Annular Cutters

Achieve burr-free finished holes, without predrilling or stepdrilling

Precision-ground flutes provide efficient chip clearance, increasing drilling productivity and decreasing cutter breakage.

Hardened, high-speed tool steel

Weldon Shank

Benefits of CS Unitec’s Cutter Design:

- Double-action tooth geometry cuts, splits and ejects chips more efficiently,
  - increasing cutting speed
  - reducing tooth load
  - minimizing tool wear
  - lengthening cutter life

Engineered with a tapered inner wall for smooth, easy slug ejection.

Center hole for pilot pin accurately aligns the cutter, allows for internal lubrication and removes the slug.

Perfect drilling to close tolerances without runout. The result: a burr-free finished hole.

ANNULAR CUTTERS

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ANNULAR CUTTERS
Pilot Pins: How they work...

1: Centering
The pilot pin accurately centers cutter over area to be drilled.

2: Oiling
During drilling, the pilot pin retracts and allows internal coolant to reach the cutting teeth.

2: Ejecting
When hole is complete, the slug is automatically ejected from the cutter.

6-Series HSS Unibroach™ Annular Cutters – Pages 36-37
Fully ground HSS annular cutters
Cutting depth: 1" 2" 3" 4"
Drilling ø: 7/16" - 5-1/8" 7/16" - 5-1/8" 3/4" - 5-1/8" 3/4" - 5-1/8"

8-Series ARMOR-PLATED Unibroach™ Annular Cutters – Pages 38-39
Fully ground HSS annular cutters with TiAlN hard coating
Cutting depth: 1" 2" 3"
Drilling ø: 7/16" - 5-1/8" 7/16" - 5-1/8" 3/4" - 5-1/8"

9-Series Unibroach™ TCT Hornet Annular Cutters – Pages 40-41
Sintered carbide annular cutters with Tungsten Carbide tips
Cutting depth: 1"* 2-3/8" 3-3/8"
Drilling ø: 1/2" - 2" 1/2" - 5-1/8" 3/4" - 5-1/8"
* 1-3/8" depth for diameters larger than 1-1/2"

For Cobalt Cutters and special sizes, see page 40.

See pages 42-50 for Drill Accessories.
Unibroach® Annular Cutters

High-speed steel for drilling 3x faster than twist drills

Annular Cutters are the standard hole-making drills in the industry. Ideal for heavy-duty use on-site or in the shop, our HSS Unibroach™ cutters are available in the following sizes:

1" drill depth – ø 7/16" to ø 5 1/8"
2" drill depth – ø 7/16" to ø 5 1/8"
3" drill depth – ø 3/4" to ø 5 1/8"

Special sizes available

- CNC precision ground for fast penetration, accuracy and long life
- Flutes run the length of the cutter for efficient chip clearance, increased drilling productivity and decreased cutter breakage
- Drill holes 3 times faster than twist drills
- Produce reamed-quality, burr-free holes and solid slugs
- Reduce machine size and weight
- Cutting edges are sharppenable
- Eliminate time-consuming, costly pilot holes and step drilling

Unibroach® Stack Cutters are available in diameters from 7/16" to 1 1/8" in 1", 2" and 3" depths. Drill multiple layers of steel without stopping to remove the center slug. Please contact us or consult our price list for more information.

See page 46 for HSS Annular Cutter Starter Kit.

* HSS Cutters must be used with lubricant. See page 42 for CS Unitec lubricants and cutting oils.
# 6-Series HSS

## 1” Depth

<table>
<thead>
<tr>
<th>Order No.</th>
<th>Diameter</th>
</tr>
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<tbody>
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<td>7/16”</td>
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<tr>
<td>6-1-116</td>
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<tr>
<td>6-1-162</td>
<td>1-15/16”</td>
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<tr>
<td>6-1-166</td>
<td>2-1/16”</td>
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</table>

* Cutters in shaded area above include a Pilot Pin.

