

# ISO K

Material Specific taps for cast iron



GGST  
GGST CH  
GGST CH E(1.5P)  
GG-HT  
CT FC



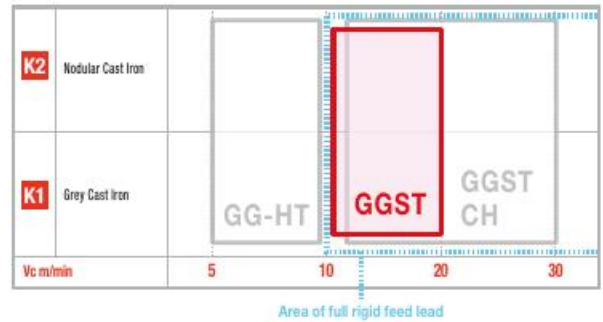
MATERIAL  
SPECIFIC

 Think threads with  
**YAMAWA**

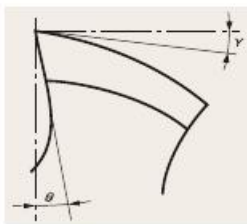


### Straight fluted taps for cast iron (for medium tapping speed)

- GGST has an optimized cutting geometry and coating.
- C (2.5P) chamfer is available.
- Recommended tapping speed is 10~20 m/min with outside coolant.
- Size range: M3 - M24; MF8x1 - MF24x1.5; G1/8 - G1



### Product features



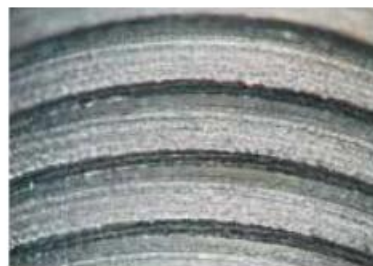
**Rake angle**  
θ cutting angle  
γ chamfer relief angle



To keep a high accuracy and circularity of the shank diameter, the marking has been transferred from the shank to the square portion of the tap.

### Process data

|                    |                      |
|--------------------|----------------------|
| Size               | G1/8-28              |
| Workpiece material | GG25                 |
| Bored hole size    | 8.8 mm, through hole |
| Tapping length     | 22.8 mm              |
| Machine            | M/C Vertical         |
| Tapping speed      | 20 m/min             |
| Lubrication        | Water soluble oil    |
| Feed               | Rigid                |



**Excellent internal  
thread surface!**

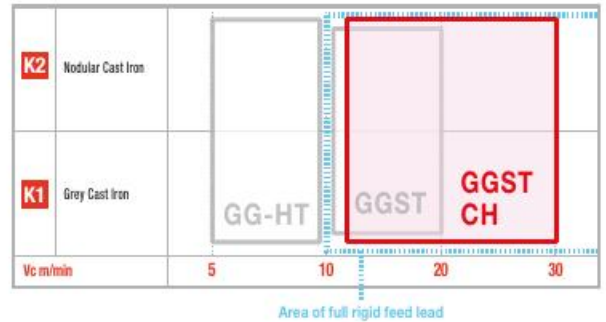
# GGST CH / GGST CH E (1.5P)

Z-PRO SERIES 



## Straight Fluted Taps for cast iron with internal coolant (for automobile parts)

- GGST CH has an optimized cutting geometry and coating.
- Both C (2.5P) and E (1.5) chamfers are available and only for blind hole use.
- E (1.5P) chamfer enables to produce threads as close as possible to the bottom of the blind holes.
- The possibility to cut shorter holes can minimize the size of the workpieces.
- Axial coolant hole helps to eject chips and to clean the hole.
- Recommended tapping speed: 10÷30 m/min
- Size range GGST CH (2.5P): M6 - M20; MF8x1 - MF20x1.5
- Size range GGST CH E(1.5P): M6 - M16; MF10x1 - MF16x1.5



## Product features

Automotive parts manufacturers widely require higher tapping speed to increase productivity and inside coolant for finished threads cleaning. Following are the example of automobile parts made of cast iron.



Engine Block

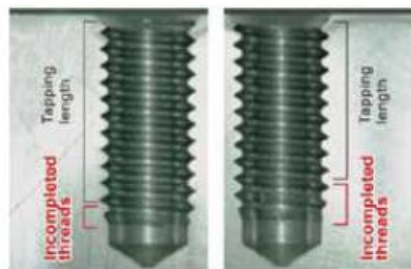
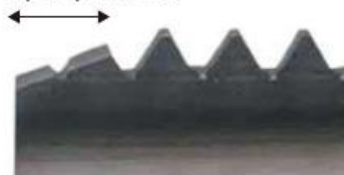


Cylinder head



Differential gear

### E(1.5P) chamfer



E(1.5P)

C(2.5P)

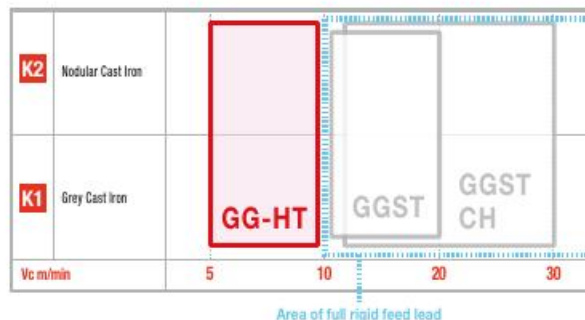
## Tapping record

| Size    | Parts         | Workpiece material | Bored hole size (mm) | Hole depth (mm) | Tapping length (mm) | Machine | Vc (m/min) | Feed        | Lubrication       | No. of tapped holes |
|---------|---------------|--------------------|----------------------|-----------------|---------------------|---------|------------|-------------|-------------------|---------------------|
| M10x1.5 | Engine block  | GG25               | 8.60                 | 18.5 (1.9D)     | 12 (1.2D)           | M/C     | 30         | Synchronous | Emulsion          | 7.000               |
| M10x1.5 | Cylinder head | Grey cast iron     | 8.60                 | 18.5 (1.9D)     | 18 (1.6D)           | M/C     | 30         | Synchronous | Water soluble oil | 3.000               |

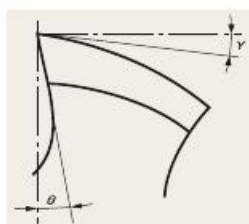


## Straight fluted taps for cast iron (for general machining)

- Rake angle: the cutting edge features a geometry with high rigidity rake angle.
- Surface treatment: thanks to Nitride treatment the surface hardness reaches 1,000 to 1,300HV ensuring high wear resistance.
- Applicable machine: can be used from CNC machining centers to drilling machines
- Recommended tapping speed: ~ 10 m/min
- Chip shape: chips are very small thanks to rake angle geometry and due to the abrasive characteristics of cast iron.
- Size range: M3 - M24; MF8x1 - MF24x1.5; G1/8 - G1



