Welcome to LittleMachineShop.com...

...the premier source of machines, tooling, parts, and accessories for bench top machinists.

We focus on best-in-class machines and we offer tools, accessories, and replacement parts for:

- Bench top lathes
- Bench top milling machines
- Small band saws

Products we support are sold by LittleMachineShop.com, Grizzly Industrial, Harbor Freight Tools, Micro-Mark, Busy Bee Tools, and others. Besides the products shown in this catalog, we have virtually every replacement part for the mini lathes, mini mills, and micro mills sold by these companies.

Visit our website at www.littlemachineshop.com to see large, full-color pictures along with more products and more information than we can fit in this catalog.

Check our website at www.littlemachineshop.com for current prices. Prices are subject to change without notice.
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HiTorque Bench Mill, Models 5500/5550

The LittleMachineShop.com HiTorque Bench Mill is a step up in size, rigidity, and power compared to a mini mill. It provides a larger table, more travel, and more horsepower. The 23.4" x 5.5" (595 mm x 140 mm) table on the 5500 bench mill provides a large work area. And the extra-long 27.6" x 6.3" (700 mm x 160 mm) table on the 5550 deluxe bench mill is huge! A 750 watt (1 hp) brushless DC motor provides abundant spindle power and tremendous low-end torque.

The HiTorque Bench Mill incorporates a true quill and drill press-style handles for easy drilling. A button on the end of each handle reverses the spindle to make tapping easy.

- R8 spindle for wide tool availability
- 0.001" graduated dials, 0.100" per turn
- Tapping mode for reversing taps out
- Solid rectangular column for rigidity
- Dovetail column to maintain head alignment at any height
- E-stop safety power switch
- Spindle speed display
- Spindle fine feed and position lock
- Fine feed on Z-axis for precise control
- Adjustable gibs on all dovetail ways
- Includes ½" capacity drill chuck and arbor

5550 HiTorque Deluxe Bench Mill

All the features of the 5500 bench mill plus:
- Extra-long table 27.6" x 6.3" (700 mm x 160 mm)
- 3-axis digital readout (DRO) with Bluetooth and 7" tablet display
- Electrically interlocked spindle lock
- Machined aluminum handwheels

5550 HiTorque Bench Mill $1848.14
5550 HiTorque Bench Mill, Deluxe $2663.18

Specifications

<table>
<thead>
<tr>
<th>Feature</th>
<th>5500 Model</th>
<th>5550 Model</th>
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<tbody>
<tr>
<td>End Milling Capacity</td>
<td>0.6” (16 mm)</td>
<td>0.6” (16 mm)</td>
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<tr>
<td>Face Milling Capacity</td>
<td>2.0” (50 mm)</td>
<td>2.0” (50 mm)</td>
</tr>
<tr>
<td>Drilling Capacity</td>
<td>0.8” (20 mm)</td>
<td>0.8” (20 mm)</td>
</tr>
<tr>
<td>Table Size</td>
<td>5500: 23.4” x 5.5” (595 mm x 140 mm)</td>
<td>5550: 23.4” x 5.5” (595 mm x 140 mm)</td>
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<tr>
<td>X-Axis Travel</td>
<td>5500: 15.6” (395 mm)</td>
<td>5550: 19.7” (500 mm)</td>
</tr>
<tr>
<td>Y-Axis Travel</td>
<td>5500: 6.7” (170 mm)</td>
<td>5550: 5.5” (140 mm)</td>
</tr>
<tr>
<td>Z-Axis Travel</td>
<td>11.6” (295 mm)</td>
<td>11.6” (295 mm)</td>
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<tr>
<td>Throat</td>
<td>7.5” (190 mm)</td>
<td>7.5” (190 mm)</td>
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<tr>
<td>X- and Y-Axis Feed Screws</td>
<td>0.100” (2.54 mm)</td>
<td>0.100” (2.54 mm)</td>
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<tr>
<td>Positioning Accuracy</td>
<td>0.0004” (0.010 mm)</td>
<td>0.0004” (0.010 mm)</td>
</tr>
<tr>
<td>Spindle Taper</td>
<td>R8</td>
<td>R8</td>
</tr>
<tr>
<td>Spindle Motor</td>
<td>1.0 hp (750 Watts)</td>
<td>1.0 hp (750 Watts)</td>
</tr>
<tr>
<td>Spindle Speed</td>
<td>100 - 2000 RPM</td>
<td>100 - 2000 RPM</td>
</tr>
<tr>
<td>Power Requirements</td>
<td>120 V 60 Hz 10 Amps</td>
<td>120 V 60 Hz 10 Amps</td>
</tr>
<tr>
<td>Weight</td>
<td>5500: 207 lbs (94 kg); 5550: 245 lbs (111 kg)</td>
<td>5500: 207 lbs (94 kg); 5550: 245 lbs (111 kg)</td>
</tr>
<tr>
<td>Dimensions (W x D x H)</td>
<td>5500: 28.9”x25.0”x28.5” (735 mm x 635 mm x 725 mm)</td>
<td>5550: 34.6”x25.0”x28.5” (880 mm x 635 mm x 725 mm)</td>
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<tr>
<td>Crated Weight</td>
<td>5500: 262 lbs (119 kg); 5550: 292 lbs (133 kg)</td>
<td>5500: 262 lbs (119 kg); 5550: 292 lbs (133 kg)</td>
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<tr>
<td>Crate Dimensions (W x D x H)</td>
<td>32.0” x 28.0” x 35.5” (813 mm x 711 mm x 902 mm)</td>
<td>32.0” x 28.0” x 35.5” (813 mm x 711 mm x 902 mm)</td>
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</tbody>
</table>

Tooling Packages and Accessories

Each tooling package includes:
- 4” precision milling vise and mounting kit
- Thin parallels set
- 1-2-3 blocks
- 58-piece clamping kit
- R8 collet set
- End mill set, 2- and 4-flute
- Center drills
- Edge and center finder
- T-slot cleaner

3526 Tooling Package $342.95
5489 Premium Tooling Package $598.95
5634 Stand Cabinet $263.37
HiTorque Mini Mill, Models 3990/4190

The LittleMachineShop.com HiTorque Mini Mill offers best-in-class features: more power, more torque, and a larger table than competitors’ mills. It has our exclusive solid column for extra rigidity. And it includes one of the most popular upgrades for our earlier mills: an air spring to support the mill head, which provides greater support for the head and increased travel on the Z-axis.

The 500 Watt brushless spindle drive motor provides tremendous low-end torque. And you can vary the speed from 100 RPM to 2500 RPM continuously. There are no gears to shift. With no gears, the HiTorque Mini Mill is the quietest in its class.

The large mill table provides 50% more table area than other mini mills. It also has 30% more travel in each direction. The resettable feed dials allow you to zero them at any point.

The HiTorque Mini Mill has drill press handles for drilling and fast motion of the mill head. It also has Z-axis fine feed with 0.001” resolution for milling operations.

- R8 Spindle for wide tool availability
- Dovetail column maintains head alignment at any height
- E-stop safety power switch
- Adjustable Z-axis stop for repetitive drilling
- Neoprene bellows protect horizontal ways
- Adjustable gibbs on all dovetail ways
- Includes ½” capacity drill chuck and arbor

4190 HiTorque Deluxe Mini Mill

All the features of the 3990 mini mill plus:

- 3-axis digital readout (DRO) with Bluetooth and 7” tablet display
- Electrically interlocked spindle lock
- Machined aluminum handwheels

3990 HiTorque Mini Mill $1154.73
4190 HiTorque Mini Mill, Deluxe $1857.82

Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
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<tbody>
<tr>
<td>End Milling Capacity</td>
<td>0.6” (16 mm)</td>
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<tr>
<td>Face Milling Capacity</td>
<td>1.2” (30 mm)</td>
</tr>
<tr>
<td>Drilling Capacity</td>
<td>0.5” (13 mm)</td>
</tr>
<tr>
<td>Table Size</td>
<td>18.1” x 4.7” (460 mm x 120 mm)</td>
</tr>
<tr>
<td>X-Axis Travel</td>
<td>11.8” (300 mm)</td>
</tr>
<tr>
<td>Y-Axis Travel</td>
<td>5.1” (130 mm)</td>
</tr>
<tr>
<td>Z-Axis Travel</td>
<td>10.6” (270 mm)</td>
</tr>
<tr>
<td>Throat</td>
<td>6.5” (165 mm)</td>
</tr>
<tr>
<td>X- and Y-Axis Feed Screws</td>
<td>0.062” (1.59 mm) per rotation</td>
</tr>
<tr>
<td>Positioning Accuracy</td>
<td>0.0004” (0.010 mm)</td>
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<tr>
<td>Spindle Taper</td>
<td>R8</td>
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<tr>
<td>Spindle Motor</td>
<td>0.67 hp (500 Watts)</td>
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<tr>
<td>Spindle Speed</td>
<td>100 - 2500 RPM</td>
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<td>Power Requirements</td>
<td>120 V 60 Hz 8 Amps</td>
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<td>Weight</td>
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<tr>
<td>Dimensions (W x D x H)</td>
<td>23.2” x 19.7” x 36.3” (590 mm x 500 mm x 922 mm)</td>
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<td>Crated Weight</td>
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<td>Crate Dimensions (W x D x H)</td>
<td>23.6” x 25.0” x 29.9” (600 mm x 635 mm x 760 mm)</td>
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Tooling Packages and Accessories

We design our tooling packages to include everything you need to get started with a new machine. Tooling packages offer tremendous savings over buying individual items, and you know that every part of the tooling package will work with your new machine. Each tooling package includes:

- 3” precision milling vise and mounting kit
- Thin parallels set
- 1-2-3 blocks (except 4491)
- 58-piece clamping kit
- R8 collet set
- End mill set, 2- and 4-flute
- Center drills
- Edge and center finder
- T-slot cleaner

We offer three packages; the higher priced packages include more pieces (e.g., more end mill sizes) and higher quality components.

4491 Mini Mill Essentials Tooling Package $240.43
3489 Tooling Package $319.95
4723 Precision Tooling Package $319.95
4858 Premium Tooling Package $648.95
5629 Stand Cabinet $161.24
HiTorque Micro Mill, Model 4700

Like its big brother, the best-in-class LittleMachineShop.com HiTorque Micro Mill has more power, more torque, and a larger table than competitors’ mills.

The 250 Watt brushless spindle drive motor provides tremendous low-end torque. And you can vary the speed from 100 RPM to 5000 RPM continuously. There are no gears or belts to shift. And, with no gears, the HiTorque Micro Mill is the quietest in its class.

The large mill table provides 50% more width than other micro mills. The resettable feed dials allow you to zero them at any point.

The HiTorque Micro Mill has a drill press handle for drilling. It also has Z-axis fine feed with 0.001” resolution for milling operations.

- #2 Morse Taper spindle
- 250 Watt output spindle motor
- Large X-Y table
- Solid, non-tilting column provides great rigidity
- Dovetail column maintains head alignment at any height
- Fine feed on Z-axis for precise control
- Radial handle for drilling
- E-stop safety power switch
- Adjustable Z-axis stop for repetitive drilling
- Adjustable gibbs on all dovetail ways
- Includes 3/8” capacity drill chuck and arbor

Specifications

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<th>Specification</th>
<th>Value</th>
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<td>End Milling Capacity</td>
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<td>Face Milling Capacity</td>
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<td>Drilling Capacity</td>
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<td>Table Size</td>
<td>15.7” x 5.7” (400 mm x 145 mm)</td>
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<td>X-Axis Travel</td>
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<td>Y-Axis Travel</td>
<td>5.9” (150 mm)</td>
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<td>Z-Axis Travel</td>
<td>8.7” (220 mm)</td>
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<td>Throat</td>
<td>5.5” (140 mm)</td>
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<td>X- and Y-Axis Feed Screws</td>
<td>0.050” (1.27 mm) per rotation</td>
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<td>Positioning Accuracy</td>
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<td>Spindle Taper</td>
<td>#2 Morse Taper</td>
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<td>Spindle Motor</td>
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<td>Spindle Speed</td>
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<td>Weight</td>
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<td>Dimensions (W x D x H)</td>
<td>20.5” x 19.3” x 28.7” (520 mm x 490 mm x 730 mm)</td>
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</table>

Tooling Packages and Accessories

We design our tooling packages to include everything you need to get started with a new machine. Tooling packages offer tremendous savings over buying individual items, and you know that every part of the tooling package will work with your new machine. Each tooling package includes:

- 3” screwless vise and mounting kit
- Thin parallels set
- 1-2-3 blocks
- 36-piece clamping kit
- Collet set
- End mill set, 2- and 4-flute
- Center drills
- Edge and center finder

3491 2MT Micro Mill Tooling Package $314.65
5627 Stand Cabinet $158.24
SIEG X2D Mini Mill

The SIEG X2D Mini Mill has all the features you want at an incredibly low price.

This mill has a solid column. It does not tilt from side to side. This construction is significantly stiffer than the tilting column on other low-cost mini mills.

The large mill table provides 50% more table area than other mini mills. It also has 30% more travel in each direction. The resettable feed dials allow you to zero them at any point.

The X2D Mini Mill has drill press handles for drilling and fast motion of the mill’s head. It also has Z-axis fine feed with 0.001” resolution for milling operations.

• 350 Watt variable speed DC drive
• Large X-Y table
• R8 Spindle for wide tool availability
• Air spring provides greater support for the mill head and increased travel on the Z-axis
• Solid column mount for greater rigidity
• Fine feed on Z-axis for precise control
• Three radial handles for drilling
• Dovetail column maintains head alignment at any height
• E-stop safety power switch
• Adjustable Z-axis stop for repetitive drilling
• Neoprene bellows protect horizontal ways
• Adjustable gibbs on all dovetail ways
• Includes ½” capacity drill chuck and arbor

Specifications

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<th>Feature</th>
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<td>End Milling Capacity</td>
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<td>Face Milling Capacity</td>
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<td>X-Axis Travel</td>
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</tr>
<tr>
<td>Spindle Taper</td>
<td>R8</td>
</tr>
<tr>
<td>Spindle Motor</td>
<td>0.47 hp (350 Watts)</td>
</tr>
<tr>
<td>Spindle Speed</td>
<td>100 - 2500 RPM</td>
</tr>
<tr>
<td>Power Requirements</td>
<td>120 V 60 Hz 6 Amps</td>
</tr>
<tr>
<td>Weight</td>
<td>126 lbs (57 kg)</td>
</tr>
<tr>
<td>Dimensions (W × D × H)</td>
<td>23.2” × 19.7” × 36.3”</td>
</tr>
<tr>
<td>(590 mm × 500 mm × 922 mm)</td>
<td></td>
</tr>
<tr>
<td>Crated Weight</td>
<td>161 lbs (73 kg)</td>
</tr>
<tr>
<td>Crate Dimensions (W × D × H)</td>
<td>23.6” × 25.0” × 29.9”</td>
</tr>
<tr>
<td></td>
<td>(600 mm × 635 mm × 760 mm)</td>
</tr>
</tbody>
</table>

Mill Comparison

How do you choose among the six manual milling machines we offer? Here’s a quick rundown of the differences:

• The 4962 SIEG X2D Mini Mill has nearly all the features we’ve become famous for at an affordable price: largest mini mill table, rigid solid column, R8 spindle, and pre-installed air spring head support.

• The 3990 HiTorque Mini Mill adds the powerful HiTorque drive system, which uses a brushless DC motor to offer more power, greater torque at low speeds, full speed range without shifting gears, and quiet operation. The 4190 HiTorque Deluxe Mini Mill adds a factory-installed DRO, a spindle lock, and nicer looking handles.

• The 5500 HiTorque Bench Mill is a step up in size, rigidity, and power. It provides a larger table, more travel, and more horsepower than the mini mills. The 5550 HiTorque Deluxe Bench Mill has an even larger table, plus a factory-installed DRO, a spindle lock, and fancy handles.

• The 4700 HiTorque Micro Mill offers the power (great torque at low speeds) and convenience (no gears or belts to shift) of the brushless DC drive system in a more compact configuration, ideal for smaller projects. Its higher spindle speed is ideal for small cutters.
HiTorque 8½” x 20” Bench Lathe, Models 3540/3595

The LittleMachineShop.com 8½”x20” HiTorque Bench Lathe is the best in its class. No other lathe in this size offers power cross feed.

The 1000 Watt brushless spindle drive motor provides tremendous low-end torque. And you can vary the speed from 100 RPM to 2000 RPM continuously in both directions. There are no gears to shift.

The cross feed and compound rest dials are graduated in 0.001” and advance 0.050” per turn. The lathe is equipped with a 4-way indexing tool post set for 3/8” (10 mm) tools.

A reversible 2 mm pitch lead screw provides extended threading capability. You can create every American Standard Unified class 2A inch screw thread from 4 to 80 threads per inch, and you can create every American Standard Metric class 6h thread from 0.2 to 8 mm pitch with the change gears that are included. All the gears on this lathe are metal.

- Power longitudinal feed and power cross feed
- Genuine NSK ball bearings
- Induction hardened bed ways
- E-stop safety power switch
- Cam lock tailstock
- Four-way tool post
- Zero-resettable dials graduated in inches and mm
- Reversible lead screw for right- and left-hand threads

$340-$404 less than Catalog 30 prices!

3595 HiTorque Deluxe Bench Lathe

All the features of the 3540 bench lathe plus:
- AXA quick change tool post (QCTP) set with five tool holders
- Digital readout (DRO) displays on compound rest and cross slide
- Anodized aluminum hand wheels, knobs, and levers
- Improved splash guard
- Modified compound rest to better accommodate QCTP

3540 HiTorque 8½”x20” Bench Lathe $1799.95
3595 HiTorque 8½”x20” Deluxe Bench Lathe $2349.95

Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Swing Over Bed</td>
<td>8.5” (215 mm)</td>
</tr>
<tr>
<td>Swing Over Saddle</td>
<td>4.6” (118 mm)</td>
</tr>
<tr>
<td>Between Centers</td>
<td>20” (510 mm)</td>
</tr>
<tr>
<td>Spindle Through Hole</td>
<td>0.8” (20 mm)</td>
</tr>
<tr>
<td>Spindle Motor Output</td>
<td>1.34 hp (1000 Watts)</td>
</tr>
<tr>
<td>Range of Threads</td>
<td>8-80 TPI (0.2-8.0 mm)</td>
</tr>
<tr>
<td>Spindle Taper</td>
<td>#3 Morse taper</td>
</tr>
<tr>
<td>Tailstock Taper</td>
<td>#2 Morse taper</td>
</tr>
<tr>
<td>Spindle Speed</td>
<td>100 - 2000 RPM</td>
</tr>
<tr>
<td>Cross Slide Travel</td>
<td>3.9” (100 mm)</td>
</tr>
<tr>
<td>Power Requirements</td>
<td>120 V 60 Hz 12 Amps</td>
</tr>
<tr>
<td>Weight</td>
<td>220 lbs (100 kg)</td>
</tr>
<tr>
<td>Dimensions (W x D x H)</td>
<td>40” x 22” x 16” (1010 mm x 550 mm x 400 mm)</td>
</tr>
<tr>
<td>Crated Weight</td>
<td>281 lbs (128 kg)</td>
</tr>
<tr>
<td>Crate Dimensions (W x D x H)</td>
<td>44” x 28” x 22” (1110 mm x 700 mm x 550 mm)</td>
</tr>
</tbody>
</table>

Tooling Packages and Accessories

We design our tooling packages to include everything you need to get started with a new machine. Tooling packages offer tremendous savings over buying individual items, and you know that every part of the tooling package will work with your new machine. Each tooling package includes:

- Quick change tool post set (3540 packages only)
- Indexable turning tools
- Boring bar
- Center drills
- Cut-off blade
- Drill chuck and arbor

For 3540
4217 Tooling Package $241.95
4857 Premium Tooling Package $310.95

For 3595
3164 Tooling Package $86.19
3389 Premium Tooling Package $156.82
3973 Stand $288.24
HiTorque 7”x16” Mini Lathe, Models 5100/5200

The LittleMachineShop.com HiTorque Mini Lathe is the best in its class. It has the most power, most torque, and more features than competitors’ lathes.

The 500 Watt brushless spindle drive motor provides tremendous low-end torque. And you can vary the speed from 50 RPM to 2500 RPM continuously in both directions. There are no gears to shift.

The cross feed and compound rest dials are graduated in 0.001” and 0.025 mm. A 4” 3-jaw lathe chuck is included, and the lathe is equipped with a 4-way indexing tool post set for 5/16” (8 mm) tools.

Real top and bottom half-nuts and a reversible 16 TPI lead screw provide extended threading capability. You can create every American Standard Unified class 2A inch screw thread from 4 to 80 threads per inch, and you can create every American Standard Metric class 6h thread from 0.3 to 8 mm pitch with the extra 21 tooth change gear that is included.

The lathe includes a chip tray, a backsplash guard, and spreaders to give the feet a broader stance.

The deluxe model 5200 (shown at left) adds an all-steel wedge-style quick change tool post set with five tool holders, digital readout (DRO) displays on the compound rest and cross slide, and metal hand wheels with chrome levers.

- Includes Mini Lathe Users Guide written by Chris Wood
  - 500 Watt output spindle motor
  - No gears in spindle drive
  - 4” 3-jaw chuck
  - E-stop safety power switch
  - Zero-resettable dials graduated in inches and mm
  - Extended threading capability - inch and metric threads
  - Rear apron shield to keep swarf out of the mechanism
  - Cam lock tailstock
  - Four-way tool post on 5100; quick change tool post set on 5200
  - Reversible lead screw for right and left hand threads

5100 HiTorque 7”x16” Mini Lathe $949.95
5200 HiTorque 7”x16” Deluxe Mini Lathe $1199.95

Specifications

<table>
<thead>
<tr>
<th>Feature</th>
<th>5100</th>
<th>5200</th>
</tr>
</thead>
<tbody>
<tr>
<td>Swing Over Bed</td>
<td>7” (180 mm)</td>
<td>7” (180 mm)</td>
</tr>
<tr>
<td>Swing Over Saddle</td>
<td>4.3” (110 mm)</td>
<td>4.3” (110 mm)</td>
</tr>
<tr>
<td>Between Centers</td>
<td>16.1” (410 mm)</td>
<td>16.1” (410 mm)</td>
</tr>
<tr>
<td>Spindle Through Hole</td>
<td>0.8” (20 mm)</td>
<td>0.8” (20 mm)</td>
</tr>
<tr>
<td>Spindle Motor Output</td>
<td>0.7 hp (500 Watts)</td>
<td>0.7 hp (500 Watts)</td>
</tr>
<tr>
<td>Range of Threads</td>
<td>4-80 TPI (0.3-8 mm)</td>
<td>4-80 TPI (0.3-8 mm)</td>
</tr>
<tr>
<td>Spindle Taper</td>
<td>#3 Morse taper</td>
<td>#3 Morse taper</td>
</tr>
<tr>
<td>Tailstock Taper</td>
<td>#2 Morse taper</td>
<td>#2 Morse taper</td>
</tr>
<tr>
<td>Spindle Speed</td>
<td>50 - 2500 RPM</td>
<td>50 - 2500 RPM</td>
</tr>
<tr>
<td>Cross Slide Travel</td>
<td>2.6” (65 mm)</td>
<td>2.6” (65 mm)</td>
</tr>
<tr>
<td>Power Requirements</td>
<td>120 V 60 Hz 8 Amps</td>
<td>120 V 60 Hz 8 Amps</td>
</tr>
<tr>
<td>Weight</td>
<td>90 lbs (41 kg)</td>
<td>90 lbs (41 kg)</td>
</tr>
<tr>
<td>Dimensions (W x D x H)</td>
<td>31” x 10” x 12” (790 mm x 260 mm x 300 mm)</td>
<td>31” x 10” x 12” (790 mm x 260 mm x 300 mm)</td>
</tr>
<tr>
<td>Crate Dimensions (W x D x H)</td>
<td>35” x 16” x 15” (900 mm x 410 mm x 380 mm)</td>
<td>35” x 16” x 15” (900 mm x 410 mm x 380 mm)</td>
</tr>
</tbody>
</table>

Tooling Packages and Accessories

Our tooling packages include everything you need to get started with a new machine. Each tooling package includes:

- Quick change tool post set (5100 packages only)
- Indexable turning tools
- Boring bar
- Center drills
- Cut-off blade
- Drill chuck and arbor

For 5100 5207 Tooling Package $225.95
4116 Premium Tooling Package $299.95

For 5200 5124 Tooling Package $83.19
5125 Premium Tooling Package $158.78
5626 Stand Cabinet $195.37

$198-$301 less than Catalog 30 prices!
SIEG C3 7”x14” Mini Lathe

The SIEG C3 7x14 Mini Lathe has all the features you want at an incredibly low price.

A full 14” bed length with a cam-lock tailstock accommodates longer work pieces.

Real top and bottom half-nuts and a reversible 16 TPI lead screw provide extended threading capability. You can create every American Standard Unified class 2A inch screw thread from 4 to 80 threads per inch, and you can create every American Standard Metric class 6h thread from 0.3 to 8 mm pitch.

The cross feed and compound rest dials are graduated in 0.001” and 0.025 mm. The lathe is equipped with a 4-way indexing tool post set for 5/16” (8 mm) tools.

The lathe includes a chip tray, a backsplash guard, and a threading dial.

Specifications

<table>
<thead>
<tr>
<th>Feature</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Swing Over Bed</td>
<td>7” (180 mm)</td>
</tr>
<tr>
<td>Swing Over Saddle</td>
<td>4.3” (110 mm)</td>
</tr>
<tr>
<td>Between Centers</td>
<td>14.0” (355 mm)</td>
</tr>
<tr>
<td>Spindle Through Hole</td>
<td>0.8” (20 mm)</td>
</tr>
<tr>
<td>Spindle Motor Output</td>
<td>0.5 hp (350 Watts)</td>
</tr>
<tr>
<td>Range of Threads</td>
<td>4-80 TPI (0.3-8 mm)</td>
</tr>
<tr>
<td>Spindle Taper</td>
<td>#3 Morse taper</td>
</tr>
<tr>
<td>Tailstock Taper</td>
<td>#2 Morse taper</td>
</tr>
<tr>
<td>Spindle Speed</td>
<td>100 - 3000 RPM</td>
</tr>
<tr>
<td>Power Requirements</td>
<td>120 V 60 Hz 6 Amps</td>
</tr>
<tr>
<td>Weight</td>
<td>88 lbs (40 kg)</td>
</tr>
<tr>
<td>Dimensions (W × D × H)</td>
<td>29” × 10” × 12” (740 mm × 260 mm × 300 mm)</td>
</tr>
<tr>
<td>Crate Dimensions (W × D × H)</td>
<td>34” × 13” × 15” (860 mm x 335 mm x 380 mm)</td>
</tr>
</tbody>
</table>

$130 less than Catalog 30 price!

Lathe Comparison

How do you choose among the five lathes shown on this and the preceding pages? Here’s a quick rundown of the differences:

- The 4959 SIEG C3 7”x14” Mini Lathe is a full featured lathe at an affordable price. It features a 14” bed and spindle speed readout in addition to the cam-lock tailstock that is included on all our lathes.
- The 5100 HiTorque Mini Lathe adds the powerful HiTorque drive system, which uses a brushless DC motor to offer more power, greater torque at low speeds, full speed range without shifting gears, and quiet operation. It comes with a 4” 3-jaw chuck. The distance between centers is 16”.
- The 5200 HiTorque Deluxe Mini Lathe adds three features to the 5100: an all-steel wedge-style quick change tool post set, digital readout (DRO) displays on the compound rest and cross slide, and metal hand wheels with chrome levers.
- The 3540 HiTorque Bench Lathe is a big step up in size (8½” × 20”) and power. It has all the features of our smaller lathes, plus power cross feed.
- The 3595 HiTorque Deluxe Bench Lathe adds several features to the 3540: most notably, an AXA quick change tool post set, digital readout displays on the compound rest and cross slide, and anodized aluminum hand wheels, knobs, and levers.

<table>
<thead>
<tr>
<th>Model</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>4959 SIEG C3 7”x14” Mini Lathe</td>
<td>$599.95</td>
</tr>
<tr>
<td>4607 Accessory Package</td>
<td>$369.27</td>
</tr>
<tr>
<td>5207 Tooling Package</td>
<td>$225.95</td>
</tr>
<tr>
<td>4116 Premium Tooling Package</td>
<td>$299.95</td>
</tr>
<tr>
<td>5625 Stand Cabinet</td>
<td>$195.37</td>
</tr>
</tbody>
</table>
Bench-Top Band Saw

The LittleMachineShop.com Bench-Top Band Saw is perfect for the small shop. It’s got the capacity of larger floor-standing saws but takes a fraction of the space.

The two-speed motor makes it great for ferrous (e.g., steel) and non-ferrous (e.g., aluminum) metals. Use low speed for steel and other harder materials. Use high speed for aluminum and other non-ferrous metals. High speed works well for wood and plastic, too.

It’s quieter and more accurate than chop saws. And by removing a few bolts and installing a handle (included), it becomes a handy portable saw.

- Uses widely available 44-7/8’ blades
- Two blade speeds
- 3” (80 mm) x 4” (100 mm) capacity
- Comes with a 14 TPI bi-metal blade
- Includes stand with quick-adjusting cast iron vise

Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Cutting Speed</td>
<td>105 FPM (58 m/Min)</td>
</tr>
<tr>
<td>High Cutting Speed</td>
<td>280 FPM (85 m/Min)</td>
</tr>
<tr>
<td>Round tube capacity</td>
<td>3” (80 mm)</td>
</tr>
<tr>
<td>Blade size</td>
<td>44.88” x 0.5” x 0.02” (1140 mm x 13 mm x 0.6 mm)</td>
</tr>
<tr>
<td>Round bar capacity</td>
<td>4” (100 mm)</td>
</tr>
<tr>
<td>Rectangle capacity</td>
<td>3” x 4” (80 mm x 100 mm)</td>
</tr>
<tr>
<td>Cutting Angle</td>
<td>0 to 45 Degrees</td>
</tr>
<tr>
<td>Power Requirements</td>
<td>120 V 60 Hz 8 Amps</td>
</tr>
<tr>
<td>Base Dimensions (W x D)</td>
<td>18.5” x 10.6” (470 mm x 270 mm)</td>
</tr>
</tbody>
</table>

4829 Bench-Top Band Saw $249.95
Jog Dial for CNC Machines

- The ideal Mach3 accessory
- Fully configurable
- USB interface
- Setup software included
- Complete jog pendant
- The Z-Bot Jog Dial II replaces the hand cranks on CNC Mills. The Z-Bot Jog Dial II is a USB jog pendant controller developed to work in conjunction with the popular Mach3 CNC control software. It is supplied with an installation disc that contains a Mach3 custom plug-in. The Jog Dial is highly flexible, easy to use, requires minimal configuration, and does not use any parallel port pins.
- The Jog Dial II USB controller has an inner and outer dial. Used for rapid coarse positioning, the outer dial will jog progressively faster, up to the full jog speed configured in Mach3, as the dial is turned further to the right or left of the center detent. The outer dial springs back to center position when released. Used for fine positioning, the inner dial jogs the machine one step increment, as configured in Mach3.
- Four buttons are used to select the axis to jog. The fifth button is easily configured for a variety of Mach3 functions using the plug-in supplied.

CNC Machines: CNC Lathes

5045 Lathe CNC, Tormach 15L Slant Pro

- 15" Diameter swing over bed
- 3 HP Spindle (up to 3500 RPM)
- D1-4 Morse with removable SC Taper Insert
- 25" Carriage
- Conversational programming

The Tormach 15L Slant-PRO™ is a compact CNC slant-bed lathe designed for prototyping and light production work. With its ability to cut challenging materials like titanium as well as softer materials such as aluminum, plastic and wood, the Tormach 15L Slant-PRO™ is a multipurpose CNC lathe for the small shop. This CNC lathe for sale can be accessorized with a wide array of tool changing and work holding options, including gang, quick change, or fully automatic tool changing, collet closers, etc. The available spindle speed range and horsepower make it well suited to cutting most metals, as well as plastics and non-abrasive composites. Conversational programming screens make this lathe a versatile prototyping and easy to program CNC tool. Many part geometries can be programmed on the control without resorting to CAD/CAM.

CNC Machines: CNC Milling Machines

5980 Milling Machine CNC, Tormach 1100M

- Tormach 1100M 3-Axis CNC Mill and Stand
- PathPilot® Controller and Control System
- 7,500 RPM R8 Spindle
- Travel: 18.0" x 11.0" x 16.25" (X, Y, Z-Axis)
- Enhanced Y-Axis Travel and Spindle Motor from the 1100 Series 3

With its ability to cut challenging materials like titanium as well as softer materials such as aluminum, plastic and wood, the Tormach 1100M PCNC Mill is a immensely flexible. With a typical footprint of 69" x 66" x 92" (with stand) the 1100M can fit in a shop without taking up a lot of room. The spindle motor has been upgraded from the 1100 Series 3 at 2.0 hp (1.40 kW) with a maximum speed of 7,500 RPM utilizing a Poly-V Belt transmission requiring Single-Phase 230 Vac, 50/60Hz, 20A breaker as the power source. The Y-Axis travel is also improved from the 1100 Series 3 with a travel of 11.0" (279 mm). Additionally, the 1100M has numerous add-on accessories which can be purchased separately. These include an automatic tool changer, 4th Axis Kit with 8" rotary table, SmartCool™ Coolant System, power drawbar kit, full enclosure, and much more.

The 1100M utilizes the PathPilot® control software which is user-friendly, supports up to 4-axes of continuous machining, industry standard G-code compliance and built-in Dropbox™ support for seamlessly transferring programs. This starter package includes the Tormach 1100M Compact 3-Axis CNC Mill with PathPilot® controller, stand, controller arm, lifting bar, backsplash kit, 5" CNC vise, TTS CNC operator set, standard LCD monitor, waterproof mini keyboard, waterproof mouse, 1-gallon machine way oil, and 1-year Autodesk Fusion license.

Collets and Chucks: 3C Collets

2244 Collet Closer, 7x10, 7x12

- 3C collet closer for 7x10 and 7x12 mini lathes
- Includes a 3 Morse taper to 3C collet adapter and a drawtube assembly

The adapter is precision ground to minimize runout. Drawtube allows 7/16" material to pass through.

2240 Collet Adapter, 3MT to 3C

- Includes a 3MT to 3C collet adapter and a drawtube assembly

2374 Collet Closer, 7x14 Mini Lathe

2728 Collet Closer, Universal
3C Collets

- Set of seven 3C round collets range in size from 1/8" to 1/2" by 16ths
- Includes 1/8", 3/16", 1/4", 5/16", 3/8", 7/16" and 1/2"
- Made of high grade tool steel
- Hardened and ground to close tolerance
- Externally threaded

The thru bore of the collets is 0.467". The 1/2" collet is bored to 1/2" by 0.66" deep. All the other collets will pass the full material size through the length of the collet.

- 4678 Collet, 3C, 1/8" $15.95
- 4679 Collet, 3C, 3/16" $15.95
- 4680 Collet, 3C, 1/4" $15.95
- 4681 Collet, 3C, 5/16" $15.95
- 4682 Collet, 3C, 3/8" $15.95
- 4683 Collet, 3C, 7/16" $15.95
- 4684 Collet, 3C, 1/2" $15.95

5C Collets

- Collet Set, 3C, Set of 7 $109.95
  - Precision ground hardened steel
  - Internally and externally threaded
  - For any machine or accessory that takes 5C collets. 5C collets range in size from 1/16" to 1-1/8". The end is internally threaded with 5C standard size (1.041-24 thread). It is also externally threaded with 5C standard size (1.238-20 thread). The overall length is 3.281 inches.

- 4593 Collet, 5C, 1/16" $7.95
- 4594 Collet, 5C, 1/8" $7.95
- 3670 Collet, 5C, 5/32" $7.95
- 3476 Collet, 5C, 1/4" $7.95
- 4595 Collet, 5C, 5/16" $7.95
- 3477 Collet, 5C, 3/8" $7.95
- 4596 Collet, 5C, 7/16" $7.95
- 3478 Collet, 5C, 1/2" $7.95
- 4597 Collet, 5C, 9/16" $7.95
- 3479 Collet, 5C, 5/8" $7.95
- 4598 Collet, 5C, 11/16" $7.95
- 3480 Collet, 5C, 3/4" $7.95
- 4599 Collet, 5C, 13/16" $7.95
- 3481 Collet, 5C, 7/8" $7.95
- 4600 Collet, 5C, 15/16" $7.95
- 3482 Collet, 5C, 1" $7.95

Brown & Sharpe Collets

- Collet Block Set, 5C Hex and Square $64.95
  - Holds standard 5C collets
  - Economical index for 2, 3, 4, and 6 divisions
  - Easy cross drilling at 60°, 90° and 120°
  - Made of hardened tool steel
  - Ground square and parallel within 0.0005" all over

- 3190 Collet Block Set, 5C Hex and Square $64.95
- 4662 Collet Set, 5C, Set of 69 $495.95
  - Set of 69 5C round collets range in size from 1/16" to 1-1/8" by 64ths
  - Made of high grade tool steel
  - Hardened and ground to close tolerance
  - Internally threaded for a work stop

- 3842 Collet Set, 5C, Set of 17 $129.95
- 4661 Collet Set, 5C, Set of 33 $239.95
- 1708 Collet Set, 5C, Set of 6 $41.90

- 3619 Collet Stop, 5C $6.95
  - Fully threaded adjustment screw
  - Thread size: 3/8"-24
  - Speeds up repetitive work

- 3047 Collet Chuck for 5C Collets $339.95
  - Plain back collet chuck mounts like a lathe chuck
  - 5" (130 mm) diameter
  - 1/16" to 1 1/8" capacity with appropriate collets
  - Through hole is 1.231"

- 3011 Tap & Tap Drill Bit, M8x1.25 Metric Thread $9.95
  - Set of seven Brown & Sharpe round collets to fit spindles with a 3 hole chuck mounting pattern is pre-drilled
  - Hardened and ground
  - 5C adapter with standard internal and external threads.

- 5478 Mount, 5C for 3 & 4 Jaw Lathe Chucks, 3" $36.95
  - 4" adapter
  - 5C adapter body
  - 3 hole chuck mounting pattern is pre-drilled
  - Hardened and ground to close tolerance
  - Set of seven Brown & Sharpe round collets to fit spindles with a Brown & Sharpe taper. This set ranges from 1/8" to 1/2" by 64ths.

- 2999 Collet Set, 7BS, Set of 7 $97.65
  - Set of seven Brown & Sharpe 7 round collets
  - 3/8"-16 drawbar thread
  - Made of high grade tool steel
  - Hardened and ground to close tolerance
  - Set of seven Brown & Sharpe round collets to fit spindles with a Brown & Sharpe taper. This set ranges from 1/8" to 1/2" by 64ths.

- 3011 Collet Set, 9BS, Set of 11 $175.45
  - Set of eleven Brown & Sharpe 9 round collets
  - 1/2"-12 drawbar thread
  - Made of high grade tool steel
  - Hardened and ground to close tolerance
  - Set of eleven Brown & Sharpe round collets to fit spindles with a Brown & Sharpe taper. This set ranges from 1/8" to 3/4" by 64ths.
Collets and Chucks: ER Collets

2229 Collet & Chuck Set, ER-25, 2MT $149.95
- Includes nine ER-25 Collets
- 2 Morse taper shank
- 3/8”-16 drawbar thread
- Includes spanner wrench and fitted case
Collet and Chuck set for lathes with a 2 Morse taper spindle taper. Includes nine ER-25 collets, 3/8”-16 drawbar thread, spanner wrench and case.

2228 Collet & Chuck Set, ER-32, 3MT $179.95
- Includes eleven ER-32 collets
- 3 Morse taper shank
- 3/8”-16 drawbar thread
- Includes spanner wrench and fitted case
Collet and Chuck set for lathes with a 3 Morse taper spindle taper. Includes eleven ER-32 collets, 3/8”-16 drawbar thread, spanner wrench and case.

2888 Collet & Chuck Set, ER-32, R8 $185.95
- Set includes eleven ER-32 collets
- R8 taper shank
- 7/16”-20 drawbar thread
- Spanner wrench
Collet and Chuck set for mills with a R8 spindle taper. Includes eleven ER-32 collets, 7/16”-20 drawbar thread, spanner wrench but no case.

3615 Collet Chuck, ER-32, R8 $72.95
- Includes ER collet nut
These collet blocks provide easy indexing for 2 and for, or 3 and 6 divisions.

5911 Collet Block, ER-25 Hexagonal $36.95
5912 Collet Block, ER-25 Square $36.95
4105 Collet Block, ER-32 Hexagonal $36.95
4106 Collet Block, ER-32 Square $36.95
5913 Collet Block, ER-40 Hexagonal $39.95
5914 Collet Block, ER-40 Square $39.95

5189 Collet Chuck, ER-16, Straight Shank, Professional Grade $59.95
- 3/4” x 2 1/2” shank
- Tolerance is 0.0003” maximum
- Balanced to 18,000 RPM
- Made of 20CrMnTi alloy steel
- Electroless nickel coating
This ER-16 straight shank collet chuck is a great tool for holding small end mills and engravers. ER-16 collets have a range of 1/32” to 3/8” (0.5 to 10.0 mm)

5188 Collet Chuck, ER-11, Straight Shank, Professional Grade $59.95

Collet Blocks, ER, Square and Hexagonal
- Uses standard ER collets
- Through hole permits long parts to be machined
- Hardened Tool Steel, Ground to .0005” on all 6 sides
- Accurately ground back face so the blocks may be used standing upright
- Includes ER collet nut
These collet blocks provide easy indexing for 2 and for, or 3 and 6 divisions.

5232 Collet Chuck, ER-32, 3” Diameter $130.25
- Mounts on mini lathe spindle
- Shorter than standard 3-jaw chuck
- Allows 25/32” stock through the headstock of the mini lathe
- Concentricity .0002”
This 3” diameter ER-32 collet chuck mounts on the lathe spindle in place of the lathe chuck or can be used as a fixture on a milling table.
ER collet chucks range in size from 3/32” up to 13/16” so you can run 25/32” (the through hole on the lathe spindle is 0.800”) stock through the headstock of your mini lathe.
The outside diameter of the lathe collet chuck is 80 mm. It has a 55 mm registration diameter and mounts with three M6 bolts on a 66 mm bolt circle.

4231 Collet Chuck, ER-32, 4” Diameter $99.95
5452 Collet Chuck, ER-40, 4” Diameter $99.95

5453 Collet Chuck, ER-32, 5C $49.95
- Made with DIN6499B (0.0005”) Run-Out Tolerance
- Holds all ER32 collets
- SC collet shank
- Hardened and precision Ground
- Half-moon Spanner included
ER-32 to 5C collet chuck milling chuck holder.

5449 Collet Chuck, ER-32, R8, Professional Grade $84.95
- Made of 20CrMnTi alloy steel
- Electrolysis nickel coating
- Thread of drawbar end: R8 - 7/16”-20
- MAX. RPM: 8,000
- T.I.R. ≤ .0003”
R8 to ER-32 professional grade collet chuck. Premium 20CrMnTi alloy steel hardened and all ground body for extended tool life. Has a superior finish (electrolysis nickel coating).

5448 Collet Chuck, ER-20, R8, Professional Grade $79.95
5450 Collet Chuck, ER-25, 2MT, Professional Grade $84.95
5883 Collet Chuck, ER-40, R8, Professional Grade $89.95

2289 Collet Holder, ER-32 Rotating, Aluminum $55.00
- Holds 18 ER-32 collets
- Can be mounted anywhere
- Made from anodized aluminum, red finish
- Easy rotation for quick accessibility
- Durable material for heavy use
Rotating rack allows for quick and easy access to 18 ER-32 collets. This carousel, made from red anodized aluminum, can be mounted anywhere. Ease of rotation makes collet size selection quick and easy.

5844 Collet Nut, ER-16 $11.47
Collet nut for the ER-16 HiTorque Micro Mill

3407 Collet Nut, ER-32 $19.95
- Fits ER-32 collet chucks
This is an M-type M40-1.5 ER-32 collet chuck nut.

4702 Collet Set, ER-16, Set of 6 $70.38
- Set of 6 ER-16 round collets
- Sizes 1/16” to 3/8” by sixteenths
- Includes 1/16”, 5/64”, 3/64”, 1/8”, 5/32”, and 3/32”
- Made of high grade tool steel
- Hardened and ground to close tolerance
Collets and Chucks: ER Collets

Collet Set, ER-20, Set of 3
2442 $36.95
- Includes 1/8", 1/4" and 3/8" collets
- Made of high grade tool steel
- Hardened and precision ground
This set of ER-20 collets provides the basics you need for the Tormach Tooling System.

Collet Set, ER-25, Set of 15
2662 $179.95
- Set of 15 ER-25 round collets
- Full range of collets hold all work sizes from 0.04" to 0.629"
- Made of high grade tool steel
- Hardened and ground to close tolerance

Collet Set, ER-32, Set of 18
2559 $203.95
- Set of 18 ER-32 round collets
- Full range of collets hold all work sizes from 0.08" to 0.787"
- Made of high grade tool steel
- Hardened and ground to close tolerance

Collet Set, ER-40, Set of 24
5666 $269.95
- Set of 24 ER-40 round collets
- Full range of collets hold all work sizes from 0.12" to 1.02"
- Made of high grade tool steel
- Hardened and ground to close tolerance

Collets, ER-11 Individual Sizes
- Made of high grade tool steel
- Major diameter 11.5 mm (0.45")
- Length 18 mm (0.71")
- Clamping Range 0.5—7 mm (0.020—0.276")
ER-11 collets are 11.5 mm (0.45") maximum diameter and 18 mm (0.71") long. They have a clamping range of 0.5—7 mm (0.020—0.276") ER collets are made from high grade tool steel, hardened and ground to close tolerance. Kerf cuts allow the collet to expand and contract as needed within the specific clamping range to securely hold the tool or workpiece.

Collet, ER-11, 1/32" 4797 $12.49
Collet, ER-11, 1/16" 4601 $12.49
Collet, ER-11, 3/32" 4398 $12.49
Collet, ER-11, 1/8" 4454 $12.49
Collet, ER-11, 3/16" 4455 $12.49
Collet, ER-11, 7/32" 4399 $12.49
Collet, ER-11, 1/4" 4456 $12.49

Collets, ER-16 Individual Sizes
- Precision ground hardened steel
- Made of high grade tool steel
- Major diameter 17 mm (0.67")
- Length 27.5 mm (1.08")
- Clamping range 0.5—7 mm (0.020—0.276")
ER-16 collets are 17 mm (0.67") maximum diameter and 27.5 mm (1.08") long. They have a clamping range of 0.5—7 mm (0.020—0.276") ER collets are made from high grade tool steel, hardened and ground to close tolerance. Kerf cuts allow the collet to expand and contract as needed within the specific clamping range to securely hold the tool or workpiece.

Collet Set, ER-16, Set of 3
4437 $36.95
Collet, ER-16, 1/32" 4613 $12.49
Collet, ER-16, 1/16" 4614 $12.49
Collet, ER-16, 3/32" 4615 $12.49
Collet, ER-16, 1/8" 4434 $12.49
Collet, ER-16, 5/32" 4435 $12.49
Collet, ER-16, 7/32" 4616 $12.49
Collet, ER-16, 1/4" 4436 $12.49
Collet, ER-16, 5/16" 4617 $12.49
Collet, ER-16, 11/32" 4619 $12.49
Collet, ER-16, 3/8" 4618 $12.49

Collets, ER-20 Individual Sizes
- Precision ground hardened steel
- Made of high grade tool steel
- Major diameter 21 mm (0.83")
- Length 31.5 mm (1.24")
- Clamping range 1—13 mm (0.039—0.512")
ER-20 collets are 21 mm (0.83") maximum diameter and 31.5 mm (1.24") long. They have a clamping range of 1—13 mm (0.039—0.512") ER collets are made from high grade tool steel, hardened and ground to close tolerance. Kerf cuts allow the collet to expand and contract as needed within the specific clamping range to securely hold the tool or workpiece.

Collet Set, ER-20, Set of 3
4620 $36.95
Collet, ER-20, 1/16" 4621 $12.49
Collet, ER-20, 3/32" 2443 $12.49
Collet, ER-20, 1/8" 4622 $12.49
Collet, ER-20, 5/32" 4623 $12.49
Collet, ER-20, 7/32" 4444 $12.49
Collet, ER-20, 1/4" 4624 $12.49
Collet, ER-20, 5/16" 4625 $12.49
Collet, ER-20, 11/32" 2445 $12.49
Collet, ER-20, 3/8" 4626 $12.49
Collet, ER-20, 13/32" 4627 $12.49
Collet, ER-20, 7/16" 4628 $12.49
Collet, ER-20, 1/2" 4629 $12.49
Collets and Chucks: ER Collets

- Precision ground hardened steel
- Made of high grade tool steel
- Major diameter 26 mm (1.02")
- Length 34 mm (1.34")
- Clamping range 1—16 mm (0.039—0.630")

ER-25 collets are 26 mm (1.02") maximum diameter and 34 mm (1.34") long. They have a clamping range of 1—16 mm (0.039—0.630"). ER collets are made from high grade tool steel, hardened and ground to close tolerance. Kerf cuts allow the collet to expand and contract as needed within the specific clamping range to securely hold the tool or workpiece.

Collets, ER-25 Individual Sizes

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Collets and Chucks: ER Collets

- Precision ground hardened steel
- Made of high grade tool steel
- Major diameter 33 mm (1.30")
- Length 40 mm (1.57")
- Clamping range 1—21 mm (0.039—0.827")

ER-32 collets are 33 mm (1.30") maximum diameter and 40 mm (1.57") long. They have a clamping range of 1—21 mm (0.039—0.827"). ER collets are made from high grade tool steel, hardened and ground to close tolerance. Kerf cuts allow the collet to expand and contract as needed within the specific clamping range to securely hold the tool or workpiece.

Collets, ER-32 Individual Sizes

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Collets and Chucks: ER Collets

- Precision ground hardened steel
- Made of high grade tool steel
- Major diameter 41 mm (1.61")
- Length 46 mm (1.81")
- Clamping range 3—26 mm (0.188—1.024")

ER-40 collets are 41 mm (1.61") maximum diameter and 46 mm (1.81") long. They have a clamping range of 3—26 mm (0.188—1.024"). ER collets are made from high grade tool steel, hardened and ground to close tolerance. Kerf cuts allow the collet to expand and contract as needed within the specific clamping range to securely hold the tool or workpiece.

Collets, ER-40 Individual Sizes

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Collets and Chucks: Morse Taper Collets

- Set of seven 2 Morse taper round collets
- Made of high-grade tool steel
- Hardened and ground to close tolerance


Collet Set, 2MT, Set of 7 $84.65

Collets, ER-40 Individual Sizes

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Collets and Chucks: Morse Taper Collets

- Set of seven 2 Morse taper round collets
- Made of high-grade tool steel
- Hardened and ground to close tolerance

Set of seven 2 Morse taper round collets. Made of high grade tool steel these collets have been hardened and ground to close tolerance. This Morse taper collet set includes seven 2MT collets sizes: 1/8", 3/16", 1/4", 5/16", 3/8", 7/16", and 1/2".

Collet Set, 2MT, Set of 7 $84.65
Collets and Chucks: Morse Taper Collets

1948 Collet Set, 3MT, Set of 11 $139.35
- Set of eleven 3 Morse taper round collets
- Drawbar thread: 3/8"-16
- Made of high grade tool steel
- Hardened and ground to close tolerance
Set of eleven 3MT round collets that work with a wide variety of lathes. Made of high grade tool steel, hardened and ground to close tolerance.

2023 Collet Set, 3MT, Set of 4 $59.00
- 1605 Collet, 3MT, 1/8" $13.95
- 1606 Collet, 3MT, 3/16" $13.95
- 1607 Collet, 3MT, 1/4" $13.95
- 1658 Collet, 3MT, 5/16" $13.95
- 1608 Collet, 3MT, 3/8" $13.95
- 1659 Collet, 3MT, 7/16" $16.30
- 1609 Collet, 3MT, 1/2" $13.95
- 1680 Collet, 3MT, 9/16" $16.30
- 1610 Collet, 3MT, 5/8" $13.95
- 1681 Collet, 3MT, 11/16" $16.30
- 1611 Collet, 3MT, 3/4" $16.30

Collets and Chucks: R8 Collets

5001 Collet Holder, R8 Rotating $24.95
- Holds 11 R8 collets
- Can be mounted anywhere
- Made from durable ABS plastic
- Easy rotation for quick accessibility
- Low Price - Great for small shops
Rotating R8 collet rack allows for quick and easy access to 11 R8 collets. This carousel, made from durable ABS plastic, can be mounted anywhere. At the low price, buy multiple racks for large R8 collet sets.

2290 Collet Holder, R8 Rotating, Aluminum $55.00
- Holds 11 R8 collets
- Can be mounted anywhere
- Made from anodized aluminum, blue finish
- Easy rotation for quick accessibility
- Durable material for heavy use
Rotating R8 collet rack allows for quick and easy access to 11 R8 collets. This carousel, made from blue anodized aluminum, can be mounted anywhere. Ease of rotation makes collet size selection quick and easy.

5915 Collet Set, R8 Metric, Set of 10 $59.95
- Set of ten R8 round collets
- Sizes 3, 4, 5, 6, 8, 10, 12, 14, 18, 20 mm
- Made of high grade tool steel
- Precision ground to close tolerance
- Internally threaded: 7/16"-20
Set of 10 R8 round metric collets sized 3, 4, 5, 6, 8, 10, 12, 14, 18, and 20 mm. Made of high grade steel, these collets have a 7/16"-20 internal drawbar threading.

4860 Collet Set, R8, Set of 13, Professional Grade $124.95
- Set of thirteen R8 round collets
- TIR less than 0.0005"
- Sizes from 1/8" to 7/8" by 16ths
- Made of high grade tool steel
- Hardened and ground to close tolerance
These are high precision professional grade collets with 0.0005" runout or less.

Collets and Chucks: Watchmakers Collets

5910 Collet Set, #10, 1 mm, Watchmakers $13.95
- 3/16-16 Threaded end fits Sherline and Taig chucks and tooling
- 1/8-18 Tap for Taig collets and collet nut
Note: For Sherline tooling a 1/8" thick flat washer must be used between the tool and arbor.

2663 Arbor, 2MT, Sherline/Taig Tooling $34.95
- Made in USA by Starrett Products
- Body diameter is 0.315" (8 mm)
- 3MT drawbar shank with 3/8"-16 drawbar thread
- Fits Taig collets and collet nut
Note: For Sherline tooling a 1/8" thick flat washer must be used between the tool and arbor.

Coolant Systems: Cutting Compounds

2236 Coolant, Kool Mist 77, Pint $6.95
- Safe for people
- Safe for materials
- Safe for the environment
- Safe for machines
Kool Mist 77 coolant is highly recommended for mist cooling any metal or alloy where tougher machine conditions require greater lubricity. It is particularly useful where the material is very abrasive. Improves metal cutting, milling, turning, drilling, grinding, and sawing. You can also use Kool Mist 77 as a flood coolant. Kool Mist 77 is 100% synthetic and biodegradable, and meets the requirements of OSHA & EPA. This coolant will not cause rancidity or buildup and creates no rust or corrosion when diluted with clean water. Workpieces and machine parts remain clean and unstained.
Mix this Kool Mist coolant concentrate with 32 parts water before use. Makes over 4 gallons of coolant.

