



# ALL PRODUCT CATALOGUE



Forbes & Company Limited



## ABOUT US

**Forbes & Company Ltd.**, founded in 1767, is the 2nd oldest registered company in India. Forbes is part of the USD 4.25 billion Shapoorji Pallonji group.

Forbes' Engineering division is a manufacturer of High Speed Steel & Carbon Steel-Threading Taps & Dies, Solid Carbide End Mills & Drills and Tungsten Carbide Rotary Burrs under the brand TOTEM.

Forbes is also a leading manufacturer of Spring Lock Washers under the brand BBBB and Advanced Marking & Automation solutions under brand BRADMA.

With 2 state-of-the-art manufacturing facilities in Mumbai and Aurangabad, Forbes' Engineering division prides itself on being a technology solution provider employing more than 500 employees. Market leader in India with a strong OEM presence via its 1500+ distributors and 7 Branch Offices, Forbes is eyeing the bigger pie of the international market. Exporting to more than 32 countries across Australia, Asia, Europe, Africa, and North & South America, Forbes is making giant strides on the global scene.



## VISION

To be a market leader by empowering customers with innovative solutions in precision cutting tools and industrial automation through world-class practices

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## MISSION

To inculcate innovation led organizational culture to be a front runner in the field of technology

To add value to the customers business while adhering to our core values of QPD: Quality, Price, Delivery & The 5 C's: Convenience, Comfort, Care, Commitment and Customer Satisfaction (Customer Delight)

To develop a strong in-house Research & Development skillset to enhance the quality of solutions

To establish the cost leadership through world-class manufacturing and operational excellence

To be accountable towards the interest of all stakeholders, environment & society at large through all our actions and decisions



## QUALITY POLICY

We commit ourselves for customer delight by delivering innovative products and solutions through continual improvement of business processes by active participation of our employees

We remain committed towards environment and statutory compliances.



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## DRILLS

|  | PRODUCTS                | DESCRIPTION                         | PAGE  |
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|                                                                                    | ANNULAR CUTTERS         |                                     |       |



**C**



A

A large red arrow pointing to the right, indicating the direction of the next slide.

**D** 

**SB**  
DIN

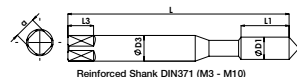
**HSS TAPS**



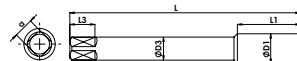
M

A diagram of a V-shaped notch with a 60-degree angle. A horizontal force  $P$  is applied at the top of the notch, pointing to the right. The notch is filled with a hatched material.

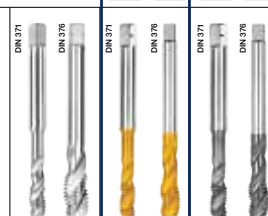
**HOLE TYPE**



Reinforced Shank DIN371 (M3 - M10)



Reduced Shank DIN376 (M12 - M20)



Select the size of nominal diameter required

**E**



\* For best result use Totem range of pre tapping drills

# USE YOUR ENDMILLS SELECTOR

Select length of tool



Select HP/GP  
(High Performance /  
General Performance)



Select corner style



Select your work piece  
material from this table



|                        | For 45 - 58 HRc Proton Plus     |                              |                             |                                  |                               |                              | For 30- 45 HRc High Speed Machining |                                 |                                  |                                  |
|------------------------|---------------------------------|------------------------------|-----------------------------|----------------------------------|-------------------------------|------------------------------|-------------------------------------|---------------------------------|----------------------------------|----------------------------------|
| Description            | 4 flute end mill regular length | 4 flute end mill long length | 4 flute end mill long reach | ball nose 2 flute regular length | ball nose 2 flute long length | ball nose 2 flute long reach | 4 flute end mill regular length     | 2 flute end mill regular length | Ball Nose 4 flute regular length | Ball Nose 2 flute regular length |
| Page No.               | 107                             | 109                          | 111                         | 112                              | 113                           | 114                          | 116                                 | 117                             | 118                              | 119                              |
| Length                 | Reg                             | Long Length                  | Long Reach                  | Reg                              | Long Length                   | Long Reach                   | Reg                                 | Reg                             | Reg                              | Reg                              |
| Dia Range Std          | 3.0-16.0                        | 3.0-16.0                     | 6.0-12.0                    | 1.0-12.0                         | 1.0-12.0                      | 6.0-12.0                     | 3.0-20.0                            | 3.0-20.0                        | 3.0-20.0                         | 3.0-20.0                         |
| Dia Range Spl          | 2.0-25.4                        | 2.0-20.0                     | 2.0-20.0                    | 1.0-20.0                         | 1.0-20.0                      | 1.0-20.0                     | 3.0-20.0                            | 3.0-20.0                        | 3.0-20.0                         | 3.0-20.0                         |
| Length of Cut (Ap Max) | 1XD                             | 1XD                          | 1XD                         | 1XD                              | 1XD                           | 1XD                          | 1XD                                 | 1XD                             | 1XD                              | 1XD                              |
| No of Flutes           | 4                               | 4                            | 4                           | 2                                | 2                             | 2                            | 4                                   | 2                               | 4                                | 2                                |
| Helix                  | 30°                             | 30°                          | 30°                         | 30°                              | 30°                           | 30°                          | 30°                                 | 30°                             | 30°                              | 30°                              |
| Coating                | Proton Plus                     | Proton Plus                  | Proton Plus                 | Proton Plus                      | Proton Plus                   | Proton Plus                  | TAIIN                               | TAIIN                           | TAIIN                            | TAIIN                            |
| Shank                  |                                 |                              |                             |                                  |                               |                              |                                     |                                 |                                  |                                  |
| Square End             | ✓                               | ✓                            | ✓                           |                                  |                               |                              | ✓                                   | ✓                               |                                  |                                  |
| Ball Nose              |                                 |                              |                             | ✓                                | ✓                             | ✓                            |                                     |                                 | ✓                                | ✓                                |
| Corner Radius          | ✓                               | ✓                            | ✓                           |                                  |                               |                              | Custom Solution                     | Custom Solution                 |                                  |                                  |
| Corner Chamfer         |                                 |                              |                             |                                  |                               |                              |                                     |                                 |                                  |                                  |
| Center Cutting         | ✓                               | ✓                            | ✓                           | ✓                                | ✓                             | ✓                            | ✓                                   | ✓                               | ✓                                | ✓                                |
| Chip Breaker           |                                 |                              |                             |                                  |                               |                              |                                     |                                 |                                  |                                  |
| Neck Type              |                                 |                              |                             |                                  |                               |                              |                                     |                                 |                                  |                                  |
| P0                     |                                 |                              |                             |                                  |                               |                              |                                     |                                 |                                  |                                  |
| P1                     |                                 |                              |                             |                                  |                               |                              |                                     |                                 |                                  |                                  |
| P2                     |                                 |                              |                             |                                  |                               |                              | •                                   | •                               | •                                | •                                |
| P3                     |                                 |                              |                             |                                  |                               |                              | •                                   | •                               | •                                | •                                |
| P4                     |                                 |                              |                             |                                  |                               |                              | •                                   | •                               | •                                | •                                |
| P5                     |                                 |                              |                             |                                  |                               |                              |                                     |                                 |                                  |                                  |
| P6                     |                                 |                              |                             |                                  |                               |                              |                                     |                                 |                                  |                                  |
| M1                     |                                 |                              |                             |                                  |                               |                              |                                     |                                 |                                  |                                  |
| M2                     |                                 |                              |                             |                                  |                               |                              |                                     |                                 |                                  |                                  |
| M3                     |                                 |                              |                             |                                  |                               |                              |                                     |                                 |                                  |                                  |
| K1                     |                                 |                              |                             |                                  |                               |                              |                                     |                                 |                                  |                                  |
| K2                     |                                 |                              |                             |                                  |                               |                              |                                     |                                 |                                  |                                  |
| K3                     |                                 |                              |                             |                                  |                               |                              |                                     |                                 |                                  |                                  |
| N1                     |                                 |                              |                             |                                  |                               |                              |                                     |                                 |                                  |                                  |
| N2                     |                                 |                              |                             |                                  |                               |                              |                                     |                                 |                                  |                                  |
| N3                     |                                 |                              |                             |                                  |                               |                              |                                     |                                 |                                  |                                  |
| N4                     |                                 |                              |                             |                                  |                               |                              |                                     |                                 |                                  |                                  |
| N5                     |                                 |                              |                             |                                  |                               |                              |                                     |                                 |                                  |                                  |
| N6                     |                                 |                              |                             |                                  |                               |                              |                                     |                                 |                                  |                                  |
| N7                     |                                 |                              |                             |                                  |                               |                              |                                     |                                 |                                  |                                  |
| S1                     |                                 |                              |                             |                                  |                               |                              |                                     |                                 |                                  |                                  |
| S2                     |                                 |                              |                             |                                  |                               |                              |                                     |                                 |                                  |                                  |
| S3                     |                                 |                              |                             |                                  |                               |                              |                                     |                                 |                                  |                                  |
| S4                     |                                 |                              |                             |                                  |                               |                              |                                     |                                 |                                  |                                  |
| H1                     | •                               | •                            | •                           | •                                | •                             | •                            |                                     |                                 |                                  |                                  |
| H2                     | •                               | •                            | •                           | •                                | •                             | •                            |                                     |                                 |                                  |                                  |
| H3                     | •                               | •                            | •                           | •                                | •                             | •                            |                                     |                                 |                                  |                                  |
| H4                     |                                 |                              |                             |                                  |                               |                              |                                     |                                 |                                  |                                  |
| Periphery Milling      | ✓                               | ✓                            | ✓                           | ✓                                | ✓                             | ✓                            | ✓                                   | ✓                               | ✓                                | ✓                                |
| Slotting               |                                 |                              |                             |                                  |                               |                              | ✓                                   | ✓                               | ✓                                | ✓                                |
| Ramping                | ✓                               | ✓                            | ✓                           | ✓                                | ✓                             | ✓                            | ✓                                   | ✓                               | ✓                                | ✓                                |
| Profiling              | ✓                               | ✓                            | ✓                           | ✓                                | ✓                             | ✓                            | ✓                                   | ✓                               | ✓                                | ✓                                |



Find your tool on the page

**Solid Carbide End Mills**

**4 Flute**
**Centre cutting HSM end mill for 30-45 HRc steel**

**P2-P4**

| Diameter<br>Ø D1 | EDP No     | Flute Length<br>L2 | Overall Length<br>L1 | Unit : mm<br>Shank Diameter<br>Ø D2 |
|------------------|------------|--------------------|----------------------|-------------------------------------|
| 3                | FBK0501200 | 12                 | 38                   | 3                                   |
| 4                | FBK0501974 | 14                 | 51                   | 4                                   |
| 5                | FBK0501326 | 20                 | 51                   | 5                                   |
| 6                | FBK0501366 | 20                 | 64                   | 6                                   |
| 8                | FBK0501975 | 20                 | 64                   | 8                                   |
| 10               | FBK0500846 | 25                 | 70                   | 10                                  |
| 12               | FBK0500942 | 25                 | 76                   | 12                                  |
| 14               | FBK0501017 | 30                 | 89                   | 14                                  |
| 16               | FBK0501048 | 30                 | 89                   | 16                                  |
| 20               | FBK0501125 | 38                 | 102                  | 20                                  |

Select tool  
diameter



\*Custom Solution possible Refer page 2.171



High Performance Cutting Tools



**HIGH SPEED STEEL TAPS**

## TAP SELECTION GUIDE



DIN 371 / DIN 376 / DIN 374 / ISO 529 / JIS

[illegible]

## TAP SELECTION GUIDE



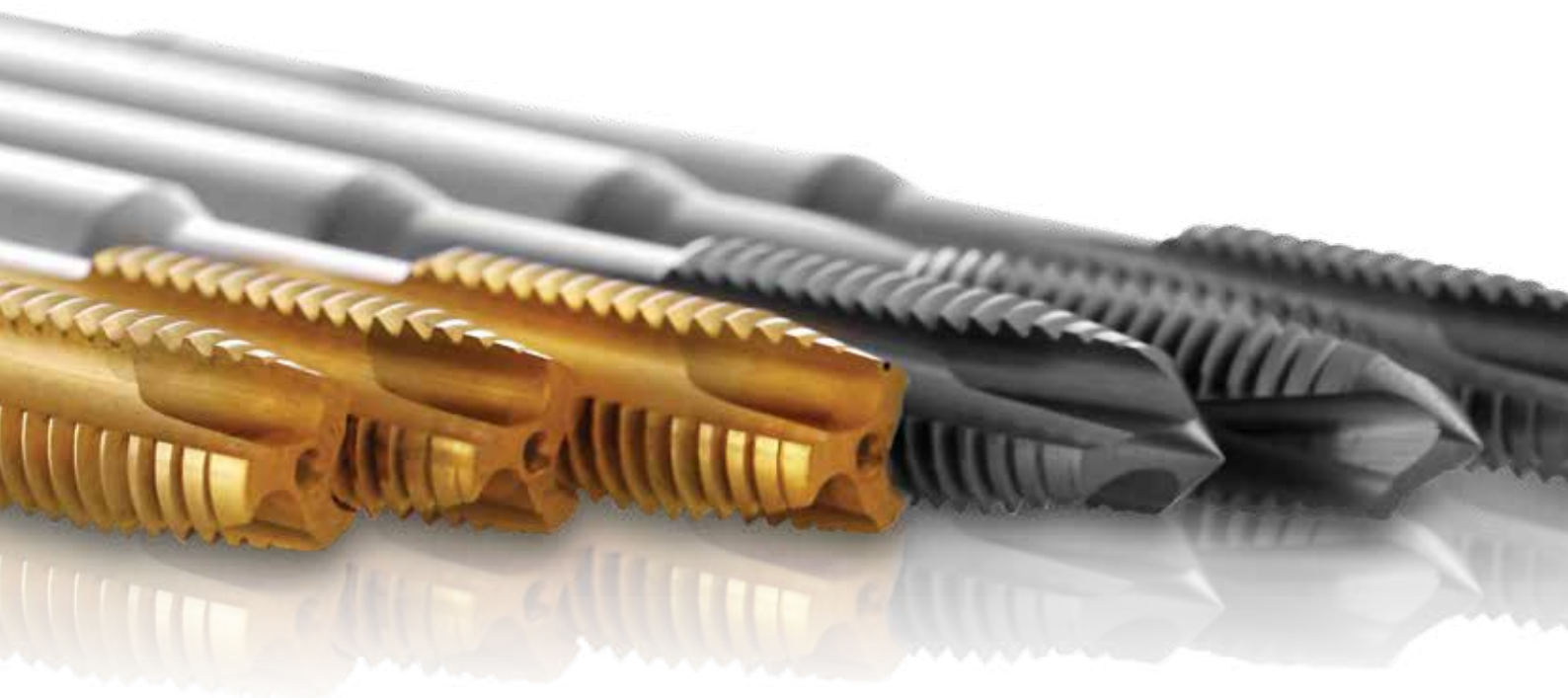
DIN 371 / DIN 376 / DIN 374 / ISO 529 / JIS

[illegible]





**High Performance Cutting Tools**



# **SPIRAL POINT TAPS**

## **SA SERIES**

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## SPIRAL POINT TAPS

| SERIES | THREAD FORM | LENGTH STANDARD | WORKPIECE MATERIAL | 1ST CHOICE | 2ND CHOICE | TOOL MATERIAL | COATING    | PAGE  |
|--------|-------------|-----------------|--------------------|------------|------------|---------------|------------|-------|
| SA1    | M           | DIN 371/ DIN376 | Steel              | P0, N4     | N1, N2     | HSSE          | Bright     | 1.005 |
| SA3    | M           | DIN 371/ DIN376 | Steel              | P0, P1     | K2, K3     | HSSE          | TiN        |       |
| SA4    | M           | DIN 371/ DIN376 | Steel              | P0-P3      | K1,K2      | HSSE          | TiAlN      |       |
| SAF3   | M           | DIN 371/ DIN376 | Forged Steel       | P1 P2      | -          | HSSE          | TiN        | 1.006 |
| SAF5   | M           | DIN 371/ DIN376 | Forged Steel       | P1- P3     | -          | HSSE          | TiCN       |       |
| SAF7   | M           | DIN 371/ DIN376 | Forged Steel       | P2-P3      | -          | HSSE          | AlCrN      |       |
| SAS3   | M           | DIN 371/ DIN376 | Stainless Steel    | M1         | -          | HSSE          | TiN        | 1.007 |
| SAS5   | M           | DIN 371/ DIN376 | Stainless Steel    | M1, M2     | -          | HSSE          | TiCN       |       |
| SAS6   | M           | DIN 371/ DIN376 | Stainless Steel    | M1- M3     | -          | HSSE          | TiAlN+WC/C |       |
| SAI6   | M           | DIN 371/ DIN376 | Super Alloys       | S1- S4     | -          | HSSE-PM       | TiAlN+WC/C | 1.008 |
| SAF5   | M           | DIN 371/ DIN376 | Steel              | P2-P3      | -          | HSSE-PM       | TiCN       | 1.009 |
| SAF7   | M           | DIN 371/ DIN376 | Steel              | P2-P4      | -          | HSSE-PM       | AlCrN      |       |
| SA1    | MF          | DIN 374         | Steel              | P0, N4     | N1, N2     | HSSE          | Bright     | 1.010 |
| SA3    | MF          | DIN 374         | Steel              | P0, P1     | K2, K3     | HSSE          | TiN        |       |
| SA4    | MF          | DIN 374         | Steel              | P0-P3      | K1,K2      | HSSE          | TiAlN      |       |
| SAF3   | MF          | DIN 374         | Forged Steel       | P1 P2      | -          | HSSE          | TiN        | 1.011 |
| SAF5   | MF          | DIN 374         | Forged Steel       | P1- P3     | -          | HSSE          | TiCN       |       |
| SAF7   | MF          | DIN 374         | Forged Steel       | P2-P3      | -          | HSSE          | AlCrN      |       |
| SAS3   | MF          | DIN 374         | Stainless Steel    | M1         | -          | HSSE          | TiN        | 1.012 |
| SAS5   | MF          | DIN 374         | Stainless Steel    | M1, M2     | -          | HSSE          | TiCN       |       |
| SAS6   | MF          | DIN 374         | Stainless Steel    | M1- M3     | -          | HSSE          | TiAlN+WC/C |       |
| SAI6   | MF          | DIN 374         | Super Alloy        | S1- S4     | -          | HSSE-PM       | TiAlN+WC/C | 1.013 |
| SA1    | UNC         | DIN 371/ DIN376 | Steel              | P0, N4     | N1, N2     | HSSE          | Bright     | 1.014 |
| SA3    | UNC         | DIN 371/ DIN376 | Steel              | P0, P1     | K2, K3     | HSSE          | TiN        |       |
| SA4    | UNC         | DIN 371/ DIN376 | Steel              | P0-P3      | K1,K2      | HSSE          | TiAlN      |       |

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## SPIRAL POINT TAPS

| SERIES | THREAD FORM | LENGTH STANDARD | WORKPIECE MATERIAL | 1ST CHOICE | 2ND CHOICE | TOOL MATERIAL | COATING    | PAGE  |
|--------|-------------|-----------------|--------------------|------------|------------|---------------|------------|-------|
| SAS3   | UNC         | DIN 371/ DIN376 | Stainless Steel    | M1         | -          | HSSE          | TiN        | 1.015 |
| SAS5   | UNC         | DIN 371/ DIN376 | Stainless Steel    | M1, M2     | -          | HSSE          | TiCN       |       |
| SAS6   | UNC         | DIN 371/ DIN376 | Stainless Steel    | M1- M3     | -          | HSSE          | TiAIN+WC/C |       |
| SA1    | UNF         | DIN 374         | Steel              | P0, N4     | N1, N2     | HSSE          | Bright     | 1.016 |
| SA3    | UNF         | DIN 374         | Steel              | P0, P1     | K2, K3     | HSSE          | TiN        |       |
| SA4    | UNF         | DIN 374         | Steel              | P0-P3      | K1,K2      | HSSE          | TiAIN      |       |
| SAS3   | UNF         | DIN 374         | Stainless Steel    | M1         | -          | HSSE          | TiN        | 1.017 |
| SAS5   | UNF         | DIN 374         | Stainless Steel    | M1, M2     | -          | HSSE          | TiCN       |       |
| SAS6   | UNF         | DIN 374         | Stainless Steel    | M1- M3     | -          | HSSE          | TiAIN+WC/C |       |
| SA1    | M           | ISO 529         | Steel              | P0, N4     | N1, N2     | HSSE          | Bright     | 1.018 |
| SA3    | M           | ISO 529         | Steel              | P0, P1     | K2, K3     | HSSE          | TiN        |       |
| SA4    | M           | ISO 529         | Steel              | P0-P3      | K1,K2      | HSSE          | TiAIN      |       |
| SAF3   | M           | ISO 529         | Forged Steel       | P1 P2      | -          | HSSE          | TiN        | 1.019 |
| SAF5   | M           | ISO 529         | Forged Steel       | P1- P3     | -          | HSSE          | TiCN       |       |
| SAF7   | M           | ISO 529         | Forged Steel       | P2-P3      | -          | HSSE          | AlCrN      |       |
| SAS3   | M           | ISO 529         | Stainless Steel    | M1         | -          | HSSE          | TiN        | 1.020 |
| SAS5   | M           | ISO 529         | Stainless Steel    | M1, M2     | -          | HSSE          | TiCN       |       |
| SAS6   | M           | ISO 529         | Stainless Steel    | M1- M3     | -          | HSSE          | TiAIN+WC/C |       |
| SAI6   | M           | ISO 529         | Super Alloys       | S1- S4     | -          | HSSE-PM       | TiAIN+WC/C | 1.021 |
| SAF5   | M           | ISO 529         | Steel              | P2-P3      | -          | HSSE-PM       | TiCN       | 1.022 |
| SAF7   | M           | ISO 529         | Steel              | P2-P4      | -          | HSSE-PM       | AlCrN      |       |
| SA1    | MF          | ISO 529         | Steel              | P0, N4     | N1, N2     | HSSE          | Bright     | 1.023 |
| SA3    | MF          | ISO 529         | Steel              | P0, P1     | K2, K3     | HSSE          | TiN        |       |
| SA4    | MF          | ISO 529         | Steel              | P0-P3      | K1,K2      | HSSE          | TiAIN      |       |

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## SPIRAL POINT TAPS

| SERIES | THREAD FORM | LENGTH STANDARD | WORKPIECE MATERIAL | 1ST CHOICE | 2ND CHOICE | TOOL MATERIAL | COATING    | PAGE  |
|--------|-------------|-----------------|--------------------|------------|------------|---------------|------------|-------|
| SAF3   | MF          | ISO 529         | Forged Steel       | P1 P2      | -          | HSSE          | TiN        | 1.024 |
| SAF5   | MF          | ISO 529         | Forged Steel       | P1- P3     | -          | HSSE          | TiCN       |       |
| SAF7   | MF          | ISO 529         | Forged Steel       | P2-P3      | -          | HSSE          | AlCrN      |       |
| SAS3   | MF          | ISO 529         | Stainless Steel    | M1         | -          | HSSE          | TiN        | 1.025 |
| SAS5   | MF          | ISO 529         | Stainless Steel    | M1, M2     | -          | HSSE          | TiCN       |       |
| SAS6   | MF          | ISO 529         | Stainless Steel    | M1- M3     | -          | HSSE          | TiAlN+WC/C |       |
| SAI6   | MF          | ISO 529         | Super Alloy        | S1- S4     | -          | HSSE-PM       | TiAlN+WC/C | 1.026 |
| SA1    | UNC         | ISO 529         | Steel              | P0, N4     | N1, N2     | HSSE          | Bright     | 1.027 |
| SA3    | UNC         | ISO 529         | Steel              | P0, P1     | K2, K3     | HSSE          | TiN        |       |
| SA4    | UNC         | ISO 529         | Steel              | P0-P3      | K1,K2      | HSSE          | TiAlN      |       |
| SAS3   | UNC         | ISO 529         | Stainless Steel    | M1         | -          | HSSE          | TiN        | 1.028 |
| SAS5   | UNC         | ISO 529         | Stainless Steel    | M1, M2     | -          | HSSE          | TiCN       |       |
| SAS6   | UNC         | ISO 529         | Stainless Steel    | M1- M3     | -          | HSSE          | TiAlN+WC/C |       |
| SA1    | UNF         | ISO 529         | Steel              | P0, N4     | N1, N2     | HSSE          | Bright     | 1.029 |
| SA3    | UNF         | ISO 529         | Steel              | P0, P1     | K2, K3     | HSSE          | TiN        |       |
| SA4    | UNF         | ISO 529         | Steel              | P0-P3      | K1,K2      | HSSE          | TiAlN      |       |
| SAS3   | UNF         | ISO 529         | Stainless Steel    | M1         | -          | HSSE          | TiN        | 1.030 |
| SAS5   | UNF         | ISO 529         | Stainless Steel    | M1, M2     | -          | HSSE          | TiCN       |       |
| SAS6   | UNF         | ISO 529         | Stainless Steel    | M1- M3     | -          | HSSE          | TiAlN+WC/C |       |
| SA1    | M           | JIS             | Steel              | P0, N4     | N1-N2      | HSSE          | Bright     | 1.031 |
| SA4    | M           | JIS             | Steel              | P0-P3      | K1-K2      | HSSE          | TiAlN      |       |
| SPPT   | M           | ISO 529         | General            | -          | -          | HSS           | Bright     | 1.032 |
| SPPT   | M           | ISO 529         | General            | -          | -          | HSS           | TiN        |       |



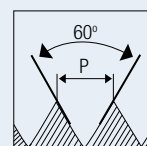
Silver cut

Spiral Point Taps

HSS TAPS

M

## Metric coarse threads



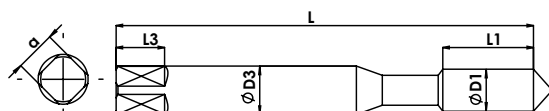
HOLE TYPE



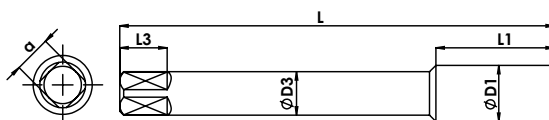
HSS-E

DIN  
371/376

6HX



Reinforced Shank DIN371 (M3 - M10)



Reduced Shank DIN376 (M12 - M20)



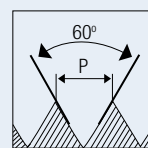
|                  |       |                |               |                |             |               | Series                            |             | SA1        | SA3        | SA4        |
|------------------|-------|----------------|---------------|----------------|-------------|---------------|-----------------------------------|-------------|------------|------------|------------|
|                  |       |                |               |                |             |               | Material - 1 <sup>st</sup> choice |             | P0, N4     | P0-P1      | P0-P3      |
|                  |       |                |               |                |             |               | Material - 2 <sup>nd</sup> choice |             | N1-N2      | K2-K3      | K1-K2      |
| DIN 371          |       |                |               |                |             |               | Coating                           |             | Bright     | TiN        | TiAlN      |
| Nominal Diameter | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter            | No of Flute | EDP No.    | EDP No.    | EDP No.    |
| ØD1              | p     | L              | L1            | ØD3            | a           | L3            | Ød1                               |             |            |            |            |
| M 3              | 0.5   | 56             | 11            | 3.5            | 2.7         | 6             | 2.5                               | 3           | FAB0203112 | FAB0203123 | FAB0204205 |
| M 3.5            | 0.6   | 56             | 12            | 4              | 3           | 6             | 2.9                               | 3           | FAB0203113 | FAB0203124 | FAB0204206 |
| M 4              | 0.7   | 63             | 13            | 4.5            | 3.4         | 6             | 3.3                               | 3           | FAB0203114 | FAB0203125 | FAB0204207 |
| M 5              | 0.8   | 70             | 16            | 6              | 4.9         | 7             | 4.2                               | 3           | FAB0203115 | FAB0203126 | FAB0204208 |
| M 6              | 1     | 80             | 19            | 6              | 4.9         | 7             | 5                                 | 3           | FAB0203116 | FAB0203127 | FAB0204209 |
| M 8              | 1.25  | 90             | 22            | 8              | 6.2         | 9             | 6.8                               | 3           | FAB0203118 | FAB0203129 | FAB0204210 |
| M 10             | 1.5   | 100            | 24            | 10             | 8           | 11            | 8.5                               | 3           | FAB0203119 | FAB0203130 | FAB0204211 |

| DIN 376 |      |     |    |    |    |    |      |   |            |            |            |
|---------|------|-----|----|----|----|----|------|---|------------|------------|------------|
| M 12    | 1.75 | 110 | 28 | 9  | 7  | 10 | 10.2 | 3 | FAB0203120 | FAB0203131 | FAB0204212 |
| M 14    | 2    | 110 | 30 | 11 | 9  | 12 | 12   | 3 | FAB0203121 | FAB0203132 | FAB0204213 |
| M 16    | 2    | 110 | 32 | 12 | 9  | 12 | 14   | 3 | FAB0203122 | FAB0203133 | FAB0204214 |
| M 18    | 2.5  | 125 | 34 | 14 | 11 | 14 | 15.5 | 4 | FAB0204201 | FAB0204203 | FAB0204215 |
| M 20    | 2.5  | 140 | 34 | 16 | 12 | 15 | 17.5 | 4 | FAB0204202 | FAB0204204 | FAB0204216 |



M

## Metric coarse threads



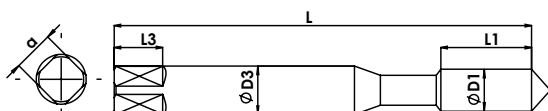
HOLE TYPE



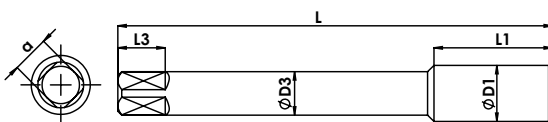
HSS-E

DIN  
371/376

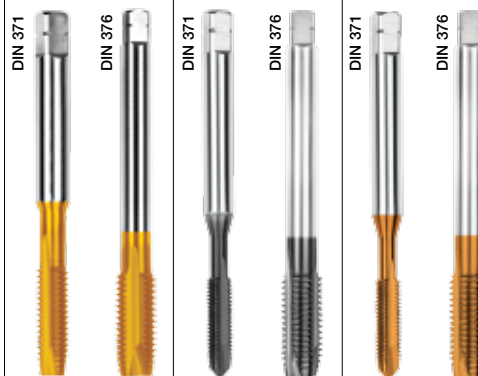
6HX



Reinforced Shank DIN371 (M3 - M10)



Reduced Shank DIN376 (M12 - M20)



|                  |       |                |               |                |             |               | Series                            |             | SAF3       |            |            |
|------------------|-------|----------------|---------------|----------------|-------------|---------------|-----------------------------------|-------------|------------|------------|------------|
|                  |       |                |               |                |             |               | Material - 1 <sup>st</sup> choice |             | P1-P2      |            |            |
|                  |       |                |               |                |             |               | Material - 2 <sup>nd</sup> choice |             | -          |            |            |
|                  |       |                |               |                |             |               | Coating                           |             | TiN        |            |            |
| DIN 371          |       |                |               |                |             |               |                                   |             | TiCN       |            |            |
| Nominal Diameter | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter            | No of Flute | EDP No.    | EDP No.    | EDP No.    |
| ØD1              | p     | L              | L1            | ØD3            | a           | L3            | Ød1                               |             |            |            |            |
| M 3              | 0.5   | 56             | 11            | 3.5            | 2.7         | 6             | 2.5                               | 3           | FAB0204217 | FAB0204229 | FAB0204740 |
| M 3.5            | 0.6   | 56             | 12            | 4              | 3           | 6             | 2.9                               | 3           | FAB0204218 | FAB0204230 | FAB0205280 |
| M 4              | 0.7   | 63             | 13            | 4.5            | 3.4         | 6             | 3.3                               | 3           | FAB0204219 | FAB0204231 | FAB0204741 |
| M 5              | 0.8   | 70             | 16            | 6              | 4.9         | 7             | 4.2                               | 3           | FAB0204220 | FAB0204232 | FAB0204742 |
| M 6              | 1     | 80             | 19            | 6              | 4.9         | 7             | 5                                 | 3           | FAB0204221 | FAB0204233 | FAB0204743 |
| M 8              | 1.25  | 90             | 22            | 8              | 6.2         | 9             | 6.8                               | 3           | FAB0204222 | FAB0204234 | FAB0204744 |
| M 10             | 1.5   | 100            | 24            | 10             | 8           | 11            | 8.5                               | 3           | FAB0204223 | FAB0204235 | FAB0204745 |

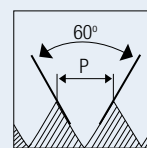
| DIN 376 |      |     |    |    |    |    |      |   |            |            |            |
|---------|------|-----|----|----|----|----|------|---|------------|------------|------------|
| M 12    | 1.75 | 110 | 28 | 9  | 7  | 10 | 10.2 | 3 | FAB0204224 | FAB0204236 | FAB0204746 |
| M 14    | 2    | 110 | 30 | 11 | 9  | 12 | 12   | 3 | FAB0204225 | FAB0204237 | FAB0204747 |
| M 6     | 2    | 110 | 32 | 12 | 9  | 12 | 14   | 3 | FAB0204226 | FAB0204238 | FAB0204748 |
| M 18    | 2.5  | 125 | 34 | 14 | 11 | 14 | 15.5 | 4 | FAB0204227 | FAB0204239 | FAB0204948 |
| M 20    | 2.5  | 140 | 34 | 16 | 12 | 15 | 17.5 | 4 | FAB0204228 | FAB0204240 | FAB0204749 |

Unit : mm



M

## Metric coarse threads



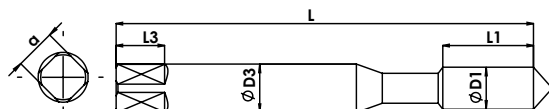
HOLE TYPE



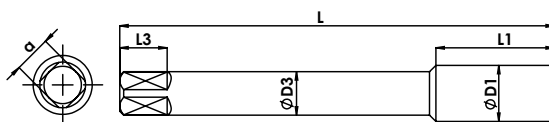
HSS-E

DIN  
371/376

6HX



Reinforced Shank DIN371 (M3 - M10)



Reduced Shank DIN376 (M12 - M20)

DIN 371

DIN 376

DIN 371

DIN 376

DIN 371

DIN 376

Series

SAS3

SAS5

SAS6

Material - 1<sup>st</sup> choice

M1

M1-M2

M1-M3

Material - 2<sup>nd</sup> choice

-

-

-

Coating

TiN

TiCN

TiAlN + WC/C

DIN 371

| Nominal Diameter | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | No of Flute | EDP No.    | EDP No.    | EDP No.    |
|------------------|-------|----------------|---------------|----------------|-------------|---------------|------------------------|-------------|------------|------------|------------|
| ØD1              | p     | L              | L1            | ØD3            | a           | L3            | Ød1                    |             |            |            |            |
| M3               | 0.5   | 56             | 11            | 3.5            | 2.7         | 6             | 2.5                    | 3           | FAB0204675 | FAB0204665 | FAB0204778 |
| M4               | 0.7   | 63             | 13            | 4.5            | 3.4         | 6             | 3.3                    | 3           | FAB0204676 | FAB0204666 | FAB0204779 |
| M5               | 0.8   | 70             | 16            | 6              | 4.9         | 7             | 4.2                    | 3           | FAB0204677 | FAB0204667 | FAB0204780 |
| M6               | 1     | 80             | 19            | 6              | 4.9         | 7             | 5                      | 3           | FAB0204678 | FAB0204668 | FAB0204781 |
| M8               | 1.25  | 90             | 22            | 8              | 6.2         | 9             | 6.8                    | 3           | FAB0204679 | FAB0204669 | FAB0204782 |
| M10              | 1.5   | 100            | 24            | 10             | 8           | 11            | 8.5                    | 3           | FAB0204680 | FAB0204670 | FAB0204783 |

DIN 376

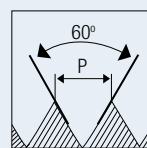
| Nominal Diameter | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | No of Flute | EDP No.    | EDP No.    | EDP No.    |
|------------------|-------|----------------|---------------|----------------|-------------|---------------|------------------------|-------------|------------|------------|------------|
| ØD1              | p     | L              | L1            | ØD3            | a           | L3            | Ød1                    |             |            |            |            |
| M12              | 1.75  | 110            | 28            | 9              | 7           | 10            | 10.2                   | 3           | FAB0204681 | FAB0204671 | FAB0204784 |
| M14              | 2     | 110            | 30            | 11             | 9           | 12            | 12                     | 3           | FAB0204682 | FAB0204672 | FAB0204785 |
| M16              | 2     | 110            | 32            | 12             | 9           | 12            | 14                     | 3           | FAB0204683 | FAB0204673 | FAB0204786 |
| M18              | 2.5   | 125            | 34            | 14             | 11          | 14            | 15.5                   | 4           | FAB0205281 | FAB0205282 | FAB0205283 |
| M20              | 2.5   | 140            | 34            | 16             | 12          | 15            | 17.5                   | 4           | FAB0204684 | FAB0204674 | FAB0204897 |

Unit : mm



M

## Metric coarse threads

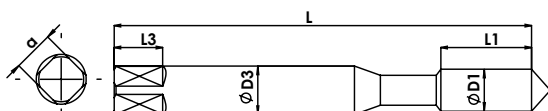


HOLE TYPE

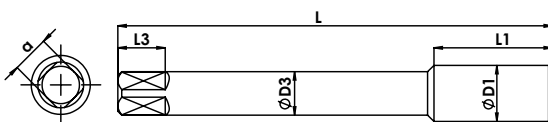
HSS-E  
PMDIN  
371/376

6HX

B/4-4.5P



Reinforced Shank DIN371 (M3 - M10)



Reduced Shank DIN376 (M12)



|                  |       |                |               |                |             |               | Series                            |             | SAI6         |
|------------------|-------|----------------|---------------|----------------|-------------|---------------|-----------------------------------|-------------|--------------|
|                  |       |                |               |                |             |               | Material - 1 <sup>st</sup> choice |             | S1-S4        |
|                  |       |                |               |                |             |               | Material - 2 <sup>nd</sup> choice |             | -            |
| DIN 371          |       |                |               |                |             |               | Coating                           |             | TiAlN + WC/C |
| Nominal Diameter | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter            | No of Flute | EDP No.      |
| ØD1              | p     | L              | L1            | ØD3            | a           | L3            | Ød1                               |             |              |
| M 3              | 0.5   | 56             | 11            | 3.5            | 2.7         | 6             | 2.5                               | 3           | FAB0204694   |
| M 4              | 0.7   | 63             | 13            | 4.5            | 3.4         | 6             | 3.3                               | 3           | FAB0204695   |
| M 5              | 0.8   | 70             | 16            | 6              | 4.9         | 7             | 4.2                               | 3           | FAB0204696   |
| M 6              | 1     | 80             | 19            | 6              | 4.9         | 7             | 5                                 | 3           | FAB0204697   |
| M 8              | 1.25  | 90             | 22            | 8              | 6.2         | 9             | 6.8                               | 3           | FAB0204698   |
| M 10             | 1.5   | 100            | 24            | 10             | 8           | 11            | 8.5                               | 3           | FAB0204699   |

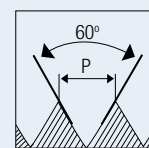
| DIN 376 |      |     |    |   |   |    |      |   |            |
|---------|------|-----|----|---|---|----|------|---|------------|
| M 12    | 1.75 | 110 | 28 | 9 | 7 | 10 | 10.2 | 3 | FAB0204700 |
| M 14    |      |     |    |   |   |    |      |   |            |
| M 16    |      |     |    |   |   |    |      |   |            |

Unit : mm



M

## Metric coarse threads

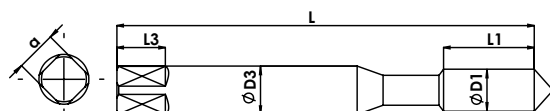


HOLE TYPE

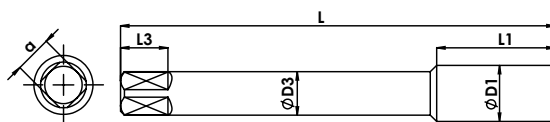
HSS-E  
PMDIN  
371/376

6HX

B/4-4.5P



Reinforced Shank DIN371 (M3 - M10)



Reduced Shank DIN376 (M12 - M16)

DIN 371

DIN 376

DIN 371

DIN 376

Series

SAF5

SAF7

Material - 1<sup>st</sup> choice

P2-P3

P2-P4

Material - 2<sup>nd</sup> choice

-

-

Coating

TiCN

AlCrN

DIN 371

| Nominal Diameter | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | No of Flute | EDP No.    | EDP No.    |
|------------------|-------|----------------|---------------|----------------|-------------|---------------|------------------------|-------------|------------|------------|
| ØD1              | p     | L              | L1            | ØD3            | a           | L3            | Ød1                    |             |            |            |
| M 3              | 0.5   | 56             | 11            | 3.5            | 2.7         | 6             | 2.5                    | 3           | FAB0205284 | FAB0205293 |
| M 4              | 0.7   | 63             | 13            | 4.5            | 3.4         | 6             | 3.3                    | 3           | FAB0205285 | FAB0205294 |
| M 5              | 0.8   | 70             | 16            | 6              | 4.9         | 7             | 4.2                    | 3           | FAB0205286 | FAB0205295 |
| M 6              | 1     | 80             | 19            | 6              | 4.9         | 7             | 5                      | 3           | FAB0205287 | FAB0205296 |
| M 8              | 1.25  | 90             | 22            | 8              | 6.2         | 9             | 6.8                    | 3           | FAB0205288 | FAB0205297 |
| M 10             | 1.5   | 100            | 24            | 10             | 8           | 11            | 8.5                    | 3           | FAB0205289 | FAB0205298 |

DIN 376

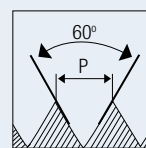
| Nominal Diameter | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | No of Flute | EDP No.    | EDP No.    |
|------------------|-------|----------------|---------------|----------------|-------------|---------------|------------------------|-------------|------------|------------|
| ØD1              | p     | L              | L1            | ØD3            | a           | L3            | Ød1                    |             |            |            |
| M 12             | 1.75  | 110            | 28            | 9              | 7           | 10            | 10.2                   | 3           | FAB0205290 | FAB0205299 |
| M 14             | 2     | 110            | 30            | 11             | 9           | 12            | 12                     | 3           | FAB0205291 | FAB0205300 |
| M 16             | 2     | 110            | 32            | 12             | 9           | 12            | 14                     | 3           | FAB0205292 | FAB0205301 |
| M 18             |       |                |               |                |             |               |                        |             |            |            |
| M 20             |       |                |               |                |             |               |                        |             |            |            |

Unit : mm



MF

## Metric fine threads



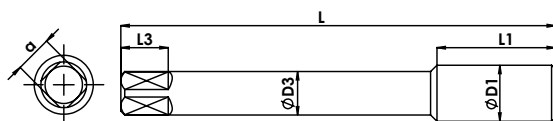
HOLE TYPE



HSS-E

DIN  
374

6HX



Male Centre (M6 - M10)  
Female Centre (M12 - M20)



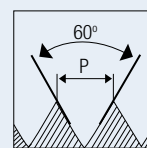
|                  |       |                |               |                |             |               | Series                            |             | SA1        | SA3        | SA4        |
|------------------|-------|----------------|---------------|----------------|-------------|---------------|-----------------------------------|-------------|------------|------------|------------|
|                  |       |                |               |                |             |               | Material - 1 <sup>st</sup> choice |             | P0, N4     | P0-P1      | P0-P3      |
|                  |       |                |               |                |             |               | Material - 2 <sup>nd</sup> choice |             | N1-N2      | K2-K3      | K1-K2      |
| DIN 374          |       |                |               |                |             |               | Coating                           |             | Bright     | TiN        | TiAlN      |
| Nominal Diameter | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter            | No of Flute | EDP No.    | EDP No.    | EDP No.    |
| ØD1              | p     | L              | L1            | ØD3            | a           | L3            | Ød1                               |             |            |            |            |
| M 6              | 0.75  | 80             | 14            | 4.5            | 3.4         | 6             | 5.2                               | 3           | FAB0204241 | FAB0204252 | FAB0204263 |
| M 8              | 1     | 90             | 18            | 6              | 4.9         | 7             | 7                                 | 3           | FAB0204242 | FAB0204253 | FAB0204264 |
| M 10             | 1.25  | 100            | 22            | 7              | 5.5         | 8             | 8.8                               | 3           | FAB0204243 | FAB0204254 | FAB0204265 |
| M 10             | 1     | 90             | 18            | 7              | 5.5         | 8             | 9                                 | 3           | FAB0204244 | FAB0204255 | FAB0204266 |
| M 12             | 1.5   | 100            | 22            | 9              | 7           | 10            | 10.5                              | 3           | FAB0204245 | FAB0204256 | FAB0204267 |
| M 12             | 1.25  | 100            | 22            | 9              | 7           | 10            | 10.8                              | 3           | FAB0204246 | FAB0204257 | FAB0204268 |
| M 14             | 1.5   | 100            | 22            | 11             | 9           | 12            | 12.5                              | 3           | FAB0204247 | FAB0204258 | FAB0204269 |
| M 14             | 1.25  | 100            | 22            | 11             | 9           | 12            | 12.8                              | 3           | FAB0204248 | FAB0204259 | FAB0204270 |
| M 16             | 1.5   | 100            | 22            | 12             | 11          | 12            | 14.5                              | 3           | FAB0204249 | FAB0204260 | FAB0204271 |
| M 18             | 1.5   | 110            | 25            | 14             | 12          | 14            | 16.5                              | 4           | FAB0204250 | FAB0204261 | FAB0204272 |
| M 20             | 1.5   | 125            | 25            | 16             | 14.5        | 15            | 18.5                              | 4           | FAB0204251 | FAB0204262 | FAB0204273 |

Unit : mm



MF

## Metric fine threads



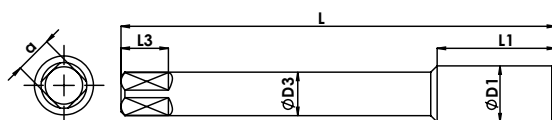
HOLE TYPE



HSS-E

DIN  
374

6HX



Male Centre (M8 - M10)  
Female Centre (M12 - M20)



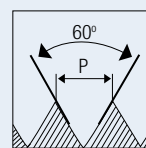
| DIN 374          |       |                |               |                |             |               | Series                            |             | SAF3       | SAF5       | SAF7       |
|------------------|-------|----------------|---------------|----------------|-------------|---------------|-----------------------------------|-------------|------------|------------|------------|
|                  |       |                |               |                |             |               | Material - 1 <sup>st</sup> choice |             | P1-P2      | P1-P3      | P2-P3      |
|                  |       |                |               |                |             |               | Material - 2 <sup>nd</sup> choice |             | -          | -          | -          |
|                  |       |                |               |                |             |               | Coating                           |             | TiN        | TiCN       | AlCrN      |
| Nominal Diameter | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter            | No of Flute | EDP No.    | EDP No.    | EDP No.    |
| ØD1              | p     | L              | L1            | ØD3            | a           | L3            | Ød1                               |             |            |            |            |
| M 8              | 1     | 90             | 18            | 6              | 4.9         | 7             | 7                                 | 3           | FAB0204544 | FAB0204550 | FAB0204750 |
| M 10             | 1.25  | 100            | 22            | 7              | 5.5         | 8             | 8.8                               | 3           | FAB0204545 | FAB0204551 | FAB0204751 |
| M 10             | 1     | 90             | 18            | 7              | 5.5         | 8             | 9                                 | 3           | FAB0204903 | FAB0204929 | FAB0204752 |
| M 12             | 1.5   | 100            | 22            | 9              | 7           | 10            | 10.5                              | 3           | FAB0204547 | FAB0204553 | FAB0204753 |
| M 12             | 1.25  | 100            | 22            | 9              | 7           | 10            | 10.8                              | 3           | FAB0204546 | FAB0204552 | FAB0204754 |
| M 14             | 1.5   | 100            | 22            | 11             | 9           | 12            | 12.5                              | 3           | FAB0204548 | FAB0203818 | FAB0204755 |
| M 16             | 1.5   | 100            | 22            | 12             | 11          | 12            | 14.5                              | 3           | FAB0204549 | FAB0204555 | FAB0204756 |
| M 18             | 1.5   | 110            | 25            | 14             | 12          | 14            | 16.5                              | 4           | FAB0204904 | FAB0204930 | FAB0204757 |
| M 20             | 1.5   | 125            | 25            | 16             | 14.5        | 15            | 18.5                              | 4           | FAB0204905 | FAB0204931 | FAB0204758 |

Unit : mm



MF

## Metric fine threads



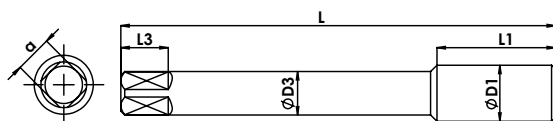
HOLE TYPE



HSS-E

DIN  
374

6HX



Male Centre (M8 - M10)  
Female Centre (M12 - M20)



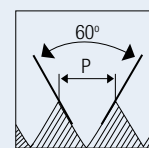
|                  |       |                |               |                |             |               | Series                            |             | SAS3       | SAS5       | SAS6         |
|------------------|-------|----------------|---------------|----------------|-------------|---------------|-----------------------------------|-------------|------------|------------|--------------|
|                  |       |                |               |                |             |               | Material - 1 <sup>st</sup> choice |             | M1         | M1-M2      | M1-M3        |
|                  |       |                |               |                |             |               | Material - 2 <sup>nd</sup> choice |             | -          | -          | -            |
| DIN 374          |       |                |               |                |             |               | Coating                           |             | TiN        | TiCN       | TiAlN + WC/C |
| Nominal Diameter | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter            | No of Flute | EDP No.    | EDP No.    | EDP No.      |
| ØD1              | p     | L              | L1            | ØD3            | a           | L3            | Ød1                               |             |            |            |              |
| M 8              | 1     | 90             | 18            | 6              | 4.9         | 7             | 7                                 | 3           | FAB0204832 | FAB0204858 | FAB0204787   |
| M 10             | 1.25  | 100            | 22            | 7              | 5.5         | 8             | 8.8                               | 3           | FAB0204834 | FAB0204860 | FAB0204788   |
| M 10             | 1     | 90             | 18            | 7              | 5.5         | 8             | 9                                 | 3           | FAB0204833 | FAB0204859 | FAB0204789   |
| M 12             | 1.5   | 100            | 22            | 9              | 7           | 10            | 10.5                              | 3           | FAB0204836 | FAB0204862 | FAB0204790   |
| M 12             | 1.25  | 100            | 22            | 9              | 7           | 10            | 10.8                              | 3           | FAB0204835 | FAB0204861 | FAB0204791   |
| M 14             | 1.5   | 100            | 22            | 11             | 9           | 12            | 12.5                              | 3           | FAB0204837 | FAB0204863 | FAB0204792   |
| M 16             | 1.5   | 100            | 22            | 12             | 11          | 12            | 14.5                              | 3           | FAB0204838 | FAB0204864 | FAB0204793   |
| M 18             | 1.5   | 110            | 25            | 14             | 12          | 14            | 16.5                              | 4           | FAB0205302 | FAB0205304 | FAB0205306   |
| M 20             | 1.5   | 125            | 25            | 16             | 14.5        | 15            | 18.5                              | 4           | FAB0205303 | FAB0205305 | FAB0205307   |

Unit : mm



MF

## Metric fine threads

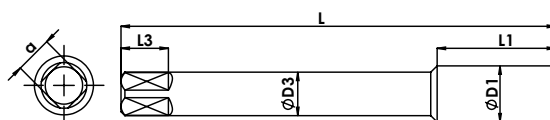


HOLE TYPE

HSS-E  
PMDIN  
374

6HX

B/4-4.5P



Male Centre (M8 - M10)  
Female Centre (M12)



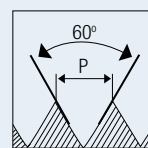
| DIN 374          |       |                |               |                |             |               | Series                            |             | SAI6         |
|------------------|-------|----------------|---------------|----------------|-------------|---------------|-----------------------------------|-------------|--------------|
|                  |       |                |               |                |             |               | Material - 1 <sup>st</sup> choice |             | S1-S4        |
|                  |       |                |               |                |             |               | Material - 2 <sup>nd</sup> choice |             | -            |
|                  |       |                |               |                |             |               | Coating                           |             | TiAlN + WC/C |
| Nominal Diameter | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter            | No of Flute | EDP No.      |
| ØD1              | p     | L              | L1            | ØD3            | a           | L3            | Ød1                               |             |              |
| M 8              | 1     | 90             | 18            | 6              | 4.9         | 7             | 7                                 | 3           | FAB0204810   |
| M 10             | 1.25  | 100            | 22            | 7              | 5.5         | 8             | 8.8                               | 3           | FAB0204811   |
| M 10             | 1     | 90             | 18            | 7              | 5.5         | 8             | 9                                 | 3           | FAB0204812   |
| M 12             | 1.5   | 100            | 22            | 9              | 7           | 10            | 10.5                              | 3           | FAB0204815   |
| M 12             | 1.25  | 100            | 22            | 9              | 7           | 10            | 10.8                              | 3           | FAB0204816   |
| M 14             |       |                |               |                |             |               |                                   |             |              |
| M 16             |       |                |               |                |             |               |                                   |             |              |

Unit : mm



UNC

Unified coarse threads



HOLE TYPE

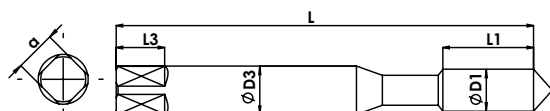


HSS-E

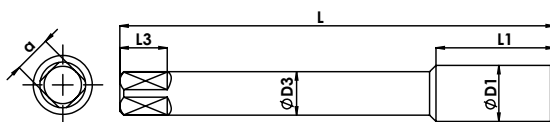
DIN  
371/376

2B

B/4-4.5P



Reinforced Shank DIN371 (1/4" - 3/8")



Reduced Shank DIN376 (7/16" - 1")

DIN 371

DIN 376

DIN 371

DIN 376

DIN 371

DIN 376

Series

SA1

SA3

SA4

Material - 1<sup>st</sup> choice

P0, N4

P0-P1

P0-P3

Material - 2<sup>nd</sup> choice

N1-N2

K2-K3

K1-K2

Coating

Bright

TiN

TiAlN

DIN 371

| Nominal Diameter | TPI | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | No of Flute | EDP No.    | EDP No.    | EDP No.    |
|------------------|-----|----------------|---------------|----------------|-------------|---------------|------------------------|-------------|------------|------------|------------|
| ØD1              | p   | L              | L1            | ØD3            | a           | L3            | Ød1                    |             |            |            |            |
| 1/4"             | 20  | 80             | 19            | 7              | 5.5         | 8             | 5.1                    | 3           | FAB0204274 | FAB0204283 | FAB0204292 |
| 5/16"            | 18  | 90             | 22            | 8              | 6.2         | 9             | 6.6                    | 3           | FAB0204275 | FAB0204284 | FAB0204293 |
| 3/8"             | 16  | 100            | 24            | 10             | 8           | 11            | 8                      | 3           | FAB0204276 | FAB0204285 | FAB0204294 |

DIN 376

| Nominal Diameter | TPI | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | No of Flute | EDP No.    | EDP No.    | EDP No.    |
|------------------|-----|----------------|---------------|----------------|-------------|---------------|------------------------|-------------|------------|------------|------------|
| ØD1              | p   | L              | L1            | ØD3            | a           | L3            | Ød1                    |             |            |            |            |
| 7/16"            | 14  | 100            | 24            | 8              | 6.2         | 9             | 9.4                    | 3           | FAB0204277 | FAB0204286 | FAB0204295 |
| 1/2"             | 13  | 110            | 28            | 9              | 7           | 10            | 10.8                   | 3           | FAB0204278 | FAB0204287 | FAB0204296 |
| 5/8"             | 11  | 110            | 32            | 12             | 9           | 12            | 13.5                   | 3           | FAB0204279 | FAB0204288 | FAB0204297 |
| 3/4"             | 10  | 125            | 34            | 14             | 11          | 14            | 16.5                   | 4           | FAB0204280 | FAB0204289 | FAB0204298 |
| 7/8"             | 9   | 140            | 34            | 18             | 14.5        | 17            | 19.5                   | 4           | FAB0204281 | FAB0204290 | FAB0204299 |
| 1"               | 8   | 160            | 38            | 18             | 14.5        | 17            | 22.25                  | 4           | FAB0204282 | FAB0204291 | FAB0204300 |



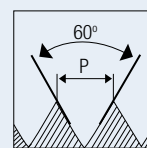
Silver cut

Spiral Point Taps

HSS TAPS

UNC

Unified coarse threads



HOLE TYPE

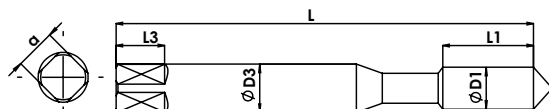


HSS-E

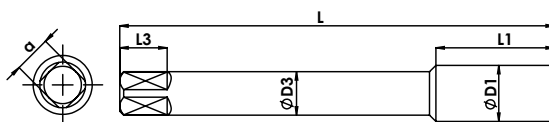
DIN  
371/376

2B

B/4-4.5P



Reinforced Shank DIN371 (1/4" - 3/8")



Reduced Shank DIN376 (7/16" - 1")

DIN 371

DIN 376

DIN 371

DIN 376

DIN 371

DIN 376

Series

SAS3

SAS5

SAS6

Material - 1<sup>st</sup> choice

M1

M1-M2

M1-M3

Material - 2<sup>nd</sup> choice

-

-

-

Coating

TiN

TiCN

TiAlN + WC/C

DIN 371

| Nominal Diameter | TPI | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | No of Flute | EDP No.    | EDP No.    | EDP No.    |
|------------------|-----|----------------|---------------|----------------|-------------|---------------|------------------------|-------------|------------|------------|------------|
| ØD1              | p   | L              | L1            | ØD3            | a           | L3            | Ød1                    |             |            |            |            |
| 1/4"             | 20  | 80             | 19            | 7              | 5.5         | 8             | 5.1                    | 3           | FAB0205308 | FAB0205317 | FAB0205326 |
| 5/16"            | 18  | 90             | 22            | 8              | 6.2         | 9             | 6.6                    | 3           | FAB0205309 | FAB0205318 | FAB0205327 |
| 3/8"             | 16  | 100            | 24            | 10             | 8           | 11            | 8                      | 3           | FAB0205310 | FAB0205319 | FAB0205328 |

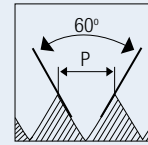
DIN 376

| Nominal Diameter | TPI | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | No of Flute | EDP No.    | EDP No.    | EDP No.    |
|------------------|-----|----------------|---------------|----------------|-------------|---------------|------------------------|-------------|------------|------------|------------|
| ØD1              | p   | L              | L1            | ØD3            | a           | L3            | Ød1                    |             |            |            |            |
| 7/16"            | 14  | 110            | 24            | 8              | 6.2         | 9             | 9.4                    | 3           | FAB0205311 | FAB0205320 | FAB0205329 |
| 1/2"             | 13  | 110            | 28            | 9              | 7           | 10            | 10.8                   | 3           | FAB0205312 | FAB0205321 | FAB0205330 |
| 5/8"             | 11  | 110            | 32            | 12             | 9           | 12            | 13.6                   | 3           | FAB0205313 | FAB0205322 | FAB0205331 |
| 3/4"             | 10  | 125            | 34            | 14             | 11          | 14            | 16.5                   | 4           | FAB0205314 | FAB0205323 | FAB0205332 |
| 7/8"             | 9   | 140            | 34            | 18             | 14.5        | 17            | 19.6                   | 4           | FAB0205315 | FAB0205324 | FAB0205333 |
| 1"               | 8   | 160            | 38            | 18             | 14.5        | 17            | 22.3                   | 4           | FAB0205316 | FAB0205325 | FAB0205334 |



UNF

Unified fine threads



HOLE TYPE

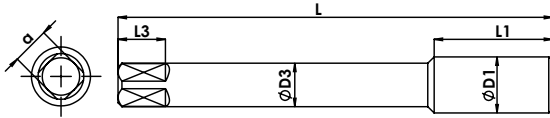


HSS-E

DIN  
374

2B

B/4-4.5P



Male Centre (1/4" - 3/8")  
Female Centre (7/16" - 1")



|                  |     |                |               |                |             |               | Series                            |             | SA1        | SA3        | SA4        |
|------------------|-----|----------------|---------------|----------------|-------------|---------------|-----------------------------------|-------------|------------|------------|------------|
|                  |     |                |               |                |             |               | Material - 1 <sup>st</sup> choice |             | P0, N4     | P0-P1      | P0-P3      |
|                  |     |                |               |                |             |               | Material - 2 <sup>nd</sup> choice |             | N1-N2      | K2-K3      | K1-K2      |
| DIN 374          |     |                |               |                |             |               | Coating                           |             | Bright     | TiN        | TiAlN      |
| Nominal Diameter | TPI | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter            | No of Flute | EDP No.    | EDP No.    | EDP No.    |
| ØD1              | p   | L              | L1            | ØD3            | a           | L3            | Ød1                               |             |            |            |            |
| 1/4"             | 28  | 80             | 19            | 4.5            | 3.4         | 6             | 5.5                               | 3           | FAB0204301 | FAB0204310 | FAB0204319 |
| 5/16"            | 24  | 90             | 22            | 6              | 4.9         | 8             | 6.9                               | 3           | FAB0204302 | FAB0204311 | FAB0204320 |
| 3/8"             | 24  | 90             | 20            | 7              | 5.5         | 8             | 8.5                               | 3           | FAB0204303 | FAB0204312 | FAB0204321 |
| 7/16"            | 20  | 90             | 20            | 8              | 6.2         | 9             | 9.9                               | 3           | FAB0204304 | FAB0204313 | FAB0204322 |
| 1/2"             | 20  | 100            | 22            | 9              | 7           | 10            | 11.5                              | 3           | FAB0204305 | FAB0204314 | FAB0204323 |
| 5/8"             | 18  | 100            | 22            | 12             | 9           | 12            | 14.5                              | 3           | FAB0204306 | FAB0204315 | FAB0204324 |
| 3/4"             | 16  | 110            | 25            | 14             | 11          | 14            | 17.5                              | 4           | FAB0204307 | FAB0204316 | FAB0204325 |
| 7/8"             | 14  | 125            | 25            | 18             | 14.5        | 17            | 20.5                              | 4           | FAB0204308 | FAB0204317 | FAB0204326 |
| 1"               | 12  | 140            | 28            | 18             | 14.5        | 17            | 23.3                              | 4           | FAB0204309 | FAB0204318 | FAB0204327 |

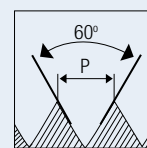


Silver cut

Spiral Point Taps

UNF

Unified fine threads



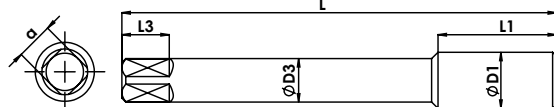
HOLE TYPE



HSS-E

DIN  
374

2B



Male Centre (1/4" - 3/8")  
Female Centre (7/16" - 1")

