



# GenSwiss®

*Making The Machinist's Job Easier*



2026 CATALOG  
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# Signature SERIES





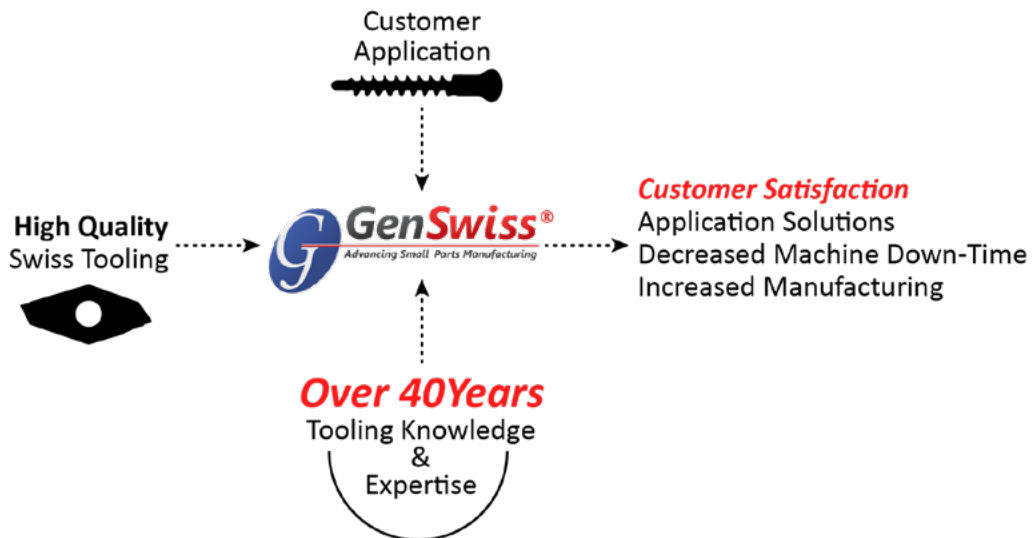
### **Westfield, MA, USA**

Genevieve Swiss Industries, Inc. brings to market unique high-quality precision tools and accessories advancing small parts manufacturing and enhancing Swiss-style machining.

GenSwiss® Signature Series line of premium products consistently delivers precision performance for industries requiring the highest degree of standards. Each tool is held to ultra-high standards and features geometries designed for the material-type. We strive to deliver products which meet or exceed customer expectations, providing a reliable service with application solutions. Standard and custom orders are available.

#### Industries Served

- Automotive
- Aerospace
- Energy Markets
- Firearms
- Medical/Dental
- Metalworking



## Precision Tools

- High quality for extended tool life
- Quick setup times
- Low TIR's and tight tolerances
- Thousands of tools available
- Custom tooling available



## Customer Service & Sales Team

- Our skilled staff is dedicated to providing you with the tooling and assistance you require
- The GenSwiss team visits our distributor network to support our partners and learn how we can better provide or improve the GenSwiss experience
- Instant access to inventory allows our team to provide immediate lead times and pricing

## Tooling Application Assistance

- 40 years of industry experience
- Knowledge of the benefits and disadvantages on all available tooling systems
- GenSwiss will find the right combination of tools for your application to optimize the best tool life with cost savings



## GenSwiss E-Commerce

- See product inventory 24/7
- Get instant pricing 24/7
- Track orders
- Place custom tooling orders



[www.genswiss.com](http://www.genswiss.com)

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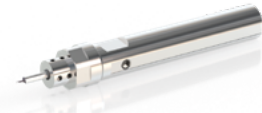
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# ROTARY BROACHING GUIDE



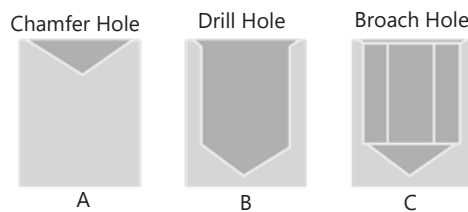
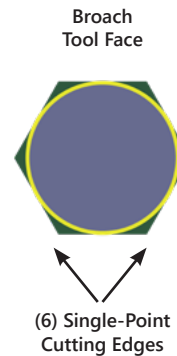
Rotary Broaching is a fast and easy method of producing polygonal drive features in turned parts. Genevieve Swiss offers Premium Rotary Broaching products from PCM, the European industry leader in rotary broaching tools.



## A Guide To Internal Rotary Broaching

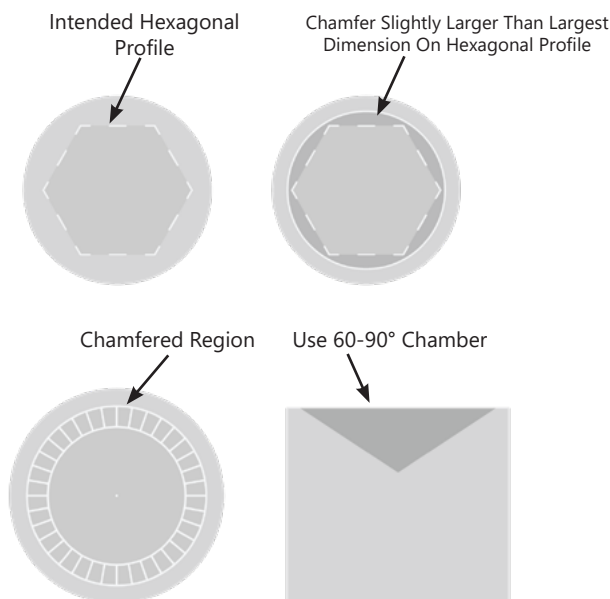
During the rotary broach operation, the broach tool approaches the work piece at a small angle. The tool spins synchronously with the part, creating a wobble effect that causes the leading cutting edge to rotate in and out of the cut like a cam. This method shapes internal and external polygonal profiles at a single-point. Compared to punch forming, which shapes the entire profile at once, rotary broaching requires 80% less force, offers increased tool life, and lowers machine maintenance cost over time.

The advantages offered by rotary broaching result from proper preparation prior to the broaching operation. The most important part of this preparation includes drilling a hole which allows for broached material to accumulate, preventing damage to the broach tool and machine. Continue with the guide below for some important tips on rotary broaching.



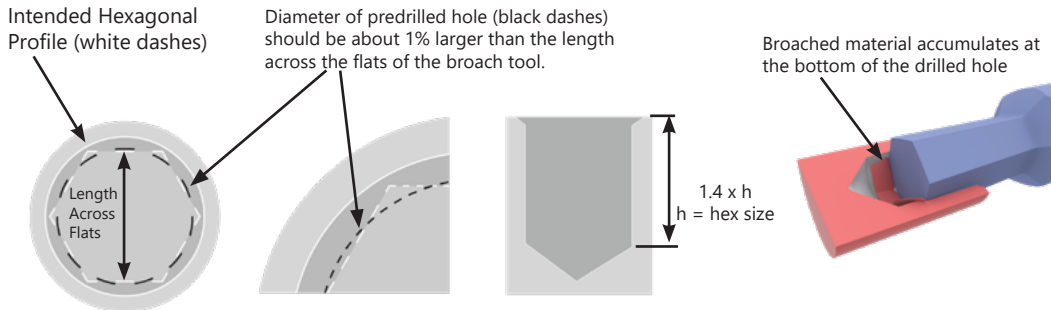
### Preparing To Broach A Hole

First, prepare the hole with a 60° - 90° chamfer slightly bigger than the largest dimension of the broach tool. A chamfer provides a guide for the broach tool.



## Drilling The Hole

For internal broaching, the diameter of the hole should be 1 percent larger than the diameter across the flats of the broach's hex shape and drilled as deep as possible. A depth of 1.3 to 1.5 times the depth of the broached profile is recommended. Drilling to this depth is vital, leaving room for material accumulation during the broaching process. If material accumulates during the drilling process, re-drill the hole with a smaller drill.



## If Drill Radius Is Not Allowed

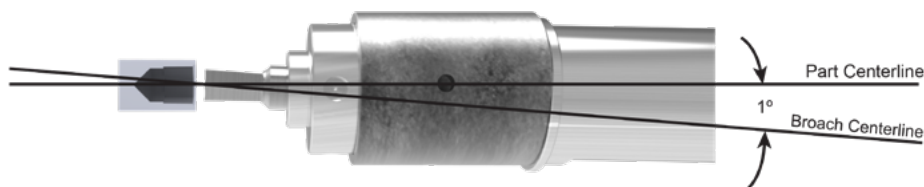
Many medical and aerospace applications do not allow for a drill radius along the broached walls of the part. When exact concentricity is required, chamfer, drill, and then pre-bore the hole. Using a micro-bore allows for extra control and accuracy. The use of a drill might lead to inaccuracies due to deflection and other conditions.

**NOTE:** Broaching into a tight hole will not allow air or coolant to escape, resulting in a build up of pressure. This can cause the part or tool to push back, damaging the tool or machine. Use a GenSwiss broach that has a pressure relief vent.



## Broaching The Hole

Rotary broaching holders hold the broach tool at a 1° angle relative to the centerline of the workpiece. As the broach holder rotates, the broach tool is pushed into the pre-drilled hole. During the beginning of broaching, when the broach is touching the material, the edges could break if the speed is too high.

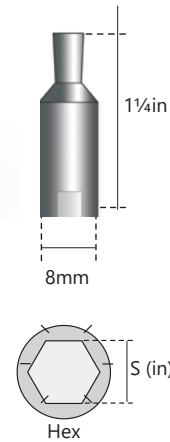


For best results, start the broach operation at a slow rotation, and then increase the speed when it is in full contact. We recommend for the first 1mm a reduced speed of 500 rpm max.

The feed rate mainly depends on the material characteristics. In mild steel, 0.0012 to 0.0024 inches per revolution is recommended. If the machine thrust force is sufficient, the feed can be doubled as machinability increases. In most cases the maximum feed rate should not exceed 0.03 times the profile diameter. A slower feed rate will produce an improved finish with finer lines along the sidewalls of the broached hole. By increasing the feed rate, the cutting cycle will be faster, but the broaching lines will be more pronounced, leaving a coarse finish. **We do not recommend speeds over 2,000 rpm.**

Call us [413-562-4800](tel:413-562-4800) for more information on Rotary Broaching

# SIGNATURE SERIES ROTARY BROACH TOOLS



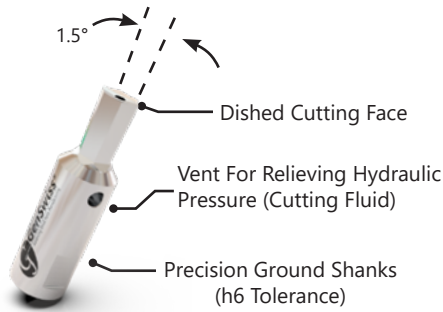
GenSwiss' premium rotary broach tools deliver consistent high-performance cutting for industries requiring the highest degree of standards. Each tool is precision ground to ultra-high standards and features geometries designed specifically for the material type in which each broach will be used. These tools are engineered and manufactured to be utilized in the aerospace industry, medical industry, or any industry requiring the highest standards for inspection.

## Signature Series Hexagon Broaches - 1 1/4 inch OAL

| Item No.    | Description         | S <sub>min</sub> | S <sub>max</sub> | Nominal | Material | Vented |
|-------------|---------------------|------------------|------------------|---------|----------|--------|
| 3008-000130 | RBT-0832-01.280     | 0.0503           | 0.0507           |         | GSX      |        |
| 3008-000178 | RBT-0832-01.300     | 0.0513           | 0.0529           | 1.3mm   | GSX      | •      |
| 3008-000131 | RBT-0832-01.529     | 0.0600           | 0.0604           | 1.5mm   | GSX      |        |
| 3008-000132 | RBT-0832-01.600     | 0.063            | 0.0635           | 1/16    | GSX      |        |
| 3008-000133 | RBT-0832-01.983T    | 0.0781           | 0.0791           | 5/64    | GSX      | •      |
| 3008-000134 | RBT-0832-02.030T    | 0.0795           | 0.0799           | 2mm     | GSX      | •      |
| 3008-000135 | RBT-0832-02.039T    | 0.0801           | 0.0805           |         | GSX      | •      |
| 3008-000136 | RBT-0832-02.400T    | 0.0939           | 0.0951           | 3/32    | GSX      | •      |
| 3008-000137 | RBT-0832-02.420T    | 0.0949           | 0.0953           |         | GSX      | •      |
| 3008-000138 | RBT-0832-02.540T    | 0.0996           | 0.1000           | 2.5mm   | GSX      | •      |
| 3008-000139 | RBT-0832-02.555T    | 0.1004           | 0.1008           |         | GSX      | •      |
| 3008-000140 | RBT-0832-02.780T    | 0.1094           | 0.1111           | 7/64    | GSX      | •      |
| 3008-000141 | RBT-0832-03.020T    | 0.1189           | 0.1193           | 3mm     | GSX      | •      |
| 3008-000142 | RBT-0832-03.210T    | 0.1262           | 0.1266           | 1/8     | GSX      | •      |
| 3008-000143 | RBT-0832-03.530T    | 0.139            | 0.1394           |         | GSX      | •      |
| 3008-000144 | RBT-0832-03.550T    | 0.1394           | 0.1398           |         | GSX      | •      |
| 3008-000145 | RBT-0832-03.553T    | 0.1395           | 0.1399           |         | GSX      | •      |
| 3008-000146 | RBT-0832-03.580T    | 0.1402           | 0.1409           |         | GSX      | •      |
| 3008-000147 | RBT-0832-03.581T    | 0.1406           | 0.1410           | 9/64    | GSX      | •      |
| 3008-000231 | RBT-0832-03.606T    | 0.1418           | 0.1422           |         | GSX      | •      |
| 3008-000148 | RBT-0832-03.968T    | 0.1563           | 0.1586           | 5/32    | GSX      | •      |
| 3008-000149 | RBT-0832-04.049T    | 0.1594           | 0.1600           | 4mm     | GSX      | •      |
| 3008-000340 | RBT-0832-04.135T    | 0.1626           | 0.1630           |         | GSX      | •      |
| 3008-000223 | RBT-0832-04.150T-NF | 0.1642           | 0.1646           |         | GSX      | •      |
| 3008-000179 | RBT-0832-04.366T    | 0.1719           | 0.1743           | 11/64   | GSX      | •      |
| 3008-000150 | RBT-0832-04.560T    | 0.1795           | 0.1799           | 5mm     | GSX      | •      |
| 3008-000341 | RBT-0832-04.669T    | 0.1836           | 0.1840           |         | GSX      | •      |
| 3008-000151 | RBT-0832-04.790T    | 0.188            | 0.1892           | 3/16    | GSX      | •      |
| 3008-000152 | RBT-0832-05.000T    | 0.1969           | 0.1976           |         | GSX      | •      |
| 3008-000153 | RBT-0832-05.048T    | 0.1985           | 0.1990           | 5mm     | GSX      | •      |
| 3008-000154 | RBT-0832-05.070T    | 0.1996           | 0.2000           |         | GSX      | •      |
| 3008-000180 | RBT-0832-05.557T    | 0.2188           | 0.2218           | 7/32    | GSX      | •      |
| 3008-000181 | RBT-0832-06.000T    | 0.237            | 0.2399           | 6.0mm   | GSX      | •      |
| 3008-000155 | RBT-0832-06.390T    | 0.2514           | 0.2518           | 1/4     | GSX      | •      |
| 3008-000156 | RBT-0832-06.420T    | 0.2525           | 0.2530           |         | GSX      | •      |
| 3008-000157 | RBT-0832-06.450T    | 0.2539           | 0.2545           |         | GSX      | •      |
| 3008-000336 | RBT-0832-07.944T    | 0.3125           | 0.3130           |         | GSX      | •      |
| 3008-000158 | RBT-0832-08.020T    | 0.3155           | 0.3160           | 5/16    | GSX      | •      |
| 3008-000159 | RBT-0832-09.520T    | 0.3788           | 0.3794           | 3/8     | GSX      | •      |

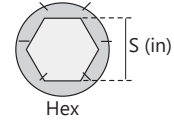
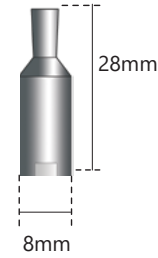
Recommended Depth of Cut = 1.5x5

Special sizes available upon request. Quick turnaround time.



Special Sizes Expedited for  
FAST DELIVERY!

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Order Online [www.genswiss.com](http://www.genswiss.com)



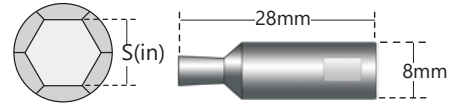
Signature Line Hexagon Broaches - 28mm OAL

| Item No.    | Description         | S <sub>min</sub> | S <sub>max</sub> | Nominal | Material | Vented |
|-------------|---------------------|------------------|------------------|---------|----------|--------|
| 3008-000335 | RBT-0828-00.895     | 0.035            | 0.0355           |         | GSX      |        |
| 3008-000307 | RBT-0828-00.9017-Ti | 0.0353           | 0.0357           |         | GSX      |        |
| 3008-000164 | RBT-0828-00.902-Ti  | 0.035            | 0.0360           |         | GSX      |        |
| 3008-000330 | RBT-0828-00.914     | 0.035            | 0.0370           |         | GSX      |        |
| 3008-000309 | RBT-0828-00.95      | 0.0374           | 0.0378           |         | GSX      |        |
| 3008-000202 | RBT-0828-01.270-Ti  | 0.0498           | 0.0502           |         | GSX      |        |
| 3008-000100 | RBT-0828-01.280     | 0.0503           | 0.0507           |         | GSX      |        |
| 3008-000174 | RBT-0828-01.300     | 0.0513           | 0.0529           | 1.3mm   | GSX      |        |
| 3008-000226 | RBT-0828-01.518     | 0.0595           | 0.0600           |         | GSX      |        |
| 3008-000101 | RBT-0828-01.529     | 0.06             | 0.0604           | 1.5mm   | GSX      |        |
| 3008-000173 | RBT-0828-01.590T    | 0.0623           | 0.0628           |         | GSX      | •      |
| 3008-000102 | RBT-0828-01.600     | 0.063            | 0.0635           | 1/16    | GSX      |        |
| 3008-000204 | RBT-0828-01.619T-Ti | 0.0635           | 0.0640           |         | GSX      | •      |
| 3008-000188 | RBT-0828-01.621T    | 0.0636           | 0.0640           |         | GSX      | •      |
| 3008-000206 | RBT-0828-01.626-NF  | 0.063            | 0.0650           |         | GSX      |        |
| 3008-000199 | RBT-0828-01.721T-Ti | 0.0675           | 0.0680           |         | GSX      | •      |
| 3008-000319 | RBT-0828-01.842-Ti  | 0.072            | 0.0730           |         | GSX      |        |
| 3008-000327 | RBT-0828-01.842T-Ti | 0.072            | 0.0730           |         | GSX      | •      |
| 3008-000103 | RBT-0828-01.983T    | 0.0781           | 0.0791           | 5/64    | GSX      | •      |
| 3008-000213 | RBT-0828-01.996T    | 0.0785           | 0.0790           |         | GSX      | •      |
| 3008-000104 | RBT-0828-02.030T    | 0.0795           | 0.0799           | 2mm     | GSX      | •      |
| 3008-000205 | RBT-0828-02.030T-NF | 0.0795           | 0.0799           |         | GSX      | •      |
| 3008-000105 | RBT-0828-02.039T    | 0.0801           | 0.0805           |         | GSX      | •      |
| 3008-000248 | RBT-0828-02.100T-Ti | 0.0823           | 0.0827           |         | GSX      | •      |
| 3008-000168 | RBT-0828-02.380T    | 0.0935           | 0.0939           |         | GSX      | •      |
| 3008-000249 | RBT-0828-02.387T    | 0.0938           | 0.0942           |         | GSX      | •      |
| 3008-000203 | RBT-0828-02.393T    | 0.0937           | 0.0947           |         | GSX      | •      |
| 3008-000106 | RBT-0828-02.400T    | 0.0939           | 0.0951           | 3/32    | GSX      | •      |
| 3008-000214 | RBT-0828-02.401T-Ti | 0.0939           | 0.0952           |         | GSX      | •      |
| 3008-000208 | RBT-0828-02.413T-NF | 0.0948           | 0.0952           |         | GSX      | •      |
| 3008-000107 | RBT-0828-02.420T    | 0.0949           | 0.0953           |         | GSX      | •      |
| 3008-000215 | RBT-0828-02.500T-NF | 0.0979           | 0.0989           |         | GSX      | •      |
| 3008-000189 | RBT-0828-02.512T-NF | 0.0987           | 0.0991           |         | GSX      | •      |
| 3008-000334 | RBT-0828-02.518-Ti  | 0.0989           | 0.0994           |         | GSX      | •      |
| 3008-000184 | RBT-0828-02.525T-NF | 0.0992           | 0.0996           |         | GSX      | •      |

Recommended Depth of Cut = 1.5x5

Special sizes available upon request. Quick turnaround time.

## Signature Line Hexagon Broaches - 28mm OAL

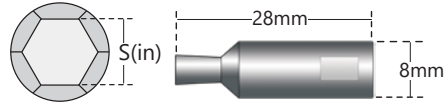


| Item No.    | Description         | $S_{min}$ | $S_{max}$ | Nominal | Material | Vented |
|-------------|---------------------|-----------|-----------|---------|----------|--------|
| 3008-000187 | RBT-0828-02.527T-NF | 0.0993    | 0.0997    |         | GSX      | •      |
| 3008-000108 | RBT-0828-02.540T    | 0.0996    | 0.1000    |         | GSX      | •      |
| 3008-000109 | RBT-0828-02.555T    | 0.1004    | 0.1008    |         | GSX      | •      |
| 3008-000185 | RBT-0828-02.600T    | 0.102     | 0.1028    |         | GSX      | •      |
| 3008-000216 | RBT-0828-02.684T-NF | 0.1055    | 0.1059    |         | GSX      | •      |
| 3008-000373 | RBT-0828-02.7125    | 0.1065    | 0.1071    |         | GSX      |        |
| 3008-000247 | RBT-0828-02.715T    | 0.1067    | 0.1070    |         | GSX      | •      |
| 3008-000368 | RBT-0828-02.774     | 0.109     | 0.1094    |         | GSX      |        |
| 3008-000171 | RBT-0828-02.774T    | 0.109     | 0.1094    |         | GSX      | •      |
| 3008-000110 | RBT-0828-02.780T    | 0.1094    | 0.1111    |         | GSX      | •      |
| 3008-000182 | RBT-0828-02.837T-NF | 0.1115    | 0.1119    |         | GSX      | •      |
| 3008-000111 | RBT-0828-03.020T    | 0.1189    | 0.1193    |         | GSX      | •      |
| 3008-000333 | RBT-0828-03.043T    | 0.1196    | 0.1200    |         | GSX      | •      |
| 3008-000328 | RBT-0828-03.200T    | 0.1255    | 0.1270    |         | GSX      | •      |
| 3008-000112 | RBT-0828-03.210T    | 0.1262    | 0.1266    |         | GSX      | •      |
| 3008-000163 | RBT-0828-03.245T-NF | 0.126     | 0.131     |         | GSX      | •      |
| 3008-000207 | RBT-0828-03.255T-NF | 0.1272    | 0.1291    |         | GSX      | •      |
| 3008-000160 | RBT-0828-03.500T-Ti | 0.1386    | 0.1392    |         | GSX      | •      |
| 3008-000113 | RBT-0828-03.530T    | 0.139     | 0.1394    |         | GSX      | •      |
| 3008-000190 | RBT-0828-03.538T    | 0.1391    | 0.1395    |         | GSX      | •      |
| 3008-000196 | RBT-0828-03.543T-Ti | 0.1393    | 0.1397    |         | GSX      | •      |
| 3008-000114 | RBT-0828-03.550T    | 0.1394    | 0.1398    |         | GSX      | •      |
| 3008-000115 | RBT-0828-03.553T    | 0.1395    | 0.1399    |         | GSX      | •      |
| 3008-000116 | RBT-0828-03.580T    | 0.1402    | 0.1409    |         | GSX      | •      |
| 3008-000117 | RBT-0828-03.581T    | 0.1406    | 0.1410    | 9/64    | GSX      | •      |
| 3008-000194 | RBT-0828-03.595T-Ti | 0.1414    | 0.1417    |         | GSX      | •      |
| 3008-000183 | RBT-0828-03.607T-NF | 0.1416    | 0.1424    |         | GSX      | •      |
| 3008-000201 | RBT-0828-03.615T-NF | 0.142     | 0.1427    |         | GSX      | •      |
| 3008-000167 | RBT-0828-03.962T    | 0.155     | 0.1570    |         | GSX      | •      |
| 3008-000118 | RBT-0828-03.968T    | 0.1563    | 0.1586    | 5/32    | GSX      | •      |
| 3008-000186 | RBT-0828-04.013T-NF | 0.157     | 0.159     |         | GSX      | •      |
| 3008-000200 | RBT-0828-04.02T-NF  | 0.158     | 0.1585    |         | GSX      | •      |
| 3008-000195 | RBT-0828-04.030T-Ti | 0.1584    | 0.1589    |         | GSX      | •      |
| 3008-000119 | RBT-0828-04.049T    | 0.1594    | 0.1600    | 4mm     | GSX      | •      |
| 3008-000162 | RBT-0828-04.049T-NF | 0.1594    | 0.1600    |         | GSX      | •      |
| 3008-000320 | RBT-0828-04.079T    | 0.1586    | 0.1626    |         | GSX      | •      |
| 3008-000222 | RBT-0828-04.188T    | 0.1639    | 0.1659    |         | GSX      | •      |
| 3008-000175 | RBT-0828-04.366T    | 0.1719    | 0.1743    | 11/64   | GSX      | •      |
| 3008-000172 | RBT-0828-04.38T     | 0.179     | 0.1795    |         | GSX      | •      |
| 3008-000237 | RBT-0828-04.552T    | 0.1779    | 0.1804    |         | GSX      | •      |
| 3008-000120 | RBT-0828-04.560T    | 0.1795    | 0.1799    |         | GSX      | •      |
| 3008-000312 | RBT-0828-04.580T    | 0.1783    | 0.1823    |         | GSX      | •      |
| 3008-000218 | RBT-0828-04.680T    | 0.184     | 0.1845    |         | GSX      | •      |
| 3008-000121 | RBT-0828-04.790T    | 0.188     | 0.1892    |         | GSX      | •      |
| 3008-000192 | RBT-0828-04.790T-NF | 0.188     | 0.1892    |         | GSX      | •      |

Recommended Depth of Cut = 1.5x5

Special sizes available upon request. Quick turnaround time.

Signature Line Hexagon Broaches - 28mm OAL

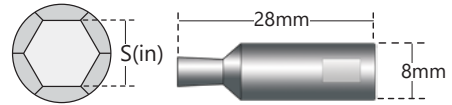


| Item No.    | Description         | S <sub>min</sub> | S <sub>max</sub> | Nominal | Material | Vented |
|-------------|---------------------|------------------|------------------|---------|----------|--------|
| 3008-000210 | RBT-0828-04.790T-Ti | 0.188            | 0.1892           |         | GSX      | •      |
| 3008-000225 | RBT-0828-04.826T-Ti | 0.1895           | 0.19             |         | GSX      | •      |
| 3008-000321 | RBT-0828-04.919T    | 0.192            | 0.1953           |         | GSX      | •      |
| 3008-000342 | RBT-0828-04.948T    | 0.1946           | 0.1950           |         | GSX      | •      |
| 3008-000122 | RBT-0828-05.000T    | 0.1969           | 0.1976           |         | GSX      | •      |
| 3008-000123 | RBT-0828-05.048T    | 0.1985           | 0.199            |         | GSX      | •      |
| 3008-000169 | RBT-0828-05.048T-NF | 0.1985           | 0.199            |         | GSX      | •      |
| 3008-000124 | RBT-0828-05.070T    | 0.1996           | 0.2              |         | GSX      | •      |
| 3008-000198 | RBT-0828-05.070T-NF | 0.1996           | 0.2              |         | GSX      | •      |
| 3008-000322 | RBT-0828-05.080T    | 0.198            | 0.2020           |         | GSX      | •      |
| 3008-000343 | RBT-0828-05.177T    | 0.2036           | 0.2040           |         | GSX      | •      |
| 3008-000329 | RBT-0828-05.182T-NF | 0.198            | 0.2040           |         | GSX      | •      |
| 3008-000371 | RBT-0828-05.207T-NF | 0.2              | 0.2100           |         | GSX      | •      |
| 3008-000238 | RBT-0828-05.556T    | 0.2174           | 0.2200           |         | GSX      | •      |
| 3008-000176 | RBT-0828-05.557T    | 0.2188           | 0.2218           |         | GSX      | •      |
| 3008-000227 | RBT-0828-05.557T-NF | 0.2188           | 0.2218           |         | GSX      | •      |
| 3008-000313 | RBT-0828-05.580T    | 0.2177           | 0.2217           |         | GSX      | •      |
| 3008-000344 | RBT-0828-05.685T    | 0.2236           | 0.2240           |         | GSX      | •      |
| 3008-000177 | RBT-0828-06.000T    | 0.237            | 0.2399           |         | GSX      | •      |
| 3008-000166 | RBT-0828-06.00T-NF  | 0.236            | 0.2364           |         | GSX      | •      |
| 3008-000165 | RBT-0828-06.00T-Ti  | 0.236            | 0.2364           |         | GSX      | •      |
| 3008-000197 | RBT-0828-06.09T     | 0.2396           | 0.24             |         | GSX      | •      |
| 3008-000324 | RBT-0828-06.109T    | 0.2385           | 0.2425           |         | GSX      | •      |
| 3008-000193 | RBT-0828-06.12T-Ti  | 0.24             | 0.242            |         | GSX      | •      |
| 3008-000345 | RBT-0828-06.167T    | 0.2426           | 0.2430           |         | GSX      | •      |
| 3008-000229 | RBT-0828-06.200T-Ti | 0.2439           | 0.2443           |         | GSX      | •      |
| 3008-000125 | RBT-0828-06.390T    | 0.2514           | 0.2518           |         | GSX      | •      |
| 3008-000126 | RBT-0828-06.420T    | 0.2525           | 0.253            |         | GSX      | •      |
| 3008-000161 | RBT-0828-06.420T-NF | 0.2525           | 0.253            |         | GSX      | •      |
| 3008-000127 | RBT-0828-06.450T    | 0.2539           | 0.2545           |         | GSX      | •      |
| 3008-000323 | RBT-0828-06.477T    | 0.253            | 0.2570           |         | GSX      | •      |
| 3008-000211 | RBT-0828-06.482T-NF | 0.2549           | 0.2555           |         | GSX      | •      |
| 3008-000212 | RBT-0828-06.507T-NF | 0.2559           | 0.2565           |         | GSX      | •      |
| 3008-000346 | RBT-0828-06.523T    | 0.2566           | 0.257            |         | GSX      | •      |
| 3008-000217 | RBT-0828-06.705T-NF | 0.263            | 0.265            |         | GSX      | •      |
| 3008-000339 | RBT-0828-06.99T-Ti  | 0.2745           | 0.276            |         | GSX      | •      |
| 3008-000170 | RBT-0828-07.000T    | 0.2764           | 0.2793           |         | GSX      | •      |
| 3008-000314 | RBT-0828-07.109T    | 0.2779           | 0.2819           |         | GSX      | •      |
| 3008-000347 | RBT-0828-07.183T    | 0.2826           | 0.283            |         | GSX      | •      |
| 3008-000219 | RBT-0828-07.220T    | 0.284            | 0.2845           |         | GSX      | •      |
| 3008-000228 | RBT-0828-07.239T-NF | 0.2848           | 0.2852           |         | GSX      | •      |
| 3008-000310 | RBT-0828-07.300T    | 0.2866           | 0.2874           |         | GSX      | •      |
| 3008-000348 | RBT-0828-07.310T    | 0.2876           | 0.288            |         | GSX      | •      |
| 3008-000224 | RBT-0828-08.001T-NF | 0.314            | 0.316            |         | GSX      | •      |
| 3008-000128 | RBT-0828-08.020T    | 0.3155           | 0.316            |         | GSX      | •      |
| 3008-000209 | RBT-0828-08.052T    | 0.316            | 0.318            |         | GSX      | •      |
| 3008-000369 | RBT-0828-08.053T    | 0.315            | 0.3190           |         | GSX      | •      |
| 3008-000315 | RBT-0828-08.098T    | 0.3163           | 0.3213           |         | GSX      | •      |

Recommended Depth of Cut = 1.5x5

Special sizes available upon request. Quick turnaround time.

Signature Series Hexagon Broaches - 28mm OAL



| Item No.    | Description         | S <sub>min</sub> | S <sub>max</sub> | Nominal | Material | Vented |
|-------------|---------------------|------------------|------------------|---------|----------|--------|
| 3008-000191 | RBT-0828-08.10T-NF  | 0.3157           | 0.3224           |         | GSX      | •      |
| 3008-000325 | RBT-0828-08.115T    | 0.3170           | 0.3220           |         | GSX      | •      |
| 3008-000370 | RBT-0828-08.153T    | 0.3190           | 0.3230           |         | GSX      | •      |
| 3008-000349 | RBT-0828-08.174T    | 0.3216           | 0.322            |         | GSX      | •      |
| 3008-000375 | RBT-0828-08.496T    | 0.3343           | 0.3347           |         | GSX      | •      |
| 3008-000239 | RBT-0828-08.778T    | 0.3437           | 0.3475           |         | GSX      | •      |
| 3008-000316 | RBT-0828-08.920T    | 0.3490           | 0.3533           |         | GSX      | •      |
| 3008-000350 | RBT-0828-08.936T    | 0.3516           | 0.352            |         | GSX      | •      |
| 3008-000220 | RBT-0828-08.9725T   | 0.3530           | 0.3535           |         | GSX      | •      |
| 3008-000232 | RBT-0828-09.073T    | 0.3553           | 0.3591           |         | GSX      | •      |
| 3008-000317 | RBT-0828-09.096T    | 0.3556           | 0.3606           |         | GSX      | •      |
| 3008-000351 | RBT-0828-09.190T    | 0.3616           | 0.362            |         | GSX      | •      |
| 3008-000221 | RBT-0828-09.2265T   | 0.3630           | 0.3635           |         | GSX      | •      |
| 3008-000129 | RBT-0828-09.520T    | 0.3788           | 0.3794           |         | GSX      | •      |
| 3008-000332 | RBT-0828-09.525T    | 0.3750           | 0.379            |         | GSX      | •      |
| 3008-000326 | RBT-0828-09.690T    | 0.3790           | 0.3840           |         | GSX      | •      |
| 3008-000352 | RBT-0828-09.723T    | 0.3826           | 0.3830           |         | GSX      | •      |
| 3008-000338 | RBT-0828-09.746T    | 0.3835           | 0.3839           |         | GSX      | •      |
| 3008-000230 | RBT-0828-10.020T-Ti | 0.3943           | 0.3947           |         | GSX      | •      |
| 3008-000372 | RBT-0828-10.046T-Ti | 0.395            | 0.396            |         | GSX      |        |
| 3008-000240 | RBT-0828-10.076     | 0.3947           | 0.3987           |         | GSX      |        |
| 3008-000308 | RBT-0828-10.1000    | 0.3965           | 0.3976           |         | GSX      |        |
| 3008-000318 | RBT-0828-10.137     | 0.3966           | 0.4016           |         | GSX      |        |
| 3008-000353 | RBT-0828-10.206     | 0.4016           | 0.4020           |         | GSX      |        |
| 3008-000233 | RBT-0828-11.083     | 0.4342           | 0.4384           |         | GSX      |        |
| 3008-000366 | RBT-0828-11.100-Ti  | 0.4360           | 0.4380           |         | GSX      |        |
| 3008-000374 | RBT-0828-11.125     | 0.4360           | 0.4400           |         | GSX      |        |
| 3008-000241 | RBT-0828-11.169     | 0.4375           | 0.4420           |         | GSX      |        |
| 3008-000354 | RBT-0828-11.222     | 0.4416           | 0.4420           |         | GSX      |        |
| 3008-000355 | RBT-0828-11.298     | 0.4446           | 0.4450           |         | GSX      |        |
| 3008-000337 | RBT-0828-11.303     | 0.4448           | 0.4452           |         | GSX      |        |
| 3008-000234 | RBT-0828-12.085     | 0.4737           | 0.4780           |         | GSX      |        |
| 3008-000356 | RBT-0828-12.238     | 0.4816           | 0.4820           |         | GSX      |        |
| 3008-000236 | RBT-0828-12.763     | 0.5000           | 0.5050           |         | GSX      |        |
| 3008-000311 | RBT-0828-12.934     | 0.5088           | 0.5092           |         | GSX      |        |
| 3008-000357 | RBT-0828-12.949     | 0.5096           | 0.5100           |         | GSX      |        |
| 3008-000235 | RBT-0828-13.089     | 0.5130           | 0.5175           |         | GSX      |        |
| 3008-000358 | RBT-0828-13.228     | 0.5206           | 0.5210           |         | GSX      |        |

Recommended Depth of Cut = 1.5xS

Special sizes available upon request. Quick turnaround time.



