1.5 | TRR1367AGS | D11 | .591 | 4.33 | 2.165 | .542 | .406 | .63 | 8 | - | 17.3 |
| M20 x | 2.5 | TRR1370BGS | D12 | .787 | 5.51 | 2.433 | .652 | .489 | .69 | 8 | - | 18.9 |
| M20 x | 1.5 | TRR1372AGS | D11 | .591 | 4.92 | 2.433 | .652 | .489 | .69 | 8 | - | 19.3 |
| M22 x | 2.5 | TRR1374BGS | D12 | .787 | 5.51 | 2.654 | .697 | .523 | .75 | 8 | - | 20.9 |
| M22 x | 1.5 | TRR1376AGS | D11 | .591 | 4.92 | 2.654 | .697 | .523 | .75 | 8 | - | 21.3 |
| M24 x | 3.0 | TRR1378EGS | D15 | .945 | 6.30 | 2.693 | .760 | .570 | .75 | 8 | - | 22.7 |
| M24 x | 1.5 | TRR1380AGS | D11 | .591 | 5.51 | 2.693 | .760 | .570 | .75 | 8 | - | 23.3 |

◎ : Excellent ○ : Good

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | 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 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | 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 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | | | | | | | | | | | |



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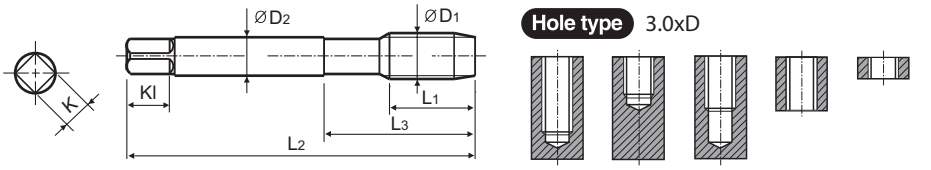
# Forming Taps for Multipurpose

**TRR10 SERIES**

▶ High performance on various ductile materials

DIN/ANSI




Material groups **MU** | HSS PM | UNC UNF | H | 60° | 2P~3P | X Coating

p.7

## Machine Taps

Unit: Inch

| Size ØD1 | TPI | EDP No. | Limits | Thread Length L1 | Overall Length L2 | Neck Length L3 | Shank Diameter ØD2 | Square Size K | Square Length Kl | No. of Lobe Z | Tapping Drill Diameter (Ød1) Inch | Metric |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| #0 | - 80 | TRR10023GS | H3 | .315 | 1.57 | .362 | .141 | .110 | .19 | 4 | - | 1.4 |
| #1 | - 64 | TRR10043GS | H3 | .315 | 1.57 | .370 | .141 | .110 | .19 | 4 | - | 1.7 |
| #2 | - 56 | TRR10082GS | H2 | .386 | 1.77 | .425 | .141 | .110 | .19 | 4 | - | 2.0 |
| #2 | - 56 | TRR10083GS | H3 | .386 | 1.77 | .425 | .141 | .110 | .19 | 4 | - | 2.0 |
| #2 | - 64 | TRR10102GS | H2 | .386 | 1.77 | .425 | .141 | .110 | .19 | 4 | - | 2.0 |
| #2 | - 64 | TRR10103GS | H3 | .386 | 1.77 | .425 | .141 | .110 | .19 | 4 | - | 2.0 |
| #3 | - 48 | TRR10122GS | H2 | .386 | 1.97 | .453 | .141 | .110 | .19 | 4 | - | 2.3 |
| #3 | - 48 | TRR10123GS | H3 | .386 | 1.97 | .453 | .141 | .110 | .19 | 4 | - | 2.3 |
| #3 | - 56 | TRR10142GS | H2 | .386 | 1.97 | .453 | .141 | .110 | .19 | 4 | - | 2.3 |
| #3 | - 56 | TRR10143GS | H3 | .386 | 1.97 | .453 | .141 | .110 | .19 | 4 | - | 2.3 |
| #4 | - 40 | TRR10163GS | H3 | .299 | 2.21 | .709 | .141 | .110 | .19 | 4 | #38 | - |
| #4 | - 40 | TRR10165GS | H5 | .299 | 2.21 | .709 | .141 | .110 | .19 | 4 | #38 | - |
| #4 | - 48 | TRR10183GS | H3 | .299 | 2.21 | .709 | .141 | .110 | .19 | 4 | - | 2.6 |
| #4 | - 48 | TRR10185GS | H5 | .299 | 2.21 | .709 | .141 | .110 | .19 | 4 | - | 2.6 |
| #5 | - 40 | TRR10203GS | H3 | .299 | 2.21 | .709 | .141 | .110 | .19 | 4 | - | 2.9 |
| #5 | - 40 | TRR10205GS | H5 | .299 | 2.21 | .709 | .141 | .110 | .19 | 4 | - | 2.9 |
| #5 | - 44 | TRR10223GS | H3 | .299 | 2.21 | .709 | .141 | .110 | .19 | 4 | - | 2.9 |
| #5 | - 44 | TRR10225GS | H5 | .299 | 2.21 | .709 | .141 | .110 | .19 | 4 | - | 2.9 |

▶ NEXT PAGE

◎ : Excellent ○ : Good

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | 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 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | 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 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | | | | | | | | | | | |

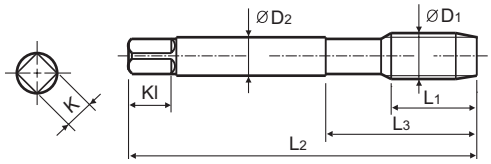
X-Coating, HSS-PM

# Forming Taps for Multipurpose

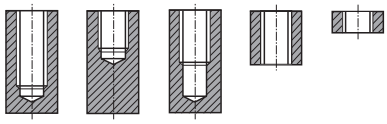
## TRR10 SERIES

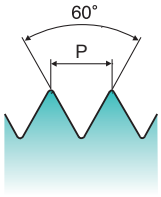
▶ High performance on various ductile materials

