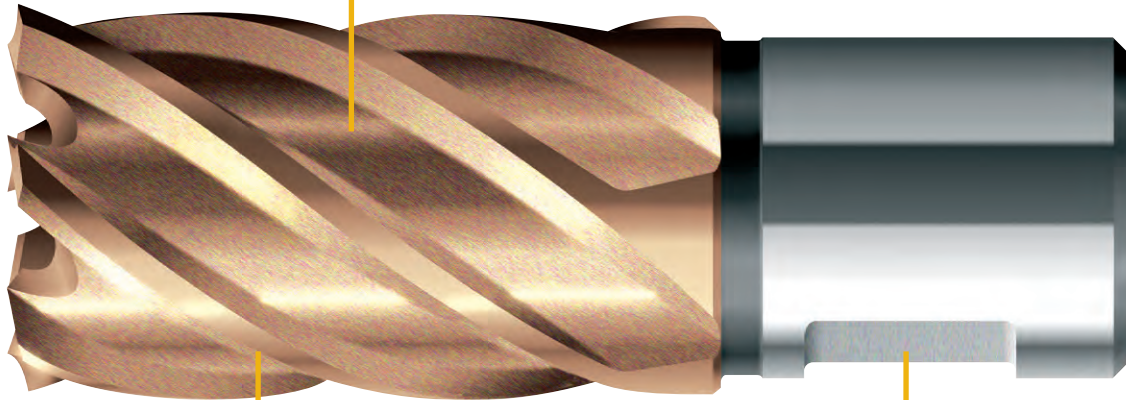


Annular Cutters

Achieve burr-free finished holes, without predrilling or stepdrilling

ANNULAR CUTTERS

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.

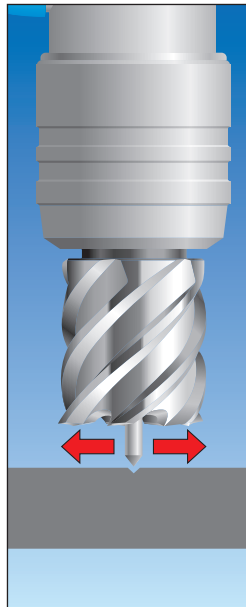


Pilot Pins: How they work...



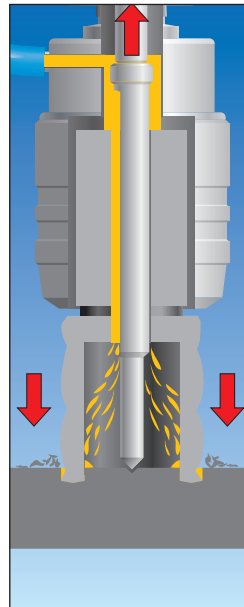
Pilot Pin included with every annular cutter up to 4" DOC

1: Centering



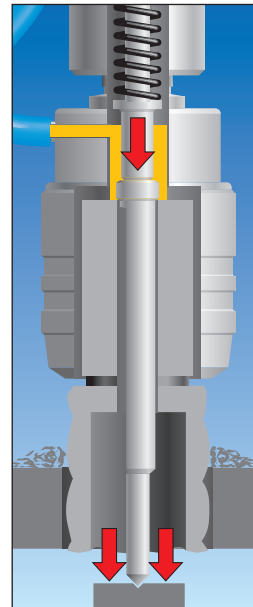
The pilot pin accurately centers cutter over area to be drilled.

2: Oiling



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


3: Ejecting



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


6-Series HSS Unibroach™ Annular Cutters – Pages 56-57

Fully ground HSS annular cutters

Cutting depth:	1"	2"	3"	4"	6"	8"	
Drilling ø:	7/16" - 5-1/8"	7/16" - 5-1/8"	3/4" - 5-1/8"	3/4" - 6"	3/4" - 6"	3/4" - 6"	


8-Series ARMOR-PLATED Unibroach™ Annular Cutters – Pages 58-59

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 60-61

Sintered carbide annular cutters with Tungsten Carbide tips

Cutting depth:	1"*	2-3/8"	3-3/8"	4"	6"	8"	
Drilling ø:	1/2" - 2"	1/2" - 5-1/8"	3/4" - 5-1/8"	3/4" - 6"	3/4" - 6"	3/4" - 6"	

* 1-3/8" depth for diameters larger than 1-1/2"

For Cobalt Cutters, Rail Cutters and special sizes, see page 63. For One-Touch TCT Cutters, see page 62.