## 2” Depth

<table>
<thead>
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<th>Order No.</th>
<th>Diameter</th>
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</thead>
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<tr>
<td>6-1-218</td>
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<tr>
<td>6-1-220</td>
<td>5/8”</td>
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<tr>
<td>6-1-224</td>
<td>3/4”</td>
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<td>13/16”</td>
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<td>6-1-228</td>
<td>7/8”</td>
</tr>
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<td>6-1-230</td>
<td>15/16”</td>
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<td>6-1-242</td>
<td>1-5/16”</td>
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<tr>
<td>6-1-244</td>
<td>1-3/8”</td>
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<tr>
<td>6-1-246</td>
<td>1-7/16”</td>
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<tr>
<td>6-1-248</td>
<td>1-1/2”</td>
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<tr>
<td>6-1-262</td>
<td>1-15/16”</td>
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<td>2”</td>
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<td>6-1-266</td>
<td>2-1/16”</td>
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## 3” Depth

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<td>N/A</td>
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<tr>
<td>6-1-324</td>
<td>3/4”</td>
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<tr>
<td>6-1-326</td>
<td>13/16”</td>
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<td>6-1-328</td>
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<td>6-1-330</td>
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<td>6-1-334</td>
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<td>6-1-354</td>
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<td>6-1-356</td>
<td>1-3/4”</td>
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<tr>
<td>6-1-358</td>
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<td>6-1-360</td>
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<tr>
<td>6-1-362</td>
<td>1-15/16”</td>
</tr>
<tr>
<td>6-1-364</td>
<td>2”</td>
</tr>
<tr>
<td>6-1-366</td>
<td>2-1/16”</td>
</tr>
</tbody>
</table>

## Cutter Kits

Each HSS steel cutter kit comes with the following: 9/16”, 11/16”, 13/16”, 15/16”, 1-1/16”, pilot pin & carrying case.

- **Order No.**: Description
  - 6-1-001: 1” depth Cutter Kit
  - 6-1-002: 2” depth Cutter Kit

## Pilot Pins for 6-Series

<table>
<thead>
<tr>
<th>Order No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>7-3-102</td>
<td>1/2” - 3” dia., 1” depth</td>
</tr>
<tr>
<td>7-3-202</td>
<td>1/2” - 3” dia., 2” depth</td>
</tr>
<tr>
<td>7-3-302</td>
<td>3/4” - 3” dia., 3” depth</td>
</tr>
</tbody>
</table>

For 1-1/4” Shanks

- 7-3-1002: 3-1/16” - 5” dia., 1” depth
- 7-3-2002: 3-1/16” - 5” dia., 2” depth
- 7-3-3002: 3-1/16” - 5” dia., 3” depth

**Option for Cutters 3” and 4” Depth**

- 7-3-402: 2-piece pin for 3” and 4” depth cutters with 8mm pilot hole.

* We also stock 4” depth HSS cutters and Metric HSS cutters. Larger diameters and special sizes available upon request. Please call us for pricing and delivery.

See pages 42-50 for Drill Accessories.
ARMOR-PLATED Unibroach™ Cutters, at 90Rc hardness, are the state-of-the-art in hole cutting technology. They multiply service life, reduce cost and increase productivity.

ARMOR-PLATED Unibroach™ cutters are available in the following sizes:

1” drill depth – Ø 7/16” to Ø 5 1/8”
2” drill depth – Ø 7/16” to Ø 5 1/8”
3” drill depth – Ø 3/4” to Ø 5 1/8”

* Metric and larger diameter cutters available on request

• 3 to 4 times longer tool life with TiAlN coating
• Drill with less friction and more power
• Withstands higher working temperatures – up to 1480°F (800°C)
• Dry drilling or lubricating with water simplifies working conditions and cleanup*
• Prevents cold weld – metal chips do not adhere to the cutter
• Ideal for structural steel and hard metal
• 3/4” dia. shank (1 1/4” dia. shank available)

* After the TiAlN coating is worn, lubricate with cutting oil

See page 46 for ARMOR-PLATED Unibroach™ TiAlN Annular Cutter Starter Kit.
ARMOR-PLATED = Less Friction = Less Heat = More Holes!
Increase tool life and achieve faster feed rates

Shank size: 3/4" up to 3" dia.

** After the TiAlN coating is worn, lubricate with cutting oil

ARMOR-PLATED Unibroach™ TiAlN Cutters:

- Drill with less friction and more power
- Withstand higher working temperatures – up to 1480°F (800°C)
- Dry drill or lubricate with water to simplify working conditions and cleanup**
- Prevent cold weld – metal chips do not adhere to the cutter
- Are ideal for structural steel and hard metal

ARMOR-PLATED Cutter Kits
Each armord-plate cutter kit comes with the following: 9/16", 11/16", 13/16", 15/16", 1-1/16", pilot pin & carrying case.