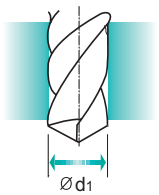
DIN/ANSI




Hole type 3.0xD






Material groups **MU** | HSS PM | UNC UNF | H | 60° | 2P~3P | X Coating

p.7

## Machine Taps

Unit: Inch

| Size ØD1 | TPI | EDP No. | Limits | Thread Length L1 | Overall Length L2 | Neck Length L3 | Shank Diameter ØD2 | Square Size K | Square Length Kl | No. of Lobe Z | Tapping Drill Diameter (Ød1) Inch | Metric |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| #6 - 32 | | TRR10243GS | H3 | .374 | 2.21 | .787 | .141 | .110 | .19 | 4 | 1/8 | - |
| #6 - 32 | | TRR10245GS | H5 | .374 | 2.21 | .787 | .141 | .110 | .19 | 4 | 1/8 | - |
| #6 - 40 | | TRR10263GS | H3 | .374 | 2.21 | .787 | .141 | .110 | .19 | 4 | - | 3.2 |
| #6 - 40 | | TRR10265GS | H5 | .374 | 2.21 | .787 | .141 | .110 | .19 | 4 | - | 3.2 |
| #8 - 32 | | TRR10283GS | H3 | .374 | 2.48 | .827 | .168 | .131 | .25 | 4 | - | 3.8 |
| #8 - 32 | | TRR10285GS | H5 | .374 | 2.48 | .827 | .168 | .131 | .25 | 4 | - | 3.8 |
| #8 - 36 | | TRR10303GS | H3 | .374 | 2.48 | .827 | .168 | .131 | .25 | 4 | #24 | - |
| #8 - 36 | | TRR10305GS | H5 | .374 | 2.48 | .827 | .168 | .131 | .25 | 4 | #24 | - |
| #10 - 24 | | TRR10324GS | H4 | .500 | 2.75 | .984 | .194 | .152 | .25 | 5 | - | 4.4 |
| #10 - 24 | | TRR10326GS | H6 | .500 | 2.75 | .984 | .194 | .152 | .25 | 5 | - | 4.4 |
| #10 - 32 | | TRR10344GS | H4 | .500 | 2.75 | .984 | .194 | .152 | .25 | 5 | - | 4.5 |
| #10 - 32 | | TRR10346GS | H6 | .500 | 2.75 | .984 | .194 | .152 | .25 | 5 | - | 4.5 |
| #12 - 24 | | TRR10365GS | H5 | .500 | 3.15 | 1.142 | .220 | .165 | .28 | 5 | - | 5.0 |
| #12 - 24 | | TRR10367GS | H7 | .500 | 3.15 | 1.142 | .220 | .165 | .28 | 5 | - | 5.0 |
| #12 - 28 | | TRR10385GS | H5 | .500 | 3.15 | 1.142 | .220 | .165 | .28 | 5 | - | 5.1 |
| #12 - 28 | | TRR10387GS | H7 | .500 | 3.15 | 1.142 | .220 | .165 | .28 | 5 | - | 5.1 |
| 1/4 - 20 | | TRR10404GS | H4 | .500 | 3.15 | 1.181 | .255 | .191 | .31 | 5 | - | 5.8 |
| 1/4 - 20 | | TRR10406GS | H6 | .500 | 3.15 | 1.181 | .255 | .191 | .31 | 5 | - | 5.8 |
| 1/4 - 28 | | TRR10424GS | H4 | .500 | 3.15 | 1.181 | .255 | .191 | .31 | 5 | 15/64 | - |
| 1/4 - 28 | | TRR10426GS | H6 | .500 | 3.15 | 1.181 | .255 | .191 | .31 | 5 | 15/64 | - |

▶ NEXT PAGE

◎ : Excellent ○ : Good

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | 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 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | 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 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | | | | | | | | | | | |



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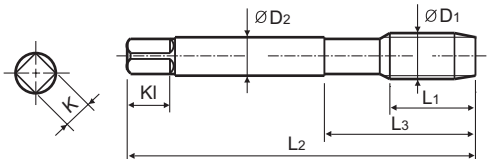
X-Coating, HSS-PM

# Forming Taps for Multipurpose

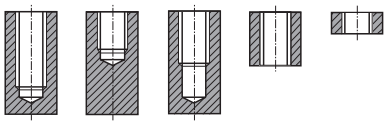
## TRR10 SERIES

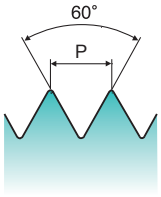
▶ High performance on various ductile materials

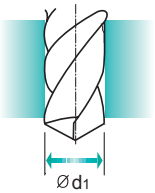
DIN/ANSI




Hole type 3.0xD






Material groups **MU** | HSS PM | UNC UNF | H | 60° | 2P~3P | X Coating

p.7

## Machine Taps

Unit: Inch

| Size ØD1 | TPI | EDP No. | Limits | Thread Length L1 | Overall Length L2 | Neck Length L3 | Shank Diameter ØD2 | Square Size K | Square Length Kl | No. of Lobe Z | Tapping Drill Diameter (Ød1) Inch | Metric |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5/16 | 18 | TRR10445GS | H5 | .555 | 3.54 | 1.378 | .318 | .238 | .38 | 5 | - | 7.3 |
| 5/16 | 18 | TRR10447GS | H7 | .555 | 3.54 | 1.378 | .318 | .238 | .38 | 5 | - | 7.3 |
| 5/16 | 24 | TRR10465GS | H5 | .555 | 3.54 | 1.378 | .318 | .238 | .38 | 5 | - | 7.5 |
| 5/16 | 24 | TRR10467GS | H7 | .555 | 3.54 | 1.378 | .318 | .238 | .38 | 5 | - | 7.5 |
| 3/8 | 16 | TRR10485GS | H5 | .626 | 3.94 | 1.575 | .381 | .286 | .44 | 8 | - | 8.8 |
| 3/8 | 16 | TRR10487GS | H7 | .626 | 3.94 | 1.575 | .381 | .286 | .44 | 8 | - | 8.8 |
| 3/8 | 24 | TRR10505GS | H5 | .626 | 3.94 | 1.575 | .381 | .286 | .44 | 8 | - | 9.0 |
| 3/8 | 24 | TRR10507GS | H7 | .626 | 3.94 | 1.575 | .381 | .286 | .44 | 8 | - | 9.0 |
| 7/16 | 14 | TRR10525GS | H5 | .713 | 3.94 | 1.693 | .323 | .242 | .41 | 8 | - | 10.3 |
| 7/16 | 14 | TRR10528GS | H8 | .713 | 3.94 | 1.693 | .323 | .242 | .41 | 8 | - | 10.3 |
| 7/16 | 20 | TRR10545GS | H5 | .713 | 3.94 | 1.693 | .323 | .242 | .41 | 8 | - | 10.6 |
| 7/16 | 20 | TRR10548GS | H8 | .713 | 3.94 | 1.693 | .323 | .242 | .41 | 8 | - | 10.6 |
| 1/2 | 13 | TRR10565GS | H5 | .768 | 4.33 | 1.929 | .367 | .275 | .44 | 8 | - | 11.8 |
| 1/2 | 13 | TRR10568GS | H8 | .768 | 4.33 | 1.929 | .367 | .275 | .44 | 8 | - | 11.8 |
| 1/2 | 20 | TRR10585GS | H5 | .768 | 3.94 | 1.929 | .367 | .275 | .44 | 8 | - | 12.1 |
| 1/2 | 20 | TRR10588GS | H8 | .768 | 3.94 | 1.929 | .367 | .275 | .44 | 8 | - | 12.1 |
| 9/16 | 12 | TRR10600GS | H10 | .835 | 4.33 | 1.969 | .429 | .322 | .50 | 8 | - | 13.4 |
| 9/16 | 12 | TRR10607GS | H7 | .835 | 4.33 | 1.969 | .429 | .322 | .50 | 8 | - | 13.4 |
| 9/16 | 18 | TRR10620GS | H10 | .835 | 3.94 | 1.969 | .429 | .322 | .50 | 8 | - | 13.7 |
| 9/16 | 18 | TRR10627GS | H7 | .835 | 3.94 | 1.969 | .429 | .322 | .50 | 8 | - | 13.7 |

▶ NEXT PAGE

◎ : Excellent ○ : Good

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | 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 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | 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 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | | | | | | | | | | | |