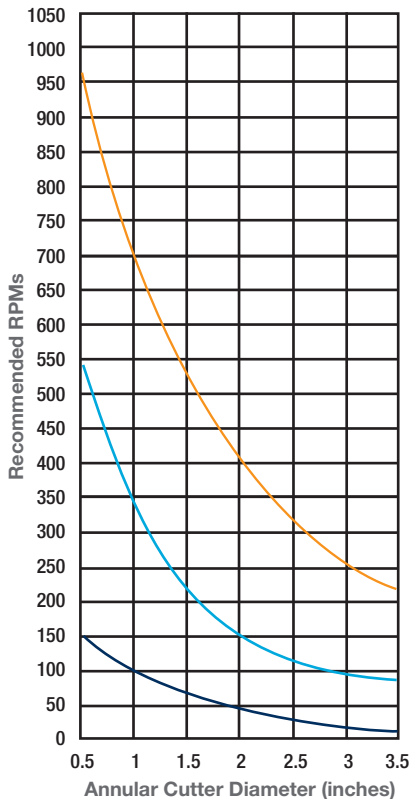
➤ See pages 65-71 for Drill Accessories

Unibroach® Annular Cutters

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



**Annular Cutter
Recommended
Revolutions Per Minute**
Recommended Feed Rate:
.002 - .004 inches per revolution



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:

Drill Depth	1"	2"	3"	4"	6"	8"
Diameter	Ø 7/16" to Ø 5 1/8"	Ø 7/16" to Ø 5 1/8"	Ø 3/4" to Ø 5 1/8"	Ø 3/4" to Ø 6"	Ø 3/4" to Ø 6"	Ø 3/4" to Ø 6"

Special sizes available; metric cutters available on request.
Every annular cutter up to 4" DOC includes a pilot pin.*

- 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 resharpenable
- Eliminate time-consuming, costly pilot holes and step drilling

HSS Cutters must be used with lubricant.
See page 66 for CS Unitec lubricants and cutting oil.



See page 65 for HSS
Annular Cutter Starter Kit.



* Pilot pins supplied with annular cutters up to 4" DOC.
Other pilot pins can be purchased separately.

Unibroach® Stack Cutters are available in diameters from 9/16" 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.

6-Series HSS

1" Depth

Order No.	Diameter
6-1-114	7/16"
6-1-116	1/2"
6-1-118	9/16"
6-1-120	5/8"
6-1-122	11/16"
6-1-124	3/4"
6-1-126	13/16"
6-1-128	7/8"
6-1-130	15/16"
6-1-132	1"
6-1-134	1-1/16"
6-1-136	1-1/8"
6-1-138	1-3/16"
6-1-140	1-1/4"
6-1-142	1-5/16"
6-1-144	1-3/8"
6-1-146	1-7/16"
6-1-148	1-1/2"
6-1-150	1-9/16"
6-1-152	1-5/8"
6-1-154	1-11/16"
6-1-156	1-3/4"
6-1-158	1-13/16"
6-1-160	1-7/8"
6-1-162	1-15/16"
6-1-164	2"
6-1-166	2-1/16"
6-1-168	2-1/8"
6-1-170	2-3/16"
6-1-172	2-1/4"
6-1-174	2-5/16"
6-1-176	2-3/8"
6-1-178	2-7/16"
6-1-180	2-1/2"
6-1-182	2-9/16"
6-1-184	2-5/8"
6-1-186	2-11/16"
6-1-188	2-3/4"
6-1-190	2-13/16"
6-1-192	2-7/8"
6-1-194	2-15/16"
6-1-196	3"
6-1-198	3-1/16"
6-1-1100	3-1/8"
6-1-1102	3-3/16"
6-1-1104	3-1/4"
6-1-1106	3-5/16"
6-1-1108	3-3/8"
6-1-1110	3-7/16"
6-1-1112	3-1/2"
6-1-1114	3-9/16"
6-1-1116	3-5/8"
6-1-1118	3-11/16"
6-1-1120	3-3/4"
6-1-1122	3-13/16"
6-1-1124	3-7/8"
6-1-1126	3-15/16"
6-1-1128	4"