Pilot Pins for 8-Series
For 3/4" Shanks
7-3-102 1/2" - 3" dia., 1" depth
7-3-202 1/2" - 3" dia., 2" depth
7-3-302 3/4" - 3" dia., 3" depth

Option for Cutters 3" and 4" Depth
7-3-402 2-piece pin for 3" and 4" depth cutters with 8mm pilot hole.

3"+ Diameter Cutters
Metric and larger diameter cutters available on request.

See pages 42-50 for Drill Accessories.
Tungsten carbide-tipped for high-speed cutting

- Use high-speed RPM for best results and faster holemaking
- Ideal for drilling steel with rust or paint
- Will outlast High-speed Steel cutters
- Leaves a burr-free finished hole
- Available in all sizes (fractional and metric)
- ¾" or 1 ⅛" shank

TCT Hornet cutters are available in the following sizes:

- 1" drill depth – Ø ½" to Ø 1½"
- 1-3/8" drill depth – Ø 1 ⅛" to Ø 2"
- 2-3/8" drill depth – Ø 1½" to Ø 5 ⅛"
- 3-3/8" drill depth – Ø 2¼" to Ø 5 ⅞"

- Metric cutters available on request

Unibroach® Cobalt Cutters

- Unibroach® Cobalt Cutters are made with 5% cobalt to increase resistance to wear
- Excellent results when drilling high-tensile steel and difficult-to-machine materials
- Available with TiAlN coating upon request
- Available for hole sizes up to 5" dia.

- ¾" shank is standard for cutters up to 3" dia. • Metric cutters available on request • See our price list for part numbers

Unibroach® Large-diameter Hole Cutting

Drill perfect holes up to 5 ⅛" diameter without runout

- Standard with ¾" or 1 ⅛" shank diameters
- More cutting teeth to distribute the load evenly
- Increase tool life and achieve faster feed rates
- Use on milling machines, drill presses, CNC and other equipment
- A solid slug has a higher value for scrap metal
- Available in TCT Carbide, HSS, Cobalt and ARMOR-PLATED Unibroach™
## 9-Series - TCT Carbide Hornet

### 1" Depth

<table>
<thead>
<tr>
<th>Order No.</th>
<th>Diameter</th>
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<tr>
<td>9-1-116 C</td>
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<tr>
<td>9-1-122 C</td>
<td>5/8&quot;</td>
</tr>
<tr>
<td>9-1-124 C</td>
<td>11/16&quot;</td>
</tr>
<tr>
<td>9-1-126 C</td>
<td>3/4&quot;</td>
</tr>
<tr>
<td>9-1-128 C</td>
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<td>1&quot;</td>
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### 2-3/8" Depth

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### 3-3/8" Depth

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</tr>
<tr>
<td>9-1-342 C</td>
<td>1-5/16&quot;</td>
</tr>
<tr>
<td>9-1-344 C</td>
<td>1-3/8&quot;</td>
</tr>
<tr>
<td>9-1-346 C</td>
<td>1-7/16&quot;</td>
</tr>
<tr>
<td>9-1-348 C</td>
<td>1-1/2&quot;</td>
</tr>
<tr>
<td>9-1-350 C</td>
<td>1-9/16&quot;</td>
</tr>
<tr>
<td>9-1-352 C</td>
<td>1-5/8&quot;</td>
</tr>
<tr>
<td>9-1-354 C</td>
<td>1-11/16&quot;</td>
</tr>
<tr>
<td>9-1-356 C</td>
<td>1-3/4&quot;</td>
</tr>
<tr>
<td>9-1-358 C</td>
<td>1-13/16&quot;</td>
</tr>
<tr>
<td>9-1-360 C</td>
<td>1-7/8&quot;</td>
</tr>
<tr>
<td>9-1-362 C</td>
<td>1-15/16&quot;</td>
</tr>
<tr>
<td>9-1-364 C</td>
<td>2&quot;</td>
</tr>
<tr>
<td>9-1-366 C</td>
<td>2-1/16&quot;</td>
</tr>
<tr>
<td>9-1-368 C</td>
<td>2-1/8&quot;</td>
</tr>
</tbody>
</table>