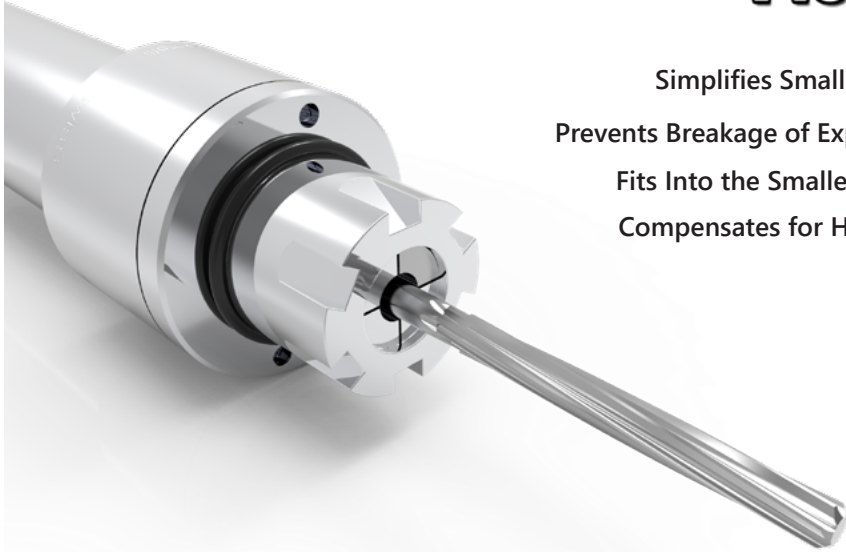
**Signature Series Hexagon Broaches - 1.75in OAL**

| Item No.    | Description       | S <sub>min</sub> | S <sub>max</sub> | Material |
|-------------|-------------------|------------------|------------------|----------|
| 3008-000242 | RBT-127445-14.095 | 0.5524           | 0.5574           | GSX      |
| 3008-000359 | RBT-127445-14.244 | 0.5606           | 0.5610           | GSX      |
| 3008-000243 | RBT-127445-14.357 | 0.5625           | 0.5680           | GSX      |
| 3008-000360 | RBT-127445-14.549 | 0.5726           | 0.5730           | GSX      |
| 3008-000244 | RBT-127445-15.133 | 0.5925           | 0.5990           | GSX      |
| 3008-000361 | RBT-127445-15.260 | 0.6006           | 0.6010           | GSX      |
| 3008-000245 | RBT-127445-15.951 | 0.6250           | 0.6310           | GSX      |
| 3008-000362 | RBT-127445-16.124 | 0.6346           | 0.6350           | GSX      |
| 3008-000246 | RBT-127445-16.133 | 0.6318           | 0.6351           | GSX      |
| 3008-000363 | RBT-127445-16.276 | 0.6406           | 0.6410           | GSX      |

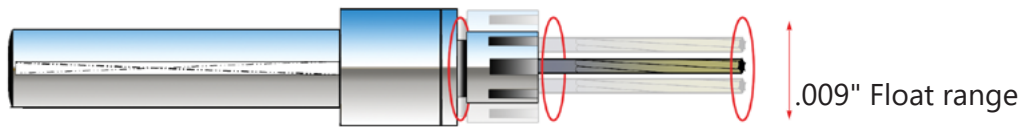
Recommended Depth of Cut = 1.5xS

Special sizes available upon request. Quick turnaround time.

# .009" True Orbital/ Float

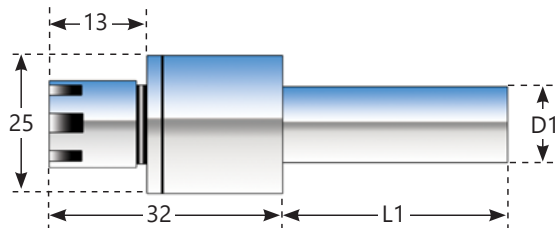


- Simplifies Small Hole Reaming
- Prevents Breakage of Expensive Micro Reamers
- Fits Into the Smallest Swiss Machines
- Compensates for Hole Misalignment



Orbital Float

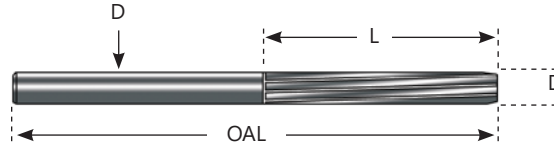
Designed with "True Orbital Float" capability, the micro reamer holder aligns the reamer perfectly to the drilled hole enabling better size control, reduces "bell-mouthing", and increases tool life.



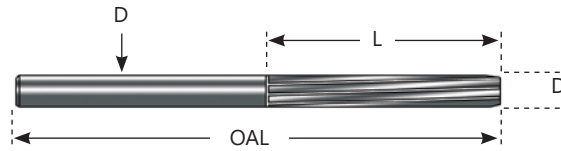
| Item No.    | Description    | Shank (D1) | Length (L1) | Collet Size |
|-------------|----------------|------------|-------------|-------------|
| 3505-000100 | RFH-08-008-042 | 8mm        | 42mm        | ER8         |
| 3505-000103 | RFH-08-190-070 | 3/4in      | 42mm        | ER8         |
| 3505-000105 | RFH-11-010-042 | 10mm       | 42mm        | ER11        |
| 3505-000108 | RFH-11-200-042 | 20mm       | 42mm        | ER11        |
| 3505-000107 | RFH-11-220-042 | 22mm       | 42mm        | ER11        |
| 3505-000106 | RFH-11-190-042 | 3/4in      | 42mm        | ER11        |

Holds .5mm to 7mm diameter reamers

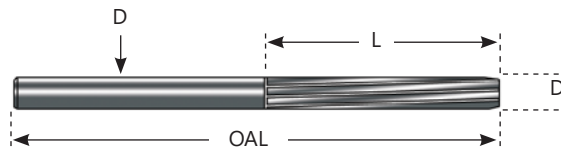
- Precision manufactured from K15 carbide
- Sizes ranging from .023" - .5138"
- Diameter tolerance of  $+.00012'' / - 0.00''$
- 10° left hand spiral right hand cut



| Item No.         | Description  | D mm | D Inch | L    | OAL  | Item No.         | Description  | D mm | D Inch | L    | OAL  |
|------------------|--------------|------|--------|------|------|------------------|--------------|------|--------|------|------|
| 3510-000176      | TR-8600-0060 | 0.60 | .0236  | .275 | 1.3  | 3510-000110      | TR-8600-0109 | 1.09 | .0429  | .393 | 1.58 |
| 3510-000387      | TR-8600-0061 | 0.61 | .0240  | .275 | 1.3  | Call For Details | TR-8600-0110 | 1.10 | .0433  | .393 | 1.58 |
| 3510-000215      | TR-8600-0062 | 0.62 | .0244  | .275 | 1.3  | 3510-000254      | TR-8600-0111 | 1.11 | .0437  | .158 | 1.58 |
| 3510-000278      | TR-8600-0063 | 0.63 | .0248  | .275 | 1.3  | 3510-000111      | TR-8600-0112 | 1.12 | .0441  | .158 | 1.58 |
| 3510-000152      | TR-8600-0064 | 0.64 | .0252  | .275 | 1.3  | Call For Details | TR-8600-0113 | 1.13 | .0445  | .158 | 1.58 |
| 3510-000153      | TR-8600-0065 | 0.65 | .0256  | .275 | 1.3  | Call For Details | TR-8600-0114 | 1.14 | .0449  | .158 | 1.58 |
| 3510-000168      | TR-8600-0066 | 0.66 | .0260  | .275 | 1.3  | 3510-000192      | TR-8600-0115 | 1.15 | .0453  | .158 | 1.58 |
| 3510-000343      | TR-8600-0067 | 0.67 | .0264  | .275 | 1.3  | 3510-000253      | TR-8600-0116 | 1.16 | .0457  | .158 | 1.58 |
| 3510-000324      | TR-8600-0068 | 0.68 | .0268  | .275 | 1.3  | Call For Details | TR-8600-0117 | 1.17 | .0461  | .158 | 1.58 |
| 3510-000217      | TR-8600-0070 | 0.70 | .0276  | .275 | 1.3  | 3510-000207      | TR-8600-0118 | 1.18 | .0465  | .158 | 1.58 |
| 3510-000202      | TR-8600-0071 | 0.71 | .0280  | .280 | 1.3  | Call For Details | TR-8600-0119 | 1.19 | .0469  | .158 | 1.58 |
| 3510-000100      | TR-8600-0072 | 0.72 | .0283  | .275 | 1.3  | 3510-000310      | TR-8600-0120 | 1.20 | .0472  | .393 | 1.58 |
| 3510-000364      | TR-8600-0073 | 0.73 | .0287  | .275 | 1.3  | 3510-000275      | TR-8600-0121 | 1.21 | .0476  | .393 | 1.58 |
| 3510-000102      | TR-8600-0074 | 0.74 | .0291  | .275 | 1.3  | Call For Details | TR-8600-0122 | 1.22 | .0480  | .393 | 1.58 |
| 3510-000256      | TR-8600-0075 | 0.75 | .0295  | .275 | 1.3  | 3510-000401      | TR-8600-0123 | 1.23 | .0484  | .393 | 1.58 |
| 3510-000178      | TR-8600-0077 | 0.77 | .0305  | .275 | 1.3  | 3510-000169      | TR-8600-0124 | 1.24 | .0488  | .393 | 1.58 |
| 3510-000103      | TR-8600-0078 | 0.78 | .0307  | .275 | 1.3  | 3510-000170      | TR-8600-0125 | 1.25 | .0492  | .393 | 1.58 |
| 3510-000104      | TR-8600-0079 | 0.79 | .0311  | .275 | 1.3  | Call For Details | TR-8600-0126 | 1.26 | .0496  | .393 | 1.58 |
| 3510-000301      | TR-8600-0080 | 0.80 | .0314  | .275 | 1.3  | 3510-000112      | TR-8600-0127 | 1.27 | .0500  | .393 | 1.58 |
| Call For Details | TR-8600-0081 | 0.81 | .0319  | .275 | 1.3  | 3510-000113      | TR-8600-0128 | 1.28 | .0504  | .393 | 1.58 |
| 3510-000197      | TR-8600-0082 | 0.82 | .0323  | .275 | 1.3  | Call For Details | TR-8600-0129 | 1.29 | .0508  | .393 | 1.58 |
| 3510-000376      | TR-8600-0083 | 0.83 | .0327  | .275 | 1.3  | 3510-000163      | TR-8600-0130 | 1.30 | .0512  | .393 | 1.58 |
| 3510-000388      | TR-8600-0084 | 0.84 | .0333  | .275 | 1.3  | 3510-000195      | TR-8600-0131 | 1.31 | .0516  | .393 | 1.58 |
| 3510-000200      | TR-8600-0085 | 0.85 | .0334  | .275 | 1.3  | 3510-000114      | TR-8600-0132 | 1.32 | .0519  | .393 | 1.58 |
| 3510-000294      | TR-8600-0086 | 0.86 | .0339  | .275 | 1.3  | 3510-000346      | TR-8600-0133 | 1.33 | .0524  | .393 | 1.97 |
| Call For Details | TR-8600-0087 | 0.87 | .0343  | .275 | 1.3  | Call For Details | TR-8600-0134 | 1.34 | .0528  | .393 | 1.58 |
| 3510-000377      | TR-8600-0088 | 0.88 | .0346  | .275 | 1.3  | Call For Details | TR-8600-0135 | 1.35 | .0531  | .393 | 1.58 |
| 3510-000203      | TR-8600-0089 | 0.89 | .0350  | .275 | 1.3  | 3510-000335      | TR-8600-0136 | 1.36 | .0535  | .393 | 1.58 |
| 3510-000105      | TR-8600-0090 | 0.90 | .0354  | .275 | 1.3  | 3510-000193      | TR-8600-0137 | 1.37 | .0539  | .393 | 1.58 |
| 3510-000394      | TR-8600-0091 | 0.91 | .0358  | .275 | 1.3  | 3510-000194      | TR-8600-0138 | 1.38 | .0543  | .393 | 1.58 |
| 3510-000395      | TR-8600-0092 | 0.92 | .0362  | .275 | 1.3  | Call For Details | TR-8600-0139 | 1.39 | .0547  | .393 | 1.58 |
| 3510-000323      | TR-8600-0093 | 0.93 | .0366  | .275 | 1.3  | 3510-000141      | TR-8600-0140 | 1.40 | .0550  | .393 | 1.58 |
| 3510-000396      | TR-8600-0094 | 0.94 | .0370  | .275 | 1.3  | 3510-000300      | TR-8600-0141 | 1.41 | .0555  | .393 | 1.58 |
| Call For Details | TR-8600-0095 | 0.95 | .0374  | .275 | 1.3  | 3510-000276      | TR-8600-0142 | 1.42 | .0559  | .393 | 1.58 |
| 3510-000160      | TR-8600-0096 | 0.96 | .0378  | .275 | 1.3  | Call For Details | TR-8600-0143 | 1.43 | .0563  | .393 | 1.58 |
| Call For Details | TR-8600-0097 | 0.97 | .0382  | .275 | 1.3  | Call For Details | TR-8600-0144 | 1.44 | .0567  | .393 | 1.58 |
| 3510-000296      | TR-8600-0098 | 0.98 | .0386  | .275 | 1.3  | Call For Details | TR-8600-0145 | 1.45 | .0571  | .393 | 1.58 |
| 3510-000297      | TR-8600-0099 | 0.99 | .0389  | .275 | 1.3  | 3510-000279      | TR-8600-0146 | 1.46 | .0575  | .393 | 1.58 |
| 3510-000298      | TR-8600-0100 | 1.00 | .0394  | .275 | 1.3  | 3510-000264      | TR-8600-0147 | 1.47 | .0579  | .393 | 1.58 |
| 3510-000187      | TR-8600-0101 | 1.01 | .0398  | .281 | 1.3  | Call For Details | TR-8600-0148 | 1.48 | .0583  | .393 | 1.58 |
| 3510-000289      | TR-8600-0102 | 1.02 | .0402  | .275 | 1.3  | 3510-000373      | TR-8600-0149 | 1.49 | .0587  | .393 | 1.58 |
| 3510-000397      | TR-8600-0103 | 1.03 | .0406  | .275 | 1.3  | 3510-000175      | TR-8600-0150 | 1.50 | .0590  | .393 | 1.58 |
| 3510-000107      | TR-8600-0104 | 1.04 | .0409  | .275 | 1.3  | 3510-000183      | TR-8600-0151 | 1.51 | .0594  | .393 | 1.58 |
| 3510-000108      | TR-8600-0105 | 1.05 | .0413  | .275 | 1.3  | 3510-000184      | TR-8600-0152 | 1.52 | .0598  | .393 | 1.58 |
| 3510-000367      | TR-8600-0106 | 1.06 | .0417  | .433 | 1.97 | 3510-000185      | TR-8600-0153 | 1.53 | .0602  | .393 | 1.58 |
| 3510-000368      | TR-8600-0107 | 1.07 | .0421  | .433 | 1.97 | 3510-000186      | TR-8600-0154 | 1.54 | .0614" | .393 | 1.58 |
| 3510-000109      | TR-8600-0108 | 1.08 | .0425  | .393 | 1.58 | 3510-000257      | TR-8600-0155 | 1.57 | .0618" | .393 | 1.58 |



| Item No.         | Description  | D mm | D Inch | L    | OAL  | Item No.         | Description  | D mm | D Inch | L    | OAL  |
|------------------|--------------|------|--------|------|------|------------------|--------------|------|--------|------|------|
| 3510-000309      | TR-8600-0156 | 1.58 | .0622" | .433 | 1.97 | 3510-000374      | TR-8600-0207 | 2.07 | .0815  | .433 | 1.97 |
| 3510-000191      | TR-8600-0157 | 1.59 | .0626" | .433 | 1.97 | 3510-000375      | TR-8600-0208 | 2.08 | .0819  | .433 | 1.97 |
| 3510-000190      | TR-8600-0158 | 1.60 | .0630" | .433 | 1.97 | Call For Details | TR-8600-0209 | 2.09 | .0823  | .433 | 1.97 |
| 3510-000115      | TR-8600-0159 | 1.61 | .0634" | .433 | 1.97 | 3510-000304      | TR-8600-0210 | 2.10 | .0826  | .433 | 1.97 |
| 3510-000158      | TR-8600-0160 | 1.62 | .0638" | .433 | 1.97 | 3510-000126      | TR-8600-0211 | 2.11 | .0831  | .433 | 1.97 |
| 3510-000116      | TR-8600-0161 | 1.63 | .0642" | .433 | 1.97 | Call For Details | TR-8600-0212 | 2.12 | .0835  | .433 | 1.97 |
| 3510-000248      | TR-8600-0162 | 1.64 | .0645" | .433 | 1.97 | Call For Details | TR-8600-0213 | 2.13 | .0839  | .433 | 1.97 |
| 3510-000177      | TR-8600-0163 | 1.65 | .0649" | .433 | 1.97 | 3510-000251      | TR-8600-0214 | 2.14 | .0843  | .437 | 1.97 |
| 3510-000180      | TR-8600-0164 | 1.64 | .0646  | .433 | 1.97 | Call For Details | TR-8600-0215 | 2.15 | .0846  | .437 | 1.97 |
| 3510-000117      | TR-8600-0165 | 1.65 | .0650  | .433 | 1.97 | Call For Details | TR-8600-0216 | 2.16 | .0850  | .437 | 1.97 |
| Call For Details | TR-8600-0166 | 1.66 | .0654  | .433 | 1.97 | 3510-000250      | TR-8600-0217 | 2.17 | .0854  | .437 | 1.97 |
| Call For Details | TR-8600-0167 | 1.67 | .0657  | .433 | 1.97 | Call For Details | TR-8600-0218 | 2.18 | .0858  | .437 | 1.97 |
| 3510-000344      | TR-8600-0168 | 1.68 | .0661" | .433 | 1.97 | Call For Details | TR-8600-0219 | 2.19 | .0862  | .437 | 1.97 |
| 3510-000345      | TR-8600-0169 | 1.69 | .0665" | .433 | 1.97 | Call For Details | TR-8600-0220 | 2.20 | .0866  | .437 | 1.97 |
| 3510-000342      | TR-8600-0170 | 1.70 | .0669" | .433 | 1.97 | Call For Details | TR-8600-0221 | 2.21 | .0870  | .437 | 1.97 |
| 3510-000118      | TR-8600-0171 | 1.71 | .0673" | .433 | 1.97 | Call For Details | TR-8600-0222 | 2.22 | .0874  | .437 | 1.97 |
| 3510-000336      | TR-8600-0172 | 1.72 | 0.0677 | .433 | 1.97 | Call For Details | TR-8600-0223 | 2.23 | .0878  | .437 | 1.97 |
| 3510-000144      | TR-8600-0173 | 1.73 | 0.0681 | .433 | 1.97 | 3510-000402      | TR-8600-0224 | 2.24 | .0882  | .433 | 1.97 |
| Call For Details | TR-8600-0174 | 1.74 | .0685  | .433 | 1.97 | 3510-000179      | TR-8600-0225 | 2.25 | .0886  | .433 | 1.97 |
| 3510-000150      | TR-8600-0175 | 1.75 | .0689  | .433 | 1.97 | Call For Details | TR-8600-0226 | 2.26 | .0890  | .433 | 1.97 |
| 3510-000361      | TR-8600-0176 | 1.76 | .0692  | .433 | 1.97 | Call For Details | TR-8600-0227 | 2.27 | .0894  | .433 | 1.97 |
| Call For Details | TR-8600-0177 | 1.76 | .0697  | .433 | 1.97 | 3510-000292      | TR-8600-0228 | 2.28 | .0897  | .433 | 1.97 |
| 3510-000363      | TR-8600-0178 | 1.76 | .0701  | .433 | 1.97 | 3510-000404      | TR-8600-0229 | 2.29 | .0902  | .433 | 1.97 |
| 3510-000378      | TR-8600-0179 | 1.79 | .0704  | .433 | 1.97 | 3510-000393      | TR-8600-0230 | 2.30 | .0905  | .433 | 1.97 |
| 3510-000277      | TR-8600-0180 | 1.80 | .0708  | .433 | 1.97 | Call For Details | TR-8600-0231 | 2.31 | .0909  | .437 | 1.97 |
| Call For Details | TR-8600-0181 | 1.81 | .0713  | .433 | 1.97 | 3510-000188      | TR-8600-0232 | 2.32 | .0913  | .433 | 1.97 |
| Call For Details | TR-8600-0182 | 1.82 | .0717  | .433 | 1.97 | Call For Details | TR-8600-0233 | 2.33 | .0917  | .433 | 1.97 |
| 3510-000208      | TR-8600-0183 | 1.83 | .0720  | .433 | 1.97 | 3510-000291      | TR-8600-0234 | 2.34 | .0921  | .433 | 1.97 |
| Call For Details | TR-8600-0184 | 1.84 | .0724  | .433 | 1.97 | 3510-000127      | TR-8600-0235 | 2.35 | .0925  | .433 | 1.97 |
| 3510-000370      | TR-8600-0185 | 1.85 | .0728  | .433 | 1.97 | 3510-000128      | TR-8600-0236 | 2.36 | .0929  | .433 | 1.97 |
| 3510-000381      | TR-8600-0186 | 1.86 | .0732  | .433 | 1.97 | 3510-000129      | TR-8600-0237 | 2.37 | .0933  | .590 | 2.25 |
| 3510-000382      | TR-8600-0187 | 1.87 | .0736  | .433 | 1.97 | 3510-000130      | TR-8600-0238 | 2.38 | .0937  | .590 | 2.25 |
| Call For Details | TR-8600-0188 | 1.88 | .0740  | .433 | 1.97 | 3866-000351      | TR-8600-0239 | 2.39 | .0941  | .590 | 2.25 |
| 3510-000155      | TR-8600-0189 | 1.89 | .0744  | .433 | 1.97 | 3510-000145      | TR-8600-0240 | 2.4  | .0945  | .590 | 2.25 |
| 3510-000360      | TR-8600-0190 | 1.90 | .0748  | .433 | 1.97 | 3510-000347      | TR-8600-0241 | 2.41 | .0949  | .590 | 2.25 |
| 3510-000156      | TR-8600-0191 | 1.91 | .0752  | .433 | 1.97 | 3510-000371      | TR-8600-0244 | 2.44 | .0960  | .590 | 1.97 |
| Call For Details | TR-8600-0192 | 1.92 | .0756  | .433 | 1.97 | 3510-000196      | TR-8600-0245 | 2.45 | .0965  | .590 | 2.25 |
| 3510-000157      | TR-8600-0193 | 1.93 | .0760  | .433 | 1.97 | 3510-000189      | TR-8600-0246 | 2.46 | .0968  | .590 | 2.25 |
| 3510-000119      | TR-8600-0194 | 1.94 | .0763  | .433 | 1.97 | 3510-000287      | TR-8600-0247 | 2.47 | .0972  | .590 | 2.25 |
| 3510-000230      | TR-8600-0195 | 1.95 | .0767  | .433 | 1.97 | 3510-000288      | TR-8600-0248 | 2.48 | .0976  | .590 | 2.25 |
| 3510-000120      | TR-8600-0196 | 1.96 | .0772  | .433 | 1.97 | 3510-000131      | TR-8600-0249 | 2.49 | .0980  | .590 | 2.25 |
| 3510-000121      | TR-8600-0197 | 1.97 | .0776  | .433 | 1.97 | 3510-000159      | TR-8600-0250 | 2.5  | .0984" | .590 | 2.25 |
| 3510-000322      | TR-8600-0198 | 1.98 | .0780  | .433 | 1.97 | 3510-000365      | TR-8600-0251 | 2.51 | .0988" | .590 | 2.25 |
| 3510-000122      | TR-8600-0199 | 1.99 | .0783  | .433 | 1.97 | 3510-000182      | TR-8600-0254 | 2.54 | .0100" | .590 | 2.25 |
| 3510-000339      | TR-8600-0200 | 2.00 | .0787  | .433 | 1.97 | 3510-000198      | TR-8600-0255 | 2.55 | .1003" | .590 | 2.25 |
| 3510-000356      | TR-8600-0201 | 2.01 | .0791  | .433 | 1.97 | 3510-000398      | TR-8600-0256 | 2.56 | .1008" | .590 | 2.25 |
| 3510-0352        | TR-8600-0202 | 2.02 | .0795  | .433 | 1.97 | 3510-000399      | TR-8600-0258 | 2.58 | .1016" | .590 | 2.25 |
| 3510-000204      | TR-8600-0203 | 2.03 | .0799  | .433 | 1.97 | 3510-000400      | TR-8600-0259 | 2.59 | .1020" | .590 | 2.25 |
| 3510-000123      | TR-8600-0204 | 2.04 | .0803  | .433 | 1.97 | 3510-000341      | TR-8600-0261 | 2.61 | .1028" | .590 | 2.25 |
| 3510-000124      | TR-8600-0205 | 2.05 | .0807  | .433 | 1.97 | 3510-000340      | TR-8600-0262 | 2.62 | .1031" | .590 | 2.25 |
| 3510-000125      | TR-8600-0206 | 2.06 | .0811  | .433 | 1.97 | 3510-000132      | TR-8600-0263 | 2.63 | .1035" | .590 | 2.25 |



| Item No.    | Description  | D mm | D Inch  | L    | OAL  |
|-------------|--------------|------|---------|------|------|
| 3510-000173 | TR-8600-0267 | 2.67 | .1051"  | .590 | 2.25 |
| 3510-000174 | TR-8600-0268 | 2.68 | .1055"  | .590 | 2.25 |
| 3510-000379 | TR-8600-0269 | 2.69 | .1059"  | .590 | 2.25 |
| 3510-000359 | TR-8600-0272 | 2.72 | .1070"  | .590 | 2.25 |
| 3510-000143 | TR-8600-0277 | 2.77 | .1091"  | .590 | 2.25 |
| 3510-000362 | TR-8600-0278 | 2.78 | .1094"  | .590 | 2.25 |
| 3510-000380 | TR-8600-0279 | 2.79 | .1098"  | .590 | 2.25 |
| 3510-000372 | TR-8600-0280 | 2.8  | .1102"  | .590 | 2.25 |
| 3510-000151 | TR-8600-0283 | 2.83 | .1114"  | .590 | 2.25 |
| 3510-000316 | TR-8600-0284 | 2.84 | .1118"  | .590 | 2.25 |
| 3510-000263 | TR-8600-0288 | 2.88 | .1134"  | .590 | 2.25 |
| 3510-000295 | TR-8600-0292 | 2.92 | .1150"  | .590 | 2.25 |
| 3510-000302 | TR-8600-0293 | 2.93 | .1155"  | .590 | 2.25 |
| 3510-000233 | TR-8600-0295 | 2.95 | .1161"  | .590 | 2.25 |
| 3510-000234 | TR-8600-0296 | 2.96 | .1165"  | .590 | 2.25 |
| 3510-000252 | TR-8600-0298 | 2.98 | .1173"  | .590 | 2.25 |
| 3510-000210 | TR-8600-0299 | 2.99 | .1177"  | .590 | 2.25 |
| 3510-000255 | TR-8600-0300 | 3.0  | .1181"  | .590 | 2.25 |
| 3510-000231 | TR-8600-0301 | 3.01 | .1185"  | .590 | 2.25 |
| 3510-000337 | TR-8600-0302 | 3.02 | .1189"  | .590 | 2.25 |
| 3510-000338 | TR-8600-0303 | 3.03 | .1193"  | .590 | 2.25 |
| 3510-000134 | TR-8600-0305 | 3.05 | .1201"  | .590 | 2.25 |
| 3510-000354 | TR-8600-0306 | 3.06 | .1204"  | .590 | 2.25 |
| 3510-000232 | TR-8600-0309 | 3.09 | .1216"  | .590 | 2.25 |
| 3510-000315 | TR-8600-0310 | 3.1  | .1220"  | .590 | 2.25 |
| 3510-000135 | TR-8600-0311 | 3.11 | .1224"  | .590 | 2.25 |
| 3510-000355 | TR-8600-0312 | 3.12 | .12228" | .590 | 2.25 |
| 3510-000235 | TR-8600-0313 | 3.13 | .1232"  | .590 | 2.25 |
| 3510-000236 | TR-8600-0314 | 3.14 | .1236"  | .590 | 2.25 |
| 3510-000136 | TR-8600-0316 | 3.16 | .1244"  | .590 | 2.25 |
| 3510-000357 | TR-8600-0317 | 3.17 | .1248"  | .590 | 2.25 |
| 3510-000138 | TR-8600-0318 | 3.18 | .1252"  | .590 | 2.25 |
| 3510-000206 | TR-8600-0319 | 3.19 | .1256"  | .590 | 2.25 |
| 3510-000161 | TR-8600-0320 | 3.2  | .1260"  | .590 | 2.25 |
| 3510-000171 | TR-8600-0321 | 3.21 | .1264"  | .590 | 2.25 |
| 3510-000303 | TR-8600-0322 | 3.22 | .1268"  | .590 | 2.25 |
| 3510-000172 | TR-8600-0323 | 3.23 | .1272"  | .590 | 2.25 |
| 3510-000201 | TR-8600-0324 | 3.24 | .1275"  | .590 | 2.25 |
| 3510-000282 | TR-8600-0325 | 3.25 | .1279"  | .590 | 2.25 |

**Additional Sizes Available - Call 413-562-4800 for More Information**

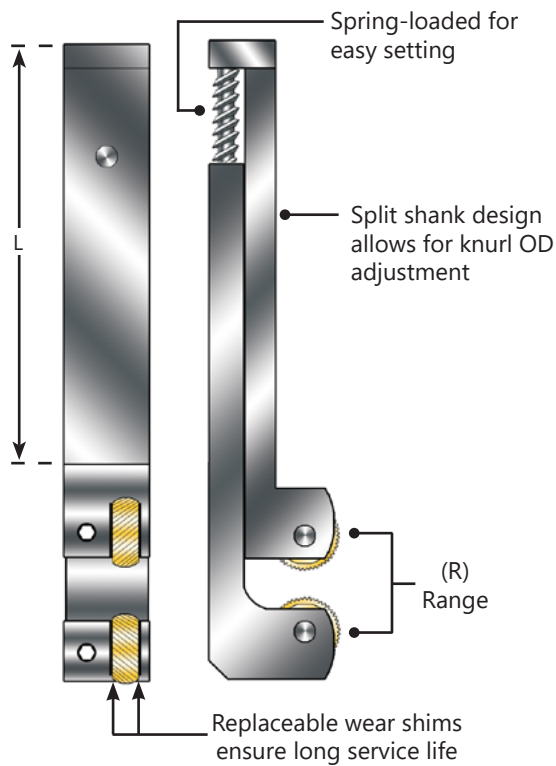
# COMPACT STRADDLE KNURL HOLDERS

## for small parts

- Create perfect knurls
- Eliminates workpiece deflection
- Low interference

Specifically designed for Swiss-type machines; our low profile straddle knurl holders keep interference to a minimum within the tooling envelope of most machines while ensuring adjacent tool positions are available to maximize tooling capacity.

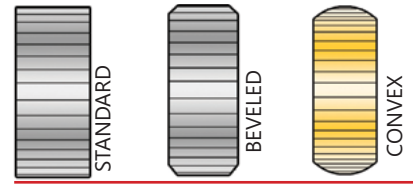
| Item No.    | Description  | Shank  | L      | R         | Wheel Dimensions        |
|-------------|--------------|--------|--------|-----------|-------------------------|
| 2040-000107 | KHS-2BPR-375 | .375in | 2.7in  | .0-.394in | 5/16in x 1/8in x 5/32in |
| 2040-000110 | KHS-2EPR-500 | .500in | 3.24in | 0-.750in  | 1/2in x 3/16in x 3/16in |
| 2040-000111 | KHS-2EPR-625 | .625in | 3.24in | 0-.750in  | 1/2in x 3/16in x 3/16in |



# KNURLING WHEELS

Genevieve Swiss offers a full line of precision knurling tools for Swiss-type applications. Optional wheel geometries are available to suit your specific needs. More options are available in addition to what is listed below.

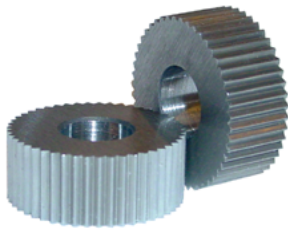
Call [413-562-4800](tel:413-562-4800) for details or to discuss applications.



