

# HIGH PRECISION COLLETS & GUIDE BUSHES

FOR SWISS TYPE CNC AUTOMATIC LATHES



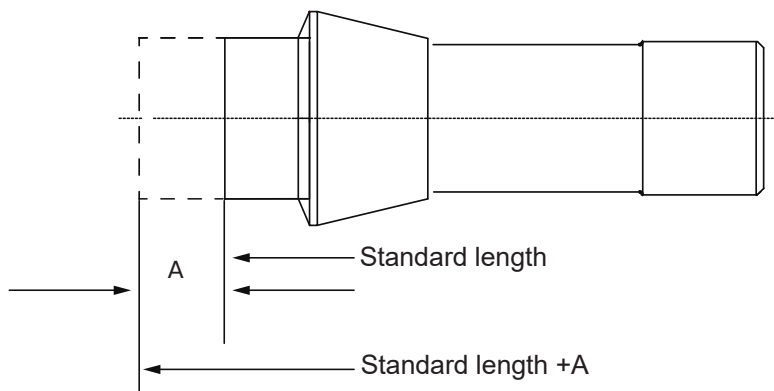
**High-Precision collets,  
carbide lined guide bushes for swiss type automatic lathes**



# Technical Information

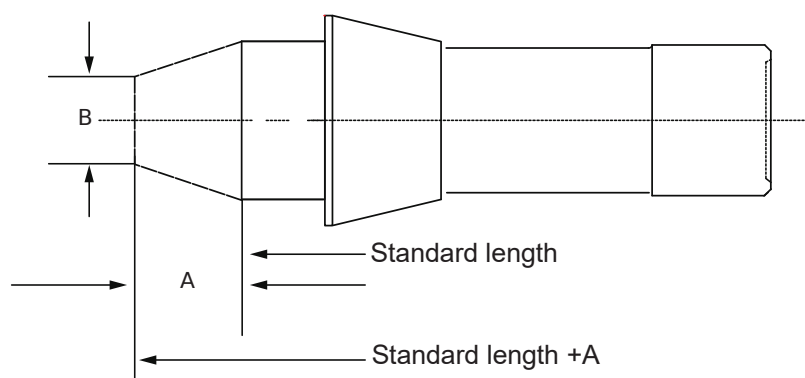
## ● Extended Nose Collets:

When ordering extended nose collets or bushings, please refer to the diagrams as below. It is helpful to us in insuring accuracy if you supply the "A" dimensions when ordering.



### Straight nose

"A" must be given when collet is ordered.



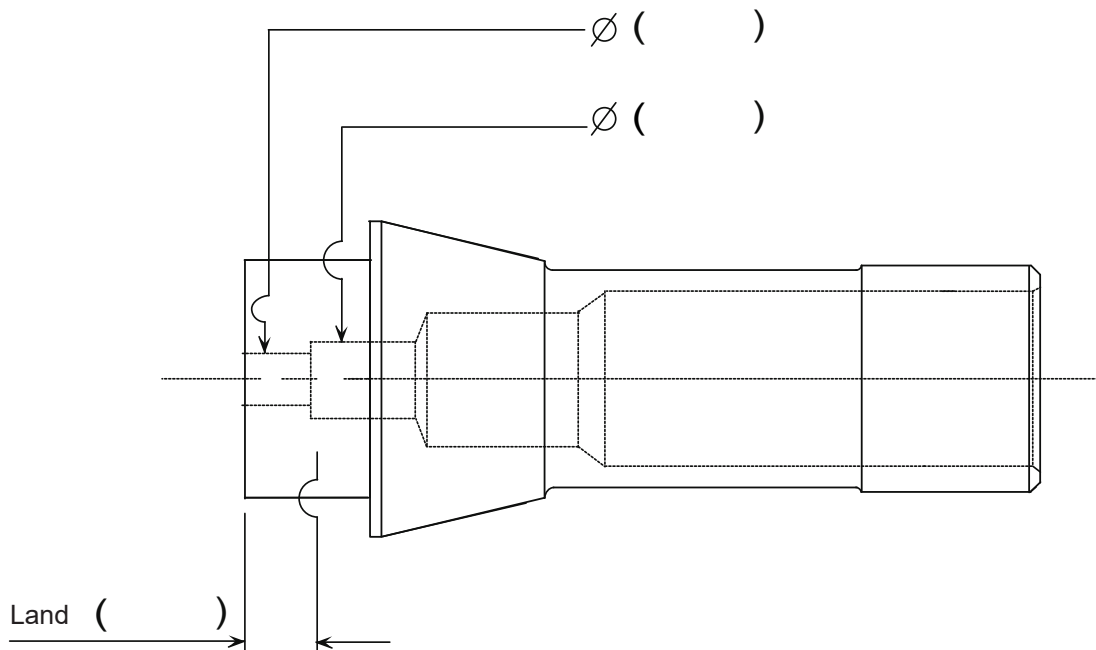
### Tapered nose

"A" must be given when collet is ordered, and give B if you have specific requirement or go with our standard.

## ● Overgrip Collets:

Overgrip collets are used when the collet must be sprung open to clear a larger diameter and grip on a smaller diameter behind that larger diameter.

**EXAMPLE:** the threads of a screw measure 6.5mm and the shank of the screw between the threads and the head of the screw is 6.0mm. You are inserting the screw "**thread end first**" into the sub-spindle collet. The collet would have to open up enough to clear the 6.5mm and grip on the 6.0. Since the shank of the screw is a given length, the 6.0mm bore of the collet must have a specific length assigned to it. We call that the "**LAND**". Since the machine has limited stroke when opening and closing a collet, you may want to contact the machine manufacturer to see if your specific application would be possible.



When ordering, please supply the following information:

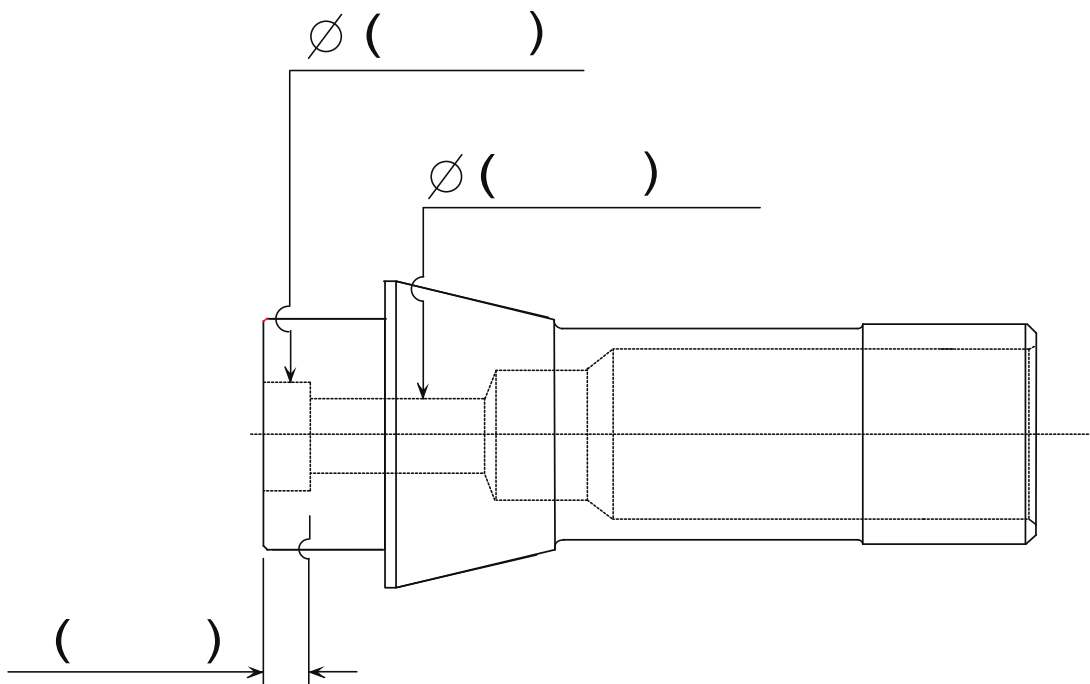
Bore diameter

Overgrip diameter

Land

## ● Step Bore Collets:

Step bore collets are used when the collet must hold 2 or more different diameters of a given part. **EXAMPLE:** A part has a diameter of 6.35mm for 3.8 in length, then steps down to 5.08mm. You are inserting the 5.08mm diameter into the sub spindle first and you need to grip both the 5.08 and the 6.35 diameters. The collet would have both bores in it, the 6.35 at the face of the collet and into the collet for a length of 3.8. The 5.08 bore behind the 6.35 bore would run into the backbore of the collet.



When ordering, please specify  
Step bore collet

And supply the following information:

Bore diameter

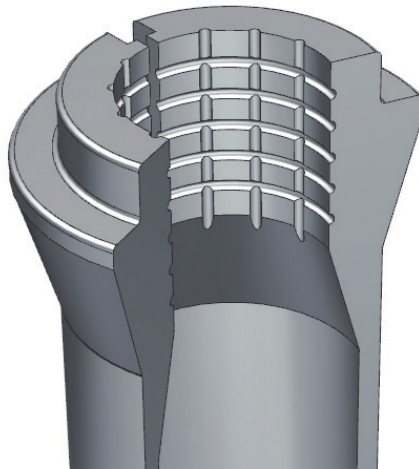
Depth of bore

Thru bore diameter

## ● Powerful Groove

Available from Bore  $\varnothing$  8.00mm above.

Collets with Powerful Groove are used for extra gripping force. We wire slots along the bore length to provide a **waffle pattern**. When ordering, please specify "Powerful Groove"



## ● Collet Bores (Smooth / Groove):

### **Please note:**

Headstock collet bore diameters within 6 mm are normally smooth. Bore diameters 6.0mm and larger are normally grooved.

**IF YOU ARE ORDERING A PICKOFF COLLET** (sub-spindle collet), it is imperative that you specify smooth bore if that is what you need. Many machines use the same collet in the pick-off attachment that is used in the headstock. While pick-off collets generally require a smooth bore. For this reason, if you require a collet for a pick-off operation (sub spindle collet), please specify smooth bore when ordering.

## ● Extra long carbide lined Max for Guide bushing

As the bore diameter gets larger, the bore length will increase by bore group. Please see table below.

| Bore size(mm)          | Standard carbide lined length(mm) | Max Carbide lined length (3*STD mm) |
|------------------------|-----------------------------------|-------------------------------------|
| $\Phi < 0.8$           | OA                                |                                     |
| $0.8 \leq \Phi \leq 1$ | 5.7                               | OA                                  |
| $1 < \Phi \leq 1.5$    | 2                                 | 6                                   |
| $1.5 < \Phi \leq 2$    | 5                                 | 15                                  |
| $2 < \Phi \leq 3$      | 7                                 | 21                                  |
| $3 < \Phi \leq 5$      | 10                                | 30                                  |
| $5 < \Phi \leq 8$      | 11                                | 33                                  |
| $8 < \Phi \leq 10$     | 13                                | 39                                  |
| $10 < \Phi \leq 14$    | 14                                | 42                                  |
| $14 < \Phi \leq 17$    | 16                                | 48                                  |
| $17 < \Phi \leq 20$    | 18                                | 54                                  |
| $20 < \Phi \leq 23$    | 22                                | 66                                  |
| $23 < \Phi \leq 24$    | 24                                | 72                                  |
| $24 < \Phi \leq 32$    | 25                                | 75                                  |

When ordering please supply Carbide lined length you need or go with our standard.

## ● PVC collets and bushings

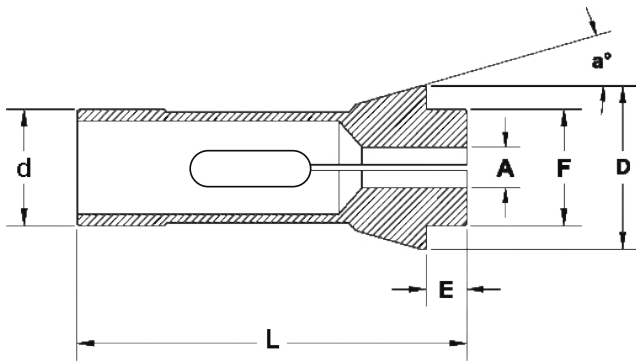
PVC inserted collets and bushings are now available for those parts that require minimal scratching. More other bore material option: Carbide, brass.

## ● V-SLOT, S-SLOT

We offer S/V slotting on the finish slots to help prevent scratching. Collets and bushings ordered with S/V slotting must have an even number of slots.