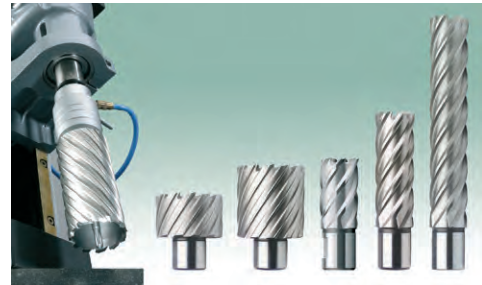
2" Depth

Order No.	Diameter
6-1-214	7/16"
6-1-216	1/2"
6-1-218	9/16"
6-1-220	5/8"
6-1-222	11/16"
6-1-224	3/4"
6-1-226	13/16"
6-1-228	7/8"
6-1-230	15/16"
6-1-232	1"
6-1-234	1-1/16"
6-1-236	1-1/8"
6-1-238	1-3/16"
6-1-240	1-1/4"
6-1-242	1-5/16"
6-1-244	1-3/8"
6-1-246	1-7/16"
6-1-248	1-1/2"
6-1-250	1-9/16"
6-1-252	1-5/8"
6-1-254	1-11/16"
6-1-256	1-3/4"
6-1-258	1-13/16"
6-1-260	1-7/8"
6-1-262	1-15/16"
6-1-264	2"
6-1-266	2-1/16"
6-1-268	2-1/8"
6-1-270	2-3/16"
6-1-272	2-1/4"
6-1-274	2-5/16"
6-1-276	2-3/8"
6-1-278	2-7/16"
6-1-280	2-1/2"
6-1-282	2-9/16"
6-1-284	2-5/8"
6-1-286	2-11/16"
6-1-288	2-3/4"
6-1-290	2-13/16"
6-1-292	2-7/8"
6-1-294	2-15/16"
6-1-296	3"
6-1-298	3-1/16"
6-1-2100	3-1/8"
6-1-2102	3-3/16"
6-1-2104	3-1/4"
6-1-2106	3-5/16"
6-1-2108	3-3/8"
6-1-2110	3-7/16"
6-1-2112	3-1/2"
6-1-2114	3-9/16"
6-1-2116	3-5/8"
6-1-2118	3-11/16"
6-1-2120	3-3/4"
6-1-2122	3-13/16"
6-1-2124	3-7/8"
6-1-2126	3-15/16"
6-1-2128	4"

3" Depth*

Order No.	Diameter
N/A	
N/A	
N/A	
N/A	
6-1-322	11/16"
6-1-324	3/4"
6-1-326	13/16"
6-1-328	7/8"
6-1-330	15/16"
6-1-332	1"
6-1-334	1-1/16"
6-1-336	1-1/8"
6-1-338	1-3/16"
6-1-340	1-1/4"
6-1-342	1-5/16"
6-1-344	1-3/8"
6-1-346	1-7/16"
6-1-348	1-1/2"
6-1-350	1-9/16"
6-1-352	1-5/8"
6-1-354	1-11/16"
6-1-356	1-3/4"
6-1-358	1-13/16"
6-1-360	1-7/8"
6-1-362	1-15/16"
6-1-364	2"
6-1-366	2-1/16"
6-1-368	2-1/8"
6-1-370	2-3/16"
6-1-372	2-1/4"
6-1-374	2-5/16"
6-1-376	2-3/8"
6-1-378	2-7/16"
6-1-380	2-1/2"
6-1-382	2-9/16"
6-1-384	2-5/8"
6-1-386	2-11/16"
6-1-388	2-3/4"
6-1-390	2-13/16"
6-1-392	2-7/8"
6-1-394	2-15/16"
6-1-396	3"
6-1-398	3-1/16"
6-1-3100	3-1/8"
6-1-3102	3-3/16"
6-1-3104	3-1/4"
6-1-3106	3-5/16"
6-1-3108	3-3/8"
6-1-3110	3-7/16"
6-1-3112	3-1/2"
6-1-3114	3-9/16"
6-1-3116	3-5/8"
6-1-3118	3-11/16"
6-1-3120	3-3/4"
6-1-3122	3-13/16"
6-1-3124	3-7/8"
6-1-3126	3-15/16"
6-1-3128	4"

* Cutters with 3" depth have an 8mm pilot hole.



Shank size:

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

Pilot pin included with every annular cutter up to 4" DOC

Cutter Kits

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

Order No.	Description
6-1-001	1" depth Cutter Kit
6-1-002	2" depth Cutter Kit

Pilot Pins for 6-Series

Order No.	Description
For 3/4" Shanks	
7-3-102	7/16" - 3" dia., 1" depth
7-3-202	7/16" - 3" dia., 2" depth
7-3-302	3/4" - 3" dia., 3" depth
For 1-1/4" Shanks	
7-3-1002	3-1/16" - 5-1/8" dia., 1" depth
7-3-2002	3-1/16" - 5-1/8" dia., 2" depth
7-3-3002	3-1/16" - 5-1/8" 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.
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Option for Cutters 6" and 8" Depth

9-3-602 C	Pin for 6" depth cutters with 8mm pilot hole.
9-3-802 C	Pin for 8" depth cutters with 8mm pilot hole.