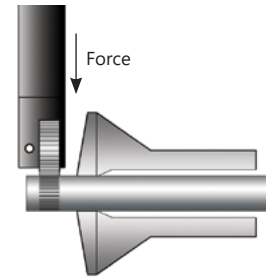
## Standard Knurl Dies For Bump Knurling

| Knurl Series | Wheel Dimensions  | Straight Tooth | 30° Right Hand | 30° Left Hand | 30° Male  | 30° Female | Available Pitch Teeth Per Inch (TPI)        |
|--------------|-------------------|----------------|----------------|---------------|-----------|------------|---|
|              | OD x ID x Width   |                |                |               |           |            |   |
| BP           | 5/16 x 1/8 x 5/32 | KDS-BPS0-      | KDR-BPR0-      | KDL-BPL0-     | KDD-BPM0- | KDD-BPF0-  | 20, 25, 30, 35, 40, 50, 60, 70, 80, 90, 100 |
| EP           | 1/2 x 3/16 x 3/16 | KDS-EPS0-      | KDR-EPR0-      | KDL-EPL0-     | KDD-EPM0- | KDD-EPF0-  | 16, 20, 25, 30, 32, 35, 40, 50, 80          |

All Wheels Also Available in DIAMETRICAL PITCH Configurations: 64DP, 96DP, 128DP, 160DP



- Precision lapped tooth forms provide superior knurled surfaces
- HSS vacuum hardened to approximately 63 Rockwell C
- Sides and Bore are Finish Ground to Maintain Close Tolerances
- Available Coated on Request



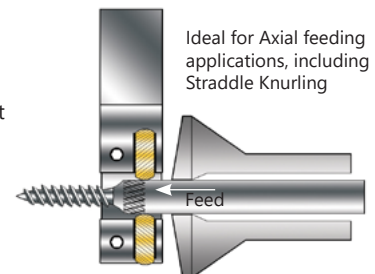
## CONVEX Series Knurl Dies For Axial Feeding - Inch

| Knurl Series | Wheel Dimensions  | Straight Tooth | 30° Right Hand | 30° Left Hand | Available Pitch Teeth Per Inch (TPI) |
|--------------|-------------------|----------------|----------------|---------------|--------------------------------------|
|              | OD x ID x Width   |                |                |               |                                      |
| EPV          | 1/2 x 3/16 x 3/16 | KDS-EPSV-      | KDR-EPRV-      | KDL-EPLV-     | 16, 20, 25, 30, 32, 35, 40, 50, 80   |

All Wheels Also Available in DIAMETRICAL PITCH Configurations: 64DP, 96DP, 128DP, 160DP

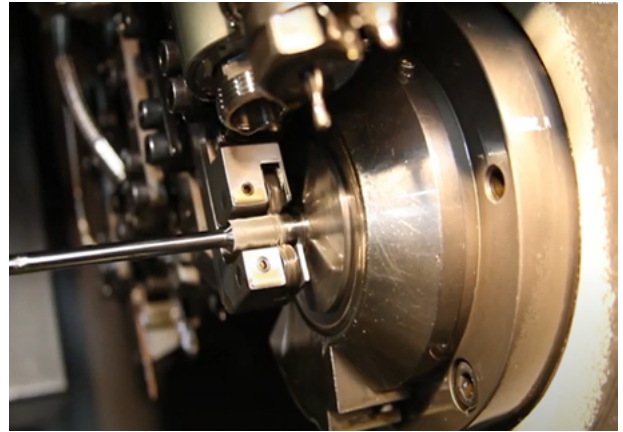


- Hi-Cobalt HSS treated with ferritic nitrocarburizing is standard on all CONVEX Knurls.
- Full-form convex relief spreads out forces providing smoother finish
- The ULTIMATE knurling die for Swiss-type straddle knurling

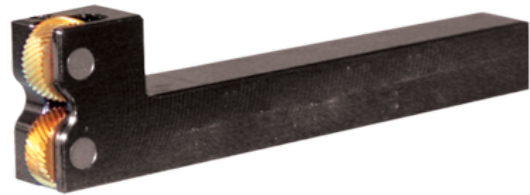


# Knurling Speeds and Feeds

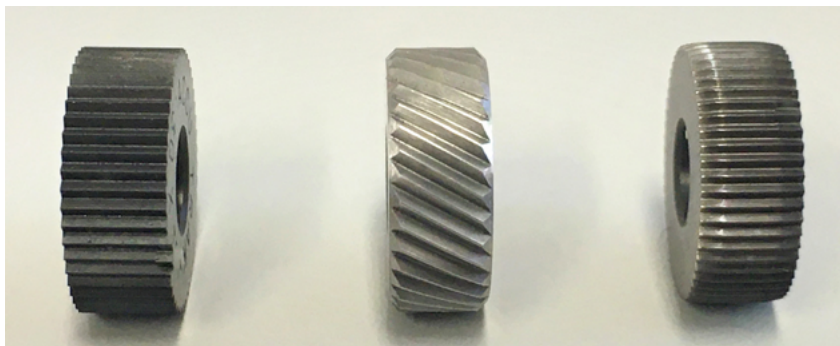
For convenience, knurling is often performed at the same speeds used for turning operations when using high speed steel tool bits. But to prevent seizing of the rolls on the pin, we recommend a maximum surface speed of about 150 SFPM (Feet/Min) or 50 m/min. You may find you get longer knurl life and improved appearance by slowing down the spindle to about 50 SFPM (15 m/min) for harder steels and stainless. CARBIDE knurl pins are strongly recommended for all high speed knurl applications. DOWEL pins with a plus tolerance SHOULD NOT be used because of the possibility of the knurls seizing up and breaking.



For BUMP knurling with a SINGLE TOOL HOLDER from the cross-slide, the infeed would normally be .001-.004"/rev (.025 - .1mm) to roll the part complete 5/20 revolutions. When knurling stainless steels, it is important not to roll any longer than necessary as this material work hardens as it is formed. The total amount the tool penetrates into the workpiece is approximately 50% of the tooth depth of the wheel. You may have to travel more than this amount to allow for the flexing of the part or holder due to rolling pressure. Some trial and error will be required.



If you are using a two die STRADDLE HOLDER, the infeed rate should be 5 or 10 times faster because the wheels are coming in tangentially instead of head on. Before knurling, the holder should be set so that the distance between the two wheels is smaller than the workpiece diameter by approximately the depth of the knurl tooth. Then to knurl, move the holder so that the two wheels are as close to the centerline as possible to minimize the knurling pressure on work spindle and cross slide.



# Knurling Speeds and Feeds

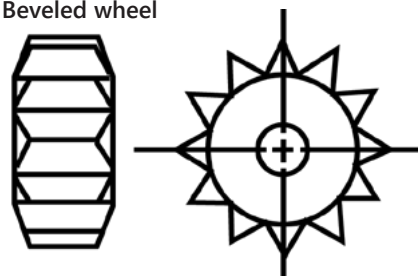
| Material                         | Recommended SFPM [ft/Min] |
|----------------------------------|---------------------------|
| Acetal (Delrin)                  | 90-130 SFM [27-40] M/MIN  |
| Aluminum and its alloys          | 90-130 SFM [27-40] M/MIN  |
| Brass (360 high machining)       | 90-130 SFM [27-40] M/MIN  |
| Bronze (high tensile)            | 90-130 SFM [27-40] M/MIN  |
| Hastelloy                        | 35-50 SFM [10-15 M/MIN]   |
| Inconel                          | 35-50 SFM [10-15 M/MIN]   |
| Monel                            | 35-50 SFM [10-15 M/MIN]   |
| High nickel steel                | 35-50 SFM [10-15 M/MIN]   |
| Mild steel (.2-.3 C)             | 50-70 SFM [15-21 M/MIN]   |
| Steel (.4-.5 C)                  | 50-70 SFM [15-21 M/MIN]   |
| Tool steel                       | 35-50 SFM [10-15 M/MIN]   |
| Steel alloys (300-400 Brinell)   | 35-50 SFM [10-15 M/MIN]   |
| Stainless steel (free machining) | 50-70 SFM [15-21 M/MIN]   |
| Stainless (work hardening)       | 35-50 SFM [10-15 M/MIN]   |
| Titanium alloys                  | 50-70 SFM [15-21 M/MIN]   |
| Heat Treated Steels              |                           |
| 35-40 Rockwell C                 | 35-50 SFM [10-15 M/MIN]   |
| 40-45 Rockwell C                 | 35-50 SFM [10-15 M/MIN]   |
| 45-50 Rockwell C                 | 35-50 SFM [10-15 M/MIN]   |
| 50-55 Rockwell C                 | 35-50 SFM [10-15 M/MIN]   |

| Material                         | Recommended Feed per Rev [in/Rev] |
|----------------------------------|-----------------------------------|
| Acetal (Delrin)                  | .008 to .020                      |
| Aluminum and its alloys          | .008 to .020                      |
| Brass (360 high machining)       | .008 to .020                      |
| Bronze (high tensile)            | .008 to .020                      |
| Hastelloy                        | .004 to .009                      |
| Inconel                          | .004 to .009                      |
| Monel                            | .004 to .009                      |
| High nickel steel                | .004 to .009                      |
| Mild steel (.2-.3 C)             | .006 to .012                      |
| Steel (.4-.5 C)                  | .006 to .012                      |
| Tool steel                       | .004 to .009                      |
| Steel alloys (300-400 Brinell)   | .004 to .009                      |
| Stainless steel (free machining) | .008 to .020                      |
| Stainless steel (work hardening) | .004 to .009                      |
| Titanium alloys                  | .004 to .009                      |
| Heat Treated Steels              |                                   |
| 35-40 Rockwell C                 | .004 to .009                      |
| 40-45 Rockwell C                 | .004 to .009                      |
| 45-50 Rockwell C                 | .004 to .009                      |
| 50-55 Rockwell C                 | .004 to .009                      |

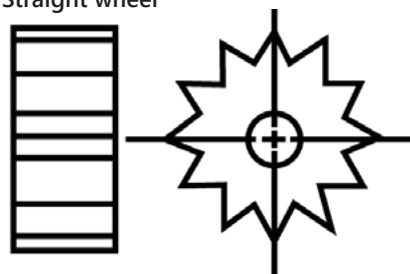
| In-Feed approximate Rev |                  |            |             |
|-------------------------|------------------|------------|-------------|
| T.P.I.                  | ALUMINUM & BRASS | MILD STEEL | ALLOY STEEL |
| 12                      | 12               | 15         | 25          |
| 16-20                   | 10               | 13         | 22          |
| 25-35                   | 8                | 11         | 20          |

| End-Feed approximate Feed Per Rev |                  |            |             |
|-----------------------------------|------------------|------------|-------------|
| T.P.I.                            | ALUMINUM & BRASS | MILD STEEL | ALLOY STEEL |
| 12                                | .008             | .006       | .004        |
| 16-20                             | .010             | .008       | .005        |
| 25-35                             | .013             | .010       | .007        |

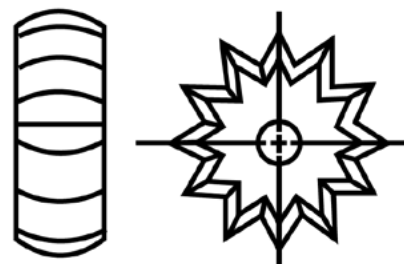
Beveled wheel



Straight wheel



Convex wheel



# SIGNATURE SERIES Mini Boring System with Anti-Vibration Technology



Coolant-Thru

Every insert-style boring holder has coolant-thru capability.



## Multiple Insert Types

35 and 80 degree rhombic and trigon inserts available with several coating types.

## Adaptable Shank Sizes

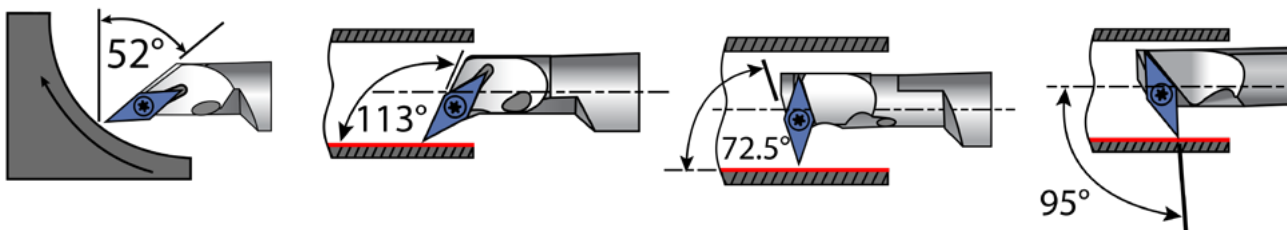
Coolant-thru bushings are available to fit boring holders to almost any static tool holder diameter.

GenSwiss' new mini boring line provides a method of creating ID features that utilize easy to change ISO style turning inserts and round shank holders.

Inserts come in 3 geometries: 35 degree rhombic, 80 degree rhombic, and 80 degree trigon. Several chip breaker geometries and coatings are available, ideal for cutting materials such as carbon alloy steels, stainless steels, cast iron, and aluminum alloys.

Available solid carbide insert holders provide enhanced vibration dampening to ensure tool cutting accuracy. Each holder features coolant-thru outlets and shank diameters down to 4.8mm. Boring holders can be paired with a GenSwiss bushing for easy mounting to static round shank tool holders.

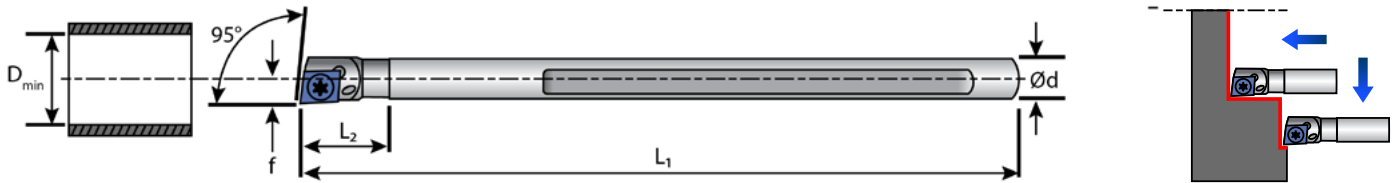
## Holders Are Available With Various Cutting Angles



Down to Min bore diameter .189 inch (4.8mm)

## Signature Series Mini Boring System

## Internal Turning Tools Material: Carbide



### SCLDL (95°)

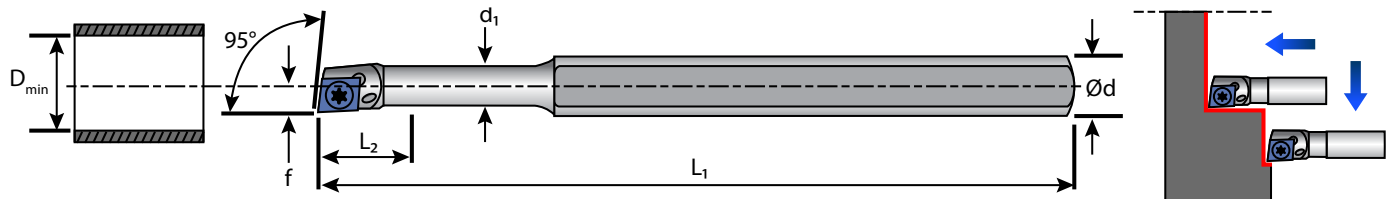
Ø 4-6mm Shanks

| Left Hand Item No. | Description      | d | L <sub>1</sub> | L <sub>2</sub> | f   | D <sub>min</sub> | Insert    | Screw    | Key |
|--------------------|------------------|---|----------------|----------------|-----|------------------|-----------|----------|-----|
| Call for details   | CB0400F SCLDL 04 | 4 | 80             | -              | 2.4 | 4.8              | CDGT 0401 | BFTX1804 | T6  |
| Call for details   | CB0500F SCLDL 04 | 5 | 80             | -              | 2.9 | 5.8              | CDGT 0401 | BFTX1804 | T6  |
| Call for details   | CB0600G SCLDL 04 | 6 | 95             | -              | 3.4 | 6.8              | CDGT 0401 | BFTX1804 | T6  |

### SCLDR (95°)

Ø 4-6mm Shanks

| Right Hand Item No. | Description     | d | L <sub>1</sub> | L <sub>2</sub> | f   | D <sub>min</sub> | Insert    | Screw    | Key |
|---------------------|-----------------|---|----------------|----------------|-----|------------------|-----------|----------|-----|
| 1200-000001         | CB0400F SCLDR04 | 4 | 80             | -              | 2.4 | 4.8              | CDGT 0401 | BFTX1804 | T6  |
| 1200-000002         | CB0500F SCLDR04 | 5 | 80             | -              | 2.9 | 5.8              | CDGT 0401 | BFTX1804 | T6  |
| 1200-000003         | CB0600G SCLDR04 | 6 | 95             | -              | 3.4 | 6.8              | CDGT 0401 | BFTX1804 | T6  |



### SCLDL (95°)

Ø 8mm Shanks

| Left Hand Item No. | Description      | d | d <sub>1</sub> | L <sub>1</sub> | L <sub>2</sub> | f   | D <sub>min</sub> | Insert    | Screw    | Key |
|--------------------|------------------|---|----------------|----------------|----------------|-----|------------------|-----------|----------|-----|
| Call for details   | CB0408H SCLDL 04 | 8 | 4              | 100            | 24             | 2.4 | 4.8              | CDGT 0401 | BFTX1804 | T6  |
| Call for details   | CB0508H SCLDL 04 | 8 | 5              | 100            | 30             | 2.9 | 5.8              | CDGT 0401 | BFTX1804 | T6  |
| Call for details   | CB0608H SCLDL 04 | 8 | 6              | 100            | 36             | 3.4 | 6.8              | CDGT 0401 | BFTX1804 | T6  |

### SCLDR (95°)

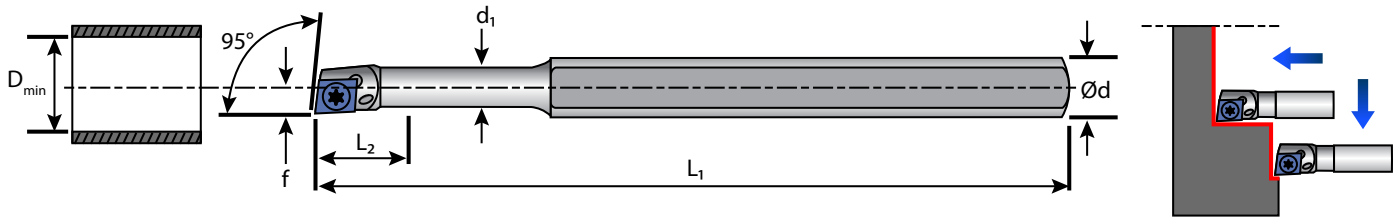
Ø 8mm Shanks

| Right Hand Item No. | Description      | d | d <sub>1</sub> | L <sub>1</sub> | L <sub>2</sub> | f   | D <sub>min</sub> | Insert    | Screw    | Key |
|---------------------|------------------|---|----------------|----------------|----------------|-----|------------------|-----------|----------|-----|
| 1200-000004         | CB0408H SCLDR 04 | 8 | 4              | 100            | 24             | 2.4 | 4.8              | CDGT 0401 | BFTX1804 | T6  |
| 1200-000005         | CB0508H SCLDR 04 | 8 | 5              | 100            | 30             | 2.9 | 5.8              | CDGT 0401 | BFTX1804 | T6  |
| 1200-000006         | CB0608H SCLDR 04 | 8 | 6              | 100            | 36             | 3.4 | 6.8              | CDGT 0401 | BFTX1804 | T6  |

## Signature Series Mini Boring System

## Internal Turning Tools

Material: Carbide



### SCUPL (95°)

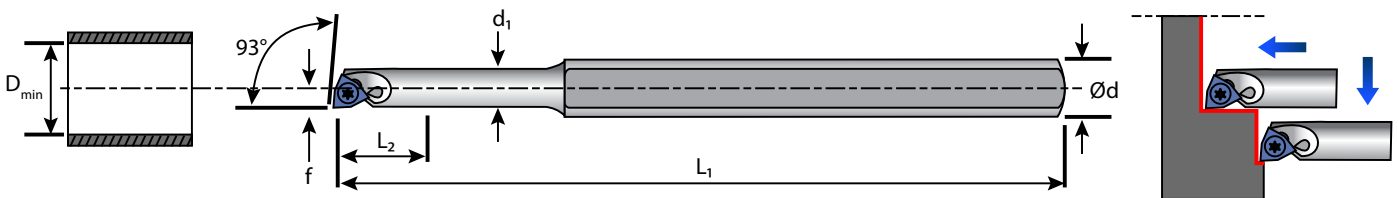
Ø 8-16mm Shanks

| Left Hand Item No. | Description      | d  | d <sub>1</sub> | L <sub>1</sub> | L <sub>2</sub> | f   | D <sub>min</sub> | Insert              | Screw      | Key |
|--------------------|------------------|----|----------------|----------------|----------------|-----|------------------|---------------------|------------|-----|
| Call for details   | CB0608H SCUPL 05 | 8  | 6              | 100            | 28             | 4.5 | 8                | CPMT 05T1/CPGT 05T1 | BTFX 02204 | T7  |
| Call for details   | CB0810J SCUPL 05 | 10 | 8              | 110            | 36             | 6   | 11               | CPMT 05T1/CPGT 05T1 | BTFX 02204 | T7  |
| Call for details   | CB1012K SCUPL 05 | 12 | 10             | 125            | 44             | 7   | 13               | CPMT 05T1/CPGT 05T1 | BTFX 02205 | T7  |
| Call for details   | CB1216M SCUPL 05 | 16 | 12             | 150            | 55             | 9   | 16               | CPMT 05T1/CPGT 05T1 | BTFX 02206 | T7  |

### SCUPR (95°)

Ø 8-16mm Shanks

| Right Hand Item No. | Description      | d  | d <sub>1</sub> | L <sub>1</sub> | L <sub>2</sub> | f   | D <sub>min</sub> | Insert              | Screw      | Key |
|---------------------|------------------|----|----------------|----------------|----------------|-----|------------------|---------------------|------------|-----|
| 1200-000007         | CB0608H SCUPR 05 | 8  | 6              | 100            | 28             | 4.5 | 8                | CPMT 05T1/CPGT 05T1 | BTFX 02204 | T7  |
| 1200-000008         | CB0810J SCUPR 05 | 10 | 8              | 110            | 36             | 6   | 11               | CPMT 05T1/CPGT 05T1 | BTFX 02204 | T7  |
| 1200-000009         | CB1012K SCUPR 05 | 12 | 10             | 125            | 44             | 7   | 13               | CPMT 05T1/CPGT 05T1 | BTFX 02205 | T7  |
| Call for details    | CB1216M SCUPR05  | 16 | 12             | 150            | 55             | 9   | 16               | CPMT 05T1/CPGT 05T1 | BTFX 02206 | T7  |



### SWUCL (93°)

Ø 8mm Shanks

| Left Handed Item No. | Description      | d | d <sub>1</sub> | L <sub>1</sub> | L <sub>2</sub> | f   | D <sub>min</sub> | Insert              | Screw      | Key |
|----------------------|------------------|---|----------------|----------------|----------------|-----|------------------|---------------------|------------|-----|
| Call for details     | CB0508H SWUCL 02 | 8 | 5              | 100            | 24             | 2.9 | 5.8              | WCMT 0201/WCGT 0201 | BTFX 02035 | T6  |
| Call for details     | CB0608H SWUCL 02 | 8 | 6              | 100            | 32             | 3.9 | 7.8              | WCMT 0201/WCGT 0201 | BTFX 02035 | T6  |

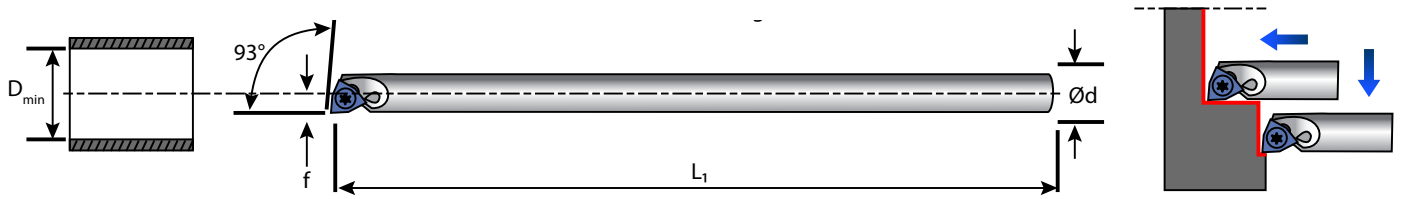
### SWUCR (93°)

Ø 8mm Shanks

| Right Handed Item No. | Description      | d | d <sub>1</sub> | L <sub>1</sub> | L <sub>2</sub> | f   | D <sub>min</sub> | Insert              | Screw      | Key |
|-----------------------|------------------|---|----------------|----------------|----------------|-----|------------------|---------------------|------------|-----|
| Call for details      | CB0508H SWUCR 02 | 8 | 5              | 100            | 24             | 2.9 | 5.8              | WCMT 0201/WCGT 0201 | BTFX 02035 | T6  |
| 1200-000010           | CB0608H SWUCR 02 | 8 | 6              | 100            | 32             | 3.9 | 7.8              | WCMT 0201/WCGT 0201 | BTFX 02035 | T6  |

## Signature Series Mini Boring System

## Internal Turning Tools Material: Carbide



### SWUCL (93°)

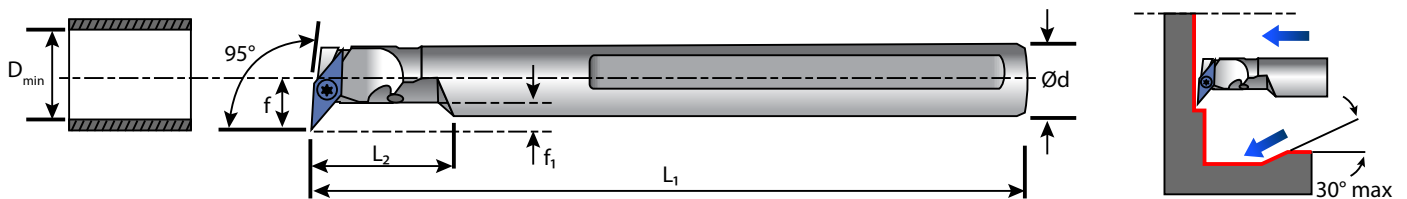
Ø 5-6mm Shanks

| Left Handed Item No. | Description      | d | L <sub>1</sub> | L <sub>2</sub> | f   | D <sub>min</sub> | Insert              | Screw      | Key |
|----------------------|------------------|---|----------------|----------------|-----|------------------|---------------------|------------|-----|
| Call for details     | CB0500F SWUCL 02 | 5 | 85             | -              | 2.9 | 5.8              | WCMT 0201/WCGT 0201 | BFTX 02035 | T6  |
| Call for details     | CB0600G SWUCL 02 | 6 | 95             | -              | 3.9 | 5.8              | WCMT 0201/WCGT 0201 | BFTX 02035 | T6  |

### SWUCR (93°)

Ø 5-6mm Shanks

| Right Handed Item No. | Description      | d | L <sub>1</sub> | L <sub>2</sub> | f   | D <sub>min</sub> | Insert              | Screw      | Key |
|-----------------------|------------------|---|----------------|----------------|-----|------------------|---------------------|------------|-----|
| Call for details      | CB0500F SWUCR 02 | 5 | 85             | -              | 2.9 | 5.8              | WCMT 0201/WCGT 0201 | BFTX 02035 | T6  |
| Call for details      | CB0600G SWUCR 02 | 6 | 95             | -              | 3.9 | 5.8              | WCMT 0201/WCGT 0201 | BFTX 02035 | T6  |



### SVLCL (95°)

Ø 10-16mm Shanks

| Left Handed Item No. | Description      | d  | L <sub>1</sub> | L <sub>2</sub> | f  | f <sub>1</sub> | D <sub>min</sub> | Insert              | Screw    | Key |
|----------------------|------------------|----|----------------|----------------|----|----------------|------------------|---------------------|----------|-----|
| Call for details     | CB1000H SVLCL 07 | 10 | 100            | 32             | 7  | 5              | 12.5             | VCMT 0702/VCGT 0702 | BFTX0205 | T6  |
| Call for details     | CB1200K SVLCL 07 | 12 | 125            | 40             | 9  | 6              | 15.5             | VCMT 0702/VCGT 0702 | BFTX0205 | T6  |
| Call for details     | CB1600M SVLCL 07 | 16 | 150            | 55             | 11 | 5              | 19.5             | VCMT 0702/VCGT 0702 | BFTX0205 | T6  |

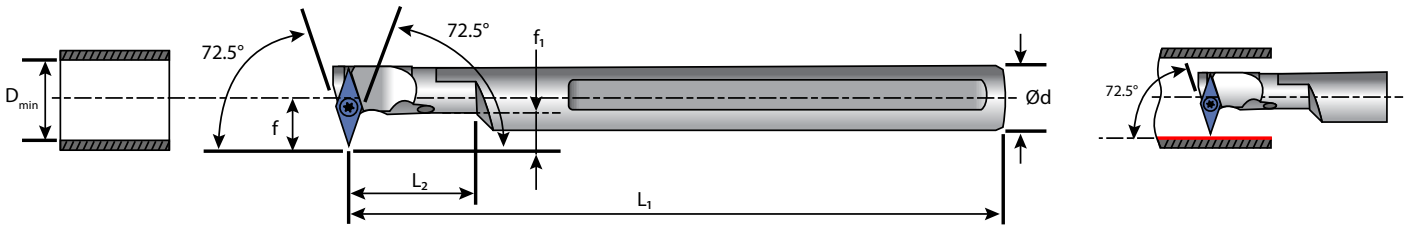
### SVLCR (95°)

Ø 10-16mm Shanks

| Right Handed Item No. | Description      | d  | L <sub>1</sub> | L <sub>2</sub> | f  | f <sub>1</sub> | D <sub>min</sub> | Insert              | Screw    | Key |
|-----------------------|------------------|----|----------------|----------------|----|----------------|------------------|---------------------|----------|-----|
| 1200-000011           | CB1000H SVLCR 07 | 10 | 100            | 32             | 7  | 5              | 12.5             | VCMT 0702/VCGT 0702 | BFTX0205 | T6  |
| 1200-000012           | CB1200K SVLCR 07 | 12 | 125            | 40             | 9  | 6              | 15.5             | VCMT 0702/VCGT 0702 | BFTX0205 | T6  |
| Call for details      | CB1600M SVLCR 07 | 16 | 150            | 55             | 11 | 5              | 19.5             | VCMT 0702/VCGT 0702 | BFTX0205 | T6  |

# Signature Series Mini Boring System

## Internal Turning Tools Material: Carbide



### SVVCL (72.5°)

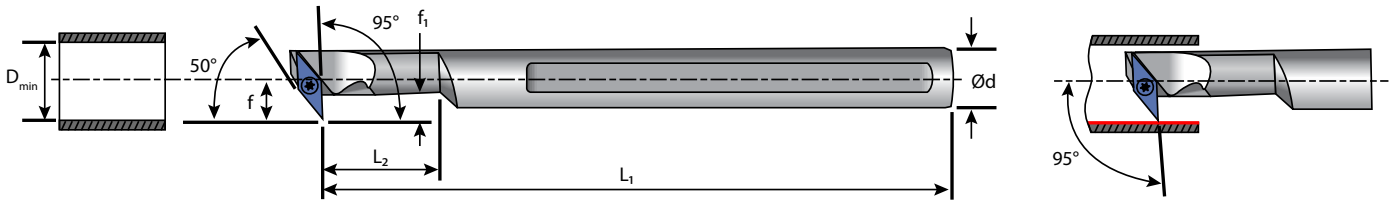
Ø 10-16mm Shanks

| Left Handed Item No. | Description      | d  | L <sub>1</sub> | L <sub>2</sub> | f  | f <sub>1</sub> | D <sub>min</sub> | Insert              | Screw    | Key |
|----------------------|------------------|----|----------------|----------------|----|----------------|------------------|---------------------|----------|-----|
| Call for details     | CB1000H SVVCL 07 | 10 | 100            | 32             | 8  | 6              | 13.5             | VCMT 0702/VCGT 0702 | BFTX0205 | T6  |
| Call for details     | CB1200K SVVCL 07 | 12 | 125            | 40             | 9  | 6              | 15.5             | VCMT 0702/VCGT 0702 | BFTX0205 | T6  |
| Call for details     | CB1600M SVVCL 07 | 16 | 150            | 55             | 11 | 6              | 19.5             | VCMT 0702/VCGT 0702 | BFTX0205 | T6  |

### SVVCR (72.5°)

Ø 10-16mm Shanks

| Right Handed Item No. | Description      | d  | L <sub>1</sub> | L <sub>2</sub> | f  | f <sub>1</sub> | D <sub>min</sub> | Insert              | Screw    | Key |
|-----------------------|------------------|----|----------------|----------------|----|----------------|------------------|---------------------|----------|-----|
| Call for details      | CB1000H SVVCR 07 | 10 | 100            | 32             | 8  | 6              | 13.5             | VCMT 0702/VCGT 0702 | BFTX0205 | T6  |
| Call for details      | CB1200K SVVCR 07 | 12 | 125            | 40             | 9  | 6              | 15.5             | VCMT 0702/VCGT 0702 | BFTX0205 | T6  |
| Call for details      | CB1600M SVVCR 07 | 16 | 150            | 55             | 11 | 6              | 19.5             | VCMT 0702/VCGT 0702 | BFTX0205 | T6  |



### SV95CL (50°)

Ø 10-16mm Shanks

| Left Handed Item No. | Description       | d  | L <sub>1</sub> | L <sub>2</sub> | f  | f <sub>1</sub> | D <sub>min</sub> | Insert              | Screw    | Key |
|----------------------|-------------------|----|----------------|----------------|----|----------------|------------------|---------------------|----------|-----|
| Call for details     | CB1000H SV95CL 07 | 10 | 100            | 32             | 7  | 5              | 12.5             | VCMT 0702/VCGT 0702 | BFTX0205 | T6  |
| Call for details     | CB1200K SV95CL 07 | 12 | 125            | 40             | 9  | 6              | 15.5             | VCMT 0702/VCGT 0702 | BFTX0205 | T6  |
| Call for details     | CB1600M SV95CL 07 | 16 | 150            | 55             | 11 | 8              | 19.5             | VCMT 0702/VCGT 0702 | BFTX0205 | T6  |

### SV95CR (50°)

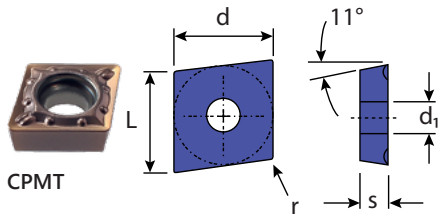
Ø 10-16mm Shanks

| Right Handed Item No. | Description       | d  | L <sub>1</sub> | L <sub>2</sub> | f  | f <sub>1</sub> | D <sub>min</sub> | Insert              | Screw    | Key |
|-----------------------|-------------------|----|----------------|----------------|----|----------------|------------------|---------------------|----------|-----|
| Call for details      | CB1000H SV95CR 07 | 10 | 100            | 32             | 7  | 5              | 12.5             | VCMT 0702/VCGT 0702 | BFTX0205 | T6  |
| Call for details      | CB1200K SV95CR 07 | 12 | 125            | 40             | 9  | 6              | 15.5             | VCMT 0702/VCGT 0702 | BFTX0205 | T6  |
| Call for details      | CB1600M SV95CR 07 | 16 | 150            | 55             | 11 | 8              | 19.5             | VCMT 0702/VCGT 0702 | BFTX0205 | T6  |

# Signature Series Mini Boring System

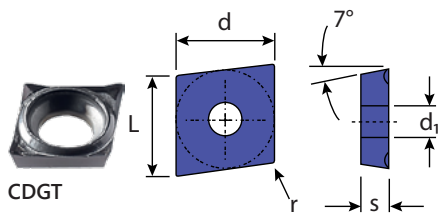
## Turning Inserts

|   |                                    |
|---|------------------------------------|
| P | CarbonSteel, Alloy Steel           |
| M | Stainless Steel                    |
| K | Cast Iron                          |
| N | Aluminium alloy, non-ferrous metal |