2235 Coolant, Kool Mist 77, Gallon $44.95
Coolant Systems: Cutting Compounds

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<td></td>
<td>• Wax-based metal-cutting compound in 6&quot; tube</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Extends tool life</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Lubricate saw blades, taps, drills, and hole saws</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Nikx Stikx is a non-hazardous solid metal-cutting compound that eases your task and extends the life of all metal cutting and threading tools. Cutting oils are combined with wax in a tube approximately 1&quot; in diameter and 6&quot; long. Rub a little compound on the tool cutting edges. The compound heats up when cutting starts. The heated compound migrates to the tool cutting edge. The cutting compound helps prevent steel and aluminum from galling on the tool cutting edges. The compound works equally well on wood working tools by preventing wood pitch build-up and galling on the tool cutting edges. The compound is a great lubricant for driving screws and lag-bolts. Craftsmen, electricians, plumbers, maintenance engineers and machinists welcome the product because it's convenient to use without fear of spillage.</td>
<td></td>
</tr>
<tr>
<td>3088</td>
<td>Cutting Fluid, Re-Li-On, 4 Oz.</td>
<td>$3.95</td>
</tr>
<tr>
<td></td>
<td>• Engineered formula for cutting and tapping</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Extends tool life and controls chip welding</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Improves finishes and tolerances</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Safe and odorless</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Spray top for easy application</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Re-Li-On cutting and tapping fluid is a non-ozone depleting product that is safe on aluminum and exotic alloys such as stainless steel, hastelloy, inconel and titanium. The engineered formula clings to the cutting tool and provides strong lubrication.</td>
<td></td>
</tr>
<tr>
<td>3120</td>
<td>Cutting Fluid, Re-Li-On, 16 Oz.</td>
<td>$9.95</td>
</tr>
<tr>
<td>5848</td>
<td>Cutting Oil, Viper’s Venom</td>
<td>$19.50</td>
</tr>
<tr>
<td></td>
<td>• 32 oz. bottle with applicator top</td>
<td></td>
</tr>
<tr>
<td></td>
<td>This high sulfur content cutting oil was recommended to us by the guys at the Arthur R. Warner Co. They know high speed steel and they use this stuff in their shop. It's great for threading, tapping, turning and milling.</td>
<td></td>
</tr>
</tbody>
</table>

Coolant Systems: Flood Systems

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>3952</td>
<td>Coolant Hose on Magnetic Base</td>
<td>$19.95</td>
</tr>
<tr>
<td></td>
<td>• Great for flood coolant applications</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 1/4&quot; ID flexible coolant hoses with shut off</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• On/off switchable magnetic base</td>
<td></td>
</tr>
<tr>
<td>3660</td>
<td>Coolant Hose on Magnetic Base</td>
<td>$52.95</td>
</tr>
<tr>
<td></td>
<td>• Great for flood coolant applications</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Two 1/4&quot; ID flexible coolant hoses with individual shut offs</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• On/off switchable magnetic base</td>
<td></td>
</tr>
<tr>
<td>4551</td>
<td>Coolant Hose Set, Modular, 1/4&quot; ID</td>
<td>$8.95</td>
</tr>
<tr>
<td></td>
<td>• 12&quot; length of 1/4&quot; ID modular coolant hose</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 1/16&quot;, 1/8&quot;, 1/4&quot; nozzles</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 1/8&quot; NPT and 1/4&quot; NPT connectors</td>
<td></td>
</tr>
<tr>
<td></td>
<td>This is a starter set for modular coolant hose.</td>
<td></td>
</tr>
<tr>
<td>4553</td>
<td>Coolant Hose Plier, Modular 1/4&quot; ID</td>
<td>$18.95</td>
</tr>
<tr>
<td>4552</td>
<td>Coolant Hose Valve, Modular 1/4&quot; ID</td>
<td>$3.95</td>
</tr>
<tr>
<td>4716</td>
<td>Coolant Hose Valve, Modular 1/4&quot; ID</td>
<td>$3.95</td>
</tr>
<tr>
<td>4550</td>
<td>Coolant Hose, Modular 1/4&quot; ID, 12&quot; Long</td>
<td>$3.95</td>
</tr>
<tr>
<td>4763</td>
<td>Coolant Hose, Steel with Magnetic Base</td>
<td>$59.95</td>
</tr>
<tr>
<td></td>
<td>• 5/8&quot; diameter X 13&quot; long steel nozzled hose</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• On/off switchable magnetic base</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Magnetic base dimensions: 2.36&quot; x 1.97&quot; x 2.17&quot;</td>
<td></td>
</tr>
</tbody>
</table>

Coolant Systems: Lubricants

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>3984</td>
<td>Lubriplate 630-AA Lithium Grease</td>
<td>$11.95</td>
</tr>
<tr>
<td></td>
<td>• Lithium-based grease for general purpose lubrication</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• High anti-wear for extra lubricity</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Water resistant</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Wide operating temperature range</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 630-AA is an NLGI No. 1 lubricant</td>
<td></td>
</tr>
<tr>
<td></td>
<td>This is the grease we recommend for small machine tools. It is great for many other applications as well.</td>
<td></td>
</tr>
<tr>
<td>3195</td>
<td>M1 Lubricant, 12 oz. Aerosol Can, Starrett</td>
<td>$9.95</td>
</tr>
<tr>
<td></td>
<td>• Starrett M1 all-purpose lubricant in 12 oz. Aerosol can</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Must be shipped by ground; not available outside the continental US</td>
<td></td>
</tr>
<tr>
<td></td>
<td>M1® is the &quot;modern one&quot; - the superior alternative. This all-purpose lubricant dries quickly and will not attract dirt or other contaminants as other leading lubricants do. Starrett lubricant simultaneously dries as it protects, avoiding dirt and grime. Dries to leave a film that protects and lubricates. Lubricates without silicone. Penetrates to quickly to free frozen nuts, bolts and metal parts. Prevents rust and corrosion damage by providing a molecular shield that locks to the metal. Non-soluble in water so it displaces moisture to lift it away from the surface to be protected. Non-conductive, preventing short circuits. Applications for industry are nearly endless. Protect working surfaces of machinery; use in dip tanks to protect production parts in process, or apply on tools when stored. Starrett M1 lubricant is also ideal in highly corrosive situations that destroy metal equipment used in marine environments.</td>
<td></td>
</tr>
<tr>
<td>3179</td>
<td>M1 Lubricant, Case of 12 Aerosol Cans, Starrett</td>
<td>$99.95</td>
</tr>
<tr>
<td>1825</td>
<td>Tool and Instrument Oil, Starrett</td>
<td>$10.60</td>
</tr>
<tr>
<td></td>
<td>• Starrett catalog number 1620</td>
<td></td>
</tr>
<tr>
<td></td>
<td>This oil is the same extra-fine lubricant made to Starrett specifications and used in the Starrett factory to lubricate and protect their precision measuring tools and instruments. It is also perfect for all mechanics, homeowners, hobbyists, and sportsmen who require the finest all-purpose oil. Special high-refining makes Starrett Tool and Instrument Oil colorless, ensures thorough lubrication of close-fitting parts at high temperatures and below zero, and provides a strong lasting film over all areas requiring protection against rust. This oil has not been adulterated by additives for color and odor.</td>
<td></td>
</tr>
</tbody>
</table>
Coolant Systems: Lubricants

4120 Way Oil, Mobil Vactra Oil No. 2 $34.95
- ISO viscosity 68
- One gallon
- Recommended for horizontal slideways on small to medium size machine tools
- Rust Protection, ASTM D 6658Pass
- Flash Point, ASTM D92, °C228

When you need oil for your machine, many types of oil will work - even motor oil. However, the best oil to use is oil designed specifically for lubricating machine ways. This type of oil has an additive that helps the oil stick to the surface. We suggest and use 4120 Mobil Vactra Oil No. 2 Way Oil with ISO viscosity 68. Information provided by Mobil. Mobil Vactra Oil Numbered Series products are recommended for the lubrication of machine tool slideway systems. They are designed for use with combinations of cast iron, steel and non-metallic way materials. Mobil machine oil may be applied by hand, force-fed lubricator or in flood application by circulation system. Mobil Vactra Oil No. Series of products are suitable for use in applications that require Fives Cincinnatia specifications P53, P47, and P50. Mobil Vactra Oil No. 2 is recommended for horizontal slideways on small to medium size machine tools. It is also suitable for circulating application in large machines and as a moderate duty hydraulic fluid. Mobil machine oil can be used for lubrication of ball screws, linear guides, headstocks, translating screws. Mobil Vactra Oil Numbered Series is recommended for applications where oil contamination of the aqueous coolants shortens coolant batch life. Mobil Vactra Oil No. 2 Way Oil ISO Viscosity Grade 68CST @ 40°C, ASTM D4456Flash Point, ASTM D92, °C228Pour Point, ASTM D97, °C-18Copper Strip Corrosion, ASTM D 130C, 3 H1Rust Protection, ASTM D 6658PassFZG Load Support, ISO 14635, Fail Stage 13

Information provided by Mobil: Mobil Vactra Oil Numbered Series products are recommended for the lubrication of machine tool slideway systems. They are designed for use with combinations of cast iron, steel and non-metallic way materials. Mobil machine oil may be applied by hand, force-fed lubricator or in flood application by circulation system. Mobil Vactra Oil No. Series of products are suitable for use in applications that require Fives Cincinnatia specifications P53, P47, and P50. Mobil Vactra Oil No. 2 is recommended for horizontal slideways on small to medium size machine tools. It is also suitable for circulating application in large machines and as a moderate duty hydraulic fluid. Mobil machine oil can be used for lubrication of ball screws, linear guides, headstocks, translating screws. Mobil Vactra Oil Numbered Series is recommended for applications where oil contamination of the aqueous coolants shortens coolant batch life. Mobil Vactra Oil No. 2 Way Oil ISO Viscosity Grade 68CST @ 40°C, ASTM D4456Flash Point, ASTM D92, °C228Pour Point, ASTM D97, °C-18Copper Strip Corrosion, ASTM D 130C, 3 H1Rust Protection, ASTM D 6658PassFZG Load Support, ISO 14635, Fail Stage 13

Coolant Systems: Mist Systems

4718 FogBuster Sprayer Coolant System with Tank, 1 Outlet $354.95
- FogBuster model 10100 with one spray outlet
- 1/2 gallon clear coolant tank
- Stainless steel handle, nozzle with magnetic stand, and pressure regulator
- Reduces airborne pollutants in shop

Half-gallon models are popular for many coolant and lubricant applications. Coolant level can be easily viewed through the clear reservoir. The provided stainless steel handle makes carrying or carrying this spray mist coolant system quick and easy. The hose from tank to nozzle is 5 feet long. Unlike other mist coolant systems, the FogBuster does not atomize coolant at the nozzle tip. Coolant is carried accurately with the air stream after leaving the nozzle and will produce a small spray pattern from several inches from its target. Greater cooling and lubrication is achieved along with a reduction in airborne pollutants. The system is suitable for use with any type of soluble coolant or oil. Only solid brass fittings are used. There is nothing to rust or corrode. The system is suitable for use with any type of soluble coolant or oil. One gallon tank is available. 

4719 Lathe Mount for FogBuster Mist Unit $34.95

4984 PORTaMIST Spray Mist Unit 18" $156.00
- Kool Mist PORTaMIST model 60M12
- 12” Lock-Line® spray positioner
- Heavy duty magnetic base
- Adjustable coolant nozzle
- 4’ coolant and air hoses

This spray mist coolant unit has a 1/8” NPT thread for your compressed air supply. (You furnish the air compressor.) Includes a sample of Kool Mist 77.

2226 Spra-Kool Midget Mist Coolant Spray Unit $35.95
- For turning, drilling, milling, sawing, and grinding
- Designed to be moved from machine to machine
- Adjustable coolant spray nozzle for precise aim
- Adjustable spray volume
- Removable strainer prevents clogs

The Spra-Kool Midget unit has successfully been used for over 30 years as a versatile, economical method of applying a coolant spray for machining. The Spra-Kool coolant spray unit works on 30 to 150 PSI air pressure. (You furnish the air compressor.) Only solid brass fittings are used. There is nothing to rust or corrode. The system is suitable for use with any type of soluble coolant or oil.

3804 Spra-Kool Midget Mist Coolant Spray Unit & Coolant $41.95

Cutting Tools: Boring Bars

1246 Boring Bar Set, 3/8" Shank, Carbide $19.95
- Set of nine boring bars - 3 lengths for each min. bore size
- Shank diameter 3/8"
- Hardened and ground to .001” - .0005”
- Shanks are made of special heat treated alloy steel
- Designed so the same bar can bore flat

This carbide tipped boring bar set includes three different length boring bars each for minimum bores of 5/16", 3/8", and 7/16". The deep hole ranges from 3/4" to 2-1/4". The heat treated, alloy steel shanks are held to .000 to .0005" from the nominal diameter. The holder may vary from that shown in the photo.

3768 Boring Bar Set, 1/2" Shank, Carbide with Holder for Mini Lathe $33.19

3832 Boring Bar Set, 3/4" Shank, Carbide $49.95

1247 Boring Bar Set, 1/2" Shank, HSS $24.95

2682 Boring Bar Set, 1/2" Shank, HSS $76.95

2683 Boring Bar Set, 3/8" Shank, HSS $63.95
Cutting Tools: Boring Bars

1779 Boring Bar, 3/8" Indexable $34.95
- Profiling bars for semi-finishing and finishing operations
- Designed for CCMT 80° inserts
- 7° Relief angle
- Negative 5° Lead angle for boring
- 3" Side & end cutting edge angle
This 3/8" diameter indexable boring bar for sale uses CCMT inserts. Minimum bore diameter is 0.50".

1780 Boring Bar, 1/2" Indexable $35.95
- Minimum bore diameter: 5/16".
- Maximum bore depth: 3.5625".

3719 Boring Bar, 5/16" Indexable $38.95
- CCMT 21.51 inserts with this boring bar set.
- 5/16" diameter bar is 4" long.
- 7/16", and 9/16". The bore depth ranges from 3/4" to 3". The heat treated, alloy steel shanks are held to 0.000 to -0.0005" from the nominal diameter.

5436 Boring Bar, 5/16" Indexable, SOS $29.95
- CCMT 21.52 inserts with this boring bar set.

4788 Boring Bar, 3/8" Indexable, 80 Deg HSS Diamond Inserts, AR Warner Kit #13 $96.00
- 3/8" diameter, 5" long boring bar
- 3 CDMN-21.5.5 high speed steel inserts
- 1 extra Torx screw
- 1 wrench

This Arthur R. Warner Co. precision boring bar uses high speed steel inserts. Combine the advantages of high speed steel cutting tools with the convenience of indexable tooling. The minimum boring diameter is 0.330".

The Arthur R. Warner Co. is a family-owned American manufacturer of high speed steel products with specialization in cutting, shaping, pre-grinding, heat treating, and finish grinding of premium grades of flat high speed steel. Their quality is excellent and LittleMachineShop.com is proud to carry their products.

1720 Boring Bar, 3/8" Indexable, HSS Triangle Inserts, AR Warner Kit #12 $95.95
- 3/8" diameter, 5" long boring bar with TPNW-1.81.5.5 insert
- 2 extra TPNW-1.81.5.5 high speed steel inserts
- 1 extra Torx screw
- 1 wrench

This Arthur R. Warner Co. precision boring bar uses high speed steel inserts. Combine the advantages of high speed steel cutting tools with the convenience of indexable tooling. The minimum boring diameter is 0.330".

The Arthur R. Warner Co. is a family-owned American manufacturer of high speed steel products with specialization in cutting, shaping, pre-grinding, heat treating, and finish grinding of premium grades of flat high speed steel. Their quality is excellent and LittleMachineShop.com is proud to carry their products.

1721 Boring Bar, 1/2" Indexable, HSS Triangle Inserts, AR Warner Kit #14 $102.00
- 1/2" diameter, 5" long boring bar with TPW2-1.81.5.5 insert
- 2 extra TPW2-1.81.5.5 high speed steel inserts
- 1 extra Torx screw
- 1 wrench

This Arthur R. Warner Co. precision boring bar uses high speed steel inserts. Combine the advantages of high speed steel cutting tools with the convenience of indexable tooling. The minimum boring diameter is 0.330".

The Arthur R. Warner Co. is a family-owned American manufacturer of high speed steel products with specialization in cutting, shaping, pre-grinding, heat treating, and finish grinding of premium grades of flat high speed steel. Their quality is excellent and LittleMachineShop.com is proud to carry their products.

5605 Boring Bar, 3/8" Indexable, S06H-SCLCR-2, Tormach $39.95
- Designation: S06H-SCLCR-2
- Steel shank 3/8" x 4"
- Designed for CCMT and CCGT inserts
- Approach 95°, 7° relief angle
- Insert Shape: 80° Rhombus (C)

Right hand Boring Bar. Includes wrenches and (1) insert.

5608 Boring Bar, 1/2" Indexable, S08M-SCLCL-2, Tormach $45.95

5607 Boring Bar, 1/2" Indexable, S08M-SCLCR-2, Tormach $45.95

5606 Boring Bar, 3/8" Indexable, S06H-SCLCL-2, Tormach $34.95

5435 Boring Bars, Indexable, 80 Deg Diamond Inserts, 3 Piece $89.95
- 3 piece set, 5/16", 3/8" and 1/2" diameter
- Uses CCMT 80 degree diamond inserts
- 7 degree relief angle, negative 5 degree lead angle for boring
- 3 degree side and end cutting edge angle
- Torx wrench and CCMT inserts included

Boring bars for semi-finishing and finishing operations. The 5/16" diameter bar is 4" long. The 3/8" diameter bar is 6" long. The 1/2" diameter bar is 7.75" long.

5403 Boring Head Set, RB Professional Grade $184.95
- Offset: 5/8", Crosshole: 1/2"
- Shank thread: 7/16"-20 UNC
- Min/Max boring diameter: 0.394" / 5.906"
- Max boring depth: 1.970"

Rugged design allows excellent rigity for chatter-free boring. Head features a threaded back for multiple shanks exchangeable. Set complete with boring head, boring shank, carbide tipped boring bars & L-shape Hex Wrenches. Dial on head with 0.001" graduation for accurate hole sizing. Fitted durable carrying case included.

5404 Boring Head Set, 2MT Professional Grade $179.95

5389 Interchangeable Pilot Counterbore Set, HSS, 21 Piece $96.95
- 6 counterbore sizes
- 14 pilots
- Straight shanks
- 1 holder: 3/8" shank
- High speed steel

21 Piece interchangeable pilot counterbore set used in spot facing and counterboring operations. Kit includes: 1 holder with 3/8" shank, shank sizes: 5/16", 3/8", 7/16", 1/2", 9/16", 5/16" Pilot: 5/32" Shank: 0.187, 0.204, 0.213, 0.229, 0.241, 0.254, 0.267, 0.312, 0.3/8", 0.25/4, 0.32/2 & 7/16"
Cutting Tools: Countersinks

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>4540</td>
<td>Countersink Set, Single Flute 82 Degree, 1/2&quot; Shank</td>
<td>$29.95</td>
</tr>
<tr>
<td>4539</td>
<td>Countersink Set, Single Flute 82 Degree, 1/4&quot; Shank</td>
<td>$16.95</td>
</tr>
<tr>
<td>4535</td>
<td>Countersink, 82 Degree, 1/4&quot; Single Flute</td>
<td>$3.95</td>
</tr>
<tr>
<td>4536</td>
<td>Countersink, 82 Degree, 3/8&quot; Single Flute</td>
<td>$6.95</td>
</tr>
<tr>
<td>4537</td>
<td>Countersink, 82 Degree, 1/2&quot; Single Flute</td>
<td>$7.95</td>
</tr>
<tr>
<td>4538</td>
<td>Countersink, 82 Degree, 3/4&quot; Single Flute</td>
<td>$12.95</td>
</tr>
<tr>
<td>4542</td>
<td>Countersink Set, Zero Flute 82 Degree, 1/2&quot; Shank</td>
<td>$45.95</td>
</tr>
</tbody>
</table>

- Single flute countersinks
- High speed steel
- For steel, brass, and aluminum
- 82 degree point angle
- 1/4", 3/8", 1/2", and 3/4" diameter countersinks

Use 82 degree countersinks for deburring and for flat head screws. These countersinks can be resharpened with a small mounted grinding wheel in the hole. Sizes 0, 1, and 2 have a 1/4" diameter shank. Sizes 3 and 4 have a 1/2" diameter shank.

Cutting Tools: Cut-Off Tools

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>5108</td>
<td>Cut-Off Blade, 1/32&quot;</td>
<td>$16.00</td>
</tr>
<tr>
<td>5109</td>
<td>Cut-Off Blade, 1/16&quot;</td>
<td>$16.00</td>
</tr>
<tr>
<td>3415</td>
<td>Cut-Off Blade, P1 Carbide Tipped</td>
<td>$65.95</td>
</tr>
<tr>
<td>4993</td>
<td>Cut-Off Blade, P2 Indexable</td>
<td>$52.95</td>
</tr>
</tbody>
</table>

- T-15 High Speed Steel
- Width: .032", Height: .218", Length: 3.0"
- Used on 5106, 5107, and 5130 grooving & cut-off tools
- 0.032" x 0.218" x 3" M2 HSS cut-off blade.

- This blade is size P1
- Two micro grain carbide tips brazed on
- High speed steel
- Width: 1/16", Height: 1/2", Length: 4-1/2"
- 1/16" x 1/2" x 4-1/2" M2 HSS cut-off blade.

- This blade is size P2
- Fits 0XA and AXA cut-off holders
- Uses GTN-2, G2L-2 or GTR-2 inserts
- Includes one GTN-2 insert
- 0.072" x 0.218" x 3-1/2" M2 HSS cut-off blade.

- These T-shape parting blades provide great side clearance.

Cut-Off Blades, High Speed Steel

- 1/2" x 4-1/2" M2 HSS cut-off blades
- These T-shape parting blades provide great side clearance
- P1N blades are 0.060" wide
- P1 Blades are 1/16" (0.063") wide
- P1X blades are 5/64" (0.063") wide

We carry both imported M2 blades and premium American-made M2 high speed steel cut-off blades from the Arthur R. Warner Co.

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1929</td>
<td>Cut-Off Blade, P1</td>
<td>$7.95</td>
</tr>
<tr>
<td>1728</td>
<td>Cut-Off Blade, P1, M2 HSS</td>
<td>$19.95</td>
</tr>
<tr>
<td>1930</td>
<td>Cut-Off Blade, P1N</td>
<td>$7.95</td>
</tr>
<tr>
<td>1729</td>
<td>Cut-Off Blade, P1N, M2 HSS</td>
<td>$19.95</td>
</tr>
<tr>
<td>1552</td>
<td>Cut-Off Blade, P1X</td>
<td>$7.95</td>
</tr>
</tbody>
</table>

Cutting Tools: Drill Sets

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>3418</td>
<td>Drill Set, 115 Piece Jobber Length Cobalt Steel</td>
<td>$499.95</td>
</tr>
</tbody>
</table>

- Made in USA
- Bronze color finish
- 135º split point

115 Piece cobalt steel drill set. Set includes 1/16" - 1/2" by 64ths, A - Z, and No. 1 - 60. Cobalt drills display higher red hardness and are especially effective in drilling hard or abrasive materials. These are jobbers length drills with straight shanks. Jobbers length drills are normal length drills. Includes a metal index for storing the drills.
### Cutting Tools: Drills

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>2826</td>
<td>Drill Set, 115 Piece Jobber Length HSS</td>
<td>$124.95</td>
</tr>
<tr>
<td></td>
<td>- 118° Point</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Surface Treated Black Finish</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Jobber Length</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Straight Shank</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- High Speed Steel</td>
<td></td>
</tr>
<tr>
<td></td>
<td>115 Piece high speed steel drill set</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1/16&quot; - 1/2&quot; by 64ths, A - Z, and No. 1 - 60.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>These are jobber length drills with straight shanks. Jobber length drills are normal length drills. Includes a metal index for storing the drills.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3043 Drill Set, #1-60 Jobber Length HSS</td>
<td>$39.95</td>
</tr>
<tr>
<td></td>
<td>2828 Drill Set, 29 Piece Jobber Length HSS</td>
<td>$44.95</td>
</tr>
<tr>
<td></td>
<td>3044 Drill Set, A-Z Jobber Length HSS</td>
<td>$69.95</td>
</tr>
<tr>
<td></td>
<td>3977 Drill Set, #61-80 Jobber Length HSS</td>
<td>$17.95</td>
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<tr>
<td>2827</td>
<td>Drill Set, 115 Piece Screw Machine Length HSS</td>
<td>$294.95</td>
</tr>
<tr>
<td></td>
<td>- Made in USA</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Surface treated black finish</td>
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</tr>
<tr>
<td></td>
<td>- Heavy duty 135° split point</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Machine length</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- High speed steel</td>
<td></td>
</tr>
<tr>
<td></td>
<td>115 Piece high speed steel machine screw set</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Screw Machine Drill Bit Set includes 1/16' - 1/2' by 64ths, A - Z, and No. 1 - 60. These are screw machine length drills with straight shanks. Screw machine length drills are 5/8 as long as normal jobber-length drills. These shorter drill bits are useful on mini lathes and mini mills where there isn't much distance for tools. Includes a Huot metal index for storing the drills.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4150 Drill Set, #1-60 Screw Machine Length HSS</td>
<td>$69.95</td>
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<tr>
<td></td>
<td>2829 Drill Set, 29 Piece Jobber Length HSS</td>
<td>$85.95</td>
</tr>
<tr>
<td></td>
<td>2830 Drill Set, 29 Piece Screw Machine Length HSS</td>
<td>$74.95</td>
</tr>
<tr>
<td>2831</td>
<td>Drill Set, 19 Piece Metric Jobber Length HSS</td>
<td>$69.95</td>
</tr>
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<td></td>
<td>- Made in USA</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Bright finish</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- 118° point</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Jobber length</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- High speed steel</td>
<td></td>
</tr>
<tr>
<td></td>
<td>19 Piece metric high speed steel drill set</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Set includes 1.0 mm - 10.0 mm by 0.5 mm. These are jobbers length drills with straight shanks. Jobbers length drills are normal length drills. Includes a Huot metal index for storing the drills.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3591 Drill Set, 29 Piece Turbomax Tip</td>
<td>$139.95</td>
</tr>
<tr>
<td></td>
<td>- 1/16&quot; through 1/2&quot; by 1/64&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Revolutionary tip design stays sharper longer and drills up to 28 percent faster</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Three-flatted shank design provides better chuck grip and reduces slippage</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- M-2 high speed steel for the best combination of strength, heat resistance, and wear resistance</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Gold oxide finish. Made in US</td>
<td></td>
</tr>
<tr>
<td></td>
<td>High speed steel drill bit set with Turbo Point tip,29-piece set in metal index case includes drill bit sizes 1/16&quot; through 1/2&quot; in 1/64&quot; increments. These are jobbers length drills with three-flatted shanks on larger sizes. Jobbers length drills are normal length drills. Three-flatted shank design is ideal for use in keyless chucks.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4130 Tap &amp; Drill Combo Set, 18 Pieces HSS</td>
<td>$54.95</td>
</tr>
<tr>
<td></td>
<td>- High speed steel taps and drill bits</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Drill bits are matched with taps for quick use</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Includes 6-32, 8-32, 10-24, 10-32, 1/4&quot;-20, 5/16&quot;-18, 3/8&quot;-16, 7/16&quot;-14, and 1/2&quot;-13 HSS taps</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Includes #36, #29, #25, #21, #7, F, 5/16&quot;, U, and 27/64&quot; HSS drill bits</td>
<td></td>
</tr>
<tr>
<td></td>
<td>This set makes tapping common thread sizes a breeze. No need to get out your reading glasses to check those pesky drill charts any more. With this kit you'll be able to grab the correct drill bit and tap and go to work immediately.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5837 Tap &amp; Drill Combo Set, 18 Pieces HSS, Metric</td>
<td>$54.95</td>
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### Cutting Tools: End Mills

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Price</th>
</tr>
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<tbody>
<tr>
<td>4859</td>
<td>Center Drills, Cobalt, Set of 5 (Numbers 1-5)</td>
<td>$19.95</td>
</tr>
<tr>
<td></td>
<td>- Combined drill and countersink</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Sizes 1, 2, 3, 4 &amp; 5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- M42 (8% cobalt) high speed steel</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- 60° included angle</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Right hand cutting direction</td>
<td></td>
</tr>
<tr>
<td></td>
<td>This set includes five different sizes of combined drills and countersinks, commonly called center drills. They are used to produce a center hole on a workpiece for turning between centers. Each center drill is made of high speed steel with a right hand cutting direction. Each center drill is made of ground high speed steel with a right hand cutting direction. Each center drill is made of high speed steel with a right hand cutting direction.</td>
<td></td>
</tr>
<tr>
<td>4864</td>
<td>Center Drill, Number 1, Cobalt</td>
<td>$2.95</td>
</tr>
<tr>
<td>4865</td>
<td>Center Drill, Number 2, Cobalt</td>
<td>$3.95</td>
</tr>
<tr>
<td>4866</td>
<td>Center Drill, Number 3, Cobalt</td>
<td>$3.95</td>
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<tr>
<td>4867</td>
<td>Center Drill, Number 4, Cobalt</td>
<td>$4.95</td>
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<tr>
<td>4868</td>
<td>Center Drill, Number 5, Cobalt</td>
<td>$7.95</td>
</tr>
<tr>
<td>1230</td>
<td>Center Drills, HSS, Set of 5 (Numbers 1-5)</td>
<td>$8.95</td>
</tr>
<tr>
<td></td>
<td>- Combined drill and countersink</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Sizes 1, 2, 3, 4 &amp; 5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- High speed steel</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- 60° included angle</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Right hand cutting direction</td>
<td></td>
</tr>
<tr>
<td></td>
<td>This set includes five different sizes of combined drills and countersinks, commonly called center drills. They are used to produce a center hole on a workpiece for turning between centers. Each center drill is made of high speed steel with a right hand cutting direction. Each center drill is made of high speed steel with a right hand cutting direction. Each center drill is made of high speed steel with a right hand cutting direction.</td>
<td></td>
</tr>
<tr>
<td>2990</td>
<td>Center Drills, HSS, Set of 4 (Numbers 1-4)</td>
<td>$5.95</td>
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<tr>
<td>2985</td>
<td>Center Drill, Number 1, HSS</td>
<td>$1.05</td>
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<tr>
<td>2986</td>
<td>Center Drill, Number 2, HSS</td>
<td>$1.25</td>
</tr>
<tr>
<td>2987</td>
<td>Center Drill, Number 3, HSS</td>
<td>$1.25</td>
</tr>
<tr>
<td>2988</td>
<td>Center Drill, Number 4, HSS</td>
<td>$1.95</td>
</tr>
<tr>
<td>2989</td>
<td>Center Drill, Number 5, HSS</td>
<td>$2.95</td>
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</tbody>
</table>

### Corner Rounding End Mills, HSS, Individual Sizes

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>5137</td>
<td>Corner Rounding End Mill, 1/16&quot;, HSS</td>
<td>$11.95</td>
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<tr>
<td>5138</td>
<td>Corner Rounding End Mill, 1/8&quot;, HSS</td>
<td>$11.95</td>
</tr>
<tr>
<td>5139</td>
<td>Corner Rounding End Mill, 1/4&quot;, HSS</td>
<td>$19.95</td>
</tr>
<tr>
<td>5359</td>
<td>Drill-Mill, 90 Degree, 1/4&quot; 2 Flute, Cobalt</td>
<td>$23.95</td>
</tr>
<tr>
<td>5360</td>
<td>Drill-Mill, 90 Degree, 3/8&quot; 2 Flute, Cobalt</td>
<td>$25.95</td>
</tr>
<tr>
<td>5361</td>
<td>Drill-Mill, 90 Degree, 1/2&quot; 2 Flute, Cobalt</td>
<td>$35.95</td>
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</tbody>
</table>

### Drill-Mills, 90 Degree, 2-Flute, Cobalt, Individual Sizes

<table>
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<tr>
<th>Code</th>
<th>Description</th>
<th>Price</th>
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<tbody>
<tr>
<td>90</td>
<td>90 Degree angle</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cobalt steel</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Forspotting, chamfering, grooving</td>
<td></td>
</tr>
<tr>
<td></td>
<td>For aluminum</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Drill-mills work best on aluminum. They can be used for spotting holes instead of using a center drill; and are great for chamfering edges. Use a drill-mill to make a 90 degree angle groove.</td>
<td></td>
</tr>
</tbody>
</table>

(800) 981 9663 LittleMachineShop.com
<table>
<thead>
<tr>
<th>Item Number</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1245</td>
<td>End Mill Set, 10 pieces 2 &amp; 4 Flute, TiN coated HSS</td>
<td>$46.95</td>
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<tr>
<td>1244</td>
<td>End Mill Set, 20 pieces 2 &amp; 4 Flute, TiN coated HSS</td>
<td>$82.95</td>
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<tr>
<td>4888</td>
<td>End Mill Set, 6 Piece 2 Flute, Cobalt</td>
<td>$54.95</td>
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<tr>
<td>1242</td>
<td>End Mill Set, 6 Piece 2 Flute, HSS</td>
<td>$22.95</td>
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<td>2548</td>
<td>End Mill Set, Miniature, 10 pieces 2 &amp; 4 Flute, HSS</td>
<td>$64.95</td>
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<tr>
<td>4265</td>
<td>End Mill Set, Miniature, 5 pieces 2 Flute</td>
<td>$37.90</td>
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<tr>
<td>5415</td>
<td>End Mill, 1/8” 2 Flute Ball End, M42 Cobalt</td>
<td>$18.95</td>
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<td>5416</td>
<td>End Mill, 3/16” 2 Flute Ball End, M42 Cobalt</td>
<td>$16.95</td>
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<tr>
<td>5417</td>
<td>End Mill, 1/4” 2 Flute Ball End, M42 Cobalt</td>
<td>$16.95</td>
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<tr>
<td>5418</td>
<td>End Mill, 3/8” 2 Flute Ball End, M42 Cobalt</td>
<td>$16.95</td>
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<tr>
<td>5419</td>
<td>End Mill, 1/2” 2 Flute Ball End, M42 Cobalt</td>
<td>$26.95</td>
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<td>5420</td>
<td>End Mill, 1/8” 2 Flute, M42 Cobalt</td>
<td>$11.95</td>
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<tr>
<td>5421</td>
<td>End Mill, 3/16” 2 Flute, M42 Cobalt</td>
<td>$11.95</td>
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<tr>
<td>5422</td>
<td>End Mill, 1/4” 2 Flute, M42 Cobalt</td>
<td>$11.95</td>
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<tr>
<td>5423</td>
<td>End Mill, 5/16” 2 Flute, M42 Cobalt</td>
<td>$12.95</td>
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<tr>
<td>5424</td>
<td>End Mill, 3/8” 2 Flute, M42 Cobalt</td>
<td>$12.95</td>
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<tr>
<td>5425</td>
<td>End Mill, 7/16” 2 Flute, M42 Cobalt</td>
<td>$13.95</td>
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<td>5426</td>
<td>End Mill, 1/2” 2 Flute, M42 Cobalt</td>
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<tr>
<td>5140</td>
<td>End Mill, 1/8” 2 Flute, HSS</td>
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<td>End Mill, 3/16” 2 Flute, HSS</td>
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<td>5142</td>
<td>End Mill, 1/4” 2 Flute, HSS</td>
<td>$4.50</td>
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<tr>
<td>5143</td>
<td>End Mill, 5/16” 2 Flute, HSS</td>
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<td>5144</td>
<td>End Mill, 3/8” 2 Flute, HSS</td>
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<tr>
<td>5145</td>
<td>End Mill, 7/16” 2 Flute, HSS</td>
<td>$6.95</td>
</tr>
<tr>
<td>5146</td>
<td>End Mill, 1/2” 2 Flute, HSS, 3/8” shank</td>
<td>$7.95</td>
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<tr>
<td>5147</td>
<td>End Mill, 1/2” 2 Flute, HSS</td>
<td>$6.95</td>
</tr>
<tr>
<td>5149</td>
<td>End Mill, 3/16” 2 Flute, HSS</td>
<td>$10.95</td>
</tr>
<tr>
<td>5150</td>
<td>End Mill, 5/8” 2 Flute, HSS</td>
<td>$9.95</td>
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<tr>
<td>5151</td>
<td>End Mill, 3/4” 2 Flute, HSS</td>
<td>$13.95</td>
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<tr>
<td>5152</td>
<td>End Mill, 3/4” 2 Flute, HSS</td>
<td>$14.95</td>
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<tr>
<td>5153</td>
<td>End Mill, 1” 2 Flute, HSS</td>
<td>$20.95</td>
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<tr>
<td>5148</td>
<td>End Mill, 9/16” 2 Flute, HSS</td>
<td>$8.95</td>
</tr>
<tr>
<td>5149</td>
<td>End Mill, 3/16” 2 Flute, HSS</td>
<td>$10.95</td>
</tr>
<tr>
<td>5150</td>
<td>End Mill, 5/8” 2 Flute, HSS</td>
<td>$9.95</td>
</tr>
<tr>
<td>5151</td>
<td>End Mill, 3/4” 2 Flute, HSS</td>
<td>$13.95</td>
</tr>
<tr>
<td>5152</td>
<td>End Mill, 3/4” 2 Flute, HSS</td>
<td>$14.95</td>
</tr>
<tr>
<td>5153</td>
<td>End Mill, 1” 2 Flute, HSS, 1/2” shank</td>
<td>$20.95</td>
</tr>
<tr>
<td>5420</td>
<td>End Mill, 1/8” 2 Flute, M42 Cobalt TiCN Coated</td>
<td>$23.95</td>
</tr>
<tr>
<td>5421</td>
<td>End Mill, 3/16” 2 Flute, M42 Cobalt TiCN Coated</td>
<td>$23.95</td>
</tr>
<tr>
<td>5422</td>
<td>End Mill, 1/4” 2 Flute, M42 Cobalt TiCN Coated</td>
<td>$29.95</td>
</tr>
<tr>
<td>5423</td>
<td>End Mill, 5/16” 2 Flute, M42 Cobalt TiCN Coated</td>
<td>$25.95</td>
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<tr>
<td>5424</td>
<td>End Mill, 3/8” 2 Flute, M42 Cobalt TiCN Coated</td>
<td>$25.95</td>
</tr>
<tr>
<td>5425</td>
<td>End Mill, 7/16” 2 Flute, M42 Cobalt TiCN Coated</td>
<td>$38.95</td>
</tr>
<tr>
<td>5426</td>
<td>End Mill, 1/2” 2 Flute, M42 Cobalt TiCN Coated</td>
<td>$42.95</td>
</tr>
<tr>
<td>5154</td>
<td>End Mill, 1/8” 2 Flute, M42 Cobalt, Individual Sizes</td>
<td>$23.95</td>
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<tr>
<td>5155</td>
<td>End Mill, 3/16” 2 Flute, M42 Cobalt, Individual Sizes</td>
<td>$25.95</td>
</tr>
<tr>
<td>5156</td>
<td>End Mill, 1/4” 2 Flute, M42 Cobalt, Individual Sizes</td>
<td>$29.95</td>
</tr>
<tr>
<td>5157</td>
<td>End Mill, 5/16” 2 Flute, M42 Cobalt, Individual Sizes</td>
<td>$38.95</td>
</tr>
<tr>
<td>5158</td>
<td>End Mill, 3/8” 2 Flute, M42 Cobalt, Individual Sizes</td>
<td>$42.95</td>
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</tbody>
</table>

End Mills, 2 Flute, M42 Cobalt, Individual Sizes

- Single ended, 2 flute
- Weldon shank
- M42 (8%) cobalt

Single end 2 flute center cut end mill ground from M42 (8%) cobalt. Used for removing material from a workshop and leaving a smooth finish.
## Cutting Tools: End Mills

### End Mills, 4 Flute, HSS, Individual Sizes
- HSS 4 flute end mills
- Center cutting
- Single End
- Weldon Shank

Single end 4 flute center cut end mill ground from solid high speed steel. Used for removing material from a workpiece and leaving a smooth finish.

<table>
<thead>
<tr>
<th>Size</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/8&quot; Flute, HSS</td>
<td>3/16&quot; 4 Flute, HSS</td>
<td>$5.95</td>
</tr>
<tr>
<td>1/4&quot; Flute, HSS</td>
<td>5/16&quot; 4 Flute, HSS</td>
<td>$5.95</td>
</tr>
<tr>
<td>3/8&quot; Flute, HSS</td>
<td>7/16&quot; 4 Flute, HSS</td>
<td>$6.95</td>
</tr>
<tr>
<td>1/2&quot; Flute, HSS</td>
<td>1&quot; 4 Flute, HSS</td>
<td>$9.95</td>
</tr>
</tbody>
</table>

### End Mills, 4 Flute, M42 Cobalt, Individual Sizes
- M42 8% cobalt 4 flute end mills
- Center cutting
- 3/8" shank
- Made in the USA

These are high quality, American made, cobalt end mills for general milling operations including slots, grooves and other similar features. They are ground from solid M42 8% cobalt steel. The cutting areas are either Titanium Nitride (TiN) or Titanium CarboNitride (TiCN) coated. These CNC qualified end mills feature a spiral flute design for a faster and smoother cutting action.

<table>
<thead>
<tr>
<th>Size</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/8&quot; Flute, M42 Cobalt TiCN</td>
<td>3/16&quot; 4 Flute, M42 Cobalt TiCN Coated</td>
<td>$26.95</td>
</tr>
<tr>
<td>1/4&quot; Flute, M42 Cobalt TiCN</td>
<td>5/16&quot; 4 Flute, M42 Cobalt TiCN Coated</td>
<td>$29.95</td>
</tr>
<tr>
<td>3/8&quot; Flute, M42 Cobalt TiCN</td>
<td>7/16&quot; 4 Flute, M42 Cobalt TiCN Coated</td>
<td>$37.95</td>
</tr>
<tr>
<td>1/2&quot; Flute, M42 Cobalt TiCN</td>
<td>1&quot; 4 Flute, M42 Cobalt TiCN Coated</td>
<td>$46.95</td>
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</tbody>
</table>

### End Mills, Roughing, Cobalt, Individual Sizes
- 3 and 4 flute roughing end mills
- M42 8% cobalt
- Center cutting, single end
- Weldon Shank

Roughing end mill ground from solid M42 8% cobalt; center cutting and uncoated.

<table>
<thead>
<tr>
<th>Size</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot; Flute, M42 Cobalt</td>
<td>3/8&quot; 4 Flute, M42 Cobalt</td>
<td>$10.95</td>
</tr>
<tr>
<td>1/2&quot; Flute, M42 Cobalt</td>
<td>5/16&quot; 4 Flute, M42 Cobalt</td>
<td>$11.95</td>
</tr>
<tr>
<td>3/8&quot; Flute, M42 Cobalt</td>
<td>7/16&quot; 4 Flute, M42 Cobalt</td>
<td>$13.95</td>
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<tr>
<td>1/2&quot; Flute, M42 Cobalt</td>
<td>1&quot; 4 Flute, M42 Cobalt</td>
<td>$18.95</td>
</tr>
</tbody>
</table>

### End Mills Miniature, 2 Flute, Double Ended HSS, Individual Sizes
- Double ended, 2 flute miniature end mills
- High Speed Steel
- 2-1/4" overall length
- 3/16" Shank diameter

Popular for small slotting, engraving, pocketing and similar applications. The medium-high helix angle produces an ideal shearing cut for outstanding performance.

<table>
<thead>
<tr>
<th>Size</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/16&quot; Flute, Double End, HSS</td>
<td>1/16&quot; 2 Flute, Double End, HSS</td>
<td>$6.95</td>
</tr>
<tr>
<td>3/32&quot; Flute, Double End, HSS</td>
<td>3/32&quot; 2 Flute, Double End, HSS</td>
<td>$5.95</td>
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<tr>
<td>1/8&quot; Flute, Double End, HSS</td>
<td>1/8&quot; 2 Flute, Double End, HSS</td>
<td>$5.95</td>
</tr>
<tr>
<td>5/32&quot; Flute, Double End, HSS</td>
<td>5/32&quot; 2 Flute, Double End, HSS</td>
<td>$5.95</td>
</tr>
</tbody>
</table>

### End Mills Miniature, 4 Flute, Double Ended HSS, Individual Sizes
- Double ended, 4 flute miniature end mills
- High Speed Steel
- 2-1/4" overall length
- 3/16" Shank diameter

Popular for small slotting, engraving, pocketing and similar applications. The medium-high helix angle produces an ideal shearing cut for outstanding performance.

<table>
<thead>
<tr>
<th>Size</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/16&quot; Flute, Double End, HSS</td>
<td>1/16&quot; 4 Flute, Double End, HSS</td>
<td>$6.95</td>
</tr>
</tbody>
</table>

### End Mills Miniature, 4 Flute, Double Ended M42 Cobalt, Individual Sizes
- Double ended, 4 flute miniature end mills
- High Speed Steel
- 2-1/4" overall length
- 3/16" Shank diameter

Popular for small slotting, engraving, pocketing and similar applications. The medium-high helix angle produces an ideal shearing cut for outstanding performance.

<table>
<thead>
<tr>
<th>Size</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/16&quot; Flute, Double End, M42 Cobalt</td>
<td>1/16&quot; 4 Flute, Double End, M42 Cobalt</td>
<td>$6.95</td>
</tr>
</tbody>
</table>

### Cutting Tools: Engraving Tools

#### Engraving Tool, 90 Degree Angle
- Submicron grade carbide
- 1/8" shank, 1 1/2" overall length
- Recommended for use with plastics
- Use for aluminum, steel, and stainless steel
- Kyocera Micro Tools PN EGR1250-090

These engraving cutters can be used on mild steel, alloyed steel, stainless steel, nickel alloys, titanium, cast iron, aluminum, copper, brass, and plastics. These cutters cause fewer burrs on plastics.

<table>
<thead>
<tr>
<th>Size</th>
<th>Description</th>
<th>Price</th>
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</thead>
<tbody>
<tr>
<td>3779 Engraving Tool, 90 Degree Angle</td>
<td>$23.95</td>
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</tbody>
</table>
## Cutting Tools: Engraving Tools

- **Submicron grade carbide**
- **1/8” shank, 1 1/2” overall length**
- **Use for aluminum, steel, and stainless steel**
- **Kyocera Micro Tools**

These engraving cutters can be used on mild steel, alloyed steel, stainless steel, nickel alloys, titanium, cast iron, aluminum, copper, brass, and plastics. These cutters might cause a bur when used on plastics.

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>3776</td>
<td>Engraving Tool, Half Round, 0.005” Line Width</td>
<td>$24.95</td>
</tr>
<tr>
<td>3777</td>
<td>Engraving Tool, Half Round, 0.010” Line Width</td>
<td>$24.95</td>
</tr>
<tr>
<td>3778</td>
<td>Engraving Tool, Half Round, 0.020” Line Width</td>
<td>$24.95</td>
</tr>
</tbody>
</table>

## Cutting Tools: Indexable End Mills

- **R8 shrink**
- **1.25” cutting diameter**
- **4.00” length of cut**
- **One set of 2 TPG322 end mill carbide inserts included**


<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>4804</td>
<td>Indexable End Mill, 2 Flute, 25 mm, Center Cut, Tormach</td>
<td>$155.00</td>
</tr>
<tr>
<td>4813 Arbor, End Mill, TSS to M12 Medium</td>
<td>$39.95</td>
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</tr>
<tr>
<td>4812 Arbor, End Mill, TSS to M12 Short</td>
<td>$39.95</td>
<td></td>
</tr>
<tr>
<td>4818 Arbor, End Mill, TSS to M8 Long</td>
<td>$39.95</td>
<td></td>
</tr>
<tr>
<td>4817 Arbor, End Mill, TSS to M8 Medium</td>
<td>$39.95</td>
<td></td>
</tr>
<tr>
<td>4816 Arbor, End Mill, TSS to M8 Short</td>
<td>$39.95</td>
<td></td>
</tr>
<tr>
<td>5038 Arbor, Slitting Saw, TSS</td>
<td>$55.95</td>
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</tr>
<tr>
<td>4806 Indexable End Mill, 2 Flute, 17 mm, Center Cut, Tormach</td>
<td>$135.00</td>
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<tr>
<td>4814 Insert, QGOT0830R-G1 Carbide, 10 Pack, Tormach</td>
<td>$143.55</td>
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</tr>
<tr>
<td>4811 Insert, QGOT1342R-G1 Carbide, Pack of 10, Tormach</td>
<td>$219.45</td>
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<tr>
<td>4815 Insert, QMGT0830R-M2 Carbide, 10 pack, Tormach</td>
<td>$150.15</td>
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<tr>
<td>4808 Insert, QMGT1342R-M2 Carbide, Pack of 10, Tormach</td>
<td>$127.05</td>
<td></td>
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</tbody>
</table>

## Cutting Tools: Insertable Inserts

- **2 flute indexable mill with precision machined insert pockets**
- **16 mm (0.63”) cutting diameter**
- **23 mm (0.91”) height**
- **M8 screw stud, hardened tool steel body**
- **Inserts sold separately. See 5039 and 4664**

For information about which insert to use with each of our tools, see the insert application chart at www.littlemachineshop.com/inserts.
Cutting Tools: Indexable Inserts

Inserts, Carbide

Carbide inserts. These inserts fit our indexable tools.

<table>
<thead>
<tr>
<th>Insert</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>3471 Insert, VCMT-222</td>
<td>$14.95</td>
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</tr>
<tr>
<td>5441 Insert, 11ERA60 External Thread, TIN Coated</td>
<td>$11.95</td>
<td></td>
</tr>
<tr>
<td>5442 Insert, 11IRA60 Internal Thread, TIN Coated</td>
<td>$11.95</td>
<td></td>
</tr>
<tr>
<td>5582 Insert, APKT-1003 Square Shoulder</td>
<td>$9.95</td>
<td></td>
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<tr>
<td>1781 Insert, CCMT-21.51</td>
<td>$4.95</td>
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<tr>
<td>5643 Insert, CCMT-32.51 Carbide</td>
<td>$10.95</td>
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<tr>
<td>1795 Insert, CCMT-32.52</td>
<td>$4.95</td>
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<tr>
<td>4921 Insert, DCMT-32.51</td>
<td>$8.95</td>
<td></td>
</tr>
<tr>
<td>4922 Insert, DCMT-32.52</td>
<td>$8.95</td>
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<tr>
<td>4994 Insert, GTN-2</td>
<td>$7.95</td>
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<tr>
<td>5051 Insert, GTR-2</td>
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<tr>
<td>5930 Insert, MGMN-200-G</td>
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<tr>
<td>2033 Insert, TCMT-1.81.51</td>
<td>$4.95</td>
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<tr>
<td>3416 Insert, TCMT-21.50</td>
<td>$4.95</td>
<td></td>
</tr>
<tr>
<td>1670 Insert, TCMT-21.51</td>
<td>$4.95</td>
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<tr>
<td>3417 Insert, TCMT-21.52</td>
<td>$4.95</td>
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<tr>
<td>5931 Insert, TDEX-21.5 Carbide</td>
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<tr>
<td>1216 Insert, TPC-322</td>
<td>$9.71</td>
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<tr>
<td>1910 Insert, TPG-221</td>
<td>$3.93</td>
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<tr>
<td>2277 Insert, TPG-322 Carbide</td>
<td>$3.75</td>
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<tr>
<td>2381 Insert, TPGH-32.51</td>
<td>$5.95</td>
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<tr>
<td>5644 Insert, TPGH-322 Carbide</td>
<td>$4.95</td>
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<tr>
<td>5651 Insert, TPMB-321 Carbide</td>
<td>$10.95</td>
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<tr>
<td>5649 Insert, TPWT-222 Carbide</td>
<td>$7.95</td>
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<tr>
<td>5648 Insert, VCMT-221 Carbide</td>
<td>$11.95</td>
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Inserts, High Speed Steel

High speed steel inserts.

These inserts are made from T-15 high speed steel by the A. R. Warner Co.

Combine the advantages of high speed steel cutting tools with the convenience of indexable tooling.

<table>
<thead>
<tr>
<th>Insert</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>3578 Insert, 1/16’ Groover HSS</td>
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</tr>
<tr>
<td>3577 Insert, 1/32’ Groover HSS</td>
<td>$12.95</td>
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<tr>
<td>3576 Insert, 1/64’ Groover HSS</td>
<td>$12.95</td>
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<tr>
<td>4603 Insert, 60 Degree Threading Tool</td>
<td>$13.95</td>
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<tr>
<td>3696 Insert, CCMH-21.51 HSS</td>
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<tr>
<td>3574 Insert, CCMH-32.51 HSS</td>
<td>$8.95</td>
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<tr>
<td>3575 Insert, CCMH-32.52 HSS</td>
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<tr>
<td>4975 Insert, CCWH-21.55 HSS</td>
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<tr>
<td>1724 Insert, TCWM-2-1.5-1 HSS</td>
<td>$7.49</td>
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<tr>
<td>1725 Insert, TCWM-2-1.5-2 HSS</td>
<td>$7.49</td>
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<tr>
<td>3698 Insert, TCWM-321 HSS</td>
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<tr>
<td>3468 Insert, Threading Tool, TNMC-32-NV HSS</td>
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<tr>
<td>3469 Insert, Threading Tool, TPMC-32-NV HSS</td>
<td>$16.95</td>
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</tr>
<tr>
<td>1623 Insert, TPMB-321 HSS</td>
<td>$8.50</td>
<td></td>
</tr>
<tr>
<td>1622 Insert, TPMB-322 HSS</td>
<td>$8.50</td>
<td></td>
</tr>
<tr>
<td>1722 Insert, TPWM-1-8.1-5-5 HSS</td>
<td>$8.95</td>
<td></td>
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<tr>
<td>1723 Insert, TPWM-1-8.1-5-1 HSS</td>
<td>$8.95</td>
<td></td>
</tr>
<tr>
<td>1624 Insert, TPWM-221 HSS</td>
<td>$7.95</td>
<td></td>
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<tr>
<td>1621 Insert, TPWM-222 HSS</td>
<td>$7.95</td>
<td></td>
</tr>
<tr>
<td>5110 Insert, VCWM-221 HSS</td>
<td>$10.95</td>
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</tr>
<tr>
<td>3470 Insert, VCWM-222 HSS</td>
<td>$11.50</td>
<td></td>
</tr>
</tbody>
</table>

Cutting Tools: Reamers

Reamers, Adjustable 4 Piece #8 - #5

- Reamers in this set are adjustable from 0.250” to 0.375”
- Black Oxide Finish
- Handle Multiple Hole Sizes with One Tool
- 4 Piece Set Sizes #8 - #5
- Wooden Storage Box Included

Adjustable blade lets you handle multiple hole sizes with one tool. Multiple tools in each set let you handle more hole sizes, making these sets virtually indispensable. Reamers are hardened, precision-ground high speed steel with a black oxide finish. Wooden storage box is included.

<table>
<thead>
<tr>
<th>Size</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>5948 Reamer Set, Adjustable, 4 Piece #8 - #5</td>
<td>$74.95</td>
<td></td>
</tr>
</tbody>
</table>

Reamers, Adjustable Blade, Individual Sizes

- High Speed Steel
- Handle Multiple Hole Sizes with One Tool
- 5 Blades

Adjustable blades give the operator the ability to handle multiple hole sizes with a single tool, making them a good choice for users with low volume reaming needs. Blades are adjusted by loosening one nut and tightening the other. Each reamer expands to the next size. Square end allows the user to turn the reamer by hand with an adjustable wrench or straight handle tap wrench. Straight flute reamers should be used in thru-hole applications only.

<table>
<thead>
<tr>
<th>Size</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>5941 Reamer, Adjustable 1/4” - 9/32” #8</td>
<td>$16.95</td>
<td></td>
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<tr>
<td>5942 Reamer, Adjustable 9/32” - 5/16” #7</td>
<td>$16.95</td>
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<tr>
<td>5943 Reamer, Adjustable 5/16” - 11/32” #6</td>
<td>$16.95</td>
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<tr>
<td>5944 Reamer, Adjustable 11/32” - 3/8” #5</td>
<td>$16.95</td>
<td></td>
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<tr>
<td>5945 Reamer, Adjustable 3/8” - 13/32” #4</td>
<td>$22.50</td>
<td></td>
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<tr>
<td>5946 Reamer, Adjustable 13/32” - 7/16” #3</td>
<td>$22.50</td>
<td></td>
</tr>
<tr>
<td>5947 Reamer, Adjustable 7/16” - 15/32” #2</td>
<td>$22.50</td>
<td></td>
</tr>
</tbody>
</table>

Reamers, Chucking, HSS Individual Sizes

- High Speed Steel
- Straight Flute
- 45 Degree Chamfer
- ANSI standard

High speed steel reamers suitable for production reaming of most materials. Straight flute with 45 degree chamfer for gradual starting load.

<table>
<thead>
<tr>
<th>Size</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>5950 Reamer, Chucking 1/16” HSS</td>
<td>$7.49</td>
<td></td>
</tr>
<tr>
<td>5951 Reamer, Chucking 1/8” HSS</td>
<td>$4.95</td>
<td></td>
</tr>
<tr>
<td>5952 Reamer, Chucking 9/64” HSS</td>
<td>$4.49</td>
<td></td>
</tr>
<tr>
<td>5953 Reamer, Chucking 5/32” HSS</td>
<td>$4.49</td>
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</tr>
<tr>
<td>5954 Reamer, Chucking 3/16” HSS</td>
<td>$4.49</td>
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</tr>
<tr>
<td>5955 Reamer, Chucking 7/32” HSS</td>
<td>$5.49</td>
<td></td>
</tr>
<tr>
<td>5956 Reamer, Chucking 15/64” HSS</td>
<td>$7.49</td>
<td></td>
</tr>
<tr>
<td>5957 Reamer, Chucking 1/4” HSS</td>
<td>$7.49</td>
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</tr>
<tr>
<td>5958 Reamer, Chucking 5/16” HSS</td>
<td>$7.95</td>
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<tr>
<td>5959 Reamer, Chucking 23/64” HSS</td>
<td>$9.95</td>
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<tr>
<td>5960 Reamer, Chucking 3/8” HSS</td>
<td>$9.95</td>
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<tr>
<td>5961 Reamer, Chucking 27/64” HSS</td>
<td>$11.95</td>
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<tr>
<td>5962 Reamer, Chucking 7/16” HSS</td>
<td>$12.95</td>
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<tr>
<td>5963 Reamer, Chucking 31/64” HSS</td>
<td>$14.95</td>
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</tr>
<tr>
<td>5964 Reamer, Chucking 1/2” HSS</td>
<td>$13.95</td>
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</tbody>
</table>
**Cutting Tools: Saw Blades**

- Band Saw Blades, Duratec FB, Individual Sizes, Starrett
  - Starrett Duratec PH band saw blade 64 1/2" x 1/2" x 0.025".
  - Made from carbon steel with a flexible back, Duratec FB is ideal for economical cutting on easy-to-machine ferrous or nonferrous metal and wood. It is for general purpose contour and straight cutting on a variety of machines.
  - 4460 Band Saw Blade, 64-1/2", Duratec FB 6/S, Starrett $13.95
  - 4461 Band Saw Blade, 64-1/2", Duratec FB 10/S, Starrett $13.95
  - 4462 Band Saw Blade, 64-1/2", Duratec FB 14/S, Starrett $13.95
  - 4463 Band Saw Blade, 64-1/2", Duratec FB 24/W, Starrett $13.95
- Band Saw Blades, Intenss PRO-DIE, Individual Sizes, Starrett
  - Starrett Intenss PRO-DIE band saw blade 64-1/2" x 1/2" x 0.025".
  - Intenss PRO-DIE band saw blades have bi-metal unique saw technology, triple tempered M-42 cobalt HSS teeth combined with alloy steel backing strip for heat, abrasion and shock resistance, longevity and chip clearing. Ideal for tool, die and mold steels, stainless and nickel based and non-ferrous alloys.
  - 1854 Band Saw Blade, 64-1/2", Intenss PRO-DIE 6/P-HP, Starrett $26.95
  - 1855 Band Saw Blade, 64-1/2", Intenss PRO-DIE 8-125, Starrett $28.95
  - 1876 Band Saw Blade, 64-1/2", Intenss PRO-DIE 10-145, Starrett $26.95
- Band Saw Blades, Porta-Band Bi-Metal, Individual Sizes, Starrett
  - 44-7/8" (1140 mm) x 1/2" (13 mm) x 0.020" (0.5 mm)
  - Triple tempered M-42 cobalt high speed steel teeth with a fatigue resistant alloy steel backer
  - Patented "Twin Tooth" design of the Split-Chip advantage "bi-metal unique"
  - Faster cutting and longer life than ordinary blades
  - Starrett Univerz bandsaw blades available in a variety of tooth pitches
  - These 44-7/8" bandsaw blades utilize Starrett’s exclusive bi-metal unique saw technology for faster cutting and longer blade life. Besides fitting LittleMachineShop.com portable band saws, these Starrett bandsaw blades fit Black & Decker, DeWalt, Greenlee, Makita, Unitec, Porter-Cable, Ridgid, Rockwell, Skil, Milwaukee portable band saws.
  - 4932 Band Saw Blade, 44-7/8", Univerz Bi-Metal 10/S, Starrett $9.95
  - 4933 Band Saw Blade, 44-7/8", Univerz Bi-Metal 14/S, Starrett $9.95
  - 4934 Band Saw Blade, 44-7/8", Univerz Bi-Metal 18/W, Starrett $9.95
  - 4935 Band Saw Blade, 44-7/8", Univerz Bi-Metal 24/W, Starrett $9.95
  - 4937 Band Saw Blade, 44-7/8", Univerz Bi-Metal 14-18/W, Starrett $9.95
  - 4936 Band Saw Blade, 44-7/8", Univerz Bi-Metal 10-14/S, Starrett $9.95
- Hacksaw Blades, Bi-Metal, Individual Sizes, Starrett
  - Starrett bi-metal unique HSS Safe-Flex hacksaw blades
  - These blades are 12" long, 1/2" wide and are 0.025" thick Bi-metal unique High Speed Steel Safe-Flex hacksaw blades are made with a patented solid-state diffusion process with 170% more HSS weld area and ground teeth for reduced blade fracture, faster cutting and longer life.
  - 1850 Hacksaw Blade, Bi-Metal, 18 TPI, Starrett $2.01
  - 1851 Hacksaw Blade, Bi-Metal, 24 TPI, Starrett $2.01
  - 3561 Hacksaw Blade, Bi-Metal, 32 TPI, Starrett $2.01

**Cutting Tools: Slitting Saws**

- Slitting Saw Blades, HSS, Individual Sizes
  - 3" Saw Diameter
  - 1" Hole Size
  - 30 Teeth
  - High Speed Steel
  - 4725 Slitting Saw Blade, 1/32", HSS $9.95
  - 4726 Slitting Saw Blade, 3/64", HSS $9.95
  - 4727 Slitting Saw Blade, 1/16", HSS $9.95
  - 4728 Slitting Saw Blade, 3/32", HSS $9.95
  - 4729 Slitting Saw Blade, 1/8", HSS $14.95

**Cutting Tools: T-Slot and Dovetail Cutters**

- Dovetail Cutters
  - High speed steel cutters
  - 60° dovetail angle
  - 3/8" shank diameter
  - 5921 Dovetail Cutter, Indexable 60 Degree 1/2" Dia., 1 Flute $25.95
  - 2904 Dovetail Cutter, 60 Degree 3/8" Dia., HSS $13.95
  - 2905 Dovetail Cutter, 60 Degree 1/2" Dia., HSS $14.95
  - 2906 Dovetail Cutter, 60 Degree 3/4" Dia., HSS $15.95
  - 5090 Dovetail Cutter, 60 Degree 1-3/8" Dia., HSS $34.95
- T-Slot Cutters, HSS, Individual Sizes
  - High speed steel T-slot cutters
  - Eight teeth
  - Positive radial rake, right and left hand spiral.
  - 5195 T-Slot Cutter, 3/8" T-slot, HSS $21.95
  - 5196 T-Slot Cutter, 7/16" (12 mm) T-slot, HSS $26.95
  - 5194 T-Slot Cutter, 8 mm T-slot, HSS $18.95

**Cutting Tools: Turning Tools**

- Chamfer Tool, 3/8" Indexable, SCSCR-06-2J, Tormach
  - Designation: SCSCR-06-2J
  - Steel shank 3/8" x 3-1/2""  
  - Designed for CCMT and CCGT 21.51 inserts
  - Approach 45°, 7° relief angle
  - Insert Shape: 80° (C)
  - Right hand Chamfer Tool. Includes wrenches and (1) insert.
  - 5612 Chamfer Tool, 3/8" Indexable, SCSCR-06-2J, Tormach $43.95
- Facing Tool, 3/8" Indexable, SCKCR-06-2J, Tormach
  - Designation: SCKCR-06-2J
  - Steel shank 3/8" x 3-1/2""  
  - Designed for CCMT and CCGT 21.51 inserts
  - Approach 75°, 7° relief angle
  - Insert Shape: 80° (C)
  - Right hand Facing Tool. Includes wrenches and (1) insert.
  - 5611 Facing Tool, 3/8" Indexable, SCKCR-06-2J, Tormach $43.95
Cutting Tools: Turning Tools

5926 Grooving Tool Holder, 3/8” Shank, External MEGHR06-2 $31.95
• Right hand external grooving tool holder
• Designation MEGHR06-2
• Shank size 3/8”
• Overall length is 3”
• Uses MGMN-200 inserts
MEGHR06-2 external right hand grooving tool holder has a 3/8” x 3/8” shank. Tool holder design provides precision clamping & insert indexing accuracy. Ideal for external grooving, turning, part-off, relieving & profile machining. Maximum cutting depth is 1/2”. Overall length is 3”.