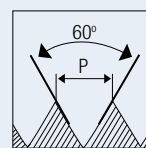


|                  |     |                |               |                |             |               | Series                            |             | SAS3       | SAS5       | SAS6         |
|------------------|-----|----------------|---------------|----------------|-------------|---------------|-----------------------------------|-------------|------------|------------|--------------|
|                  |     |                |               |                |             |               | Material - 1 <sup>st</sup> choice |             | M1         | M1-M2      | M1-M3        |
|                  |     |                |               |                |             |               | Material - 2 <sup>nd</sup> choice |             | -          | -          | -            |
| DIN 374          |     |                |               |                |             |               | Coating                           |             | TiN        | TiCN       | TiAlN + WC/C |
| Nominal Diameter | TPI | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter            | No of Flute | EDP No.    | EDP No.    | EDP No.      |
| ØD1              | p   | L              | L1            | ØD3            | a           | L3            | Ød1                               |             |            |            |              |
| 1/4"             | 28  | 80             | 19            | 4.5            | 3.4         | 6             | 5.5                               | 3           | FAB0205335 | FAB0205344 | FAB0205353   |
| 5/16"            | 24  | 90             | 22            | 6              | 4.9         | 8             | 6.9                               | 3           | FAB0205336 | FAB0205345 | FAB0205354   |
| 3/8"             | 24  | 90             | 20            | 7              | 5.5         | 8             | 8.5                               | 3           | FAB0205337 | FAB0205346 | FAB0205355   |
| 7/16"            | 20  | 90             | 20            | 9              | 6.2         | 9             | 9.9                               | 3           | FAB0205338 | FAB0205347 | FAB0205356   |
| 1/2"             | 20  | 100            | 22            | 9              | 7           | 10            | 11.5                              | 3           | FAB0205339 | FAB0205348 | FAB0205357   |
| 5/8"             | 18  | 100            | 22            | 12             | 9           | 12            | 14.5                              | 3           | FAB0205340 | FAB0205349 | FAB0205358   |
| 3/4"             | 16  | 110            | 25            | 14             | 11          | 14            | 17.5                              | 4           | FAB0205341 | FAB0205350 | FAB0205359   |
| 7/8"             | 14  | 125            | 25            | 18             | 14.5        | 17            | 20.5                              | 4           | FAB0205342 | FAB0205351 | FAB0205360   |
| 1"               | 12  | 140            | 28            | 18             | 14.5        | 17            | 23.3                              | 4           | FAB0205343 | FAB0205352 | FAB0205361   |



M

## Metric coarse threads



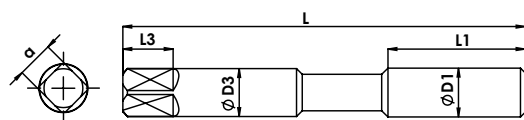
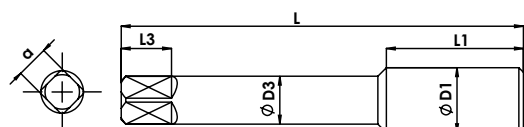
HOLE TYPE



HSS-E

ISO  
529

6HX

Reinforced Shank (M3 - M10)  
Male Centre upto M5

Reduced Shank (M12 - M20)



|                         |       |                |               |                |             |               | Series                            |             | SA1        | SA3        | SA4        |
|-------------------------|-------|----------------|---------------|----------------|-------------|---------------|-----------------------------------|-------------|------------|------------|------------|
|                         |       |                |               |                |             |               | Material - 1 <sup>st</sup> choice |             | P0, N4     | P0-P1      | P0-P3      |
|                         |       |                |               |                |             |               | Material - 2 <sup>nd</sup> choice |             | N1-N2      | K2-K3      | K1-K2      |
| ISO529 / IS 6175 Part 2 |       |                |               |                |             |               | Coating                           |             | Bright     | TiN        | TiAlN      |
| Nominal Diameter        | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter            | No of Flute | EDP No.    | EDP No.    | EDP No.    |
| ØD1                     | p     | L              | L1            | ØD3            | a           | L3            | Ød1                               |             |            |            |            |
| M 3                     | 0.5   | 48             | 11            | 3.15           | 2.5         | 5             | 2.5                               | 3           | FAB0200647 | FAB0200648 | FAB0203044 |
| M 3.5                   | 0.6   | 50             | 13            | 3.55           | 2.8         | 5             | 2.9                               | 3           | FAB0200653 | FAB0200654 | FAB0203045 |
| M 4                     | 0.7   | 53             | 13            | 4              | 3.15        | 6             | 3.3                               | 3           | FAB0200659 | FAB0200661 | FAB0200662 |
| M 5                     | 0.8   | 58             | 16            | 5              | 4           | 7             | 4.2                               | 3           | FAB0200671 | FAB0200673 | FAB0203046 |
| M 6                     | 1     | 66             | 19            | 6.3            | 5           | 8             | 5                                 | 3           | FAB0200682 | FAB0200684 | FAB0200685 |
| M 7                     | 1     | 66             | 19            | 7.1            | 5.6         | 8             | 6                                 | 3           | FAB0203033 | FAB0203040 | FAB0203047 |
| M 8                     | 1.25  | 72             | 22            | 8              | 6.3         | 9             | 6.8                               | 3           | FAB0200694 | FAB0200696 | FAB0200697 |
| M 10                    | 1.5   | 80             | 24            | 10             | 8           | 11            | 8.5                               | 3           | FAB0200718 | FAB0200720 | FAB0200721 |

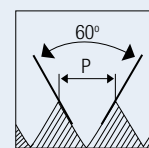
| ISO529 / IS 6175 Part 3 |       |                |               |                |             |               |                        |             | EDP No.    | EDP No.    | EDP No.    |
|-------------------------|-------|----------------|---------------|----------------|-------------|---------------|------------------------|-------------|------------|------------|------------|
| Nominal Diameter        | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | No of Flute |            |            |            |
| ØD1                     | p     | L              | L1            | ØD3            | a           | L3            | Ød1                    |             |            |            |            |
| M 12                    | 1.75  | 89             | 29            | 9              | 7.1         | 10            | 10.2                   | 3           | FAB0200748 | FAB0200751 | FAB0203052 |
| M 14                    | 2     | 95             | 30            | 11.2           | 9           | 12            | 12                     | 3           | FAB0200778 | FAB0200780 | FAB0203054 |
| M 16                    | 2     | 102            | 32            | 12.5           | 10          | 13            | 14                     | 3           | FAB0200799 | FAB0200801 | FAB0203055 |
| M 18                    | 2.5   | 112            | 37            | 14             | 11.2        | 14            | 15.5                   | 4           | FAB0203037 | FAB0203043 | FAB0203057 |
| M 20                    | 2.5   | 112            | 37            | 14             | 11.2        | 14            | 17.5                   | 4           | FAB0203039 | FAB0200810 | FAB0203059 |

Unit : mm



M

## Metric coarse threads



HOLE TYPE

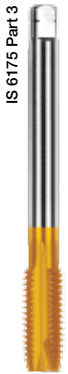


HSS-E

ISO  
529

6HX



|                                                                                                                   |       |                |               |                |             |               |                        |             |                                                                                                      |            |                                                                                                       |  |                                                                                                       |  |                                                                                                       |  |                                                                                                       |  |                                                                                                       |  |
|-------------------------------------------------------------------------------------------------------------------|-------|----------------|---------------|----------------|-------------|---------------|------------------------|-------------|------------------------------------------------------------------------------------------------------|------------|-------------------------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------------------------------------|--|
| <div><p>Reinforced Shank (M3 - M10)<br/>Male Centre upto M5</p></div> <div><p>Reduced Shank (M12 - M20)</p></div> |       |                |               |                |             |               |                        |             | <br>IS 6175 Part 2 |            | <br>IS 6175 Part 3 |  | <br>IS 6175 Part 2 |  | <br>IS 6175 Part 3 |  | <br>IS 6175 Part 2 |  | <br>IS 6175 Part 3 |  |
|                                                                                                                   |       |                |               |                |             |               |                        |             | Series                                                                                               |            | SAF3                                                                                                  |  | SAF5                                                                                                  |  | SAF7                                                                                                  |  |                                                                                                       |  |                                                                                                       |  |
|                                                                                                                   |       |                |               |                |             |               |                        |             | Material - 1 <sup>st</sup> choice                                                                    |            | P1-P2                                                                                                 |  | P1-P3                                                                                                 |  | P2-P3                                                                                                 |  |                                                                                                       |  |                                                                                                       |  |
|                                                                                                                   |       |                |               |                |             |               |                        |             | Material - 2 <sup>nd</sup> choice                                                                    |            | -                                                                                                     |  | -                                                                                                     |  | -                                                                                                     |  |                                                                                                       |  |                                                                                                       |  |
|                                                                                                                   |       |                |               |                |             |               |                        |             | Coating                                                                                              |            | TiN                                                                                                   |  | TiCN                                                                                                  |  | AlCrN                                                                                                 |  |                                                                                                       |  |                                                                                                       |  |
| ISO529 / IS 6175 Part 2                                                                                           |       |                |               |                |             |               |                        |             |                                                                                                      |            |                                                                                                       |  |                                                                                                       |  |                                                                                                       |  |                                                                                                       |  |                                                                                                       |  |
| Nominal Diameter                                                                                                  | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | No of Flute | EDP No.                                                                                              |            | EDP No.                                                                                               |  | EDP No.                                                                                               |  |                                                                                                       |  |                                                                                                       |  |                                                                                                       |  |
| ØD1                                                                                                               | p     | L              | L1            | ØD3            | a           | L3            | Ød1                    |             |                                                                                                      |            |                                                                                                       |  |                                                                                                       |  |                                                                                                       |  |                                                                                                       |  |                                                                                                       |  |
| M 3                                                                                                               | 0.5   | 48             | 11            | 3.15           | 2.5         | 5             | 2.5                    | 3           | FAB0203060                                                                                           | FAB0203077 | FAB0205124                                                                                            |  |                                                                                                       |  |                                                                                                       |  |                                                                                                       |  |                                                                                                       |  |
| M 3.5                                                                                                             | 0.6   | 50             | 13            | 3.55           | 2.8         | 5             | 2.9                    | 3           | FAB0205116                                                                                           | FAB0205120 | FAB0205125                                                                                            |  |                                                                                                       |  |                                                                                                       |  |                                                                                                       |  |                                                                                                       |  |
| M 4                                                                                                               | 0.7   | 53             | 13            | 4              | 3.15        | 6             | 3.3                    | 3           | FAB0203061                                                                                           | FAB0203078 | FAB0205126                                                                                            |  |                                                                                                       |  |                                                                                                       |  |                                                                                                       |  |                                                                                                       |  |
| M 5                                                                                                               | 0.8   | 58             | 16            | 5              | 4           | 7             | 4.2                    | 3           | FAB0203062                                                                                           | FAB0203079 | FAB0205127                                                                                            |  |                                                                                                       |  |                                                                                                       |  |                                                                                                       |  |                                                                                                       |  |
| M 6                                                                                                               | 1     | 66             | 19            | 6.3            | 5           | 8             | 5                      | 3           | FAB0203063                                                                                           | FAB0203080 | FAB0205128                                                                                            |  |                                                                                                       |  |                                                                                                       |  |                                                                                                       |  |                                                                                                       |  |
| M 7                                                                                                               | 1     | 66             | 19            | 7.1            | 5.6         | 8             | 6                      | 3           | FAB0205117                                                                                           | FAB0205121 | FAB0205129                                                                                            |  |                                                                                                       |  |                                                                                                       |  |                                                                                                       |  |                                                                                                       |  |
| M 8                                                                                                               | 1.25  | 72             | 22            | 8              | 6.3         | 9             | 6.8                    | 3           | FAB0203065                                                                                           | FAB0203082 | FAB0205130                                                                                            |  |                                                                                                       |  |                                                                                                       |  |                                                                                                       |  |                                                                                                       |  |
| M 10                                                                                                              | 1.5   | 80             | 24            | 10             | 8           | 11            | 8.5                    | 3           | FAB0203068                                                                                           | FAB0203085 | FAB0205131                                                                                            |  |                                                                                                       |  |                                                                                                       |  |                                                                                                       |  |                                                                                                       |  |

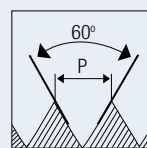
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|-------------------------|-------|----------------|---------------|----------------|-------------|---------------|------------------------|-------------|------------|------------|------------|
| Nominal Diameter        | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | No of Flute |            |            |            |
| ØD1                     | p     | L              | L1            | ØD3            | a           | L3            | Ød1                    |             |            |            |            |
| M 12                    | 1.75  | 89             | 29            | 9              | 7.1         | 10            | 10.2                   | 3           | FAB0203070 | FAB0203087 | FAB0205132 |
| M 14                    | 2     | 95             | 30            | 11.2           | 9           | 12            | 12                     | 3           | FAB0203072 | FAB0203089 | FAB0205133 |
| M 16                    | 2     | 102            | 32            | 12.5           | 10          | 13            | 14                     | 3           | FAB0203074 | FAB0203091 | FAB0205134 |
| M 18                    | 2.5   | 112            | 37            | 14             | 11.2        | 14            | 15.5                   | 4           | FAB0205118 | FAB0205122 | FAB0205135 |
| M 20                    | 2.5   | 112            | 37            | 14             | 11.2        | 14            | 17.5                   | 4           | FAB0205119 | FAB0205123 | FAB0205136 |

Unit : mm



M

## Metric coarse threads



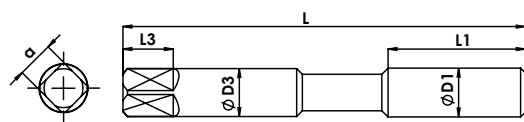
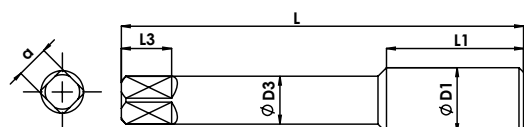
HOLE TYPE



HSS-E

ISO  
529

6HX

Reinforced Shank (M3 - M10)  
Male Centre upto M5

Reduced Shank (M12 - M16)



|                         |       |                |               |                |             |               | Series                            |             | SAS3       | SAS5       | SAS6         |
|-------------------------|-------|----------------|---------------|----------------|-------------|---------------|-----------------------------------|-------------|------------|------------|--------------|
|                         |       |                |               |                |             |               | Material - 1 <sup>st</sup> choice |             | M1         | M1-M2      | M1-M3        |
|                         |       |                |               |                |             |               | Material - 2 <sup>nd</sup> choice |             | -          | -          | -            |
|                         |       |                |               |                |             |               | Coating                           |             | TiN        | TiCN       | TiAlN + WC/C |
| ISO529 / IS 6175 Part 2 |       |                |               |                |             |               |                                   |             | EDP No.    | EDP No.    | EDP No.      |
| Nominal Diameter        | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter            | No of Flute |            |            |              |
| ØD1                     | p     | L              | L1            | ØD3            | a           | L3            | Ød1                               |             |            |            |              |
| M 3                     | 0.5   | 48             | 11            | 3.15           | 2.5         | 5             | 2.5                               | 3           | FAB0203094 | FAB0203103 | FAB0205137   |
| M 4                     | 0.7   | 53             | 13            | 4              | 3.15        | 6             | 3.3                               | 3           | FAB0203095 | FAB0203104 | FAB0205138   |
| M 5                     | 0.8   | 58             | 16            | 5              | 4           | 7             | 4.2                               | 3           | FAB0203096 | FAB0203105 | FAB0205139   |
| M 6                     | 1     | 66             | 19            | 6.3            | 5           | 8             | 5                                 | 3           | FAB0203097 | FAB0203106 | FAB0205140   |
| M 8                     | 1.25  | 72             | 22            | 8              | 6.3         | 9             | 6.8                               | 3           | FAB0203098 | FAB0203107 | FAB0205141   |
| M 10                    | 1.5   | 80             | 24            | 10             | 8           | 11            | 8.5                               | 3           | FAB0203099 | FAB0203108 | FAB0205142   |

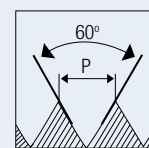
| ISO529 / IS 6175 Part 3 |      |     |    |      |     |    |      |   |            |            |            |
|-------------------------|------|-----|----|------|-----|----|------|---|------------|------------|------------|
| M 12                    | 1.75 | 89  | 29 | 9    | 7.1 | 10 | 10.2 | 3 | FAB0203100 | FAB0203109 | FAB0205143 |
| M 14                    | 2    | 95  | 30 | 11.2 | 9   | 12 | 12   | 3 | FAB0203101 | FAB0203110 | FAB0205144 |
| M 16                    | 2    | 102 | 32 | 12.5 | 10  | 13 | 14   | 3 | FAB0203102 | FAB0203111 | FAB0205145 |
| M 18                    |      |     |    |      |     |    |      |   |            |            |            |
| M 20                    |      |     |    |      |     |    |      |   |            |            |            |

Unit : mm



M

## Metric coarse threads

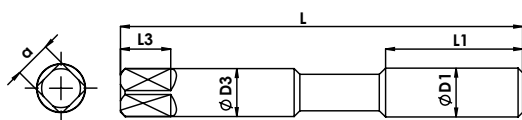
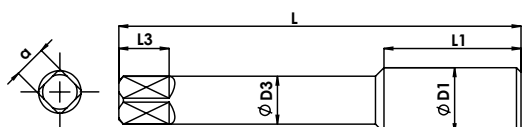


HOLE TYPE

HSS-E  
PMISO  
529

6HX

B/4-4.5P

Reinforced Shank (M3 - M10)  
Male Centre upto M5

Reduced Shank (M12 - M16)



|                         |       |                |               |                |             |               | Series                            | SAI6         |            |
|-------------------------|-------|----------------|---------------|----------------|-------------|---------------|-----------------------------------|--------------|------------|
|                         |       |                |               |                |             |               | Material - 1 <sup>st</sup> choice | S1-S4        |            |
|                         |       |                |               |                |             |               | Material - 2 <sup>nd</sup> choice | -            |            |
| ISO529 / IS 6175 Part 2 |       |                |               |                |             |               | Coating                           | TiAlN + WC/C |            |
| Nominal Diameter        | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter            | No of Flute  | EDP No.    |
| ØD1                     | p     | L              | L1            | ØD3            | a           | L3            | Ød1                               |              |            |
| M 3                     | 0.5   | 48             | 11            | 3.15           | 2.5         | 5             | 2.5                               | 3            | FAB0204712 |
| M 4                     | 0.7   | 53             | 13            | 4              | 3.15        | 6             | 3.3                               | 3            | FAB0204713 |
| M 5                     | 0.8   | 58             | 16            | 5              | 4           | 7             | 4.2                               | 3            | FAB0204714 |
| M 6                     | 1     | 66             | 19            | 6.3            | 5           | 8             | 5                                 | 3            | FAB0204715 |
| M 8                     | 1.25  | 72             | 22            | 8              | 6.3         | 9             | 6.8                               | 3            | FAB0204716 |
| M 10                    | 1.5   | 80             | 24            | 10             | 8           | 11            | 8.5                               | 3            | FAB0204717 |

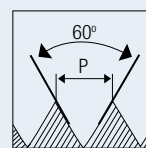
| ISO529 / IS 6175 Part 3 |      |     |    |      |     |    |      |   |            |
|-------------------------|------|-----|----|------|-----|----|------|---|------------|
| M 12                    | 1.75 | 89  | 29 | 9    | 7.1 | 10 | 10.2 | 3 | FAB0204718 |
| M 14                    | 2    | 95  | 30 | 11.2 | 9   | 12 | 12   | 3 | FAB0204719 |
| M 16                    | 2    | 102 | 32 | 12.5 | 10  | 13 | 14   | 3 | FAB0204720 |

Unit : mm



M

## Metric coarse threads

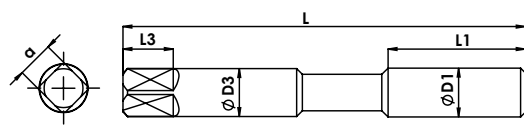
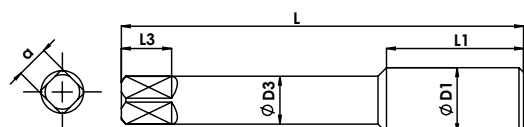


HOLE TYPE

HSS-E  
PMISO  
529

6HX

B/4-4.5P

Reinforced Shank (M3 - M10)  
Male Centre upto M5

Reduced Shank (M12 - M16)

IS 6175 Part 2

IS 6175 Part 3

IS 6175 Part 2

IS 6175 Part 3

| Series                            |             | SAF5       | SAF7       |
|-----------------------------------|-------------|------------|------------|
| Material - 1 <sup>st</sup> choice |             | P2-P3      | P2-P4      |
| Material - 2 <sup>nd</sup> choice |             | -          | -          |
| Coating                           |             | TiCN       | AlCrN      |
| Tapping Drill Diameter            | No of Flute | EDP No.    | EDP No.    |
| Ød1                               |             |            |            |
| 2.5                               | 3           | FAB0205146 | FAB0205155 |
| 3.3                               | 3           | FAB0205147 | FAB0205156 |
| 4.2                               | 3           | FAB0205148 | FAB0205157 |
| 5                                 | 3           | FAB0205149 | FAB0205158 |
| 6.8                               | 3           | FAB0205150 | FAB0205159 |
| 8.5                               | 3           | FAB0205151 | FAB0205160 |

| ISO529 / IS 6175 Part 3 |      |     |    |      |     |    |      |   |            |            |
|-------------------------|------|-----|----|------|-----|----|------|---|------------|------------|
| M 12                    | 1.75 | 89  | 29 | 9    | 7.1 | 10 | 10.2 | 3 | FAB0205152 | FAB0205161 |
| M 14                    | 2    | 95  | 30 | 11.2 | 9   | 12 | 12   | 3 | FAB0205153 | FAB0205162 |
| M 16                    | 2    | 102 | 32 | 12.5 | 10  | 13 | 14   | 3 | FAB0205154 | FAB0205163 |

Unit : mm



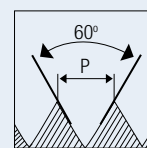
Silver cut

Spiral Point Taps

HSS TAPS

MF

## Metric fine threads



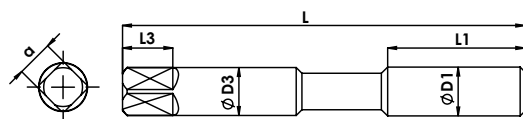
HOLE TYPE



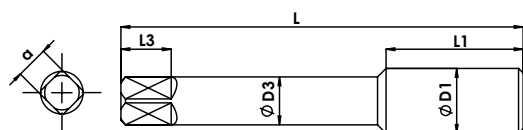
HSS-E

ISO  
529

6HX



Reinforced Shank (M8 - M10)



Reduced Shank (M12 - M20)

IS 6175 Part 2

IS 6175 Part 3

IS 6175 Part 2

IS 6175 Part 3

IS 6175 Part 2

IS 6175 Part 3



Series

SA1

SA3

SA4

Material - 1<sup>st</sup> choice

P0, N4

P0-P1

P0-P3

Material - 2<sup>nd</sup> choice

N1-N2

K2-K3

K1-K2

Coating

Bright

TiN

TiAlN

ISO529 / IS 6175 Part 2

| Nominal Diameter | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | No. of Flutes | EDP No.    | EDP No.    | EDP No.    |
|------------------|-------|----------------|---------------|----------------|-------------|---------------|------------------------|---------------|------------|------------|------------|
| ØD1              | p     | L              | L1            | ØD3            | a           | L3            | Ød1                    |               |            |            |            |
| M 8              | 1     | 69             | 19            | 8              | 6.3         | 9             | 7                      | 3             | FAB0203034 | FAB0203041 | FAB0203048 |
| M 10             | 1     | 76             | 20            | 10             | 8           | 11            | 9                      | 3             | FAB0203035 | FAB0200702 | FAB0203049 |
| M 10             | 1.25  | 76             | 20            | 10             | 8           | 11            | 8.8                    | 3             | FAB0200708 | FAB0200710 | FAB0203050 |

ISO529 / IS 6175 Part 3

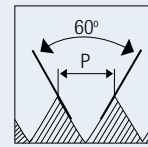
| M 12 | 1.5 | 89  | 29 | 9    | 7.1  | 10 | 10.5 | 3 | FAB0200738 | FAB0200740 | FAB0203051 |
|------|-----|-----|----|------|------|----|------|---|------------|------------|------------|
| M 14 | 1.5 | 95  | 30 | 11.2 | 9    | 12 | 12.5 | 3 | FAB0200769 | FAB0200771 | FAB0203053 |
| M 16 | 1.5 | 102 | 32 | 12.5 | 10   | 13 | 14.5 | 3 | FAB0200787 | FAB0200789 | FAB0200790 |
| M 18 | 1.5 | 104 | 29 | 14   | 11.2 | 14 | 16.5 | 4 | FAB0203036 | FAB0203042 | FAB0203056 |
| M 20 | 1.5 | 104 | 29 | 14   | 11.2 | 14 | 18.5 | 4 | FAB0203038 | FAB0200807 | FAB0203058 |

Unit : mm



MF

## Metric fine threads



HOLE TYPE

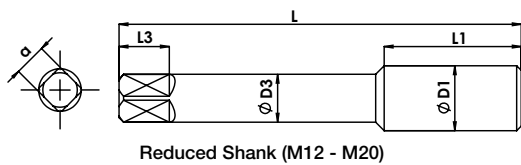
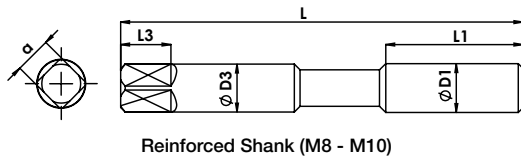


HSS-E

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6HX

B/4-4.5P



IS 6175 Part 2

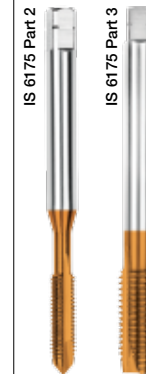
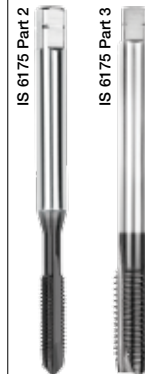
IS 6175 Part 3

IS 6175 Part 2

IS 6175 Part 3

IS 6175 Part 2

IS 6175 Part 3



Series

SAF3

SAF5

SAF7

Material - 1<sup>st</sup> choice

P1-P2

P1-P3

P2-P3

Material - 2<sup>nd</sup> choice

-

-

-

Coating

TiN

TiCN

AlCrN

ISO529 / IS 6175 Part 2

| Nominal Diameter | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter |   | EDP No.    | EDP No.    | EDP No.    |
|------------------|-------|----------------|---------------|----------------|-------------|---------------|------------------------|---|------------|------------|------------|
| ØD1              | p     | L              | L1            | ØD3            | a           | L3            | Ød1                    |   |            |            |            |
| M 8              | 1     | 69             | 19            | 8              | 6.3         | 9             | 7                      | 3 | FAB0203064 | FAB0203081 | FAB0205164 |
| M 10             | 1     | 76             | 20            | 10             | 8           | 11            | 9                      | 3 | FAB0203066 | FAB0203083 | FAB0205165 |
| M 10             | 1.25  | 76             | 20            | 10             | 8           | 11            | 8.8                    | 3 | FAB0203067 | FAB0203084 | FAB0205166 |

ISO529 / IS 6175 Part 3

|      |     |     |    |      |      |    |      |   |            |            |            |
|------|-----|-----|----|------|------|----|------|---|------------|------------|------------|
| M 12 | 1.5 | 89  | 29 | 9    | 7.1  | 10 | 10.5 | 3 | FAB0203069 | FAB0203086 | FAB0205167 |
| M 14 | 1.5 | 95  | 30 | 11.2 | 9    | 12 | 12.5 | 3 | FAB0203071 | FAB0203088 | FAB0205168 |
| M 16 | 1.5 | 102 | 32 | 12.5 | 10   | 13 | 14.5 | 3 | FAB0203073 | FAB0203090 | FAB0205169 |
| M 18 | 1.5 | 104 | 29 | 14   | 11.2 | 14 | 16.5 | 4 | FAB0203075 | FAB0203092 | FAB0205170 |
| M 20 | 1.5 | 104 | 29 | 14   | 11.2 | 14 | 18.5 | 4 | FAB0203076 | FAB0203093 | FAB0205171 |

Unit : mm



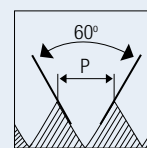
Silver cut

Spiral Point Taps

HSS TAPS

MF

Metric fine threads



HOLE TYPE



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ISO  
529

6HX



|                                                                                           |  |       |                |               |                |             |               |                        |                                   |            |                       |            |                       |            |                       |  |                       |  |                       |  |
|-------------------------------------------------------------------------------------------|--|-------|----------------|---------------|----------------|-------------|---------------|------------------------|-----------------------------------|------------|-----------------------|------------|-----------------------|------------|-----------------------|--|-----------------------|--|-----------------------|--|
| <div><p>Reinforced Shank (M8 - M10)</p></div> <div><p>Reduced Shank (M12 - M20)</p></div> |  |       |                |               |                |             |               |                        | <p>IS 6175 Part 2</p>             |            | <p>IS 6175 Part 3</p> |            | <p>IS 6175 Part 2</p> |            | <p>IS 6175 Part 3</p> |  | <p>IS 6175 Part 2</p> |  | <p>IS 6175 Part 3</p> |  |
|                                                                                           |  |       |                |               |                |             |               |                        | Series                            |            | SAS3                  |            | SAS5                  |            | SAS6                  |  |                       |  |                       |  |
|                                                                                           |  |       |                |               |                |             |               |                        | Material - 1 <sup>st</sup> choice |            | M1                    |            | M1-M2                 |            | M1-M3                 |  |                       |  |                       |  |
|                                                                                           |  |       |                |               |                |             |               |                        | Material - 2 <sup>nd</sup> choice |            | -                     |            | -                     |            | -                     |  |                       |  |                       |  |
| ISO529 / IS 6175 Part 2                                                                   |  |       |                |               |                |             |               |                        | Coating                           |            | TiN                   |            | TiCN                  |            | TiAlN + WC/C          |  |                       |  |                       |  |
| Nominal Diameter                                                                          |  | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | No. of Flutes                     | EDP No.    |                       | EDP No.    |                       | EDP No.    |                       |  |                       |  |                       |  |
| ØD1                                                                                       |  | p     | L              | L1            | ØD3            | a           | L3            | Ød1                    |                                   |            |                       |            |                       |            |                       |  |                       |  |                       |  |
| M 8                                                                                       |  | 1     | 69             | 19            | 8              | 6.3         | 9             | 7                      | 3                                 | FAB0205172 |                       | FAB0205180 |                       | FAB0205585 |                       |  |                       |  |                       |  |
| M 10                                                                                      |  | 1     | 76             | 20            | 10             | 8           | 11            | 9                      | 3                                 | FAB0205173 |                       | FAB0205181 |                       | FAB0205586 |                       |  |                       |  |                       |  |
| M 10                                                                                      |  | 1.25  | 76             | 20            | 10             | 8           | 11            | 8.8                    | 3                                 | FAB0205174 |                       | FAB0205182 |                       | FAB0205587 |                       |  |                       |  |                       |  |

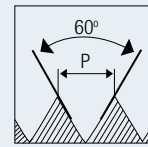
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|-------------------------|-----|-----|----|------|------|----|------|---|------------|------------|------------|
| ISO529 / IS 6175 Part 3 |     |     |    |      |      |    |      |   |            |            |            |
| M 12                    | 1.5 | 89  | 29 | 9    | 7.1  | 10 | 10.5 | 3 | FAB0205175 | FAB0205183 | FAB0205588 |
| M 14                    | 1.5 | 95  | 30 | 11.2 | 9    | 12 | 12.5 | 3 | FAB0205176 | FAB0205184 | FAB0205589 |
| M 16                    | 1.5 | 102 | 32 | 12.5 | 10   | 13 | 14.5 | 3 | FAB0205177 | FAB0205185 | FAB0205590 |
| M 18                    | 1.5 | 104 | 29 | 14   | 11.2 | 14 | 16.5 | 4 | FAB0205178 | FAB0205186 | FAB0205591 |
| M 20                    | 1.5 | 104 | 29 | 14   | 11.2 | 14 | 18.5 | 4 | FAB0205179 | FAB0205187 | FAB0205592 |

Unit : mm



MF

## Metric fine threads

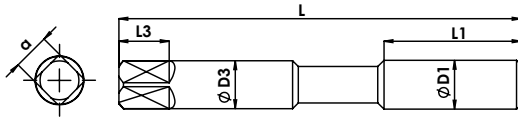


HOLE TYPE

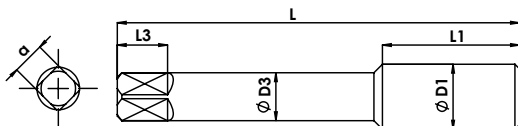
HSS-E  
PMISO  
529

6HX

B/4-4.5P



Reinforced Shank (M8 - M10)



Reduced Shank (M12 - M20)



|                         |       |                |               |                |             |               | Series                            |               | SAI6         |
|-------------------------|-------|----------------|---------------|----------------|-------------|---------------|-----------------------------------|---------------|--------------|
|                         |       |                |               |                |             |               | Material - 1 <sup>st</sup> choice |               | S1-S4        |
|                         |       |                |               |                |             |               | Material - 2 <sup>nd</sup> choice |               | -            |
| ISO529 / IS 6175 Part 2 |       |                |               |                |             |               | Coating                           |               | TiAlN + WC/C |
| Nominal Diameter        | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter            | No. of Flutes | EDP No.      |
| ØD1                     | p     | L              | L1            | ØD3            | a           | L3            | Ød1                               |               |              |
| M 8                     | 1     | 69             | 19            | 8              | 6.3         | 9             | 7                                 | 3             |              |
| M 10                    | 1     | 76             | 20            | 10             | 8           | 11            | 9                                 | 3             |              |
| M 10                    | 1.25  | 76             | 20            | 10             | 8           | 11            | 8.8                               | 3             |              |

| ISO529 / IS 6175 Part 3 |     |     |    |      |      |    |      |   |            |
|-------------------------|-----|-----|----|------|------|----|------|---|------------|
| M 12                    | 1.5 | 89  | 29 | 9    | 7.1  | 10 | 10.5 | 3 | FAB0205191 |
| M 14                    | 1.5 | 95  | 30 | 11.2 | 9    | 12 | 12.5 | 3 | FAB0205192 |
| M 16                    | 1.5 | 102 | 32 | 12.5 | 10   | 13 | 14.5 | 3 | FAB0205193 |
| M 18                    | 1.5 | 104 | 29 | 14   | 11.2 | 14 | 16.5 | 4 | FAB0205194 |
| M 20                    | 1.5 | 104 | 29 | 14   | 11.2 | 14 | 18.5 | 4 | FAB0205195 |

Unit : mm



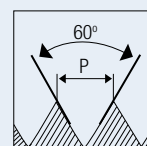
Silver cut

Spiral Point Taps

HSS TAPS

UNC

Unified coarse threads



HOLE TYPE

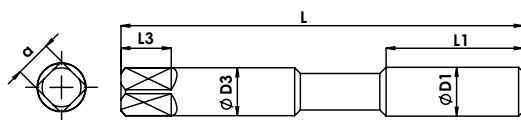


HSS-E

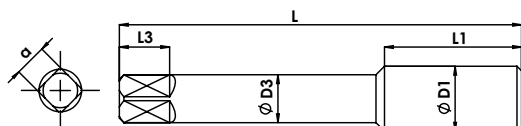
ISO  
529

2B

B/4-4.5P



Reinforced Shank (1/4" - 3/8")



Reduced Shank (7/16" - 3/4")

IS 6175 Part 2

IS 6175 Part 3

IS 6175 Part 2

IS 6175 Part 3

IS 6175 Part 2

IS 6175 Part 3



Series

SA1

SA3

SA4

Material - 1<sup>st</sup> choice

P0, N4

P0-P1

P0-P3

Material - 2<sup>nd</sup> choice

N1-N2

K2-K3

K1-K2

Coating

Bright

TiN

TiAlN

ISO529 / IS 6175 Part 2

| Nominal Diameter | TPI | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | No. of Flutes | EDP No.    | EDP No.    | EDP No.    |
|------------------|-----|----------------|---------------|----------------|-------------|---------------|------------------------|---------------|------------|------------|------------|
| ØD1              | p   | L              | L1            | ØD3            | a           | L3            | Ød1                    |               |            |            |            |
| 1/4"             | 20  | 66             | 19            | 6.3            | 5           | 8             | 5.1                    | 3             | FAB0200573 | FAB0200575 | FAB0205196 |
| 5/16"            | 18  | 72             | 22            | 8              | 6.3         | 9             | 6.6                    | 3             | FAB0200582 | FAB0200584 | FAB0205197 |
| 3/8"             | 16  | 80             | 24            | 10             | 8           | 11            | 8                      | 3             | FAB0200593 | FAB0200595 | FAB0205198 |

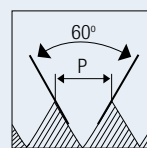
ISO529 / IS 6175 Part 3

| 7/16" | 14 | 85  | 25 | 8    | 6.3  | 9  | 9.4  | 3 | FAB0200603 | FAB0200605 | FAB0205199 |
|-------|----|-----|----|------|------|----|------|---|------------|------------|------------|
| 1/2"  | 13 | 89  | 29 | 9    | 7.1  | 10 | 10.8 | 3 | FAB0200614 | FAB0200616 | FAB0205200 |
| 5/8"  | 11 | 102 | 32 | 12.5 | 10   | 13 | 13.5 | 3 | FAB0200627 | FAB0200629 | FAB0200630 |
| 3/4"  | 10 | 112 | 37 | 14   | 11.2 | 14 | 16.5 | 4 | FAB0200638 | FAB0200640 | FAB0205202 |



UNC

Unified coarse threads



HOLE TYPE

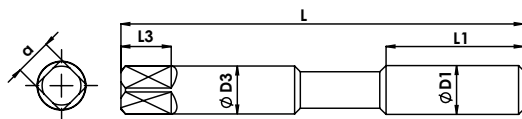


HSS-E

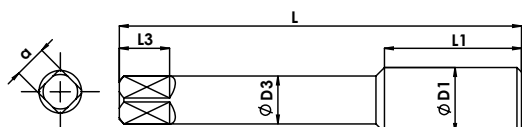
ISO  
529

2B

B/4-4.5P



Reinforced Shank (1/4" - 3/8")



Reduced Shank (7/16" - 3/4")

IS 6175 Part 2

IS 6175 Part 3

IS 6175 Part 2

IS 6175 Part 3

IS 6175 Part 2

IS 6175 Part 3



Series

SAS3

SAS5

SAS6

Material - 1<sup>st</sup> choice

M1

M1-M2

M1-M3

Material - 2<sup>nd</sup> choice

-

-

-

Coating

TiN

TiCN

TiAlN + WC/C

ISO529 / IS 6175 Part 2

| Nominal Diameter | TPI | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | No. of Flutes | EDP No.    | EDP No.    | EDP No.    |
|------------------|-----|----------------|---------------|----------------|-------------|---------------|------------------------|---------------|------------|------------|------------|
| ØD1              | p   | L              | L1            | ØD3            | a           | L3            | Ød1                    |               |            |            |            |
| 1/4"             | 20  | 66             | 19            | 6.3            | 5           | 8             | 5.1                    | 3             | FAB0205217 | FAB0205224 | FAB0205231 |
| 5/16"            | 18  | 72             | 22            | 8              | 6.3         | 9             | 6.6                    | 3             | FAB0205218 | FAB0205225 | FAB0205232 |
| 3/8"             | 16  | 80             | 24            | 10             | 8           | 11            | 8                      | 3             | FAB0205219 | FAB0205226 | FAB0205233 |

ISO529 / IS 6175 Part 3

| Nominal Diameter | TPI | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | No. of Flutes | EDP No.    | EDP No.    | EDP No.    |
|------------------|-----|----------------|---------------|----------------|-------------|---------------|------------------------|---------------|------------|------------|------------|
| ØD1              | p   | L              | L1            | ØD3            | a           | L3            | Ød1                    |               |            |            |            |
| 7/16"            | 14  | 85             | 25            | 8              | 6.3         | 9             | 9.4                    | 3             | FAB0205220 | FAB0205227 | FAB0205234 |
| 1/2"             | 13  | 89             | 29            | 9              | 7.1         | 10            | 10.8                   | 3             | FAB0205221 | FAB0205228 | FAB0205235 |
| 5/8"             | 11  | 102            | 32            | 12.5           | 10          | 13            | 13.5                   | 3             | FAB0205222 | FAB0205229 | FAB0205236 |
| 3/4"             | 10  | 112            | 37            | 14             | 11.2        | 14            | 16.5                   | 4             | FAB0205223 | FAB0205230 | FAB0205237 |

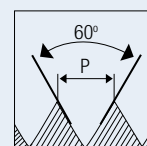


Silver cut

Spiral Point Taps

UNF

Unified fine threads



HOLE TYPE



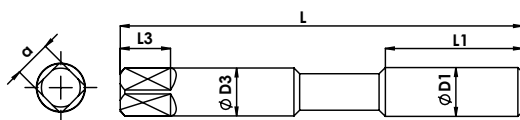
HSS-E

ISO  
529

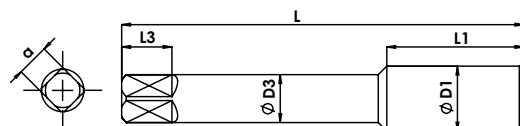
2B

B/4-4.5P

HSS TAPS



Reinforced Shank (1/4" - 3/8")



Reduced Shank (7/16" - 3/4")

IS 6175 Part 2

IS 6175 Part 3

IS 6175 Part 2

IS 6175 Part 3

IS 6175 Part 2

IS 6175 Part 3



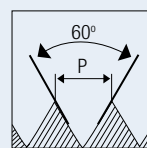
|                         |     |                |               |                |             |               | Series                            |              | SA1        | SA3        | SA4        |       |
|-------------------------|-----|----------------|---------------|----------------|-------------|---------------|-----------------------------------|--------------|------------|------------|------------|-------|
|                         |     |                |               |                |             |               | Material - 1 <sup>st</sup> choice |              | P0, N4     | P0-P1      | P0-P3      |       |
|                         |     |                |               |                |             |               | Material - 2 <sup>nd</sup> choice |              | N1-N2      | K2-K3      | K1-K2      |       |
| ISO529 / IS 6175 Part 2 |     |                |               |                |             |               |                                   | Coating      |            | Bright     | TiN        | TiAlN |
| Nominal Diameter        | TPI | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter            | No of Flutes | EDP No.    | EDP No.    | EDP No.    |       |
| ØD1                     | p   | L              | L1            | ØD3            | a           | L3            | Ød1                               |              |            |            |            |       |
| 1/4"                    | 28  | 66             | 19            | 6.3            | 5           | 8             | 5.5                               | 3            | FAB0200497 | FAB0200499 | FAB0205238 |       |
| 5/16"                   | 24  | 69             | 19            | 8              | 6.3         | 9             | 6.9                               | 3            | FAB0200506 | FAB0200508 | FAB0205239 |       |
| 3/8"                    | 24  | 76             | 20            | 10             | 8           | 11            | 8.5                               | 3            | FAB0200517 | FAB0200519 | FAB0205240 |       |

| ISO529 / IS 6175 Part 3 |    |     |    |      |      |    |      |   |            |            |            |
|-------------------------|----|-----|----|------|------|----|------|---|------------|------------|------------|
| 7/16"                   | 20 | 82  | 22 | 8    | 6.3  | 9  | 9.9  | 3 | FAB0200528 | FAB0200530 | FAB0205241 |
| 1/2"                    | 20 | 84  | 24 | 9    | 7.1  | 10 | 11.5 | 3 | FAB0200539 | FAB0200541 | FAB0205242 |
| 5/8"                    | 18 | 95  | 25 | 12.5 | 10   | 13 | 14.5 | 3 | FAB0200552 | FAB0200554 | FAB0205243 |
| 3/4"                    | 16 | 104 | 29 | 14   | 11.2 | 14 | 17.5 | 4 | FAB0200563 | FAB0200565 | FAB0205244 |



UNF

Unified fine threads



HOLE TYPE

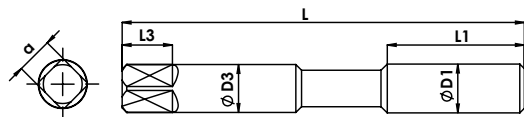


HSS-E

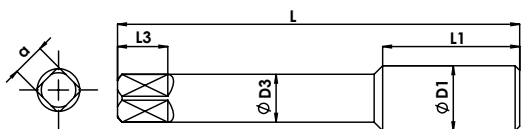
ISO  
529

2B

B/4-4.5P



Reinforced Shank (1/4" - 3/8")



Reduced Shank (7/16" - 3/4")

IS 6175 Part 2

IS 6175 Part 3

IS 6175 Part 2

IS 6175 Part 3

IS 6175 Part 2

IS 6175 Part 3



Series

SAS3

SAS5

SAS6

Material - 1<sup>st</sup> choice

M1

M1-M2

M1-M3

Material - 2<sup>nd</sup> choice

-

-

-

Coating

TiN

TiCN

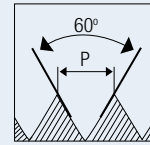
TiAlN + WC/C

ISO529 / IS 6175 Part 2

| Nominal Diameter | TPI | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | No of Flutes | EDP No.    | EDP No.    | EDP No.    |
|------------------|-----|----------------|---------------|----------------|-------------|---------------|------------------------|--------------|------------|------------|------------|
| ØD1              | p   | L              | L1            | ØD3            | a           | L3            | Ød1                    |              |            |            |            |
| 1/4"             | 28  | 66             | 19            | 6.3            | 5           | 8             | 5.5                    | 3            | FAB0205259 | FAB0205266 | FAB0205273 |
| 5/16"            | 24  | 69             | 19            | 8              | 6.3         | 9             | 6.9                    | 3            | FAB0205260 | FAB0205267 | FAB0205274 |
| 3/8"             | 24  | 76             | 20            | 10             | 8           | 11            | 8.5                    | 3            | FAB0205261 | FAB0205268 | FAB0205275 |

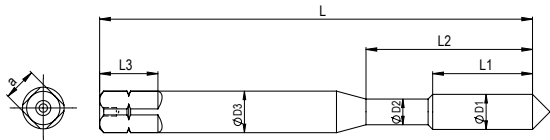
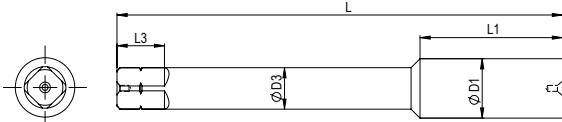
ISO529 / IS 6175 Part 3

| Nominal Diameter | TPI | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | No of Flutes | EDP No.    | EDP No.    | EDP No.    |
|------------------|-----|----------------|---------------|----------------|-------------|---------------|------------------------|--------------|------------|------------|------------|
| ØD1              | p   | L              | L1            | ØD3            | a           | L3            | Ød1                    |              |            |            |            |
| 7/16"            | 20  | 82             | 22            | 8              | 6.3         | 9             | 9.9                    | 3            | FAB0205262 | FAB0205269 | FAB0205276 |
| 1/2"             | 20  | 84             | 24            | 9              | 7.1         | 10            | 11.5                   | 3            | FAB0205263 | FAB0205270 | FAB0205277 |
| 5/8"             | 18  | 95             | 25            | 12.5           | 10          | 13            | 14.5                   | 3            | FAB0205264 | FAB0205271 | FAB0205278 |
| 3/4"             | 16  | 104            | 29            | 14             | 11.2        | 14            | 17.5                   | 4            | FAB0205265 | FAB0205272 | FAB0205279 |

**M/MF****Metric coarse & fine threads**

HOLE TYPE

**HSS-E****JIS****6HX**

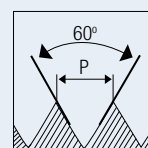
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|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|----------------|---------------|----------------|-------------|---------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|------------|
| <div></div> <div>Reinforced Shank (M3 - M6)<br/>Male Centre upto M6</div> <div></div> <div>Reduced Shank (M8- M20)</div> |       |                |               |                |             |               |  |  |            |
|                                                                                                                                                                                                                                                                                            |       |                |               |                |             |               | Series                                                                              | SA1                                                                                 | SA4        |
|                                                                                                                                                                                                                                                                                            |       |                |               |                |             |               | Material - 1 <sup>st</sup> choice                                                   | P0, N4                                                                              | P0-P3      |
|                                                                                                                                                                                                                                                                                            |       |                |               |                |             |               | Material - 2 <sup>nd</sup> choice                                                   | N1-N2                                                                               | K1-K2      |
|                                                                                                                                                                                                                                                                                            |       |                |               |                |             |               | Coating                                                                             | Bright                                                                              | TiAlN      |
| JIS                                                                                                                                                                                                                                                                                        |       |                |               |                |             |               |                                                                                     | EDP No.                                                                             | EDP No.    |
| Nominal Diameter                                                                                                                                                                                                                                                                           | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter                                                              |                                                                                     |            |
| ØD1                                                                                                                                                                                                                                                                                        | p     | L              | L1            | ØD3            | a           | L3            | Ød1                                                                                 |                                                                                     |            |
| M 3                                                                                                                                                                                                                                                                                        | 0.5   | 46             | 11            | 4              | 3.2         | 6             | 2.5                                                                                 | FAB0205072                                                                          | FAB0205613 |
| M 4                                                                                                                                                                                                                                                                                        | 0.7   | 52             | 13            | 5              | 4           | 7             | 3.3                                                                                 | FAB0205073                                                                          | FAB0205614 |
| M 5                                                                                                                                                                                                                                                                                        | 0.8   | 60             | 16            | 5.5            | 4.5         | 7             | 4.2                                                                                 | FAB0205074                                                                          | FAB0205615 |
| M 6                                                                                                                                                                                                                                                                                        | 1     | 62             | 19            | 6              | 4.5         | 7             | 5                                                                                   | FAB0205075                                                                          | FAB0205616 |
| M 8                                                                                                                                                                                                                                                                                        | 1.25  | 70             | 22            | 6.2            | 5           | 8             | 6.8                                                                                 | FAB0205076                                                                          | FAB0205617 |
| M 8                                                                                                                                                                                                                                                                                        | 1     | 70             | 22            | 6.2            | 5           | 8             | 7                                                                                   | FAB0205627                                                                          | FAB0205618 |
| M 10                                                                                                                                                                                                                                                                                       | 1.5   | 75             | 24            | 7              | 5.5         | 8             | 8.5                                                                                 | FAB0205077                                                                          | FAB0205619 |
| M 10                                                                                                                                                                                                                                                                                       | 1.25  | 75             | 24            | 7              | 5.5         | 8             | 8.8                                                                                 | FAB0205628                                                                          | FAB0205620 |
| M 12                                                                                                                                                                                                                                                                                       | 1.75  | 82             | 29            | 8.5            | 6.5         | 9             | 10.3                                                                                | FAB0205078                                                                          | FAB0205621 |
| M 12                                                                                                                                                                                                                                                                                       | 1.5   | 82             | 29            | 8.5            | 6.5         | 9             | 10.5                                                                                | FAB0205629                                                                          | FAB0205622 |
| M 14                                                                                                                                                                                                                                                                                       | 2     | 88             | 30            | 10.5           | 8           | 11            | 12                                                                                  | FAB0205630                                                                          | FAB0205623 |
| M 16                                                                                                                                                                                                                                                                                       | 2     | 95             | 32            | 12.5           | 10          | 13            | 14                                                                                  | FAB0205631                                                                          | FAB0205624 |
| M 18                                                                                                                                                                                                                                                                                       | 2.5   | 100            | 37            | 14             | 11          | 14            | 15.5                                                                                | FAB0205632                                                                          | FAB0205625 |
| M 20                                                                                                                                                                                                                                                                                       | 2.5   | 105            | 37            | 15             | 12          | 15            | 17.5                                                                                | FAB0205633                                                                          | FAB0205626 |

Unit : mm



M

## Metric coarse threads



HOLE TYPE

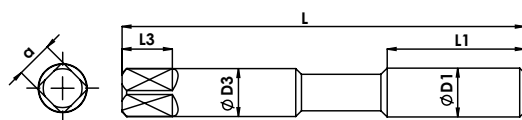
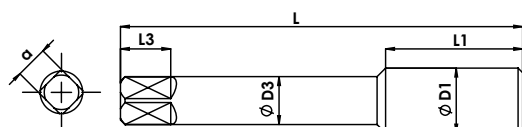


HSS

6H

ISO  
529

B/4-4.5P

Reinforced Shank (M3 - M10)  
Male Centre upto M5

Reduced Shank (M12 - M20)



Coating

Bright

TiN

| Nominal Diameter | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | No of Flutes | EDP No.    | EDP No.    |
|------------------|-------|----------------|---------------|----------------|-------------|---------------|------------------------|--------------|------------|------------|
| ØD1              | p     | L              | L1            | ØD3            | a           | L3            | Ød1                    |              |            |            |
| M 3              | 0.5   | 48             | 11            | 3.15           | 2.5         | 5             | 2.5                    | 2            | FAA0201810 | FAB0200135 |
| M 3.5            | 0.6   | 50             | 13            | 3.55           | 2.8         | 5             | 2.9                    | 2            | FAA0201841 | FAB0200139 |
| M 4              | 0.7   | 53             | 13            | 4              | 3.15        | 6             | 3.3                    | 2            | FAA0201872 | FAB0200145 |
| M 5              | 0.8   | 58             | 16            | 5              | 4           | 7             | 4.2                    | 2            | FAA0201922 | FAB0200154 |
| M 6              | 1     | 66             | 19            | 6.3            | 5           | 8             | 5                      | 2            | FAA0201965 | FAB0200163 |
| M 7              | 1     | 66             | 19            | 7.1            | 5.6         | 8             | 6                      | 3            | FAA0201998 | FAB0200167 |
| M 8              | 1.25  | 72             | 22            | 8              | 6.3         | 9             | 6.8                    | 3            | FAA0202028 | FAB0200173 |
| M 10             | 1.5   | 80             | 24            | 10             | 8           | 11            | 8.5                    | 3            | FAA0202101 | FAB0200186 |
| M 12             | 1.75  | 89             | 29            | 9              | 7.1         | 10            | 10.2                   | 3            | FAA0202163 | FAB0200200 |
| M 14             | 2     | 95             | 30            | 11.2           | 9           | 12            | 12                     | 3            | FAA0202193 | FAB0200207 |
| M 16             | 2     | 102            | 32            | 12.5           | 10          | 13            | 14                     | 3            | FAA0202225 | FAB0200216 |
| M 18             | 2.5   | 112            | 37            | 14             | 11.2        | 14            | 15.5                   | 4            | FAA0202259 | FAB0206711 |
| M 20             | 2.5   | 112            | 37            | 14             | 11.2        | 14            | 17.5                   | 4            | FAA0202286 | FAB0200225 |
| M 24             | 3     | 130            | 45            | 18             | 14          | 18            | 21                     | 4            | FAA0202345 | FAB0200234 |
| M 27             | 3     | 135            | 45            | 20             | 16          | 20            | 24                     | 4            | FAA0202373 | FAB0200238 |
| M 30             | 3.5   | 180            | 48            | 20             | 16          | 20            | 26.5                   | 4            | FAA0202397 | FAB0201224 |
| M 36             | 4     | 162            | 57            | 25             | 20          | 24            | 32                     | 4            | FAA0202433 | FAB0206712 |

Unit : mm



**High Performance Cutting Tools**



# **SPIRAL FLUTE TAPS** **SB SERIES**

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## SPIRAL FLUTE TAPS

| SERIES | THREAD FORM | BLANK STANDARD   | WORKPIECE MATERIAL | 1ST CHOICE | 2ND CHOICE | TOOL MATERIAL | COATING      | PAGE  |
|--------|-------------|------------------|--------------------|------------|------------|---------------|--------------|-------|
| SB1    | M           | DIN 371/ DIN 376 | Steel              | P0-P1      | N1 N2      | HSSE          | Bright       | 1.036 |
| SB3    | M           | DIN 371/ DIN 376 | Steel              | P1-P2      | K2, N3, N4 | HSSE          | TiN          |       |
| SB4    | M           | DIN 371/ DIN 376 | Steel              | P1-P2      | K1-K2      | HSSE          | TiAIN        |       |
| SBF3   | M           | DIN 371/ DIN 376 | Forged Steel       | P2         | -          | HSSE          | TiN          | 1.037 |
| SBF5   | M           | DIN 371/ DIN 376 | Forged Steel       | P2-P3      | -          | HSSE          | TiCN         |       |
| SBF7   | M           | DIN 371/ DIN 376 | Forged Steel       | P2-P3      | -          | HSSE          | AlCrN        |       |
| SBS5   | M           | DIN 371/ DIN 376 | Stainless Steel    | M1 M2      | -          | HSSE          | TiCN         | 1.038 |
| SBS6   | M           | DIN 371/ DIN 376 | Stainless Steel    | M1-M3      | -          | HSSE          | TiAIN + WC/C |       |
| SBS5   | M           | DIN 371/ DIN 376 | Stainless Steel    | M1-M3      | -          | HSSE-PM       | TiCN         | 1.039 |
| SBI6   | M           | DIN 371/ DIN 376 | Super Alloys       | S1-S4      | -          | HSSE-PM       | TiAIN + WC/C |       |
| SBF7TC | M           | DIN 371/ DIN 376 | Forged Steel       | P2-P4      | -          | HSSE          | AlCrN        | 1.040 |
| SB1    | MF          | DIN 374          | Steel              | P0-P1      | N1 N2      | HSSE          | Bright       | 1.041 |
| SB3    | MF          | DIN 374          | Steel              | P1-P2      | K2, N3, N4 | HSSE          | TiN          |       |
| SB4    | MF          | DIN 374          | Steel              | P1-P2      | K1-K2      | HSSE          | TiAIN        |       |
| SBF3   | MF          | DIN 374          | Forged Steel       | P2         | -          | HSSE          | TiN          | 1.042 |
| SBF5   | MF          | DIN 374          | Forged Steel       | P2-P3      | -          | HSSE          | TiCN         |       |
| SBF7   | MF          | DIN 374          | Forged Steel       | P2-P3      | -          | HSSE          | AlCrN        |       |
| SBS5   | MF          | DIN 374          | Stainless Steel    | M1 M2      | -          | HSSE          | TiCN         | 1.043 |
| SBS6   | MF          | DIN 374          | Stainless Steel    | M1-M3      | -          | HSSE          | TiAIN + WC/C |       |
| SBI6   | MF          | DIN 374          | Super Alloys       | S1-S4      | -          | HSSE-PM       | TiAIN + WC/C | 1.044 |
| SBF7TC | MF          | DIN 374          | Forged Steel       | P2-P4      | -          | HSSE          | AlCrN        | 1.045 |
| SB1    | UNC         | DIN 371/ DIN 376 | Steel              | P0-P1      | N1 N2      | HSSE          | Bright       | 1.046 |
| SB3    | UNC         | DIN 371/ DIN 376 | Steel              | P1-P2      | K2, N3, N4 | HSSE          | TiN          |       |
| SBS5   | UNC         | DIN 371/ DIN 376 | Stainless Steel    | M1 M2      | -          | HSSE          | TiCN         | 1.047 |
| SBS5   | UNC         | DIN 371/ DIN 376 | Stainless Steel    | M1-M3      | -          | HSSE-PM       | TiCN         | 1.048 |
| SB1    | UNF         | DIN 374          | Steel              | P0-P1      | N1 N2      | HSSE          | Bright       | 1.049 |
| SB3    | UNF         | DIN 374          | Steel              | P1-P2      | K2, N3, N4 | HSSE          | TiN          |       |
| SBS5   | UNF         | DIN 374          | Stainless Steel    | M1 M2      | -          | HSSE          | TiCN         | 1.050 |
| SBS5   | UNF         | DIN 374          | Stainless Steel    | M1-M3      | -          | HSSE-PM       | TiCN         | 1.051 |

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## SPIRAL FLUTE TAPS

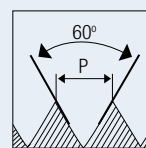
| SERIES | THREAD FORM | BLANK STANDARD | WORKPIECE MATERIAL | 1ST CHOICE | 2ND CHOICE | TOOL MATERIAL | COATING      | PAGE  |
|--------|-------------|----------------|--------------------|------------|------------|---------------|--------------|-------|
| SB1    | M           | ISO 529        | Steel              | P0-P1      | N1 N2      | HSSE          | Bright       | 1.052 |
| SB3    | M           | ISO 529        | Steel              | P1-P2      | K2, N3, N4 | HSSE          | TiN          |       |
| SB4    | M           | ISO 529        | Steel              | P1-P2      | K1-K2      | HSSE          | TiAlN        |       |
| SBF3   | M           | ISO 529        | Forged Steel       | P2         | -          | HSSE          | TiN          | 1.053 |
| SBF5   | M           | ISO 529        | Forged Steel       | P2-P3      | -          | HSSE          | TiCN         |       |
| SBF7   | M           | ISO 529        | Forged Steel       | P2-P3      | -          | HSSE          | AlCrN        |       |
| SBS5   | M           | ISO 529        | Stainless Steel    | M1 M2      | -          | HSSE          | TiCN         | 1.054 |
| SBS6   | M           | ISO 529        | Stainless Steel    | M1-M3      | -          | HSSE          | TiAlN + WC/C |       |
| SBS5   | M           | ISO 529        | Stainless Steel    | M1-M3      | -          | HSSE-PM       | TiCN         | 1.055 |
| SBI6   | M           | ISO 529        | Super Alloys       | S1-S4      | -          | HSSE-PM       | TiAlN + WC/C |       |
| SBF7TC | M           | ISO 529        | Forged Steel       | P2-P4      | -          | HSSE          | AlCrN        | 1.056 |
| SB1    | MF          | ISO 529        | Steel              | P0-P1      | N1 N2      | HSSE          | Bright       | 1.057 |
| SB3    | MF          | ISO 529        | Steel              | P1-P2      | K2, N3, N4 | HSSE          | TiN          |       |
| SB4    | MF          | ISO 529        | Steel              | P1-P2      | K1-K2      | HSSE          | TiAlN        |       |
| SBF3   | MF          | ISO 529        | Forged Steel       | P2         | -          | HSSE          | TiN          | 1.058 |
| SBF5   | MF          | ISO 529        | Forged Steel       | P2-P3      | -          | HSSE          | TiCN         |       |
| SBF7   | MF          | ISO 529        | Forged Steel       | P2-P3      | -          | HSSE          | AlCrN        |       |
| SBS5   | MF          | ISO 529        | Stainless Steel    | M1 M2      | -          | HSSE          | TiCN         | 1.059 |
| SBF7TC | MF          | ISO 529        | Forged Steel       | P2-P4      | -          | HSSE          | AlCrN        | 1.060 |
| SB1    | UNC         | ISO 529        | Steel              | P0-P1      | N1 N2      | HSSE          | Bright       | 1.061 |
| SB3    | UNC         | ISO 529        | Steel              | P1-P2      | K2, N3, N4 | HSSE          | TiN          |       |
| SBS5   | UNC         | ISO 529        | Stainless Steel    | M1 M2      | -          | HSSE          | TiCN         | 1.062 |
| SBS5   | UNC         | ISO 529        | Stainless Steel    | M1-M3      | -          | HSSE-PM       | TiCN         | 1.063 |
| SB1    | UNF         | ISO 529        | Steel              | P0-P1      | N1 N2      | HSSE          | Bright       | 1.064 |
| SB3    | UNF         | ISO 529        | Steel              | P1-P2      | K2, N3, N4 | HSSE          | TiN          |       |
| SBS5   | UNF         | ISO 529        | Stainless Steel    | M1 M2      | -          | HSSE          | TiCN         | 1.065 |
| SBS5   | UNF         | ISO 529        | Stainless Steel    | M1-M3      | -          | HSSE-PM       | TiCN         | 1.066 |
| SB1    | M           | JIS            | Steel              | P0-P1      | N1-N2      | HSSE          | Bright       | 1.067 |
| SB4    | M           | JIS            | Steel              | P1-P2      | K1-K2      | HSSE          | TiAlN        |       |
| Spirex | M           | ISO 529        | General            | -          | -          | HSSE          | Bright       | 1.068 |
| Spirex | M           | ISO 529        | General            | -          | -          | HSSE          | TiN          |       |