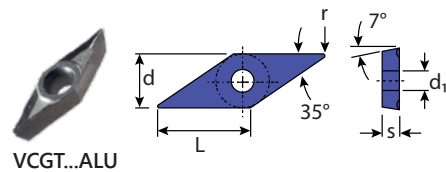
| Item No.    | Description        | L   | d    | s    | d <sub>1</sub> | r   | P | M | K |
|-------------|--------------------|-----|------|------|----------------|-----|---|---|---|
| 1200-000018 | CPMT 05T102 EN-PM1 | 5.6 | 5.56 | 1.97 | 2.5            | 0.2 | ■ | ■ | ■ |
| 1200-000019 | CPMT 05T104 EN-PM1 | 5.6 | 5.56 | 1.97 | 2.5            | 0.4 | ■ | ■ | ■ |

**Grade K400 with G1 Coating**



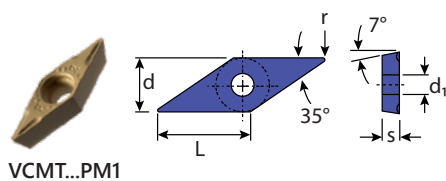
| Item No.    | Description        | L    | d    | s | d <sub>1</sub> | r   | P | M | K | N |
|-------------|--------------------|------|------|---|----------------|-----|---|---|---|---|
| 1200-000020 | CDGT 040101 FN-ALU | 4.03 | 3.97 | 1 | 2.1            | 0.1 |   |   |   | ■ |
| 1200-000021 | CDGT 040102 FN     | 4.03 | 3.97 | 1 | 2.1            | 0.2 | ■ | ■ | ■ |   |
| 1200-000022 | CDGT 040104 FN     | 4.03 | 3.97 | 1 | 2.1            | 0.4 | ■ | ■ |   |   |

(Item # 1200-000020) Grade K15 Uncoated  
 (Item # 1200-000021 & 1200-000022) Grade K400 with G1 Coating



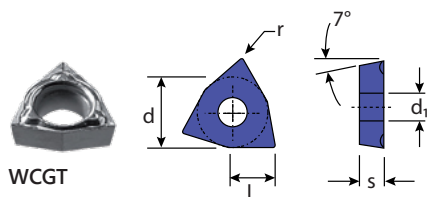
| Item No.    | Description        | L    | d    | s    | d <sub>1</sub> | r   | N |
|-------------|--------------------|------|------|------|----------------|-----|---|
| 1200-000025 | VCGT 070201 FN-ALU | 6.92 | 3.97 | 2.38 | 2.2            | 0.1 | ■ |

**Grade K15 Uncoated**



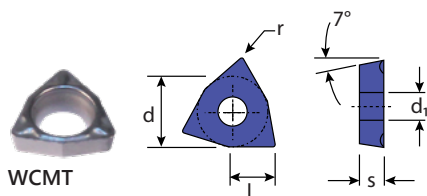
| Item No.    | Description        | L    | d    | s    | d <sub>1</sub> | r   | P | M | K |
|-------------|--------------------|------|------|------|----------------|-----|---|---|---|
| 1200-000023 | VCMT 070202 EN-PM1 | 6.92 | 3.97 | 2.38 | 2.2            | 0.2 | ■ | ■ | ■ |
| 1200-000024 | VCMT 070204 EN-PM1 | 6.92 | 3.97 | 2.38 | 2.2            | 0.4 | ■ | ■ | ■ |

**Grade K400 with G1 Coating**



| Item No.    | Description        | L   | d    | s    | d <sub>1</sub> | r   | N |
|-------------|--------------------|-----|------|------|----------------|-----|---|
| 1200-000028 | WCGT 020101 FN-ALU | 2.7 | 3.97 | 1.59 | 2.2            | 0.1 | ■ |

**Grade K15 Uncoated**

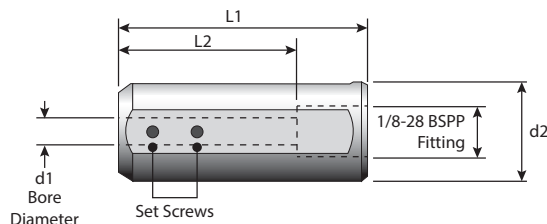


| Item No.    | Description | L   | d    | s    | d <sub>1</sub> | r   | M |
|-------------|-------------|-----|------|------|----------------|-----|---|
| 1200-000026 | WCMT 020102 | 2.7 | 3.97 | 1.59 | 2.2            | 0.2 | ■ |
| 1200-000027 | WCMT 020104 | 2.7 | 3.96 | 1.59 | 2.2            | 0.4 | ■ |

**Grade K400 with G1 Coating**

# COOLANT THRU BORING BUSHINGS

Material: Steel



Coolant Fittings & Accessories



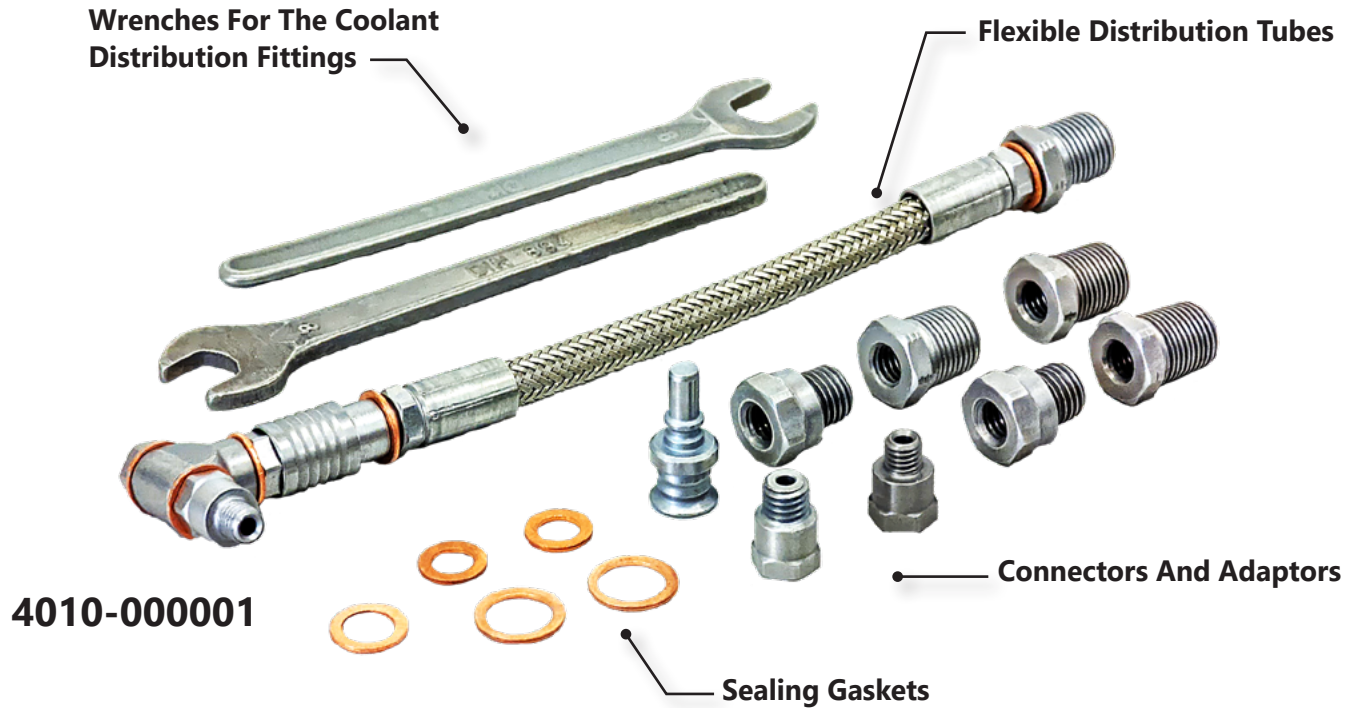
Item # 4005-000104

| Item No.     | Description     | d <sub>1</sub> | L <sub>1</sub> | L <sub>2</sub> | d <sub>2</sub> |
|--------------|-----------------|----------------|----------------|----------------|----------------|
| 1028-000001A | CTB-4.00-158760 | 4mm            | 3 inch         | thru           | 5/8 inch       |
| 1028-000002A | CTB-4.00-190760 | 4mm            | 3 inch         | thru           | 3/4 inch       |
| 1028-000003A | CTB-4.00-200760 | 4mm            | 3 inch         | thru           | 20mm           |
| 1028-000004A | CTB-4.00-220760 | 4mm            | 3 inch         | thru           | 22mm           |
| 1028-000005A | CTB-4.00-230760 | 4mm            | 3 inch         | thru           | 23mm           |
| 1028-000006A | CTB-4.00-250760 | 4mm            | 3 inch         | thru           | 25mm           |
| 1028-000007A | CTB-4.00-254760 | 4mm            | 3 inch         | thru           | 1.0 inch       |
| 1028-000008A | CTB-5.00-158760 | 5mm            | 3 inch         | thru           | 5/8 inch       |
| 1028-000009A | CTB-5.00-190760 | 5mm            | 3 inch         | thru           | 3/4 inch       |
| 1028-000010A | CTB-5.00-200760 | 5mm            | 3 inch         | thru           | 20mm           |
| 1028-000011A | CTB-5.00-220760 | 5mm            | 3 inch         | thru           | 22mm           |
| 1028-000012A | CTB-5.00-230760 | 5mm            | 3 inch         | thru           | 23mm           |
| 1028-000013A | CTB-5.00-250760 | 5mm            | 3 inch         | thru           | 25mm           |
| 1028-000014A | CTB-5.00-254760 | 5mm            | 3 inch         | thru           | 1.0 inch       |
| 1028-000015A | CTB-6.00-158760 | 6mm            | 3 inch         | thru           | 5/8 inch       |
| 1028-000016A | CTB-6.00-190760 | 6mm            | 3 inch         | thru           | 3/4 inch       |
| 1028-000017A | CTB-6.00-200760 | 6mm            | 3 inch         | thru           | 20mm           |
| 1028-000018A | CTB-6.00-220760 | 6mm            | 3 inch         | thru           | 22mm           |
| 1028-000019A | CTB-6.00-230760 | 6mm            | 3 inch         | thru           | 23mm           |
| 1028-000020A | CTB-6.00-250760 | 6mm            | 3 inch         | thru           | 25mm           |
| 1028-000021A | CTB-6.00-254760 | 6mm            | 3 inch         | thru           | 1.0 inch       |
| 1028-000022A | CTB-8.00-158760 | 8mm            | 3 inch         | thru           | 5/8 inch       |
| 1028-000023A | CTB-8.00-190760 | 8mm            | 3 inch         | thru           | 3/4 inch       |
| 1028-000024A | CTB-8.00-200760 | 8mm            | 3 inch         | thru           | 20mm           |
| 1028-000025A | CTB-8.00-220760 | 8mm            | 3 inch         | thru           | 22mm           |
| 1028-000026A | CTB-8.00-230760 | 8mm            | 3 inch         | thru           | 23mm           |
| 1028-000027A | CTB-8.00-250760 | 8mm            | 3 inch         | thru           | 25mm           |
| 1028-000028A | CTB-8.00-254760 | 8mm            | 3 inch         | thru           | 1.0 inch       |
| 1028-000029A | CTB-10.0-190760 | 10mm           | 3 inch         | 2 inch min     | 3/4 inch       |
| 1028-000030A | CTB-10.0-200760 | 10mm           | 3 inch         | 2 inch min     | 20mm           |
| 1028-000031A | CTB-10.0-220760 | 10mm           | 3 inch         | 2 inch min     | 22mm           |
| 1028-000032A | CTB-10.0-230760 | 10mm           | 3 inch         | 2 inch min     | 23mm           |
| 1028-000033A | CTB-10.0-250760 | 10mm           | 3 inch         | 2 inch min     | 25mm           |
| 1028-000034A | CTB-10.0-254760 | 10mm           | 3 inch         | 2 inch min     | 1.0 inch       |
| 1028-000035A | CTB-12.0-190760 | 12mm           | 3 inch         | 2 inch min     | 3/4 inch       |
| 1028-000036A | CTB-12.0-200760 | 12mm           | 3 inch         | 2 inch min     | 20mm           |
| 1028-000037A | CTB-12.0-220760 | 12mm           | 3 inch         | 2 inch min     | 22mm           |
| 1028-000038A | CTB-12.0-230760 | 12mm           | 3 inch         | 2 inch min     | 23mm           |
| 1028-000039A | CTB-12.0-250760 | 12mm           | 3 inch         | 2 inch min     | 25mm           |
| 1028-000040A | CTB-12.0-254760 | 12mm           | 3 inch         | 2 inch min     | 1.0 inch       |



# GenSwiss MicroCoolant Kit

- No more searching for proper fittings!
- Everything in one kit with all connections!
- Precision Copper sealing gaskets!
- High pressure hose with quick disconnect!
- Wrenches included for all fittings!



Flexible tube 102mm (Stocked) 152mm / 203mm  
(Available upon request) with quick connection fittings.

## Quick Connection Fittings:

(1) Quick connection fitting MICRO with M8x1(M) on one end.

## Flexible Distribution Tubes:

(1) M8x1(M), flexible tube OD: 8 mm, L: 4", 6" or 8" (102, 152 or 203 mm), M8x1(M)

## Connectors And Adaptors:

(2) Adaptor M8x1 (H) to BSPP 1/8" (M)  
(1) Adaptor M8x1 (H) to M6x1 (M)  
(1) Spacer H:10mm M8x1 (M)-M8x1 (F)  
(1) Short banjo M8x1 (F)  
(1) Banjo bolt M8x1 (M)

## Locking And Connecting Plugs:

(1) Quick connection fitting NANO to M8x1(F)  
(1) Sealing plug with quick connection fitting MICRO

## Sealing Gaskets:

(2) Sealing gasket in copper for M6  
(6) Sealing gasket in copper for M8  
(1) Sealing gasket in copper for M10 & BSPP 1/8"

## Fastening Keys For Coolant Distribution Fittings:

(2) Wrench for assembly on the universal hexagon used in the MICRO program.

# Connectors and Adaptors



**Adaptor  
M6x1(H) to  
NPT 1/8\"(M)**



**Adaptor  
M6x1(H) to  
BSPT 1/8\"(M)**



**Adaptor  
M6x1(H) to M8x-  
1(M)**



**Adaptor  
M6x1(H) to M5x-  
0.8(M)**



**Quick-Change  
Protector Plug**



**Adaptor  
M6x1(H) to  
BSPT 1/8\"(M)**



**Adaptor  
M6x1(H) to M8x-  
1(M)**



**Quick-Change  
Fitting M6x1(M)  
on one end(M)**



**M5 to 1/4JIC  
4005-000133**

- Easily adapts coolant delivery kits to standard quarter JIC feedlines from high-pressure pumps
- Run a feedline from the pump to the tool
- M5 to 1/4JIC



**M6 to 1/4JIC  
4005-000134**

- Easily adapts coolant delivery kits to standard quarter JIC feedlines from high-pressure pumps
- Run a feedline from the pump to the tool
- M6 to 1/4JIC

# Fluid Management Systems

**Replace your plastic lock lines!** Modular articulated system for the supply of refrigerant at low, medium or high-pressure. Also useful for air blasting operations. Ideal for both fixed-head and Swiss-type CNC lathes, vertical and horizontal machining centers, grinding or transfer machines.

**3mm through hole for coolant supply**

**6mm through hole for coolant supply**

**10.5mm through hole for coolant supply**

**16mm through hole for coolant supply**

Exclusive operation of the mechanism that allows to position and use it with low pressures without the need for tightening of the nuts, even in this mode of operation a total liquid tightness is maintained. For high-pressure work, it must be blocked to ensure stiffness.

Withstands the vibration and pressure of refrigerant without losing the position. It can be orientated and fixed without the need to use mounting keys.

Allows work with emulsion or cutting oil or compressed air for cooling or cleaning of the workpiece.

In the "Initial Connection" (IC) parts, BSP threads have 1 mark in the hexagon area and NPT threads have 2 marks. Metric threads have no marks. This marking allows for easy identification.

Resistant to pressures of up to 80 bar (1,160 psi) in the 16mm and 10.5mm programs, 100 bar (1,450 psi) in the 6mm program and 150 bar (2,175 psi) in the 3mm program.

| Pressure<br>(Bar) | 3mm<br>(l/min) | 6mm<br>(l/min) | 10.5mm<br>(l/min) | 16mm<br>(l/min) |
|-------------------|----------------|----------------|-------------------|-----------------|
| 2                 | 6              | 24             | 73                | 169             |
| 8                 | 12             | 48             | 145               | 338             |
| 15                | 16             | 65             | 199               | 463             |
| 20                | 19             | 75             | 230               | 534             |
| 30                | 23             | 92             | 282               | 654             |
| 50                | 30             | 119            | 364               | 844             |
| 80                | 38             | 150            | 460               | 1068            |
| 100               | 42             | 168            | ---               | ---             |
| 150               | 51             | ---            | ---               | ---             |

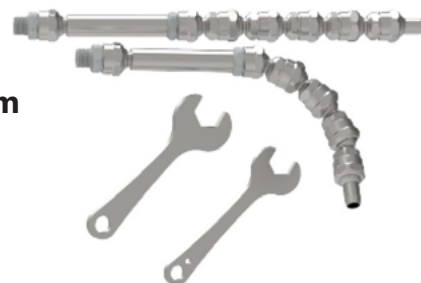
|                   | 3mm    | 6mm  | 10.5mm | 16mm  |
|-------------------|--------|------|--------|-------|
| <b>MAX TORQUE</b> | 1.8 Nm | 6 Nm | 28 Nm  | 40 Nm |

**NOTE: Do not exceed the maximum tightening torque when blocking the parts. We strongly recommend using the specific wrenches for each of the articulated steel programs. Failure to follow these instructions may damage the parts and void the warranty.**

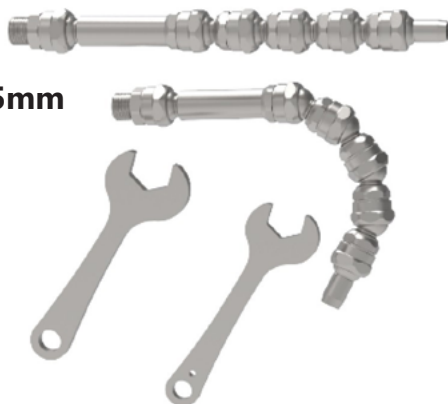
**3mm**



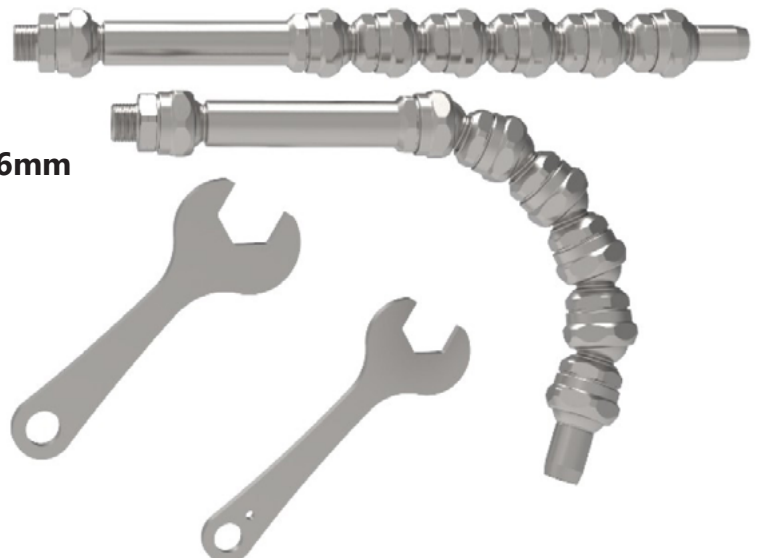
**6mm**



**10.5mm**



**16mm**



**All Coolant Kits Offer  
Mix & Match Compatibility**

## 3mm Articulated Coolant Distribution Starter Kit

Item# **DMH-FLEX-KIT-3MM**

The internal through hole of the program is 3mm and is ideal for the distribution of refrigerant (oil or emulsion) in small-sized machines such as Swiss-type CNC lathes, fixed-head CNC lathes, driven tools or as distribution branches of bigger programs: 6mm, 10.5mm or 16mm.

### Description

#### Kit Single Outlet 3mm

For general cooling with a single outlet L=135mm.  
Weight: 30 g.

#### A. Initial Connection:

1 Unit M8x1(M) to articulated connection

#### B. Articulated connection:

5 units Articulated connection L:12:5mm  
1 unit Articulated connection L:42.5mm

#### C. Coolant nozzles:

1 unit Straight nozzle. ID: 3mm & L:9mm

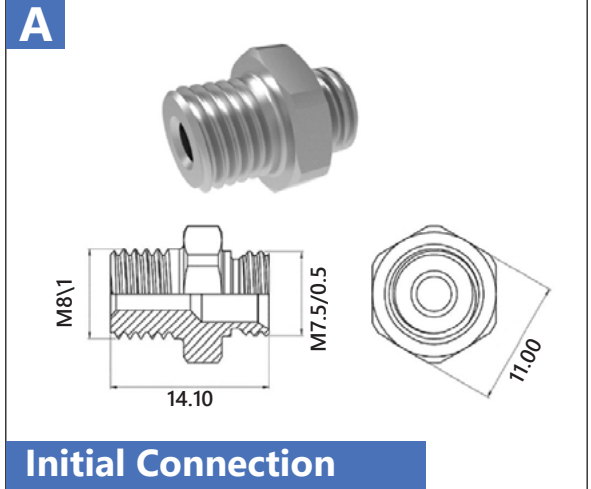
#### D. Fastening wrenches for the articulated system:

1 unit Wrenches for fastening the 2 hexagons used in the 3mm starter kit. SW8 & SW9

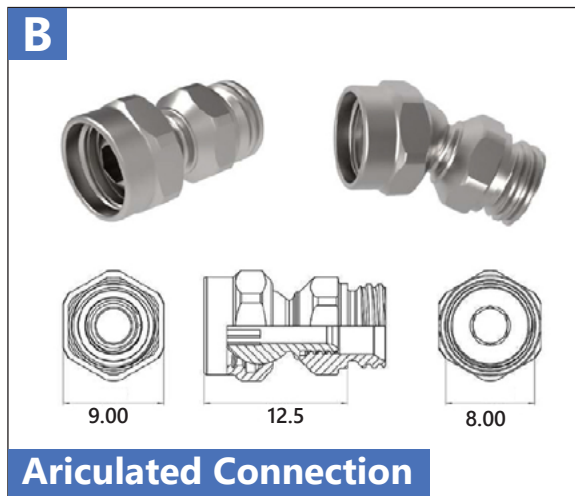
Maximum torque for locking the parts of the system: 1.8 Nm  
Maximum pressure: 150 Bar (2,175 psi)

**Starter Kit: Set of Components delivered in a basic kit for the most typical applications.**

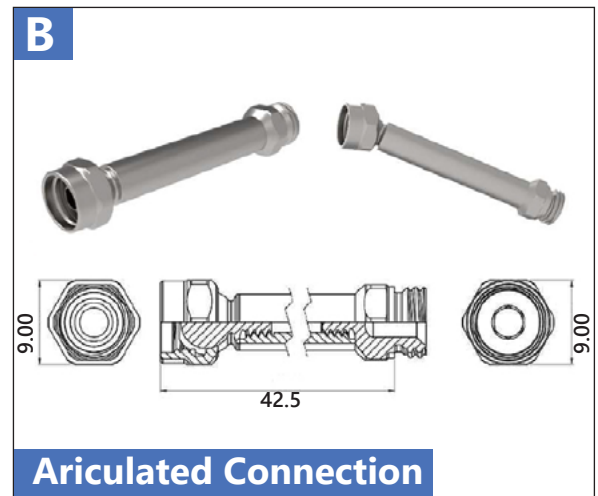
**Call 413-562-4800 to order starter kit or inquire on more Coolant Distribution Components.**



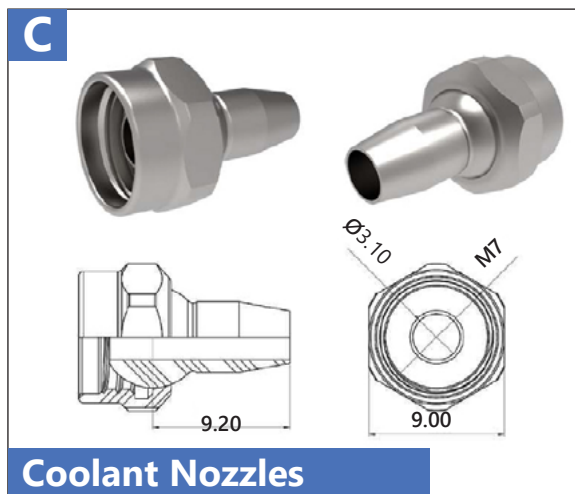
**Initial Connection**



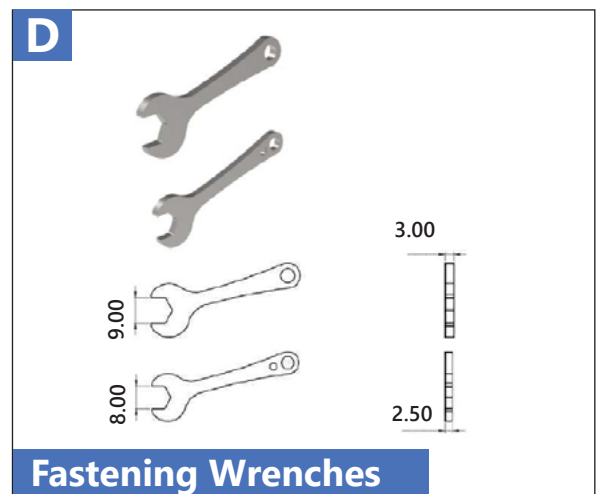
**Articulated Connection**



**Articulated Connection**



**Coolant Nozzles**



**Fastening Wrenches**

## 6mm Articulated Coolant Distribution Starter Kit

Item# **DMH-FLEX-KIT-6MM**

The internal through hole of the program is 6mm and is ideal for the distribution of air and refrigerant (oil or emulsion) in small-sized machines such as Swiss-type CNC lathes, fixed-head CNC lathes, tapping centers, grinding machines or as distribution branches of bigger programs 10.5 or 16mm.

### Description

#### Kit Single Outlet 6 mm

For general cooling with a single outlet L=220mm.  
Weight: 120 g.

#### A. Initial Connection:

1 Unit BSPP 1/8" (M) to articulated connection

#### B. Articulated connection:

5 units Articulated connection L:20:5mm  
1 unit Articulated connection L:70.5mm

#### C. Coolant nozzles:

1 unit Straight nozzle. ID: 6mm & L:16mm

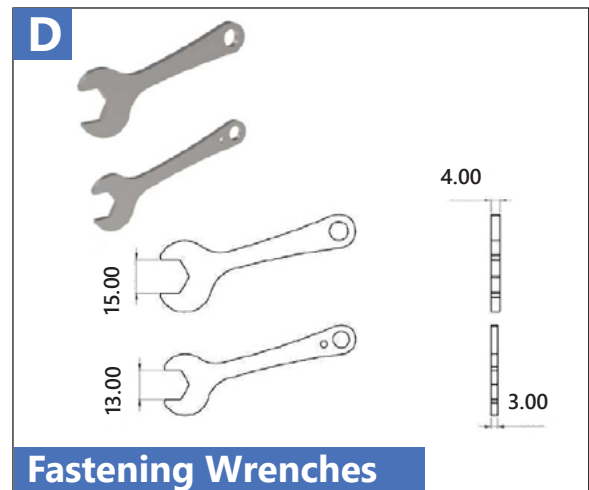
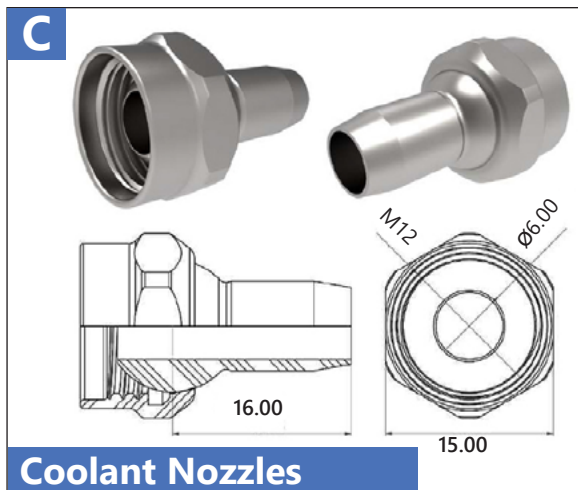
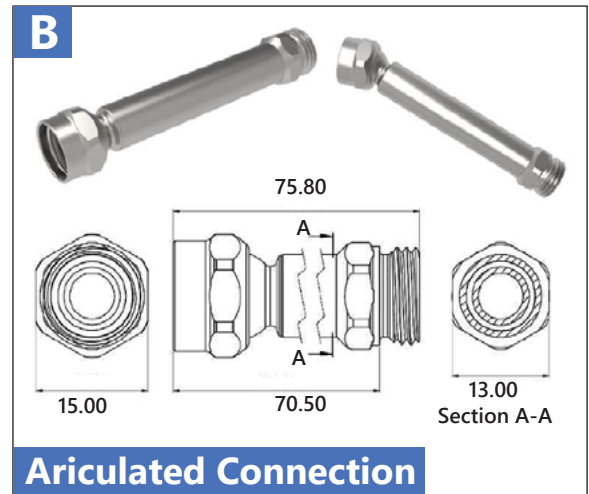
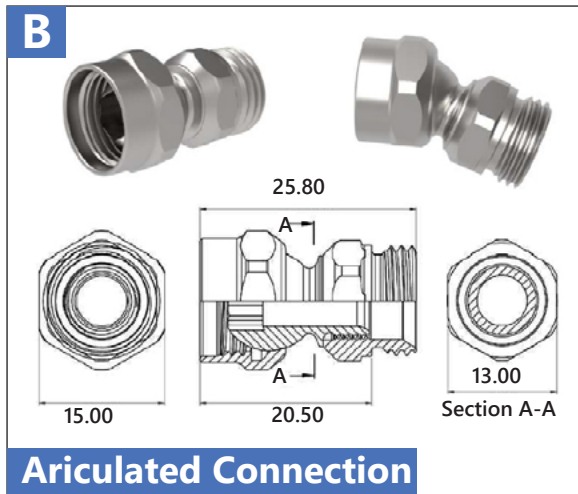
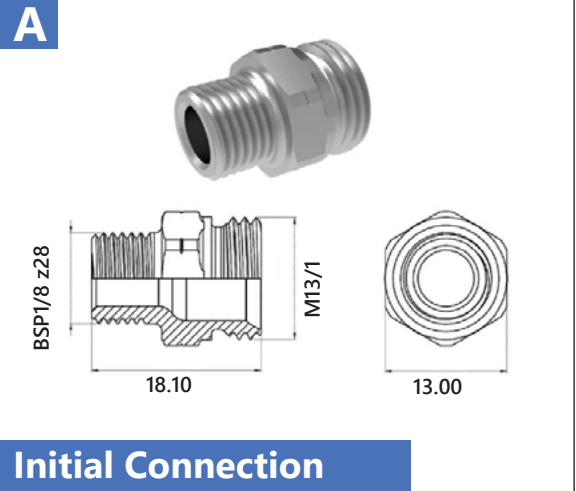
#### D. Fastening wrenches for the articulated system:

1 unit Wrenches for fastening the 2 hexagons used in the 6mm starter kit. SW13 & SW15

Maximum torque for locking the parts of the system: 6 Nm  
Maximum pressure: 100 Bar (1,450 psi)

**Starter Kit: Set of Components delivered in a basic kit for the most typical applications.**

**Call 413-562-4800 to order starter kit or inquire on more Coolant Distribution Components.**



# 10.5mm Articulated Coolant Distribution Starter Kit

Item# **DMH-FLEX-KIT-10.5MM**

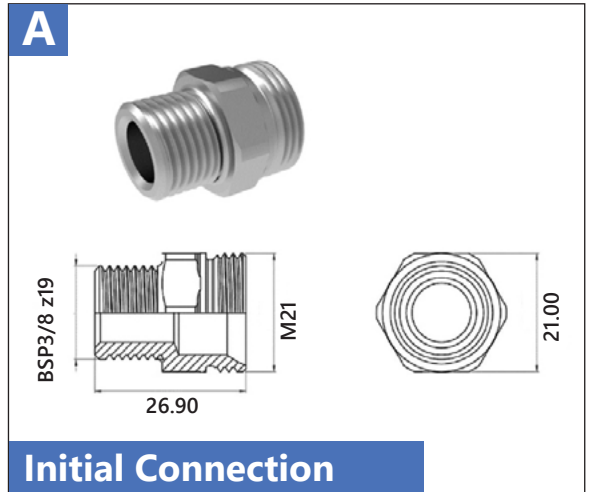
The internal through hole of the program is 10.5mm and is ideal for the distribution of air and refrigerant (oil or emulsion) in medium and large-sized machines such as CNC lathes, machining centers, grinding machines or as distribution branches of the 16mm program.

| Description   |
|---|
| <p><b>Kit Single Outlet 10.5mm</b><br/>For general cooling with a single outlet L=260mm.<br/>Weight: 440g.</p> <p><b>A. Initial Connection:</b><br/>1 Unit BSPP 3/8" (M) to articulated connection</p> <p><b>B. Articulated connection:</b><br/>5 units Articulated connection L:28.5mm<br/>1 unit Articulated connection L:78.5mm</p> <p><b>C. Coolant nozzles:</b><br/>1 unit Straight nozzle. ID: 10.5mm &amp; L:27mm</p> <p><b>D. Fastening wrenches for the articulated system:</b><br/>1 unit Wrenches for fastening the 2 hexagons used in the 10.5mm starter kit. SW21 &amp; SW24</p> |

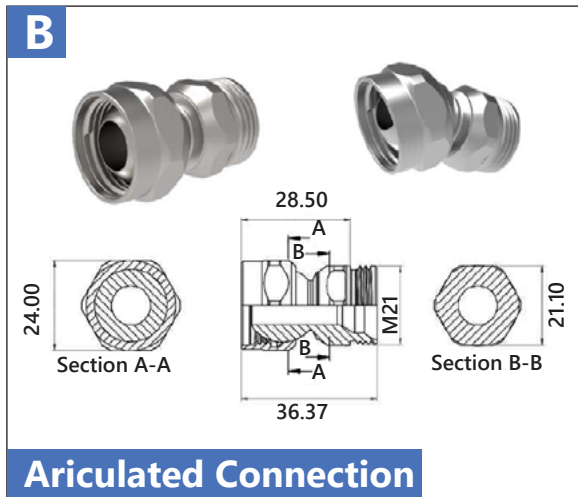
**Starter Kit: Set of Components delivered in a basic kit for the most typical applications.**

**Call 413-562-4800 to order starter kit or inquire on more Coolant Distribution Components.**

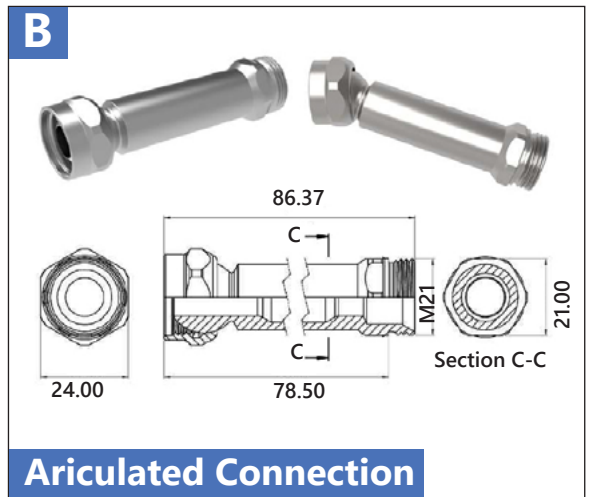
Maximum torque for locking the parts of the system: 28 Nm  
Maximum pressure: 80 Bar (1,160 psi)



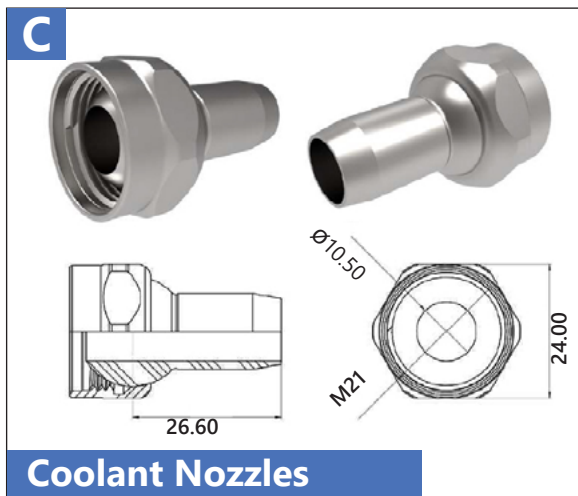
**Initial Connection**



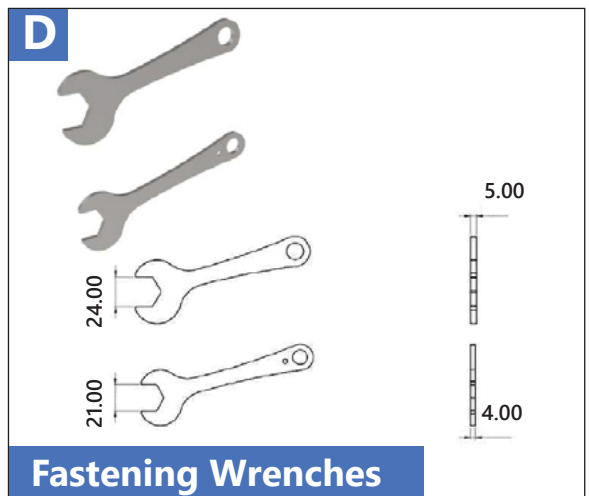
**Articulated Connection**



**Articulated Connection**



**Coolant Nozzles**



**Fastening Wrenches**

# 16mm Articulated Coolant Distribution Starter Kit

Item# **DMH-FLEX-KIT-16MM**

The internal through hole of the program is 16mm and is ideal for the distribution of air and refrigerant (oil or emulsion) in medium and large-sized machines such as CNC lathes, machining centers, driven tools or grinding machines.