5613 Profiling Tool, 3/8” Indexable, SCMCN-06-2J, Tormach $43.95
• Designation: SCMCN-06-2J
• Steel shank 3/8” x 3-1/2”
• Designed for CCMT and CCGT 21.51 inserts
• Approach 50°, 7° relief angle
• Insert Shape: 80° (C)
Neutral hand Profile Tool. Includes wrenches and (1) insert.

5619 Profiling Tool, 3/8” Indexable, SCMCN-08-2J, Tormach $43.95
• Includes 1 carbide (VCMT-221) insert
• 3/8” square, 6” overall length, Side angle: 3 degrees

2431 Profiling Tool, 3/8” Indexable, 35 Deg Diamond Inserts, A R Warner Kit #15 $109.00
• 3/8” square, 6” long profiling tool
• Includes 2 HS5 (VCMW-221) inserts
• Includes 1 carbide (VCMW-221) insert
• 2 MS-1153 screws
• 1 T-7 torx wrench
This Arthur R. Warner Co. precision profiling tool uses high speed steel or carbide inserts. Combine the advantages of high speed steel cutting tools with the convenience of indexable tooling. This profiling tool is great for CNC applications, and can be used for most of your turning needs. Contents:
1 Right Hand bar 3/8 inch shank, 6 inch overall length, Side angle: 3 degrees
2 Inserts T-15 High Speed Steel VCMW-221
Relief: 7 degrees, IC: 0.250 inch, Thickness: 0.125 inch, Hole: 0.110 inch, Top opening: 0.146 inch, Radius: 0.015 inch
1 Insert Carbide VCMT221, Relief: 7 degrees, IC: 0.250 inch, Thickness: 0.125 inch, Hole: 0.110 inch, Top opening: 0.146 inch, Radius: 0.015 inch
Screws: (3) MS-1153
Wrench: T-7
The Arthur R. Warner Co. is a family-owned American manufacturer of high speed steel products with specialization in cutting, shaping, pre-grinding, heat treating, and finish grinding of premium grades of flat high speed steel. Their quality is excellent and LittleMachineShop.com is proud to carry their products.

4516 Tool Bit Sharpening Training Set $41.95
• Six presharpened 1/4” high speed steel tool bits
• Five unsharpened 1/4” tool bits
• Sharpening instructions
Learn how to grind tool bits with this set. The presharpened tool bits show you how the finished product should look. The unsharpened tool bits give you plenty of practice. The presharpened tool bits are ground in the same manner as hand-ground tool bits so they provide an example of how to properly grind tool bits. All the tool bits are M2 high speed steel. M2 is a high speed steel in the tungsten-molybdenum series. The carbides in it are small and evenly distributed. It has high wear resistance. It is used to manufacture a variety of tools, such as drill bits, taps and reamers.

3192 Tool Bit, 5/16” Right Hand, Brazed Carbide $1.95
• AR-5 Style turning tool
• C6 Carbide tipped single point brazed tip
• Overall length 2 1/4”
• Right hand tool; cuts from right to left
• Use for steel and steel alloys
These tool bit are C6 grade carbide. C6 carbide is designed for steel and steel alloys, but in hobby use works fine on aluminum and non-ferrous metals too.

3193 Tool Bit, 5/16” Left Hand, Brazed Carbide $1.95
• 5/16” Right Hand, Brazed Carbide $1.95

2250 Tool Bits, 1/4” Presharpened, Set of 6 $35.95
• Six pre-sharpened 1/4” high speed steel tool bits
• Includes Right hand, Left hand, 45 degree chamfer, Round nose, Boring bar, Cut off
These tool bits are made from high speed steel. These tool bits are ground in the same manner as hand-ground tool bits so they provide an example of how to properly grind tool bits.

1964 Tool Bit, 1/4” Left Hand, Presharpened $6.75
1965 Tool Bit, 1/4” Right Hand, Presharpened $6.75
1966 Tool Bit, 1/4” 45 Degree Chamfer, Presharpened $6.75
1967 Tool Bit, 1/4” Round Nose, Presharpened $6.75
1968 Tool Bit, 1/4” Boring Bar, Presharpened $6.75
1969 Tool Bit, 1/4” Cut-Off, Presharpened $6.75
Cutting Tools: Turning Tools

**2412** Tool Bits, 5/16" Braided Carbide, Set of 5 $28.32
- 5 piece cutting tool set
- 5/16" (8mm) shanks
- Carbide cutting tips
- Variety of tips for roughing, straight and facing cuts and parting-off
- Ideal for mini lathes
This set includes five different braided carbide turning tools. The shanks are 5/16" (8mm) which is the right size for the mini lathe. This set includes one each of the following tool bits: DIN 4971R (ISO1) Straight cutter for rough turning,DIN 4975 (ISO10) Pointed tip for straight turning,DIN 4980R (ISO6) Right angle cutter - offset side cutter for facing,DIN 4980L (ISO6) Left angle cutter - offset side cutter for facing,DIN 4981R (ISO7) Parting-off cutter

**5433** Turning & Boring Tools, 3/8" Indexable, Triangle Inserts $79.95
- 4 turning tools
- 1 boring tool
- Inserts and torx wrenches
- 3/8" Shank
- Uses TCMT-21.51 Inserts
Set comes in a fitted aluminum case

**5432** Turning & Boring Tools, 5/16" Indexable, Triangle Inserts $79.95
- 4 turning tools
- 1 boring tool
- Inserts and torx wrenches
- 5/16" Shank
- Uses TCMT-1.81.51 Inserts
Set comes in a fitted aluminum case

**Tool Bits, M2 High Speed Steel, Individual Sizes**
- 2-1/2" long M2 HSS tool bits
M2 is a high speed steel in the tungsten-molybdenum series. The carbides in it are small and evenly distributed. It has high wear resistance. It is used for a variety of tools, such as drill bits, taps and reamers.
1154 Tool Bit, 1/8" x 2-1/2", M2 HSS $1.49
1153 Tool Bit, 3/16" x 2-1/2", M2 HSS $1.95
1155 Tool Bit, 1/4" x 2-1/2", M2 HSS $1.95
1152 Tool Bit, 5/16" x 2-1/2", M2 HSS $1.95
1156 Tool Bit, 3/8" x 2-1/2", M2 HSS $2.95

**Tool Bits, T-15 High Speed Steel, Individual Sizes**
- 2-1/2" long T-15 HSS tool bits
T-15 is a tungsten type super high speed steel containing high vanadium for excellent abrasion resistance and cobalt for good red hardness. All T-15 is ideal for cutting difficult to machine materials where high frictional heat is present.
1726 Tool Bit, 1/8" x 2-1/2" T-15 HSS, A R Warner $7.95
1716 Tool Bit, 3/16" x 2-1/2", T-15 HSS, A R Warner $8.95
1717 Tool Bit, 1/4" x 2-1/2", T-15 HSS, A R Warner $10.95
1715 Tool Bit, 5/16" x 2-1/2", T-15 HSS, A R Warner $12.95
1718 Tool Bit, 3/8" x 3", T-15 HSS, A R Warner $16.95

**3694** Turning & Boring Tools, 3/8" Indexable, HSS Inserts, A R Warner Kit #8 $166.00
- Right and left hand turning tools with 0.375" shank 3.5" long
- Boring bar with 0.375" shank 5.0" overall length
- Includes three T-15 HSS (CCMW21.51) inserts for turning
- Includes two T-15 HSS (CCMW21.51) inserts for boring
- Includes two MS-1152 screws, three MS-1153 screws and one T-7 wrench
This Arthur R. Warner Co. kit includes a 3/8" right-hand turning tool, a 3/8" left-hand turning tool, and a 3/8" boring bar. The right hand turning bar has a 0.375" shank, and is 3.50" in overall length. The left hand turning bar has a 0.375" shank, and is 3.50" in overall length. The left hand turning bar has a second insert pocket in opposite end that provides a 50° side cutting edge angle. This provides a way to use the two insert points that are not used in the other tool holders. The boring bar has a 0.375" shank, and is 5.0" in overall length. It has 0.188" flat along length for location, and requires a 0.365" minimum bore.

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**5434** Turning & Cut-Off Tools, 3/8" Indexable, 7 Piece Set $149.95
- 6 turning tools
- 1 cut-off blade
- Inserts and torx wrenches
- 3/8" Shank
- Extra inserts and screws available
Seven 3/8" indexable tool set, six turning tools and 1 cut-off blade, torx wrenches and inserts. Set comes in a fitted aluminum case.

**3693** Turning 1/4" & Boring 3/8" Indexable, HSS Inserts, A R Warner Kit #4 $163.50
- Right and left hand turning tools with 0.250" shank 3.5" long
- Boring bar with 0.375" shank 5.0" overall length
- Includes three T-15 HSS (CCMW21.51) inserts for turning
- Includes two T-15 HSS (CCMW21.51) inserts for boring
- Includes two MS-1152 screws, four MS-1153 screws and one T-7 wrench
This Arthur R. Warner Co. kit includes a 1/4" right-hand turning tool, a 1/4" left-hand turning tool, and a 3/8" boring bar. The right hand turning bar has a 0.250" shank, and is 3.50" in overall length. The left hand turning bar has a 0.250" shank, and is 3.50" in overall length. The left hand turning bar has a second insert pocket in opposite end that provides a 50° side cutting edge angle. This provides a way to use the two insert points that are not used in the other tool holders. The boring bar has a 0.375" shank, and is 5.0" in overall length. It has 0.188" flat along length for location, and requires a 0.365" minimum bore.

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Cutting Tools: Turning Tools

### 5609 Turning and Facing Tool, 3/8" Indexable, SCLCR-06-2J, Tormach
- **Designation:** SCLCR-06-2J
- Steel Shank 3/8" x 3-1/2"
- Designed for CCMT and CCCTG 21.51 inserts
- Approach 95°, 7° relief angle
- Insert Shape: 80° (C)

Right hand Turning/Facing Tool. Includes wrenches and (1) insert.

**Price:** $43.95

### 5610 Turning and Facing Tool, 3/8" Indexable, SCLCL-06-2J, Tormach
- **Designation:** SCLCL-06-2J
- Steel Shank 3/8" x 3-1/2"
- Designed for CCMT and CCCTG 21.51 inserts
- Approach 95°, 7° relief angle
- Insert Shape: 80° (C)

Right hand Turning/Facing Tool. Includes wrenches and (1) insert.

**Price:** $43.95

### 5615 Turning and Facing Tool, 1/2" Indexable, SCLCR-08-3A, Tormach
- **Designation:** SCBCR-08-3A
- Steel Shank 1/2" x 4"
- Designed for CCMT and CCCTG 32.51 inserts
- Approach 75°, 7° relief angle
- Insert Shape: 80° (C)

Right hand Turning Tool. Includes wrenches and (1) insert.

**Price:** $44.95

### 3569 Turning Tools, 1/2" Indexable, 80 Deg Diamond HSS Inserts, A R Warner Kit #11
- Right hand tool holder
- Left hand tool holder, double ended
- Includes 5 T-15 HSS (CWM232.52) inserts
- Includes 4 MS-1153 screws and one T-15 wrench

Left hand bar has 0.5" shank and is 4" long. It includes a second insert pocket that provides a 50° side cutting edge.

Uses CWM232.51 and CWM232.52 inserts.

The second insert pocket on the left hand tool provides a way to use the second and fourth corners on the diamond insert.

Made by A R Warner.

The Arthur R. Warner Co. is a family-owned American manufacturer of high speed steel products with specialization in cutting, shaping, pre-grinding, heat treating, and finish grinding of premium grades of flat high speed steel. Their quality is excellent and LittleMachineShop.com is proud to carry their products. Shop lathe turning tools online today.

**Price:** $127.00

### 3580 Screw, Insert Retaining, MS-1153
- **Price:** $1.95

### 4132 Turning Tools, 3/8" Indexable, Carbide Triangle Inserts, A R Warner Kit #30, Set of 3
- 3 piece turning tool set
- 3/8" square Shank
- 3 TCMT21.52 inserts
- 1 TCMT21.51 insert
- Torx wrench and 4 screws

This Arthur R. Warner Co. precision tool holder kits use carbide or high speed steel inserts. These are production quality tool holders that are made in the USA.

The kit contains the following:

AR and AL tool holders with TCMT21.52 inserts

1 extra TCMT21.52 carbide insert

1 extra Torx screw

1 Torx wrench

Note that TCMW21.51 and TCMW21.52 high speed steel inserts also fit these tool holders.

The Arthur R. Warner Co. is a family-owned American manufacturer of high speed steel products with specialization in cutting, shaping, pre-grinding, heat treating, and finish grading of premium grades of flat high speed steel (and tool steel). Their quality is excellent and LittleMachineShop.com is proud to carry their products. Shop lathe turning tools online today.

**Price:** $69.95

### 1619 Turning Tools, 3/8" Indexable, HSS Triangle Inserts, A R Warner Kit #5, Set of 5
- 5 piece turning tool set
- 3/8" square Shank
- Overall length
- 6 screws (MS-1153) (5 installed on the bits, 1 extra)
- T-7 wrench
- 6 TPMW-222 HSS inserts (5 installed on the bits, 1 extra)

This Arthur R. Warner Co. precision tool holder kits use high speed steel inserts. Combine the advantages of high speed steel cutting tools with the convenience of indexable tooling.

The kit contains the following:

5 Turning bars 3/8 inch Shank 3.50 inches overall length

6 Inserts (Turning) T-15 High Speed Steel TPMW-222

Relief: 11 degree, IC: .250 inch, Thickness: .125 inch, Hole: .110 inch Top opening: .146 inch @ 60 degrees, Radius: .031 inch

Screws: (6) MS-1153

Wrench: T-7

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**Price:** $153.00

### 1620 Turning Tool, 1/2" Indexable, SCBCR-08-3A, Tormach
- **Price:** $43.95

### 1621 Turning Tools, 3/8" Indexable, HSS Triangle Inserts, A R Warner Kit #30, Set of 3
- 3 piece turning tool set
- 3/8" square Shank
- 3 TCMT21.52 inserts
- 1 TCMT21.51 insert
- Torx wrench and 4 screws

This Arthur R. Warner Co. precision tool holder kits use carbide or high speed steel inserts. These are production quality tool holders that are made in the USA.

The kit contains the following:

AR and AL tool holders with TCMT21.52 inserts

1 extra TCMT21.52 carbide insert

1 extra Torx screw

1 Torx wrench

Note that TCMW21.51 and TCMW21.52 high speed steel inserts also fit these tool holders.

The Arthur R. Warner Co. is a family-owned American manufacturer of high speed steel products with specialization in cutting, shaping, pre-grinding, heat treating, and finish grading of premium grades of flat high speed steel (and tool steel). Their quality is excellent and LittleMachineShop.com is proud to carry their products. Shop lathe turning tools online today.

**Price:** $69.95

### 1620 Turning Tool, 1/2" Indexable, SCBCR-08-3A, Tormach
- **Price:** $43.95

### 1621 Turning Tools, 3/8" Indexable, HSS Triangle Inserts, A R Warner Kit #30, Set of 3
- 3 piece turning tool set
- 3/8" square Shank
- 3 TCMT21.52 inserts
- 1 TCMT21.51 insert
- Torx wrench and 4 screws

This Arthur R. Warner Co. precision tool holder kits use carbide or high speed steel inserts. These are production quality tool holders that are made in the USA.

The kit contains the following:

AR and AL tool holders with TCMT21.52 inserts

1 extra TCMT21.52 carbide insert

1 extra Torx screw

1 Torx wrench

Note that TCMW21.51 and TCMW21.52 high speed steel inserts also fit these tool holders.

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**Price:** $69.95

### 1620 Turning Tool, 1/2" Indexable, SCBCR-08-3A, Tormach
- **Price:** $43.95

### 1621 Turning Tools, 3/8" Indexable, HSS Triangle Inserts, A R Warner Kit #30, Set of 3
- 3 piece turning tool set
- 3/8" square Shank
- 3 TCMT21.52 inserts
- 1 TCMT21.51 insert
- Torx wrench and 4 screws

This Arthur R. Warner Co. precision tool holder kits use carbide or high speed steel inserts. These are production quality tool holders that are made in the USA.

The kit contains the following:

AR and AL tool holders with TCMT21.52 inserts

1 extra TCMT21.52 carbide insert

1 extra Torx screw

1 Torx wrench

Note that TCMW21.51 and TCMW21.52 high speed steel inserts also fit these tool holders.

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**Price:** $69.95

### 1620 Turning Tool, 1/2" Indexable, SCBCR-08-3A, Tormach
- **Price:** $43.95

### 1621 Turning Tools, 3/8" Indexable, HSS Triangle Inserts, A R Warner Kit #30, Set of 3
- 3 piece turning tool set
- 3/8" square Shank
- 3 TCMT21.52 inserts
- 1 TCMT21.51 insert
- Torx wrench and 4 screws

This Arthur R. Warner Co. precision tool holder kits use carbide or high speed steel inserts. These are production quality tool holders that are made in the USA.

The kit contains the following:

AR and AL tool holders with TCMT21.52 inserts

1 extra TCMT21.52 carbide insert

1 extra Torx screw

1 Torx wrench

Note that TCMW21.51 and TCMW21.52 high speed steel inserts also fit these tool holders.

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**Price:** $69.95
### Cutting Tools: Turning Tools

- **5 piece set of lathe turning tools**
- **3/8” square shank**
- **Extra screws included**
- **Two wrenches**
- **TCMT21.51 carbide inserts**

This set of indexable turning tools includes 5 indexable tools (AR, AL, BR, BL, E). Inserts, a wrench, and extra screws. It comes in a wooden case.

**Style AR right hand tool comes in a wooden case.**

**Style BR right hand tool with a 15° lead angle**

**Style E Neutral threading tool with 60° included angle**

**Style AR right hand tool**

- **Includes**: inserts, a wrench, and extra screws.
- **Material**: carbide inserts (TCMT21.51).

**Style BL left hand tool with a 15° lead angle**

**Style AL left hand tool**

- **Includes**: inserts, a wrench, and extra screws.
- **Material**: carbide inserts (TCMT21.51).

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### DROs: DRO Packages

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<td>Transceiver, Bluetooth DRO</td>
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**3811 Digital Position Readout, 3-Axis DRO Pros Mill**

- **Easiest to use DRO on the market.**
- **More buttons, most intuitive layout—just walk up and operate**
- **5 micron (0.0002”) resolution**
- **Clearly-written full-color manual and video training DVD, 3-year warranty**
- **SlimLine 20 mm x 28.5 mm (0.79” x 1.12”) scales; you choose the length, up to 1000 mm (39.3”) travel**
- **INCLUDE SCALE SIZES IN SPECIAL INSTRUCTIONS ON YOUR ORDER**

The DRO PROS 3M three-axis mill package includes everything you need: the display head; 3 glass scales up to 1000 mm (39.3”) travel; detailed installation instructions; a detailed full-color operator’s manual; 3-year warranty; display mounting arm; power cord; mounting hardware; and universal mounting brackets. The package includes your choice of 19 different size scales ranging in travel from 100 mm (3.9”) up to 1000 mm (39.3”) in 50 mm increments. Optionally, you can choose 1 micron (0.00005”) resolution scales for an additional $50.00 per scale. Operates on 120V or 240V AC.

**3929 Digital Position Readout, 2-Axis DRO Pros Lathe** | $599.00

**3976 Digital Position Readout, 2-Axis DRO Pros Mill** | $599.00

**3997 DRO Pros Scale Upgrade to 1 Micron Resolution** | $50.00

**4239 Digital Position Readout, 3-Axis Magnetic Scale, DRO Pros Mill**

- **Magnetic scales can be cut to exact length you need**
- **Easy to use. More buttons, most intuitive layout—just walk up and operate**
- **5 micron (0.0002”) resolution**
- **Clearly-written full-color manual and 6-year warranty**

The DRO PROS EL400 three-axis mill package includes everything you need: the display head, 3 magnetic scales; you choose the length, up to 1000 mm (39.3”) travel. The package includes your choice of 19 different size scales ranging in travel from 100 mm (3.9”) up to 1000 mm (39.3”) in 50 mm increments. Optionally, you can choose 1 micron (0.00005”) resolution scales for an additional $50.00 per scale. Operates on 120V or 240V AC.

**4241 Digital Position Readout, 2-Axis Magnetic Scale, DRO Pros Lathe** | $985.00

**4240 Digital Position Readout, 2-Axis Magnetic Scale, DRO Pros Mill** | $855.00
DROs: DRO Packages

2665 Digital Position Readout, 3-Axis Shooting Star
* Shooting Star BT-3 3-axis digital position readout
* Includes the digital display unit, 3 scales, and mounting hardware
* Resolution: 0.0005", accuracy: 0.001"
* The keypad is a splash-proof membrane with tactile keys in a sturdy metal enclosure
* Guaranteed to fit any mill, lathe, or 3-in-1 machine

Shooting Star BT-3 3-axis digital position readout functions include: inch/mm display, reversible count direction (change the direction in which the count goes up), automatic centering (find the center of a workpiece or hole by touching off two sides), two sets of coordinates (good for placing hole patterns, making slots and such), enter coordinates (you can enter the values for the current location), bolt circle and bolt line calculators (quickly create a pattern of holes), tool offsets (remember the setting for various lathe tools), and preset positions (quickly return to positions you have saved). This DRO uses a precision rack and anti-backlash pinion, with an optical encoder on the pinion. Power: 120VAC. This DRO includes one 48" scale and two 16" scales. The scales are easily shortened to suit your machine. It will fit on the mini mill with a power feed installed. "NOTE" These items ship directly from the supplier in Canada. Shooting Start takes two or three weeks to process and ship orders, so there will be a delay before you receive this order.

2664 Digital Position Readout, 2-Axis Shooting Star

3568 Digital Position Readout, 3-Axis Shooting Star for X3 Mill

DROs: Scales

2014 DRO Scale, 12" (300 mm) CLOSEOUT
* Digital scale unit has a range of 0-12" (0-300mm)
* Includes two mounting brackets
* Resolution is 0.0005" (0.01mm) and the accuracy is 0.001" (0.03 mm)
* Data output jack works with many digital display units
* One SR 44 1.5V battery is included

The scale cross section is 16 mm x 4 mm. The scale is 420 mm long. With the mounting brackets installed, it is 445 mm long overall. This scale is the correct length for the X- and Z-axis on the mini mill as well as the carriage motion on 7x10 and 7x12 mini lathes.

2015 DRO Scale, 16" (400 mm) CLOSEOUT

5012 DRO Scale, 12" (300 mm) with Display
* 12" travel stainless steel scale
* Stackable display unit
* Mounting arm
* Displays in inches or mm
* Resolution: 0.01mm/0.0005"Accuracy: 0.04mm/0.002" These units are significantly more robust than other inexpensive scales that are available. There are no batteries in the scale units, and the scale units are permanently wired. No square rubber plugs to cause issues. The plug into the display unit is a micro USB plug (though not wired as USB), so it's pretty robust. And each display has a strain relief to prevent stress on the plug. Each display unit contains two CR2032 lithium batteries for long life.

5011 DRO Scale, 6" (150 mm) with Display

5596 DRO Scale, 24" (600 mm) with Display

5012 DRO Scale, 12" (300 mm) with Display

5011 DRO Scale, 6" (150 mm) with Display

5596 DRO Scale, 24" with Display

5011 DRO Scale, 6" (150 mm) MOUNTING KIT

5012 DRO Scale, 12" (300 mm) with Display

5011 DRO Scale, 6" (150 mm) with Display

Kits: Lathe Conversion Kits

5000 Bed Extension Kit 16" $193.31
* Precision ways are approximately 28-3/8" long
* Rack is approximately 17-3/4" long
* Lead screw is approximately 29-5/16" long

This lathe bed extension kit turns your 7x10, 7x12, or 7x14 lathe into a 7x16 lathe. This lathe conversion kit includes a bed casting, a lead screw, a rack, a motor mount, a chip pan, 2 chip pan braces, several fasteners, and complete instructions. The 7x16 bed is actually 8" longer than the 7x10 bed. It is 4" longer than the 7x12 bed. This is NOT a bolt-together kit. You must drill and tap 9 holes in the new bed casting to match your lathe. You need three metric taps: M3x0.5, M6x1.0, and M8x1.25. If you don't have metric drills, you can use letter and number drills for tap drills. (The sizes are given in the instructions.)

1928 Bed Extension Kit 14" $182.93

1617 Tap & Tap Drill Kit $24.95

4270 Bed Extension Kit 16", HiTorque Mini Lathes $150.42
* ONLY FITS LittleMachineShop.com HiTorque 7x12 Mini Lathes
* Extend your HiTorque Mini Lathe to 16" between centers
* Precision ground ways are approximately 27-7/8" long
* Rack is approximately 18" long
* Lead screw is approximately 29" long

This kit turns your Littlemachineleshop.com 7x12 HiTorque Mini Lathe into a 7x16 lathe. It includes a bed casting, a lead screw, a rack, a chip pan, and complete instructions. This is NOT a bolt-together kit. You must drill and tap 10 holes in the new bed casting to match your lathe. You need three metric taps: M3x0.5, M6x1.0, and M8x1.25. If you don't have metric drills, you can use letter and number drills for tap drills. (The sizes are given in the instructions.)

3042 Control Box Assembly, Mini Lathe $182.71
* For 7x10 and 7x12 Mini Lathe
* Incorporates XMT-1125 controller
* 120V 60Hz input

This mini lathe control box kit includes the plastic control box, the motor controller, the emergency stop switch, the F/O/R switch, the potentiometer, the fuse holder and fuse. This is a fully-assembled control box. Simply hook up the power and motor leads and go. Use this box to replace FC250/110V, and FC250BJ/110V, FC250/110V boards. For 120V 7x10 and 7x12 C2 mini lathes

3200 Control Box Kit, Mini Lathe 230V $158.34

4450 Extended Cross Slide Travel Kit $88.08

This kit adds one inch to the travel of the lathe cross slide on 7x10 and 7x12 mini lathes. These are SIEG C2 and C3 lathes. The increased travel is away from the centerline of the lathe so you can work on larger diameter work pieces. This lathe conversion travel kit replaces the saddle and the cross slide feed screw, and it includes a spacer for the longer screw.

5366 Extended Cross Slide Travel Kit 20 TPI $88.08

5847 Extended Cross Slide Travel Kit DRO (Black Scales) $88.08

5367 Extended Cross Slide Travel Kit DRO (Gray Scales) $88.08

2383 Feed Screw Parts, 20 TPI, Mini Lathe $61.33

These parts change Grizzly, Harbor Freight, Homier, and Cummins mini lathes to 20 thread per inch feed screws on the cross slide and compound rest. Each rotation of the hand wheel will advance 0.050".

4047 Feed Screw Parts, Metric, Bench Lathe $87.42
* Fits HiTorque Bench Lathe
* Fits SIEG C4 and SC4 lathes

These parts change the cross slide and compound feed screws, and the carriage dial to metric.
**Kits: Lathe Conversion Kits**

### 3446 Metal Gear Kit, Mini Lathe Complete
- $268.20
  - Changes every plastic gear on the mini lathe to metal
  - Metal change gear set
  - Metal 2-speed transmission gears
  - Metal lead screw drive gears
  - Metal 80-tooth gears

This mini lathe gear kit changes every plastic gear on a mini lathe to steel. You will never break a plastic gear again. *NOTE* Although our HiTorque lathe is listed in the compatibility tab, only the change gears are compatible.

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>3446</td>
<td>Metal Gear Kit, Mini Lathe Complete</td>
<td>$268.20</td>
</tr>
</tbody>
</table>

### 3448 Metal Transmission Gear Kit, Mini Lathe & 3MT Mini Mill
- $59.57
  - Replaces both plastic transmission gears with metal
  - Fits mini lathes and 3MT mini mills
  - Small Gear: 12 Teeth / 20 Teeth, 12 mm Bore, 5 mm Keyway
  - Large Gear: 21 Teeth / 29 Teeth, 30 mm Bore, 5 mm Keyway

Once this steel gear set is installed on your mini lathe or mini mill, you will no longer have to worry about breaking the hard-to-replace gears inside the headstock. On the mini lathe, the belt drive ensures that expensive parts don’t break from overloads.

On the mini mill, the easy-to-replace intermediate gear on top of the headstock is still plastic. This helps to ensure that you don’t break expensive and hard to replace parts.

The smaller in this set is smaller of the two transmission gears. It has 12 Teeth on one end and 20 teeth on the other.

The larger of the two is the larger of the two transmission gears. It has 21 Teeth on one end and 29 teeth on the other.

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>3448</td>
<td>Metal Transmission Gear Kit, Mini Lathe &amp; 3MT Mini Mill</td>
<td>$59.57</td>
</tr>
</tbody>
</table>

### 1690 Metric Threading Kit 12"  
- $62.00

Metric threading kit for 7x12 mini lathes. This kit replaces the lead screw and half nuts so you can more easily cut metric threads.

You cannot use a threading dial with this kit installed. There is no metric threading dial.

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Price</th>
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<tbody>
<tr>
<td>1690</td>
<td>Metric Threading Kit 12&quot;</td>
<td>$62.00</td>
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</tbody>
</table>

### 2592 Power Switch Upgrade Kit
- $4.95
  - Heavy duty switch
  - Five times the rated life of the standard switch
  - Switch rated at 16 A at 120/250 VAC
  - No soldering required to install

This is an upgrade kit for the illuminated power switch on Harbor Freight mini lathes. The kit contains an upgraded switch, two crisp terminals, and a multi-stack quick disconnect. You have to un-solder the old switch, but the crisp terminals eliminate soldering during installation.

<table>
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</thead>
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<tr>
<td>2592</td>
<td>Power Switch Upgrade Kit</td>
<td>$4.95</td>
</tr>
</tbody>
</table>

### 2018 Tailstock Cam Lock Kit
- $29.95

This kit converts a standard mini lathe tailstock to lock by lever action. This camlock action locks the tailstock to the ways by moving a lever about 45 degrees. You must drill one 1/2" hole in the back of the tailstock casting. This lathe cam lock kit is made from heat treated 4140 steel for long life.

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>Tailstock Cam Lock Kit</td>
<td>$29.95</td>
</tr>
</tbody>
</table>

### 2634 Tweaks & Enhancements Kit, Mini Lathe
- $21.97
  - Several small items to make your lathe work better and last longer
  - Easier gb and saddle retainer adjustment
  - Fewer busted knuckles
  - Quicker gear cover removal
  - Fewer tailstock clamp jams

The Mini Lathe Tweaks & Enhancements Kit can make a big difference in the operation of your mini lathe. The kit includes the following:

- Hardened lathe chuck mounting nuts for long life.
- Self-locking set screws for the cross slide and compound rest gibs.
- Self-locking cap screws for the carriage retainers.
- Button-head cap screws for the cross slide and compound rest crank handles.
- Thumb screws for the change gear cover.
- A spring for the tailstock clamp.
- A rubber boot to protect the F/O/R switch on 7x10 and 7x12 mini lathes.
- A rubber guard to prevent chips from getting into the motor speed control enclosure.

**Kits: Lathe Starter Kits**

### 1261 Starter Kit, Mini Lathe, 5/16” Tool Bits
- $31.85
  - 0-1/2” Capacity Drill Chuck and key
  - Drill chuck arbor 2MT short to 33JT
  - Five 5/16” M2 high speed steel tool bit blanks
  - Four center drills, sizes 1, 2, 3, and 4
  - Mini Lathe starter kit designed for 7x10, 7x12 and 7x14 mini lathes and includes all the basics you need to get started with a new mini lathe.

Drill Chuck: 0-1/2” Capacity drill chuck. All working parts are hardened. Chuck key is included. Number 33 Jacobs taper mount. Runout of this chuck is 0.008” (0.20 mm) or less. This mini lathe starter kit is specifically designed for use on the mini lathe tailstock. The rated capacity of the drill chuck is 1 mm (0.039”) to 13 mm (0.512”).

Tool Bits: 5/16” square by 2-1/2” long HSS mini lathe tool bits made of m2 high speed steel. The tool post on most mini lathes are sized to use 5/16” tool bits.

Center Drills: Four sizes combined drills and countersinks made of high speed steel. Sizes 1, 2, 3, and 4 with 60 degree counter sinks.

### 1796 Starter Kit, Lathe, 3/8” Tool Bits
- $33.82
  - 1/2” professional grade drill chuck, 2MT standard to 33JT drill chuck arbor
  - 1/2” indexable boring bar - CCMT inserts
  - 3/8” indexable TCMT carbine inserts
  - Premium P1 cut-off blade, 5 center drills

This tooling package contains premium quality tooling for a C4, SC4 or LittleMachineShop.com HiTorque 8.5x16 bench lathes. The 1/2” capacity professional grade drill chuck is mounted on a short 2MT shank for the mini lathe. Specifically designed for the mini lathe tailstock, the rated capacity is 1 mm (0.039”) to 13 mm (0.512”). All working parts are hardened. Chuck key included. Number 33 Jacobs taper mount. This chuck is comparable to a Jacobs 34-34 heavy duty drill chuck, including the runout specification of 0.004” (0.10 mm) or less.

Indexable turning tools are made by Arthur R. Warner Co. in the USA. These precision tool holder kits use carbide inserts and include three styles of tools, AR right hand, E Neutral (threading tool - 60 degree angle), and AL left hand. Kit includes three tool holders, TCMT inserts, one extra TCMT-21.52 carbide insert, one extra Tosa screw, and one wrench.

1/2” diameter indexable boring bar uses CCMT inserts and is 7” long. The minimum bore diameter for this is 0.625”. The boring bar takes CCMT 32.51 or CCMT 32.52 inserts. The premium P1 parting blade is 1/16” x 1/2” x 4-1/2” and made from M2 HSS by Arthur R. Warner Co. T-square parting blades provide great side clearance.

Five sizes combined drills and countersinks made of high speed steel. Sizes 1, 2, 3, 4, and 5 with 60 degree counter sinks.

This tooling package does not include a quick change tool post because the 3595 Bench Lathe is equipped with a QC TP.
Kits: Lathe Starter Kits

5124 Tooling Package, 5200 Mini Lathe

- 3/8” indexable TCMT inserts
- 9-piece carbide boring bar set - 3/8” shank
- 1/2” drill chuck, 2MT short to 33JT drill chuck arbor
- 4 center drills (sizes 1-4)
- P1N cut-off blade

This package contains all the tooling you need to be productive with your HiTorque model 5200 mini lathe. The 1/2” capacity drill chuck is mounted on a short 2 Morse taper shank for the mini lathe. This chuck is specifically designed for the mini lathe tailstock. The rated capacity of the drill chuck is 1 mm (0.039”) to 13 mm (0.512”).

The set of indexable turning tools includes 5 tools (TAR, TAL, TBR, TBL, TE), inserts, a wrench, and extra screws. It comes in a wooden case. The carbide inserts are TCMT21.51. The carbide tipped 9-piece boring bar set includes three different length boring bars each for minimum bores of 5/16”, 3/8”, and 7/16”. The bore depth ranges from 3/4” to 2-1/4”. The heat treated, alloy steel shanks are held to 0.000 to -0.0005” from the nominal diameter. The P1 parting blade is 1/16” x 1/2” x 4-1/2” and made from M2 HSS. These T-shape parting blades provide great side clearance. This package includes 4 different sizes of combined drills and countersinks, commonly called center drills. The center drill set is high speed steel and includes sizes 1, 2, 3, and 4. These are 60 degree center drills. These are the sizes that are most used by bench top machinists.

5125 Tooling Package, 5200 Mini Lathe

- 1/2” professional grade drill chuck
- 2MT standard to 33JT drill chuck arbor
- 3/8” - 6” long indexable boring bar - CCMT inserts
- 3/8” indexable TCMT carbide inserts
- Premium P1 cut-off blade, 5 center drills

This package contains our best versions of all the tooling you need to be productive with your 7x10, 7x12, 7x14, or 7x16 mini lathe. The package does not include a quick change tool post because there is one on the model 5200 lathe. Drill Chuck: The 1/2” capacity professional grade drill chuck is mounted on a short 2MT shank for the mini lathe. Specifically designed for the mini lathe tailstock, the rated capacity is 1 mm (0.039”) to 13 mm (0.512”). All working parts are hardened. Chuck key included. Number 33 Jacobs taper mount. This chuck is comparable to a Jacobs 34-33 heavy duty drill chuck, including the runout specification of 0.004” (0.10 mm) or less. Indexable Inserts: Indexable turning tools are made by AR Warner Co in the USA. These Warner precision tool holder kits use carbide inserts and include three styles of tools, AR right hand, E Neutral (threading tool - 60° angle), and AL left hand. Kit includes three tool holders, TCMT inserts, one extra TCMT-21.52 carbide insert, one extra Torx screw, and one wrench. Boring Bar: This 3/8” diameter indexable boring bar uses CCMT inserts and is 6” long. The minimum bore diameter for this is 0.50”. The boring bar takes CCMT 21.51 or CCMT 21.52 inserts. Cut-Off Blade: The premium P1 parting blade is 1/16” x 1/2” x 4-1/2” and made from M2 HSS by Arthur R. Warner Co. in the USA. These T-shape parting blades provide great side clearance. Center Drills: Five sizes combined drills and countersinks made of high speed steel. Sizes 1, 2, 3, 4, and 5 with 60 degree counter sinks.

5680 Tooling Package, Grizzly G0765 Mini Lathe

- Specific items for 7x14 from Grizzly, Real Bull, and Big Dog
- 3/8” indexable TCMT inserts, P1N cut-off blade
- 9-piece carbide boring bar set - 3/8” shank
- 1/2” drill chuck, 2MT standard to 33JT drill chuck arbor
- 4 center drills (sizes 1-4)

This mini lathe tooling package contains all the tooling you need to be productive with your 7x14 mini lathe on the first day you own it. The Tormach 0XA quick change tool post set (QCTP). This mini lathe tooling package includes the tool post and the following tool holders:

1 - #1 Turning & Facing
1 - #2 Boring, Turning & Facing
1 - #4 Heavy Duty Boring will hold both 3/8 and 1/2 boring bars
1 - #7 Universal Parting Blade (for 1/2 inch cut-off blade - horizontal)

The wedge type quick change tool post is made of steel and all working parts are hardened and ground. No tools are required to change tools. Additional tool holders are available. The turning tool holders accept tools with 1/4” to 1/2” shank. The boring tool holder accepts boring bars with 3/8” or 1/2” round shanks. The cut-off tool holder holds 1/2” tall parting blades. The 1/2” capacity drill chuck is mounted on a short 2 Morse taper shank for the mini lathe. This chuck is specifically designed for the mini lathe tailstock. The rated capacity of the drill chuck is 1 mm (0.039”) to 13 mm (0.512”).

The set of indexable turning tools includes 5 tools (TAR, TAL, TBR, TBL, TE), inserts, a wrench, and extra screws. It comes in a wooden case. The carbide inserts are TCMT21.51. The carbide tipped 9-piece boring bar set includes three different length boring bars each for minimum bores of 5/16”, 3/8”, and 7/16”. The bore depth ranges from 3/4” to 2-1/4”. The heat treated, alloy steel shanks are held to 0.000 to -0.0005” from the nominal diameter. The P1 parting blade is 1/16” x 1/2” x 4-1/2” and made from M2 HSS. These T-shape parting blades provide great side clearance. This mini lathe tooling package includes 4 different sizes of combined drills and countersinks, commonly called center drills. The center drill set is high speed steel and includes sizes 1, 2, 3, and 4. These are 60 degree center drills. These are the sizes that are most used by bench top machinists.
Kits: Lathe Starter Kits

4857 Tooling Package, HiTorque Bench Lathe
Premium

- 0XA QCTP set with post mount for SC4 lathes
- 1/2” professional grade drill chuck, 2MT standard to 33JT drill chuck arbor
- 1/2” indexable boring bar - CCMT inserts
- 3/8” indexable TCMC carbide inserts
- Premium P1 cut-off blade, 5 center drills

This tooling package contains premium quality tooling for a C4, SC4 or LittleMachineShop.com HiTorque 8.5x16 bench lathes. Includes a 0XA (Series 000) quick change tool post set (QCTP). This set includes the tool post and the following tool holders: 2 - #1 Turning & Facing; 1 - #2 Boring, Turning & Facing; 1 - #4 Heavy Duty Boring will hold both 3/8 and 1/2 boring bars; 1 - #7 Universal Parting Blade (for 1/2 inch cut-off bar - horizontal). QCTP features all steel construction and wedge type tool post for better clamping and repeatability. All working parts are hardened, ground and sealed. Designed for lathes with limited distance from the top of the compound to the center of the lathe. The tool post mounts with an M12/M10 stud for C4 and SC4 lathes, which is included. The 1/2” capacity professional grade drill chuck is mounted on a short 2MT shank for the mini lathe. Specifically designed for the mini lathe tailstock, the rated capacity is 1 mm (0.039”) to 13 mm (0.512”). All working parts are hardened. Chuck key included. Number 33 Jacobs taper mount. This chuck is comparable to a Jacobs 34-33 heavy duty drill chuck, including the runout specification of 0.004” (0.10 mm) or less. Indexable turning tools are made by Arthur R. Warner Co. in the USA. These precision tool holder kits use carbide inserts and include three styles of tools, AR right hand, E Neutral (threading tool - 60 degree angle), and AL left hand. Kit includes three tool holders, TCMC inserts, one extra TCMC-21.52 carbide insert, one extra Torx screw, and one wrench. 1/2” diameter indexable boring bar uses CCMT inserts and is 7” long. The minimum bore diameter for this is 0.625”. The boring bar takes CCMT 32.51 or CCMT 32.52 inserts. The premium P1 parting blade is 1/16” x 1/2” x 4-1/2” and made from M2 HSS by Arthur R. Warner Co. These T-shape parting blades provide great side clearance. Five sizes combined drills and countersinks made of high speed steel. Sizes 1, 2, 3, 4, and 5 with 60 degree counter sinks.

$310.95

4116 Tooling Package, Mini Lathe Premium

- Tormach 0XA (Series 000) QCTP set
- 1/2” professional grade drill chuck, 2MT standard to 33JT drill chuck arbor
- 3/8”- 6” long indexable boring bar - CCMT inserts
- Premium P1 cut-off blade, 5 center drills

This package contains our best versions of all the tooling you need to be productive with your 7x10, 7x12, 7x14, or 7x16 mini lathe. QCTP: The 0XA (Series 000) quick change tool post features all steel construction and wedge type tool post for better clamping and repeatability. All working parts are hardened and ground. Sealed for maintenance-free operation. Tool holders designed for mini lathes and other lathes with limited distance from the top of the compound to the center of the lathe. The tool post mounts with an M10 stud, which is included. This set includes the tool post and the following tool holders: 2 - #1 Turning & Facing; 1 - #2 Boring, Turning & Facing; 1 - #4 Heavy Duty Boring will hold both 3/8 and 1/2 boring bars; 1 - #7 Universal Parting Blade (for 1/2 inch cut-off bar - horizontal). Drill Chuck: The 1/2” capacity professional grade drill chuck is mounted on a short 2MT shank for the mini lathe. Specifically designed for the mini lathe tailstock, the rated capacity is 1 mm (0.039”) to 13 mm (0.512”). All working parts are hardened. Chuck key included. Number 33 Jacobs taper mount. This chuck is comparable to a Jacobs 34-33 heavy duty drill chuck, including the runout specification of 0.004” (0.10 mm) or less. Indexable Inserts: Indexable turning tools are made by Arthur R. Warner Co. in the USA. These Warner precision tool holder kits use carbide inserts and include three styles of tools, AR right hand, E Neutral (threading tool - 60 degree angle), and AL left hand. Kit includes three tool holders, TCMC inserts, one extra TCMC-21.52 carbide insert, one extra Torx screw, and one wrench. Boring Bar: This 3/8” diameter indexable boring bar uses CCMT inserts and is 6” long. The minimum bore diameter for this is 0.50”. The boring bar takes CCMT 21.51 or CCMT 21.52 inserts. Cut-Off Blade: The premium P1 parting blade is 1/16” x 1/2” x 4-1/2” and made from M2 HSS by Arthur R. Warner Co. in the USA. These T-shape parting blades provide great side clearance. Center Drills: Five sizes combined drills and countersinks made of high speed steel. Sizes 1, 2, 3, 4, and 5 with 60 degree counter sinks.

$299.95
Kits: Lathe Starter Kits

5207 Tooling Package, Mini Lathe, OXA QCTP $225.95
- QCTP Set easily mounts to 7x10, 7x12, 7x14, 7x16 lathes
- 3/8" Indexable TCMT inserts, P1N cut-off blade
- 9-piece carbide boring bar set - 3/8" shank
- 1/2" drill chuck, 2MT short to 33JT drill chuck arbor
- 4 center drills (sizes 1-4)

This package contains all the tooling you need to be productive with your 7x10, 7x12, 7x14 or 7x16 mini lathe on the first day you own it.

The OXA quick change tool post set (QCTP).

This mini lathe tool set includes the tool post and the following tool holders:
- #1 Turning & Facing
- #2 Boring, Turning & Facing
- #4 Heavy Duty Boring will hold both 3/8 and 1/2 boring bars
- #7 Universal Parting Blade (for 1/2 inch cut-off blade - horizontal)

The wedge type quick change tool post is made of steel and all working parts are hardened and ground. No tools are required to change tools. Additional tool holders are available.

The turning tool holders accept tools with 1/4" to 1/2" shank. The boring tool holder accepts boring bars with 3/8" or 1/2" round shanks. The cut-off tool holder holds 1/2" tall parting blades.

The 1/2" capacity drill chuck is mounted on a short 2 Morse taper shank for the mini lathe. This chuck is specifically designed for the mini lathe tailstock. The rated capacity of the drill chuck is 1 mm (0.039") to 13 mm (0.512").

The set of indexable turning tools includes 5 tools (TAR, TAL, TBR, TBL, TE), inserts, a wrench, and extra screws. It comes in a fitted case. The carbide inserts are TCMT21.51.

The carbide tipped 9-piece boring bar set includes three different length boring bars each for minimum bores of 5/16", 3/8", and 7/16". The bore depth ranges from 3/4" to 2-1/4". The heat treated, alloy steel shanks are held to 0.000 to -0.0005" from the nominal diameter.

The P1 parting blade is 1/16' x 1/2' x 4-1/2' and made from M2 HSS. These T-shape parting blades provide great side clearance. This package includes 4 different sizes of combined drills and countersinks, commonly called center drills. The center drill set is high speed steel and includes sizes 1, 2, 3, 4, and 5. These are 60 degree center drills. These are the sizes that are most used by bench top machinists.

The quick change tool holder. The quick change tool post is made from hardened steel. No tools are required to change tools. Additional tool holders are available. It requires some level of work, tapping a hole, or making a T-slot nut, to mount this QCTP on your lathe. The turning tool holders accept tools with 3/8" to 1/2" shank. The turning and boring tool holder accepts boring bars with up to 1/2" round shanks. The cut-off tool holder holds 1/2" tall parting blades. The 1/2" capacity drill chuck is mounted on a standard 2 Morse taper shank. The rated capacity of the drill chuck is 1 mm (0.039") to 13 mm (0.512").

This kit includes the tools you need to be productive with your lathe on the first day you own it. The AXA (Series 100) quick change tool post set (QCTP) includes the tool post, mounting hardware, a turning & facing tool holder, a boring, turning & facing tool holder, a universal parting blade holder, and a knurling, facing & turning tool holder. The quick change tool post is made from hardened steel. No tools are required to change tools. Additional tool holders are available. It requires some level of work, tapping a hole, or making a T-slot nut, to mount this QCTP on your lathe. The turning tool holders accept tools with 3/8" to 1/2" shank. The turning and boring tool holder accepts boring bars with up to 1/2" round shanks. The cut-off tool holder holds 1/2" tall parting blades. The 1/2" capacity drill chuck is mounted on a standard 2 Morse taper shank. The rated capacity of the drill chuck is 1 mm (0.039") to 13 mm (0.512").

The set of 1/2" shank indexable turning tools includes 5 tools (TAR, TAL, TBR, TBL, TE), inserts, a wrench, and extra screws. It comes in a fitted case. The carbide inserts are TCMT-321. The carbide tipped 9-piece boring bar set includes three different length boring bars each for minimum bores of 5/16", 3/8", and 7/16". The bore depth ranges from 3/4" to 2-1/4". The heat treated, alloy steel shanks are held to 0.000 to -0.0005" from the nominal diameter. The P1 parting blade is 1/16" x 1/2" x 4-1/2" and made from M2 HSS. These T-shape parting blades provide great side clearance. This package includes 5 different sizes of combined drills and countersinks, commonly called center drills. The center drill set is high speed steel and includes sizes 1, 2, 3, 4, and 5. These are 60 degree center drills. These are the sizes that are most used by bench top machinists.

3786 Tooling Package, 9x20 Lathe $254.19
- AXA (Series 100) Quick Change Tool Post Set
- 1/2" Indexable TCMM Inserts, P1X Cut-Off Blade
- 1/2" Drill Chuck, 2MT Standard to 33JT Drill Chuck Arbor
- 9-piece carbide Boring Bar Set - 3/8" shank
- 5 Center Drills (sizes 1-5)

This package contains all the tooling you need to be productive with your lathe on the first day you own it. The AXA (Series 100) quick change tool post set (QCTP) includes the tool post, mounting hardware, a turning & facing tool holder, a boring, turning & facing tool holder, a universal parting blade holder, and a knurling, facing & turning tool holder. The quick change tool post is made from hardened steel. No tools are required to change tools. Additional tool holders are available. It requires some level of work, tapping a hole, or making a T-slot nut, to mount this QCTP on your lathe. The turning tool holders accept tools with 3/8" to 1/2" shank. The turning and boring tool holder accepts boring bars with up to 1/2" round shanks. The cut-off tool holder holds 1/2" tall parting blades. The 1/2" capacity drill chuck is mounted on a standard 2 Morse taper shank. The rated capacity of the drill chuck is 1 mm (0.039") to 13 mm (0.512").

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The quick change tool post is made from hardened steel. No tools are required to change tools. Additional tool holders are available. It requires some level of work, tapping a hole, or making a T-slot nut, to mount this QCTP on your lathe. The turning tool holders accept tools with 3/8" to 1/2" shank. The turning and boring tool holder accepts boring bars with up to 1/2" round shanks. The cut-off tool holder holds 1/2" tall parting blades. The 1/2" capacity drill chuck is mounted on a standard 2 Morse taper shank. The rated capacity of the drill chuck is 1 mm (0.039") to 13 mm (0.512").

The set of 1/2" shank indexable turning tools includes 5 tools (TAR, TAL, TBR, TBL, TE), inserts, a wrench, and extra screws. It comes in a fitted case. The carbide inserts are TCMM-321. The carbide tipped 9-piece boring bar set includes three different length boring bars each for minimum bores of 5/16", 3/8", and 7/16". The bore depth ranges from 3/4" to 2-1/4". The heat treated, alloy steel shanks are held to 0.000 to -0.0005" from the nominal diameter. The P1 parting blade is 1/16" x 1/2" x 4-1/2" and made from M2 HSS. These T-shape parting blades provide great side clearance. This package includes 5 different sizes of combined drills and countersinks, commonly called center drills. The center drill set is high speed steel and includes sizes 1, 2, 3, 4, and 5. These are 60 degree center drills. These are the sizes that are most used by bench top machinists.

Kits: Mill Conversion Kits

2258 Air Spring Conversion Kit $45.85
- Converts torsion spring mini mills to air spring
- Allows travel to the top of the column
- Provides better support for the mill head

Convert torsion spring mini mills to air spring. Most mini mills use a torsion spring mounted on the side of the column to support the head. This air spring conversion kit provides all the parts required to change to a vertical air spring that mounts inside and above the column. With the air spring installed, you can move the mill head up until the top of the casting is almost flush with the top of the column. You can move it down until it almost contacts the adjustable Z-axis stop set in its lowest position. Besides all the parts required to mount the air spring, this kit also includes a longer Z-axis rack so you can take advantage of the longer head motion. This air spring has about 35 pounds of force. This is not enough to totally support the head, but it is a heck of a lot more support than the torsion arm provides.

4005 Air Spring Conversion Kit, HiTorque Mini Mills $64.05
- Allows travel to the top of the column
- Provides better support for the mill head

4005 Air Spring Conversion Kit for HiTorque Mini Mills

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<table>
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<th>Kits: Mill Conversion Kits</th>
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<tr>
<td><strong>2560 Belt Drive Conversion Kit, Mini Mill</strong></td>
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<tr>
<td>- No more broken drive gears</td>
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<tr>
<td>- Much quieter operation</td>
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<tr>
<td>- Spindle speed up to 4300 RPM</td>
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<tr>
<td>- Ideal for manual and CNC mini mills</td>
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This mini mill belt drive conversion kit provides an easy-to-install alternative to the noisy and fragile factory-installed gears that drive the spindle on the mini mill. This kit is CNC-machined from the highest quality materials. Designed to run full-time, it is built to last. The CNC belt drive conversion kit includes one belt. Change speeds without any tools. Simply remove the guard, loosen the lever locks and move the belt from one pair of pulleys to the other. Low speed range is 0-1700 RPM. High speed range is 0-4300 RPM. Installation is bolt-on and takes about 20 minutes. This CNC belt drive kit fits the mills shown on the Compatibility tab. Don't expect it to fit other machines. The small pulley has a 9 mm bore with a 3 mm keyway. The large pulley has a 30 mm bore with a 5 mm keyway. If your shafts don't match these values, then this belt drive will not fit your mill.

| 4795 Belt Drive Shield, Mini Mill, Plastic | $4.95 |
| 2657 V-Belt, 2L130 for Mini Mill Belt Drive Kit | $4.95 |

| **4213 CNC Spindle Control Upgrade Kit for SX2, SC2** | $125.62 |
| - Converts brushless DC drive to CNC control |
| - Provides speed, on/off, and direction control |
| - For 500 watt Brushless DC drive used on SX2, SC2 |
| - 120V 60Hz |

This CNC spindle control kit consists of a small circuit board that replaces the circuit board with the speed control potentiometer, plus a replacement chip for the motor controller card. This conversion kit works on SX2 mini mills and SC2 mini lathes.

| 4950 CNC Spindle Control Upgrade Kit for SX2, SC2 230V | $125.62 |
| 4645 CNC Spindle Control Upgrade Kit for SX3, SC4 | $125.62 |
| 4951 CNC Spindle Control Upgrade Kit for SX3, SC4 230V | $125.62 |

| **1764 Feed Screw Parts, 20 TPI, Mini Mill** | $61.20 |

These parts change Grizzly, Homier, Cummins, and Harbor Freight mini mills to 20 thread per inch feed screws on the X- and Y-axis.

Each rotation of the hand wheel will advance the table 0.050". The mini mill tool kit includes two feed screws, two nuts, two 50 division dials, plus the springs and keys that you are going to lose during disassembly. This mini mill conversion kit has the correct screw to work with the mini mill power feed.

| 1989 Metric Kit, Mini Mill | $71.28 |

| **5177 Large Table Solid Column Conversion Kit, Mini Mill** | $499.95 |
| - Converts a tilting column mini mill to the large table solid column version |
| - 30% more travel in both directions |
| - 50% more table area |
| - Solid column is significantly more rigid |

This kit converts a tilting column mini mill to a large table with a solid column. The kit includes the X-Y table and column from the HiTorque Solid Column Mini Mill (part number 3990), the fasteners needed to connect them. This kit contains a complete X-Y table assembly for a mini mill. The table is 120 mm (4.73") by 460 mm (18.11"). It has three 12 mm T-slots. The X-axis travel is 300 mm (11.8") and the Y-axis travel is 130 mm (5.1"). The dials are graduated in 0.001" and one turn of the hand wheels moves the table 0.050". The X-Y table is made of cast iron and steel. There are adjustable gibs on both axes.

| 5855 Long Table Kit, Bench Mill | $347.53 |
| - Extra long table for Bench Mill, X2.7 and SX2.7 mills |

This extra long mill table fits both SIEG X3 and SIEG Super X3 mills and comes complete with an extra long feed screw and rule which may be fitted to the front of the table with the rivets supplied. The table is 700 mm x 1610 mm.

| 3845 Long Table Kit, Super X3L | $254.93 |
| - Extra long table for X3 SX3 mills |

This extra long mill table fits both SIEG X3 and SIEG Super X3 mills and comes complete with an extra long feed screw and rule which may be fitted to the front of the table with the rivets supplied. The table is 700 mm x 1610 mm.

| 2642 Long Table Kit, Micro Mill | $107.34 |
| - Table is 400 mm x 145 mm |
| - X-Axis travel is 330 mm |

This kit adds a larger table, and increases the X-axis travel to 330 mm on the Harbor Freight 47158 micro mill. The conversion kit includes a new table and 20 TPI X-axis screw.

| 3492 Long Table Kit, Micro Mill, Metric | $107.34 |

| 2635 Tweaks & Enhancements Kit, Mini Mill | $34.95 |
| - Several small items to make your mini mill work better and last longer |
| - Easier gib adjustment |
| - Fewer stripped locking levers |
| - Easier backlash adjustment |
| - Cleaner T-slots |

The Mini Mill Tweaks & Enhancements Kit™ can make a big difference in the operation of your mini mill. The kit includes:

- R8 spindle
- Two spindle gears
- Two spacing rings
- Two keys
- One bearing
- One drawbar
- Complete instructions

**Summary:**

- **Belt Drive Conversion Kit, Mini Mill**: Day 20, $154.95
- **CNC Spindle Control Upgrade Kit for SX2, SC2**: Day 25, $125.62
- **Feed Screw Parts, 20 TPI, Mini Mill**: Day 31, $61.20
- **Large Table Solid Column Conversion Kit, Mini Mill**: Day 49, $499.95
- **Long Table Kit, Bench Mill**: Day 58, $347.53
- **Long Table Kit, Micro Mill**: Day 26, $107.34
- **CNC Spindle Control Upgrade Kit for SX3, SC2 230V**: Day 46, $125.62
- **CNC Spindle Control Upgrade Kit for SX3, SC4**: Day 49, $125.62
- **CNC Spindle Control Upgrade Kit for SX3, SC4 230V**: Day 49, $125.62
- **Large Table Kit, Super X3L**: Day 38, $254.93
- **Long Table Kit, Micro Mill, Metric**: Day 34, $107.34
- **Spindle Conversion Kit, R8**: Day 16, $84.38
- **Tweaks & Enhancements Kit, Mini Mill**: Day 26, $34.95
- **Extra Long Table Kit, Micro Mill**: Day 26, $107.34
- **Long Table Kit, Super X3L**: Day 38, $254.93
- **Spindle Conversion Kit, R8**: Day 16, $84.38
- **Tweaks & Enhancements Kit, Mini Mill**: Day 26, $34.95

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Kits: Mill Conversion Kits

5069 Upgrade Kit, Mini Mill  $197.85
- Includes 2258 Air Spring Kit and 2560 Mini Mill Belt Drive Kit
- Much quieter operation
- Spindle speed up to 4300 RPM
- Allows travel to the top of the column while providing better support for the mill head
- No more broken drive gears

Do not buy this milling machine upgrade kit if you have a HiTorque Mini Mill. Most or all of these features are already included on the HiTorque mills.

This mini mill kit provides an easy-to-install alternative to the noisy and fragile factory-installed gears that drive the spindle on the machine. The kit includes one belt. Change speeds without any tools. Simply remove the guard, loosen the lever locks and move the belt from one pair of pulleys to the other. Low speed range is 0-1700 RPM. High speed range is 0-4300 RPM. This belt drive fits the following mills:

- Grizzly G0516 Lathe Mill Combo
- Micromills 7877 Mini Mil
- Grizzly G8689 Mini Milling Machine
- Harbor Freight 44991 Central Machinery Mini Mill/Drill
- Hare & Forbes HM-10 Mini Mill Drill
- Homier O3947 Speedway Mini Mill
- Micro-Mark 82573 MicroLux Milling Machine

The small pulley has a 9 mm bore with a 5 mm keyway. If your shafts don't match these values, then this belt drive will not fit your mill.

Convert torsion spring mini mills to air spring. This mini mill kit provides all the parts required to change to a vertical air spring that mounts inside and above the column. With the air spring installed, you can move the mill head up until the top of the casting is almost flush with the top of the column. You can move it down until it almost contacts the adjustable Z-axis stop set in its lowest position. This air spring has about 35 pounds of force. This is not enough to totally support the head, but it is a heck of a lot more support than the torsion arm provides.


1-2-3 Blocks - These precision 1-2-3 blocks are ground and case hardened on all sides to 50-60 Rc. The blocks are 1" by 2" by 3". They are parallel within 0.0002", flat within 0.0002" and square within 0.0002". The blocks are 1" by 2" by 3". They are parallel within 0.0002", flat within 0.0002" and square within 0.0002". They are parallel within 0.0002", flat within 0.0002" and square within 0.0002". Each set includes two matched blocks. The blocks have 23 holes through them, 5 are threaded 3/8"-16 NC. The center finder end tapers to a point to locate holes. The edge and center finder is hardened and ground all over.