For more option please see Page 22

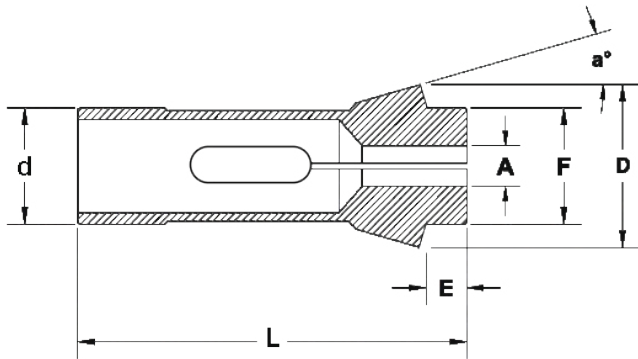
# COLLETS(HEADSTOCK,PICK-OFF) STRAIGHT SHOULDER



| Order Code    | d     | D    | L    | E   | F    | α      | A Max |         |        | US code | Swiss code |             |
|---------------|-------|------|------|-----|------|--------|-------|---------|--------|---------|------------|-------------|
|               |       |      |      |     |      |        | Round | Hexagon | Square |         |            |             |
| ININSF6/76    | 6     | 10   | 30   |     |      | 15°    | 4.5   |         |        |         | 100E       | F6 76-599   |
| INSF7/66      | 7     | 10.7 | 26   | 2.9 | 7    | 15°    | 4.5   | 3       | 3      |         | 1020E      | F7 76-66    |
| INSF7/206     | 7     | 10.5 | 26   | 3   | 7    | 15°    | 4.5   | 3       | 3      |         |            |             |
| INSF8/577     | 8     | 12   | 42   | 4.5 | 8    | 16°    | 5.5   | 4       | 3      | TF8     | 101E       | F8 76-577   |
| INSF8/1079    | 8     | 12   | 41   | 3.5 | 8    | 16°    | 4.5   | 3       | 3      |         |            |             |
| INSF8/102     | 8     | 13.7 | 30   |     | 8    | 21°    | 6     |         |        |         | 102E       |             |
| INSF8/103     | 8     | 14   | 35   |     | 8    | 15°    | 5     |         |        |         | 103E       |             |
| INSF8/36      | 8     | 11.6 | 36   | 3   | 8    | 15°    |       |         |        |         |            |             |
| INSF10/86     | 10    | 15.5 | 47.5 | 5.5 | 10   | 20°    | 7     | 5       | 4      | TF10    | 109E       | F10 76-86   |
| INSF10/1178   | 10    | 16   | 46   | 4   | 10   | 20°    | 7     | 5       | 4      |         | 111E       | F10 76-1178 |
| INSF10/9054   | 10    | 16   | 47   | 5   | 10   | 20°    | 7     | 6       | 5      |         |            |             |
| INSF10/9096   | 10    | 15   | 43   | 5   | 10   | 15°    | 6.5   | 5       | 4      |         | 110E       | F10 76-720  |
| INSF12/78     | 12    | 18.1 | 44.5 | 4.3 | 12   | 15°    | 8     | 6       | 5      |         | 1155E      | F12 76-78   |
| INSF12/578    | 12    | 18   | 64   | 6   | 12   | 16°    | 8     | 6       | 5      | TF12    | 114E       | F12 76-578  |
| INSF13/357    | 13    | 19   | 64   | 6   | 13   | 16°    | 10    | 8       | 7      | TF13    | 116E       | F13 76-357  |
| INSF14/99     | 14    | 20   | 47   | 4   | 14   | 20°    | 10    | 8       | 7      |         |            |             |
| INSF15/358    | 15    | 22   | 47   | 5   | 15   | 20°    | 10.5  | 9       | 7      |         | 121E       | F15 76-358  |
| INSF15/580    | 15    | 21   | 64   | 6   | 15   | 16°    | 11    | 9       | 8      | TF15    | 120E       | F15 76-580  |
| INSF15/9005   | 15    | 20   | 45.5 | 2.5 | 15   | 15°    | 10    | 8       | 7      |         |            |             |
| INSF15/9012   | 15    | 21   | 64   | 6   | 17.5 | 16°    | 11.5  | 9       | 8      |         |            |             |
| INSF16/104    | 16    | 22   | 55   | 5   | 16   | 15°    | 12    | 10      | 8      |         | 123E       | F16 76-104  |
| INSF16/1076   | 16    | 21   | 64   | 6   | 16   | 16°    | 12    | 10      | 8      | TF16    | EF16/1212E | F16 76-1076 |
| INSF16/9070   | 16    | 21   | 62   | 4   | 16   | 16°    | 12    | 10      | 8      |         |            |             |
| INP10C        | 16    | 22   | 50   |     |      | 15.5°  |       |         |        | P1053C  |            | P10C        |
| INSF18/85     | 18    | 25   | 67   | 7   | 19.5 | 15°    | 14    | 11      | 9      |         | 127E       | F18 76-85   |
| INSF18/579    | 18    | 24   | 64   |     |      | 16°    |       |         |        | TF18    | 128E       | F18 76-579  |
| INSF20/87     | 20    | 28   | 67   | 7   | 21   | 16°    | 16    | 13      | 11     | TF20    | 138E       | F20 76-87   |
| INSF20/102    | 20    | 27.5 | 60   | 5   | 20   | 15°    | 16    | 13      | 11     |         | 1299E      | F20 76-02   |
| INSF20/108    | 20    | 27.5 | 69   |     |      | 15°    |       |         |        |         | 137E       |             |
| INSF20/201    | 20    | 26   | 54   | 5   | 19   | 15°    | 16    | 13      | 11     |         | 136E       | F20 76-201  |
| INSF20/9026   | 20    | 26   | 67   | 3   | 19   | 16°    | 16    | 13      | 11     |         |            |             |
| INP16C        | 20    | 26   | 68   |     |      | 13°40' |       |         |        | P1653C  |            | P16C        |
| INSF22/727    | 22    | 32   | 66   | 7   | 25   | 16°    | 17    | 15      | 12     |         |            | F22 727     |
| INSF22/88     | 22    | 28   | 67   |     |      | 13°    |       |         |        |         | 139E       | F22 76-88   |
| INSF23.8/9020 | 23.8  | 28   | 62   | 7   | 22   | 15°    | 18    | 15      | 12     | TF24    | ETF 24     | S16HMS      |
| INSF24/9003   | 24    | 28   | 62   | 7   | 22   | 15°    | 17    | 15      | 12     |         |            |             |
| INSF25/64     | 25    | 35   | 77   | 10  | 27   | 16°    | 20    | 17      | 14     | TF25    | 145E       | F25 76-64   |
| INSF25/91     | 25    | 34   | 65   | 6   | 25   | 15°    | 20    | 17      | 14     | 0156    | 144E       | F25 76-91   |
| INSF25/581    | 25    | 31   | 54   |     |      | 15°    | 20    | 14      | 14     |         | 143E       | F25 76-581  |
| INSF25/9015   | 25    | 35   | 85   | 18  | 27   | 16°    | 20    | 17      | 14     |         |            |             |
| INSF25/9091   | 25    | 35   | 72   | 5   | 27   | 16°    | 20    | 17      | 14     |         |            |             |
| INSF26/90     | 26    | 32   | 67   | 7   | 27.5 | 13°    | 20.5  | 17      | 14     |         | 146 E      | F26 76-90   |
| INSF26/9021   | 26    | 36   | 67   | 7   | 28   | 15°    | 20.5  | 17      | 14     |         |            |             |
| INP20C        | 26    |      | 72   |     |      | 15°    |       |         |        | NN20KFC |            | P20C        |
| INSF27/22     | 27    | 38   | 72.7 | 8   | 30   | 15°    | 23    | 19      | 16     | TF27    | 147E       | F27 76-22   |
| INSF28/9004   | 28    | 35   | 77   | 10  | 27.5 | 16°    | 22.5  | 19      | 16     | BS20    | S20-HM     |             |
| INSF30/63     | 30    | 42   | 80   | 10  | 34   | 16°    | 25    | 21      | 17     | TF30    | 157E       | F30 76-63   |
| INSF30/101    | 30    | 38   | 65   | 6   | 32   | 15°    | 25    | 21      | 17     | 0161    | EF30/1446E | F30 76-101  |
| INSF30/9044   | 30    | 42   | 80   | 12  | 32   | 16°    | 25    | 22      | 18     |         | S25-HS     |             |
| INSF30/9066   | 30    | 42   | 78   | 10  | 32   | 16°    | 25    | 22      | 18     |         |            |             |
| INSF32/1023   | 32    | 40   | 65   | 6   | 34   | 15°    | 26    | 22      | 18     | 0166    | 0166       | F32 1023    |
| INP25C        | 32    | 42   | 85   |     |      | 13°    |       |         |        | P2553C  |            | P25C        |
| INSF33/9043   | 33    | 40   | 80   | 12  | 32   | 16°    | 28    | 24      | 20     |         |            | S25-HM      |
| INSF34/77     | 34    | 44   | 80   |     |      | 16°    |       |         |        | TF34    | 165E/1497E | F34 76-77   |
| INSF37/740    | 37    | 47   | 92   | 10  | 40   | 16°    | 32    | 27      | 22     | TF37    | EF37/1536E | F37 76-740  |
| INSF37SP      | 36.98 | 47   | 92   | 10  | 40   | 16°7'  | 32    | 27      | 22     | TF37SP  |            |             |
| INSF39/1208   | 39    | 46   | 80   |     |      | 15°    | 32    | 27      | 22     |         | EF39/1208E |             |
| INSF40/9074   | 40    | 50   | 92   | 10  | 43   | 16°    | 35    | 30      | 24     | TF40    | ETF40      | F40         |
| INSF40/47     | 40    | 47   | 92   |     |      | 16°    | 36    |         |        | EF40    | EF40       | F40         |
| INP30C        | 42    | 52   | 85   |     |      | 13°    |       |         |        | NN30TC  |            | P30C        |
| INSF44/9082   | 44    | 52   | 92   | 10  | 44   | 16°30' | 38    | 32      | 27     | TF44    |            | F44 76-92   |
| INSF44.4/9061 | 44.4  | 54.5 | 64   | 8.5 | 42   | 15°    | 37    | 31      | 26     |         |            |             |