**Description**

**Kit Single Outlet 16mm**  
 For general cooling with a single outlet L=206 mm.  
 Weight: 1248 g.

**A. Initial Connection:**  
 1 Unit BSPP 1/2" (M) to articulated connection

**B. Articulated connection:**  
 3 units Articulated connection L:37mm  
 1 unit Articulated connection L:87mm

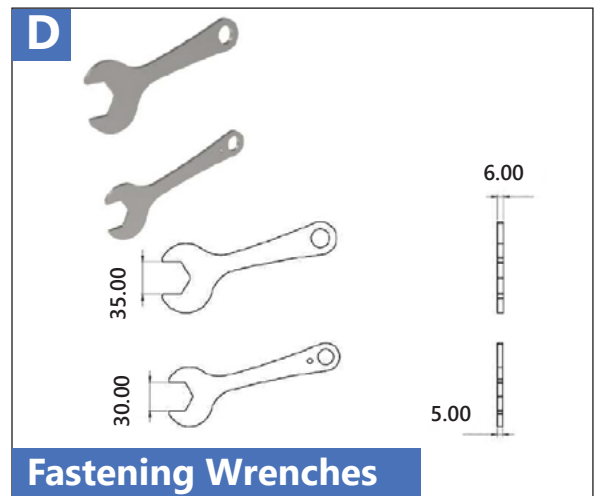
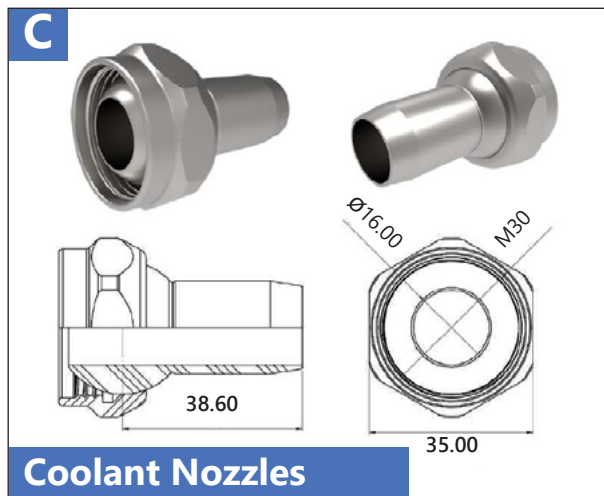
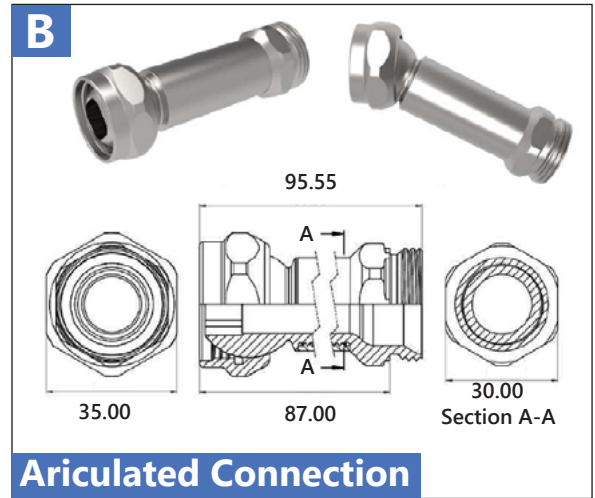
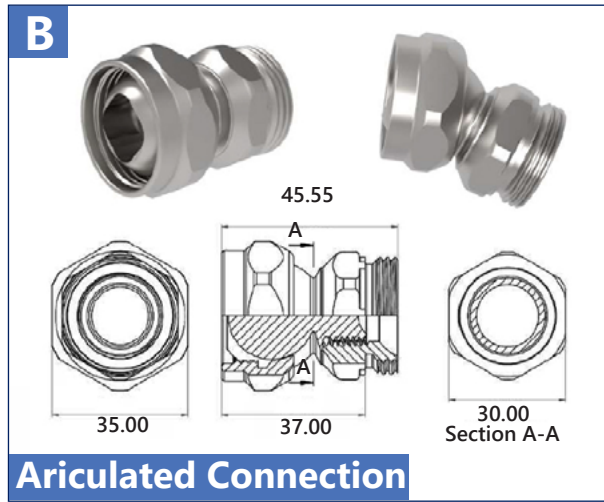
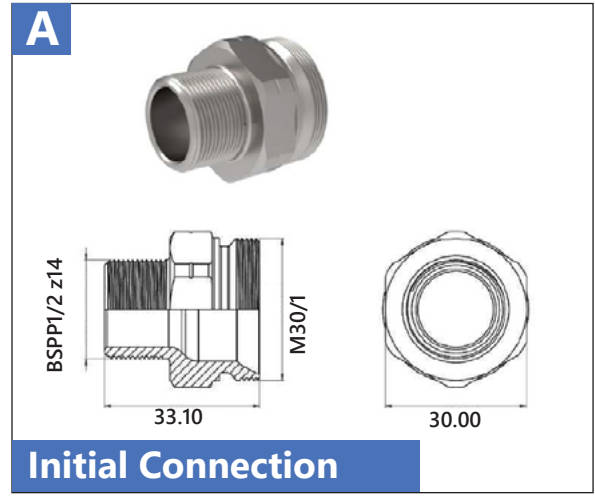
**C. Coolant nozzles:**  
 1 unit Straight nozzle. ID: 16 mm & L:38.5mm

**D. Fastening wrenches for the articulated system:**  
 1 unit Wrenches for fastening the 2 hexagons used in the 16mm starter kit. SW30 & SW35

**Starter Kit: Set of Components delivered in a basic kit for the most typical applications.**

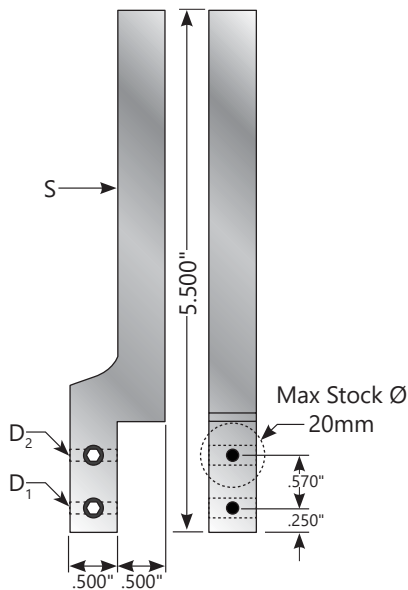
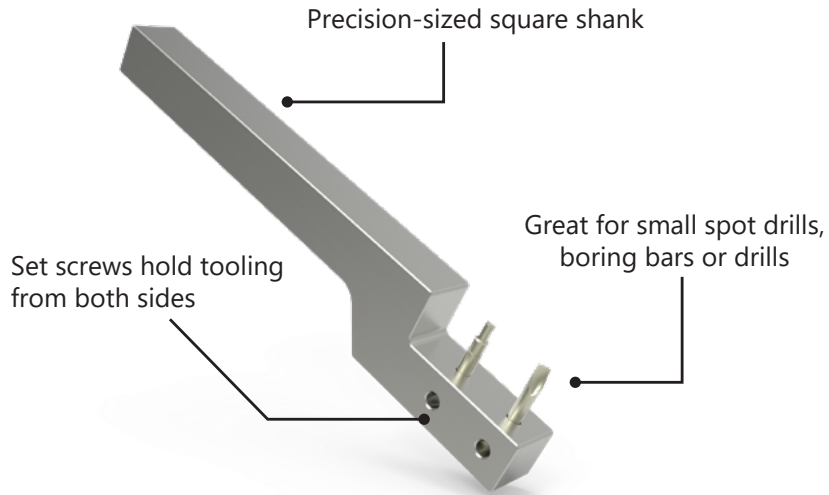
**Call 413-562-4800 to order starter kit or inquire on more Coolant Distribution Components.**

Maximum torque for locking the parts of the system: 40 Nm  
 Maximum pressure: 80 Bar (1,160 psi)





# The GenBore<sup>®</sup>-mini

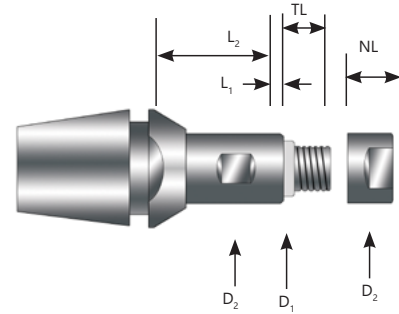
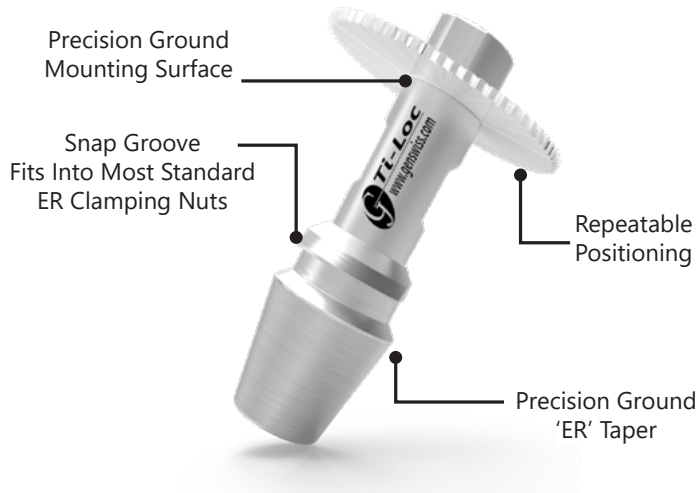


The GenBore-mini is an excellent solution for when you need to incorporate additional small ID tools into your setup. Low profile and interference-free in most Swiss machines, the GenBore-mini is ideal for small ID spotting, drilling, and boring.

- Effective solution for increasing ID tools capacity
- Interference-free design for smaller machines
- Accurately locates small shank ID tooling
- Custom options available - call for details

| Item No.    | Description                              | S     | D <sub>1</sub> | D <sub>2</sub> |
|-------------|--|-------|----------------|----------------|
| 6011-000375 | GenBore-mini blank 3/8" shank            | .500" | ---            | ---            |
| 6011-000200 | GenBore-mini blank 1/2" shank            | .500" | ---            | ---            |
| 6011-000201 | (2) .125" Tool Bores                     | .500" | .125"          | .125"          |
| 6011-000202 | (1) .125" Tool Bore (1) .1875" Tool bore | .500" | .125"          | .187"          |

# Ti-Loc® Slitting Saw Arbors



All Ti-Loc Saw Arbors Include (2) Saw Clamping Nuts



Nut w/Smaller Width For Clamping Thicker Saws

Standard Nut For Clamping Standard Saws

The Ti-Loc tool directly mounts into any ER Taper Live or Static Tool Position. Simply insert the Ti-Loc holder into most ER nuts and twist to align the locking cam profile just as you would any ER collet. It comes standard with ER11, ER16 and ER20 taper arbors that serve as their own collet, eliminating the need for a two-piece arbor system.

| ER11 Saw Arbors (Inch) |                    | SAW ID         | BODY DIAMETER  | JOURNAL THICKNESS | EXTENSION LENGTH | NUT LENGTH | THREAD LENGTH |
|------------------------|--------------------|----------------|----------------|-------------------|------------------|------------|---------------|
| Item No.               | Description        | D <sub>1</sub> | D <sub>2</sub> | L <sub>1</sub>    | L <sub>2</sub>   | NL         | TL            |
| 4800-000208            | SAT-11-3.18-064100 | .1250in        | 6.40mm         | .045mm            | 10.00mm          | 5.00mm     | 5.00mm        |
| 4800-000209            | SAT-11-3.18-064140 | .1250in        | 6.40mm         | .045mm            | 14.00mm          | 5.00mm     | 5.00mm        |
| 4800-000210            | SAT-11-3.18-064190 | .1250in        | 6.40mm         | .045mm            | 19.00mm          | 5.00mm     | 5.00mm        |
| 4800-000224            | SAT-11-3.18-064250 | .1250in        | 6.40mm         | .045mm            | 25.00mm          | 5.00mm     | 5.00mm        |
| 4800-000212            | SAT-11-4.76-080100 | .1875in        | 8.00mm         | .045mm            | 10.00mm          | 5.00mm     | 6.35mm        |
| 4800-000213            | SAT-11-4.76-080140 | .1875in        | 8.00mm         | .045mm            | 14.00mm          | 5.00mm     | 6.35mm        |
| 4800-000214            | SAT-11-4.76-080190 | .1875in        | 8.00mm         | .045mm            | 19.00mm          | 5.00mm     | 6.35mm        |
| 4800-000225            | SAT-11-4.76-080250 | .1875in        | 8.00mm         | .045mm            | 25.00mm          | 5.00mm     | 6.35mm        |

| ER11 Saw Arbors (Metric) |                    | SAW ID         | BODY DIAMETER  | JOURNAL THICKNESS | EXTENSION LENGTH | NUT LENGTH | THREAD LENGTH |
|--------------------------|--------------------|----------------|----------------|-------------------|------------------|------------|---------------|
| Item No.                 | Description        | D <sub>1</sub> | D <sub>2</sub> | L <sub>1</sub>    | L <sub>2</sub>   | NL         | TL            |
| 4800-000205              | SAT-11-3.00-064100 | 3.00mm         | 6.40mm         | 1.00mm            | 10.00mm          | 5.00mm     | 5.00mm        |
| 4800-000206              | SAT-11-3.00-064140 | 3.00mm         | 6.40mm         | 1.00mm            | 14.00mm          | 5.00mm     | 5.00mm        |
| 4800-000207              | SAT-11-3.00-064190 | 3.00mm         | 6.40mm         | 1.00mm            | 19.00mm          | 5.00mm     | 5.00mm        |
| 4800-000223              | SAT-11-3.00-064250 | 3.00mm         | 6.40mm         | 1.00mm            | 25.00mm          | 5.00mm     | 5.00mm        |
| 4800-000216              | SAT-11-5.00-080100 | 5.00mm         | 8.00mm         | 1.00mm            | 10.00mm          | 5.00mm     | 6.35mm        |
| 4800-000217              | SAT-11-5.00-080140 | 5.00mm         | 8.00mm         | 1.00mm            | 14.00mm          | 5.00mm     | 6.35mm        |
| 4800-000218              | SAT-11-5.00-080190 | 5.00mm         | 8.00mm         | 1.00mm            | 19.00mm          | 5.00mm     | 6.35mm        |
| 4800-000226              | SAT-11-5.00-080250 | 5.00mm         | 8.00mm         | 1.00mm            | 25.00mm          | 5.00mm     | 6.35mm        |
| 4800-000220              | SAT-11-6.00-080100 | 6.00mm         | 8.00mm         | 1.00mm            | 10.00mm          | 6.35mm     | 8.00mm        |
| 4800-000221              | SAT-11-6.00-080140 | 6.00mm         | 8.00mm         | 1.00mm            | 14.00mm          | 6.35mm     | 8.00mm        |
| 4800-000222              | SAT-11-6.00-080190 | 6.00mm         | 8.00mm         | 1.00mm            | 19.00mm          | 6.35mm     | 8.00mm        |
| 4800-000227              | SAT-11-6.00-080250 | 6.00mm         | 8.00mm         | 1.00mm            | 25.00mm          | 6.35mm     | 8.00mm        |

| ER16 Saw Arbors (Inch) |                    | SAW ID         | BODY DIAMETER  | JOURNAL THICKNESS | EXTENSION LENGTH | NUT LENGTH | THREAD LENGTH |
|------------------------|--------------------|----------------|----------------|-------------------|------------------|------------|---------------|
| Item No.               | Description        | D <sub>1</sub> | D <sub>2</sub> | L <sub>1</sub>    | L <sub>2</sub>   | NL         | TL            |
| 4800-000148            | SAT-16-3.18-064180 | .1250in        | .2519in        | .0017in           | .7086in          | 0.25in     | .2559in       |
| 4800-000149            | SAT-16-3.18-064240 | .1250in        | .2519in        | .0017in           | .9448in          | 0.25in     | .2559in       |
| 4800-000151            | SAT-16-4.76-095180 | .1875in        | .3740in        | .0017in           | .7086in          | 0.25in     | .2559in       |
| 4800-000154            | SAT-16-4.76-095240 | .1875in        | .3740in        | .0017in           | .9448in          | 0.25in     | .2559in       |
| 4800-000158            | SAT-16-6.35-095180 | .2500in        | .3740in        | .0017in           | .7086in          | 0.25in     | .2559in       |
| 4800-000162            | SAT-16-6.35-095240 | .2500in        | .3740in        | .0017in           | .9448in          | 0.25in     | .2559in       |
| 4800-000190            | SAT-16-7.94-100180 | .3125in        | .3937in        | .0017in           | .7086in          | 0.25in     | .2559in       |
| 4800-000168            | SAT-16-7.94-100240 | .3125in        | .3937in        | .0017in           | .9448in          | 0.25in     | .2559in       |
| 4800-000294            | SAT-16-7.94-100500 | .3125in        | .3937in        | .0017in           | 1.9685in         | 0.25in     | .2559in       |

| ER16 Saw Arbors (Metric) |                    | SAW ID         | BODY DIAMETER  | JOURNAL THICKNESS | EXTENSION LENGTH | NUT LENGTH | THREAD LENGTH |
|--------------------------|--------------------|----------------|----------------|-------------------|------------------|------------|---------------|
| Item No.                 | Description        | D <sub>1</sub> | D <sub>2</sub> | L <sub>1</sub>    | L <sub>2</sub>   | NL         | TL            |
| 4800-000146              | SAT-16-3.00-064180 | 3.00mm         | 6.40mm         | 1.00mm            | 18.00mm          | 6.35mm     | 6.50mm        |
| 4800-000147              | SAT-16-3.00-064240 | 3.00mm         | 6.40mm         | 1.00mm            | 24.00mm          | 6.35mm     | 6.50mm        |
| 4800-000152              | SAT-16-5.00-095180 | 5.00mm         | 9.50mm         | 1.00mm            | 18.00mm          | 6.35mm     | 6.50mm        |
| 4800-000185              | SAT-16-5.00-095240 | 5.00mm         | 9.50mm         | 1.00mm            | 24.00mm          | 6.35mm     | 6.50mm        |
| 4800-000156              | SAT-16-6.00-095180 | 6.00mm         | 9.50mm         | 1.00mm            | 18.00mm          | 6.35mm     | 6.50mm        |
| 4800-000159              | SAT-16-6.00-095240 | 6.00mm         | 9.50mm         | 1.00mm            | 24.00mm          | 6.35mm     | 6.50mm        |
| 4800-000191              | SAT-16-8.00-100180 | 8.00mm         | 10.00mm        | 1.00mm            | 18.00mm          | 6.35mm     | 6.50mm        |
| 4800-000186              | SAT-16-8.00-100240 | 8.00mm         | 10.00mm        | 1.00mm            | 24.00mm          | 6.35mm     | 6.50mm        |

| ER20 Saw Arbors (Inch) |                    | SAW ID         | BODY DIAMETER  | JOURNAL THICKNESS | EXTENSION LENGTH | NUT LENGTH | THREAD LENGTH |
|------------------------|--------------------|----------------|----------------|-------------------|------------------|------------|---------------|
| Item No.               | Description        | D <sub>1</sub> | D <sub>2</sub> | L <sub>1</sub>    | L <sub>2</sub>   | NL         | TL            |
| 4800-000236            | SAT-20-3.18-064180 | .125in         | .2519in        | .0017in           | .7086in          | .25in      | .2559in       |
| 4800-000237            | SAT-20-3.18-064300 | .125in         | .2519in        | .0017in           | 1.181in          | .25in      | .2559in       |
| 4800-000242            | SAT-20-4.76-095180 | .1875in        | .2519in        | .0017in           | .7086in          | .25in      | .3051in       |
| 4800-000243            | SAT-20-4.76-095300 | .1875in        | .2519in        | .0017in           | 1.1811in         | .25in      | .3051in       |
| 4800-000257            | SAT-20-6.35-095180 | .2500in        | .3740in        | .0017in           | .7086in          | .25in      | .3051in       |
| 4800-000258            | SAT-20-6.35-095300 | .2500in        | .3740in        | .0017in           | 1.1811in         | .25in      | .3051in       |
| 4800-000262            | SAT-20-7.94-100180 | .3125in        | .3937in        | .0017in           | .7086in          | .25in      | .3051in       |
| 4800-000263            | SAT-20-7.94-100300 | .3125in        | .3937in        | .0017in           | 1.1811in         | .25in      | .3051in       |
| 4800-000270            | SAT-20-9.52-125180 | .3750in        | .4921in        | .0017in           | .7086in          | .27in      | .3543in       |
| 4800-000271            | SAT-20-9.52-125300 | .3750in        | .4921in        | .0017in           | 1.1811in         | .27in      | .3543in       |

| ER20 Saw Arbors (Metric) |                    | SAW ID         | BODY DIAMETER  | JOURNAL THICKNESS | EXTENSION LENGTH | NUT LENGTH | THREAD LENGTH |
|--------------------------|--------------------|----------------|----------------|-------------------|------------------|------------|---------------|
| Item No.                 | Description        | D <sub>1</sub> | D <sub>2</sub> | L <sub>1</sub>    | L <sub>2</sub>   | NL         | TL            |
| 4800-000232              | SAT-20-3.00-064180 | 3.00mm         | 6.40mm         | 1.00mm            | 18.00mm          | 6.35mm     | 6.50mm        |
| 4800-000233              | SAT-20-3.00-064300 | 3.00mm         | 6.40mm         | 1.00mm            | 30.00mm          | 6.35mm     | 6.50mm        |
| 4800-000246              | SAT-20-5.00-095180 | 5.00mm         | 9.50mm         | 1.00mm            | 18.00mm          | 6.35mm     | 7.75mm        |
| 4800-000247              | SAT-20-5.00-095300 | 5.00mm         | 9.50mm         | 1.00mm            | 30.00mm          | 6.35mm     | 7.75mm        |
| 4800-000252              | SAT-20-6.00-095180 | 6.00mm         | 9.50mm         | 1.00mm            | 18.00mm          | 6.35mm     | 8.50mm        |
| 4800-000253              | SAT-20-6.00-095300 | 6.00mm         | 9.50mm         | 1.00mm            | 30.00mm          | 6.35mm     | 8.50mm        |
| 4800-000266              | SAT-20-8.00-100180 | 8.00mm         | 10.00mm        | 1.00mm            | 18.00mm          | 6.35mm     | 7.75mm        |
| 4800-000267              | SAT-20-8.00-100300 | 8.00mm         | 10.00mm        | 1.00mm            | 30.00mm          | 6.35mm     | 7.75mm        |
| 4800-000274              | SAT-20-10.0-125180 | 10.00mm        | 12.50mm        | 1.00mm            | 18.00mm          | 7.00mm     | 9.00mm        |
| 4800-000275              | SAT-20-10.0-125300 | 10.00mm        | 12.50mm        | 1.00mm            | 30.00mm          | 7.00mm     | 9.00mm        |

# Signature Series Saw Arbors

## Custom Slitting Saw Arbors

GenSwiss has the capability to assist with the engineering and manufacture of special gang slotting arbors that also feature the option of holding an end mill, spot drill or other small round shank rotary tool.

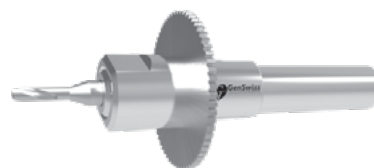
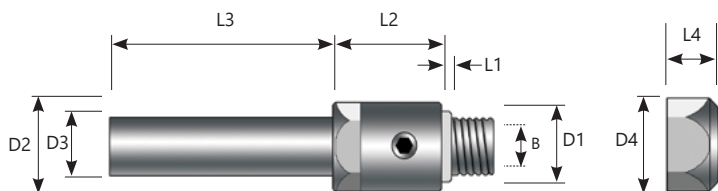
Some features we provide:

- Spacers for gang slotting with multiple blades.
- Custom hub widths (L1 dim.) for oversize blade thicknesses.
- Optional shank sizes for special applications.



## Combination Saw Arbors

GenSwiss combination arbors are made from pre-hardened material and exemplify what it means to be called "Swiss Precision". The addition of the combined mill or center drill provides additional tool capacity and setup flexibility.



### Combination Saw Arbors - 5015 Series (Inch)

| Tool Bore (B) | Hub    |        | Body   |        | Shaft  |         | Nut    |        | Item No.    | Description     |
|---------------|--------|--------|--------|--------|--------|---------|--------|--------|-------------|-----------------|
|               | D1     | L1     | D2     | L2     | D3     | L3      | D4     | L4     |             |                 |
| .1181in       | .250in | .125in | .375in | .625in | .250in | 1.375in | .375in | .375in | 5015-000109 | SAC-N250-250118 |
|               | .312in | .125in | .375in | .625in | .312in | 1.375in | .375in | .375in | 5015-000111 | SAC-N312-312118 |
|               | .375in | .125in | .500in | .625in | .375in | 1.375in | .500in | .374in | 5015-000114 | SAC-N375-375118 |
| .1250in       | .250in | .125in | .375in | .625in | .250in | 1.375in | .375in | .375in | 5015-000108 | SAC-N250-250125 |
|               | .312in | .125in | .375in | .625in | .312in | 1.375in | .375in | .375in | 5015-000110 | SAC-N312-312125 |
|               | .375in | .125in | .500in | .625in | .375in | 1.375in | .500in | .375in | 5015-000101 | SAC-N375-375125 |
| .1875in       | .312in | .125in | .375in | .625in | .312in | 1.375in | .375in | .375in | 5015-000112 | SAC-N312-312187 |
|               | .375in | .125in | .500in | .625in | .375in | 1.375in | .500in | .375in | 5015-000102 | SAC-N375-375187 |

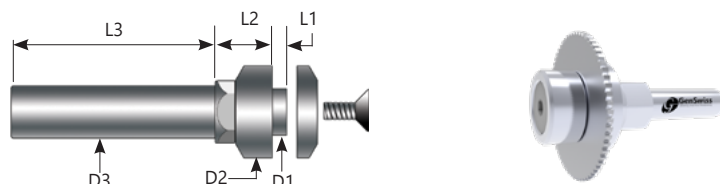
### Combination Saw Arbors - 5015 Series (Metric)

| Tool Bore (B) | Hub     |        | Body    |         | Shaft   |         | Nut     |        | Item No.    | Description     |
|---------------|---------|--------|---------|---------|---------|---------|---------|--------|-------------|-----------------|
|               | D1      | L1     | D2      | L2      | D3      | L3      | D4      | L4     |             |                 |
| 3.00mm        | 8.00mm  | 3.00mm | 8.00mm  | 16.00mm | 8.00mm  | 35.00mm | 9.50mm  | 9.50mm | 5015-000113 | SAC-N315-315118 |
|               | 10.00mm | 3.00mm | 12.70mm | 16.00mm | 10.00mm | 35.00mm | 12.70mm | 9.50mm | 5015-000115 | SAC-N394-394118 |
| .0049mm       | 8.00mm  | 3.00mm | 9.50mm  | 16.00mm | 8.00mm  | 35.00mm | 9.50mm  | 9.50mm | 5015-000105 | SAC-N315-315125 |
|               | 10.00mm | 3.00mm | 12.70mm | 16.00mm | 10.00mm | 35.00mm | 12.70mm | 9.50mm | 5015-000106 | SAC-N394-394125 |
| .0073mm       | 8.00mm  | 3.00mm | 9.50mm  | 16.00mm | 8.00mm  | 35.00mm | 9.50mm  | 9.50mm | 5015-000100 | SAC-N315-315187 |
|               | 10.00mm | 3.00mm | 12.70mm | 16.00mm | 10.00mm | 35.00mm | 12.70mm | 9.50mm | 5015-000103 | SAC-N394-394187 |

# Signature Series Saw Arbors

## Flange Mount Saw Arbors - 5020 (SAF)

These flanged saw arbors provide maximum saw balance and stability with the flange mount design. The unique design applies pressure to the outward edge of the flange ensuring the greatest gripping power at the outer most edge to prevent slipping. Uses countersunk screw and flange washer to apply holding force. Measured TIR is less than .0002".



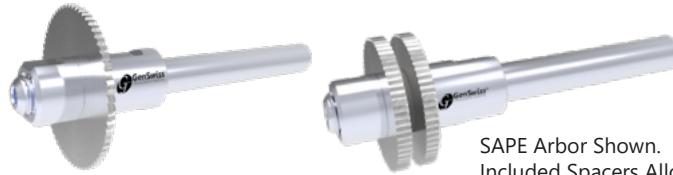
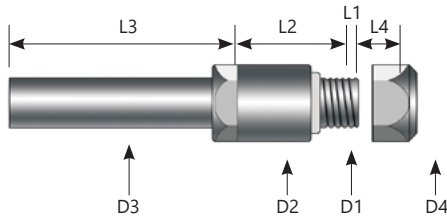
| Flange Mount (Inch) |                       | SAW ID  | JOURNAL THICKNESS | BODY DIAMETER | EXTENSION LENGTH | SHANK DIAMETER | SHANK LENGTH |
|---------------------|-----------------------|---------|-------------------|---------------|------------------|----------------|--------------|
| Item No.            | Description           | D1      | L1                | D2            | L2               | D3             | L3           |
| 5021-000006         | SAF-047013-473895-M3F | .1874in | .05in             | .37in         | .47in            | .187in         | 1.50in       |
| 5021-000008         | SAF-079016-793816-M5F | .3125in | .065in            | .625in        | .53in            | .312in         | 1.50in       |
| 5021-000009         | SAF-095025-953816-M6F | .375in  | .098in            | .625in        | .54in            | .374in         | 1.50in       |
| 5021-000007         | SAF-063013-633811-M4F | .250in  | .05in             | .448in        | .47in            | .25in          | 1.50in       |
| 5021-000014         | SAF-063028-041611-M4F | .250in  | .108in            | .448in        | .44in            | .157in         | 1.00in       |
| 5021-000002         | SAF-095011-042511-C11 | .3750in | .045in            | .450in        | .751in           | .156in         | 1.00in       |

| Flange Mount (Metric) |                       | SAW ID  | JOURNAL THICKNESS | BODY DIAMETER | EXTENSION LENGTH | SHANK DIAMETER | SHANK LENGTH |
|-----------------------|-----------------------|---------|-------------------|---------------|------------------|----------------|--------------|
| Item No.              | Description           | D1      | L1                | D2            | L2               | D3             | L3           |
| 5020-000100           | SAF-050010-503809-M4F | 5.00mm  | 1.00mm            | 9.00mm        | 12.00mm          | 5.00mm         | 38.0mm       |
| 5020-000101           | SAF-050010-703812-M4F | 5.00mm  | 1.00mm            | 12.00mm       | 12.00mm          | 7.00mm         | 38.0mm       |
| 5020-000111           | SAF-050010-704212-M4F | 5.00mm  | 1.00mm            | 12.00mm       | 7.60mm           | 7.00mm         | 42.0mm       |
| 5020-000103           | SAF-080016-703818-M5F | 8.00mm  | 1.60mm            | 18.00mm       | 13.00mm          | 7.00mm         | 38.00mm      |
| 5020-000104           | SAF-080016-104514-M5F | 8.00mm  | 1.60mm            | 14.00mm       | 14.00mm          | 10.00mm        | 45.00mm      |
| 5020-000105           | SAF-080040-104514-M5F | 8.00mm  | 4.00mm            | 14.00mm       | 14.00mm          | 10.00mm        | 45.00mm      |
| 5021-000010           | SAF-095025-071918-M5F | 9.52mm  | 2.50mm            | 18.00mm       | 14.00mm          | 7.00mm         | 19.00mm      |
| 5020-000108           | SAF-100025-134520-M6F | 10.00mm | 2.50mm            | 20.00mm       | 16.00mm          | 13.00mm        | 45.00mm      |
| 5021-000001           | SAF-100025-071918-C15 | 10.00mm | 2.50mm            | 19.00mm       | 14.00mm          | 7.00mm         | 19.00mm      |
| 5021-000004           | SAF-100025-071918-C18 | 10.00mm | 2.50mm            | 18.00mm       | 14.00mm          | 7.00mm         | 19.00mm      |
| 5020-000106           | SAF-130025-134522-M6F | 13.00mm | 2.50mm            | 22.00mm       | 16.00mm          | 13.00mm        | 45.00mm      |
| 5021-000011           | SAF-160025-071919-C19 | 16.00mm | 2.50mm            | 19.00mm       | 14.00mm          | 7.00mm         | 19.00mm      |
| 5020-000107           | SAF-160025-134525-M6F | 16.00mm | 2.50mm            | 25.00mm       | 16.00mm          | 13.00mm        | 45.00mm      |

# Signature Series Saw Arbors

## Precision Saw Arbors - 5025 Series

Our most popular style of slitting saw arbor is available in guaranteed TIR grade SAP (border .0002" TIR) and the extended journal version SAPE. When ULTRA Precision is required the SAP guide is suggested as they are held to stringent quality standards required by discerning Swiss-type machinists.