Kits: Starter Kits

2653 Starter Kit, Micro Mill  $86.95
- This kit contains the basics you need to start using your new micro mill.
- 36-piece clamping kit for 5/16" (8 mm) T-slots
- Thin parallels (3" long)
- 1-2-3 blocks
- Edge and center finder

This kit contains the basics you need to start using your new micro mill. The clamping kit fits the 8 mm T-slots on the micro mill. The clamping kit includes 10 M6 studs, 4 step block pairs, 6 T-slot nuts, 6 flange nuts, and 6 step clamps. The thin parallels are a set of 10 matched pairs of high grade steel parallels, precision ground and hardened. The parallels are 1/8" thick and 3" long. The heights are 1/2", 5/8", 3/4", 7/8", 1", 1-1/8", 1-1/4", 1-3/8", 1-1/2", and 1-5/8". They are made of high grade alloy steel hardened to 52-58 Rc and are parallel within 0.0002" on the top and bottom. The pairs are matched in height within 0.0004". The precision 1-2-3 blocks are ground and case hardened on all sides to 50-60 Rc. The blocks are 1" by 2" by 3". They are parallel within 0.0002", flat within 0.0002" and square within 0.0002". Each set includes two matched blocks. The blocks have 23 holes through them, 5 are threaded 3/8"-16 NC. The 3/8" diameter combination edge and center finder helps you locate work on your mill. The edge finder end has a 0.200" diameter cylinder to quickly find the edge of a work piece. The center finder end tapers to a point to locate holes. The edge and center finder is hardened and ground all over.

1262 Starter Kit, X2/SX2 Mini Mill  $97.95
- Clamping kit for 7/16" (12 mm) T-slots
- Thin parallels (6" long)
- 1-2-3 blocks
- Edge and center finder
- T-slot cleaner

This milling machine kit contains the basics you need to start using your new mini mill. This Mini Mill Starter Kit includes:


1-2-3 Blocks - These precision 1-2-3 blocks are ground and case hardened on all sides to 50-60 Rc. The blocks are 1" by 2" by 3". They are parallel within 0.0002", flat within 0.0002" and square within 0.0002". Each set includes two matched blocks. The blocks have 23 holes through them, 5 are threaded 3/8"-16 NC. The center finder end tapers to a point to locate holes. The edge and center finder is hardened and ground all over.

The edge finder end has a 0.200" diameter cylinder to quickly find the edge of a work piece. The center finder end tapers to a point to locate holes. The edge and center finder is hardened and ground all over. T-Slot Cleaner - Use this T-slot cleaner to clean the debris from the T-slots on your mini mill and bench mill. Made for LittleMachineShop.com specifically to fit the Mini Mill and Bench Mill.

3491 Tooling Package, 2MT Micro Mill  $314.65
- 3" toolmakers screwless vise and 10 pairs of 4" long thin parallels
- Precise 1-2-3 Blocks and 36-piece Clamping Kit - 8 mm T-slot
- Two 6-piece end mill sets, 2 & 4 flute and 5 center drills
- Seven piece 2MT collet set
- Combination edge and center finder

Tooling package with all the essentials for a 2MT micro mill. Toolmakers Vise: 3" toolmakers screwless vise has a one-piece body. The body and jaws are hardened to Rc 58-62. All sides are flat, square and parallel to 0.0002". There are horizontal and vertical veeves on the inside face of the movable jaw to hold round objects. The vise jaws are 1.38" deep and open to 3.78" capacity. The vise is 7.28" long, 2.76" tall and 2.765" wide. Thin Parallels: Set of ten pairs, 1/8" thick x 4" long, in fitted case. Made of high-grade alloy steel hardened to 52-58 Rc, parallel within 0.0002" on top and bottom. Parallel heights: 1/2", 3/4", 7/8", 1", 1-1/8", 1-1/4", 1-3/8", 1-1/2", and 1-5/8" (pairs matched within 0.0004") Clamping Kit: 36-piece kit fits 8 mm T-slots on a micro mill. Includes 10 M6 studs, 4 step block pairs, 6 T-slot nuts, 6 flange nuts, and 6 step clamps. End Mills: 6-piece 4 flute and 6-piece 2 flute, HSS, center cutting end mill sets. Sizes 1/8", 3/16", 1/4", 5/16", 3/8", and 1/2". All with 3/8" shanks. 2MT Collets: Set of seven high-grade tool hardened steel round collets, sizes 1/8", 3/16", 1/4", 5/16", 3/8", 7/16", and 1/2". The drawbar thread is 3/8"-16. This set includes all the sizes required for common end mills. 1-2-3 Blocks: Ground and hardened on all sides to 50-60 Rc, sizes 1" x 2" x 3". Parallel within 0.0002", flat within 0.0002", and square within 0.0002". Set has two matched blocks, 23 holes of which 5 are threaded 3/8"-16 NC. Center Drills: Five sizes combined drills and countersinks made of high speed steel. Sizes 1, 2, 3, 4, and 5 with 60 degree counter sinks.
Kits: Mill Starter Kits

4759 Tooling Package, ER-16 Micro Mill $293.98
- 3” toolmakers screwless vise and 10 pairs of 4” long thin parallels
- Precision 1-2-3 blocks and 36-piece clamping kit - 8 mm T-slot
- Two 6-piece end mill sets, 2 & 4 flute and 5 center drills
- Five piece ER-16 collet set
- Combination edge and center finder

Tooling package with all the essentials for an ER-16 Micro Mill. Toolmakers Vise: 3” toolmakers screwless vise has a one-piece body. The body and jaws are hardened to Rc 58-62. All sides are flat, square and parallel to 0.0002”. There are horizontal and vertical vees on the inside face of the movable jaw to hold round objects. The vise jaws are 1.38” deep and open to 3.78” capacity. The vise is 7.28” long, 2.76” tall and 2.78” wide. Thin Parallels: Set of ten pairs, 1/8” thick x 4” long, in fitted case. Made of high-grade alloy steel hardened to 52-58 Rc, parallel within 0.0002” on top and bottom. Parallel heights: 1/2”, 5/8”, 3/4”, 7/8”, 1”, 1-1/8”, 1-1/4”, 1-3/8”, 1-1/2”, and 1-5/8” (pairs matched within 0.0004”). Clamping Kit: 36-piece kit fits 8 mm T-slots on a micro mill. Includes 10 M6 studs, 4 step block, 6 T-slot nuts, 6 flange nuts, and 6 step clamps. End Mills: 6-piece 4 flute & 6-piece 2 flute, HS5, center cutting end mill sets. Sizes 1/8”, 3/16”, 1/4”, 5/16”, 3/8”, and 1/2”. All with 3/8” shanks. ER-16 Collets: Set of five ER-16 round collets. Sizes: 1/8”, 3/16”, 1/4”, 5/16”, and 3/8”. Made of high-grade tool steel hardened, ground to close tolerance, this set includes the sizes required for most common end mills. 1-2-3 Blocks: Ground and hardened on all sides to 60–65 RC, sizes 1-1/2” x 2” x 3”. Parallel within 0.0002”, flat within 0.0002”, and square within 0.0002”. Set has two matched blocks, 23 holes of which 5 are threaded 3/8”-16 NC. Center Drills: Five sizes combined drills and countersinks made of high speed steel. Sizes 1, 2, 3, 4, and 5 with 60 degree counter sinks.

5671 Tooling Package, Grizzly G0758 Mill $330.43
- 3” precision milling vise (heavy) and 10 pairs of 4” long thin parallels
- Precision 1-2-3 blocks and 20 piece end mill set - 2 & 4 flute (10 each)
- 58-piece clamping kit - 5/16”-18, 3/8”-T-slots
- Seven piece R8 collet set, five center drills - 60° countersinks
- Combination edge and center finder and a T-slot cleaner

Tooling package with all the essentials for an R8 mini mill. Milling Vise: 3” Kurt-style milling vise. Top, gib, jaws, bottom of vise bed and all plate mounting surfaces are ground. The angle tight positive lock style jaws are interchangeable with industry standard machine vises, are hardened and ground, and can be mounted on either end of the fixed and movable jaw for a wide range of clamping distances. Overall length is 10.85” and the height is 3.05”. Jaws are 3.15” wide, 1.04” deep, open 3”, and are perpendicular to the ways within 0.002” in 4”. The ways are parallel to the base within 0.0006” in 4” without the swivel. Thin Parallels: Set of ten pairs, 1/8” thick x 4” long, in fitted case. Made of high-grade alloy steel hardened to 52-58 Rc, parallel within 0.0002” on top and bottom. Parallel heights: 1/2”, 5/8”, 3/4”, 7/8”, 1”, 1-1/8”, 1-1/4”, 1-3/8”, 1-1/2”, and 1-5/8” (pairs matched within 0.0004”). End Mills: 20 piece set included 2 flute and 4 flute center cutting TiN coated HSS end mills sizes 3/16”-3/4” by 16ths. R8 Collets: Set of seven high-grade tool hardened steel, sizes 1/8”, 3/16”, 1/4”, 3/8”, 1/2”, 5/8”, 3/4”, 1-2-3 Blocks: Ground and hardened on all sides to 50-60 RC, sizes 1” x 2” x 3”. Parallel within 0.0002”, flat within 0.0002”, and square within 0.0002”. Set has two matched blocks, 23 holes of which 5 are threaded 3/8”-16 NC. Center Drills: Five sizes combined drills and countersinks made of high speed steel. Sizes 1, 2, 3, 4, and 5 with 60 degree counter sinks.

4212 Tooling Package, R8 CNC Mini Mill $376.95
- 3” precision milling vise (Heavy) and 10 pairs of 4” long thin parallels
- Five piece R8 end mill holders, 20 piece end mill set - 2 & 4 flute (10 each)
- 58-piece clamping kit - 3/8”-16, 7/16”-T-slots
- Precision 1-2-3 blocks, five center drills - 60° countersinks
- Combination Edge and Center Finder and a T-Slot Cleaner Tooling package with all the essentials for an R8 CNC Mini Mill. Milling Vise: 3” Kurt-style milling vise. Top, gib, jaws, bottom of vise bed and all plate mounting surfaces are ground. The angle tight positive lock style jaws are interchangeable with industry standard machine vises, are hardened and ground, and can be mounted on either end of the fixed and movable jaw for a wide range of clamping distances. Overall length is 10.85” and the height is 3.05”. Jaws are 3.15” wide, 1.04” deep, open 3”, and are perpendicular to the ways within 0.002” in 4”. The ways are parallel to the base within 0.0006” in 4” without the swivel. Thin Parallels: Set of ten pairs, 1/8” thick x 4” long, in fitted case. Made of high-grade alloy steel hardened to 52-58 Rc, parallel within 0.0002” on top and bottom. Parallel heights: 1/2”, 5/8”, 3/4”, 7/8”, 1”, 1-1/8”, 1-1/4”, 1-3/8”, 1-1/2”, and 1-5/8” (pairs matched within 0.0004”). End Mills: 20 piece set included 2 flute and 4 flute center cutting TiN coated HSS end mills sizes 3/16”-3/4” by 16ths. R8 Collets: Set of seven high-grade tool hardened steel, sizes 1/8”, 3/16”, 1/4”, 3/8”, 1/2”, 5/8”, 3/4”, 1-2-3 Blocks: Ground and hardened on all sides to 50-60 RC, sizes 1” x 2” x 3”. Parallel within 0.0002”, flat within 0.0002”, and square within 0.0002”. Set has two matched blocks, 23 holes of which 5 are threaded 3/8”-16 NC. Center Drills: Five sizes combined drills and countersinks made of high speed steel. Sizes 1, 2, 3, 4, and 5 with 60 degree counter sinks.

4589 Tooling Package, R8 Bench Mill Premium $598.95
- 4” Precision milling, professional and 10 pairs of thin parallels
- Thirteen piece R8 collets, Two six-piece M42 8% cobalt end mill set - 2 & 4 flute
- 58 - piece clamping kit - 3/8”-16, 7/16”-T-slots
- Premium precision 1-2-3 blocks, five center drills - 60° countersinks
- Combination edge and center finder and a T-slot cleaner

Premium tooling package with all the best products for your R8 mini mill. Milling Vise: 4” Kurt-style professional milling vise with detachable 360° swivel base and easy to read divisions. Top, gib, jaws, swivel base, bottom of vise bed and all plate mounting surfaces are ground. The angle tight positive lock style jaws are interchangeable with industry standard machine vises, are hardened and ground, and can be mounted on either end of the fixed and movable jaw supports for a wide range of clamping distances. Overall length is 11.6” and the height is 3.1” without base, and 4.3” with base. Jaws are 3.15” wide, 0.9” deep, open 3”, and are perpendicular to the ways within 0.0004” in 4”. The ways are parallel to the base within 0.0003” in 4” without the swivel. Thin Parallels: Set of ten pairs, 1/8” thick. Made of high-grade alloy steel hardened to 52-58 Rc, parallel within 0.0003” on top and bottom. Parallel heights: 1/2”, 9/16”, 5/8”, 11/16”, 3/4”, 13/16”, 7/8”, 15/16”, 1”, 1-1/16” (pairs matched within 0.0003”). End Mills: Two six-piece M42 8% cobalt, center cutting End Mills sets, 2 & 4 flute. Sizes: 1/8”, 3/16”, 1/4”, 5/16”, 3/8” and 1/2”. The smaller end mills have 3/16” shanks and the 1/2” end mill has a 1/2” shank. R8 Collets: 13 R8 round collets sizes 1/8” to 1” by 16ths. Made of high grade tool steel hardened, ground and to a TIR of 0.0005” or less. This set includes all the sizes required for common end mills. 1-2-3 Blocks: Premium precision 1-2-3 blocks, ground and case hardened on all sides to 55-60 Rc. Blocks are 1” x 2” x 3”; parallel, flat, and square within 0.0001”. Set includes two matched blocks and 5 cap screws. Blocks have 23 holes, five are threaded 3/8”-16 NC. Five piece M42 8% cobalt combined drills and countersinks sizes 1, 2, 3, 4, and 5 with 60 degree counter sinks.

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Kits: Mill Starter Kits

3489 Tooling Package, R8 Mini Mill $319.95
- 3" precision milling vise (heavy) and 10 pairs of 4" long thin parallels
- Precision 1-2-3 blocks and 20 piece end mill set - 2 & 4 flute (10 each)
- 58- piece clamping kit - 3/8"-16, 7/16" T-slots
- Seven piece R8 collet set, five center drills - 60° countersinks
- Combination edge and center finder and a T-slot cleaner

This mill tooling package comes with all the essentials for an R8 mini mill. Milling Vise: 3" Kurt-style milling vise. Top, gib, jaws, bottom of vise bed and all plate mounting surfaces are ground. The angle tight positive lock style jaws are interchangeable with industry standard machine vises, are hardened and ground, and can be mounted on either end of the fixed and movable jaw supports for a wide range of clamping distances.

Overall length is 10.85" and the height is 3.05". Jaws are 3.15" wide, 1.04" deep, open 3", and are perpendicular to the ways within 0.002" in 4'. The ways are parallel to the base within 0.0006" in 4" without the swivel. Thin Parallels: Set of five pairs, 1/4" thick x 4" long, in fitted case. Made of high grade alloy steel hardened to 52-58 Rc, parallel within 0.0002' on top and bottom. Parallel heights: 1/2", 5/8", 7/8", 1", 1-1/8", 1-1/4", 1-3/8", 1-1/2", and 1-5/8" (pairs matched within 0.0004').

4491 Tooling Package, R8 Mini Mill Essentials $240.43
- 3" precision milling vise, 4 pairs of 3" parallels
- 58 - piece clamping kit - 3/8"-16, 7/16" T-slots
- Ten piece end mill set - 2 & 4 flute
- Five piece R8 collet set, four center drills - 60° countersinks
- Combination edge and center finder and a T-slot cleaner

Tooling package with the basic tooling for an R8 mini mill. Milling Vise: The precision 3" Kurt-style milling machine vise has a detachable swivel base that features easy to read divisions. The top, bottom of vise bed, gib, jaws, swivel base, and all plate mounting surfaces are ground. The hardened and ground replaceable jaws on this vise are 3.15" wide, 0.93" deep, and open 2.83". The vise is 10.24" long. Without the base, the vise is 2.91" high. With the base, the vise is 3.94" high. The replaceable jaws can be mounted on either end of the fixed and movable jaw supports providing a wide range of clamping distances.

Thin Parallels: Set of four pairs of thin parallels. They are 5/32" thick and 3" long. The heights are 1/2", 5/8", 3/4", and 7/8". The parallels are made of high grade alloy steel hardened to 52 to 58 Rc. They are parallel within 0.0002" on top and bottom. The parallels are made of high grade alloy steel hardened to 52 to 58 Rc. They are parallel within 0.0002" on top and bottom. Parallel heights: 1/2", 5/8", 7/8", 1", 1-1/8", 1-1/4", 1-3/8", 1-1/2", and 1-5/8" (pairs matched within 0.0004').

4723 Tooling Package, R8 Mini Mill Precision $319.95
- 3" Toolmakers screwless vise and 10 pairs of 4" long thin parallels
- Precision 1-2-3 blocks and 20 piece end mill set - 2 & 4 flute (10 each)
- 58- piece clamping kit - 3/8"-16, 7/16" T-slots
- Seven piece R8 collet set, five center drills - 60° countersinks
- Combination edge and center finder and a T-slot cleaner

Tooling package with all the essentials for an R8 mini mill. Toolmakers Vise: 3" toolmakers screwless vise has a one-piece body. The body and jaws are hardened to Rc 58-62. All sides are flat, square and parallel to 0.0002'. There are horizontal and vertical veins on the inside face of the movable jaw to hold round objects. The vise jaws are 1.38" deep and open to 3.78" capacity. The vise is 7.28" long, 2.76" tall and 2.785" wide. Thin Parallels: Set of ten pairs, 1/8" thick x 4" long, in fitted case. Made of high grade alloy steel hardened to 52-58 Rc, parallel within 0.0002' on top and bottom. Parallel heights: 1/2", 5/8", 3/4", 7/8", 1", 1-1/8", 1-1/4", 1-3/8", 1-1/2", and 1-5/8" (pairs matched within 0.0004').

4858 Tooling Package, R8 Mini Mill Premium $648.95
- 3" Precision milling, professional and 10 pairs of 3" long, high grade, thin parallels
- Thirteen piece R8 collets, Two six-piece M42 8% cobalt end mill set - 2 & 4 flute
- 58 - piece clamping kit - 3/8"-16, 7/16" T-slots
- Premium precision 1-2-3 blocks, five center drills - 60° countersinks
- Combination edge and center finder and a T-slot cleaner

Premium mini mill R8 tooling package with all the best products for your machine. Milling Vise: 3" Kurt-style professional milling vise with detachable 360° swivel base and easy to read divisions. Top, gib, jaws, swivel base, bottom of vise bed and all plate mounting surfaces are ground. The angle tight positive lock style jaws are interchangeable with industry standard machine vises, are hardened and ground, and can be mounted on either end of the fixed and movable jaw supports for a wide range of clamping distances. Overall length is 11.6" and the height is 3.1" without base, and 4.3" with base. Jaws are 3.15" wide, 0.9" deep, open 3", and are perpendicular to the ways within 0.0005" in 4'. The ways are parallel to the base within 0.0003' in 4" without the swivel. Thin Parallels: Set of ten pairs, 1/8" thick x 3" long. Made of high grade alloy steel hardened to 52-58 Rc, parallel within 0.0001" on top and bottom. Parallel heights: 1/2", 9/16", 5/8", 11/16", 3/4", 13/16", 7/8", 15/16", 1", 1-1/16" (pairs matched within 0.0002'). End Mills: Two-piece M42 8% cobalt, center cutting End Mills sets, 2 & 4 flute. Sizes: 1/8", 3/16", 1/4", 5/32", 3/8" and 1/2". The smaller end mills have 3/32" shanks and the 1/2" end mill has a 1/4" shank. R8 Collets: 13 R8 round collets sizes 1/8" to 1" by 16ths. Made of high grade tool steel, hardened and ground to a TIR of 0.0005 or less. This set includes all the sizes required for common end mill sizes. 1-2-3 Blocks: Premium precision 1-2-3 blocks, ground and case hardened on all sides to 50-60 Rc. Blocks are 1" x 2" x 3" parallel, flat, and square within 0.0001". Mini mill tooling package set includes two matched blocks and 5 cap screws. Blocks have 23 holes, five are threaded 3/8"-16 NC. Five piece M42 8% cobalt combined drills and countersinks sizes 1, 2, 3, 4, and 5 with 60 degree counter sinks.

Kits: Spare Parts Kits

2249 Spare Parts Kit, Micro Mill $20.36
- 5 GMA-2 fuses
- 6 different gears

This kit contains the parts that fail most often on the micro mill with a 2 Morse taper spindle.
Kits: Spare Parts Kits

1223  Spare Parts Kit, Mini Lathe  $30.65
This spare parts package contains the parts that fail most often on the mini lathe.
This mini lathe spare parts kit contains:
5 GMA-5 fuses
1 Gear, 2-Speed Intermediate Shaft
1 Gear, 2-Speed Spindle
1 Belt, Timing
1 Pulley, Timing Belt Motor (8 mm shaft)
1 Pulley, Timing Belt Intermediate Shaft
1 Gear, 80 Tooth
2262  Spare Parts Kit, 7x14 Mini Lathe  $25.51

1703  Spare Parts Kit, R8, Mini Mill  $35.85
- R8 Mini Mill Spindle Gears
- 5 GMA-5 Fuses
- 1 Motor Gear
- 2 Spindle Gears
- 2 Intermediate Shaft Gears
This kit contains the parts that fail most often on the mini mill with the R8 spindle. The kit contains:
5 GMA-5 fuses
1 14-Teeth Intermediate Shaft Gear
1 2-Speed Intermediate Shaft Gear, 12 Teeth / 20 Teeth
1 30-Teeth Intermediate Shaft Gear
1 29-Teeth Spindle Gear, No. 11
1 21-Teeth Spindle Gear, No. 21
1 Motor Gear, Metal
1 30-Teeth Spindle Gear, No. 20
1 21-Teeth Spindle Gear, No. 12
1 14-Teeth Intermediate Shaft Gear

Lathe: 10x21 Lathe (C6) Accessories

2499  Faceplate, G0516 Combo Lathe Mill  $59.46
Faceplate for Grizzly G0516 and SIEG C6 lathes. The faceplate is 8.66" (220 mm) in diameter and has 8 slots for mounting work.

2497  Follower Rest, C6 Lathe  $73.49
This follower rest fits the Grizzly G0516 and SIEG C6 lathes.
The follower rest can support work up to 1.5" in diameter.

5042  Follower Rest, C8 Lathe  $80.16
This follower rest fits the SIEG C8 and SC8 lathes.

2894  Milling Attachment, C6 Lathe  $265.48
Milling attachment for the SIEG C6 lathe. This milling attachment includes the mounting bracket required to mount it on a SIEG C6 lathe. The vise opening is 1.9". The width of the vise is 2.6" and the depth is 1.4". The travel is 3.6". The dial is graduated in 0.025 mm (approximately 0.001") and there are 60 divisions, so the advance is 1.5 mm (0.059") per revolution.

2496  Steady Rest, C6 Lathe  $85.35
This steady rest fits the Grizzly G0516, and SIEG C6 lathes.
The steady rest can support work up to 2.5" in diameter.

5036  Steady Rest, C8 Lathe  $112.00
This steady rest fits the SIEG C8 and SC8 lathes.

2498  Wood Turning Tool Rest and Center, C6  $68.49
Wood turning tool rest and center for Grizzly G0516 and SIEG C6 lathe. The tool rest clamps in the standard tool post so you can turn wood on your mini lathe. The driving center fits in the lathe spindle.

Lathe: 4x5 Micro Lathe (C0)/Unimat Accessories

2946  Auto Longitudinal Feed, SIEG C0 Lathes  $57.60
- Powers the lead screw
- Clutch disengages when not in use
- Includes drive belt and mounting bolt
- Fits SIEG C0 lathes

5873  Belt, Auto Longitudinal Feed, SIEG C0  $5.88

2947  Compound Rest Assembly SIEG C0 Lathes  $56.29
- Top slide for turning tapers
- 40 mm of travel
- Holds tools up to 1/4" shank
- Fits SIEG C0 lathes

2950  Faceplate, Nano Lathe, Unimat 3 & 4 and SIEG C0 Lathes  $22.50
- 70 mm diameter
- Three slots to mount work
- M14x1.0 mounting thread
- Fits SIEG C0 lathes and Unimat 3 & 4
This is a faceplate with a 70 mm diameter designed to be screwed onto a lathe's spindle in place of a chuck.

2948  Live Center, SIEG C0 Lathes  $28.34
- 10 mm straight shank
- Point is a 60º included angle
- Fits SIEG C0 lathes
The body is 0.91" (23 mm) in diameter.

2945  Steady Rest, SIEG C0 Lathes  $34.15
- Supports work up to 40 mm (1.5") in diameter
- Fits SIEG C0 lathes

2952  Tool Post, Unimat 3 & 4 and SIEG C0 Lathes  $22.63
- Two sided tool post
- Holds tools up to 1/4" shank
- Fits Unimat 3 & 4 lathes
- Fits SIEG C0 lathes
- Mounts with an M6 bolt included

2949  Wood Turning Tool Rest and Center, Unimat 4 and SIEG C0 Lathes  $46.82
- Wood turning tool rest and spur center
- 150 mm long tool rest
- Includes spur center with 10 mm shank
- Fits Unimat 4 lathes
- Fits SIEG C0 lathes

Lathe: 7x10/12/14 Mini Lathe (C2/C3) Accessories

4607  Accessory Package, 3" Spindle Flange Mini Lathe  $369.27
- Complete set of mini lathe accessories
- Fully equip your mini lathe
- Steadies, centers, chucks, locks and dogs
This package includes all the accessories you could want to fully equip your mini lathe. This accessory package is for lathes that come from the factory with a 3" lathe chuck.

5371  Accessory Package, 4" Spindle Flange, Mini Lathe  $369.27
- Complete set of mini lathe accessories
- Fully equip your mini lathe
- Steadies, centers, chucks, locks and dogs
This package includes all the accessories you could want to fully equip your mini lathe. This package is for mini lathes that come from the factory with a 4" lathe chuck.
**Lathe: 7x10/12/14 Mini Lathe (C2/C3) Accessories**

**1700 Boring Bar Holder, 1/2”**

1/2” Boring bar holder. This simple mini lathe boring bar holder fits in the standard 4-way tool post. It holds boring bars with 1/2” shanks.

**Price: $11.16**

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**5135 Bullseye Lathe Tool Height Setter**

- Quickly and easily check lathe tool bit height
- Accepts any diameter work piece from 1/8” to 2 1/2”
- Rubber band provides hands-free operation

This lathe tool height gauge will allow you to quickly and accurately check and adjust lathe tool height. With the help of this lathe tool height setter there is no guess work and no fumbling around.

**Price: $9.95**

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**2977 Carriage Lock, Mini Lathe**

- Locks carriage down to ways
- Won't rock the carriage when locking
- Mounts to existing follower rest mounting holes
- No tools required to lock the carriage

This mini lathe carriage lock mounts to the two tapped holes for mounting the follower rest. The carriage lock can be left in place for most operations.

**Price: $38.25**

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**2705 Carriage Stop, Mini Lathe, Adjustable**

This carriage stop clamps to the ways of your mini lathe to provide a repeatable stop position. This is useful when making multiple cutting passes or when making multiple parts.

This stop incorporates a fine adjustment. It is locked with a lever so you need no tools to use it.

Order this and other mini lathe tools and accessories at LittleMachineShop.

**Price: $27.02**

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**3938 Change Gear Set, Metal**

- Attractive all metal change gears
- Complete set of good-looking steel change gears for the mini lathe.

**Price: $193.18**

---

**1677 Compound Rest Bottom, Drilled**

This is the bottom half of the compound rest on the mini lathe. This part has a second set of holes that moves the center of rotation of the compound rest to help eliminate chatter.

The part requires 3 M6 x 30 studs.

**Price: $36.27**

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**1777 Compound Rest Bottom, Drilled and Milled**

This is the bottom half of the compound rest on the mini lathe. This part has a second set of holes that moves the center of rotation of the compound rest to help eliminate chatter.

This part is also about 1/4” thinner than the standard part. This makes it possible to mount AKA or Series 100 tool posts on the mini lathe.

Use the holes nearest the end of the part. Do not expect to use this without a quick change tool post of some sort. It will place the standard tool post about 1/4” too low.

The thread pitch is 1 mm so the compound advances 0.040” (actually 0.0394”) per revolution. Use with a dial that has 40 divisions.

**Price: $45.20**

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**4836 Compound Rest Top, T-slot**

- Two 8 mm T-slots 25 mm center to center
- Mounts QCTP or standard 4-way tool holder

This compound rest top fits any mini lathe. It gives you two 8 mm T-slots with which you can mount anything you want.

**Price: $35.82**

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**1551 Cut-Off Tool Holder**

- Fits Standard 4-way Tool Posts
- Holds 1/2” Tall Cut-Off Blades
- Steel Construction

This cut-off, or parting, tool holder fits in the standard 4-way tool post (and most other tool posts) and holds 1/2” tall cut-off blades.

The mini lathe parting tool holder is made of steel and has a 3/8” shank.

Use 3mm hex wrench for screws.

**Price: $22.36**

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**5916 Cut-Off Tool Holder, 3/8” Indexable with GTN-2 Inserts**

- 3/8” Indexable GTN-2 Cut-Off Tool Holder
- Includes: tool holder, cut-off blade, 10 inserts, 2 allen wrenches
- Tool holder is a SLTBN0375-2
- Uses GTN-2 Inserts
- Cut-off blade NCH 19-2
- 3/8” Indexable GTN-2 Cut-Off Tool Holder Includes a SLTBN0375-2 tool holder, NCIH 19-2 cut-off blade, 10 GTN-2 inserts and 2 allen wrenches.

Tool holder dimensions (see photo)

- A1 is 0.472”
- A is 0.984”
- H2 is 1.161”
- H4 is 0.435”
- M is 0.118”
- C is 2.2’

**Price: $84.50**

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**1873 Drawbar, 3MT x 3/8”-16, Mini Lathe**

This is the 3/8-16 drawbar for the 7x10 and 7x12 mini lathe with the 3 Morse Taper spindle. This drawbar is a 3/8-16 x 5” cap screw and a flat washer. They are both hardened for long life.

**Price: $3.49**

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**2224 Drawbar, 3MT x 3/8”-16, 7x14 Mini Lathe**

**Price: $4.49**

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**5123 Faceplate, Mini Lathe, 100 mm Flange**

- 160 mm Diameter
- 8 Slots to Mount Work
- 72 mm Registration Recess
- Requires 3 M8 x 25 Studs
- Compatible with Lathes with 100 mm Flange Chuck Mount

The faceplate is 6.29” (160 mm) in diameter and has 8 slots for mounting work. The faceplate is made of cast iron.

This faceplate has a 72 mm registration recess. It requires 3 M8 x 25 studs. It mounts in place of a 100 mm (4”) 3-jaw lathe chuck.

**Price: $40.64**

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**1199 Faceplate, Mini Lathe, 80 mm Flange**

- 160 mm Diameter
- 8 Slots to Mount Work
- 55 mm Registration Recess
- Requires 3 M6 x 30 Studs
- Compatible with Lathes with 80 mm Flange Chuck Mount

The faceplate is 6.29” (160 mm) in diameter and has 8 slots for mounting work. The lathe face plate is made of cast iron. This mini lathe faceplate has a 55 mm registration recess. It requires 3 M6 x 30 studs.

**Price: $37.04**

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**2644 Clamping Kit for Faceplate**

**Price: $19.44**

**3400 Faceplate, C4 Lathe**

**Price: $143.18**

**2499 Faceplate, G0516 Combo Lathe Mill**

**Price: $59.46**

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**1198 Follower Rest, Mini Lathe**

This follower rest mounts on the lathe saddle and moves with the carriage.

The follower rest can support work up to 1” in diameter.

**Price: $48.95**

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**2419 Follower Rest, Mini Lathe, Ball Bearing**

**Price: $70.49**
## Lathe: 7x10/12/14 Mini Lathe (C2/C3) Accessories

<table>
<thead>
<tr>
<th>Item Code</th>
<th>Product Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>2459</td>
<td>Gear, 21 Teeth</td>
<td>$10.85</td>
</tr>
<tr>
<td>3937</td>
<td>Knob and Hand Wheel Kit, Mini Lathe</td>
<td>$85.97</td>
</tr>
<tr>
<td>3967</td>
<td>Lathe Cover, Mini Lathe</td>
<td>$19.95</td>
</tr>
<tr>
<td>4464</td>
<td>Lathe Dog Set</td>
<td>$35.95</td>
</tr>
<tr>
<td>3766</td>
<td>Milling Attachment Package, Mini Lathe</td>
<td>$278.48</td>
</tr>
<tr>
<td>1956</td>
<td>Milling Attachment, Taig</td>
<td>$72.95</td>
</tr>
<tr>
<td>4968</td>
<td>Revolving Tailstock Chuck Adapter, 3&quot; Chuck, 2MT</td>
<td>$152.95</td>
</tr>
<tr>
<td>1197</td>
<td>Steady Rest, 0-1&quot; Mini Lathe</td>
<td>$56.74</td>
</tr>
<tr>
<td>1684</td>
<td>Tachometer, Spindle</td>
<td>$129.56</td>
</tr>
<tr>
<td>3818</td>
<td>Tachometer, Spindle, HiTorque Mini Machines</td>
<td>$161.43</td>
</tr>
<tr>
<td>2658</td>
<td>Tachulator Tachometer &amp; SFM Meter</td>
<td>$109.95</td>
</tr>
</tbody>
</table>

A 21 tooth change gear allows you to cut more accurate metric threads with a mini lathe.

These gears are made from metal for durability.

This gear fits most current production mini lathes. Measure the width of the keyway in your change gears to be sure.

The attractive hand wheels are all metal, and the levers are chrome.

This denim lathe cover provides protection for your lathe when you are not using it. The denim cloth breathes preventing moisture build-up under the cover.

**NOTE**: Chuck is not included, but it works great with our 1187 lathe chuck.

This lathe steady rest can support work up to 1" in diameter. If this product is out of stock, you may want to try our part number 2418 Steady Rest, Ball Bearing as a substitute! It is the same Steady Rest just with the added ball bearing feature.

This spindle tachometer mounts on the top of the mini lathe headstock and displays the speed, to the nearest 20 RPM, of the spindle.

The spindle tachometer includes the interrupter wheel and the sensor and cable.

This spindle tachometer mounts on the top of the mini lathe headstock and displays the speed, to the nearest 20 RPM, of the spindle.

The spindle speed readout plugs into the jack on the control panel.

This spindle tachometer mounts the top of the mini lathe headstock and displays the speed, to the nearest 20 RPM, of the spindle.

The spindle speed readout plugs into the jack on the control panel.

**NOTE**: Chuck NOT INCLUDED: Mounts a 3" 3-jaw chuck in the tailstock.

Three ball bearings provide support for heavy duty load and high speed. Max Load: 1100 lbs. Maximum Rated RPM: 4000 2MT standard shank

Use this in conjunction with a 3" 3-jaw chuck in place of a live center. No more center drilling. This works great for long, large diameter work pieces where a live center or steady rest just won't cut it. Three ball bearings for heavy duty loads and relatively high speed. This package works great with our 1187 lathe chuck.

Great for threading, this allows you to turn your spindle by hand as slowly as you like. Tighten the bolt to engage the crank. Loosen to remove it.

Period counting for fast updates even at slow rpm inputs.

Calculates SFM from rpm and entered diameter.

**Digital tachometer for lathes and mills**

**Displays rpm and surface feet per minute**

**Range to 9999 rpm, 9999 SFM**

**Accuracy and resolution to 1 rpm**

**Cutter or work diameter to 99.99"**

This includes driver pins for lathes with an 80 mm spindle flange (including mini lathes), and lathes with a 100 mm spindle flange.

Also available:

- 2MT standard shank
- Multiple-position switch
- Sensor contains light source - will work in complete darkness
- Bright attractive 4 digit 0.36" high display with decimal points

**Crystal time base for high accuracy and stability**

**Professional quality conservative design and manufacturing**

**Crystal time base for high accuracy and stability**

**Screw terminal block for sensor connection**

**Usable with multiple sensor heads using a DPDT or 2-pole multiple-position switch**

**Features Include**

- Period counting for fast updates even at slow rpm inputs
- Calculates SFM from rpm and entered diameter
- Cutter or work diameter from 0.01" to 99.99"

**Low power consumption:** 50mA typically at 9-12VDC

**Bright attractive 4 digit 0.56" high display with decimal points**

**Sensor contains light source - will work in complete darkness**

**Crystal time base for high accuracy and stability**

**Professional quality conservative design and manufacturing**

**Screw terminal block for sensor connection**

**Usable with multiple sensor heads using a DPDT or 2-pole multiple-position switch**
### Lathe: 7x10/12/14 Mini Lathe (C2/C3) Accessories

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1204</td>
<td>Tool Post, Mini Lathe, Four-Position</td>
<td>$22.65</td>
</tr>
<tr>
<td></td>
<td>- Four-position tool post for the mini lathe</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- 2” square and 1.5” tall</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Tool slot is 0.64” tall and 0.32” from the bottom</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Four-position tool post for the mini lathe. This is the tool holder that comes on the mini lathe. On most mini lathes it is the correct size for 5/16” tools. On ‘early’ Homier and Cummins lathes it is the correct size for 3/8” tools. The tool holder is 2” square and 1.5” tall. The tool slot is 0.64” tall and is 0.32” from the bottom.</td>
<td></td>
</tr>
<tr>
<td>3844</td>
<td>Tooling Plate, Milling Attachment</td>
<td>$81.43</td>
</tr>
<tr>
<td></td>
<td>This tooling plate works with the lathe milling attachment. It is 120 mm (4.72”) square and includes four clamps. The holes are threaded M6 and are 20 mm on centers</td>
<td></td>
</tr>
<tr>
<td>1685</td>
<td>Wood Turning Tool Rest and Center, Mini &amp; Bench Lathe</td>
<td>$68.43</td>
</tr>
<tr>
<td></td>
<td>- Woodturning tool rest and spur center</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The mini lathe tool rest clamps in the standard tool post so you can turn wood on your mini lathe. The driving center fits in the lathe spindle.</td>
<td></td>
</tr>
<tr>
<td>2498</td>
<td>Wood Turning Tool Rest and Center, C6</td>
<td>$68.49</td>
</tr>
<tr>
<td>Lathe: 7x10/12/14 Mini Lathe (C2/C3) Assemblies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1769</td>
<td>Compound Rest Assembly</td>
<td>$90.55</td>
</tr>
<tr>
<td></td>
<td>This is a complete compound rest for the mini lathe. This mini lathe compound rest includes the tool post and locking handle not shown in the photo.</td>
<td></td>
</tr>
<tr>
<td>4293</td>
<td>Mini Lathe Deluxe DRO Kit</td>
<td>$344.87</td>
</tr>
<tr>
<td></td>
<td>- Digital Readouts for cross slide and compound rest</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Metal hand wheels and chrome levers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- All metal change gears</td>
<td></td>
</tr>
<tr>
<td></td>
<td>This digital readout kit will equip your mini lathe with digital readouts on the cross slide and compound rest. The attractive hand wheels are all metal, and the levers are chrome. All the good-looking change gears are metal. This DRO kit works on any 7x10, 7x12, 7x14, or 7x16 lathe made by SIEG, which includes virtually all the mini lathes sold in the US and most of the mini lathes sold world-wide. The DRO mounts right on the cross slide and compound rest to give you accurate depth-of-cut readings. The resolution is 0.0001”, the accuracy is 0.001”. There are buttons for On/Off, Zero, and Inch/MA.</td>
<td></td>
</tr>
<tr>
<td>2299</td>
<td>Mini Lathe Headstock Assembly</td>
<td>$145.31</td>
</tr>
<tr>
<td></td>
<td>This is the headstock assembly for a 7x10 or 7x12 mini lathe. This lathe headstock for sale includes the spindle and all the pieces in the headstock casting, the High/Low shifter, all parts on the spindle, and all parts on the intermediate shaft, except the pulley.</td>
<td></td>
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<tr>
<td>5849</td>
<td>Mini Lathe Headstock Assembly, SIEG C3</td>
<td>$155.31</td>
</tr>
<tr>
<td></td>
<td>This is the headstock assembly for a SIEG C3 7x14 mini lathe. It includes the spindle and all the pieces in the headstock casting.</td>
<td></td>
</tr>
<tr>
<td>1884</td>
<td>Tailstock Assembly, Mini Lathe</td>
<td>$78.72</td>
</tr>
<tr>
<td></td>
<td>- Complete Tailstock Assembly for Mini Lathe</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Center Height Approx. 90 mm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- 2MT Quill</td>
<td></td>
</tr>
<tr>
<td></td>
<td>This is a kit of all the parts required to make a complete tailstock for the mini lathe. The center height of this tailstock is approximately 90 mm. The quill is 2 Morse taper.</td>
<td></td>
</tr>
</tbody>
</table>

### Lathe: 8.5x16 Lathe (C4) Accessories

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>2502</td>
<td>Tailstock Assembly, Mini Lathe, Cam Lock</td>
<td>$86.16</td>
</tr>
<tr>
<td></td>
<td>This is the tailstock from the HiTorque mini lathe. It has a factory-installed cam lock mechanism. It holds 2 Morse taper tooling.</td>
<td></td>
</tr>
<tr>
<td>5202</td>
<td>Telescoping Lead Screw Cover, 7x14, 7x16</td>
<td>$73.13</td>
</tr>
<tr>
<td></td>
<td>- All metal construction</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Works with threading dial</td>
<td></td>
</tr>
<tr>
<td></td>
<td>These are telescoping metal covers for the lead screw of your mini lathe.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mounting requires that you drill and tap several holes in your lathe. The installation tools hold the mounting brackets in place as you mark the hole locations.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Purchase this telescoping lead screw cover and other mini lathe machine parts today.</td>
<td></td>
</tr>
<tr>
<td>5201</td>
<td>Telescoping Lead Screw Cover, 7x10, 7x12</td>
<td>$78.63</td>
</tr>
<tr>
<td>5203</td>
<td>Tools, Telescoping Lead Screw Cover Installation</td>
<td>$9.95</td>
</tr>
<tr>
<td>1526</td>
<td>Threading Dial Assembly (Inch)</td>
<td>$22.40</td>
</tr>
<tr>
<td></td>
<td>This kit includes all the parts needed to add a thread dial indicator for cutting inch threads to a mini lathe. This dial assembly DOES NOT help you to cut inch threads on a metric lathe with a metric lead screw.</td>
<td></td>
</tr>
<tr>
<td>2545</td>
<td>Threading Dial Assembly (Inch), G0516</td>
<td>$32.40</td>
</tr>
<tr>
<td>4665</td>
<td>Accessory Package, C4 Lathe</td>
<td>$381.93</td>
</tr>
<tr>
<td></td>
<td>- Complete set of C4 lathe accessories</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Fully equip your C4 lathe</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Steadies, centers, chucks, faceplate and dogs</td>
<td></td>
</tr>
<tr>
<td></td>
<td>This package includes all the accessories you could want to fully equip your C4 lathe.</td>
<td></td>
</tr>
<tr>
<td>3538</td>
<td>Chip Tray, HiTorque Bench Lathe C4/SC4</td>
<td>$79.40</td>
</tr>
<tr>
<td></td>
<td>Chip tray for the HiTorque Bench Lathe, C4 and SC4 lathes.</td>
<td></td>
</tr>
<tr>
<td>3400</td>
<td>Faceplate, C4 Lathe</td>
<td>$43.60</td>
</tr>
<tr>
<td></td>
<td>- 180 mm Diameter</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- 8 Slots for Mounting Work</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Compatible with Lathes with 100 mm Flange Chuck Mount Faceplate SIEG C4 lathe.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The faceplate is 7.1” (180 mm) in diameter and has 8 slots for mounting work.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>This faceplate will not fit with the plastic chuck guard in place.</td>
<td></td>
</tr>
<tr>
<td>3401</td>
<td>Clamping Kit for C4 Faceplate</td>
<td>$27.16</td>
</tr>
<tr>
<td>5043</td>
<td>Faceplate, C8 Lathe</td>
<td>$57.70</td>
</tr>
<tr>
<td></td>
<td>- 254 mm Diameter</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- 8 Slots to Mount Work</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Faceplate SIEG C8 lathe.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The faceplate lathe is 10” (254 mm) in diameter and has 8 slots for mounting work.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>This faceplate will not fit with the plastic chuck guard in place.</td>
<td></td>
</tr>
<tr>
<td>5035</td>
<td>Clamping Kit for C8 Faceplate</td>
<td>$30.35</td>
</tr>
</tbody>
</table>

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(800) 981 9663  LittleMachineShop.com  Page 43
### Lathe: 8.5x16 Lathe (C4) Accessories

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>3399</td>
<td>Follower Rest, C4 Lathe</td>
<td>$62.58</td>
</tr>
<tr>
<td>3398</td>
<td>Steady Rest, C4 Lathe</td>
<td>$73.71</td>
</tr>
</tbody>
</table>

This follower rest fits the SIEG C4 lathes. The follower rest can support work up to 2.2" in diameter.

This steady rest fits the SIEG C4 lathes. The steady rest can support work up to 2.2" in diameter.

### Lathe: 8x12/14 Lathe Accessories

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>2544</td>
<td>Faceplate, 8x12 Lathe</td>
<td>$45.60</td>
</tr>
<tr>
<td>2859</td>
<td>Follower Rest, 8x12, 8x14 Lathes</td>
<td>$64.85</td>
</tr>
<tr>
<td>2858</td>
<td>Steady Rest, 8x12, 8x14 Lathes</td>
<td>$75.98</td>
</tr>
</tbody>
</table>

The faceplate is 7.87" (200 mm) in diameter and has 8 slots for mounting work.

This faceplate mounts on the same flange as a 4" 3-jaw chuck mounts.

This follower rest fits 8x12 and 8x14 lathes. The follower rest can support work up to 2.5" in diameter.

This steady rest fits 8x12 and 8x14 lathes. The steady rest can support work up to 2.5" in diameter.

### Lathe: Small Lathe Accessories

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>5857</td>
<td>Compound Clamp, Grizzly G0602</td>
<td>$135.00</td>
</tr>
</tbody>
</table>

- Designed for the Grizzly G0602 lathe
- Improves rigidity
- Made in the US

Improve the rigidity of your G0602 lathe with the Belfanti Machine Works G0602 compound clamp. The increased rigidity improves part-off capability and surface finishing, and it reduces chatter issues commonly found with the stock compound clamping system. All the hardware needed to install your new compound kit (metric studs, tap, drill bit, nuts, and washers) is included, along with instructions. You'll need the following tools to complete the installation: Center punch, hammer, metric open end wrench set, metric allen wrench set, drill or drill press.

### Lathe: Tool Post Grinders

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>Tool Post Grinder, Mini Lathe</td>
<td>$185.01</td>
</tr>
</tbody>
</table>

- 6,000 RPM

This tool post grinder is designed specifically for the mini lathe. To install, you simply replace the compound rest. The bottom of the mounting foot is approximately 50 mm (2") below the centerline of the grinding wheel. The grinder comes with 2 different grit grinding wheels (60 and 80 grit), and the tools needed to change them.

Motor 150 watts, 120V, 60 Hz. This mini lathe tool post grinder is approximately 8’ tall, 9’ long and 3.5’ thick.

Get the right tools for your mini lathe and order this tool post grinder for sale today.

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>2195</td>
<td>Arbor, Grinding Wheel</td>
<td>$9.91</td>
</tr>
<tr>
<td>2584</td>
<td>Grinding Wheel, 120 Grit</td>
<td>$12.63</td>
</tr>
<tr>
<td>1767</td>
<td>Grinding Wheel, 80 Grit</td>
<td>$12.57</td>
</tr>
<tr>
<td>2585</td>
<td>Grinding Wheel, 180 Grit</td>
<td>$12.63</td>
</tr>
<tr>
<td>2586</td>
<td>Grinding Wheel, 240 Grit</td>
<td>$12.63</td>
</tr>
<tr>
<td>2184</td>
<td>Grinding Wheel, 60 Grit</td>
<td>$12.71</td>
</tr>
<tr>
<td>2194</td>
<td>Poly-V Belt, Tool Post Grinder</td>
<td>$5.37</td>
</tr>
<tr>
<td>4670</td>
<td>Tool Post Grinder, Bench Lathe</td>
<td>$195.01</td>
</tr>
<tr>
<td>4671</td>
<td>Tool Post Grinder, C6 Lathe</td>
<td>$195.01</td>
</tr>
</tbody>
</table>

### Lathe: Tooling

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>2568</td>
<td>Ball and Radius Turning Tool, Large, OMW</td>
<td>$139.95</td>
</tr>
</tbody>
</table>

The OMW Large Radius Ball Tool like its smaller counterpart is designed to cut round shapes or curves in brass, aluminum, steel, wood or plastic on your own lathe. Balls in the ends of rods, shafts, or handles are easily turned with the tool. You can also make ball joints, governor weights, railing knobs, round contact points for tools, nose cones, and many other useful and decorative objects. The OMW lathe radius turning tool is sized for lathes of 5" or greater swing, and the ½" shank size will fit most standard tool holders. The tool will cut convex curves up to 1¼" in diameter.

This lathe ball turning attachment is manufactured from the highest quality materials. Frames are machined from high strength aluminum alloy. The handle is tool steel, the pivot pins are hardened and ground and rotate in custom bronze bearings. The tool is completely machined from solid metal stock, there are no stamped, cast or pressed parts. A pre-ground High Speed steel tool bit is included. Each lathe radius turning tool is manufactured in the USA by OMW Corporation and is carefully inspected and checked before shipment.

This lathe ball turning attachment is designed so that the center height is 3/8" from the bottom of the shank. The tool comes with a pre-ground HSS tool bit which may be easily resharpened or modified.

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>2569</td>
<td>Ball and Radius Turning Tool, Small, OMW</td>
<td>$89.95</td>
</tr>
<tr>
<td>2963</td>
<td>Tool Bit, Large Ball and Radius Turning Tool</td>
<td>$21.95</td>
</tr>
<tr>
<td>2964</td>
<td>Tool Bit, Small Ball and Radius Turning Tool</td>
<td>$18.95</td>
</tr>
</tbody>
</table>

### Lathe: Tooling

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970</td>
<td>Ball Turning Attachment</td>
<td>$59.85</td>
</tr>
</tbody>
</table>

This attachment allows you to turn balls on the mini lathe. This radius turning tool will cut convex curves up to 2" in diameter.

Includes one presharpened tool bit. You must make a mounting block for the ball turning attachment.
Lathe: Tooling

Dead Centers

Morse taper solid dead centers. These dead centers have a 60 degree included point angle. Half-notched dead centers have about half the point cut away so you can work closer to the end of the work piece.

<table>
<thead>
<tr>
<th>Dead Center</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>5187 1MT</td>
<td>$5.95</td>
</tr>
<tr>
<td>5475 1MT</td>
<td>$9.95</td>
</tr>
<tr>
<td>5471 1MT, Carbide Tip</td>
<td>$13.95</td>
</tr>
<tr>
<td>5473 2MT</td>
<td>$7.95</td>
</tr>
<tr>
<td>1890 2MT</td>
<td>$6.80</td>
</tr>
<tr>
<td>5476 2MT, Carbide Tip</td>
<td>$10.95</td>
</tr>
<tr>
<td>5186 2MT, Carbide Tip, Half-Notched</td>
<td>$12.95</td>
</tr>
<tr>
<td>5474 3MT</td>
<td>$8.95</td>
</tr>
<tr>
<td>1188 3MT</td>
<td>$8.22</td>
</tr>
<tr>
<td>5477 3MT, Carbide Tip</td>
<td>$16.95</td>
</tr>
<tr>
<td>5472 3MT, Carbide Tip, Half-Notched</td>
<td>$16.95</td>
</tr>
</tbody>
</table>

1911 Knurler, Large Capacity $49.95

- 0 to 2” (50 mm) diameter capacity
- Fits standard 4-way and quick change tool posts
- Includes three sets of knurls

This scissor knurling tool is made to our design, specifically for the mini lathe. This knurler fits in the standard tool post of the mini lathe without any modification. This knurling tool also works with any of the quick change tool posts we sell. The mounting bar is 3/8” (9.5 mm) tall so it replaces a 3/8” tool bit. It comes with fine (33 lines per inch, 0.8 mm pitch), medium (21 lines per inch, 1.2 mm pitch), and coarse (14 lines per inch, 1.8 mm pitch) diamond knurls.

3770 Knurler, Large Capacity with 6 sets of Knurls $63.95

1733 Knurls, Coarse Diamond $5.95
2974 Knurls, Coarse Straight $5.95
1731 Knurls, Fine Diamond $5.95
2972 Knurls, Fine Straight $5.95
1732 Knurls, Medium Diamond $5.95
2973 Knurls, Medium Straight $5.95

Lathe Mandrels, Individual Sizes

- Standard taper: .0005” per 1”
- Smaller end is .0005” undersized
- Made of tool steel hardened and ground

Lathe and OD grinder mandrels. Designed for setting-up accurately bored or reamed blanks and castings.

<table>
<thead>
<tr>
<th>Lathe Mandrel</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>5459 Lathe Mandrel, 1/8” x 2-1/2”</td>
<td>$9.95</td>
</tr>
<tr>
<td>5460 Lathe Mandrel, 3/16” x 3”</td>
<td>$9.95</td>
</tr>
<tr>
<td>5461 Lathe Mandrel, 1/4” x 3-3/4”</td>
<td>$9.95</td>
</tr>
<tr>
<td>5462 Lathe Mandrel, 5/16” x 4”</td>
<td>$9.95</td>
</tr>
<tr>
<td>5463 Lathe Mandrel, 3/8” x 4-1/4”</td>
<td>$9.95</td>
</tr>
<tr>
<td>5464 Lathe Mandrel, 7/16” x 4-1/4”</td>
<td>$9.95</td>
</tr>
<tr>
<td>5465 Lathe Mandrel, 1/2” x 5”</td>
<td>$9.95</td>
</tr>
</tbody>
</table>

1189 Live Center, 2MT Short $23.18

- Point is a 60° included angle
- Short 2 Morse taper for the mini lathe
- Fits Jet 1014 mini wood lathe
- 1.495” diameter body

This mini lathe live center fits the tailstock of the mini lathe. The point is a 60° included angle and is 0.71” in diameter.

3154 Live Center, 2MT Standard Bull Nose $119.95

- For tubing and other hollow work
- Point is a 70° included angle
- Standard bull nose 2 Morse taper
- 5.31” total length

This bull nose live center is made from hardened steel and ground for accuracy. It has precision high quality bearings. The nose is a 70° included angle. The diameter of the nose is 2.49”. The diameter of the flat on the front of the nose is 0.46”.

1592 Live Center, 2MT Standard Heavy Duty $24.95

- Point is a 60° included angle
- Standard 2 Morse taper for the mini lathe
- 1.77” diameter body

This center is made from hardened steel and ground for accuracy. It has precision high quality bearings. The point is a 60° included angle.

The maximum diameter of the point is 0.98”. The OD of the body is 1.77”. The distance from the tip to the front of the body is 1.66”.

The rated radial load is 90 lbs. The maximum speed is 5000 RPM.

2714 Live Center, 0MT $29.95
1704 Live Center, 1MT Heavy Duty $26.95
3702 Live Center, 3MT $29.95

4544 Live Center, 2MT Standard Multi Point $117.95

- 7 different live center points
- Precision needle and thrust bearings
- Bull nose and conical tips
- In a fitted case

This live center set gives you lots of options to support large and small parts.

The body is 1.7” (45 mm) in diameter. The "bull nose" center is 0.98” (25 mm) in diameter.

4545 Live Center, 3MT Multi Point $134.95

4692 Live Center, 2MT Standard Multi Point Precision $59.95

- 7 live center points
- Precision needle and thrust bearings
- Bull nose and conical tips
- In a fitted wood case

This live center set gives you lots of options to support large and small parts. There are five 60 degree live center tips of four different diameters. There are two of the largest ‘standard’ centers. The 60 degree centers range in diameter from 0.22 to 0.53” (5.5 to 13.5 mm). The 60 degree conical center is for pointed work pieces. The “bull nose” center is 1.22” (31 mm) in diameter. There is a tapered pin to pop the tips out of the live center.

4915 Live Center, 3MT Multi Point Precision $69.95

2504 Rotating Tailstock Chuck $59.95

This is a 'live' drill chuck for the tailstock. Use it to support small diameter work where a live center is not practical. The shank is 2 Morse taper. The drill chuck is 1/2” capacity.

1877 Tailstock Turret Tool Holder, 2MT $115.95

This tailstock turret tool holder has positions for 6 tools. The tool positions are 5/8” diameter holes with a set screw to retain the tool holder. The shank is a 2 Morse taper.

3053 Tailstock Turret Tool Holder, 3MT $139.95

Lathe Chucks: Accessories

1382 Chuck Stop, 3-Jaw, 3 Piece Set $124.99

- Set of three 3-Jaw Chuck Stops
- Fits 3” to 5” 3-Jaw lathe chucks
- Thicknesses include 8.5 mm, 11.5 mm, and 14.5 mm
- Magnetic mounting on chuck face
- Made from blue anodized aluminum

The chuck stops mount magnetically to the face of any 3” to 5” 3-Jaw lathe chuck. The front and back surfaces are parallel within ±0.002” (±0.05 mm).

The design allows short and small parts to project a consistent distance past the chuck jaws without falling inside the bore.
### Lathe Chucks: Accessories

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1688</td>
<td>Jaws, Inside for 3-Jaw 3” Chuck</td>
<td>$40.00</td>
</tr>
<tr>
<td>1973</td>
<td>Jaws, Inside for 3-Jaw 4” Chuck</td>
<td>$53.13</td>
</tr>
<tr>
<td>5027</td>
<td>Jaws, Inside for 3-Jaw 5” Chuck</td>
<td>$57.65</td>
</tr>
<tr>
<td>5793</td>
<td>Jaws, Inside for 3-Jaw 6” Chuck</td>
<td>$49.95</td>
</tr>
<tr>
<td>1689</td>
<td>Jaws, Outside for 3-Jaw 3” Chuck</td>
<td>$40.00</td>
</tr>
<tr>
<td>1974</td>
<td>Jaws, Outside for 3-Jaw 4” Chuck</td>
<td>$53.13</td>
</tr>
<tr>
<td>5028</td>
<td>Jaws, Outside for 3-Jaw 5” Chuck</td>
<td>$57.65</td>
</tr>
<tr>
<td>5932</td>
<td>Jaws, Outside for 3-Jaw 6” Chuck</td>
<td>$33.95</td>
</tr>
<tr>
<td>5029</td>
<td>Reversible for 4-Jaw 3” Chuck</td>
<td>$45.65</td>
</tr>
<tr>
<td>3408</td>
<td>Reversible for 4-Jaw 4” Chuck</td>
<td>$53.57</td>
</tr>
<tr>
<td>5030</td>
<td>Reversible for 4-Jaw 5” Chuck</td>
<td>$56.50</td>
</tr>
<tr>
<td>2961</td>
<td>Adapter, 5” Lathe Chuck</td>
<td>$31.01</td>
</tr>
<tr>
<td>5050</td>
<td>Adapter, 5” Lathe Chuck to C8 Spindle</td>
<td>$38.37</td>
</tr>
<tr>
<td>4913</td>
<td>Adapter, 6” Lathe Chuck</td>
<td>$38.64</td>
</tr>
<tr>
<td>4912</td>
<td>Adapter, 6” Lathe Chuck</td>
<td>$38.64</td>
</tr>
<tr>
<td>1768</td>
<td>Key, Lathe Chuck, 8 mm Square</td>
<td>$10.26</td>
</tr>
<tr>
<td>1692</td>
<td>Adapter, 4” Lathe Chuck</td>
<td>$21.63</td>
</tr>
<tr>
<td>3782</td>
<td>Adapter, 4” Lathe Chuck on 4” Rotary Table</td>
<td>$89.95</td>
</tr>
<tr>
<td>2358</td>
<td>Adapter, 5” Lathe Chuck</td>
<td>$31.18</td>
</tr>
</tbody>
</table>

### Lathe Chucks: Adapters

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>4768</td>
<td>Backplate Lathe Chuck Adapter, 3” to 3”</td>
<td>$22.11</td>
</tr>
<tr>
<td>4769</td>
<td>Backplate Lathe Chuck Adapter, 4” to 3”</td>
<td>$27.72</td>
</tr>
<tr>
<td>4770</td>
<td>Backplate Lathe Chuck Adapter, 5” to 3”</td>
<td>$33.53</td>
</tr>
<tr>
<td>4771</td>
<td>Backplate Lathe Chuck Adapter, 5” to 4”</td>
<td>$36.53</td>
</tr>
<tr>
<td>4772</td>
<td>Backplate Lathe Chuck Adapter, 6” to 4”</td>
<td>$44.88</td>
</tr>
</tbody>
</table>

### Backplate Lathe Chuck Adapters, Semi Machined

- Lathe side is fully machined
- Chuck side must be machined to suit
- Use for European style chucks
- These are a semi-machined adapter plate. The side that attaches to the lathe flange is fully machined. The side on which the lathe chuck mounts is not finished.
- Mount the backplate adapter on your lathe and complete machining of the chuck-mounting side. This ensures two things: that it will fit your chuck, and that it is concentric on your lathe.