† We also stock 8" depth HSS cutters and Metric HSS cutters. Larger diameters and special sizes available upon request. Please call us for pricing and delivery.



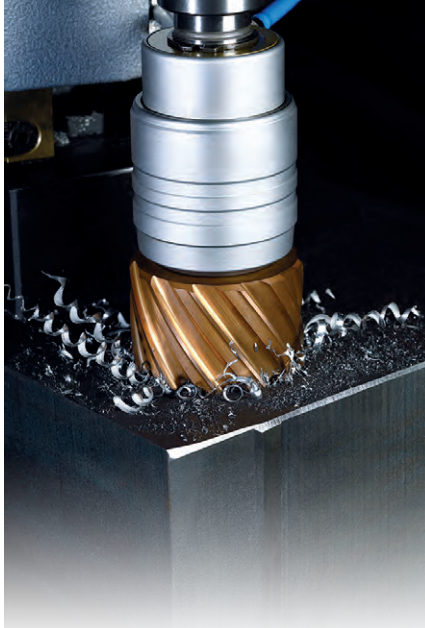
➤ See pages 65-71 for Drill Accessories

Unibroach® Annular Cutters

TiAlN Carbide coating for up to 4x tool life, less friction and more power

Less Friction = Less Heat = More Holes!

ANNULAR CUTTERS



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:

Drill Depth	1"	2"	3"
Diameter	∅ 7/16" to ∅ 5 1/8"	∅ 7/16" to ∅ 5 1/8"	∅ 3/4" to ∅ 5 1/8"



Special sizes available; metric cutters available on request.

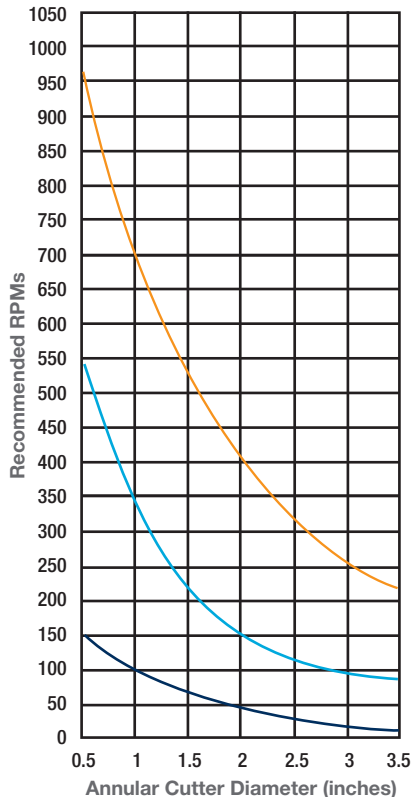
Every annular cutter up to 4" DOC includes a corresponding pilot pin.

- 3 to 4 times longer tool life with TiAlN Carbide 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 Carbide coating is worn, lubricate with cutting oil



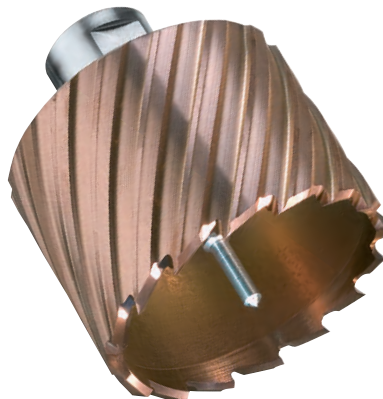
**Annular Cutter
Recommended
Revolutions Per Minute**
Recommended Feed Rate:
.002 - .004 inches per revolution



Aluminum
200 ft./min.

**Mild Steel
(Carbon)**
80 ft./min.

**High Tensile
Steel
(Stainless)**
30 ft./min.



See page 65 for ARMOR-PLATED Unibroach™ TiAlN Carbide-Coated Annular Cutter Starter Kit.

* Pilot pins supplied with annular cutters up to 4" DOC. Other pilot pins can be purchased separately.

8-Series ARMOR-PLATED TiAIN

ARMOR-PLATED = Less Friction = Less Heat = More Holes!
Increase tool life and achieve faster feed rates



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

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.