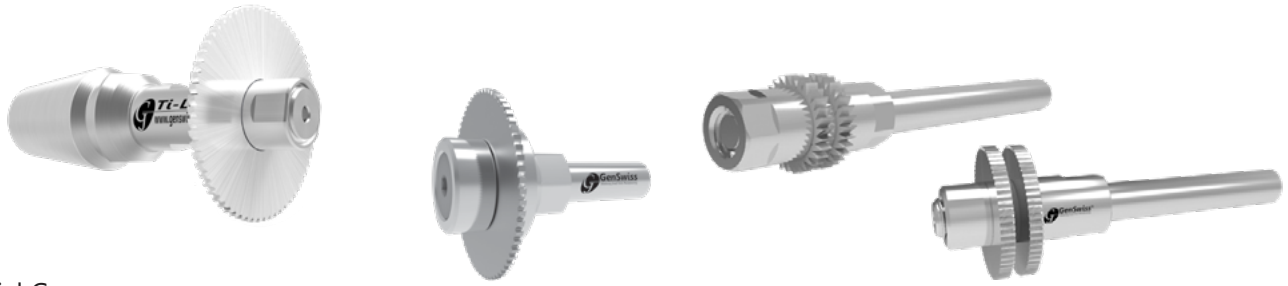


SAPE Arbor Shown.  
Included Spacers Allow For  
Double Saw Configuration.

| ULTRA Precision (Inch) |                     | SAW ID  | JOURNAL THICKNESS | BODY Ø | EXTENSION LENGTH | SHANK DIAMETER | SHANK LENGTH | NUT DIAMETER | NUT LENGTH |                 |
|------------------------|---------------------|---------|-------------------|--------|------------------|----------------|--------------|--------------|------------|-----------------|
| Item No.               | Description         | D1      | L1                | D2     | L2               | D3             | L3           | D4           | L4         | Includes Spacer |
| 5025-000102            | SAP-N1250-1250      | .1250in | .025in            | .197in | .500in           | .125in         | 1.0in        | .197in       | .185in     | No              |
| 5025-000103            | SAP-N1875-1875      | .1875in | .045in            | .315in | .500in           | .187in         | 1.4in        | .315in       | .305in     | No              |
| 5025-000104            | SAP-N2500-2500      | .2500in | .045in            | .394in | .500in           | .250in         | 1.4in        | .394in       | .305in     | No              |
| 5025-000105            | SAP-N3125-3125      | .3125in | .045in            | .450in | .500in           | .312in         | 1.4in        | .450in       | .305in     | No              |
| 5025-000106            | SAP-N3750-3750      | .3750in | .045in            | .500in | .500in           | .375in         | 1.4in        | .500in       | .305in     | No              |
| 5025-000107            | SAP-N5000-5000      | .5000in | .045in            | .625in | .500in           | .500in         | 1.4in        | .625in       | .305in     | No              |
| 5025-000113            | SAPE-N2500-2500-6.0 | .2500in | .236in            | .453in | .500in           | .250in         | 1.4in        | .453in       | .349in     | Yes             |

| ULTRA Precision (Metric) |                     | SAW ID  | JOURNAL THICKNESS | BODY Ø  | EXTENSION LENGTH | SHANK DIAMETER | SHANK LENGTH | NUT Ø   | NUT LENGTH |                 |
|--------------------------|---------------------|---------|-------------------|---------|------------------|----------------|--------------|---------|------------|-----------------|
| Item No.                 | Description         | D1      | L1                | D2      | L2               | D3             | L3           | D4      | L4         | Includes Spacer |
| 5025-000114              | SAP-N0500-0300      | 5.00mm  | 1.00mm            | 8.00mm  | 11.50mm          | 3.00mm         | 38.00mm      | 8.00mm  | 6.35mm     | No              |
| 5025-000100              | SAP-N0500-0500      | 5.00mm  | 1.00mm            | 8.00mm  | 11.50mm          | 5.00mm         | 38.00mm      | 8.00mm  | 6.35mm     | No              |
| 5025-000116              | SAP-N0507-0738      | 5.00mm  | 3.00mm            | 7.00mm  | 13.20mm          | 7.00mm         | 25.65mm      | 7.00mm  | 9.50mm     | No              |
| 5025-000117              | SAP-N1970-1970      | 5.00mm  | 3.00mm            | 7.00mm  | 16.50mm          | 5.00mm         | 30.00mm      | 7.00mm  | 9.50mm     | No              |
| 5025-000101              | SAP-N0800-0800      | 8.00mm  | 1.00mm            | 11.50mm | 11.30mm          | 8.00mm         | 35.00mm      | 11.50mm | 8.00mm     | No              |
| 5025-000109              | SAP-N1000-1000      | 10.00mm | 1.00mm            | 13.50mm | 16.60mm          | 10.00mm        | 30.00mm      | 13.50mm | 8.00mm     | No              |
| 5025-000111              | SAPE-N0500-0500-6.0 | 5.00mm  | 6.00mm            | 8.00mm  | 12.70mm          | 5.00mm         | 35.60mm      | 8.00mm  | 8.85mm     | Yes             |
| 5025-000112              | SAPE-N0800-0800-6.0 | 8.00mm  | 6.00mm            | 10.00mm | 12.70mm          | 8.00mm         | 35.60mm      | 10.00mm | 8.85mm     | Yes             |

# Slitting Saw Speeds & Feeds



## Material Groups

| Group 1                             | Group 2                          | Group 3                           | Group 4                            | Group 5               | Group 6             | Group 7 | Group 8   | Group 9     |
|-------------------------------------|----------------------------------|-----------------------------------|------------------------------------|-----------------------|---------------------|---------|-----------|-------------|
| Steels up to 50 daN/mm <sup>2</sup> | Steels 50-80 daN/mm <sup>2</sup> | Steels 80-100 daN/mm <sup>2</sup> | Steels 100-130 daN/mm <sup>2</sup> | Alloyed Steels CR, Ni | Tough Materials     | Copper  | Aluminium | Plastic     |
| Construction steels                 | Construction steels              | Construction steels               | Stainless steels                   | Stainless steels      | High alloyed steels | Brass   |           | Thermoplast |
| Tempering steels                    | Tempering steels                 | Tempering steels                  | Alloyed tool steels                | Heat resisting steels | Nickel Alloys       | Bronze  |           | Duroplast   |
| Case hardening steels               | Spring steels                    | Nitrid steels                     | High speed steels                  | Titanium alloys       | Inconel             |         |           |             |
| Steels for automatic lathes         | Case hardening steels            | Cast iron >180 HB                 | Heat resisting steels              |                       | Waspalloy           |         |           |             |
|                                     | Non-alloyed tool steels          | Spring steels                     | Cast iron >180 HB                  |                       | Nimonic             |         |           |             |
|                                     |                                  | Tool steels                       |                                    |                       |                     |         |           |             |

## Surface Feet Per Minute

| Material Group 1 | Material Group 2 | Material Group 3 | Material Group 4 | Material Group 5 | Material Group 6 | Material Group 7 | Material Group 8 | Material Group 9 |
|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| 525              | 460              | 330              | 280              | 230              | 130              | 625              | 820              | 1640             |

## RPM Per Diameter

|       | Material Group 1 | Material Group 2 | Material Group 3 | Material Group 4 | Material Group 5 | Material Group 6 | Material Group 7 | Material Group 8 | Material Group 9 |
|-------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| 15 mm | 3400             | 3000             | 2125             | 1800             | 1500             | 840              | 4000             | 5300             | 10600            |
| 20 mm | 2550             | 2200             | 1600             | 1360             | 1120             | 630              | 3000             | 4000             | 7950             |
| 25 mm | 2038             | 1800             | 1280             | 1100             | 900              | 500              | 2425             | 3200             | 6365             |
| 30 mm | 1700             | 1500             | 1065             | 900              | 750              | 420              | 2000             | 2650             | 5300             |
| 40 mm | 1275             | 1100             | 800              | 680              | 560              | 315              | 1500             | 2000             | 3975             |

## Feed Per Tooth

| Material Group 1 | Material Group 2 | Material Group 3 | Material Group 4 | Material Group 5 | Material Group 6 | Material Group 7 | Material Group 8 | Material Group 9 |
|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| .0005"-.001"     | .0005"-.001"     | .0004"-.0008"    | .0004"-.0008"    | .0003"-.0006"    | .0003"-.0006"    | .0006"-.0012"    | .0006"-.0012"    | .0005"-.001"     |

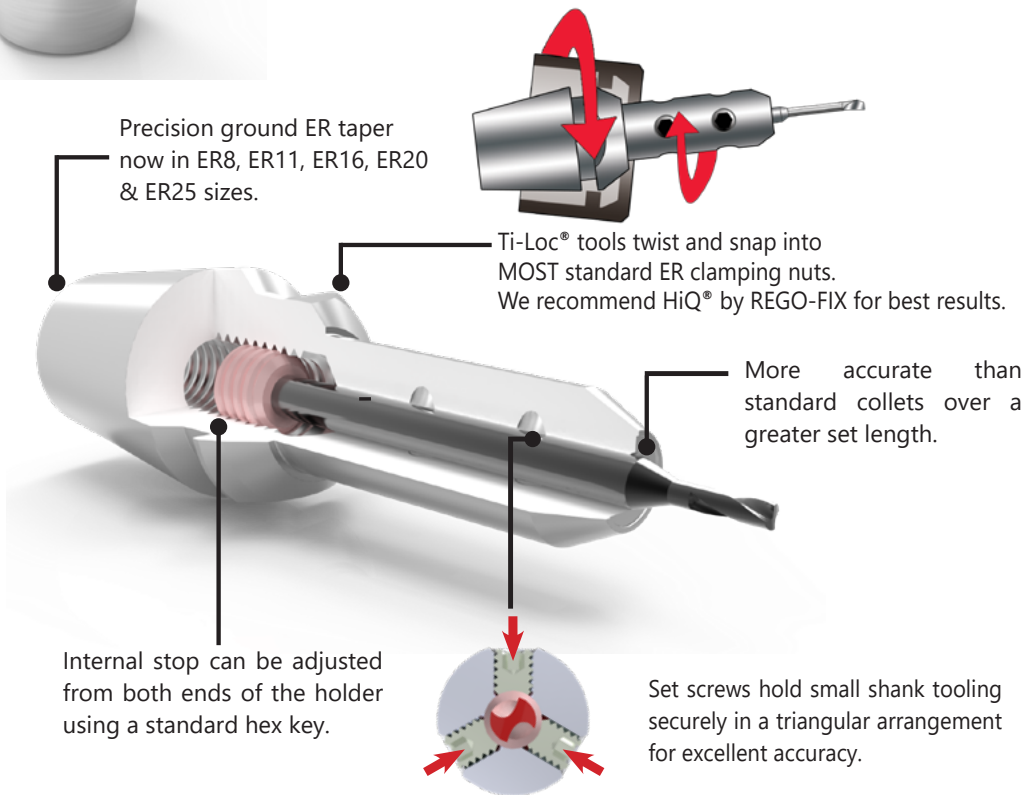


# Ti-Loc<sup>®</sup> Mill Extensions

Patented

The BEST Method For Running  
Micro End Mills In Your CNC Swiss

- Enables micro tools to clear the guide bushing
- Maintains exceptional TIR at extended length
- Solves deflection and chatter issues
- Coolant-thru versions for ER16 sizes
- TIR <.0002in



## Replacement Stop Screws

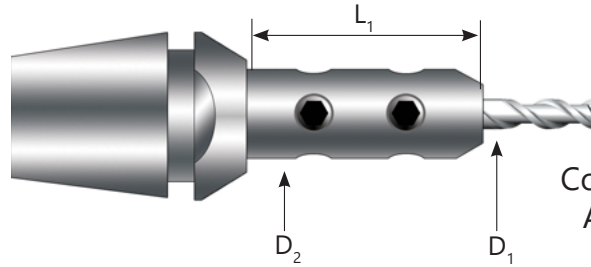
| Item No.    | Size | Fits      |
|-------------|------|-----------|
| 8999-000021 | M6   | ER11      |
| 8999-000206 | M8   | ER16 & 20 |
| 8999-000210 | M10  | ER25      |



## Replacement Set Screws

| Item No.    | Size |
|-------------|------|
| 8999-000011 | M3   |
| 8999-000007 | M4   |
| 8999-000214 | M5   |





Coolant-Thru Versions Available For ER16!

## ER8

| Item No.    | Description        | $L_1$ | $D_1$  | $D_2$ |
|-------------|--------------------|-------|--------|-------|
| 4900-110100 | CTE-08-1.00-064100 | 10    | 1      | 6.4   |
| 4900-110150 | CTE-08-1.50-064100 |       | 1.5    | 6.4   |
| 4900-110159 | CTE-08-1.59-064100 |       | .062in | 6.4   |
| 4900-110200 | CTE-08-2.00-064100 |       | 2      | 6.4   |
| 4900-110300 | CTE-08-3.00-070100 |       | 3      | 7     |
| 4900-110318 | CTE-08-3.18-070100 |       | .125in | 7     |
| 4900-115100 | CTE-08-1.00-064150 | 15    | 1      | 6.4   |
| 4900-115150 | CTE-08-1.50-064150 |       | 1.5    | 6.4   |
| 4900-115159 | CTE-08-1.59-064150 |       | .062in | 6.4   |
| 4900-115200 | CTE-08-2.00-064150 |       | 2      | 6.4   |
| 4900-115300 | CTE-08-3.00-070150 |       | 3      | 7     |
| 4900-115318 | CTE-08-3.18-070150 |       | .125in | 7     |

NOTE: ER8 Holders Include a special M10x.75 clamping nut.

## ER11

| Item No.    | Description        | $L_1$ | $D_1$  | $D_2$ |
|-------------|--------------------|-------|--------|-------|
| 4900-210100 | CTE-11-1.00-064100 | 10    | 1      | 6.4   |
| 4900-210150 | CTE-11-1.50-064100 |       | 1.5    | 6.4   |
| 4900-210159 | CTE-11-1.59-064100 |       | .062in | 6.4   |
| 4900-210200 | CTE-11-2.00-064100 |       | 2      | 6.4   |
| 4900-210300 | CTE-11-3.00-080100 |       | 3      | 8     |
| 4900-210318 | CTE-11-3.18-080100 |       | .125in | 8     |
| 4900-215300 | CTE-11-3.00-080150 | 15    | 3      | 8     |
| 4900-215318 | CTE-11-3.18-080150 |       | .125in | 8     |
| 4900-210400 | CTE-11-4.00-080100 |       | 4      | 8     |
| 4900-215400 | CTE-11-4.00-080150 | 16    | 4      | 8     |
| 4900-216400 | CTE-11-4.00-080160 |       | 4      | 8     |
| 4900-220300 | CTE-11-3.00-080200 | 20    | 3      | 8     |
| 4900-220318 | CTE-11-3.18-080200 |       | .125in | 8     |
| 4900-220400 | CTE-11-4.00-080200 |       | 4      | 8     |

## ER16

| Item No.       | Description         | $L_1$ | $D_1$  | $D_2$ |
|----------------|---------------------|-------|--------|-------|
| 4900-306318    | CTE-16-3.18-095060  | 6mm   | 1/8in  | 9.5   |
| 4900-316100    | CTE-16-1.00-064160  | 16    | 1      | 6.4   |
| 4900-316150    | CTE-16-1.50-064160  |       | 1.5    | 6.4   |
| 4900-316159    | CTE-16-1.59-064160  |       | .062in | 6.4   |
| 4900-316200    | CTE-16-2.00-064160  |       | 2      | 6.4   |
| 4900-316300    | CTE-16-3.00-095160  |       | 3      | 8     |
| 4900-316318    | CTE-16-3.18-095160  |       | .187in | 9.5   |
| 4900-316400    | CTE-16-4.00-095160  | 20    | 4      | 9.5   |
| 4900-316476    | CTE-16-4.76-095160  |       | .187in | 9.5   |
| 4900-316500    | CTE-16-5.00-095160  |       | 5      | 9.5   |
| 4900-320300    | CTE-16-3.00-095200  | 25    | 3      | 9.5   |
| 4900-325300    | CTE-16-3.00-095250  |       | 3      | 9.5   |
| * 4900-325300C | CTE-16-3.00-095250C | 25    | 3      | 9.5   |
| 4900-325318    | CTE-16-3.18-095250  |       | .125in | 9.5   |
| * 4900-325318C | CTE-16-3.18-095250C | 25    | .125in | 9.5   |
| 4900-325400    | CTE-16-4.00-095250  |       | 4      | 9.5   |
| 4900-325476    | CTE-16-4.76-095250  | 25    | .187in | 9.5   |
| 4900-325500    | CTE-16-5.00-095250  |       | 5      | 9.5   |
| 4900-340476    | CTE-16-4.76-095400  |       | 3/16in | 9.5   |

\* Coolant-Thru Version

## ER20

| Item No.    | Description        | $L_1$ | $D_1$  | $D_2$ |
|-------------|--------------------|-------|--------|-------|
| 4900-414300 | CTE-20-3.00-095140 | 14    | 3      | 9.5   |
| 4900-414476 | CTE-20-4.76-114140 |       | .187in | 11.4  |
| 4900-414500 | CTE-20-5.00-114140 |       | 5      | 11.4  |
| 4900-414600 | CTE-20-6.00-125140 |       | 6      | 12.5  |
| 4900-414635 | CTE-20-6.35-125140 | 16    | .250in | 12.5  |
| 4900-416318 | CTE-20-3.18-095160 |       | .125in | 9.5   |
| 4900-416400 | CTE-20-4.00-095160 |       | 4      | 9.5   |
| 4900-416476 | CTE-20-4.76-114160 | 25    | .187in | 11.4  |
| 4900-425300 | CTE-20-3.00-095250 |       | 3      | 9.5   |
| 4900-425318 | CTE-20-3.18-095250 | 25    | .125in | 9.5   |
| 4900-425400 | CTE-20-4.00-095250 |       | 4      | 9.5   |
| 4900-425476 | CTE-20-4.76-114250 | 25    | .187in | 11.4  |
| 4900-425500 | CTE-20-5.00-114250 |       | 5      | 11.4  |
| 4900-425600 | CTE-20-6.00-125250 |       | 6      | 12.5  |
| 4900-425635 | CTE-20-6.35-125250 | 25    | .250in | 12.5  |

## Collet Reduction

| Item No.    | Description      | Shank Size | Collet Size | Extension Length |
|-------------|------------------|------------|-------------|------------------|
| 4910-000100 | RTE-16-08-100254 | ER16       | ER8         | 1.0 in           |



Extend the reach of your tools with superior TIR

Special sizes available upon request. Quick turnaround time. Please call 413-562-4800 for additional sizes.

## ER25

| Item No.    | Description        | $L_1$ | $D_1$  | $D_2$ |
|-------------|--------------------|-------|--------|-------|
| 4900-525300 | CTE-25-3.00-100250 | 25    | 3      | 10    |
| 4900-525318 | CTE-25-3.18-100250 |       | .125in | 10    |
| 4900-525400 | CTE-25-4.00-100250 |       | 4      | 10    |
| 4900-525476 | CTE-25-4.76-125250 |       | .187in | 12.5  |
| 4900-525500 | CTE-25-5.00-125250 |       | 5      | 12.5  |
| 4900-525600 | CTE-25-6.00-125250 |       | 6      | 12.5  |
| 4900-525635 | CTE-25-6.35-125250 |       | .250in | 12.5  |
| 4900-525700 | CTE-25-7.00-160250 |       | 7      | 16    |
| 4900-525794 | CTE-25-7.94-160250 |       | .312in | 16    |
| 4900-525800 | CTE-25-8.00-160250 |       | 8      | 16    |

# GENQUICK

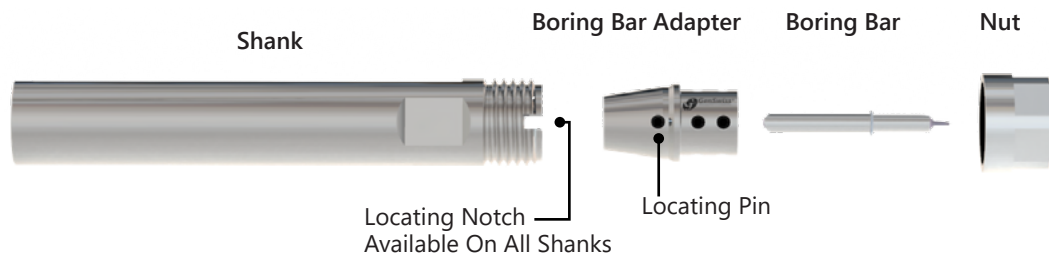
## QUICK-CHANGE TOOL HOLDING SOLUTIONS

The GenQuick tooling system helps new users as well as seasoned veterans achieve faster setups and tool changes through the use of tool holder adaptors and quick-change modules that can be preset and are based on the ER standard tool holding system.

These collet sleeves are cost effective solutions to tool holding and are available in a variety of both inch and metric sized shank diameters, and feature a solid shank for rigidity and a side coolant port for connection to a high-pressure coolant delivery system. Every unit has a notched collet taper for easy tool orientation when combined with quick-change boring bar adapters.



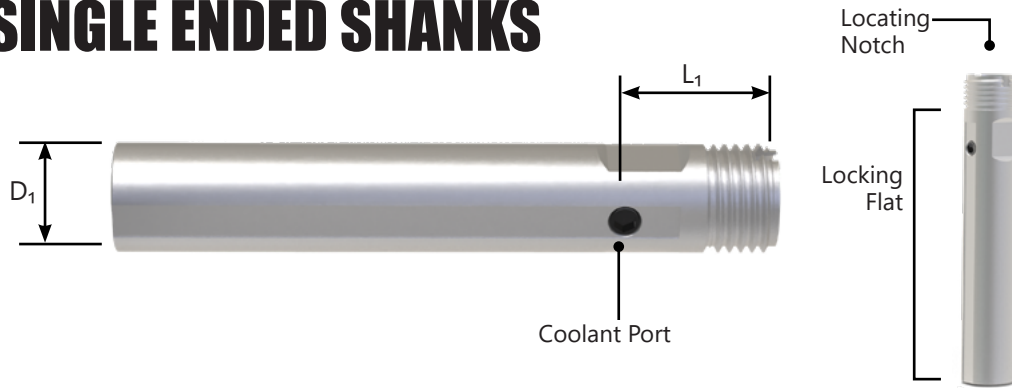
### Single Ended Shank Used With The Quick-Change Boring Bar Adapter



### Single Ended Shank Used With The Quick-Change Collet Adapter



# SINGLE ENDED SHANKS



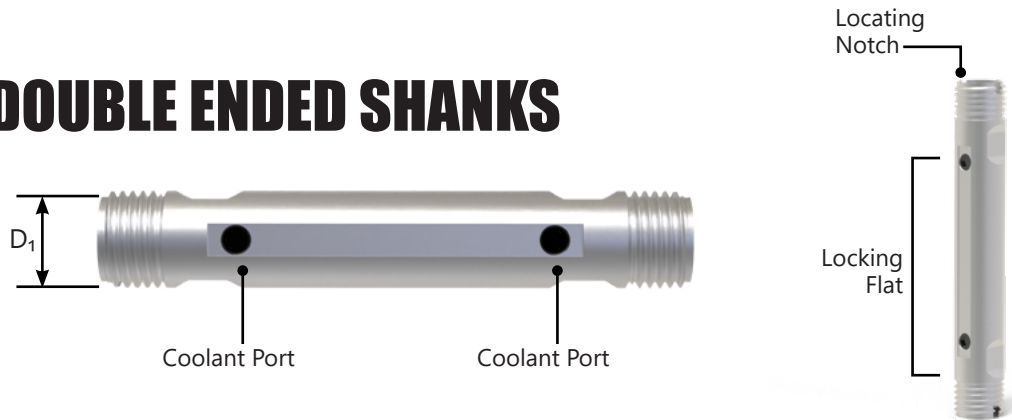
## Shank w/ Nut - Inch

| Item No.    | Description      | Collet | D <sub>1</sub> | L <sub>1</sub> | OAL  |
|-------------|------------------|--------|----------------|----------------|------|
| 1045-000257 | CQS-S16-0500-CSE | ER16   | .500"          | 1.1"           | 4.5" |
| 1045-000195 | CQS-S16-0625-CSE | ER16   | .625"          | 1.1"           | 4.5" |
| 1045-000129 | CQS-S16-0750-CSE | ER16   | .750"          | 1.1"           | 4.5" |
| 1045-000133 | CQS-S16-1000-CSE | ER16   | 1.00"          | 1.1"           | 4.5" |
| 1045-000134 | CQS-S20-0750-CSE | ER20   | .750"          | 1.2"           | 4.5" |
| 1045-000136 | CQS-S20-1000-CSE | ER20   | 1.00"          | 1.2"           | 4.5" |
| 1045-000291 | CQS-S20-1250-CSE | ER20   | 1.25"          | 1.2"           | 4.5" |

## Shank w/ Nut - Metric

| Item No.     | Description        | Collet | D <sub>1</sub> | L <sub>1</sub> | OAL     |
|--------------|--------------------|--------|----------------|----------------|---------|
| 1045-000126  | CQS-S16-0629-CSE   | ER16   | 16mm           | 22mm           | 114mm   |
| 1045-000190  | CQS-S16-0787-CSE-S | ER16   | 20mm           | 22mm           | 71mm    |
| 1045-000225  | CQS-S16-0787-CSE   | ER16   | 20mm           | 28mm           | 114mm   |
| 1045-000206  | CQS-S16-0866-CSE   | ER16   | 22mm           | 28mm           | 118mm   |
| 1045-000220  | CQS-S16-0984-CSE   | ER20   | 25mm           | 28mm           | 95mm    |
| 1045-000135  | CQS-S20-0866-CSE   | ER20   | 22mm           | 30mm           | 114mm   |
| 1045-000290A | CQS-S20-0984-CSE   | ER20   | 25mm           |                | 95.25mm |

# DOUBLE ENDED SHANKS



## Inch

| Item No.    | Description      | Collet | D <sub>1</sub> | OAL  |
|-------------|------------------|--------|----------------|------|
| 1045-000127 | CQS-S16-0750-CDE | ER16   | .750"          | 4.5" |
| 1045-000131 | CQS-S16-1000-CDE | ER16   | 1.00"          | 4.5" |
| 1045-000170 | CQS-S20-1000-CDE | ER20   | 1.00"          | 4.5" |

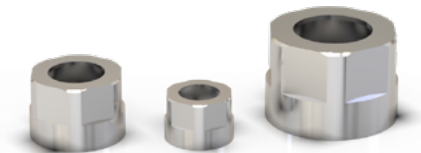
## Metric

| Item No.    | Description      | Collet | D <sub>1</sub> | OAL   |
|-------------|------------------|--------|----------------|-------|
| 1045-000130 | CQS-S16-0866-CDE | ER16   | 22mm           | 114mm |
| 1045-000200 | CQS-S16-0984-CDE | ER16   | 25mm           | 95mm  |

NOTE: Each double ended shank is sold with two nuts

## SPARE CLAMPING NUTS

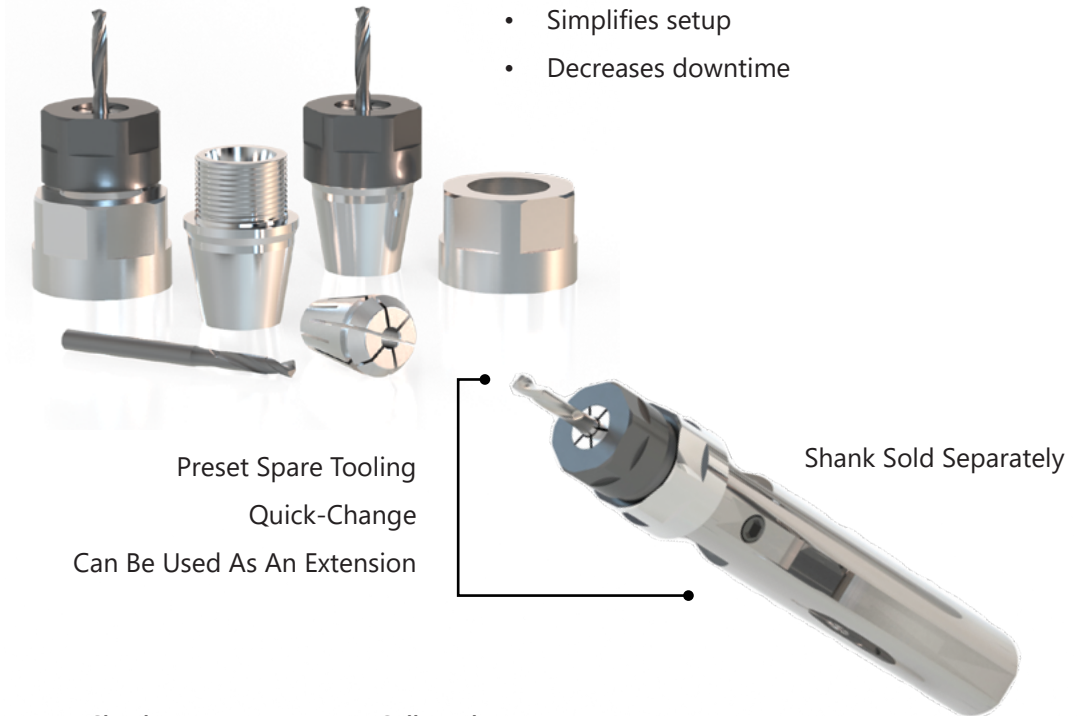
For holding the collet and bore adapters to the single or double ended shanks.



| Item No.    | Description | ER Size | Nut Thread |
|-------------|-------------|---------|------------|
| 1045-000305 | CQS-NT-11A  | ER11    | M13 x .75  |
| 1045-000244 | CQS-NT-11B  | ER11    | M14 x .75  |
| 1045-000205 | CQS-NT-16A  | ER16    | M19 x 1.0  |
| 1045-000124 | CQS-NT-16B  | ER16    | M22 x 1.5  |
| 1045-000197 | CQS-NT-20A  | ER20    | M24 x 1.0  |
| 1045-000125 | CQS-NT-20B  | ER20    | M25 x 1.5  |

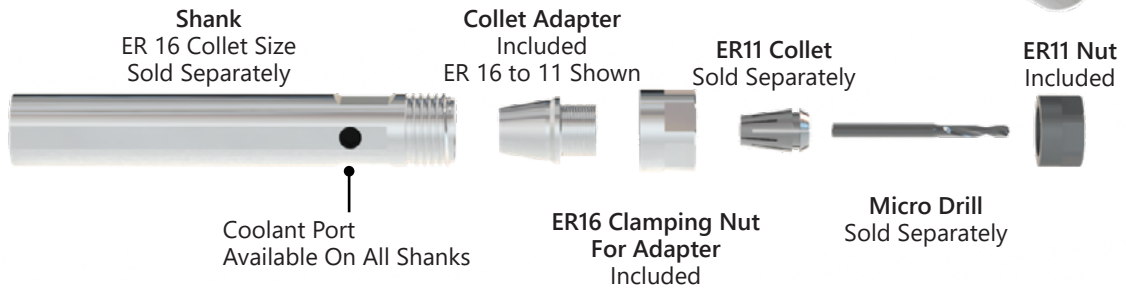
# QUICK-CHANGE COLLET ADAPTERS

Quick-Change collet adapters make it easier to control quality in your shop. These adapters make it simple to have preset tooling available, eliminating the need to touch off the tool after a routine change. This also enables less experienced machine operators to be more productive.

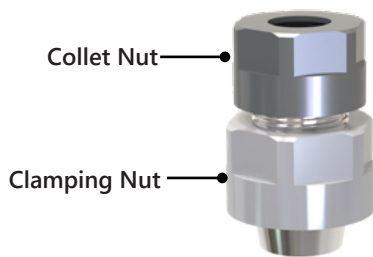


- Simplifies setup
- Decreases downtime

Preset Spare Tooling  
Quick-Change  
Can Be Used As An Extension



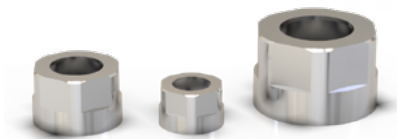
## Quick-Change Collet Adapter Assembly



| Item No.    | Description  | Adapter      | Collet | Clamping Nut Thread | Collet Nut Thread |
|-------------|--------------|--------------|--------|---------------------|-------------------|
| 1045-000242 | CQS-AS11-08A | ER11 to ER8  | ER8    | M13 x .75           | M10 x .75         |
| 1045-000226 | CQS-AS11-08B | ER11 to ER8  | ER8    | M14 x .75           | M10 x .75         |
| 1045-000111 | CQS-AS16-11A | ER16 to ER11 | ER11   | M19 x 1             | M13 x .75         |
| 1045-000112 | CQS-AS16-11B | ER16 to ER11 | ER11   | M22 x 1.5           | M13 x .75         |
| 1045-000114 | CQS-AS20-16A | ER20 to ER16 | ER16   | M24 x 1             | M19 x .1          |
| 1045-000115 | CQS-AS20-16B | ER20 to ER16 | ER16   | M25 x 1.5           | M19 x .1          |

NOTE: Shank and collets sold separately

## Spare Collet Nuts

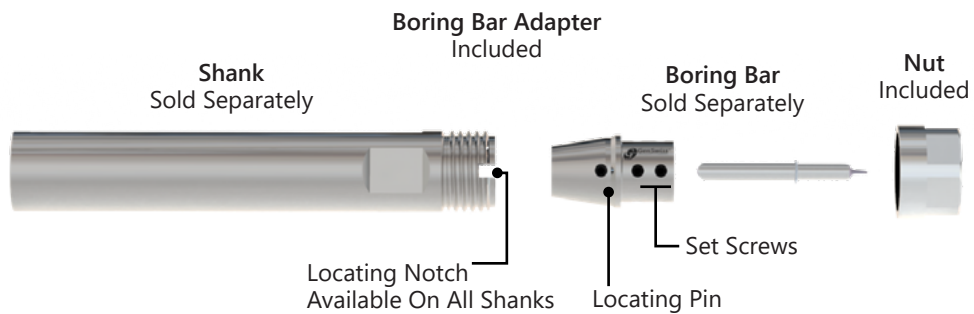


| Item No.    | Description  | ER Size | Nut Thread |
|-------------|--------------|---------|------------|
| 1045-000242 | CN-ER08-MNSH | ER08    | M10 x .75  |
| 1045-000111 | CN-ER11-MNSG | ER11    | M13 x .75  |
| 1045-000114 | CN-ER16-MNSG | ER16    | M19 x 1.0  |

# QUICK-CHANGE BORING ADAPTERS

Quick-Change Boring adaptors make it fast and simple to locate center position for boring bars when combined with notched ER holders. A simple locating pin rests within the notched holder ensuring accurate centering. These solid bushings utilize the ER collet system to securely hold a boring bar in a rigid fashion. Axial length can be easily set using any form of presetting device.