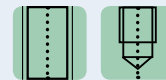
## Spiral Flute Taps

M

## Metric coarse threads



HOLE TYPE



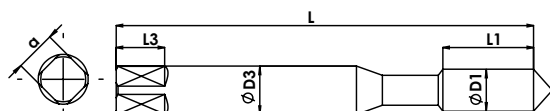
HSS-E

DIN  
371/376

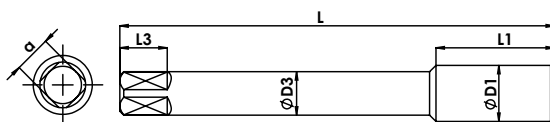
6HX

C/2-3P

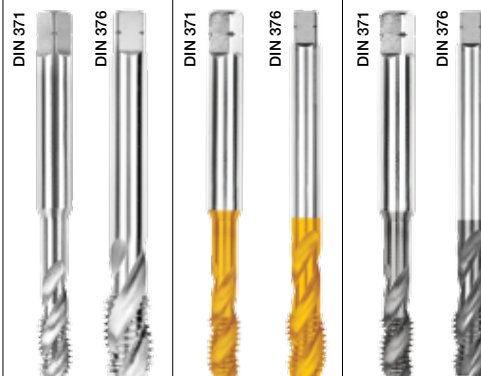
35°



Reinforced Shank DIN371 (M3 - M10)



Reduced Shank DIN376 (M12 - M20)



|                  |       |                |               |                |             |               | Series                            |              | SB1        | SB3        | SB4        |
|------------------|-------|----------------|---------------|----------------|-------------|---------------|-----------------------------------|--------------|------------|------------|------------|
|                  |       |                |               |                |             |               | Material - 1 <sup>st</sup> choice |              | P0-P1      | P1-P2      | P1-P2      |
|                  |       |                |               |                |             |               | Material - 2 <sup>nd</sup> choice |              | N1-N2      | K2, N3-N4  | K1-K2      |
| DIN 371          |       |                |               |                |             |               | Coating                           |              | Bright     | TiN        | TiAlN      |
| Nominal Diameter | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter            | No of Flutes | EDP No.    | EDP No.    | EDP No.    |
| ØD1              | p     | L              | L1            | ØD3            | a           | L3            | Ød1                               |              |            |            |            |
| M 3              | 0.5   | 56             | 6             | 3.5            | 2.7         | 6             | 2.5                               | 3            | FAB0203197 | FAB0203207 | FAB0204334 |
| M 3.5            | 0.6   | 56             | 7             | 4              | 3           | 6             | 2.9                               | 3            | FAB0204328 | FAB0204331 | FAB0204335 |
| M 4              | 0.7   | 63             | 8             | 4.5            | 3.4         | 6             | 3.3                               | 3            | FAB0203198 | FAB0203208 | FAB0200968 |
| M 5              | 0.8   | 70             | 8             | 6              | 4.9         | 8             | 4.2                               | 3            | FAB0203199 | FAB0203209 | FAB0203685 |
| M 6              | 1     | 80             | 10            | 6              | 4.9         | 8             | 5                                 | 3            | FAB0203200 | FAB0203210 | FAB0203686 |
| M 7              | 1     | 80             | 10            | 7              | 5.5         | 8             | 6                                 | 3            | FAB0203201 | FAB0203211 | FAB0204336 |
| M 8              | 1.25  | 90             | 13            | 8              | 6.2         | 9             | 6.8                               | 3            | FAB0203202 | FAB0203212 | FAB0203687 |
| M 10             | 1.5   | 100            | 15            | 10             | 8           | 11            | 8.5                               | 3            | FAB0203203 | FAB0203213 | FAB0203688 |

| DIN 376 |      |     |    |    |    |    |      |   |            |            |            |
|---------|------|-----|----|----|----|----|------|---|------------|------------|------------|
| M 12    | 1.75 | 110 | 18 | 9  | 7  | 10 | 10.2 | 3 | FAB0203204 | FAB0203684 | FAB0203689 |
| M 14    | 2    | 110 | 20 | 11 | 9  | 12 | 12   | 3 | FAB0203205 | FAB0203215 | FAB0204337 |
| M 16    | 2    | 110 | 20 | 12 | 9  | 12 | 14   | 3 | FAB0203206 | FAB0203216 | FAB0204338 |
| M 18    | 2.5  | 125 | 25 | 14 | 11 | 14 | 15.5 | 4 | FAB0204329 | FAB0204332 | FAB0204339 |
| M 20    | 2.5  | 140 | 25 | 16 | 12 | 15 | 17.5 | 4 | FAB0204330 | FAB0204333 | FAB0204340 |

Unit : mm

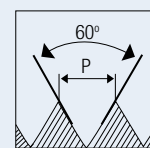


## Spiral Flute Taps

HSS TAPS

M

## Metric coarse threads



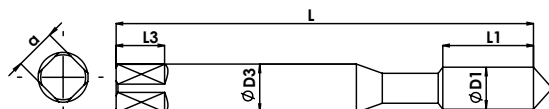
HOLE TYPE



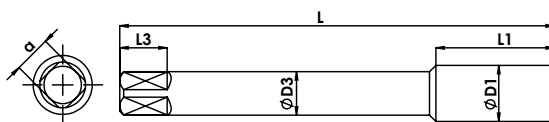
HSS-E

DIN  
371/376

6HX



Reinforced Shank DIN371 (M3 - M10)



Reduced Shank DIN376 (M12 - M20)



|                  |       |                |               |                |             |               | Series                            |              | SBF3       | SBF5       | SBF7       |
|------------------|-------|----------------|---------------|----------------|-------------|---------------|-----------------------------------|--------------|------------|------------|------------|
|                  |       |                |               |                |             |               | Material - 1 <sup>st</sup> choice |              | P2         | P2-P3      | P2-P3      |
|                  |       |                |               |                |             |               | Material - 2 <sup>nd</sup> choice |              | -          | -          | -          |
| DIN 371          |       |                |               |                |             |               | Coating                           |              | TiN        | TiCN       | AlCrN      |
| Nominal Diameter | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter            | No of Flutes | EDP No.    | EDP No.    | EDP No.    |
| ØD1              | p     | L              | L1            | ØD3            | a           | L3            | Ød1                               |              |            |            |            |
| M 3              | 0.5   | 56             | 6             | 3.5            | 2.7         | 6             | 2.5                               | 3            | FAB0204556 | FAB0204341 | FAB0204759 |
| M 3.5            | 0.6   | 56             | 7             | 4              | 3           | 6             | 2.9                               | 3            | FAB0205535 | FAB0204342 | FAB0205537 |
| M 4              | 0.7   | 63             | 8             | 4.5            | 3.4         | 6             | 3.3                               | 3            | FAB0204557 | FAB0204343 | FAB0204760 |
| M 5              | 0.8   | 70             | 8             | 6              | 4.9         | 8             | 4.2                               | 3            | FAB0204558 | FAB0204344 | FAB0204761 |
| M 6              | 1     | 80             | 10            | 6              | 4.9         | 8             | 5                                 | 3            | FAB0204559 | FAB0204345 | FAB0204762 |
| M 7              | 1     | 80             | 10            | 7              | 5.5         | 8             | 6                                 | 3            | FAB0205536 | FAB0204346 | FAB0205538 |
| M 8              | 1.25  | 90             | 13            | 8              | 6.2         | 9             | 6.8                               | 3            | FAB0204560 | FAB0204347 | FAB0204763 |
| M 10             | 1.5   | 100            | 15            | 10             | 8           | 11            | 8.5                               | 3            | FAB0204561 | FAB0204348 | FAB0204764 |

| DIN 376          |       |                |               |                |             |               |                        |              |            |            |            |
|------------------|-------|----------------|---------------|----------------|-------------|---------------|------------------------|--------------|------------|------------|------------|
| Nominal Diameter | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | No of Flutes | EDP No.    | EDP No.    | EDP No.    |
| ØD1              | p     | L              | L1            | ØD3            | a           | L3            | Ød1                    |              |            |            |            |
| M 12             | 1.75  | 110            | 18            | 9              | 7           | 10            | 10.2                   | 3            | FAB0204562 | FAB0204349 | FAB0204765 |
| M 14             | 2     | 110            | 20            | 11             | 9           | 12            | 12                     | 3            | FAB0204563 | FAB0204350 | FAB0204766 |
| M 16             | 2     | 110            | 20            | 12             | 9           | 12            | 14                     | 3            | FAB0204564 | FAB0204351 | FAB0204767 |
| M 18             | 2.5   | 125            | 25            | 14             | 11          | 14            | 15.5                   | 4            | FAB0204908 | FAB0204352 | FAB0204934 |
| M 20             | 2.5   | 140            | 25            | 16             | 12          | 15            | 17.5                   | 4            | FAB0204120 | FAB0204353 | FAB0204768 |

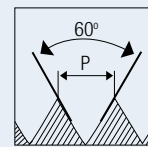
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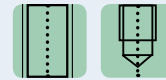
## Spiral Flute Taps

# M

## Metric coarse threads



HOLE TYPE



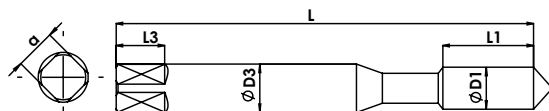
HSS-E

DIN  
371/376

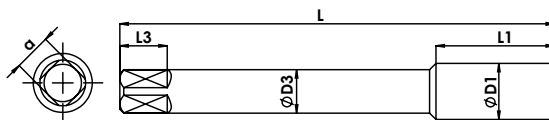
6HX

C/2-3P

45°



Reinforced Shank DIN371 (M3 - M10)



Reduced Shank DIN376 (M12 - M20)

DIN 371

DIN 376

DIN 371

DIN 376

Series

SBS5

SBS6

Material - 1<sup>st</sup> choice

M1-M2

M1-M3

Material - 2<sup>nd</sup> choice

-

-

Coating

TiCN

TiAlN + WC/C

DIN 371

| Nominal Diameter | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | No of Flutes | EDP No.    | EDP No.    |
|------------------|-------|----------------|---------------|----------------|-------------|---------------|------------------------|--------------|------------|------------|
| ØD1              | p     | L              | L1            | ØD3            | a           | L3            | Ød1                    |              |            |            |
| M 3              | 0.5   | 56             | 6             | 3.5            | 2.7         | 6             | 2.5                    | 3            | FAB0204655 | FAB0204794 |
| M 4              | 0.7   | 63             | 8             | 4.5            | 3.4         | 6             | 3.3                    | 3            | FAB0204656 | FAB0204795 |
| M 5              | 0.8   | 70             | 8             | 6              | 4.9         | 8             | 4.2                    | 3            | FAB0204657 | FAB0204796 |
| M 6              | 1     | 80             | 10            | 6              | 4.9         | 8             | 5                      | 3            | FAB0204658 | FAB0204797 |
| M 8              | 1.25  | 90             | 13            | 8              | 6.2         | 9             | 6.8                    | 3            | FAB0204659 | FAB0204798 |
| M 10             | 1.5   | 100            | 15            | 10             | 8           | 11            | 8.5                    | 3            | FAB0204660 | FAB0204799 |

DIN 376

| Nominal Diameter | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | No of Flutes | EDP No.    | EDP No.    |
|------------------|-------|----------------|---------------|----------------|-------------|---------------|------------------------|--------------|------------|------------|
| ØD1              | p     | L              | L1            | ØD3            | a           | L3            | Ød1                    |              |            |            |
| M 12             | 1.75  | 110            | 18            | 9              | 7           | 10            | 10.2                   | 3            | FAB0204661 | FAB0204800 |
| M 14             | 2     | 110            | 20            | 11             | 9           | 12            | 12                     | 3            | FAB0204662 | FAB0204801 |
| M 16             | 2     | 110            | 20            | 12             | 9           | 12            | 14                     | 3            | FAB0204663 | FAB0204802 |
| M 18             | 2.5   | 125            | 25            | 14             | 11          | 14            | 15.5                   | 4            | -          | -          |
| M 20             | 2.5   | 140            | 25            | 16             | 12          | 15            | 17.5                   | 4            | FAB0204664 | -          |

Unit : mm

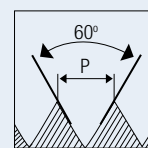


## Spiral Flute Taps

HSS TAPS

M

## Metric coarse threads



HOLE TYPE

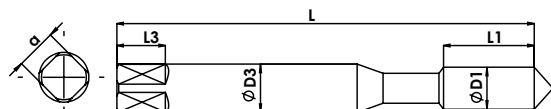
HSS-E  
PMDIN  
371/376

6HX

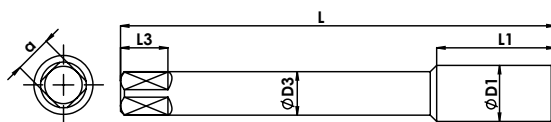
C/2-3P

45°

18°



Reinforced Shank DIN371 (M3 - M10)



Reduced Shank DIN376 (M12 - M16)

DIN 371

DIN 376

DIN 371

DIN 376

Series

SBS5

SBI6

Material - 1<sup>st</sup> choice

M1-M3

S1-S4

Material - 2<sup>nd</sup> choice

-

-

Coating

TiCN

TiAlN + WC/C

| DIN 371          |       |                |               |                |             |               | Coating                |              | TiCN       | TiAlN + WC/C |
|------------------|-------|----------------|---------------|----------------|-------------|---------------|------------------------|--------------|------------|--------------|
| Nominal Diameter | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | No of Flutes | EDP No.    | EDP No.      |
| ØD1              | p     | L              | L1            | ØD3            | a           | L3            | Ød1                    |              |            |              |
| M 3              | 0.5   | 56             | 6             | 3.5            | 2.7         | 6             | 2.5                    | 3            | FAB0205539 | FAB0204703   |
| M 4              | 0.7   | 63             | 8             | 4.5            | 3.4         | 6             | 3.3                    | 3            | FAB0205540 | FAB0204704   |
| M 5              | 0.8   | 70             | 8             | 6              | 4.9         | 8             | 4.2                    | 3            | FAB0205541 | FAB0204705   |
| M 6              | 1     | 80             | 10            | 6              | 4.9         | 8             | 5                      | 3            | FAB0205542 | FAB0204706   |
| M 8              | 1.25  | 90             | 13            | 8              | 6.2         | 9             | 6.8                    | 3            | FAB0205543 | FAB0204707   |
| M 10             | 1.5   | 100            | 15            | 10             | 8           | 11            | 8.5                    | 3            | FAB0205544 | FAB0204708   |

| DIN 376          |       |                |               |                |             |               |                        |              |            |            |
|------------------|-------|----------------|---------------|----------------|-------------|---------------|------------------------|--------------|------------|------------|
| Nominal Diameter | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | No of Flutes | EDP No.    | EDP No.    |
| ØD1              | p     | L              | L1            | ØD3            | a           | L3            | Ød1                    |              |            |            |
| M 12             | 1.75  | 110            | 18            | 9              | 7           | 10            | 10.2                   | 3            | FAB0205545 | FAB0204709 |
| M 14             | 2     | 110            | 20            | 11             | 9           | 12            | 12                     | 3            | FAB0205546 | FAB0204710 |
| M 16             | 2     | 110            | 20            | 12             | 9           | 12            | 14                     | 3            | FAB0205547 | FAB0204711 |

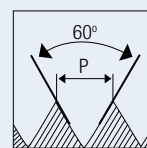
Unit : mm



## Spiral Flute Taps

M

## Metric coarse threads



HOLE TYPE



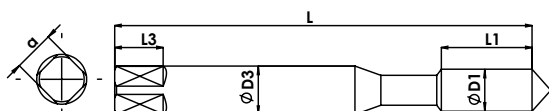
HSS-E

DIN  
371/376

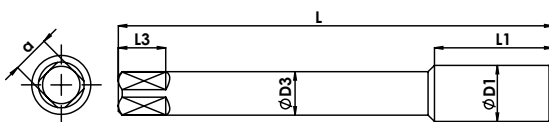
6HX



15°



Reinforced Shank DIN371 (M5 - M10)



Reduced Shank DIN376 (M12 - M20)



|                  |       |                |               |                |             |               | Series                            | SBF7TC        |            |
|------------------|-------|----------------|---------------|----------------|-------------|---------------|-----------------------------------|---------------|------------|
|                  |       |                |               |                |             |               | Material - 1 <sup>st</sup> choice | P2-P4         |            |
|                  |       |                |               |                |             |               | Material - 2 <sup>nd</sup> choice | -             |            |
| DIN 371          |       |                |               |                |             |               | Coating                           | AlCrN         |            |
| Nominal Diameter | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter            | No. of Flutes | EDP No.    |
| ØD1              | p     | L              | L1            | ØD3            | a           | L3            | Ød1                               |               |            |
| M 5              | 0.8   | 70             | 8             | 6              | 4.9         | 8             | 4.2                               | 3             | FAB0204955 |
| M 6              | 1     | 80             | 10            | 6              | 4.9         | 8             | 5                                 | 3             | FAB0204956 |
| M 8              | 1.25  | 90             | 13            | 8              | 6.2         | 9             | 6.8                               | 3             | FAB0204957 |
| M 10             | 1.5   | 100            | 15            | 10             | 8           | 11            | 8.5                               | 3             | FAB0204958 |

| DIN 376 |      |     |    |    |    |    |      |   |            |
|---------|------|-----|----|----|----|----|------|---|------------|
| M 12    | 1.75 | 110 | 18 | 9  | 7  | 10 | 10.2 | 3 | FAB0204959 |
| M 14    | 2    | 110 | 20 | 11 | 9  | 12 | 12   | 3 | FAB0204960 |
| M 16    | 2    | 110 | 20 | 12 | 9  | 12 | 14   | 3 | FAB0204961 |
| M 18    | 2.5  | 125 | 25 | 14 | 11 | 14 | 15.5 | 4 | FAB0204962 |
| M 20    | 2.5  | 140 | 25 | 16 | 12 | 15 | 17.5 | 4 | FAB0204963 |

Unit : mm

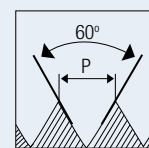


## Spiral Flute Taps

HSS TAPS

MF

## Metric fine threads



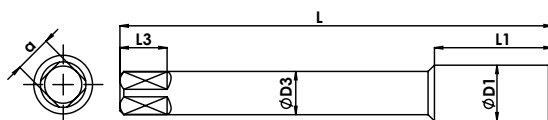
HOLE TYPE



HSS-E

DIN  
374

6HX



Male centre (M6 - M10)  
Female centre (M12 - M20)



|                  |       |                |               |                |             |               | Series                            |               | SB1        | SB3        | SB4        |
|------------------|-------|----------------|---------------|----------------|-------------|---------------|-----------------------------------|---------------|------------|------------|------------|
|                  |       |                |               |                |             |               | Material - 1 <sup>st</sup> choice |               | P0-P1      | P1-P2      | P1-P2      |
|                  |       |                |               |                |             |               | Material - 2 <sup>nd</sup> choice |               | N1-N2      | K2, N3-N4  | K1-K2      |
| DIN 374          |       |                |               |                |             |               | Coating                           |               | Bright     | TiN        | TiAlN      |
| Nominal Diameter | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter            | No. of Flutes | EDP No.    | EDP No.    | EDP No.    |
| ØD1              | p     | L              | L1            | ØD3            | a           | L3            | Ød1                               |               |            |            |            |
| M6               | 0.75  | 80             | 8             | 4.5            | 3.4         | 6             | 5.2                               | 3             | FAB0204354 | FAB0204365 | FAB0204375 |
| M8               | 1     | 90             | 11            | 6              | 4.9         | 8             | 7                                 | 3             | FAB0204355 | FAB0203297 | FAB0204376 |
| M10              | 1.25  | 100            | 13            | 7              | 5.5         | 8             | 8.8                               | 3             | FAB0204356 | FAB0204366 | FAB0204377 |
| M10              | 1     | 90             | 13            | 7              | 5.5         | 8             | 9                                 | 3             | FAB0204357 | FAB0204367 | FAB0204378 |
| M12              | 1.5   | 100            | 15            | 9              | 7           | 10            | 10.5                              | 3             | FAB0204358 | FAB0204368 | FAB0204379 |
| M12              | 1.25  | 100            | 15            | 9              | 7           | 10            | 10.8                              | 3             | FAB0204359 | FAB0204369 | FAB0204380 |
| M14              | 1.5   | 100            | 15            | 11             | 9           | 12            | 12.5                              | 3             | FAB0204360 | FAB0204370 | FAB0204381 |
| M16              | 1.5   | 100            | 15            | 12             | 9           | 12            | 14.5                              | 3             | FAB0204362 | FAB0204372 | FAB0204383 |
| M18              | 1.5   | 110            | 15            | 14             | 11          | 14            | 16.5                              | 4             | FAB0204363 | FAB0204373 | FAB0204384 |
| M20              | 1.5   | 125            | 15            | 16             | 12          | 15            | 18.5                              | 4             | FAB0204364 | FAB0204374 | FAB0204385 |

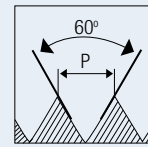
Unit : mm



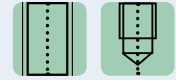
## Spiral Flute Taps

# MF

## Metric fine threads



HOLE TYPE



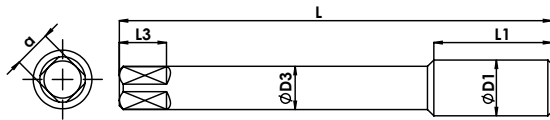
HSS-E

DIN  
374

6HX

C/2-3P

15°



Male centre (M6 - M10)  
Female centre (M12 - M20)



|                  |       |                |               |                |             |               | Series                            |               | SBF3       | SBF5       | SBF7       |
|------------------|-------|----------------|---------------|----------------|-------------|---------------|-----------------------------------|---------------|------------|------------|------------|
|                  |       |                |               |                |             |               | Material - 1 <sup>st</sup> choice |               | P2         | P2-P3      | P2-P3      |
|                  |       |                |               |                |             |               | Material - 2 <sup>nd</sup> choice |               | -          | -          | -          |
| DIN 374          |       |                |               |                |             |               | Coating                           |               | TiN        | TiCN       | AlCrN      |
| Nominal Diameter | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter            | No. of Flutes | EDP No.    | EDP No.    | EDP No.    |
| ØD1              | p     | L              | L1            | ØD3            | a           | L3            | Ød1                               |               |            |            |            |
| M 6              | 0.75  | 80             | 10            | 4.5            | 3.4         | 6             | 5.2                               | 3             | FAB0205548 | FAB0204386 | -          |
| M 8              | 1     | 90             | 13            | 6              | 4.9         | 8             | 7                                 | 3             | FAB0204565 | FAB0204387 | FAB0204769 |
| M 10             | 1.25  | 100            | 15            | 7              | 5.5         | 8             | 8.8                               | 3             | FAB0204566 | FAB0204388 | FAB0204770 |
| M 10             | 1     | 90             | 15            | 7              | 5.5         | 8             | 9                                 | 3             | FAB0204737 | FAB0204389 | FAB0204771 |
| M 12             | 1.5   | 100            | 18            | 9              | 7           | 10            | 10.5                              | 3             | FAB0204568 | FAB0204390 | FAB0204772 |
| M 12             | 1.25  | 100            | 18            | 9              | 7           | 10            | 10.8                              | 3             | FAB0204567 | FAB0204391 | FAB0204773 |
| M 14             | 1.5   | 100            | 20            | 11             | 9           | 12            | 12.5                              | 3             | FAB0204569 | FAB0204392 | FAB0204774 |
| M 16             | 1.5   | 100            | 20            | 12             | 9           | 12            | 14.5                              | 3             | FAB0204570 | FAB0204394 | FAB0204775 |
| M 18             | 1.5   | 110            | 25            | 14             | 11          | 14            | 16.5                              | 4             | FAB0204912 | FAB0204395 | FAB0204776 |
| M 20             | 1.5   | 125            | 25            | 16             | 12          | 15            | 18.5                              | 4             | FAB0204913 | FAB0204396 | FAB0204777 |

Unit : mm

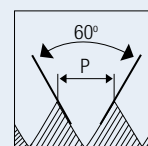


## Spiral Flute Taps

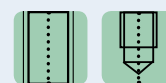
HSS TAPS

MF

## Metric fine threads



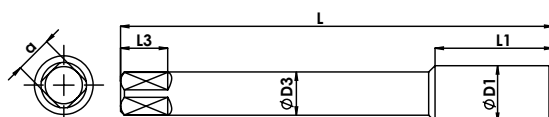
HOLE TYPE



HSS-E

DIN  
374

6HX



Male centre (M8 - M10)  
Female centre (M12 - M16)



|                  |       |                |               |                |             |               |                        |               | Series                            | SBS5       | SBS6         |
|------------------|-------|----------------|---------------|----------------|-------------|---------------|------------------------|---------------|-----------------------------------|------------|--------------|
|                  |       |                |               |                |             |               |                        |               | Material - 1 <sup>st</sup> choice | M1-M2      | M1-M3        |
|                  |       |                |               |                |             |               |                        |               | Material - 2 <sup>nd</sup> choice | -          | -            |
| DIN 374          |       |                |               |                |             |               |                        |               | Coating                           | TiCN       | TiAlN + WC/C |
| Nominal Diameter | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | No. of Flutes | EDP No.                           | EDP No.    | EDP No.      |
| ØD1              | p     | L              | L1            | ØD3            | a           | L3            | Ød1                    |               |                                   |            |              |
| M 8              | 1     | 90             | 11            | 6              | 4.9         | 8             | 7                      | 3             | FAB0204839                        | FAB0204803 | FAB0204803   |
| M 10             | 1.25  | 100            | 13            | 7              | 5.5         | 8             | 8.8                    | 3             | FAB0204841                        | FAB0204804 | FAB0204804   |
| M 10             | 1     | 90             | 13            | 7              | 5.5         | 8             | 9                      | 3             | FAB0204840                        | FAB0204805 | FAB0204805   |
| M 12             | 1.5   | 100            | 15            | 9              | 7           | 10            | 10.5                   | 3             | FAB0204843                        | FAB0204806 | FAB0204806   |
| M 12             | 1.25  | 100            | 15            | 9              | 7           | 10            | 10.8                   | 3             | FAB0204842                        | FAB0204807 | FAB0204807   |
| M 14             | 1.5   | 100            | 15            | 11             | 9           | 12            | 12.5                   | 3             | FAB0204844                        | FAB0204808 | FAB0204808   |
| M 16             | 1.5   | 100            | 15            | 12             | 9           | 12            | 14.5                   | 3             | FAB0204845                        | FAB0204809 | FAB0204809   |
| M 18             | 1.5   | 110            | 15            | 14             | 11          | 14            | 16.5                   | 4             | -                                 | -          | -            |
| M 20             | 1.5   | 125            | 15            | 16             | 12          | 15            | 18.5                   | 4             | -                                 | -          | -            |

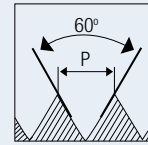
Unit : mm



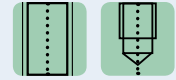
## Spiral Flute Taps

# MF

## Metric fine threads



HOLE TYPE



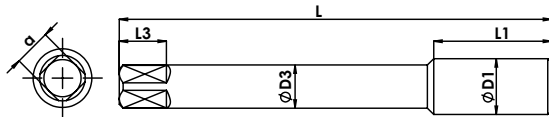
HSS-E  
PM

DIN  
374

6HX

C/2-3P

18°



Male centre (M8 - M10)  
Female centre (M12)



| DIN 374          |       |                |               |                |             |               |                        |               | Series                            | SBI6         |
|------------------|-------|----------------|---------------|----------------|-------------|---------------|------------------------|---------------|-----------------------------------|--------------|
|                  |       |                |               |                |             |               |                        |               | Material - 1 <sup>st</sup> choice | S1-S4        |
|                  |       |                |               |                |             |               |                        |               | Material - 2 <sup>nd</sup> choice | -            |
|                  |       |                |               |                |             |               |                        |               | Coating                           | TiAIN + WC/C |
| Nominal Diameter | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | No. of Flutes | EDP No.                           |              |
| ØD1              | p     | L              | L1            | ØD3            | a           | L3            | Ød1                    |               |                                   |              |
| M 8              | 1     | 90             | 11            | 6              | 4.9         | 8             | 7                      | 3             | FAB0204738                        |              |
| M 10             | 1.25  | 100            | 13            | 7              | 5.5         | 8             | 8.8                    | 3             | FAB0204813                        |              |
| M 10             | 1     | 90             | 13            | 7              | 5.5         | 8             | 9                      | 3             | FAB0204814                        |              |
| M 12             | 1.5   | 100            | 15            | 9              | 7           | 10            | 10.5                   | 3             | FAB0204739                        |              |
| M 12             | 1.25  | 100            | 15            | 9              | 7           | 10            | 10.8                   | 3             | FAB0204898                        |              |
| M 14             |       |                |               |                |             |               |                        |               |                                   |              |
| M 16             |       |                |               |                |             |               |                        |               |                                   |              |

Unit : mm

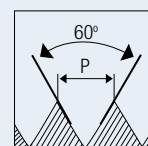


## Spiral Flute Taps

HSS TAPS

MF

## Metric fine threads



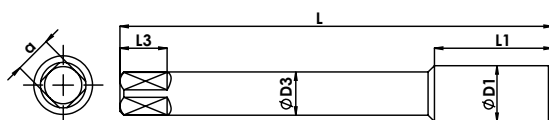
HOLE TYPE



HSS-E

DIN  
374

6HX



Male centre (M8 - M10)  
Female centre (M12)



|                  |       |                |               |                |             |               |                        |               | Series                            | SBF7TC |
|------------------|-------|----------------|---------------|----------------|-------------|---------------|------------------------|---------------|-----------------------------------|--------|
|                  |       |                |               |                |             |               |                        |               | Material - 1 <sup>st</sup> choice | P2-P4  |
|                  |       |                |               |                |             |               |                        |               | Material - 2 <sup>nd</sup> choice | -      |
|                  |       |                |               |                |             |               |                        |               | Coating                           | AlCrN  |
| DIN 374          |       |                |               |                |             |               |                        |               |                                   |        |
| Nominal Diameter | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | No. of Flutes | EDP No.                           |        |
| ØD1              | p     | L              | L1            | ØD3            | a           | L3            | Ød1                    |               |                                   |        |
| M 8              | 1     | 90             | 13            | 6              | 4.9         | 8             | 7                      | 3             | FAB0204966                        |        |
| M 10             | 1.25  | 100            | 15            | 7              | 5.5         | 8             | 8.8                    | 3             | FAB0204968                        |        |
| M 10             | 1     | 90             | 15            | 7              | 5.5         | 8             | 9                      | 3             | FAB0204967                        |        |
| M 12             | 1.5   | 100            | 18            | 9              | 7           | 10            | 10.5                   | 3             | FAB0204970                        |        |
| M 12             | 1.25  | 100            | 18            | 9              | 7           | 10            | 10.8                   | 3             | FAB0204969                        |        |
| M 14             | 1.5   | 100            | 20            | 11             | 9           | 12            | 12.5                   | 4             | FAB0204971                        |        |
| M 16             | 1.5   | 100            | 20            | 12             | 9           | 12            | 14.5                   | 4             | FAB0204972                        |        |
| M 18             | 1.5   | 110            | 25            | 14             | 11          | 14            | 16.5                   | 4             | FAB0204973                        |        |
| M 20             | 1.5   | 125            | 25            | 16             | 12          | 15            | 18.5                   | 4             | FAB0204974                        |        |

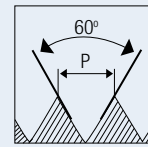
Unit : mm



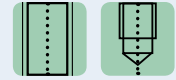
## Spiral Flute Taps

# UNC

## Unified coarse threads



HOLE TYPE



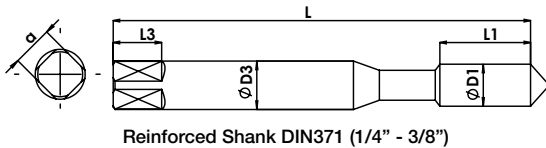
HSS-E

DIN  
371/376

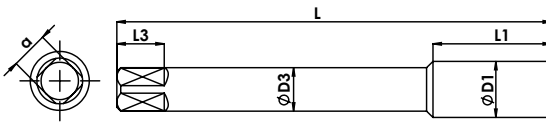
2B

C/2-3P

35°



Reinforced Shank DIN371 (1/4" - 3/8")



Reduced Shank DIN 376 (7/16" - 1")



|                  |     |                |               |                |             |               | Series                            |              | SB1        | SB3        |
|------------------|-----|----------------|---------------|----------------|-------------|---------------|-----------------------------------|--------------|------------|------------|
|                  |     |                |               |                |             |               | Material - 1 <sup>st</sup> choice |              | P0-P1      | P1-P2      |
|                  |     |                |               |                |             |               | Material - 2 <sup>nd</sup> choice |              | N1-N2      | K2, N3-N4  |
|                  |     |                |               |                |             |               | Coating                           |              | Bright     | TiN        |
| DIN 371          |     |                |               |                |             |               |                                   |              | EDP No.    | EDP No.    |
| Nominal Diameter | TPI | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter            | No of Flutes |            |            |
| ØD1              | p   | L              | L1            | ØD3            | a           | L3            | Ød1                               |              |            |            |
| 1/4"             | 20  | 80             | 10            | 7              | 5.5         | 8             | 5.1                               | 3            | FAB0204397 | FAB0204406 |
| 5/16"            | 18  | 90             | 13            | 8              | 6.2         | 9             | 6.6                               | 3            | FAB0204398 | FAB0204407 |
| 3/8"             | 16  | 100            | 15            | 9              | 7           | 10            | 8                                 | 3            | FAB0204399 | FAB0204408 |

| DIN 376 |    |     |    |    |      |    |       |   |            |            |
|---------|----|-----|----|----|------|----|-------|---|------------|------------|
| 7/16"   | 14 | 100 | 18 | 8  | 6.2  | 9  | 9.4   | 3 | FAB0204400 | FAB0204409 |
| 1/2"    | 13 | 110 | 18 | 9  | 7    | 10 | 10.8  | 3 | FAB0204401 | FAB0204410 |
| 5/8"    | 11 | 110 | 20 | 12 | 9    | 12 | 13.5  | 3 | FAB0204402 | FAB0204411 |
| 3/4"    | 10 | 125 | 25 | 14 | 11   | 14 | 16.5  | 4 | FAB0204403 | FAB0204412 |
| 7/8"    | 9  | 140 | 25 | 18 | 14.5 | 17 | 19.5  | 4 | FAB0204404 | FAB0204413 |
| 1"      | 8  | 160 | 30 | 18 | 14.5 | 17 | 22.25 | 4 | FAB0204405 | FAB0204414 |



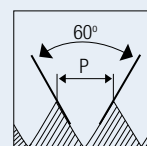
Silver cut

Spiral Flute Taps

HSS TAPS

UNC

Unified coarse threads



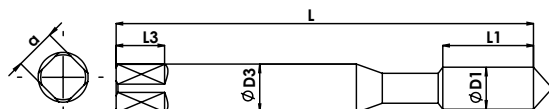
HOLE TYPE



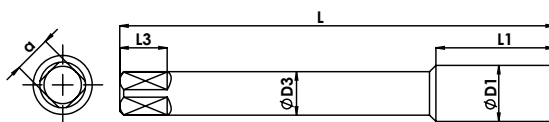
HSS-E

DIN 371/376

2B



Reinforced Shank DIN371 (1/4" - 3/8")



Reduced Shank DIN376 (7/16" - 1")

DIN 371

DIN 376



| DIN 371          |     |                |               |                |             |               |                        |              | Series                            | SBS5  |
|------------------|-----|----------------|---------------|----------------|-------------|---------------|------------------------|--------------|-----------------------------------|-------|
|                  |     |                |               |                |             |               |                        |              | Material - 1 <sup>st</sup> choice | M1-M2 |
|                  |     |                |               |                |             |               |                        |              | Material - 2 <sup>nd</sup> choice | -     |
|                  |     |                |               |                |             |               |                        |              | Coating                           | TiCN  |
| Nominal Diameter | TPI | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | No of Flutes | EDP No.                           |       |
| ØD1              | p   | L              | L1            | ØD3            | a           | L3            | Ød1                    |              |                                   |       |
| 1/4"             | 20  | 80             | 10            | 7              | 5.5         | 8             | 5.                     | 3            | FAB0205549                        |       |
| 5/16"            | 18  | 90             | 13            | 8              | 6.2         | 9             | 6.6                    | 3            | FAB0205550                        |       |
| 3/8"             | 16  | 100            | 15            | 9              | 7           | 10            | 8                      | 3            | FAB0205551                        |       |

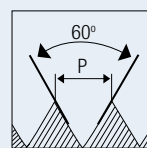
| DIN 376 |    |     |    |    |      |    |       |   |            |
|---------|----|-----|----|----|------|----|-------|---|------------|
| 7/16"   | 14 | 100 | 18 | 8  | 6.2  | 9  | 9.4   | 3 | FAB0205552 |
| 1/2"    | 13 | 110 | 18 | 9  | 7    | 10 | 10.8  | 3 | FAB0205553 |
| 5/8"    | 11 | 110 | 20 | 12 | 9    | 12 | 13.5  | 3 | FAB0205554 |
| 3/4"    | 10 | 125 | 25 | 14 | 11   | 14 | 16.5  | 4 | FAB0205555 |
| 7/8"    | 9  | 140 | 25 | 18 | 14.5 | 17 | 19.5  | 4 | FAB0205556 |
| 1"      | 8  | 160 | 30 | 18 | 14.5 | 17 | 22.25 | 4 | FAB0205557 |



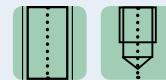
## Spiral Flute Taps

# UNC

## Unified coarse threads



HOLE TYPE

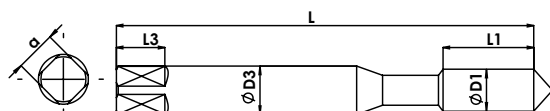

HSS-E  
PM

DIN  
371/376

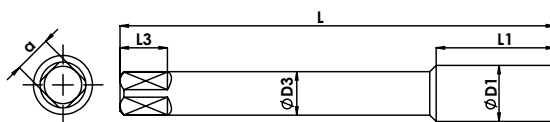
2B

C/2-3P

45°



Reinforced Shank DIN371 (1/4" - 3/8")



Reduced Shank DIN376 (7/16" - 1")



|                  |     |                |               |                |             |               | Series                            |              | SBS5       |  |
|------------------|-----|----------------|---------------|----------------|-------------|---------------|-----------------------------------|--------------|------------|--|
|                  |     |                |               |                |             |               | Material - 1 <sup>st</sup> choice |              | M1-M3      |  |
|                  |     |                |               |                |             |               | Material - 2 <sup>nd</sup> choice |              | -          |  |
| DIN 371          |     |                |               |                |             |               | Coating                           |              | TiCN       |  |
| Nominal Diameter | TPI | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter            | No of Flutes | EDP No.    |  |
| ØD1              | p   | L              | L1            | ØD3            | a           | L3            | Ød1                               |              |            |  |
| 1/4"             | 20  | 80             | 10            | 7              | 5.5         | 8             | 5.1                               | 3            | FAB0205558 |  |
| 5/16"            | 18  | 90             | 13            | 8              | 6.2         | 9             | 6.6                               | 3            | FAB0205559 |  |
| 3/8"             | 16  | 100            | 15            | 9              | 7           | 10            | 8                                 | 3            | FAB0205560 |  |

| DIN 376 |    |     |    |    |      |    |       |   |            |
|---------|----|-----|----|----|------|----|-------|---|------------|
| 7/16"   | 14 | 100 | 18 | 8  | 6.2  | 9  | 9.4   | 3 | FAB0205561 |
| 1/2"    | 13 | 110 | 18 | 9  | 7    | 10 | 10.8  | 3 | FAB0205562 |
| 5/8"    | 11 | 110 | 20 | 12 | 9    | 12 | 13.5  | 3 | FAB0205563 |
| 3/4"    | 10 | 125 | 25 | 14 | 11   | 14 | 16.5  | 4 | FAB0205564 |
| 7/8"    | 9  | 140 | 25 | 18 | 14.5 | 17 | 19.5  | 4 | FAB0205565 |
| 1"      | 8  | 160 | 30 | 18 | 14.5 | 17 | 22.25 | 4 | FAB0205566 |



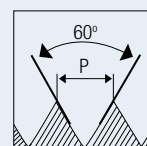
**Silver cut**

**Spiral Flute Taps**

HSS TAPS

**UNF**

**Unified fine threads**



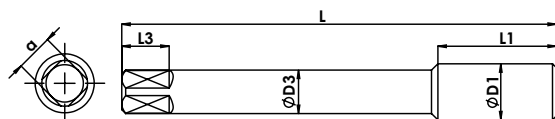
**HOLE TYPE**



**HSS-E**

**DIN 374**

**2B**



Male centre (1/4" - 3/8")  
Female centre (7/16" - 1")

DIN 371



DIN 374



DIN 371



DIN 374



**Series**

SB1

SB3

**Material - 1<sup>st</sup> choice**

P0-P1

P1-P2

**Material - 2<sup>nd</sup> choice**

N1-N2

K2, N3-N4

**Coating**

**Bright**

**TiN**

**DIN 374**

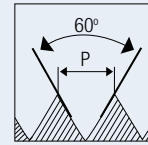
| Nominal Diameter | TPI | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | No of Flutes | EDP No.    | EDP No.    |
|------------------|-----|----------------|---------------|----------------|-------------|---------------|------------------------|--------------|------------|------------|
| ØD1              | p   | L              | L1            | ØD3            | a           | L3            | Ød1                    |              |            |            |
| 1/4"             | 28  | 80             | 10            | 7              | 5.5         | 8             | 5.5                    | 3            | FAB0204415 | FAB0204424 |
| 5/16"            | 24  | 90             | 13            | 8              | 6.2         | 9             | 6.9                    | 3            | FAB0204416 | FAB0204425 |
| 3/8"             | 24  | 100            | 15            | 9              | 7           | 10            | 8.5                    | 3            | FAB0204417 | FAB0204426 |
| 7/16"            | 20  | 100            | 18            | 8              | 6.2         | 9             | 9.9                    | 3            | FAB0204418 | FAB0204427 |
| 1/2"             | 20  | 100            | 18            | 9              | 7           | 10            | 11.5                   | 3            | FAB0204419 | FAB0204428 |
| 5/8"             | 18  | 100            | 20            | 12             | 9           | 12            | 14.5                   | 3            | FAB0204420 | FAB0204429 |
| 3/4"             | 16  | 110            | 25            | 14             | 11          | 14            | 17.5                   | 4            | FAB0204421 | FAB0204430 |
| 7/8"             | 14  | 125            | 25            | 18             | 14.5        | 17            | 20.5                   | 4            | FAB0204422 | FAB0204431 |
| 1"               | 12  | 140            | 30            | 18             | 14.5        | 17            | 23.3                   | 4            | FAB0204423 | FAB0204432 |



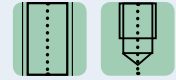
## Spiral Flute Taps

UNF

## Unified fine threads



HOLE TYPE



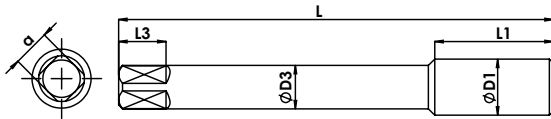
HSS-E

DIN  
374

2B

C/2-3P

45°



Male centre (1/4" - 3/8")  
Female centre (7/16" - 1")



Series

SBS5

Material - 1<sup>st</sup> choice

M1-M2

Material - 2<sup>nd</sup> choice

-

Coating

TiCN

DIN 374

| Nominal Diameter | TPI | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | No of Flutes | EDP No.    |
|------------------|-----|----------------|---------------|----------------|-------------|---------------|------------------------|--------------|------------|
| ØD1              | p   | L              | L1            | ØD3            | a           | L3            | Ød1                    |              |            |
| 1/4"             | 28  | 80             | 10            | 7              | 5.5         | 8             | 5.5                    | 3            | FAB0205567 |
| 5/16"            | 24  | 90             | 13            | 8              | 6.2         | 9             | 6.9                    | 3            | FAB0205568 |
| 3/8"             | 24  | 100            | 15            | 9              | 7           | 10            | 8.5                    | 3            | FAB0205569 |
| 7/16"            | 20  | 100            | 18            | 8              | 6.2         | 9             | 9.9                    | 3            | FAB0205570 |
| 1/2"             | 20  | 100            | 18            | 9              | 7           | 10            | 11.5                   | 3            | FAB0205571 |
| 5/8"             | 18  | 100            | 20            | 12             | 9           | 12            | 14.5                   | 3            | FAB0205572 |
| 3/4"             | 16  | 110            | 25            | 14             | 11          | 14            | 17.5                   | 4            | FAB0205573 |
| 7/8"             | 14  | 125            | 25            | 18             | 14.5        | 17            | 20.5                   | 4            | FAB0205574 |
| 1"               | 12  | 140            | 30            | 18             | 14.5        | 17            | 23.3                   | 4            | FAB0205575 |



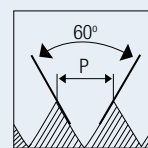
Silver cut

Spiral Flute Taps

HSS TAPS

UNF

Unified fine threads



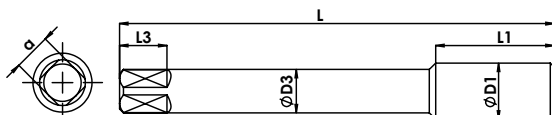
HOLE TYPE

HSS-E  
PMDIN  
374

2B

C/2-3P

45°



Male centre (1/4" - 3/8")  
Female centre (7/16" - 1")



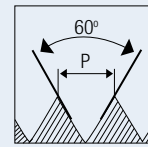
|                  |     |                |               |                |             |               | Series                            |              | SBS5       |
|------------------|-----|----------------|---------------|----------------|-------------|---------------|-----------------------------------|--------------|------------|
|                  |     |                |               |                |             |               | Material - 1 <sup>st</sup> choice |              | M1-M3      |
|                  |     |                |               |                |             |               | Material - 2 <sup>nd</sup> choice |              | -          |
| DIN 374          |     |                |               |                |             |               | Coating                           |              | TICN       |
| Nominal Diameter | TPI | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter            | No of Flutes | EDP No.    |
| ØD1              | p   | L              | L1            | ØD3            | a           | L3            | Ød1                               |              |            |
| 1/4"             | 28  | 80             | 10            | 7              | 5.5         | 8             | 5.5                               | 3            | FAB0205576 |
| 5/16"            | 24  | 90             | 13            | 8              | 6.2         | 9             | 6.9                               | 3            | FAB0205577 |
| 3/8"             | 24  | 100            | 15            | 9              | 7           | 10            | 8.5                               | 3            | FAB0205578 |
| 7/16"            | 20  | 100            | 18            | 8              | 6.2         | 9             | 9.9                               | 3            | FAB0205579 |
| 1/2"             | 20  | 100            | 18            | 9              | 7           | 10            | 11.5                              | 3            | FAB0205580 |
| 5/8"             | 18  | 100            | 20            | 12             | 9           | 12            | 14.5                              | 3            | FAB0205581 |
| 3/4"             | 16  | 110            | 25            | 14             | 11          | 14            | 17.5                              | 4            | FAB0205582 |
| 7/8"             | 14  | 125            | 25            | 18             | 14.5        | 17            | 20.5                              | 4            | FAB0205583 |
| 1"               | 12  | 140            | 30            | 18             | 14.5        | 17            | 23.3                              | 4            | FAB0205584 |



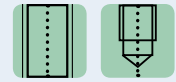
## Spiral Flute Taps

M

## Metric coarse threads



HOLE TYPE



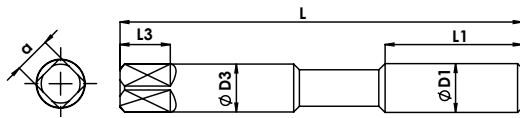
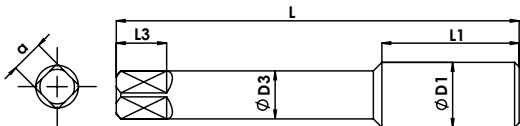
HSS-E

ISO  
529

6HX

C/2-3P

35°

Reinforced Shank (M3 - M10)  
Male centre upto M5

Reduced Shank (M12 - M20)



|                          |       |                |               |                |             |               | Series                            |               | SB1        | SB3        | SB4        |
|--------------------------|-------|----------------|---------------|----------------|-------------|---------------|-----------------------------------|---------------|------------|------------|------------|
|                          |       |                |               |                |             |               | Material - 1 <sup>st</sup> choice |               | P0-P1      | P1-P2      | P1-P2      |
|                          |       |                |               |                |             |               | Material - 2 <sup>nd</sup> choice |               | N1-N2      | K2, N3-N4  | K1-K2      |
| ISO 529 / IS 6175 Part 2 |       |                |               |                |             |               | Coating                           |               | Bright     | TiN        | TiAlN      |
| Nominal Diameter         | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter            | No. of Flutes | EDP No.    | EDP No.    | EDP No.    |
| ØD1                      | p     | L              | L1            | ØD3            | a           | L3            | Ød1                               |               |            |            |            |
| M 3                      | 0.5   | 48             | 5             | 3.15           | 2.5         | 5             | 2.5                               | 3             | FAB0200649 | FAB0200650 | FAB0203145 |
| M 3.5                    | 0.6   | 50             | 6             | 3.55           | 2.8         | 5             | 2.9                               | 3             | FAB0203134 | FAB0203142 | FAB0203146 |
| M 4                      | 0.7   | 53             | 7             | 4              | 3.15        | 6             | 3.3                               | 3             | FAB0200663 | FAB0200665 | FAB0200666 |
| M 5                      | 0.8   | 58             | 8             | 5              | 4           | 7             | 4.2                               | 3             | FAB0200674 | FAB0200676 | FAB0200677 |
| M 6                      | 1     | 66             | 10            | 6.3            | 5           | 8             | 5                                 | 3             | FAB0200686 | FAB0200688 | FAB0200689 |
| M 7                      | 1     | 66             | 10            | 7.1            | 5.6         | 8             | 6                                 | 3             | FAB0203135 | FAB0203143 | FAB0203147 |
| M 8                      | 1.25  | 72             | 13            | 8              | 6.3         | 9             | 6.8                               | 3             | FAB0200698 | FAB0200700 | FAB0200701 |
| M 10                     | 1.5   | 80             | 15            | 10             | 8           | 11            | 8.5                               | 3             | FAB0200722 | FAB0200724 | FAB0200725 |

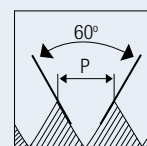
| ISO 529 / IS 6175 Part 3 |      |     |    |      |      |    |      |   |            |            |            |
|--------------------------|------|-----|----|------|------|----|------|---|------------|------------|------------|
| M 12                     | 1.75 | 89  | 18 | 9    | 7.1  | 10 | 10.2 | 3 | FAB0200752 | FAB0200754 | FAB0200755 |
| M 14                     | 2    | 95  | 20 | 11.2 | 9    | 12 | 12   | 3 | FAB0200781 | FAB0200782 | FAB0203152 |
| M 16                     | 2    | 102 | 20 | 12.5 | 10   | 13 | 14   | 3 | FAB0200802 | FAB0200804 | FAB0203153 |
| M 18                     | 2.5  | 112 | 25 | 14   | 11.2 | 14 | 15.5 | 4 | FAB0203139 | FAB0202155 | FAB0203155 |
| M 20                     | 2.5  | 112 | 25 | 14   | 11.2 | 14 | 17.5 | 4 | FAB0203141 | FAB0200812 | FAB0203157 |

Unit : mm



M

## Metric coarse threads



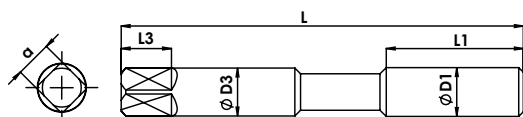
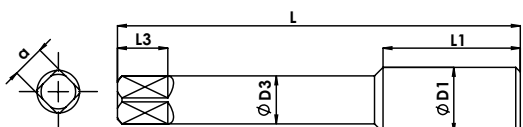
HOLE TYPE



HSS-E

ISO  
529

6HX

Reinforced Shank (M3 - M10)  
Male centre upto M5

Reduced Shank (M12 - M20)



|                          |       |                |               |                |             |               | Series                            |               | SBF3       | SBF5       | SBF7       |
|--------------------------|-------|----------------|---------------|----------------|-------------|---------------|-----------------------------------|---------------|------------|------------|------------|
|                          |       |                |               |                |             |               | Material - 1 <sup>st</sup> choice |               | P2         | P2-P3      | P2-P3      |
|                          |       |                |               |                |             |               | Material - 2 <sup>nd</sup> choice |               | -          | -          | -          |
| ISO 529 / IS 6175 Part 2 |       |                |               |                |             |               | Coating                           |               | TiN        | TiCN       | AlCrN      |
| Nominal Diameter         | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter            | No. of Flutes | EDP No.    | EDP No.    | EDP No.    |
| ØD1                      | p     | L              | L1            | ØD3            | a           | L3            | Ød1                               |               |            |            |            |
| M 3                      | 0.5   | 48             | 5             | 3.15           | 2.5         | 5             | 2.5                               | 3             | FAB0204636 | FAB0203158 | FAB0205434 |
| M 3.5                    | 0.6   | 50             | 6             | 3.55           | 2.8         | 5             | 2.9                               | 3             | FAB0205427 | FAB0205431 | FAB0205435 |
| M 4                      | 0.7   | 53             | 7             | 4              | 3.15        | 6             | 3.3                               | 3             | FAB0204637 | FAB0203159 | FAB0205436 |
| M 5                      | 0.8   | 58             | 8             | 5              | 4           | 7             | 4.2                               | 3             | FAB0204638 | FAB0203160 | FAB0205437 |
| M 6                      | 1     | 66             | 10            | 6.3            | 5           | 8             | 5                                 | 3             | FAB0204639 | FAB0203161 | FAB0205438 |
| M 7                      | 1     | 66             | 10            | 7.1            | 5.6         | 8             | 6                                 | 3             | FAB0205428 | FAB0205432 | FAB0205439 |
| M 8                      | 1.25  | 72             | 13            | 8              | 6.3         | 9             | 6.8                               | 3             | FAB0204640 | FAB0203163 | FAB0205440 |
| M 10                     | 1.5   | 80             | 15            | 10             | 8           | 11            | 8.5                               | 3             | FAB0204641 | FAB0203166 | FAB0205441 |

| ISO 529 / IS 6175 Part 3 |      |     |    |      |      |    |      |   |            |            |            |
|--------------------------|------|-----|----|------|------|----|------|---|------------|------------|------------|
| M 12                     | 1.75 | 89  | 18 | 9    | 7.1  | 10 | 10.2 | 3 | FAB0204642 | FAB0203169 | FAB0205442 |
| M 14                     | 2    | 95  | 20 | 11.2 | 9    | 12 | 12   | 3 | FAB0204643 | FAB0203171 | FAB0205443 |
| M 16                     | 2    | 102 | 20 | 12.5 | 10   | 13 | 14   | 3 | FAB0204644 | FAB0203173 | FAB0205444 |
| M 18                     | 2.5  | 112 | 25 | 14   | 11.2 | 14 | 15.5 | 4 | FAB0205429 | FAB0205433 | FAB0205445 |
| M 20                     | 2.5  | 112 | 25 | 14   | 11.2 | 14 | 17.5 | 4 | FAB0205430 | FAB0203176 | FAB0205446 |

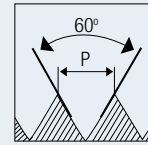
Unit : mm



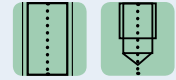
## Spiral Flute Taps

M

## Metric coarse threads



HOLE TYPE



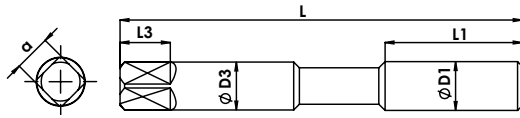
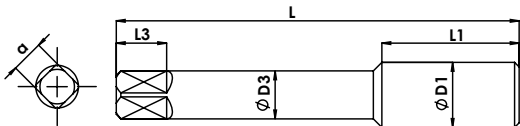
HSS-E

ISO  
529

6HX

C/2-3P

45°

Reinforced Shank (M3 - M10)  
Male centre upto M5

Reduced Shank (M12 - M20)

IS 6175 Part 2

IS 6175 Part 3

IS 6175 Part 2

IS 6175 Part 3



Series

SBS5

SBS6

Material - 1<sup>st</sup> choice

M1-M2

M1-M3

Material - 2<sup>nd</sup> choice

-

-

Coating

TiCN

TiAlN + WC/C

ISO 529 / IS 6175 Part 2

| Nominal Diameter | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | No. of Flutes | EDP No.    | EDP No.    |
|------------------|-------|----------------|---------------|----------------|-------------|---------------|------------------------|---------------|------------|------------|
| ØD1              | p     | L              | L1            | ØD3            | a           | L3            | Ød1                    |               |            |            |
| M 3              | 0.5   | 48             | 5             | 3.15           | 2.5         | 5             | 2.5                    | 3             | FAB0203187 | FAB0205447 |
| M 4              | 0.7   | 53             | 7             | 4              | 3.15        | 6             | 3.3                    | 3             | FAB0203188 | FAB0205448 |
| M 5              | 0.8   | 58             | 8             | 5              | 4           | 7             | 4.2                    | 3             | FAB0203189 | FAB0205449 |
| M 6              | 1     | 66             | 10            | 6.3            | 5           | 8             | 5                      | 3             | FAB0203190 | FAB0205450 |
| M 8              | 1.25  | 72             | 13            | 8              | 6.3         | 9             | 6.8                    | 3             | FAB0203191 | FAB0205451 |
| M 10             | 1.5   | 80             | 15            | 10             | 8           | 11            | 8.5                    | 3             | FAB0203192 | FAB0205452 |

ISO 529 / IS 6175 Part 3

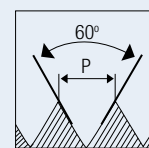
| M 12 | 1.75 | 89  | 18 | 9    | 7.1  | 10 | 10.2 | 3 | FAB0203193 | FAB0205453 |
|------|------|-----|----|------|------|----|------|---|------------|------------|
| M 14 | 2    | 95  | 20 | 11.2 | 9    | 12 | 12   | 3 | FAB0203194 | FAB0205454 |
| M 16 | 2    | 102 | 20 | 12.5 | 10   | 13 | 14   | 3 | FAB0203195 | FAB0205455 |
| M 20 | 2.5  | 112 | 25 | 14   | 11.2 | 14 | 17.5 | 4 | FAB0203196 | FAB0205456 |

Unit : mm



M

## Metric coarse threads



HOLE TYPE

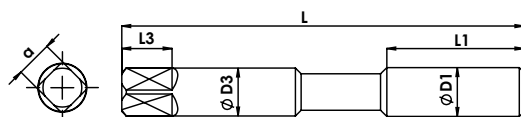
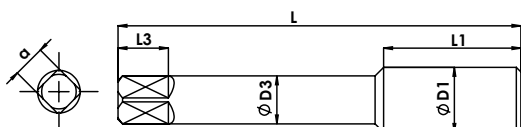
HSS-E  
PMISO  
529

6HX

C/2-3P

45°

18°

Reinforced Shank (M3 - M10)  
Male centre upto M5

Reduced Shank (M12 - M16)

IS 6175 Part 2

IS 6175 Part 3

IS 6175 Part 2

IS 6175 Part 3



|                          |       |                |               |                |             |               |                        |               | Series                            | SBS5       | SBI6         |
|--------------------------|-------|----------------|---------------|----------------|-------------|---------------|------------------------|---------------|-----------------------------------|------------|--------------|
|                          |       |                |               |                |             |               |                        |               | Material - 1 <sup>st</sup> choice | M1-M3      | S1-S4        |
|                          |       |                |               |                |             |               |                        |               | Material - 2 <sup>nd</sup> choice | -          | -            |
|                          |       |                |               |                |             |               |                        |               | Coating                           | TiCN       | TiAlN + WC/C |
| ISO 529 / IS 6175 Part 2 |       |                |               |                |             |               |                        |               |                                   |            |              |
| Nominal Diameter         | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | No. of Flutes |                                   | EDP No.    | EDP No.      |
| ØD1                      | p     | L              | L1            | ØD3            | a           | L3            | Ød1                    |               |                                   |            |              |
| M 3                      | 0.5   | 48             | 5             | 3.15           | 2.5         | 5             | 2.5                    | 3             |                                   | FAB0205457 | FAB0204721   |
| M 4                      | 0.7   | 53             | 7             | 4              | 3.15        | 6             | 3.3                    | 3             |                                   | FAB0205458 | FAB0204722   |
| M 5                      | 0.8   | 58             | 8             | 5              | 4           | 7             | 4.2                    | 3             |                                   | FAB0205459 | FAB0204723   |
| M 6                      | 1     | 66             | 10            | 6.3            | 5           | 8             | 5                      | 3             |                                   | FAB0205460 | FAB0204724   |
| M 8                      | 1.25  | 72             | 13            | 8              | 6.3         | 9             | 6.8                    | 3             |                                   | FAB0205461 | FAB0204725   |
| M 10                     | 1.5   | 80             | 15            | 10             | 8           | 11            | 8.5                    | 3             |                                   | FAB0205462 | FAB0204726   |

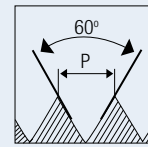
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|--------------------------|-------|----------------|---------------|----------------|-------------|---------------|------------------------|---------------|--|------------|------------|
| Nominal Diameter         | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | No. of Flutes |  | EDP No.    | EDP No.    |
| ØD1                      | p     | L              | L1            | ØD3            | a           | L3            | Ød1                    |               |  |            |            |
| M 12                     | 1.75  | 89             | 18            | 9              | 7.1         | 10            | 10.2                   | 3             |  | FAB0205463 | FAB0204727 |
| M 14                     | 2     | 95             | 20            | 11.2           | 9           | 12            | 12                     | 3             |  | FAB0205464 | FAB0204728 |
| M 16                     | 2     | 102            | 20            | 12.5           | 10          | 13            | 14                     | 3             |  | FAB0205465 | FAB0204729 |

Unit : mm



M

## Metric coarse threads



HOLE TYPE



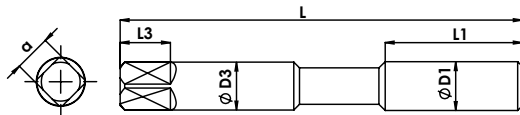
HSS-E

ISO  
529

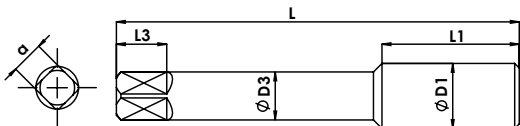
6HX

C/2-3P

15°



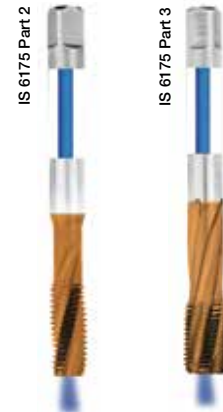
Reinforced Shank (M5 - M10)