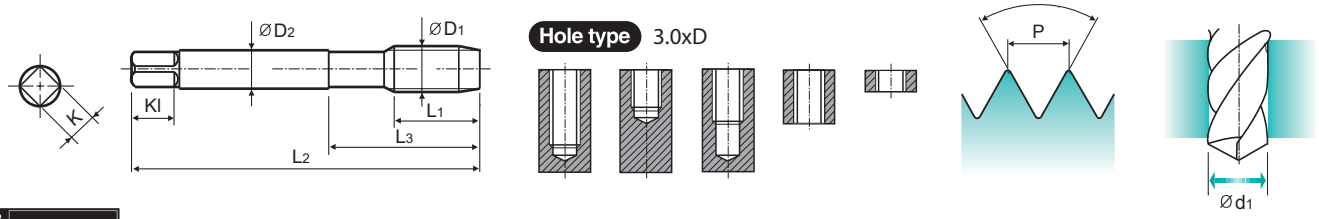
X-Coating, HSS-PM

# Forming Taps for Multipurpose

**TRR10** SERIES

▶ High performance on various ductile materials

DIN/ANSI




Material groups **MU** | HSS PM | UNC UNF | H | 60° | 2P~3P | X Coating

p.7

## Machine Taps

Unit: Inch

| Size ØD1 | | TPI | EDP No. | Limits | Thread Length L1 | Overall Length L2 | Neck Length L3 | Shank Diameter ØD2 | Square Size K | Square Length Kl | No. of Lobe Z | Tapping Drill Diameter (Ød1) Inch | Metric |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5/8 | - | 11 | TRR10640GS | H10 | .909 | 4.33 | 2.126 | .480 | .360 | .56 | 8 | - | 14.9 |
| 5/8 | - | 11 | TRR10647GS | H7 | .909 | 4.33 | 2.126 | .480 | .360 | .56 | 8 | - | 14.9 |
| 5/8 | - | 18 | TRR10660GS | H10 | .909 | 3.94 | 2.126 | .480 | .360 | .56 | 8 | - | 15.3 |
| 5/8 | - | 18 | TRR10667GS | H7 | .909 | 3.94 | 2.126 | .480 | .360 | .56 | 8 | - | 15.3 |
| 3/4 | - | 10 | TRR10700GS | H10 | .799 | 4.92 | 2.441 | .590 | .442 | .69 | 8 | - | 17.9 |
| 3/4 | - | 10 | TRR10707GS | H7 | .799 | 4.92 | 2.441 | .590 | .442 | .69 | 8 | - | 17.9 |
| 3/4 | - | 16 | TRR10720GS | H10 | .626 | 4.33 | 2.441 | .590 | .442 | .69 | 8 | - | 18.4 |
| 3/4 | - | 16 | TRR10727GS | H7 | .626 | 4.33 | 2.441 | .590 | .442 | .69 | 8 | - | 18.4 |
| 7/8 | - | 9 | TRR10748GS | H8 | .890 | 5.51 | 2.638 | .697 | .523 | .75 | 8 | - | 21.0 |
| 7/8 | - | 9 | TRR1074AGS | H11 | .890 | 5.51 | 2.638 | .697 | .523 | .75 | 8 | - | 21.0 |
| 7/8 | - | 14 | TRR10768GS | H8 | .713 | 4.92 | 2.638 | .697 | .523 | .75 | 8 | - | 21.4 |
| 7/8 | - | 14 | TRR1076AGS | H11 | .713 | 4.92 | 2.638 | .697 | .523 | .75 | 8 | - | 21.4 |
| 1" | - | 8 | TRR10788GS | H8 | 1.00 | 6.30 | 2.992 | .800 | .600 | .81 | 8 | - | 24.0 |
| 1" | - | 8 | TRR1078AGS | H11 | 1.00 | 6.30 | 2.992 | .800 | .600 | .81 | 8 | - | 24.0 |
| 1" | - | 12 | TRR10808GS | H8 | .835 | 5.51 | 2.992 | .800 | .600 | .81 | 8 | - | 24.5 |
| 1" | - | 12 | TRR1080AGS | H11 | .835 | 5.51 | 2.992 | .800 | .600 | .81 | 8 | - | 24.5 |

◎ : Excellent ○ : Good

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | 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 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | 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 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | | | | | | | | | | | |

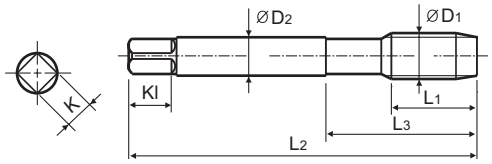
X-Coating, HSS-PM

# Forming Taps for Multipurpose

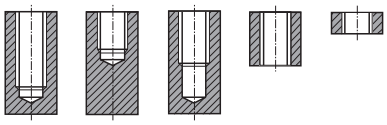
**TRR12** SERIES

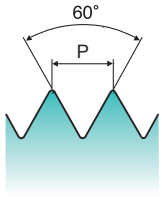
▶ High performance on various ductile materials

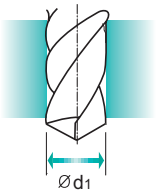
DIN/ANSI




Hole type 3.0xD






Material groups **MU** | HSS PM | M/MF | D | 60° | 2P~3P | X Coating

p.7

## Machine Taps

Unit: Inch

| Size ØD1 | Pitch P | EDP No. | Limits | Thread Length L1 | Overall Length L2 | Neck Length L3 | Shank Diameter ØD2 | Square Size K | Square Length Kl | No. of Lobe Z | Tapping Drill Diameter (Ød1) Inch | Metric |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| M2 x | 0.4 | TRR12133GS | D3 | .315 | 1.77 | .362 | .141 | .110 | .19 | 4 | - | 1.8 |
| M2 x | 0.4 | TRR12135GS | D5 | .315 | 1.77 | .362 | .141 | .110 | .19 | 4 | - | 1.8 |
| M2.5 x | 0.45 | TRR12173GS | D3 | .354 | 1.97 | .425 | .141 | .110 | .19 | 4 | - | 2.3 |
| M2.5 x | 0.45 | TRR12175GS | D5 | .354 | 1.97 | .425 | .141 | .110 | .19 | 4 | - | 2.3 |
| M3 x | 0.5 | TRR12203GS | D3 | .236 | 2.21 | .709 | .141 | .110 | .19 | 4 | - | 2.8 |
| M3 x | 0.5 | TRR12205GS | D5 | .236 | 2.21 | .709 | .141 | .110 | .19 | 4 | - | 2.8 |
| M3.5 x | 0.6 | TRR12224GS | D4 | .283 | 2.21 | .787 | .141 | .110 | .19 | 4 | - | 3.2 |
| M3.5 x | 0.6 | TRR12226GS | D6 | .283 | 2.21 | .787 | .141 | .110 | .19 | 4 | - | 3.2 |
| M4 x | 0.7 | TRR12244GS | D4 | .331 | 2.48 | .827 | .168 | .131 | .25 | 4 | - | 3.7 |
| M4 x | 0.7 | TRR12246GS | D6 | .331 | 2.48 | .827 | .168 | .131 | .25 | 4 | - | 3.7 |
| M4.5 x | 0.75 | TRR12264GS | D4 | .374 | 2.75 | .984 | .194 | .152 | .25 | 4 | - | 4.2 |
| M4.5 x | 0.75 | TRR12266GS | D6 | .374 | 2.75 | .984 | .194 | .152 | .25 | 4 | - | 4.2 |
| M5 x | 0.8 | TRR12284GS | D4 | .378 | 2.75 | .984 | .194 | .152 | .25 | 5 | - | 4.6 |
| M5 x | 0.8 | TRR12287GS | D7 | .378 | 2.75 | .984 | .194 | .152 | .25 | 5 | - | 4.6 |
| M6 x | 1 | TRR12315GS | D5 | .394 | 3.15 | 1.181 | .255 | .191 | .31 | 5 | - | 5.6 |
| M6 x | 1 | TRR12318GS | D8 | .394 | 3.15 | 1.181 | .255 | .191 | .31 | 5 | - | 5.6 |
| M7 x | 1 | TRR12345GS | D5 | .394 | 3.15 | 1.181 | .318 | .238 | .38 | 5 | - | 6.6 |
| M7 x | 1 | TRR12348GS | D8 | .394 | 3.15 | 1.181 | .318 | .238 | .38 | 5 | - | 6.6 |
| M8 x | 1.25 | TRR12365GS | D5 | .472 | 3.54 | 1.378 | .318 | .238 | .38 | 5 | - | 7.5 |
| M8 x | 1.25 | TRR12369GS | D9 | .472 | 3.54 | 1.378 | .318 | .238 | .38 | 5 | - | 7.5 |