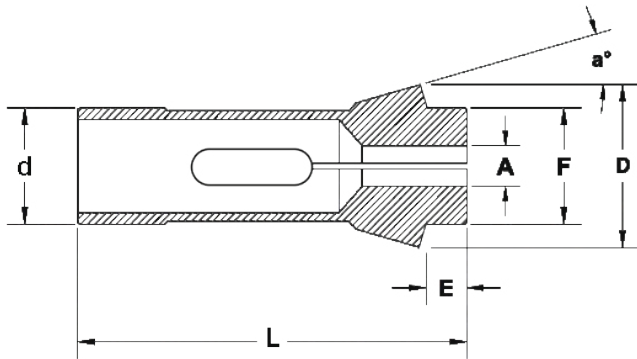


# COLLETS(HEADSTOCK,PULL TYPE) TAPERED SHOULDER



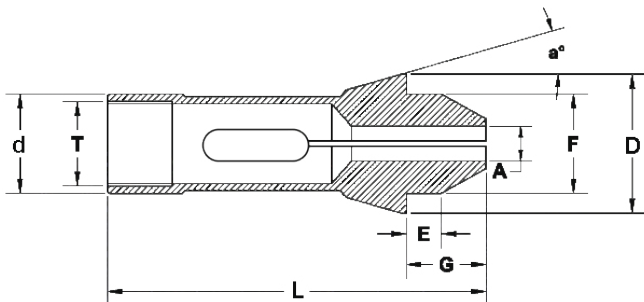
| Order Code     | d     | D    | L     | E   | F  | α   | A Max |         |        | US code | Swiss code      |
|----------------|-------|------|-------|-----|----|-----|-------|---------|--------|---------|-----------------|
|                |       |      |       |     |    |     | Round | Hexagon | Square |         |                 |
| INSF14/98      | 14    | 18   | 46    | 4   | 14 | 13° | 10    | 8       | 7      |         | 117E F14 76-98  |
| ININSF22/71    | 22    | 30   | 55    |     |    | 15° | 16    | 15      | 10     |         | 140E F22 71     |
| INSF28/93      | 28    | 38   | 70    | 7   | 28 | 15° | 23    | 19      | 16     |         | 148E F28 76-93  |
| INSF32/221     | 32    | 45   | 75    | 8   | 34 | 15° | 26    | 22      | 18     | TF32    | 161E F32 76-221 |
| INSF35/67      | 35    | 43   | 70    |     |    | 15° | 30    | 24      | 20     |         | 162E F35 76-67  |
| INSF35/94      | 35    | 48   | 80    | 8   | 38 | 15° | 30    | 25      | 21     |         | 163E F35 76-94  |
| INSF37/9087    | 37    | 44   | 91    | 5.7 | 38 | 16° | 32    | 27      | 22     |         |                 |
| INSF38/72      | 38.08 | 49   | 107.5 | 9   | 38 | 15° | 32    | 27      | 22     |         | 164E F38 76-72  |
| INSF42/99      | 42    | 55   | 94    | 9   | 42 | 15° | 36    | 30      | 25     |         | 171E F42 76-99  |
| INSF40/01      | 40    | 54.5 | 104   |     |    | 18° |       |         |        |         |                 |
| INSF43/37      | 43    | 53   | 92    | 10  | 46 | 16° | 38    | 33      | 27     | TF43    | TF43            |
| INSF43/9078    | 43    | 53   | 92    | 10  | 42 | 15° | 35    | 30      | 25     |         |                 |
| INSF48/38      | 48    | 54   | 100   | 10  | 44 | 15° | 39    | 34      | 28     | BS38    | BS38            |
| INSF48/81      | 48    | 60   | 94    | 9   | 50 | 15° | 42    | 36      | 29     | TF48    | 173E F48 76-81  |
| INSF54/01      | 54    | 87   | 68    |     |    | 19° |       |         |        |         |                 |
| INSF58/355     | 58    | 70   | 94    | 9   | 60 | 15° | 51    | 44      | 36     |         | 177E F58 17-355 |
| INSF60/01      | 60    | 89   | 72    |     |    | 16° |       |         |        |         |                 |
| INSF66/359     | 66    | 84   | 110   | 9   | 73 | 15° | 59    | 48      | 39     |         | 185E F66 76-59  |
| INSF72/187     | 72    | 90   | 142   |     |    | 15° |       |         |        |         | 187E            |
| INSF75/01      | 75    | 100  | 93    |     |    | 15° |       |         |        |         |                 |
| INSF84/188     | 84    | 100  | 142   |     |    | 15° |       |         |        |         | 188E            |
| INSF88/190     | 88    | 106  | 115   |     |    | 15° |       |         |        |         | 190E            |
| INSF90/193     | 90    | 107  | 130   |     |    | 15° |       |         |        |         | 193E            |
| INSF95/194     | 95    | 116  | 200   |     |    | 15° |       |         |        |         | 194E            |
| INSF105/195    | 105   | 125  | 172   |     |    | 15° |       |         |        |         | 195E            |
| INSF112/196    | 112   | 138  | 120   |     |    | 15° |       |         |        |         | 196E            |
| INSF44.4/BNC34 | 44.4  | 54.2 | 108   |     |    | 15° |       |         |        |         |                 |
| INSF30/AD25    | 30    | 43   | 66    | 5.5 | 33 | 15° |       |         |        |         |                 |
| INSF48/AD40    | 48    | 66   | 84    |     |    | 15° |       |         |        |         |                 |
| INSF56/AD50    | 56    | 68   | 94    |     | 58 | 15° |       |         |        |         |                 |
| INSF75/AD65    | 75    | 93   | 100   | 9   | 79 | 15° |       |         |        |         |                 |
| INSF40/C32     | 40    | 54   | 104   |     |    | 18° |       |         |        |         |                 |
| INSF54/C44     | 54    | 68   | 87    |     |    | 19° |       |         |        |         |                 |
| INSF60/C50     | 60    | 72   | 89    |     |    | 16° |       |         |        |         |                 |
| INSF75/C60     | 75    | 93   | 100   |     |    | 15° |       |         |        |         |                 |
| INSF85/C75     | 85    | 98   | 110   |     |    |     |       |         |        |         |                 |

## COLLETS - OVER GRIPPING



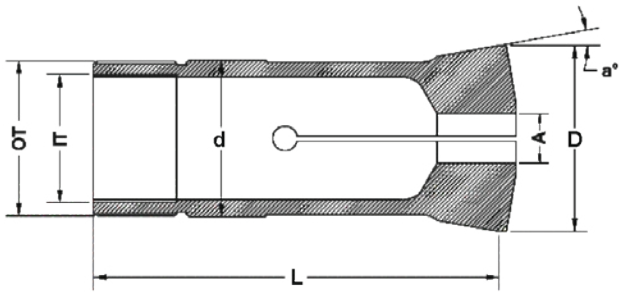
| Order Code  | d  | D  | L  | E  | F  | $\alpha$ |
|-------------|----|----|----|----|----|----------|
| INSF25/9089 | 25 | 35 | 77 | 10 | 24 | 48°      |
| INSF37/9112 | 37 | 44 | 91 | 6  | 36 | 16°      |

## LONG NOSE COLLETS WITH INTERNAL THREAD



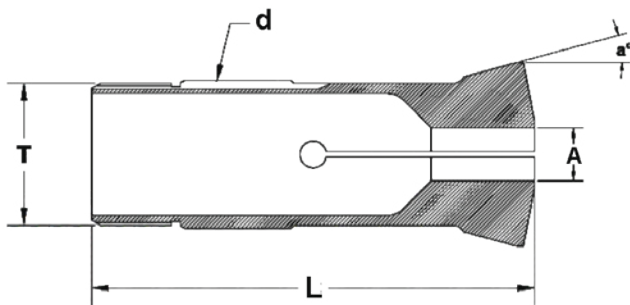
| Order Code  | d  | D  | L  | G  | E | F  | $\alpha$ | T        | A Max |         |        |
|-------------|----|----|----|----|---|----|----------|----------|-------|---------|--------|
|             |    |    |    |    |   |    |          |          | Round | Hexagon | Square |
| INSF13/2014 | 13 | 19 | 70 | 12 | 6 | 13 | 16°      | M11x0.75 | 9.5   | 8       | 6      |
| INSF16/830  | 16 | 21 | 66 | 8  | 6 | 16 | 16°      | M14x0.75 | 12.5  | 10      | 8      |
| INSF16/2015 | 16 | 21 | 71 | 13 | 6 | 16 | 16°      | M14x0.75 | 12.5  | 10      | 8      |
| INSF20/2016 | 20 | 26 | 62 | 13 | 5 | 19 | 15°      | M18x1    | 15.5  | 13      | 11     |
| INSF25/2018 | 25 | 35 | 85 | 18 | 9 | 27 | 16°      | M22x1    | 20    | 17      | 14     |

## MACHINED COLLETS



| Order Code | d      | D      | L      | OT             | IT           | A Max |         |        | α   |
|------------|--------|--------|--------|----------------|--------------|-------|---------|--------|-----|
|            |        |        |        |                |              | Round | Hexagon | Square |     |
| 5C         | 1.250" | 1.468  | 3.281" | 1.238"*20TPI   | 1.041"*24TPI | 26.99 | 23.02   | 19.05  | 10° |
| 16C        | 1.889" | 2.265" | 4.312" | 1.870"*1.75TPI | 1.687"*20TPI | 41.28 | 35.72   | 28.97  | 10° |
| 20C        | 2.378" | 2.880" | 6.250" | 2.359"*1.5TPI  | M53*1mm      | 50.8  | 44.45   | 36.11  | 10° |
| 25C        | 2.930" | 3.470" | 6.480" | 2.871"*1.5TPI  | 25/8"*24 TPI | 65    | 56.29   | 45.92  | 10° |
| 3I         | 2.000" | 2.205" | 3.750" | 1.988"*20      | 1.79"*24TPI  | 44.45 | 38.89   | 31.75  | 10° |

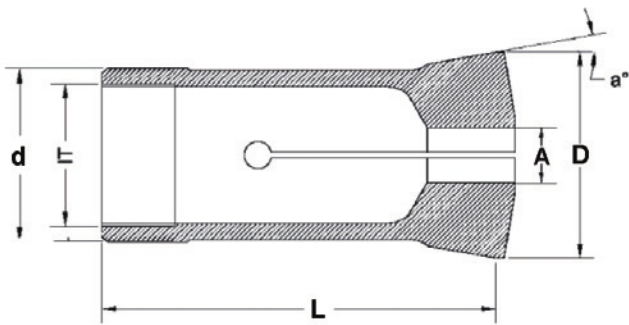
## EXTERNAL THREADED PULL TYPE COLLETS



| Order Code     | d  | L     | α     | D    | A Max |         |        | T(Outside threaded) |
|----------------|----|-------|-------|------|-------|---------|--------|---------------------|
|                |    |       |       |      | Round | Hexagon | Square |                     |
| INSF19/9018    | 19 | 77    | 15°   | 26.5 | 13.5  | 11      | 9      | M18.5x1.2           |
| INSF19/9019    | 19 | 76    | 15°   | 26   | 13.5  | 11      | 9      | M18.5x1.2           |
| INSF33/9017    | 33 | 100   | 15°   | 41   | 27    | 23      | 19     | M32x1.5             |
| IN359E         | 23 | 93.8  | 20°   | 32   | 18    | 15      | 12     | Tr23x1.5            |
| IN363E         | 25 | 89    | 16°   | /    | 18    | 15      | 12     | M23x1               |
| IN366E         | 28 | 106.5 | 18.5° | /    | 21    | 17      | 14     | Tr27x20TPI          |
| IN367E         | 28 | 104.4 | 20°   | /    | 22    | 19      | 15     | Tr28x1.5            |
| IN386E         | 32 | 115   | 20°   | 45   | 27    | 23      | 19     | Tr32x1.5            |
| IN390E         | 47 | 115   | 20°   | /    | 38    | 32      | 26     | Tr47x1.5            |
| INSF25/EGURO20 | 25 | 102   | 15°   | 33   |       |         |        | M24x1.5             |
| INSF25/TAK20   | 25 | 102.5 |       | 35   |       |         |        | M25x1.25            |
| INSF32/EGURO25 | 32 | 118   | 15°   | 42   |       |         |        | M32x1.5             |
| INSF26/KL20    | 26 | 92    | 15°   | 34   |       |         |        | M25x1.25            |
| INSF36/TAK25   | 36 | 131   |       | 52   |       |         |        | M36x2               |
| INSF36/XKC30F  | 36 | 109   | 15°   | 44   |       |         |        | M35x1.25            |
| INSF36/RIKEN25 | 36 | 88    | 10°   | 44   |       |         |        | M32x1.5             |
| INSF55/RIKEN40 | 55 | 110   | 10°   | 66   |       |         |        | M50x1.5             |
| INSF83/RIKEN60 | 83 | 132   | 10°   | 97   |       |         |        | M78x2.0             |
| INSF37/850     | 37 | 101   | 15°   | 46   |       |         |        | M32x1.5             |

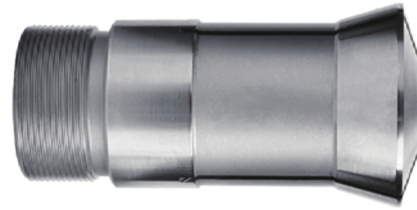
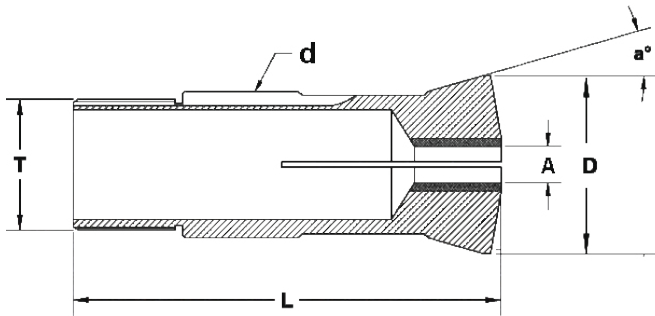
| Order Code      | d  | L     | $\alpha$ | D    | A Max |         |        | T(Outside threaded) |
|-----------------|----|-------|----------|------|-------|---------|--------|---------------------|
|                 |    |       |          |      | Round | Hexagon | Square |                     |
| INSF32/YB25     | 32 | 104   |          | 39   |       |         |        | 31.5x20f"           |
| INSF39/YB32     | 39 | 119   |          | 49   |       |         |        | 38x18f"             |
| INSF52/YB42     | 52 | 137   |          | 64   |       |         |        | 50x16f"             |
| INSF16/0825     | 16 | 72    |          | 24   |       |         |        | M15x0.85            |
| INSF28/1820     | 28 | 100   |          | 36   |       |         |        | M25x1.5             |
| INSF35/1825     | 35 | 124   |          | 49   |       |         |        | M33x1.5             |
| INSF43/1832     | 43 | 137   |          | 57.5 |       |         |        | M40x1.75            |
| INSF15/DAIWA10  | 15 | 60    |          | 20   |       |         |        | M15x1.0             |
| INSF17/DAIWA102 | 17 | 69    |          | 24   |       |         |        | M17x1.0             |
| INSF22/DAIWA15  | 22 | 85    |          | 28   |       |         |        | M21x1.0             |
| INSF25/DAIWA20  | 25 | 102.5 |          | 35   |       |         |        | M25x1.25            |
| INSF36/DAIWA25  | 36 | 131   |          | 52   |       |         |        | M36x2.0             |
| INSF34/SD25     | 34 | 84    |          | 41.5 |       |         |        | 29x20f"             |
| INSF42/SD32     | 42 | 95    |          | 49   |       |         |        | 38x20f"             |
| INSF42/SD34     | 42 | 95.5  |          | 51   |       |         |        | 36x1.5              |
| INSF56/SD45     | 56 | 120   |          | 68   |       |         |        | 51x20f"             |
| INSF61/SD52     | 61 | 120   |          | 68   |       |         |        | 56x20f"             |