Reduced Shank (M12 - M20)

IS 6175 Part 2

IS 6175 Part 3



Series

SBF7TC

Material - 1<sup>st</sup> choice

P2-P4

Material - 2<sup>nd</sup> choice

-

Coating

AlCrN

ISO 529 / IS 6175 Part 2

| Nominal Diameter | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | No. of Flutes | EDP No.    |
|------------------|-------|----------------|---------------|----------------|-------------|---------------|------------------------|---------------|------------|
| ØD1              | p     | L              | L1            | ØD3            | a           | L3            | Ød1                    |               |            |
| M 5              | 0.8   | 58             | 8             | 5              | 4           | 7             | 4.2                    | 3             | FAB0205468 |
| M 6              | 1     | 66             | 10            | 6.3            | 5           | 8             | 5                      | 3             | FAB0205469 |
| M 8              | 1.25  | 72             | 13            | 8              | 6.3         | 9             | 6.8                    | 3             | FAB0205470 |
| M 10             | 1.5   | 80             | 15            | 10             | 8           | 11            | 8.5                    | 3             | FAB0205471 |

ISO 529 / IS 6175 Part 3

| M 12 | 1.75 | 89  | 18 | 9    | 7.1  | 10 | 10.2 | 3 | FAB0205472 |
|------|------|-----|----|------|------|----|------|---|------------|
| M 14 | 2    | 95  | 20 | 11.2 | 9    | 12 | 12   | 3 | FAB0205473 |
| M 16 | 2    | 102 | 20 | 12.5 | 10   | 13 | 14   | 3 | FAB0205474 |
| M 18 | 2.5  | 112 | 25 | 14   | 11.2 | 14 | 15.5 | 4 | FAB0205475 |
| M 20 | 2.5  | 112 | 25 | 14   | 11.2 | 14 | 17.5 | 4 | FAB0205476 |

Unit : mm



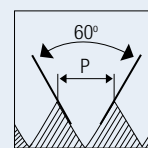
Silver cut

Spiral Flute Taps

HSS TAPS

MF

## Metric fine threads



HOLE TYPE



HSS-E

ISO  
529

6HX

C/2-3P

35°

| <br>                     |       |                |               |                |             |               |                        |               | IS 6175 Part 2                    |  | IS 6175 Part 3 |  | IS 6175 Part 2 |  | IS 6175 Part 3 |  | IS 6175 Part 2 |  | IS 6175 Part 3 |  |
|--------------------------|-------|----------------|---------------|----------------|-------------|---------------|------------------------|---------------|-----------------------------------|--|----------------|--|----------------|--|----------------|--|----------------|--|----------------|--|
|                          |       |                |               |                |             |               |                        |               | Series                            |  | SB1            |  | SB3            |  | SB4            |  |                |  |                |  |
|                          |       |                |               |                |             |               |                        |               | Material - 1 <sup>st</sup> choice |  | P0-P1          |  | P1-P2          |  | P1-P2          |  |                |  |                |  |
|                          |       |                |               |                |             |               |                        |               | Material - 2 <sup>nd</sup> choice |  | N1-N2          |  | K2, N3-N4      |  | K1-K2          |  |                |  |                |  |
| ISO 529 / IS 6175 Part 2 |       |                |               |                |             |               |                        |               | Coating                           |  | Bright         |  | TiN            |  | TiAlN          |  |                |  |                |  |
| Nominal Diameter         | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | No. of Flutes | EDP No.                           |  | EDP No.        |  | EDP No.        |  |                |  |                |  |                |  |
| ØD1                      | p     | L              | L1            | ØD3            | a           | L3            | Ød1                    |               |                                   |  |                |  |                |  |                |  |                |  |                |  |
| M 8                      | 1     | 72             | 13            | 8              | 6.3         | 9             | 7                      | 3             | FAB0203136                        |  | FAB0202157     |  | FAB0203148     |  |                |  |                |  |                |  |
| M 10                     | 1     | 80             | 15            | 10             | 8           | 11            | 9                      | 3             | FAB0203137                        |  | FAB0200703     |  | FAB0203149     |  |                |  |                |  |                |  |
| M 10                     | 1.25  | 80             | 15            | 10             | 8           | 11            | 8.8                    | 3             | FAB0200711                        |  | FAB0200713     |  | FAB0203150     |  |                |  |                |  |                |  |

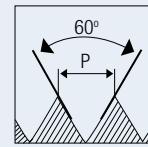
| ISO 529 / IS 6175 Part 3 |      |     |    |      |      |    |       |   |            |            |            |
|--------------------------|------|-----|----|------|------|----|-------|---|------------|------------|------------|
| M 12                     | 1.25 | 89  | 18 | 9    | 7.1  | 10 | 10.75 | 3 | FAB0200732 | FAB0200733 | FAB0204653 |
| M 12                     | 1.5  | 89  | 18 | 9    | 7.1  | 10 | 10.5  | 3 | FAB0200741 | FAB0200743 | FAB0200744 |
| M 14                     | 1.5  | 95  | 20 | 11.2 | 9    | 12 | 12.5  | 3 | FAB0200772 | FAB0200774 | FAB0203151 |
| M 16                     | 1.5  | 102 | 20 | 12.5 | 10   | 13 | 14.5  | 3 | FAB0200791 | FAB0200793 | FAB0200794 |
| M 18                     | 1.5  | 112 | 25 | 14   | 11.2 | 14 | 16.5  | 4 | FAB0203138 | FAB0203144 | FAB0203154 |
| M 20                     | 1.5  | 112 | 25 | 14   | 11.2 | 14 | 18.5  | 4 | FAB0203140 | FAB0200808 | FAB0203156 |

Unit : mm

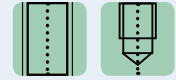


MF

## Metric fine threads



HOLE TYPE



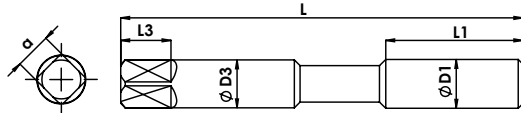
HSS-E

ISO  
529

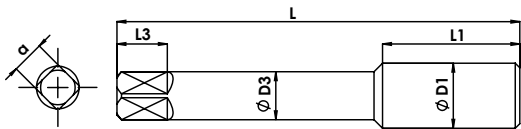
6HX

C/2-3P

15°



Reinforced Shank (M8 - M10)



Reduced Shank (M12 - M20)



| Series                            |               | SBF3       | SBF5       | SBF7       |
|-----------------------------------|---------------|------------|------------|------------|
| Material - 1 <sup>st</sup> choice |               | P2         | P2-P3      | P2-P3      |
| Material - 2 <sup>nd</sup> choice |               | -          | -          | -          |
| Coating                           |               | TiN        | TiCN       | AlCrN      |
| Tapping Drill Diameter            | No. of Flutes | EDP No.    | EDP No.    | EDP No.    |
| Ød1                               |               |            |            |            |
| 7                                 | 3             | FAB0204645 | FAB0203162 | FAB0205480 |
| 9                                 | 3             | FAB0205477 | FAB0203164 | FAB0205481 |
| 8.8                               | 3             | FAB0204646 | FAB0203165 | FAB0205482 |

## ISO 529 / IS 6175 Part 2

| Nominal Diameter | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | No. of Flutes | EDP No.    | EDP No.    | EDP No.    |
|------------------|-------|----------------|---------------|----------------|-------------|---------------|------------------------|---------------|------------|------------|------------|
| ØD1              | p     | L              | L1            | ØD3            | a           | L3            | Ød1                    |               |            |            |            |
| M 8              | 1     | 72             | 13            | 8              | 6.3         | 9             | 7                      | 3             | FAB0204645 | FAB0203162 | FAB0205480 |
| M 10             | 1     | 80             | 15            | 10             | 8           | 11            | 9                      | 3             | FAB0205477 | FAB0203164 | FAB0205481 |
| M 10             | 1.25  | 80             | 15            | 10             | 8           | 11            | 8.8                    | 3             | FAB0204646 | FAB0203165 | FAB0205482 |

## ISO 529 / IS 6175 Part 3

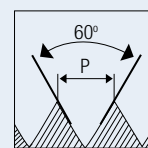
|      |      |     |    |      |      |    |      |   |            |            |            |
|------|------|-----|----|------|------|----|------|---|------------|------------|------------|
| M 12 | 1.5  | 89  | 18 | 9    | 7.1  | 10 | 10.5 | 3 | FAB0204648 | FAB0203168 | FAB0205484 |
| M 12 | 1.25 | 89  | 18 | 9    | 7.1  | 10 | 10.8 | 3 | FAB0204647 | FAB0203167 | FAB0205483 |
| M 14 | 1.5  | 95  | 20 | 11.2 | 9    | 12 | 12.5 | 3 | FAB0204649 | FAB0203170 | FAB0205485 |
| M 16 | 1.5  | 102 | 20 | 12.5 | 10   | 13 | 14.5 | 3 | FAB0204650 | FAB0203172 | FAB0205486 |
| M 18 | 1.5  | 112 | 25 | 14   | 11.2 | 14 | 16.5 | 4 | FAB0205478 | FAB0203174 | FAB0205487 |
| M 20 | 1.5  | 112 | 25 | 14   | 11.2 | 14 | 18.5 | 4 | FAB0205479 | FAB0203175 | FAB0205488 |

Unit : mm



MF

## Metric fine threads



HOLE TYPE



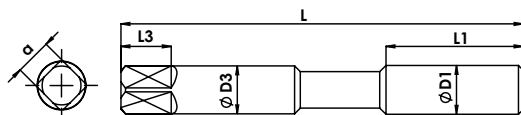
HSS-E

ISO  
529

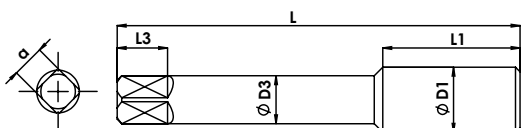
6HX

C/2-3P

45°



Reinforced Shank (M8 - M10)



Reduced Shank (M12 - M20)

IS 6175 Part 2

IS 6175 Part 3



|                          |       |                |               |                |             |               |                        |               | Series                            | SBS5  |
|--------------------------|-------|----------------|---------------|----------------|-------------|---------------|------------------------|---------------|-----------------------------------|-------|
|                          |       |                |               |                |             |               |                        |               | Material - 1 <sup>st</sup> choice | M1-M2 |
|                          |       |                |               |                |             |               |                        |               | Material - 2 <sup>nd</sup> choice | -     |
|                          |       |                |               |                |             |               |                        |               | Coating                           | TiCN  |
| ISO 529 / IS 6175 Part 2 |       |                |               |                |             |               |                        |               | EDP No.                           |       |
| Nominal Diameter         | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | No. of Flutes |                                   |       |
| ØD1                      | p     | L              | L1            | ØD3            | a           | L3            | Ød1                    |               |                                   |       |
| M 8                      | 1     | 72             | 13            | 8              | 6.3         | 9             | 7                      | 3             | FAB0205489                        |       |
| M 10                     | 1     | 80             | 15            | 10             | 8           | 11            | 9                      | 3             | FAB0205490                        |       |
| M 10                     | 1.25  | 80             | 15            | 10             | 8           | 11            | 8.8                    | 3             | FAB0205491                        |       |

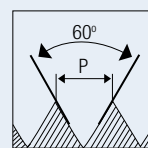
| ISO 529 / IS 6175 Part 3 |      |     |    |      |      |    |      |   | EDP No.    |  |
|--------------------------|------|-----|----|------|------|----|------|---|------------|--|
| M 12                     | 1.5  | 89  | 18 | 9    | 7.1  | 10 | 10.5 | 3 | FAB0205492 |  |
| M 12                     | 1.25 | 89  | 18 | 9    | 7.1  | 10 | 10.8 | 3 | FAB0205493 |  |
| M 14                     | 1.5  | 95  | 20 | 11.2 | 9    | 12 | 12.5 | 3 | FAB0205494 |  |
| M 16                     | 1.5  | 102 | 20 | 12.5 | 10   | 13 | 14.5 | 3 | FAB0205495 |  |
| M 18                     | 1.5  | 112 | 25 | 14   | 11.2 | 14 | 16.5 | 4 | FAB0205496 |  |
| M 20                     | 1.5  | 112 | 25 | 14   | 11.2 | 14 | 18.5 | 4 | FAB0205497 |  |

Unit : mm



MF

## Metric fine threads



HOLE TYPE



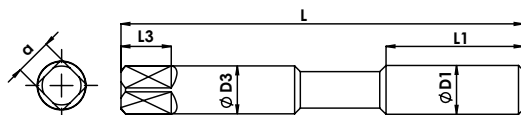
HSS-E

ISO  
529

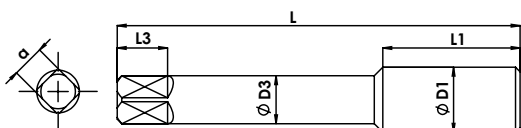
6HX

C/2-3P

15°



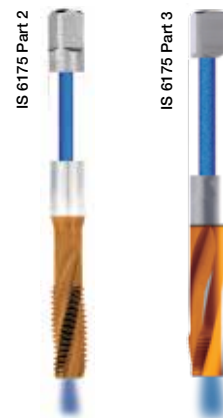
Reinforced Shank (M8 - M10)



Reduced Shank (M12 - M20)

IS 6175 Part 2

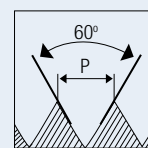
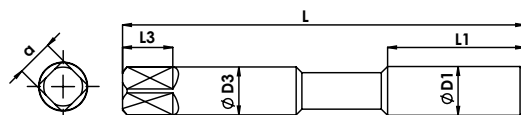
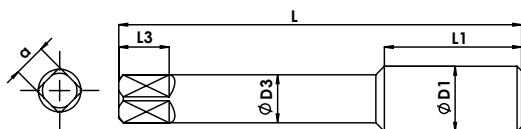
IS 6175 Part 3



| Series                            |               | SBF7TC  |
|-----------------------------------|---------------|---------|
| Material - 1 <sup>st</sup> choice |               | P2-P4   |
| Material - 2 <sup>nd</sup> choice |               | -       |
| Coating                           |               | AlCrN   |
| Tapping Drill Diameter            | No. of Flutes | EDP No. |
| Ød1                               |               |         |
| 7                                 | 3             |         |
| 9                                 | 3             |         |
| 8.8                               | 3             |         |

| ISO 529 / IS 6175 Part 3 |      |     |    |      |      |    |      |   |            |
|--------------------------|------|-----|----|------|------|----|------|---|------------|
| M 12                     | 1.5  | 89  | 18 | 9    | 7.1  | 10 | 10.5 | 3 | FAB0205501 |
| M 12                     | 1.25 | 89  | 18 | 9    | 7.1  | 10 | 10.8 | 3 | FAB0205502 |
| M 14                     | 1.5  | 95  | 20 | 11.2 | 9    | 12 | 12.5 | 3 | FAB0204077 |
| M 16                     | 1.5  | 102 | 20 | 12.5 | 10   | 13 | 14.5 | 3 | FAB0205504 |
| M 18                     | 1.5  | 112 | 25 | 14   | 11.2 | 14 | 16.5 | 4 | FAB0205505 |
| M 20                     | 1.5  | 112 | 25 | 14   | 11.2 | 14 | 18.5 | 4 | FAB0205506 |

Unit : mm

**Silver cut****Spiral Flute Taps****HSS TAPS****UNC****Unified coarse threads****HOLE TYPE****HSS-E****ISO 529****2B****C/2-3P****35°****Reinforced Shank (1/4" - 3/8")****Reduced Shank (7/16" - 3/4")**

IS 6175 Part 2



IS 6175 Part 3



IS 6175 Part 2



IS 6175 Part 3

**Series****SB1****SB3****Material - 1<sup>st</sup> choice****P0-P1****P1-P2****Material - 2<sup>nd</sup> choice****N1-N2****K2, N3-N4****Coating****Bright****TiN****ISO 529 / IS 6175 Part 2**

| Nominal Diameter | TPI | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | No. of Flutes | EDP No.    | EDP No.    |
|------------------|-----|----------------|---------------|----------------|-------------|---------------|------------------------|---------------|------------|------------|
| ØD1              | p   | L              | L1            | ØD3            | a           | L3            | Ød1                    |               |            |            |
| 1/4"             | 20  | 66             | 10            | 6.3            | 5           | 8             | 5.5                    | 3             | FAB0200576 | FAB0200578 |
| 5/16"            | 18  | 72             | 13            | 8              | 6.3         | 9             | 6.9                    | 3             | FAB0200585 | FAB0200587 |
| 3/8"             | 16  | 80             | 15            | 10             | 8           | 11            | 8.5                    | 3             | FAB0200596 | FAB0200598 |

**ISO 529 / IS 6175 Part 3**

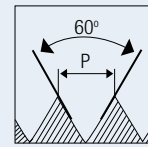
| 7/16" | 14 | 85  | 18 | 8    | 6.3  | 9  | 9.2  | 3 | FAB0200606 | FAB0200608 |
|-------|----|-----|----|------|------|----|------|---|------------|------------|
| 1/2"  | 13 | 89  | 18 | 9    | 7.1  | 10 | 11.5 | 3 | FAB0200617 | FAB0200619 |
| 5/8"  | 11 | 102 | 20 | 12.5 | 10   | 13 | 14.5 | 3 | FAB0200631 | FAB0200633 |
| 3/4"  | 10 | 112 | 25 | 14   | 11.2 | 14 | 17.5 | 4 | FAB0200641 | FAB0200643 |



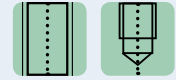
## Spiral Flute Taps

UNC

## Unified coarse threads



HOLE TYPE



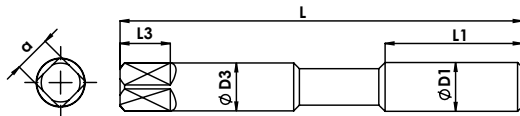
HSS-E

ISO  
529

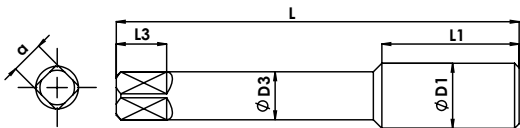
2B

C/2-3P

45°



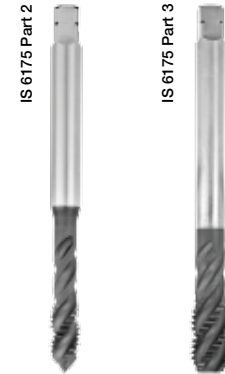
Reinforced Shank (1/4" - 3/8")



Reduced Shank (7/16" - 3/4")

IS 6175 Part 2

IS 6175 Part 3



Series

SBS5

Material - 1<sup>st</sup> choice

M1-M2

Material - 2<sup>nd</sup> choice

-

Coating

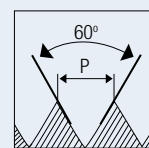
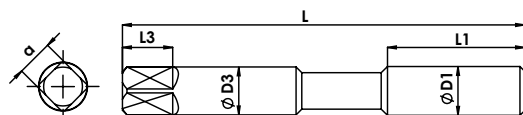
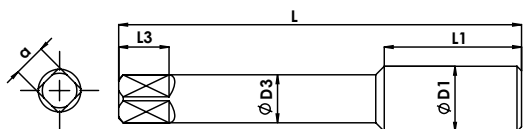
TiCN

ISO 529 / IS 6175 Part 2

| Nominal Diameter | TPI | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | No. of Flutes | EDP No.    |
|------------------|-----|----------------|---------------|----------------|-------------|---------------|------------------------|---------------|------------|
| ØD1              | p   | L              | L1            | ØD3            | a           | L3            | Ød1                    |               |            |
| 1/4"             | 20  | 66             | 10            | 6.3            | 5           | 8             | 5.5                    | 3             | FAB0205507 |
| 5/16"            | 18  | 72             | 13            | 8              | 6.3         | 9             | 6.9                    | 3             | FAB0205508 |
| 3/8"             | 16  | 80             | 15            | 10             | 8           | 11            | 8.5                    | 3             | FAB0205509 |

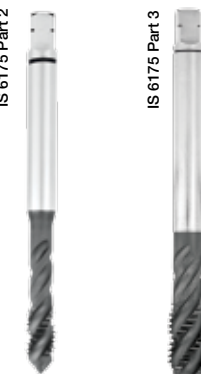
ISO 529 / IS 6175 Part 3

| Nominal Diameter | TPI | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | No. of Flutes | EDP No.    |
|------------------|-----|----------------|---------------|----------------|-------------|---------------|------------------------|---------------|------------|
| ØD1              | p   | L              | L1            | ØD3            | a           | L3            | Ød1                    |               |            |
| 7/16"            | 14  | 85             | 18            | 8              | 6.3         | 9             | 9.2                    | 3             | FAB0205510 |
| 1/2"             | 13  | 89             | 18            | 9              | 7.1         | 10            | 11.5                   | 3             | FAB0205511 |
| 5/8"             | 11  | 102            | 20            | 12.5           | 10          | 13            | 14.5                   | 3             | FAB0205512 |
| 3/4"             | 10  | 112            | 25            | 14             | 11.2        | 14            | 17.5                   | 4             | FAB0205513 |

**Silver cut****Spiral Flute Taps****HSS TAPS****UNC****Unified coarse threads****HOLE TYPE****HSS-E  
PM****ISO  
529****2B****C/2-3P****45°****Reinforced Shank (1/4" - 3/8")****Reduced Shank (7/16" - 3/4")**

IS 6175 Part 2

IS 6175 Part 3



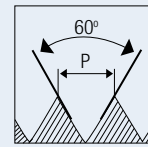
|                          |     |                |               |                |             |               |                        |               | Series                            | SBS5  |
|--------------------------|-----|----------------|---------------|----------------|-------------|---------------|------------------------|---------------|-----------------------------------|-------|
|                          |     |                |               |                |             |               |                        |               | Material - 1 <sup>st</sup> choice | M1-M3 |
|                          |     |                |               |                |             |               |                        |               | Material - 2 <sup>nd</sup> choice | -     |
|                          |     |                |               |                |             |               |                        |               | Coating                           | TiCN  |
| ISO 529 / IS 6175 Part 2 |     |                |               |                |             |               |                        |               | EDP No.                           |       |
| Nominal Diameter         | TPI | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | No. of Flutes |                                   |       |
| ØD1                      | p   | L              | L1            | ØD3            | a           | L3            | Ød1                    |               |                                   |       |
| 1/4"                     | 20  | 66             | 10            | 6.3            | 5           | 8             | 5.5                    | 3             | FAB0205514                        |       |
| 5/16"                    | 18  | 72             | 13            | 8              | 6.3         | 9             | 6.9                    | 3             | FAB0205515                        |       |
| 3/8"                     | 16  | 80             | 15            | 10             | 8           | 11            | 8.5                    | 3             | FAB0205516                        |       |

| ISO 529 / IS 6175 Part 3 |    |     |    |      |      |    |      |   |            |
|--------------------------|----|-----|----|------|------|----|------|---|------------|
| 7/16"                    | 14 | 85  | 18 | 8    | 6.3  | 9  | 9.2  | 3 | FAB0205517 |
| 1/2"                     | 13 | 89  | 18 | 9    | 7.1  | 10 | 11.5 | 3 | FAB0205518 |
| 5/8"                     | 11 | 102 | 20 | 12.5 | 10   | 13 | 14.5 | 3 | FAB0205519 |
| 3/4"                     | 10 | 112 | 25 | 14   | 11.2 | 14 | 17.5 | 4 | FAB0205520 |

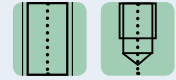


UNF

Unified fine threads



HOLE TYPE



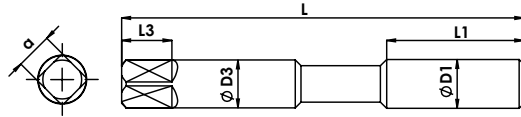
HSS-E

ISO  
529

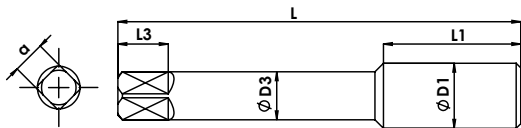
2B

C/2-3P

35°



Reinforced Shank (1/4" - 3/8")



Reduced Shank (7/16" - 3/4")

IS 6175 Part 2



IS 6175 Part 3



IS 6175 Part 2



IS 6175 Part 3



Series

SB1

SB3

Material - 1<sup>st</sup> choice

P0-P1

P1-P2

Material - 2<sup>nd</sup> choice

N1-N2

K2, N3-N4

Coating

Bright

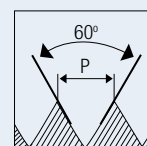
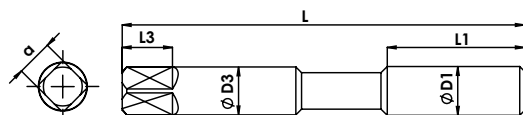
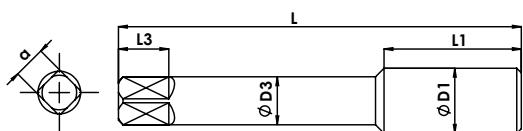
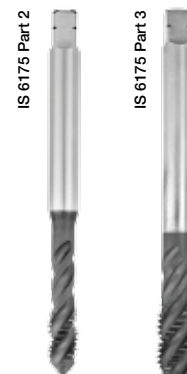
TiN

ISO 529 / IS 6175 Part 2

| Nominal Diameter | TPI | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | No. of Flutes | EDP No.    | EDP No.    |
|------------------|-----|----------------|---------------|----------------|-------------|---------------|------------------------|---------------|------------|------------|
| ØD1              | p   | L              | L1            | ØD3            | a           | L3            | Ød1                    |               |            |            |
| 1/4"             | 28  | 66             | 10            | 6.3            | 5           | 8             | 5.5                    | 3             | FAB0200500 | FAB0200501 |
| 5/16"            | 24  | 69             | 13            | 8              | 6.3         | 9             | 6.9                    | 3             | FAB0200510 | FAB0200512 |
| 3/8"             | 24  | 76             | 15            | 10             | 8           | 11            | 8.5                    | 3             | FAB0200520 | FAB0200522 |

ISO 529 / IS 6175 Part 3

| Nominal Diameter | TPI | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | No. of Flutes | EDP No.    | EDP No.    |
|------------------|-----|----------------|---------------|----------------|-------------|---------------|------------------------|---------------|------------|------------|
| ØD1              | p   | L              | L1            | ØD3            | a           | L3            | Ød1                    |               |            |            |
| 7/16"            | 20  | 82             | 18            | 8              | 6.3         | 9             | 9.9                    | 3             | FAB0200531 | FAB0200533 |
| 1/2"             | 20  | 84             | 18            | 9              | 7.1         | 10            | 11.5                   | 3             | FAB0200542 | FAB0200544 |
| 5/8"             | 18  | 95             | 20            | 12.5           | 10          | 13            | 14.5                   | 3             | FAB0200555 | FAB0200557 |
| 3/4"             | 16  | 104            | 20            | 14             | 11.2        | 14            | 17.5                   | 4             | FAB0200566 | FAB0200568 |

**Silver cut****Spiral Flute Taps****HSS TAPS****UNF****Unified fine threads****HOLE TYPE****HSS-E****ISO 529****2B****C/2-3P****45°****Reinforced Shank (1/4" - 3/8")****Reduced Shank (7/16" - 3/4")**

|                  |     |                |               |                |             |               |                        |               | Series                            | SBS5  |
|------------------|-----|----------------|---------------|----------------|-------------|---------------|------------------------|---------------|-----------------------------------|-------|
|                  |     |                |               |                |             |               |                        |               | Material - 1 <sup>st</sup> choice | M1-M2 |
|                  |     |                |               |                |             |               |                        |               | Material - 2 <sup>nd</sup> choice | -     |
|                  |     |                |               |                |             |               |                        |               | Coating                           | TiCN  |
|                  |     |                |               |                |             |               |                        |               | EDP No.                           |       |
| Nominal Diameter | TPI | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | No. of Flutes |                                   |       |
| ØD1              | p   | L              | L1            | ØD3            | a           | L3            | Ød1                    |               |                                   |       |
| 1/4"             | 28  | 66             | 10            | 6.3            | 5           | 8             | 5.5                    | 3             | FAB0205521                        |       |
| 5/16"            | 24  | 69             | 13            | 8              | 6.3         | 9             | 6.9                    | 3             | FAB0205522                        |       |
| 3/8"             | 24  | 76             | 15            | 10             | 8           | 11            | 8.5                    | 3             | FAB0205523                        |       |

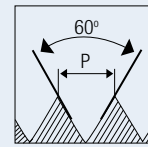
| ISO 529 / IS 6175 Part 3 |    |     |    |      |      |    |      |   |            |
|--------------------------|----|-----|----|------|------|----|------|---|------------|
| 7/16"                    | 20 | 82  | 18 | 8    | 6.3  | 9  | 9.9  | 3 | FAB0205524 |
| 1/2"                     | 20 | 84  | 18 | 9    | 7.1  | 10 | 11.5 | 3 | FAB0205525 |
| 5/8"                     | 18 | 95  | 20 | 12.5 | 10   | 13 | 14.5 | 3 | FAB0205526 |
| 3/4"                     | 16 | 104 | 20 | 14   | 11.2 | 14 | 17.5 | 4 | FAB0205527 |



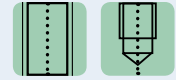
## Spiral Flute Taps

UNF

## Unified fine threads



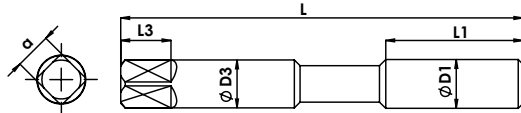
HOLE TYPE

HSS-E  
PMISO  
529

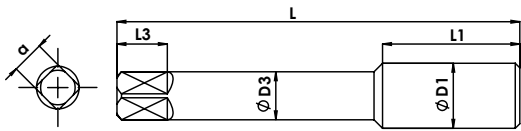
2B

C/2-3P

45°



Reinforced Shank (1/4" - 3/8")



Reduced Shank (7/16" - 3/4")

IS 6175 Part 2



IS 6175 Part 3



Series

SBS5

Material - 1<sup>st</sup> choice

M1-M3

Material - 2<sup>nd</sup> choice

-

Coating

TiCN

ISO 529 / IS 6175 Part 2

| Nominal Diameter | TPI | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | No. of Flutes | EDP No.    |
|------------------|-----|----------------|---------------|----------------|-------------|---------------|------------------------|---------------|------------|
| ØD1              | p   | L              | L1            | ØD3            | a           | L3            | Ød1                    |               |            |
| 1/4"             | 28  | 66             | 10            | 6.3            | 5           | 8             | 5.5                    | 3             | FAB0205528 |
| 5/16"            | 24  | 69             | 13            | 8              | 6.3         | 9             | 6.9                    | 3             | FAB0205529 |
| 3/8"             | 24  | 76             | 15            | 10             | 8           | 11            | 8.5                    | 3             | FAB0205530 |

ISO 529 / IS 6175 Part 3

| Nominal Diameter | TPI | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | No. of Flutes | EDP No.    |
|------------------|-----|----------------|---------------|----------------|-------------|---------------|------------------------|---------------|------------|
| ØD1              | p   | L              | L1            | ØD3            | a           | L3            | Ød1                    |               |            |
| 7/16"            | 20  | 82             | 18            | 8              | 6.3         | 9             | 9.9                    | 3             | FAB0205531 |
| 1/2"             | 20  | 84             | 18            | 9              | 7.1         | 10            | 11.5                   | 3             | FAB0205532 |
| 5/8"             | 18  | 95             | 20            | 12.5           | 10          | 13            | 14.5                   | 3             | FAB0205533 |
| 3/4"             | 16  | 104            | 20            | 14             | 11.2        | 14            | 17.5                   | 4             | FAB0205534 |



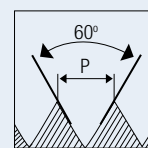
Silver cut

Spiral Flute Taps

HSS TAPS

M/MF

Metric coarse &amp; fine threads



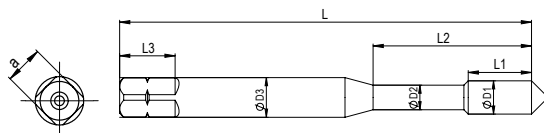
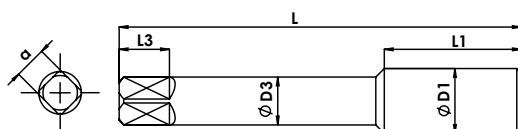
HOLE TYPE



HSS-E

JIS

6HX

Reinforced Shank (M3 - M6)  
Male Centre upto M6

Reduced Shank (M8- M20)

JIS



JIS



Series

SB1

SB4

Material - 1<sup>st</sup> choice

P0-P1

P1-P2

Material - 2<sup>nd</sup> choice

N1-N2

K1-K2

Coating

Bright

TiAIN

JIS

| Nominal Diameter | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | EDP No.    | EDP No.    |
|------------------|-------|----------------|---------------|----------------|-------------|---------------|------------------------|------------|------------|
| ØD1              | p     | L              | L1            | ØD3            | a           | L3            | Ød1                    |            |            |
| M 3              | 0.5   | 46             | 11            | 4              | 3.2         | 6             | 2.5                    | FAB0205079 | FAB0205593 |
| M 4              | 0.7   | 52             | 13            | 5              | 4           | 7             | 3.3                    | FAB0205080 | FAB0205594 |
| M 5              | 0.8   | 60             | 16            | 5.5            | 4.5         | 7             | 4.2                    | FAB0205081 | FAB0205595 |
| M 6              | 1     | 62             | 19            | 6              | 4.5         | 7             | 5                      | FAB0205082 | FAB0205596 |
| M 8              | 1.25  | 70             | 22            | 6.2            | 5           | 8             | 6.8                    | FAB0205083 | FAB0205597 |
| M 8              | 1     | 70             | 22            | 6.2            | 5           | 8             | 7                      | FAB0206328 | FAB0205598 |
| M 10             | 1.5   | 75             | 24            | 7              | 5.5         | 8             | 8.5                    | FAB0205084 | FAB0205599 |
| M 10             | 1.25  | 75             | 24            | 7              | 5.5         | 8             | 8.8                    | FAB0206286 | FAB0205600 |
| M 12             | 1.75  | 82             | 29            | 8.5            | 6.5         | 9             | 10.3                   | FAB0205085 | FAB0205601 |
| M 12             | 1.5   | 82             | 29            | 8.5            | 6.5         | 9             | 10.5                   | FAB0205609 | FAB0205602 |
| M 14             | 2     | 88             | 30            | 10.5           | 8           | 11            | 12                     | FAB0205610 | FAB0205603 |
| M 16             | 2     | 95             | 32            | 12.5           | 10          | 13            | 14                     | FAB0205611 | FAB0205604 |
| M 18             | 2.5   | 100            | 37            | 14             | 11          | 14            | 15.5                   | FAB0205612 | FAB0205605 |
| M 20             | 2.5   | 105            | 37            | 15             | 12          | 15            | 17.5                   | FAB0205613 | FAB0205606 |

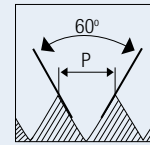
Unit : mm



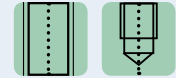
## Spiral Flute Taps

M

## Metric coarse threads



HOLE TYPE



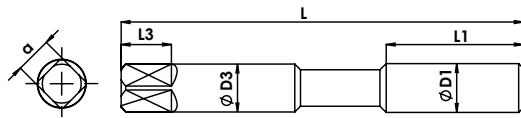
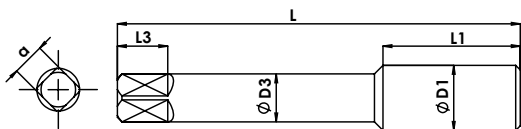
HSSE

6H

ISO  
529

35°

C/2-3P

Reinforced Shank (M3 - M10)  
Male centre upto M5

Reduced Shank (M12 - M20)

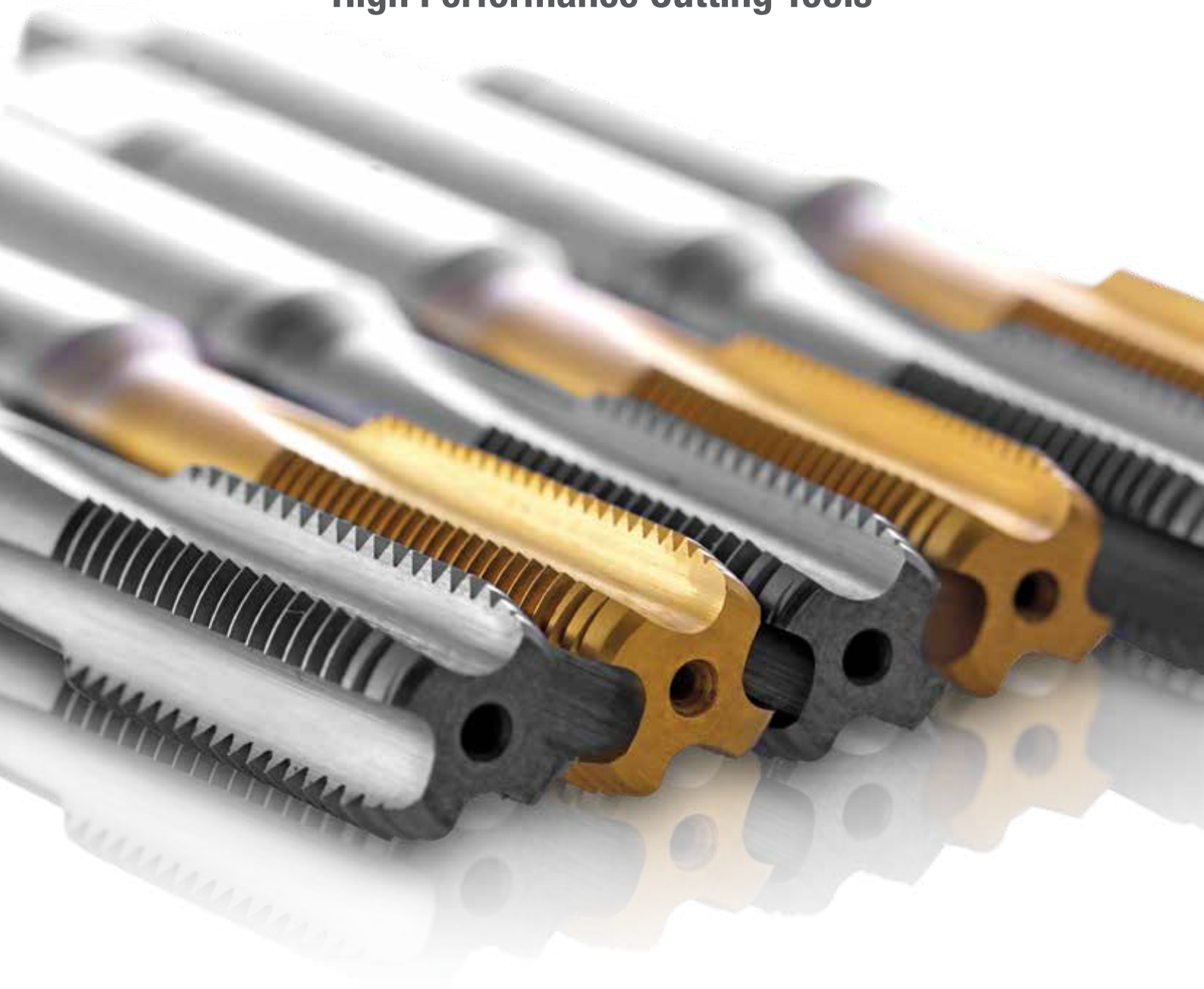


|                  |       |                |               |                |             |               | Coating                | Bright     | TiN        |
|------------------|-------|----------------|---------------|----------------|-------------|---------------|------------------------|------------|------------|
| Nominal Diameter | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | EDP No.    | EDP No.    |
| ØD1              | p     | L              | L1            | ØD3            | a           | L3            | Ød1                    |            |            |
| M 3              | 0.5   | 48             | 5             | 3.15           | 2.5         | 5             | 2.5                    | FAB0201290 | FAB0201292 |
| M 3.5            | 0.6   | 50             | 6             | 3.55           | 2.8         | 5             | 2.9                    | FAB0201293 | FAB0206709 |
| M 4              | 0.7   | 53             | 7             | 4              | 3.15        | 6             | 3.3                    | FAB0201295 | FAB0201296 |
| M 5              | 0.8   | 58             | 8             | 5              | 4           | 7             | 4.2                    | FAB0201299 | FAB0201300 |
| M 6              | 1     | 66             | 10            | 6.3            | 5           | 8             | 5                      | FAB0201303 | FAB0201304 |
| M 7              | 1     | 66             | 10            | 7.1            | 5.6         | 8             | 6                      | FAB0201310 | FAB0201311 |
| M 8              | 1.25  | 72             | 13            | 8              | 6.3         | 9             | 6.8                    | FAB0201314 | FAB0201315 |
| M 10             | 1.5   | 80             | 15            | 10             | 8           | 11            | 8.5                    | FAB0201324 | FAB0201325 |
| M 12             | 1.75  | 89             | 18            | 9              | 7.1         | 10            | 10.2                   | FAB0201334 | FAB0201335 |
| M 14             | 2     | 95             | 20            | 11.2           | 9           | 12            | 12                     | FAB0201341 | FAB0201342 |
| M 16             | 2     | 102            | 20            | 12.5           | 10          | 13            | 14                     | FAB0201347 | FAB0201348 |
| M 18             | 2.5   | 112            | 25            | 14             | 11.2        | 14            | 15.5                   | FAB0201351 | FAB0201352 |
| M 20             | 2.5   | 112            | 25            | 14             | 11.2        | 14            | 17.5                   | FAB0201355 | FAB0201356 |
| M 24             | 3     | 130            | 30            | 18             | 14          | 18            | 21                     | FAB0201360 | FAB0201362 |
| M 27             | 3     | 135            | 30            | 20             | 16          | 20            | 24                     | FAB0201365 | FAB0206710 |
| M 30             | 3.5   | 138            | 35            | 20             | 16          | 20            | 26.5                   | FAB0201366 | FAB0204001 |
| M 36             | 4     | 162            | 40            | 25             | 20          | 24            | 32                     | FAB0201368 | FAB0202149 |

Unit : mm



**High Performance Cutting Tools**



**STRAIGHT FLUTE TAPS**  
**SC SERIES**

# CONTENTS



## STRAIGHT FLUTE TAPS

| SERIES | THREAD FORM | LENGTH STANDARD | WORKPIECE MATERIAL | 1ST CHOICE | 2ND CHOICE | TOOL MATERIAL | COATING | PAGE  |
|--------|-------------|-----------------|--------------------|------------|------------|---------------|---------|-------|
| SC3    | M           | DIN 371/DIN376  | CAST IRON          | K1,K2      | N2,N3      | HSSE          | TiN     | 1.072 |
| SC4    | M           | DIN 371/DIN376  | CAST IRON          | K1-K3      | -          | HSSE          | TiAIN   |       |
| SCF5   | M           | DIN 371/DIN376  | STEEL              | P2-P3      | -          | HSSE          | TiCN    | 1.073 |
| SC4TC  | M           | DIN 371/DIN376  | CAST IRON          | K1-K3      | -          | HSSE          | TiAIN   |       |
| SC4    | M           | DIN 371/DIN376  | CAST IRON          | K1-K3      | -          | HSSE PM       | TiAIN   | 1.074 |
| SC4TC  | M           | DIN 371/DIN376  | CAST IRON          | K1-K3      | -          | HSSE PM       | TiAIN   |       |
| SC3    | MF          | DIN 374         | CAST IRON          | K1,K2      | N2,N3      | HSSE          | TiN     | 1.075 |
| SC4    | MF          | DIN 374         | CAST IRON          | K1-K3      | -          | HSSE          | TiAIN   |       |
| SCF5   | MF          | DIN 374         | STEEL              | P2-P3      | -          | HSSE          | TiCN    | 1.076 |
| SC4TC  | MF          | DIN 374         | CAST IRON          | K1-K3      | -          | HSSE          | TiAIN   |       |
| SC3    | UNC         | DIN 371/DIN376  | CAST IRON          | K1-K2      | N2,N3      | HSSE          | TiN     | 1.077 |
| SC4    | UNC         | DIN 371/DIN376  | CAST IRON          | K1,K3      | -          | HSSE          | TiAIN   |       |
| SC3    | UNF         | DIN 374         | CAST IRON          | K1,K2      | N2,N3      | HSSE          | TiN     | 1.078 |
| SC4    | UNF         | DIN 374         | CAST IRON          | K1,K3      | -          | HSSE          | TiAIN   |       |
| SC3    | M           | ISO 529         | CAST IRON          | K1,K2      | N2,N3      | HSSE          | TiN     | 1.079 |
| SC4    | M           | ISO 529         | CAST IRON          | K1-K3      | -          | HSSE          | TiAIN   |       |

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## STRAIGHT FLUTE TAPS

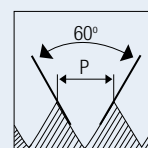
| SERIES | THREAD FORM | LENGTH STANDARD | WORKPIECE MATERIAL | 1ST CHOICE | 2ND CHOICE | TOOL MATERIAL | COATING | PAGE  |
|--------|-------------|-----------------|--------------------|------------|------------|---------------|---------|-------|
| SCF5   | M           | ISO 529         | STEEL              | P2-P3      | -          | HSSE          | TiCN    | 1.080 |
| SC4TC  | M           | ISO 529         | CAST IRON          | K1-K3      | -          | HSSE          | TiAlN   |       |
| SC4    | M           | ISO 529         | CAST IRON          | K1-K3      | -          | HSSE PM       | TiAlN   | 1.081 |
| SC4TC  | M           | ISO 529         | CAST IRON          | K1-K3      | -          | HSSE PM       | TiAlN   |       |
| SC3    | MF          | ISO 529         | CAST IRON          | K1,K2      | N2,N3      | HSSE          | TiN     | 1.082 |
| SC4    | MF          | ISO 529         | CAST IRON          | K1-K3      | -          | HSSE          | TiAlN   |       |
| SCF5   | MF          | ISO 529         | STEEL              | P2-P3      | -          | HSSE          | TiCN    | 1.083 |
| SC4TC  | MF          | ISO 529         | CAST IRON          | K1-K3      | -          | HSSE          | TiAlN   |       |
| SC3    | UNC         | ISO 529         | CAST IRON          | K1,K2      | N2,N3      | HSSE          | TiN     | 1.084 |
| SC4    | UNC         | ISO 529         | CAST IRON          | K1-K3      | -          | HSSE          | TiAlN   |       |
| SC3    | UNF         | ISO 529         | CAST IRON          | K1,K2      | N2,N3      | HSSE          | TiN     | 1.085 |
| SC4    | UNF         | ISO 529         | CAST IRON          | K1-K3      | -          | HSSE          | TiAlN   |       |
| SC1    | M           | JIS             | CAST IRON          | K1-K2      | N2,N3      | HSSE          | TiN     | 1.086 |
| SC4    | M           | JIS             | CAST IRON          | K1-K3      | -          | HSSE          | TiAlN   |       |



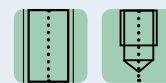
## Straight Flute Tap

M

## Metric coarse threads



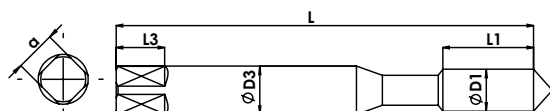
HOLE TYPE



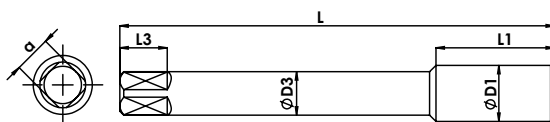
HSS-E

DIN  
371/376

6H



Reinforced Shank DIN371 (M3 - M10)



Reduced Shank DIN376 (M12 - M20)



|                  |       |                |               |                |             |               | Series                            |               | SC3        | SC4        |
|------------------|-------|----------------|---------------|----------------|-------------|---------------|-----------------------------------|---------------|------------|------------|
|                  |       |                |               |                |             |               | Material - 1 <sup>st</sup> choice |               | K1-K2      | K1-K3      |
|                  |       |                |               |                |             |               | Material - 2 <sup>nd</sup> choice |               | N2-N3      | -          |
|                  |       |                |               |                |             |               | Coating                           |               | TiN        | TiAlN      |
| DIN 371          |       |                |               |                |             |               |                                   |               | EDP No.    | EDP No.    |
| Nominal Diameter | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter            | No. Of Flutes |            |            |
| ØD1              | p     | L              | L1            | ØD3            | a           | L3            | Ød1                               |               |            |            |
| M 3              | 0.5   | 56             | 11            | 3.5            | 2.7         | 6             | 2.5                               | 3             | FAB0204433 | FAB0204441 |
| M 4              | 0.7   | 63             | 13            | 4.5            | 3.4         | 6             | 3.3                               | 3             | FAB0204434 | FAB0204442 |
| M 5              | 0.8   | 70             | 16            | 6              | 4.9         | 8             | 4.2                               | 3             | FAB0203676 | FAB0204443 |
| M 6              | 1     | 80             | 19            | 6              | 4.9         | 8             | 5                                 | 3             | FAB0203677 | FAB0203679 |
| M 8              | 1.25  | 90             | 22            | 8              | 6.2         | 9             | 6.8                               | 4             | FAB0203678 | FAB0203680 |
| M 10             | 1.5   | 100            | 24            | 10             | 8           | 11            | 8.5                               | 4             | FAB0200969 | FAB0203682 |

| DIN 376 |      |     |    |    |    |    |      |   |            |            |
|---------|------|-----|----|----|----|----|------|---|------------|------------|
| M 12    | 1.75 | 110 | 28 | 9  | 7  | 10 | 10.2 | 4 | FAB0200975 | FAB0203683 |
| M 14    | 2    | 110 | 30 | 11 | 9  | 12 | 12   | 4 | FAB0204437 | FAB0204446 |
| M 16    | 2    | 110 | 32 | 12 | 9  | 12 | 14   | 4 | FAB0204438 | FAB0204447 |
| M 18    | 2.5  | 125 | 34 | 14 | 11 | 14 | 15.5 | 4 | FAB0204439 | FAB0204448 |
| M 20    | 2.5  | 140 | 34 | 16 | 12 | 15 | 17.5 | 4 | FAB0204440 | FAB0204449 |

Unit : mm

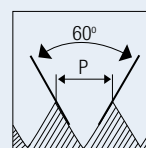


## Straight Flute Tap

HSS TAPS

M

## Metric coarse threads



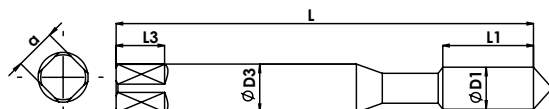
HOLE TYPE



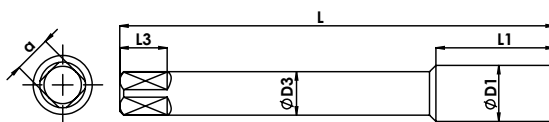
HSS-E

DIN  
371/376

6HX



Reinforced Shank DIN371 (M3 - M10)



Reduced Shank DIN376 (M12 - M20)

DIN 371

DIN 376

DIN 371

DIN 376

Series

SCF5

SC4TC

Material - 1<sup>st</sup> choice

P2-P3

K1-K3

Material - 2<sup>nd</sup> choice

-

-

Coating

TiCN

TiAlN

DIN 371

| Nominal Diameter | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | No. of Flutes | EDP No.    | EDP No.    |
|------------------|-------|----------------|---------------|----------------|-------------|---------------|------------------------|---------------|------------|------------|
| ØD1              | p     | L              | L1            | ØD3            | a           | L3            | Ød1                    |               |            |            |
| M 3              | 0.5   | 56             | 11            | 3.5            | 2.7         | 6             | 2.5                    | 3             | FAB0204586 | FAB0204873 |
| M 4              | 0.7   | 63             | 13            | 4.5            | 3.4         | 6             | 3.3                    | 3             | FAB0204587 | FAB0204874 |
| M 5              | 0.8   | 70             | 16            | 6              | 4.9         | 8             | 4.2                    | 3             | FAB0204588 | FAB0204875 |
| M 6              | 1     | 80             | 19            | 6              | 4.9         | 8             | 5                      | 3             | FAB0204589 | FAB0204876 |
| M 8              | 1.25  | 90             | 22            | 8              | 6.2         | 9             | 6.8                    | 4             | FAB0204590 | FAB0204877 |
| M 10             | 1.5   | 100            | 24            | 10             | 8           | 11            | 8.5                    | 4             | FAB0204591 | FAB0204878 |

DIN 376

| Nominal Diameter | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | No. of Flutes | EDP No.    | EDP No.    |
|------------------|-------|----------------|---------------|----------------|-------------|---------------|------------------------|---------------|------------|------------|
| ØD1              | p     | L              | L1            | ØD3            | a           | L3            | Ød1                    |               |            |            |
| M 12             | 1.75  | 110            | 28            | 9              | 7           | 10            | 10.2                   | 4             | FAB0204592 | FAB0204879 |
| M 14             | 2     | 110            | 30            | 11             | 9           | 12            | 12                     | 4             | FAB0204593 | FAB0204880 |
| M 16             | 2     | 110            | 32            | 12             | 9           | 12            | 14                     | 4             | FAB0204594 | FAB0204881 |
| M 18             | 2.5   | 125            | 34            | 14             | 11          | 14            | 15.5                   | 4             | FAB0204939 | FAB0204882 |
| M 20             | 2.5   | 140            | 34            | 16             | 12          | 15            | 17.5                   | 4             | FAB0204940 | FAB0204883 |

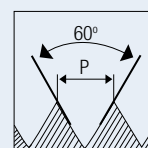
Unit : mm



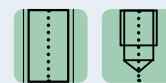
## Straight Flute Tap

M

## Metric coarse threads

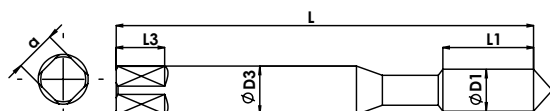


HOLE TYPE

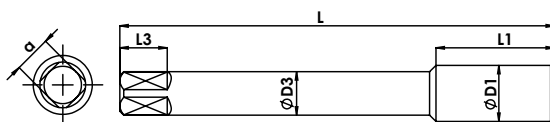
HSS-E  
PMDIN  
371/376

6H

E/1.5-2P



Reinforced Shank DIN371 (M3 - M10)



Reduced Shank DIN376 (M12 - M20)

DIN 371

DIN 376

DIN 371

DIN 376

Series

SC4

SC4TC

Material - 1<sup>st</sup> choice

K1-K3

K1-K3

Material - 2<sup>nd</sup> choice

-

-

Coating

TiAIN

TiAIN

DIN 371

| Nominal Diameter | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | No. Of Flutes | EDP No.    | EDP No.    |
|------------------|-------|----------------|---------------|----------------|-------------|---------------|------------------------|---------------|------------|------------|
| ØD1              | p     | L              | L1            | ØD3            | a           | L3            | Ød1                    |               |            |            |
| M 3              | 0.5   | 56             | 11            | 3.5            | 2.7         | 6             | 2.5                    | 3             | FAB0205405 | FAB0205416 |
| M 4              | 0.7   | 63             | 13            | 4.5            | 3.4         | 6             | 3.3                    | 3             | FAB0205406 | FAB0205417 |
| M 5              | 0.8   | 70             | 16            | 6              | 4.9         | 8             | 4.2                    | 3             | FAB0205407 | FAB0205418 |
| M 6              | 1     | 80             | 19            | 6              | 4.9         | 8             | 5                      | 3             | FAB0205408 | FAB0205419 |
| M 8              | 1.25  | 90             | 22            | 8              | 6.2         | 9             | 6.8                    | 4             | FAB0205409 | FAB0205420 |
| M 10             | 1.5   | 100            | 24            | 10             | 8           | 11            | 8.5                    | 4             | FAB0205410 | FAB0205421 |

DIN 376

| Nominal Diameter | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | No. Of Flutes | EDP No.    | EDP No.    |
|------------------|-------|----------------|---------------|----------------|-------------|---------------|------------------------|---------------|------------|------------|
| ØD1              | p     | L              | L1            | ØD3            | a           | L3            | Ød1                    |               |            |            |
| M 12             | 1.75  | 110            | 28            | 9              | 7           | 10            | 10.2                   | 4             | FAB0205411 | FAB0205422 |
| M 14             | 2     | 110            | 30            | 11             | 9           | 12            | 12                     | 4             | FAB0205412 | FAB0205423 |
| M 16             | 2     | 110            | 32            | 12             | 9           | 12            | 14                     | 4             | FAB0205413 | FAB0205424 |
| M 18             | 2.5   | 125            | 34            | 14             | 11          | 14            | 15.5                   | 4             | FAB0205414 | FAB0205425 |
| M 20             | 2.5   | 140            | 34            | 16             | 12          | 15            | 17.5                   | 4             | FAB0205415 | FAB0205426 |

Unit : mm

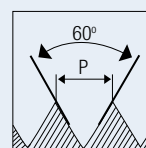


## Straight Flute Tap

HSS TAPS

MF

## Metric fine threads



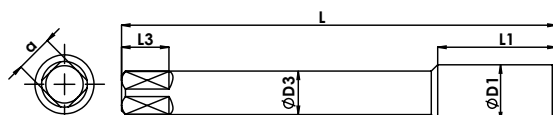
HOLE TYPE



HSS-E

DIN  
374

6H



Male centre (M8 - M10)  
Female centre (M12 - M20)



|                  |       |                |               |                |             |               |                        |               | Series                            | SC3   | SC4        |
|------------------|-------|----------------|---------------|----------------|-------------|---------------|------------------------|---------------|-----------------------------------|-------|------------|
|                  |       |                |               |                |             |               |                        |               | Material - 1 <sup>st</sup> choice | K1-K2 | K1-K3      |
|                  |       |                |               |                |             |               |                        |               | Material - 2 <sup>nd</sup> choice | N2-N3 | -          |
| DIN 374          |       |                |               |                |             |               |                        |               | Coating                           | TiN   | TiAlN      |
| Nominal Diameter | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | No. Of Flutes | EDP No.                           |       | EDP No.    |
| ØD1              | p     | L              | L1            | ØD3            | a           | L3            | Ød1                    |               |                                   |       |            |
| M 8              | 1     | 90             | 22            | 6              | 4.9         | 8             | 7                      | 4             | FAB0204451                        |       | FAB0204460 |
| M 10             | 1.25  | 100            | 24            | 7              | 5.5         | 8             | 8.8                    | 4             | FAB0203681                        |       | FAB0204461 |
| M 10             | 1     | 90             | 20            | 7              | 5.5         | 8             | 9                      | 4             | FAB0204452                        |       | FAB0204462 |
| M12              | 1.5   | 100            | 22            | 9              | 7           | 10            | 10.5                   | 4             | FAB0204453                        |       | FAB0204463 |
| M12              | 1.25  | 100            | 22            | 9              | 7           | 10            | 10.8                   | 4             | FAB0204454                        |       | FAB0204464 |
| M14              | 1.5   | 100            | 22            | 11             | 9           | 12            | 12.5                   | 4             | FAB0204455                        |       | FAB0204465 |
| M16              | 1.5   | 100            | 22            | 12             | 9           | 12            | 14.5                   | 4             | FAB0204456                        |       | FAB0204466 |
| M18              | 1.5   | 110            | 25            | 14             | 11          | 14            | 16.5                   | 4             | FAB0204457                        |       | FAB0204467 |
| M20              | 1.5   | 125            | 25            | 16             | 12          | 15            | 18.5                   | 4             | FAB0204458                        |       | FAB0204468 |

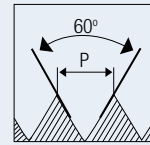
Unit : mm



## Straight Flute Tap

MF

## Metric fine threads



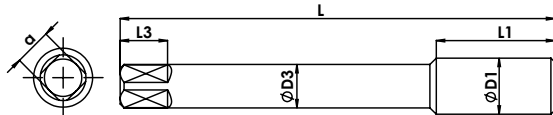
HOLE TYPE



HSS-E

DIN  
374

6HX



Male centre (M8 - M10)  
Female centre (M12 - M20)



Series

SCF5

SC4TC

Material - 1<sup>st</sup> choice

P2-P3

K1-K3

Material - 2<sup>nd</sup> choice

-

-

DIN 374

Coating

TiCN

TiAIN

| Nominal Diameter | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | No. Of Flutes | EDP No.    | EDP No.    |
|------------------|-------|----------------|---------------|----------------|-------------|---------------|------------------------|---------------|------------|------------|
| ØD1              | p     | L              | L1            | ØD3            | a           | L3            | Ød1                    |               |            |            |
| M 8              | 1     | 90             | 22            | 6              | 4.9         | 8             | 7                      | 4             | FAB0204595 | FAB0204886 |
| M 10             | 1.25  | 100            | 24            | 7              | 5.5         | 8             | 8.8                    | 4             | FAB0204596 | FAB0204888 |
| M 10             | 1     | 90             | 20            | 7              | 5.5         | 8             | 9                      | 4             | FAB0204943 | FAB0204887 |
| M 12             | 1.5   | 100            | 22            | 9              | 7           | 10            | 10.5                   | 4             | FAB0204598 | FAB0204890 |
| M 12             | 1.25  | 100            | 22            | 9              | 7           | 10            | 10.8                   | 4             | FAB0204597 | FAB0204889 |
| M 14             | 1.5   | 100            | 22            | 11             | 9           | 12            | 12.5                   | 4             | FAB0204599 | FAB0204891 |
| M 16             | 1.5   | 100            | 22            | 12             | 9           | 12            | 14.5                   | 4             | FAB0204600 | FAB0204892 |
| M 18             | 1.5   | 110            | 25            | 14             | 11          | 14            | 16.5                   | 4             | FAB0204944 | FAB0204893 |
| M 20             | 1.5   | 125            | 25            | 16             | 12          | 15            | 18.5                   | 4             | FAB0204945 | FAB0204894 |

Unit : mm



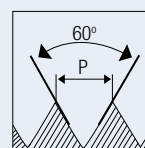
Silver cut

Straight Flute Tap

HSS TAPS

UNC

Unified coarse threads



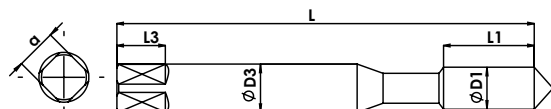
HOLE TYPE



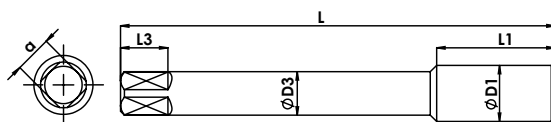
HSS-E

DIN  
371/376

2B



Reinforced Shank DIN371 (1/4" - 3/8")



Reduced Shank DIN376 (7/16" - 1")

DIN 371

DIN 376

DIN 371

DIN 376

DIN 371

DIN 376

Series

SC3

SC4

Material - 1<sup>st</sup> choice

K1-K2

K1-K3

Material - 2<sup>nd</sup> choice

N2-N3

-

Coating

TiN

TiAlN

DIN 371

| Nominal Diameter | TPI | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | No. Of Flutes | EDP No.    | EDP No.    |
|------------------|-----|----------------|---------------|----------------|-------------|---------------|------------------------|---------------|------------|------------|
| ØD1              | p   | L              | L1            | ØD3            | a           | L3            | Ød1                    |               |            |            |
| 1/4"             | 20  | 80             | 19            | 7              | 5.5         | 8             | 5.1                    | 3             | FAB0204469 | FAB0204478 |
| 5/16"            | 18  | 90             | 22            | 8              | 6.2         | 9             | 6.6                    | 4             | FAB0204470 | FAB0204479 |
| 3/8"             | 16  | 100            | 24            | 10             | 8           | 11            | 8                      | 4             | FAB0206259 | FAB0204480 |