## Product features



**Rake angle**  
θ cutting angle  
γ chamfer relief angle

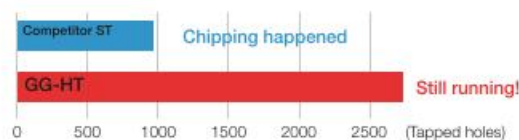


**Chip shape**

## Process data

The following table shows test performed on GG25 with general purpose tap and GG-HT.  
GG-HT achieves more than three times the number of holes tapped with a competitor ST (straight fluted) general purpose.

|                 |                    |               |                         |
|-----------------|--------------------|---------------|-------------------------|
| Product         | GG-HT M8x1.25      | Machine       | M/C (Synchronous)       |
|                 | ST M8x1.25         |               |                         |
| Material grade  | GG25               | Tapping speed | 10 m/min                |
| Hole shape      | 12 mm through hole | Lubrication   | Water soluble (oil 20%) |
| Bored hole size | 6.8 mm             |               |                         |



## Tapping record

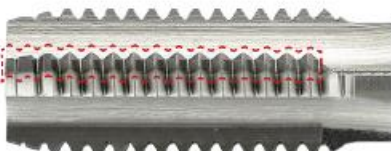
| Size    | Material grade | Bored hole size (mm) | Tapping length (mm) | Machine         | Vc (m/min) | Feed            | Lubrication   | No. of tapped holes |
|---------|----------------|----------------------|---------------------|-----------------|------------|-----------------|---------------|---------------------|
| M5x0.8  | GG25           | 4.28                 | 12 (2.4D)           | M/C             | 10         | Synchronous     | Water soluble | 2.100               |
| M8x1.25 | GG25           | 6.85                 | 18 (2.3D)           | Special machine | 8          | Non-synchronous | Water soluble | 2.400               |
| M10x1.5 | GG25           | 8.60                 | 20 (2D)             | Special machine | 8.5        | Non-synchronous | Insoluble     | 2.500               |
| M10x1.5 | GG25           | 8.60                 | 12 (1.2D)           | Special machine | 7.5        | Synchronous     | Insoluble     | 3.000               |



## Carbide taps for cast iron, CT-FC (for mass production)

- For mass production machining, Yamawa recommends micrograin carbide taps featuring high wear resistance with consequent great cost-per-thread reduction.
- Micrograin carbide taps can last 50 times longer than the HSS taps.
- CT-FC is the Yamawa carbide tap with specific design based on GG-HT geometry for extremely long and stable tool life.
- Size range: M3 - M16; G3/8
- Solid carbide up to M10; carbide tipped  $\geq$  M12

## Product features



Carbide tipped type

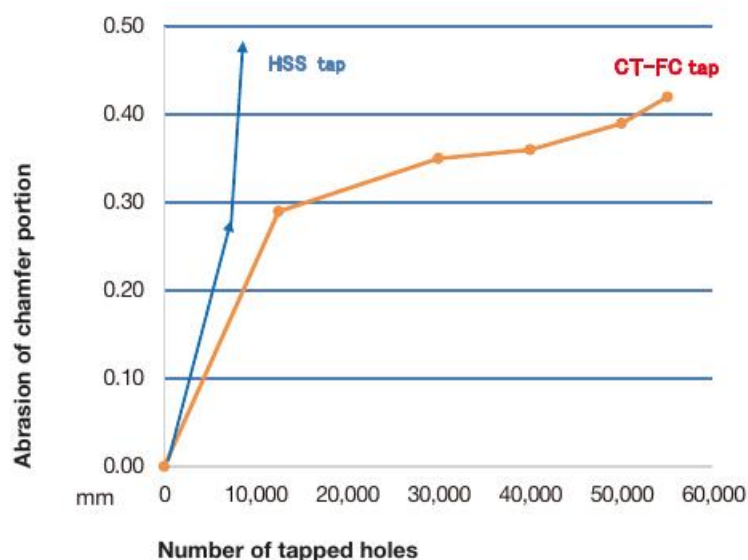
This graph shows the number of tapped holes and the chamfer wear width for M5x0.8 CT-FC compared to HSS conventional tap. On GG25 cast iron, CT-FC tap performs almost 50 times longer life than HSS conventional tap.

### Tapping condition

|                    |                   |
|--------------------|-------------------|
| Size               | M5x0.8            |
| Workpiece material | GG25              |
| Bored hole size    | 4.2 mm            |
| Machine            | M/C               |
| Tapping speed      | 8 m/min           |
| Lubrication        | Water soluble oil |

### Usage notes

CT-FC carbide taps thanks to carbide substrate hardness have much higher wear resistance compared with HSS taps. Nevertheless, due to relatively lower toughness we recommend to make sure that the machining conditions such as workpiece clamping or tap/hole alignment are safe and stable.



## Tapping record

| Size     | Material grade | Bored hole size (mm) | Tapping length (mm) | Machine         | Vc (m/min) | Feed        | Lubrication   | No. of tapped holes |
|----------|----------------|----------------------|---------------------|-----------------|------------|-------------|---------------|---------------------|
| M6x1     | GG25           | 5.09                 | 12 (2D)             | M/C             | 12         | Synchronous | Water soluble | 70.000              |
| M6x1     | GG25           | 5.00                 | 10 (1.6D)           | M/C             | 8          | Synchronous | Water soluble | 53.000              |
| M8x1.25  | GG25           | 6.85                 | 16 (2D)             | M/C             | 16         | Synchronous | Water soluble | 18.860              |
| M8x1.25  | GG30           | 6.85                 | 24 (3D)             | M/C             | 16         | Synchronous | Water soluble | 64.000              |
| M10x1.25 | GG25           | 8.70                 | 18 (1.8D)           | Special machine | 16         | Synchronous | Water soluble | 38.500              |