### 1-3/8" Depth

<table>
<thead>
<tr>
<th>Order No.</th>
<th>Diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>9-1-134 C</td>
<td>1-1/16&quot;</td>
</tr>
<tr>
<td>9-1-136 C</td>
<td>1-1/8&quot;</td>
</tr>
<tr>
<td>9-1-138 C</td>
<td>1-3/16&quot;</td>
</tr>
<tr>
<td>9-1-140 C</td>
<td>1-1/4&quot;</td>
</tr>
<tr>
<td>9-1-142 C</td>
<td>1-5/16&quot;</td>
</tr>
<tr>
<td>9-1-144 C</td>
<td>1-3/8&quot;</td>
</tr>
<tr>
<td>9-1-146 C</td>
<td>1-7/16&quot;</td>
</tr>
<tr>
<td>9-1-148 C</td>
<td>1-1/2&quot;</td>
</tr>
</tbody>
</table>

### 3/4" for cutters up to 3" dia.

1-1/4" for cutters 3-1/16 to 5-1/8" dia.

---

**Cutter Kits**

Each hornet carbide cutter kit comes with the following: 9/16", 11/16", 13/16", 15/16", 1-1/16", pilot pin & carrying case.

<table>
<thead>
<tr>
<th>Order No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>9-1-001 C</td>
<td>1-3/8&quot; depth Cutter Kit</td>
</tr>
<tr>
<td>9-1-002 C</td>
<td>2-3/8&quot; depth Cutter Kit</td>
</tr>
</tbody>
</table>

**We also stock Metric Carbide cutters. Please call us for pricing and delivery. Larger diameters and special sizes are available upon request.**

---

**Pilot Pins for 9-Series**

<table>
<thead>
<tr>
<th>Order No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>9-3-102 C</td>
<td>For 3/4&quot; Shanks</td>
</tr>
<tr>
<td>9-3-202 C</td>
<td>5/8&quot; - 2&quot; dia., 1-3/8&quot; depth</td>
</tr>
<tr>
<td>9-3-302 C</td>
<td>11/16&quot;- 2-5/16&quot; dia., 2&quot; depth</td>
</tr>
<tr>
<td>9-3-302 A</td>
<td>13/16&quot; - 2&quot; dia., 3&quot; depth</td>
</tr>
</tbody>
</table>

**For 1-1/4" Shanks**

<table>
<thead>
<tr>
<th>Order No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>9-3-202A C</td>
<td>2-3/8&quot; - 5-1/8&quot; dia., 2&quot; depth</td>
</tr>
<tr>
<td>9-3-302A C</td>
<td>2-3/8&quot; - 5-1/8&quot; dia., 3&quot; depth</td>
</tr>
</tbody>
</table>

**Option for Cutters 3" Depth**

7-3-402 2-piece pin for 3" depth cutters with 8mm pilot hole.

---

See pages 42-50 for Drill Accessories.
Lubricants

Coolant extends the life of cutting tools

**ProLube™ Ideal for cutting steel, stainless steel and hard metals**

Your cutting tools will work cooler, longer and more efficiently with ProLube™ Lubricants from CS Unitec.
- Prolong tool life by reducing friction and wear
- Unique composition provides excellent adhesion to cutting tools for maximum lubrication
- Corrosion inhibitor
- Non-toxic

**ProLube Paste**
- CS 7030-712
- 12 oz. tub

**ProLube Liquid**
- Water soluble 16:1
- CS 7010-504 - 1 gal. bottle

Upgrade your drill’s cooling system: see page 44 for arbors with automatic cooling.