DIN 376

| Nominal Diameter | TPI | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | No. Of Flutes | EDP No.    | EDP No.    |
|------------------|-----|----------------|---------------|----------------|-------------|---------------|------------------------|---------------|------------|------------|
| ØD1              | p   | L              | L1            | ØD3            | a           | L3            | Ød1                    |               |            |            |
| 7/16"            | 14  | 110            | 24            | 8              | 6.2         | 9             | 9.4                    | 4             | FAB0204472 | FAB0204481 |
| 1/2"             | 13  | 110            | 28            | 9              | 7           | 10            | 10.8                   | 4             | FAB0206260 | FAB0204482 |
| 5/8"             | 11  | 110            | 32            | 12             | 9           | 12            | 13.5                   | 4             | FAB0206261 | FAB0204483 |
| 3/4"             | 10  | 125            | 34            | 14             | 11          | 14            | 16.5                   | 4             | FAB0206262 | FAB0204484 |
| 7/8"             | 9   | 140            | 34            | 18             | 14.5        | 17            | 19.5                   | 4             | FAB0206263 | FAB0204485 |
| 1"               | 8   | 160            | 38            | 20             | 14.5        | 17.5          | 22.3                   | 4             | FAB0204477 | FAB0204486 |

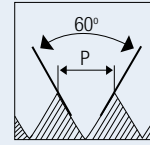
Unit : mm



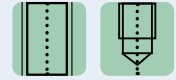
## Straight Flute Tap

UNF

## Unified fine threads



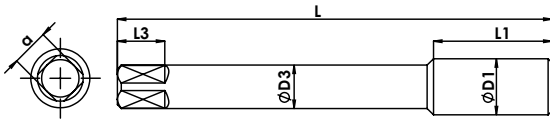
HOLE TYPE



HSS-E

DIN  
374

2B



Male centre (1/4" - 3/8")  
Female centre (7/16" - 1")



|                  |     |                |               |                |             |               |                        |               | Series                            | SC3   | SC4        |
|------------------|-----|----------------|---------------|----------------|-------------|---------------|------------------------|---------------|-----------------------------------|-------|------------|
|                  |     |                |               |                |             |               |                        |               | Material - 1 <sup>st</sup> choice | K1-K2 | K1, K3     |
|                  |     |                |               |                |             |               |                        |               | Material - 2 <sup>nd</sup> choice | N2-N3 | -          |
| DIN 374          |     |                |               |                |             |               |                        |               | Coating                           | TiN   | TiAIN      |
| Nominal Diameter | TPI | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | No. Of Flutes | EDP No.                           |       | EDP No.    |
| ØD1              | p   | L              | L1            | ØD3            | a           | L3            | Ød1                    |               |                                   |       |            |
| 1/4"             | 28  | 80             | 19            | 5.5            | 4.3         | 7             | 5.5                    | 3             | FAB0204487                        |       | FAB0204496 |
| 5/16"            | 24  | 90             | 22            | 6              | 4.9         | 8             | 6.9                    | 4             | FAB0204488                        |       | FAB0204497 |
| 3/8"             | 24  | 100            | 20            | 7              | 5.5         | 8             | 8.5                    | 4             | FAB0204489                        |       | FAB0204498 |
| 7/16"            | 20  | 100            | 22            | 8              | 6.2         | 9             | 9.9                    | 4             | FAB0204490                        |       | FAB0204499 |
| 1/2"             | 20  | 100            | 22            | 9              | 7           | 10            | 11.5                   | 4             | FAB0204491                        |       | FAB0204500 |
| 5/8"             | 18  | 100            | 22            | 12             | 9           | 12            | 14.5                   | 4             | FAB0204492                        |       | FAB0204501 |
| 3/4"             | 16  | 110            | 25            | 14             | 11          | 14            | 17.5                   | 4             | FAB0204493                        |       | FAB0204502 |
| 7/8"             | 14  | 125            | 25            | 18             | 14.5        | 17            | 20.5                   | 4             | FAB0204494                        |       | FAB0204503 |
| 1"               | 12  | 140            | 28            | 18             | 14.5        | 17            | 23.25                  | 4             | FAB0204495                        |       | FAB0204504 |

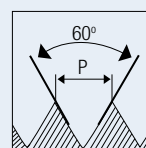


## Straight Flute Tap

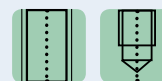
HSS TAPS

M

## Metric coarse threads



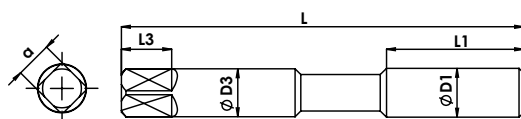
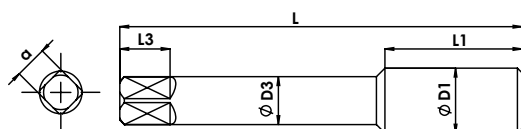
HOLE TYPE



HSS-E

ISO  
529

6H

Reinforced Shank (M3 - M10)  
Male centre upto M5

Reduced Shank (M12 - M20)

IS 6175 Part 2

IS 6175 Part 3

IS 6175 Part 2

IS 6175 Part 3



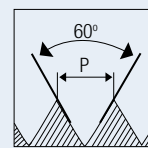
|                         |       |                |               |                |             |               |                        |               | Series                            | SC3   | SC4        |
|-------------------------|-------|----------------|---------------|----------------|-------------|---------------|------------------------|---------------|-----------------------------------|-------|------------|
|                         |       |                |               |                |             |               |                        |               | Material - 1 <sup>st</sup> choice | K1-K2 | K1-K3      |
|                         |       |                |               |                |             |               |                        |               | Material - 2 <sup>nd</sup> choice | N2-N3 | -          |
|                         |       |                |               |                |             |               |                        |               | Coating                           | TiN   | TiAlN      |
| ISO529 / IS 6175 Part 2 |       |                |               |                |             |               |                        |               |                                   |       |            |
| Nominal Diameter        | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | No. of Flutes | EDP No.                           |       | EDP No.    |
| ØD1                     | p     | L              | L1            | ØD3            | a           | L3            | Ød1                    |               |                                   |       |            |
| M 3                     | 0.5   | 48             | 11            | 3.15           | 2.5         | 5             | 2.5                    | 3             | FAB0200645                        |       | FAB0200646 |
| M 3.5                   | 0.6   | 50             | 13            | 3.55           | 2.8         | 5             | 2.9                    | 3             | FAB0200652                        |       | FAB0203220 |
| M 4                     | 0.7   | 53             | 13            | 4              | 3.15        | 6             | 3.3                    | 3             | FAB0200657                        |       | FAB0200658 |
| M 5                     | 0.8   | 58             | 16            | 5              | 4           | 7             | 4.2                    | 3             | FAB0200669                        |       | FAB0200670 |
| M 6                     | 1     | 66             | 19            | 6.3            | 5           | 8             | 5                      | 3             | FAB0200680                        |       | FAB0200681 |
| M 8                     | 1.25  | 72             | 22            | 8              | 6.3         | 9             | 6.8                    | 4             | FAB0200692                        |       | FAB0200693 |
| M 10                    | 1.5   | 80             | 24            | 10             | 8           | 11            | 8.5                    | 4             | FAB0200716                        |       | FAB0200717 |

| ISO529 / IS 6175 Part 3 |      |     |    |      |      |    |      |   |            |            |
|-------------------------|------|-----|----|------|------|----|------|---|------------|------------|
| M 12                    | 1.75 | 89  | 29 | 9    | 7.1  | 10 | 10.2 | 4 | FAB0200747 | FAB0200871 |
| M 14                    | 2    | 95  | 30 | 11.2 | 9    | 12 | 12   | 4 | FAB0200776 | FAB0200777 |
| M 16                    | 2    | 102 | 32 | 12.5 | 10   | 13 | 14   | 4 | FAB0200797 | FAB0200798 |
| M 20                    | 2.5  | 112 | 37 | 14   | 11.2 | 14 | 17.5 | 4 | FAB0203219 | FAB0200809 |

Unit : mm

M

## Metric coarse threads



HOLE TYPE

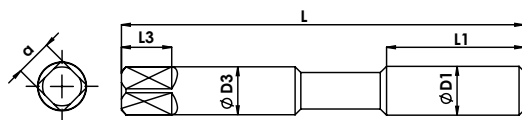
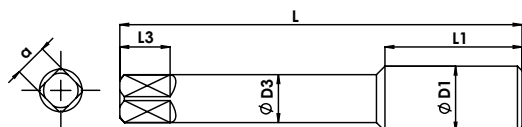


HSS-E

ISO  
529

6HX

E/1.5-2P

Reinforced Shank (M3 - M10)  
Male centre upto M5

Reduced Shank (M12 - M20)

IS 6175 Part 2

IS 6175 Part 3

IS 6175 Part 2

IS 6175 Part 3

| Series                            |               | SCF5       | SC4TC      |
|-----------------------------------|---------------|------------|------------|
| Material - 1 <sup>st</sup> choice |               | P2-P3      | K1-K3      |
| Material - 2 <sup>nd</sup> choice |               | -          | -          |
| Coating                           |               | TiCN       | TiAlN      |
| Tapping Drill Diameter            | No. of Flutes | EDP No.    | EDP No.    |
| Ød1                               |               |            |            |
| 2.5                               | 3             | FAB0204616 | -          |
| 2.9                               | 3             |            | -          |
| 3.3                               | 3             | FAB0204617 | -          |
| 4.2                               | 3             | FAB0204618 | FAB0205365 |
| 5                                 | 3             | FAB0204619 | FAB0205366 |
| 6.8                               | 4             | FAB0204620 | FAB0205367 |
| 8.5                               | 4             | FAB0204621 | FAB0205368 |

## ISO529 / IS 6175 Part 3

|      |      |     |    |      |      |    |      |   |            |            |
|------|------|-----|----|------|------|----|------|---|------------|------------|
| M 12 | 1.75 | 89  | 29 | 9    | 7.1  | 10 | 10.2 | 4 | FAB0204622 | FAB0205369 |
| M 14 | 2    | 95  | 30 | 11.2 | 9    | 12 | 12   | 4 | FAB0204623 | FAB0205370 |
| M 16 | 2    | 102 | 32 | 12.5 | 10   | 13 | 14   | 4 | FAB0204624 | FAB0205371 |
| M 20 | 2.5  | 112 | 37 | 14   | 11.2 | 14 | 17.5 | 4 | FAB0205362 | FAB0205372 |

Unit : mm

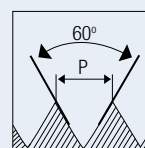


## Straight Flute Tap

HSS TAPS

M

## Metric coarse threads

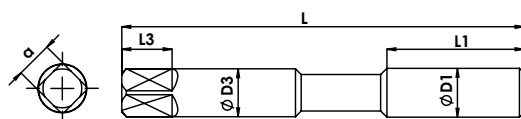
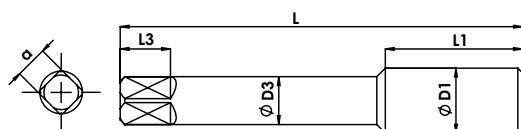


HOLE TYPE

HSS-E  
PMISO  
529

6H

E/1.5-2P

Reinforced Shank (M3 - M10)  
Male centre upto M5

Reduced Shank (M12 - M20)

IS 6175 Part 2

IS 6175 Part 3

IS 6175 Part 2

IS 6175 Part 3



|                         |       |                |               |                |             |               |                        |               | Series                            | SC4   | SC4TC      |
|-------------------------|-------|----------------|---------------|----------------|-------------|---------------|------------------------|---------------|-----------------------------------|-------|------------|
|                         |       |                |               |                |             |               |                        |               | Material - 1 <sup>st</sup> choice | K1-K3 | K1-K3      |
|                         |       |                |               |                |             |               |                        |               | Material - 2 <sup>nd</sup> choice | -     | -          |
|                         |       |                |               |                |             |               |                        |               | Coating                           | TIAlN | TIAlN      |
| ISO529 / IS 6175 Part 2 |       |                |               |                |             |               |                        |               | EDP No.                           |       | EDP No.    |
| Nominal Diameter        | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | No. of Flutes |                                   |       |            |
| ØD1                     | p     | L              | L1            | ØD3            | a           | L3            | Ød1                    |               |                                   |       |            |
| M 3                     | 0.5   | 48             | 11            | 3.15           | 2.5         | 5             | 2.5                    | 3             | FAB0205373                        |       | -          |
| M 3                     | 0.6   | 50             | 13            | 3.55           | 2.8         | 5             | 2.9                    | 3             | FAB0205374                        |       | -          |
| M 4                     | 0.7   | 53             | 13            | 4              | 3.15        | 6             | 3.3                    | 3             | FAB0205375                        |       | -          |
| M 5                     | 0.8   | 58             | 16            | 5              | 4           | 7             | 4.2                    | 3             | FAB0205376                        |       | FAB0205387 |
| M 6                     | 1     | 66             | 19            | 6.3            | 5           | 8             | 5                      | 3             | FAB0205377                        |       | FAB0205388 |
| M 8                     | 1.25  | 72             | 22            | 8              | 6.3         | 9             | 6.8                    | 4             | FAB0205378                        |       | FAB0205389 |
| M 10                    | 1.5   | 80             | 24            | 10             | 8           | 11            | 8.5                    | 4             | FAB0205379                        |       | FAB0205390 |

| ISO529 / IS 6175 Part 3 |      |     |    |      |      |    |      |   |            |            |
|-------------------------|------|-----|----|------|------|----|------|---|------------|------------|
| M 12                    | 1.75 | 89  | 29 | 9    | 7.1  | 10 | 10.2 | 4 | FAB0205380 | FAB0205391 |
| M 14                    | 2    | 95  | 30 | 11.2 | 9    | 12 | 12   | 4 | FAB0205381 | FAB0205392 |
| M 16                    | 2    | 102 | 32 | 12.5 | 10   | 13 | 14   | 4 | FAB0205382 | FAB0205393 |
| M 20                    | 2.5  | 112 | 37 | 14   | 11.2 | 14 | 17.5 | 4 | FAB0205383 | FAB0205394 |

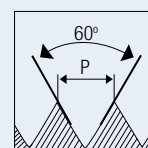
Unit : mm



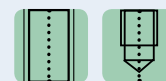
## Straight Flute Tap

MF

## Metric fine threads



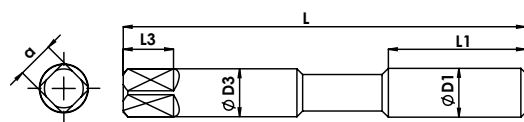
HOLE TYPE



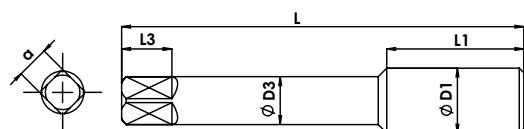
HSS-E

ISO  
529

6H



Reinforced Shank (M8 - M10)



Reduced Shank (M12 - M20)

IS 6175 Part 2

IS 6175 Part 3

IS 6175 Part 2

IS 6175 Part 3



Series

SC3

SC4

Material - 1<sup>st</sup> choice

K1-K2

K1, K3

Material - 2<sup>nd</sup> choice

N2-N3

-

Coating

TiN

TiAIN

ISO529 / IS 6175 Part 2

| Nominal Diameter | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | No. of Flutes | EDP No.    | EDP No.    |
|------------------|-------|----------------|---------------|----------------|-------------|---------------|------------------------|---------------|------------|------------|
| ØD1              | p     | L              | L1            | ØD3            | a           | L3            | Ød1                    |               |            |            |
| M 8              | 1     | 69             | 19            | 8              | 6.3         | 9             | 7                      | 4             | FAB0202976 | FAB0203740 |
| M 10             | 1.25  | 76             | 20            | 10             | 8           | 11            | 8.8                    | 4             | FAB0200706 | FAB0200707 |

ISO529 / IS 6175 Part 3

|      |      |     |    |      |      |    |      |   |            |            |
|------|------|-----|----|------|------|----|------|---|------------|------------|
| M 12 | 1.25 | 84  | 24 | 9    | 7.1  | 10 | 10.8 | 4 | FAB0200727 | FAB0200728 |
| M12  | 1.5  | 89  | 29 | 9    | 7.1  | 10 | 10.5 | 4 | FAB0200736 | FAB0200737 |
| M 14 | 1.5  | 95  | 30 | 11.2 | 9    | 12 | 12.5 | 4 | FAB0200767 | FAB0200768 |
| M 16 | 1.5  | 102 | 32 | 12.5 | 10   | 13 | 14.5 | 4 | FAB0200785 | FAB0200786 |
| M 18 | 1.5  | 104 | 29 | 14   | 11.2 | 14 | 16.5 | 4 | FAB0203217 | FAB0200805 |
| M 20 | 1.5  | 104 | 29 | 14   | 11.2 | 14 | 18.5 | 4 | FAB0203218 | FAB0200806 |

Unit : mm

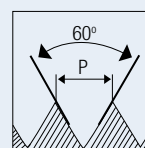


## Straight Flute Tap

HSS TAPS

MF

## Metric fine threads



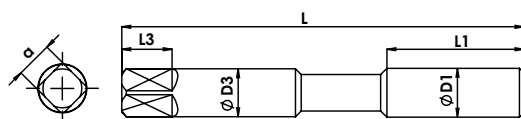
HOLE TYPE



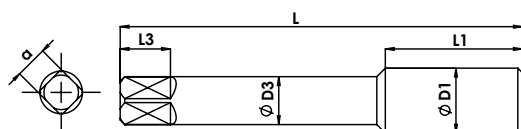
HSS-E

ISO  
529

6HX



Reinforced Shank (M8 - M10)



Reduced Shank (M12 - M20)

IS 6175 Part 2



IS 6175 Part 3



IS 6175 Part 2



IS 6175 Part 3



|                         |       |                |               |                |             |               |                        |               | Series                            | SCF5  | SC4TC      |
|-------------------------|-------|----------------|---------------|----------------|-------------|---------------|------------------------|---------------|-----------------------------------|-------|------------|
|                         |       |                |               |                |             |               |                        |               | Material - 1 <sup>st</sup> choice | P2-P3 | K1-K3      |
|                         |       |                |               |                |             |               |                        |               | Material - 2 <sup>nd</sup> choice | -     | -          |
|                         |       |                |               |                |             |               |                        |               | Coating                           | TiCN  | TiAlN      |
| ISO529 / IS 6175 Part 2 |       |                |               |                |             |               |                        |               |                                   |       |            |
| Nominal Diameter        | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | No. of Flutes | EDP No.                           |       |            |
| ØD1                     | p     | L              | L1            | ØD3            | a           | L3            | Ød1                    |               |                                   |       |            |
| M 8                     | 1     | 69             | 19            | 8              | 6.3         | 9             | 7                      | 4             | FAB0204625                        |       | FAB0205397 |
| M 10                    | 1.25  | 76             | 20            | 10             | 8           | 11            | 8.8                    | 4             | FAB0204626                        |       | FAB0205398 |

| ISO529 / IS 6175 Part 3 |      |     |    |      |      |    |      |   |            |            |
|-------------------------|------|-----|----|------|------|----|------|---|------------|------------|
| M 12                    | 1.25 | 84  | 24 | 9    | 7.1  | 10 | 10.8 | 4 | FAB0204627 | FAB0205399 |
| M 12                    | 1.5  | 89  | 29 | 9    | 7.1  | 10 | 10.5 | 4 | FAB0204628 | FAB0205400 |
| M 14                    | 1.5  | 95  | 30 | 11.2 | 9    | 12 | 12.5 | 4 | FAB0204629 | FAB0205401 |
| M 16                    | 1.5  | 102 | 32 | 12.5 | 10   | 13 | 14.5 | 4 | FAB0204630 | FAB0205402 |
| M 18                    | 1.5  | 104 | 29 | 14   | 11.2 | 14 | 16.5 | 4 | FAB0205395 | FAB0205403 |
| M 20                    | 1.5  | 104 | 29 | 14   | 11.2 | 14 | 18.5 | 4 | FAB0205396 | FAB0205404 |

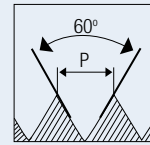
Unit : mm



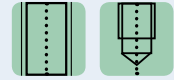
## Straight Flute Tap

UNC

## Unified coarse threads



HOLE TYPE

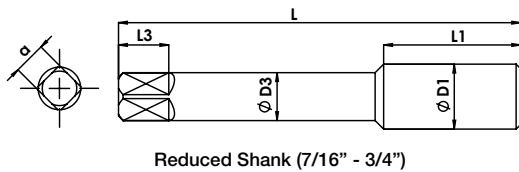
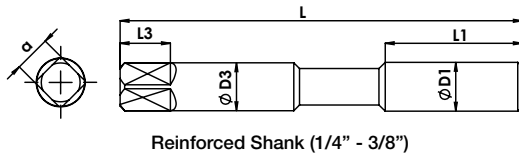


HSS-E

ISO  
529

2B

E/1.5-2P



IS 6175 Part 2

IS 6175 Part 3

IS 6175 Part 2

IS 6175 Part 3



Series

SC3

SC4

Material - 1<sup>st</sup> choice

K1-K2

K1-K3

Material - 2<sup>nd</sup> choice

N2-N3

-

Coating

TiN

TiAIN

ISO529 / IS 6175 Part 2

| Nominal Diameter | TPI | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | No. of Flutes | EDP No.    | EDP No.    |
|------------------|-----|----------------|---------------|----------------|-------------|---------------|------------------------|---------------|------------|------------|
| ØD1              | p   | L              | L1            | ØD3            | a           | L3            | Ød1                    |               |            |            |
| 1/4"             | 20  | 66             | 19            | 6.3            | 5           | 8             | 5.5                    | 3             | FAB0200571 | FAB0200572 |
| 5/16"            | 18  | 72             | 22            | 8              | 6.3         | 9             | 6.9                    | 4             | FAB0200581 | FAB0203289 |
| 3/8"             | 16  | 80             | 24            | 10             | 8           | 11            | 8.5                    | 4             | FAB0200591 | FAB0200592 |

ISO529 / IS 6175 Part 2

|       |    |     |    |      |      |    |      |   |            |            |
|-------|----|-----|----|------|------|----|------|---|------------|------------|
| 7/16" | 14 | 85  | 25 | 8    | 6.3  | 9  | 9.9  | 4 | FAB0200601 | FAB0200602 |
| 1/2"  | 13 | 89  | 29 | 9    | 7.1  | 10 | 11.5 | 4 | FAB0200612 | FAB0200613 |
| 5/8"  | 11 | 102 | 32 | 12.5 | 10   | 13 | 14.5 | 4 | FAB0200625 | FAB0200626 |
| 3/4"  | 10 | 112 | 37 | 14   | 11.2 | 14 | 17.5 | 4 | FAB0200636 | FAB0200637 |



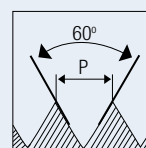
Silver cut

Straight Flute Tap

HSS TAPS

UNF

Unified fine threads



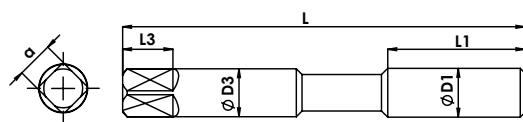
HOLE TYPE



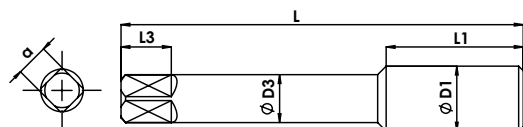
HSS-E

ISO  
529

2B



Reinforced Shank (1/4" - 3/8")



Reduced Shank (7/16" - 3/4")

IS 6175 Part 2



IS 6175 Part 3



IS 6175 Part 2



IS 6175 Part 3



Series

SC3

SC4

Material - 1<sup>st</sup> choice

K1-K2

K1, K3

Material - 2<sup>nd</sup> choice

N2-N3

-

Coating

TiN

TiAlN

ISO529 / IS 6175 Part 2

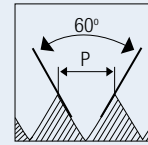
| Nominal Diameter | TPI | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | No. of Flutes | EDP No.    | EDP No.    |
|------------------|-----|----------------|---------------|----------------|-------------|---------------|------------------------|---------------|------------|------------|
| ØD1              | p   | L              | L1            | ØD3            | a           | L3            | Ød1                    |               |            |            |
| 1/4"             | 28  | 66             | 19            | 6.3            | 5           | 8             | 5.5                    | 3             | FAB0200495 | FAB0200496 |
| 5/16"            | 24  | 69             | 19            | 8              | 6.3         | 9             | 6.9                    | 4             | FAB0200504 | FAB0200505 |
| 3/8"             | 24  | 76             | 20            | 10             | 8           | 11            | 8.5                    | 4             | FAB0200515 | FAB0200516 |

ISO529 / IS 6175 Part 3

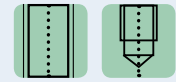
| Nominal Diameter | TPI | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | No. of Flutes | EDP No.    | EDP No.    |
|------------------|-----|----------------|---------------|----------------|-------------|---------------|------------------------|---------------|------------|------------|
| ØD1              | p   | L              | L1            | ØD3            | a           | L3            | Ød1                    |               |            |            |
| 7/16"            | 20  | 82             | 22            | 8              | 6.3         | 9             | 9.9                    | 4             | FAB0200526 | FAB0200527 |
| 1/2"             | 20  | 84             | 24            | 9              | 7.1         | 10            | 11.5                   | 4             | FAB0200537 | FAB0200538 |
| 5/8"             | 18  | 95             | 25            | 12.5           | 10          | 13            | 14.5                   | 4             | FAB0200550 | FAB0200551 |
| 3/4"             | 16  | 104            | 29            | 14             | 11.2        | 14            | 17.5                   | 4             | FAB0200561 | FAB0200562 |



## Straight Flute Tap

**M/MF****Metric coarse & fine threads**

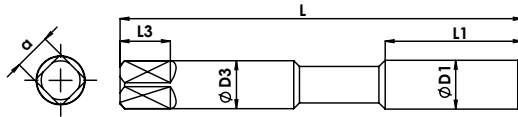
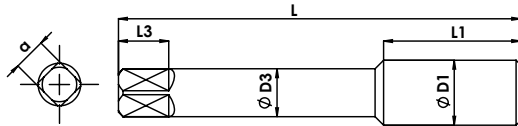
HOLE TYPE



HSS-E

JIS

6H

Reinforced Shank (M3 - M10)  
Male Centre upto M5

Reduced Shank (M12 - M20)



|                  |       |                |               |                |             |               | Series                            | SC3        | SC4        |
|------------------|-------|----------------|---------------|----------------|-------------|---------------|-----------------------------------|------------|------------|
|                  |       |                |               |                |             |               | Material - 1 <sup>st</sup> choice | P0, N4     | P0-P3      |
|                  |       |                |               |                |             |               | Material - 2 <sup>nd</sup> choice | N1-N2      | K1-K2      |
|                  |       |                |               |                |             |               | Coating                           | TiN        | TiAIN      |
| JIS              |       |                |               |                |             |               | Tapping Drill Diameter            | EDP No.    | EDP No.    |
| Nominal Diameter | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Ød1                               |            |            |
| ØD1              | p     | L              | L1            | ØD3            | a           | L3            |                                   |            |            |
| M 3              | 0.5   | 46             | 11            | 4              | 3.2         | 6             | 2.5                               | FAB0205644 | FAB0205659 |
| M 4              | 0.7   | 52             | 13            | 5              | 4           | 7             | 3.3                               | FAB0205645 | FAB0205660 |
| M 5              | 0.8   | 60             | 16            | 5.5            | 4.5         | 7             | 4.2                               | FAB0205646 | FAB0205661 |
| M 6              | 1     | 62             | 19            | 6              | 4.5         | 7             | 5                                 | FAB0205647 | FAB0205662 |
| M 8              | 1.25  | 70             | 22            | 6.2            | 5           | 8             | 6.8                               | FAB0205648 | FAB0205663 |
| M 8              | 1     | 70             | 22            | 6.2            | 5           | 8             | 7                                 | FAB0205649 | FAB0205664 |
| M 10             | 1.5   | 75             | 24            | 7              | 5.5         | 8             | 8.5                               | FAB0205650 | FAB0205665 |
| M 10             | 1.25  | 75             | 24            | 7              | 5.5         | 8             | 8.8                               | FAB0205651 | FAB0205666 |
| M 12             | 1.75  | 82             | 21            | 8.5            | 6.5         | 9             | 10.3                              | FAB0205652 | FAB0205667 |
| M 12             | 1.5   | 82             | 21            | 8.5            | 6.5         | 9             | 10.5                              | FAB0205653 | FAB0205668 |
| M 12             | 1.25  | 82             | 21            | 8.5            | 6.5         | 9             | 10.8                              | FAB0205654 | FAB0205669 |
| M 14             | 2     | 88             | 30            | 10.5           | 8           | 11            | 12                                | FAB0205655 | FAB0205670 |
| M 16             | 2     | 95             | 32            | 12.5           | 10          | 13            | 14                                | FAB0205656 | FAB0205671 |
| M 18             | 2.5   | 100            | 37            | 14             | 11          | 14            | 15.5                              | FAB0205657 | FAB0205672 |
| M 20             | 2.5   | 105            | 37            | 15             | 12          | 15            | 17.5                              | FAB0205658 | FAB0205673 |

Unit : mm



**High Performance Cutting Tools**



# **FORMING TAPS** **SD SERIES**

# CONTENTS



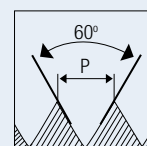
## FORMING TAPS

| SERIES | THREAD FORM | BLANK STANDARD | WORKPIECE MATERIAL | 1ST CHOICE   | 2ND CHOICE | TOOL MATERIAL | COATING | PAGE  |
|--------|-------------|----------------|--------------------|--------------|------------|---------------|---------|-------|
| SD1    | M           | DIN 371/DIN376 | NON-FERROUS        | N1-N2        | -          | HSSE          | Bright  | 1.089 |
| SD3    | M           | DIN 371/DIN376 | NON-FERROUS        | P0-P2, N1-N3 | -          | HSSE          | TiN     |       |
| SD4    | M           | DIN 371/DIN376 | STEEL              | P1-P2        | -          | HSSE          | TiAlN   | 1.090 |
| SD1*   | M           | DIN 371/DIN376 | NON-FERROUS        | N1-N2        | -          | HSSE          | Bright  | 1.091 |
| SD3*   | M           | DIN 371/DIN376 | NON-FERROUS        | P0-P2        | N1-N3      | HSSE          | TiN     |       |
| SDF5   | M           | DIN 371/DIN376 | STEEL              | P1-P2        | -          | HSSE          | TiCN    | 1.092 |
| SD1    | MF          | DIN 374        | NON-FERROUS        | N1-N2        | -          | HSSE          | Bright  | 1.093 |
| SD3    | MF          | DIN 374        | NON-FERROUS        | P0-P2, N1-N3 | -          | HSSE          | TiN     |       |
| SD4    | MF          | DIN 374        | STEEL              | P1-P2        | -          | HSSE          | TiAlN   | 1.094 |
| SD1    | M           | ISO 529        | NON-FERROUS        | N1-N2        | -          | HSSE          | Bright  | 1.095 |
| SD3    | M           | ISO 529        | NON-FERROUS        | P0-P2, N1-N3 | -          | HSSE          | TiAlN   |       |
| SDF5   | M           | ISO 529        | STEEL              | P1-P2        | -          | HSSE          | TiCN    | 1.096 |
| SD1    | MF          | ISO 529        | NON-FERROUS        | N1-N2        | -          | HSSE          | Bright  | 1.097 |
| SD3    | MF          | ISO 529        | NON-FERROUS        | P0-P2, N1-N3 | -          | HSSE          | TiN     |       |
| SDF5   | MF          | ISO 529        | STEEL              | P1-P2        | -          | HSSE          | TiAlN   | 1.098 |
| SD1    | M / MF      | JIS            | NON-FERROUS        | N1-N2        | -          | HSSE          | Bright  | 1.099 |
| SD3    | M / MF      | JIS            | NON-FERROUS        | P0-P2, N1-N3 | -          | HSSE          | TiN     |       |

\* without oil groove

M

# Metric coarse threads



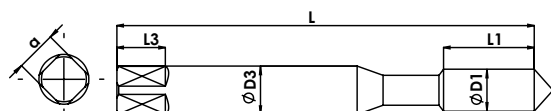
HOLE TYPE



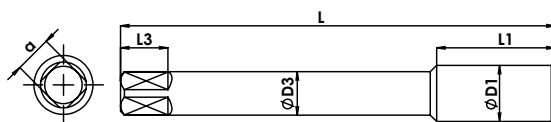
HSS-E

DIN  
371/376

6HX



Reinforced Shank DIN371 (M3 - M10)



Reduced Shank DIN376 (M12 - M16)

DIN 371



DIN 376



DIN 371



DIN 376



Series

SD1

SD3

Material - 1<sup>st</sup> choice

N1-N2

P0-P2, N1-N3

Material - 2<sup>nd</sup> choice

-

-

Coating

Bright

TiN

DIN 371

| Nominal Diameter | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | EDP No.    | EDP No.    |
|------------------|-------|----------------|---------------|----------------|-------------|---------------|------------------------|------------|------------|
| ØD1              | p     | L              | L1            | ØD3            | a           | L3            | Ød1                    |            |            |
| M 3              | 0.5   | 56             | 11            | 3.5            | 2.7         | 6             | 2.8                    | FAB0200954 | FAB0200961 |
| M 3.5            | 0.6   | 56             | 12            | 4              | 3           | 6             | 3.3                    | FAB0204505 | FAB0204507 |
| M 4              | 0.7   | 63             | 13            | 4.5            | 3.4         | 6             | 3.7                    | FAB0200955 | FAB0200962 |
| M 5              | 0.8   | 70             | 16            | 6              | 4.9         | 8             | 4.7                    | FAB0200956 | FAB0200963 |
| M 6              | 1     | 80             | 19            | 6              | 4.9         | 8             | 5.5                    | FAB0200957 | FAB0200964 |
| M 7              | 1     | 80             | 19            | 7              | 5.5         | 8             | 6.5                    | FAB0204506 | FAB0204508 |
| M 8              | 1.25  | 90             | 22            | 8              | 6.2         | 9             | 7.4                    | FAB0200958 | FAB0200965 |
| M 10             | 1.5   | 100            | 24            | 10             | 8           | 11            | 9.3                    | FAB0200959 | FAB0200966 |

DIN 376

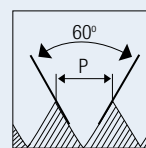
| Nominal Diameter | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | EDP No.    | EDP No.    |
|------------------|-------|----------------|---------------|----------------|-------------|---------------|------------------------|------------|------------|
| ØD1              | p     | L              | L1            | ØD3            | a           | L3            | Ød1                    |            |            |
| M 12             | 1.75  | 110            | 28            | 9              | 7           | 10            | 11.2                   | FAB0200960 | FAB0200967 |
| M 14             | 2     | 110            | 30            | 11             | 9           | 12            | 13.1                   | FAB0203285 | FAB0203287 |
| M 16             | 2     | 110            | 32            | 12             | 9           | 12            | 15.1                   | FAB0203286 | FAB0203288 |

Unit : mm

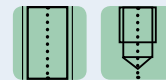


M

## Metric coarse threads



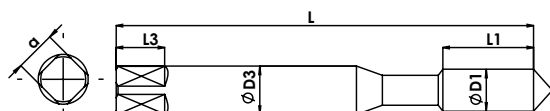
HOLE TYPE



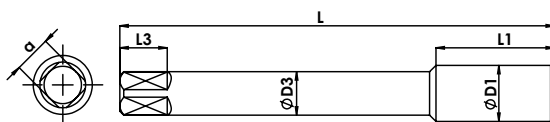
HSS-E

DIN  
371/376

6HX



Reinforced Shank DIN371 (M3 - M10)



Reduced Shank DIN376 (M12 - M16)



|                  |       |                |               |                |             |               | Series                            | SD4        |
|------------------|-------|----------------|---------------|----------------|-------------|---------------|-----------------------------------|------------|
|                  |       |                |               |                |             |               | Material - 1 <sup>st</sup> choice | P1-P2      |
|                  |       |                |               |                |             |               | Material - 2 <sup>nd</sup> choice | -          |
|                  |       |                |               |                |             |               | Coating                           | TIAIN      |
| DIN 371          |       |                |               |                |             |               | Tapping Drill Diameter            | EDP No.    |
| Nominal Diameter | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Ød1                               |            |
| ØD1              | p     | L              | L1            | ØD3            | a           | L3            |                                   |            |
| M 3              | 0.5   | 56             | 11            | 3.5            | 2.7         | 6             | 2.8                               | FAB0204509 |
| M 3.5            | 0.6   | 56             | 12            | 4              | 3           | 6             | 3.3                               | FAB0204510 |
| M 4              | 0.7   | 63             | 13            | 4.5            | 3.4         | 6             | 3.7                               | FAB0204511 |
| M 5              | 0.8   | 70             | 16            | 6              | 4.9         | 8             | 4.7                               | FAB0204512 |
| M 6              | 1     | 80             | 19            | 6              | 4.9         | 8             | 5.5                               | FAB0204513 |
| M 7              | 1     | 80             | 19            | 7              | 5.5         | 8             | 6.5                               | FAB0204514 |
| M 8              | 1.25  | 90             | 22            | 8              | 6.2         | 9             | 7.4                               | FAB0204515 |
| M 10             | 1.5   | 100            | 24            | 10             | 8           | 11            | 9.3                               | FAB0204516 |

| DIN 376 |      |     |    |    |   |    |      |            |
|---------|------|-----|----|----|---|----|------|------------|
| M 12    | 1.75 | 110 | 28 | 9  | 7 | 10 | 11.2 | FAB0204517 |
| M 14    | 2    | 110 | 30 | 11 | 9 | 12 | 13.1 | FAB0204518 |
| M 16    | 2    | 110 | 32 | 12 | 9 | 12 | 15.1 | FAB0204519 |

Unit : mm



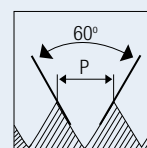
Silver cut

Forming Taps

HSS TAPS

M

# Metric coarse threads (without oil groove)



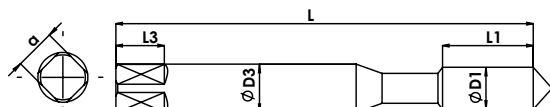
HOLE TYPE



HSS-E

DIN  
371

6HX



Reinforced Shank DIN371 (M3 - M8)



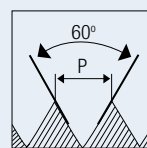
|                  |       |                |               |                |             |               | Series                            | SD1        | SD3          |
|------------------|-------|----------------|---------------|----------------|-------------|---------------|-----------------------------------|------------|--------------|
|                  |       |                |               |                |             |               | Material - 1 <sup>st</sup> choice | N1-N2      | P0-P2, N1-N3 |
|                  |       |                |               |                |             |               | Material - 2 <sup>nd</sup> choice | -          | -            |
|                  |       |                |               |                |             |               | Coating                           | Bright     | TiN          |
| DIN 371          |       |                |               |                |             |               | Tapping Drill Diameter            | EDP No.    | EDP No.      |
| Nominal Diameter | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Ød1                               |            |              |
| ØD1              | p     | L              | L1            | ØD3            | a           | L3            |                                   |            |              |
| M 3              | 0.5   | 56             | 11            | 3.5            | 2.7         | 6             | 2.8                               | FAB0203614 | FAB0203619   |
| M 4              | 0.7   | 63             | 13            | 4.5            | 3.4         | 6             | 3.7                               | FAB0203615 | FAB0203620   |
| M 5              | 0.8   | 70             | 16            | 6              | 4.9         | 8             | 4.7                               | FAB0203616 | FAB0203621   |
| M 6              | 1     | 80             | 19            | 6              | 4.9         | 8             | 5.5                               | FAB0203617 | FAB0203622   |
| M 8              | 1.25  | 90             | 22            | 8              | 6.2         | 9             | 7.4                               | FAB0203618 | FAB0203623   |

Unit : mm

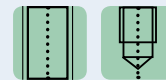


M

## Metric coarse threads



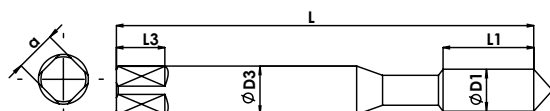
HOLE TYPE



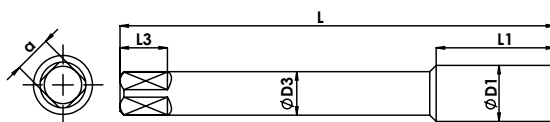
HSS-E

DIN  
371/376

6HX



Reinforced Shank DIN371 (M3 - M10)



Reduced Shank DIN376 (M12 - M16)

DIN 371

DIN 376



Series

SDF5

Material - 1<sup>st</sup> choice

P1-P3

Material - 2<sup>nd</sup> choice

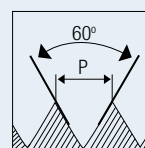
Coating

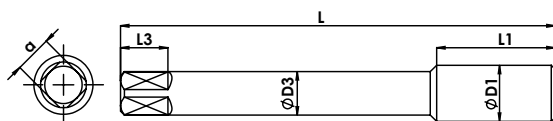
TiCN

| DIN 371          |       |                |               |                |             |               | Tapping Drill Diameter | EDP No.    |
|------------------|-------|----------------|---------------|----------------|-------------|---------------|------------------------|------------|
| Nominal Diameter | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Ød1                    |            |
| ØD1              | p     | L              | L1            | ØD3            | a           | L3            |                        |            |
| M 3              | 0.5   | 56             | 11            | 3.5            | 2.7         | 6             | 2.8                    | FAB0205097 |
| M 3.5            | 0.6   | 56             | 12            | 4              | 3           | 6             | 3.3                    | FAB0205098 |
| M 4              | 0.7   | 63             | 13            | 4.5            | 3.4         | 6             | 3.7                    | FAB0205099 |
| M 5              | 0.8   | 70             | 16            | 6              | 4.9         | 8             | 4.7                    | FAB0205100 |
| M 6              | 1     | 80             | 19            | 6              | 4.9         | 8             | 5.5                    | FAB0205101 |
| M 7              | 1     | 80             | 19            | 7              | 5.5         | 8             | 6.5                    | FAB0205102 |
| M 8              | 1.25  | 90             | 22            | 8              | 6.2         | 9             | 7.4                    | FAB0205103 |
| M 10             | 1.5   | 100            | 24            | 10             | 8           | 11            | 9.3                    | FAB0205104 |

| DIN 376          |       |                |               |                |             |               |      | EDP No.    |
|------------------|-------|----------------|---------------|----------------|-------------|---------------|------|------------|
| Nominal Diameter | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Ød1  |            |
| ØD1              | p     | L              | L1            | ØD3            | a           | L3            |      |            |
| M 12             | 1.75  | 110            | 28            | 9              | 7           | 10            | 11.2 | FAB0205105 |
| M 14             | 2     | 110            | 30            | 11             | 9           | 12            | 13.1 | FAB0205106 |
| M 16             | 2     | 110            | 32            | 12             | 9           | 12            | 15.1 | FAB0205107 |

Unit : mm


**Silver cut**
**Forming Taps**
**HSS TAPS**
**MF**
**Metric fine threads**

**HOLE TYPE**

**HSS-E**
**DIN 374**
**6HX**


Male Centre (M8 - M10)  
Female Centre (M12 - M20)

DIN 371



DIN 376



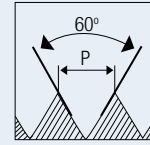
|                  |       |                |               |                |             |               | Series                            | SD1        | SD3        |
|------------------|-------|----------------|---------------|----------------|-------------|---------------|-----------------------------------|------------|------------|
|                  |       |                |               |                |             |               | Material - 1 <sup>st</sup> choice | N1-N2      | N1-N3      |
|                  |       |                |               |                |             |               | Material - 2 <sup>nd</sup> choice | -          | P0-P2      |
|                  |       |                |               |                |             |               | Coating                           | Bright     | TiN        |
| DIN 374          |       |                |               |                |             |               | Tapping Drill Diameter            | EDP No.    | EDP No.    |
| Nominal Diameter | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Ød1                               |            |            |
| ØD1              | p     | L              | L1            | ØD3            | a           | L3            |                                   |            |            |
| M 8              | 1     | 90             | 17            | 6              | 4.9         | 8             | 7.5                               | FAB0204520 | FAB0204528 |
| M 10             | 1.25  | 100            | 22            | 7              | 5.5         | 8             | 9.4                               | FAB0204521 | FAB0204529 |
| M 12             | 1.5   | 100            | 22            | 9              | 7           | 10            | 11.3                              | FAB0204522 | FAB0204530 |
| M 12             | 1.25  | 100            | 22            | 9              | 7           | 10            | 11.4                              | FAB0204523 | FAB0204531 |
| M 14             | 1.5   | 100            | 22            | 11             | 9           | 12            | 13.3                              | FAB0204524 | FAB0204532 |
| M 16             | 1.5   | 100            | 22            | 12             | 14.5        | 12            | 15.3                              | FAB0204525 | FAB0204533 |
| M 18             | 1.5   | 110            | 25            | 14             | 16.5        | 14            | 17.3                              | FAB0204526 | FAB0204534 |
| M 20             | 1.5   | 125            | 25            | 16             | 18.5        | 15            | 19.3                              | FAB0204527 | FAB0204535 |

Unit : mm

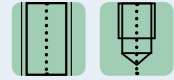


## MF

### Metric fine threads



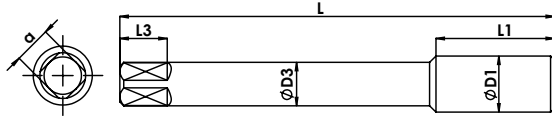
HOLE TYPE



HSS-E

DIN  
374

6HX



Male Centre (M8 - M10)  
Female Centre (M12 - M20)



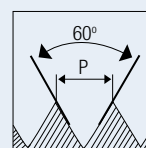
| DIN 374          |       |                |               |                |             |               | Series                            | SD4        |
|------------------|-------|----------------|---------------|----------------|-------------|---------------|-----------------------------------|------------|
|                  |       |                |               |                |             |               | Material - 1 <sup>st</sup> choice | P1-P2      |
|                  |       |                |               |                |             |               | Material - 2 <sup>nd</sup> choice | -          |
|                  |       |                |               |                |             |               | Coating                           | TiAIN      |
| Nominal Diameter | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter            | EDP No.    |
| ØD1              | p     | L              | L1            | ØD3            | a           | L3            | Ød1                               |            |
| M 8              | 1     | 90             | 17            | 6              | 4.9         | 8             | 7.5                               | FAB0204536 |
| M 10             | 1.25  | 100            | 22            | 7              | 5.5         | 8             | 9.4                               | FAB0204537 |
| M 12             | 1.5   | 100            | 22            | 9              | 7           | 10            | 11.3                              | FAB0204538 |
| M 12             | 1.25  | 100            | 22            | 9              | 7           | 10            | 11.4                              | FAB0204539 |
| M 14             | 1.5   | 100            | 22            | 11             | 9           | 12            | 13.3                              | FAB0204540 |
| M 16             | 1.5   | 100            | 22            | 12             | 14.5        | 12            | 15.3                              | FAB0204541 |
| M 18             | 1.5   | 110            | 25            | 14             | 16.5        | 14            | 17.3                              | FAB0204542 |
| M 20             | 1.5   | 125            | 25            | 16             | 18.5        | 15            | 19.3                              | FAB0204543 |

Unit : mm



M

## Metric coarse threads



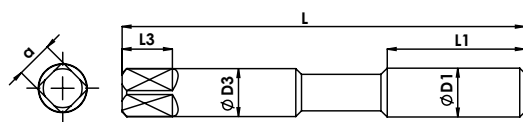
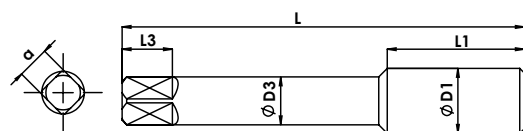
HOLE TYPE



HSS-E

ISO  
529

6HX

Reinforced Shank (M3 - M10)  
Male Centre upto M5

Reduced Shank (M12 - M16)

DIN 371



DIN 376



DIN 371



DIN 376



Series

SD1

SD3

Material - 1<sup>st</sup> choice

N1-N2

N1-N3

Material - 2<sup>nd</sup> choice

-

P0-P2

Coating

Bright

TiN

ISO 529 / IS 6175 Part 2

| Nominal Diameter | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | EDP No.    | EDP No.    |
|------------------|-------|----------------|---------------|----------------|-------------|---------------|------------------------|------------|------------|
| ØD1              | p     | L              | L1            | ØD3            | a           | L3            | Ød1                    |            |            |
| M 3              | 0.5   | 48             | 11            | 3.15           | 2.5         | 5             | 2.8                    | FAB0201417 | FAB0202740 |
| M 3.5            | 0.6   | 50             | 13            | 3.55           | 2.8         | 5             | 3.3                    | FAB0203221 | FAB0203231 |
| M 4              | 0.7   | 53             | 13            | 4              | 3.15        | 6             | 3.7                    | FAB0201421 | FAB0202747 |
| M 5              | 0.8   | 58             | 16            | 5              | 4           | 7             | 4.7                    | FAB0201420 | FAB0202748 |
| M 6              | 1     | 66             | 19            | 6.3            | 5           | 8             | 5.5                    | FAB0201422 | FAB0202749 |
| M 7              | 1     | 66             | 19            | 7.1            | 5.6         | 8             | 6.5                    | FAB0203222 | FAB0203232 |
| M 8              | 1.25  | 72             | 22            | 8              | 6.3         | 9             | 7.4                    | FAB0201425 | FAB0202750 |
| M 10             | 1.5   | 80             | 24            | 10             | 8           | 9             | 9.3                    | FAB0201426 | FAB0202751 |

ISO 529 / IS 6175 Part 3

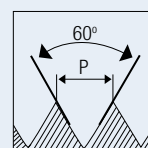
|      |      |     |    |      |     |    |      |            |            |
|------|------|-----|----|------|-----|----|------|------------|------------|
| M 12 | 1.75 | 89  | 29 | 9    | 7.1 | 10 | 11.2 | FAB0201428 | FAB0202752 |
| M 14 | 2    | 95  | 30 | 11.2 | 9   | 12 | 13.1 | FAB0203228 | FAB0203238 |
| M 16 | 2    | 102 | 32 | 12.5 | 10  | 13 | 15.1 | FAB0203230 | FAB0203240 |

Unit : mm



M

## Metric coarse threads



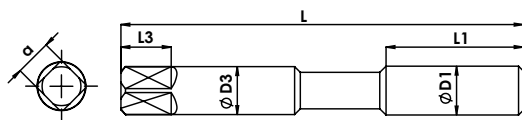
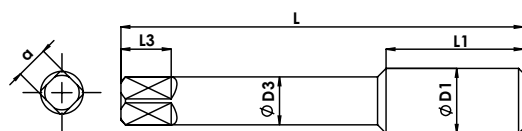
HOLE TYPE



HSS-E

ISO  
529

6HX

Reinforced Shank (M3 - M10)  
Male Centre upto M5

Reduced Shank (M12 - M16)

IS 6175 Part 2



IS 6175 Part 3



|                                   |            |
|-----------------------------------|------------|
| Series                            | SDF5       |
| Material - 1 <sup>st</sup> choice | P1-P2      |
| Material - 2 <sup>nd</sup> choice | -          |
| Coating                           | TiCN       |
| Tapping Drill Diameter            | EDP No.    |
| Ød1                               |            |
| 2.8                               | FAB0203241 |
| 3.7                               | FAB0203242 |
| 4.7                               | FAB0203243 |
| 5.5                               | FAB0203244 |
| 7.4                               | FAB0203246 |
| 9.3                               | FAB0203249 |

| ISO 529 / IS 6175 Part 3 |      |     |    |      |     |    |      |            |
|--------------------------|------|-----|----|------|-----|----|------|------------|
| M 12                     | 1.75 | 89  | 29 | 9    | 7.1 | 10 | 11.2 | FAB0203251 |
| M 14                     | 2    | 95  | 30 | 11.2 | 9   | 12 | 13.1 | FAB0205095 |
| M 16                     | 2    | 102 | 32 | 12.5 | 10  | 13 | 15.1 | FAB0205096 |

Unit : mm



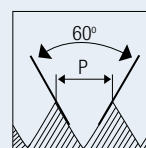
Silver cut

Forming Taps

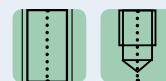
HSS TAPS

MF

## Metric fine threads



HOLE TYPE

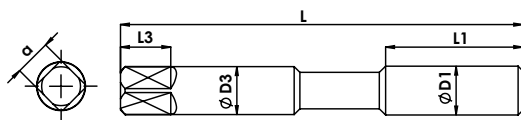


HSS-E

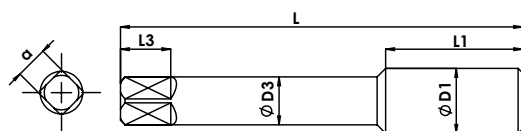
ISO  
529

6HX

C/2-3P



Reinforced Shank (M8 - M10)



Reduced Shank (M12 - M16)

IS 6175 Part 2



IS 6175 Part 3



IS 6175 Part 2



IS 6175 Part 3



Series

SD1

SD3

Material - 1<sup>st</sup> choice

N1-N3

N1-N3

Material - 2<sup>nd</sup> choice

-

P0-P2

Coating

Bright

TiN

ISO 529 / IS 6175 Part 2

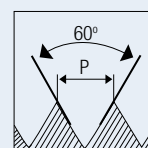
| Nominal Diameter | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | EDP No.    | EDP No.    |
|------------------|-------|----------------|---------------|----------------|-------------|---------------|------------------------|------------|------------|
| ØD1              | p     | L              | L1            | ØD3            | a           | L3            | Ød1                    |            |            |
| M 8              | 1     | 69             | 19            | 8              | 6.3         | 9             | 7.5                    | FAB0203223 | FAB0203233 |
| M 10             | 1     | 76             | 20            | 10             | 8           | 11            | 9.5                    | FAB0203224 | FAB0203234 |
| M 10             | 1.25  | 76             | 20            | 10             | 8           | 11            | 9.4                    | FAB0203225 | FAB0203235 |
| M 12             | 1.5   | 89             | 29            | 9              | 7.1         | 10            | 11.3                   | FAB0203226 | FAB0203236 |
| M 14             | 1.5   | 95             | 30            | 11.2           | 9           | 12            | 13.3                   | FAB0203227 | FAB0203237 |
| M 16             | 1.5   | 102            | 32            | 12.5           | 10          | 13            | 15.3                   | FAB0203229 | FAB0203239 |

Unit : mm



MF

## Metric fine threads



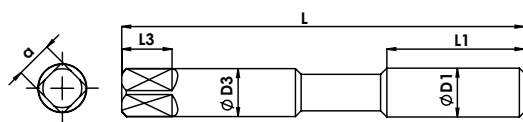
HOLE TYPE



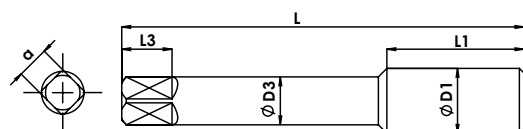
HSS-E

ISO  
529

6HX



Reinforced Shank (M8 - M10)



Reduced Shank (M12 - M16)

IS 6175 Part 2



IS 6175 Part 3



| Series                            | SDF5       |
|-----------------------------------|------------|
| Material - 1 <sup>st</sup> choice | P1-P2      |
| Material - 2 <sup>nd</sup> choice | -          |
| Coating                           | TiCN       |
| Tapping Drill Diameter            | EDP No.    |
| Ød1                               |            |
| 7.5                               | FAB0203245 |
| 9.5                               | FAB0203247 |
| 9.4                               | FAB0203248 |

| ISO 529 / IS 6175 Part 3 |     |     |    |      |     |    |      |            |
|--------------------------|-----|-----|----|------|-----|----|------|------------|
| M 12                     | 1.5 | 89  | 29 | 9    | 7.1 | 10 | 11.3 | FAB0203250 |
| M 14                     | 1.5 | 95  | 30 | 11.2 | 9   | 12 | 13.3 | FAB0203252 |
| M 16                     | 1.5 | 102 | 32 | 12.5 | 10  | 13 | 15.3 | FAB0203253 |

Unit : mm



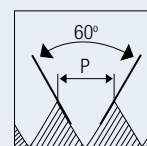
Silver cut

Forming Taps

HSS TAPS

M/MF

Metric coarse &amp; fine threads



HOLE TYPE



HSS-E

JIS

6HX



Reinforced Shank (M3 - M6)  
Male Centre upto M5

Reduced Shank (M8 - M12)

|                  |       |                |               |                |             |               |  |                                   |            |              |
|------------------|-------|----------------|---------------|----------------|-------------|---------------|--|-----------------------------------|------------|--------------|
|                  |       |                |               |                |             |               |  | Series                            | SD1        | SD3          |
|                  |       |                |               |                |             |               |  | Material - 1 <sup>st</sup> choice | N1-N2      | P0-P2, N1-N3 |
|                  |       |                |               |                |             |               |  | Material - 2 <sup>nd</sup> choice | -          | -            |
|                  |       |                |               |                |             |               |  | Coating                           | Bright     | TiN          |
| JIS              |       |                |               |                |             |               |  | Tapping Drill Diameter            | EDP No.    | EDP No.      |
| Nominal Diameter | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length |  | Ød1                               |            |              |
| ØD1              | p     | L              | L1            | ØD3            | a           | L3            |  | Ød1                               |            |              |
| M 3              | 0.5   | 46             | 11            | 4              | 3.2         | 6             |  | 2.8                               | FAB0205634 | FAB0205060   |
| M 4              | 0.7   | 52             | 13            | 5              | 4           | 7             |  | 3.7                               | FAB0205635 | FAB0205061   |
| M 5              | 0.8   | 60             | 16            | 5.5            | 4.5         | 7             |  | 4.7                               | FAB0205636 | FAB0205062   |
| M 6              | 1     | 62             | 19            | 6              | 4.5         | 7             |  | 5.5                               | FAB0205637 | FAB0205063   |
| M 8              | 1.25  | 70             | 22            | 6.2            | 5           | 8             |  | 7.4                               | FAB0205638 | FAB0205064   |
| M 8              | 1     | 70             | 22            | 6.2            | 5           | 8             |  | 7.5                               | FAB0205639 | FAB0205065   |
| M 10             | 1.5   | 75             | 24            | 7              | 5.5         | 8             |  | 9.3                               | FAB0205640 | FAB0205066   |
| M 10             | 1.25  | 75             | 24            | 7              | 5.5         | 8             |  | 9.4                               | FAB0205641 | FAB0205067   |
| M 12             | 1.75  | 82             | 29            | 8.5            | 6.5         | 9             |  | 11.2                              | FAB0205642 | FAB0205069   |
| M 12             | 1.5   | 82             | 29            | 8.5            | 6.5         | 9             |  | 11.3                              | FAB0205643 | FAB0205070   |

Unit : mm



# HOLLOW TAP



## FEATURES

- Tapping up to 2D in blind hole
- More cutting teeth ensures perfect chip distribution
- Maximum self control due to non fluted guide portion

## WORKPIECE MATERIAL

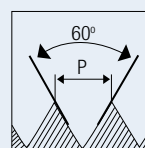
- Free Cutting Steel
- Structural Steel
- Carbon Steel
- Alloy Steel < 850 M/mm<sup>2</sup>
- Free Machining Stainless Steel
- Spheroidal Graphite
- Malleable Cast Iron



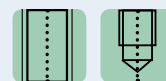
## Hollow Taps

**M**

### Metric coarse threads



HOLE TYPE



HSS-E

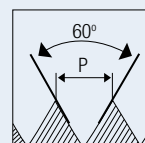
DIN 376



| Nominal Diameter | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Tapping Drill Diameter |
|------------------|-------|----------------|---------------|----------------|-------------|------------------------|
| ØD1              | p     | L              | L1            | ØD3            | a           | Ød1                    |
| M 20             | 2.5   | 140            | 32            | 16             | 12          | 17.5                   |
| M 24             | 3     | 160            | 38            | 18             | 14.5        | 21                     |
| M 27             | 3     | 160            | 36            | 20             | 16          | 24                     |
| M 30             | 3.5   | 180            | 45            | 22             | 18          | 26.5                   |
| M 33             | 3.5   | 180            | 45            | 25             | 20          | 29.5                   |
| M 36             | 4     | 200            | 52            | 28             | 22          | 32                     |
| M 39             | 4     | 200            | 52            | 32             | 24          | 35                     |
| M 42             | 4.5   | 200            | 59            | 32             | 24          | 37.5                   |
| M 45             | 4.5   | 220            | 59            | 36             | 29          | 40.5                   |
| M 48             | 5     | 250            | 65            | 36             | 29          | 43                     |
| M 52             | 5     | 250            | 65            | 40             | 32          | 47                     |
| M 56             | 5.5   | 280            | 72            | 45             | 35          | 50.5                   |
| M 60             | 5.5   | 280            | 72            | 45             | 35          | 54.5                   |
| M 64             | 6     | 315            | 78            | 50             | 39          | 58                     |

**MF**

### Metric fine threads



HOLE TYPE



HSS-E

DIN 376



| Nominal Diameter | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Tapping Drill Diameter |
|------------------|-------|----------------|---------------|----------------|-------------|------------------------|
| ØD1              | p     | L              | L1            | ØD3            | a           | Ød1                    |
| M 30             | 2     | 150            | 28            | 22             | 18          | 28                     |
| M 33             | 2     | 160            | 30            | 25             | 20          | 31                     |
| M 36             | 2     | 170            | 30            | 28             | 22          | 34                     |
| M 36             | 3     | 200            | 45            | 28             | 22          | 33                     |
| M 39             | 3     | 200            | 45            | 32             | 24          | 36                     |
| M 42             | 3     | 200            | 50            | 32             | 24          | 39                     |
| M 45             | 3     | 200            | 50            | 36             | 29          | 42                     |
| M 48             | 3     | 225            | 50            | 36             | 29          | 45                     |
| M 56             | 4     | 250            | 55            | 45             | 35          | 52                     |
| M 72             | 6     | 340            | 78            | 56             | 44          | 66                     |

Add image



**High Performance Cutting Tools**



**HAND TAPS /  
SHORT MACHINE TAPS**

## HSS HAND TAPS



These are straight flute general purpose taps which can be used for both machine or hand tapping. They are generally the most economical tool for use on production runs, but are best on materials that produce chips, or where the swarf breaks readily. Where deep holes are to be tapped, in materials which produce stringy swarf, other types of taps may be needed, especially for coarse threads.

Hand taps can be supplied in sets of three; bottom, second and taper leads, or individually.

**BOTTOM TAPS** have a chamfer (lead) of 1–2 threads, the angle of the lead being around 18 degrees per side. They are used to produce threads close to the bottom of blind holes.

**SECOND TAPS** have a lead of 3-5 threads at 8 degrees per side. They are the most popular and can be used for through holes, or blind holes where the thread does not need to go right to the bottom.

**TAPER TAPS** have a lead of 7-10 threads at 5 degrees per side. The taper lead distributes the cutting force over a large area, and the taper shape helps the thread to start. They can therefore be used to start a thread prior to use of second or bottom leads, or for through holes.