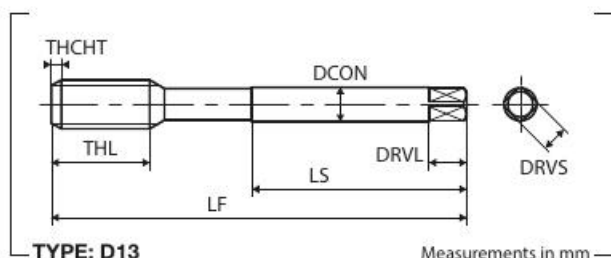
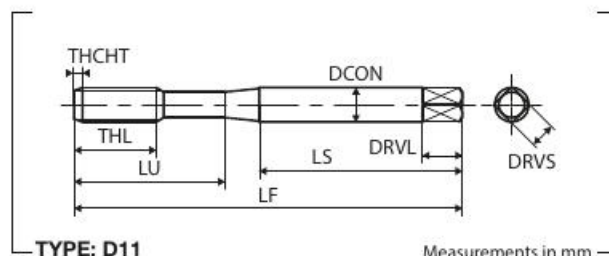
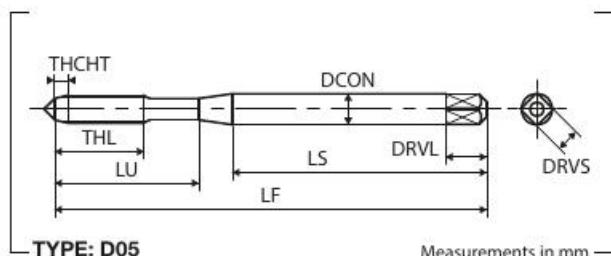
DIN

HSS-E

COATING



2.5P  
THCHT



● stock standard, ○ check stock, ⊙ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

| M       | TCTR<br>(tolerance) | Ø<br>(mm) | Hole Ø<br>(mm) | Code       | THCHT | LF  | THL | LU | LS | DCON | DRVS | DRVL | NOF | Type | Stock |
|---------|---------------------|-----------|----------------|------------|-------|-----|-----|----|----|------|------|------|-----|------|-------|
| DIN 371 |                     |           |                |            |       |     |     |    |    |      |      |      |     |      |       |
| M3x0.5  | ISO2X(6HX)          | 2.5       | 2.56           | 3104101035 | 2.5P  | 56  | 9   | 18 | 34 | 3.5  | 2.7  | 6    | 3   | D05  | ●     |
| M4x0.7  | ISO2X(6HX)          | 3.3       | 3.38           | 3104101042 | 2.5P  | 63  | 13  | 21 | 38 | 4.5  | 3.4  | 6    | 4   | D05  | ●     |
| M5x0.8  | ISO2X(6HX)          | 4.2       | 4.28           | 3104101049 | 2.5P  | 70  | 14  | 25 | 39 | 6    | 4.9  | 8    | 4   | D05  | ●     |
| M6x1    | ISO2X(6HX)          | 5         | 5.09           | 3104101055 | 2.5P  | 80  | 15  | 30 | 45 | 6    | 4.9  | 8    | 4   | D05  | ●     |
| M8x1.25 | ISO2X(6HX)          | 6.8       | 6.85           | 3104101064 | 2.5P  | 90  | 19  | 35 | 47 | 8    | 6.2  | 9    | 4   | D11  | ●     |
| M10x1.5 | ISO2X(6HX)          | 8.5       | 8.6            | 3104101078 | 2.5P  | 100 | 23  | 39 | 52 | 10   | 8    | 11   | 4   | D11  | ●     |

| M        | TCTR<br>(tolerance) | Ø<br>(mm) | Hole Ø<br>(mm) | Code       | THCHT | LF  | THL | LU | LS | DCON | DRVS | DRVL | NOF | Type | Stock |
|----------|---------------------|-----------|----------------|------------|-------|-----|-----|----|----|------|------|------|-----|------|-------|
| DIN 376  |                     |           |                |            |       |     |     |    |    |      |      |      |     |      |       |
| M12x1.75 | ISO2X(6HX)          | 10.3      | 10.36          | 3104101088 | 2.5P  | 110 | 26  | -  | 56 | 9    | 7    | 10   | 4   | D13  | ●     |
| M14x2    | ISO2X(6HX)          | 12        | 12.12          | 3104101100 | 2.5P  | 110 | 26  | -  | 56 | 11   | 9    | 12   | 4   | D13  | ●     |
| M16x2    | ISO2X(6HX)          | 14        | 14.12          | 3104101114 | 2.5P  | 110 | 26  | -  | 56 | 12   | 9    | 12   | 4   | D13  | ●     |
| M18x2.5  | ISO2X(6HX)          | 15.5      | 15.63          | 3104101128 | 2.5P  | 125 | 33  | -  | 64 | 14   | 11   | 14   | 4   | D13  | ●     |
| M20x2.5  | ISO2X(6HX)          | 17.5      | 17.63          | 3104101141 | 2.5P  | 140 | 33  | -  | 71 | 16   | 12   | 15   | 4   | D13  | ●     |
| M22x2.5  | ISO2X(6HX)          | 19.5      | 19.63          | 3104101156 | 2.5P  | 140 | 33  | -  | 71 | 18   | 14.5 | 17   | 4   | D13  | ●     |
| M24x3    | ISO2X(6HX)          | 21        | 21.13          | 3104101167 | 2.5P  | 160 | 37  | -  | 82 | 18   | 14.5 | 17   | 4   | D13  | ●     |

| MF       | TCTR<br>(tolerance) | Ø<br>(mm) | Hole Ø<br>(mm) | Code       | THCHT | LF  | THL | LU | LS | DCON | DRVS | DRVL | NOF | Type | Stock |
|----------|---------------------|-----------|----------------|------------|-------|-----|-----|----|----|------|------|------|-----|------|-------|
| DIN 374  |                     |           |                |            |       |     |     |    |    |      |      |      |     |      |       |
| M8x1     | ISO2X(6HX)          | 7         | 7.09           | 3104101065 | 2.5P  | 90  | 19  | -  | 46 | 6    | 4.9  | 8    | 4   | D13  | ●     |
| M10x1.25 | ISO2X(6HX)          | 8.8       | 8.85           | 3104101079 | 2.5P  | 100 | 23  | -  | 51 | 7    | 5.5  | 8    | 4   | D13  | ●     |
| M10x1    | ISO2X(6HX)          | 9         | 9.09           | 3104101080 | 2.5P  | 90  | 19  | -  | 46 | 7    | 5.5  | 8    | 4   | D13  | ●     |
| M12x1.5  | ISO2X(6HX)          | 10.5      | 10.6           | 3104101089 | 2.5P  | 100 | 21  | -  | 51 | 9    | 7    | 10   | 4   | D13  | ●     |
| M12x1.25 | ISO2X(6HX)          | 10.8      | 10.85          | 3104101090 | 2.5P  | 100 | 21  | -  | 51 | 9    | 7    | 10   | 4   | D13  | ●     |
| M12x1    | ISO2X(6HX)          | 11        | 11.09          | 3104101091 | 2.5P  | 100 | 21  | -  | 51 | 9    | 7    | 10   | 4   | D13  | ●     |
| M14x1.5  | ISO2X(6HX)          | 12.5      | 12.6           | 3104101102 | 2.5P  | 100 | 21  | -  | 51 | 11   | 9    | 12   | 4   | D13  | ●     |