## INTERNAL THREADED PULL TYPE COLLETS



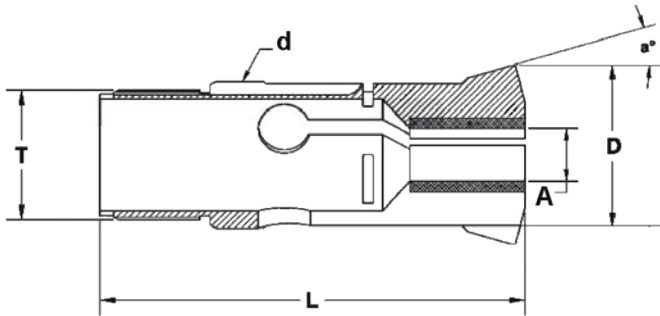
| Order Code  | d  | L   | $\alpha$ | D  | IT(internal threaded) | A Max |         |        |
|-------------|----|-----|----------|----|-----------------------|-------|---------|--------|
|             |    |     |          |    |                       | Round | Hexagon | Square |
| INSF30/9019 | 30 | 75  | 15°      | 38 | M25X1.5               | 22.5  | 19      | 16     |
| INTI-58/01  | 58 | 105 | 15°      | 70 | M50X1.5               | 41    | 35      | 29     |
| INSF30/SC20 | 30 | 79  | 15°      | 38 | M26X1.0               | 22.5  | 19      | 16     |

# CARBIDE LINED GUIDE BUSH -DRAWN TYPE



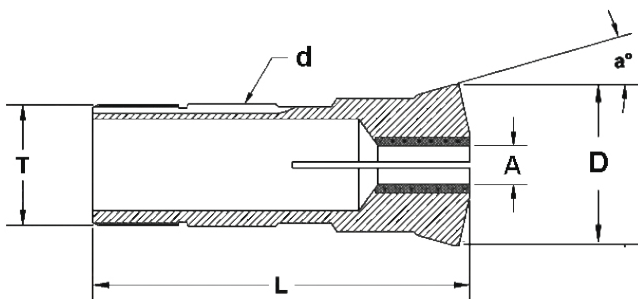
| Order Code | d  | L    | D    | α      | T        | A Max |         |        | US code   | Swiss code     |       |
|------------|----|------|------|--------|----------|-------|---------|--------|-----------|----------------|-------|
|            |    |      |      |        |          | Round | Hexagon | Square |           |                |       |
| INR9/01    | 9  | 44   | 12   | 16°    | M8X0.5   | 5     | 4       | 3      | TD4       | 3077E          |       |
| INR9/03    | 9  | 38.5 | 12.5 | 16°    | M8x0.75  | 5     | 4       | 3      |           |                |       |
| INR9/09    | 9  | 44   | 12.5 | 16°    | M8x0.75  | 5     | 4       | 3      | PD4       | T9-44/J3       |       |
| INR11/02   | 11 | 53   | 14.5 | 16°    | M10x0.75 | 7     | 5       | 4      | TD7       |                |       |
| INR11/12   | 11 | 53   | 14.5 | 16°    | M10x0.80 | 7     | 5       | 4      |           | T11-53-M10.080 |       |
| INR12/01   | 12 | 52   |      | 30°    | M12x1    | 7     | 6       | 5      | TSD7      |                |       |
| INR12/07   | 12 | 50   | 15   | 30°    | M12x1    | 7.5   | 6       | 5      |           | T12-50-M12.1   |       |
| INR13/01   | 13 | 41.5 | 16   | 15°    | M12x0.75 | 8     | 6       | 5      |           | T13-41.5       |       |
| INR14/02   | 14 | 64   | 18   | 16°    | M13x0.75 | 8.5   | 7       | 6      |           | T14-64         |       |
| INR14/03   | 14 | 61.5 | 20   | 15.5°  | M14x1    | 8.5   | 7       | 6      | P853D     |                |       |
| INR15/02   | 15 | 54   | 19   | 16°    | M14x1    | 10    | 8       | 7      |           |                |       |
| INR16/03   | 16 | 60   |      | 30°    | M14x1    | 10    | 8       | 7      | SD125     |                |       |
| INR16/06   | 16 | 59   |      | 16°    | M16x1    | 10    | 8       | 7      | TD10TXP   |                |       |
| INR16/07   | 16 | 63   | 20   | 15°30' | M14x1    | 10    | 8       | 7      | P1053D    |                | P10D  |
| INR16/12   | 16 | 59   | 20.5 | 16°    | M14x1    | 10    | 8       | 7      | TD10      | T16-59         | 3260E |
| INR18/01   | 18 | 59   | 21.8 | 30°    | M16x1    | 12    | 10      | 8      | SD125R-16 | T18-59-M16.1   |       |
| INR18/02   | 18 | 60   | 21.8 | 30°    | M18x1    | 13    | 10      | 9      | SD125R    | T18-59-M18.1   |       |
| INR20/01   | 20 | 55   | 55   | 30°    | M20x1    | 13    | 11      | 9      |           | T20-55         |       |
| INR21/03   | 21 | 57.5 | 24   | 12.5°  | M18x1    | 14    | 11      | 9      | SNC15     | T21-75.4       |       |
| INR22/01   | 22 | 68   | 29   | 16°    | M19x1    | 16    | 12      | 10     | TD20      | T22-68-M19.1   |       |
| INR22/03   | 22 | 70   | 26   | 15°    | M20x1    | 15.5  | 13      | 11     | P1653D    |                | P16D  |
| INR23/01   | 23 | 72   | 28   | 16°    | M22x1    | 16.5  | 14      | 11     | TSG20R    | T23-72         |       |
| INR24/03   | 24 | 61   | 29.5 | 30°    | M24x1    | 16    | 13      | 11     | 0201      | T24-61         |       |
| INR26/02   | 26 | 77   | 29   | 16°    | M25x1    | 20    | 17      | 14     | TD26      | T26-77         |       |
| INR28/02   | 28 | 81   | 38   | 30°    | M25x1    | 20.5  | 17      | 14     | TD25/167  | T28-81         |       |
| INR28/04   | 28 | 82   | 34   | 16°    | M25x1    | 20.5  | 17      | 14     | TD25S     | T28-82-M25.1   |       |
| INR28/05   | 28 | 82   | 34   | 16°    | M27x1    | 22    | 18      | 15     |           | T28-82-M27.1   |       |
| INR30/01   | 30 | 70   | 36   | 16°    | M28x1    | 20.5  | 17      | 14     | S20HGB    | T30-70         |       |
| INR30/05   | 30 | 59   | 35   | 15.75° | M30x1    | 22    | 19      | 16     |           | 510.001 / B230 |       |
| INR30/06   | 30 | 68   | 35   | 15.5°  | M30x1    | 22    | 19      | 16     | NN20KD    |                | P20D  |
| INR32/02   | 32 | 71   | 39.8 | 30°    | M32x1    | 23    | 19      | 16     | TSD20     | T32-71         |       |
| INR33/01   | 33 | 70   |      | 16°    | M30x1    | 26    | 22      | 18     | TD33      |                |       |
| INR34/02   | 34 | 87.5 | 41   | 10°    | M34x1    | 27.5  | 23      | 19     | CD25      | T34-87.5       |       |
| INR34/26   | 34 | 87.5 | 41   | 16°    | M34x1    |       |         |        |           |                |       |
| INR36/02   | 36 | 90   | 44   | 13°    | M36x1    | 25    | 21      | 18     | P2553D    |                | P25D  |
| INR40/03   | 40 | 71.5 | 48   | 30°    | M36x1    | 29    | 25      | 21     | SD255-36  | T40-72-M36.1   |       |
| INR40/05   | 40 | 73   | 48   | 30°    | M40x1    | 30    | 25      | 21     | SD255     | T40-72-M40.1   |       |
| INR41/01   | 41 | 54   |      | 10°    | M38x1    | 32    | 27      | 22     | BS32B     |                |       |
| INR41/02   | 41 | 82   | 46   | 10°    | M38x1    | 32    | 27      | 22     |           |                |       |
| INR42/01   | 42 | 82   | 49   | 16°    | M40x1    | 33    | 28      | 23     | TD32S     | T42-82-C16     |       |
| INR42/02   | 42 | 82   | 48   | 20°    | M40x1    | 33    | 28      | 23     | TD32      | T42-82-C20     |       |
| INR42/04   | 44 | 87.5 | 53   | 20°    | M40x1    | 33    | 28      | 23     |           | 3835E          |       |
| INR44/01   | 44 | 90   | 50   | 13°    | M40x1    | 33    | 28      | 23     | NN30TD    |                | P30D  |
| INR45/01   | 45 | 82   | 52   | 16°    | M42x1    | 36    | 30      | 25     | TD45      |                |       |
| INR46/01   | 46 | 92   | 53   | 16°    | M45x1    | 38    | 32      | 26     | TD38      | T46-92         |       |
| INR46/02   | 46 | 82   | 53   | 16°    | M45x1    | 38    | 32      | 26     | H38D/SL38 | T46-82         |       |
| INR48/02   | 48 | 81   | 56   | 30°    | M48x1.25 | 38    | 33      | 27     |           | T48-81-C30     |       |
| INR48/04   | 48 | 82   | 54   | 16°    | M46x1    | 38    | 33      | 27     | STM38     | T48-82         |       |
| INR48/06   | 48 | 81   | 54   | 10°    | M46x1    | 38    | 33      | 27     |           | T48-81-C10     |       |
| INR52/01   | 52 | 95   | 59   |        | M50X1    |       |         |        |           |                |       |

## CARBIDE LINED GUIDE BUSH - TRAUB



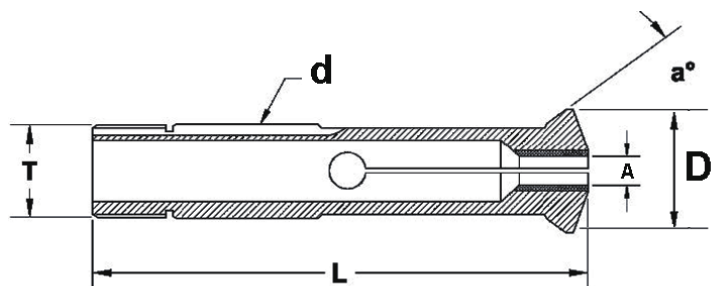
| Order Code | d  | L    | D  | $\alpha$ | T     | A Max |         |        | US Code |
|------------|----|------|----|----------|-------|-------|---------|--------|---------|
|            |    |      |    |          |       | Round | Hexagon | Square |         |
| INR21/07   | 21 | 65.5 | 24 | 12°      | M18x1 | 13.5  | 11      | 9      | TRB468  |
| INR27/01   | 27 | 67.5 | 30 | 12°      | M24x1 | 18    | 15      | 13     |         |
| INR28/06   | 28 | 81.2 | 34 | 16°      | M25x1 | 21    | 18      | 15     |         |
| INR34/03   | 34 | 87.5 | 41 | 10°      | M34x1 | 26    |         |        | TRB761  |
| INR42/07   | 42 | 81.2 | 49 | 16°      | M40x1 | 33    | 28      | 23     |         |

## CARBIDE LINED GUIDE BUSH - WITH REINFORCED SHANK



| Order Code | d  | L   | D  | $\alpha$ | T        | A Max |         |        | US code | Swiss code   |
|------------|----|-----|----|----------|----------|-------|---------|--------|---------|--------------|
|            |    |     |    |          |          | Round | Hexagon | Square |         |              |
| INR22/05   | 22 | 68  | 29 | 16°      | M22x1    | 16    | 13      | 11     | TD20R   | T22-68-M22.1 |
| INR34/06   | 34 | 150 | 42 | 20°      | M32x1.50 | 27    | 22      | 19     | T200XP  |              |