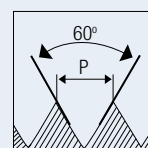
## HSS HAND TAPS

| THREAD FORM | BLANK STANDARD | TOLERANCE | LEAD CHAMFER | COATING | PAGE  |
|-------------|----------------|-----------|--------------|---------|-------|
| M           | ISO            | 6H        | T/S/B        | Bright  | 1.104 |
| MF          | ISO            | 6H        | T/B          | Bright  | 1.106 |
| M           | ISO Long Shank | 6H        | 5°           | Bright  | 1.109 |
| M           | ISO Long Shank | 6H        | 10°          | Bright  | 1.110 |
| M/MF        | ISO Long Shank | 6H        | 20°          | Bright  | 1.111 |
| M/MF        | ISO Long Shank | 6H        | B/4-4.5P     | Bright  | 1.113 |
| M           | ISO            | 6H        | Serial Form  | Bright  | 1.114 |
| BSW         | ISO            | Class 2   | T/S/B        | Bright  | 1.115 |
| BSF         | ISO            | Class 2   | T/S/B        | Bright  | 1.116 |
| BA          | ISO            | Class 2   | T/S/B        | Bright  | 1.117 |
| BSB         | ISO            | Class 2   | T/S/B        | Bright  | 1.118 |
| BS Con      | ISO            | Class 2   | T/B          | Bright  | 1.119 |
| ME          | ISO            | Class 2   | T/S/B        | Bright  | 1.120 |
| BSP         | ISO 2284       | -         | T/B          | Bright  | 1.121 |
| BSPT        | ISO 2284       | -         | T/B          | Bright  | 1.122 |
| UNC         | ISO            | 2B        | T/S/B        | Bright  | 1.123 |
| UNF         | ISO            | 2B        | T/S/B        | Bright  | 1.125 |
| NPT         | ANSI           | -         | T/B          | Bright  | 1.127 |
| NPS         | ANSI           | -         | T/B          | Bright  | 1.128 |
| M           | ISO 529        | 6H        | C/2-3P       | Bright  | 1.129 |
| M           | ISO 529        | 6H        | B/4-4.5P     | Bright  | 1.130 |



M

## Metric coarse threads



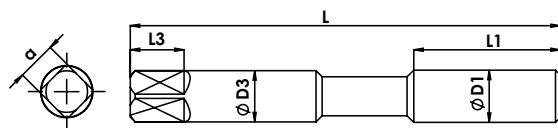
HOLE TYPE



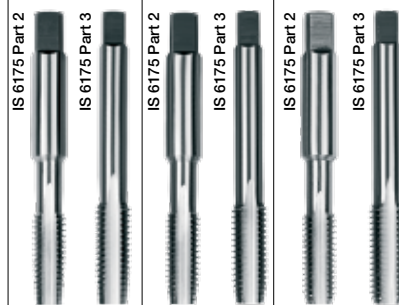
HSS

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6H



Reinforced Shank (M3 - M10)



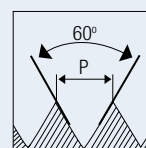
| ISO 529 / IS 6175 Part 1 |       |                |               |                |             |               | Lead Chamfer           | Taper      | Second     | Bottom     | Set        |
|--------------------------|-------|----------------|---------------|----------------|-------------|---------------|------------------------|------------|------------|------------|------------|
| Nominal Diameter         | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | EDP No.    | EDP No.    | EDP No.    | EDP No.    |
| ØD1                      | p     | L              | L1            | ØD3            | a           | L3            | Ød1                    |            |            |            |            |
| M 1.6                    | 0.35  | 41             | 8             | 2.5            | 2           | 4             | 1.25                   | FAA0201730 | FAA0201731 | FAA0201732 | FAA0201729 |
| M 2.0                    | 0.4   | 41             | 8             | 2.5            | 2           | 4             | 1.6                    | FAA0201747 | FAA0201750 | FAA0201753 | FAA0201745 |
| M 2.2                    | 0.45  | 44.5           | 9.5           | 2.8            | 2.24        | 5             | 1.75                   | FAA0201762 | FAA0201763 | FAA0201764 | FAA0201761 |
| M 2.3                    | 0.4   | 44.5           | 9.5           | 2.8            | 2.24        | 5             | 1.9                    | FAA0201767 | FAA0201768 | FAA0201769 | FAA0201766 |
| M 2.5                    | 0.45  | 44.5           | 9.5           | 2.8            | 2.24        | 5             | 2.05                   | FAA0201772 | FAA0201773 | FAA0201775 | FAA0201771 |
| M 2.6                    | 0.45  | 44.5           | 9.5           | 2.8            | 2.24        | 5             | 2.15                   | FAA0201783 | FAA0201784 | FAA0201785 | FAA0201782 |

| ISO 529 / IS 6175 Part 2 |      |    |    |      |      |    |      |            |            |            |            |
|--------------------------|------|----|----|------|------|----|------|------------|------------|------------|------------|
| M 3.0                    | 0.5  | 48 | 11 | 3.15 | 2.5  | 5  | 2.5  | FAA0201792 | FAA0201798 | FAA0201804 | FAA0201787 |
| M 3.5                    | 0.6  | 50 | 13 | 3.55 | 2.8  | 5  | 2.9  | FAA0201832 | FAA0201835 | FAA0201838 | FAA0201828 |
| M 4.0                    | 0.7  | 53 | 13 | 4    | 3.15 | 6  | 3.3  | FAA0201854 | FAA0201861 | FAA0201866 | FAA0201847 |
| M 4.5                    | 0.75 | 53 | 13 | 4.5  | 3.55 | 6  | 3.75 | FAA0201892 | FAA0201893 | FAA0201894 | FAA0201889 |
| M 5.0                    | 0.8  | 58 | 16 | 5    | 4    | 7  | 4.2  | FAA0201904 | FAA0201910 | FAA0201917 | FAA0201897 |
| M 6.0                    | 1    | 66 | 19 | 6.3  | 5    | 8  | 5    | FAA0201947 | FAA0201953 | FAA0201959 | FAA0201939 |
| M 7.0                    | 1    | 66 | 19 | 7.1  | 5.6  | 8  | 6    | FAA0201989 | FAA0201992 | FAA0201995 | FAA0201985 |
| M 8.0                    | 1.25 | 72 | 22 | 8    | 6.3  | 9  | 6.75 | FAA0202009 | FAA0202014 | FAA0202020 | FAA0202003 |
| M 9.0                    | 1.25 | 72 | 22 | 9    | 7.1  | 10 | 7.75 | FAA0202055 | FAA0202059 | FAA0202063 | FAA0202051 |
| M 10.0                   | 1.5  | 80 | 24 | 10   | 8    | 11 | 8.5  | FAA0202080 | FAA0202086 | FAA0202093 | FAA0202072 |

Unit : mm



## Metric coarse threads



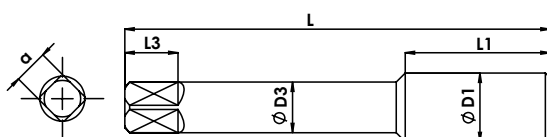
HOLE TYPE



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6H



Reduced Shank (M12 - M30)

IS 6175 Part 3

IS 6175 Part 3

IS 6175 Part 3

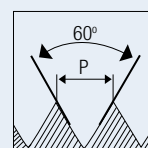
| ISO 529 / IS 6175 Part 3 |       |                |               |                |             |               | Lead Chamfer           | Taper      | Second     | Bottom     | Set        |
|--------------------------|-------|----------------|---------------|----------------|-------------|---------------|------------------------|------------|------------|------------|------------|
| Nominal Diameter         | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | EDP No.    | EDP No.    | EDP No.    | EDP No.    |
| ØD1                      | p     | L              | L1            | ØD3            | a           | L3            | Ød1                    |            |            |            |            |
| M 11.0                   | 1.5   | 85             | 25            | 8              | 6.3         | 9             | 9.5                    | FAA0202127 | FAA0202131 | FAA0202136 | FAA0202123 |
| M 12.0                   | 1.75  | 89             | 29            | 9              | 7.1         | 10            | 10.25                  | FAA0202147 | FAA0202153 | FAA0202157 | FAA0202141 |
| M 14                     | 2     | 95             | 30            | 11.2           | 9           | 12            | 12                     | FAA0202181 | FAA0202185 | FAA0202189 | FAA0202177 |
| M 16                     | 2     | 102            | 32            | 12.5           | 10          | 13            | 14                     | FAA0202209 | FAA0202214 | FAA0202219 | FAA0202204 |
| M 18                     | 2.5   | 112            | 37            | 14             | 11.2        | 14            | 15.5                   | FAA0202251 | FAA0202253 | FAA0202256 | FAA0202247 |
| M 20                     | 2.5   | 112            | 37            | 14             | 11.2        | 14            | 17.5                   | FAA0202271 | FAA0202276 | FAA0202281 | FAA0202265 |
| M 22                     | 2.5   | 118            | 38            | 16             | 12.5        | 16            | 19.5                   | FAA0202306 | FAA0202310 | FAA0202314 | FAA0202302 |
| M 24                     | 3     | 130            | 45            | 18             | 14          | 18            | 21                     | FAA0202330 | FAA0202335 | FAA0202340 | FAA0202325 |
| M 27                     | 3     | 135            | 45            | 20             | 16          | 20            | 24                     | FAA0202364 | FAA0202367 | FAA0202370 | FAA0202360 |
| M 30                     | 3.5   | 138            | 48            | 20             | 16          | 20            | 26.5                   | FAA0202385 | FAA0202389 | FAA0202393 | FAA0202381 |
| M 33                     | 3.5   | 151            | 51            | 22.4           | 18          | 22            | 29.5                   | FAA0202408 | FAA0202409 | FAA0202410 | FAA0202405 |
| M 36                     | 4     | 162            | 57            | 25             | 20          | 24            | 32                     | FAA0202421 | FAA0202425 | FAA0202429 | FAA0202418 |
| M 39                     | 4     | 170            | 60            | 28             | 22.4        | 26            | 35                     | FAA0202443 | FAA0202444 | FAA0202445 | FAA0202440 |
| M 42                     | 4.5   | 170            | 60            | 28             | 22.4        | 26            | 37.5                   | FAA0202452 | FAA0202454 | FAA0202455 | FAA0202449 |
| M 45                     | 4.5   | 187            | 67            | 31.5           | 25          | 28            | 40.5                   | FAA0202462 | FAA0202463 | FAA0202464 | FAA0202459 |
| M 48                     | 5     | 187            | 67            | 31.5           | 25          | 28            | 43                     | FAA0202471 | FAA0202472 | FAA0202473 | FAA0202468 |
| M 52                     | 5     | 200            | 70            | 35.5           | 28          | 31            | 47                     | FAA0202478 | FAA0202479 | FAA0202480 | FAA0202477 |
| M 56                     | 5.5   | 200            | 70            | 35.5           | 28          | 31            | 50.5                   | FAA0202482 | FAA0202483 | FAA0202484 | FAA0202481 |

Unit : mm



MF

## Metric fine threads



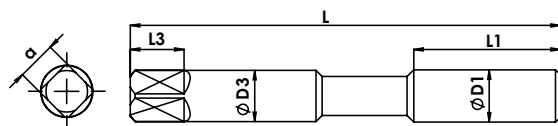
HOLE TYPE



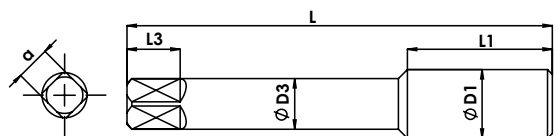
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Reinforced Shank (M3 - M10)



Reduced Shank (M12 - M30)

IS 6175 Part 2

IS 6175 Part 3

IS 6175 Part 2

IS 6175 Part 3

| ISO 529 / IS 6175 Part 2 |       |                |               |                |             |               | Lead Chamfer           | Taper      | Bottom     | Pair       |
|--------------------------|-------|----------------|---------------|----------------|-------------|---------------|------------------------|------------|------------|------------|
| Nominal Diameter         | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | EDP No.    | EDP No.    | EDP No.    |
| ØD1                      | p     | L              | L1            | ØD3            | a           | L3            | Ød1                    |            |            |            |
| M 3                      | 0.35  | 48             | 11            | 3.15           | 2.5         | 5             | 2.12                   | FAA0202551 | FAA0202555 | FAA0202535 |
| M 3                      | 0.6   | 48             | 11            | 3.15           | 2.5         | 5             | 2.12                   | FAA0202542 | FAA0202544 | FAA0202541 |
| M 4                      | 0.5   | 53             | 13            | 4              | 3.15        | 6             | 2.8                    | FAA0202565 | FAA0202569 | FAA0202564 |
| M 4                      | 0.75  | 53             | 13            | 4              | 3.15        | 6             | 2.8                    | FAA0202576 | FAA0202578 | FAA0202575 |
| M 5                      | 0.5   | 58             | 16            | 5              | 4           | 7             | 3.55                   | FAA0202589 | FAA0202593 | FAA0202588 |
| M 5.5                    | 0.9   | 62             | 17            | 5.6            | 4.5         | 7             | 4                      | FAA0202615 | FAA0202616 | FAA0202614 |
| M 6                      | 0.5   | 66             | 19            | 6.3            | 5           | 8             | 4.5                    | FAA0202627 | FAA0202629 | FAA0202626 |
| M 6                      | 0.75  | 66             | 19            | 6.3            | 5           | 8             | 4.5                    | FAA0202634 | FAA0202640 | FAA0202633 |
| M 7                      | 0.75  | 66             | 19            | 7.1            | 5.6         | 8             | 5.3                    | FAA0202666 | FAA0202670 | FAA0202665 |
| M 8                      | 1     | 69             | 19            | 8              | 6.3         | 9             | 6                      | FAA0202698 | FAA0202704 | FAA0202697 |
| M 9                      | 1     | 69             | 19            | 9              | 7.1         | 10            | 7.1                    | FAA0202732 | FAA0202736 | FAA0202731 |
| M 10                     | 1     | 76             | 20            | 10             | 8           | 11            | 7.5                    | FAA0202759 | FAA0202764 | FAA0202758 |
| M 10                     | 1.25  | 76             | 20            | 10             | 8           | 11            | 7.5                    | FAA0202787 | FAA0202793 | FAA0202786 |

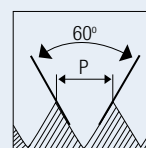
| ISO 529 / IS 6175 Part 3 |       |                |               |                |             |               |                        |            |            |            |
|--------------------------|-------|----------------|---------------|----------------|-------------|---------------|------------------------|------------|------------|------------|
| Nominal Diameter         | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | EDP No.    | EDP No.    | EDP No.    |
| ØD1                      | p     | L              | L1            | ØD3            | a           | L3            | Ød1                    |            |            |            |
| M 11                     | 1.25  | 82             | 22            | 8              | 6.3         | 9             | 9.8                    | FAA0202830 | FAA0202831 | FAA0202829 |
| M 12                     | 1     | 84             | 24            | 9              | 7.1         | 10            | 11                     | FAA0202846 | FAA0202855 | FAA0202845 |
| M 12                     | 1.25  | 84             | 24            | 9              | 7.1         | 10            | 10.8                   | FAA0202870 | FAA0202874 | FAA0202869 |
| M 12                     | 1.5   | 89             | 29            | 9              | 7.1         | 10            | 10.5                   | FAA0202895 | FAA0202903 | FAA0202893 |
| M 14                     | 1     | 87             | 22            | 11.2           | 9           | 12            | 13                     | FAA0202946 | FAA0202951 | FAA0202945 |
| M 14                     | 1.25  | 90             | 25            | 11.2           | 9           | 12            | 12.8                   | FAA0202967 | FAA0202973 | FAA0202966 |
| M 14                     | 1.5   | 95             | 30            | 11.2           | 9           | 12            | 12.5                   | FAA0202989 | FAA0202997 | FAA0202988 |

Unit : mm



MF

## Metric fine threads



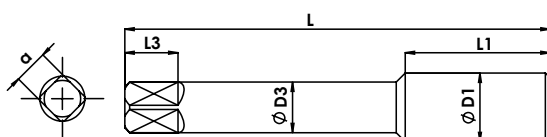
HOLE TYPE



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Reduced Shank (M12 - M30)

IS 6175 Part 3

IS 6175 Part 3

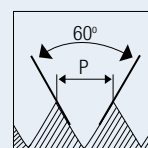
| ISO 529 / IS 6175 Part 3 |       |                |               |                |             |               | Lead Chamfer           | Taper      | Bottom     | Pair       |
|--------------------------|-------|----------------|---------------|----------------|-------------|---------------|------------------------|------------|------------|------------|
| Nominal Diameter         | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | EDP No.    | EDP No.    | EDP No.    |
| ØD1                      | p     | L              | L1            | ØD3            | a           | L3            | Ød1                    |            |            |            |
| M 16                     | 1     | 92             | 22            | 12.5           | 10          | 13            | 15                     | FAA0203042 | FAA0203046 | FAA0203041 |
| M 16                     | 1.5   | 102            | 32            | 12.5           | 10          | 13            | 14.5                   | FAA0203064 | FAA0203072 | FAA0203063 |
| M 18                     | 1     | 97             | 22            | 14             | 11.2        | 14            | 17                     | FAA0203098 | FAA0203101 | FAA0203097 |
| M 18                     | 1.5   | 104            | 29            | 14             | 11.2        | 14            | 16.5                   | FAA0203107 | FAA0203115 | FAA0203106 |
| M 18                     | 2     | 112            | 37            | 14             | 11.2        | 14            | 16                     | FAA0203130 | FAA0203132 | FAA0203129 |
| M 20                     | 1     | 102            | 27            | 14             | 11.2        | 14            | 19                     | FAA0203147 | FAA0203149 | FAA0203146 |
| M 20                     | 1.5   | 104            | 29            | 14             | 11.2        | 14            | 18.5                   | FAA0203156 | FAA0203164 | FAA0203155 |
| M 20                     | 2     | 112            | 37            | 14             | 11.2        | 14            | 18                     | FAA0203181 | FAA0203185 | FAA0203180 |
| M 22                     | 1     | 109            | 29            | 16             | 12.5        | 16            | 21                     | FAA0203196 | FAA0203198 | FAA0203195 |
| M 22                     | 1.5   | 113            | 33            | 16             | 12.5        | 16            | 20.5                   | FAA0203202 | FAA0203208 | FAA0203201 |
| M 22                     | 2     | 118            | 38            | 16             | 12.5        | 16            | 20                     | FAA0203219 | FAA0203221 | FAA0203218 |
| M 24                     | 1     | 114            | 29            | 18             | 14          | 18            | 23                     | FAA0203228 | FAA0203229 | FAA0203227 |
| M 24                     | 1.5   | 120            | 35            | 18             | 14          | 18            | 22.5                   | FAA0203234 | FAA0203239 | FAA0203233 |
| M 24                     | 2     | 120            | 35            | 18             | 14          | 18            | 22                     | FAA0203254 | FAA0203258 | FAA0203253 |
| M 25                     | 1     | 114            | 29            | 18             | 14          | 18            | 24                     | FAA0203267 | FAA0203269 | FAA0203266 |
| M 25                     | 1.5   | 120            | 35            | 18             | 14          | 18            | 23.5                   | FAA0203274 | FAA0203278 | FAA0203273 |
| M 27                     | 1.5   | 127            | 37            | 20             | 16          | 20            | 25.5                   | FAA0203307 | FAA0203309 | FAA0203306 |
| M 27                     | 2     | 127            | 37            | 20             | 16          | 20            | 25                     | FAA0203316 | FAA0203320 | FAA0203315 |
| M 28                     | 1.5   | 127            | 37            | 20             | 16          | 20            | 26.5                   | FAA0203329 | FAA0203331 | FAA0203328 |
| M 30                     | 1.5   | 127            | 37            | 20             | 16          | 20            | 28.5                   | FAA0203344 | FAA0203348 | FAA0203343 |

Unit : mm



MF

## Metric fine threads



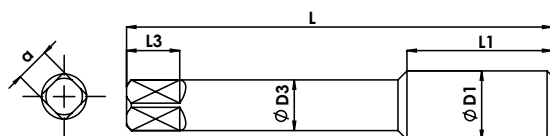
HOLE TYPE



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Reduced Shank (M12 - M30)

IS 6175 Part 3



IS 6175 Part 3

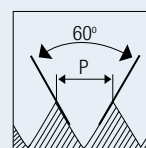


| ISO 529 / IS 6175 Part 3 |       |                |               |                |             |               | Lead Chamfer           | Taper      | Bottom     | Pair       |
|--------------------------|-------|----------------|---------------|----------------|-------------|---------------|------------------------|------------|------------|------------|
| Nominal Diameter         | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | EDP No.    | EDP No.    | EDP No.    |
| ØD1                      | p     | L              | L1            | ØD3            | a           | L3            | Ød1                    |            |            |            |
| M 30                     | 2     | 127            | 37            | 20             | 16          | 20            | 28                     | FAA0203359 | FAA0203363 | FAA0203358 |
| M 30                     | 3     | 138            | 48            | 20             | 16          | 20            | 27                     | FAA0203371 | FAA0203373 | FAA0203370 |
| M 32                     | 1.5   | 137            | 37            | 22.4           | 18          | 22            | 30.5                   | FAA0203385 | FAA0203389 | FAA0203384 |
| M 33                     | 1.5   | 137            | 37            | 22.4           | 18          | 22            | 31.5                   | FAA0203398 | FAA0203399 | FAA0203397 |
| M 33                     | 2     | 137            | 37            | 22.4           | 18          | 22            | 31                     | FAA0203403 | FAA0203405 | FAA0203402 |
| M 33                     | 3     | 151            | 51            | 22.4           | 18          | 22            | 30                     | FAA0203409 | FAA0203411 | FAA0203408 |
| M 36                     | 1.5   | 144            | 39            | 25             | 20          | 24            | 34.5                   | FAA0203435 | FAA0203437 | FAA0203434 |
| M 36                     | 2     | 144            | 39            | 25             | 20          | 24            | 34                     | FAA0203442 | FAA0203444 | FAA0203441 |
| M 36                     | 3     | 162            | 57            | 25             | 20          | 24            | 33                     | FAA0203450 | FAA0203452 | FAA0203449 |
| M 39                     | 1.5   | 149            | 39            | 28             | 22.4        | 26            | 37.5                   | FAA0203464 | FAA0203465 | FAA0203463 |
| M 39                     | 2     | 149            | 39            | 28             | 22.4        | 26            | 37                     |            | FAA0203467 | FAA0203466 |
| M 39                     | 3     | 170            | 60            | 28             | 22.4        | 26            | 36                     | FAA0203470 | FAA0203472 | FAA0203469 |
| M 40                     | 1.5   | 149            | 39            | 28             | 22.4        | 26            | 38.5                   | FAA0203477 | FAA0203479 | FAA0203476 |
| M 42                     | 1.5   | 149            | 39            | 28             | 22.4        | 26            | 40.5                   | FAA0203490 | FAA0203491 | FAA0203489 |
| M 42                     | 3     | 170            | 60            | 28             | 22.4        | 26            | 39                     | FAA0203500 | FAA0203502 | FAA0203499 |
| M 45                     | 1.5   | 165            | 45            | 31.5           | 25          | 28            | 43.5                   | FAA0203521 | FAA0203522 | FAA0203520 |
| M 45                     | 3     | 187            | 67            | 31.5           | 25          | 28            | 42                     | FAA0203529 | FAA0203531 | FAA0203528 |
| M 48                     | 1.5   | 165            | 45            | 31.5           | 25          | 28            | 46.5                   | FAA0203533 | FAA0203534 | FAA0203532 |
| M 48                     | 2     | 165            | 45            | 31.5           | 25          | 28            | 46                     | FAA0203539 | FAA0203541 | FAA0203538 |
| M 48                     | 3     | 187            | 67            | 31.5           | 25          | 28            | 45                     | FAA0203546 | FAA0203548 | FAA0203545 |

Unit : mm



# Metric Long Shank Coarse threads



(Taper-Type A)

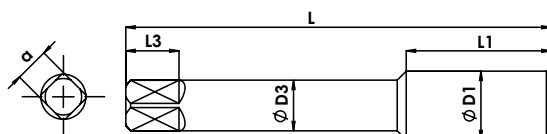
HOLE TYPE



HSS

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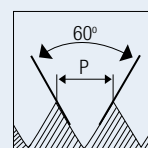
| ISO 2283 / IS 6175 Part 4 |       |                |               |                |             |               | Lead Chamfer           | 5°         |
|---------------------------|-------|----------------|---------------|----------------|-------------|---------------|------------------------|------------|
| Nominal Diameter          | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | EDP No.    |
| ØD1                       | p     | L              | L1            | ØD3            | a           | L3            | Ød1                    |            |
| M 3                       | 0.5   | 66             | 11            | 2.24           | 1.8         | 4             | 2.5                    | FAA0203714 |
| M 4                       | 0.7   | 73             | 13            | 3.15           | 2.5         | 5             | 3.3                    | FAA0203721 |
| M 5                       | 0.8   | 79             | 16            | 4              | 3.15        | 6             | 4.2                    | FAA0203738 |
| M 6                       | 1     | 89             | 19            | 4.5            | 3.55        | 6             | 5                      | FAA0203747 |
| M 8                       | 1.25  | 97             | 22            | 6.3            | 5           | 8             | 6.75                   | FAA0203770 |
| M 10                      | 1.5   | 108            | 24            | 8              | 6.3         | 9             | 8.5                    | FAA0203794 |
| M 12                      | 1.75  | 119            | 29            | 9              | 7.1         | 10            | 10.25                  | FAA0203816 |
| M 14                      | 2     | 127            | 30            | 11.2           | 9           | 12            | 12.5                   | FAA0207063 |
| M 16                      | 2     | 137            | 32            | 12.5           | 10          | 13            | 14                     | FAA0203852 |
| M 18                      | 2.5   | 149            | 37            | 14             | 11.2        | 14            | 15.5                   | FAA0203867 |
| M 20                      | 2.5   | 149            | 37            | 14             | 11.2        | 14            | 17.5                   | FAA0203884 |

Unit : mm



M

## ISO Metric Long Shank Coarse threads



(Second-Type D)

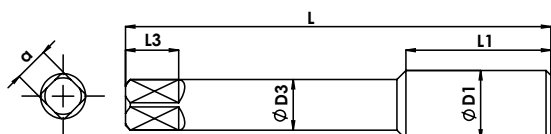
HOLE TYPE



HSS

ISO  
2283

6H



| ISO 2283 / IS 6175 Part 4 |       |                |               |                |             |               | Lead Chamfer           | 10°        |
|---------------------------|-------|----------------|---------------|----------------|-------------|---------------|------------------------|------------|
| Nominal Diameter          | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | EDP No.    |
| ØD1                       | p     | L              | L1            | ØD3            | a           | L3            | Ød1                    |            |
| M 3                       | 0.5   | 66             | 11            | 2.24           | 0.1         | 4             | 2.5                    | FAA0203715 |
| M 4                       | 0.7   | 73             | 13            | 3.15           | 2.5         | 5             | 3.3                    | FAA0203722 |
| M 5                       | 0.8   | 79             | 16            | 4              | 3.15        | 6             | 4.2                    | FAA0203739 |
| M 6                       | 1     | 89             | 19            | 4.5            | 3.55        | 6             | 5                      | FAA0203748 |
| M 8                       | 1.25  | 97             | 22            | 6.3            | 5           | 8             | 6.75                   | FAA0203771 |
| M 10                      | 1.5   | 108            | 24            | 8              | 6.3         | 9             | 8.5                    | FAA0203795 |
| M 12                      | 1.75  | 119            | 29            | 9              | 7           | 10            | 10.25                  | FAA0203817 |
| M 14                      | 2     | 127            | 30            | 11.2           | 9           | 12            | 12                     | FAA0207305 |
| M 16                      | 2     | 137            | 32            | 12.5           | 10          | 13            | 14                     | FAA0203853 |
| M 18                      | 2.5   | 149            | 37            | 14             | 11.2        | 14            | 15.5                   | FAA0207306 |
| M 20                      | 2.5   | 149            | 37            | 14             | 11.2        | 14            | 17.5                   | FAA0203885 |

Unit : mm

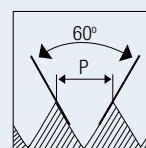


## HSS Machine Taps

HSS TAPS

M/MF

## Metric Long Shank Coarse &amp; fine threads



(Bottom-Type C)

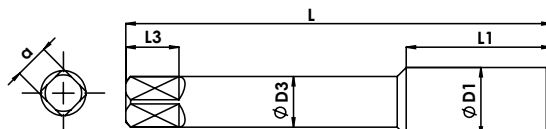
HOLE TYPE



HSS

ISO  
2283

6H



| ISO 2283 / IS 6175 Part 4 |       |                |               |                |             |               | Lead Chamfer           | 20°        |
|---------------------------|-------|----------------|---------------|----------------|-------------|---------------|------------------------|------------|
| Nominal Diameter          | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | EDP No.    |
| ØD1                       | p     | L              | L1            | ØD3            | a           | L3            | Ød1                    |            |
| M 3                       | 0.5   | 66             | 11            | 2.24           | 1.8         | 4             | 2.5                    | FAA0203716 |
| M 3.5                     | 0.6   | 68             | 13            | 2.5            | 2           | 4             | 2.9                    | FAA0203719 |
| M 4                       | 0.7   | 73             | 13            | 3.15           | 2.5         | 5             | 3.3                    | FAA0203723 |
| M 5                       | 0.8   | 79             | 16            | 4              | 3.15        | 6             | 4.2                    | FAA0203740 |
| M 6                       | 1     | 89             | 19            | 4.5            | 3.55        | 6             | 5                      | FAA0203749 |
| M 7                       | 1     | 89             | 19            | 5.6            | 4.5         | 7             | 6                      | FAA0203759 |
| M 8                       | 1     | 97             | 19            | 6.3            | 5           | 8             | 7                      | FAA0203767 |
| M 8                       | 1.25  | 97             | 22            | 6.3            | 5           | 8             | 6.75                   | FAA0203772 |
| M 9                       | 1.25  | 97             | 22            | 7.1            | 5.6         | 8             | 7.75                   | FAA0203781 |
| M 10                      | 1     | 108            | 20            | 8              | 6.3         | 9             | 9                      | FAA0203786 |
| M 10                      | 1.25  | 108            | 20            | 8              | 6.3         | 9             | 8.75                   | FAA0203792 |
| M 10                      | 1.5   | 108            | 24            | 8              | 6.3         | 9             | 8.5                    | FAA0203796 |
| M 12                      | 1.25  | 119            | 24            | 9              | 7.1         | 10            | 10.75                  | FAA0203808 |
| M 12                      | 1.5   | 119            | 29            | 9              | 7.1         | 10            | 10.5                   | FAA0203813 |

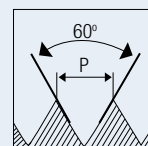
Unit : mm



HSS Machine Taps

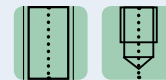
M/MF

# Metric Long Shank Coarse & fine threads



(Bottom-Type C)

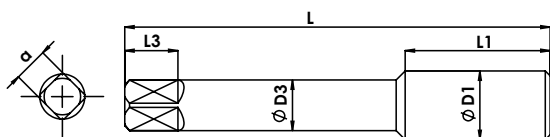
HOLE TYPE



HSS

ISO  
2283

6H



| ISO 2283 / IS 6175 Part 4 |       |                |               |                |             |               | Lead Chamfer           | 20°        |
|---------------------------|-------|----------------|---------------|----------------|-------------|---------------|------------------------|------------|
| Nominal Diameter          | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | EDP No.    |
| ØD1                       | p     | L              | L1            | ØD3            | a           | L3            | Ød1                    |            |
| M 12                      | 1.75  | 119            | 29            | 9              | 7.1         | 10            | 10.25                  | FAA0203818 |
| M 14                      | 1.25  | 127            | 25            | 11.2           | 9           | 12            | 12.75                  | FAA0203828 |
| M 14                      | 1.5   | 127            | 30            | 11.2           | 9           | 12            | 12.5                   | FAA0203832 |
| M 14                      | 2     | 127            | 30            | 11.2           | 9           | 12            | 12                     | FAA0203841 |
| M 16                      | 1.5   | 137            | 32            | 12.5           | 10          | 13            | 14.5                   | FAA0203849 |
| M 16                      | 2     | 137            | 32            | 12.5           | 10          | 13            | 14                     | FAA0203854 |
| M 18                      | 1.5   | 149            | 29            | 14             | 11.2        | 14            | 16.5                   | FAA0203864 |
| M 18                      | 2.5   | 149            | 37            | 14             | 11.2        | 14            | 15.5                   | FAA0203868 |
| M 20                      | 1.5   | 149            | 29            | 14             | 11.2        | 14            | 18.5                   | FAA0203875 |
| M 20                      | 2.5   | 149            | 37            | 14             | 11.2        | 14            | 17.5                   | FAA0203886 |
| M 22                      | 2.5   | 158            | 38            | 16             | 12.5        | 16            | 19.5                   | FAA0203902 |
| M 24                      | 3     | 172            | 45            | 18             | 14          | 18            | 21                     | FAA0203918 |
| M 27                      | 3     | 180            | 45            | 20             | 16          | 20            | 24                     | FAA0203940 |
| M 30                      | 3.5   | 183            | 48            | 20             | 16          | 20            | 26.5                   | FAA0203955 |

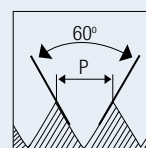
Unit : mm



## HSS Machine Taps

M/MF

## Metric Long Shank Coarse &amp; fine threads



(SPPT-Type B)

HOLE TYPE

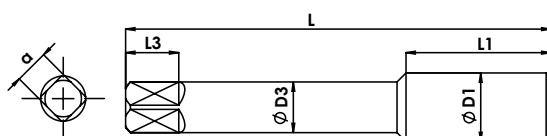


HSS

ISO  
2283

6H

HSS TAPS



## ISO 2283 / IS 6175 Part 4

Spiral Point with 10° lead chamfer

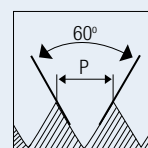
| Nominal Diameter | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | EDP No.    |
|------------------|-------|----------------|---------------|----------------|-------------|---------------|------------------------|------------|
| ØD1              | p     | L              | L1            | ØD3            | a           | L3            | Ød1                    |            |
| M 3              | 0.5   | 66             | 11            | 2.24           | 1.8         | 4             | 2.5                    | FAA0203717 |
| M 3.5            | 0.6   | 68             | 13            | 2.5            | 2           | 4             | 2.9                    | FAA0203720 |
| M 4              | 0.7   | 73             | 13            | 3.15           | 2.5         | 5             | 3.3                    | FAA0203726 |
| M 5              | 0.8   | 79             | 16            | 4              | 3.15        | 6             | 4.2                    | FAA0203743 |
| M 6              | 1     | 89             | 19            | 4.5            | 3.55        | 6             | 5                      | FAA0203753 |
| M 8              | 1.25  | 97             | 22            | 6.3            | 5           | 8             | 6.75                   | FAA0203775 |
| M 10             | 1.25  | 108            | 20            | 8              | 6.3         | 9             | 8.75                   | FAA0203793 |
| M 10             | 1.5   | 108            | 24            | 8              | 6.3         | 9             | 8.5                    | FAA0203798 |
| M 12             | 1.5   | 119            | 29            | 9              | 7.1         | 10            | 10.5                   | FAA0203815 |
| M 12             | 1.75  | 119            | 29            | 9              | 7.1         | 10            | 10.25                  | FAA0203821 |
| M 14             | 1.5   | 127            | 30            | 11.2           | 9           | 12            | 12.5                   | FAA0203835 |
| M 14             | 2     | 127            | 30            | 11.2           | 9           | 12            | 12                     | FAA0203842 |
| M 16             | 1.5   | 137            | 32            | 12.5           | 10          | 13            | 14.5                   | FAA0203851 |
| M 16             | 2     | 137            | 32            | 12.5           | 10          | 13            | 14                     | FAA0203857 |
| M 18             | 1.5   | 142            | 29            | 14             | 11.2        | 14            | 16.5                   | FAA0203865 |
| M 18             | 2.5   | 149            | 37            | 14             | 11.2        | 14            | 15.5                   | FAA0203869 |
| M 20             | 1.5   | 142            | 29            | 14             | 11.2        | 14            | 18.5                   | FAA0203878 |
| M 20             | 2.5   | 149            | 37            | 14             | 11.2        | 14            | 17.5                   | FAA0203888 |
| M 22             | 2.5   | 158            | 38            | 16             | 12.5        | 16            | 19.5                   | FAA0203903 |
| M 24             | 3     | 172            | 45            | 18             | 14          | 18            | 21                     | FAA0203920 |

Unit : mm



M

## Metric serial form coarse threads



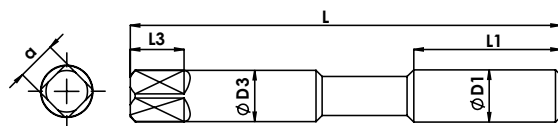
HOLE TYPE



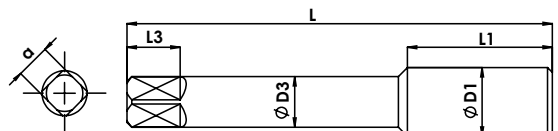
HSS

ISO  
529

6H



Reinforced Shank (M3 - M10)



Reduced Shank (M12 - M30)

IS 6175 Part 2

IS 6175 Part 3

IS 6175 Part 2

IS 6175 Part 3

IS 6175 Part 2

IS 6175 Part 3

ISO 529 / IS 6175 Part 2

Lead Chamfer

Rougher

Intermediate

Finisher

Set

| Nominal Diameter | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | EDP No.    | EDP No.    | EDP No.    | EDP No.    |
|------------------|-------|----------------|---------------|----------------|-------------|---------------|------------------------|------------|------------|------------|------------|
| ØD1              | p     | L              | L1            | ØD3            | a           | L3            | Ød1                    |            |            |            |            |
| M 3              | 0.5   | 48             | 11            | 3.15           | 2.5         | 5             | 2.5                    | FAA0201821 | FAA0201822 | FAA0201804 | FAA0201820 |
| M 4              | 0.7   | 53             | 13            | 4              | 3.15        | 6             | 3.3                    | FAA0201881 | FAA0201882 | FAA0201866 | FAA0201880 |
| M 5              | 0.8   | 58             | 16            | 5              | 4           | 7             | 4.2                    | FAA0201932 | FAA0201933 | FAA0201917 | FAA0201931 |
| M 6              | 1     | 66             | 19            | 6.3            | 5           | 8             | 5                      | FAA0201977 | FAA0201978 | FAA0201959 | FAA0201976 |
| M 8              | 1.25  | 72             | 22            | 8              | 6.3         | 9             | 6.75                   | FAA0202037 | FAA0202038 | FAA0202020 | FAA0202036 |
| M 10             | 1.5   | 80             | 24            | 10             | 8           | 11            | 8.5                    | FAA0202108 | FAA0202109 | FAA0202093 | FAA0202107 |

ISO 529 / IS 6175 Part 3

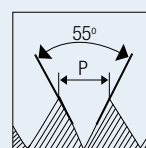
|      |      |     |    |      |      |    |       |            |            |            |            |
|------|------|-----|----|------|------|----|-------|------------|------------|------------|------------|
| M 12 | 1.75 | 89  | 29 | 9    | 7.1  | 10 | 10.25 | FAA0202171 | FAA0202172 | FAA0202157 | FAA0202170 |
| M 14 | 2    | 95  | 30 | 11.2 | 9    | 12 | 12    | FAA0202198 | FAA0202199 | FAA0202189 | FAA0202197 |
| M 16 | 2    | 102 | 32 | 12.5 | 10   | 13 | 14    | FAA0202233 | FAA0202234 | FAA0202219 | FAA0202232 |
| M 18 | 2.5  | 112 | 37 | 14   | 11.2 | 14 | 15.5  | FAA0202263 | FAA0202264 | FAA0202256 | FAA0202262 |
| M 20 | 2.5  | 112 | 37 | 14   | 11.2 | 14 | 17.5  | FAA0202293 | FAA0202294 | FAA0202281 | FAA0202292 |
| M 22 | 2.5  | 118 | 38 | 16   | 12.5 | 16 | 19.5  | FAA0202306 | FAA0202310 | FAA0202314 | FAA0202321 |
| M 24 | 3    | 130 | 45 | 18   | 14   | 18 | 21    | FAA0202349 | FAA0202350 | FAA0202340 | FAA0202348 |
| M 27 | 3    | 135 | 45 | 20   | 16   | 20 | 24    | FAA0202376 | FAA0202377 | FAA0202370 | FAA0202375 |
| M 30 | 3.5  | 138 | 48 | 20   | 16   | 20 | 26.5  | FAA0202401 | FAA0202402 | FAA0202393 | FAA0202400 |

Unit : mm



BSW

## Whithworth coarse threads



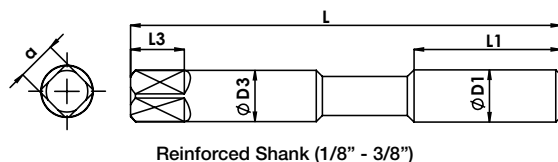
HOLE TYPE



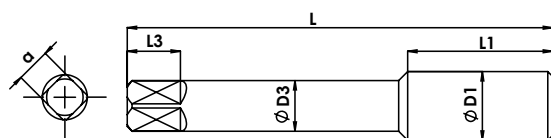
HSS

ISO  
529

Class 2



Reinforced Shank (1/8" - 3/8")



Reduced Shank (7/16" - 2")



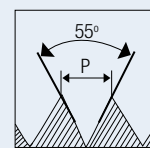
|                  |     |                |               |                |             |               | Lead Chamfer           | Taper      | Second     | Bottom     | Set        |
|------------------|-----|----------------|---------------|----------------|-------------|---------------|------------------------|------------|------------|------------|------------|
| Nominal Diameter | TPI | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | EDP No.    | EDP No.    | EDP No.    | EDP No.    |
| ØD1              | p   | L              | L1            | ØD3            | a           | L3            | Ød1                    |            |            |            |            |
| 1/8"             | 40  | 48             | 11            | 3.15           | 2.5         | 5             | 2.55                   | FAA0200011 | FAA0200013 | FAA0200015 | FAA0200009 |
| 5/32"            | 32  | 53             | 13            | 4              | 3.15        | 6             | 3.2                    | FAA0200022 | FAA0200024 | FAA0200026 | FAA0200020 |
| 3/16"            | 24  | 58             | 16            | 5              | 4           | 7             | 3.7                    | FAA0200038 | FAA0200042 | FAA0200045 | FAA0200034 |
| 1/4"             | 20  | 66             | 19            | 6.3            | 5           | 8             | 5.1                    | FAA0200065 | FAA0200070 | FAA0200075 | FAA0200061 |
| 5/16"            | 18  | 72             | 22            | 8              | 6.3         | 9             | 6.5                    | FAA0200098 | FAA0200102 | FAA0200106 | FAA0200094 |
| 3/8"             | 16  | 80             | 24            | 10             | 8           | 11            | 7.9                    | FAA0200120 | FAA0200124 | FAA0200127 | FAA0200115 |
| 7/16"            | 14  | 85             | 25            | 8              | 6.3         | 9             | 9.3                    | FAA0200143 | FAA0200147 | FAA0200151 | FAA0200139 |
| 1/2"             | 12  | 89             | 29            | 9.5            | 7.5         | 10            | 10.5                   | FAA0200162 | FAA0200165 | FAA0200168 | FAA0200159 |
| 9/16"            | 12  | 95             | 30            | 11.2           | 9           | 12            | 12.1                   | FAA0200178 | FAA0200180 | FAA0200182 | FAA0200177 |
| 5/8"             | 11  | 102            | 32            | 12.5           | 10          | 13            | 13.5                   | FAA0200193 | FAA0200197 | FAA0200201 | FAA0200189 |
| 11/16"           | 11  | 112            | 37            | 14             | 11.2        | 14            | 15.1                   | FAA0200231 | FAA0200232 | FAA0200233 | FAA0200230 |
| 3/4"             | 10  | 112            | 37            | 14             | 11.2        | 14            | 16.25                  | FAA0200213 | FAA0200217 | FAA0200221 | FAA0200211 |
| 7/8"             | 9   | 118            | 38            | 16             | 12.5        | 16            | 19.25                  | FAA0200237 | FAA0200241 | FAA0200245 | FAA0200235 |
| 1"               | 8   | 130            | 45            | 18             | 14          | 18            | 22                     | FAA0200257 | FAA0200261 | FAA0200265 | FAA0200254 |
| 1.1/8"           | 7   | 138            | 48            | 20             | 16          | 20            | 24.75                  | FAA0200275 | FAA0200277 | FAA0200279 | FAA0200274 |
| 1.1/4"           | 7   | 151            | 51            | 22.4           | 18          | 22            | 28                     | FAA0200282 | FAA0200284 | FAA0200286 | FAA0200281 |
| 1.3/8"           | 6   | 162            | 57            | 25             | 20          | 24            | 30.1                   | FAA0200291 | FAA0200292 | FAA0200293 | FAA0200290 |
| 1.1/2"           | 6   | 170            | 60            | 28             | 22.4        | 26            | 33.5                   | FAA0200295 | FAA0200297 | FAA0200299 | FAA0200294 |
| 1.5/8"           | 5   | 170            | 60            | 28             | 22.4        | 26            | 35.7                   |            |            | FAA0200303 | FAA0200302 |
| 1.3/4"           | 5   | 187            | 67            | 31.5           | 25          | 28            | 39                     | FAA0200305 | FAA0200306 | FAA0200307 | FAA0200304 |
| 1.7/8"           | 4.5 | 187            | 67            | 31.5           | 25          | 28            | 41.3                   | FAA0200309 | FAA0200310 | FAA0200311 | FAA0200308 |
| 2"               | 4.5 | 200            | 70            | 35.5           | 28          | 31            | 44.5                   | FAA0200313 | FAA0200314 | FAA0200315 | FAA0200312 |

Unit : inch

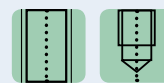


BSF

## Whithworth fine threads



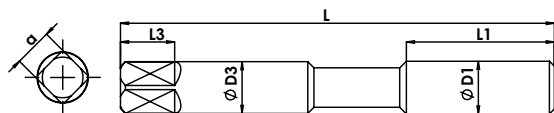
HOLE TYPE



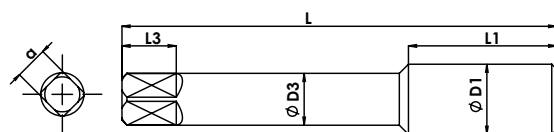
HSS

ISO  
529

Class 2



Reinforced Shank (3/16" - 3/8")



Reduced Shank (7/16" - 2")



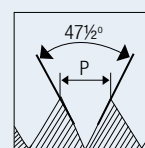
|                  |     |                |               |                |             |               | Lead Chamfer           | Taper      | Second     | Bottom     | Set        |
|------------------|-----|----------------|---------------|----------------|-------------|---------------|------------------------|------------|------------|------------|------------|
| Nominal Diameter | TPI | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | EDP No.    | EDP No.    | EDP No.    | EDP No.    |
| ØD1              | p   | L              | L1            | ØD3            | a           | L3            | Ød1                    |            |            |            |            |
| 3/16"            | 32  | 58             | 16            | 5              | 4           | 7             | 4                      | FAA0200348 | FAA0200349 | FAA0200350 | FAA0200346 |
| 1/4"             | 26  | 66             | 19            | 6.3            | 5           | 8             | 5.3                    | FAA0200363 | FAA0200366 | FAA0200369 | FAA0200360 |
| 5/16"            | 22  | 72             | 22            | 8              | 6.3         | 9             | 6.8                    | FAA0200383 | FAA0200385 | FAA0200387 | FAA0200381 |
| 3/8"             | 20  | 80             | 24            | 10             | 8           | 11            | 8.3                    | FAA0200397 | FAA0200399 | FAA0200401 | FAA0200394 |
| 7/16"            | 18  | 85             | 25            | 8              | 6.3         | 9             | 9.7                    | FAA0200409 | FAA0200412 | FAA0200415 | FAA0200407 |
| 1/2"             | 16  | 89             | 29            | 9.5            | 7.5         | 10            | 11.1                   | FAA0200421 | FAA0200423 | FAA0200425 | FAA0200419 |
| 9/16"            | 16  | 95             | 30            | 11.2           | 9           | 12            | 12.7                   | FAA0200432 | FAA0200433 | FAA0200434 | FAA0200431 |
| 5/8"             | 14  | 102            | 32            | 12.5           | 10          | 13            | 14                     | FAA0200440 | FAA0200443 | FAA0200446 | FAA0200437 |
| 11/16"           | 14  | 112            | 37            | 14             | 11.2        | 14            | 15.5                   | FAA0200451 | FAA0200452 | FAA0200453 | FAA0200450 |
| 3/4"             | 12  | 112            | 37            | 14             | 11.2        | 14            | 16.75                  | FAA0200455 | FAA0200457 | FAA0200459 | FAA0200454 |
| 7/8"             | 11  | 118            | 38            | 16             | 12.5        | 16            | 19.75                  | FAA0200464 | FAA0200466 | FAA0200467 | FAA0200462 |
| 1"               | 10  | 130            | 45            | 18             | 14          | 18            | 22.75                  | FAA0200472 | FAA0200474 | FAA0200476 | FAA0200470 |
| 1.1/8"           | 9   | 138            | 48            | 20             | 16          | 20            | 25.5                   | FAA0200479 | FAA0200480 | FAA0200481 | FAA0200478 |
| 1.1/4"           | 9   | 151            | 51            | 22.4           | 18          | 22            | 28.5                   | FAA0200483 | FAA0200484 | FAA0200485 | FAA0200482 |
| 1.3/8"           | 8   | 162            | 57            | 25             | 20          | 24            | 31.5                   | FAA0200487 | FAA0200488 | FAA0200489 | FAA0200486 |
| 1.1/2"           | 8   | 170            | 60            | 28             | 22.4        | 26            | 34.5                   | FAA0200491 | FAA0200492 | FAA0200493 | FAA0200490 |
| 1.5/8"           | 8   | 170            | 60            | 28             | 22.4        | 26            | 37.7                   | FAA0200496 | -          | -          | FAA0200494 |
| 1.3/4"           | 7   | 187            | 67            | 31.5           | 25          | 28            | 41                     | -          | -          | -          | FAA0200495 |
| 2"               | 7   | 200            | 70            | 35.5           | 28          | 31            | 47                     | FAA0200498 | FAA0200499 | FAA0200500 | FAA0200497 |

Unit : inch



BA

## British association threads



HOLE TYPE



HSS

ISO  
529

Class 2

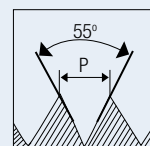
|                  |       |                |               |                |             |               |                        | Lead Chamfer | Taper      | Second     | Bottom     | Set |
|------------------|-------|----------------|---------------|----------------|-------------|---------------|------------------------|--------------|------------|------------|------------|-----|
| Nominal Diameter | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | EDP No.      | EDP No.    | EDP No.    | EDP No.    |     |
| ØD1              | p     | L              | L1            | ØD3            | a           | L3            | Ød1                    |              |            |            |            |     |
| 12               | 90.9  | 40             | 7             | 2.5            | 2           | 4             | 1.05                   | FAA0200647   | FAA0200648 | FAA0200649 | FAA0200646 |     |
| 11               | 81.9  | 41             | 8             | 2.5            | 2           | 4             | 1.2                    | FAA0200643   | FAA0200644 | FAA0200645 | FAA0200642 |     |
| 10               | 72.6  | 41             | 8             | 2.5            | 2           | 4             | 1.4                    | FAA0200635   | FAA0200637 | FAA0200639 | FAA0200632 |     |
| 9                | 65.1  | 41             | 8             | 2.5            | 2           | 4             | 1.55                   | FAA0200625   | FAA0200627 | FAA0200629 | FAA0200623 |     |
| 8                | 59.1  | 44.5           | 9.5           | 2.8            | 2.24        | 5             | 1.8                    | FAA0200616   | FAA0200618 | FAA0200620 | FAA0200613 |     |
| 7                | 52.9  | 44.5           | 9.5           | 2.8            | 2.24        | 5             | 2.05                   | FAA0200603   | FAA0200606 | FAA0200609 | FAA0200601 |     |
| 6                | 47.9  | 44.5           | 9.5           | 2.8            | 2.24        | 5             | 2.3                    | FAA0200590   | FAA0200593 | FAA0200596 | FAA0200588 |     |
| 5                | 43    | 48             | 11            | 3.15           | 2.5         | 5             | 2.65                   | FAA0200578   | FAA0200581 | FAA0200584 | FAA0200576 |     |
| 4                | 38.5  | 50             | 13            | 3.55           | 2.8         | 5             | 3                      | FAA0200564   | FAA0200567 | FAA0200570 | FAA0200562 |     |
| 3                | 34.8  | 53             | 13            | 4.5            | 3.55        | 6             | 3.4                    | FAA0200555   | FAA0200557 | FAA0200559 | FAA0200552 |     |
| 2                | 31.4  | 58             | 16            | 5              | 4           | 7             | 4                      | FAA0200541   | FAA0200544 | FAA0200547 | FAA0200539 |     |
| 1                | 28.2  | 62             | 17            | 5.6            | 4.5         | 7             | 4.5                    | FAA0200529   | FAA0200532 | FAA0200535 | FAA0200527 |     |
| 0                | 25.4  | 66             | 19            | 6.3            | 5           | 8             | 5.1                    | FAA0200517   | FAA0200520 | FAA0200523 | FAA0200515 |     |

Unit : mm



BSB

## British brass threads



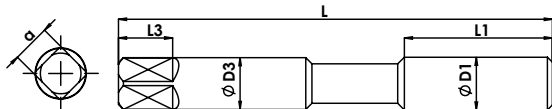
HOLE TYPE



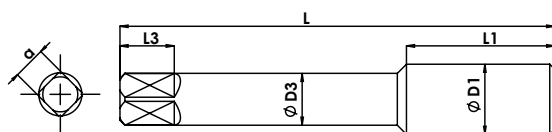
HSS

ISO  
529

Class 2



Reinforced Shank (1/8" - 3/8")



Reduced Shank (7/16" - 2")



|                  |     |                |               |                |             |               | Lead Chamfer           | Taper      | Second     | Bottom     | Set        |
|------------------|-----|----------------|---------------|----------------|-------------|---------------|------------------------|------------|------------|------------|------------|
| Nominal Diameter | TPI | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | EDP No.    | EDP No.    | EDP No.    | EDP No.    |
| ØD1              | p   | L              | L1            | ØD3            | a           | L3            | Ød1                    |            |            |            |            |
| 1/4"             | 26  | 66             | 19            | 6.3            | 5           | 8             | 5.3                    | FAA0200653 | FAA0200654 | FAA0200655 | FAA0200651 |
| 5/16"            | 26  | 69             | 19            | 8              | 6.3         | 9             | 5.8                    | FAA0200658 | FAA0200659 | FAA0200660 | FAA0200656 |
| 3/8"             | 26  | 76             | 20            | 10             | 8           | 11            | 8.4                    | FAA0200663 | FAA0200664 | FAA0200665 | FAA0200661 |
| 7/16"            | 26  | 82             | 22            | 8              | 6.3         | 9             | 10                     | FAA0200668 | FAA0200669 | FAA0200670 | FAA0200666 |
| 1/2"             | 26  | 84             | 24            | 9              | 7.1         | 10            | 11.5                   | FAA0200673 | FAA0200674 | FAA0200675 | FAA0200671 |
| 9/16"            | 26  | 90             | 25            | 11.2           | 9           | 12            | 13.1                   | FAA0200678 | FAA0200679 | FAA0200680 | FAA0200676 |
| 5/8"             | 26  | 95             | 25            | 12.5           | 10          | 13            | 14.7                   | FAA0200683 | FAA0200684 | FAA0200685 | FAA0200681 |
| 3/4"             | 26  | 104            | 29            | 14             | 11.2        | 14            | 17.8                   | FAA0200687 | FAA0200688 | FAA0200689 | FAA0200686 |
| 7/8"             | 26  | 113            | 33            | 16             | 12.5        | 16            | 21                     | FAA0200691 | FAA0200692 | FAA0200693 | FAA0200690 |
| 1"               | 26  | 120            | 35            | 18             | 14          | 18            | 24.2                   | FAA0200694 | -          | FAA0200695 | FAA0207315 |

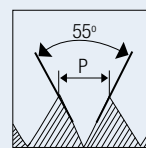
Unit : mm



HSS Hand Taps

HSS TAPS

BS Con

British standard conduit  
threads

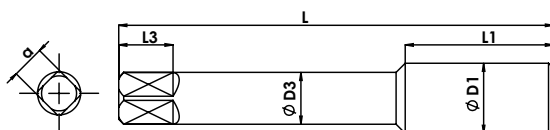
HOLE TYPE



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Class 2



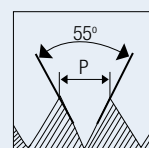
|                  |     |                |               |                |             |               | Lead Chamfer           | Taper      | Bottom     | Pair       |
|------------------|-----|----------------|---------------|----------------|-------------|---------------|------------------------|------------|------------|------------|
| Nominal Diameter | TPI | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | EDP No.    | EDP No.    | EDP No.    |
| ØD1              | p   | L              | L1            | ØD3            | a           | L3            | Ød1                    |            |            |            |
| 1/2"             | 18  | 84             | 24            | 9              | 7.1         | 10            | 11.5                   | FAA0200697 | FAA0200698 | FAA0200696 |
| 5/8"             | 18  | 95             | 25            | 12.5           | 10          | 13            | 14.2                   | -          | FAA0200700 | FAA0200699 |
| 3/4"             | 16  | 104            | 29            | 14             | 11.2        | 14            | 17.5                   | FAA0200702 | FAA0200704 | FAA0200701 |
| 1"               | 16  | 120            | 35            | 18             | 14          | 18            | 23.8                   | FAA0200707 | FAA0200708 | FAA0200706 |

Unit : mm



ME

Model engineer



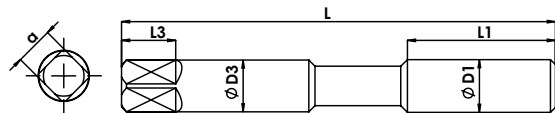
HOLE TYPE



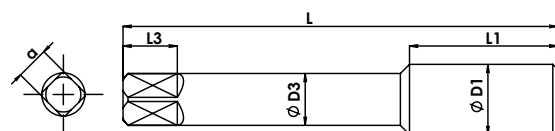
HSS

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Class 2



Reinforced Shank (1/8" - 3/8")



Reduced Shank (7/16" - 2")



|                  |     |                |               |                |             |               | Lead Chamfer           | Taper      | Second     | Bottom     | EDP No.    |
|------------------|-----|----------------|---------------|----------------|-------------|---------------|------------------------|------------|------------|------------|------------|
| Nominal Diameter | TPI | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | EDP No.    | EDP No.    | EDP No.    | Set        |
| ØD1              | p   | L              | L1            | ØD3            | a           | L3            | Ød1                    |            |            |            |            |
| 1/8"             | 40  | 48             | 11            | 3.15           | 2.5         | 5             | 2.55                   |            |            |            | FAA0207317 |
| 5/32"            | 40  | 53             | 13            | 4              | 3.15        | 6             | 3.3                    | FAA0200720 | FAA0200721 | FAA0200722 | FAA0200718 |
| 3/16"            | 40  | 58             | 16            | 5              | 4           | 7             | 4                      | FAA0200724 | FAA0200725 | FAA0200726 | FAA0200723 |
| 7/32"            | 40  | 62             | 17            | 5.6            | 4.5         | 7             | 4.8                    | FAA0200729 | FAA0200730 | FAA0200731 | FAA0200727 |
| 1/4"             | 40  | 66             | 13            | 6.3            | 5           | 8             | 5.5                    | FAA0200733 | FAA0200734 | FAA0200735 | FAA0200732 |
| 9/32"            | 32  | 66             | 19            | 7.1            | 5.6         | 8             | 6.1                    | FAA0200739 | FAA0200740 | FAA0200741 | FAA0200737 |
| 5/16"            | 32  | 66             | 16            | 8              | 6.3         | 9             | 7                      | FAA0200743 | FAA0200744 | FAA0200745 | FAA0200742 |
| 3/8"             | 32  | 73             | 16            | 10             | 8           | 11            | 8.6                    | FAA0200748 | FAA0200749 | FAA0200750 | FAA0200746 |
| 7/16"            | 32  | 80             | 20            | 8              | 6.3         | 9             | 10.3                   |            |            |            | FAA0207320 |
| 1/2"             | 32  | 80             | 20            | 9              | 10          | 7.1           | 11.9                   |            |            |            | FAA0207324 |

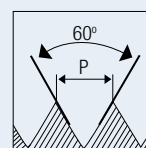
Unit : mm



## HSS Hand Taps

BSP

## British pipe threads



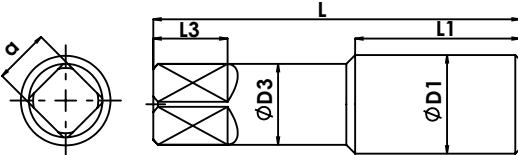
HOLE TYPE



HSS

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2284

HSS TAPS

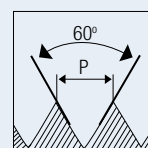
|  |     |                |               |                |             |               |                        |  |            |            |            |     |
|-----------------------------------------------------------------------------------|-----|----------------|---------------|----------------|-------------|---------------|------------------------|------------------------------------------------------------------------------------|------------|------------|------------|-----|
|                                                                                   |     |                |               |                |             |               |                        | Lead Chamfer                                                                       | Taper      | Second     | Bottom     | Set |
| Nominal Diameter                                                                  | TPI | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | EDP No.                                                                            | EDP No.    | EDP No.    | EDP No.    |     |
| ØD1                                                                               | p   | L              | L1            | ØD3            | a           | L3            | Ød1                    |                                                                                    |            |            |            |     |
| 1/8"                                                                              | 28  | 59             | 15            | 8              | 6.3         | 9             | 8.8                    | FAA0204606                                                                         | FAA0204610 | FAA0204614 | FAA0204602 |     |
| 1/4"                                                                              | 19  | 67             | 19            | 10             | 8           | 11            | 11.8                   | FAA0204627                                                                         | FAA0204631 | FAA0204634 | FAA0204623 |     |
| 3/8"                                                                              | 19  | 75             | 21            | 12.5           | 10          | 13            | 15.25                  | FAA0204648                                                                         | FAA0204652 | FAA0204656 | FAA0204644 |     |
| 1/2"                                                                              | 14  | 87             | 26            | 16             | 12.5        | 16            | 19                     | FAA0204665                                                                         | FAA0204669 | FAA0204673 | FAA0204662 |     |
| 5/8"                                                                              | 14  | 91             | 26            | 18             | 14          | 18            | 21                     | FAA0204680                                                                         | FAA0204682 | FAA0204684 | FAA0204678 |     |
| 3/4"                                                                              | 14  | 96             | 28            | 20             | 16          | 20            | 24.5                   | FAA0204689                                                                         | FAA0204692 | FAA0204695 | FAA0204686 |     |
| 7/8"                                                                              | 14  | 102            | 29            | 22.4           | 18          | 22            | 28.25                  | FAA0204702                                                                         |            | FAA0204704 | FAA0204700 |     |
| 1"                                                                                | 11  | 109            | 33            | 25             | 20          | 24            | 30.75                  | FAA0204708                                                                         | FAA0204713 | FAA0204715 | FAA0204706 |     |
| 1.1/4"                                                                            | 11  | 119            | 36            | 31.5           | 25          | 28            | 39.5                   | FAA0204722                                                                         | FAA0204724 | FAA0204727 | FAA0204721 |     |
| 1.1/2"                                                                            | 11  | 125            | 37            | 35.5           | 28          | 31            | 45                     | FAA0204733                                                                         | FAA0204735 | FAA0204738 | FAA0204732 |     |
| 1.3/4"                                                                            | 11  | 132            | 39            | 35.5           | 28          | 31            | 51                     | FAA0204743                                                                         |            | FAA0204744 | FAA0204742 |     |
| 2"                                                                                | 11  | 140            | 41            | 40             | 31.5        | 34            | 57                     | FAA0204746                                                                         |            | FAA0204749 | FAA0204745 |     |