**Cutting Oil**
- High-performance, biodegradable, non-hazardous oils and pastes
- Oils for heavy removal of metal, including stainless steel
- Chlorine-free (MSDS on bottle/tub)
- Not necessary to dilute with water

**Cutting Oil:**
- Part No. ZHS 006 (quart)
- Part No. ZHS 005 (gallon)

**Pressurized Coolant Bottle**

Use with any automatic internal lubrication system.
- Part No. 9 4002 0020

**Pilot Pins for Cutters**
- Milled channel efficiently supplies internal lubrication to cutting teeth
- Available for cutter diameters ranging from 7/16" to 5 1/8" and 1", 2", 3" and 4" depth of cut
- See price list for part numbers
**Accessories**

**Drill Chucks for Straight Shank Twist Drills**

- Two capacities: \(\frac{1}{2}\)" and \(\frac{3}{4}\)"
- Four chucks and adapters to fit all magnetic drills:
  
  A) **IBC 17** – \(\frac{1}{2}\)" chuck for MAB 425 and CSU 32 series
  
  B) **IBC 18** – \(\frac{1}{2}\)" chuck with \(\frac{3}{4}\)" shank for AIRBOR™ and HB 4400 (fits all drills with \(\frac{3}{4}\)" arbor bore)
  
  C) **IBC 21** – \(\frac{3}{4}\)" chuck with MT3 shank for MAB 825, CSU 80AC and CSU 100/3RL
  
  D) **IBC 22** – \(\frac{3}{4}\)" chuck with MT2 shank for MAB 455, MAB 525 and CSU 50 series

**Quick-change Tapping Tools, Collets and Chucks**

- Manufactured from high-quality HSS to ASA Standard (or DIN 376 for metric)
- Ideal for CS Unitec’s portable drilling and tapping machines and other drills

*Tap collets fit magnetic drills with \(\frac{3}{4}\)" arbor bore. Available for taps \(\frac{1}{4}\)" through \(\frac{3}{4}\)". Hold standard USA taps conforming to ASA.*

**Quick-change tapping chuck, Part No. GSW-222**, with MT2 connection, complete with flexible collet to tap \(\frac{5}{16}\)" to \(\frac{5}{8}\)". For use with CSU 50RL and MAB 485 magnetic drills.

Part No. **GSW-830C** tapping chuck includes two variable clamp collets to tap \(\frac{5}{8}\)" to 1 \(\frac{1}{8}\)". It is the least expensive system if you will tap more than 4 sizes. GSW-830C has an MT3 connection. For use with all MT3 drills.

Variable clamp collets for use in tap chuck No. **GSW-830**:
- Part No. **GST-160** variable clamp collet for shanks \(\frac{3}{8}\)" – \(\frac{5}{8}\)".
- Part No. **GST-230** variable clamp collet for shanks \(\frac{5}{8}\)" – 7/8".

Part No. **GSW-444** quick-change tapping chuck with MT4 connection (for MAB 1300). Collets not included.

- **GSS-420** collet for \(\frac{1}{2}\)" shanks
- **GSS-433** collet for 1" shanks
- **GSS-422** collet for \(\frac{5}{8}\)" shanks
- **GSS-442** collet for 1\(\frac{1}{4}\)" shanks
- **GSS-427** collet for \(\frac{3}{4}\)" shanks

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**See page 26 for additional tapping accessories.**
Accessories

 Arbors for Annular Cutters

• Use on any magnetic drill stand, drill press or shop equipment with a Morse Taper intake of No. 2, 3 or 4
• Available for Annular Cutter shank sizes of 3/4" or 1 1/4" Weldon
• Available for automatic internal cooling or manual cooling

<table>
<thead>
<tr>
<th>Manual Cooling</th>
<th>Automatic Cooling</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZIA 219M – Morse Taper No. 2 3/4&quot; arbor bore</td>
<td>ZIA 219KN – Morse Taper No. 2 3/4&quot; arbor bore</td>
</tr>
<tr>
<td>ZIA 319M – Morse Taper No. 3 3/4&quot; arbor bore</td>
<td>ZIA 319KN – Morse Taper No. 3 3/4&quot; arbor bore</td>
</tr>
<tr>
<td>ZIA 30/75 – Morse Taper No. 3 3/4&quot; arbor bore, 3&quot; depth</td>
<td>ZIA 30/32 – Morse Taper No. 3 1 1/4&quot; arbor bore</td>
</tr>
<tr>
<td>ZIA 419M – Morse Taper No. 4 3/4&quot; arbor bore</td>
<td></td>
</tr>
</tbody>
</table>

Quick-lock Arbor with Automatic Internal Cooling

• Keyless for fast, no-tools changeover for 3/4" dia. shank annular cutters
• Automatic internal cooling
• Turn, click... go!