## CARBIDE LINED GUIDE BUSH - MAGIC TYPE



| Order Code | d  | L  | D  | $\alpha$ | T     | A Max |         |        | US code | Swiss code |
|------------|----|----|----|----------|-------|-------|---------|--------|---------|------------|
|            |    |    |    |          |       | Round | Hexagon | Square |         |            |
| INR10/02   | 10 | 58 |    | 36°      | M10x1 | 5.5   | 4       | 3      | TD4SA   |            |
| INR13/02   | 13 | 68 | 17 | 36°      | M13x1 | 8     | 6       | 5      | TD7SA   |            |
| INR18/05   | 18 | 68 | 24 | 36°      | M18x1 | 13    | 10      | 9      | TD10SA  |            |

## QUICK REFERENCE FOR SWISS TYPE MACHINE

### CITIZEN

| Machine model                                    | Headstock collet                   |                 | Guide bushing                        |                 | Pick-off collet  |                 |
|--|------------------------------------|-----------------|--------------------------------------|-----------------|------------------|-----------------|
|  | Collet Model No.                   | INSIGHT Part NO | Bushing Model No.                    | INSIGHT Part NO | Collet Model No. | INSIGHT Part NO |
| R04  | TF8 ( F8/76-511 / 101E )           | INSF8/577       | PD4 ( T9 / 3077E / 1.001 )           | INR9/01         | TF8              | INSF8/577       |
| R07  | TF15 ( F15 / 120E / 40.003 )       | INSF15/580      | TD7 ( T11/J4 / 3134E / 3.001 )       | INR11/02        | TF15             | INSF15/580      |
| D10,F10  | TF15 ( F15 / 120E / 40.003 )       | INSF15/580      | TD10 ( T16/J6R / 3260E / 8.001 )     | INR16/12        |                  |                 |
| L10  | TF15 ( F15 / 120E / 40.003 )       | INSF15/580      | TD10                                 | INR16/12        | TF8              | INSF8/577       |
| B12,B12I,B12II,                                  | TF16 ( F16/1076 / 1212E / 40.012 ) | INSF16/1076     | SD125R ( T18 / 3319E / 174.001 )     | INR18/02        |                  |                 |
| F12,B12V,B12VI,M12                               | TF16 ( F16/1076 / 1212E / 40.012 ) | INSF16/1076     | SD125R                               | INR18/02        | TF16             | INSF16/1076     |
| BL12   | BL12                               | INSF19/9018     |                                      |                 |                  |                 |
| K16,A16,C16,M16                                  | TF20 ( F20/87 / 138E / 40.004 )    | INSF20/87       | 0201 ( T24/B238 / 3507E / 61.002 )   | INR24/03        | TF20             | INSF20/87       |
| L20,L20VII,M20,B20,B20IV,A20,A20I,E16J,E216,E220 | TF25 ( F25/64 / 145E )             | INSF25/64       | TD25NS ( T28/B261 / 3602E / 22.001 ) | INR28/04        | TF25             | INSF25/64       |
| A20(Non-Guide Bushing model)                     | BL25                               | INSF33/9017     |                                      |                 | TF25             | INSF25/64       |
| D16  | TF25                               | INSF25/64       |                                      |                 |                  |                 |
| G16,L16  | TF25                               | INSF25/64       | 0201                                 | INR24/03        |                  |                 |
| L16V/L,16VII                                     | TF25                               | INSF25/64       | 0201                                 | INR24/03        | TF25             | INSF25/64       |
| L20I,L20III                                      | TF25                               | INSF25/64       | TD25NS                               | INR28/04        |                  |                 |
| BL25   | BL25                               | INSF33/9017     |                                      |                 | TF30             | INSF30/63       |
| 20#  | 511.001                            | INSF26/9021     | 510.001                              | INR30/05        | 511.001          | INSF26/9021     |
| L25,E225,E225J,F25                               | TF30 ( F30/63 / 157E / 40.006 )    | INSF30/63       | CD25 ( T34/B227 / 3733E / 451.001 )  | INR34/02        | TF30             | INSF30/63       |
| A32,C32,E232,E32/32IV,E32K,G32,L32,M32           | TF37 ( F37/740 / 1536E )           | INSF37/740      | TD32 ( T42 / 28.01 )                 | INR42/02        | TF37             | INSF37/740      |
| FL32   | TF37SP                             | OA              |                                      |                 | TF37SP           | OA              |
| L32 UPGRADE 38mm                                 | TF43 ( F43 / 511.024 )             | INSF43/37       |                                      |                 | TF43             | INSF43/37       |
| BNA-42GTY  | TF48 ( F48/81 173E 231.009 )       | INSF48/81       |                                      |                 |                  |                 |
| FL42   | TF48                               | INSF48/81       |                                      |                 | TF48             | INSF48/81       |

# QUICK REFERENCE FOR SWISS TYPE MACHINE

## STAR

| Machine model                           | Headstock collet |                 | Guide bushing     |                 | Pick-off collet  |                 |
|---|------------------|-----------------|-------------------|-----------------|------------------|-----------------|
|   | Collet Model No. | INSIGHT Part NO | Bushing Model No. | INSIGHT Part NO | Collet Model No. | INSIGHT Part NO |
| JNC16,RNC10/10B,SNC10DX                 | TF15             | INSF15/580      | TD10              | INR16/12        |                  |                 |
| SH7                                     | TF15             | INSF15/580      | SW7               | INOA            |                  |                 |
| SR10J                                   | TF15             | INSF15/580      | TD10              | INR16/12        | TF15             | INSF15/580      |
| SW7                                     | TF15             | INSF15/580      | SW7               | INOA            | TF15             | INSF15/580      |
|   |                  |                 | TD10              | INR16/12        | TF10             | INSF10/86       |
| SB12/12R,SW12RZ                         | TF18             | INSF18/579      | SNC15             | INR21/03        | TF18             |                 |
| ECAS16,KJR16B,SA16,SB16,SR16,SV12,VNC12 | TF20             | INSF20/87       | TD20R             | INR22/05        | TF20             | INSF20/87       |
| JNC16                                   | TF20             | INSF20/87       | TD20R             | INR22/05        |                  |                 |
|   |                  |                 | SNC15             | INR21/03        |                  |                 |
| RNC16/16B,SE16,SH16,SNC15DX             | TF20             | INSF20/87       | TD20R             | INR22/08        |                  |                 |
| SA12                                    | TF20             | INSF20/87       | SNC15             | INR21/03        | TF20             | INSF20/87       |
| SH12,SE12                               | TF20             | INSF20/87       | SNC15             | INR21/03        |                  |                 |
| SI12                                    | TF20             | INSF20/87       | SNC15             | INR21/03        | TF15             | INSF15/580      |
| SST16                                   | TF20             | INSF20/87       | TD20R             | INR22/05        | TF10             | INSF10/86       |
|   |                  |                 |                   |                 | TF20             | INSF20/87       |
| ECAS20,KNC16/20B,SW20,SR20,SV20         | TF25             | INSF25/64       | TD25S             | INR28/04        | TF25             | INSF25/64       |
| VNC20                                   | TF25             | INSF25/64       | TD25S             | INR28/04        | TF20             | INSF20/87       |
| SNC25DX                                 | TF34             | INSF34/77       | TD32S             | INR42/01        | CD25             |                 |
| ECAS32,KNC25/32B,SR32,SV32J             | TF37             | INSF37/740      | TD32S             | INR42/01        | TF37             | INSF37/740      |
| STM32,JNC25/32                          | TF37             | INSF37/740      | TD32S             | INR42/01        |                  |                 |
| VNC32                                   | TF37             | SF37/740        | TD32S             | INR42/01        | TF30             | SF30/63         |
| SF25                                    | TF37             | INSF37/740      |                   |                 | 0161             | INSF30/101      |
| SG42                                    | TF48             | INSF48/81       |                   |                 | TF48             | INSF48/81       |
| STM38                                   | TF48             | INSF48/81       | STM38             | INR48/04        |                  |                 |
| SV38R,ST38                              | TF48             | INSF48/81       | STM38             | INR48/04        | TF48             | INSF48/81       |
| MAF42                                   | TF48             | INSF48/81       |                   |                 |                  |                 |
| SC-20(Non-Guide Bushing model)          |                  | INSF30/SC20     |                   |                 |                  |                 |

## TSUGAMI

| Machine model   | Headstock collet |                 | Guide bushing     |                 | Pick-off collet  |                 |
|---|------------------|-----------------|-------------------|-----------------|------------------|-----------------|
|   | Collet Model No. | INSIGHT Part NO | Bushing Model No. | INSIGHT Part NO | Collet Model No. | INSIGHT Part NO |
| B007/BW07/BO75-III  | TF10             | INSF10/86       | TD7               | INR11/02        | TF10             | INSF10/86       |
| NT11/NT11S  | TF15             | INSF15/580      | SD125R            | INR18/02        |                  |                 |
| NP11  | TF15             | INSF15/580      | SD125R            | INR18/02        | TF15             | INSF15/580      |
| NT12  | TF20             | INSF20/87       | TD20              | INR22/01        |                  |                 |
|   |                  |                 | TD20R             | INR22/08        |                  |                 |
| NP16/NMP1611  | TF20             | INSF20/87       | TD25              | INR28/02        | TF20             | INSF20/87       |
| NT16  | TF20             | INSF20/87       | TD25              | INR28/02        |                  |                 |
| BS12/BO12/BS12V/BO12V/BE12III/<br>BN12/BW12/BW129Z/BU12/S16D/S1       | TF24             | INSF23.8/9020   | TSG20R            | INR23/01        | TF24             | INSF23.8/9020   |
| NT17/NT17S  | TF24             | INSF23.8/9020   | TSG20R            | INR23/01        |                  |                 |
| BS19/BE19/NP201/NP20III/NP20III/S2<br>OP/BS20A/S20D/BH20/S20H/BE20III | TF25             | INSF25/64       | TD25              | INR28/02        | TF25             | INSF25/64       |
| S205-II/S206-II   | TF25             | INSF25/64       | TD26              | INR26/02        | TF25             | INSF25/64       |
| NT20  | TF25             | INSF25/64       | TD25              | INR28/02        |                  |                 |
| BO206-III/BO205-III/BO206/BW299Z/BE20V                                | TF25             | INSF25/64       | TD26              | INR26/02        | TF25             | INSF25/64       |
|   |                  |                 | TD25              | INR28/02        |                  |                 |
| BU265/SY,MU26S/SY,SS26,S25P,<br>S25D,S25H,BS26,BA26                   | 0166             | INSF32/1023     | CD25              | INR34/02        | 0166             | INSF32/1023     |
| NT25/NT32/NP32  | TF37             | INSF37/740      | TD32              | INR42/02        |                  |                 |
| S205-II 1",S206-II 1"   | TF37             | INSF37/740      | TD33              | INR33/01        | TF25             | INSF25/64       |
| BO325-III/BO326-III/BW329Z/<br>SS327-III-5AX/BO325B                   | TF43             | INSF43/37       | TD32              | INR42/02        | TF37             | INSF37/740      |
| BO386-C   | BS38             | INSF48/38       |                   |                 | BS38             | INSF48/38       |
| BU385/SY,BH385,MU38S/SY,<br>TMU1,BO385,BO38T                          | TF43             | INSF43/37       | STM38             | INR48/04        | BS38             | INSF48/38       |



# QUICK REFERENCE FOR SWISS TYPE MACHINE

## HANWHA

| Machine model                             | Headstock collet             |                 | Guide bushing        |                 | Pick-off collet  |                 |
|---|------------------------------|-----------------|----------------------|-----------------|------------------|-----------------|
|   | Collet Model No.             | INSIGHT Part NO | Bushing Model No.    | INSIGHT Part NO | Collet Model No. | INSIGHT Part NO |
| XD12III/XE12/XP12, XD10                   | TF16 (F16 / 1212E / 40.012)  | INSF16/1076     | SD125R               | INR18/02        | TF16             | INSF16/1076     |
| XD12III/XE12/XP12 (Europe), XD10 (Europe) | TF15 ( F15 / 120E / 40.003 ) | INSF15/580      | SD125R16             | INR18/01        | TF15             | INSF15/580      |
| XD16III/XE16/XP16                         | TF22 (F22 / 140E / 231.002)  | ININSF22/71     | TD20R                | INR22/08        | TF22             | ININSF22/71     |
| XD20II/XE20 /XP20/XD20V                   | TF25 ( F25 / 145E / 40.005)  | INSF25/64       | TD25NS               |                 | TF25             | INSF25/64       |
| HANEX25                                   | TF30 ( F30 / 157E )          | INSF30/63       | CD25                 |                 | TF30             | INSF30/63       |
| XD26II/XE26 /XP26, XDI26                  | TF32 (F32 / 161E / 231.005)  | INSF32/221      | CD25                 |                 | TF32             | INSF32/221      |
| XD32                                      | TF37 (F37 / 1536E / 40.008)  | INSF37/740      | TD45                 |                 | TF37             | INSF37/740      |
| XD32II/STL32 (S)/XP32                     | TF37                         | INSF37/740      | TD32S                |                 | TF37             | INSF37/740      |
| XD35II/XE35                               | TF40 / F40                   | INSF40/9074     | TD45                 |                 | F40              | INSF40/9074     |
| XD38II(F)                                 | TF44 (F44 / 511.026)         | INSF44/9082     | H38D / SL38 / T46-82 |                 | TF44             | INSF44/9082     |
| XD38II-H (F, Ø40mm)                       | TF48 (F48 / 173E /231.009)   | INSF48/81       |                      |                 | TF48             | INSF48/81       |
| XD38II-H (S), R (F,S)                     | TF48                         | INSF48/81       |                      |                 | TF48             | INSF48/81       |
| XD38II-N (S)                              | TF44                         | INSF44/9082     |                      |                 | TF44             | INSF44/9082     |
| STL38H (S) / Standard, Y3                 | TF48                         | INSF48/81       | H38D / SL38 / T46-82 |                 | TF48             | INSF48/81       |
| STL38H (S) / none Y3                      | TF48                         | INSF48/81       | H38D / SL38 / T46-82 |                 | TF48             | INSF48/81       |
| STL42                                     | TF48                         | INSF48/81       |                      |                 | TF48             | INSF48/81       |