Unit : mm



BSPT

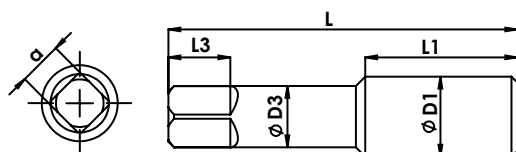
## British taper pipe threads



HOLE TYPE



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|                  |     |                |               |                |             |               | Lead Chamfer           | Taper      | Bottom     | Pair       |
|------------------|-----|----------------|---------------|----------------|-------------|---------------|------------------------|------------|------------|------------|
| Nominal Diameter | TPI | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | EDP No.    | EDP No.    | EDP No.    |
| ØD1              | p   | L              | L1            | ØD3            | a           | L3            | Ød1                    |            |            |            |
| 1/8"             | 28  | 59             | 15            | 8              | 6.3         | 9             | 8.8                    | FAA0204836 | FAA0204840 | FAA0204833 |
| 1/4"             | 19  | 67             | 19            | 10             | 8           | 11            | 11.8                   | FAA0204849 | FAA0204852 | FAA0204846 |
| 3/8"             | 19  | 75             | 21            | 12.5           | 10          | 13            | 15.25                  | FAA0204857 | FAA0204859 | FAA0204855 |
| 1/2"             | 14  | 87             | 26            | 16             | 12.5        | 16            | 19                     | FAA0204865 | FAA0204868 | FAA0204863 |
| 3/4"             | 14  | 96             | 28            | 20             | 16          | 20            | 24.5                   | FAA0204873 | FAA0204876 | FAA0204871 |
| 1"               | 11  | 109            | 33            | 25             | 20          | 24            | 30.75                  | FAA0204881 | FAA0204883 | FAA0204880 |
| 1.1/4"           | 11  | 119            | 36            | 31.5           | 25          | 28            | 39.5                   | FAA0204890 | FAA0204891 | FAA0204889 |
| 1.1/2"           | 11  | 125            | 37            | 35.5           | 28          | 31            | 45                     | FAA0204893 | FAA0204894 | FAA0204892 |
| 2"               | 11  | 140            | 41            | 40             | 31.5        | 34            | 57                     |            |            | FAA0204895 |

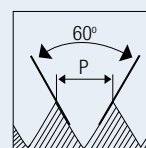
Unit : mm



## HSS Hand Taps

UNC

## Unified coarse threads



HOLE TYPE

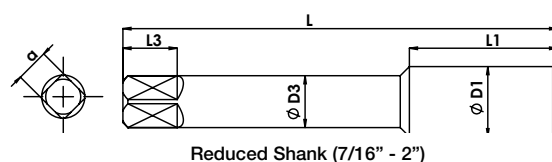
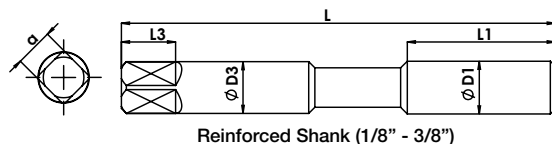


HSS

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529

2B

HSS TAPS



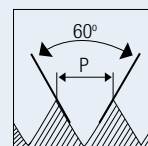
|                  |     |                |               |                |             |               | Lead Chamfer           | Taper      | Second     | Bottom     | Set        |
|------------------|-----|----------------|---------------|----------------|-------------|---------------|------------------------|------------|------------|------------|------------|
| Nominal Diameter | TPI | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | EDP No.    | EDP No.    | EDP No.    | EDP No.    |
| ØD1              | p   | L              | L1            | ØD3            | a           | L3            | Ød1                    |            |            |            |            |
| 1/4"             | 20  | 66             | 19            | 6.3            | 5           | 8             | 5.1                    | FAA0200880 | FAA0200885 | FAA0200891 | FAA0200875 |
| 5/16"            | 18  | 72             | 22            | 8              | 6.3         | 9             | 6.6                    | FAA0200912 | FAA0200916 | FAA0200920 | FAA0200907 |
| 3/8"             | 16  | 80             | 24            | 10             | 8           | 11            | 8                      | FAA0200945 | FAA0200949 | FAA0200953 | FAA0200940 |
| 7/16"            | 14  | 85             | 25            | 8              | 6.3         | 9             | 9.4                    | FAA0200984 | FAA0200987 | FAA0200990 | FAA0200980 |
| 1/2"             | 13  | 89             | 29            | 9              | 7.1         | 10            | 10.8                   | FAA0201011 | FAA0201014 | FAA0201017 | FAA0201007 |
| 9/16"            | 12  | 95             | 30            | 11.2           | 9           | 12            | 12.2                   | FAA0201044 | FAA0201046 | FAA0201048 | FAA0201042 |
| 5/8"             | 11  | 102            | 32            | 12.5           | 10          | 13            | 13.5                   | FAA0201062 | FAA0201065 | FAA0201068 | FAA0201058 |
| 3/4"             | 10  | 112            | 37            | 14             | 11.2        | 14            | 16.5                   | FAA0201095 | FAA0201098 | FAA0201101 | FAA0201092 |
| 7/8"             | 9   | 118            | 38            | 16             | 12.5        | 16            | 19.5                   | FAA0201127 | FAA0201130 | FAA0201133 | FAA0201125 |
| 1"               | 8   | 130            | 45            | 18             | 14          | 18            | 22.25                  | FAA0201155 | FAA0201158 | FAA0201161 | FAA0201151 |
| 1.1/8"           | 7   | 138            | 48            | 20             | 16          | 20            | 25                     | FAA0201182 | FAA0201183 | FAA0201184 | FAA0201181 |
| 1.1/4"           | 7   | 151            | 51            | 22.4           | 18          | 22            | 28                     | FAA0201193 | FAA0201194 | FAA0201195 | FAA0201192 |
| 1.3/8"           | 6   | 162            | 57            | 25             | 20          | 24            | 30.75                  | FAA0201201 | FAA0201202 | FAA0201203 | FAA0201200 |
| 1.1/2"           | 6   | 170            | 60            | 28             | 22.4        | 26            | 34                     | FAA0201209 | FAA0201210 | FAA0201211 | FAA0201208 |
| 1.3/4"           | 5   | 187            | 67            | 31.5           | 25          | 28            | 39.5                   | FAA0201220 | FAA0201221 | FAA0201222 | FAA0201219 |
| 2"               | 4.5 | 200            | 70            | 35.5           | 28          | 31            | 45                     | FAA0201225 | FAA0201226 | FAA0201227 | FAA0201224 |

Unit : mm



UNC

## Unified coarse threads



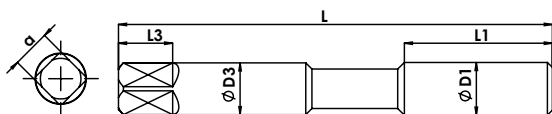
HOLE TYPE



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2B



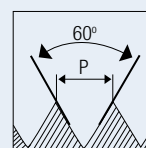
|                  |       |                |               |                |             |               | Lead Chamfer           | Taper      | Second     | Bottom     | Set        |
|------------------|-------|----------------|---------------|----------------|-------------|---------------|------------------------|------------|------------|------------|------------|
| Nominal Diameter | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | EDP No.    | EDP No.    | EDP No.    | EDP No.    |
| ØD1              | p     | L              | L1            | ØD3            | a           | L3            | Ød1                    |            |            |            |            |
| 1                | 64    | 41             | 8             | 2.5            | 2           | 4             | 1.55                   | FAA0200811 | FAA0200812 | FAA0200813 | FAA0200810 |
| 2                | 56    | 44.5           | 9.5           | 2.8            | 2.24        | 5             | 1.85                   | FAA0200815 | FAA0200816 | FAA0200817 | FAA0200814 |
| 3                | 48    | 44.5           | 9.5           | 2.8            | 2.24        | 5             | 2.1                    | FAA0200820 | FAA0200821 | FAA0200822 | FAA0200819 |
| 4                | 40    | 48             | 11            | 3.15           | 2.5         | 5             | 2.35                   | FAA0200826 | FAA0200828 | FAA0200830 | FAA0200824 |
| 5                | 40    | 48             | 11            | 3.15           | 2.5         | 5             | 2.65                   | FAA0200834 | FAA0200835 | FAA0200836 | FAA0200833 |
| 6                | 32    | 50             | 13            | 3.55           | 2.8         | 5             | 2.85                   | FAA0200839 | FAA0200840 | FAA0200841 | FAA0200838 |
| 8                | 32    | 53             | 13            | 4.5            | 3.55        | 6             | 3.5                    | FAA0200847 | FAA0200849 | FAA0200851 | FAA0200845 |
| 10               | 24    | 58             | 16            | 5              | 4           | 7             | 3.9                    | FAA0200857 | FAA0200859 | FAA0200862 | FAA0200855 |
| 12               | 24    | 62             | 17            | 5.6            | 4.5         | 7             | 4.5                    | FAA0200867 | FAA0200868 | FAA0200869 | FAA0200866 |

Unit : mm



UNF

## Unified fine threads



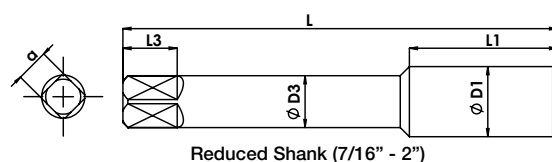
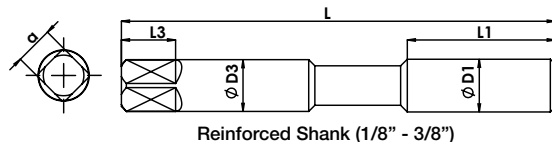
HOLE TYPE



HSS

ISO  
529

2B



|                  |     |                |               |                |             |               | Lead Chamfer           | Taper      | Second     | Bottom     | Set        |
|------------------|-----|----------------|---------------|----------------|-------------|---------------|------------------------|------------|------------|------------|------------|
| Nominal Diameter | TPI | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | EDP No.    | EDP No.    | EDP No.    | EDP No.    |
| ØD1              | p   | L              | L1            | ØD3            | a           | L3            | Ød1                    |            |            |            |            |
| 1/4"             | 28  | 66             | 19            | 6.3            | 5           | 8             | 5.5                    | FAA0201319 | FAA0201324 | FAA0201329 | FAA0201315 |
| 5/16"            | 24  | 69             | 19            | 8              | 6.3         | 9             | 6.9                    | FAA0201353 | FAA0201357 | FAA0201362 | FAA0201349 |
| 3/8"             | 24  | 76             | 20            | 10             | 8           | 11            | 8.5                    | FAA0201394 | FAA0201398 | FAA0201402 | FAA0201390 |
| 7/16"            | 20  | 82             | 22            | 8              | 6.3         | 9             | 9.9                    | FAA0201433 | FAA0201436 | FAA0201439 | FAA0201430 |
| 1/2"             | 20  | 84             | 24            | 9              | 7.1         | 10            | 11.5                   | FAA0201457 | FAA0201460 | FAA0201463 | FAA0201455 |
| 9/16"            | 18  | 90             | 25            | 11.2           | 9           | 12            | 12.9                   | FAA0201489 | FAA0201491 | FAA0201493 | FAA0201488 |
| 5/8"             | 18  | 95             | 25            | 12.5           | 10          | 13            | 14.5                   | FAA0201506 | FAA0201509 | FAA0201512 | FAA0201503 |
| 3/4"             | 16  | 104            | 29            | 14             | 11.2        | 14            | 17.5                   | FAA0201532 | FAA0201535 | FAA0201538 | FAA0201528 |
| 7/8"             | 14  | 113            | 33            | 16             | 12.5        | 16            | 20.4                   | FAA0201557 | FAA0201560 | FAA0201563 | FAA0201555 |
| 1"               | 12  | 120            | 35            | 18             | 14          | 18            | 23.25                  | FAA0201588 | FAA0201591 | FAA0201594 | FAA0201586 |
| 1.1/8"           | 12  | 127            | 37            | 20             | 16          | 20            | 26.5                   | FAA0201611 | FAA0201612 | FAA0201613 | FAA0201610 |
| 1.1/4"           | 12  | 137            | 37            | 22.4           | 18          | 22            | 29.5                   | FAA0201623 | FAA0201624 | FAA0201625 | FAA0201622 |
| 1.3/8"           | 12  | 144            | 37            | 25             | 20          | 24            | 32.75                  | FAA0201630 | FAA0201631 | FAA0201632 | FAA0201629 |
| 1.1/2"           | 12  | 149            | 39            | 28             | 22.4        | 26            | 36                     | FAA0201638 | FAA0201639 | FAA0201640 | FAA0201637 |

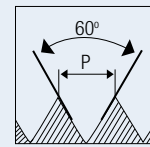
Unit : mm



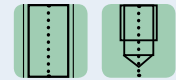
HSS Hand Taps

UNF

Unified fine threads



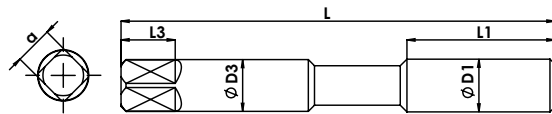
HOLE TYPE



HSS

ISO  
529

2B



|                  |       |                |               |                |             |               | Lead Chamfer           | Taper      | Second     | Bottom     | Set        |
|------------------|-------|----------------|---------------|----------------|-------------|---------------|------------------------|------------|------------|------------|------------|
| Nominal Diameter | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | EDP No.    | EDP No.    | EDP No.    | EDP No.    |
| ØD1              | p     | L              | L1            | ØD3            | a           | L3            | Ød1                    |            |            |            |            |
| 0                | 80    | 41             | 8             | 2.5            | 2           | 4             | 1.25                   | FAA0201237 | FAA0201238 | FAA0201239 | FAA0201236 |
| 1                | 72    | 41             | 8             | 2.5            | 2           | 4             | 1.55                   |            | FAA0201241 | FAA0201242 | FAA0201240 |
| 2                | 64    | 44.5           | 9.5           | 2.8            | 2.24        | 5             | 1.9                    | FAA0201244 | FAA0201245 | FAA0201246 | FAA0201243 |
| 3                | 56    | 44.5           | 9.5           | 2.8            | 2.24        | 5             | 2.15                   | FAA0201249 | FAA0201250 | FAA0201251 | FAA0201248 |
| 4                | 48    | 48             | 11            | 3.15           | 2.5         | 5             | 2.4                    | FAA0201254 | FAA0201255 | FAA0201256 | FAA0201253 |
| 5                | 44    | 48             | 11            | 3.15           | 2.5         | 5             | 2.7                    | FAA0201259 | FAA0201260 | FAA0201261 | FAA0201258 |
| 6                | 40    | 50             | 13            | 3.55           | 2.8         | 5             | 2.95                   | FAA0201264 | FAA0201265 | FAA0201266 | FAA0201263 |
| 8                | 36    | 53             | 13            | 4.5            | 3.55        | 6             | 3.5                    | FAA0201269 | FAA0201270 | FAA0201271 | FAA0201268 |
| 10               | 32    | 58             | 16            | 5              | 4           | 7             | 4.1                    | FAA0201276 | FAA0201280 | FAA0201283 | FAA0201275 |
| 12               | 28    | 62             | 17            | 5.6            | 4.5         | 7             | 4.7                    | FAA0201303 | FAA0201305 | FAA0201307 | FAA0201302 |

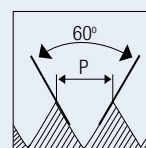
Unit : mm



## HSS Hand Taps

NPT

## Pipe threads



HOLE TYPE



HSS

ANSI  
94.9

HSS TAPS

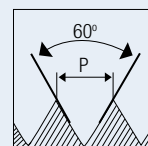
|                  |      |                |               |                |             |               | Lead Chamfer           | Taper      | Bottom     | Pair       |
|------------------|------|----------------|---------------|----------------|-------------|---------------|------------------------|------------|------------|------------|
| Nominal Diameter | TPI  | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | EDP No.    | EDP No.    | EDP No.    |
| ØD1              | p    | L              | L1            | ØD3            | a           | L3            | Ød1                    |            |            |            |
| 1/16"            | 27   | 2.1/8          | 11/16         | 0.312          | 0.234       | 3/8           | 6.3                    | FAA0204897 | FAA0204898 | FAA0204896 |
| 1/8"             | 27   | 2.1/8          | 3/4           | 0.437          | 0.328       | 3/8           | 8.7                    | FAA0204901 | FAA0204903 | FAA0204899 |
| 1/4"             | 18   | 2.7/16         | 1.1/16        | 0.562          | 0.421       | 7/16          | 11.1                   | FAA0204911 | FAA0204914 | FAA0204909 |
| 3/8"             | 18   | 2.9/16         | 1.1/16        | 0.7            | 0.531       | 1/2           | 14.5                   | FAA0204921 | FAA0204925 | FAA0204919 |
| 1/2"             | 14   | 3.1/8          | 1.3/8         | 0.687          | 0.515       | 5/8           | 18                     | FAA0204932 | FAA0204934 | FAA0204928 |
| 3/4"             | 14   | 3.1/4          | 1.3/8         | 0.906          | 0.679       | 11/16         | 23.25                  | FAA0204943 | FAA0204946 | FAA0204942 |
| 1"               | 11.5 | 3.3/4          | 1.3/4         | 1.125          | 0.843       | 13/16         | 29                     | FAA0204951 | FAA0204954 | FAA0204950 |
| 1.1/4"           | 11.5 | 4              | 1.3/4         | 1.312          | 0.984       | 15/16         | 38                     | FAA0204958 | FAA0204959 | FAA0204957 |
| 1.1/2"           | 11.5 | 4.1/4          | 1.3/4         | 1.5            | 1.125       | 1             | 44                     | FAA0204963 | FAA0204964 | FAA0204962 |
| 2"               | 11.5 | 4.1/2          | 1.3/4         | 1.875          | 1.406       | 1.1/8         | 56                     | FAA0204969 | FAA0204968 | FAA0204967 |
| 2.1/2"           | 8    | 5.1/2          | 2.9/16        | 2.25           | 1.687       | 1.1/4         | 65.48                  |            |            | FAA0204970 |
| 3"               | 8    | 6              | 2.5/8         | 2.625          | 1.968       | 1.3/8         | -                      |            |            | FAA0207340 |

Unit : mm



NPS

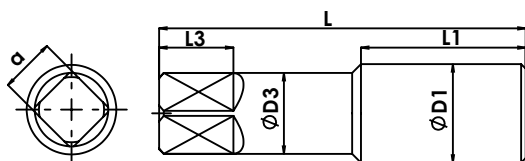
## Pipe threads special



HOLE TYPE



HSS

ANSI  
94.9

|                  |      |                |               |                |             |               | Lead Chamfer           | Taper      | Second     | Bottom     | Set        |
|------------------|------|----------------|---------------|----------------|-------------|---------------|------------------------|------------|------------|------------|------------|
| Nominal Diameter | TPI  | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter | EDP No.    | EDP No.    | EDP No.    | EDP No.    |
| ØD1              | p    | L              | L1            | ØD3            | a           | L3            | Ød1                    |            |            |            |            |
| 1/16"            | 27   | 2.1/8          | 11/16         | 0.312          | 0.234       | 3/8           | 6.3                    | -          | -          | -          | FAA0207341 |
| 1/8"             | 27   | 2.1/8          | 3/4           | 0.437          | 0.328       | 3/8           | 8.7                    | FAA0205003 | FAA0205004 | FAA0205005 | FAA0205002 |
| 1/4"             | 18   | 2.7/16         | 1.1/16        | 0.562          | 0.421       | 7/16          | 11.1                   | FAA0205006 | FAA0205007 | FAA0205008 | FAA0207342 |
| 3/8"             | 18   | 2.9/16         | 1.1/16        | 0.7            | 0.531       | 1/2           | 14.5                   | FAA0205009 | FAA0205010 | FAA0205011 | FAA0207343 |
| 1/2"             | 14   | 3.1/8          | 1.3/8         | 0.687          | 0.515       | 5/8           | 18                     | FAA0205012 | FAA0205013 | FAA0205014 | FAA0207344 |
| 3/4"             | 14   | 3.1/4          | 1.3/8         | 0.906          | 0.679       | 11/16         | 23.25                  | FAA0205015 | FAA0205016 | FAA0205017 | FAA0207345 |
| 1"               | 11.5 | 3.3/4          | 1.3/4         | 1.125          | 0.843       | 13/16         | 29                     | -          | -          | -          | FAA0207346 |
| 1.1/4"           | 11.5 | 4              | 1.3/4         | 1.312          | 0.984       | 15/16         | 38                     | -          | -          | FAA0205018 | FAA0207349 |
| 1.1/2"           | 11.5 | 4.1/4          | 1.3/4         | 1.5            | 1.125       | 1             | 44                     | -          | -          | -          | FAA0207351 |
| 2"               | 11.5 | 4.1/2          | 1.3/4         | 1.875          | 1.406       | 1.1/8         | 56                     | -          | -          | -          | FAA0207354 |

Unit : mm



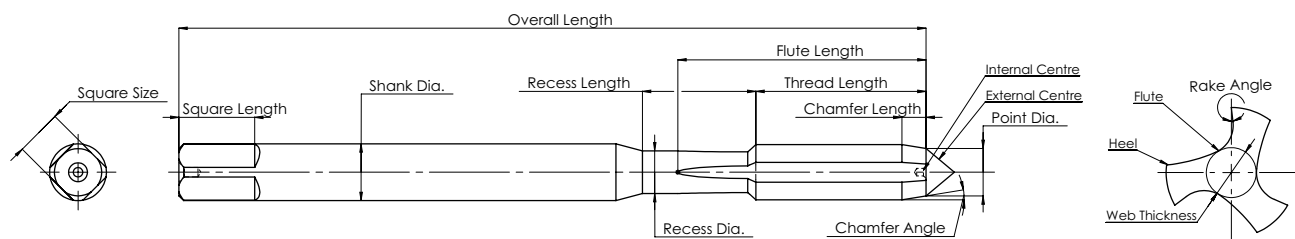
High Performance Cutting Tools



# TECHNICAL DETAILS

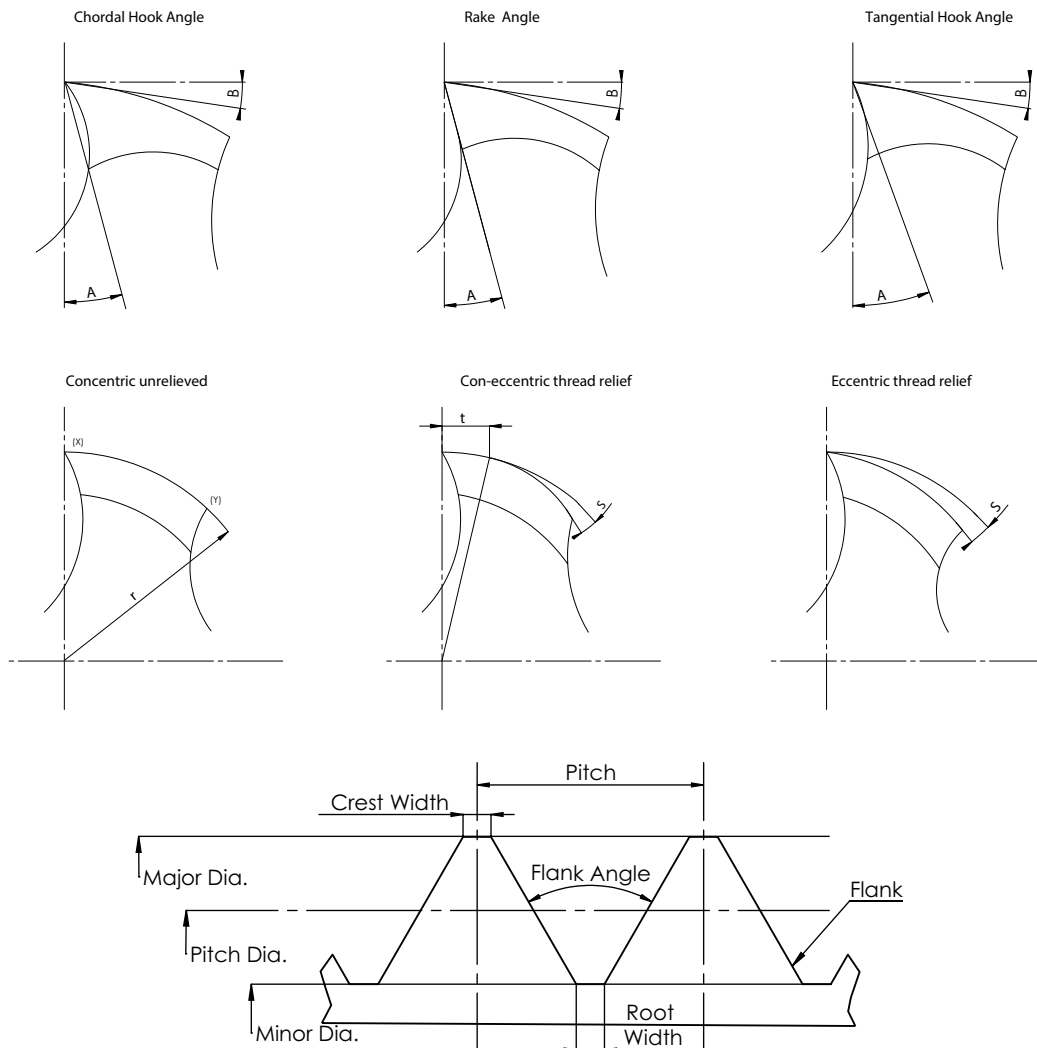


## TAP NOMENCLATURE



- **THREAD LENGTH:** It is a total length of threaded portion.
- **OVERALL LENGTH:** The axial distance between the two extreme ends of a tap is called as the overall length of the tap.
- **SQUARE:** The square end of the tap shank, for holding it in the tap wrench.
- **SHANK :** It is the cylindrical part of tap which is used for hold or drive.
- **CUTTING EDGE :** The edge formed by the intersection of the flute face and the form of the thread, imposed on the land
- **FLUTE :** It is the groove in the body of tap which provides cutting edge. Permits removal of chips and allows coolant or lubricant to reach the cutting edge.
- **LAND :** It is the surface between cutting edge and non-cutting edge
- **WEB :** The central portion of tap which joins the land and extends along the fluted portion of tap
- **WEB TAPER :** It is the increase in the web thickness from the entering end of the Tap towards the shank end of the flutes.
- **HEEL :** It is the edge formed by the intersection of the relieved surface behind the cutting edge and the flute
- **CHAMFER :** The taper on the threads at the front end of the tap made by grinding and relieving the crest of the first few teeth
- **RAKE ANGLE :** The angular relationship of the straight cutting face of the tooth with respect to a radial line through the crest of the tooth of cutting edge. There are three types of rake angle. The details given below. Positive rake means that the crest of the cutting face is angularly ahead. Negative rake means that the crest of the cutting face is angularly behind. Zero radial rake means the cutting face is directly on a radial line
- **CREST :** It is the prominent part of thread i.e. Top surface joining the two sides of thread
- **ROOT :** It is the bottom of the groove between sides of two adjacent threads
- **FLANK :** The flank angle is the angle between individual flank and perpendicular to axis of thread, it is equal to half angle of thread
- **INCLUDED ANGLE :** It is the angle between two flanks of thread

## TAP NOMENCLATURE



### Thread Profile

- **DEPTH OF THREAD :** It is the distance between the crest and root of single thread
- **MINOR DIAMETER :** It is the diameter between the two root of opposite thread.
- **THREAD RELIEF :** The clearance produced on the land by gradually reducing the diameter of the entire thread form between the cutting edge and the non cutting edge
- **EFFECTIVE DIAMETER (PCD) :** The pitch circle diameter of thread as generated by straight line parallel to axis of tap. This straight line is called as Pitch line. Along the pitch line the width of threads and width of spaces are equal on a perfect thread. This is the important parameter in screw thread and it decides the quality of fit between the two threaded assembly.
- **MAJOR DIAMETER :** It is the diameter over the crest of thread. Basic major diameter, it is the nominal diameter

## USE YOUR TAPS SELECTOR

Select execution of tool considering  
blind or through hole



**B**

Select thread form and find  
page number, select from DIN/ISO/JIS  
standard length

Select your work piece material from this table with desired Vc

[illegible]

D



Go to desired page number find your tool on the page

SB  
DIN

## HSS TAPS



**Silver cut** Spiral Flute Taps

M

## Metric coarse threads



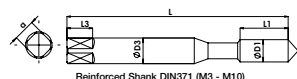
**HOLE TYPE**

**HSS-E** **DIN** **6HX** **C/2-3P** **35**

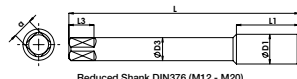
C/2-3P 35

C/2-3P 35

C/2-3P 35



Reinforced Shank DIN371 (M3 - M10)



Reduced Shank DIN376 (M12 - M20)

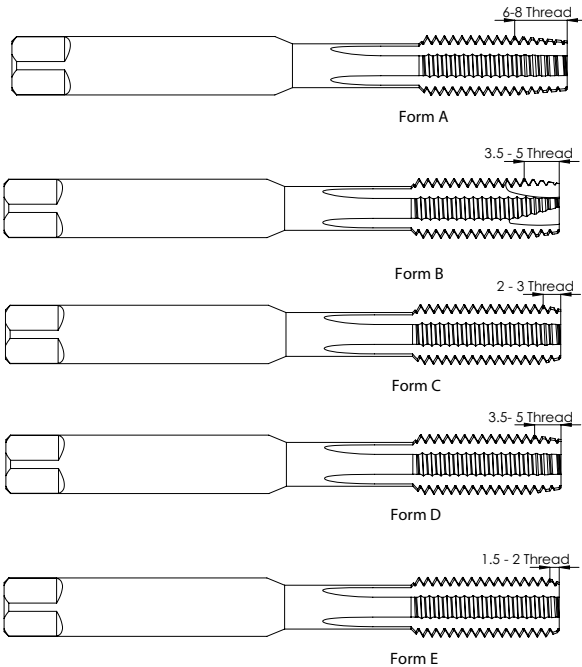


|                  |       |                |               |                |             |               | Series                            | SB1        | SB3        | SB4        |
|------------------|-------|----------------|---------------|----------------|-------------|---------------|-----------------------------------|------------|------------|------------|
|                  |       |                |               |                |             |               | Material - 1 <sup>st</sup> choice | P0-P1      | P1-P2      | P1-P2      |
|                  |       |                |               |                |             |               | Material - 2 <sup>nd</sup> choice | N1-N2      | K2, N3-N4  | K1-K2      |
|                  |       |                |               |                |             |               | Coating                           | Bright     | TIN        | TiAIN      |
| DIN 371          |       |                |               |                |             |               |                                   |            |            |            |
| Nominal Diameter | Pitch | Overall Length | Thread Length | Shank Diameter | Square Size | Square Length | Tapping Drill Diameter            | EDP No.    | EDP No.    | EDP No.    |
| ØD1              | p     | L              | L1            | ØD3            | a           | L3            | Ød1                               |            |            |            |
| M 3              | 0.5   | 56             | 6             | 3.5            | 2.7         | 6             | 2.5                               | FAB0203197 | FAB0203207 | FAB0204334 |
| M 3.5            | 0.6   | 56             | 7             | 4              | 3           | 6             | 2.9                               | FAB0204328 | FAB0204331 | FAB0204335 |
| M 4              | 0.7   | 63             | 8             | 4.5            | 3.4         | 6             | 3.3                               | FAB0203198 | FAB0203208 | FAB0200968 |
| M 5              | 0.8   | 70             | 8             | 6              | 4.9         | 8             | 4.2                               | FAB0203199 | FAB0203209 | FAB0203685 |
| M 6              | 1     | 80             | 10            | 6              | 4.9         | 8             | 5                                 | FAB0203200 | FAB0203210 | FAB0204386 |
| M 7              | 1     | 80             | 10            | 7              | 5.5         | 8             | 6                                 | FAB0203201 | FAB0203211 | FAB0204336 |
| M 8              | 1.25  | 90             | 13            | 8              | 6.2         | 9             | 6.8                               | FAB0203202 | FAB0203212 | FAB0203687 |
| M 10             | 1.5   | 100            | 15            | 10             | 8           | 11            | 8.5                               | FAB0203203 | FAB0203213 | FAB0203688 |

Select the size of  
nominal diameter  
required

\* For best result use Totem range of pre tapping drills

## CHAMFER FORMS



### Form A

6 - 8 threads for short through hole

### Form B

3.5 - 5 threads with spiral point for all through holes and deep tapping holes

### Form C

2 - 3 threads for blind holes; generally for aluminium and grey cast iron.

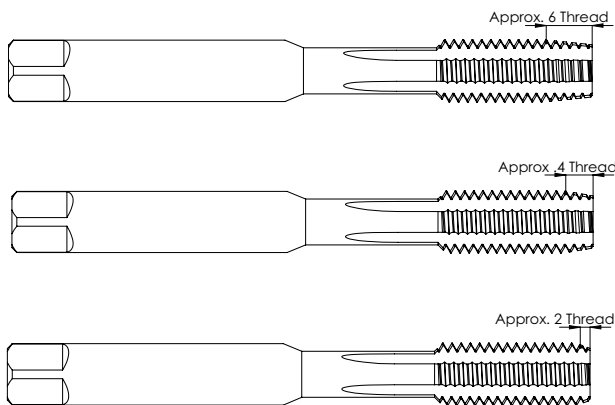
### Form D

3.5 - 5 threads for short through hole

### Form E

1.5 - 2 threads for blind holes with small run-out depth

## Chamfer length for set of 3 taps



### Taper Tap

6 threads approx.

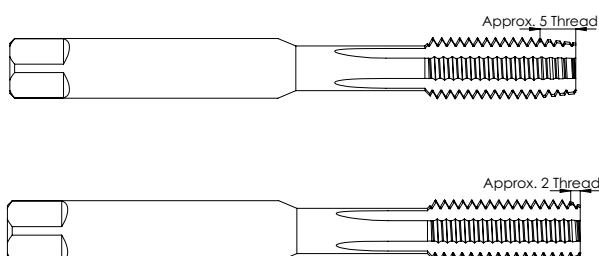
### Second Tap

4 threads approx.

### Bottom Tap

2 threads approx.

## Chamfer length for set of 2 taps (Pairs)



### Taper Tap

5 threads approx.

### Bottom Tap

2 threads approx.

Technical data provided should be considered advisory only as variations may be necessary depending on the particular application.



## MATERIAL DETAILS

| Material Group   |    | Material Description                                                                      | Content    | Tensile Strength RM (MPa)* | Hardness (HB) | Hardness (HRC) | Torque Constant (Kc) N/mm <sup>2</sup> |
|------------------|----|-------------------------------------------------------------------------------------------|------------|----------------------------|---------------|----------------|----------------------------------------|
| Steels           | P0 | Low-Carbon Steels, Long Chipping                                                          | C <0,25%   | <530                       | <125          | —              | 2000                                   |
|                  | P1 | Low-Carbon Steels, Short Chipping, Free Machining                                         | C <0,25%   | <530                       | <125          | —              | 2100                                   |
|                  | P2 | Medium- and High-Carbon Steels                                                            | C >0,25%   | <530                       | <220          | <25            | 2200                                   |
|                  | P3 | Alloy Steels and Tool Steels                                                              | C >0,25%   | 600-850                    | <330          | <35            | 2400                                   |
|                  | P4 | Alloy Steels and Tool Steels                                                              | C >0,25%   | 850-1400                   | 340-450       | 35-48          | 2500                                   |
|                  | P5 | Ferritic, Martensitic, and PH Stainless Steels                                            | —          | 600-900                    | <330          | <35            | —                                      |
|                  | P6 | High-Strength Ferritic, Martensitic, and PH Stainless Steels                              | —          | 900-1350                   | 350-450       | 35-48          | 2600                                   |
| Stainless Steels | M1 | Austenitic Stainless Steel                                                                | —          | <600                       | 130-200       | -              | 2300                                   |
|                  | M2 | High-Strength Austenitic Stainless and Cast Stainless Steels                              | —          | 600-800                    | 150-230       | <25            | 2600                                   |
|                  | M3 | Duplex Stainless Steel                                                                    | —          | <800                       | 135-275       | <30            | 3000                                   |
| Cast Iron        | K1 | Grey Cast Iron                                                                            | —          | 125-500                    | 120-290       | <32            | 1600                                   |
|                  | K2 | Low- and Medium-Strength Ductile Irons (Nodular Irons) and Compacted Graphite Irons (CGI) | —          | <600                       | 130-260       | <28            | 1700                                   |
|                  | K3 | High-Strength Ductile Irons and Austempered Ductile Iron (ADI)                            | —          | >600                       | 180-350       | <43            | 2000                                   |
| Non-Ferrous      | N1 | Wrought Aluminium                                                                         | —          | —                          | —             | —              | 700                                    |
|                  | N2 | Low-Silicon Aluminium Alloys and Magnesium Alloys                                         | Si <12,2%  | —                          | —             | —              | 800                                    |
|                  | N3 | High-Silicon Aluminium Alloys and Magnesium Alloys                                        | Si > 12,2% | —                          | —             | —              | 1000                                   |
|                  | N4 | Copper-, Brass-, Zinc-Based on Machinability Index Range of 70-100                        | —          | —                          | —             | —              | 800                                    |
|                  | N5 | Nylon, Plastics, Rubbers, Phenolics, Resins, Fibreglass                                   | —          | —                          | —             | —              | —                                      |
|                  | N6 | Carbon, Graphite Composites, CFRP                                                         | —          | —                          | —             | —              | —                                      |
|                  | N7 | Metal Matrix Composites (MMC)                                                             | —          | —                          | —             | —              | —                                      |
| Special Alloys   | S1 | Iron-Based, Heat-Resistant Alloys                                                         | —          | 500-1200                   | 160-260       | 25-48          | —                                      |
|                  | S2 | Cobalt-Based, Heat-Resistant Alloys                                                       | —          | 1000-1500                  | 250-450       | 25-48          | —                                      |
|                  | S3 | Nickel-Based, Heat-Resistant Alloys                                                       | —          | 600-1700                   | 160-450       | <48            | 2000                                   |
|                  | S4 | Titanium and Titanium Alloys                                                              | —          | 900-1600                   | 300-400       | 33-48          | 2300                                   |
| Hardened Steels  | H1 | Hardened Materials                                                                        | —          | —                          | —             | 44-48          | 2600                                   |
|                  | H2 | Hardened Materials                                                                        | —          | —                          | —             | 48-55          | 2900                                   |
|                  | H3 | Hardened Materials                                                                        | —          | —                          | —             | 56-60          | 2900                                   |
|                  | H4 | Hardened Materials                                                                        | —          | —                          | —             | >60            | —                                      |

Technical data provided should be considered advisory only as variations may be necessary depending on the particular application.



## MATERIAL DETAILS

| Material Group   |    | ANSI                                                                                                                                                                                  | DIN                                                                 |
|------------------|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|
| Steels           | P0 | A36, 1008, 1010, 1018 through 1029; 1108, 1117                                                                                                                                        |                                                                     |
|                  | P1 | 10L18, 1200 Series, 1213, 12L14                                                                                                                                                       | C15, Ck22, ST37-2, S235JR, 9SMnPb28, GS38                           |
|                  | P2 | 1035, 1045, 10L45, 1050, 10L50, 1080, 1137, 1144, 11L44, 1525, 1545, 1572                                                                                                             | ST52, S355JR, C35, GS60, Cf53                                       |
|                  | P3 | 1300, 2000, 3000, 4000, 5000, 8000, P20, SAE: A, D, H, O, S, M, T                                                                                                                     | 16MnCr5, Ck45, 21CrMoV5-7, 38SMn28                                  |
|                  | P4 | 1300, 2000, 3000, 4000, 5000, 8000, P20, SAE: A, D, H, O, S, M, T                                                                                                                     | 100Cr6, 30CrNiMo8, 42CrMo4, C70W2, S6525, X120Mn12                  |
|                  | P5 | 15-5 PH, 13-8 PH, 17-4 PH, 400 and 500 Series                                                                                                                                         | 100Cr6, 30CrNiMo8, 42CrMo4, C70W2, S6525, X120Mn12                  |
|                  | P6 | 15-5 PH, 13-8 PH, 17-4 PH, 400 and 500 Series                                                                                                                                         | X102CrMo17, G-X120Cr29                                              |
| Stainless Steels | M1 | 200 Series, 301, 302, 304, 304L, 309                                                                                                                                                  | X5CrNi 18 10, X2CrNiMo 17 13 2, G-X25CrNiSi18 9, X15CrNiSi 20 12    |
|                  | M2 | 310, 316, 316L, 321, 347, 384 ASTM Cast XM-1, XM-5, XM-7, XM-21                                                                                                                       | X2CrNiMo 13 4, X5NiCr 32 21, X5CrNiNb 18 10, G-X15CrNi 25-20        |
|                  | M3 | 323, 329, F55, 2205, S329000                                                                                                                                                          | X8CrNiMo27 5, X2CrNiMoN22 5 3, X20CrNiSi25 4, G-X40CrNiSi27 4       |
| Cast Iron        | K1 | class 20, 25, 30, 35, 40, 45, 50, 55, 60, G1800, G3000, G3500, G4000                                                                                                                  | GG15, GG25, GG30, GG40, GTW40                                       |
|                  | K2 | 60-40-18, 65-45-12, 80-55-06, SAE J434:D4018, D4512, D5506, ASTM A47: Grade 32510, 35018, SAE J158: Grade M3210, M4504, M5003, M5503, M7002, ASTM A842: Grade 250, 300, 350, 400, 450 | GGG40, GTS35                                                        |
|                  | K3 | ASTM A536:100-70-03, 120-90-02, SAE J434: D7003, SAE J158:Grade M8501AST A897: 125-80-10, 150-100-7, 175-125-4, 200-150-1, 230-185                                                    | GGG60, GTW55, GTS65                                                 |
| Non-Ferrous      | N1 | 2025, 5050, 7050, 1000, 2017                                                                                                                                                          | AlMg1, Al99.5, AlCuMg1, AlCuBiPb, AlMgSi1, AlMgSiPb                 |
|                  | N2 | 2024, 6061, 7075                                                                                                                                                                      | GAISiCu4, GDAISi10Mg                                                |
|                  | N3 | —                                                                                                                                                                                     | G-ALSi12, G-AlSi17Cu4, G-AlSi21CuNiMg                               |
|                  | N4 | C81500                                                                                                                                                                                | CuZn40, Ms60, G-CuSn5ZnPb, CuZn37, CuSi3Mn                          |
|                  | N5 | —                                                                                                                                                                                     | LEXAN®, HOSTALEN™, Polystyrol, Makralon®                            |
|                  | N6 | Graphite, CFK, CFRP                                                                                                                                                                   | CFK, GFK                                                            |
|                  | N7 | C63000                                                                                                                                                                                | —                                                                   |
| Special Alloys   | S1 | INCOLOY® 800 Series, A608, A567, Discaloy™, INVAR®, N-155, 16-25-6, 19-9 DL; Cast: ASTM A-297, A-351, A-567, A-608                                                                    | X1NiCrMoCu32 28 7, X12NiCrSi36 16, X5NiCrAlTi31 20, X40CoCrNi20 20  |
|                  | S2 | Haynes® 25 (L605), Haynes 188, J-1570, Stellite®, AiResist 213; Cast: AiResist 13, Haynes 21, MAR-M302, MAR-M509, NASA Co-W-Re, WI-52                                                 | Haynes® 188, Stellite® 6,21,31                                      |
|                  | S3 | Astrolloy™, Hastelloy® B/C/ C-276 /X, INCONEL® 600 and 700 Series, IN102,INCOLOY 900 Series, Rene 41, Waspalloy®, Monel®, K-500, MAR-M20, NIMONIC®, UDIMET®                           | INCONEL® 690, INCONEL 625, Hastelloy®, NIMONIC® 75                  |
|                  | S4 | Pure: Ti 98.8, Ti 98.9, Ti 99.9; Alloyed: Ti 5Al-2.5Sn, Ti6Al-4V, Ti6Al-2Sn-4Zr-2Mo, Ti-3Al-8V-6Cr-4Mo-4Zr, Ti-10V-2Fe-3Al, Ti-13V-11Cr-3Al                                           | Ti1, TiAl5Sn2, TiAl6V4, TiAl4Mo4Sn2                                 |
| Hardened Steels  | H1 | Tool Steel H10, H11, H13, D2, D3, 4340, P20                                                                                                                                           | GX260NiCr42, GX330NiCr42, GX300CrNiSi952, GX300CrMo153, HARDOX® 400 |
|                  | H2 | Tool Steel H10, H11, H13, D2, D3, 4340, P20                                                                                                                                           | —                                                                   |
|                  | H3 | Tool Steel H10, H11, H13, D2, D3, 4340, P20                                                                                                                                           | —                                                                   |
|                  | H4 | Tool Steel H10, H11, H13, D2, D3, 4340, P20                                                                                                                                           | —                                                                   |

Technical data provided should be considered advisory only as variations may be necessary depending on the particular application.



## P-Steel

Steel is the most used workpiece material in metal cutting. Steel as a material is comprised mainly of iron and carbon, often with a modest mixture of alloying elements. Steel has a typical carbon content of 0.05% to 1.5 %

### Plain Carbon Steel

This category of steels includes those materials that are a combination of iron and carbon with no alloying elements. As the carbon content in these materials is increased, the ductility of the material is reduced. The carbon content is usually 0.8%. The hardness varies from 90 up to 350HB

Typical uses of this steel include: Axles, shafts, tubes, forgings, welded constructions, structural steel, deep drawn and stamped products, pressure vessel steel, and a variety of cast steels.

### Alloy Steels

Plain carbon steels are made up primarily of iron and carbon, while alloy steels include these same elements with many other elemental additions. The purpose of alloying steel is either to enhance the material's physical properties or its ultimate manufacturability. The physical property enhancements include improved toughness, tensile strength, hardenability, ductility and wear resistance. Alloyed steels have a carbon content lower than 1.7 % and alloying elements such as Ni, Cr, Mo, V and W.

The machinability of steel differs, depending on alloying elements, heat treatment and manufacturing process (forged, rolled, cast, etc.).

Components manufactured from this steel include Crank Shafts, Connecting Rods, Cam Shafts, Hubs, Axles, Shafts, other forging components.

## M-Stainless steel

As the name implies, this group of materials is designed to resist oxidation and other forms of corrosion, in addition to heat in some instances. These materials tend to have significantly greater corrosion resistance and strength at high temperatures than their plain or alloy steel counterparts due to the substantial additions of Chromium, Nickel, Molybdenum, Niobium and Titanium supply different characteristics, such as resistance towards corrosion and strength at high temperatures. These additions combine with Oxygen to create a passivating layer on the surface of the steel, which provides a non-corrosive property to the material.

Stainless steels are used extensively in the food processing, medical – surgical implants, chemical and petroleum industries to transfer corrosive liquids between processing and storage facilities. Stainless steels can be cold formed, forged, machined, welded or extruded.

### Ferritic and martensitic stainless steel

Ferritic steels have magnetic properties. Martensitic stainless steels have relatively high carbon content, which make them hardenable. Weldability is low for both ferritic and martensitic and medium to low resistance against corrosion, which increases with a larger Cr-content.

### Austenitic stainless steel

Austenitic Stainless steel are the most common and familiar types of stainless steel. They are most easily recognized as nonmagnetic. They are extremely formable and weldable, and they can be successfully used from cryogenic temperatures to the red-hot temperatures of furnaces and jet engines. They contain between about 16 and 25% chromium, and they can also contain nitrogen in solution, both of which contribute to their high corrosion resistance. Were it not for the cost of the nickel that helps stabilize their austenitic structure, these alloys would be used even more widely.

Work hardening produces hard surfaces and hard chips, which in turn lead to notch wear. It also creates adhesion and produces built-up edge. It has a relative machinability of 60%. The hardening condition can tear coating and substrate material from the edge, resulting in chipping and bad surface finish. Austenite produces tough, long, continuous chips, which are difficult to break. Generates lot of heat during machining.



## **K-Cast iron**

Cast iron is an iron carbon mixture that is generally used to pour sand castings, as opposed to making billets or bar stock. It has excellent flow properties and therefore, when it is heated to extreme temperatures. Ideal material for complex cast shapes and intricate moulds.

This material is often used for automotive engine blocks, cylinder heads, valve bodies, manifolds, heavy equipment oil pans and machine bases.

### **Grey Cast Iron**

Grey cast iron is an extremely versatile, very machinable relatively low strength cast iron used for pipe, automotive engine blocks, farm implements and fittings. This material receives its dark grey colour from the excess carbon in the form of graphite flakes, which give it its name. It has graphite in typical flake form and the main properties are low impact strength, good thermal conductivity, less heat when engine operates and low heat in cutting process; good dampening properties, absorbs the vibrations in the engine.

### **Malleable Cast Iron**

When white cast iron castings are annealed, malleable iron castings are formed. Malleable iron castings result when hard, brittle cementite in white iron castings is transformed into tempered carbon or graphite in the form of rounded nodules or aggregate. The resulting material is a strong, ductile, tough and very machinable product that is used on a broad scope of applications.

### **Nodular Cast Iron**

Nodular or “ductile” iron is used to manufacture a wide range of automotive engine components including cam shafts, crank shafts, bearing caps and cylinder heads. This material is also frequently used for heavy equipment cast parts as well as heavy machinery faceplates and guides. Nodular iron is strong, ductile, tough and extremely shock resistant.

Components manufactured from this material include hubs, tubing, rollers, exhaust manifolds, crankshafts, differential housings, bearing caps, exhaust manifolds, bedplates, turbo charger housings, clutch plates and fly wheels.

## **N-Non-ferrous materials**

Non-ferrous metals are metals that do not contain iron. Non-ferrous metals are used because of desirable properties such as low weight (e.g., Aluminium), higher conductivity (e.g., Copper), non-magnetic property or resistance to corrosion (e.g., Zinc).

Aluminium (Al) alloys comprising less than 12-13% Silicon (Si) represent the largest part.

### **LM2 (ADC 12)**

One of the two most widely used alloys for all types of die-castings. Mainly used in Automobile Industry for manufacturing components like Crank case, cylinder head, transmission housings, brackets.

### **LM4**

The most versatile of the alloys, has very good casting characteristics and is used for a very wide range of applications.

### **LM5**

Suitable for sand and chill castings requiring maximum corrosion resistance. Mainly used for castings in marine application.

### **LM6**

Suitable for large, intricate and thin walled castings in all types of moulds. Also used where corrosion resistance or ductility is required.

### **LM9**

Used for applications especially in low pressure die casting, requiring the characteristics of LM6 with higher tensile strength after heat treatment.

### **LM13**

Used in applications where thermal stresses are more e.g. Piston. This alloy can withstand higher temperature and load. It has a good wear resistance properties and machinability. But it requires heat treatment.

### **LM 24**

Suitable for large, intricate and thin walled castings in all types of moulds, also used where corrosion resistance or ductility is required



## FORMULAS

### TAP DRILL SIZE

- A. Tap Drill Size (Inch Size Cut Taps)  
 $\text{Drill } \varnothing = \text{Basic O.D. OF Thread} - ((0.0130 \times \% \text{ of Full Thread}) / \text{Pitch (T.P.I.)})$
- B. Tap Drill Size (Inch Size Roll Form Taps)  
 $\text{Drill } \varnothing = \text{BASIC O.D. OF Thread} - ((0.0068 \times \% \text{ of Full Thread}) / \text{Pitch (T.P.I.)})$
- C. Tap Drill Size (Metric Size Cut Taps)  
 $\text{Drill } \varnothing = \text{Basic O.D. OF Thread} - ((\text{Pitch in mm} \times \% \text{ of Full Thread}) / 76.98)$
- D. Tap Drill Size (Metric Size Roll Form Taps)  
 $\text{DRILL } \varnothing = \text{BASIC O.D. OF THD} - ((\text{Pitch in mm} \times \% \text{ of Full Thread}) / 147.06).$

### OR

Drill Diameter = Nominal diameter - Pitch

### INCH – METRIC CONVERSIONS

- A. INCHES TO MILLIMETERS  $\text{MM} = \text{INCH} \times 25.4$
- B. MILLIMETERS TO INCHES  $\text{INCH} = \text{MM} / 25.4$  - OR -  $\text{INCH} = \text{MM} \times 0.03937$

### THREADING FORMULAS

$$\text{Cutting Speed (Vc)} = \frac{N \times 3.14 \times D}{1000} \text{ (m/min)}$$

$$\text{RPM (N)} = \frac{Vc \times 1000}{3.14 \times D} \text{ (RPM)}$$

$$\text{Torque (Md)} = \frac{P^2 \times D \times Kc}{8000} \text{ (Nm)}$$

$$\text{Power (P)} = \frac{Md \times 2 \times 3.14 \times N}{60} \text{ (KW)}$$

Vc - Cutting Speed (m/min)

P - Pitch (mm)

Kc - Specific cutting force (N/mm<sup>2</sup>)

P - Power (KW)

Md - Torque (Nm)

D - Nominal Dia (mm)

N - RPM



### HARDNESS AND TENSILE STRENGTH

| Vickers Hardness No. HV | Rockwell C. Scale Hardness No. HRC | Brinell Hardness No. HB | Tensile strength N/mm <sup>2</sup> |
|-------------------------|------------------------------------|-------------------------|------------------------------------|
| 940                     | 68                                 |                         |                                    |
| 900                     | 67                                 |                         |                                    |
| 864                     | 66                                 |                         |                                    |
| 829                     | 65                                 |                         |                                    |
| 800                     | 64                                 |                         |                                    |
| 773                     | 63                                 |                         |                                    |
| 745                     | 62                                 |                         |                                    |
| 720                     | 61                                 |                         |                                    |
| 698                     | 60                                 |                         |                                    |
| 675                     | 59                                 |                         |                                    |
| 655                     | 58                                 | 2200                    |                                    |
| 650                     | 618                                | 2180                    |                                    |
| 640                     | 608                                | 2145                    |                                    |
| 639                     | 57                                 | 607                     | 2140                               |
| 630                     | 599                                | 2105                    |                                    |
| 620                     | 589                                | 2070                    |                                    |
| 615                     | 56                                 | 584                     | 2050                               |
| 610                     | 580                                | 2030                    |                                    |
| 600                     | 570                                | 1995                    |                                    |
| 596                     | 55                                 | 567                     | 1980                               |
| 590                     | 561                                | 1955                    |                                    |
| 580                     | 551                                | 1920                    |                                    |
| 578                     | 54                                 | 549                     | 1910                               |
| 570                     | 542                                | 1880                    |                                    |
| 560                     | 53                                 | 532                     | 1845                               |
| 550                     | 523                                | 1810                    |                                    |
| 544                     | 52                                 | 517                     | 1790                               |
| 540                     | 513                                | 1775                    |                                    |
| 530                     | 504                                | 1740                    |                                    |
| 527                     | 51                                 | 501                     | 1730                               |
| 520                     | 494                                | 1700                    |                                    |
| 514                     | 50                                 | 488                     | 1680                               |
| 510                     | 485                                | 1665                    |                                    |
| 500                     | 475                                | 1630                    |                                    |
| 497                     | 49                                 | 472                     | 1620                               |
| 490                     | 466                                | 1595                    |                                    |
| 484                     | 48                                 | 460                     | 1570                               |
| 480                     | 456                                | 1555                    |                                    |
| 473                     | 47                                 | 449                     | 1530                               |
| 470                     | 447                                | 1520                    |                                    |
| 460                     | 437                                | 1485                    |                                    |
| 458                     | 46                                 | 435                     | 1480                               |
| 450                     | 428                                | 1455                    |                                    |
| 446                     | 45                                 | 424                     | 1440                               |
| 440                     | 418                                | 1420                    |                                    |

| Vickers Hardness No. HV | Rockwell C. Scale Hardness No. HRC | Brinell Hardness No. HB | Tensile strength N/mm <sup>2</sup> |
|-------------------------|------------------------------------|-------------------------|------------------------------------|
| 434                     | 44                                 | 413                     | 1400                               |
| 423                     | 43                                 | 402                     | 1360                               |
| 413                     | 42                                 | 393                     | 1330                               |
| 403                     | 41                                 | 383                     | 1300                               |
| 392                     | 40                                 | 372                     | 1260                               |
| 382                     | 39                                 | 363                     | 1230                               |
| 373                     | 38                                 | 354                     | 1200                               |
| 364                     | 37                                 | 346                     | 1170                               |
| 355                     | 36                                 | 337                     | 1140                               |
| 350                     | 333                                | 1125                    |                                    |
| 345                     | 35                                 | 328                     | 1110                               |
| 340                     | 323                                | 1095                    |                                    |
| 336                     | 34                                 | 319                     | 1080                               |
| 330                     | 314                                | 1060                    |                                    |
| 327                     | 33                                 | 311                     | 1050                               |
| 320                     | 304                                | 1030                    |                                    |
| 317                     | 32                                 | 301                     | 1020                               |
| 310                     | 31                                 | 295                     | 995                                |
| 302                     | 30                                 | 287                     | 970                                |
| 300                     | 285                                | 965                     |                                    |
| 295                     | 280                                | 950                     |                                    |
| 293                     | 29                                 | 278                     | 940                                |
| 290                     | 276                                | 930                     |                                    |
| 287                     | 28                                 | 273                     | 920                                |
| 285                     | 271                                | 915                     |                                    |
| 280                     | 27                                 | 266                     | 900                                |
| 275                     | 261                                | 880                     |                                    |
| 272                     | 26                                 | 258                     | 870                                |
| 270                     | 257                                | 865                     |                                    |
| 268                     | 25                                 | 255                     | 860                                |
| 265                     | 252                                | 850                     |                                    |
| 260                     | 24                                 | 247                     | 835                                |
| 255                     | 23                                 | 242                     | 820                                |
| 250                     | 22                                 | 238                     | 800                                |
| 245                     | 233                                | 785                     |                                    |
| 243                     | 21                                 | 231                     | 780                                |
| 240                     | 228                                | 770                     |                                    |
| 235                     | 223                                | 755                     |                                    |
| 230                     | 219                                | 740                     |                                    |
| 225                     | 214                                | 720                     |                                    |
| 220                     | 209                                | 705                     |                                    |
| 215                     | 204                                | 690                     |                                    |
| 210                     | 199                                | 675                     |                                    |
| 205                     | 195                                | 660                     |                                    |
| 200                     | 190                                | 640                     |                                    |

Technical data provided should be considered advisory only as variations may be necessary depending on the particular application.



## TABLE CUTTING SPEEDS

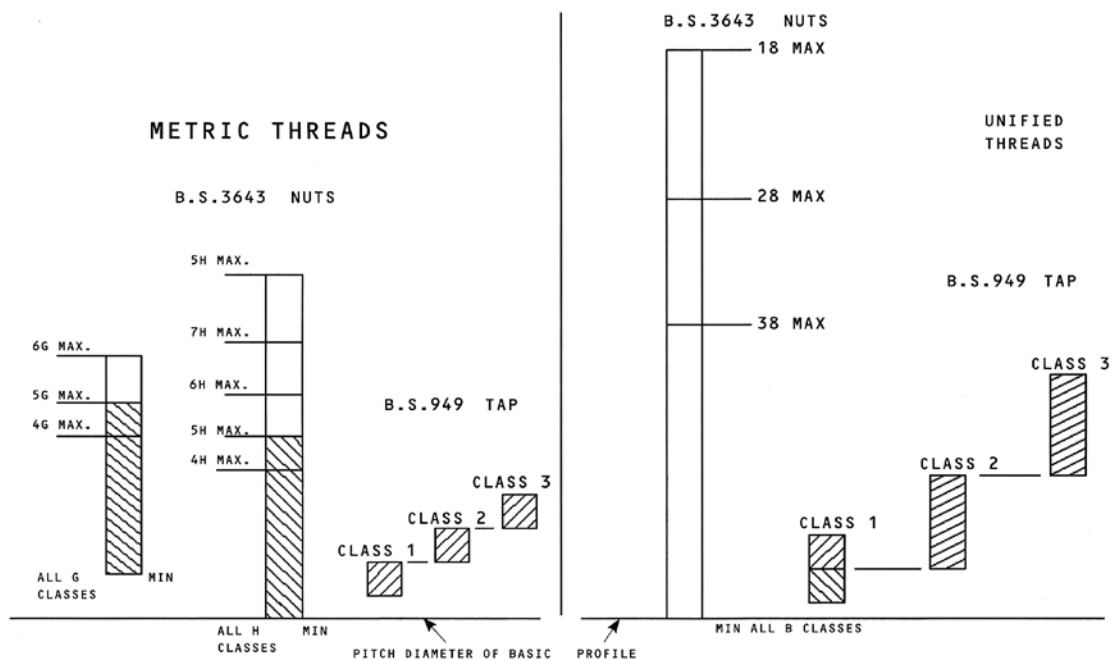
| M/min                | 5                            | 8    | 10   | 15   | 20   | 25   | 30   | 40    | 50    | 60    | 70    | 80    | 90    | 100   | 110   | 150   |
|----------------------|------------------------------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Tool dia<br>mm /inch | Revolutions Per Minute (RPM) |      |      |      |      |      |      |       |       |       |       |       |       |       |       |       |
| 1                    | 1592                         | 2546 | 3138 | 4775 | 6366 | 7958 | 9549 | 12732 | 15916 | 19099 | 22282 | 25465 | 28648 | 31831 | 35014 | 47747 |
| 1.5                  | 1061                         | 1698 | 2122 | 3183 | 4244 | 5305 | 6366 | 8488  | 10610 | 12732 | 14854 | 16977 | 19099 | 21221 | 23343 | 31831 |
| 2                    | 796                          | 1273 | 1592 | 2387 | 3183 | 3979 | 4775 | 6366  | 7958  | 9549  | 11141 | 12732 | 14324 | 15916 | 17507 | 23873 |
| 2.5                  | 637                          | 1019 | 1273 | 1910 | 2546 | 3183 | 3820 | 5093  | 6366  | 7639  | 8913  | 10186 | 11459 | 12732 | 14006 | 19099 |
| 3                    | 531                          | 849  | 1061 | 1592 | 2122 | 2653 | 3183 | 4244  | 5305  | 6366  | 7427  | 8488  | 9549  | 10610 | 11671 | 15916 |
| 1/8"                 | 500                          | 801  | 1001 | 1501 | 2002 | 2502 | 3003 | 4004  | 5005  | 6006  | 7007  | 8008  | 9009  | 10010 | 11011 | 15015 |
| 3.5                  | 455                          | 728  | 909  | 1364 | 1819 | 2274 | 2728 | 3638  | 4547  | 5457  | 6366  | 7176  | 8185  | 9095  | 10004 | 13642 |
| 4                    | 398                          | 637  | 796  | 1194 | 1592 | 1989 | 2387 | 3183  | 3979  | 4775  | 5570  | 6366  | 7162  | 7958  | 8754  | 11937 |
| 4.5                  | 354                          | 566  | 707  | 1061 | 1415 | 1768 | 2122 | 2829  | 3537  | 4244  | 4951  | 5659  | 6366  | 7074  | 7781  | 10610 |
| 3/16"                | 334                          | 535  | 669  | 1003 | 1337 | 1672 | 2006 | 2675  | 3344  | 4012  | 4681  | 5350  | 6018  | 6687  | 7356  | 10031 |
| 5                    | 318                          | 509  | 637  | 955  | 1273 | 1592 | 1910 | 2546  | 3183  | 3820  | 4456  | 5093  | 5730  | 6366  | 7003  | 9549  |
| 6                    | 265                          | 424  | 531  | 796  | 1061 | 1326 | 1592 | 2122  | 2653  | 3183  | 3714  | 4244  | 4775  | 5305  | 5836  | 7958  |
| 1/4"                 | 251                          | 401  | 501  | 752  | 1003 | 1253 | 1504 | 2005  | 2506  | 3008  | 3509  | 4010  | 4511  | 5013  | 5514  | 7519  |
| 7                    | 227                          | 364  | 455  | 682  | 909  | 1137 | 1364 | 1819  | 2274  | 2728  | 3183  | 3638  | 4093  | 4547  | 5002  | 6821  |
| 5/16"                | 200                          | 321  | 401  | 601  | 802  | 1002 | 1203 | 1604  | 2004  | 2405  | 2806  | 3207  | 3608  | 4009  | 4410  | 6013  |
| 8                    | 199                          | 318  | 398  | 597  | 796  | 995  | 1194 | 1592  | 1989  | 2387  | 2785  | 3183  | 3581  | 3979  | 4377  | 5968  |
| 9                    | 177                          | 283  | 354  | 531  | 707  | 884  | 1061 | 1415  | 1768  | 2122  | 2476  | 2829  | 3183  | 3537  | 3890  | 5305  |
| 3/8"                 | 167                          | 267  | 334  | 501  | 668  | 835  | 1002 | 1336  | 1670  | 2004  | 2338  | 2672  | 3006  | 3340  | 3674  | 5010  |
| 10                   | 159                          | 255  | 318  | 477  | 637  | 796  | 955  | 1273  | 1592  | 1910  | 2228  | 2546  | 2865  | 3183  | 3501  | 4775  |
| 7/16"                | 143                          | 229  | 287  | 430  | 573  | 716  | 860  | 1146  | 1433  | 1719  | 2006  | 2292  | 2579  | 2865  | 3152  | 4298  |
| 12                   | 133                          | 212  | 265  | 398  | 531  | 663  | 796  | 1061  | 1326  | 1592  | 1857  | 2122  | 2387  | 2653  | 2918  | 3979  |
| 1/2"                 | 125                          | 201  | 251  | 376  | 501  | 627  | 752  | 1003  | 1253  | 1504  | 1754  | 2005  | 2256  | 2506  | 2757  | 3760  |
| 14                   | 114                          | 182  | 227  | 341  | 455  | 568  | 682  | 909   | 1137  | 1364  | 1592  | 1819  | 2046  | 2274  | 2501  | 3410  |
| 9/16"                | 111                          | 178  | 223  | 334  | 446  | 557  | 668  | 891   | 1114  | 1337  | 1559  | 1782  | 2005  | 2228  | 2450  | 3341  |
| 15                   | 106                          | 170  | 212  | 318  | 424  | 531  | 637  | 849   | 1061  | 1273  | 1485  | 1698  | 1910  | 2122  | 2334  | 3183  |

Technical data provided should be considered advisory only as variations may be necessary depending on the particular application.