- 4768 Backplate Lathe Chuck Adapter, 3” to 3”
- 4769 Backplate Lathe Chuck Adapter, 4” to 3”
- 4770 Backplate Lathe Chuck Adapter, 5” to 3”
- 4771 Backplate Lathe Chuck Adapter, 5” to 4”
- 4772 Backplate Lathe Chuck Adapter, 6” to 4”
Lathe Chucks: Adapters

We stock a wide range of cast iron threaded lathe chuck adapters. These adapters are designed to mount flat back lathe chucks on lathes with threaded spindles.

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1791</td>
<td>Chuck Adapter, 1”-10 Thread 4” Diameter, 3 Holes</td>
<td>$23.95</td>
</tr>
<tr>
<td>1917</td>
<td>Chuck Adapter, 1”-10 Thread 4” Diameter, 3 Holes</td>
<td>$24.95</td>
</tr>
<tr>
<td>2333</td>
<td>Chuck Adapter, 1”-10 Thread 5” Diameter</td>
<td>$43.95</td>
</tr>
<tr>
<td>2334</td>
<td>Chuck Adapter, 1”-10 Thread 6” Diameter</td>
<td>$49.95</td>
</tr>
<tr>
<td>1916</td>
<td>Chuck Adapter, 1”-8 Thread 4” Diameter</td>
<td>$23.95</td>
</tr>
<tr>
<td>2331</td>
<td>Chuck Adapter, 1”-8 Thread 5” Diameter</td>
<td>$39.95</td>
</tr>
<tr>
<td>2332</td>
<td>Chuck Adapter, 1”-8 Thread 6” Diameter</td>
<td>$49.95</td>
</tr>
<tr>
<td>1792</td>
<td>Chuck Adapter, 1-1/2”-8 Thread 4” Diameter</td>
<td>$23.95</td>
</tr>
<tr>
<td>1918</td>
<td>Chuck Adapter, 1-1/2”-8 Thread 4” Diameter</td>
<td>$24.95</td>
</tr>
<tr>
<td>1919</td>
<td>Chuck Adapter, 1-1/2”-8 Thread 6” Diameter</td>
<td>$44.95</td>
</tr>
<tr>
<td>5126</td>
<td>Chuck Adapter, 1-3/4”-8 Thread 6” Diameter</td>
<td>$39.95</td>
</tr>
<tr>
<td>2022</td>
<td>Chuck Adapter, 1/2”-20 Thread 3” Diameter</td>
<td>$23.95</td>
</tr>
<tr>
<td>1923</td>
<td>Chuck Adapter, 2-1/4”-8 Thread 6” Diameter</td>
<td>$44.95</td>
</tr>
<tr>
<td>1920</td>
<td>Chuck Adapter, 3/4”-16 Thread 3” Diameter</td>
<td>$23.95</td>
</tr>
<tr>
<td>1921</td>
<td>Chuck Adapter, M39 x 4 Thread 4” Diameter</td>
<td>$24.95</td>
</tr>
<tr>
<td>1922</td>
<td>Chuck Adapter, M39 x 4 Thread 6” Diameter</td>
<td>$44.95</td>
</tr>
<tr>
<td>2335</td>
<td>Chuck Adapter, Unthreaded 4” Diameter</td>
<td>$24.95</td>
</tr>
<tr>
<td>2336</td>
<td>Chuck Adapter, Unthreaded 6” Diameter</td>
<td>$44.95</td>
</tr>
</tbody>
</table>

Lathe Chucks: Chucks

See the lathe chuck capacity chart at www.littlemachineshop.com/chuck.

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1187</td>
<td>Lathe Chuck, 3-Jaw 3”</td>
<td>$100.57</td>
</tr>
<tr>
<td></td>
<td>• Self-centering 3-Jaw lathe chuck.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 3” (80 mm) diameter</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Includes chuck key, inside and outside jaws</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Plain back mounting</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• High quality steel, hardened and ground</td>
<td></td>
</tr>
<tr>
<td></td>
<td>This 3 inch 3-Jaw self-centering lathe chuck is the one that comes on the</td>
<td></td>
</tr>
<tr>
<td></td>
<td>mini lathe. It includes a chuck key and inside and outside jaws. This</td>
<td></td>
</tr>
<tr>
<td></td>
<td>three jaw chuck has a 0.63” (16 mm) through hole. It holds work up to</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2.48” (63 mm) in diameter. The radial runout of a test bar held in this</td>
<td></td>
</tr>
<tr>
<td></td>
<td>chuck, when the chuck is mounted true, is 0.003” maximum.</td>
<td></td>
</tr>
<tr>
<td>2916</td>
<td>Lathe Chuck, 3-Jaw 2” Self-Centering</td>
<td>$53.95</td>
</tr>
<tr>
<td>1698</td>
<td>Lathe Chuck, 3-Jaw 4”</td>
<td>$120.04</td>
</tr>
<tr>
<td>2337</td>
<td>Lathe Chuck, 3-Jaw 5”</td>
<td>$133.70</td>
</tr>
<tr>
<td>2028</td>
<td>Lathe Chuck, 3-Jaw 6”</td>
<td>$183.90</td>
</tr>
<tr>
<td>5933</td>
<td>Lathe Chuck, 3-Jaw 3&quot;, Front Mount</td>
<td>$135.95</td>
</tr>
<tr>
<td></td>
<td>• 3-jaw Front Mount Lathe Chuck</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 3” (80 mm) diameter</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Includes chuck key, inside and outside jaws</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Plain back mounting</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• High quality steel, hardened and ground</td>
<td></td>
</tr>
<tr>
<td></td>
<td>This 3 inch 3-Jaw front mount lathe chuck includes a chuck key, inside and</td>
<td></td>
</tr>
<tr>
<td></td>
<td>outside jaws, and three M6 mounting bolts. The chuck has an inside</td>
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<tr>
<td></td>
<td>diameter gripping range of 24-64 mm, and an outside diameter gripping</td>
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</tr>
<tr>
<td></td>
<td>range of 2-70mm. Front mount chucks are designed to be used with rotary</td>
<td></td>
</tr>
<tr>
<td></td>
<td>tables and other devices where back mounting chucks cannot be used. Easily</td>
<td></td>
</tr>
<tr>
<td></td>
<td>mount on table, dividing head, fixture, or indexer. This is a plain back</td>
<td></td>
</tr>
<tr>
<td></td>
<td>chuck and requires a backplate adapter to mount it on a lathe.</td>
<td></td>
</tr>
<tr>
<td>1941</td>
<td>Lathe Chuck, 3-Jaw 4&quot;, with Adapter</td>
<td>$131.78</td>
</tr>
<tr>
<td></td>
<td>• 3-jaw self-centering lathe chuck</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 4” (100 mm) diameter</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Includes chuck key, inside and outside jaws and mounting bolts</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Includes an adapter to mount on a 3” (80 mm) flange</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• High quality steel, hardened and ground</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4” 3-Jaw self-centering lathe chuck with adapter for the mini lathe. This</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3-Jaw front lathe chuck has a 0.87” (22 mm) through hole. The radial</td>
<td></td>
</tr>
<tr>
<td></td>
<td>runout of a test bar held in this chuck, when the chuck is mounted true, is</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.003” maximum.</td>
<td></td>
</tr>
<tr>
<td>2345</td>
<td>Lathe Chuck, 3-Jaw 5”, with Adapter</td>
<td>$153.70</td>
</tr>
<tr>
<td>1175</td>
<td>Lathe Chuck, 4-Jaw 3”</td>
<td>$102.21</td>
</tr>
<tr>
<td></td>
<td>• 4-jaw lathe chuck</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 3” (80 mm) diameter</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Each jaw is independently adjustable and reversible</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Plain back mounting</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• High quality steel, hardened and ground</td>
<td></td>
</tr>
<tr>
<td></td>
<td>This 4-jaw 3” lathe chuck comes with a chuck key and reversible jaws.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>This chuck has a 0.87” (22 mm) through hole. It holds work up to 3.15”</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(80 mm) diameter</td>
<td></td>
</tr>
<tr>
<td>2917</td>
<td>Lathe Chuck, 4-Jaw 2”, Self-Centering</td>
<td>$59.95</td>
</tr>
<tr>
<td>1588</td>
<td>Lathe Chuck, 4-Jaw 4”, Independent</td>
<td>$114.27</td>
</tr>
<tr>
<td>2338</td>
<td>Lathe Chuck, 4-Jaw 5”</td>
<td>$131.93</td>
</tr>
<tr>
<td>2038</td>
<td>Lathe Chuck, 4-Jaw 6”</td>
<td>$170.50</td>
</tr>
<tr>
<td>1697</td>
<td>Lathe Chuck, 4-Jaw 4”, Independent with Adapter</td>
<td>$126.27</td>
</tr>
<tr>
<td></td>
<td>• 4-jaw lathe chuck</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 4” (100 mm) diameter</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Each jaw is independently adjustable and reversible</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• High quality steel, hardened and ground</td>
<td></td>
</tr>
<tr>
<td></td>
<td>This 4-jaw 4” lathe chuck has a 0.98” (25 mm) through hole. The chuck</td>
<td></td>
</tr>
<tr>
<td></td>
<td>can hold work up to 3.94” (100 mm) in diameter.</td>
<td></td>
</tr>
<tr>
<td>2346</td>
<td>Lathe Chuck, 4-Jaw 5”, Independent with Adapter</td>
<td>$143.85</td>
</tr>
</tbody>
</table>

(800) 981 9663 LittleMachineShop.com
Lathe Chucks: Chucks

2361 Lathe Chuck, 4-Jaw 4", Self-Centering $165.50
- 4-jaw self-centering lathe chuck
- 4" (100 mm) diameter
- Plain back mounting
- Includes chuck key, inside and outside jaws
- High grade tool steel
- 4 inch, 4-Jaw self-centering lathe chuck for square or octagonal work. The through bore of this chuck is 20 mm (0.79`). This lathe chuck can hold work up to 80 mm (3.15") in diameter. The radial runout of a test bar held in this chuck, when the chuck is mounted true, is 0.004" maximum.

3424 Lathe Chuck, 4-Jaw 3" Self-Centering $122.95
- 4-jaw self-centering lathe chuck
- 3" (76 mm) diameter
- Plain back mounting
- Includes chuck key and mounting bolts
- 1.02" (26 mm) through hole.
- The chuck can hold work up to 3.15" (80 mm) in diameter. The radial runout of a test bar held in this chuck, when the chuck is mounted true, is 0.003" maximum.

2276 Lathe Chuck, 6-Jaw 4", Self-Centering $212.05
- 6-jaw self centering lathe chuck
- 4" (100 mm) diameter
- Includes chuck key and mounting bolts
- Plain back mounting
- Excellent for holding thin walled workpieces
- The jaws on this 4" 6-jaw self-centering lathe chuck are hardened and ground. Includes chuck key and mounting bolts. Because the chuck is designed to hold tubing, outside jaws are not included. This chuck has a 1.02" (26 mm) through hole. The chuck can hold work up to 3.15" (80 mm) in diameter. The radial runout of a test bar held in this chuck, when the chuck is mounted true, is 0.003" maximum.

Machines: Band Saws

4829 Band Saw, Bench Top $249.95
- Uses widely available 44-7/8" blades
- Two blade speeds
- 3" (80 mm) x 4" (100 mm) capacity
- Comes with a 14 TPI bi-metal blade
- Includes stand with quick-adjusting cast iron vise
- This small bench top saw for sale is perfect for the small shop. It’s got the capacity of larger floor-standing saws but takes a fraction of the space. Cast iron vise swivels for angle cuts. The two speed motor makes it great for ferrous (read: steel) and non-ferrous (read: aluminum) metals.
- It’s quieter and more accurate than shop saws. It takes less than 5 minutes to remove the saw from the base and configure it for portable use.
- The double-chain drive makes this table top band saw more rugged than the competition.

Machines: Lathes

5200 HiTorque 7x16 Deluxe Mini Lathe $1,199.95
- Features of 5100 (most powerful, most low-speed torque, gearless spindle, cam-lock TS, 4" chuck)
- Extended bed (16` between centers) provides more working room
- Most powerful lathe with most low-speed torque in its class
- 4" 3-jaw lathe chuck
- No gears in spindle drive
- Cam lock tailstock
- The LittleMachineShop.com HiTorque 7x16 Mini Lathe for sale is the best in its class. It has the most power, most torque, and a longer center distance than other lathes in its class. The 500 Watt brushless spindle drive motor provides tremendous low-end torque. And you can vary the speed from 50 rpm to 2500 rpm continuously in both directions. There are no gears to shift. The cross feed and compound rest dials are graduated in 0.001" and 0.025 mm. A 4" 3-jaw lathe chuck is included, and the lathe is equipped with a 4-way indexing tool post set for 5/16" (8 mm) tools. A reversible 16 TPI lead screw provide extended threading capability. You can create every American Standard Unified class 2A 2A inch thread from 4 to 80 threads per inch, and you can create every American Standard Metric class 6h thread from 0.3 to 8 mm pitch with the extra 21 tooth change gear that is included. Cutting inch threads is made even easier with the factory-installed threading dial. This HiTorque 7x16 Mini Lathe for sale includes a chip tray, a backlash guard, and spreaders to give the feet a broader stance. The LittleMachineShop.com HiTorque 7x16 Mini Lathe is longer version of the SIEG SC3. "NOTE" We ship machines only to the US and Canada.

5100 HiTorque 7x16 Mini Lathe $949.95
- Extended bed (16` between centers) provides more working room
- Most powerful lathe with most low-speed torque in its class
- 4" 3-jaw lathe chuck
- No gears in spindle drive
- Cam lock tailstock
- The LittleMachineShop.com HiTorque 7x16 Mini Lathe for sale is the best in its class. It has the most power, most torque, and a longer center distance than other lathes in its class. The 500 Watt brushless spindle drive motor provides tremendous low-end torque. And you can vary the speed from 50 rpm to 2500 rpm continuously in both directions. There are no gears to shift. The cross feed and compound rest dials are graduated in 0.001" and 0.025 mm. A 4" 3-jaw lathe chuck is included, and the lathe is equipped with a 4-way indexing tool post set for 5/16" (8 mm) tools. A reversible 16 TPI lead screw provide extended threading capability. You can create every American Standard Unified class 2A 2A inch thread from 4 to 80 threads per inch, and you can create every American Standard Metric class 6h thread from 0.3 to 8 mm pitch with the extra 21 tooth change gear that is included. Cutting inch threads is made even easier with the factory-installed threading dial. This HiTorque 7x16 Mini Lathe for sale includes a chip tray, a backlash guard, and spreaders to give the feet a broader stance. The LittleMachineShop.com HiTorque 7x16 Mini Lathe is longer version of the SIEG SC3. "NOTE" We ship machines only to the US and Canada.

3540 HiTorque 8.5x20 Bench Lathe $1,799.95
- Inch dials, inch and metric threading
- 120VAC 60 Hz
- 1000 Watt (1.34 HP) brushless DC drive
- Power longitudinal feed and power cross feed
- 4" (100 mm) 3-jaw self centering lathe chuck
- The LittleMachineShop.com model 3540 HiTorque 8.5x20 Bench Lathe is the best in its class. No other metal lathes in this size offer power cross feed.
- The 1000 Watt brushless spindle drive motor provides tremendous low-end torque. And you can vary the speed from 100 rpm to 2000 rpm continuously in both directions. There are no gears to shift. The cross feed and compound rest dials are graduated in 0.001" and 0.050" per turn. The metal lathe is equipped with a 4-way indexing tool post set for 10 mm tools. A reversible 2 mm pitch lead screw provide extended threading capability. You can create every American Standard Unified class 2A 2A inch thread from 4 to 80 threads per inch, and you can create every American Standard Metric class 6h thread from 0.2 to 8 mm pitch with the change gears that are included. All the gears on this lathe are metal. The LittleMachineShop.com model 3540 HiTorque 8.5x20 Bench Lathe is a version of the SIEG SC4 bench lathe.
Machines: Lathes

3595 HiTorque 8.5x20 Deluxe Bench Lathe $2,349.95
- Digital dials, inch and metric threading
- 120VAC 60 Hz
- 1000 Watt (1.34 HP) brushless DC drive
- Power longitudinal feed and power cross feed
- 4" (100 mm) 3-jaw centering lathe chuck

The LittleMachineShop.com HiTorque 8.5x20 Bench Lathe is the best in its class. No other lathe machinery in this size offers power cross feed.

The Deluxe model includes digital readouts on the cross slide and compound rest; an AXA quick change tool post set with five tool holders; anodized aluminum hand wheels, knobs, and levers with black anodizing in the hand wheels; and a heavy duty splash guard. In addition, the compound rest is modified to better accommodate a quick change tool post.

The 1000 Watt brushless spindle drive motor provides tremendous low-end torque. And you can vary the speed from 100 rpm to 2000 rpm continuously in both directions. There are no gears to shift.

The cross feed and compound rest dials are graduated in 0.001" and advance 0.050" per turn. A reversible 2 mm pitch lead screw provides extended threading capability. With our lathe machinery, you can create every American Standard Unified class 2A inch screw thread from 4 to 80 threads per inch, and you can create every American Standard Metric class 6 thread from 0.2 to 8 mm pitch with the change gears that are included. All the gears on this lathe are metal.

The LittleMachineShop.com model 3595 HiTorque 8.5x20 Bench Lathe for sale is a version of the SIEG SC4 bench lathe.

4959 SIEG C3 7x14 Mini Lathe $599.95
- Full featured miniature lathe at an incredible price
- Includes 3" 3-jaw chuck, 2 sets of jaws, and chuck key
- Variable speed with two speed ranges for low speed torque
- Digital spindle speed readout
- Cam-lock tailstock

The SIEG C3 7x14 Mini Lathe has all the features you want at an incredibly low price. Full 14" bed length with a cam-lock tailstock for your longer work pieces. Real top and bottom half-nuts and a reversible 16 TPI lead screw provide extended threading capability. You can create every American Standard Unified class 2A inch screw thread from 4 to 80 threads per inch, and you can create every American Standard Metric class 6 thread from 0.3 to 8 mm pitch. The cross feed and compound rest dials are graduated in 0.001" and 0.025 mm. The miniature lathe is equipped with a 4-way indexing tool post set for 5/16" (8 mm) tools.

The SIEG C3 7x14 Mini Lathe includes a chip tray, a backsplash guard, and a threading dial.

5499 SIEG C3 7x14 Long Mini Lathe $1,848.14
- Larger than mini mills
- 750 watt (1 hp) brushless DC variable speed drive
- No gears in spindle drive
- R8 spindle and drill chuck
- Tapping mode for reversing taps out

The LittleMachineShop.com HiTorque Bench Mill 5500 is a step up in size, rigidity, and power compared to a mini mill. This benchtop mill for sale provides a larger table, more travel, and more horsepower. A 750 watt (1 hp) brushless DC motor provides abundant spindle power and tremendous low-end torque. The motor has a forward and reverse mode on the power panel. The 23.4" x 5.5" (595 mm x 140 mm) table provides a large work area. The HiTorque Bench Mill incorporates a true quill and drill press style handles for easy drilling. A button on the end of each handle reverses the spindle to make tapping easy. The control panel includes a digital spindle speed display. This mill is a version of the SIEG SX2.7.

5550 HiTorque Bench Mill, Long Table, Deluxe $2,663.18
- Larger than mini mills
- 750 watt (1 hp) brushless DC variable speed drive
- No gears in spindle drive
- R8 spindle and drill chuck
- Tapping mode for reversing taps out

The Model 5550 Deluxe HiTorque Benchtop Milling Machine has all the features of popular HiTorque Bench Mill 5500, plus:" 3-axis digital readout (DRO) with Bluetooth and 7" tablet display* Larger table* Electrically interlocked spindle lock* Machined aluminum handwheels* The LittleMachineShop.com HiTorque Bench Mill is a step up in size, rigidity, and power compared to a mini mill. This HiTorque benchtop milling machine for sale provides a larger table, more travel, and more horsepower. A 750 watt (1 hp) brushless DC motor provides abundant spindle power and tremendous low-end torque and the motor has built in forward and reverse modes easily switched from the power panel. The 7.25" x 6.25" (180 mm x 160 mm) table provides a large work area. The HiTorque Bench Mill incorporates a true quill and drill press style handles for easy drilling. A button on the end of each handle reverses the spindle to make tapping easy. The control panel includes a digital spindle speed display. This mill is a version of the SIEG SX2.7.

5555 HiTorque 8.5x20 Deluxe Bench Lathe $2,663.18
- Digital dials, inch and metric threading
- 120VAC 60 Hz
- 1000 Watt (1.34 HP) brushless DC drive
- Power longitudinal feed and power cross feed
- 4" (100 mm) 3-jaw centering lathe chuck

The LittleMachineShop.com HiTorque 8.5x20 Bench Lathe is for sale is the best in its class. No other lathe machinery in this size offers power cross feed.

The Deluxe model includes digital readouts on the cross slide and compound rest; an AXA quick change tool post set with five tool holders; anodized aluminum hand wheels, knobs, and levers with black anodizing in the hand wheels; and a heavy duty splash guard. In addition, the compound rest is modified to better accommodate a quick change tool post.

The 1000 Watt brushless spindle drive motor provides tremendous low-end torque. And you can vary the speed from 100 rpm to 2000 rpm continuously in both directions. There are no gears to shift.

The cross feed and compound rest dials are graduated in 0.001" and advance 0.050" per turn. A reversible 2 mm pitch lead screw provides extended threading capability. With our lathe machinery, you can create every American Standard Unified class 2A inch screw thread from 4 to 80 threads per inch, and you can create every American Standard Metric class 6 thread from 0.2 to 8 mm pitch with the change gears that are included. All the gears on this lathe are metal.

The LittleMachineShop.com model 3595 HiTorque 8.5x20 Bench Lathe for sale is a version of the SIEG SC4 bench lathe.

4960 SIEG C3 7x14 Deluxe Mini Lathe $799.95
- Most powerful mini mill machine in its class
- Most low-speed torque in its class
- No gears in spindle drive
- R2 Morse taper spindle
- Digital spindle speed readout

The LittleMachineShop.com HiTorque Micro Mill is the best in its class. It has the most power, most torque, and a larger table than other mills in its class.

The 250 Watt brushless spindle drive motor provides tremendous low-end torque. And you can vary the speed from 100 rpm to 5000 rpm continuously. There are no gears or belts to shift. And, with no gears, the HiTorque Micro Mill is the quietest in its class. The large mill table provides 50% more width than other micro mills. The resettable feed dials allow you to zero them at any point.

The HiTorque Micro Mill has a drill press handle for drilling. It also has a 2-axis fine feed with 0.001" resolution for milling operations.

This is a version of the SIEG SX1P micro milling machine for sale.

3990 HiTorque Mini Mill $1,154.73
- Most powerful mini mill machine in its class
- Most low-speed torque in its class
- No gears in spindle drive
- Largest table and X-Y travel in its class
- R8 spindle and drill chuck

The LittleMachineShop.com HiTorque Mini Mill is the best in its class. It has the most power, most torque, and a larger table than other mills in its class. This mill has a solid column. It does not tilt from side to side. This construction is significantly stiffer than the tilting column on other mini mills. This model also includes the air spring head support for even support through the Z-axis range of travel. The 500 Watt brushless spindle drive motor provides tremendous low-end torque. And you can vary the speed from 50 rpm to 2500 rpm continuously. There are no gears to shift. And, with no gears, the HiTorque Mini Mill is the quietest in its class. The large mill table provides 50% more table area than other mini mills. It also has 30% more travel in each direction. The resettable feed dials allow you to zero them at any point. The HiTorque Mini Mill has a drill press handle for drilling and fast motion of the mill's head. It also has a 2-axis fine feed with 0.001" resolution for milling operations. *NOTE* We ship machines only to the US and Canada.
The Model 4190 Deluxe HiTorque Mini Mill for sale has all the features of our popular Model 3990 HiTorque Mini Mill, plus: 3-axis digital readout (DRO) with Bluetooth and 7" tablet display. The DRO is completely installed on the mill.* Electrically interlocked spindle lock* Machined aluminum handwheels and color keyed drill handles

The LittleMachineShop.com HiTorque Mini Mill for sale is the best in its class. It has the most power, most torque, and a larger table than other mills in its class. This mini milling machine has a solid column. It does not tilt from side to side. This construction is significantly stiffer than the tilting column on other mini mills. This model also includes the air spring head support for even support through the Z-axis range of travel. The 500 Watt brushless spindle drive motor provides tremendous low-end torque. And you can vary the speed from 50 rpm to 2500 rpm continuously. There are no gears to shift. And, with no gears, the HiTorque Mini Mill is the quietest in its class. The large mill table provides 50% more table area than other mini mills. It also has 30% more travel in each direction. The resettable feed dials allow you to zero them at any point. The HiTorque mini milling machine for sale has drill press handles for drilling and fast motion of the mill's head. It also has Z-axis fine feed with 0.001" resolution for milling operations.*NOTE* We ship machines only to the US and Canada.

### Machines: Stands/Cabinets

#### 5626 Stand Cabinet, HiTorque 7x16 Mini Lathe SC3
- Metal stand and chip tray for mini lathe
- Single column two door design
- 34.9" x 13.9" x 34.9" (886 mm x 354 mm x 886 mm)
- Cabinet for storage with locking door
- Fits 7x16 SC3 mini lathes

This single column two door design black stand comes with a built in cabinet and is suitable for all 7x16 SC3 mini lathes. The cabinet has one shelf. The chip tray has been upgraded to be more robust than the trays that ship with most mini lathes. Has bolting slots for securing the stand to a floor for additional stability and safety.

- **$195.37**

#### 5623 Stand Cabinet, 7x10 C2 Mini Lathe
- **$195.37**

#### 5624 Stand Cabinet, 7x12 C2/C2 SC2 Mini Lathe
- **$195.37**

#### 5625 Stand Cabinet, 7x14 C3 Mini Lathe
- **$195.37**

### Machines: Mills

#### 4190 HiTorque Mini Mill, Deluxe
- Includes 3-axis DRO and interlocked spindle lock
- Most powerful mill in its class with the most low speed torque
- No gears in spindle drive
- Largest table and X-Y travel in its class
- R8 spindle and drill chuck

The Model 4190 Deluxe HiTorque Mini Mill for sale has all the features of our popular Model 3990 HiTorque Mini Mill, plus: 3-axis digital readout (DRO) with Bluetooth and 7" tablet display. The DRO is completely installed on the mill.* Electrically interlocked spindle lock* Machined aluminum handwheels and color keyed drill handles

This model also includes the air spring head support for even support through the Z-axis range of travel. The 500 Watt brushless spindle drive motor provides tremendous low-end torque. And you can vary the speed from 50 rpm to 2500 rpm continuously. There are no gears to shift. And, with no gears, the HiTorque Mini Mill is the quietest in its class. The large mill table provides 50% more table area than other mini mills. It also has 30% more travel in each direction. The resettable feed dials allow you to zero them at any point. The HiTorque mini milling machine for sale has drill press handles for drilling and fast motion of the mill's head. It also has Z-axis fine feed with 0.001" resolution for milling operations.*NOTE* We ship machines only to the US and Canada.

- **$1,857.82**

#### 4962 SIEG X2D Mini Mill
- Full featured mini mill at an incredible price
- 350 Watt variable speed DC drive
- Largest table and X-Y travel in its class
- R8 Spindle taper
- Dovetail solid column and air spring head support

The SIEG X2D Mini Mill has all the features you want at an incredibly low price. This mill has a solid column. It does not tilt from side to side. This construction is significantly stiffer than the tilting column on other mini mills. The large mill table provides 50% more table area than other mini mills. It also has 30% more travel in each direction. The resettable feed dials allow you to zero them at any point. The SIEG X2D Mini Mill has drill press handles for drilling and fast motion of the mill's head. It also has Z-axis fine feed with 0.001" resolution for milling operations.*NOTE* We ship machines only to the US and Canada.

- **$790.05**

### Machines: Stands/Cabinets

#### 5634 Stand Cabinet, HiTorque Bench Mill SX2.7
- Metal stand and chip tray for bench mill
- Single column design
- 20.79" x 23.94" x 33.66" (528 mm x 608 mm x 855 mm)
- Cabinet for storage with locking door
- Fits the HiTorque bench mill and SX2.7 bench mills

This single column black stand comes with a built in cabinet and is suitable the HiTorque bench mill and all SX2.7 bench mills. The cabinet has one shelf. The chip tray has been upgraded to provide years of service. Has bolting slots for securing the stand to a floor for additional stability and safety.

- **$263.37**

#### 5629 Stand Cabinet, HiTorque Mini Mill X2Z/X2L/SX2L
- Metal stand and chip tray for mini mill
- Single column design
- 16.1" x 19.3" x 35.0" (410 mm x 489 mm x 889 mm)
- Cabinet for storage with locking door
- Fits the HiTorque mini mill and X2L/SX2L mini mills

This single column black stand comes with a built in cabinet and is suitable the HiTorque mini mill and all X2L/SX2L mini mills. The cabinet has one shelf. The chip tray has been upgraded to provide years of service. Has bolting slots for securing the stand to a floor for additional stability and safety.

- **$161.24**

#### 5627 Stand Cabinet, HiTorque Micro Mill X1/SX1
- **$158.24**

#### 5628 Stand Cabinet, X2/SX2 Mini Mill
- **$161.24**

#### 3973 Stand Cabinet, HiTorque Bench Lathe C4/S4
- Metal stand and chip tray for bench lathe
- Shipped disassembled, requires assembly
- Fits all HiTorque Bench Lathes
- Fits all C4 and SC4 lathes

This double column black stand includes two built-n cabinets and a chip tray.

- **$288.24**
**Mill: HiTorque Bench Mill (SX2.7) Accessories**

5846 Deluxe Productivity Upgrade Package, HiTorque Bench Mill

- Includes the 5655 Spindle Lock, the 5633 Quill Stop, and the 5657 power lift in one easy kit
- Makes tool changes easier, faster, and more convenient.
- Electro-magnetic interlock disables power to the motor with the fork of the Spindle Brake engaged.
- Quick and accurate way to set quill depth of cut on 5500 Bench Top Mill.
- Power Lift Switch is mounted to the system plate and has three momentary positions: up, off, and down.

**Power Lift System, HiTorque Bench Mill**

- The Spindle Brake provides a convenient method of locking the spindle freeing both hands to complete a tool change. A safety switch ensures that power to the motor is disabled when the Spindle Brake is engaged.
- This Spindle Brake features an integral flip-style locking fork which locks the mill’s spindle when engaged and does not require a separate locking device to be mounted and removed from the mill. To operate, flip the Spindle Brake fork down over the spindle while the spindle is at rest. Then rotate the spindle by hand until the set screws in the Spindle Brake fork mesh with a spindle spline. Once the tool change is complete, lift the Spindle Brake fork up into the retracted position and you are ready to go.

**Quill Stop, HiTorque Bench Mill**

- The Quill Stop provides a quick and accurate way to set the quill depth of cut. It is great for drilling multiple holes to the same depth.
- The Quill Stop is also very handy in performing single or repeated chamfering of parts. To set up the chamfer the first time on a part, turn the mill off and simply lower the cutter to the top of the part, lock the fine feed knob, and back-off one full turn (turn the Button Nut clockwise as viewed from the top). Then start the mill and turn the Button Nut on the Quill Stop counter clockwise in small increments until the cutter contacts the part. Then continue turning the Button Nut counterclockwise and alternately lowering the quill until the desired chamfer is achieved. The Quill Stop works equally well performing inside chamfers using typical chamfering mills, and outside chamfers using, for example, a hollow mill.

**Power Feed, HiTorque Large Bench Mill**

- The Power Feed system for the Little Machine Shop 5500 mill functionally replaces the X-Axis manual hand wheel that is used to raise and lower the mill head. Using the Power Lift System for the Little Machine Shop 5500 mill functionally replaces the Z-Axis manual hand wheel that is used to raise and lower the mill head.
- The Power Lift System is really easy, just press the switch up or down and release, and you are done. It is much faster than using the hand wheel, and much easier on your shoulders.

**Productivity Upgrade Package, HiTorque Bench Mill**

- A safety switch ensures that power to the motor is disabled when the Spindle Brake is engaged.
- This Spindle Brake features an integral flip-style locking fork which locks the mill’s spindle when engaged and does not require a separate locking device to be mounted and removed from the mill. To operate, flip the Spindle Brake fork down over the spindle while the spindle is at rest. Then rotate the spindle by hand until the set screws in the Spindle Brake fork mesh with a spindle spline. Once the tool change is complete, lift the Spindle Brake fork up into the retracted position and you are ready to go.

**Productivity Upgrade Package, HiTorque Large Bench Mill**

- A safety switch ensures that power to the motor is disabled when the Spindle Brake is engaged.
- This Spindle Brake features an integral flip-style locking fork which locks the mill’s spindle when engaged and does not require a separate locking device to be mounted and removed from the mill. To operate, flip the Spindle Brake fork down over the spindle while the spindle is at rest. Then rotate the spindle by hand until the set screws in the Spindle Brake fork mesh with a spindle spline. Once the tool change is complete, lift the Spindle Brake fork up into the retracted position and you are ready to go.

**Productivity Upgrade Package, HiTorque Mill**

- A safety switch ensures that power to the motor is disabled when the Spindle Brake is engaged.
- This Spindle Brake features an integral flip-style locking fork which locks the mill’s spindle when engaged and does not require a separate locking device to be mounted and removed from the mill. To operate, flip the Spindle Brake fork down over the spindle while the spindle is at rest. Then rotate the spindle by hand until the set screws in the Spindle Brake fork mesh with a spindle spline. Once the tool change is complete, lift the Spindle Brake fork up into the retracted position and you are ready to go.

**Productivity Upgrade Package, Deluxe HiTorque Bench Mill**

- A safety switch ensures that power to the motor is disabled when the Spindle Brake is engaged.
- This Spindle Brake features an integral flip-style locking fork which locks the mill’s spindle when engaged and does not require a separate locking device to be mounted and removed from the mill. To operate, flip the Spindle Brake fork down over the spindle while the spindle is at rest. Then rotate the spindle by hand until the set screws in the Spindle Brake fork mesh with a spindle spline. Once the tool change is complete, lift the Spindle Brake fork up into the retracted position and you are ready to go.

**Productivity Upgrade Package, Deluxe HiTorque Large Bench Mill**

- A safety switch ensures that power to the motor is disabled when the Spindle Brake is engaged.
- This Spindle Brake features an integral flip-style locking fork which locks the mill’s spindle when engaged and does not require a separate locking device to be mounted and removed from the mill. To operate, flip the Spindle Brake fork down over the spindle while the spindle is at rest. Then rotate the spindle by hand until the set screws in the Spindle Brake fork mesh with a spindle spline. Once the tool change is complete, lift the Spindle Brake fork up into the retracted position and you are ready to go.

**Productivity Upgrade Package, Deluxe HiTorque Mill**

- A safety switch ensures that power to the motor is disabled when the Spindle Brake is engaged.
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**Productivity Upgrade Package, Deluxe HiTorque Mini Mill**

- A safety switch ensures that power to the motor is disabled when the Spindle Brake is engaged.
- This Spindle Brake features an integral flip-style locking fork which locks the mill’s spindle when engaged and does not require a separate locking device to be mounted and removed from the mill. To operate, flip the Spindle Brake fork down over the spindle while the spindle is at rest. Then rotate the spindle by hand until the set screws in the Spindle Brake fork mesh with a spindle spline. Once the tool change is complete, lift the Spindle Brake fork up into the retracted position and you are ready to go.
HiTorque Mini Mill (SX2) Accessories

4151 High Speed Spindle Kit, HiTorque Mini Mill $69.95
- Fits HiTorque mini mills
- 5000 rpm top speed
- Includes two pulleys and a belt
- Belt is 350-SM-15, 70 teeth

These pulleys change the spindle speed range to 5000 rpm max.

It's important to have high speed bearings, as the standard bearings are not rated to 5000 rpm. Most LittleMachineShop.com HiTorque Mini Mills have high speed bearings—see the Chris' Tips tab. The increased speed is great for small cutters such as those used for engraving. Just remember that doubling the speed will cut the torque in half. This high speed spindle kit uses the same belt as the standard drive pulleys. We do not have installation instructions completed yet, so you are on your own for installation. The pulleys are easy, but if you have to change the bearings you have to press the spindle out and back in. A hydraulic press makes it an easy task. Switching pulleys to the original set shouldn't take more than 20 minutes. Order this and other mini mill accessories online at LittleMachineShop.com.

4483 Solid Column Conversion Kit, HiTorque Mini Mill $204.95
- Converts a HiTorque Tilting Column Mini Mill to the solid column version.
- Can be used on other Mini Mills (See Chris' Tips)

This mini mill conversion kit converts a HiTorque Tilting Column Mini Mill (part number 3900) to solid column. The kit includes the base and column from the HiTorque Solid Column Mini Mill (part number 3960), the fasteners needed to connect them, and complete instructions.

4761 Spindle Lock, HiTorque Mini Mill $46.00
- Makes tool changes easier, faster, and more convenient
- Loosen and tighten keyless chucks with one hand
- The spindle brake provides a fixed position for inserting the locking pin and frees both hands for changing tools. Fits SIEG SX2 mills

This power feed takes about 20 minutes to install. It is a bolt-on accessory for the HiTorque Mini Mill and requires no modifications to the machine. This 3 Morse Taper arbor drawbar replaces the original 12M metric drawbar with a 3/8”-16 thread.
- 4.1” long when measured like a bolt
- 3/8”-16 thread

This drawbar fits the Grizzly G8689 and the Micro-Mark 82573 mini mills with the 3 Morse taper spindle, and is for use with collets and end mill holders with 3/8-16 NC thread. These mini mill drawbars are custom made for LittleMachineShop.com.

*NOTE*: this is not the original drawbar for these machines. If you are looking to replace the original see item 1414.

5585 Tramming Set, Mini Mill $63.95
- Everything you need to tram a mini mill
- Dial test indicator
- Universal arm locks with one knob
- Shim assortment

This package includes everything you need to tram your mini mill and square your vise. Mount the indicator on the universal arm, put the shank of the universal arm in a drill chuck, and check the four corners of your mill table. Adjust the tram by shimming under the base of the column.

HiTorque Micro Mill (X1) Accessories

3860 Micro Mill X-Y Table Assembly $293.17
- Complete X-Y table assembly for a micro mill
- Includes long table and extended X-axis travel

This is the complete X-Y table assembly for a Super X1 Micro Mill. The table is 145 mm (5.7”) by 400 mm (15.7”). It has three 8 mm T-slots. The X-axis travel is approximately 330 mm (13”) and the Y-axis travel is approximately 130 mm (5.1”). The table is 124 mm (4.9”) tall (the hand wheel is higher). The table base is 353 mm (13.9”) deep and 216 mm (8.5”) wide. The dials are graduated in 0.001” and one turn of the hand wheels moves the table 0.0625”. The X-Y table is made of cast iron and steel. There are adjustable gibs on both axes. Order this X-Y table for sale for your workshop today.

1637 Drawbar, 3MT x 3/8”-16, Mini Mill $9.95
- This 3 Morse Taper arbor drawbar replaces the original 12M metric drawbar with a 3/8”-16 thread.
- 4” long when measured like a bolt
- 3/8”-16 thread

This drawbar fits the Grizzly G8689 and the Micro-Mark 82573 mini mills with the 3 Morse taper spindle, and is for use with collets and end mill holders with 3/8-16 NC thread. These mini mill drawbars are custom made for LittleMachineShop.com.

3935 HiTorque Retrofit Drive Package, 500 Watt $659.93
- 120V 60Hz input

This is a complete HiTorque Brushless DC variable speed drive system. It comes with 3” (1 m) cables so it is adaptable to many applications.

The motor is 0-5000 RPM, 500 Watt (0.67 HP) output. The motor shaft is 14 mm in diameter and 14.5 mm long. The motor is 74 mm square and 140 mm long, not including the shaft. The mounting holes are 6 mm on a 68 mm square. 120V 60Hz 8 amps input.

5112 Power Feed, HiTorque Mini Mill $379.85
- Fits large-table mini mills
- Clutch disengages power feed when not in use
- Adjustable limit switches restrict travel
- 120-240V 50-60Hz

Power table feed for the HiTorque and other large-table mini mills. This power table feed mounts on the left end of the mini mill’s table and drives the X-axis feed screw. It is variable speed (0 to 20 inches per minute). The power feed takes about 20 minutes to install. It is a bolt-on accessory for the HiTorque Mini Mill and requires no modifications to the machine. This mini mill power feed works on 120-240V 50-60Hz power. It has a computer-style (IEC 60320 C3/C4) power cord that unplugs from the power supply unit. This makes it easy to adapt for other countries. The furnished power cord has a North American (NEMA 5-15P) wall plug. This mini mill power feed also fits the Grizzly G0727 horizontal/vertical mill. SIEG U1
Mill: Mini Mill (X2) Accessories

5111 Power Feed, Mini Mill $379.85
- Fits standard mini mills
- Clutch disengages power feed when not in use
- Adjustable limit switches restrict travel
- 120-240V 50-60Hz

Power table feed for the mini mill. This power feed mounts on the left end of the mini mill's table and drives the X-axis feed screw. It is variable speed (0 to 20 inches per minute). The mini mill power feed kit takes about two hours to install. The power feed unit bolts to existing bolt holes in the left end of the table. The limit switch mechanism is mounted to the back of the mill table. This mini mill power feed kit fits any mini mill with an extended X-axis feed screw. Look under the left side of the table to see if the X-axis feed screw has a 2 1/2" long unthreaded extension with a slot in the end. If so, you can use this power feed kit. The X-axis power feed works on 120-240V 50-60Hz power. It has a computer-style (IEC 60320 C3/C4) power cord that unplugs from the power supply unit. This makes it easy to adapt for other countries. The furnished power cord has a North American (NEMA 5-15P) wall plug.

5127 Riser, 2" Solid Column $49.07
- Adds 2" (50 mm) to the head space
- For solid column mini mills and micro mills
- Includes proper mounting hardware

This riser block mounts between the base and the column, adding 50 mm (2") to the head room on the mini mill. The riser block has 4 holes for 8 mm fasteners on 50 mm x 135 mm centers.

4785 Spindle Lock, X2 Mini Mill $119.00
- Makes tool changes easier, faster, and more convenient
- When engaged, the plunger automatically drops into the locking hole as the spindle is rotated
- An electro-magnetic interlock disables power to the motor when the spring plunger is engaged
- Frees both hands for changing tools
- Loosen and tighten keyless chucks with one hand

The spindle brake provides a fixed position for inserting the spindle. In short, it includes everything that travels up and down the column. The HiTorque mini mill. It includes the motor, motor controls, spindle housing and spindle. In short, it includes everything that travels up and down the column. This mini mill head assembly has an R8 spindle. The 500 Watt brushless spindle drive motor provides tremendous low-end torque. And you can vary the speed from 50 rpm to 2500 rpm continuously. There are no gears to shift. And, with no gears, the HiTorque Mini Mill is the quietest in its class. Drilling capacity: 1/2". End milling capacity: 5/8". Power: 120V, 60 Hz.

3711 Work Stop, Small Universal $9.95
- Rigid stop for small milling machines
- Made of hardened steel
- Column is 0.47" diameter and 3.94" tall
- Base is 1.57" wide, 2.76" long and 0.47" thick
- Rod is 0.375" diameter and 6" long

Use this work stop with vises, angle plates, jigs, and so on. It is the perfect size for 3" and 4" vises.

3679 Work Stop, Universal $12.95

Mill: Mini Mill (X2) Assemblies

1766 Column Assembly, Mini Mill $150.68
This is the complete column assembly for the mini mill.

4503 Control Box Assembly, Mini Mill $240.36
- For all Mini Mills with conventional DC drives
- Saves complicated rewiring for updated controller board
- 120V 60 Hz input

This control box assembly includes two plastic control boxes, the motor controller, the emergency stop switch, the I/O switch, the potentiometer, the fuse holder and fuse. This is a fully-assembled control box set. Simply hook up the motor leads and go. One box mounts on the back of the column, the other on the side of the head. This package includes the current-production XMT-1135 motor controller. For all 120V mini mills except those with brushless DC drives.

1663 Mini Mill Head Assembly, R8 Spindle $447.09
This is the complete head assembly for the mini mill. It includes the motor, motor controls, spindle housing and spindle. In short, it includes everything that travels up and down the column. This mini mill head assembly has an R8 spindle. The motor controller is a PWM variable speed controller with overload protection and a zero-speed start interlock. Motor: 350 Watt (0.47 HP). Low speed: 0-1100 RPM. High speed: 0-2500 RPM. Drilling capacity: 1/2". End milling capacity: 5/8". Face milling capacity: 1-1/8". Power: 120V, 60 Hz. Order this and other mini mill components online at LittleMachineShop.com.

4134 Mini Mill Head Assembly, R8 Spindle, HiTorque $741.48
- R8 spindle
- No gears in spindle drive
- Most low-speed torque in its class
- Most powerful mill in its class

This is the complete head assembly for the HiTorque mini mill. It includes the motor, motor controls, spindle housing and spindle. In short, it includes everything that travels up and down the column. This mini mill head assembly has an R8 spindle. The 500 Watt brushless spindle drive motor provides tremendous low-end torque. And you can vary the speed from 50 rpm to 2500 rpm continuously. There are no gears to shift. And, with no gears, the HiTorque Mini Mill is the quietest in its class. Drilling capacity: 1/2". End milling capacity: 5/8". Face milling capacity: 1-1/8". Power: 120V, 60 Hz.

3677 Mini Mill Large Table Assembly $376.07
- 30% more travel in both directions
- 50% more table area

Unbolt the column from your existing X-Y table and bolt it to this one.

Great for the Grizzly G0516. This is a complete X-Y table assembly for a mini mill. The table is 120 mm (4.73") by 460 mm (18.11"). It has three 12 mm T-slots. The X-axis travel is 300 mm (11.8") and the Y-axis travel is 130 mm (5.1"). The dials are graduated in 0.001" and one turn of the hand wheels moves the table 0.050". The X-Y table is made of cast iron and steel. There are adjustable gibs on both axes. This is all you need to make a mini mill using the milling column from a Grizzly G0516 Combo Lathe with Milling Attachment.

5013 Mini Mill Large Table Assembly, Solid Column Base $394.60
- 30% more travel in both directions
- 50% more table area
- Bolt pattern for solid column attachment (P/N 4307)

This is a complete X-Y table assembly for a mini mill. The table is 120 mm (4.73") by 460 mm (18.11"). It has three 12 mm T-slots. The X-axis travel is 300 mm (11.8") and the Y-axis travel is 130 mm (5.1"). The dials are graduated in 0.001" and one turn of the hand wheels moves the table 0.050". The X-Y table is made of cast iron and steel. There are adjustable gibs on both axes. The column mounting bolt pattern consists of 4 M8 threaded holes spaced 135 mm x 50 mm.
Mill: Mini Mill (X2) Assemblies

1944 Mini Mill Spindle Box Assembly, R8 $145.31
This is the spindle box casting for the mini mill, along with all the internal parts. Included are:
- An R8 spindle with all the gears, bearings, spacers, and top nut that ride on it.
- The intermediate shaft with all the gears, bearings and such that ride on it. This includes the intermediate gear on the top of the shaft.
- The high/low speed shifting mechanism.

1765 Mini Mill Table Assembly $256.12
This is the complete XY milling table assembly for a mini mill. The table is 90 mm (3.54") by 335 mm (13.19"). It has three 12 mm T-slots.
- The X-axis travel is approximately 8" and the Y-axis travel is approximately 4".
- The table is 136 mm (5.31") tall (the hand wheel and rear mount are higher).
- The table is 390 mm (15.4") deep and 460 mm (18.1") wide.
- The dials are graduated in 0.001" and one turn of the hand wheels moves the table 0.0625".

3062 Variable Speed Drive Package $255.04
- Complete 250 W (1/3 HP) variable speed drive
- 120 V 60 Hz power
- 0-5000 RPM
- Forward and Reverse

Mill: Quick Change Tooling

About the Tormach Tooling System
Tool switching with the Tormach Tooling System (TTS) is extremely easy: Simply loosen the drawbar, slide out the current tool holder, then slip in the next and retighten. The unique geometry of the TTS tool holder ensures that, as the drawbar is tightened, the tool holder moves into an exact Z height while increasing rigidity.

Each TTS holder has a shoulder that is undercut so it contacts the spindle itself, not the end of the collet. As the drawbar is tightened, the collet will simultaneously squeeze the shank and be pulled upward into the spindle taper. This simultaneous action, grasping while moving up, pulls the tool holder tightly against the spindle face. The high-pressure contact between the shoulder of the tool holder and the spindle is the equivalent of a zero tolerance fit; the vertical location (Z-height) of the tool is exact.

The initial placement, created by simply sliding the tool holder up until it stops, is normally within a few thousandths of an inch. The final location, after tightening the collet, is exact, highly repeatable, and not affected by the variable tension of the drawbar or wear on the collet.

2456 Boring Head Arbor, Tormach TTS $48.95
- Quick change boring head shank with 7/8-20 thread
- Minimal clearance height for tool change
- Repeatable tool positioning
- Hardened and precision ground

Part of the Tormach Tooling System (TTS) this boring head arbor fits to 7/8-20 UN F mounted hears or other tooling with the 7/8-20 thread.

2435 Collet Holder, Tormach TTS, ER-20 $44.95
- Quick change adapter for ER-20 collets
- Minimal clearance height for tool change
- Repeatable tool positioning
- Hardened and precision ground

Part of the Tormach Tooling System (TTS) this ER collet holder is designed to hold industry standard (DIN 46999) self-extracting collets, size ER-20. ER20 collet holders can hold tools up to 1/2" in diameter. Ideal for any small milling or drilling operations.

2455 Collet, Tormach TTS, 3MT, 3/4" $31.95

2588 Drill Chuck, Tormach TTS, 1/4" $44.95
- 0-1/4" Capacity drill chuck
- Mounted on Tormach Tooling System Arbor
- Minimal clearance height for tool change
- Repeatable tool positioning
- Hardened and precision ground

0-1/4" Capacity drill chuck and Tormach Tooling System Arbor. All working parts are hardened. Chuck key is included. Number 1 Jacobs taper mount.

2434 End Mill Holder, Tormach TTS, 3/8" $32.95
- Quick change adapter for 3/8" shank end mills
- Minimal clearance height for tool change
- Repeatable tool positioning
- Hardened and precision ground

Part of the Tormach Tooling System (TTS) this set screw hold is intended to be used with end mills that have a Weldon shank. The tool holder has a set screw on one side and a balancing dimple on the other side. The balancing dimple reduces vibrations at speeds above 8000 RPM.

2698 Blank Tool Holder, Tormach TTS $29.95
2438 End Mill Holder, Tormach TTS, 1/2" $32.95
3026 End Mill Holder, Tormach TTS, 1/4" $32.95
4125 End Mill Holder, Tormach TTS, 10 mm $32.95
4126 End Mill Holder, Tormach TTS, 12 mm $32.95
3025 End Mill Holder, Tormach TTS, 5/16" $32.95
4124 End Mill Holder, Tormach TTS, 6 mm $32.95

4581 Passive Probe, Tormach $395.00
- For edge finding and digitizing

The passive probe is an affordable option for occasional and hobby use. This probe uses a normally closed sensing logic and is suitable for edge finding, digitizing, and other basic probing procedures. Stylus is ground steel ball. It interfaces with the PCNC mill using a 5 pin DIN connector. Includes 10 mm TTS low-profile mount.

4805 Shell Mill Arbor, 1/2", Tormach Quick Change $79.95
- Compatible with shell mills designed for 1/2" R8 arbors.
- Works with 4121 Face Mill

This is the TTS arbor used for the 4121 face mill.
Mill: Quick Change Tooling

2440 Starter Set, CNC, Tormach TTS $995.00
- Complete set for CNC operations includes 15 tool holders
- Minimal clearance height for tool change
- Repeatable tool positioning
- All tool holders are hardened and precision ground
- Tool height presetting set included
CNC operations work best with one holder for each tool in order to make use of the tool length compensation table in the CNC controller. This function also requires a system for measuring the mounted tools. The CNC set includes a total of 15 tool holders plus a tool measuring set. The Tormach Tool Assistant Set includes 8" digital height gauge (measurement accuracy +/- 0.0005"), USB interface cable with touch trigger, manual, and Tool Assistant software. This is an outstanding value and a great way to get started with a CNC that has been retrofitted from a manual machine. If your CNC machine supports a tool offset table but you're not using it, then you're not realizing the full benefit of CNC machining.

4608 Starter Set, CNC, Tormach TTS, Metric $995.00

2441 Starter Set, Manual, Tormach TTS (Inch) $245.00
- Complete set for manual operations includes 4 tool holders
- Minimal clearance height for tool change
- Repeatable tool positioning
- All tool holders are hardened and precision ground
You don't need a CNC to take advantage of the Tormach Tooling System. Manual operations benefit from quick change, reduced clearance, and increased rigidity. This is a basic set that will introduce users to all of those features. The manual mill operators set will improve productivity in manual milling.

4663 SuperFly Cutter, Tormach TTS $145.00
- Adjustable to 3” (75mm) Cutting Diameter
- Includes tool bar for SEHT Insert
- 1.8” (46mm) Height
- TTS Fly Cutter Body with ATC Geometry
The Tormach SuperFly cutter kit has modern insert geometries and is specially designed for maximum performance on spindles with less than 3hp. It includes fly cutter tool bar, body, insert retaining screw and wrench. Like all Tormach TTS tools, the SuperFly Cutter has a 3/4” straight shank. Use it with the TTS system, or use it in any 3/4” collet. Tormach part number 32428.

4688 Insert, SEHT43AFFN-X83, Tormach $17.95
4689 Insert, SEHT43AFSN-X45, Tormach $16.95
4799 Screw, Insert Retaining, SEHT Inserts $6.95

5037 Wrench, ER-16 & ER-20, Deluxe Tormach Set $34.95
- Includes (1) Box End wrench for retention nuts and (1) open-end wrench for TTS arbors.
- Anodized Aluminum Alloy
- Slim Profile
- High Visibility Blue Color
- Laser Size Marking
This set works for both ER-16 and ER-20 TTS holders as well as other ER-16 and ER-20 collet nuts and chucks.

5041 Wrench, ER-32, Deluxe Tormach Set $34.95

Mill: Tooling

1626 Boring Head Shank, R8 $34.95
- R8 Boring Head Shank
- 1/4”-20 Tapped Mounting Thread
- Made of high grade tool steel
- Hardened and ground
This boring head shank has an R8 taper on one end and a 7/8”-20 thread on the other. The mill boring head shank adapts our boring head to mills with an R8 spindle.

4824 Boring Head Shank, 1/2” Straight $21.95
4630 Boring Head Shank, 2MT $24.95
1265 Boring Head Shank, 3MT $29.95
5402 Boring Head Shank, 3MT Professional Grade $29.95
5401 Boring Head Shank, R8 Professional Grade $31.95

1266 Boring Head, 2” $52.95
- 2” boring head holds 1/2” shank boring bars
- The mill boring head offsets up to 5/8”
- Mounts on a shank with a 7/8”-20 thread
- Dia is graduated in 0.001”
- Bar holder moves freely and smoothly
Two inch round boring head designed with superior rigidity for chatter-free boring and precise hole size accuracy. The boring bar holder moves freely and smoothly. The design of this boring head assures superior rigidity for chatter-free boring and precise hole accuracy. The adjusting screw is hardened and ground for long lasting trouble free use.

4764 Boring Head, 2” Professional $109.95
- 2” diameter boring head holds 1/2” shank boring bars
- The boring head offsets up to 5/8”
- Mounts on a shank with a 7/8”-20 thread
- Dia is graduated in 0.001”
- Boring bar holder moves freely and smoothly
The design of this boring head assures superior rigidity for chatter-free boring and precise hole accuracy. The adjusting screw is hardened and ground for long lasting trouble free use.

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The centerline of the milling machine indexer spin jig is about 2.75 above the base.

The spindle is hardened and ground. The spindle accuracy is 0.0004 TIR. The indexing plate is precision ground. The 5C pin indexer directly indexes in 10 degree steps. The vernier provides 1 degree increments.

This indexing spin jig is used on milling machines, grinders, and inspection equipment. The indexing plate is precision ground. The 5C pin indexer directly indexes in 10 degree steps. The vernier provides 1 degree increments. The centerline of the milling machine indexer spin jig is about 2.75 above the base.

The indexing plate is precision ground. The 5C pin indexer directly indexes in 10 degree steps. The vernier provides 1 degree increments. The centerline of the milling machine indexer spin jig is about 2.75 above the base.
Models: Fully Assembled and Kits

3137  British Toy Loco Material Kit  $149.95
  ● Working British toy loco steam engine
  ● Includes virtually all the material and drawings you need to make this engine*
  ● You machine the parts
  ● CAD drawings and complete construction manual
  This is an operating toy steam engine.
  This kit includes 65 pages of drawings and 60 pages of construction notes that are specific to the mini mill and mini lathe.
  When finished, the British toy loco measures 2.23" wide x 6.43" long x 3.72" high. If runs on 027 gauge track which is 1.25" between the rails.
  Because of the difficulties and dangers of using steam, these engines are most often powered by compressed air.
  * You must purchase one piece of brass basin drain tube from your hardware store.

3135  Model Steam Launch Engine Material Kit  $59.95
  ● Working model of a steam launch boat engine
  ● Includes all the material and drawings you need to make this model
  ● You machine the parts
  ● CAD drawings and complete construction manual
  This is a working model engine kit.
  This Elderberry Steam Engine kit includes 15 pages of drawings and 32 pages of construction notes that are specific to the mini mill and mini lathe.
  When finished, the launch engine measures 2.00" wide x 2.93" long x 3.17" high.
  Because of the difficulties and dangers of using steam, these engines are most often powered by compressed air.

3136  Model Steam Mill Engine Material Kit  $79.95
  ● Working model of a steam mill engine
  ● Includes all the material and drawings you need to make this model
  ● You machine the parts
  ● CAD drawings and complete construction manual
  This is a working model engine kit.
  This model steam engine kit includes 35 pages of drawings and 32 pages of construction notes that are specific to the mini mill and mini lathe.
  When finished, the mill engine measures 2.79" wide x 4.54" long x 3.08" high.
  Because of the difficulties and dangers of using steam, these engines are most often powered by compressed air.

2594  Oscillating Steam Engine Material Kit  $27.95
  ● Includes all the materials you need
  Plus all the hardware to assemble the engine
  ● Complete plans are included
  ● Great first project for beginners
  This kit includes all the materials and hardware required to make the oscillating steam engine.
  This engine can be built with a small lathe (Sherline or larger) and a drill press. A small mill (Sherline or larger) makes it easier. You will need a source of compressed air, such as an air compressor, to run this engine.

3485  Oscillating Steam Engine Material Kit and Instructional DVD  $49.95

Models: Plans

2515  Buffalo Pup Steam Tug Boat Plans  $29.95
  ● Radio controlled 36" model tug boat runs on live steam
  ● Build the 2 cylinder steam engine from bar stock
  ● Build the copper boiler
  ● Build the boat, including propeller and rudder
  ● Install the radio control
  Complete plans to build a steam driven, radio controlled model of a tug boat.
  These plans were created by Bill Reichart.
  There are 30 pages of plans that cover building the boat including, building the boiler out of copper, and building the steam engine out of bar stock, and building the deck and cabin out of wood. The hull is fiberglass.
  Sources are provided for all purchased parts including propane, the ceramic burner, and the fiberglass hull.