▶ NEXT PAGE

◎ : Excellent ○ : Good

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | 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 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | 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 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | | | | | | | | | | | |

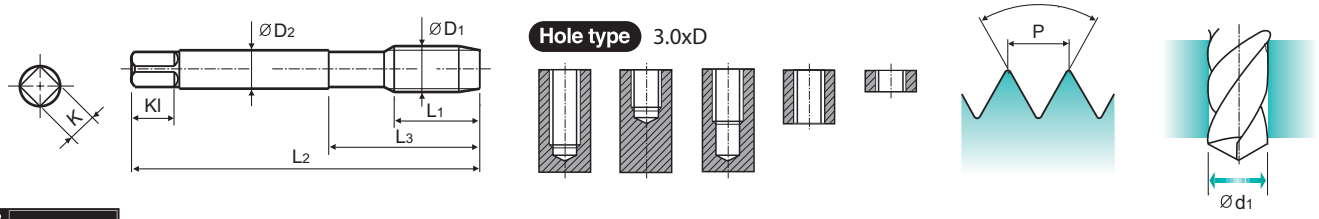
X-Coating, HSS-PM

# Forming Taps for Multipurpose

## TRR12 SERIES

▶ High performance on various ductile materials

DIN/ANSI




Material groups **MU** | HSS PM | M/MF | D | 60° | 2P~3P | X Coating

p.7

## Machine Taps

Unit: Inch

| Size ØD1 | | Pitch P | EDP No. | Limits | Thread Length L1 | Overall Length L2 | Neck Length L3 | Shank Diameter ØD2 | Square Size K | Square Length Kl | No. of Lobe Z | Tapping Drill Diameter (Ød1) Inch | Metric |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| M8 | x | 1 | TRR12375GS | D5 | .472 | 3.54 | 1.378 | .318 | .238 | .38 | 5 | - | 7.6 |
| M8 | x | 1 | TRR12378GS | D8 | .472 | 3.54 | 1.378 | .318 | .238 | .38 | 5 | - | 7.6 |
| M10 | x | 1.5 | TRR12420GS | D10 | .591 | 3.94 | 1.535 | .381 | .286 | .44 | 8 | - | 9.4 |
| M10 | x | 1.5 | TRR12426GS | D6 | .591 | 3.94 | 1.535 | .381 | .286 | .44 | 8 | - | 9.4 |
| M10 | x | 1.25 | TRR12435GS | D5 | .591 | 3.94 | 1.535 | .381 | .286 | .44 | 8 | - | 9.5 |
| M10 | x | 1.25 | TRR12439GS | D9 | .591 | 3.94 | 1.535 | .381 | .286 | .44 | 8 | - | 9.5 |
| M12 | x | 1.75 | TRR12506GS | D6 | .669 | 4.33 | 1.929 | .367 | .275 | .44 | 8 | - | 11.2 |
| M12 | x | 1.75 | TRR1250AGS | D11 | .669 | 4.33 | 1.929 | .367 | .275 | .44 | 8 | - | 11.2 |
| M12 | x | 1.5 | TRR12516GS | D6 | .669 | 3.94 | 1.929 | .367 | .275 | .44 | 8 | - | 11.3 |
| M12 | x | 1.5 | TRR1251AGS | D11 | .669 | 3.94 | 1.929 | .367 | .275 | .44 | 8 | - | 11.3 |
| M14 | x | 2 | TRR12547GS | D7 | .787 | 4.33 | 1.969 | .429 | .322 | .50 | 8 | - | 13.1 |
| M14 | x | 2 | TRR1254BGS | D12 | .787 | 4.33 | 1.969 | .429 | .322 | .50 | 8 | - | 13.1 |
| M14 | x | 1.5 | TRR12556GS | D6 | .787 | 3.94 | 1.969 | .429 | .322 | .50 | 8 | - | 13.3 |
| M14 | x | 1.5 | TRR1255AGS | D11 | .787 | 3.94 | 1.969 | .429 | .322 | .50 | 8 | - | 13.3 |
| M16 | x | 2 | TRR12607GS | D7 | .787 | 4.33 | 2.126 | .480 | .360 | .56 | 8 | - | 15.1 |
| M16 | x | 2 | TRR1260BGS | D12 | .787 | 4.33 | 2.126 | .480 | .360 | .56 | 8 | - | 15.1 |
| M16 | x | 1.5 | TRR12616GS | D6 | .787 | 3.94 | 2.126 | .480 | .360 | .56 | 8 | - | 15.3 |
| M16 | x | 1.5 | TRR1261AGS | D11 | .787 | 3.94 | 2.126 | .480 | .360 | .56 | 8 | - | 15.3 |
| M18 | x | 2.5 | TRR12657GS | D7 | .787 | 4.92 | 2.165 | .542 | .406 | .63 | 8 | - | 16.9 |
| M18 | x | 2.5 | TRR1265BGS | D12 | .787 | 4.92 | 2.165 | .542 | .406 | .63 | 8 | - | 16.9 |

▶ NEXT PAGE

◎ : Excellent ○ : Good

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | 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 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | 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 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | | | | | | | | | | | |



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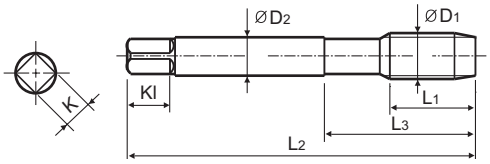
X-Coating, HSS-PM

# Forming Taps for Multipurpose

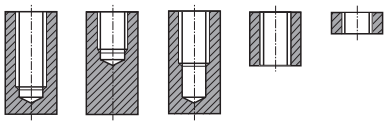
## TRR12 SERIES

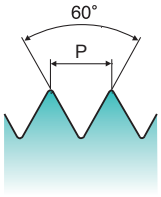
▶ High performance on various ductile materials

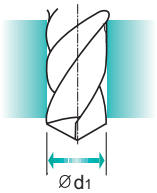
DIN/ANSI




Hole type 3.0xD






Material groups **MU** | HSS PM | M/MF | D | 60° | 2P~3P | X Coating

p.7

## Machine Taps

Unit: Inch

| Size ØD1 | Pitch P | EDP No. | Limits | Thread Length L1 | Overall Length L2 | Neck Length L3 | Shank Diameter ØD2 | Square Size K | Square Length Kl | No. of Lobe Z | Tapping Drill Diameter (Ød1) Inch | Metric |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| M18 x | 1.5 | TRR12676GS | D6 | .591 | 4.33 | 2.165 | .542 | .406 | .63 | 8 | - | 17.3 |
| M18 x | 1.5 | TRR1267AGS | D11 | .591 | 4.33 | 2.165 | .542 | .406 | .63 | 8 | - | 17.3 |
| M20 x | 2.5 | TRR12707GS | D7 | .787 | 5.51 | 2.433 | .652 | .489 | .69 | 8 | - | 18.9 |
| M20 x | 2.5 | TRR1270BGS | D12 | .787 | 5.51 | 2.433 | .652 | .489 | .69 | 8 | - | 18.9 |
| M20 x | 1.5 | TRR12726GS | D6 | .591 | 4.92 | 2.433 | .652 | .489 | .69 | 8 | - | 19.3 |
| M20 x | 1.5 | TRR1272AGS | D11 | .591 | 4.92 | 2.433 | .652 | .489 | .69 | 8 | - | 19.3 |
| M22 x | 2.5 | TRR1274BGS | D12 | .787 | 5.51 | 2.654 | .697 | .523 | .75 | 8 | - | 20.9 |
| M22 x | 1.5 | TRR1276AGS | D11 | .591 | 4.92 | 2.654 | .697 | .523 | .75 | 8 | - | 21.3 |
| M24 x | 3 | TRR1278EGS | D15 | .945 | 6.30 | 2.693 | .760 | .570 | .75 | 8 | - | 22.7 |
| M24 x | 1.5 | TRR1280AGS | D11 | .591 | 5.51 | 2.693 | .760 | .570 | .75 | 8 | - | 23.3 |