| MF             | TCTR<br>(tolerance) |  $\emptyset$<br>(mm) | Hole $\emptyset$<br>(mm) | Code       | THCHT | LF  | THL | LU | LS | DCON | DRVS | DRVL | NOF | Type | Stock |
|----------------|---------------------|------------------------------------------------------------------------------------------------------|--------------------------|------------|-------|-----|-----|----|----|------|------|------|-----|------|-------|
| DIN 374        |                     |                                                                                                      |                          |            |       |     |     |    |    |      |      |      |     |      |       |
| <b>M16x1.5</b> | ISO2X(6HX)          | 14.5                                                                                                 | 14.6                     | 3104101116 | 2.5P  | 100 | 21  | -  | 51 | 12   | 9    | 12   | 4   | D13  | ●     |
| <b>M18x1.5</b> | ISO2X(6HX)          | 16.5                                                                                                 | 16.6                     | 3104101130 | 2.5P  | 110 | 24  | -  | 56 | 14   | 11   | 14   | 4   | D13  | ●     |
| <b>M20x1.5</b> | ISO2X(6HX)          | 18.5                                                                                                 | 18.6                     | 3104101144 | 2.5P  | 125 | 24  | -  | 64 | 16   | 12   | 15   | 4   | D13  | ●     |
| <b>M22x1.5</b> | ISO2X(6HX)          | 20.5                                                                                                 | 20.6                     | 3104101158 | 2.5P  | 125 | 24  | -  | 64 | 18   | 14.5 | 17   | 4   | D13  | ●     |
| <b>M24x1.5</b> | ISO2X(6HX)          | 22.5                                                                                                 | 22.6                     | 3104101170 | 2.5P  | 140 | 27  | -  | 71 | 18   | 14.5 | 17   | 4   | D13  | ●     |

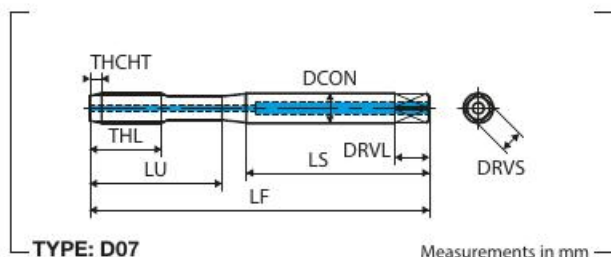
| G (BSP)       | TCTR<br>(tolerance) |  $\emptyset$<br>(mm) | Hole $\emptyset$<br>(mm) | Code       | THCHT | LF  | THL | LU | LS | DCON | DRVS | DRVL | NOF | Type | Stock |
|---------------|---------------------|-------------------------------------------------------------------------------------------------------|--------------------------|------------|-------|-----|-----|----|----|------|------|------|-----|------|-------|
| DIN 5156      |                     |                                                                                                       |                          |            |       |     |     |    |    |      |      |      |     |      |       |
| <b>1/8-28</b> | -                   | 8.75                                                                                                  | 8.78                     | 3104130004 | 2.5P  | 90  | 19  | -  | 46 | 7    | 5.5  | 8    | 4   | D13  | ●     |
| <b>1/4-19</b> | -                   | 11.75                                                                                                 | 11.78                    | 3104130006 | 2.5P  | 100 | 21  | -  | 51 | 11   | 9    | 12   | 4   | D13  | ●     |
| <b>3/8-19</b> | -                   | 15.25                                                                                                 | 15.28                    | 3104130008 | 2.5P  | 100 | 21  | -  | 51 | 12   | 9    | 12   | 4   | D13  | ●     |
| <b>1/2-14</b> | -                   | 19                                                                                                    | 19.04                    | 3104130009 | 2.5P  | 125 | 24  | -  | 64 | 16   | 12   | 15   | 4   | D13  | ●     |
| <b>3/4-14</b> | -                   | 24.5                                                                                                  | 24.52                    | 3104130011 | 2.5P  | 140 | 27  | -  | 71 | 20   | 16   | 19   | 4   | D13  | ●     |
| <b>1-11</b>   | -                   | 30.75                                                                                                 | 30.77                    | 3104130013 | 2.5P  | 160 | 29  | -  | 82 | 25   | 20   | 23   | 4   | D13  | ●     |



DIN

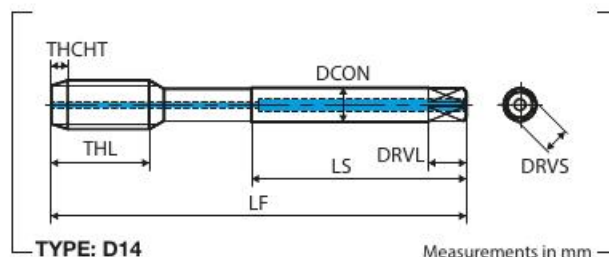
HSS-E

COATING



TYPE: D07

Measurements in mm



TYPE: D14

Measurements in mm

● stock standard, ○ check stock, ⊕ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

| M       | TCTR<br>(tolerance) | $\varnothing$<br>(mm) | Hole $\varnothing$<br>(mm) | Code       | THCHT | LF  | THL | LU | LS | DCON | DRVS | DRVL | NOF | Type | Stock |
|---------|---------------------|-----------------------|----------------------------|------------|-------|-----|-----|----|----|------|------|------|-----|------|-------|
| DIN 371 |                     |                       |                            |            |       |     |     |    |    |      |      |      |     |      |       |
| M6x1    | ISO2X(6HX)          | 5                     | 5.09                       | 3205101055 | 2.5P  | 80  | 15  | 30 | 45 | 6    | 4.9  | 8    | 4   | D07  | ●     |
| M8x1.25 | ISO2X(6HX)          | 6.8                   | 6.85                       | 3205101064 | 2.5P  | 90  | 19  | 35 | 47 | 8    | 6.2  | 9    | 4   | D07  | ●     |
| M10x1.5 | ISO2X(6HX)          | 8.5                   | 8.6                        | 3205101078 | 2.5P  | 100 | 23  | 39 | 52 | 10   | 8    | 11   | 4   | D07  | ●     |