- Easily locates boring bar axial & radial position



## Inch

| Item No.    | Description    | ER Size | Bore    | Nut Thread |
|-------------|----------------|---------|---------|------------|
| 1045-000137 | CQS-SH16-12501 | ER16    | 1/8 in  | M19 x 1    |
| 1045-000139 | CQS-SH16-15601 |         | 5/32 in | M19 x 1    |
| 1045-000140 | CQS-SH16-18701 |         | 3/16 in | M19 x 1    |
| 1045-000230 | CQS-SH16-21801 |         | 7/32 in | M19 x 1    |
| 1045-000142 | CQS-SH16-25001 |         | 1/4 in  | M19 x 1    |
| 1045-000145 | CQS-SH16-31201 |         | 5/16 in | M19 x 1    |
| 1045-000147 | CQS-SH16-37501 |         | 3/8 in  | M19 x 1    |
| 1045-000149 | CQS-SH20-12501 | ER20    | 1/8 in  | M24 x 1    |
| 1045-000193 | CQS-SH20-18701 |         | 3/16 in | M24 x 1    |
| 1045-000153 | CQS-SH20-25001 |         | 1/4 in  | M24 x 1    |
| 1045-000280 | CQS-SH20-31201 |         | 5/16 in | M24 x 1    |
| 1045-000156 | CQS-SH20-37501 |         | 3/8 in  | M24 x 1    |
| 1045-000157 | CQS-SH20-5001  |         | 1/2 in  | M24 x 1    |

## Metric

| Item No.    | Description    | ER Size | Bore | Nut Thread |
|-------------|----------------|---------|------|------------|
| 1045-000260 | CQS-SH16-15701 | ER16    | 4mm  | M19 x 1    |
| 1045-000201 | CQS-SH16-19701 |         | 5mm  | M19 x 1    |
| 1045-000202 | CQS-SH16-23601 |         | 6mm  | M19 x 1    |
| 1045-000146 | CQS-SH16-31501 |         | 8mm  | M19 x 1    |
| 1045-000306 | CQS-SH20-23601 | ER20    | 6mm  | M24 x 1    |

Please call 413-562-4800 for additional sizes

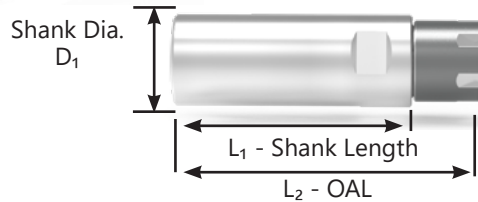
Locking Flats Prevent Damage To Shank; Provides Orientation For Tools

# SIGNATURE SERIES COLLET SLEEVES

ER-style precision collet sleeves provide rigid and accurate holding for ID tooling. Machined from medium carbon alloy steel. These collet sleeves feature ground shanks and tapers. Mini-nuts are used to reduce interference and to make setup and tool changing easier than other collet sleeves with hexagonal clamping nuts.



Coolant-thru Internal Stop Screw Prevents Tool Pushback



## Precision ER Collet Sleeves - Inch Shanks

| Collet | Item No.     | Description   | Shank Dia. (D <sub>1</sub> ) | Shank Length (L <sub>1</sub> ) | OAL (L <sub>2</sub> ) | With Locking Flat | Stop Screw | Nut Type    |
|--------|--------------|---------------|------------------------------|--------------------------------|-----------------------|-------------------|------------|-------------|
| ER08   | 1025-000299  | CS-08-064-070 | 0.25in                       | 70mm                           | 83mm                  | Yes               | No         | Nut         |
| ER11   | 1025-000201  | CS-11-127-023 | 0.500in                      | 23mm                           | 30mm                  | Yes               | Yes        | No Mini-Nut |
|        | 1025-000107  | CS-11-158-050 | 0.625in                      | 50mm                           | 62mm                  | Yes               | Yes        | Mini-Nut    |
|        | 1025-000108  | CS-11-158-100 | 0.625in                      | 100mm                          | 112mm                 | Yes               | Yes        | Mini-Nut    |
|        | 1025-000110  | CS-11-190-070 | 0.750in                      | 70mm                           | 82mm                  | Yes               | Yes        | Mini-Nut    |
|        | 1025-000298  | CS-11-190-050 | 0.750in                      | 50mm                           | 67mm                  | Yes               | Yes        | Mini-Nut    |
| ER16   | 1025-000131  | CS-16-158-075 | 0.625in                      | 75mm                           | 90mm                  | Yes               | Yes        | Mini-Nut    |
|        | 1025-000132A | CS-16-190-035 | 0.750in                      | 35mm                           | 50mm                  | Yes               | Yes        | Mini-Nut    |
|        | 1025-000133  | CS-16-190-050 | 0.750in                      | 50mm                           | 65mm                  | Yes               | Yes        | Mini-Nut    |
|        | 1025-000134  | CS-16-190-070 | 0.750in                      | 70mm                           | 85mm                  | Yes               | Yes        | Mini-Nut    |
|        | 1025-000135  | CS-16-190-100 | 0.750in                      | 100mm                          | 115mm                 | Yes               | Yes        | Mini-Nut    |
|        | 1025-000216  | CS-16-254-022 | 1.00in                       | 22mm                           | 37mm                  | Yes               | Yes        | Mini-Nut    |
|        | 1025-000272  | CS-16-254-033 | 1.00in                       | 33mm                           | 49mm                  | Yes               | Yes        | Mini-Nut    |
|        | 1025-000174  | CS-16-254-038 | 1.00in                       | 38mm                           | 53mm                  | Yes               | Yes        | Mini-Nut    |
|        | 1025-000130  | CS-16-254-065 | 1.00in                       | 65mm                           | 80mm                  | Yes               | No         | Mini-Nut    |
|        | 1025-000183  | CS-16-254-075 | 1.00in                       | 75mm                           | 90mm                  | Yes               | Yes        | Mini-Nut    |
|        | 1025-000138  | CS-16-254-080 | 1.00in                       | 80mm                           | 95mm                  | Yes               | Yes        | Mini-Nut    |
|        | 1025-000140  | CS-16-254-100 | 1.00in                       | 100mm                          | 115mm                 | Yes               | Yes        | Mini-Nut    |
|        | 1025-000142  | CS-16-254-130 | 1.00in                       | 130mm                          | 145mm                 | Yes               | Yes        | Mini-Nut    |
| ER20   | 1025-000151  | CS-20-254-100 | 1.00in                       | 100mm                          | 117mm                 | Yes               | No         | Mini-Nut    |
|        | 1025-000152  | CS-20-254-140 | 1.00in                       | 140mm                          | 157mm                 | Yes               | No         | Mini-Nut    |
|        | 1025-000295  | CS-20-254-110 | 1.00in                       | 110mm                          | 125mm                 | No                | No         | Mini-Nut    |

## Precision ER Collet Sleeves - Metric Shanks

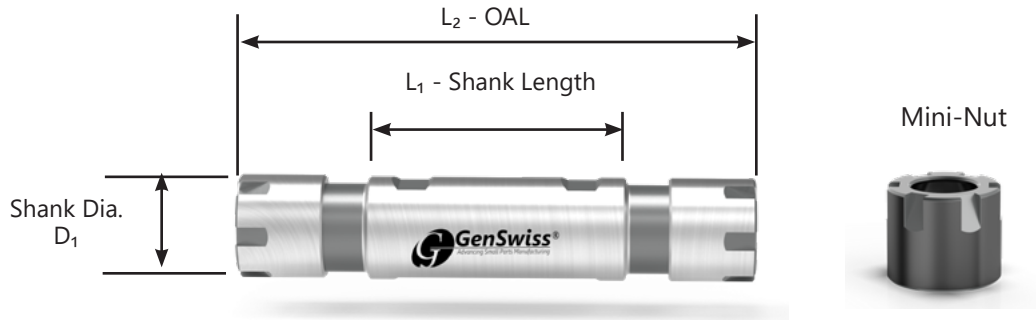
| Collet | Item No.    | Description   | Shank Dia. (D <sub>1</sub> ) | Shank Length (L <sub>1</sub> ) | OAL (L <sub>2</sub> ) | With Locking Flat | Stop Screw | Nut Type |
|--------|-------------|---------------|------------------------------|--------------------------------|-----------------------|-------------------|------------|----------|
| ER11   | 1025-000164 | CS-11-200-070 | 20mm                         | 70mm                           | 82mm                  | Yes               | Yes        | Mini-Nut |
| ER16   | 1025-000234 | CS-16-200-035 | 20mm                         | 35mm                           | 50mm                  | Yes               | Yes        | Mini-Nut |
|        | 1025-000199 | CS-16-200-070 | 20mm                         | 70mm                           | 85mm                  | Yes               | Yes        | Mini-Nut |
|        | 1025-000184 | CS-16-200-100 | 20mm                         | 100mm                          | 115mm                 | Yes               | Yes        | Mini-Nut |
|        | 1025-000197 | CS-16-250-100 | 25mm                         | 100mm                          | 115mm                 | Yes               | No         | Hex-Nut  |
|        | 1025-000232 | CS-16-250-160 | 25mm                         | 160mm                          | 175mm                 | Yes               | No         | Hex-Nut  |
| ER20   | 1025-000150 | CS-20-220-080 | 22mm                         | 80mm                           | 97mm                  | Yes               | No         | Mini-Nut |



# SIGNATURE SERIES DOUBLE ENDED COLLET SLEEVES

Double Ended Swiss Precision Sleeves Features:

- Adds additional ID tool positions
- Enables simultaneous main and subspindle operations
- Precision ground and thru-hardened to ensure high accuracy



## Double Ended Precision ER Collet Sleeves - Inch Shanks

| Collet Size | Item No.    | Description    | Shank Dia. (D <sub>1</sub> ) | Shank Length (L <sub>1</sub> ) | OAL (L <sub>2</sub> ) | With Locking Flat | Stop Screw | Nut Type |
|-------------|-------------|----------------|------------------------------|--------------------------------|-----------------------|-------------------|------------|----------|
| ER11        | 1025-000114 | CS-11-190-035D | 0.750in                      | 35mm                           | 51mm                  | Yes               | No         | Mini-Nut |
|             | 1025-000115 | CS-11-190-057D | 0.750in                      | 57mm                           | 73mm                  | Yes               | No         | Mini-Nut |
|             | 1025-000116 | CS-11-190-069D | 0.750in                      | 69mm                           | 85mm                  | Yes               | No         | Mini-Nut |
|             | 1025-000117 | CS-11-190-096D | 0.750in                      | 96mm                           | 112mm                 | Yes               | No         | Mini-Nut |
| ER16        | 1025-000139 | CS-16-254-045D | 1.00in                       | 45mm                           | 75mm                  | Yes               | No         | Mini-Nut |
|             | 1025-000141 | CS-16-254-075D | 1.00in                       | 75mm                           | 105mm                 | Yes               | No         | Mini-Nut |

## Double Ended Precision ER Collet Sleeves - Metric Shanks

| Collet Size | Item No.    | Description    | Shank Dia. (D <sub>1</sub> ) | Shank Length (L <sub>1</sub> ) | OAL (L <sub>2</sub> ) | With Locking Flat | Stop Screw | Nut Type |
|-------------|-------------|----------------|------------------------------|--------------------------------|-----------------------|-------------------|------------|----------|
| ER11        | 1025-000103 | CS-11-160-050D | 16mm                         | 50mm                           | 77mm                  | Yes               | No         | Mini-Nut |
|             | 1025-000300 | CS-11-170-066D | 17mm                         | 66mm                           | 100mm                 | Yes               | No         | Mini-Nut |
|             | 1025-000167 | CS-11-200-030D | 20mm                         | 30mm                           | 57mm                  | Yes               | No         | Mini-Nut |
| ER16        | 1025-000129 | CS-16-250-062D | 25mm                         | 62mm                           | 118mm                 | Yes               | No         | Mini-Nut |

# SIGNATURE SERIES COOLANT-FED COLLET SLEEVES

- Designed for high-pressure coolant delivery systems
- Single and dual coolant port versions available
- Use with sealed coolant-style ER collets or standard collets



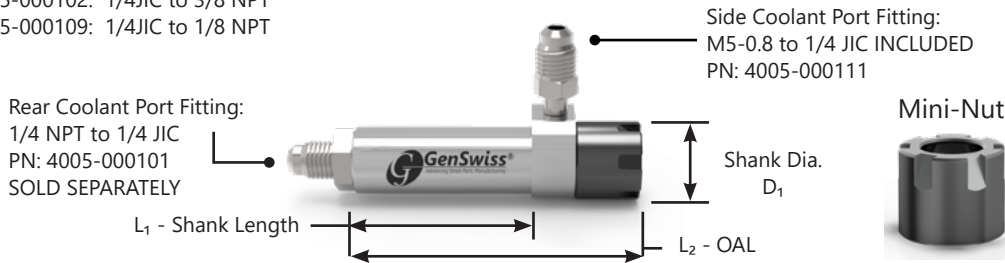
## Coolant-Fed ER Collet Sleeves - Inch Shanks

## Single Coolant Port

| Collet Size | Item No.    | Description    | Shank Dia. (D <sub>1</sub> ) | Shank Length (L <sub>1</sub> ) | OAL (L <sub>2</sub> ) | With Locking Flat | Stop Screw | Nut Type | Rear Coolant Port | Fitting PN  |
|-------------|-------------|----------------|------------------------------|--------------------------------|-----------------------|-------------------|------------|----------|-------------------|-------------|
| ER11        | 1025-000188 | CS-11-190-035C | 0.75in                       | 35mm                           | 44.5mm                | Yes               | Yes        | Mini-Nut | 1/8 NPT           | 4005-000109 |
|             | 1025-000190 | CS-11-190-062C | 0.75in                       | 62mm                           | 71.5mm                | Yes               | Yes        | Mini-Nut | 1/8 NPT           | 4005-000109 |
| ER16        | 1025-000119 | CS-16-190-042C | 0.75in                       | 42mm                           | 55mm                  | Yes               | Yes        | Mini-Nut | 1/4 NPT           | 4005-000101 |
|             | 1025-000121 | CS-16-190-062C | 0.75in                       | 62mm                           | 75mm                  | Yes               | Yes        | Mini-Nut | 1/4 NPT           | 4005-000101 |
|             | 1025-000123 | CS-16-190-086C | 0.75in                       | 86mm                           | 100mm                 | Yes               | Yes        | Mini-Nut | 1/4 NPT           | 4005-000101 |
|             | 1025-000228 | CS-16-254-049C | 1in                          | 49mm                           | 65mm                  | Yes               | Yes        | Mini-Nut | 3/8 NPT           | 4005-000102 |
| ER20        | 1025-000147 | CS-20-254-050C | 1in                          | 50mm                           | 67mm                  | Yes               | Yes        | Mini-Nut | 3/8 NPT           | 4005-000102 |
|             | 1025-000149 | CS-20-254-085C | 1in                          | 83mm                           | 100mm                 | Yes               | Yes        | Mini-Nut | 3/8 NPT           | 4005-000102 |

NOTE: Fitting is included with all collet sleeves  
 PN 4005-000101: 1/4JIC to 1/4 NPT  
 PN 4005-000102: 1/4JIC to 3/8 NPT  
 PN 4005-000109: 1/4JIC to 1/8 NPT

NOTE: Stop screws included with all shanks



## Coolant-Fed ER Collet Sleeves - Inch Shanks

## Double Coolant Ports

| Collet Size | Item No.     | Description     | Shank Dia. (D <sub>1</sub> ) | Shank Length (L <sub>1</sub> ) | OAL (L <sub>2</sub> ) | With Locking Flat | Stop Screw | Nut Type | Side Coolant Port | Rear Coolant Port |
|-------------|--------------|-----------------|------------------------------|--------------------------------|-----------------------|-------------------|------------|----------|-------------------|-------------------|
| ER16        | 1025-000245A | CS-16-190-050GC | 0.75in                       | 50mm                           | 77mm                  | Yes               | No         | Mini-Nut | M5                | 1/4 NPT           |
|             | 1025-000251A | CS-16-190-060GC | 0.75in                       | 60mm                           | 87mm                  | Yes               | No         | Mini-Nut | M5                | 1/4 NPT           |
|             | 1025-000252A | CS-16-190-070GC | 0.75in                       | 70mm                           | 97mm                  | Yes               | No         | Mini-Nut | M5                | 1/4 NPT           |
|             | 1025-000258A | CS-16-254-050GC | 1.0in                        | 50mm                           | 77mm                  | Yes               | No         | Mini-Nut | M5                | 1/4 NPT           |

## Coolant-Fed ER Collet Sleeves - Metric Shanks

## Double Coolant Ports

| Collet Size | Item No.     | Description     | Shank Dia. (D <sub>1</sub> ) | Shank Length (L <sub>1</sub> ) | OAL (L <sub>2</sub> ) | With Locking Flat | Stop Screw | Nut Type | Side Coolant Port | Rear Coolant Port |
|-------------|--------------|-----------------|------------------------------|--------------------------------|-----------------------|-------------------|------------|----------|-------------------|-------------------|
| ER16        | 1025-000253A | CS-16-200-050GC | 20mm                         | 50mm                           | 77mm                  | Yes               | No         | Mini-Nut | M5                | 1/4 NPT           |
|             | 1025-000254A | CS-16-200-070GC | 20mm                         | 70mm                           | 97mm                  | Yes               | No         | Mini-Nut | M5                | 1/4 NPT           |
|             | 1025-000250A | CS-16-220-050GC | 22mm                         | 50mm                           | 77mm                  | Yes               | No         | Mini-Nut | M5                | 1/4 NPT           |
|             | 1025-000255A | CS-16-220-070GC | 22mm                         | 70mm                           | 97mm                  | Yes               | No         | Mini-Nut | M5                | 1/4 NPT           |
|             | 1025-000256A | CS-16-250-050GC | 25mm                         | 50mm                           | 77mm                  | Yes               | No         | Mini-Nut | M5                | 1/4 NPT           |
|             | 1025-000257A | CS-16-250-070GC | 25mm                         | 70mm                           | 97mm                  | Yes               | No         | Mini-Nut | M5                | 1/4 NPT           |

# SIGNATURE SERIES SUB SPINDLE TOOL HOLDING

- Holds 3/4 in or 1in shank collet sleeves or boring bar holders
- Protects live tooling drive gear when station is not in use
- Shorter block length provides clearance for deeper hole drilling operations

| Collet Size | Item No.     | Description     | Shank Dia. (D <sub>1</sub> ) | Shank Length (L <sub>1</sub> ) | OAL (L <sub>2</sub> ) | With Locking Flat | Stop Screw |
|-------------|--------------|-----------------|------------------------------|--------------------------------|-----------------------|-------------------|------------|
| ER16        | 1025-000284A | CS-16-190-040CX | 3/4in                        | 39.878mm                       | 61mm                  | Yes               | Yes        |
|             | 1025-000285A | CS-16-254-050CX | 1.0in                        | 50mm                           | 72mm                  | Yes               | No         |

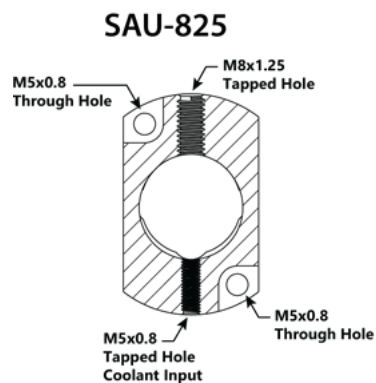
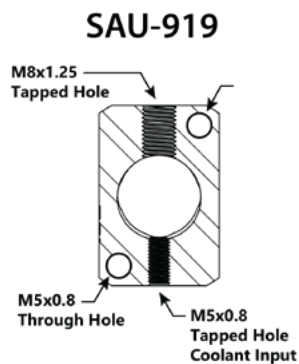
## Only Fits L20 & L12 Citizen Machines

TOOL HOLDER (sold separately)  
CIT-SAU919-S-CT



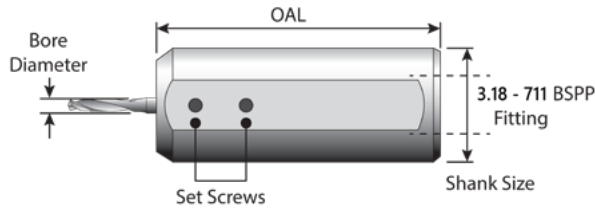
## Only Fits L32 Citizen Machines

TOOL HOLDER (sold separately)  
CIT-SAU825-S-CT



# DRILL BUSHINGS

GenSwiss drill sleeves are a new product designed and manufactured by GenSwiss. These sleeves have precision ground inch and metric shanks and are a robust method for holding drills to tight tolerances. Each GenSwiss drill sleeve features coolant-thru holes, enabling coolant delivery to your coolant-thru drills. Standard tool bore sizes range from 3-8mm, but drill sleeves can be made to order.



| Item No.    | Description      | Shank Size | OAL  | Set Screw | Bore Diameter |        |
|-------------|------------------|------------|------|-----------|---------------|--------|
| 1027-000100 | CTS-3.00-158760  | 5/8in      | 3in  | M4        | 3mm           |        |
| 1027-000101 | CTS-3.18-158760  |            | 3in  | M4        | 1/8in         |        |
| 1027-000102 | CTS-4.00-158760  |            | 3in  | M4        | 4mm           |        |
| 1027-000103 | CTS-4.76-158760  |            | 3in  | M4        | 3/16in        |        |
| 1027-000104 | CTS-6.00-158760  |            | 3in  | M6        | 6mm           |        |
| 1027-000105 | CTS-6.35-158760  |            | 3in  | M6        | 1/4in         |        |
| 1027-000106 | CTS-7.94-158760  |            | 3in  | M6        | 5/16in        |        |
| 1027-000107 | CTS-8.00-158760  | 3in        | M6   | 8mm       |               |        |
| 1027-000146 | CTS-1.50-190760  | 3/4in      | 3in  | M4        | 1.5mm         |        |
| 1027-000108 | CTS-3.00-190760  |            | 3in  | M4        | 3mm           |        |
| 1027-000109 | CTS-3.18-190760  |            | 3in  | M4        | 1/8in         |        |
| 1027-000110 | CTS-4.00-190760  |            | 3in  | M4        | 4mm           |        |
| 1027-000111 | CTS-4.76-190760  |            | 3in  | M4        | 3/16in        |        |
| 1027-000147 | CTS-4.76-190760  |            | 3in  | M4        | 5mm           |        |
| 1027-000112 | CTS-6.00-190760  |            | 3in  | M6        | 6mm           |        |
| 1027-000113 | CTS-6.35-190760  |            | 3in  | M6        | 1/4in         |        |
| 1027-000114 | CTS-7.94-190760  |            | 3in  | M6        | 5/16in        |        |
| 1027-000115 | CTS-8.00-190760  |            | 3in  | M6        | 8mm           |        |
| 1027-000150 | CTS-12.00-190760 |            | 3in  | M8        | 12mm          |        |
| 1027-000116 | CTS-3.00-200760  |            | 20mm | 3in       | M4            | 3mm    |
| 1027-000117 | CTS-3.18-200760  |            |      | 3in       | M4            | 1/8in  |
| 1027-000118 | CTS-4.00-200760  |            |      | 3in       | M4            | 4mm    |
| 1027-000119 | CTS-4.76-200760  |            |      | 3in       | M4            | 3/16in |
| 1027-000145 | CTS-12.70-200760 | 3in        |      | M8        | .5in          |        |
| 1027-000120 | CTS-6.00-200760  | 3in        |      | M6        | 6mm           |        |
| 1027-000121 | CTS-6.35-200760  | 3in        |      | M6        | 1/4in         |        |
| 1027-000122 | CTS-7.94-200760  | 3in        |      | M6        | 5/16in        |        |
| 1027-000123 | CTS-8.00-200760  | 3in        |      | M6        | 8mm           |        |
| 1027-000124 | CTS-3.00-220760  | 22mm       |      | 3in       | M4            | 3mm    |
| 1027-000125 | CTS-3.18-220760  |            |      | 3in       | M4            | 1/8in  |
| 1027-000126 | CTS-4.00-220760  |            |      | 3in       | M4            | 4mm    |
| 1027-000127 | CTS-4.76-220760  |            | 3in  | M4        | 3/16in        |        |
| 1027-000128 | CTS-6.00-220760  |            | 3in  | M6        | 6mm           |        |
| 1027-000129 | CTS-6.35-220760  |            | 3in  | M6        | 1/4in         |        |
| 1027-000130 | CTS-7.94-220760  |            | 3in  | M6        | 5/16in        |        |
| 1027-000131 | CTS-8.00-220760  |            | 3in  | M6        | 8mm           |        |
| 1027-000149 | CTS-8.00-220760  |            | 3in  | M6        | 14mm          |        |
| 1027-000152 | CTS-10.00-220760 |            | 3in  | M8        | 10mm          |        |
| 1027-000151 | CTS-12.00-220760 |            | 3in  | M8        | 12mm          |        |
| 1027-000149 | CTS-14.00-220760 |            | 3in  | M6        | 14mm          |        |
| 1027-000132 | CTS-3.00-254760  |            | 1in  | 3in       | M4            | 3mm    |
| 1027-000133 | CTS-3.18-254760  |            |      | 3in       | M4            | 1/8in  |
| 1027-000134 | CTS-4.00-254760  | 3in        |      | M4        | 4mm           |        |
| 1027-000135 | CTS-4.76-254760  | 3in        |      | M4        | 3/16in        |        |
| 1027-000136 | CTS-6.00-254760  | 3in        |      | M6        | 6mm           |        |
| 1027-000137 | CTS-6.35-254760  | 3in        |      | M6        | 1/4in         |        |
| 1027-000138 | CTS-7.94-254760  | 3in        |      | M6        | 5/16in        |        |
| 1027-000139 | CTS-8.00-254760  | 3in        |      | M6        | 8mm           |        |
| 1027-000142 | CTS-10.00-254760 | 3in        |      | M8        | 10mm          |        |
| 1027-000148 | CTS-12.00-254760 | 3in        |      | M8        | 12mm          |        |
| 1027-000141 | CTS-13.00-254760 | 3in        |      | M8        | 13mm          |        |
| 1027-000140 | CTS-14.00-254760 | 3in        |      | M8        | 14mm          |        |
| 1027-000144 | CTS-14.26-254760 | 3in        |      | M8        | .5615in       |        |
| 1027-000143 | CTS-14.27-254760 | 3in        |      | M8        | .5620in       |        |



# SIGNATURE SERIES

## Collets & Guide Bushings



GenSwiss Signature Series collection of precision ground collets and guide bushings provide feedstock material with exceptional stability for better results. Used in Swiss type CNC lathes on major machine models, our collets and guide bushings enable operators to create complex parts accurately and precisely while increasing productivity by reducing cycle times. Call us at 413-562-4800 for specialized unique options on workholding guide bushings and collets. Made machine specific to order.



Standards available from stock in nominal, inch and metric

## Collets

Several types of collet bores available; including round, hexagon, square and special shapes. Some collets, such as Emergency collets, can be adjusted to hold parts of different sizes within a range by tightening or loosening the clamping force. Whereas the Dead length collets, W, B, L type Collets hold only specific diameters as they are intended to use for repeated accuracy on High production machines. V-Line, U-Line, and over-grip designs, are engineered to securely clamp delicate components without causing surface damage, making them ideal for precision machining applications.

*All Standard Collets available with Carbide Insert*



### Collet - Smooth Bore



- Starting at 1mm
- Bigger Bore Sizes also Available in Smooth Bore on request
- Available in Standard Precision and Ultra Precision



### Collet - Grooved Bore



- Standard Grooved Bores Available up to Ø8.0 mm
- Used Especially in Headstock



### Collet - Profile Bore (Serrated)

- All profiles (Hexagon, Square, Rectangular, etc.)
- Available up to Ø8.0 mm
- Standard collet models



### Collet - Serrated Bore

- Horizontal and Vertical Grooves
- Available in Bore Ø8.0 mm



### Collet - Step Bore

- Clamping on Two Different Diameters Possible
- Available for All Collet Types



### Collet - Over Gripping (Jump Collet)

- Suitable for Clearing a shoulder and Gripping on a Smaller Diameter
- Used on Pick-off Spindle



### Collet - Special Profile

- Suitable for Different Special Profiles and Partial Shapes
- Unique Shapes Available



### Collet - VLine

- No marks on material while clamping / Easier Cleaning after Operation
- Suitable for all profiles (Square, Hexagon, etc.)
- Uniform High Tension



### Long Nose Collet - Straight Nose (Extended Nose)

- All Standard Collets available with Long Straight Nose
- Used on Pick-off Spindle



### Long Nose Collet - Tapered Nose

- All Standard Collets available with Long Tapered Nose
- Used on Pick-off Spindle



### Collet with Full Seal (Silicone Seal)

- Slots filled with silicone sealant to prevent chip and dirt debris entering inside the collets
- Mainly used on a Pick-off Spindle



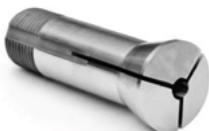
### Collet with Key Slot on Cone

- Available on request
- Key Slot on cone is for profile orientation
- Suitable for all profiles (Hexagon, Square, etc..)



### Collet with Key Slot on Guiding Diameter

- Key Slot on Guiding Diameter is for profile orientation
- Suitable for all profiles (Hexagon, Square, etc..)



### SW Collet - Standard Nose

- Suitable for Tool Grinding machines and Schaublin Lathes
- Available in Standard Precision and Ultra Precision



### SW Collet - Long Nose

- Suitable for Tool Grinding machines
- Available in Standard precision and Ultra Precision

# Bar Feed Collets

GenSwiss Signature Series Bar Feed Collets, or bar loader collets, are specialized holding devices used in automatic lathe bar feeders mainly used on Swiss type CNC machines to securely grip and advance raw bar stock into the machine spindle. They ensure precise, continuous feeding by securing the bar—even with internal diameters (ID) or irregular shapes—using spring tension and various fastening methods such as pins, threads, or set screws.

Our bar feed collets are made from High quality spring steel and heat treated to ensure good quality and life.

Proper selection depends on the diameter of the bar stock, the style of the bar feed loader, and whether the material is solid or hollow. **Note: made machine specific to order.**

*All dimensions are in mm - Unless Otherwise Specified*



## Bar Feed Collet - External Thread

AVAILABLE STOCK

- Specially processed to obtain uniform tension
- Used for Standard Solid Bars



## Bar Feed Collet - Internal Thread

AVAILABLE STOCK

- Specially processed to obtain uniform tension
- Used to install workpiece locator or stop



## Bar Feed Collet - Pin Type

AVAILABLE STOCK

- Specially processed to obtain uniform tension
- Secured using pin or set screws for locking into a channel

Three Main Types listed above  
Special / Customized Bar Feed Collets available upon request  
Call GenSwiss at 413-562-4800

# Emergency Collets

AVAILABLE STOCK



Emergency Collets are specifically engineered steel collets that can be quickly and easily sized. This allows the machinist to bore an opening into an emergency collet to match the exact size and shape required.

Provide a dependable temporary solution in situations where standard collets are unavailable. By allowing in-house adjustment, these collets help minimize downtime and keep production running until a permanent replacement is secured.

# Popular Bar Feed (Loader) Collets

GenSwiss Signature Series CAV & D, FMB, LNS, and IEMCA Style Bar Loader Collets are engineered for wear resistance, requiring fewer replacements.

Bar loader collets are set to normal tension unless otherwise specified. If an application requires a lighter or heavier tension, please specify when ordering. **Note: made machine specific to order.**



## FC7DL Round Bar Loader Collet

AVAILABLE STOCK

- CAV Style with thread connection
- Capacity Range Min Ø .061" and Max Ø .231"



## FC10DL Round Bar Loader Collet

AVAILABLE STOCK

- CAV Style with thread connection
- Capacity Range Min Ø .078" and Max Ø .334"



## CIT15NF Round Bar Loader Collet

AVAILABLE STOCK

- CAV Style with cross hole for pin mounting
- Capacity Range Min Ø .078" and Max Ø .546"



## 20D Round Bar Loader Collet

AVAILABLE STOCK

- Engineered for wear resistance, requiring fewer collet replacements
- D-Style with cross hole for pin mounting
- Capacity Range Min Ø 2.54mm (.100") and Max Ø 18mm (.709")



## 10D Round Bar Loader Collet

AVAILABLE STOCK

- Engineered for wear resistance, requiring fewer collet replacements
- D-Style with cross hole for pin mounting
- Capacity Range Min Ø 2.54mm (.100") and Max Ø 18mm (.709")



## 15D Round Bar Loader Collet

AVAILABLE STOCK

- Engineered for wear resistance, requiring fewer collet replacements
- D-Style with cross hole for pin mounting
- Capacity Range Min Ø 1.27mm (.050") and Max Ø 13mm (.512")

# Guide Bushings

GenSwiss Signature Series Guide Bushings are available in a variety of standard sizes, shapes and materials. Suitable for the most popular Swiss Machines & CNC turning centers.

Draw Bushings, also known as Bushings and Guide Bushings, are manufactured from proprietary material containing both high tensile strengths and wearability. Offered in Round, Hex, Square and other profiles as well as Extended nose, U-Line, silicone sealing, brass guides.

Round Swiss Guide Bushings are carbide lined to keep the stock clean and unmarked. Specials are available in hardened steel, \*surface pro lining, angular and zig-zagged.

Standard Stock includes Round Guide Bushings, available in nominal sizes, ready for immediate shipping & delivery.

*\*Surface Pro is gentler on easy to mark materials offering heat resistance, wear resistance and corrosion resistance while providing high level surface finish for high precision machining.*



## Drawn (Adjustable) Type

- Standard Bore Chamfer on bore edge



## Reinforced Shank

- Brass & bronze guides provide better guidance to the job
- All guide bushings available with guides on request



## Profile

- All Standard guide bushings available with Profiles such as Hexagon, Square and Special partial shapes available on request



## Traub

- Bore surface finish - Ra value of 0.4 micron
- Standard Bore Chamfer on bore edge



## Long Nose

- Shifting the Guiding area forward and thereby enhancing the stability of the workpiece
- Standard Bore Chamfer on bore edge
- Standard Precision



## Extended Carbide Insert (Max Land Guide Bushing)

- Bore Diameter from 4mm to 42mm
- Guiding surface length will vary depending on bore diameter and guide bush model
- Prevents slippage of component from the carbide guide

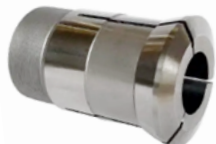
# Popular Guide Bushings (Carbide Lined or Surface Pro)



CD25

AVAILABLE STOCK

- Support bar stock up to 25mm
- Available in Round (Smooth), Hex (Keyed), and Square (Keyed)
- Bore sizes from 3 mm - 25 mm



STM38

AVAILABLE STOCK

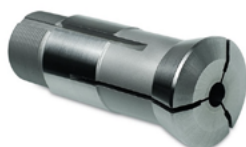
- Primarily used for complex components that require tight toleranc
- Bore sizes from 2 mm - 38.00 mm



TD25S

AVAILABLE STOCK

- Machine Compatability: Star
- High Precision Round Carbide Lined or Surface Pro
- Extended Nose (approximately 82mm in total length)
- Bore sizes from 3 mm - 21 mm



TD25NS

AVAILABLE STOCK

- Features a standard 16° collet angle
- Bore sizes from 3.0 mm-21 mm



TD26

AVAILABLE STOCK

- Available in smooth or specialized forms
- Bore sizes from 2.0 mm - 20.0 mm
- Carbide lined or Surface Pro



TD32

AVAILABLE STOCK

- Available in Round (Smooth) STOCK, Hex (Keyed) SPECIAL, and Square (Keyed) SPECIAL
- Collet Angle 20°
- Bore sizes from 4.0 mm - 32.0 mm



TD32S

AVAILABLE STOCK

- Available in Round (Smooth) STOCK, Hex (Keyed) SPECIAL, and Square (Keyed) SPECIAL
- Bore sizes from 3.0 mm - 32.0 mm

Call GenSwiss 413-562-4800 for unique options on your workholding guide bushings and collets.