## RECOMMENDED TAP TOLERANCES

| Tap Tolerance BS 949 | Class 1        | Class 2            | Class 3            |
|----------------------|----------------|--------------------|--------------------|
| Metric BS 3643       | Classes 4H, 5H | Classes 6H, 4G, 5G | Classes 7H, 8H, 9G |
| Unified BS 1580      | Class 3B       | Class 2B           | Class 1B           |
| Whitworth BS 84      | Close Class    | Medium Class       | Normal Class       |
| B.A. BS 93           | -              | Normal Class       | -                  |

## DISPOSITION OF TAP TOLERANCES IN RELATION TO NUT TOLERANCES FOR METRIC AND UNIFIED THREADS



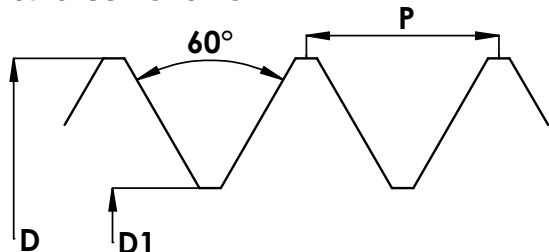
## THREAD TOLERANCES FOR TAP TO ANSI 9-49

|                             |      |                                                  |
|-----------------------------|------|--------------------------------------------------|
| up to 1" Diameter           | GH 2 | Basic pitch diameter, plus 0.0005", plus 0.0010" |
| up to 1" Diameter           | GH 3 | Basic pitch diameter, plus 0.0010", plus 0.0015" |
| up to 1" Diameter           | GH 4 | Basic pitch diameter, plus 0.0015", plus 0.0020" |
| Over 1" Dia. to 1 1/2" Dia. | GH 4 | Basic pitch diameter, plus 0.0010", plus 0.0020" |
| Over 1 1/2" Dia.            | GH 7 | Basic pitch diameter, plus 0.0015", plus 0.0035" |

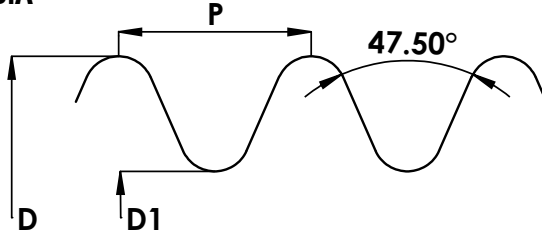


## THREAD FORMS

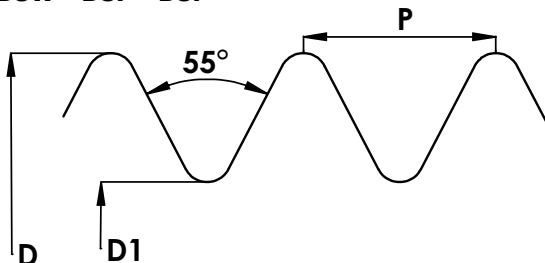
**Metric ISO - UNC - UNF**



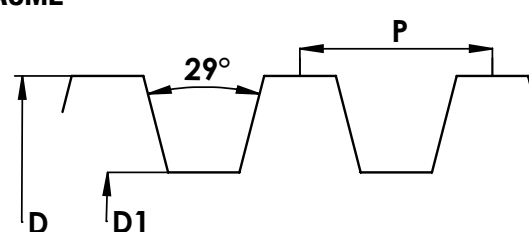
**B.A**



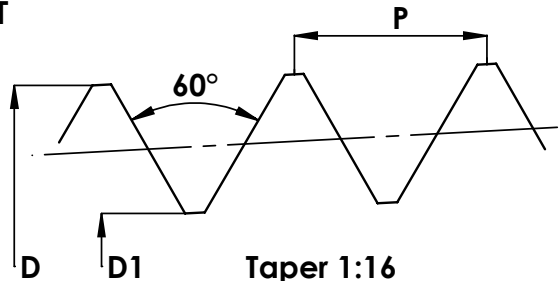
**BSW - BSF - BSP**



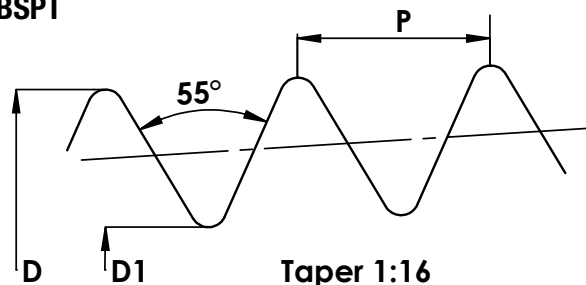
**ACME**



**NPT**



**BSPT**

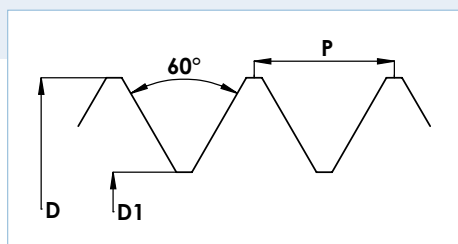


|      |                                                                                 |
|------|---------------------------------------------------------------------------------|
| ACME | : Acme Thread                                                                   |
| BA   | : British Association Standard Thread                                           |
| BSF  | : British Standard Fine Thread Series                                           |
| BSP  | : British Standard Pipe                                                         |
| BSPT | : British Standard Taper Pipe Thread                                            |
| BSW  | : British Standard Whitworth Coarse Thread Series                               |
| M    | : Metric Screw Thread Series                                                    |
| NGT  | : National Gas Taper Thread (See "SGT")                                         |
| NPS  | : for Tap marking only (See NPSC, NPSM)                                         |
| NPSF | : Dryseal American National Standard Fuel Internal Straight Pipe Thread         |
| NPSI | : Dryseal American National Standard Intermediate Internal Straight Pipe Thread |

|      |                                                             |
|------|-------------------------------------------------------------|
| NPT  | : American National Standard Taper Pipe Thread              |
| NPTF | : Dryseal American National Standard Taper Pipe Thread      |
| PG   | : Panzer Gewinder                                           |
| STI  | : Special Thread for Helical Coil Wire Screw Thread Inserts |
| UN   | : Unified Constant Pitch Thread Series                      |
| UNC  | : Unified Coarse Thread Series                              |
| UNEF | : Unified Extra Fine Thread Series                          |
| UNF  | : Unified Fine Thread Series                                |
| UNS  | : Unified Thread-Special                                    |
| WW   | : British Standard Whitworth Special Thread                 |

Technical data provided should be considered advisory only as variations may be necessary depending on the particular application.

## RECOMMENDED TAP DRILL SIZES



| Metric Coarse    |       |            |
|------------------|-------|------------|
| Nominal Diameter | Pitch | Drill Size |
| Ø D              |       |            |
| 2                | 0.4   | 1.6        |
| 2.2              | 0.45  | 1.75       |
| 2.3              | 0.4   | 1.9        |
| 2.5              | 0.45  | 2.05       |
| 2.6              | 0.45  | 2.1        |
| 3                | 0.5   | 2.5        |
| 3.5              | 0.6   | 2.9        |
| 4                | 0.7   | 3.3        |
| 4.5              | 0.75  | 3.7        |
| 5                | 0.8   | 4.2        |
| 6                | 1     | 5          |
| 7                | 1     | 6          |
| 8                | 1.25  | 6.8        |
| 9                | 1.25  | 7.8        |
| 10               | 1.5   | 8.5        |
| 11               | 1.5   | 9.5        |
| 12               | 1.75  | 10.2       |
| 14               | 2     | 12         |
| 16               | 2     | 14         |
| 18               | 2.5   | 15.5       |
| 20               | 2.5   | 17.5       |
| 22               | 2.5   | 19.5       |
| 24               | 3     | 21         |
| 27               | 3     | 24         |
| 30               | 3.5   | 26.5       |
| 33               | 3.5   | 29.5       |
| 36               | 4     | 32         |
| 39               | 4     | 35         |
| 42               | 4.5   | 37.5       |
| 45               | 4.5   | 40.5       |
| 48               | 5     | 43         |
| 52               | 5     | 47         |
| 56               | 5.5   | 50.5       |
| 60               | 5.5   | 54.5       |
| 64               | 6     | 58         |
| 68               | 6     | 62         |
|                  |       |            |
|                  |       |            |
|                  |       |            |

| Metric Fine      |       |            |
|------------------|-------|------------|
| Nominal Diameter | Pitch | Drill Size |
| Ø D              |       |            |
| 2.5              | 0.35  | 2.15       |
| 3                | 0.35  | 2.65       |
| 3.5              | 0.35  | 3.15       |
| 4                | 0.5   | 3.5        |
| 4.5              | 0.5   | 4          |
| 5                | 0.5   | 4.5        |
| 6                | 0.75  | 5.2        |
| 7                | 0.75  | 6.2        |
| 8                | 0.75  | 7.2        |
| 8                | 1     | 7          |
| 9                | 1     | 8          |
| 10               | 0.75  | 9.2        |
| 10               | 1     | 9          |
| 10               | 1.25  | 8.8        |
| 11               | 1     | 10         |
| 12               | 1     | 11         |
| 12               | 1.25  | 10.8       |
| 12               | 1.5   | 10.5       |
| 14               | 1     | 13         |
| 14               | 1.25  | 12.8       |
| 14               | 1.5   | 12.5       |
| 15               | 1     | 14         |
| 15               | 1.5   | 13.5       |
| 16               | 1     | 15         |
| 16               | 1.5   | 14.5       |
| 17               | 1     | 16         |
| 17               | 1.5   | 15.5       |
| 18               | 1.5   | 16.5       |
| 18               | 2     | 16         |
| 20               | 1     | 19         |
| 20               | 1.5   | 18.5       |
| 20               | 2     | 18         |
| 22               | 1     | 21         |
| 22               | 1.5   | 20.5       |
| 22               | 2     | 20         |
| 24               | 1     | 23         |
| 24               | 1.5   | 22.5       |
| 24               | 2     | 22         |
| 24               | 1     | 24         |
| 25               | 1.5   | 23.5       |

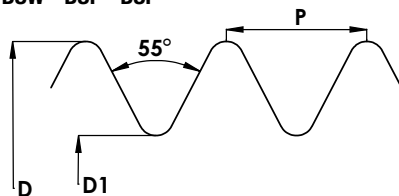
| Metric Fine      |       |            |
|------------------|-------|------------|
| Nominal Diameter | Pitch | Drill Size |
| Ø D              |       |            |
| 26               | 1.5   | 24.5       |
| 27               | 1     | 26         |
| 27               | 1.5   | 25.5       |
| 27               | 2     | 25         |
| 28               | 1.5   | 26.5       |
| 28               | 2     | 26         |
| 30               | 1     | 29         |
| 30               | 1.5   | 28.5       |
| 30               | 2     | 28         |
| 32               | 1.5   | 30.5       |
| 32               | 2     | 30         |
| 33               | 1.5   | 31.5       |
| 33               | 2     | 31         |
| 33               | 3     | 30         |
| 35               | 1.5   | 33.5       |
| 36               | 1.5   | 34.5       |
| 36               | 2     | 34         |
| 36               | 3     | 33         |
| 38               | 1.5   | 36.5       |
| 39               | 1.5   | 37.5       |
| 39               | 2     | 37         |
| 39               | 3     | 36         |
| 40               | 1.5   | 38.5       |
| 40               | 2     | 38         |
| 40               | 3     | 37         |
| 42               | 1.5   | 40.5       |
| 42               | 2     | 40         |
| 42               | 3     | 39         |
| 45               | 1.5   | 43.5       |
| 45               | 2     | 43         |
| 45               | 3     | 42         |
| 48               | 1.5   | 46.5       |
| 48               | 2     | 46         |
| 48               | 3     | 45         |
| 50               | 1.5   | 48.5       |
| 50               | 2     | 48         |
| 50               | 3     | 47         |
| 52               | 1.5   | 50.5       |
| 52               | 2     | 50         |
| 52               | 3     | 49         |

Technical data provided should be considered advisory only as variations may be necessary depending on the particular application.



## RECOMMENDED TAP DRILL SIZES

BSW - BSF - BSP



| BSW              |     |                  |
|------------------|-----|------------------|
| Nominal Diameter | TPI | Drill Size in mm |
| Ø D              |     |                  |
| 1/16"            | 60  | 1.2              |
| 3/32"            | 48  | 1.9              |
| 1/8"             | 40  | 2.6              |
| 5/32"            | 32  | 3.2              |
| 3/16"            | 24  | 3.7              |
| 7/32"            | 24  | 4.5              |
| 1/4"             | 20  | 5.1              |
| 9/32"            | 20  | 5.8              |
| 5/16"            | 18  | 6.5              |
| 3/8"             | 16  | 7.9              |
| 7/16"            | 14  | 9.3              |
| 1/2"             | 12  | 10.5             |
| 9/16"            | 12  | 12.1             |
| 5/8"             | 11  | 13.5             |
| 11/16"           | 11  | 15.1             |
| 3/4"             | 10  | 16.3             |
| 7/8"             | 9   | 19.3             |
| 15/16"           | 9   | 20.6             |
| 1"               | 8   | 22.0             |
| 1.1/8"           | 7   | 24.8             |
| 1.1/4"           | 7   | 28.0             |
| 1.3/8"           | 6   | 30.5             |
| 1.1/2"           | 6   | 33.5             |
| 1.5/8"           | 5   | 36.0             |
| 1.3/4"           | 5   | 39.0             |
| 1.7/8"           | 4 ½ | 41.3             |
| 2"               | 4 ½ | 44.5             |

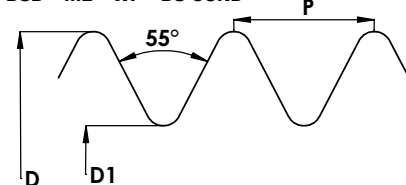
| BSF              |     |                  |
|------------------|-----|------------------|
| Nominal Diameter | TPI | Drill Size in mm |
| Ø D              |     |                  |
| 3/16"            | 32  | 4                |
| 7/32"            | 28  | 4.6              |
| 1/4"             | 26  | 5.30             |
| 9/32"            | 26  | 6.00             |
| 5/16"            | 22  | 6.80             |
| 3/8"             | 20  | 8.30             |
| 7/16"            | 18  | 9.70             |
| 1/2"             | 16  | 11.10            |
| 9/16"            | 16  | 12.70            |
| 5/8"             | 14  | 14.00            |
| 11/16"           | 14  | 15.50            |
| 3/4"             | 12  | 16.75            |
| 7/8"             | 11  | 19.75            |
| 15/16"           | 11  | 21.50            |
| 1"               | 10  | 22.75            |
| 1.1/8"           | 9   | 25.50            |
| 1.1/4"           | 9   | 28.50            |
| 1.3/8"           | 8   | 31.50            |
| 1.1/2"           | 8   | 34.50            |
| 1.5/8"           | 8   | 37.70            |
| 1.3/4"           | 7   | 41.00            |
| 1.7/8"           | 7   | 43.70            |
| 2"               | 7   | 47.00            |

| BSP              |     |                  |
|------------------|-----|------------------|
| Nominal Diameter | TPI | Drill Size in mm |
| Ø D              |     |                  |
| 1/8"             | 28  | 8.80             |
| 1/4"             | 19  | 11.80            |
| 3/8"             | 19  | 15.25            |
| 1/2"             | 14  | 19.00            |
| 5/8"             | 14  | 21.00            |
| 3/4"             | 14  | 24.50            |
| 7/8"             | 14  | 28.25            |
| 1"               | 11  | 30.75            |
| 1.1/4"           | 11  | 39.50            |
| 1.1/2"           | 11  | 45.00            |
| 1.3/4"           | 11  | 51.00            |
| 2"               | 11  | 57.00            |



## RECOMMENDED TAP DRILL SIZES

BSB - ME - WF - BS COND



| BSB              |     |                  |
|------------------|-----|------------------|
| Nominal Diameter | TPI | Drill Size in mm |
| Ø D              |     |                  |
| 1/4"             | 26  | 5.3/4            |
| 9/32"            | 26  | 6.10             |
| 5/16"            | 26  | 6.90             |
| 3/8"             | 26  | 8.40             |
| 7/16"            | 26  | 10.00            |
| 1/2"             | 26  | 11.50            |
| 9/16"            | 26  | 13.1/13          |
| 5/8"             | 26  | 14.70            |
| 11/16"           | 26  | 16.50            |
| 3/4"             | 26  | 17.80            |
| 7/8"             | 26  | 21.00            |
| 1"               | 26  | 24.20            |
| 1.1/8"           | 26  | 27.50            |
| 1.1/4"           | 26  | 30.50            |
| 1.3/8"           | 26  | 33.70            |
| 1.1/2"           | 26  | 36.90            |
| 2                | 26  | 49.60            |

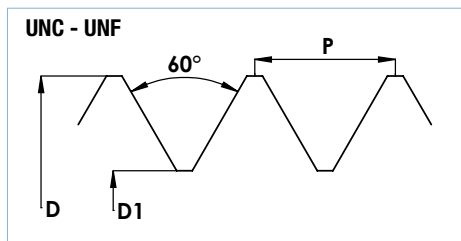
| ME               |     |                  |
|------------------|-----|------------------|
| Nominal Diameter | TPI | Drill Size in mm |
| Ø D              |     |                  |
| 1/8"             | 40  | 2.55             |
| 5/32"            | 40  | 3.30             |
| 3/16"            | 40  | 4.00             |
| 7/32"            | 40  | 4.80             |
| 1/4"             | 40  | 5.50             |
| 9/32"            | 32  | 6.10             |
| 5/16"            | 32  | 7.00             |
| 3/8"             | 32  | 8.60             |
| 7/16"            | 26  | 10.00            |
| 1/2"             | 26  | 11.50            |

| BS COND.         |     |                  |
|------------------|-----|------------------|
| Nominal Diameter | TPI | Drill Size in mm |
| Ø D              |     |                  |
| 1/2"             | 18  | 11.50            |
| 5/8"             | 18  | 14.20            |
| 3/4"             | 16  | 17.50            |
| 7/8"             | 16  | 20.60            |
| 1"               | 16  | 23.80            |
| 1.1/4"           | 16  | 30.10            |
| 1.1/2"           | 14  | 36.10            |
| 2                | 14  | 48.80            |

| WHITWORTH FORM SPECIAL |          |                  |
|------------------------|----------|------------------|
| Nominal Diameter       | TPI      | Drill Size in mm |
| Ø D                    |          |                  |
| 1/4"                   | 24/28/32 | 5.3, 5.4, 5.5    |
| 5/16"                  | 24/40    | 6.75, 7.3        |
| 3/8"                   | 24, 40   | 8.4, 8.9         |
| 7/16"                  | 20/24/40 | 9.8/10, 10.5     |
| 1/2"                   | 20/24/40 | 11.5, 11.9, 12   |
| 9/16"                  | 20       | 13.1             |
| 5/8"                   | 20       | 14.5             |
| 11/16"                 | 20       | 16.2             |
| 3/4"                   | 14/20    | 17.1, 17.8       |
| 7/8"                   | 14/16/20 | 20.0, 20.6, 21.0 |
| 1"                     | 12/20    | 23.0, 24.0       |



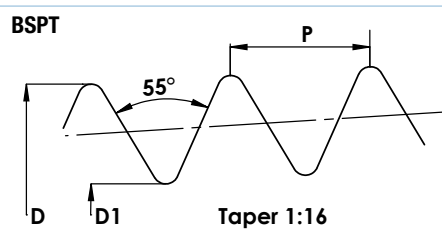
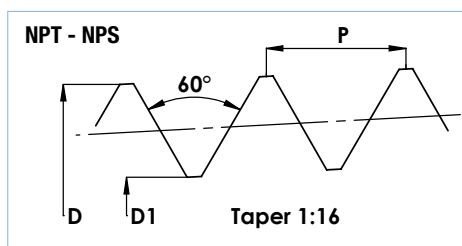
## RECOMMENDED TAP DRILL SIZES



| UNC              |       |            |
|------------------|-------|------------|
| Nominal Diameter | Pitch | Drill Size |
| Ø D              |       |            |
| #1               | 64    | 1.5        |
| #2               | 56    | 1.8        |
| #3               | 48    | 2.1        |
| #4               | 40    | 2.3        |
| #5               | 40    | 2.6        |
| #6               | 32    | 2.85       |
| #8               | 32    | 3.5        |
| #10              | 24    | 3.9        |
| #12              | 24    | 4.5        |
| 1/4"             | 20    | 5.2        |
| 5/16"            | 18    | 6.6        |
| 3/8"             | 16    | 8          |
| 7/16"            | 14    | 9.4        |
| 1/2"             | 13    | 10.75      |
| 9/16"            | 12    | 12.25      |
| 5/8"             | 11    | 13.5       |
| 3/4"             | 10    | 16.5       |
| 7/8"             | 9     | 19.5       |
| 1"               | 8     | 22.25      |
| 1.1/8"           | 7     | 25         |
| 1.1/4"           | 7     | 28.25      |
| 1.3/8"           | 6     | 30.75      |
| 1.1/2"           | 6     | 34         |
| 1.3/4"           | 5     | 39.5       |
| 2"               | 4.5   | 45.25      |

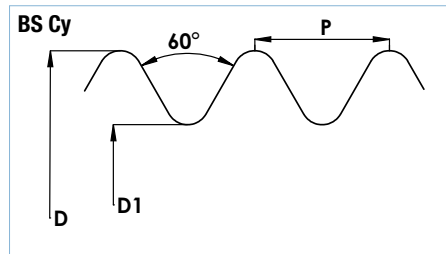
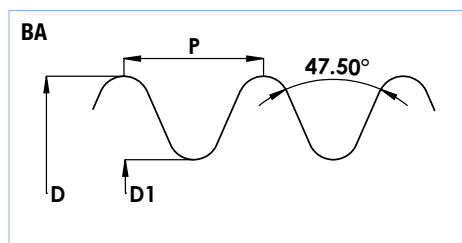
| UNF              |       |            |
|------------------|-------|------------|
| Nominal Diameter | Pitch | Drill Size |
| Ø D              |       |            |
| #1               | 80    | 1.3        |
| #2               | 72    | 1.6        |
| #3               | 64    | 1.9        |
| #4               | 56    | 2.1        |
| #5               | 48    | 2.4        |
| #6               | 44    | 2.7        |
| #8               | 40    | 3          |
| #10              | 36    | 3.5        |
| #12              | 32    | 4.1        |
| 1/4"             | 28    | 4.7        |
| 5/16"            | 28    | 5.5        |
| 3/8"             | 24    | 6.9        |
| 7/16"            | 24    | 8.5        |
| 1/2"             | 20    | 9.9        |
| 9/16"            | 20    | 11.5       |
| 5/8"             | 18    | 12.9       |
| 3/4"             | 18    | 14.5       |
| 7/8"             | 16    | 17.5       |
| 1"               | 14    | 20.5       |
| 1.1/8"           | 12    | 23.25      |
| 1.1/4"           | 12    | 26.5       |
| 1.3/8"           | 12    | 29.5       |
| 1.1/2"           | 12    | 32.7       |
| 2"               | 12    | 36         |

### RECOMMENDED TAP DRILL SIZES



| NPT & NPS        |      |                     |                        |
|------------------|------|---------------------|------------------------|
| Nominal Diameter | TPI  | Drill Size in mm    |                        |
| ØD               |      | Tapping With Reamer | Tapping Without Reamer |
| 1/16"            | 27   | 6.00                | 6.30                   |
| 1/8"             | 27   | 8.40                | 8.70                   |
| 1/4"             | 18   | 10.70               | 11.10                  |
| 3/8"             | 18   | 14.25               | 14.50                  |
| 1/2"             | 14   | 17.50               | 18.00                  |
| 3/4"             | 14   | 22.75               | 23.25                  |
| 1"               | 11.5 | 28.50               | 29.00                  |
| 1.1/4"           | 11.5 | 37.50               | 38.00                  |
| 1.1/2"           | 11.5 | 43.50               | 44.00                  |
| 2" BA            | 11.5 | 55.00               | 56.00                  |

| BSPT             |     |                  |
|------------------|-----|------------------|
| Nominal Diameter | TPI | Drill Size in mm |
| ØD               |     |                  |
| 1/8"             | 28  | 8.80             |
| 1/4"             | 19  | 11.80            |
| 3/8"             | 19  | 15.25            |
| 1/2"             | 14  | 19.00            |
| 5/8"             | 14  | 21.00            |
| 3/4"             | 14  | 24.50            |
| 7/8"             | 14  | 28.25            |
| 1"               | 11  | 30.75            |
| 1.1/4"           | 11  | 39.50            |
| 1.1/2"           | 11  | 45.00            |
| 1.3/4"           | 11  | 51.00            |
| 2                | 11  | 57.00            |



| BA   |          |      |                  |
|------|----------|------|------------------|
| Size | Diameter | TPI  | Drill Size in mm |
| 0    | 0.2362   | 25.4 | 5.10             |
| 1    | 0.2087   | 28.2 | 4.50             |
| 2    | 0.1850   | 31.4 | 4.00             |
| 3    | 0.1614   | 34.8 | 3.40             |
| 4    | 0.1417   | 38.5 | 3.00             |
| 5    | 0.1260   | 43   | 2.65             |
| 6    | 0.1102   | 47.9 | 2.30             |
| 7    | 0.0984   | 52.9 | 2.05             |
| 8    | 0.0866   | 59.1 | 1.80             |
| 9    | 0.0748   | 65.1 | 1.55             |
| 10   | 0.0669   | 72.6 | 1.40             |
| 11   | 0.0591   | 81.9 | 1.20             |
| 12   | 0.0512   | 90.9 | 1.05             |

| BS Cy |     |                  |
|-------|-----|------------------|
| Size  | TPI | Drill Size in mm |
| 1/8"  | 40  | 2.65             |
| 5/32" | 32  | 3.30             |
| 3/16" | 32  | 4.10             |
| 7/32" | 26  | 4.80             |
| 1/4"  | 26  | 5.60             |
| 5/16" | 26  | 7.20             |
| 3/8"  | 26  | 8.70             |
| 7/16" | 26  | 10.30            |
| 1/2"  | 26  | 11.90            |
| 9/16" | 26  | 13.50            |
| 5/8"  | 26  | 15.00            |
| 3/4"  | 26  | 18.20            |
| 1"    | 24  | 24.50            |



## SURFACE TREATMENT

While selecting the correct type of tap for a job, the material to be tapped should also be considered. This may determine the surface coating that should be applied to the tap in order to extend its life. Most taps are supplied with no surface treatment. They are referred to as 'Bright Finish'. These taps are mainly for use on non-ferrous materials, or steels that do not cold weld. Bright finish taps are therefore suitable for all hand operations, where speeds are too low for cold welding to occur, and for most machine operations.

### **STEAM OXIDE:**

A black oxidized surface ( $\text{Fe}_3\text{O}_4$ ) produced on the surface of a finished tap by means of a steam furnace. This oxidized surface is porous and helps retain cutting fluid in the working portion of the tap. The materials on which steam oxide has shown improvement in performance are stainless steels, steel forgings, tool and die steels, hot and cold rolled steels, and high nickel alloys.

### **TITANIUM NITRIDE (TiN):**

A thin deposit (approx. 0.0001") applied to the surface of a finished tap utilizing PVD coating technology. TiN coating increases the surface hardness and wear resistance. Use of TiN coating on standard tools will help increase tool life in harder materials (up to 32 HRC), such as stainless steels, steel forgings, tool and die steels and hot and cold rolled steels. TiN coating also works very well with water-base cutting fluids.

### **TITANIUM CARBONITRIDE (TiCN):**

Similar to TiN, TiCN is applied utilizing PVD coating technology. This coating combines high hardness (approx. 2800 vickers) with the anti-seizure properties of Nitride. A lower coefficient of friction helps reduce welding by 75% over TiN coated tools. These features make TiCN especially beneficial in non-ferrous material and hardened steels.

### **TITANIUM ALUMINUM NITRIDE (TiAlN):**

TiAlN is applied using PVD coating technology. The addition of aluminum reduces friction and increases the coating oxidation temperature. As a result, TiAlN has increased resistance to heat and oxidation wear. This makes TiAlN better suited for High Speed/High Heat applications. TiAlN coating is incorporated into many of our tools.



## CUTTING SPEEDS BASED ON MACHINING CONDITION

**Tapping speeds are determined by many factors. The main ones are:-**

- a) Thread pitch
- b) Material being tapped
- c) Hole depth
- d) Hole type, through or blind
- e) Depth of thread
- f) Lubricant quality and flow rate

**Tapping speeds should be decreased if :-**

- a) Lubricant is poor, or flow is restricted
- b) Bottom lead or Spiral flute taps are used
- c) Thread depth (%) increases.
- d) Thread pitch is coarse
- e) Cutting taper threads (50% normal speed)
- f) Cutting Acme or Trapezoidal threads (40% normal speed)

**Tapping speeds can be increased if:-**

- a) Thread depth decreases
- b) Thread pitch is fine
- c) Coolant flow and quality is good
- d) Spiral point or Fluteless (Roll) taps are used



## TROUBLESHOOTING

Many factors can affect the quality of a tapped thread.  
Some more common problems are listed along with probable causes.

### POOR THREAD FINISH

Misalignment of tap and work piece  
Incorrect feed rate  
Chips/swarf not being cleared properly  
Tapping device or machine faulty  
Insufficient or incorrect lubricant  
Incorrectly ground or blunt tap  
Wrong tap selection

### OVERSIZE/BELL MOUTHED

Misalignment  
Incorrect feed rate  
Incorrect tapping drill  
Tapping device or machine faulty  
Insufficient or incorrect lubricant  
Incorrectly ground or eccentric tap  
Wrong tap selection

### EXCESSIVE TAP WEAR

Wrong tap selection  
Blunt or incorrectly sharpened tap  
Insufficient or incorrect lubricant  
Tapping speed too high  
Hole work hardened  
Taps Technical Information

### COLD WELDING

Wrong material composition  
Blunt or incorrectly sharpened tap  
Insufficient or incorrect lubricant  
Tapping speed too high  
Material too soft

### TAP BREAKING

Incorrectly sharpened/blunt tap  
Tap hits bottom of hole  
Machine or tapping device faulty  
Wrong tap selection  
Incorrect or insufficient lubricant  
Tapping speed too high  
Hole work hardened  
Inefficient chip or swarf removal  
Incorrect tapping drill size

### TAP TEETH CHIPPING

Incorrectly sharpened/blunt tap  
Tap hits bottom of hole  
Machine or tapping device faulty

In order to minimize problems the following rules should be followed:-

- 1) Use a pitch controlled tapping attachment
- 2) Choose the correct lubricant
- 3) Use the correct type of tap for the job
- 4) Use the correct tapping drill size
- 5) Choose the correct speeds and feeds
- 6) Keep taps sharp. Regrind with a proper machine
- 7) Ensure accurate alignment
- 8) Check hardness of material, especially when changing batches
- 9) Ensure thread gauging is recently certified – they do wear !



### CASE STUDIES

| Industry Segment     | Automotive                |
|----------------------|---------------------------|
| Tap series           | SA3                       |
| Size                 | M8 X 1.25 SA3 6HX DIN 371 |
| Component            | Bush                      |
| Work material        | EN8                       |
| Type of hole         | Through hole              |
| Hole dia             | 6.8 mm                    |
| Drill depth          | 12 mm                     |
| Tapping depth        | 12 mm                     |
| Machine              | Radial drilling           |
| Tapping direction    | Vertical                  |
| Speed (Vc)           | 20 m/min                  |
| Coolant              | Tapping Oil               |
| Tool Life            | 40m                       |
| Competitor tool life | 25m                       |

| Industry Segment     | Automotive            |
|----------------------|-----------------------|
| Tap series           | SAF5                  |
| Size                 | M12X1.25 SAF5 DIN 374 |
| Component            | Wheel Hub             |
| Work material        | 16MnCr5               |
| Type of hole         | Through hole          |
| Hole dia             | 10.75 mm              |
| Drill depth          | 12 mm                 |
| Tapping depth        | 12 mm                 |
| Machine              | HMC (2 spindle)       |
| Tapping direction    | Horizontal            |
| Speed (Vc)           | 22 m/min              |
| Coolant              | Water Soluble Oil     |
| Tool Life            | 754 nos               |
| Competitor tool life | 400 nos               |

| Industry Segment     | Automotive            |
|----------------------|-----------------------|
| Tap series           | SA3                   |
| Size                 | M3 X 0.5 SA3          |
| Component            | Hub                   |
| Work material        | S45C                  |
| Type of hole         | Through hole (4holes) |
| Hole dia             | 2.5 mm                |
| Drill depth          | 6.0 mm                |
| Tapping depth        | 6.0 mm                |
| Machine              | Tapping Machine       |
| Tapping direction    | Vertical              |
| Speed (Vc)           | 25 m/min              |
| Coolant              | Neat cutting oil      |
| Tool Life            | 730 nos               |
| Competitor tool life | 600 nos               |

| Industry Segment     | Automotive        |
|----------------------|-------------------|
| Tap series           | SBF5              |
| Size                 | M14 X 1.5 SBF5    |
| Component            | Housing           |
| Work material        | C40               |
| Type of hole         | Blind hole        |
| Hole dia             | 12.5 mm           |
| Drill depth          | 40.0 mm           |
| Tapping depth        | 35.0 mm           |
| Machine              | Tapping Machine   |
| Tapping direction    | Vertical          |
| Speed (Vc)           | 15 m/min          |
| Coolant              | Water Soluble Oil |
| Tool Life            | 470 nos           |
| Competitor tool life | 430 nos           |

| Industry Segment     | Automotive              |
|----------------------|-------------------------|
| Tap series           | SC4                     |
| Size                 | M8 X 1.25 SC4 DIN 371   |
| Component            | Cylinder Head           |
| Work material        | Grey Cast Iron (220BHN) |
| Type of hole         | Blind hole              |
| Hole dia             | 6.8 mm                  |
| Drill depth          | 20.0 mm                 |
| Tapping depth        | 16.0 mm                 |
| Machine              | Makino HMC              |
| Tapping direction    | Horizontal              |
| Speed (Vc)           | 50 m/min                |
| Coolant              | Water Soluble Oil       |
| Tool Life            | 67 mtrs                 |
| Competitor tool life | 58 mtrs                 |

| Industry Segment     | Automotive         |
|----------------------|--------------------|
| Tap series           | SD3                |
| Size                 | M6 X 1 SD3 DIN 371 |
| Component            | Under Bracket      |
| Work material        | EN8D               |
| Type of hole         | Through hole       |
| Hole dia             | 5.55 mm            |
| Drill depth          | 10.0 mm            |
| Tapping depth        | 10.0 mm            |
| Machine              | AMS - VMC          |
| Tapping direction    | Vertical           |
| Speed (Vc)           | 20 m/min           |
| Coolant              | Water Soluble Oil  |
| Tool Life            | 2200 nos           |
| Competitor tool life | 800 nos            |

Technical data provided should be considered advisory only as variations may be necessary depending on the particular application.



## CASE STUDIES

| Industry Segment     | Automotive         |
|----------------------|--------------------|
| Tap series           | SD3                |
| Size                 | M6 X 1 SD3 DIN 371 |
| Component            | Bracket            |
| Work material        | AC4C (Al. Casting) |
| Type of hole         | Blind hole         |
| Hole dia             | 5.55 mm            |
| Drill depth          | 23.0 mm            |
| Tapping depth        | 20.0 mm            |
| Machine              | AMS                |
| Tapping direction    | Vertical           |
| Speed (Vc)           | 30 m/min           |
| Coolant              | Water Soluble Oil  |
| Tool Life            | 353 mtrs           |
| Competitor tool life | 240 mtrs           |

| Industry Segment     | Automotive               |
|----------------------|--------------------------|
| Tap series           | SAF5                     |
| Size                 | HPT 12X1.25 SAF5 OAL 110 |
| Component            | Bearing Hub              |
| Work material        | C56 E2                   |
| Type of hole         | Through hole (4nos)      |
| Hole dia             | 10.75 mm                 |
| Drill depth          | 12.0 mm                  |
| Tapping depth        | 12.0 mm                  |
| Machine              | Hyundai - VMC            |
| Tapping direction    | Vertical                 |
| Speed (Vc)           | 20 m/min                 |
| Coolant              | Water Soluble Oil        |
| Tool Life            | 505 comp                 |
| Competitor tool life | 400 comp                 |

| Industry Segment     | Automotive               |
|----------------------|--------------------------|
| Tap series           | SBF TC                   |
| Size                 | 7/16 UNF SBF3 1B OAL 110 |
| Component            | Crank Shaft              |
| Work material        | 41Cr4 (30 - 32 HRC)      |
| Type of hole         | Blind hole               |
| Hole dia             | 9.2 mm                   |
| Drill depth          | 77.0 mm                  |
| Tapping depth        | 70.0 mm                  |
| Machine              | VMC                      |
| Tapping direction    | Vertical                 |
| Speed (Vc)           | 300 RPM                  |
| Coolant              | Water Soluble Oil        |
| Tool Life            | 26 mtrs                  |
| Competitor tool life | 21 mtrs                  |

| Industry Segment     | Automotive          |
|----------------------|---------------------|
| Tap series           | SBF                 |
| Size                 | M24X1.5 SBF3 ISO    |
| Component            | Axle                |
| Work material        | Forged Steel        |
| Type of hole         | Blind Hole          |
| Hole dia             | 22.5 mm             |
| Drill depth          | 45.0 mm             |
| Tapping depth        | 39.0 mm             |
| Machine              | Radial Drilling M/c |
| Tapping direction    | Vertical            |
| Speed (Vc)           | 150 RPM             |
| Coolant              | Water Soluble Oil   |
| Tool Life            | 20 mts              |
| Competitor tool life | 18 mts              |

| Industry Segment     | Automotive                 |
|----------------------|----------------------------|
| Tap series           | SD3                        |
| Size                 | M6X1X100 OAL SD3           |
| Component            | Crank Case                 |
| Work material        | ADC12                      |
| Type of hole         | Blind hole (8holes / Comp) |
| Hole dia             | 5.5 mm                     |
| Drill depth          | 9.0 mm                     |
| Tapping depth        | 8.0 mm                     |
| Machine              | VMC                        |
| Tapping direction    | Vertical                   |
| Speed (Vc)           | 2100 RPM                   |
| Coolant              | Water Soluble Oil          |
| Tool Life            | 118 mtrs                   |
| Competitor tool life | 96 mtrs                    |

| Industry Segment     | Automotive                      |
|----------------------|---------------------------------|
| Tap series           | SBF TC                          |
| Size                 | M14X1.5 SBF7 TC DIN 374         |
| Component            | Tie Rod                         |
| Work material        | S45C Forged Steel (220-260 BHN) |
| Type of hole         | Blind hole                      |
| Hole dia             | 12.50 mm                        |
| Drill depth          | 45.0 mm                         |
| Tapping depth        | 38.0 mm                         |
| Machine              | VMC                             |
| Tapping direction    | Vertical                        |
| Speed (Vc)           | 300 RPM                         |
| Coolant              | Water Soluble Oil               |
| Tool Life            | 17.6 mtrs                       |
| Competitor tool life | 16.5 mtrs                       |



## CASE STUDIES

| Industry Segment     | Automotive            |
|----------------------|-----------------------|
| Tap series           | SA3                   |
| Size                 | M6X1 SA3 6G ISO       |
| Component            | Hub                   |
| Work material        | S45C (25 - 30 HRC)    |
| Type of hole         | Through hole (4holes) |
| Hole dia             | 5.0 mm                |
| Drill depth          | 6.0 mm                |
| Tapping depth        | 6.0 mm                |
| Machine              | Tapping Machine       |
| Tapping direction    | Vertical              |
| Speed (Vc)           | 515 RPM               |
| Coolant              | Neat cutting oil      |
| Tool Life            | 30 mtrs               |
| Competitor tool life | 22 mtrs               |

| Industry Segment     | Automotive                |
|----------------------|---------------------------|
| Tap series           | SC4                       |
| Size                 | M12X1.75 SC4 ISO          |
| Component            | Flange                    |
| Work material        | S.G. Iron (200 - 230 BHN) |
| Type of hole         | Blind / Through hole      |
| Hole dia             | 10.25 mm                  |
| Drill depth          | 16.0 mm                   |
| Tapping depth        | 12.0 mm                   |
| Machine              | VMC                       |
| Tapping direction    | Vertical                  |
| Speed (Vc)           | 650 RPM                   |
| Coolant              | Water Soluble Oil         |
| Tool Life            | 13.2 mtrs                 |
| Competitor tool life | 11.3 mtrs                 |

| Industry Segment     | Automotive                  |
|----------------------|-----------------------------|
| Tap series           | SB3                         |
| Size                 | M6X1 SB3 ISO                |
| Component            | Housing STR MTR             |
| Work material        | Aluminium Casting           |
| Type of hole         | Blind (2 holes / component) |
| Hole dia             | 5mm                         |
| Drill depth          | 27mm                        |
| Tapping depth        | 17mm                        |
| Machine              | VMC                         |
| Tapping direction    | Vertical                    |
| Speed (Vc)           | 1000 RPM                    |
| Coolant              | Castrol                     |
| Tool Life            | 68 mts                      |
| Competitor tool life | 41 mts                      |

| Industry Segment     | Automotive                   |
|----------------------|------------------------------|
| Tap series           | SB4                          |
| Size                 | M8X1.25 SB4 DIN 371          |
| Component            | Cylinder Head                |
| Work material        | Aluminium Casting            |
| Type of hole         | Blind (17 holes / component) |
| Hole dia             | 6.8mm                        |
| Drill depth          | 23mm                         |
| Tapping depth        | 18mm                         |
| Machine              | VMC                          |
| Tapping direction    | Vertical                     |
| Speed (Vc)           | 800 RPM                      |
| Coolant              | Water Soluble Oil            |
| Tool Life            | 107 mts                      |
| Competitor tool life | 87 mts                       |

| Industry Segment     | Electrical               |
|----------------------|--------------------------|
| Tap series           | SA4                      |
| Size                 | M5 X 0.8 SA4 6HX DIN 371 |
| Component            | Motor Cover              |
| Work material        | Grey Cast Iron (25HRC)   |
| Type of hole         | Through hole             |
| Hole dia             | 4.2mm                    |
| Drill depth          | 8mm                      |
| Tapping depth        | 8mm                      |
| Machine              | Radial Drilling Machine  |
| Tapping direction    | Vertical                 |
| Speed (Vc)           | 510 RPM                  |
| Coolant              | Tapping Oil              |
| Tool Life            | 62 mts                   |
| Competitor tool life | 49 mts                   |

| Industry Segment     | Automotive        |
|----------------------|-------------------|
| Tap series           | SBF3              |
| Size                 | M10X1.25 SBF5 7G  |
| Component            | Crown Wheel       |
| Work material        | 16MnCr5 (210 BHN) |
| Type of hole         | Blind hole        |
| Hole dia             | 8.75mm            |
| Drill depth          | 14.5mm            |
| Tapping depth        | 11mm              |
| Machine              | VMC               |
| Tapping direction    | Vertical          |
| Speed (Vc)           | 500 RPM           |
| Coolant              | Water Soluble Oil |
| Tool Life            | 40 mts            |
| Competitor tool life | 36 mts            |

Technical data provided should be considered advisory only as variations may be necessary depending on the particular application.



## CASE STUDIES

| Industry Segment     | Valve & Pump             |
|----------------------|--------------------------|
| Tap series           | SBS                      |
| Size                 | M10 X 1.5 SBS3 DIN 371   |
| Component            | Piston Valve Body        |
| Work material        | A105 Cast Steel (30 HRC) |
| Type of hole         | Through hole (2holes)    |
| Hole dia             | 8.5 mm                   |
| Drill depth          | 20.5 mm                  |
| Tapping depth        | 19.5 mm                  |
| Machine              | VMC                      |
| Tapping direction    | Vertical                 |
| Speed (Vc)           | 300 RPM                  |
| Coolant              | Water Soluble Oil        |
| Tool Life            | 24 mts                   |
| Competitor tool life | 18 mts                   |

| Industry Segment     | Automotive              |
|----------------------|-------------------------|
| Tap series           | SBF5                    |
| Size                 | M12 X 1.25 SBF5 LH 7GX  |
| Component            | SN Valve Body           |
| Work material        | A350 LF2 (Forged Steel) |
| Type of hole         | Through hole            |
| Hole dia             | 10.8 mm                 |
| Drill depth          | 6.0 mm                  |
| Tapping depth        | 6.0 mm                  |
| Machine              | HMC                     |
| Tapping direction    | Horizontal              |
| Speed (Vc)           | 210 RPM                 |
| Coolant              | Water Soluble Oil       |
| Tool Life            | 750 nos                 |
| Competitor tool life | 954 nos                 |

| Industry Segment     | Automotive                  |
|----------------------|-----------------------------|
| Tap series           | SBF5                        |
| Size                 | M12 X 1.75 SBF5 7GX TC PM   |
| Component            | Output Shaft                |
| Work material        | 20MnCr5                     |
| Type of hole         | Blind hole                  |
| Hole dia             | 10.3 mm                     |
| Drill depth          | 24.0 mm                     |
| Tapping depth        | 22.0 mm                     |
| Machine              | VMC                         |
| Tapping direction    | Vertical                    |
| Speed (Vc)           | 16 m/min                    |
| Coolant              | Water Soluble Oil           |
| Tool Life            | 20 mtrs (CPC reduction 20%) |
| Competitor tool life | 20 mtrs                     |

| Industry Segment     | Automotive         |
|----------------------|--------------------|
| Tap series           | SD3                |
| Size                 | M6 X 1 SD3 DIN 371 |
| Component            | Clutch Cover       |
| Work material        | ADC12              |
| Type of hole         | Blind Hole         |
| Hole dia             | 5.48 mm            |
| Drill depth          | 16.0 mm            |
| Tapping depth        | 13.0 mm            |
| Machine              | VMC                |
| Tapping direction    | Vertical           |
| Speed (Vc)           | 2000 RPM           |
| Coolant              | Water Soluble Oil  |
| Tool Life            | 457 mts            |
| Competitor tool life | 250 mts            |

| Industry Segment     | Medical                         |
|----------------------|---------------------------------|
| Tap series           | SBI                             |
| Size                 | M7 X 1 LS SBI6 PM               |
| Component            | Nail – A493011210               |
| Work material        | Titanium Alloy                  |
| Type of hole         | Blind hole                      |
| Hole dia             | 6.0 mm                          |
| Drill depth          | 20.0 mm                         |
| Tapping depth        | 17.6 mm                         |
| Machine              | Tapping Machine                 |
| Tapping direction    | Vertical                        |
| Speed (Vc)           | 50 RPM                          |
| Coolant              | Neat Cutting Oil                |
| Tool Life            | 100 Comp (consistency achieved) |
| Competitor tool life | 40 Comp (Tap breakage)          |

| Industry Segment     | Automotive             |
|----------------------|------------------------|
| Tap series           | SBF3                   |
| Size                 | M6 X 1 SBF3 TC DIN 371 |
| Component            | Balancing Shaft        |
| Work material        | 41Cr4 (30 - 32 HRC)    |
| Type of hole         | Blind Hole             |
| Hole dia             | 5.0 mm                 |
| Drill depth          | 20.0 mm                |
| Tapping depth        | 12.5 mm                |
| Machine              | VMC - Makino           |
| Tapping direction    | Vertical               |
| Speed (Vc)           | 350 RPM                |
| Coolant              | Water Soluble Oil      |
| Tool Life            | 200 comp               |
| Competitor tool life | 560 comp               |

Technical data provided should be considered advisory only as variations may be necessary depending on the particular application.



### CASE STUDIES

| Industry Segment     | Valve & Pump        |
|----------------------|---------------------|
| Tap series           | SBS                 |
| Size                 | M6 X 1 SBS5 DIN 371 |
| Component            | Upper Body Cover    |
| Work material        | WCC (32 HRC)        |
| Type of hole         | Blind hole (8holes) |
| Hole dia             | 5.0 mm              |
| Drill depth          | 20.0 mm             |
| Tapping depth        | 15.0 mm             |
| Machine              | VMC                 |
| Tapping direction    | Vertical            |
| Speed (Vc)           | 16m/min             |
| Coolant              | Water Soluble Oil   |
| Tool Life            | 40 Comp             |
| Competitor tool life | 31 Comp             |

| Industry Segment     | Automotive                   |
|----------------------|------------------------------|
| Tap series           | SC                           |
| Size                 | M12 X 1.75 SC4'E' TC DIN 376 |
| Component            | S02 Cover                    |
| Work material        | S.G Iron                     |
| Type of hole         | Blind Hole                   |
| Hole dia             | 10.3 mm                      |
| Drill depth          | 21.0 mm                      |
| Tapping depth        | 18.0 mm                      |
| Machine              | VMC - Makino                 |
| Tapping direction    | Vertical                     |
| Speed (Vc)           | 34m/min                      |
| Coolant              | Water Soluble Oil            |
| Tool Life            | 80 mts                       |
| Competitor tool life | 160 mts                      |

| Industry Segment     | Valve & Pump                |
|----------------------|-----------------------------|
| Tap series           | SC                          |
| Size                 | M5 X 0.8 SC5 PM DIN 371     |
| Component            | Cylinder Block (Compressor) |
| Work material        | Grey Cast Iron (200BHN)     |
| Type of hole         | Blind hole (4 holes)        |
| Hole dia             | 4.2 mm                      |
| Drill depth          | 22.0 mm                     |
| Tapping depth        | 18.0 mm                     |
| Machine              | VMC Fine ATC                |
| Tapping direction    | Vertical                    |
| Speed (Vc)           | 550 RPM                     |
| Coolant              | Water Soluble Oil           |
| Tool Life            | 5800 Comp                   |
| Competitor tool life | 5200 Comp                   |

| Industry Segment     | Valve & Pump                |
|----------------------|-----------------------------|
| Tap series           | SBS                         |
| Size                 | M6 X 1 SBS5                 |
| Component            | XI Job                      |
| Work material        | SS202                       |
| Type of hole         | Blind hole                  |
| Hole dia             | 5.0 mm                      |
| Drill depth          | 21.0 mm                     |
| Tapping depth        | 17.0 mm                     |
| Machine              | Geedee Weiler Turing Center |
| Tapping direction    | Horizontal                  |
| Speed (Vc)           | 600 RPM                     |
| Coolant              | Water Soluble Oil           |
| Tool Life            | 25.5 mts                    |
| Competitor tool life | 20 mts                      |

| Industry Segment     | Automotive            |
|----------------------|-----------------------|
| Tap series           | SC                    |
| Size                 | M8 X 1.25 SC4 DIN 371 |
| Component            | Axial Housing         |
| Work material        | Grey Cast Iron        |
| Type of hole         | Blind Hole (2 holes)  |
| Hole dia             | 6.8 mm                |
| Drill depth          | 20.0 mm               |
| Tapping depth        | 15.0 mm               |
| Machine              | VMC                   |
| Tapping direction    | Vertical              |
| Speed (Vc)           | 20m/min               |
| Coolant              | Water Soluble Oil     |
| Tool Life            | 3000 Comp             |
| Competitor tool life | 3200 Comp             |

| Industry Segment     | Automotive              |
|----------------------|-------------------------|
| Tap series           | SC                      |
| Size                 | 3/4" UNF SB4 SPL        |
| Component            | Axle Housing            |
| Work material        | Forged Steel            |
| Type of hole         | Blind Hole              |
| Hole dia             | mm                      |
| Drill depth          | 42.0 mm                 |
| Tapping depth        | 40.0 mm                 |
| Machine              | Radial Drilling Machine |
| Tapping direction    | Vertical                |
| Speed (Vc)           | 12m/min                 |
| Coolant              | Water Soluble Oil       |
| Tool Life            | 27 mts                  |
| Competitor tool life | 32 mts                  |

Technical data provided should be considered advisory only as variations may be necessary depending on the particular application.



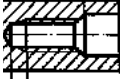
## CASE STUDIES

| Industry Segment     | Automotive                  |
|----------------------|-----------------------------|
| Tap series           | SCF                         |
| Size                 | M12 X 1.25 SCC5 OH2 HSSE PM |
| Component            | Crankshaft                  |
| Work material        | Ductile Cast Iron           |
| Type of hole         | Blind Hole                  |
| Hole dia             | 10.8 mm                     |
| Drill depth          | 17.0 mm                     |
| Tapping depth        | 13.0 mm                     |
| Machine              | SPM                         |
| Tapping direction    | Horizontal                  |
| Speed (Vc)           | 120 RPM                     |
| Coolant              | Neat Cutting Oil            |
| Tool Life            | 800 Comp (Reduction in CPC) |
| Competitor tool life | 800 Comp                    |

| Industry Segment     | Automotive            |
|----------------------|-----------------------|
| Tap series           | SA                    |
| Size                 | M8 X1.25 SA3 DIN 371  |
| Component            | Rear Axle Plate       |
| Work material        | Forged Steel (22 HRC) |
| Type of hole         | Through hole          |
| Hole dia             | 6.8 mm                |
| Drill depth          | 20.0 mm               |
| Tapping depth        | 15.0 mm               |
| Machine              | VMC                   |
| Tapping direction    | Vertical              |
| Speed (Vc)           | 800 RPM               |
| Coolant              | Water Soluble Oil     |
| Tool Life            | 48 mts                |
| Competitor tool life | 40 mts                |



## CUSTOM TOOL REQUEST FORM - HSS TAPS

|                                                                                     |                                                                                     |                                                                                      |                                        |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|----------------------------------------|
| <b>Customer:</b>                                                                    |                                                                                     |                                                                                      |                                        |
| Customer Name                                                                       |                                                                                     | Date                                                                                 |                                        |
| Address:                                                                            |                                                                                     |                                                                                      |                                        |
| Contact Person:                                                                     |                                                                                     |                                                                                      |                                        |
| Contact No.                                                                         | Tel. _____                                                                          | Mobile: _____                                                                        |                                        |
|                                                                                     | Email : _____                                                                       |                                                                                      |                                        |
| <b>Tap Details:</b>                                                                 |                                                                                     | <b>Work material Details:</b>                                                        |                                        |
| Tap Size :                                                                          |                                                                                     | Component Name:                                                                      |                                        |
| Tolerance/Gauge Details:                                                            |                                                                                     | Material Type:                                                                       |                                        |
| Standard:                                                                           |                                                                                     | Hardness:                                                                            |                                        |
| Tap Dimensional Details<br>(For Special)                                            |                                                                                     | Tensile Strength                                                                     |                                        |
| <b>Pre Tapping Hole</b>                                                             |                                                                                     |                                                                                      |                                        |
| <b>Type Of Hole</b>                                                                 |                                                                                     |                                                                                      |                                        |
| <input type="checkbox"/> Drilled                                                    | <input type="checkbox"/> Reamed                                                     | <input type="checkbox"/> Punched                                                     | <input type="checkbox"/> Cast          |
| <input type="checkbox"/> Blind Hole                                                 | <input type="checkbox"/> Through Hole                                               | <input type="checkbox"/> Stepped Hole                                                |                                        |
|  |  |  |                                        |
| Drill /Hole Dia                                                                     | Hole Depth:                                                                         | Thread Depth:                                                                        |                                        |
| <b>Machine Details</b>                                                              |                                                                                     |                                                                                      |                                        |
| <b>Machine make/ Type :</b>                                                         |                                                                                     |                                                                                      |                                        |
| <b>Operation:</b>                                                                   | <input type="checkbox"/> Vertical                                                   | <input type="checkbox"/> Horizontal                                                  | <input type="checkbox"/> Angular       |
|                                                                                     | <input type="checkbox"/> Hand Tapping                                               | <input type="checkbox"/> Machine Tapping                                             |                                        |
| <b>Type Of Tap Holder:</b>                                                          | <input type="checkbox"/> Rigid Type                                                 | <input type="checkbox"/> Floating Type                                               | <input type="checkbox"/> Collect Chuck |
| <b>Cutting Speed</b>                                                                | _____RPM                                                                            | _____M/Min                                                                           | M/c Power:_____hp                      |
| <b>Lubrication</b>                                                                  | <input type="checkbox"/> Oil                                                        | <input type="checkbox"/> Water Soluble                                               | <input type="checkbox"/> Brush         |
|                                                                                     | <input type="checkbox"/> Air/Dry                                                    | <input type="checkbox"/> Other                                                       |                                        |
| <b>Type Of Chips:</b>                                                               | <input type="checkbox"/> Continuous                                                 | <input type="checkbox"/> Semi Continuous                                             | <input type="checkbox"/> Short         |
|                                                                                     | <input type="checkbox"/> Powder                                                     |                                                                                      |                                        |
| <b>Coatings:</b>                                                                    | <input type="checkbox"/> Tin                                                        | <input type="checkbox"/> TiAlN                                                       | <input type="checkbox"/> TiCn          |
|                                                                                     | <input type="checkbox"/> Other                                                      |                                                                                      |                                        |
| <b>Current Supplier's Detail</b>                                                    |                                                                                     |                                                                                      |                                        |
| Tool Make:                                                                          | Consumption/mth.: _____                                                             |                                                                                      |                                        |
| Tool Size: _____                                                                    | Tool Price: _____                                                                   |                                                                                      |                                        |
| Tool Life : _____                                                                   | Cost Per Component: _____                                                           |                                                                                      |                                        |
| <b>Additional Information if any:</b>                                               |                                                                                     |                                                                                      |                                        |
|                                                                                     |                                                                                     |                                                                                      |                                        |
| <b>Sales Engineer</b>                                                               |                                                                                     | <b>Branch Manager</b>                                                                |                                        |
| <b>DSO:</b>                                                                         |                                                                                     |                                                                                      |                                        |



## TRIAL TOOL RESULTS FORM

|                                       |  |                                                                                                                                 |        |
|---------------------------------------|--|---------------------------------------------------------------------------------------------------------------------------------|--------|
| Customer Name                         |  | Ref No.                                                                                                                         |        |
| Address                               |  | Date                                                                                                                            |        |
|                                       |  | Sales/Apl. Engg.:                                                                                                               |        |
| Contact Person's Name & Dept.:        |  | Contact No.:                                                                                                                    |        |
| <b>Tool Description:</b>              |  |                                                                                                                                 |        |
| Component Details:                    |  | Operation Details:                                                                                                              |        |
| Component Name:                       |  | Type :                                                                                                                          |        |
| Material:                             |  | Hole/Drill Depth:                                                                                                               |        |
| Hardness:                             |  | Hole Type:                                                                                                                      |        |
| Tensile Strength:                     |  | Gauge Details:                                                                                                                  |        |
| <b>Recommended Parameters:</b>        |  |                                                                                                                                 |        |
| Size:                                 |  | Coolant:                                                                                                                        |        |
| Speed:                                |  | These parameters are for only as a guide can vary according to working conditions                                               |        |
| Feed:                                 |  |                                                                                                                                 |        |
| <b>Machine/Tapping Details:</b>       |  |                                                                                                                                 |        |
| <b>Present Status</b>                 |  | <b>Trial Status</b>                                                                                                             |        |
| M/c. Type                             |  | Tool-1                                                                                                                          | Tool-2 |
| Spindle rpm:                          |  |                                                                                                                                 |        |
| Speed:                                |  |                                                                                                                                 |        |
| Feed:                                 |  |                                                                                                                                 |        |
| Coolant:                              |  |                                                                                                                                 |        |
| Tap Make:                             |  |                                                                                                                                 |        |
| No Of Flutes:                         |  |                                                                                                                                 |        |
| Type /Tool No:                        |  |                                                                                                                                 |        |
| Life Obtained                         |  |                                                                                                                                 |        |
| Kind of Failure                       |  | Thread Chip off / Thread worn out / No Go answering / Go Tight / Tap Breakage / Reverse Cutting / Chip Clogging / Built up edge |        |
| Tool Consumption /Quarter:            |  |                                                                                                                                 |        |
| Cost / Component:                     |  |                                                                                                                                 |        |
| Cycle time of operation:              |  |                                                                                                                                 |        |
| <b>Trial Result Summary:</b>          |  |                                                                                                                                 |        |
|                                       |  |                                                                                                                                 |        |
|                                       |  |                                                                                                                                 |        |
|                                       |  |                                                                                                                                 |        |
|                                       |  |                                                                                                                                 |        |
| <b>Additional Information if any:</b> |  |                                                                                                                                 |        |
| Sales Engineer                        |  | Branch Manager                                                                                                                  |        |
| DSO:                                  |  |                                                                                                                                 |        |