| M        | TCTR<br>(tolerance) | $\varnothing$<br>(mm) | Hole $\varnothing$<br>(mm) | Code       | THCHT | LF  | THL | LU | LS | DCON | DRVS | DRVL | NOF | Type | Stock |
|----------|---------------------|-----------------------|----------------------------|------------|-------|-----|-----|----|----|------|------|------|-----|------|-------|
| DIN 376  |                     |                       |                            |            |       |     |     |    |    |      |      |      |     |      |       |
| M12x1.75 | ISO2X(6HX)          | 10.3                  | 10.36                      | 3205101088 | 2.5P  | 110 | 26  | -  | 56 | 9    | 7    | 10   | 4   | D14  | ●     |
| M14x2    | ISO2X(6HX)          | 12                    | 12.12                      | 3205101100 | 2.5P  | 110 | 26  | -  | 56 | 11   | 9    | 12   | 4   | D14  | ●     |
| M16x2    | ISO2X(6HX)          | 14                    | 14.12                      | 3205101114 | 2.5P  | 110 | 26  | -  | 56 | 12   | 9    | 12   | 4   | D14  | ●     |
| M18x2.5  | ISO2X(6HX)          | 15.5                  | 15.63                      | 3205101128 | 2.5P  | 125 | 33  | -  | 64 | 14   | 11   | 14   | 4   | D14  | ●     |
| M20x2.5  | ISO2X(6HX)          | 17.5                  | 17.63                      | 3205101141 | 2.5P  | 140 | 33  | -  | 71 | 16   | 12   | 15   | 4   | D14  | ●     |
| M24x3    | ISO2X(6HX)          | 21.13                 | 21                         | 3205101167 | 2.5P  | 16  | 37  | -  | 82 | 18   | 14.5 | 17   | 4   | D14  | ●     |

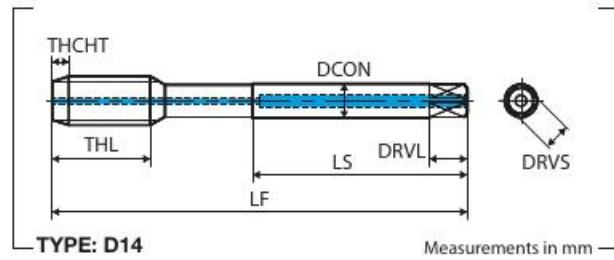
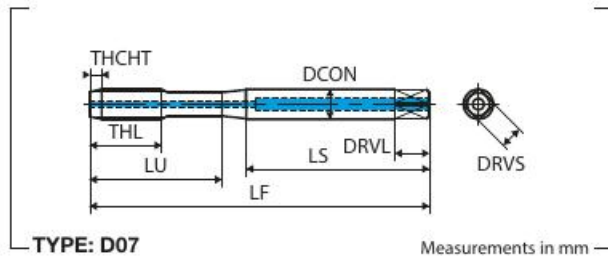
| MF       | TCTR<br>(tolerance) | $\varnothing$<br>(mm) | Hole $\varnothing$<br>(mm) | Code       | THCHT | LF  | THL | LU | LS | DCON | DRVS | DRVL | NOF | Type | Stock |
|----------|---------------------|-----------------------|----------------------------|------------|-------|-----|-----|----|----|------|------|------|-----|------|-------|
| DIN 374  |                     |                       |                            |            |       |     |     |    |    |      |      |      |     |      |       |
| M8x1     | ISO2X(6HX)          | 7                     | 7.09                       | 3205101065 | 2.5P  | 90  | 19  | -  | 46 | 6    | 4.9  | 8    | 4   | D14  | ●     |
| M10x1.25 | ISO2X(6HX)          | 8.8                   | 8.85                       | 3205101079 | 2.5P  | 100 | 23  | -  | 51 | 7    | 5.5  | 8    | 4   | D14  | ●     |
| M10x1    | ISO2X(6HX)          | 9                     | 9.09                       | 3205101080 | 2.5P  | 90  | 19  | -  | 46 | 7    | 5.5  | 8    | 4   | D14  | ●     |
| M12x1.5  | ISO2X(6HX)          | 10.5                  | 10.6                       | 3205101089 | 2.5P  | 100 | 21  | -  | 51 | 9    | 7    | 10   | 4   | D14  | ●     |
| M12x1.25 | ISO2X(6HX)          | 10.8                  | 10.85                      | 3205101090 | 2.5P  | 100 | 21  | -  | 51 | 9    | 7    | 10   | 4   | D14  | ●     |
| M14x1.5  | ISO2X(6HX)          | 12.5                  | 12.6                       | 3205101102 | 2.5P  | 100 | 21  | -  | 51 | 11   | 9    | 12   | 4   | D14  | ●     |
| M16x1.5  | ISO2X(6HX)          | 14.5                  | 14.6                       | 3205101116 | 2.5P  | 100 | 21  | -  | 51 | 12   | 9    | 12   | 4   | D14  | ●     |
| M18x1.5  | ISO2X(6HX)          | 16.5                  | 16.6                       | 3205101130 | 2.5P  | 110 | 24  | -  | 56 | 14   | 11   | 14   | 4   | D14  | ●     |
| M20x1.5  | ISO2X(6HX)          | 18.5                  | 18.6                       | 3205101144 | 2.5P  | 125 | 24  | -  | 64 | 16   | 12   | 15   | 4   | D14  | ●     |



DIN

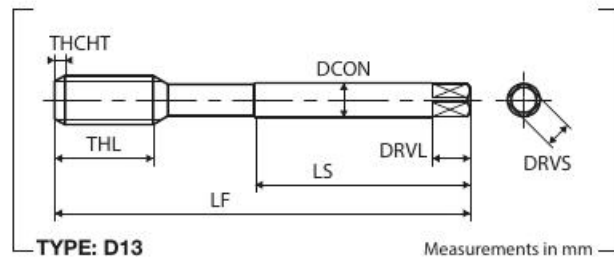
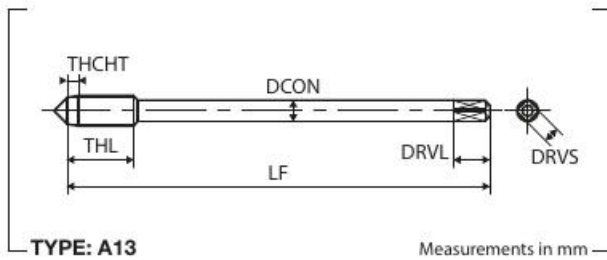
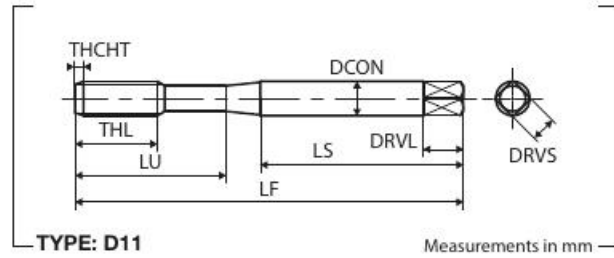
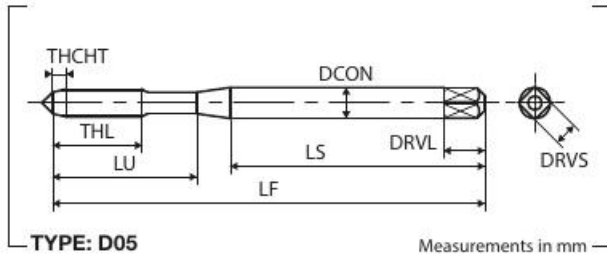
HSS-E