Pilot pin included with every annular cutter up to 4" DOC

1" Depth	
Order No.	Diameter
8-1-114 T	7/16"
8-1-116 T	1/2"
8-1-118 T	9/16"
8-1-120 T	5/8"
8-1-122 T	11/16"
8-1-124 T	3/4"
8-1-126 T	13/16"
8-1-128 T	7/8"
8-1-130 T	15/16"
8-1-132 T	1"
8-1-134 T	1-1/16"
8-1-136 T	1-1/8"
8-1-138 T	1-3/16"
8-1-140 T	1-1/4"
8-1-142 T	1-5/16"
8-1-144 T	1-3/8"
8-1-146 T	1-7/16"
8-1-148 T	1-1/2"
8-1-150 T	1-9/16"
8-1-152 T	1-5/8"
8-1-154 T	1-11/16"
8-1-156 T	1-3/4"
8-1-158 T	1-13/16"
8-1-160 T	1-7/8"
8-1-162 T	1-15/16"
8-1-164 T	2"
8-1-166 T	2-1/16"

2" Depth	
Order No.	Diameter
8-1-214 T	7/16"
8-1-216 T	1/2"
8-1-218 T	9/16"
8-1-220 T	5/8"
8-1-222 T	11/16"
8-1-224 T	3/4"
8-1-226 T	13/16"
8-1-228 T	7/8"
8-1-230 T	15/16"
8-1-232 T	1"
8-1-234 T	1-1/16"
8-1-236 T	1-1/8"
8-1-238 T	1-3/16"
8-1-240 T	1-1/4"
8-1-242 T	1-5/16"
8-1-244 T	1-3/8"
8-1-246 T	1-7/16"
8-1-248 T	1-1/2"
8-1-250 T	1-9/16"
8-1-252 T	1-5/8"
8-1-254 T	1-11/16"
8-1-256 T	1-3/4"
8-1-258 T	1-13/16"
8-1-260 T	1-7/8"
8-1-262 T	1-15/16"
8-1-264 T	2"
8-1-266 T	2-1/16"

3" Depth*	
Order No.	Diameter
N/A	
N/A	
N/A	
N/A	
N/A	
8-1-324 T	3/4"
8-1-326 T	13/16"
8-1-328 T	7/8"
8-1-330 T	15/16"
8-1-332 T	1"
8-1-334 T	1-1/16"
8-1-336 T	1-1/8"
8-1-338 T	1-3/16"
8-1-340 T	1-1/4"
8-1-342 T	1-5/16"
8-1-344 T	1-3/8"
8-1-346 T	1-7/16"
8-1-348 T	1-1/2"
8-1-350 T	1-9/16"
8-1-352 T	1-5/8"
8-1-354 T	1-11/16"
8-1-356 T	1-3/4"
8-1-358 T	1-13/16"
8-1-360 T	1-7/8"
8-1-362 T	1-15/16"
8-1-364 T	2"
8-1-366 T	2-1/16"

* Cutters with 3" depth have an 8mm dia. pilot hole.

ARMOR-PLATED Cutter Kits

Each armor-plated cutter kit comes with the following: 9/16", 11/16", 13/16", 15/16", 1-1/16", pilot pins & carrying case.

Order No.	Description
8-1-001 T	1" depth Cutter Kit
8-1-002 T	2" depth Cutter Kit

Pilot Pins for 8-Series

Order No.	Description
For 3/4" Shanks	
7-3-102	7/16" - 3" dia., 1" depth
7-3-202	7/16" - 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.

ARMOR-PLATED Unibroach™ TiAIN Carbide-Coated 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

** After the TiAIN Carbide coating is worn, lubricate with cutting oil

➤ See pages 65-71 for Drill Accessories

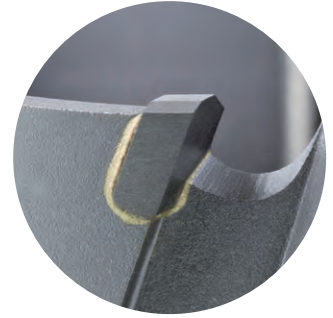
Unibroach® Annular Cutters

TCT Carbide Hornet – tungsten carbide-tipped for high-speed cutting

ANNULAR CUTTERS



- Use high-speed RPM for best results and faster holmaking
- Ideal for drilling steel with rust or paint and bolting applications
- Will outlast High-speed Steel cutters
- Leaves a burr-free finished hole
- Available in all sizes (fractional and metric)
- 2 flats
- $\frac{3}{4}$ " or $1\frac{1}{4}$ " shank



Closeup of tungsten-carbide teeth.

TCT Hornet cutters are available in the following sizes:

Drill Depth	1"	1-3/8"	2-3/8"	3-3/8"	4"	6"	8"
Diameter	$\varnothing \frac{1}{2}$ " to $\varnothing 1\frac{1}{2}$ "	$\varnothing \frac{19}{16}$ " to $\varnothing 2$ "	$\varnothing \frac{1}{2}$ " to $\varnothing 5\frac{1}{8}$ "	$\varnothing \frac{3}{4}$ " to $\varnothing 5\frac{1}{8}$ "	$\varnothing \frac{3}{4}$ " to $\varnothing 6$ "	$\varnothing \frac{13}{16}$ " to $\varnothing 6$ "	$\varnothing \frac{13}{16}$ " to $\varnothing 6$ "

Special sizes available; metric cutters available on request.