Models: Precision: Calipers

3704  Dial Caliper, 6" Industrial Quality  $29.95
  ● Style and quality similar to Swiss-made calipers
  ● Clear graduations every 0.001"
  ● Hardened stainless steel bar, rack, gears, depth rod and measuring faces
  ● Knife-edge contacts for both inside and outside measurements
  ● Fine adjustment roller for one hand use
  This 6" Dial Caliper is made of hardened stainless steel for long life. It has a thumb wheel and a locking screw. The measuring faces are hardened, ground and lapped. The bezel can be rotated 360°.
  You can make inside, outside, depth and step measurements. The dial caliper is furnished with a fitted case.

4272  Dial Caliper, 6" Professional Grade  $59.95
  ● Z-Limit brand guarantees professional quality
  ● Clear graduations every 0.001", 0.100" per revolution
  ● Hardened stainless steel bar, rack, gears, depth rod and measuring faces
  ● Knife-edge contacts for both inside and outside measurements
  ● Fine adjustment roller for one hand use
  This 6" digital dial caliper is made and inspected in the same factory as some of America's best-known brands. The caliper is made of hardened stainless steel for long life. It is very smooth operating and shock resistant. It has a thumb wheel and a locking screw. The rack is screwed on. The measuring faces are hardened, ground and lapped. The bezel can be rotated 360°.
  You can make inside, outside, depth and step measurements. The dial caliper is furnished with a durable fitted case.

1830  Dial Caliper, 6", Starrett  $209.00
  ● Starrett 6" white dial caliper and fitted case
  ● Direct reading, reliable and accurate.
  ● American Made
  This is one of the handiest measuring tools available, used by mechanics and toolmakers everywhere. It is direct reading, reliable, and accurate. The Starrett 120 Series dial calipers are the only American made dial calipers on the market. Starrett catalog number 120A-6.

3166  Dial Caliper, 6", Starrett  $120.00
  ● Starrett 6" white dial caliper and fitted case
  ● Starrett catalog number 3102-6
  ● Sharp, clear dial graduations of .001" with .100" per revolution
  ● Sharp, black graduations on the satin finished bar, every .001"
  ● This is one of the handiest measuring tools available, used by mechanics and toolmakers everywhere. It is direct reading, reliable, and accurate. With the ability to provide quick, accurate measurement of O.D., I.D. and depth, the dial caliper is the most versatile precision hand tool on the market. Imported

1758  Electronic Digital Caliper 6", 4 Buttons  $32.95
  ● 6" (150 mm) range
  ● 0.0005" (0.01 mm) resolution
  ● 0.001" (0.02 mm) accuracy
  ● Reads inches or mm
  ● Four button model has display lock
  This 6" electronic digital caliper has manual power on and off. It won't go off and lose your measurement. There are four buttons (one more than most digital calipers). OFF/ON: Turns the power on and off. ZERO: Sets the readout to zero at any position. AM/INCH: Switches between inch and metric display. HOLD: Locks the display. Use this button when you take a measurement where you cannot easily see the display. Press HOLD again to unlock the display. You can make absolute or relative inside, outside, depth, and step measurements. Furnished with a fitted case.
Precision: Calipers

2983 Electronic Digital Caliper, 6" $29.95
- 0-6" (0-150 mm) range
- 0.0005" (0.01 mm) resolution
- 0.001" (0.02 mm) accuracy
- Reads inches or mm
This 6" electronic digital caliper has manual power on and off. There are three buttons. OFF: Turns the power off.
ON/ZERO: Turns the power on and sets the readout to zero at any position. MM/INCH: Switches between inch and metric display. You can make absolute or relative inside, outside, depth, and step measurements. Furnished with a fitted case.

5758 Electronic Digital Caliper, 6" Fractions $34.95
- Range: 0-6" (0-150 mm)
- Accuracy: 0.001"/6"
- Resolution: 0.0005" / 0.01mm / 1/128"
- Easy to Read Super Large Display LCD
- IP54: Splash water, oil and dust resistance
This electronic digital caliper has a large display and easily switches from inches (decimal) to fractions to metric measurements. The caliper has an easy to read large display. The hardened stainless steel construction allows for smooth movement and high measure speed. The three buttons perform the following: OFF/ON: Turns the power on and off. ZERO: Sets the readout to zero at any position. MM/in/F: Switches between fractional inch, decimal inch and metric display. Furnished with a fitted case.

5864 Electronic Digital Caliper, 6" Fractions $48.99
- Range: 0-6" (0-150 mm)
- Accuracy: 0.001"/6"
- Resolution: 0.0005" / 0.01mm / 64th
- IP67: Dust tight, temporarily inresable
- Operating Environment: 0-40 C
This 6" electronic digital caliper has a large display and easily switches from inches (decimal) to fractions to metric measurements. The caliper has an easy to read large display. The hardened stainless steel construction allows for smooth movement and high measure speed. The International Protection Rating of this caliper is IP67 (protected from immersion between 15 centimetres and 1 metre in depth, limited ingress protection). The caliper has an auto shut-off and comes with a fitted case.

5865 Electronic Digital Caliper, 8" Fractions $64.99
- Range: 0-8" (0-200 mm)
- Accuracy: 0.001"/6"
- Resolution: 0.0005" / 0.01mm / 64th
- IP67: Dust tight, temporarily inresable
This electronic digital caliper has a large display and easily switches from inches (decimal) to fractions to metric measurements. The caliper has an easy to read large display. The hardened stainless steel construction allows for smooth movement and high measure speed. The International Protection Rating of this caliper is IP67 (protected from immersion between 15 centimetres and 1 metre in depth, limited ingress protection). The caliper has an auto shut-off and comes with a fitted case.

1601 Electronic Digital Caliper, 6" PEC $46.39
- 0-6" (0-150 mm) range
- 0.0005" (0.01 mm) resolution
- 0.001" (0.02 mm) accuracy
- Reads inches, mm or fractions
This 6" electronic digital caliper has manual power on and off. There are three buttons. ON/OFF: Power switch. MM/in/infrac: Metric/Inch/Inch Fraction conversion. ZERO: Zero's display in any position. You can make absolute or relative inside, outside, depth, and step measurements. This is PEC 8000-F6

4251 Electronic Digital Caliper, 6" Professional Grade $54.95
- 2-Z Limit brand guarantees professional quality
- Large, easy-to-read LCD display can be zeroed at any position
- Automatic shut-off after 5 minutes of non-use, last measuring position retained when shut off
- Hardened stainless steel body for long life, with fine adjustment. thumb wheel
- Resolution is 0.0005" (0.01mm) and linear accuracy meets DIN 862 standard
This 6" electronic digital caliper is made and inspected in the same factory as some of America's best-known brands.
The 6" digital vernier caliper measures four ways; outside, inside, depth, and step. The three keys are on/off, inch/mm, and zero.
Jaw Depths: 1 1/2" outside, 5/8" inside.
The CR-2032 battery is included. Includes a durable plastic case.

4458 Electronic Digital Caliper, 6", IP67, Starrett $217.00
- Large, easy-to-read LCD display
- IP67 level of protection against coolant, water, dirt and dust
- Hardened stainless steel measuring surface for long life
- Fine adjustment for precision measurements
- Resolution is .0005" (0.01 mm)
Starrett 6" electronic digital caliper resists coolant, water, dirt and dust. Starrett catalog number 798A-6/150. The Starrett 798 electronic caliper provides an IP67 level of protection against foreign matter in hostile shop environments. In addition to being coolant and water resistant, the 798 also offers excellent protection against chips, dirt, dust, and other contaminants. The extra large LCD (character height .310") makes the 798 exceptionally easy to read. All 798 models also include an output port for RS232 equipped devices. While there are other IP67 electronic calipers available, only the 798 is a Starrett - for a century and a quarter, the tool of choice for the most experienced toolmakers and machinists when the measurements are most critical. According to IEC529, in IP67 the first number “6” identifies protection against ingress of dust and the second number “7” identifies submersion in water under standardized conditions of pressure for 30 minutes. With this caliper you can set zero at any position, read inches or millimeters, and lock the slide in position. There is a manual on/off button, plus the caliper turns itself off after thirty minutes of inactivity.

2752 Electronic Digital Caliper, 6", Starrett 799 $173.00
- Large, easy-to-read LCD display can be zeroed at any position
- Automatic shut-off after 5 minutes of non-use, last measuring position retained when shut off
- Hardened stainless steel body for long life
- Fine adjustment thumb wheel
- Resolution is .0005" (0.01 mm) and linear accuracy meets DIN 862 standard
Starrett 6" electronic digital caliper Starrett catalog number 799A-6/150. Starrett's 799 series electronic calipers are light, comfortable, easy to use, and constructed with features that have made Starrett slide calipers the machinist's first choice for many years. They have a slim, streamlined profile, function buttons for zero and inch/mm, a large, clear, easy-to-read LCD display, and long battery life. The 799 Calipers are furnished in a fitted, protective case. Jaw Depths: 1 1/2" outside, 5/8" inside.

Precision: Edge and Center Finders

2747 Center Finder, Drill Press $15.95
- Accurately and quickly locates center on cylindrical workpieces
- Satin chrome finish
- Place tool in drill chuck or collet and line up pointer with line scribed on shaft
- 3/8" diameter shank
The drill press center finder is a quick way to find the approximate center of cylindrical objects. Line the pointer up with the mark and the drill chuck is centered over the work.
Precision: Edge and Center Finders

2060 Coaxial Centering Indicator
- $79.95
- Use this indicator to quickly center work pieces or fixtures on your mill
- This coaxial centering indicator remains stationary while the spindle rotates
- Can be used to center internal and external diameters
- The locating accuracy is 0.0005" of center
- Furnished in a fitted case

Use this indicator to quickly center work pieces or fixtures on your mill. The measuring range is 0.25". The shank is 0.375" diameter and 0.75" long. The indicator is 5.5" long from the top of the shank to the bottom of the tip holder (the black part). Can measure internal diameters from 0.12" to 4.25" and external diameters from zero to 4.25". This set includes:
- Indicator body, restraining rod (prevents rotation), spring-loaded center point feeler, three straight feelers (for IDs), three curved feelers (for ODs). Buy this and other precision tools for sale online at LittleMachineShop.

2652 Collet Adapter for Edge Finders, Starrett
- Starrett Catalog Number PT28314
- Compatible with Any Attachment with a 3/8" Post
- Eliminates Need to Change Collet to Use Edge Finder

This is a time saving accessory for edge finders with a 3/8" shank. The collet adapter allows quick installation and removal of the edge finder, eliminating the need for collet changes on Bridgeports and similar machines. It can be used with any attachment with a 3/8" shank. The progressive steps are 1/4", 5/16", 3/8", 1/2", 5/8", 3/4" and 1". Step depths vary from .100" to .200".

5446 Edge and Center Finder Set, 4 Piece
- $29.95
- 4 piece Edge and Center Finder Set
- Accurately locates the starting point for all types of machine work and jig boring
- Hardened and ground all over
- Accuracy 0.0002"

The edge finder end has a 0.200" diameter cylinder to quickly find the edge of a work piece. The center finder end tapers to a point to locate holes. Set includes:

1822 Edge and Center Finder, 1/2" Shank, Starrett
- $33.50

1375 Edge and Center Finder, 10 mm Shank, Starrett
- $34.00

1240 Edge and Center Finder, 3/8" Shank
- $7.95

1960 Edge and Center Finder, 3/8" Shank Audible, Fisher
- $13.95

1959 Edge and Center Finder, 3/8" Shank, Fisher
- $15.95

1961 Edge Finder, 1/4" Shank Audible, Fisher
- $15.95

1823 Edge Finder, 3/8" Shank, Starrett
- $27.50

2604 Edge and Center Finder, 3/8" Shank Laser
- $124.50
- 3/8" Shank fits collets and end mill holders
- 3.375" overall length
- Uses common SR44 batteries (included)
- Accuracy to 0.001"
- Includes polarizing attachment to adjust dot size

The model 2604 3/8" Shank Laser Edge and Center Finder is a new tool for your mill that saves setup time. It eliminates the frustrations and doubts of using the century-old indirect method with a conventional edge finder or wiggler. The Laser Center/Edge Finder projects a fine laser beam that directly indicates the edge of the workpiece. Move the beam to the edge of the workpiece and set your dial to zero. It is that easy. No more calculating half the diameter of the edge finder. You can also use this laser edge finder to locate scribed or center-punched locations. Simply move the laser beam to the location on the workpiece and the spindle is aligned. Our laser edge finder is easy to align so you can be sure it is always accurate.

2886 Polarizing Attachment for Laser Edge Finder
- $29.95

2606 Edge and Center Finder, 1/2" Shank Laser
- $124.50

2679 Edge and Center Finder, 1/2" Shank Laser Wet Cabinet
- $134.50

2543 Edge and Center Finder, 1/4" Shank Laser
- $124.50

2624 Edge and Center Finder, 10 mm Shank Laser
- $124.50

2623 Edge and Center Finder, 6 mm Shank Laser
- $124.50

2887 Magnetic Holder for Laser Edge Finder
- $11.50

3965 Edge and Center Finder, 3/8" Shank Laser AC Powered
- $178.50
- 3/8" Shank fits collets and end mill holders
- 3.375" overall length
- AC Powered 110 to 240 VAC
- Accuracy to 0.001"
- Includes polarizing attachment to adjust dot size

The Laser Center/Edge Finder™ is a new tool for your mill that saves setup time. It eliminates the frustrations and doubts of using the century-old indirect method with a conventional edge finder or wiggler. The Laser Center/Edge Finder projects a fine laser beam that directly indicates the edge of the workpiece. Move the beam to the edge of the workpiece and set your dial to zero. It is that easy. No more calculating half the diameter of the edge finder. You can also use the Laser Center/Edge Finder to locate scribed or center-punched locations. Simply move the laser beam to the location on the workpiece and the spindle is aligned. The Laser Center/Edge Finder is easy to align so you can be sure it is always accurate.

3966 Edge and Center Finder, 3/8" Shank Laser Concentric Circles
- $178.50
- 3/8" Shank fits collets and end mill holders
- 3.375" overall length
- Uses common SR44 batteries (included)
- Accuracy to 0.001"
- Includes polarizing attachment to adjust line width

The Laser Center/Edge Finder™ is a tool for your mill that saves setup time. It eliminates the frustrations and doubts of using the century-old indirect method with a conventional edge finder or wiggler. This Laser Center/Edge Finder projects a series of concentric rings, making it easy to center over an existing hole. See the pattern on the Chris' Tips tab. The Laser Center/Edge Finder projects a fine laser beam that directly indicates the edge of the workpiece. Move the beam to the edge of the workpiece and set your dial to zero. It is that easy. No more calculating half the diameter of the edge finder. You can also use the Laser Center/Edge Finder to locate scribed or center-punched locations. Simply move the laser beam to the location on the workpiece and the spindle is aligned. The Laser Center/Edge Finder is easy to align so you can be sure it is always accurate. The batteries last for over 3 hours of continuous operation. That's 6 months to a year of normal use.

4792 Edge and Center Finder, 1/4" Shank Laser Concentric Circles
- $164.50
Precision: Edge and Center Finders

4629 Edge and Center Finder, 3/8" Shank Laser Crosshair $164.50
- 3/8" shank fits collets and end mill holders
- 3.375" overall length
- Uses common 9V44 batteries (included)
- Accuracy to 0.001"
- Includes polarizing attachment to adjust to normal dot
- The Laser Center/Edge Finder is a tool for your mill that saves setup time. It eliminates the frustrations and doubts of using the century-old indirect method with a conventional edge finder or wiggler. This Laser Center/Edge Finder projects a crosshair, making it easy to align a workpiece on the table. The Laser Center/Edge Finder projects a fine laser beam that directly indicates the edge of the work. Move the beam to the edge of the work and set your dial to zero. It is that easy. No more calculating half the diameter of the edge finder. You can also use the Laser Center/Edge Finder to locate scribed or center-punched locations. Simply move the laser beam to the location on the workpiece and the spindle is aligned. The Laser Center/Edge Finder is easy to align so you can be sure it is always accurate. The batteries last for over 3 hours of continuous operation. That's 6 months to a year of normal use.

3188 Edge Finder, 1/2" Shank Electronic $25.95
- Lights up when it contacts the edge of the work
- Repeatable to 0.0002"
- Works on any conductive metal
- Includes LED light and battery
- Made in USA
- This electronic edge finder has a 1/2" shank. It is 4" long overall.

2294 Wiggler Center Finder Set, PEC $22.95
- Collet chuck and 4 probes
- Includes needle point, 0.250" ball, 0.100" disk, and 0.250"-shank indicator holder
- Made in USA
- This wiggler center finder set comes with a collet chuck and 4 probes for finding centers, edges, and indicating. Each probe snaps into the body without removing the collet nut.
- The wiggler shank is 0.375" diameter.

1603 Wiggler Center Finder Set $14.95

2279 Wiggler Center Finder, Starrett $25.50
- Quickly and accurately locate working centers.
- Attachment snapped in chuck without removing collet nut.
- Spring tension on ball permits guiding point to true concentricity.
- Starrett Wiggler Center Finder. Starrett catalog number 828A. The wiggler center finder and pointed shank quickly and accurately locates working centers. Spring tension on the ball of the point permits guiding the point to true concentricity so that the work can be brought into perfect alignment with the machine spindle. The attachment is snapped in the chuck without removing the collet nut and is clamped by a ball swivel-joint, which permits adjustment to an angular position or true concentricity.

3716 Dial Indicator, 0.25" x 0.001", Small Face $14.95
- 0.25" dial indicator with 0.001" resolution
- AGD Group 1 for tight locations
- 1.5" Diameter face, 0.375" shank, #4-48 tip thread
- Rack & contact point made of hardened stainless steel
- Jeweled movement
- This 1/4" stroke dial small face dial indicator features large, easy to read numbers and crisp graduations. Each revolution is 0.100", indicated by the revolution counter. The resolution is 0.001". There is a mounting lug on the back of the case.

1236 Dial Indicator, 1" x 0.001" $14.95
- 0-1" dial indicator with 0.001" resolution
- AGD Group 2
- 2.25" Diameter face, 0.375" shank, #4-48 tip thread
- Lug back mounting screws: #2-56 thread
- This 1" stroke dial indicator features large, easy to read numbers and crisp graduations. Each revolution is 0.100", indicated by the revolution counter. The resolution is 0.001". There is a mounting lug on the back of the case.

2726 Dial Indicator, 2" x 0.001" $25.95
2873 Dial Indicator, 1" x 0.0005" $16.95

4467 Indicator Back, Dial Indicator, with Lug $4.95
2531 Magnetic Back for Dial Indicator $4.95
1783 Point Set, Dial Indicator $4.95

1236 Dial Indicator, 1" x 0.001" with Lifting Lever $18.50
- 0-1" Dial Indicator with 0.001" Resolution
- AGD Group 2 - 2" Diameter Dial Face
- Lifting Lever, 0.375" Shank, #4-48 Tip Thread
- Lug Back
- Jeweled Movement
- This 1" stroke dial indicator features large, easy to read numbers and crisp graduations. Each revolution is 0.100", indicated by the revolution counter. The resolution is 0.001". There is a mounting lug on the back of the case. The indicator comes with an equipped lifting lever attached to the top end of the spindle. This improves inspection efficiency and accuracy when using the indicator on a mounted stand. With a lifting lever, the spindle can easily be raised in small increments as material is moved under the spindle.

5517 Dial Indicator, 1" x 0.001", Magnetic Back $24.95
- 0-1" dial indicator with 0.001" resolution
- 0.375" Shank, #4-48 Tip Thread of Hardened Stainless
- AGD Group 2, 2" Diameter Face
- Magnetic Back Screws On/Off
- Magnetic Back is 2 1/4" in Diameter and Coated
- This 1" stroke dial indicator features large, easy to read numbers and crisp graduations. Each revolution is 0.100", indicated by the revolution counter. The resolution is 0.001". There is a screw on/off magnetic back which has a protective coating. The indicator shank is 3/8" (0.375") in diameter, made of hardened stainless steel and has a #4-48 tip thread.
4281 Dial Indicator, 1" x 0.001", Professional Grade, Shock Resistant
- Z-Limit brand guarantees professional quality
- 0-1" dial indicator with 0.001" resolution
- 6 jewel shock resistant movement
- 2.25" dial diameter AGD Group 2 with 0.375" shank and flat back
- Calibration certificate included
This 1" stroke dial indicator features large, easy to read numbers and crisp graduations. Each revolution is 0.100", indicated by the revolution counter. The resolution is 0.001". The thread for the tip is #4-48. Includes a durable plastic case. This indicator is made and inspected in the same factory as some of Europe's best-known brands.

4285 Dial Indicator, 0.25" x 0.001", Professional Grade, Shock Resistant $39.95
4282 Dial Indicator, 0.5" x 0.0005", Professional Grade, Shock Resistant $49.95
4112 Dial Indicator, 1" x 0.001", Professional Grade $29.95
4284 Dial Indicator, 5 mm x 0.01 mm, Professional Grade, Shock Resistant $42.95
4283 Dial Indicator, 10 mm x 0.01 mm, Professional Grade, Shock Resistant $49.95

1835 Dial Indicator, 1", Starrett $157.00
- Range: 1.000"  
- Face diameter: 2-1/4"  
- Graduations: 0.001"  
- Shockless, hardened steel gear train and jewel bearings  
- Lug on center of the back  
Starrett catalog number 25-441J. These indicators have a shockless, hardened steel gear train and jewel bearings. They are furnished with a lug on the center of the back. This is an AGD Group 2 indicator with a 2.25" Diameter face, 0.375" shank, and #4-48 tip thread.

1819 Dial Indicator, Starrett Last Word $200.00
- Starrett dial indicator with universal friction holder with shank  
- Graduation: 0.0005"  
- Range: 0.030"  
- Dial Reading: 0-15-0  
Starrett catalog number 711LP5Z. Steel Contact Point Length: 5/32" (4 mm) Steel Contact Point Ball Diameter: 0.120" (3 mm)

These handy test indicators are among the most versatile available. Their small size and variety of attachments handle all jobs with ease and accuracy. A very useful feature is the shaded dial - when used with a mirror, such as in a jig bore application, the operator always knows where he is.

5379 Dial Test Indicator Set, 0.3" x 0.0005" $59.95
- 0.001" Dial Test Indicator Set with .0005" Graduation  
- Three dovetail positioning mounts work with most existing test indicator accessories  
- Precision gear-driven design with smooth jeweled movement  
- Frictionally adjustable contacts  
- High contrast easy to read dials with a white background  
Includes 2 contact points, 2 dovetail clamps, 1 swivel post holder, 1 tool post holder and 1 contact wrench in a fitted case. Manufactured and inspected at world class factory that produces highest quality European brands. Contact point reverses automatically to maintain clockwise hand rotation. Meets or exceeds ANSI/ASME accuracy specifications. Narrow body for in reach ability, and a satin chrome finish for durability. Interchangeable with 3808AC.

1249 Dial Test Indicator, 0-15-0 x 0.0005" $29.95
- Dial test indicator with 0.0005" graduations  
- Range is 0 - 0.030" in either direction  
- Reading 0-15-0  
- Includes 5/32" and 3/8" diameter posts, dovetails on the back and end, and an 0.080" diameter point  
- 7 Jewel movement, Comes in a fitted case  
Test Dial Indicator for sale with 0.0005" graduations and reading from 0-15-0. Comes in a fitted case.

3522 Dial Test Indicator, 0-15-0 x 0.0005" and Universal Magnetic Base $79.95

2875 Dial Test Indicator, 0-4-0 x 0.0001" $49.95
4633 Replacement Point, Dial Test Indicator $3.95

3709 Dial Test Indicator, 0-15-0 x 0.0005", Interapid Style $89.95
- Dial test indicator with 0.0005" graduations  
- Range is 0.030" in either direction  
- Includes 5/32" and 3/8" diameter posts, dovetails on the back and end, and an 0.080" diameter point  
- Dial test indicator comes in a fitted case  
- jeweled movement  
This Swiss-type horizontal dial indicator has a large 1.5" dial. 210 degree swivel arc with .080 steel contact point.

3548 Dial Test Indicator, 0-5-0 x 0.0001", Dovetail Mount, Starrett $311.00
- Starrett dial test indicator with dovetail mount  
- Starrett catalog number 780AZ  
- Dial test indicator with 0.0001" graduations  
- Range is 0.010"  
These precision test indicators were designed to be positioned for easy and accurate readability. The versatility of the angled head, combined with the three dovetail mounts eliminates the need for having both vertical and horizontal style test indicators. These are the features that make this series of test indicators superior to ordinary types. angled head for better reading position.Large 1 3/8" (35mm) dial diameter Precision gear-driven design with smooth, jeweled movement. Meet or exceed ISO accuracy specification. For extreme accuracy we recommend positioning the lever contact so that it is approximately 15° from being horizontal with the workpiece. Three dovetail mounting positions work with existing test indicator accessories. Inch reading indicators are available with easy-to-read, shaded white, shaded red, or solid black dials - millimeter reading indicators with solid yellow dials. Contact point reverses automatically, always maintaining clockwise hand rotation. Narrow body for in reach ability. Satin chrome finish for durability. Long carbide contacts 13/16" (20mm) are furnished as standard. Contacts are frictionally adjustable and replaceable.

3168 Dial Test Indicator, 0-5-0 x 0.0001", Starrett $392.00
- Starrett dial test indicator with attachments  
- Starrett catalog number 780ACZ  
- Range is 0.005" in either direction  
- Precision gear-driven design with smooth, jeweled movement  
- Dial test indicator comes in a fitted case  
These precision test indicators were designed to be positioned for easy and accurate readability. The versatility of the angled head, combined with the three dovetail mounts eliminates the need for having both vertical and horizontal style test indicators. Includes a dovetail body clamp, tool post holder, swivel post snug with dovetail indicator clamp, and a snug and rod unit. For extreme accuracy we recommend positioning the lever contact so that it is approximately 15° from being horizontal with the workpiece.

2876 Electronic Digital Indicator, 0.5" $46.95
- Measurement range is 0-0.5"  
- Resolution is 0.0005", accuracy is 0.0012"  
- Measures in inches or mm  
- Set to zero at any position  
There are three buttons; OFF for power, ZERO/ON to zero the display, and IN/MM to switch between inches and millimeters. The digital display indicator turns on automatically when the plunger moves. Pressing ZERO/ON zeros the electronic digital indicator at any position so you can make comparative readings between two parts.
Electronic Digital Indicator, 0.5“, Starrett
- Starrett 0.5” digital electronic AGD Group 2 indicator
- Starrett catalog number 3600-5
- Range .500” (12.7mm)
- Resolution .0005” (.01mm)
- Reverse travel (± control indicates direction)
This electronic digital indicator features a large, easy to read LCD display. You can set zero at any position and change the direction that shows positive dimensions. The indicator has a 3/8” shank and the tip thread is #4-48. The case has a mounting lug on the back.

Electronic Digital Indicator, 0.5“, Starrett
- 0.5” digital electronic AGD Group 2 indicator
- Range .500” (12.7mm)
- Resolution .0005” (.01mm)
- Reverse travel (± control indicates direction)
- True inch/mm conversion
This electronic digital indicator features a large, easy to read LCD display. You can set zero at any position and change the direction that shows positive dimensions. The indicator has a 3/8” shank and the tip thread is #4-48. The case has a mounting lug on the back. Front battery cover allows easy access to change battery. Extra large LCD display. Absolute zero reset button. Zero at any point. On/Off button. Flat Back with Lug Back included. Battery included: SR44, 1.55V. Supplied with fitted case.

Electronic Digital Indicator, 1”
- Measurement range is 0-1”
- Resolution is 0.0005”, accuracy is 0.0012”
- Measures in inches or mm
- Set to zero at any position
- Relative and absolute measurement
This indicator with graduations to .001” will handle by far the majority of jobs. Shank diameter is 1/4” (6.3 mm). For full use, first choose the proper contact from the three hardened contact points that are included. Then the contact is brought against the work with enough pressure to give the hand one full turn. Set the hand at zero by rotating the dial with the knurled bezel. This provides one full rotation of the hand both to the right and left of zero, showing a rise or drop in the work and the amount of that variation.

Electronic Digital Indicator, 1”, Quick Action
- 1” digital electronic AGD Group 2 indicator
- Range 0-1” (0-25mm)
- Resolution .0005” (.01mm)
- Excellent repeatability with quick movement of measurements
- True inch/mm conversion
- Absolute zero reset button. Lug Back and on/off button. Comes with a fitted case.

Indicator Back, Dial Indicator, Flat
- Fits 2.25” dial diameter AGD Group 2 indicators
- Four hole pattern

Indicator Mount
- Rigid steel construction
- Dovetail groove for clamping test indicators
- Holds 5/32” & 3/8” shank indicators
- 1/4” post hole
This item works great with the 4648 magnetic base

Point Set With Ring, 22 Piece Set
- 22 Points
- 4-48 Screw Threads
- Fits AGD Indicators
- Premium quality
- Aluminum ring for easy storage and easy selection. Ring includes 22 points with 4-48 screw threads that fit AGD indicators. All points are mounted on a convenient aluminum ring for safe keeping and ready selection.
2451 Combination Square, 4” 4R, Starrett $78.00

- Starrett 12” combination square with square head
- Starrett catalog number 11H-12-4R
- Graduation No. 4R - 8ths, 16ths, 32nds, 64ths
- Machine divided blade
- The square has a reversible lock bolt, scriber, spirit level, and hardened steel, photoengraved blade with regular finish. Cast iron head with black wrinkle finish.
- The blade is 1” wide and 3/32” thick.

1839 Combination Square, 12” 4R, Starrett $84.00

- Starrett 12” combination square with square head
- Starrett catalog number 11H-12-4R
- Graduation No. 4R - 8ths, 16ths, Quick Reading 32nds, 64ths
- Machine divided blade
- The square has a reversible lock bolt, scriber, spirit level, and hardened steel, photoengraved blade with regular finish. Cast iron head with black wrinkle finish.
- The blade is 1” wide and 3/32” thick.

2549 Machinist Square Set $49.95

- Machinist square set includes 2”, 3”, 4” and 6” squares
- Made from fully seasoned and hardened tool steel
- Accurate right angles both inside and outside
- Beams are ground and lapped
- Class H accuracy: 0.0008” + 0.0001” per inch

5874 Machinist Square Set, 2”, 4”, 6” $39.95

- Starrett 4” double square with graduated blade
- 4R Graduation - 8ths, 16ths, 32nds, 64ths
- Scale accuracy: 0.001”
- Squareness: 0.0015”
- Pair of heavy duty hardened, precision ground double squares, 4” and 6”.
- Blades are graduated in 8ths, 16ths, 32nds, and 64ths.
- Blades are satin chrome finished to reduce glare and rust, and are easy to read.
- Made to US standards for accuracy and squareness with scale accuracy of 0.001” and squareness of 0.0015”.
- The 6” square has a bubble level and the squares may be locked at any position along the blade.
- Squares come in a storage case with foam insert.

5869 Double Square Set, 4” and 6” 4R $25.49

- 4” 4R blade with 2.5” base
- 6” 4R blade with 4” base
- 4R Graduation - 8ths, 16ths, 32nds, 64ths
- Scale accuracy: 0.001”
- Squareness: 0.0015”
- Double square made in the US by Products Engineering Corporation (PEC).

5359 Double Square, 4” 4R, Starrett $73.00

- Starrett 4” double square with graduated blade
- 4R Graduation - 8ths, 16ths, 32nds, 64ths
- Popular with machinists, toolmakers, and patternmakers
- The sliding blade is adjustable making it more practical for a wide variety of uses than a common square with fixed blade.
- The faces of the head are ground square.
- Starrett catalog number 13A.

2025 Double Square, 6” 4R, Starrett $89.00

- Double square with 6” blade
- Easy to read satin chrome finish blade is fully hardened and tempered
- 4R graduations, 8ths & 16ths, 32nds & 64ths
- Head has hammertone powder-coat finish
- Double square made in the US by Products Engineering Corporation (PEC).

2741 Double Square, 6” 4R, PEC $47.95

- Double square with 6” blade
- Easy to read satin chrome finish blade is fully hardened and tempered
- 4R graduations, 8ths & 16ths, 32nds & 64ths
- Head has hammertone powder-coat finish
- Double square made in the US by Products Engineering Corporation (PEC).

4742 DYKEM Hi-Spot Blue $8.95

- Non-drying
- Non-hardening
- Transfers from surface to surface
- Saves time in surface scraping work
- 0.55 Oz.
- Hi-Spot is an intensely blue, soft, smooth uniform paste that can be spread to an extremely thin layer easily and evenly. It is typically used to show high spots on bearings and when making close fitting parts. The film remains pliable and transferable for months.
- WARNING: This product can expose you to chemicals such as Michler’s ketone, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov/product.

4741 DYKEM Steel Blue Layout Fluid $9.95

- 4 OZ. container
- Brush in cap
- Provides a thin blue film without cracking or chipping
- Toluene free
- Must be shipped by ground; not available outside the continental US
- Machinists depend on Dykem Steel Blue Layout Fluids to scribe sharp, clear, precise lines. When applied, the layout fluid provides a uniform deep blue color that prevents glare and dries in minutes. Dykem Layout Fluid creates an extremely thin film which adds practically no thickness to the work piece and remains flexible without cracking and chipping.

2742 Machinist Square Set, PEC $67.95

- Includes 2”, 3”, 4” and 6” squares
- Made from high quality tool steel
- True right angles inside and outside
- Beams and blades are precision ground
- Blade is hardened
- Machinist squares made in the US by Products Engineering Corporation (PEC).
- Length of blade is measured from inner edge of beam to end of blade. These squares are square within 0.0006” over the length of the blade. The two sides of the blades and beams are parallel within 0.0005” over their length.

3810 Layout & Marking Kit $19.95

- Scriber with 2-3/8” Point, Starrett
- Sharpie Magnum Permanent Marker, Black
- Sharpie Metallic Fine Point Permanent Marker
- The big, fat Sharpie Magnum King Size in this kit is a great substitute for layout dye. It marks on virtually any surface, provides an opaque covering to scribe, and doesn't dry out in the can.
- Not to mention that it avoids all the hassle and limitations of shipping and using hazardous layout dyes.
- The Starrett scriber has been the industry standard for many years.
- The Sharpie Metallic marker can be used on dark materials where contrast is needed. It is also great for identifying materials in your steel rack.

4740 Layout & Marking Kit $9.95

- Machinist square set includes 2”, 3”, 4” and 6” squares
- Made from fully seasoned and hardened tool steel
- Accurate right angles both inside and outside
- Beams are ground and lapped
- Class H accuracy: 0.0008” + 0.0001” per inch
Precision Machinists Level, Starrett

- Starrett machinist's improved level
- Starrett catalog number 98-12
- Ground and graduated main vials
- Cross test vial and plumb vial
- 0.005" per foot (0.42 mm per meter) accuracy

These Starrett Machinist Levels have ground and graduated main vials, and a cross test vial. The 12' level also has a plumb vial. These vials are adjustable to a positive setting and are housed in a satin chrome brass tube with a friction-fit closing cover to prevent breakage. The base of the precision machinists level features an involute groove running the length of the base, which provides a reliable seat for round work such as pipes or shafting. With the cross test vial, it is possible to simultaneously level in both directions. This prevents inaccuracies in the main vial reading caused by canting the level sideward on round work. The main level vials have graduations that are approximately 80-90 seconds or .005' per foot (0.42 mm per meter). There are five, six, or seven lines on each side of the bubble, depending on the base length. Starrett Machinist Levels are the finest levels available, used for precision work that is typically required in industry. All have these features: All level bases are made from the finest quality seasoned cast iron and are precision-machined on the reference surface. Nonmachined surfaces have an attractive, black wrinkle finish. An involute longitudinal groove between the bearing flats for accurate seating on round work. This groove has an involute design, permitting better centering and greater capacity to handle larger rounds. Groove and bearing flats are machined together for maximum accuracy.

2423 Precision Machinists Level, 12', Starrett $233.00

- Starrett toolmaker's grade stainless steel square
- Starrett catalog number 3020-6
- Blade length 5 29/32'
- Beam length 3 29/32'
- Squareness accuracy to .0002' (0.005mm) for every 6' (150mm)

These high quality toolmaker's squares feature hardended, ground, and lapped stainless steel construction on both the blade and the beam. The beam is machined at the inner corner for clearance.

3173 Square, 6" Toolmakers, Starrett $165.00

- Starrett catalog number 98-12
- Starrett catalog number 3020-6
- Blade length 5 29/32'
- Beam length 3 29/32'
- Squareness accuracy to .0002' (0.005mm) for every 6' (150mm)

Squares have multiple uses around the shop, including using it as layout fluid.

3172 Square, 3" Toolmakers, Starrett $91.00

- Starrett catalog number 98-12
- Starrett catalog number 3020-6
- Blade length 5 29/32'
- Beam length 3 29/32'
- Squareness accuracy to .0002' (0.005mm) for every 6' (150mm)

Squares have multiple uses around the shop, including using it as layout fluid.

3564 Square, 4" Toolmakers, Starrett $110.00

- Starrett catalog number 98-12
- Starrett catalog number 3020-6
- Blade length 5 29/32'
- Beam length 3 29/32'
- Squareness accuracy to .0002' (0.005mm) for every 6' (150mm)

Squares have multiple uses around the shop, including using it as layout fluid.

3069 Surface Gage $26.95

- For scribing lines, use on a surface plate
- Includes 4" and 7" spindles
- Bottom V-groove ground for cylindrical work
- Retractable pins in base for working on flat surfaces
- Fine adjustment

3068 Surface Plate 9"x12" $35.95

- Black granite for long term stability
- Grade B: ±0.0001 accuracy
- Meets federal specification GGG-P-463C

Surface plates are checked with an auto-collimator for overall accuracy. All points on the surface are between two parallel planes 0.0002’ apart.

2031 Transfer Punch Set 3/32" to 1/2" $13.95

- 28 piece transfer punch set
- Sizes from 3/32" to 1/2" by 1/64" plus a 17/32” punch
- Heat treated and tempered tool steel for long life
- Transfer punches are 0.0025” undersize

These transfer punches are 4-7/8’ long and have a black oxide finish. The precision punch set includes an indexed stand. The punches are 3/32” to 1/2” diameter in increments of 1/64’, plus a 17/32” punch.

5970 Transfer Screw Set, 1/4" - 7/16" $30.95

- 4 sizes / 6 screws each plus wrench/holder
- Sizes: 1/4-20, 5/16-18, 3/8-16, 7/16-14
- Transfer exact location of threaded holes
- Works with blind holes

Transfer the exact location of a threaded hole to your work piece. Transfer screws are more accurate than transfer punches and may be used with blind holes. The use of transfer screws is the most precise method of transferring threaded holes to mating parts and are great for tool & die work, and in layouts. This set includes 4 sizes of transfer screws (6 screws each) and the wrench/holders. Sizes: 1/4-20, 5/16-18, 3/8-16, 7/16-14

5969 Transfer Screw Set, #4 - #10 $34.95

5987 Transfer Screw Set, M3 - M6 $30.95

5968 Transfer Screw Set, M6 - M12 $30.95

Transfer Screws, Single Size Sets

- Includes 6 transfer screws in a wrench/holder
- Transfer exact location of threaded holes
- Works with blind holes

3079 Transfer Screw Set, 1/4"-20 Thread $12.95

3080 Transfer Screw Set, 5/16"-18 Thread $12.95

3081 Transfer Screw Set, 3/8"-16 Thread $12.95

3082 Transfer Screw Set, 1/2"-13 Thread $12.95

3083 Transfer Screw Set, M4 Thread $12.95

3084 Transfer Screw Set, M5 Thread $12.95

3085 Transfer Screw Set, M6 Thread $12.95

3086 Transfer Screw Set, M8 Thread $12.95

3087 Transfer Screw Set, M10 Thread $12.95

Transfer Screws, Single Size Sets

- Includes 6 transfer screws in a wrench/holder
- Transfer exact location of threaded holes
- Works with blind holes

3065 Sharpie Fine Point Permanent Marker, Black $0.99

- The original pen style permanent marker
- Permanent on most surfaces
- Quick-drying ink
- Fade and water resistant
- Marks on plastic, metal, cardboard, vinyl, leather and glass

This is the original Sharpie marker. It has many uses around the shop, including using it as layout fluid.

3607 Sharpie King Size Permanent Marker, $2.50

3606 Sharpie Metallic Fine Point Permanent Marker $1.95

- The original pen style permanent marker
- Permanent on most surfaces
- Quick-drying ink
- Fade and water resistant
- Marks on plastic, metal, cardboard, vinyl, leather and glass

This is the original Sharpie marker. It has many uses around the shop, including using it as layout fluid.
3609 Uni-Paint Valve Action Paint Marker, Black $2.95
- Quick drying, Acid Free
- Marks opaque and glossy on light or dark surfaces - just like paint
- Fade-Proof, Water-Proof
- Must be shipped by ground; not available outside the continental US
Marks on virtually any surface; glass, metal, wood, rubber, stone, plastic, paper, vinyl, leather, felt, canvas and more.

3610 Uni-Paint Valve Action Paint Marker, White $2.95

3028 Universal Bevel, PEC $26.95
- Six inch long blade
- Set to any angle
- Stainless steel
- Made in USA
This high-accuracy T-bevel features both straight slots and offset slots in the blade and straight slots in the stock. This combination allows for the widest possible variety of adjustments. Align the T-bevel with the angle you want to duplicate, then tighten the knurled locking nut.

2227 Universal Bevel, Starrett $120.00
- Starrett Universal Bevel
- Starrett catalog number 47
- Wide variety of adjustment and angle settings
- Blade is 6" (150 mm) long
This improved Universal Bevel has both offset and straight slots in the blade, in combination with straight slots in the stock that allow for a wide variety of adjustment and angle settings that are impossible to obtain with many ordinary bevels. Length of the blade is 6" (150 mm), and the stock, 3-1/2" (90 mm). The stock lies flat on the work or paper since the head of the clamping bolt is recessed. This tool can be set to duplicate an angle from a master, or it may be easily converted into a Bevel Protractor by using this tool with the No. 193 Protractor (PN 1833).

Precision: Measuring

3103 Angle Gage Set $29.95
- Set of 18 metal angle gages
- 5° to 90° by 5° increments
- Satin chrome finish
- Eight gaging surfaces on each gage
- Check primary angle, 1/2 primary and complementary angles
The angle gage set is furnished in a vinyl case for storage.

5490 Angle Gage, Digital $36.95
- +/-180 Degree Range
- Auto Off conserves battery life
- 0.1 Degree Resolution
- Compact and Lightweight design with ±0.1 Degree Repeatability
- Magnetic Disk Base
This small device is great for setup or checking angles. It is accurate and reliable and the magnetic base makes for easy angle checking on a work piece, angle vise or sine vise, and whatever else you can dream up.

3459 BoltSize-It Bolt and Nut Checker $4.95
- Sizes bolts, nuts, and screws
- Sorts coarse threads, fine threads, and metric threads
- Measures inches and millimeters
- Length: 8-5/8", Width: 4-1/4"
Size bolt diameter by pushing bolt through sizing holes
Gauges hex nuts and washers (USS, SAE)
Gauges metric hex nuts and washers by holding under metric holes
Measure US and metric thread pitch
Special notch gauges flat headed metal and wood screws
Ruler marked with inches and millimeters
Sturdy and lightweight plastic resists water, alcohol, oil, and grease
Fits in shirt pocket (8-5/8" x 3-1/4" or 217 mm x 82 mm)

3708 Bore Gage Set, 2-6" Dial $89.95
- Measure ID of holes from 2" to 6" in diameter
- Close tolerance measurement of ID, taper and roundness
- Furnished with AGD Group II dial indicator
- Accuracy: 0.0005"
- Includes fitted case and interchangeable anvils
This dial bore gage is easy to calibrate with a ring gage or micrometer.

3617 Caliper, 6" Outside Spring $9.95
- Easy Adjustment Over Entire Range
- Centrally Located Adjustment Screw
- Balanced Legs, Uniform Tension
- Polished Natural Steel Finish

3688 Caliper, 6" Hermaphrodite $16.95
3618 Caliper, 6" Inside Spring $9.95
3687 Divider, 6" Spring $9.95

2743 Center Gage, 60 Degree, PEC $10.95
- Made of high quality steel
- Satin chrome finish
- Use for grinding and setting thread cutting tools
- Gaging surfaces are precision ground
Center gage made in the US by Products Engineering Corporation (PEC). Used for grinding and setting screw cutting tools. Scales with 14ths and 20ths graduations provided on one side, 24ths and 32nds on reverse side. Scales are used to determine number of threads per inch. Gage also features a table of double depths of thread for selecting size of tap drills. Made of hardened spring tempered steel, with a protective satin chrome finish. All gaging surfaces are precision ground.

4254 Center Gage, Acme, PEC $25.50

1829 Center Gage, 60 Degree, Starrett $25.50
- Starrett 60 degree center gage
- Starrett catalog number C391
- Extremely handy for use in grinding and setting thread cutting tools
- Spring tempered steel
These gages meet the following standards: American National or U.S. 60°, Whitworth or English 55°, and Metric 60°. They also have a very useful scale for finding the number of threads per inch through graduations in 14ths, 20ths, 24ths and 32nds of an inch. The gage also has a table of double depths of threads for determining size of tap drills.

2882 Comparator Stand & Indicator $46.95
- Fine vertical adjustment with lock
- 6" x 6" granite base flat within 0.0005"
- 1" Diameter column, 8" tall
- Includes a 0-1" x 0.001" dial indicator
This granite dial gage comparator stand will accept any AGD 1, 2, 3, or 4 dial indicator.
5185 Depth Base for 6" Caliper $15.95
- Slot Width: .64"
- 1.5 x 4 x 1.5 Inches
- Z-Limit Brand Guarantees Professional Quality
- 3" Base

This depth base attaches to the blade of a 6" caliper for depth measurement. It has a locking nut to secure along the blade. This precise measurement instrument is used to determine the depth of any shape with a step, slot, or groove.

3546 Depth Gage, 6" Combination, Starrett $78.00
- Starrett 6" combination gage, 32nds/64ths
- Starrett catalog number 236
- Combination depth gage and protractor

This depth gage has an added feature permitting its use as a protractor for measuring angles. It is a simple, handy tool that is a welcome addition to any machinist's tool box. The head is graduated both left and right to 30, 45, and 60 degrees. The rule can be set to any of these angles by swinging the rule until the line on the turret coincides with the desired angle. Head is made of hardened steel, ground, and nicely polished – 2 5/8" (66mm) long and 1 8/32" (3mm) wide. One side of the base is cut out to permit easier and more accurate readings. The center of the head is recessed so that the tool will lay flat to permit more accurate measurements. A tempered rule that has been accurately machined divided, is smoothly fitted to the head and can be locked in position by a knurled nut.

5599 Depth Gage, 6" Steel Rule, PEC $29.95
- 6" Rule made of Hardened and Tempered Steel
- Protractor Graduations Include 30°, 45°, and 60° Angles
- Base Surface Measures 2-12" x 1/8" Thick
- Rule Measures 7/32" Wide and 0.041" Thick

These very handy depth gages can be used to quickly obtain measurements in 32nd of an inch by simply adjusting the rule to the required depth. The gage consists of a nicely finished, hardened steel head and an accurate, machine divided, tempered steel rule.

3547 Depth Gage, 6" Steel Rule, Starrett $58.00
- Starrett steel rule depth gage, 0-6" range, 32nds/64ths
- Starrett catalog number 237
- Head length is 2-5/8" x 1/8"
- Hardened steel head, tempered steel rule

These very handy depth gages can be used to quickly obtain measurements in 64ths of an inch by simply adjusting the rule to the required depth. The gage consists of a nicely finished, hardened steel head and an accurate, machine divided, tempered steel rule. The rule is Starrett No. 610N. The gage can be smoothly adjusted to the required measurement and then locked into position by a knurled nut. The base is cut out on one side, adjacent to the rule, permitting easier readings and more accurate measurements.

3460 Drill Gage $4.95
- 1/16" to 1/2" fractional size drill gage
- Quickly check drill sizes
- 32 holes marked with drill sizes
- Measurement marked in inches and decimal equivalents
- Sturdy and lightweight plastic resists water, alcohol, oil, and grease.
- Fits in shirt pocket (3-3/8" x 7-9/16" or 86 mm x 193 mm)

3552 Drill Gage, A-Z Drill Sizes, Starrett $82.00
- Starrett Standard Letter Size Drill Gage, A-Z range
- Starrett catalog number 198
- Hardened steel
- Drill sizes .234" to .413"

Letter size drills can be quickly and conveniently checked with this gage. Twenty-six holes are provided, giving corresponding drill sizes from "A" through "Z" with decimal equivalents from .234" diameter through .413" diameter.

The gage is approximately 5/64" thick by 2 5/16" wide and 6 1/4" long. It is hardened and has a satin finish. Thoroughly tested after hardening.

3551 Drill Gage, Jobbers, 1/16-1/2", Starrett $71.00
- Starrett Jobbers' Drill Gage, 1/16-1/2" Range
- Starrett catalog number 187
- Hardened Steel
- Marked with inches and decimal equivalents

Using this gage, the size of any twist drill from 1/16-1/2" by 64ths can be quickly determined. The gage has a total of 29 holes, each marked with the drill size in inches and the decimal equivalent. Gage is rigidly tested after hardening and has a black matte finish. Gage information is steel stamped on one side and white marked on the reverse side for quick, clear reading. Approximately 5/64" thick by 2 5/16" by 6 1/4" long.

3557 Drill Point Gage, Starrett $69.00
- Starrett Drill Point Gage, 59° bevel, 32nds graduations
- Starrett catalog number 22C
- The head is beveled at 59° (the correct drill point angle)
- Graduated in 32nds along the 59° face for measuring the drill lips

This gage was designed specifically for use in drill grinding. It provides a quick, accurate way for determining the correct drill point angle of 59° and the correct length of drill lips necessary for clean-cut drilling at maximum feeds and speeds. The sliding head may be adjusted to any position along the rule and locked by a thumb nut. The head is beveled at 59° (the correct drill point angle), and is also graduated in 32nds along the 59° face for measuring the drill lips which should be of equal lengths. The hook has rule accurate, machine-divided graduations in 8ths, 16ths, quick-reading 32nds and 64ths. Hook is adjustable and can be shortened or extended on either side of the rule, and may also be removed if desired. Tool can also be used as a plain rule, hook rule, depth gage, and slide caliper. The No. 22D Head-only will fit all steel rules 3/4" wide by 3/64" thick.

3092 Height Gage, 12", Dial $109.95
- Stainless steel with satin chrome finish
- Carbide tipped scriber for longer life
- Fine feed adjustment
- Positive lock screw
- 0.001" Graduations

5794 Scriber, Height Gage $16.95
- Large LCD Display, Inch, Metric and Fractions
- iGaging'sMiniMag 6" Height Gauge makes vertical and horizontal measuring easy. The large LCD display gives measurements in inches, millimeters and fractions and unit has ABS and hold functions. Mounted on a solid aluminum base with magnets, the gage has a stainless steel beam for smooth travel with no play. IP54 rated for splash water, oil & dust resistance, the resolution is 0.0005" (0.01mm) with an accuracy of +/-0.001" (+/- 0.03mm). Controls are Zero reset, On/Off, inch/mm/fraction conversion, Hold, Absolute.

3181 Height Gage, 6", Digital, Starrett $288.00
- Starrett 6-0-6" (0-150 mm) range digital height gage
- Starrett catalog number 3751AZ-6/150
- Easy-to-read LCD with .32" high characters
- Linear Accuracy: 0.001" (0.02mm)
- Resolution: .0005" (0.01mm)

3580 Height Gage, 6", Digital, iGaging $50.99
- Resolution: 0.0005"" Accuracy +/-0.001"
- Repeatability: 0.0005"
- Large LCD Display, Inch, Metric and Fractions
- iGaging's MiniMag 6" Height Gauge makes vertical and horizontal measuring easy. The large LCD display gives measurements in inches, millimeters and fractions and unit has ABS and hold functions. Mounted on a solid aluminum base with magnets, the gage has a stainless steel beam for smooth travel with no play. IP54 rated for splash water, oil & dust resistance, the resolution is 0.0005" (0.01mm) with an accuracy of +/-0.001" (+/- 0.03mm). Controls are Zero reset, On/Off, inch/mm/fraction conversion, Hold, Absolute.
4642 Height Gage, Digital, 8", Tormach
- 8" Digital Height Gauge
- 0.001" graduations
- Easy to read LCD screen
This is a stainless steel dial height gauge with 0.001" graduations.

4948 Indicator Holder, 1/4" Round Shank
- 1/4" Straight
- 3" overall length
- For use with test indicators and probes with dovetails
- Locks in 90° increments
Great for aligning a vise or setting up a work piece.

4648 Magnetic Indicator Holder - CLOSEOUT
- Magna-type magnetic indicator holder
- Designed to be used with small test indicators and dial indicators
- Fine precision adjustment
- 1/4" stainless steel 6" long holding rod
- Permanent magnet has a 50 lb holding force
This magnetic base works great with test indicators. It has a fine adjustment which works well for small adjustments without manually moving the indicator or work piece. The base is 3-1/2" x 1-3/16" x 1".

4754 Magnetic Indicator Holder with Indicator Mount
- Magnetic base indicator holder with one-knob lock
- Permanent magnet has an 80 kg (176 lb) holding force.
- On/off switch makes it easy to position
- V-groove base allows you to mount it on cylindrical surfaces. This magnetic indicator holder locks all its joints when the knob is tightened. The on/off switch makes it easy to position. The V-groove base allows you to mount it on cylindrical surfaces. The permanent magnet has an 80 kg (176 lb) holding force. The lower arm is 110 mm long, the upper arm is 100 mm long.

2880 Magnetic Base Indicator Holder
- Magnetic base indicator holder with one-knob lock
- Permanent magnet has an 80 kg (176 lb) holding force
- On/off switch makes it easy to position
- V-groove base allows you to mount it on cylindrical surfaces. This magnetic indicator holder locks all its joints when the knob is tightened. The on/off switch makes it easy to position. The V-groove base allows you to mount it on cylindrical surfaces. The permanent magnet has an 80 kg (176 lb) holding force.

1237 Magnetic Base Indicator Holder
- Magnetic base indicator holder with fine adjustment
- Permanent magnet has an 60 kg (130 lb) holding force
- On/off switch makes it easy to position
- V-groove base allows you to mount it on cylindrical surfaces
- Works with most AGD dial and test indicators
This magnetic base indicator holder has a fine adjustment feature. The on/off switch makes it easy to position. The V-groove base allows you to mount it on cylindrical surfaces. The permanent magnet has an 60 kg (130 lb) holding force.

5374 Magnetic Base Indicator Holder, Fine Adjustment
- Unique top fine adjustment mechanism
- 3-D rigid aluminum arm movement
- Dovetail groove for test indicator
- Maximum reach is 10.7"
- On/Off switch
Magnetic base indicator holder with fine adjustment mechanism on the top of the base. Magnet has 176 lbs of pull. Base is 60 x 50 x 55mm.

5373 Magnetic Base Indicator Holder, Fine Adjustment, Mini
- Magnetic base indicator holder with fine adjustment mechanism
- 3-D rigid aluminum arm movement
- Dovetail groove for test indicator
- Maximum reach is 10.7"
- On/Off switch
Magnetic base indicator holder with fine adjustment mechanism on the top of the base. Magnet has 176 lbs of pull. Base is 60 x 50 x 55mm.

3714 Magnetic Base Indicator Holder, Professional Grade
- Z-Limit brand guarantees professional quality
- Magnetic base indicator holder with fine adjustment
- Permanent magnet has an 65 kg (145 lb) holding force
- On/off switch makes it easy to position
- V-groove base allows you to mount it on cylindrical surfaces. This magnetic base indicator holder has a fine adjustment feature. The on/off switch makes it easy to position. The V-groove base allows you to mount it on cylindrical surfaces. The permanent magnet has an 66 kg (145 lb) holding force.
3663 Micrometer Set, 0-6"  
- Solid metal C-shape frame for all sizes  
- Graduation: 0.0001"  
- Hardened and precision ground anvil spindle thread with microlap finish on ends  
This 0-6" micrometer set features carbide faces and clear 0.0001" graduations on a satin-chrome finish. The frames are forged steel. 1" through 5" standards are included, as well as adjusting wrenches. The micrometers have a ratchet stop for exact repetitive readings and a lock lever to lock the barrel. The micrometers come in a fitted case.

2520 Micrometer, 0-1" Digital  
- Measurement range is 0-1"  
- Resolution is 0.00005"  
- Protected from dust and water to IP54 per IEC529 standard  
- Large LCD display  
- Rugged plastic case  
This digital electronic micrometer with carbide measuring faces has a resolution of 0.00005". There are three buttons; ON/OFF, SET to zero the display, and ABS/INC to switch between absolute and incremental measurement. The micrometer turns itself off after about 5 minutes of inactivity. Pressing ABS/INC zeros the micrometer at any position so you can make comparative readings between two parts. The absolute measurement is not lost, and is displayed by pressing ABS/INC again. The IP54 code says that dust shall not penetrate in a quantity to interfere with satisfactory operation of the device or to impair safety, and water splashed against the device from any direction shall have no harmful effects.

5866 Micrometer, 0-1" Digital IP65  
- Measurement range: 0-1"  
- Resolution: 0.00005"/0.001mm  
- Accuracy: 0.00015"/0.003mm  
- IP65 Water, Oil & Dust Resistance  
- Large LCD display  
Easy to read digital electronic micrometer with a large LCD digital display + Vernier scale reading in the spindle. The digital display has two measuring modes Metric/Standard as well with absolute and incremental modes for each. The spindle has carbide measuring faces and the resolution of 0.00005"/0.001mm. Measurement range is 0-1" and the unit is rated as IP65 (water, oil and dust resistance). There are three buttons; ON/OFF Zero, ABS in/mm to switch between imperial and metric with absolute and incremental measurement options for each. The micrometer has an auto shut-off. Comes with an adjustment wrench and a 3V CR 2032 lithium battery and a ball adapter.

1845 Micrometer, 0-1" Digital, Starrett  
- ON/OFF button with auto off after 30 minutes of nonuse.  
- Ability to zero tool at any position.  
- Inch or millimeter graduations.  
- Balanced frame design.  
- One-piece spindle, micro-lapped carbide measuring faces.  

3180 Micrometer, 0-1", Starrett  
- Starrett 0-1" micrometer  
- Starrett catalog number T230XRL  
- Accurate to 0.0001"  
- Thousandths are numbered on inch tools for quick and easy reading  
- Adjustments are easy and quick  
The Starrett 0-1" micrometer is the jewel of precision tools used by skilled workmen worldwide.

The balanced frame and thimble design insures easy handling and better readability. A ring-type knurled lock nut provides quick and sure locking. The combination ratchet and speeder provides uniform pressure and quicker adjustment. A gracefully designed tapered frame allows use in narrow slots and tight places.

The Starrett T230XRL micrometer has a rigid one-piece frame of drop forged steel and an extremely hard and stable one-piece spindle (the heart of the accuracy). It features micro-lapped measuring faces, quick and easy adjustment, plus Starrett workmanship.

1962 Pee Dee Thread Measuring Wires, Fisher  
- Made in USA by Fisher Machine Shop  
This set of thread measuring wires includes 48 wires of 16 different diameters for the three wire thread measuring procedure. You can measure threads from 3 to 48 threads per inch, and metric threads from 0.5 mm to 6 mm pitch. You can also measure Acme threads from 3 to 16 threads per inch. The thread measuring wires come with thread charts and are furnished with a quality vinyl case. This is a quality American-made product from Fisher Machine Shop. These are the original Pee Dee thread measuring wires.

3720 Pin Gage Set, 0.061" to 0.250" Minus  
- 190 2" long pin gages  
- Each pin is up to 0.0002" under the marked size  
- Hardened to 60-62 Rc  
- Finished to 10 microrines  
- Furnished in a sturdy plastic case with sizes marked  
These pin gages provide one of the best ways of measuring hole diameters. They can also be used to measure the distance between holes and for go/no go gaging. This set includes 190 pin gages, one for each 0.001" from 0.061" to 0.250". Each of the pin gages are individually marked with their respective sizes.

3879 Pin Gage Set, 0.011" to 0.060" Minus  
- 190 2" long pin gages  
- Each pin is up to 0.0002" under the marked size  
- Hardened to 60-62 Rc  
- Finished to 10 microrines  
- Furnished in a sturdy plastic case with sizes marked  
These pin gages provide one of the best ways of measuring hole diameters. They can also be used to measure the distance between holes and for go/no go gaging. This set includes 190 pin gages, one for each 0.001" from 0.011" to 0.060". Each of the pin gages are individually marked with their respective sizes.