COATING



● stock standard, ○ check stock, ⊕ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

| M        | TCTR<br>(tolerance) |  $\varnothing$<br>(mm)   | Hole $\varnothing$<br>(mm) | Code       | THCHT | LF  | THL | LU | LS | DCON | DRVS | DRVL | NOF | Type | Stock |
|----------|---------------------|-----------------------------------------------------------------------------------------------------------|----------------------------|------------|-------|-----|-----|----|----|------|------|------|-----|------|-------|
| DIN 371  |                     |                                                                                                           |                            |            |       |     |     |    |    |      |      |      |     |      |       |
| M6x1     | ISO2X(6HX)          | 5                                                                                                         | 5.09                       | 3206101055 | 1.5P  | 80  | 15  | 30 | 45 | 6    | 4.9  | 8    | 4   | D07  | ●     |
| M7x1     | ISO2X(6HX)          | 6                                                                                                         | 6.09                       | 3206101060 | 1.5P  | 80  | 15  | 30 | 45 | 7    | 5.5  | 8    | 4   | D07  | ●     |
| M8x1.25  | ISO2X(6HX)          | 6.8                                                                                                       | 6.85                       | 3206101064 | 1.5P  | 90  | 19  | 35 | 47 | 8    | 6.2  | 9    | 4   | D07  | ●     |
| M10x1.5  | ISO2X(6HX)          | 8.5                                                                                                       | 8.6                        | 3206101078 | 1.5P  | 100 | 23  | 39 | 52 | 10   | 8    | 11   | 4   | D07  | ●     |
| M        | TCTR<br>(tolerance) |  $\varnothing$<br>(mm)   | Hole $\varnothing$<br>(mm) | Code       | THCHT | LF  | THL | LU | LS | DCON | DRVS | DRVL | NOF | Type | Stock |
| DIN 376  |                     |                                                                                                           |                            |            |       |     |     |    |    |      |      |      |     |      |       |
| M12x1.75 | ISO2X(6HX)          | 10.3                                                                                                      | 10.36                      | 3206101088 | 1.5P  | 110 | 26  | -  | 56 | 9    | 7    | 10   | 4   | D14  | ●     |
| M14x2    | ISO2X(6HX)          | 12                                                                                                        | 12.12                      | 3206101100 | 1.5P  | 110 | 26  | -  | 56 | 11   | 9    | 12   | 4   | D14  | ●     |
| M16x2    | ISO2X(6HX)          | 14                                                                                                        | 14.12                      | 3206101114 | 1.5P  | 110 | 26  | -  | 56 | 12   | 9    | 12   | 4   | D14  | ●     |
| MF       | TCTR<br>(tolerance) |  $\varnothing$<br>(mm) | Hole $\varnothing$<br>(mm) | Code       | THCHT | LF  | THL | LU | LS | DCON | DRVS | DRVL | NOF | Type | Stock |
| DIN 374  |                     |                                                                                                           |                            |            |       |     |     |    |    |      |      |      |     |      |       |
| M10x1.25 | ISO2X(6HX)          | 8.8                                                                                                       | 8.85                       | 3206101079 | 1.5P  | 100 | 23  | -  | 51 | 7    | 5.5  | 8    | 4   | D14  | ●     |
| M10x1    | ISO2X(6HX)          | 9                                                                                                         | 9.09                       | 3206101080 | 1.5P  | 90  | 19  | -  | 46 | 7    | 5.5  | 8    | 4   | D14  | ●     |
| M12x1.5  | ISO2X(6HX)          | 10.5                                                                                                      | 10.6                       | 3206101089 | 1.5P  | 100 | 21  | -  | 51 | 9    | 7    | 10   | 4   | D14  | ●     |
| M12x1.25 | ISO2X(6HX)          | 10.8                                                                                                      | 10.85                      | 3206101090 | 1.5P  | 100 | 21  | -  | 51 | 9    | 7    | 10   | 4   | D14  | ●     |
| M14x1.5  | ISO2X(6HX)          | 12.5                                                                                                      | 12.6                       | 3206101102 | 1.5P  | 100 | 21  | -  | 51 | 11   | 9    | 12   | 4   | D14  | ●     |
| M16x1.5  | ISO2X(6HX)          | 14.5                                                                                                      | 14.6                       | 3206101116 | 1.5P  | 100 | 21  | -  | 51 | 12   | 9    | 12   | 4   | D14  | ●     |



● stock standard, ○ check stock, ⊙ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

| M       | TCTR<br>(tolerance) | ∅<br>(mm) | Hole ∅<br>(mm) | Code        | THCHT | LF  | THL | LU | LS | DCON | DRVS | DRVL | NOF | Type | Stock |
|---------|---------------------|-----------|----------------|-------------|-------|-----|-----|----|----|------|------|------|-----|------|-------|
| DIN 371 |                     |           |                |             |       |     |     |    |    |      |      |      |     |      |       |
| M3x0.5  | ISO2X(6HX)          | 2.5       | 2.56           | TD3.0GBAENC | 2.5P  | 56  | 9   | 18 | 34 | 3.5  | 2.7  | 6    | 3   | D05  | ●     |
| M4x0.7  | ISO2X(6HX)          | 3.3       | 3.38           | TD4.0IBAENC | 2.5P  | 63  | 13  | 21 | 38 | 4.5  | 3.4  | 6    | 4   | D05  | ●     |
| M5x0.8  | ISO2X(6HX)          | 4.2       | 4.28           | TD5.0KBAENC | 2.5P  | 70  | 14  | 25 | 39 | 6    | 4.9  | 8    | 4   | D05  | ●     |
| M6x1    | ISO2X(6HX)          | 5         | 5.09           | TD6.0MBAENC | 2.5P  | 80  | 15  | 30 | 45 | 6    | 4.9  | 8    | 4   | D05  | ●     |
| M8x1.25 | ISO2X(6HX)          | 6.8       | 6.85           | TD8.0NBAENC | 2.5P  | 90  | 19  | 35 | 47 | 8    | 6.2  | 9    | 4   | D11  | ●     |
| M10x1.5 | ISO2X(6HX)          | 8.5       | 8.6            | TD0100BAENC | 2.5P  | 100 | 23  | 39 | 52 | 10   | 8    | 11   | 4   | D11  | ●     |