ZSS 200 – Morse Taper No. 2 for 3/4" dia. shank annular cutters
ZSS 300 – Morse Taper No. 3 for 3/4" dia. shank annular cutters

Power Assist

The Power Assist is a standard capstan, designed with delayed torque transfer. This decreases the load on both cutter and drilling machine, allowing the machine to maintain max. RPM under full load.

• Reduces drilling time • Prevents cutter breakage
• Extends lifespan of cutter/drill bit and machine

ZPA 401 – Power Assist for CSU 32 and CSU 50 series
ZPA 402 – Power Assist for CSU 80 and CSU 100/3 series
Extensions for Annular Cutters

Extra-long holders extend stroke of drills

- Extend cutter reach up to 18"
- Available for magnetic drills with 3/4" arbor bore or MT3
- Also available with 3 flats for straight shank drill chucks and R8 shanks for drill presses
- Drill difficult-to-reach areas
- Extend cutter reach over the side or through an existing hole*

7-9-902 – 2" extension
7-9-903 – 3" extension
7-9-906 – 6" extension
7-9-912 – 12" extension
7-9-918 – 18" extension

* Hole diameter must be larger than 1 5/16" to accommodate width of extension

We also offer extensions with the following connections:

- 3 Flats for Geared Chucks x 3/4" arbor
- MT2 or MT3 x 3/4" arbor
- R8

2-in-1 Drill/Taps

Drill and tap with one tool

National Coarse Threads (UNC) – sizes available:

<table>
<thead>
<tr>
<th>Size</th>
<th>UNC</th>
<th>Size</th>
<th>UNC</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS500</td>
<td>1/2&quot; x 13</td>
<td>CS875</td>
<td>7/8&quot; x 9</td>
</tr>
<tr>
<td>CS625</td>
<td>5/8&quot; x 11</td>
<td>CS1000</td>
<td>1&quot; x 8</td>
</tr>
<tr>
<td>CS750</td>
<td>3/4&quot; x 10</td>
<td>CSDT-UNCKIT – 1/2&quot;, 5/8&quot;, 3/4&quot; &amp; 1&quot; drill/taps</td>
<td></td>
</tr>
</tbody>
</table>

82° and 90° Countersinks

- Manufactured of HSS with 5% cobalt
- 3/4" Weldon shank

Countersink hole sizes:

<table>
<thead>
<tr>
<th>Size</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTS 30</td>
<td>5/8&quot; to 2&quot; / 82°</td>
</tr>
<tr>
<td>CTS 50</td>
<td>5/8&quot; to 2 1/8&quot; / 90°</td>
</tr>
</tbody>
</table>

Detachable Chip Guard

Protects against flying chips when drilling

ZSS 050 – for MAB 150, MAB 425, MAB 485 and MAB 525
Accessories

Starter Kits

CS Unitec starter kits offer the essentials you need to begin drilling. We have two options that provide a cost-effective tool set for your application.

HSS Steel Cutter Starter Kit

**ZST 100S** Kit Includes:
- Set of 5 annular cutters (one each of the following):
  - 9/16" dia. x 1" depth (6-1-118)
  - 11/16" dia. x 1" depth (6-1-122)
  - 13/16" dia. x 1" depth (6-1-126)
  - 15/16" dia. x 1" depth (6-1-130)
  - 1-1/16" dia. x 1" depth (6-1-134)
- 2 pilot pins
- 1 cutter storage box
- 1 Power Worker magnetic stick (POW 100)
- 1 quart high-performance cutting oil (ZHS 006)

See pages 36-37 for more information on HSS annular cutters.

Armor-Plated TiAlN Cutter Starter Kit

**ZST 100P** Kit Includes:
- Set of 5 annular cutters (one each of the following):
  - 9/16" dia. x 1" depth (8-1-118)
  - 11/16" dia. x 1" depth (8-1-122)
  - 13/16" dia. x 1" depth (8-1-126)
  - 15/16" dia. x 1" depth (8-1-130)
  - 1-1/16" dia. x 1" depth (8-1-134)
- 2 pilot pins
- 1 cutter storage box
- 1 Power Worker magnetic stick (POW 100)
- 1 quart high-performance cutting oil (ZHS 006)

See pages 38-39 for more information on Armor-Plated TiAlN annular cutters.