## TORNOS

| Machine model          | Headstock collet |                 | Guide bushing     |                 | Pick-off collet  |                 |
|------------------------|------------------|-----------------|-------------------|-----------------|------------------|-----------------|
|                        | Collet Model No. | INSIGHT Part NO | Bushing Model No. | INSIGHT Part NO | Collet Model No. | INSIGHT Part NO |
| DECO 2000 10,ENC74     | TF13             | INSF13/357      | TD10              | INR16/12        | TF13             | INSF13/357      |
| ENC16,                 | F20-201,136E     | INSF20/201      | 0201              | INR24/03        | TF20             | INSF20/87       |
| Elector16              | F20-201,136E     |                 | 0201              | INR24/03        |                  |                 |
| ENC164                 | TF15,            |                 | 0201              | INR24/03        | TF15             |                 |
|                        | F20-201,136E     | INSF20/201      |                   |                 | F20-201,136E     | INSF20/201      |
| ENC162                 | TF15             |                 | 0201              | INR24/03        |                  |                 |
|                        | F20-201,136E     | INSF20/201      |                   |                 |                  |                 |
| TOP-100                | TF16             | INSF16/1076     | TD10TXP           | INR16/06        | TF13             | INSF13/357      |
| R125                   | TF16             | INSF16/1076     | TD10SA            | INR18/05        |                  |                 |
| R10                    | TF15             | INSF15/580      | TD10SA            | INR18/05        |                  |                 |
| DECO-7                 | TF10             | INSF10/86       | TD7               | INR11/02        | TF10             | INSF10/86       |
| TOP200                 | 0161             | INSF30/101      | T200XP            | INR34/06        | TF25             | INSF25/64       |
|                        |                  |                 |                   |                 | 0161             | INSF30/101      |
| EVODECO 16A            | F20-201,136E     |                 | 0201              | INR24/03        | TF20             | INSF20/87       |
| DECO 2000 1"           | 0161             | INSF30/101      | CD25              | INR34/02        | 0161             | INSF30/101      |
| SIGMA 20               | 0161             | INSF30/101      | CD25              | INR34/02        |                  |                 |
| DECO 2000 25/32,ENC167 | TF25             | INSF25/64       | TD25/167          | INR28/02        | TF25             | INSF25/64       |
| TMB26,                 | F32-221,TF32     | INSF32/221      | SD255-36          | INR40/03        |                  |                 |
| DECO 2000 26/32        | TF37             | INSF37/740      | TD32S             | INR42/01        | TF37             | INSF37/740      |
| MR32                   | TF37             | INSF37/740      | TD32              | INR42/02        |                  |                 |
| DELTA 20               | TF24             | INSF23.8/9020   | TD26              | INR26/02        |                  |                 |

# QUICK REFERENCE FOR SWISS TYPE MACHINE

## TORNOS(CAM)

| Collet Model No.                 | NSIGHT Part NO. | Machine    |                | Bushing Model No.    | NSIGHT Part NO. | Machine              |
|----------------------------------|-----------------|------------|----------------|----------------------|-----------------|----------------------|
|                                  |                 | Headstock  | Attach.        |                      |                 |                      |
| TF6 / F6 76-599 / 100E           | INSF6/76        |            | M7 R10/R125    | TD4                  | INR9/01         | M4                   |
| TF7 / F7 76-576 / 1010E          | INSF7/66        |            | R10/R125       | TD7                  | INR11/02        | M7                   |
| TF8 / F8 76-577 / 101E           | INSF8/577       | M4         | M7 R10/R125    | TD10                 | INR16/12        | R10,R125,M10         |
| TF10 / F10 76-86 / 109E          | INSF10/86       | M7         | M15 R16        | SD125R               | INR18/02        | R10,R125,M10         |
| TF12 / F12 76-578 / 114E         | INSF12/578      |            | M15 R16/20     | SD125R-16 Rev.Holder | OA              | R10,R125             |
| TF13 / F13 76-357 / 116E         | INSF13/357      | MS7        | M7 CT. HSK.    | TD20                 | INR22/01        | R16,R20,RR20,M15     |
| TF15 / F15 76-580 / 120E         |                 | R10        |                | TD25                 | INR28/02        | R20,RR20,M20,M25,M28 |
| TF16 / F16 76-1076 / EF16/1212E  | INSF16/1076     | R125       | M20/25/28 MR32 | TD32                 | INR42/02        | MR32                 |
| TF20 / F20 76-87 / 138E          | INSF20/87       | M15 R16    |                |                      |                 |                      |
| TF25 / F25 76-64 / 145E          | INSF25/64       | M20 R/RR20 |                |                      |                 |                      |
| TF34 / F34 76-77 / 165E / 1497E  | INSF34/77       | M25/28     |                |                      |                 |                      |
| TF37 / F37 76-740 / EF37 / 1536E | INSF37/740      | MR32       |                |                      |                 |                      |

## NOMURA

| Machine model   | Headstock collet |                  | Guide bushing     |                  | Pick-off collet  |                  |
|---|------------------|------------------|-------------------|------------------|------------------|------------------|
|   | Collet Model No. | INSIGHT Part NO. | Bushing Model No. | INSIGHT Part NO. | Collet Model No. | INSIGHT Part NO. |
| NN16T   | P1053C           | INP10C           | P853D             | INR14/03         |                  |                  |
|   |                  |                  | P1053D            | INR16/07         |                  |                  |
|   |                  |                  | P1653D            | INR22/03         |                  |                  |
| NN16K,NN16KF,NN12K,P1053, P1253,P1653   | P1053C           | INP10C           | P853D             | INP1053D         |                  |                  |
|   | P1653C           | INP16C           | P1053D            | INR16/07         |                  |                  |
|   |                  |                  | P1653D            | INR22/03         |                  |                  |
| NN13SB,NN13TB,NN16BII, NN16BIII,NN16HB,NN16UB                                       | P1653C           | INP16C           | P1653D            | INR22/03         | P1653C           | INP16C           |
| NN13S,NN13SII,NN13T,NN16H,NN1 6H III,NN16HA,NN16UII,SN-160, SN-160A,SN-160C,SN-160D | P1653C           | INP16C           | P1653D            | INR22/03         |                  |                  |
| NN20BII,NN20BIII,NN20J,NN20UB   | P1653C           | INP16C           | P1653D            | INR22/03         | P1653C           | INP16C           |
|   | NN20KFC          | INP20C           | NN20KD            | INR30/06         | NN20KFC          | INP20C           |
| NN20F   | P1653C           | INP16C           | P1653D            | INR22/03         |                  |                  |
|   |                  |                  | NN20KD            | INR30/06         |                  |                  |
| NN20H,NN20HIII,NN20HA,NN20R,N N20UII,NN25R,NN25RY, NN25RYA,NN30TC,NN30TD            | P1653C           | INP16C           | P1653D            | INR22/03         |                  |                  |
|   | NN20KFC          | INP20C           | NN20KD            | INR30/06         |                  |                  |
| NN20K   | P2553C           | INP25C           | P1653D            | INR22/03         |                  |                  |
|   |                  |                  | NN20KD            | INR30/06         |                  |                  |
| NN20KF  | NN20KFC          | INP20C           | P1653D            | INR22/03         |                  |                  |
|   |                  |                  | NN20KD            | INR30/06         |                  |                  |
| NN32YB  | P1653C           | INP16C           | P1653D            | INR22/03         | P1653C           | INP16C           |
|   | P2553            | INP25C           | P2553D            | INR36/02         | P2553C           | INP25C           |
|   | NN30TC           | INP30C           | NN30TD            | INR44/01         | NN30TC           | INP30C           |

# QUICK REFERENCE FOR SWISS TYPE MACHINE

## TRAUB

| Machine model | Headstock collet |                 | Sub spindle collet   |                 | Carbide bushing   |                 |
|---------------|------------------|-----------------|----------------------|-----------------|-------------------|-----------------|
|               | Collet Model No. | INSIGHT Part NO | Sub Collet Model No. | INSIGHT Part NO | Bushing Model No. | INSIGHT Part NO |
| TNL12         | TF16             | INSF16/1076     | TF16                 | INSF16/1076     | TRB468            | INR21/07        |
| TNL16G        | TF20             | INSF20/87       | TF20                 | INSF20/87       | TD20R             | INR22/05        |
| TNL16G        | 0156             | INSF25/91       | 0156                 | INSF25/91       | TD25S             | INR28/04        |
| TNL26         | TF30             | INSF30/63       | TF30                 | INSF30/63       | TRB761            | INR34/03        |

## KSI

| Machine model | Headstock collet |                 | Guide bushing     |                 | Pick-off collet  |                 |
|---------------|------------------|-----------------|-------------------|-----------------|------------------|-----------------|
|               | Collet Model No. | INSIGHT Part NO | Bushing Model No. | INSIGHT Part NO | Collet Model No. | INSIGHT Part NO |
| SA12          | TF16             | INSF16/1076     | SD125R            | INR18/02        | TF16             | INSF16/1076     |
| SA20/SM20     | TF25             | INSF25/64       | TD25NS, TD25S     | INR28/04        | TF25             | INSF25/64       |
| SA26          | F32-221 TF32     | INSF32/221      | CD25              | INR34/02        | F32-221 TF32     | INSF32/221      |
| SA32          | TF37             | INSF37/740      | TD32S             | INR42/01        | TF37             | INSF37/740      |
| SA38          | TF44             | INSF44/9082     | TD38              | INR46/01        | TF37             | INSF37/740      |
| SQC20         | TF25             | INSF25/64       | TD25-NS, TD25S    | INR28/04        | TF25             | INSF25/64       |
| SQC32         | TF44             | INSF44/9082     | TD32S             | INR42/01        | TF37             | INSF37/740      |
| SQC38         | TF48             | INSF48/81       | TD38              | INR46/01        | TF44             | INSF44/9082     |

## NEXTURN

| Machine model | Headstock collet |                 | Guide bushing     |                 | Pick-off collet  |                 |
|---------------|------------------|-----------------|-------------------|-----------------|------------------|-----------------|
|               | Collet Model No. | INSIGHT Part NO | Bushing Model No. | INSIGHT Part NO | Collet Model No. | INSIGHT Part NO |
| SA12/12A      | TF16             | INSF16/1076     | SD125R            | INR18/02        | TF16             | INSF16/1076     |
| SA18A         | TF25             | INSF25/64       | TD25NS, TD25S     | INR28/04        | TF25             | INSF25/64       |
| SA20/20E      | TF25             | INSF25/64       | TD25NS            | INR28/04        | TF25             | INSF25/64       |
| SA26/26E      | TF32             | INSF32/221      | CD25              | INR34/02        | TF32             | INSF32/221      |
| SA32          | TF37             | INSF37/740      | TD32S             | INR42/01        | TF37             | INSF37/740      |
| SA38          | TF44             | INSF44/9082     | TD38              | INR46/01        | TF37             | INSF37/740      |
|               |                  |                 |                   |                 | TF44             | INSF44/9082     |

## KITAMURA

| Machine model      | Headstock collet  |                 | Sub collet       |                  |
|--------------------|-------------------|-----------------|------------------|------------------|
|                    | Collet Model No.  | INSIGHT Part NO | Collet Model No. | INSIGHT Part NO. |
| XKNC-204,XKNC-20G  | EDA-8             | INSF25/EGURO20  |                  |                  |
| XKNG100GL,XKNC50GL | EDA-10            | INSF32/EGURO25  | EDA-8            | INSF25/EGURO20   |
| XKNG-50G           | INSF36/XKC30F OA* | INSF36/XKC30F   |                  |                  |

\* XKNG-50G machine Collet use : INSF36/XKC30F, Dimension( Head part Outside Dia : 44mm, Total length : 109mm.  $\alpha=15^\circ$  ),Please provide 3-view drawing to customize.