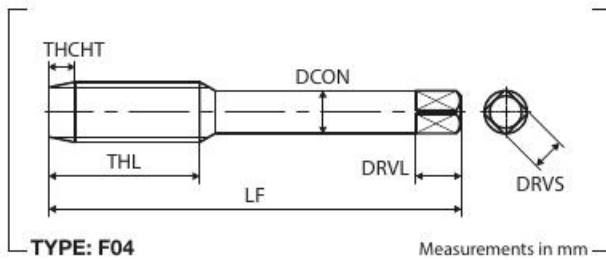
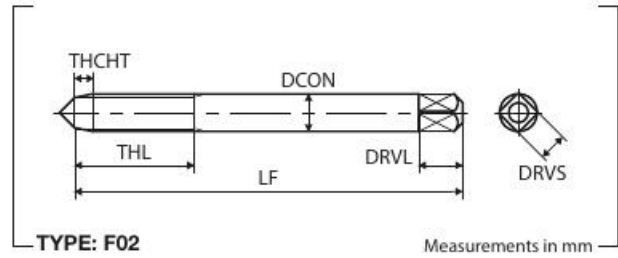
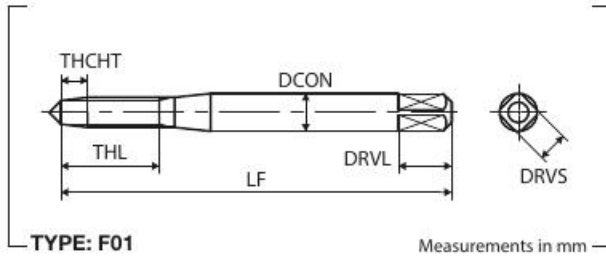
| M        | TCTR<br>(tolerance) | ∅<br>(mm) | Hole ∅<br>(mm) | Code        | THCHT | LF  | THL | LU | LS | DCON | DRVS | DRVL | NOF | Type | Stock |
|----------|---------------------|-----------|----------------|-------------|-------|-----|-----|----|----|------|------|------|-----|------|-------|
| DIN 376  |                     |           |                |             |       |     |     |    |    |      |      |      |     |      |       |
| M6x1     | ISO2X(6HX)          | 5         | 5.09           | TG6.0MBAENC | 2.5P  | 80  | 15  | -  | -  | 4.5  | 3.4  | 6    | 4   | A13  | ●     |
| M8x1.25  | ISO2X(6HX)          | 6.8       | 6.85           | TG8.0NBAENC | 2.5P  | 90  | 19  | -  | 46 | 6    | 4.9  | 8    | 4   | D13  | ●     |
| M10x1.5  | ISO2X(6HX)          | 8.5       | 8.6            | TG0100BAENC | 2.5P  | 100 | 23  | -  | 51 | 7    | 5.5  | 8    | 4   | D13  | ●     |
| M12x1.75 | ISO2X(6HX)          | 10.3      | 10.36          | TG012PBAENC | 2.5P  | 110 | 26  | -  | 56 | 9    | 7    | 10   | 4   | D13  | ●     |
| M14x2    | ISO2X(6HX)          | 12        | 12.12          | TG014QBAENC | 2.5P  | 110 | 26  | -  | 56 | 11   | 9    | 12   | 4   | D13  | ●     |
| M16x2    | ISO2X(6HX)          | 14        | 14.12          | TG016QBAENC | 2.5P  | 110 | 26  | -  | 56 | 12   | 9    | 12   | 4   | D13  | ●     |
| M18x2.5  | ISO2X(6HX)          | 15.5      | 15.63          | TG018RBAENC | 2.5P  | 125 | 33  | -  | 64 | 14   | 11   | 14   | 4   | D13  | ●     |
| M20x2.5  | ISO2X(6HX)          | 17.5      | 17.63          | TG020RBAENC | 2.5P  | 140 | 33  | -  | 71 | 16   | 12   | 15   | 4   | D13  | ●     |
| M22x2.5  | ISO2X(6HX)          | 19.5      | 19.63          | TG022RBAENC | 2.5P  | 140 | 33  | -  | 71 | 18   | 14.5 | 17   | 4   | D13  | ●     |
| M24x3    | ISO2X(6HX)          | 21        | 21.13          | TG024SBAENC | 2.5P  | 160 | 37  | -  | 82 | 18   | 14.5 | 17   | 4   | D13  | ●     |

| MF       | TCTR<br>(tolerance) | ∅<br>(mm) | Hole ∅<br>(mm) | Code        | THCHT | LF  | THL | LU | LS | DCON | DRVS | DRVL | NOF | Type | Stock |
|----------|---------------------|-----------|----------------|-------------|-------|-----|-----|----|----|------|------|------|-----|------|-------|
| DIN 374  |                     |           |                |             |       |     |     |    |    |      |      |      |     |      |       |
| M8x1     | ISO2X(6HX)          | 7         | 7.09           | TM8.0MBAENC | 2.5P  | 90  | 19  | -  | 46 | 6    | 4.9  | 8    | 4   | D13  | ●     |
| M10x1.25 | ISO2X(6HX)          | 8.8       | 8.85           | TM010NBAENC | 2.5P  | 100 | 23  | -  | 51 | 7    | 5.5  | 8    | 4   | D13  | ●     |
| M10x1    | ISO2X(6HX)          | 9         | 9.09           | TM010MBAENC | 2.5P  | 90  | 19  | -  | 46 | 7    | 5.5  | 8    | 4   | D13  | ●     |
| M12x1.5  | ISO2X(6HX)          | 10.5      | 10.6           | TM0120BAENC | 2.5P  | 100 | 21  | -  | 51 | 9    | 7    | 10   | 4   | D13  | ●     |
| M12x1.25 | ISO2X(6HX)          | 10.8      | 10.85          | TM012NBAENC | 2.5P  | 100 | 21  | -  | 51 | 9    | 7    | 10   | 4   | D13  | ●     |
| M12x1    | ISO2X(6HX)          | 11        | 11.09          | TM012MBAENC | 2.5P  | 100 | 21  | -  | 51 | 9    | 7    | 10   | 4   | D13  | ●     |