*Every annular cutter up to 4" DOC includes a corresponding pilot pin.**



Armor plating available upon request.



* Pilot pins supplied with annular cutters up to 4" DOC. Other pilot pins can be purchased separately.

9-Series Annular Cutter Recommended RPM Rates

Cutter Size	Stainless & Alloy Steel	Mild Steel	Iron Plate
	RPM	RPM	RPM
$\frac{1}{2}$ " - $\frac{5}{8}$ "	500 - 800	600 - 1000	800 - 1200
$\frac{11}{16}$ " - $\frac{13}{16}$ "	400 - 640	480 - 800	640 - 960
$\frac{7}{8}$ " - $\frac{15}{16}$ "	330 - 530	400 - 660	530 - 800
1" - $1\frac{3}{16}$ "	270 - 420	320 - 530	420 - 640
$1\frac{1}{4}$ " - $1\frac{3}{8}$ "	230 - 370	270 - 460	360 - 550
$1\frac{7}{16}$ " - $1\frac{9}{16}$ "	200 - 320	240 - 400	320 - 480
$1\frac{5}{8}$ " - $1\frac{3}{4}$ "	180 - 280	210 - 350	280 - 420
$1\frac{13}{16}$ " - 2"	160 - 260	190 - 320	260 - 380
$2\frac{1}{16}$ " - $2\frac{3}{16}$ "	145 - 230	170 - 290	230 - 350
$2\frac{1}{4}$ " - $2\frac{3}{8}$ "	135 - 210	160 - 270	210 - 320
$2\frac{7}{16}$ " - $2\frac{9}{16}$ "	120 - 200	150 - 250	200 - 300
$2\frac{5}{8}$ " - $2\frac{3}{4}$ "	115 - 180	140 - 230	180 - 270
$2\frac{13}{16}$ " - $2\frac{15}{16}$ "	110 - 170	130 - 210	170 - 260
3" - $3\frac{1}{8}$ "	100 - 160	120 - 200	160 - 240
$3\frac{3}{16}$ " - $3\frac{3}{8}$ "	95 - 150	115 - 190	150 - 230
$3\frac{7}{16}$ " - $3\frac{9}{16}$ "	90 - 140	110 - 180	140 - 210
$3\frac{5}{8}$ " - $3\frac{3}{4}$ "	85 - 135	105 - 170	135 - 200
$3\frac{13}{16}$ " - $3\frac{15}{16}$ "	80 - 130	95 - 160	130 - 195
4" - $4\frac{5}{16}$ "	70 - 120	90 - 145	120 - 170
$4\frac{3}{8}$ " - $4\frac{3}{4}$ "	70 - 110	80 - 135	110 - 160
$4\frac{13}{16}$ " - $5\frac{1}{8}$ "	65 - 100	75 - 125	100 - 150

9-Series - TCT Carbide Hornet

1" Depth

Order No.	Diameter
9-1-116 C	1/2"
9-1-118 C	9/16"
9-1-120 C	5/8"
9-1-122 C	11/16"
9-1-124 C	3/4"
9-1-126 C	13/16"
9-1-128 C	7/8"
9-1-130 C	15/16"
9-1-132 C	1"

1-3/8" Depth

Order No.	Diameter
9-1-134 C	1-1/16"
9-1-136 C	1-1/8"
9-1-138 C	1-3/16"
9-1-140 C	1-1/4"
9-1-142 C	1-5/16"
9-1-144 C	1-3/8"
9-1-146 C	1-7/16"
9-1-148 C	1-1/2"

2-3/8" Depth

Order No.	Diameter
9-1-216 C	1/2"
9-1-218 C	9/16"
9-1-220 C	5/8"
9-1-222 C	11/16"
9-1-224 C	3/4"
9-1-226 C	13/16"
9-1-228 C	7/8"
9-1-230 C	15/16"
9-1-232 C	1"
9-1-234 C	1-1/16"
9-1-236 C	1-1/8"
9-1-238 C	1-3/16"
9-1-240 C	1-1/4"
9-1-242 C	1-5/16"
9-1-244 C	1-3/8"
9-1-246 C	1-7/16"
9-1-248 C	1-1/2"
9-1-250 C	1-9/16"
9-1-252 C	1-5/8"
9-1-254 C	1-11/16"
9-1-256 C	1-3/4"
9-1-258 C	1-13/16"
9-1-260 C	1-7/8"
9-1-262 C	1-15/16"
9-1-264 C	2"