3556 Protractor, Rectangular Head, Starrett  
- Starrett steel protractor (0-180°), 6" blade, rectangular head  
- Starrett catalog number C183  
- Double graduations from 0-180° in two directions  
- The blade can be locked firmly at any angle by the lock nut  
- Satin chrome finish for ease of reading and resistance to rust  
This is a highly useful and accurate tool for setting bevels, transferring angles, small squaring tasks, checking cutter clearances within certain limits, and many other applications. Double graduations from 0-180° in opposite directions permit the direct reading of angles and supplementary angles. The back of the tool is flat for ease of use.

2749 Protractor, Semi-Circle Head, PEC  
- Measures angles from 0 to 180°  
- Semi-circular head is 3.3" x 2"  
- 6" arm can be locked in any position with knurled lock nut  
- Made of tempered steel with satin chrome finish  
Protractor made in the US by Products Engineering Corporation (PEC). Protectors are used for drawing radial lines, transferring angles, setting bevels, and setting tapers.

2748 Protractor, Rectangular Head, PEC  
- Made of tempered steel with satin chrome finish  
- Measures angles from 0 to 180°  
- Semi-circular head is 3.3" x 2"  
- 6" arm can be locked in any position with knurled lock nut  
- Made of tempered steel with satin chrome finish  
Protractor made in the US by Products Engineering Corporation (PEC). Protectors are used for drawing radial lines, transferring angles, setting bevels, and setting tapers.

2751 Protractor, Semi-Circle Head, Stainless, PEC  
- Made of tempered steel with satin chrome finish  
- Measures angles from 0 to 180°  
- Semi-circular head is 3.3" x 2"  
- 6" arm can be locked in any position with knurled lock nut  
- Made of tempered steel with satin chrome finish  
Protractor made in the US by Products Engineering Corporation (PEC). Protectors are used for drawing radial lines, transferring angles, setting bevels, and setting tapers.
2878  Radius Gage Set  $21.95
- Set of 25 radius gages and holder
- 1/64" to 17/64" radius by 6ths
- 9/32" to 1/2" by 32nds
- Satin chrome finish
- Five gaging surfaces on each gage for both concave and convex radii
The radius gage set is furnished in a vinyl case for storage.

1842 Radius Gage Set, Starrett  $193.00
- Starrett 25 piece radius gage set
- Starrett catalog number 5167CHZ
- Radii Range: 1/64-17/64" 9/32-1/2"
- Increments: 64ths, 32nds
- Rust and stain resistant satin finish stainless steel
- Blades are protected in sturdy steel case
Each radius gage set is furnished in an attractive case which provides complete protection and easy, instant selection of the right gage size for the job.

3029 Screw Checker, Inch, PEC  $20.95
- #1 to 5/16" thread sizes
- Quickly identify unified and American threads
- NC, NF, and NS threads
- Made in USA
Screw checkers provide a quick way to measure standard threads. They provide all the information you need for screws; diameter, length, threads per inch, hole size and even tap drill sizes.

3031 Screw Checker, Large Metric, PEC  $22.95
3030 Screw Checker, Small Metric, PEC  $20.95

3461 Screw Checker, Plastic  $4.95
- #0 to 3/4" coarse & fine threads
- 1.6 mm to 16mm metric threads
- Tap drill sizes on back
- Sturdy and lightweight plastic resists water, alcohol, oil, and grease. Fits in shirt pocket (3-3/8" x 6-5/8" or 86 mm x 168 mm)

5192 Screw Pitch Gage, Inch 51 Leaves  $10.95
- Screw pitch gage with 51 leaves
- Measures 60° threads from 4 - 84 TPI
- Each blade clearly marked with thread size
- Blades are protected in sturdy steel case
- Locking device for each set of leaves
Correct pitch is determined by matching blade teeth with threads. Each blade clearly marked with proper thread size. Blades are protected in sturdy steel case. Includes the following TPI: Leave Sizes: 4, 4.5, 5, 5.5, 6, 7, 8, 9, 10, 11, 11.5, 12, 13, 14, 15, 16, 18, 20, 22, 24, 25, 27, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56, 58, 60, 62, 64, 66, 68, 70, 72, 74, 76, 78, 80, 82, 84 threads per inch (TPI)

5190 Screw Pitch Gage, Acme Inch 16 Leaves  $28.95
5191 Screw Pitch Gage, Metric 28 Leaves  $7.95

2744 Screw Pitch Gage, Inch 51 Leaves, PEC  $45.95
- Screw pitch gage with 51 leaves
- Measures 60° threads from 4 - 84 TPI
- Each blade clearly marked with thread size
- Blades are protected in sturdy steel case
- Locking device for each set of leaves
Screw pitch gage made in the US by Products Engineering Corporation (PEC). The correct pitch is determined by engaging the blade teeth with the threads you are measuring. This screw pitch gage measures the following screw pitches: Leave Sizes: 4, 4-1/2, 5, 5-1/2, 6, 7, 8, 9, 10, 11, 11-1/2, 12, 13, 14, 15, 16, 18 threads per inch (TPI) Leave Sizes: 20, 22, 24, 26, 27, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56, 58, 60, 62, 64, 66, 68, 70, 72, 74, 76, 78, 80, 82, 84 threads per inch (TPI)

3176 Screw Pitch Gage, Inch 51 Leaves, Starrett  $84.00
- Screw pitch gage with 51 leaves
- Each blade clearly marked with thread size
- Blades are protected in sturdy steel case
- Locking device for each set of leaves
Starrett screw pitch gages are among the most useful tools in any mechanic's toolbox. They quickly determine the pitch of various threads. These gages consist of a substantial steel case with a number of folding leaves at both ends, each leaf having teeth corresponding to a definite pitch, marked on each leaf. The screw pitch gage features a locking device at both ends of the case, so leaves can be securely locked in position for use. Leaves have a special narrow design, permitting checking internal threads in nuts, etc., as well as external threads. Measures 60° threads from 4 threads per inch to 84 threads per inch. Leave Sizes: 4, 4.5, 5, 5.5, 6, 7, 8, 9, 10, 11, 11.5, 12, 13, 14, 15, 16, 18 threads per inch (TPI) Leave Sizes: 20, 22, 24, 26, 27, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56, 58, 60, 62, 64, 66, 68, 70, 72, 74, 76, 78, 80, 82, 84 threads per inch (TPI) Starrett catalog number 472

1834 Screw Pitch Gage, Inch 30 Leaves, Starrett  $42.00
2617 Screw Pitch Gage, Metric 28 Leaves, Starrett  $48.50

3093 Small Hole Gage Set, 4-Piece  $12.95
- 4 small hole gages with 0.125" to 0.500" range
- Full spherical ball for very accurate measurements
- Hardened, satin-chrome plated measuring faces
- Furnished in plastic pouch

4492 Small Hole Gage Set, 4-Piece, PEC  $61.95
- 4 small hole gages with 0.125" to 0.500" range
- Extra long for gaging deep holes and slots
- Hardened, satin-chrome finish
- Furnished in fitted vinyl case
- Size adjustment by knurled knob
Precision: Measuring

3545 Small Hole Gage Set, 4-Piece, Starrett $173.00
- Starrett 4-piece small hole gage set
- Starrett catalog number 582EZ
- Range of 0.125-0.500" (3.2-12.7 mm)
- Hardened-ball measuring surface with two-point contact
- Smooth, sensitive adjustment for better feel, giving more accurate measurements

These small hole gages are well balanced tools that are ideal for accurately measuring small holes, slots, grooves, and recesses in all kinds of work. The radius on each gage is less than the minimum diameter to be measured, which provides the two-point contact necessary for maximum accuracy. They have smooth, sensitive adjustment for better feel, giving more accurate measurements. The adjustment of the gage beyond its range is restricted by a safety stop that prevents breakage. Accurate measurements are obtained by slightly "rocking" these gages in the hole to be measured. This will guarantee contact at the true diameter. The final size is then obtained by measuring over the ball contacts with a micrometer. Furnished in a vinyl pouch.

1234 Steel Rule, 6" 4R Rigid $5.95
- 4R graduations, 8ths & 16ths, 32nds & 64ths
- Hardened stainless steel
- Rule is 3/4" wide and 0.032" thick

This precision, 6" long steel rule is flexible to fit into tight spots. The etched black graduations are easy to read against the non-glare finish.

Steel Rules, PEC
- Made from the finest quality steel available
- Fully hardened and tempered with stain chrome finish
- Precisely etched, then black filled for readability
- Flexible rules are 1/2" wide and 0.015" thick
- Rigid rules are 3/4" wide and 0.040" thick

2730 Steel Rule, 12" 4R Flexible, PEC $21.95
2735 Steel Rule, 12" 4R Rigid, PEC $24.95
2732 Steel Rule, 12" 5R Flexible, PEC $21.95
2733 Steel Rule, 150 mm 31 (in/mm) Flexible, PEC $11.49
2736 Steel Rule, 150 mm 31 (in/mm) Rigid, PEC $12.00
5092 Steel Rule, 300 mm 30 (mm/.05mm) Flexible, PEC $21.95
4796 Steel Rule, 300 mm 30 (mm/.05mm) Rigid, PEC $23.95
4227 Steel Rule, 6" 4R Black Flexible, PEC $8.95
2729 Steel Rule, 6" 4R Flexible, PEC $11.49
2734 Steel Rule, 6" 4R Rigid, PEC $12.00
2731 Steel Rule, 6" 5R Flexible, PEC $11.50
4610 Steel Rule, Hook 12" (32nds/.5mm), PEC $29.95

Steel Rules, Starrett
- Starrett precision steel rules are machine-divided, not photoengraved. They are inspected to Starrett Master Standards, which are traceable to the National Institute of Standards and Technology.
- Graduation No. 4R are 8ths & 16ths, quick-reading 32nds and 64ths.
- Graduation No. 16R are quick-reading 32nds and 64ths, aircraft quick-reading 50ths and 100ths.
- Graduation No. 5R are quick-reading 10ths, aircraft quick-reading 100ths, 32nds and 64ths.
- Graduations No. 31 are 32nds and 64ths on one side; mm and 1/2 mm on reverse.
- Flexible rules are 1/2" wide and 1/64" thick.
- Rigid rules are 3/4" wide and 3/64" thick.

3175 Steel Rule, 12" 5R Flexible, Starrett $51.00
1828 Steel Rule, 150 mm 31 (in/mm) Flexible, Starrett $27.00
1826 Steel Rule, 6" 4R Flexible, Starrett $24.00
2233 Steel Rule, 6" 4R Rigid, Starrett $25.50
1827 Steel Rule, 6" 5R Flexible, Starrett $24.50

3550 Tap and Drill Gage, Starrett "Time Saver" $77.00
- Starrett hardened tap and drill gage
- Starrett catalog number 185
- Drill sizes number 1-60 (0.228-0.040"

This highly useful gage shows at a glance the correct size tap drill for any common size machine screw tap in "NF" National Fine or "NC" National Coarse Thread Series, that will leave the right amount of stock for approximately 65% full thread. The gage also shows the correct body size drill to use. In addition, there are 60 holes marked with the number size and decimal equivalent of the drill that fits each hole. Example: a size 2-56 tap (No. 2 tap with 56 pitch) calls for a No. 50 tap drill and a No. 44 body drill. The gage has a black matte finish with information stamped on one side and white marked on the reverse side for quick, clear reading. The gage is thoroughly tested for accuracy after hardening. Approximate size, 5/64" thick by 2 5/16" wide by 6 1/4" long.

3185 Telescoping Gage Set, 4-Piece 5/16 - 2-1/8", PEC $75.95
- For measuring holes, slots and recesses
- Measures holes from 5/16" to 2 1/8" diameter
- Double action is self-centering
- Satin chrome finish
- Contact ends are hardened and ground

Use telescoping gages to measure ID, deep holes, recesses, slots, grooves, and other hard to reach places. Measure the actual size or lock the self-centering plungers to a known size for a go-no go gage.

3184 Telescoping Gage Set, 6-Piece 5/16 - 6", PEC $105.95

1840 Telescoping Gage Set, 4-Piece 5/16 - 2-1/8", Starrett $160.00
- Starrett telescoping gage set
- Starrett catalog number 579GZ
- Range: Four gages, 5/16" to 2-1/8"
- Handles are approximately 2-3/8" long
- Contains two telescoping contacts

Starrett telescoping gages are used for determining the true size of holes, slots, and recesses up to 2-1/8" (54 mm). The ends of both contacts are hardened and ground to a radius to allow proper clearance on the smallest hole the gage will enter. These tools must be slightly "rocked" in the hole being measured to ensure that the tool is on the proper diameter before it is locked and withdrawn. The final hole size is obtained by measuring over the gage contacts with a micrometer.

The No. 579 Series telescoping gages have handles that are rigidly attached to the contact plungers and are automatically self-centering. Also, the No. 579 gages have two telescoping contacts.

The handles are approximately 2-3/8" (60 mm) long.

Constant spring tension gives uniform contact pressure and both plungers are easily locked at any desired setting.

2959 Telescoping Gage Set, 6-Piece 5/16 - 6", Starrett $272.00

2879 Telescoping Gage Set, 6-Piece 5/16 - 6" $16.95
- For measuring holes, slots and recesses
- Measures holes from 5/16" to 6" diameter
- Double action is self-centering
- Satin chrome finish
- Contact ends are hardened and ground to the radius of the smallest diameter

Use telecopng gages to measure ID, deep holes, recesses, slots, grooves, and other hard to reach places. Measure the actual size or lock the self-centering plungers to a known size for a go-no go gage.
**Precision: Measuring**

5967 Telescoping Gage Set, 6-Piece 5/16 - 6", Professional Grade
- $39.95
- For measuring holes, slots and recesses
- Measures holes from 5/16" to 6" diameter
- Double action is self-centering
- Satin chrome finish
- Contact ends are hardened and ground to the radius of the smallest diameter

Use telescoping gages to measure ID, deep holes, recesses, slots, grooves, and other hard to reach places.
- Measure the actual size or lock the self-centering plungers to a known size for a gage.

3771 Test Indicator Holder, Professional Grade
- $19.95
- Z-Limit brand guarantees professional quality
- Clamping diameter range of 1-3/8" to 2"
- Length from the center of the clamp to the indicator can be up to 6-1/2"
- Clamps to the outside of an end mill holder and does not disturb the working tool

This test indicator holder has a clamping diameter of 1-3/8".
- The length from the center of the clamp to the indicator can be up to 6-1/2".
- The test indicator clamps to the outside of an end mill holder and does not disturb the working tool.

4832 Test Indicator Holder, Universal
- $29.95
- Designed to hold dovetailed test indicators or 1/4" straight shanks
- 3 different clamping dimensions: 1/4", 3/8" & 1/2" for various collet sizes
- Reaches anywhere within a 8" diameter and fine-adjusts approximately 3/8".

Setting up a workpiece before machining, aligning the center of a round workpiece in relation to the cutting head, or aligning vise jaws to the spindle takes virtually no time.
- This test indicator holder.

1843 Thickness Gage Set, Starrett
- $77.00
- 26 Tapered Leaves, 1/2 - 1/4 x 3-1/32"
- Range: .0025 - .025" Leaf Thickness (Inches): .0015 to .025
- Tempered-steel.
- Locking device. Leaves easily removed or replaced.

Starrett thickness gage set (feeler gage) Starrett catalog number 64T26 Tapered Leaves, 1/2 - 1/4 x 3-1/32" Range .0025 - .025" Leaf Thickness (Inches): .0015, .002, .0025, .003, .004, .005, .006, .007, .008, .009, .010, .012, .013, .014, .015, .016, .017, .018, .019, .020, .021, .022, .023, .024, .025

The gages of this Starrett feeler gage set are used in automotive, aviation, diesel, and farm equipment manufacture and service, and also in jig, fixture, gage, and experimental work.
- Especially useful in adjusting tappets, spark plugs, distributor points, checking bearing clearances and gear play, fitting pistons, rings and pins, and gaging narrow slots.
- Leaves made of finest tempered-steel, carefully finished to correct thickness, individually tested and marked with thickness.
- Locking device on most gages - permits securely locking one or more leaves in position.
- Leaves are easily removed or replaced.
- Gage has a rugged, substantial steel case protects leaves.

4521 Universal Arm for Indicators
- $26.95
- Rigid universal steel arm with central locking mechanism
- 8 mm indicator stem hole and dovetail grooves holds most dial indicators and test indicators
- 11" arm length
- Fine adjustment knob

4653 Universal Arm for Indicators, Mini
- $21.95

**Precision: Sets**

1782 Dial Indicator, Magnetic Base & Point Set
- $29.95
- 0-1" dial indicator with 0.001" resolution
- Magnetic base indicator holder with fine adjustment
- 22 piece indicator point set
- All in a plastic case

This 1" stroke dial indicator features large, easy to read numbers and crisp graduations.
- Each revolution is 0.100", indicated by the revolution counter.
- The resolution is 0.001".

The magnetic base indicator holder has a fine adjustment feature.
- The on/off switch makes it easy to position.

2925 Dial Indicator, Test Indicator, Magnetic Base & Point Set
- $59.95
- 0-1" dial indicator with 0.001" resolution
- 0-15-0 dial test indicator with 0.0005" resolution
- Magnetic base indicator holder with fine adjustment
- 22 piece indicator point set
- All in a plastic case

The 1" stroke dial indicator features large, easy to read numbers and crisp graduations.
- Each revolution is 0.100", indicated by the revolution counter.
- The resolution is 0.001".

The magnetic base indicator holder has a fine adjustment feature.
- The on/off switch makes it easy to position.

2518 Inspection Kit, 6-Piece
- $99.95
- 1" Dial indicator, magnetic base and point set
- 0-30-0 Dial test indicator
- 0-1" micrometer
- 6" Dial caliper
- Plastic case

This set includes all the basic precision measuring tools.
- The micrometer has a range of 0-1" and a resolution of 0.0001".
- An adjustment wrench is included.

The dial caliper has a range of 0-6" and a resolution of 0.001".
- The dial test indicator has a range of 0.030" in either direction and a resolution of 0.0005".
- It includes 5/32" and 3/8" diameter posts, dovetails on the back and end, and a 0.080" diameter point.

The magnetic base indicator holder has a fine adjustment feature.
- The on/off switch makes it easy to position.

1260 Measurement Starter Kit with Digital Caliper
- $59.95
- 6" electronic digital caliper
- 6" steel rule
- 1" x 0.001" stroke dial indicator
- Magnetic base indicator holder
- Starrett Tools & Rules for Precision Measuring booklet

This kit includes the basic measurement tools you need for the mini mill, mini lathe or other small machines.
- The magnetic base includes a fine adjustment.

1259 Measurement Starter Kit with Dial Caliper
- $49.95

(800) 981 9663 LittleMachineShop.com Page 71
Precision: Setup

2552 Adjustable Parallel Set $42.95
- Made of precision ground tool steel
- Easily expanded to size in openings for quick reference measurements
- Lock desired size by set screws provided
- Exact size can be set with micrometer
- Furnished in fitted plastic case with size range markings
Six piece adjustable precision parallel set.

Parallels are adjustable to the following sizes: 3/8" - 1/2", 1/2" - 11/16", 11/16" - 15/16", 15/16" - 1-1/5/16", 1-1/5/16" - 1-3/4", 1-3/4" - 2-1/4".

The parallels are 5" long and 1/4" thick.

2553 Angle Block Set $29.95
- Simple, quick angle set ups
- Manufactured of hardened, stabilized and ground steel
- Accurate to ±0.0001" per inch
- Fitted case
- Angle blocks are 3" long and 0.25" thick

Ten piece angle block set. The angles included are 1°, 2°, 3°, 4°, 5°, 10°, 15°, 20°, 25°, 30°. You can combine them to make any integral angle.

3431 Angle Plate, 3" Slotted & Webbed $16.95
- 3" long, 2.5" tall, and 2" wide
- Accurately machined and ground square and parallel on outside and ends
- Slots provide many options for mounting
- widely used for machining, layout and inspection
- High tensile cast iron is properly seasoned to prevent distortion

3432 Angle Plate, 4-1/2" Slotted & Webbed $22.95
- 3.5" long, 3" tall, and 3" wide
- Precision ground finishing: Square and parallel to .0005" per 6" on two working surfaces
- Webbed end
- Made from high tensile cast iron normalized and stress relieved

5385 Angle Plate, 3" Webbed End $18.95
- 3" long, 3" tall, and 3" wide
- Precision ground finishing: Square and parallel to .0005" per 6" on two working surfaces
- Webbed end
- Made from high tensile cast iron normalized and stress relieved

5384 Angle Plate, 2" Webbed End $12.95
5386 Angle Plate, 4" Webbed End $27.95

1233 Blocks, 1-2-3 $12.95
- Threaded holes are 3/8"-16 thread
- Through holes are 5/16" parallel
- Hardened and precision ground steel
- Pairs are matched within 0.0002".

These precision 1-2-3 blocks are ground and case hardened on all sides to 50-60 Rc. The blocks are 1" by 2" by 3". They are parallel within 0.0002", flat within 0.0002" and square within 0.0002".

Each set includes two matched blocks.

The blocks have 23 holes through them, 5 are threaded 3/8"-16 NC.

3666 Blocks, 2-4-6 $109.95

2881 Blocks, 1-2-3, Ultra Precision $29.95
- Threaded holes are 3/8"-16 thread
- Through holes are 5/16"
- Pair of 1-2-3 blocks
- Five 3/8"-16 x 1-1/2" Socket Head Cap Screws
- One Hex Wrench

These ultra precision 1-2-3 blocks are ground and case hardened on all sides to 55-60 Rc. They are parallel within ±0.0001", flat within ±0.0001" and square within ±0.0001".

Each set includes two matched blocks.

The blocks have 23 holes through them. Five are threaded 3/8-16 NC, and the other through holes are 5/16" diameter. The set includes a matched pair of 1-2-3 blocks, five 3/8-16 x 1-1/2" socket head cap screws and a hex wrench. Furnished in a fitted case.

2186 Center It V-Block $18.95
- CENTER IT makes it easy to drill round stock and tubing
- Bolts to the drill press table and enables the drilling of round pieces parallel and centered
- Grooves on the outer sides eliminate slippage while holding by hand for seeing
- Place CENTER IT on the drill press table, run the stationary bit down to center the fixture
- CENTER IT is a tool for drilling pipe and other round objects. The CENTER IT v-block is made specifically for use in a drill press. No clamping of the tube is necessary since the angled flats of the jig hold it centered. Holes will automatically be centered on the tube with no center-punching required. If tubing is too large to drill in a single operation this drill press v-block can simply be turned over. Especially for the metalworking enthusiast, the woodworking hobbyist, and even the professional automotive mechanic, CENTER it v-block makes speedy and precise work of drilling tasks. Its 'hand vise' grip ridges allow no-clamp holding of round stock for sawing and cutting.

CENTER IT is made of heavy aluminum extrusion. The CENTER IT drill press v-block is 5" Long, 4" Wide, and 1-3/4" High. The groove at the base of the V is 0.43" wide, so use a drill bit smaller than this to center the CENTER IT.

5380 Gage Block Set, Rectangular, 81 Pieces $169.95
- No. of Blocks - 81pc
- Made of the highest quality tool steel
- Surface hardness: HRC 64
- Grade AS-2 (B) (+/- 50 millionths)
- With fitted wooden case with sizes labeled

4855 Indicator Holder, 3/8" Square Shank $13.95
- Holds dovetail indicators
- 3/8" & 7/32" mounting holes for holding the stem of almost all dial indicators
- 4" long 3/8" square shank makes this great for use in a lathe
- Easily center work in a 4-jaw chuck by using this indicator holder in your tool post or standard turning tool holder holder for a quick change tool post with almost any indicator.

2907 Machinists Jack Set $15.95
- Machinists jack
- Two extension bases
- Auxiliary pointed screw
- Inner and outer V bases
- 1" diameter, 1.5" to 2.3" tall
- Machinists jacks are used to support odd sized or odd shaped objects. Use them to support the ends of long workpieces that extend beyond your vise jaws. Use them to support the edges of items that you are clamping with your clamping kit.
- The machinist's jack includes lots of parts that you can mix and match to meet your needs.
Precision: Setup

Machinists Jacks, Individual Sizes
- High Quality Tool Steel
- Ideal for Setup Work
These little screw jacks are ideal for work piece setup in which fine adjustment may be required to level a work piece. They also make a suitable replacement for a step block when using a clamp kit.

<table>
<thead>
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<th>Description</th>
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<td>5&quot; Sine Bar</td>
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<td>3535</td>
<td>2.5&quot; Sine Bar</td>
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<td>3945</td>
<td>Thin Parallel Shims, 3&quot; Long, 3 Pairs</td>
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<td>1893</td>
<td>Thin Parallels, 3&quot; Long, 10 Pairs</td>
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<td>Thin Parallels, 3&quot; Long, 11 Pairs</td>
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<td>Thin Parallels, 1.5&quot; Long, 9 Pairs</td>
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<td>Thin Parallels, 3&quot; Long, 10 Pairs</td>
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<td>5361</td>
<td>Thin Parallels, 1/2&quot; Long, 10 Pairs</td>
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<td>1232</td>
<td>Thin Parallels, 6&quot; Long, 10 Pairs</td>
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<tr>
<td>2220</td>
<td>Thin Parallels, 3&quot; Long, 10 Pairs, Ultra-Precision</td>
<td>$119.95</td>
</tr>
</tbody>
</table>

V-Blocks

- Vee Capacity is 1"
- Includes Clamps
- 90" V Groove is accurate within 0.0001" for central, parallel and square with all surfaces

They are ground square, parallel and concentric within 0.0001".
The V-blocks are supplied in matched pairs.
V-block clamp set includes clamps for inspection work.

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Price</th>
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<td>V-Blocks, 1-1/4&quot; x 1-1/4&quot; x 1-5/8&quot;</td>
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<tr>
<td>3718</td>
<td>V-Blocks, Miniature 0.03&quot; to 0.28&quot; Capacity</td>
<td>$139.95</td>
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Project Plans: CNC Conversions

- Z-Axis Tool Height Setter, Professional Grade
- Set zero point quickly with built-in indicator
- Positioning accuracy and repeatability: 0.0005"
- Dimensions: 2" square x 2" height
- With fitted wooden case
- Great for CNC machines

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Price</th>
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</thead>
<tbody>
<tr>
<td>5447</td>
<td>Z-Axis Tool Height Setter, Professional Grade</td>
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<tr>
<td>2395</td>
<td>Mini Lathe CNC Conversion Plans</td>
<td>$49.95</td>
</tr>
<tr>
<td>2353</td>
<td>Mini Mill CNC Conversion Plans</td>
<td>$49.95</td>
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</table>

These CNC conversion plans were created by Ronald J. Steele. This is a complete set of plans to add CNC to a mini lathe. They include a materials list with sources, plans for all the parts, and instructions for making the parts and installing them on the mini lathe.

Changes to the original machine are minimal. Three drilled and tapped holes are put into the tail end of the lathe bed to hold the Z axis lead screw thrust washer seat/motor mount plate. The remaining motion control parts are either attached via existing holes or clamped onto the machine.

Project completion time is 30 to 40 hours. Cost for mechanical hardware and materials is between $180 and $220. The plans provide several sources for the electrical parts and software.

<table>
<thead>
<tr>
<th>Model</th>
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</thead>
<tbody>
<tr>
<td>2395</td>
<td>Mini Lathe CNC Conversion Plans</td>
<td>$49.95</td>
</tr>
<tr>
<td>2353</td>
<td>Mini Mill CNC Conversion Plans</td>
<td>$49.95</td>
</tr>
</tbody>
</table>

Plans to add CNC to a mini mill. These Mini Mill CNC Conversion plans were created by Ronald J. Steele. This is a complete set of plans to add CNC to a mini mill. These CNC mill conversion plans include a materials list with sources, plans for all the parts, and instructions for making the parts and installing them on the mini mill.

Ron Steele says the cost of the hardware and materials, assuming you need to purchase everything, is about $160. The plans provide sources for all these items. The plans also provide several sources for the electrical parts and software. One kit includes software, 145 oz/in stepper motors, and a pre-wired boxed controller and sells for $645. It takes between 20 and 30 hours to machine the parts and bolt it all together.

<table>
<thead>
<tr>
<th>Model</th>
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</tr>
</thead>
<tbody>
<tr>
<td>2395</td>
<td>Mini Lathe CNC Conversion Plans</td>
<td>$49.95</td>
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<tr>
<td>2353</td>
<td>Mini Mill CNC Conversion Plans</td>
<td>$49.95</td>
</tr>
</tbody>
</table>
Project Plans: Engines

2342 Elbow Engine Plans $12.95
Complete plans to build a unique 5-cylinder steam engine. These plans were created by Bill Reichart. This steam engine has 10 pistons and no crankshaft. The plans include six pages of detailed drawings and construction notes. The engine is made from bar stock. No castings are required.

2340 Epicyclic Steam Engine Plans $24.95
Complete plans to build an epicyclic steam engine. These plans were created by Bill Reichart. This engine uses a unique set of epicyclic gears where one gear revolves around another gear. There are 33 pages of plans that detail every part and describe methods of production. The engine is made from bar stock. No castings are required. You get the gears from Boston Gear.

2341 Panther Pup Engine Plans $25.95
Complete plans to build a 4-cylinder, 4-cycle gasoline engine. These plans were created by Bill Reichart. The Panther Pup is an air-cooled internal combustion engine. There are 54 pages of plans, bound in a saddle-stitched booklet. The plans include detailed drawings of each part along with complete construction notes. Two castings are required. Plans are included to make your own patterns, or castings can be purchased from LittleMachineShop.com.

2343 Pip-Squeak Engine Plans $10.95
Complete plans to build a simple steam engine. These steam engine project plans were created by Bill Reichart. The Pip-Squeak was designed to be a very first, easy to build engine. It is built from bar stock. No castings are required. It can be made on a small hobby lathe and a small drill press. A small milling machine helps, but isn't necessary.

2295 Stirling-Steele Engine Plans $29.95
- Complete plans to build a Stirling engine
- Engine is 10" tall when completed
- 26 Pages of plans
Complete plans to build a four-cylinder Stirling cycle engine from bar stock and commercial components. These plans were created by Ronald J. Steele. The package contains 26 pages of highly detailed drawings and instructions providing all the necessary information to produce this modern compact version of a Stirling engine. The Stirling-Steele engine can be machined on a 6" lathe and small milling machine from readily available material. A full bill of materials is included as are assembly instructions. This is not a kit but a full set of dimensioned drawings.

Project Plans: Tools

2717 Belt Grinder Plans $59.95
- 17 pages of DIY belt grinder plans
- 18 pages of instructions
- 2" x 72" belt stays sharp longer and cuts cooler than shorter belts
- Use for roughing, shaping, contouring of flat or angular stock
Plans for a commercial-grade square wheel belt grinder. Machines like this sell for over $1000. This project consists of 17 pages of drawings and 18 pages of well written instructions. The drawings are printed on 11 x 17 paper, making them easy to read. Every aspect of this project has been explained and detailed, including 3 dimensional assembly drawings to show you where everything goes. Although this machine would feel right at home in a professional metal worker’s shop, the average home shop machinist will also find endless uses for this grinder. Use it for deburring, sharpening drill bits, dressing mushroomed punches, and grinding HSS lathe tool bits. Although this 2” x 72” belt grinder plan is not for a beginner, it was designed with the home shop machinist in mind. Anyone with modest equipment can complete this high performance machine. The prototype was built primarily with a 7” lathe, a drill press, and a MIG welder.

2304 Rike-Vise Plans $8.95
The Rike-Vise was invented by Bill Reichart. This simple tool is especially designed for the home machine shop. For many jobs it will replace a standard vise. The Rike-Vise is described as two 90° angle plates joined at the corner, and providing a foot so it can be easily clamped to a machine table or a lathe faceplate. The square donut piece provides an accurate clamp to secure a work piece in the base. It is made of mild steel. The plans include tips on accurately building the vise, plus details on using it. The plans comprise six 8-1/2" x 11" pages. The plans include information on building and using the Rike-Vise. Features of the Rike-Vise:
- At the lathe you can turn square stock round or drill square stock perfectly concentric.
- You can also do the same to rectangular stock, and drill or turn it in the exact center or to one side, as you desire.
- The vise holds work perpendicular for drilling at your drill press.
- At the milling machine, you can mill an end perfectly square, or notch or groove perfectly parallel to the sides.
- It holds stock perpendicular for use at the surface grinder.

QC Tool Posts: QCTP Sets

3048 Quick Change Tool Post Set, OXA, 4-Degree Cut-Off $159.95
- Quick change tool post set for lathes with up to 9” swing
- 60% of AXA, or series 100 size wedge type QCTP
- This lathe quick change pool post set includes a 4-Degree Cut-off tool holder
- Includes five tool holders
- All steel construction
This is a true wedge type quick change tool post set that is an exact 6/10 scale copy of the AXA, or series 100 wedge type quick change tool post. This quick change tool post set is designed for lathes with up to 9” swing. It requires 3/4” from the top of the compound rest to the center of the lathe. It will hold turning tools with shanks from 1/4” to 1/2”. The boring bar holder will hold 3/8” and 1/2” boring bars. It will hold 1/2” tall cut-off blades. All working parts are hardened and ground. It is completely sealed for maintenance-free operation. This set includes the tool post and the following tool holders:
- #1 Turning, Facing & Facing
- #2 T urning & Facing
- #3 Boring, Turning & Facing
- #4 Heavy Duty Boring will hold both 3/8” and 1/2” boring bars
- #7 Universal Parting Blade (for 1/2 inch cut-off blade - 4-degree) This tool post mounts with an M10 stud that is included. It also includes a piece of steel from which you can make a T-slot nut to fit your lathe.

4117 Quick Change Tool Post Mount, OXA for SC4 Lathes $9.95

4083 Quick Change Tool Post Set, OXA for 8x12, 8x14 Lathe $164.95

4046 Quick Change Tool Post Set, OXA for 9x20 Lathe $164.95

4058 Quick Change Tool Post Set, OXA for Atlas/Craftsman 6" $164.95

4157 Quick Change Tool Post Set, OXA for G0768 $139.95
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<td>Tap &amp; Tap Drill Bit, 9/16&quot;-18 Thread</td>
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**QC Tool Posts: QCTP Sets**

- Quick change tool post set for lathes with up to 8" swing
- OXA, or series 000 size (60% of AXA size)
- Includes five tool holders
- Horizontal Cut-off tool holder
- Fits all 7x10 to 7x16 mini lathes

Wedge type OXA quick change tool post set. This quick change tool post set is designed for lathes with up to 8" swing. It is the perfect size for mini lathes. The tool holders have been designed specifically to work on the mini lathes and other lathes that have limited distance from the top of the compound to the center of the lathe. This tool post mounts with an M10 stud, which is included. This quick change tool post requires 5/8" from the top of the compound rest to the center of the lathe. All working parts are hardened and ground steel. It is completely sealed for maintenance-free operation. This tool post mounts with an M10 stud. This set includes the tool post and the following tool holders: No. 1 - Turning & Facing, No. 2 - Boring, Turning & Facing, No. 4 - Heavy Duty Boring will hold both 3/8 and 1/2 boring bars.

- #7 Universal Parting Blade (for 1/2" cut-off blade - horizontal)
- #4 Heavy Duty Boring will hold both 3/8 and 1/2 boring bars.
- #10 - Knurling, Facing & Turning.

This set also includes a 9/16"-18 threaded stud and a piece of steel from which you can make a T-slot nut to fit your lathe.

- Starter set includes two Aloris tool holders
- All steel construction
- Tool holders interchange with Aloris, Dorian, and Phase II
- Made by Aloris, the originator of the super precision quick change tool post
- AXA, or series 100, wedge type quick change tool post set. This AXA quick change tool post set is designed for lathes with up to 12" swing. It is a good fit on 9x20 lathes, but requires some modification or our mounting sleeve. Many people feel that these tool posts are too large for mini lathes, but others like the mass and rigidity they provide. All working parts are hardened and ground. This lathe tool post set is completely sealed for maintenance-free operation. The tool holders interchange with Aloris, Dorian, and Phase II. This lathe tool post set includes the tool post and the following tool holders: No. 1 - Turning & Facing, No. 2 - Boring, Turning & Facing, No. 4 - Heavy Duty Boring will hold 5/8" or 3/4" round shanks. No. 7 - Universal Parting Blade. No. 10 - Knurling, Facing & Turning. This set also includes a 9/16"-18 threaded stud and a piece of steel from which you can make a T-slot nut to fit your lathe.

- Quick change tool post set for lathes with up to 12" swing
- AXA, or series 100 size
- Tool holders interchange with Aloris, Dorian, and Phase II
- All steel construction
- Includes five tool holders
- AXA, or series 100, wedge type quick change tool post set. This AXA quick change tool post set is designed for lathes with up to 12" swing. It is a good fit on 9x20 lathes, but requires some modification or our mounting sleeve. Many people feel that these tool posts are too large for mini lathes, but others like the mass and rigidity they provide. All working parts are hardened and ground. This lathe tool post set is completely sealed for maintenance-free operation. The tool holders interchange with Aloris, Dorian, and Phase II. This lathe tool post set includes the tool post and the following tool holders: No. 1 - Turning & Facing, No. 2 - Boring, Turning & Facing, No. 4 - Heavy Duty Boring will hold both 3/8 and 1/2 boring bars.

- #7 Universal Parting Blade (for 1/2" cut-off blade - horizontal)
- #4 Heavy Duty Boring will hold both 3/8 and 1/2 boring bars.
- #10 - Knurling, Facing & Turning.

This set also includes a 9/16"-18 threaded stud and a piece of steel from which you can make a T-slot nut to fit your lathe.
QC Tool Posts: QCTP Sets

3658 Quick Change Tool Post Set, BXA $299.95
- Quick change tool post set for lathes with 10-15" swing
- BXA, or series 200 size
- Tool holders interchange with Aloris, Dorian, and Phase II
- All steel construction
- Includes five tool holders
  BXA, or series 200, wedge type quick change tool post set.
  This quick change tool post set is designed for lathes with up to
  10-15" swing.
  All working parts are hardened and ground. It is completely
  sealed for maintenance-free operation.
  The tool holders interchange with Aloris, Dorian, and Phase II.
  This set includes the tool post and the following tool holders:
  No. 1 - Turning & Facing,
  No. 2 - Boring, Turning & Facing,
  No. 4 - Heavy Duty Boring,
  No. 7 - Universal Parting Blade,
  No.10 - Knurling, Facing & Turning.
  This set also includes a piece of steel from which you can make
  a T-slot nut to fit your lathe.
  The BXA turning tool holders hold tools up to 5/8".
  The cut-off tool holds 11/16" blades.
  4443 Quick Change Boring Tool Holder, BXA $36.95
  4444 Quick Change Cut-Off Tool Holder, BXA $32.95
  4445 Quick Change Knurling & Turning Tool Holder, BXA $53.95
  4442 Quick Change Turning & Boring Tool Holder, BXA $23.95
  4441 Quick Change Turning & Facing Tool Holder, BXA $21.95

Rotary Tables: Rotary Tables

3519 4th Axis Rotary Table for CNC $1,064.95
- Includes stepper motor
- Includes tailstock
- Includes adapter to mount a 3" lathe chuck
- Includes hold down clamps to mount the rotary table on the mill table
  This 4" (100 mm) 4th axis CNC rotary table is great for small CNC
  milling machines. The stepper motor is a NEMA 23 YAKO
  YK57HB76-03A 2-phase 6-wire motor.

Rotary Table Comparison
See the rotary table comparison chart at
www.littlemachineshop.com/rotary

1927 Rotary Table, 4" H/V $379.95
- 4" (100 mm) diameter
- Use in horizontal or vertical position
- Worm ratio is 72 to 1
- 10 second rotational accuracy
- 2 Morse taper center hole
  This horizontal / vertical rotary table is for indexing, circular
  cutting, angle setting, boring, and spot facing operations. The
  meehanite cast iron table is precision machined and has a 2
  Morse taper center hole. The table is graduated with a 360°
  scale. A micro collar graduated to one minute with a ten second
  accuracy vernier scale is provided. The rotary table has lock
  down clamps and the crank can be disengaged. The worm gear
  and center hole are hardened and ground. The table is 2.76" high
  when horizontal, and the centerline is 2.76" above the table when
  in the vertical position. The worm ratio is 72 to
  1.Flatness of clamping surface: 0.0006" TIRParallelism of
  clamping surface to base: 0.0008" TIRSquareness of clamping
  surface to angle face: 0.0004" TIRSquareness of clamping
  surface to center slot: 0.0008" TIRConcentricity of center
  bore: 0.0008" TIRMachining spacing error: 1 minute, 20
  seconds.
  1943 Clamping Kit, 6 mm T-Slot, 16-Piece $17.95
  1799 Dividing Plate Set for 4" Rotary Table $79.95
  1931 Rotary Table, 4" with Tailstock & Dividing
  Plate $489.95
  3791 Rotary Table, 4" with Tailstock, Dividing Plate, & 3 Jaw Lathe Chuck $579.95
  3792 Rotary Table, 4" with Tailstock, Dividing Plate, & 4 Jaw Lathe Chuck $569.95
  1800 Tailstock for 4" Rotary Table $99.95

5603 Rotary Table, 4" H/V, Economy $153.59
- Horizontal or vertical use
- 4" diameter table rotates 360°
- 1:36 ratio or 10° per handwheel revolution
- Scale reads to 15 minutes
- Low profile - 55mm (2.17") tall
  Affordably priced rotary table suitable for bolt patterns, arched
  slots, cutting out flywheels and other medium precision jobs.
  The small size of the table is great for small milling machines.
  The table has a low profile of 55mm (2.17") in the horizontal
  position. This precision grade graded cast iron table is
  graduated for a full 360°. The handwheel utilizes a 1:36 ratio
  resulting in 10" per handwheel revolution. Table comes with
  two clamping studs, two 45mm clamping bars and two t-nuts.
  5601 Rotary Table, 3" H/V, Economy $117.91
  5630 Tailstock for 3" & 4" Rotary Tables $92.83
Rotary Tables: Rotary Tables

1810 Rotary Table, 4" Precision  $341.78
- 4" (100 mm) diameter
- Use in horizontal or vertical position
- Worm ratio is 72 to 1
- 10 second rotational accuracy
- 2 Morse taper center hole

This horizontal / vertical precision rotary table is made of precision machined cast iron and has a 2 Morse taper center hole. The table is graduated with a 360 degree scale. The rotary table is furnished with lock down clamps. This rotary table comes with an adapter to mount a 3" lathe chuck. It works with both 3- and 4-jaw chucks.

The model 1810 4" Precision Rotary Table is 2.87" high when horizontal, and the centerline is 2.68" above the table when in the vertical position. The body of the table is 5" (crank handle to back) by 5.5" (mounting slot to mounting slot). The worm ratio is 72 to 1.

Flatness of clamping surface: 0.0008".
Parallelism of clamping surface to angle face: 0.0008".
Squareness of clamping surface to center slot: 0.0008".
Concentricity of center bore: 0.0008" TIP.

1888 Adapter, 3" Lathe Chuck  $33.74
3146 Adapter, 3" Lathe Chuck  $32.05
3442 Clamping Kit, 8 mm T-Slot, 10-Piece  $24.95
1813 Clamping Kit, 8 mm T-Slot, 12-Piece  $20.56
1811 Dividing Plate Set for 4" Rotary Table  $91.11
2183 Rotary Table, 4" with Tailstock & Dividing Plate  $451.78
3131 Rotary Table, 4" with Tailstock, Dividing Plate, & 3-Jaw Lathe Chuck  $537.78
3132 Rotary Table, 4" with Tailstock, Dividing Plate, & 4-Jaw Lathe Chuck  $537.78
1812 Tailstock for 4" Rotary Table  $98.58

2420 Rotary Table, 4" Precision, Digital Readout  $355.18
- 4" (100 mm) diameter
- Use in horizontal or vertical position
- Worm ratio is 72 to 1
- Digital angular readout with 1 minute (0.017 degree) resolution digital angular readout
- 2 Morse taper center hole

This horizontal / vertical rotary table is made of precision machined cast iron and has a 2 Morse taper center hole. The table is graduated with a 360 degree scale. The rotary table is furnished with lock down clamps. The digital readout displays degrees and minutes or decimal degrees. This rotary table comes with an adapter to mount a 3" lathe chuck. It works with both 3- and 4-jaw chucks. The table is 2.87" high when horizontal, and the centerline is 2.68" above the table when in the vertical position. The body of the table is 5" (crank handle to back) by 5.5" (mounting slot to mounting slot). The worm ratio is 72 to 1.

Flatness of clamping surface: 0.0008".
Parallelism of clamping surface to angle face: 0.0008".
Squareness of clamping surface to center slot: 0.0008".
Concentricity of center bore: 0.0008" TIP.

2184 Rotary Table, 6"  $599.95
2185 Rotary Table, 6" with Tailstock  $960.18
2186 Rotary Table, 6" with Tailstock, 3-Jaw Chuck  $960.18
2187 Rotary Table, 6"  Phase II  $924.95
2188 Rotary Table, 6" with Tailstock  $1787.00
2189 Rotary Table, 6" with Tailstock, Phase II  $1787.00

This horizontal / vertical rotary table is made of precision machined cast iron and has a 2 Morse taper center hole. This 6" rotary table is graduated with a 360° scale. A micro collar graduated to one minute with a tenth second accuracy vernier scale is provided. This horizontal/vertical rotary table has lock down clamps and the crank can be disengaged. The worm gear and center hole are hardened and ground. The 6" rotary table is 3.35" high when horizontal, and the centerline is 4.92" above the table when in the vertical position. The worm ratio is 90 to 1.

Flatness of clamping surface: 0.0006".
Parallelism of clamping surface to angle face: 0.0006".
Squareness of clamping surface to center slot: 0.0006".
Concentricity of center bore: 0.0006".

2194 Adapter, 5" Lathe Chuck  $119.81
1801 Dividing Plate Set for 6" Rotary Table  $144.95
3566 Rotary Table, 6" with Tailstock & Dividing Plate, Phase II  $924.95
1802 Tailstock for 6" Rotary Table, Phase II  $191.95

Threading Tools: Die Holders

2314 Die Holder  $35.33
- Holds 13/16" and 1" round dies
- Holds dies in alignment when threading on the lathe
- 2 Morse taper shank fits the mini lathe tailstock
- Tommy bar provides torque for larger thread sizes

This 2314 industrial die holder goes in the tailstock of the mini lathe, or any other lathe with a 2 Morse taper tailstock. It has a short Morse taper for the mini lathe so you may need to put a ball bearing or such like behind it so it will eject from lathes that expect a standard length taper. The arbor is made of steel. The body is aluminum for low mass, so it spins easily when you release it. This prevents small parts from twisting off. This lathe die holder tool does not work with hexagonal dies. Hexagonal dies are not made for creating new threads, they are for maintenance work.

4666 Die Stock, No. 2, 13/16"  $4.95
- For adjustable round split dies
- Holds 13/16" dies
- 6-1/2" overall length

4667 Die Stock, No. 3, 1"  $5.95
4668 Die Stock, No. 5, 1-1/2"  $7.95
### Threading Tools: Hand Tappers

<table>
<thead>
<tr>
<th>Item Number</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>2539</td>
<td>Hand Tapper</td>
<td>$169.95</td>
</tr>
<tr>
<td>2898</td>
<td>Hand Tapper, Mini</td>
<td>$74.95</td>
</tr>
</tbody>
</table>

- Assures straight tapped holes
- Helps prevent broken taps
- 7 tap adapters included

This rigid hand tapper helps prevent broken taps while tapping straight holes. Precision ground work table and spindle ensure accuracy. Tap adapters for #6, #8, #10, 1/4", 5/16", 3/8", 7/16", 1/2" and 5/8" taps. (Not recommended for taps smaller than #6.) The work area is 6.5" x 10". The clearance height is 7" and the throat depth is 7.5". The overall height is 13". This hand tapping machine includes an offset handle and a rack for the tap adapters.

### Threading Tools: Lathe Threading

<table>
<thead>
<tr>
<th>Item Number</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>3695</td>
<td>Threading Tool, External, 3/8&quot; Indexable, HSS Triangle Inserts, A R Warner Kit #17</td>
<td>$96.00</td>
</tr>
</tbody>
</table>

- For external threading, 8 through 36 TPI
- 3/8" shank, 3/8" IC inserts, 5° long
- 2 inserts included: TNMC-32-NV and TPMC-32-NV
- 1 extra 4-40 flat head cap screw
- 1 wrench

This Arthur R. Warner Co. precision threading tool will turn external threads. The tool can turn from 8 through 36 pitch, 60 degree threads.

The Arthur R. Warner Co. is a family-owned American manufacturer of high speed steel products with specialization in cutting, shaping, pre-grinding, heat treating, and finish grinding of premium grades of flat high speed steel (and tool steel). Their quality is excellent and LittleMachineShop.com is proud to carry their products.

<table>
<thead>
<tr>
<th>Item Number</th>
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</tr>
</thead>
<tbody>
<tr>
<td>5437</td>
<td>Threading Tool, External, 3/8&quot; Indexable, A R Warner Kit #20</td>
<td>$114.95</td>
</tr>
</tbody>
</table>

- Right hand external threads cut
- 3/8" shank
- Includes: 1 tool holder, 10 TiN coated carbide inserts, 1 Torx wrench
- AG60 inserts range 0.5-3.00mm/8-48 TPI
- A60 inserts range 0.5-1.5mm/16-48 TPI
- Complete with aluminum case.

### Threading Tools: Internal Threading

<table>
<thead>
<tr>
<th>Item Number</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>3467</td>
<td>Threading Tool, Int / Ext, 1/2&quot; Indexable, HSS Triangle Inserts, A R Warner Kit #18</td>
<td>$109.00</td>
</tr>
</tbody>
</table>

- For internal and external threading
- 1/2" shank, 3/8" IC Inserts, 5° long
- 2 inserts included: TNMC-32-NV and TPMC-32-NV
- 1 extra 4-40 flat head cap screw, 1 wrench
- For 8 through 36 pitch 60 degree threading

This A.R. Warner precision HSS threading tool will turn both internal and external threads. You can mount inserts on both ends. One end mounts the insert at the end of the tool for external threading. The mount on the other end is offset. Mount the insert one way for internal threading. Turn the insert around and you can use the tool for external threading too.

The minimum bore diameter for internal threading is 1.375". The maximum thread depth of this internal and external threading tool is 0.100".

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<tbody>
<tr>
<td>3570</td>
<td>Threading Tool, Internal, 3/8&quot; Indexable, HSS Triangle Inserts, A R Warner Kit #19</td>
<td>$103.00</td>
</tr>
</tbody>
</table>

- For internal threading
- Includes three T-15 high speed steel TPMW-1.8-1.5-.5 inserts
- Includes two MS-1152S screws and one T-7 wrench

This tool requires a 0.5" minimum hole size.

Uses TPMW-1.8-1.5-.5 and TPMW-1.8-1.5-1 inserts.

The maximum thread depth is 0.100".

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<tr>
<td>3571</td>
<td>Threading Tool, Internal, 1/2&quot; Indexable, HSS Triangle Inserts, A R Warner Kit #20</td>
<td>$103.00</td>
</tr>
</tbody>
</table>

- For right hand internal threads
- 3/8" x 4" shank
- 10 TiN coated 11IRA60 carbide inserts
- Includes: 1 tool holder, 1 Torx wrench
- A60 inserts cut 0.5-1.5mm/16-48 TPI threads
- Complete with aluminum case. Minimum bore 0.47" (11.9 mm)

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<tr>
<td>5440</td>
<td>Threading Tool, Internal, 1/2&quot; Indexable, HSS Triangle Inserts, A R Warner Kit #21</td>
<td>$174.95</td>
</tr>
</tbody>
</table>

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- 3/8" x 4" shank
- 10 TiN coated 11IRA60 carbide inserts
- Includes: 1 tool holder, 1 Torx wrench
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Threading Tools: Tap and Die Sets

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<tr>
<th>Item</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>2851 Die Set, 0-80 to 5-40 Threads</td>
<td>$92.95</td>
<td></td>
</tr>
<tr>
<td>2842 Die, 0-80 Thread</td>
<td>$15.95</td>
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</tr>
<tr>
<td>2843 Die, 1-64 Thread</td>
<td>$15.95</td>
<td></td>
</tr>
<tr>
<td>2844 Die, 2-56 Thread</td>
<td>$15.95</td>
<td></td>
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<tr>
<td>2845 Die, 3-48 Thread</td>
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<tr>
<td>2846 Die, 4-40 Thread</td>
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<tr>
<td>2847 Die, 5-40 Thread</td>
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<tr>
<td>2848 Die, 6-32 Thread</td>
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<tr>
<td>2849 Die, 8-32 Thread</td>
<td>$15.95</td>
<td></td>
</tr>
<tr>
<td>3675 Die, 10-32 Thread</td>
<td>$15.95</td>
<td></td>
</tr>
<tr>
<td>5919 Die Set, 1/4 - 3/4&quot; Hexagonal</td>
<td>$35.50</td>
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<tr>
<td>5920 Die Set, M6 - M20 Retreading, Hexagonal</td>
<td>$23.50</td>
<td></td>
</tr>
<tr>
<td>3601 Tap &amp; Die Set, 39-Piece Solid Round Dies</td>
<td>$159.95</td>
<td></td>
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<tr>
<td>3597 Tap &amp; Die Set, 41-Piece</td>
<td>$149.95</td>
<td></td>
</tr>
<tr>
<td>2540 Tap &amp; Die Set, 41-Piece</td>
<td>$49.95</td>
<td></td>
</tr>
<tr>
<td>2841 Tap Set, 0-80 to 5-40 Thread, Set of 6</td>
<td>$34.95</td>
<td></td>
</tr>
</tbody>
</table>

For rethreading rusty or worn threads, they can be utilized to cut smaller or larger tolerances by turning the adjustment screw.

For cutting external screw threads either by hand or with a die stock or by machine with a die holder. They can be utilized to create new threads. The taps and dies are made from high carbon steel. The Hanson 41-Piece Machine Screw / Fractional Tap and Hex Die Set includes machine screw taps, fractional plug style taps, plus 5/8"-inch and 1-inch hexagon dies.

Includes three tap handles and two die stocks.

Plastic case with lift-out tray.

This USA-made IRWIN brand 41 PC set can be used to restore or start new threads. The taps and dies are made from high carbon steel. The Hanson 41-Piece Machine Screw / Fractional Tap and Hex Die Set includes machine screw taps, fractional plug style taps, plus 5/8"-inch and 1-inch hexagon dies.

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## Threading Tools: Tap Holders and Guides

- **5966 Tap & Reamer Holder, 0-1/2", Self Aligning** $24.95
  - Self Aligning Tap & Reamer Holder
  - Capacity 0 - 1/2
  - 2 Collets Fit #0 - #8 & #10 - 1/2
  - Guide Base has Two 120° Vees for Round Items
  - Self-aligning tap and reamer holder utilizes 4 jaw collet design to provide firm grip and 90° alignment that eliminates tap breakage while producing perfectly aligned threads. The collets 4-jaw design help ensure the tap is mounted straight and provide a tight grip on the tap's shank. The collets included will fit #0 to #8 and #10 to 1/2". The base of the guide has two 120° vees that accept round stock.

- **3602 Tap Adapters, 3/8" Socket Drive** $32.95
  - Jaws adjust to tightly secure taps
  - Fits all 3/8" square drive wrenches
  - Small adapter fits taps for #0 to 1/4" thread
  - Large adapter fits taps for 1/4" to 1/2" thread
  - For use in tight workspaces or for putting some muscle on those hard-to-turn large taps. Designed for use with taps, reamers, screw extractors and other tools with a square shank. Not recommended for cutting new threads.

- **1963 Tap Guide, Fisher** $14.95
  - Made in USA
  - This tap guide helps you start thread holes straight. The reversible point is spring loaded to maintain pressure on the tap. One end of the point has a center hole for small taps, while the other end is pointed for larger taps. The 0.500" diameter body is ground and knurled for easy handling. Remove the setscrew in the back end to reverse the point. This is a quality American-made product from Fisher Machine Shop.

- **3104 Tap Guide, 2MT Short, Fisher** $16.95
  - Jaws adjust to tightly secure taps
  - Fits fractional thread taps from 1/16" to 5/32"
  - For hand tapping and driving screw extractors
  - Starrett catalog number 93A

- **3603 Tap Handle, Adjustable** $7.95
  - Offset handle adjustable tap & reamer wrench
  - Straight handle design provides greater leverage, especially when using larger diameter taps.
  - For Taps No. 0 To 1/2"
  - Starrett catalog number 174

- **2621 T-Wrench 3-5/8", Starrett** $35.00
  - Body length: 3-5/8" (90mm)
  - Capacity tap size: No. 0-14
  - Square shank: 1/4" (6.35mm)
  - Starrett catalog number 174
  - This is a well-designed tap wrench, ideal for holding smaller diameter taps, drills, reamers, and other tools up to 1/4" (6.35 mm) in diameter. It works with 0-14 tap sizes. It will firmly grip round or square shanks, is lightweight and well proportioned. The gripping surface is properly heat treated to withstand any ordinary use.

- **3177 Tap Wrench 6", Starrett** $53.00

- **5122 Tap Wrench 9", Starrett** $75.00

- **5390 Tap Wrench 5", Adjustable** $3.95
  - Body length: 5" (127 mm)
  - Capacity tap size: 0-5/16"
  - Knurled steel handles
  - Jaws surface hardened
  - Zinc die casting

- **5391 Tap Wrench 8", Adjustable** $4.95

- **3654 Tap Wrenches, Miniature** $12.95
  - For #0 to #6 taps
  - For #1.6 to #3.5 taps
  - Fits 0.110" driving square
  - Light weight tool maximizes "feel" while tapping
  - Set of two tap wrenches
  - These miniature tap wrenches are perfect for very small taps. They let you actually feel the threads being cut, and you can easily feel the tap tighten up when it is time to reverse and break the chips. The longer tap wrench is 2.5" long. The shorter one is 1.5" long. They are brightly anodized so you won't lose them.
Threading Tools: Tap Holders and Guides

3427 V-TapGuide Hand Tap Guide for Inch Threads
- Eliminate tap breakage due to improper alignment
- Automatically squares up the tap with the surface
- 90 degree V-groove along the bottom allows perpendicular alignment on round parts or corners
- Portable, pocket size
- Protective plastic storage tube is included
V-TapGuide™ by Big Gator Tools™ is made of a special alloyed steel that is ground and heat treated for durability. The guide holes are smooth, unlike drilled or reamed holes. Guide holes are sized for ANSI standard ground taps. The V-TapGuide handles taps for UTS screw sizes of #0, #1, #2, #3, #4, #5, #6, #8, #10, 1/4", 5/16", 3/8", 7/16", 1/2", and 5/8".
3428 V-TapGuide Hand Tap Guide for Metric Threads
- Eliminate tap breakage due to improper alignment
- Automatically squares up the tap with the surface
- 90 degree V-groove along the bottom allows perpendicular alignment on round parts or corners
- Portable, pocket size
- Protective plastic storage tube is included
V-TapGuide™ by Big Gator Tools™ is made of a special alloyed steel that is ground and heat treated for durability. The guide holes are smooth, unlike drilled or reamed holes. Guide holes are sized for ANSI standard ground taps. The V-TapGuide handles taps for metric screw sizes of #0, #1, #2, #3, #4, #5, #6, #8, #10, 1/4", 5/16", 3/8", 7/16", 1/2", and 5/8".

3866 V-TapGuide Hand Tap Guide Set, Inch and Metric
- Both inch and metric taps
- Eliminate tap breakage due to improper alignment
- Automatically squares up the tap with the surface
- 90 degree V-groove along the bottom allows perpendicular alignment on round parts or corners
- Portable, pocket size
- Protective plastic storage tube is included
V-TapGuide™ by Big Gator Tools™ is made of a special alloyed steel that is ground and heat treated for durability. The guide holes are smooth, unlike drilled or reamed holes. Guide holes are sized for ANSI standard ground taps. The inch V-TapGuide handles taps for UTS screw sizes of #0, #1, #2, #3, #4, #5, #6, #8, #10, 1/4", 5/16", 3/8", 7/16", 1/2", and 5/8".
The metric V-TapGuide handles taps for metric screw sizes of 1.6 mm, 2 mm, 2.5 mm, 3 mm, 3.5 mm, 4 mm, 5 mm, 6 mm, 8 mm, 10 mm, 12 mm, 14 mm, and 16 mm.

Tooling: Arbors and Sleeves

2393 Arbor, Blank 3MT Drawbar
- $12.95
- This arbor has a soft end which can be machined to suit your purpose. The arbor has a 3 Morse taper shank and is threaded for a 3/8-16 NC drawbar. The machinable end is 1.5" long and 1.5" in diameter.