| MF      | TCTR<br>(tolerance) |  Ø<br>(mm) | Hole Ø<br>(mm) | Code        | THCHT | LF  | THL | LU | LS | DCON | DRVS | DRVL | NOF | Type | Stock |
|---------|---------------------|--------------------------------------------------------------------------------------------|----------------|-------------|-------|-----|-----|----|----|------|------|------|-----|------|-------|
| DIN 374 |                     |                                                                                            |                |             |       |     |     |    |    |      |      |      |     |      |       |
| M14x1.5 | ISO2X(6HX)          | 12.5                                                                                       | 12.6           | TM0140BAENC | 2.5P  | 100 | 21  | -  | 51 | 11   | 9    | 12   | 4   | D13  | ●     |
| M16x1.5 | ISO2X(6HX)          | 14.5                                                                                       | 14.6           | TM0160BAENC | 2.5P  | 100 | 21  | -  | 51 | 12   | 9    | 12   | 4   | D13  | ●     |
| M18x1.5 | ISO2X(6HX)          | 16.5                                                                                       | 16.6           | TM0180BAENC | 2.5P  | 110 | 24  | -  | 56 | 14   | 11   | 14   | 4   | D13  | ●     |
| M20x1.5 | ISO2X(6HX)          | 18.5                                                                                       | 18.6           | TM0200BAENC | 2.5P  | 125 | 24  | -  | 64 | 16   | 12   | 15   | 4   | D13  | ●     |
| M22x1.5 | ISO2X(6HX)          | 20.5                                                                                       | 20.6           | TM0220BAENC | 2.5P  | 125 | 24  | -  | 64 | 18   | 14.5 | 17   | 4   | D13  | ●     |
| M24x1.5 | ISO2X(6HX)          | 22.5                                                                                       | 22.6           | TM0240BAENC | 2.5P  | 140 | 27  | -  | 71 | 18   | 14.5 | 17   | 4   | D13  | ●     |

| G (BSP)  | TCTR<br>(tolerance) |  Ø<br>(mm) | Hole Ø<br>(mm) | Code        | THCHT | LF  | THL | LU | LS | DCON | DRVS | DRVL | NOF | Type | Stock |
|----------|---------------------|---------------------------------------------------------------------------------------------|----------------|-------------|-------|-----|-----|----|----|------|------|------|-----|------|-------|
| DIN 5156 |                     |                                                                                             |                |             |       |     |     |    |    |      |      |      |     |      |       |
| 1/8-28   | -                   | 8.75                                                                                        | 8.78           | TVG0020AENC | 2.5P  | 90  | 19  | -  | 46 | 7    | 5.5  | 8    | 4   | D13  | ●     |
| 1/4-19   | -                   | 11.75                                                                                       | 11.78          | TVG0040AENC | 2.5P  | 100 | 21  | -  | 51 | 11   | 9    | 12   | 4   | D13  | ●     |
| 3/8-19   | -                   | 15.25                                                                                       | 15.28          | TVG0060AENC | 2.5P  | 100 | 21  | -  | 51 | 12   | 9    | 12   | 4   | D13  | ●     |
| 1/2-14   | -                   | 19                                                                                          | 19.04          | TVG0080AENC | 2.5P  | 125 | 24  | -  | 64 | 16   | 12   | 15   | 4   | D13  | ●     |
| 3/4-14   | -                   | 24.5                                                                                        | 24.52          | TVG0120AENC | 2.5P  | 140 | 27  | -  | 71 | 20   | 16   | 19   | 4   | D13  | ●     |
| 1-11     | -                   | 30.75                                                                                       | 30.77          | TVG0160AENC | 2.5P  | 160 | 29  | -  | 82 | 25   | 20   | 23   | 4   | D13  | ●     |



● stock standard, ○ check stock, ⊙ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

| M        | TCTR<br>(tolerance) | Ø<br>(mm) | Hole Ø<br>(mm) | Code    | THCHT | LF  | THL | LU | LS | DCON | DRVS | DRVL | NOF | Type | Stock |
|----------|---------------------|-----------|----------------|---------|-------|-----|-----|----|----|------|------|------|-----|------|-------|
| DIN 371  |                     |           |                |         |       |     |     |    |    |      |      |      |     |      |       |
| M3x0.5   | ISO2X(6HX)          | 2.5       | 2.56           | 36263.0 | 2.5P  | 56  | 11  | -  | -  | 3.5  | 2.7  | 6    | 3   | F01  | ○     |
| M4x0.7   | ISO2X(6HX)          | 3.3       | 3.38           | 36264.0 | 2.5P  | 63  | 13  | -  | -  | 4.5  | 3.4  | 6    | 4   | F01  | ○     |
| M5x0.8   | ISO2X(6HX)          | 4.2       | 4.28           | 36265.0 | 2.5P  | 70  | 16  | -  | -  | 6    | 4.9  | 8    | 4   | F01  | ○     |
| M6x1     | ISO2X(6HX)          | 5         | 5.09           | 36266.0 | 2.5P  | 80  | 19  | -  | -  | 6    | 4.9  | 8    | 4   | F02  | ○     |
| M8x1.25  | ISO2X(6HX)          | 6.8       | 6.85           | 36268.0 | 2.5P  | 90  | 22  | -  | -  | 8    | 6.2  | 9    | 4   | F02  | ○     |
| M10x1.5  | ISO2X(6HX)          | 8.5       | 8.6            | 3626010 | 2.5P  | 100 | 24  | -  | -  | 10   | 8    | 11   | 4   | F02  | ○     |
| DIN 376  |                     |           |                |         |       |     |     |    |    |      |      |      |     |      |       |
| M12x1.75 | ISO2X(6HX)          | 10.3      | 10.36          | 3726012 | 2.5P  | 110 | 29  | -  | -  | 9    | 7    | 10   | 4   | F04  | ○     |
| M14x2    | ISO2X(6HX)          | 12        | 12.12          | 3726014 | 2.5P  | 110 | 30  | -  | -  | 11   | 9    | 12   | 4   | F04  | ○     |
| M16x2    | ISO2X(6HX)          | 14        | 14.12          | 3726016 | 2.5P  | 110 | 32  | -  | -  | 12   | 9    | 12   | 4   | F04  | ○     |



Download  
the Yamawa's  
Catalogue



Download the  
Yamawa's APP

9/2026



Yamawa Europe S.p.A. Socio Unico

Via Don F. Tosatto 8 - 30174 Mestre Venezia, ITALY - t. +39 041.952.543 / f. +39 041.50.44.216 info@yamawa.eu - www.yamawa.eu