Order No.	Diameter
9-1-266 C	2-1/16"
9-1-268 C	2-1/8"
9-1-270 C	2-3/16"
9-1-272 C	2-1/4"
9-1-274 C	2-5/16"
9-1-276 C	2-3/8"
9-1-278 C	2-7/16"
9-1-280 C	2-1/2"
9-1-282 C	2-9/16"
9-1-284 C	2-5/8"
9-1-286 C	2-11/16"
9-1-288 C	2-3/4"
9-1-290 C	2-13/16"
9-1-292 C	2-7/8"
9-1-294 C	2-15/16"
9-1-296 C	3"
9-1-298 C	3-1/16"
9-1-2100 C	3-1/8"
9-1-2102 C	3-3/16"
9-1-2104 C	3-1/4"
9-1-2106 C	3-5/16"
9-1-2108 C	3-3/8"
9-1-2110 C	3-7/16"
9-1-2112 C	3-1/2"

3-3/8" Depth

Order No.	Diameter
9-1-322 C	11/16"
9-1-324 C	3/4"
9-1-326 C	13/16"
9-1-328 C	7/8"
9-1-330 C	15/16"
9-1-332 C	1"
9-1-334 C	1-1/16"
9-1-336 C	1-1/8"
9-1-338 C	1-3/16"
9-1-340 C	1-1/4"
9-1-342 C	1-5/16"
9-1-344 C	1-3/8"
9-1-346 C	1-7/16"
9-1-348 C	1-1/2"
9-1-350 C	1-9/16"
9-1-352 C	1-5/8"
9-1-354 C	1-11/16"
9-1-356 C	1-3/4"
9-1-358 C	1-13/16"
9-1-360 C	1-7/8"
9-1-362 C	1-15/16"
9-1-364 C	2"
9-1-366 C	2-1/16"

Order No.	Diameter
9-1-368 C	2-1/8"
9-1-370 C	2-3/16"
9-1-372 C	2-1/4"
9-1-374 C	2-5/16"
9-1-376 C	2-3/8"
9-1-378 C	2-7/16"
9-1-380 C	2-1/2"
9-1-382 C	2-9/16"
9-1-384 C	2-5/8"
9-1-386 C	2-11/16"
9-1-388 C	2-3/4"
9-1-390 C	2-13/16"
9-1-392 C	2-7/8"
9-1-394 C	2-15/16"
9-1-396 C	3"
9-1-398 C	3-1/16"
9-1-3100 C	3-1/8"
9-1-3102 C	3-3/16"
9-1-3104 C	3-1/4"
9-1-3106 C	3-5/16"
9-1-3108 C	3-3/8"
9-1-3110 C	3-7/16"
9-1-3112 C	3-1/2"
9-1-3114 C	3-9/16"

Order No.	Diameter
9-1-150 C	1-9/16"
9-1-152 C	1-5/8"
9-1-154 C	1-11/16"
9-1-156 C	1-3/4"
9-1-158 C	1-13/16"
9-1-160 C	1-7/8"
9-1-162 C	1-15/16"
9-1-164 C	2"

Order No.	Diameter
9-1-3116 C	3-5/8"
9-1-3118 C	3-11/16"
9-1-3120 C	3-3/4"
9-1-3122 C	3-13/16"
9-1-3124 C	3-7/8"
9-1-3126 C	3-15/16"
9-1-3128 C	4"
9-1-3130 C	4-1/16"
9-1-3132 C	4-1/8"
9-1-3134 C	4-3/16"
9-1-3136 C	4-1/4"
9-1-3138 C	4-5/16"
9-1-3140 C	4-3/8"
9-1-3142 C	4-7/16"
9-1-3144 C	4-1/2"
9-1-3146 C	4-9/16"
9-1-3148 C	4-5/8"
9-1-3150 C	4-11/16"
9-1-3152 C	4-3/4"
9-1-3154 C	4-13/16"
9-1-3156 C	4-7/8"
9-1-3158 C	4-15/16"
9-1-3160 C	5"
9-1-3162 C	5-1/8"



Shank size:

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

Pilot pin included with every annular cutter up to 4" DOC

Cutter Kits

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

Order No.	Description
9-1-001 C	1" depth Cutter Kit
9-1-002 C	2-3/8" depth Cutter Kit