Power Worker – simple cleanup of steel chips

Rare earth magnet cleans metal parts and shavings

- Easily clean up sharp-edged drill chips, screws and other metal parts
- Items are safely ejected off of Power Worker without hand contact
- Ideal for hard-to-reach spaces

POW 100
MOBIL CLAMP

**A true advance in magnetic drilling technology:**
The new clamping system MOBIL CLAMP can be used to convert a magnetic drilling machine into a bench drill.

Extends the functionality of your portable magnetic drill. Ideal for parts that previously could only be drilled in the workshop – they can now be machined on site. MOBIL CLAMP makes it possible to drill, countersink, ream or tap small parts, since these can be mounted into the quick clamping device.

With the mounting of a magnetic drilling machine onto the surface of the vice and the subsequent activation of the magnet, you will have a versatile, stationary drilling machine in next to no time. The magnetic drilling machine becomes a multi-purpose machine: whether large or small applications, flat or high, with the twist drill or the reamer, everything is possible. A stable support, designed for the MOBIL CLAMP clamping device, ensures the correct working height and a comfortable and reliable operation.

<table>
<thead>
<tr>
<th>MOBIL CLAMP</th>
<th>Order No.</th>
<th>Jaw width</th>
<th>Quick-action clamping jaw</th>
<th>V-block clamping jaw</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZMC 180</td>
<td></td>
<td>4&quot;</td>
<td>3.15&quot; (80mm)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(100mm)</td>
<td>clamping width</td>
<td></td>
</tr>
<tr>
<td>ZMC 300</td>
<td>Base stand for clamping device</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Powerful grip**

Jaws with step and prism for clamping of flat and round material.

**Fine adjustment**

In longitudinal movement by an adjusting screw accurately set to the machining point.
Clamping Devices

Drilling stand and vise for hand drills

Industrial drilling pillars for commercial hand drills with 43mm chuck journal diameter. Optimum stability by cast base plate combined with a pillar top of the MAB series. Versatile usability by a drill vise with 4" (100mm) jaw width (special accessories). Screws for slots are available for additional security under higher loads (special accessories). Working stroke of 9" - 17" (230 - 425mm).

Drilling Pillar
Order No. ZBS 100

Vise
Order No. ZST 100
jaw width: 4" (100mm)
clamping range: 4" (100mm)

Accessories
Screws for T-Slots
Order No. ZTN 100
Hexagon Nut with Collar
Order No. ZSM 100

Dimensions shown in mm.

Drill not included.

Dimensions shown in mm.
Vacuum Plates

For applications where drill alone will not adhere to surface

**Vacuum Plate for Channeled Plates**

Order No. ZAV 301 (vacuum plate only)
Order No. ZAV 310 (vacuum plate and vacuum pump, 110V)

Ideal for channeled plates. High-performance vacuum pump with circular oil lubrication. Clamping plate diameter: 11.8”

**Vacuum Plate for Smooth Surfaces**

Order No. ZAV 401 (vacuum plate only)
Order No. ZAV 410 (vacuum plate and vacuum pump, 110V)

Ideal for smooth surfaces. High-performance vacuum pump with circular oil lubrication. Clamping plates with two suction surfaces and cut-through drilling area.
Pipe Saddle Clamp System

Ensures safe, secure drilling of pipes and tubular material

ZRO 250 Pipe Saddle Clamp System

Pipe diameters 3¼" - 10"
Chain length: 35½"
For models: MAB 425, MAB 455, MAB 485, P1, MDM 40 and CSU 32

ZRO 500 Pipe Saddle Clamp System

Pipe diameters 6" - 20" (extension chain available)
Chain length: 65"
For models: MAB 525, MAB 825, MAB 845, CSU 50, CSU 80, CSU 100/3, AB-4300-2 and HB 4400

Ideal for applications requiring the flexibility of clamping on pipes from 3-1/4" to 20" diameter, these pipe clamp systems are flexible and easy-to-use. Swivelling V-blocks fit the contour of the pipe while the heavy-duty tension chains securely affix the clamps to the piece being drilled. The drilling position can be easily and safely adjusted.

Order No. ZRO 001 – extension chain for ZRO 500 pipe saddle clamp.