◎ : Excellent ○ : Good

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | 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 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | 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 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | | | | | | | | | | | |

X-Coating, HSS-PM

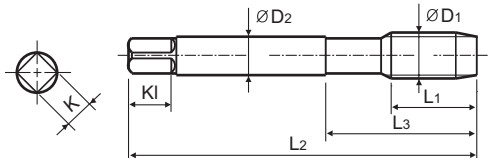
# Forming Taps for Multipurpose

## TRR15 SERIES

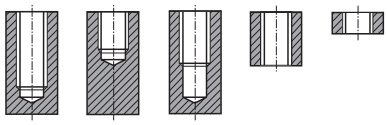
▶ High performance on various ductile materials

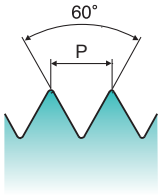
DIN/ANSI

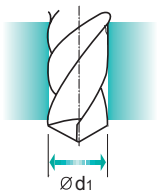
Short Chamfer




Hole type 3.0xD






with Internal Coolant

Material groups **MU**

HSS PM | UNC UNF | H | 60° | 1P~2P | X Coating

p.7

## Machine Taps

Unit: Inch

| Size ØD1 | TPI | EDP No. | Limits | Thread Length L1 | Overall Length L2 | Neck Length L3 | Shank Diameter ØD2 | Square Size K | Square Length Kl | No. of Lobe Z | Tapping Drill Diameter (Ød1) Inch | Metric |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/4 - | 20 | TRR15406GSP | H6 | .500 | 3.15 | 1.181 | .255 | .191 | .31 | 5 | - | 5.8 |
| 1/4 - | 28 | TRR15426GSP | H6 | .500 | 3.15 | 1.181 | .255 | .191 | .31 | 5 | 15/64 | - |
| 5/16 - | 18 | TRR15447GSP | H7 | .555 | 3.54 | 1.378 | .318 | .238 | .38 | 5 | - | 7.3 |
| 5/16 - | 24 | TRR15467GSP | H7 | .555 | 3.54 | 1.378 | .318 | .238 | .38 | 5 | - | 7.5 |
| 3/8 - | 16 | TRR15487GSP | H7 | .626 | 3.94 | 1.575 | .381 | .286 | .44 | 8 | - | 8.8 |
| 3/8 - | 24 | TRR15507GSP | H7 | .626 | 3.94 | 1.575 | .381 | .286 | .44 | 8 | - | 9 |
| 7/16 - | 14 | TRR15528GSP | H8 | .713 | 3.94 | 1.693 | .323 | .242 | .41 | 8 | - | 10.3 |
| 7/16 - | 20 | TRR15548GSP | H8 | .713 | 3.94 | 1.693 | .323 | .242 | .41 | 8 | - | 10.6 |
| 1/2 - | 13 | TRR15568GSP | H8 | .768 | 4.33 | 1.929 | .367 | .275 | .44 | 8 | - | 11.8 |
| 1/2 - | 20 | TRR15588GSP | H8 | .768 | 3.94 | 1.929 | .367 | .275 | .44 | 8 | - | 12.1 |
| 9/16 - | 12 | TRR15600GSP | H10 | .835 | 4.33 | 1.969 | .429 | .322 | .50 | 8 | - | 13.4 |
| 9/16 - | 18 | TRR15620GSP | H10 | .835 | 3.94 | 1.969 | .429 | .322 | .50 | 8 | - | 13.7 |
| 5/8 - | 11 | TRR15640GSP | H10 | .909 | 4.33 | 2.126 | .480 | .360 | .56 | 8 | - | 14.9 |
| 5/8 - | 18 | TRR15660GSP | H10 | .909 | 3.94 | 2.126 | .480 | .360 | .56 | 8 | - | 15.3 |
| 3/4 - | 10 | TRR15700GSP | H10 | .799 | 4.92 | 2.441 | .590 | .442 | .69 | 8 | - | 17.9 |
| 3/4 - | 16 | TRR15720GSP | H10 | .626 | 4.33 | 2.441 | .590 | .442 | .69 | 8 | - | 18.4 |
| 7/8 - | 9 | TRR1574AGSP | H11 | .890 | 5.51 | 2.638 | .697 | .523 | .75 | 8 | - | 21 |
| 7/8 - | 14 | TRR1576AGSP | H11 | .713 | 4.92 | 2.638 | .697 | .523 | .75 | 8 | - | 21.4 |
| 1" - | 8 | TRR1578AGSP | H11 | 1.00 | 6.30 | 2.992 | .800 | .600 | .81 | 8 | - | 24 |
| 1" - | 12 | TRR1580AGSP | H11 | .835 | 5.51 | 2.992 | .800 | .600 | .81 | 8 | - | 24.5 |

◎ : Excellent ○ : Good

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | 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 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | 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 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | | | | | | | | | | | |



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X-Coating, HSS-PM

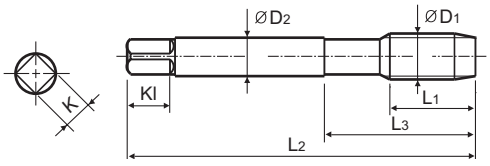
# Forming Taps for Multipurpose

**TRR17 SERIES**

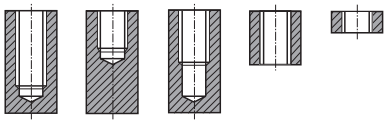
▶ High performance on various ductile materials