# Davenport Multi-Spindles

## Hard-To-Source

Davenport multi-spindle collets are specialized workholding devices designed for 5-spindle Davenport Model B and Hybrid automatic screw machines, which are known for high-speed, high-volume production. They handle bar stock up to 3/4" (13/16" or 19/32" depending on material shape) and are available in round, hex, and square configurations.

Collets are integral to the versatility of Davenport machines, supporting attachments such as threading, slotting, and drilling.

**Appliation:** Used for high-volume machining of parts from 1/16" to 3/4" in diameter.

**Types:** Standard work collets, oversize collets are available.

### Styles:

- Solid Burring Collets
- Solid Extended Nose Collets
- Tap Serration Solid Collets
- Oversized Tap Serration Collets



**Compatibility:** Essential for 5-spindle Model B automatic screw machines.

**Functionality:** Designed to work with the high-speed capability (500–4500 RPM) of Davenport lathes.

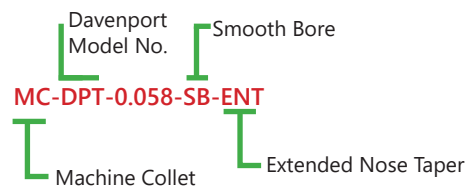
GenSwiss Signature Series collets and guide bushings have you covered from the moment your bar stock enters the machine.

Do you have a workholding situation that you need help with? Contact us for unique options on our guide bushings and collets (413) 562-4800 or contact us to request that we stock products. As a result of your request inventory decisions increase, while we strive to improve our assortment, and may lead to special orders.

[GenSwiss.com Machine Collets and Guide Bushings](#) are listed online to match the Nomenclature listed below.

| Nomenclature              |                   |
|---------------------------|-------------------|
| MC - Machine Collet       | TS - Tap Serrated |
| DPT - Davenport           | Bore Dia - 0.058  |
| ENT - Extended Nose Taper | SB - Smooth Bore  |

Example:





# GenSwiss Signature Series Micro Inspection V-Blocks

GenSwiss Signatures Series micro inspection v-blocks are a compact solution for holding the round shanks of micro tools and parts during inspection. Each block features precision ground datum surfaces so you can get accurate measurements and no tool or part movement in the block.

- **Special “V” block geometry for excellent hold on round micro parts and tools**
- **Ground datum surfaces for positioning**
- **Can be used on inspection tables and precision surfaces**
- **Holds shanks from 0.5mm to 6.0mm**



## GenSwiss Micro Inspection V-Blocks



5540-000486

**V-Block 0.5mm - 1.0mm  
Micro Inspection Clamp**



5540-000487

**V-Block 1.0mm - 1.5mm  
Micro Inspection Clamp**



5540-000488

**V-Block 1.5mm - 2mm  
Micro Inspection Clamp**



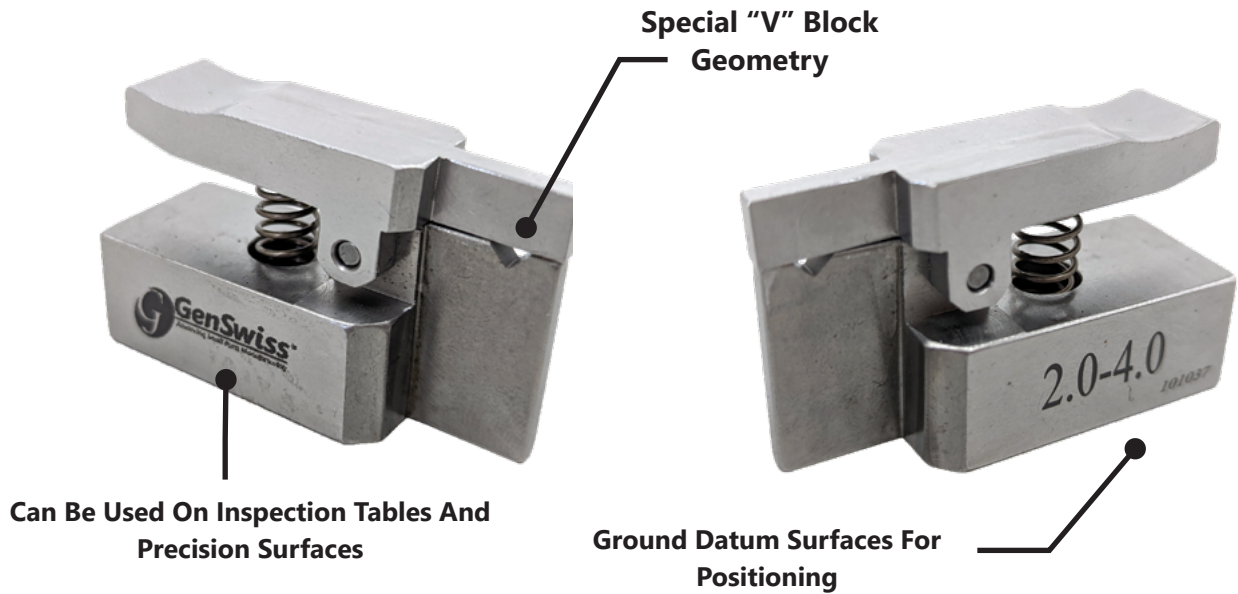
5540-000489

**V-Block 2.0mm - 4.0mm  
Micro Inspection Clamp**



5540-000490

**V-Block 4.0mm - 6.0mm  
Micro Inspection Clamp**



| Item No.    | Description                                      | Tool Size Range | Block Size |
|-------------|--|-----------------|------------|
| 5540-000486 | IMC V-Block 0.5mm - 1.0mm Micro Inspection Clamp | 0.5-1.0mm       | 52x20x31mm |
| 5540-000487 | IMC V-Block 1.0mm - 1.5mm Micro Inspection Clamp | 1.0-1.5mm       | 52x20x31mm |
| 5540-000488 | IMC V-Block 1.5mm - 2.0mm Micro Inspection Clamp | 1.5-2.0mm       | 52x20x31mm |
| 5540-000489 | IMC V-Block 2.0mm - 4.0mm Micro Inspection Clamp | 2.0-4.0mm       | 52x20x31mm |
| 5540-000490 | IMC V-Block 4.0mm - 6.0mm Micro Inspection Clamp | 4.0-6.0mm       | 52x20x31mm |

#### IMC V-Block 0.5mm - 1.0mm Micro Inspection Clamp

- GSI Part - 5540-000486
- Tool Size Range - 0.5-1.0mm
- Block Length - 52mm
- Block Width - 20mm
- Block Height - 31mm

#### IMC V-Block 2.0mm - 4.0mm Micro Inspection Clamp

- GSI Part - 5540-000489
- Tool Size Range - 2.0-4.0mm
- Block Length - 52mm
- Block Width - 20mm
- Block Height - 31mm

#### IMC V-Block 1.0mm - 1.5mm Micro Inspection Clamp

- GSI Part - 5540-000487
- Tool Size Range - 1.0-1.5mm
- Block Length - 52mm
- Block Width - 20mm
- Block Height - 31mm

#### IMC V-Block 4.0mm - 6.0mm Micro Inspection Clamp

- GSI Part - 5540-000490
- Tool Size Range - 4.0-6.0mm
- Block Length - 52mm
- Block Width - 20mm
- Block Height - 31mm

#### IMC V-Block 1.5mm - 2.0mm Micro Inspection Clamp

- GSI Part - 5540-000488
- Tool Size Range - 1.5-2.0mm
- Block Length - 52mm
- Block Width - 20mm
- Block Height - 31mm



# Signature Series Ejector Pins

## For Most Popular SWISS-CNC Machines

Standard Machining Applications

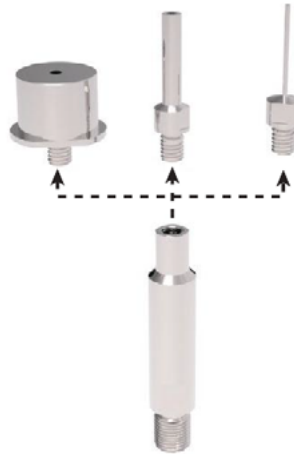
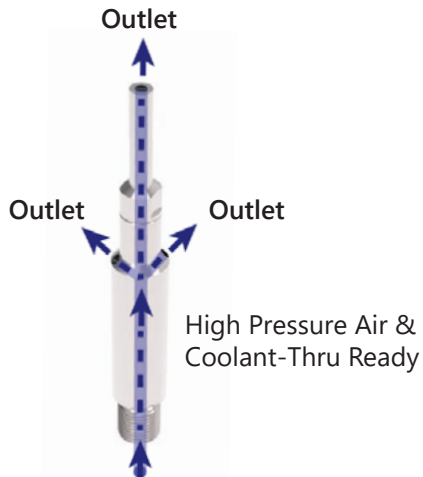
M10x1.5 to M8x1.25  
Adapter For Using  
Stand-Alone Ejector Pins With  
25 & 32mm Machines

Stand-Alone Ejector Pins

Ejector Pin Bases With  
High Pressure Air Or  
Coolant-Thru

Interchangeable Tips With High  
Pressure Air Or Coolant-Thru

Ejector Pins With High  
Pressure Air or Coolant-Thru

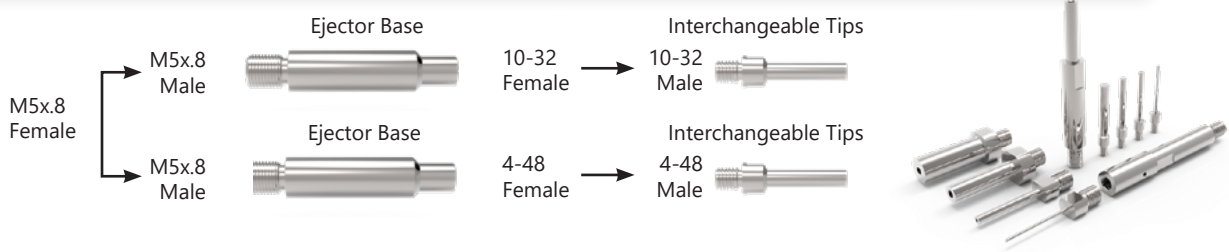


Multiple Tip Sizes For  
Different Collet Types & Sizes  
Interchangeable Tips Cut Down On  
Cost and Reduces Operation Time

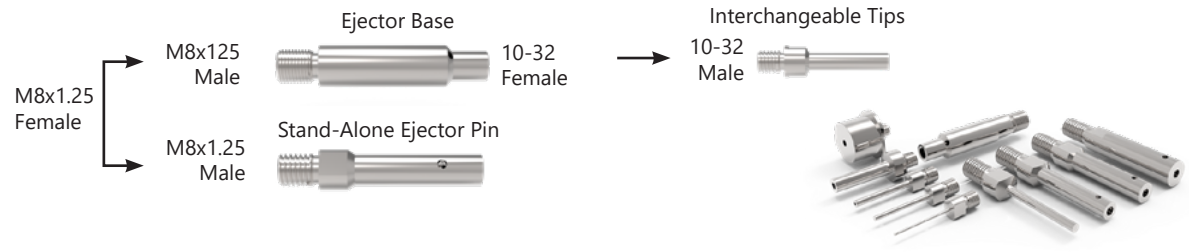
Inlet For High Pressure  
Air or Coolant Inlet



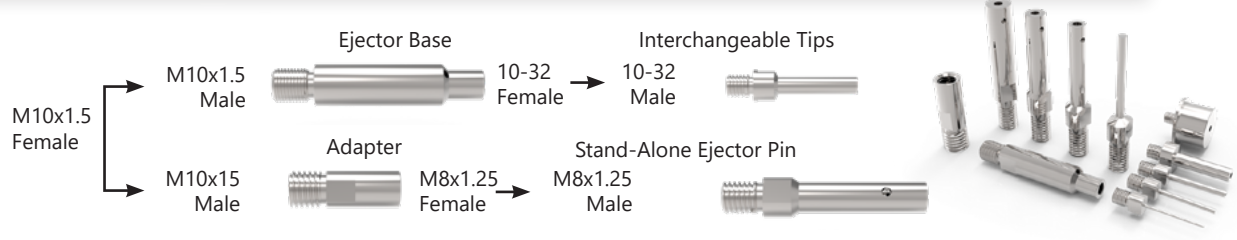
| Item No.    | Component Type       | Diameter | Length  | Coolant-Thru |
|-------------|----------------------|----------|---------|--------------|
| 7512-000128 | Ejector Base         | .160in   | 1.550in | No           |
|             |                      | .310in   | 1.550in | Yes          |
|             |                      | .040in   | 0.850in | No           |
|             |                      | .060in   | 0.850in | No           |
|             | Interchangeable Tips | .090in   | 0.850in | No           |
|             |                      | .120in   | 0.850in | No           |
|             |                      | .040in   | 1.034in | No           |
|             |                      | .093in   | 1.034in | Yes          |
|             |                      | .200in   | 1.034in | Yes          |
|             |                      | .310in   | 1.034in | Yes          |



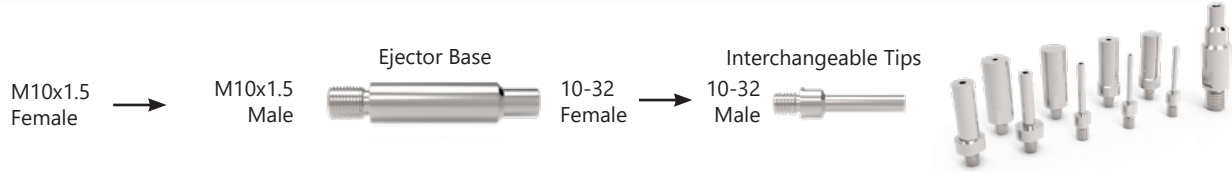
| Item No.    | Component Type       | Diameter | Length  | Coolant-Thru |
|-------------|----------------------|----------|---------|--------------|
| 7512-000124 | Ejector Base         | .276in   | 1.600in | Yes          |
|             |                      | .625in   | 0.500in | Yes          |
|             |                      | .040in   | 1.034in | No           |
|             | Interchangeable Tips | .070in   | 1.034in | No           |
|             |                      | .093in   | 1.034in | Yes          |
|             |                      | .200in   | 1.034in | Yes          |
|             |                      | .120in   | 1.600in | No           |
|             | Stand-Alone Ejectors | .240in   | 1.600in | Yes          |
|             |                      | .300in   | 1.600in | Yes          |
|             |                      | .394in   | 1.600in | Yes          |



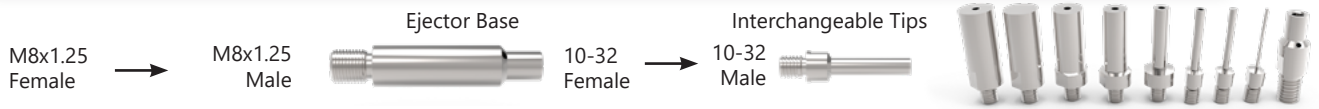
| Item No.       | Component Type       | Diameter | Length  | Coolant-Thru |
|----------------|----------------------|----------|---------|--------------|
| 7512-000125    | Ejector Base         | .276in   | 1.600in | Yes          |
|                |                      | .625in   | 0.500in | Yes          |
|                |                      | .040in   | 1.034in | No           |
|                | Interchangeable Tips | .070in   | 1.034in | No           |
|                |                      | .093in   | 1.034in | Yes          |
|                |                      | .200in   | 1.034in | Yes          |
|                |                      | .120in   | 1.600in | No           |
|                | Stand-Alone Ejectors | .240in   | 1.600in | Yes          |
|                |                      | .300in   | 1.600in | Yes          |
|                |                      | .394in   | 1.600in | Yes          |
| Adapter M10-M8 | .394in               | 0.800in  | Yes     |              |



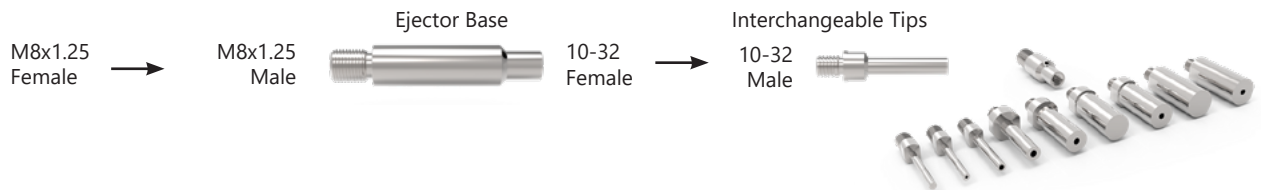
| Item No.    | Component Type       | Diameter | Length  | Coolant-Thru |
|-------------|----------------------|----------|---------|--------------|
| 7512-000139 | Ejector Base         | .275in   | 1.571in | Yes          |
|             | Interchangeable Tips | .093in   | 1.034in | No           |
|             |                      | .093in   | 1.034in | Yes          |
|             |                      | .150in   | 1.034in | Yes          |
|             |                      | .250in   | 1.034in | Yes          |
|             |                      | .310in   | 1.034in | Yes          |
|             |                      | .375in   | 1.034in | No           |
|             |                      | .375in   | 1.034in | Yes          |
|             |                      | .437in   | 1.034in | No           |
|             | .437in               | 1.034in  | Yes     |              |



| Item No.    | Component Type       | Diameter | Length  | Coolant-Thru |
|-------------|----------------------|----------|---------|--------------|
| 7512-000141 | Ejector Base         | .276in   | 0.8in   | Yes          |
|             | Interchangeable Tips | .093in   | 1.034in | No           |
|             |                      | .120in   | 1.034in | Yes          |
|             |                      | .200in   | 1.034in | Yes          |
|             |                      | .310in   | 1.034in | Yes          |
|             |                      | .375in   | 1.034in | Yes          |
|             |                      | .437in   | 1.034in | No           |
|             |                      | .437in   | 1.034in | Yes          |

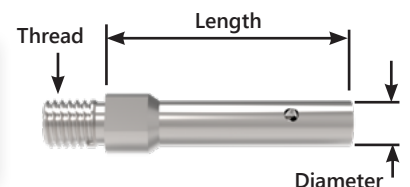


| Item No.    | Component Type       | Diameter | Length  | Coolant-Thru |
|-------------|----------------------|----------|---------|--------------|
| 7512-000140 | Ejector Base         | .276in   | 0.8in   | Yes          |
|             | Interchangeable Tips | .093in   | 1.034in | No           |
|             |                      | .093in   | 1.034in | Yes          |
|             |                      | .150in   | 1.034in | Yes          |
|             |                      | .250in   | 1.034in | Yes          |
|             |                      | .310in   | 1.034in | Yes          |
|             |                      | .375in   | 1.034in | No           |
|             |                      | .375in   | 1.034in | Yes          |
|             |                      | .437in   | 1.034in | No           |
|             | .437in               | 1.034in  | Yes     |              |



### Stand-Alone Ejector Pin Kit

| Item No.    | Diameter | Length  | Coolant-Thru |
|-------------|----------|---------|--------------|
| 7512-000136 | .120in   | 1.600in | No           |
|             | .240in   | 1.600in | Yes          |
|             | .300in   | 1.600in | Yes          |
|             | .394in   | 1.600in | Yes          |



## Ejector Base Packs

| Pieces | Coolant-Thru | Fits Ejector Tips | Item No.    |
|--------|--------------|-------------------|-------------|
| 4      | Yes          | 10-32             | 7512-000149 |
| 4      | Yes          | 10-32             | 7512-000150 |
| 4      | Yes          | 10-32             | 7512-000151 |
| 4      | Yes          | 4-48              | 7512-000152 |
| 4      | Yes          | 10-32             | 7512-000153 |
| 4      | Yes          | 10-32             | 7512-000154 |

\*Requires tips from kit EJK-CIT12-KIT-A or kit EJK-0448-KIT-A

## Tip Packs - Includes 5 Pieces Of A Single Size

| Pieces | Diameter | Length  | Coolant-Thru | Thread | Item No.    |
|--------|----------|---------|--------------|--------|-------------|
| 5      | .040in   | 1.034in | No           | 10-32  | 7512-000163 |
| 5      | .070in   | 1.034in | No           | 10-32  | 7512-000162 |
| 5      | .093in   | 1.034in | No           | 10-32  | 7512-000161 |
| 5      | .093in   | 1.034in | Yes          | 10-32  | 7512-000164 |
| 5      | .120in   | 1.034in | Yes          | 10-32  | 7512-000160 |
| 5      | .150in   | 1.034in | Yes          | 10-32  | 7512-000159 |
| 5      | .200in   | 1.034in | Yes          | 10-32  | 7512-000158 |
| 5      | .250in   | 1.034in | Yes          | 10-32  | 7512-000157 |
| 5      | .310in   | 1.034in | Yes          | 10-32  | 7512-000155 |
| 5      | .375in   | 1.034in | No           | 10-32  | 7512-000167 |
| 5      | .375in   | 1.034in | Yes          | 10-32  | 7512-000168 |
| 5      | .437in   | 1.034in | No           | 10-32  | 7512-000165 |
| 5      | .437in   | 1.034in | Yes          | 10-32  | 7512-000166 |
| 5      | .500in   | 1.034in | Yes          | 10-32  | 7512-000169 |
| 5      | .625in   | 1.034in | Yes          | 10-32  | 7512-000170 |

## Assorted Tip Kits

| Pieces | Diameter | Length  | Coolant-Thru | Thread | Item No.    |
|--------|----------|---------|--------------|--------|-------------|
| 4      | .040in   | .850in  | No           | 4-48   | 7512-000135 |
|        | .060in   | .850in  | No           | 4-48   |             |
|        | .090in   | .850in  | No           | 4-48   |             |
|        | .120in   | .850in  | No           | 4-48   |             |
| 9      | .040in   | 1.034in | No           | 10-32  | 7512-000134 |
|        | .070in   | 1.034in | No           | 10-32  |             |
|        | .093in   | 1.034in | No           | 10-32  |             |
|        | .093in   | 1.034in | Yes          | 10-32  |             |
|        | .120in   | 1.034in | Yes          | 10-32  |             |
|        | .150in   | 1.034in | Yes          | 10-32  |             |
|        | .200in   | 1.034in | Yes          | 10-32  |             |
|        | .250in   | 1.034in | Yes          | 10-32  |             |
| 13     | .310in   | 1.034in | Yes          | 10-32  | 7512-000142 |
|        | .040in   | 1.034in | No           | 10-32  |             |
|        | .070in   | 1.034in | No           | 10-32  |             |
|        | .093in   | 1.034in | No           | 10-32  |             |
|        | .375in   | 1.034in | No           | 10-32  |             |
|        | .437in   | 1.034in | No           | 10-32  |             |
|        | .093in   | 1.034in | Yes          | 10-32  |             |
|        | .120in   | 1.034in | Yes          | 10-32  |             |
|        | .150in   | 1.034in | Yes          | 10-32  |             |
|        | .200in   | 1.034in | Yes          | 10-32  |             |
|        | .250in   | 1.034in | Yes          | 10-32  |             |
| .310in | 1.034in  | Yes     | 10-32        |        |             |
| .375in | 1.034in  | Yes     | 10-32        |        |             |
| .437in | 1.034in  | Yes     | 10-32        |        |             |

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# Drill Size Chart

| FRACT #SIZE | METRIC (mm) | DECIMAL INCHES |
|-------------|-------------|----------------|
| 80          | 0.3429      | 0.0135         |
| 79          | 0.368       | 0.0145         |
| (1/64)      | 0.3969      | 0.0156         |
| 78          | 0.4064      | 0.016          |
| 77          | 0.4572      | 0.018          |
|             | 0.5         | 0.0197         |
| 76          | 0.508       | 0.02           |
| 75          | 0.5334      | 0.021          |
| 74          | 0.5715      | 0.0225         |
| 73          | 0.6096      | 0.024          |
| 72          | 0.635       | 0.025          |
| 71          | 0.6604      | 0.026          |
| 70          | 0.7712      | 0.028          |
| 69          | 0.7417      | 0.0292         |
|             | 0.75        | 0.0295         |
| 68          | 0.7874      | 0.031          |
| (1/32)      | 0.7938      | 0.0312         |
| 67          | 0.8128      | 0.032          |
| 66          | 0.8382      | 0.033          |
| 65          | 0.889       | 0.035          |
| 64          | 0.9144      | 0.036          |
| 63          | 0.9398      | 0.037          |
| 62          | 0.9652      | 0.038          |
| 61          | 0.9906      | 0.039          |
|             | 1           | 0.0394         |
| 60          | 1.016       | 0.04           |
| 59          | 1.0414      | 0.041          |
| 58          | 1.0668      | 0.042          |
| 57          | 1.0922      | 0.043          |
| 56          | 1.1811      | 0.0465         |
| (3/64)      | 1.1906      | 0.0469         |
|             | 1.25        | 0.0492         |
| 55          | 1.3208      | 0.052          |
| 54          | 1.397       | 0.055          |
|             | 1.5         | 0.0591         |
| 53          | 1.5113      | 0.0595         |
| (1/16)      | 1.5875      | 0.0625         |
| 52          | 1.6129      | 0.0635         |
| 51          | 1.7018      | 0.067          |
|             | 1.75        | 0.0689         |
| 50          | 1.778       | 0.07           |
| 49          | 1.8542      | 0.073          |
| 48          | 1.9304      | 0.076          |
| (5/64)      | 1.9844      | 0.0781         |
| 47          | 1.9939      | 0.0785         |
|             | 2           | 0.0787         |
| 46          | 2.0574      | 0.081          |
| 45          | 2.0828      | 0.082          |
| 44          | 2.144       | 0.086          |
|             | 2.25        | 0.0886         |
| 43          | 2.2606      | 0.089          |
| 42          | 2.3749      | 0.0935         |
| (3/32)      | 2.3813      | 0.0938         |
| 41          | 2.4384      | 0.096          |
| 40          | 2.4892      | 0.098          |
|             | 2.5         | 0.0984         |
| 39          | 2.5273      | 0.0995         |
| 38          | 2.5781      | 0.1015         |
| 37          | 2.6416      | 0.104          |
| 36          | 2.7051      | 0.1065         |

| LETTER FRACT #SIZE | METRIC (mm) | DECIMAL INCHES |
|--------------------|-------------|----------------|
|                    | 2.75        | 0.1083         |
| (7/64)             | 2.7781      | 0.1094         |
| 35                 | 2.794       | 0.11           |
| 34                 | 2.8194      | 0.111          |
| 33                 | 2.8702      | 0.113          |
| 32                 | 2.9464      | 0.116          |
|                    | 3           | 0.1181         |
| 31                 | 3.048       | 0.12           |
| (1/8)              | 3.175       | 0.125          |
|                    | 3.25        | 0.128          |
| 30                 | 3.2639      | 0.1285         |
| 29                 | 3.4544      | 0.136          |
|                    | 3.5         | 0.1378         |
| 28                 | 3.5687      | 0.1405         |
| (9/64)             | 3.5719      | 0.1406         |
| 27                 | 3.6576      | 0.144          |
| 26                 | 3.7973      | 0.147          |
|                    | 3.75        | 0.1476         |
| 25                 | 3.7973      | 0.1495         |
| 24                 | 3.8608      | 0.152          |
| 23                 | 3.9116      | 0.154          |
| (5/32)             | 3.9688      | 0.1562         |
| 22                 | 3.9878      | 0.157          |
|                    | 4           | 0.1575         |
| 21                 | 4.0386      | 0.159          |
| 20                 | 4.0894      | 0.161          |
| 19                 | 4.2164      | 0.166          |
|                    | 4.25        | 0.1673         |
| 18                 | 4.3053      | 0.1695         |
| (11/64)            | 4.3656      | 0.1719         |
| 17                 | 4.3942      | 0.173          |
| 16                 | 4.4958      | 0.177          |
|                    | 4.5         | 0.1772         |
| 15                 | 4.572       | 0.18           |
| 14                 | 4.6228      | 0.182          |
| 13                 | 4.699       | 0.185          |
|                    | 4.75        | 0.187          |
| (3/16)             | 4.7625      | 0.1875         |
| 12                 | 4.8006      | 0.189          |
| 11                 | 4.8514      | 0.191          |
| 10                 | 4.9149      | 0.1935         |
| 9                  | 4.9874      | 0.196          |
|                    | 5           | 0.1969         |
| 8                  | 4.0546      | 0.199          |
| 7                  | 5.1054      | 0.201          |
| (13/64)            | 5.1594      | 0.2031         |
| 6                  | 5.1816      | 0.204          |
| 5                  | 5.2197      | 0.2055         |
|                    | 5.25        | 0.2067         |
| 4                  | 5.3086      | 0.209          |
| 3                  | 5.4102      | 0.213          |
|                    | 5.5         | 0.2165         |
| (7/32)             | 5.5563      | 0.2188         |
| 2                  | 5.6134      | 0.221          |
|                    | 5.75        | 0.2264         |
| 1                  | 5.7912      | 0.228          |
| A                  | 5.9436      | 0.234          |
| (15/64)            | 5.9531      | 0.2344         |
|                    | 6           | 0.2362         |
| B                  | 6.0452      | 0.238          |

| LETTER/ FRACT SIZE | METRIC (mm) | DEC-IMAL INCHES |
|--------------------|-------------|-----------------|
| C                  | 6.1468      | 0.242           |
| D                  | 6.2484      | 0.246           |
|                    | 6.25        | 0.2461          |
| E (1/4)            | 6.35        | 0.25            |
|                    | 6.5         | 0.2559          |
| F                  | 6.5278      | 0.257           |
| G                  | 6.6294      | 0.261           |
| (17/64)            | 6.7469      | 0.2656          |
|                    | 6.75        | 0.2657          |
| H                  | 6.7564      | 0.266           |
| I                  | 6.9088      | 0.272           |
|                    | 7           | 0.2756          |
| J                  | 7.0358      | 0.277           |
| K                  | 7.1374      | 0.281           |
| (9/32)             | 7.1438      | 0.2812          |
|                    | 7.25        | 0.2854          |
| L                  | 7.366       | 0.29            |
| M                  | 7.493       | 0.295           |
|                    | 7.5         | 0.2953          |
| (19/64)            | 7.5406      | 0.2969          |
| N                  | 7.6708      | 0.302           |
|                    | 7.75        | 0.3051          |
| (5/16)             | 7.9375      | 0.3125          |
|                    | 8           | 0.315           |
| O                  | 8.0264      | 0.316           |
| P                  | 8.2042      | 0.323           |
|                    | 8.25        | 0.3248          |
| (21/64)            | 8.3344      | 0.3281          |
| Q                  | 8.4328      | 0.332           |
|                    | 8.5         | 0.3346          |
| R                  | 8.6106      | 0.339           |
| (11/32)            | 8.7316      | 0.3438          |
|                    | 8.75        | 0.3445          |
| S                  | 8.8392      | 0.348           |
|                    | 9           | 0.3543          |
| T                  | 9.0932      | 0.358           |
| (23/64)            | 9.1281      | 0.3594          |
|                    | 9.25        | 0.3642          |
| U                  | 9.3472      | 0.368           |
|                    | 9.5         | 0.374           |
| (3/8)              | 9.525       | 0.375           |
| V                  | 9.5758      | 0.377           |
|                    | 9.75        | 0.3839          |
| W                  | 9.8044      | 0.386           |
| (25/64)            | 9.9219      | 0.3906          |
|                    | 10          | 0.3937          |
| X                  | 10.0838     | 0.397           |
| Y                  | 10.2616     | 0.404           |
| (13/32)            | 10.3188     | 0.4063          |
| Z                  | 10.4902     | 0.413           |
|                    | 10.5        | 0.4134          |
| (27/64)            | 10.7156     | 0.4219          |
|                    | 11          | 0.4331          |
| (7/16)             | 11.1125     | 0.4375          |
|                    | 11.5        | 0.4528          |
| (29/64)            | 11.5094     | 0.4531          |
| (15/32)            | 11.9063     | 0.4688          |
|                    | 12          | 0.4724          |
| (31/64)            | 12.3031     | 0.4844          |
|                    | 12.5        | 0.4921          |

| FRACT SIZE | METRIC (mm) | DECIMAL INCHES |
|------------|-------------|----------------|
| (1/2)      | 12.7        | 0.5            |
|            | 13          | 0.5118         |
| (33/64)    | 13.0969     | 0.5156         |
| (17/32)    | 13.4938     | 0.5312         |
|            | 13.5        | 0.5315         |
| (35/64)    | 13.8906     | 0.5469         |
|            | 14          | 0.5512         |
| (9/16)     | 14.2875     | 0.5625         |
|            | 14.5        | 0.5709         |
| (37/64)    | 14.6844     | 0.5781         |
|            | 15          | 0.5906         |
| (19/32)    | 15.0813     | 0.5938         |
| (39/64)    | 15.4781     | 0.6094         |
|            | 15.5        | 0.6102         |
| (5/8)      | 15.875      | 0.625          |
|            | 16          | 0.6299         |
| (41/64)    | 16.2719     | 0.6406         |
|            | 16.5        | 0.6496         |
| (21/32)    | 16.6687     | 0.6562         |
|            | 17          | 0.6693         |
| (43/64)    | 17.0656     | 0.6719         |
| (11/16)    | 17.4625     | 0.6875         |
|            | 17.5        | 0.689          |
| (45/64)    | 17.8594     | 0.7031         |
|            | 18          | 0.7087         |
| (23/32)    | 18.2563     | 0.7188         |
|            | 18.5        | 0.7283         |
| (47/64)    | 18.6531     | 0.7344         |
|            | 19          | 0.748          |
| (3/4)      | 19.05       | 0.75           |
| (49/64)    | 19.4469     | 0.7656         |
|            | 19.5        | 0.7677         |
| (25/32)    | 19.8438     | 0.7813         |
|            | 20          | 0.7874         |
| 51/64      | 20.2406     | 0.7969         |
|            | 20.5        | 0.8071         |
| (13/16)    | 20.6375     | 0.8125         |
|            | 21          | 0.8268         |
| (53/64)    | 21.0344     | 0.8281         |
| (27/32)    | 21.4313     | 0.8438         |
|            | 21.5        | 0.8465         |
| (55/64)    | 21.8281     | 0.8594         |
|            | 22          | 0.8661         |
| (7/8)      | 22.225      | 0.875          |
|            | 22.5        | 0.8858         |
| (57/64)    | 22.6219     | 0.8906         |
|            | 23          | 0.9055         |
| (29/32)    | 23.0188     | 0.9062         |
| (21/23)    | 23.1913     | 0.913          |
| (59/64)    | 23.4156     | 0.9219         |
|            | 23.5        | 0.9252         |
| (15/16)    | 23.8125     | 0.9375         |
|            | 24          | 0.9449         |
| (61/64)    | 24.2094     | 0.9531         |
|            | 24.5        | 0.9646         |
| (31/32)    | 24.6063     | 0.9688         |
|            | 25          | 0.9843         |
| (63/64)    | 25.0031     | 0.9844         |
| 1          | 25.4        | 1              |

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