2394 Arbor, Blank 2MT Drawbar
- $13.51
- Arbors, Drill Chuck, Morse Taper Shank
- The long taper goes in the lathe tailstock or mill spindle. The short taper goes in the drill chuck. The 2MT Stub arbors fit the mini lathe tailstock without cutting.

3544 Arbor, Drill Chuck 0MT Standard to 2JT
- $9.79
3543 Arbor, Drill Chuck 0MT Standard to 33JT
- $9.77
5524 Arbor, Drill Chuck 1/2" Straight to 33JT
- $7.95
1778 Arbor, Drill Chuck 1MT Tang to 2JT
- $7.99
1894 Arbor, Drill Chuck 1MT Tang to 33JT
- $7.79
4631 Arbor, Drill Chuck 2MT Drawbar to 0JT
- $10.14
1882 Arbor, Drill Chuck 2MT Drawbar to 2JT
- $9.85
1883 Arbor, Drill Chuck 2MT Drawbar to 33JT
- $9.85
1803 Arbor, Drill Chuck 2MT Short to 2JT
- $9.85
1807 Arbor, Drill Chuck 2MT Short to 3/8"-24 Thread
- $9.85
1804 Arbor, Drill Chuck 2MT Short to 33JT
- $9.85
2955 Arbor, Drill Chuck 2MT Standard to 33JT
- $9.82
1167 Arbor, Drill Chuck 3MT Tang to 2JT
- $9.85
1613 Arbor, Drill Chuck 3MT Tang to 3/8"-24 Thread
- $9.85
1190 Arbor, Drill Chuck 3MT Tang to 33JT
- $9.85
1805 Arbor, Drill Chuck 3MT Drawbar to 2JT
- $12.07
1808 Arbor, Drill Chuck 3MT Drawbar to 3/8"-24 Thread
- $13.35
1806 Arbor, Drill Chuck 3MT Drawbar to 33JT
- $12.07
1191 Arbor, Drill Chuck 3MT Tang to 2JT
- $12.04
1614 Arbor, Drill Chuck 3MT Tang to 3/8"-24 Thread
- $12.07
1192 Arbor, Drill Chuck 3MT Tang to 33JT
- $10.95

Arbors, Drill Chuck, R8 Shank
- The long taper goes in the mill spindle. The short taper goes in the drill chuck.

3999 Arbor, Drill Chuck RB to 2JT
- $11.95
5445 Arbor, Drill Chuck RB to 2JT, Professional Grade
- $14.95
1676 Arbor, Drill Chuck RB to 33JT
- $14.29
5444 Arbor, Drill Chuck RB to 33JT, Professional Grade
- $14.95

Arbors, Drill Chuck, Straight Shank
- The straight end goes in a collet or other tool holder. The short taper goes in the drill chuck.

4632 Arbor, Drill Chuck 3/8" Straight to 0JT
- $10.07
2298 Arbor, Drill Chuck 3/8" Straight to 2JT
- $12.85
1195 Morse Taper Sleeve 3MT-2MT
- $7.73
- Arbor, Drill Chuck, Straight Shank
- Overall Length Is 4-3/8", Hardened and Ground, Adapts 2 Morse Taper to 3 Morse Taper Morse taper sleeve adapts 2 Morse taper tools to 3 Morse taper machines.

Hardened and precision ground.
1193 Morse Taper Sleeve 2MT-1MT
- $6.51
1194 Morse Taper Sleeve 3MT-1MT
- $7.73
Tooling: Arbors and Sleeves

3671 R8 to 3MT Sleeve $11.95
- Hardened and Ground
- Drawbar End Thread is 7/16"-20
- Adapts 3 Morse Taper to R8
This sleeve adapts 3 Morse taper tools to R8 spindles.
It is hardened and precision ground.

2190 R8 to 2MT Sleeve $9.95

4720 Slitting Saw Arbor, 1/2" Shank $14.95
- For saw blades up to 3/16" thick
- Fits 1/2", 5/8", 3/4", 7/8", and 1" holed slitting saw blades
- 1/2" straight shank
- Overall length is 2-9/16" 
This arbor has a 1/2" shank and fits slitting saw blades up to 3/16" thick. This slitting saw arbor is compatible with blades that have a center hole of 1/2", 3/8", 3/4", 7/8", or 1".

4647 Slitting Saw Arbor, R8 Shank $24.95
- For saw blades up to 3/16" thick
- Fits 1/2", 5/8", 3/4", 7/8", and 1" holed slitting saw blades
- R8 Shank
- Overall length is 5-3/32" 
This arbor has an R8 shank and fits slitting saw blades up to 3/16" thick. This slitting saw arbor is compatible with blades that have a center hole of 1/2", 5/8", 3/4", 7/8", or 1".

3620 Stub Milling Machine Arbor, 3/4" Straight Shank $64.95
- 1" diameter arbor with spacer rings and left-hand nut
- 3/4" straight shank fits in collets or end mill holders
- Fits 1" ID slitting saws and milling cutters

Tooling: Clamping Kits

2551 Clamp, Adjustable $11.95
- One piece assembly allows quick set-up
- Instant height adjustment
- Attached brass covers protect machine table and workpiece
- Fits 7/16" and 12 mm T-slots
- Clamps work up to 1.75" (44 mm) thick, clamp is 1.35" (34 mm) wide overall
This adjustable clamp fits into the T-slots on the mill table and quickly adjusted to secure your work piece. Clamp fits 7/16" and 12 mm T-slots and the clamp has a brass covering at the point of contact to protect the work piece.

2718 Clamping Kit, 6 mm & 1/4" T-Slot, 42-Piece $49.95
- Six 6 mm T-slot Nuts & Six 1/4" T-Slot Nuts
- Ten 5mm Studs
- Six Flange Nuts
- Six Step Clamps
- Four Step Block Pairs
36-piece clamping kitThis clamping kit fits the 6 mm T-slots on the Taig mill, and the 1/4" T-slots on the Sherline mill. The clamping kit includes 10 5mm studs, 4 step block pairs, 6 T-slot nuts (in each of the two sizes), 6 flange nuts, and 6 step clamps. There are more parts included than shown in the photo. The stated dimension of the clamping kit is the width at the top of the T-slot.

1943 Clamping Kit, 6 mm T-Slot, 16-Piece $17.95
- Four T-slot nuts for 6 mm T-slots
- Four studs of two different lengths
- Two flange nuts
- Two step clamps
This set of T-slot nuts and clamping bars fits our 4" H/V rotary table (PN 1927) and the Phase II 4" rotary table (PN 1727). This mill clamp set also fits Taig mills. The clamping kit includes 4 studs of two different lengths, 2 step block pairs, 4 T-slot nuts, 2 flange nuts, and 2 step clamps. The stated dimension of the clamping kit is the width at the top of the T-slot.

1144 Clamping Kit, 7/16" T-Slot $56.95
- Stud Size: 3/8"-16
- T-Slot: 7/16"
- 58 Pieces
- Made of powered casting steel, heat treated
- Storage rack included
58-piece clamping kit 3/8"-16, 7/16" T-SlotThis machinist clamping kit fits the 12 mm T-slots on the mini mill. The t-slot clamp kit includes 24 3/8"-16 studs, 12 step blocks in pairs, 6 T-slot nuts, 6 flange nuts, 4 coupling nuts, and 6 end holds. Comes in a wall mount rack. The stated dimension of the clamping kit is the width at the top of the T-slot.

1268 Clamping Kit, 1/2" T-Slot $52.95
5491 Clamping Kit, 3/8" T-Slot $54.95
3667 Clamping Kit, 5/8" T-Slot $52.95

5975 Clamping Kit, 7/16" T-Slot, Professional Grade $74.95
- T-Slot: 7/16"
- Stud Size: 3/8"-16
- Made of IC45e steel
- All parts hardened to HRC30-40
- Manufactured at factory for top US brands
58-piece clamping kit 3/8"-16, 7/16" T-Slot. This professional grade clamping kit is manufactured at a world class factory that produces high quality US brands. Pieces are made of IC45e steel for improved strength and all parts are case hardened or heat treated to HRC30-40. The t-slot clamp kit includes: 24 Studs (3/8"-16) - 4 each 3" 4" 5" 6" 7", and 8" - 4 Coupling nuts - 6 Flange nuts - 6 Forged steel step clamps - 6 T-slot Nuts - 12 Step blocks in pairs - 1 Wall RackThis machinist clamping kit fits the 12 mm T-slots on the mini mill. The stated dimension of the clamping kit is the width at the top of the T-slot.

5910 Clamping Kit, 7/16" T-Slot, Professional Grade 5-Piece $9.95
- T-Slot: 7/16"
- Stud Size: 3/8"-16
- Made of IC45e steel
- All parts hardened to HRC30-40
- Manufactured at factory for top US brands
Add individual clamping sets to expand your capabilities. This professional grade clamping kit is manufactured at a world class factory that produces high quality US brands. Pieces are made of IC45e steel for improved strength and all parts are case hardened or heat treated to HRC30-40. The t-slot clamp kit includes: 1 T-slot nut - 3/8"-16 stud - Step clamp - Step block - Flange NutThis machinist clamping kit fits the 12 mm T-slots on the mini mill. The stated dimension of the clamping kit is the width at the top of the T-slot.

3442 Clamping Kit, 8 mm T-Slot, 10-Piece $24.95
- Two T-slot nuts for 8 mm T-slots
- Two studs
- Two flange nuts
- Two step clamps
- One step block pair
This set of T-slot nuts and clamping bars fits our 4" precision rotary table (PN 1810). It also fits the Harbor Freight micro mill. The clamping kit includes 2 T-slot nuts for 8 mm T-slots, 2 studs, 1 step block pair, 2 flange nuts, and 2 step clamps. The stated dimension of the clamping kit is the width at the top of the T-slot.

1813 Clamping Kit, 8 mm T-Slot, 12-Piece $20.56
- Two T-slot nuts for 8 mm T-slots
- Two studs
- Two flange nuts
- Two step clamps
- Two pair step blocks
This set of T-slot nuts and clamping bars fits our 4" precision rotary table (PN 1810). It also fits the Harbor Freight micro mill as a milling machine clamp set. The t-slot clamp kit includes 2 studs, 2 T-slot nuts, 2 flange nuts, 2 step clamps, and 2 pair step blocks. The stated dimension of the clamping kit is the width at the top of the T-slot.
Tooling: Clamping Kits

2039 Clamping Kit, 8 mm T-Slot, 44-Piece $52.95
- 6 T-slot nuts to fit 8 mm T-Slots
- 10 M6 studs
- 6 step clamps
- 6 flange nuts
- 8 step block pairs
36-piece clamping kitThis clamping kit fits the 8 mm T-slots on the micro mill. The clamping kit includes 10 M6 studs, 8 step block pairs, 6 T-slot nuts, 6 flange nuts, and 6 step clamps. The stated dimension of the clamping kit is the width at the top of the T-slot.

1972 Clamping Kit, 8 mm T-Slot, 24-Piece $39.85

T-Slot and Flange Nuts
T-slot nuts are used on mill tables and rotary tables. They are heat treated and have a black oxide finish. The size of a T-slot nut is the width of the top of the T-slot.

2253 Flange Nut, 3/8"-16 $1.29
3150 Flange Nut, 3/8"-16 $3.95
5668 Flange Nut, 5/16"-18 $1.29
4978 Flange Nut, M6 $1.29
3097 T-Slot Nut, 1/4" $1.95
5592 T-Slot Nut, 3/8" $1.49
1269 T-Slot Nut, 7/16" $1.49
2021 T-Slot Nut, 1/2" $1.49
5971 T-Slot Nut, 5/8" $2.95
2059 T-Slot Nut, 6 mm $2.49
2058 T-Slot Nut, 8 mm $2.37
2991 T-Slot Nut, 10 mm $4.07
1418 T-Slot Nut, 12 mm $4.27

Tooling: Drill Chucks

1212 Drill Chuck, 1/2" $11.95
- High degree of accuracy
- All working parts hardened
- Drill chuck with key included
- Capacity: 1/32" - 1/2"
- Mounts to 33 Jacobs taper arbor
1/32" - 1/2" Capacity drill chuck designed for bench and floor drill presses, mills, lathes. Hardened ground center jaw improves durability and ensures straight alignment.
Runout of this mini drill chuck is 0.008" (0.20 mm) or less.

1660 Drill Chuck, 1/2" Keyless $38.95
- Self-tightening design
- No chuck key required
- Hardened tool steel
- Capacity: 1/32" - 1/2"
- Mounts to 33 Jacobs taper arbor
1/2" keyless drill chuck. No chuck key is required with this self-tightening design. The Jacobs keyless chuck is made from hardened tool steel to ensure accuracy and extended life. The rated capacity is 1/32" to 1/2". Number 33 Jacobs taper mount. Runout of this chuck is 0.005" (0.13 mm) or less.

1659 Drill Chuck, 3/8" Keyless $31.95

5923 Drill Chuck, 1/2" Keyless with Integrated R8 Arbor $80.95
- 1/64" to 1/2" Keyless Drill Chuck
- Integrated R8 Shank
- T.I.R. <=0.0025" (0.0635 mm)
- More compact than traditional chuck/arbor combinations
- No chuck slipping
1/64" - 1/2" Precision keyless drill chuck with integral R8 shank. The integrated design maximized rigidity and accuracy. Additionally, the chuck is more compact than a typical combined drill chuck and arbor combination, and there can be no chuck slipping on its arbor. The chuck’s total indicated runout (TIR) is 0.0025" (0.0635 mm) or less.

5924 Drill Chuck, 5/8" Keyless with Integrated R8 Arbor $97.50

3153 Drill Chuck, 1/2" Professional Grade $29.95
- Precision made for reduced runout
- Designed for heavy duty jobs
- Key included
- Capacity: 1/32" - 1/2"
- Mounts to 33 Jacobs taper arbor
1/32" - 1/2" Capacity professional grade drill chuck. Designed for heavy jobs; all working parts are hardened and manufactured to the highest standards for durability and straight alignment.
This chuck is comparable to a Jacobs 34-33 heavy-duty drill chuck, including the runout specification of 0.004" (0.10 mm) or less. Chuck key is included.

4862 Drill Chuck, 3/8" Professional Grade $26.95
4863 Drill Chuck, 5/8" Professional Grade $34.95

1148 Drill Chuck, 1/2" with 2MT Short Arbor $22.85
- Package designed for mini lathe tailstock
- Capacity 1/32" - 1/2" chuck
- Hardened for high degree of accuracy
- Key included
- Drill chuck mounted on a short 2 Morse Taper shank for the mini lathe
1/32" - 1/2" Capacity drill chuck with hardened ground center jaw for improved durability and straight alignment. Mini lathe drill chuck runout is 0.008" (0.20 mm) or less. 2 Morse taper to 33 Jacobs taper. This arbor has a short Morse taper and does not need to be cut to use in the tailstock of the mini lathe. This model of drill chucks for lathes also fits the Jet 1014 mini wood lathe.

2870 Drill Chuck, 1/2" with 2MT Standard Arbor $22.82
- Combo Chuck and Arbor package for small lathe tailstock
- Capacity 1/32" - 1/2" chuck
- Hardened for high degree of accuracy
- Key included
- Mounted on a standard 2MT arbor
Chuck and Arbor combo pack. 1/32" - 1/2" capacity drill chuck with hardened ground center jaw for improved durability and straight alignment. Chuck runout is 0.008" (0.20 mm) or less. This chuck comes with a standard length 2 Morse taper arbor that will eject from most lathes with a 2MT tailstock taper.

1396 Drill Chuck, 1/2" with R8 Arbor $25.29
- High degree of accuracy
- All working parts hardened
- Chuck Key Included
- Capacity: 1/32" - 1/2"
- Mount: 33 Jacobs taper with R8 Shank
1/32" - 1/2" Capacity drill chuck with a 33 Jacobs taper arbor that has an R8 Shank. Chuck has a hardened ground center jaw that improves durability and ensures straight alignment. The chuck’s roundout is 0.008" (0.20 mm) or less. Fits mini mills with an R8 spindle.

5469 Drill Chuck, 1/2", Ball Bearing $64.95
- Capacity: 1/32" - 1/2"
- Taper Mount: 33JT
- +/- .0032" (.0813 mm) TIR
- Ultra smooth with ball bearing
- Chuck key Included
Extra heavy duty, all parts hardened and precision ground. Anti-thrust ball bearing to increase the grip power with high speed drilling.

5470 Drill Chuck, 5/32" Stainless Steel $52.95
- Capacity: 1/64" - 5/32"
- Taper Mount: 3JT
- +/- .006" (.1524 mm) TIR
- Made of anti-rust stainless steel, acid resistant
- Chuck key Included
Recommended for EDM machines and the food & marine industries.

(800) 981 9663 LittleMachineShop.com
### Tooling: Drill Chucks

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>2951</td>
<td>Drill Chuck, 6 mm for Unimat 3 &amp; 4 and SIEG C0 Lathes</td>
<td>$29.76</td>
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<tr>
<td>4977</td>
<td>Key, 1/2” Drill Chuck</td>
<td>$3.95</td>
</tr>
</tbody>
</table>

- 0.6 to 6 mm (0.024” to 0.24”) capacity
- M14 x 1.0 mounting thread
- Fits Unimat 3 & 4 lathes
- Fits SIEG C0 lathes
- Includes chuck key
- Drill chuck for Emco Unimat 3, Unimat 4 and SIEG C0 4x5 lathes.
- This threaded drill chuck also works with Harbor Freight 95012 Central Machinery 4x5 Micro Lathe.
- M14 x 1.0 mounting thread with a chuck capacity of 0.6 - 6 mm (0.024” - 0.24”). Includes chuck key.

### Tools & Things: Gift Certificates

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1675</td>
<td>Gift Certificate</td>
<td>$100.00</td>
</tr>
</tbody>
</table>

LittleMachineShop.com gift certificates make great gifts. Now you know exactly what to give, and you don't need to worry about whether or not it fits.

### Tools & Things: Adhesives

#### J-B Weld
- Cold-weld compound
- Can be formed, drilled, ground, tapped, machined, filled, sanded, and painted
- Super strong and safe to use
- Don’t scrap that damaged item that nothing else can fix! J-B Weld is an incredibly versatile product that can repair everything from damaged welds and solders to a precious heirloom. Save money, save time, and save your sanity for drastically less money than other forms of permanent repair. J-B Weld is the world’s finest cold-weld compound. It’s a remarkably easy, convenient, and inexpensive alternative to welding, soldering, and brazing. J-B Weld is the smart way to repair something … and for literally pennies per use. When welding or soldering is out of the question due to cost, down time for repairs, or technical/environmental considerations, J-B Weld is the answer. J-B Weld is packaged in two tubes. One contains liquid steel/epoxy resin, and the other contains hardener. When mixed together in equal portions, a chemical reaction occurs that turns the mixture into a compound as hard and tough as steel -- and with similar properties.

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>3978</td>
<td>J-B Weld</td>
<td>$5.95</td>
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</tbody>
</table>

- Super strong and safe to use
- Don’t scrap that damaged item that nothing else can fix!
- Each tube is 0.25 oz (7 g). Both tubes are necessary to make J-B Weld.
- J-B Weld is packaged in two tubes. One contains liquid steel/epoxy resin, and the other contains hardener. When mixed together in equal portions, a chemical reaction occurs that turns the mixture into a compound as hard and tough as steel -- and with similar properties.

### Tools & Things: Batteries

- Batteries for the products we sell
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<tbody>
<tr>
<td>4420</td>
<td>Battery, AG10 Alkaline</td>
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<td>4292</td>
<td>Battery, CR2032 Lithium</td>
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<tr>
<td>1707</td>
<td>Battery, LR44 Alkaline</td>
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<tr>
<td>2975</td>
<td>Battery, LR44 Alkaline, Set of 10</td>
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</tr>
<tr>
<td>2976</td>
<td>Battery, SR44 Silver Oxide</td>
<td>$1.95</td>
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</tbody>
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### Tools & Things: Abrasives

#### Abrasive Cloth, 1" Wide, Individual Grits
- Aluminum oxide abrasive
- High grade resin-bonded on J-weight cotton cloth backing
- Flexible for contour work
- The price is for one foot. Order as many feet as you want and we will cut it to that length. Maximum length is 150 feet.
- Use for cleaning and deburring metal surfaces. Can be used with water or oil.

<table>
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<tr>
<th>Product Code</th>
<th>Description</th>
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<td>3986</td>
<td>Abrasive Cloth, 1&quot; Wide, 120 Grit</td>
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<td>3987</td>
<td>Abrasive Cloth, 1&quot; Wide, 240 Grit</td>
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<tr>
<td>3988</td>
<td>Abrasive Cloth, 1&quot; Wide, 400 Grit</td>
<td>$0.29</td>
</tr>
</tbody>
</table>

#### Abrasive Sheets, 9" X 11", Individual Grits
- Aluminum oxide abrasive
- High grade resin-bonded on J-weight cotton cloth backing
- Flexible for contour work
- Use for cleaning and deburring metal surfaces. Can be used with water or oil.

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<thead>
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<tr>
<td>4992</td>
<td>Abrasive Pad, Maroon Hand Pad, 3M</td>
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<tr>
<td>3886</td>
<td>Abrasive Sheet, Wet or Dry, 240 Grit</td>
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<td>3887</td>
<td>Abrasive Sheet, Wet or Dry, 320 Grit</td>
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<td>Abrasive Sheet, Wet or Dry, 400 Grit</td>
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<tr>
<td>3889</td>
<td>Abrasive Sheet, Wet or Dry, 600 Grit</td>
<td>$0.49</td>
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</table>

#### Tools & Things: Cratex Bullet Shaped Points
- Diameter: 9/32”, Length: 1”, Arbor hole: 1/16”
- For Proxxon and Dremel rotary tools
- Sold individually
- Mandrels fit 1/16” arbor hole

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<tr>
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<tr>
<td>4943</td>
<td>Cratex Bullet Shaped Point, 9/32” Coarse</td>
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<td>4944</td>
<td>Cratex Bullet Shaped Point, 9/32” Medium</td>
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<td>4947</td>
<td>Cratex Point Mandrel for Bullet Points, 1/8” Shank</td>
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<td>4946</td>
<td>Cratex Point Mandrel for Bullet Points, 3/32” Shank</td>
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#### Tools & Things: Loctite Products
- Visit our Web site for full information about these Loctite products.

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<tr>
<td>3988</td>
<td>Loctite 222 Purple Low Strength Threadlocker for Small Fasteners</td>
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<td>3987</td>
<td>Loctite 242 Medium Strength Blue Threadlocker</td>
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<td>Loctite 7649 Primer for Threadlockers</td>
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<td>3985</td>
<td>Loctite 271 High Strength Red Threadlocker</td>
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### Tools & Things: Batteries

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<td>Battery, SR44 Silver Oxide</td>
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### Tools & Things: Gift Certificates

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**Tools & Things: Lights**

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<td>5197</td>
<td>Flashlight, LED with Magnetic Base</td>
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<td>3682</td>
<td>Machine Light with Magnetic Base</td>
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<td>3715</td>
<td>Machine Light, Halogen with Magnetic Base</td>
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<td>4986</td>
<td>Machine Light, LED with Magnetic Base</td>
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<td>3015</td>
<td>Spindle Light, Mini Mill</td>
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<td>5972</td>
<td>Work Light, LED with Universal Arm, Waterproof</td>
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**Tools & Things: Shims**

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<td>4304</td>
<td>Shim Stock Assortment, 0.0005&quot; - 0.005&quot; Plastic</td>
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<td>1457</td>
<td>Chip Removal Tool with Shovel</td>
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<td>3953</td>
<td>Chip Shield on Magnetic Base</td>
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<td>Chip Shield, Magnetic for 3&quot; - 4&quot; Vise</td>
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**Tools & Things: Lubrication**

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<tr>
<td>4949</td>
<td>Pump Oiler, Hard Trigger</td>
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**Tools & Things: Things**

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<th>Item</th>
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<tr>
<td>3896</td>
<td>SpillMaster Container</td>
<td>$5.95</td>
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**Tools & Things: Lubrication**

- For ball oils (and hundreds of other uses)
- 6 oz. capacity
- Straight spout
- Flared bottom to prevent tipping

**Tools & Things: Shims**

- 7 sheets of 5" x 5" sheets of polyester shim stock
- Minimal compression in use
- Thickness tolerances to industry standards
- 0.0005", 0.001", 0.0015", 0.002", 0.003", 0.004", and 0.005" Color coded shim stock sheets are made from a high quality plastic material. Easy to cut and resists oil. Non-magnetic and non-conductive to electricity. Corrosion resistant.

---

**Tools & Things: Things**

- Remove Chips from Hazardous Areas
- 5" Guard and Handle
- Use on Curled and Powdered Chips
- Handle Length 6"
- Shovel 4.75" x 2.75"

---

**Tools & Things: Shims**

- Holds cutting fluids and lubricants
- Won't spill, even when upside down
- Durable polyethylene for long life
- Spill proof container includes applicator brush

---

**Tools & Things: Lubrication**

- For ball oils (and hundreds of other uses)
- 6 oz. capacity
- Straight spout
- Flared bottom to prevent tipping

- This is an old-timey (but brand new) pump oiler to oil all those little ball oils. The hardened trigger means it's good for even thick machine oils as well as most types of cutting oils.

---

**Tools & Things: Shims**

- Holds cutting fluids and lubricants
- Won't spill, even when upside down
- Durable polyethylene for long life
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**Tools & Things: Things**

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<thead>
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<td>Machinist Calc Pro 2 Machinists Calculator</td>
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<td>5387</td>
<td>Magnifier, 10x, Hastings Triplet</td>
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<td>5388</td>
<td>Magnifier, 8x, Desktop, LED Light</td>
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<td>4423</td>
<td>Safety Glasses</td>
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<tr>
<td>5587</td>
<td>Shear and Brake Combination, 8&quot;</td>
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<td>5681</td>
<td>Automatic Center Punch</td>
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**Tools & Things: Tools**

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<td>Arbor Press, 1/2-Ton</td>
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<td>5083</td>
<td>Arbor Press, 1-Ton</td>
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<td>5681</td>
<td>Automatic Center Punch</td>
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<tr>
<td>3553</td>
<td>Starrett Automatic Center Punch with adjustable stroke</td>
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<tr>
<td>2620</td>
<td>Automatic Center Punch, Starrett</td>
<td>$38.00</td>
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<tr>
<td>3189</td>
<td>Bench Block</td>
<td>$24.95</td>
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Demagnetizes tools such as dies, cutters and punches.

The first dedicated handheld machining math and reference tool which provides a complete assortment of machine shop solutions. It includes step-saving thread and drill size chart look-ups, speeds and feeds, right triangle solutions, bolt patterns and much more. Spend more time machining and less time looking up specs and data in books, on charts or in computer programs. New features include the ability to enter WOC (width of Cut), LOC (Length of Cut), and DOC (Depth of Cut). It also includes settings for 20 popular materials, 6 processes and 3 tools. It also has a new larger 2-line LCD display.

Includes settings for 20 popular materials, 6 processes and 3 tools.

● 10x Magnification
● Triplet lens system
● 21mm diameter
● Come with case

● 8x Magnification
● Flexible arm for any desired position
● 5" lens diameter
● 300 LUX (2.5 watt) LED light
● 110v/1 phase power supply, 60" cord

● Strong, lightweight clear polycarbonate lens with 11 degree base curve
● Treated with our exclusive Duramass scratch resistant and anti-fog coatings
● Non-slip rubber head grips and temple sleeve designed for breakaway cord
● Twin bridge adjustable nose piece

The safety glasses feature safety and style at an affordable. The metal frame with spring hinge temples, twin bridge adjustable nose piece leaves you at the peak of comfort and style all day long. Lightweight metal frame with extreme flexibility. Non-slip temple sleeves designed for use with breakaway cord. Twin bridge adjustable nose piece with gel nose pads. Meets or Exceeds ANSI Z87.1 Safety Standards. Always wear safety glasses when working in your shop.

This punch has a lightweight, knurled handle for a positive grip and easy handling. No hammer is required! Just hold the punch in an upright position, press the handle down, and a built-in mechanism strikes a perfect center mark every time. All working parts are made of tool steel, properly hardened. Works on metal, plastics, wood and other machinable materials.

The adjustable knurled cap of the Starrett 18A regulates the force of the blow. Should a heavy mark be required, the cap is screwed down. Progressively lighter marks are obtained by turning the cap upward. The tension of the spring, which regulates the blow is constant, so marks made by the point are uniform in depth and size for each setting. The point can be easily removed for regrinding and/or replacement. All sizes are identical in style, differing only in the striking power.

This punch has a lightweight, knurled aluminum handle for a positive grip and easy handling. No hammer is required. Just hold the punch in an upright position, press the handle down, and a built-in mechanism strikes a perfect center mark every time. The force of the blow can be adjusted by turning the knurled cap.

All working parts are made of tool steel, properly hardened. The hardened tool steel point can easily be removed for regrinding or replacement. Works on metal, plastics, wood and other machinable materials.

Made from steel; hardened and ground

Handy tool for holding work, driving pins, drilling and so on

Knurled edge provides a good grip

V-groove accommodates round and odd-shaped objects

Holes from 1/8" to 5/8" diameter

This bench block is 3" in diameter and 1.5" thick.

**Additional Information:**
- 115 VAC with on/off switch
- Table size: 6-3/4" x 4-1/4"
- Weight: 11 lbs
- Table top style demagnetizer good for demagnetizing tools such as dies, cutters, and punches.

- Starrett Automatic Center Punch with adjustable stroke
  
  - Length: 5"
  - Punch Diameter: 9/16"
  - Knurled steel handle
  
  Rugged automatic punches have all-steel handles and parts. This Starrett center punch has a mechanism that automatically strikes a blow when downward pressure is applied. No hammer is required, making one hand always free to steady the work.

- 3681 Automatic Center Punch, Starrett

- 2620 Automatic Center Punch, Starrett

- 3553 Starrett Automatic Center Punch with adjustable stroke

- 3189 Bench Block

- 5083 Arbor Press, 1-Ton

- 3681 Automatic Center Punch, Starrett

- 2620 Automatic Center Punch, Starrett

- 3553 Starrett Automatic Center Punch with adjustable stroke

- 3189 Bench Block
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<td>4676 Boroscope, Wired with Color LCD Monitor, and 9 mm Camera</td>
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<td>4687 Boroscope, Camera Head Extension</td>
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<td>1820 Center Punches, Starrett</td>
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<td>3979 Chip Brush, 1”</td>
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<td>3980 Chip Brushes, 1”, 36 Pieces</td>
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<td>1671 Deburring Tool</td>
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<td>4848 Deburring Tool Set</td>
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<td>3884 Drive Pin Punches, Extra Long, Starrett</td>
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<td>1821 Drive Pin Punches, Starrett</td>
<td>$63.00</td>
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<tr>
<td>4823 File Set, 12” Steel, 5 Pieces</td>
<td>$13.95</td>
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Chip Brushes, 1”, 36 Pieces
- Natural bristles
- Wood handle

This hand deburring tool has a built-in E-100 blade. The deburr tool deburs holes with a flick of the wrist.

This bore scope allows for easy inspections in hard to reach areas. The lightweight handheld design lets you easily find, diagnose and solve problems. Features: 2.4” color TFT LCD monitor allows image rotation for detailed images. 39” flexible gosseckle cable retains configured shape. Optional 78” flexible shaft with 9mm or 17mm camera available. Mini waterproof 9mm (IP67) camera head provides on-the-spot viewing. Night Vision Range: 20”。

This hand deburring tool has a built-in E-100 blade. The deburr tool deburs holes with a flick of the wrist.
Grinder, Proxxon IB/E Professional Rotary Tool | $154.95
- Ball bearing spindle of ground steel, with lock button for rapid cutter changing
- Streamlined die-cast aluminum head for exact bearing seats and optimal stability
- Powerful 100 W motor with full-wave electronics for variable speeds between 5,000 and 20,000 RPM
- Proxxon rotary tool comes complete with six triple-slit steel collets covering 1/32" to 1/8" (1.0 - 3.2 mm) along with a collet nut are included.
- Two year limited warranty

Grinder with 34 industrial quality bits & cutters with shanks Ø 3/32" (2.3 mm). High concentricity (maximum run out .001). This high-revving motor is usable for extended periods at a time. 120V AC, 60 Hz. The ground steel spindle runs in a ball bearing assembly, minimizing play. Six high concentricity collets sized 1/32", 1/16", 5/64", 3/32", 7/64" and 1/8" (1.0, 1.5, 2.0, 2.4, 3.0 and 3.2 mm) along with a collet nut are included.

IBS/E Professional Rotary Tool is packed in a durable plastic storage for spare blades. The K145 High-Tension Frame is constructed of cast aluminum with an extra-thick tubular steel bar for added strength. The steel tube also provides on-hand storage for spare blades. The K145 High-Tension Frame is engineered for use with Starrett bi-metal Bluestrip® and Greenstrip® blades. With just three 360° turns, the easy to use adjusting screw will tension the blade up to 28,000 psi (2,000kg/cm) which prevents the blade from twisting and binding when down on the cut. Each K145 Heavy Duty High-Tension Frame is shipped with a Starrett Bluestripe bi-metal unique ground tooth hacksaw blade.

3634 Accessory Kit for Rotary Tools $41.85
- Starrett Closed Grip Heavy Duty High-Tension Hacksaw Frame
- Starrett catalog number K145
- 12" (300mm) frame
- 4-3/8" (110mm) throat depth

The K145 is a rugged, professional quality high-tension frame constructed of cast aluminum with an extra-thick tubular steel bar for added strength. The steel tube also provides on-hand storage for spare blades. The K145 High-Tension Frame is engineered for use with Starrett bi-metal Bluestrip® and Greenstrip® blades. With just three 360° turns, the easy to use adjusting screw will tension the blade up to 28,000 psi (2,000kg/cm) which prevents the blade from twisting and binding when down on the cut. Each K145 Heavy Duty High-Tension Frame is shipped with a Starrett Bluestripe bi-metal unique ground tooth hacksaw blade.

Hex Wrench Set, T-Handle Ball End, Inch $48.95
- Cushion grip T-handle
- Sizes 3/32" and up have ball end
- Includes stand
- Ball end tips work at up to 25 degree angle
- Ball End T-handles feature welded steel handles with cushion grips sized for maximum torque while protecting the ballpoint tip and screw from rounding or stripping. The cushion grip handle is ergonomically shaped eliminating pressure points. The heavy duty handle generates flywheel effect for fast insertion and extraction of screws. Comes with a molded stand that mounts on the wall or work bench. Only available from Bondhus. ProTanium® steel means these are the strongest tools available.

Pin Vise, 0.010 - 0.055", Starrett $17.95
- Attach nuts, bolts, or hose clamps in hard-to-reach places
- Simply put desired nut, clamp, or bolt in the Handee Clamp and tighten nut on other end to secure
- Made in USA

The Handee Clamp is a small handheld device that firmly holds nuts, bolts and clamps. Its design allows for the placement of the item in vise like jaws that can be tightened from one end. Once secured, simply put the held item into place with one hand, freeing the other hand for actions such as tightening. The Handee Clamp will securely hold onto whatever you put in its jaws, enabling you to reach into that tight crevice so you can focus on the job at hand and not worry about dropping the hardware you need. There is no telling when the next time you'll need The Handee Clamp to help you with that "Out of Reach Gap". For a relatively inexpensive product, it can save you hours of frustration that makes it more than worth its value. Order this and other lathe tools online at LittleMachineShop.

Needle File Set, 12 Pieces $41.95
- Swiss Pattern File Set of 12
- 6" length, #2 Cut
- Ideal for Die Makers, Gunsmiths, Machinists, Modelers
- Common Swill Pattern Shapes
- Storage Wallet Included

Set of 12 Swiss Pattern needle files, ideal for die makers, jewelers, modelers, craftsmen and hobbyists. Use for removing, smoothing and shaping a wide range of materials. Files are #2 cut and 6". Shapes includes are: half round, hand, knife, round, round straight, square and three square shapes. Set comes in a vinyl storage wallet.

Pin Chuck Set, 0 - 3/32" $8.95
- Holds small drills firmly
- Ensures complete collet length
- Overall length: 2-1/2"
- Shank size: 1/4"
- Includes: 3 collets - capacity: 0 - 1/32", 1/32" - 1/16", 1/16" - 3/32"

Pin Vise Set, 0 - 3/16" $11.95
- Hollow handle for long wire or rods
- Includes: Ranges: 0-.055", .025"-.075", .045"-.125", .110"-.187"

Pin Vise, 0.010 - 0.055", Starrett $24.00
Pin Vise, 0.025 - 0.075", Starrett $29.50
Pin Vise, 0.045 - 0.135", Starrett $32.50

(800) 981 9663 LittleMachineShop.com
**Tools & Things: Tools**

3560 Pocket Level, Starrett $34.00
- Starrett 3.5" pocket level
- Starrett catalog number 135B
- 3.5" (88 mm) long
- Satin nickel plated finish

This is an extremely useful Starrett level that fits handily in the pocket with no sharp edges. Made from hexagonal stock with convex ends and satin nickel-plated finish.

4732 R8 Tool Fixture $89.95
- Provides a safe way to change cutting tools in R8 based tool holders.
- Easy assembly and installation.
- Mounts to the front slot of a mill table, workbench, or vise.
- Includes a tool caddy for quick access to frequently used tools
- Convenient for changing R8 based indexable-insert tooling

The R8 Tool Fixture provides a platform for setting tools in any R8 compatible tool holder, and includes a tool caddy for convenient access to frequently used tools such as an air gun, wrenches, and brushes. It is handy for setting tools in quick change tool holders like the Tormach TTS System or Royal R8 System, great for setting tools in ER collets, and useful for setting tools in shell mill arbors such as a slitting saw.

5198 Stamp Set, Numbers and Letters, 3/16" $13.95
- Numbers (0-9) & Letters (A-Z)
- Hardened to RC 59-61 at tip and tempered to RC 41 Rockwell at striking end.
- Made from carbon steel.
- Character style designed to give sharp clear impressions.
- Packed in a durable box for easy selection and storage.

3/16" Number & Letter Stamp Set -- 0-9 and A-Z

Character style is designed to give sharp clear impressions. Packed in a durable box. Easy selection and storage.

Torx Wrenches, Flag Style
- Molded Flag Style Handle with spinner top
- This is a great replacement torx wrench for many indexable turning tool sets that use torx screws.
- The flag style torx wrench is designed to prevent overtightening of insert retaining screws.

5443 Torx Wrench, T-6 $1.95
5510 Torx Wrench, T-8 $1.95
5552 Torx Wrench, T-9 $1.95
5553 Torx Wrench, T-10 $1.95
5554 Torx Wrench, T-15 $1.95

Torx Wrenches, Flag Style, Wiha
- Molded Flag Style Handle with spinner top
- Made of High Performance CRM 72 Tool Steel
- Hardened Oxide Finish
- Made In Germany

This is a great replacement torx wrench for many indexable turning tool sets that use torx screws.

The flag style torx wrench is designed to prevent overtightening of insert retaining screws.

5511 Torx Wrench, T-5, Wiha $5.95
5512 Torx Wrench, T-6, Wiha $5.95
4842 Torx Wrench, T-7, Wiha $5.95
4843 Torx Wrench, T-8, Wiha $5.95
4844 Torx Wrench, T-9, Wiha $5.95
4845 Torx Wrench, T-10, Wiha $5.95
4846 Torx Wrench, T-15, Wiha $5.95

4279 V-DrillGuide Hand Drill Guide for Inch Drills $27.50
- Drill guide is sized for drill bit sizes: 1/8" to 3/8"
- 17 drill sizes - 1/64" increments
- Special nickel alloyed steel heat treated for durability

V-DrillGuide Hand Drill Guide by Big Gator Tools® is like a portable drill press for precision alignment.

The V-groove along the bottom of the guide allows for perpendicular alignment with all drill sizes on round parts or corners.

The image shows both the top and bottom of the guide. The bottom surface is precision ground to assure stability and accurate perpendicular alignment on flat surfaces.

4911 V-DrillGuide Hand Drill Guide for Metric Drills $27.50

Tools & Things: Workwear

3968 Shop Apron $13.95
- 5 pockets designed for metalworking tools

We had these aprons custom-made to our design out of heavy-duty denim.

Tools & Things: X-Y Tables

2008 X-Y Table Assembly $172.92

This small precision X-Y table can be used on a drill press or other machine to precisely locate your workpiece.

The table is 90 mm (3.54") by 200 mm (7.87"). It has three 8 mm T-slots.

The complete X-Y Table assembly is 10.15" wide, 8.5" deep and 2.5" high.

The X-axis travel is 135 mm (5.31") and the Y-axis travel is 70 mm (2.76").

The height of the table is 60 mm (2.36").

The base is 100 mm (3.94") by 175 mm (6.89").

The dials are graduated in 0.001" and one turn of the hand wheels moves the table 0.050".

The X-Y table is made of cast iron and steel. There are adjustable gibs on both axes.

Videos and Books: CNC Books

CNC Books

CNC Books for the machinist.

Visit our Web site for a full description of these titles.

Videos and Books: Machinist Books

1165 Gears and Gear Cutting for Home Machinists $12.99
- Practical, hands-on guide for anyone who wants to cut gears on a lathe or milling machine
- Learn the fundamentals needed to design gears and gear trains
- Takes the complex description of gears and how to machine them and makes it very understandable
- Uses plain, non-technical language and keeps the level of mathematics down to the simplest form
- Well-illustrated with concise technical diagrams and B&W photo

This practical, hands-on guide will assist anyone who wants to cut gears inexpensively on a lathe or milling machine. It teaches the fundamentals needed to design gears and gear trains using simple, non-technical language paired with helpful diagrams, charts, illustrations, and photography. With 12 insightful chapters on tooth forms and sizes, rack and pinion gears, bevel wheels, worm gears, dividing heads, and so much more, this comprehensive manual takes complicated concepts and makes them approachable and easy for anyone who simply enjoys model-making.

By Ivan Law; revised and updated by George Bulliss, editor of The Home Shop Machinist magazine. 136 pages, softcover, 5.75" x 8.26". ISBN 978-1-56523-917-3

Copyright 2019 Revised and Updated by George Bulliss
### Machinists Books

How-to guide books for machinists
Visit our Web site for a full description of these titles.

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<tr>
<td>1739 Machine Shop Practice, Vol. 2</td>
<td>$29.95</td>
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<tr>
<td>3130 Machine Shop Tools and Operations</td>
<td>$32.95</td>
</tr>
<tr>
<td>3565 Metalworking Sink or Swim</td>
<td>$49.95</td>
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<tr>
<td>4735 Basic Latework for Home Machinists</td>
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<tr>
<td>3402 Home Machinist’s Handbook</td>
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<td>2465 Machine Shop Essentials: Questions &amp; Answers</td>
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<td>2238 Machine Shop Methods</td>
<td>$18.95</td>
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<tr>
<td>2366 Machine Shop Trade Secrets, Second Edition</td>
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<td>5180 Machining for Hobbyists: Getting Started</td>
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<tr>
<td>4739 The Milling Machine for Home Machinists</td>
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<td>5839 Tool &amp; Cutter Sharpening for Home Machinists</td>
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<tr>
<td>5102 Useful Machine Shop Tools to Make for Home Shop Machinists</td>
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### Other Books

Other types of books for the machinist
Visit our Web site for a full description of these titles.

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<tr>
<td>5101 Backyard Foundry for Home Machinists</td>
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<td>5026 The Machinist’s Cookbook</td>
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<tr>
<td>3110 Tools &amp; Rules for Precision Measuring</td>
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### Videos and Books: Reference Books

Reference books for the machinist
Visit our Web site for a full description of these titles.

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<td>1735 Basic Machining Reference Handbook</td>
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<tr>
<td>4996 Engineers Precision Data Pocket Reference</td>
<td>$24.95</td>
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<tr>
<td>5838 Metalworker’s Data Book for Home Machinists</td>
<td>$14.99</td>
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<td>1953 Shop Reference for Students &amp; Apprentices</td>
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### Videos and Books: Users Guides

Users Guides
Users guides for the machines we sell as well as some others
These are all available for free download on the Support menu.
Visit our Web site for a full description of these titles.

<table>
<thead>
<tr>
<th>Title</th>
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<tr>
<td>2247 Mini Lathe Users Guide</td>
<td>$5.95</td>
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<tr>
<td>2706 Mini Mill Users Guide</td>
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<tr>
<td>4928 Users Guide, HiTorque Bench Lathe, 3536 &amp; 3540</td>
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<td>4929 Users Guide, HiTorque Micro Mill, ER-16, 4660</td>
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<td>4924 Users Guide, HiTorque Mini Lathe, 4100 &amp; 4200</td>
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<td>4927 Users Guide, HiTorque Mini Mill, Solid Column with Air Spring, 3990</td>
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<td>4925 Users Guide, HiTorque Mini Mill, Tilting Column, 3900</td>
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<td>5098 Users Guide, KX1 Milling Machine, 3501</td>
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<tr>
<td>5099 Users Guide, KX3 Milling Machine, 3503</td>
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### Videos and Books: Videos

- Lathe Tool Sharpening DVD
- 10 Lathe tool bits, 5/16’ Square 2-1/2’ Long M2 HSS
This DVD video, by Jose Rodriguez, provides an hour and a half instruction on sharpening lathe cutting tools and other grinding tasks.
Learn how to create perfect lathe cutting tools from high speed steel tool bits blanks with a bench-top grinder. Create perfect left or right hand lathe cutting tools for brass, aluminum and steel. Produce a 60 degree threading tool that is as good as any commercially available threading tool bit. Learn how to prepare a parting tool for optimum results. Watch Jose as he revives an old jobber-length drill bit to give it a new lease on life. Put a new edge on worn two flute end mills and get many more hours of work out of them. Regrind screw driver tips to keep them from slipping off screw heads.
Grinding is an art that can take months or years to fully master but with the right grinder and a bit of patience, you will be able to produce perfect results right in your shop.

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<td>3963 DVD: Grinding Tool Bits and 5/16” Tool Bits</td>
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<td>3962 DVD: Grinding Tool Bits and 1/4” Tool Bits</td>
<td>$42.90</td>
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<td>3964 DVD: Grinding Tool Bits and 3/8” Tool Bits</td>
<td>$54.90</td>
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Videos and Books: Videos

3441 DVD: Sherline Lathe Basics $54.95
- How to set up and operate the Sherline lathe
Sherline Lathe Basics gives a great introduction to using the Sherline lathe. Topics covered include turning, facing, boring, workholding, eccentrics, tapers, threading, tool bit grinding, backlash, setting tool height, cleaning a chuck, hand wheel dial adjustment, using the follower rest, mounting the lathe aligning the headstock and milling. Approximate running time: 213 minutes.

3440 DVD: Shop Secrets, Volume 1: Measuring Tools $39.95
- Teaches you to operate and maintain precision measuring equipment
- Easy-to-understand words, diagrams, and three-dimensional graphics explain operation of the tools
- Covers equipment that even experienced machinists may not know how to operate
Shop Secrets, Volume 1 is a two-hour video on the use and care of machinist measuring tools and related machine shop operations. Produced for the beginning machinist, this video is in use at technical high schools in the US and in industry both in the US and the Far East. Topics include adjustable parallels, backlash, calipers, combination squares, optical comparator, dial indicators, edge finders, left-handed lead screw operation, micrometers, precision squares, radius gages, shop safety, small hole gages, thread gages, telescoping gages, thread pitch gages, vernier scales, vision assists, wigglers, steel rules. Running time: 1:52 hours.

Jose Rodriguez Videos
Jose Rodriguez publishes in depth videos about bench top machining. Visit our Web site for a full description of these videos.

2007 DVD: 7x10 Variable Speed Mini Lathe Operations $43.00

2566 DVD: Advanced Taig Micro Lathe Operations $43.00

2564 DVD: Basic Taig Micro Lathe Operations $33.00

2193 DVD: Building a Spindle Gauge for the Mini Lathe $33.00

2396 DVD: Grinding Tool Bits and Other Things $30.00

2057 DVD: Making Gears the Easy Way $43.00

2054 DVD: Threading on the Lathe $33.00

5344 DVD: Basic Operations On The HiTorque Mini Mill $18.00

4649 DVD: Basic uses for Dividing Instruments for the Mill $25.00

4518 DVD: Basic Vise Work Holding Techniques for the Mini Mill $20.00

4421 DVD: Cutting Balls & Radiuses on the Lathe $35.00

4439 DVD: HiTorque 7x12 Mini Lathe Basic Operations $39.00

4743 DVD: Introduction to the Model 4100 HiTorque Mini Lathe $20.00

4635 DVD: Introduction to the Nano Lathe-Drillpress-Mill $15.00

4440 DVD: Mini Lathe Advanced Operations, Vol. 1 $39.00

Ron Takayama Videos
Ron Takayama has created some videos that show you how to build some great projects. You get video instructions and complete plans on the DVD.

4077 DVD: Building a Horizontal Steam Engine $19.95

3820 DVD: Building a Vertical Boiler $19.95

4246 DVD: Building an Overcrank Steam Engine $19.95

4522 DVD: Building a Crosshead Overcrank Steam Engine $19.95

SwarfRat Videos
SwarfRat provides the hobby machinist with top-notch instruction that is both easy to understand and enjoyable to watch. They take the subject of metalworking and break it down into easily understood lessons; lessons that are chock-full of on-camera demonstrations, on-screen charts, animations, and 3-D computer simulations, all designed to make sure you can visualize and understand the concepts and techniques. Our lesson format is good for those of you who have some experience too; you can pick just the topics you need a little help with. Visit our Web site for a full description of these videos.

3484 DVD: Building the Oscillating Cylinder Steam/ Air Engine $26.95

2637 DVD: Mill & Lathe Spindle and Gearbox Repair $26.95

2884 DVD: Milling, Flycutting & Dovetailing $24.95

3141 DVD: Mini Machines 101 Complete Mill Series $129.95

2324 DVD: Mini Mill Basics, Clamping & Fixtures $24.95

2537 DVD: Teardown, Tuning & Tramming $24.95

2927 DVD: Toolmaking & Restoration $21.95

3123 DVD: Work Holding on the Mini Lathe $24.95

3111 DVD: Cutting Threads on the Mini Lathe $39.95

Vises: Accessories
Vise Comparison
See the vise comparison chart at www.littlemachineshop.com/vise.

Vises: Milling Vises

2045 Swivel Base, 3" Precision Milling, Heavy $29.95
- Detachable swivel base features easy to read divisions
- Ground top and bottom
This swivel base fits our 3" Precision Milling Vise, Heavy

2239 Swivel Base, 4" Precision Milling, Heavy $36.95
- Detachable swivel base features easy to read divisions
- Ground top and bottom
This swivel base fits our 4" Precision Milling Vise, Heavy

1647 Vise, 3" Milling $64.95
- Jaw Width 3.15" (80.0 mm)
- Jaw Depth 1.18" (30.0 mm)
- Swivel Base
- Maximum Jaw Opening 2.56" (65.0 mm)
This 3" milling vise is good for general mill work.

2500 Vise, 3" Precision Milling $99.95
- Detachable swivel base
- 360 degree rotation
- Ground and hardened jaws
- Jaw width 3.15" (80.0 mm)
- Jaw depth 0.93" (23.5 mm)
Precision 3" Kurt-style milling vise with swivel base. The top, bottom of vise bed, gib, jaws, swivel base, and all plate mounting surfaces are ground. The jaws of this precision milling vise are hardened and ground. The detachable swivel base allows 360 degree rotation of the vise.

3969 Vise, 3" Precision Milling Plus Parallels and Mounting Kit $129.95
### Vises: Milling Vises

<table>
<thead>
<tr>
<th>Vise, 3” Precision Milling, Heavy, No Swivel Base</th>
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<tbody>
<tr>
<td>2024</td>
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<tr>
<td>● Precision 3” Kurt-style milling machine vise</td>
</tr>
<tr>
<td>● No swivel base</td>
</tr>
<tr>
<td>● Hardened replaceable jaws</td>
</tr>
<tr>
<td>● The top, bottom of vise bed, gib, jaws, swivel base, and all plate mounting surfaces are ground</td>
</tr>
<tr>
<td>3” Kurt-style milling vise. Top, gib, jaws, bottom of vise bed and all plate mounting surfaces are ground. The angle tight positive lock style jaws are hardened and ground, and can be mounted on either end of the fixed and movable jaw providing a wide range of clamping distances. Overall length is 10.85” and the height is 3.05”. Jaws are 3.15” wide, 1.04” deep, open 3”, and are perpendicular to the ways within 0.002” in 4”. The ways are parallel to the base within 0.0006” in 4”.</td>
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<tr>
<td>3857</td>
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<tr>
<td>● Lock down type</td>
</tr>
<tr>
<td>● Compact size allows multiple vises on CNC mill table</td>
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<tr>
<td>● Flatness of all sides within 0.001”</td>
</tr>
<tr>
<td>● Mount upright, or on left or right sides</td>
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<tr>
<td>● Sides parallel within 0.0005” in 4”</td>
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### Vise, 3” Precision Milling, Heavy, with Swivel Base

<table>
<thead>
<tr>
<th>Vise, 3” Precision Milling Vise</th>
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<tbody>
<tr>
<td>1699</td>
</tr>
<tr>
<td>● Precision 3” Kurt-style milling machine vise</td>
</tr>
<tr>
<td>● Detachable swivel base features easy to read divisions</td>
</tr>
<tr>
<td>● Hardened replaceable jaws</td>
</tr>
<tr>
<td>● The top, bottom of vise bed, gib, jaws, swivel base, and all plate mounting surfaces are ground</td>
</tr>
<tr>
<td>Precision Milling Machine Vise: 3” Kurt-style milling vice with detachable 360° swivel base and easy to read divisions. Top, gib, jaws, swivel base, bottom of vise bed and all plate mounting surfaces are ground. The angle tight positive lock style jaws are interchangeable with industry standard machine vise jaws. The replaceable jaws can be mounted on either end of the fixed and movable jaw supports for a wide range of clamping distances. Overall length is 10.85” and the height is 3.05” without base, and 4.21” with base. Jaws are 3.15” wide, 1.04” deep, open 3”, and are perpendicular to the ways within 0.002” in 4”. The ways are parallel to the base within 0.0006” in 4” without the swivel.</td>
</tr>
<tr>
<td>5590</td>
</tr>
<tr>
<td>● Lock down type</td>
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<tr>
<td>● Compact size allows multiple vises on CNC mill table</td>
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<tr>
<td>● Flatness of all sides within 0.001”</td>
</tr>
<tr>
<td>● Mount upright, or on left or right sides</td>
</tr>
<tr>
<td>● Sides parallel within 0.0005” in 4”</td>
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### Other Vises

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<tr>
<th>Vise, 2.5” Drill Press</th>
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<tbody>
<tr>
<td>4140</td>
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<tr>
<td>● Cast iron construction</td>
</tr>
<tr>
<td>● Vertical and horizontal V-grooves in fixed jaw</td>
</tr>
<tr>
<td>● 2.5” jaw opening</td>
</tr>
<tr>
<td>● 1.5” jaw depth</td>
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</table>

<table>
<thead>
<tr>
<th>Vise, 3” Drill Press Quick Slide</th>
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<tbody>
<tr>
<td>4141</td>
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<tr>
<td>● 3” wide jaws</td>
</tr>
<tr>
<td>● 1/2” slot for mounting</td>
</tr>
<tr>
<td>● Precision ground</td>
</tr>
<tr>
<td>● Jaw depth 1”</td>
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<table>
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<tr>
<th>Vise, 3.5” Tilting, 0-90 Degree</th>
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<tr>
<td>3643</td>
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<tr>
<td>● Full 90° horizontal to vertical adjustment</td>
</tr>
<tr>
<td>● Multiple bolt slots in base for easy mounting</td>
</tr>
<tr>
<td>● Angle dial on one side and locking knob on opposite side</td>
</tr>
<tr>
<td>● Made from strong cast iron</td>
</tr>
<tr>
<td>● Has a rail for secure angle adjustments</td>
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<table>
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<tr>
<th>Vise, 4-1/2” Bench</th>
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<tbody>
<tr>
<td>4872</td>
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<tr>
<td>● Rugged 30,000 PSI body castings</td>
</tr>
<tr>
<td>● Built-in pipe jaws</td>
</tr>
<tr>
<td>● Locking swivel base</td>
</tr>
<tr>
<td>● Wilton-type vise with 4-1/2” jaws that open up to 4”</td>
</tr>
<tr>
<td>● Anvil work surface</td>
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**(800) 981 9663**  
LittleMachineShop.com  
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**Vises: Other Vises**

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Price</th>
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</thead>
<tbody>
<tr>
<td>3524</td>
<td>Vise, Universal Movement</td>
<td>$989.95</td>
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This fixture is composed of two parts; a precision vise and a swivel angle plate base. Vise revolves 360° horizontally with 3° engraved graduations and 45° vertically with 3° engraved graduations. Hex wrench included for locking vise at any position. Vertical angle can be adjusted with fine adjustment knob. Hardened and precision ground parallel and square within 0.0004". Unique universal movement for precision grinding, machining, boring and other applications.

**Vises: Screwless Vises**

<table>
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<th>Item</th>
<th>Description</th>
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<tbody>
<tr>
<td>1590</td>
<td>Vise, 3&quot; Screwless</td>
<td>$72.95</td>
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</table>

- Hardened and Precision Ground
- Square and Parallel within 0.0002"
- Ground "V" Way

This high precision toolmakers screwless vise has a one-piece body. The body and jaws are hardened to Rc 58-62. All sides are flat, square and parallel to 0.0002". There are horizontal and vertical vees on the inside face of the movable jaw to hold round objects. The jaws are 1.38" deep and open to 3.78" capacity.

The vise is 7.28" long, 2.76" tall and 2.875" wide.

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<tr>
<td>2675</td>
<td>Clamps, Screwless Vise</td>
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<td>3142</td>
<td>Vise, 1&quot; Screwless, Built-in Parallels</td>
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<td>3949</td>
<td>Vise, 1&quot; Screwless, Square Jaws</td>
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<td>3950</td>
<td>Vise, 1.5&quot; Screwless</td>
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<td>1591</td>
<td>Vise, 2&quot; Screwless</td>
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<td>3769</td>
<td>Vise, 2&quot; Screwless with 3&quot; Thin Parallels</td>
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<td>3763</td>
<td>Vise, 3&quot; Screwless plus Parallels and Mounting Clamps</td>
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<td>2356</td>
<td>Vise, 3&quot; Screwless with Clamping Slots</td>
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<td>3767</td>
<td>Vise, 3&quot; Screwless with Hold Down Clamps</td>
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<td>1756</td>
<td>Vise, 3&quot; Screwless Sine</td>
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- Sine range: 0-60'
- Hardened and precision ground
- Tolerance of .0004" center to center
- Jaw can be opened or closed without unbolting from work surface

3" Precision screwless sine vise. Jaw width is 2.9" (73 mm), jaw depth is 1.4" (35 mm), jaw opening is 4" (100 mm). The base size is 7" x 2.9" (190 mm x 73 mm) The center distance of the cylinders is 100.00 mm. Hardened and precision ground to a tolerance of .0004" for both parallelism and squareness. Sine range: 0 - 60'. Jaw can be opened or closed without unbolting vise from work surface.

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<tr>
<td>1757</td>
<td>Space Block Set</td>
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<td>4216</td>
<td>Vise, 3&quot; Sine Screwless &amp; Space Block Set</td>
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<td>4871</td>
<td>Vise, 3&quot; Screwless with Clamping Slots - CLOSEOUT</td>
<td>$102.95</td>
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- These vises have blemishes, cosmetic defects, and/or light rust, but function normally

This high precision toolmakers screwless vise has a one-piece body. The body and jaws are hardened to Rc 58-62. All sides are flat, square and parallel to 0.0002". There are horizontal and vertical vees on the inside face of the movable jaw to hold round objects.

This screwless vise has slots along the sides so you can clamp it to the mill table with a clamping kit.

The jaws are 1.357" deep and open to 3.94" capacity. The vise is 7.72" long, 2.76" tall and 2.875" wide.

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<td>3583</td>
<td>Z-Clamp</td>
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LittleMachineShop.com Order Form

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<td>☐ I would like to receive occasional announcements of sales and new products by email.</td>
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Subtotal

Shipping & handling (see table below)

California residents add 7¼% sales tax

Total

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Ground service to US addresses only. Contact us for rates for other services and destinations.

Web: For next-day shipping and secure credit card payment, place your order on our web site: www.LittleMachineShop.com

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Pasadena CA 91103-2002

Phone: Call us at 800 981 9663 or 626 797 7850 to place your order.

Card Number

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