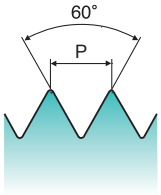
DIN/ANSI

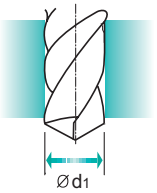
Short Chamfer




Hole type 3.0xD






with Internal Coolant

Material groups **MU** | HSS PM | M/MF | D | 60° | 1P~2P | X Coating

p.7

## Machine Taps

Unit: Inch

| Size | Pitch | EDP No. | Limits | Thread Length | Overall Length | Neck Length | Shank Diameter | Square Size | Square Length | No. of Lobe | Tapping Drill Diameter (Ød1) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ØD1 | P | | | L1 | L2 | L3 | ØD2 | K | Kl | Z | Inch | Metric |
| M6 x | 1.0 | TRR17318GSP | D8 | .394 | 3.15 | 1.181 | .255 | .191 | .31 | 5 | - | 5.6 |
| M7 x | 1.0 | TRR17348GSP | D8 | .394 | 3.15 | 1.181 | .318 | .238 | .38 | 5 | - | 6.6 |
| M8 x | 1.25 | TRR17369GSP | D9 | .472 | 3.54 | 1.378 | .318 | .238 | .38 | 5 | - | 7.5 |
| M8 x | 1.0 | TRR17378GSP | D8 | .472 | 3.54 | 1.378 | .318 | .238 | .38 | 5 | - | 7.6 |
| M10 x | 1.5 | TRR17420GSP | D10 | .591 | 3.94 | 1.535 | .381 | .286 | .44 | 8 | - | 9.4 |
| M10 x | 1.25 | TRR17439GSP | D9 | .591 | 3.94 | 1.535 | .381 | .286 | .44 | 8 | - | 9.5 |
| M12 x | 1.75 | TRR1750AGSP | D11 | .669 | 4.33 | 1.929 | .367 | .275 | .44 | 8 | - | 11.2 |
| M12 x | 1.5 | TRR1751AGSP | D11 | .669 | 3.94 | 1.929 | .367 | .275 | .44 | 8 | - | 11.3 |
| M14 x | 2.0 | TRR1754BGSP | D12 | .787 | 4.33 | 1.969 | .429 | .322 | .50 | 8 | - | 13.1 |
| M14 x | 1.5 | TRR1755AGSP | D11 | .787 | 3.94 | 1.969 | .429 | .322 | .50 | 8 | - | 13.3 |
| M16 x | 2.0 | TRR1760BGSP | D12 | .787 | 4.33 | 2.126 | .480 | .360 | .56 | 8 | - | 15.1 |
| M16 x | 1.5 | TRR1761AGSP | D11 | .787 | 3.94 | 2.126 | .480 | .360 | .56 | 8 | - | 15.3 |
| M18 x | 2.5 | TRR1765BGSP | D12 | .787 | 4.92 | 2.165 | .542 | .406 | .63 | 8 | - | 16.9 |
| M18 x | 1.5 | TRR1767AGSP | D11 | .591 | 4.33 | 2.165 | .542 | .406 | .63 | 8 | - | 17.3 |
| M20 x | 2.5 | TRR1770BGSP | D12 | .787 | 5.51 | 2.433 | .652 | .489 | .69 | 8 | - | 18.9 |
| M20 x | 1.5 | TRR1772AGSP | D11 | .591 | 4.92 | 2.433 | .652 | .489 | .69 | 8 | - | 19.3 |
| M22 x | 2.5 | TRR1774BGSP | D12 | .787 | 5.51 | 2.654 | .697 | .523 | .75 | 8 | - | 20.9 |
| M22 x | 1.5 | TRR1776AGSP | D11 | .591 | 4.92 | 2.654 | .697 | .523 | .75 | 8 | - | 21.3 |
| M24 x | 3.0 | TRR1778EGSP | D15 | .945 | 6.30 | 2.693 | .760 | .570 | .75 | 8 | - | 22.7 |
| M24 x | 1.5 | TRR1780AGSP | D11 | .591 | 5.51 | 2.693 | .760 | .570 | .75 | 8 | - | 23.3 |

◎ : Excellent ○ : Good

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | 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 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | 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 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | | | | | | | | | | | |

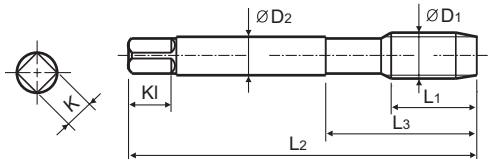
X-Coating, HSS-PM

# Forming Taps for Multipurpose

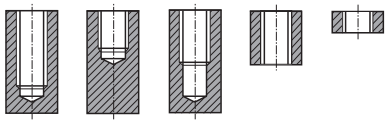
## TRR14 SERIES

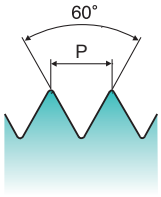
▶ High performance on various ductile materials

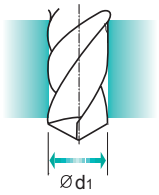
DIN/ANSI




Hole type 3.0xD






with Internal Coolant

Material groups **MU**

HSS PM | UNC UNF | H | 60° | 2P~3P | X Coating

p.7

## Machine Taps

Unit: Inch

| Size ØD1 | TPI | EDP No. | Limits | Thread Length L1 | Overall Length L2 | Neck Length L3 | Shank Diameter ØD2 | Square Size K | Square Length Kl | No. of Lobe Z | Tapping Drill Diameter (Ød1) Inch | Metric |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/4 - | 20 | TRR14404GSP | H4 | .500 | 3.15 | 1.181 | .255 | .191 | .31 | 5 | - | 5.8 |
| 1/4 - | 20 | TRR14406GSP | H6 | .500 | 3.15 | 1.181 | .255 | .191 | .31 | 5 | - | 5.8 |
| 1/4 - | 28 | TRR14424GSP | H4 | .500 | 3.15 | 1.181 | .255 | .191 | .31 | 5 | 15/64 | - |
| 1/4 - | 28 | TRR14426GSP | H6 | .500 | 3.15 | 1.181 | .255 | .191 | .31 | 5 | 15/64 | - |
| 5/16 - | 18 | TRR14445GSP | H5 | .555 | 3.54 | 1.378 | .318 | .238 | .38 | 5 | - | 7.3 |
| 5/16 - | 18 | TRR14447GSP | H7 | .555 | 3.54 | 1.378 | .318 | .238 | .38 | 5 | - | 7.3 |
| 5/16 - | 24 | TRR14465GSP | H5 | .555 | 3.54 | 1.378 | .318 | .238 | .38 | 5 | - | 7.5 |
| 5/16 - | 24 | TRR14467GSP | H7 | .555 | 3.54 | 1.378 | .318 | .238 | .38 | 5 | - | 7.5 |
| 3/8 - | 16 | TRR14485GSP | H5 | .626 | 3.94 | 1.575 | .381 | .286 | .44 | 8 | - | 8.8 |
| 3/8 - | 16 | TRR14487GSP | H7 | .626 | 3.94 | 1.575 | .381 | .286 | .44 | 8 | - | 8.8 |
| 3/8 - | 24 | TRR14505GSP | H5 | .626 | 3.94 | 1.575 | .381 | .286 | .44 | 8 | - | 9.0 |
| 3/8 - | 24 | TRR14507GSP | H7 | .626 | 3.94 | 1.575 | .381 | .286 | .44 | 8 | - | 9.0 |
| 7/16 - | 14 | TRR14525GSP | H5 | .713 | 3.94 | 1.693 | .323 | .242 | .41 | 8 | - | 10.3 |
| 7/16 - | 14 | TRR14528GSP | H8 | .713 | 3.94 | 1.693 | .323 | .242 | .41 | 8 | - | 10.3 |
| 7/16 - | 20 | TRR14545GSP | H5 | .713 | 3.94 | 1.693 | .323 | .242 | .41 | 8 | - | 10.6 |
| 7/16 - | 20 | TRR14548GSP | H8 | .713 | 3.94 | 1.693 | .323 | .242 | .41 | 8 | - | 10.6 |
| 1/2 - | 13 | TRR14565GSP | H5 | .768 | 4.33 | 1.929 | .367 | .275 | .44 | 8 | - | 11.8 |
| 1/2 - | 13 | TRR14568GSP | H8 | .768 | 4.33 | 1.929 | .367 | .275 | .44 | 8 | - | 11.8 |
| 1/2 - | 20 | TRR14585GSP | H5 | .768 | 3.94 | 1.929 | .367 | .275 | .44 | 8 | - | 12.1 |
| 1/2 - | 20 | TRR14588GSP | H8 | .768 | 3.94 | 1.929 | .367 | .275 | .44 | 8 | - | 12.1 |

▶ NEXT PAGE

◎ : Excellent ○ : Good

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | 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 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | 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 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | | | | | | | | | | | |



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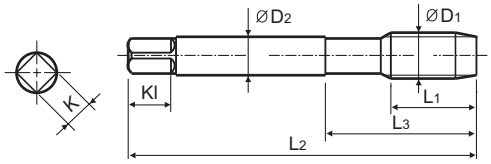
X-Coating, HSS-PM

# Forming Taps for Multipurpose

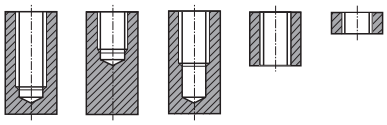
## TRR14 SERIES

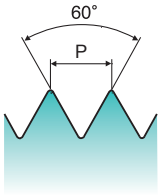
▶ High performance on various ductile materials

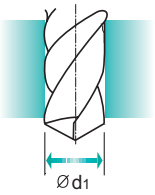
DIN/ANSI




Hole type 3.0xD






with Internal Coolant

Material groups **MU**

HSS PM | UNC UNF | H | 60° | 2P~3P | X Coating

p.7

## Machine Taps

Unit: Inch

| Size ØD1 | | TPI | EDP No. | Limits | Thread Length L1 | Overall Length L2 | Neck Length L3 | Shank Diameter ØD2 | Square Size K | Square Length Kl | No. of Lobe Z | Tapping Drill Diameter (Ød1) Inch | Metric |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9/16 | - | 12 | TRR14600GSP | H10 | .835 | 4.33 | 1.969 | .429 | .322 | .50 | 8 | - | 13.4 |
| 9/16 | - | 12 | TRR14607GSP | H7 | .835 | 4.33 | 1.969 | .429 | .322 | .50 | 8 | - | 13.4 |
| 9/16 | - | 18 | TRR14620GSP | H10 | .835 | 3.94 | 1.969 | .429 | .322 | .50 | 8 | - | 13.7 |
| 9/16 | - | 18 | TRR14627GSP | H7 | .835 | 3.94 | 1.969 | .429 | .322 | .50 | 8 | - | 13.7 |
| 5/8 | - | 11 | TRR14640GSP | H10 | .909 | 4.33 | 2.126 | .480 | .360 | .56 | 8 | - | 14.9 |
| 5/8 | - | 11 | TRR14647GSP | H7 | .909 | 4.33 | 2.126 | .480 | .360 | .56 | 8 | - | 14.9 |
| 5/8 | - | 18 | TRR14660GSP | H10 | .909 | 3.94 | 2.126 | .480 | .360 | .56 | 8 | - | 15.3 |
| 5/8 | - | 18 | TRR14667GSP | H7 | .909 | 3.94 | 2.126 | .480 | .360 | .56 | 8 | - | 15.3 |
| 3/4 | - | 10 | TRR14700GSP | H10 | .799 | 4.92 | 2.441 | .590 | .442 | .69 | 8 | - | 17.9 |
| 3/4 | - | 10 | TRR14707GSP | H7 | .799 | 4.92 | 2.441 | .590 | .442 | .69 | 8 | - | 17.9 |
| 3/4 | - | 16 | TRR14720GSP | H10 | .626 | 4.33 | 2.441 | .590 | .442 | .69 | 8 | - | 18.4 |
| 3/4 | - | 16 | TRR14727GSP | H7 | .626 | 4.33 | 2.441 | .590 | .442 | .69 | 8 | - | 18.4 |
| 7/8 | - | 9 | TRR14748GSP | H8 | .890 | 5.51 | 2.638 | .697 | .523 | .75 | 8 | - | 21.0 |
| 7/8 | - | 9 | TRR1474AGSP | H11 | .890 | 5.51 | 2.638 | .697 | .523 | .75 | 8 | - | 21.0 |
| 7/8 | - | 14 | TRR14768GSP | H8 | .713 | 4.92 | 2.638 | .697 | .523 | .75 | 8 | - | 21.4 |
| 7/8 | - | 14 | TRR1476AGSP | H11 | .713 | 4.92 | 2.638 | .697 | .523 | .75 | 8 | - | 21.4 |
| 1" | - | 8 | TRR14788GSP | H8 | 1.00 | 6.30 | 2.992 | .800 | .600 | .81 | 8 | - | 24.0 |
| 1" | - | 8 | TRR1478AGSP | H11 | 1.00 | 6.30 | 2.992 | .800 | .600 | .81 | 8 | - | 24.0 |
| 1" | - | 12 | TRR14808GSP | H8 | .835 | 5.51 | 2.992 | .800 | .600 | .81 | 8 | - | 24.5 |
| 1" | - | 12 | TRR1480AGSP | H11 | .835 | 5.51 | 2.992 | .800 | .600 | .81 | 8 | - | 24.5 |

◎ : Excellent ○ : Good

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | 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 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | 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 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | | | | | | | | | | | |

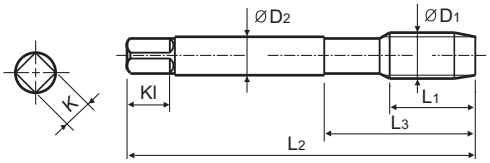
X-Coating, HSS-PM

# Forming Taps for Multipurpose

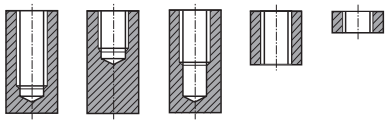
## TRR16 SERIES

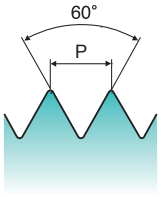
▶ High performance on various ductile materials

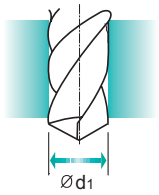
DIN/ANSI




Hole type 3.0xD






with Internal Coolant

Material groups **MU** | HSS PM | M/MF | D | 60° | 2P~3P | X Coating

p.7

## Machine Taps

Unit: Inch

| Size | Pitch | EDP No. | Limits | Thread Length | Overall Length | Neck Length | Shank Diameter | Square Size | Square Length | No. of Lobe | Tapping Drill Diameter (Ød1) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ØD1 | P | | | L1 | L2 | L3 | ØD2 | K | Kl | Z | Inch | Metric |
| M6 | x 1.0 | TRR16315GSP | D5 | .394 | 3.15 | 1.181 | .255 | .191 | .31 | 5 | - | 5.6 |
| M6 | x 1.0 | TRR16318GSP | D8 | .394 | 3.15 | 1.181 | .255 | .191 | .31 | 5 | - | 5.6 |
| M7 | x 1.0 | TRR16345GSP | D5 | .394 | 3.15 | 1.181 | .318 | .238 | .38 | 5 | - | 6.6 |
| M7 | x 1.0 | TRR16348GSP | D8 | .394 | 3.15 | 1.181 | .318 | .238 | .38 | 5 | - | 6.6 |
| M8 | x 1.25 | TRR16365GSP | D5 | .472 | 3.54 | 1.378 | .318 | .238 | .38 | 5 | - | 7.5 |
| M8 | x 1.25 | TRR16369GSP | D9 | .472 | 3.54 | 1.378 | .318 | .238 | .38 | 5 | - | 7.5 |
| M8 | x 1.0 | TRR16375GSP | D5 | .472 | 3.54 | 1.378 | .318 | .238 | .38 | 5 | - | 7.6 |
| M8 | x 1.0 | TRR16378GSP | D8 | .472 | 3.54 | 1.378 | .318 | .238 | .38 | 5 | - | 7.6 |
| M10 | x 1.5 | TRR16420GSP | D10 | .591 | 3.94 | 1.535 | .381 | .286 | .44 | 8 | - | 9.4 |
| M10 | x 1.5 | TRR16426GSP | D6 | .591 | 3.94 | 1.535 | .381 | .286 | .44 | 8 | - | 9.4 |
| M10 | x 1.25 | TRR16435GSP | D5 | .591 | 3.94 | 1.535 | .381 | .286 | .44 | 8 | - | 9.5 |
| M10 | x 1.25 | TRR16439GSP | D9 | .591 | 3.94 | 1.535 | .381 | .286 | .44 | 8 | - | 9.5 |
| M12 | x 1.75 | TRR16506GSP | D6 | .669 | 4.33 | 1.929 | .367 | .275 | .44 | 8 | - | 11.2 |
| M12 | x 1.75 | TRR1650AGSP | D11 | .669 | 4.33 | 1.929 | .367 | .275 | .44 | 8 | - | 11.2 |
| M12 | x 1.5 | TRR16516GSP | D6 | .669 | 3.94 | 1.929 | .367 | .275 | .44 | 8 | - | 11.3 |
| M12 | x 1.5 | TRR1651AGSP | D11 | .669 | 3.94 | 1.929 | .367 | .275 | .44 | 8 | - | 11.3 |
| M14 | x 2.0 | TRR16547GSP | D7 | .787 | 4.33 | 1.969 | .429 | .322 | .50 | 8 | - | 13.1 |
| M14 | x 2.0 | TRR1654BGSP | D12 | .787 | 4.33 | 1.969 | .429 | .322 | .50 | 8 | - | 13.1 |
| M14 | x 1.5 | TRR16556GSP | D6 | .787 | 3.94 | 1.969 | .429 | .322 | .50 | 8 | - | 13.3 |
| M14 | x 1.5 | TRR1655AGSP | D11 | .787 | 3.94 | 1.969 | .429 | .322 | .50 | 8 | - | 13.3 |