## EGURO

| Machine model   | Pull Collet(steel/carbide) JP code |                  |
|---|------------------------------------|------------------|
|   | Collet Model No.                   | INSIGHT Part NO. |
| SANAX-6,LB6,SANATURN-6/6B   | EDA-6                              | INSF19/9019      |
| NUCSET-8,NUCBOY-8EX.EXP,SANAX-8,SANFLEX-  | EDA-8                              | INSF25/EGURO20   |
| 8,GL-120,EB8,NUCBOY-8LL,NUCROBO-8EX<br>SANAX-10,SANATURN-10,NUCLET-<br>10EX.EXP,NUCLET-10vv,NUCPAL-10EX,NUCMAX-<br>10,NUMPAL-10vv,EB10,NUCLET-<br>10LL/10A,NUCROBO-101,NUCJET-102/103 | EDA-10                             | INSF32/EGURO25   |

# QUICK REFERENCE FOR SWISS TYPE MACHINE

## METHODS (CAM)

| Machine model | Collet           |                 | Guide bushing     |                  |
|---------------|------------------|-----------------|-------------------|------------------|
|               | Collet Model No. | INSIGHT Part NO | Bushing Model No. | INSIGHT Part NO. |
| SS20          | TF25             | INSF25/64       | TSD20             | INR32/02         |
| SS25          | TF30             | INSF30/63       | TD25              | INR28/02         |
| SS32          | TF37             | INSF37/740      | TD32              | INR42/02         |

## PETERMANN (CAM)

| Machine Builders' Model No. |             | Collet Model No.                     | NSIGHT Part NO. | Bushing Model No.                     | NSIGHT Part NO. |
|-----------------------------|-------------|--------------------------------------|-----------------|---------------------------------------|-----------------|
| Headstock                   | Attachments |                                      |                 |                                       |                 |
|                             | P4          | 0131(d4.5-L17.25 $\alpha=15^\circ$ ) | OA              | 0100(d9-L25 $\alpha=30^\circ$ M6*0.5) | OA              |
|                             |             |                                      |                 | PD4                                   | INR9/09         |
| P0/P3                       | P7          | 0136(d7-L26 $\alpha=15^\circ$ )      | OA              |                                       |                 |
| P4                          | P7R         | TF8                                  | INSF8/577       |                                       |                 |
| P7                          | P10         | TF10                                 | INSF10/86       | TD7                                   | INR11/02        |
|                             | P16         | TF10                                 | INSF10/86       |                                       |                 |
| P7R                         |             | 0146(d15-L47 $\alpha=20^\circ$ )     | OA              |                                       |                 |
| P10                         | P16         | 0147(d16-L55 $\alpha=15^\circ$ )     | OA              |                                       |                 |
|                             | P25         | 0147                                 | INOA            |                                       |                 |
| P10R                        | P16         | 0151(d20-L60 $\alpha=15^\circ$ )     |                 |                                       |                 |
|                             | P25         | 0151                                 |                 |                                       |                 |
| P16                         |             | 0152(d22-L66 $\alpha=16^\circ$ )     | OA              | 0201                                  | INR24/03        |
| 2A                          |             | 0156(d25-L65 $\alpha=15^\circ$ )     | OA              |                                       |                 |
| P25                         |             | 0166                                 | SF32/1023       | 0200(d40-L73 $\alpha=30^\circ$ M40*1) | OA              |

\*OA : Customized According to drawing

## STROHM (CAM)

| Machine Builders' Model No. |             | Collet Model No.           | NSIGHT Part NO. | Bushing Model No.                      | NSIGHT Part NO. |
|-----------------------------|-------------|----------------------------|-----------------|--|-----------------|
| Headstock                   | Attachments |                            |                 |  |                 |
|                             | M45,M125    | TF5                        |                 |  |                 |
| M45                         |             |                            |                 | TSD4(d9-L52 $\alpha=30^\circ$ M9*0.7)  | OA              |
| M45                         | M105        | TF8                        | INSF8/577       | 0100(d9-L25 $\alpha=30^\circ$ M6*0.5)  | OA              |
|                             | M125        | TF8                        | INSF8/577       |  |                 |
| M75                         |             | TF10                       | INSF10/86       | TSD7                                   | INR12/01        |
| M125                        | M205        | TF15(Front nose Dia.15)    | SF15/580        | SD125R(M18*1)                          | INR18/02        |
| M105                        | M255        | TF15(Front nose Dia.15)    | SF15/580        |  |                 |
| M125                        |             | TF15R(Front nose Dia.17.5) | INSF15/580      | SD125R-16(M16*1)                       | INR18/01        |
| M205                        |             | TF25                       | INSF25/64       | SD205(d26-L74 $\alpha=30^\circ$ M24*1) | OA              |
| M255                        |             | TF30                       | INSF30/63       | SD255(d10-L73 $\alpha=30^\circ$ M40*1) | OA              |

\*OA : Customized According to drawing

## Hardinge

| Machine model | Main-spindle collet |                 | Guide bushing     |                 | Sub-spindle collet |                 |
|---------------|---------------------|-----------------|-------------------|-----------------|--------------------|-----------------|
|               | Collet Model No.    | INSIGHT Part NO | Bushing Model No. | INSIGHT Part NO | Collet Model No.   | INSIGHT Part NO |
| ST16/216      | S16-HMS             | OA              | TSG20R            | INR23/01        | S16-HMS            | OA              |
| ST20/220      | S20-HM              | INSF28/9004     | S20HGB            | INR30/01        | TF25               | INSF25/64       |
| ST25/225      | S25-HM              | INSF33/9043     | CD25              | INR34/02        | S25-HS             | INSF33/9043     |

\*OA : Customized According to drawing

# QUICK REFERENCE FOR SWISS TYPE MACHINE

## Bechler (CAM)

| Machine model        | Collet                               |                 | Guide bushing     |                  |
|----------------------|--------------------------------------|-----------------|-------------------|------------------|
|                      | Collet Model No.                     | INSIGHT Part NO | Bushing Model No. | INSIGHT Part NO. |
| A/AS/AR-7,A/AS/AR-10 | AE1670 (Guide Dia.13mm, All L41.5mm) | OA              | TD10              | INR16/12         |
|                      |                                      |                 | SD125             | INR16/03         |
|                      |                                      |                 | SD125R            | INR18/02         |
| B/BR-12              | BR1253 (Guide Dia.21mm, All L57.5mm) | OA              |                   |                  |
| B/BR-20              | BR1666 (Guide Dia.27mm, All L57.5mm) | OA              | TD25              | INR28/02         |
| C/CR-32              | BU2235 (Guide Dia.40mm, All L65mm)   | OA              |                   |                  |

\*OA : Costomized Acording to drawing

## MAIER

| Machine model         | Main-spindle collet |                 | Guide bushing     |                 | Sub-spindle collet |                 |
|-----------------------|---------------------|-----------------|-------------------|-----------------|--------------------|-----------------|
|                       | Collet Model No.    | INSIGHT Part NO | Bushing Model No. | INSIGHT Part NO | Collet Model No.   | INSIGHT Part NO |
| ML-12A/B/C/D          | TF15                | INSF15/580      | SD125R            | INR18/01        | TF15               | INSF15/580      |
| ML-16A/B/C/D          | TF20                | INSF20/87       | TD20R             | INR22/05        | TF20               | INSF20/87       |
| ML-20A/B/C/D/E        | TF25                | INSF25/64       | TD25S             | INR28/04        | TF25               | INSF25/64       |
| ML-26A/B/C/D/E        | TF32                |                 | CD25              | INR34/02        | TF32               |                 |
| ML-32A/B/C/D/E,MLK-32 | TF37                | INSF37/740      | TD32S             | INR42/01        | TF37               | INSF37/740      |

## JINN FA

| Machine model | Headstock & Pick-off collet |                 | Guide bushing     |                 | Push collet      |                 |
|---------------|-----------------------------|-----------------|-------------------|-----------------|------------------|-----------------|
|               | Collet Model No.            | INSIGHT Part NO | Bushing Model No. | INSIGHT Part NO | Collet Model No. | INSIGHT Part NO |
| JSL-20        | BS20                        | INSF28/9004     | S20HGB            | INR30/01        |                  |                 |
| JSL-26        | TF30                        | INSF30/63       | CD25              | INR34/02        |                  |                 |
| JSL-32        | TF37                        | INSF37/740      | TD32              | INR42/02        |                  |                 |
| JSL-42        | 173E F48                    | INSF48/81       |                   | ININR52/01      |                  |                 |
| JCL32         |                             |                 |                   |                 |                  | INSF40/01       |
| JCL44         |                             |                 |                   |                 |                  | INSF54/01       |
| JCL50         |                             |                 |                   |                 |                  | INSF60/01       |
| JCL60         |                             |                 |                   |                 |                  | INSF75/01       |

## RIKEN

| Machine model | Pull collet      |                 | Push collet       |                 |
|---------------|------------------|-----------------|-------------------|-----------------|
|               | Collet Model No. | INSIGHT Part NO | Bushing Model No. | INSIGHT Part NO |
| PULL-25       | PULL-25          | INSF36/RIKEN25  |                   |                 |
| PULL-40       | PULL-40          | INSF55/RIKEN40  |                   |                 |
| PULL-60       | PULL-60          | INSF83/RIKEN60  |                   |                 |
| SAD-25        |                  |                 | SAD-25            | INSF30/AD25     |
| SAD-40        |                  |                 | SAD-40            | INSF48/AD40     |
| SAD-50        |                  |                 | SAD-50            | INSF56/AD50     |
| SAD-65        |                  |                 | SAD-65            | INSF75/AD65     |

## TAKAMAZ

| Machine model | Pull collet      |                 |
|---------------|------------------|-----------------|
|               | Collet Model No. | INSIGHT Part NO |
| 20#           |                  | INSF25/TAK20    |
| 25#           |                  | INSF36/TAK25    |
| 850(CD37)     |                  | INSF37/850      |

# QUICK REFERENCE FOR SWISS TYPE MACHINE

## TUAUB

| Machine model | Push collet      |                  |
|---------------|------------------|------------------|
|               | Collet Model No. | INSIGHT Part NO. |
| TRAUB A-15    | 140E             | INSF22/71        |
| TRAUB A-15    | 148E             | INSF28/93        |
| TRAUB A-15    | 161E             | INSF32/221       |

## INDEX

| Machine model | Push collet      |                  |
|---------------|------------------|------------------|
|               | Collet Model No. | INSIGHT Part NO. |
| INDEX 25      | 162E             | INSF35/67        |
| INDEX 30      | 163E             | INSF35/94        |
| INDEX 36      | 171E             | INSF42/99        |
| INDEX 42      | 173E             | INSF48/81        |
| INDEX 52      | 177E             | INSF58/355       |
| INDEX 60      | 185E             | INSF66/359       |
| INDEX 80      | 193E             | INSF90/193       |

## LI CO

| Machine model | Push collet      |                  |
|---------------|------------------|------------------|
|               | Collet Model No. | INSIGHT Part NO. |
| LI CO 32      | 164E             | INSF35/67        |
| LI CO 42      | 173E             | INSF35/94        |
| LI CO 52      | 177E             | INSF42/99        |
| LI CO 65      | 187E             | INSF48/81        |

## MIYNO

| Machine model | Push collet      |                  |
|---------------|------------------|------------------|
|               | Collet Model No. | INSIGHT Part NO. |
| BNC20         | 147E             | INSF35/67        |
| 148E          | 148E             | INSF28/93        |
| 161E          | 161E             | INSF32/221       |
| BNC34         |                  | INSF44.4/BNC34   |
| BND42         | 164E             | INSF42/99        |
| BNA42         | 173E             | INSF48/81        |
| 171E          | 171E             | INSF42/99        |
| BND54         | 177E             | INSF58/355       |
| BND64         | 185E             | INSF66/359       |

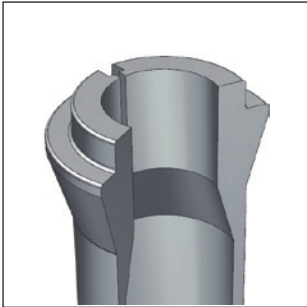
## CHIAH CHYUN

| Machine model | Push collet      |                  |
|---------------|------------------|------------------|
|               | Collet Model No. | INSIGHT Part NO. |
| 32#           | 164E             | INSF38/72        |
| 36#           | 171E             | INSF42/99        |
| 42#           | 173E             | INSF48/81        |
| 52#           | 177E             | INSF58/355       |

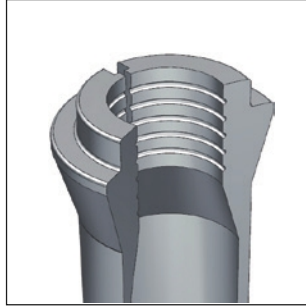
# COLLET & GUIDE BUSH CLAMPING SHAPE

## ● Collet Clamping Shape

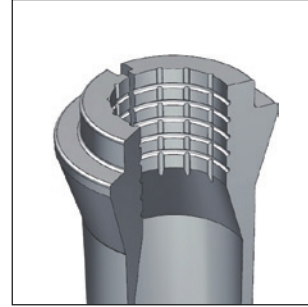
### Clamping Hole Surface



Smooth Bore

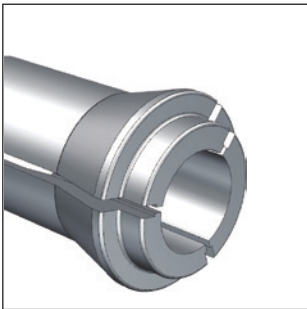


Grooved Bore

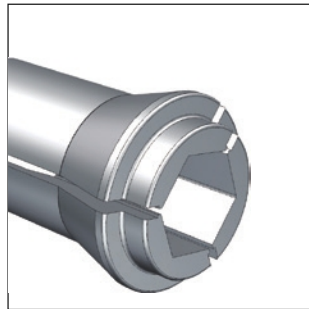


Powerful Grip

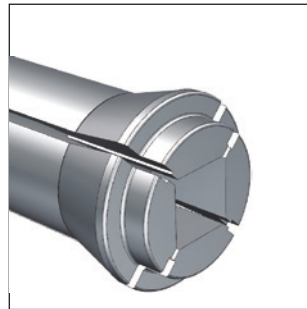
### Clamping Hole Shape



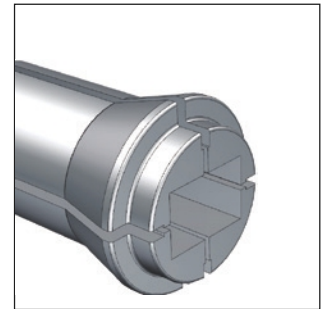
Round



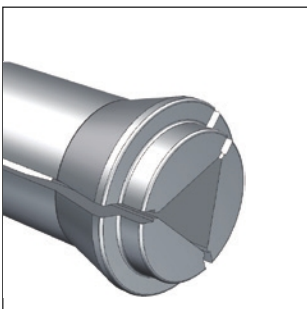
Hexagon



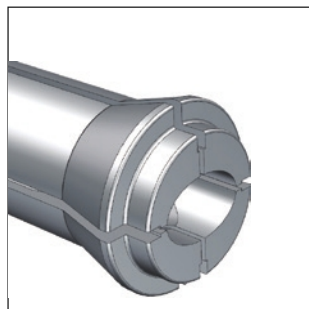
Square



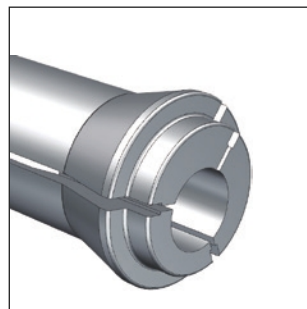
Rectangle



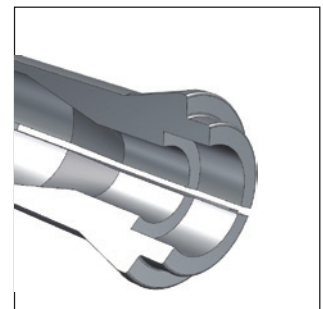
Triangle



Ellipse



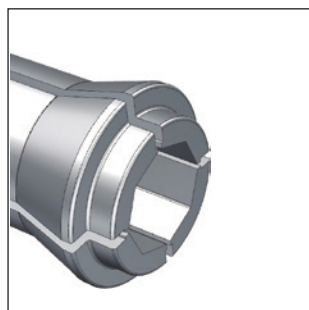
Eccentric Hole



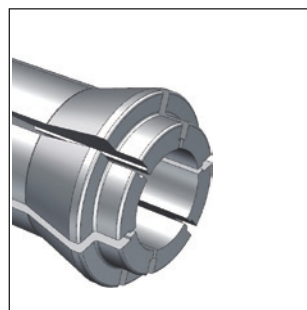
Step Hole



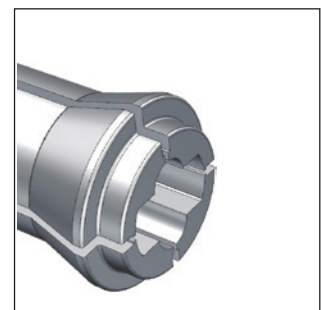
Taper Step Hole



Octagon Hole



Six Slots Hole

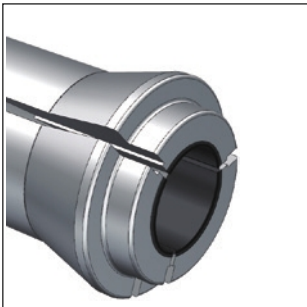


Special Hole

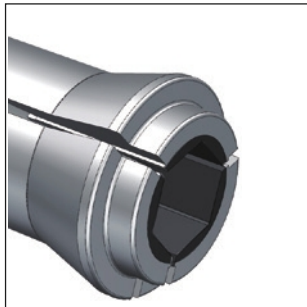


# COLLET & GUIDE BUSH CLAMPING SHAPE

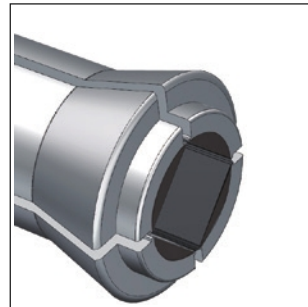
## Clamping Hole With Carbide



Round

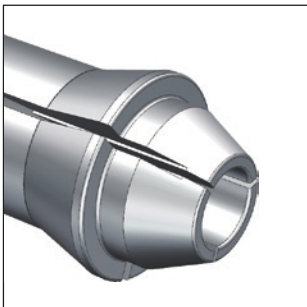


Hexagon

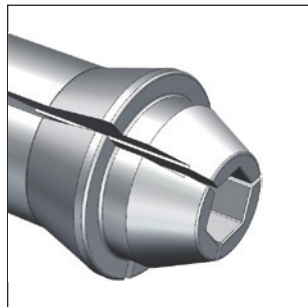


Square

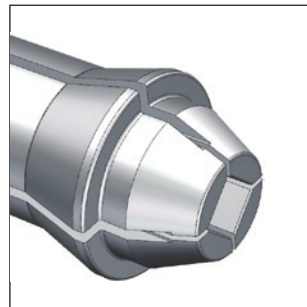
## Long-nose Straight-slot Type



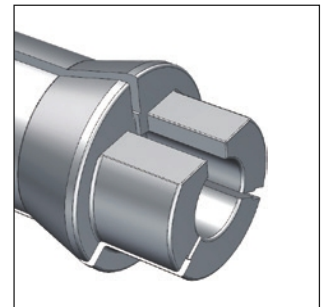
Round



Hexagon

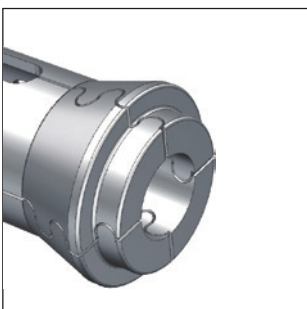


Square

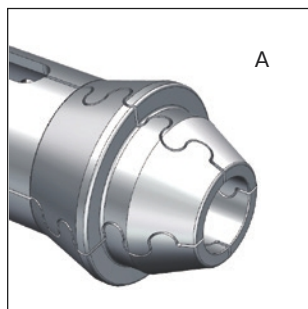


Special Hole

## S-slots Type

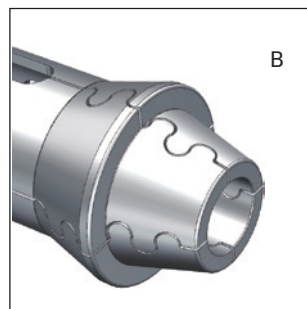


## Long-nose+S-slots Type



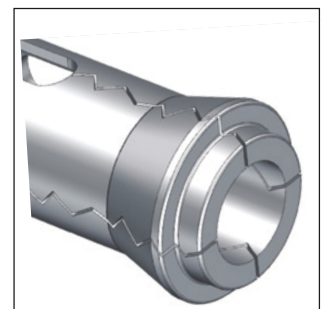
A

## Long-nose+S-slots Type

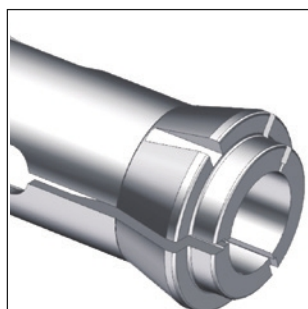


B

## V-slots Type



Key on Cone



Key on Guiding



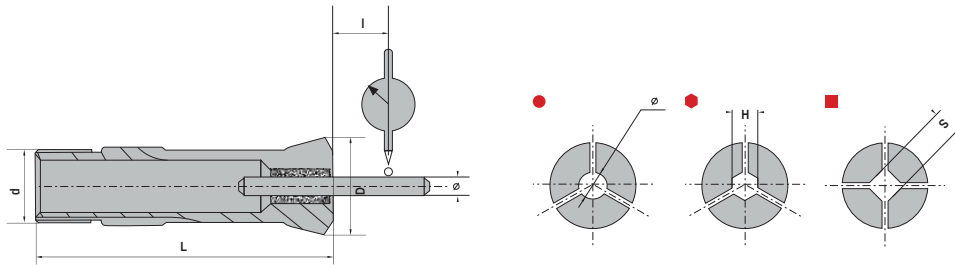
Standard Carbide



Long Carbide



# QUALITY AND TESTING STANDARDS



| Accuracy Chart |       |                       |                      |            |       |      |
|----------------|-------|-----------------------|----------------------|------------|-------|------|
| Collet ●       |       |                       |                      | Collet ■ ● |       |      |
| D              | l=D*3 | M a in S pindle T I R | S u b S pindle T I R | H&S        | L=D*3 | TIR  |
| ≤3             | 10    | 0.008                 | 0.005                | ≤3         | 10    | 0.03 |
| 3.01-6         | 16    | 0.008                 | 0.005                | 3.01-6     | 16    | 0.03 |
| 6.01-10        | 25    | 0.008                 | 0.005                | 6.01-10    | 25    | 0.03 |
| 10.01-18       | 40    | 0.015                 | 0.005                | 10.01-18   | 40    | 0.03 |
| 18.01-24       | 50    | 0.015                 | 0.005                | 18.01-24   | 50    | 0.03 |
| 24-28          | 60    | 0.02                  | 0.005                | 24-28      | 60    | 0.03 |
| > 28           | 80    | 0.02                  | 0.005                | > 28       | 80    | 0.03 |

| Accuracy Chart |       |       |                |       |      |
|----------------|-------|-------|----------------|-------|------|
| Guide Bush ●   |       |       | Guide Bush ■ ● |       |      |
| D              | l=D*3 | TIR   | H&S            | l=D*3 | TIR  |
| ≤1.2           | 4     | 0.004 | 1-3            | 10    | 0.02 |
| 1.21-1.8       | 6     | 0.005 | 1-3            | 10    | 0.02 |
| 1.81-4         | 10    | 0.005 | 3.01-6         | 16    | 0.02 |
| 4.01-6         | 16    | 0.005 | 3.01-6         | 16    | 0.02 |
| 6.01-10        | 25    | 0.005 | 6.01-10        | 25    | 0.02 |
| 10.01-18       | 40    | 0.008 | 10.01-18       | 40    | 0.02 |
| 18.01-24       | 50    | 0.008 | 18.01-24       | 50    | 0.02 |
| 24.01- 30      | 60    | 0.01  | 24-35          | 60    | 0.02 |
| 30.01- 40      | 80    | 0.02  |                | 80    | 0.02 |







**Contattaci per ricevere un preventivo**



☎ 011.055.00.39  
✉ ordini@ftktools.com

*Ufficio commerciale:*  
Via Torino, 24  
10034 Chivasso (To) - Italy

📞 011.055.00.39

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