▶ NEXT PAGE

◎ : Excellent ○ : Good

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | 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 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | 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 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | | | | | | | | | | | |



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# Forming Taps for Multipurpose

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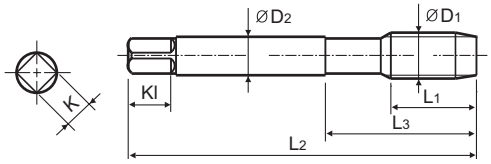
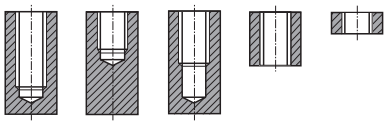
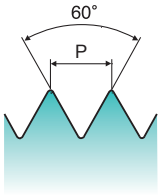
▶ High performance on various ductile materials

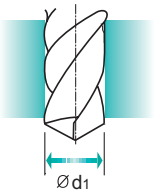
DIN/ANSI




Hole type 3.0xD






with Internal Coolant

Material groups **MU**

HSS PM | M/MF | D | 60° | 2P~3P | X Coating

p.7

## Machine Taps

Unit: Inch

| Size ØD1 | Pitch P | EDP No. | Limits | Thread Length L1 | Overall Length L2 | Neck Length L3 | Shank Diameter ØD2 | Square Size K | Square Length Kl | No. of Lobe Z | Tapping Drill Diameter (Ød1) Inch | Metric |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| M16 x | 2.0 | TRR16607GSP | D7 | .787 | 4.33 | 2.126 | .480 | .360 | .56 | 8 | - | 15.1 |
| M16 x | 2.0 | TRR1660BGSP | D12 | .787 | 4.33 | 2.126 | .480 | .360 | .56 | 8 | - | 15.1 |
| M16 x | 1.5 | TRR16616GSP | D6 | .787 | 3.94 | 2.126 | .480 | .360 | .56 | 8 | - | 15.3 |
| M16 x | 1.5 | TRR1661AGSP | D11 | .787 | 3.94 | 2.126 | .480 | .360 | .56 | 8 | - | 15.3 |
| M18 x | 2.5 | TRR16657GSP | D7 | .787 | 4.92 | 2.165 | .542 | .406 | .63 | 8 | - | 16.9 |
| M18 x | 2.5 | TRR1665BGSP | D12 | .787 | 4.92 | 2.165 | .542 | .406 | .63 | 8 | - | 16.9 |
| M18 x | 1.5 | TRR16676GSP | D6 | .591 | 4.33 | 2.165 | .542 | .406 | .63 | 8 | - | 17.3 |
| M18 x | 1.5 | TRR1667AGSP | D11 | .591 | 4.33 | 2.165 | .542 | .406 | .63 | 8 | - | 17.3 |
| M20 x | 2.5 | TRR16707GSP | D7 | .787 | 5.51 | 2.433 | .652 | .489 | .69 | 8 | - | 18.9 |
| M20 x | 2.5 | TRR1670BGSP | D12 | .787 | 5.51 | 2.433 | .652 | .489 | .69 | 8 | - | 18.9 |
| M20 x | 1.5 | TRR16726GSP | D6 | .591 | 4.92 | 2.433 | .652 | .489 | .69 | 8 | - | 19.3 |
| M20 x | 1.5 | TRR1672AGSP | D11 | .591 | 4.92 | 2.433 | .652 | .489 | .69 | 8 | - | 19.3 |
| M22 x | 2.5 | TRR16747GSP | D7 | .787 | 5.51 | 2.654 | .697 | .523 | .75 | 8 | - | 20.9 |
| M22 x | 2.5 | TRR1674BGSP | D12 | .787 | 5.51 | 2.654 | .697 | .523 | .75 | 8 | - | 20.9 |
| M22 x | 1.5 | TRR16766GSP | D6 | .591 | 4.92 | 2.654 | .697 | .523 | .75 | 8 | - | 21.3 |
| M22 x | 1.5 | TRR1676AGSP | D11 | .591 | 4.92 | 2.654 | .697 | .523 | .75 | 8 | - | 21.3 |
| M24 x | 3.0 | TRR16789GSP | D9 | .945 | 6.30 | 2.693 | .760 | .570 | .75 | 8 | - | 22.7 |
| M24 x | 3.0 | TRR1678EGSP | D15 | .945 | 6.30 | 2.693 | .760 | .570 | .75 | 8 | - | 22.7 |
| M24 x | 1.5 | TRR16806GSP | D6 | .591 | 5.51 | 2.693 | .760 | .570 | .75 | 8 | - | 23.3 |
| M24 x | 1.5 | TRR1680AGSP | D11 | .591 | 5.51 | 2.693 | .760 | .570 | .75 | 8 | - | 23.3 |

◎ : Excellent ○ : Good

| ISO | P | | | | | | | | | | | M | | | K | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | 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 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Material Description | 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 | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | | | | | | | | | | | | | |

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YG-1 CO., LTD.

**HEAD OFFICE**
13-40, Songdogwahak-ro 16beon-gil, Yeonsu-gu, Incheon 21984, South Korea
**Phone: +82-32-526-0909**
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**Phone: +1 905-335-2500**
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**YG-1 TOOLS MEXICO**
Parque Industrial Advance Aeropuerto Modulo 4 Edif A,
Col. Navajas, El Marques,
Querétaro, México CP 76260
**Phone: +52 442 348 12 70**
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**HEAD OFFICE**
13-40, Songdogwahak-ro 16beon-gil,
Yeonsu-gu, Incheon 21984, South Korea
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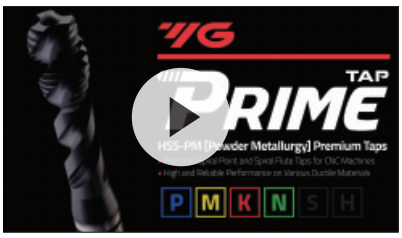


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