****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

Order No.	Description
For 3/4" Shanks	
9-3-101 C	1/2" - 1-1/2" dia., 1" depth
9-3-102 C	1-9/16" - 2" dia., 1-3/8" depth
9-3-202 C	1/2" - 3" dia., 2-3/8" depth
9-3-302 C	3/4" - 3" dia., 3-3/8" depth
For 1-1/4" Shanks	
9-3-202A C	3-1/16" - 5-1/8" dia., 2-3/8" depth
9-3-302A C	3-1/16" - 5-1/8" dia., 3-3/8" depth

Option for Cutters 3-3/8" and 4" Depth

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

Option for Cutters 6" and 8" Depth

9-3-602 C	Pin for 6" depth cutters with 8mm pilot hole.
9-3-802 C	Pin for 8" depth cutters with 8mm pilot hole.



➤ See pages 65-71 for Drill Accessories

10-Series One-Touch TCT

Tungsten carbide-tipped with one-touch shank



- No-tool cutter replacement
- When holding with a set screw, tighten to weld on flat rather than dimple area
- Leaves a burr-free finished hole
- 3/4" shank
- Compatible with Nitto Kohki and other auto-feed machines
- Armor plating also available upon request



One-Touch TCT cutters are available in the following sizes:

- 1-3/8" drill depth – \varnothing 1/2" to \varnothing 2"
- 2-3/8" drill depth – \varnothing 1/2" to \varnothing 2³/₄"
- 3-3/8" drill depth – \varnothing 1¹/₁₆" to \varnothing 1¹/₁₆"

Every 10-Series annular cutter includes a corresponding pilot pin.

- Metric cutters available on request

1-3/8" Depth	
Order No.	Diameter
10-1-116 C	1/2"
10-1-118 C	9/16"
10-1-120 C	5/8"
10-1-122 C	11/16"
10-1-124 C	3/4"
10-1-126 C	13/16"
10-1-128 C	7/8"
10-1-130 C	15/16"
10-1-132 C	1"
10-1-134 C	1-1/16"
10-1-136 C	1-1/8"
10-1-138 C	1-3/16"
10-1-140 C	1-1/4"
10-1-142 C	1-5/16"
10-1-144 C	1-3/8"
10-1-146 C	1-7/16"
10-1-148 C	1-1/2"
10-1-150 C	1-9/16"
10-1-152 C	1-5/8"
10-1-154 C	1-11/16"
10-1-156 C	1-3/4"
10-1-158 C	1-13/16"
10-1-160 C	1-7/8"
10-1-162 C	1-15/16"
10-1-164 C	2"

2-3/8" Depth	
Order No.	Diameter
10-1-216 C	1/2"
10-1-218 C	9/16"
10-1-220 C	5/8"
10-1-222 C	11/16"
10-1-224 C	3/4"
10-1-226 C	13/16"
10-1-228 C	7/8"
10-1-230 C	15/16"
10-1-232 C	1"
10-1-234 C	1-1/16"
10-1-236 C	1-1/8"
10-1-238 C	1-3/16"
10-1-240 C	1-1/4"
10-1-242 C	1-5/16"
10-1-244 C	1-3/8"
10-1-246 C	1-7/16"
10-1-248 C	1-1/2"
10-1-250 C	1-9/16"
10-1-252 C	1-5/8"
10-1-254 C	1-11/16"
10-1-256 C	1-3/4"
10-1-258 C	1-13/16"
10-1-260 C	1-7/8"
10-1-262 C	1-15/16"
10-1-264 C	2"

3-3/8" Depth	
Order No.	Diameter
10-1-266 C	2-1/16"
10-1-268 C	2-1/8"
10-1-270 C	2-3/16"
10-1-272 C	2-1/4"
10-1-274 C	2-5/16"
10-1-276 C	2-3/8"
10-1-278 C	2-7/16"
10-1-280 C	2-1/2"
10-1-282 C	2-5/8"
10-1-288 C	2-3/4"

Pilot pin included with every 10-Series annular cutter



Shank size: 3/4"

Pilot Pins for 10-Series

Order No.	Description
For 3/4" Shanks	
9-3-102 C	9/16" - 2" dia., 1-3/8" depth
9-3-202 C	1/2" - 2-3/4" dia., 2-3/8" depth
9-3-302 C	11/16" - 1-1/16" dia., 3-3/8" depth

➤ See pages 65-71 for Drill Accessories

Rail Cutters

Cut holes up to 1-11/16" dia. in track rail

- Round, clean, burr-free hole – better than spade drills
- 3/4" shank
- More cutting teeth to distribute the load evenly – increase tool life and achieve faster feed rates
- Pilot pin included with each 4-Series cutter
- Armor plating available upon request



4-Series Carbide-Tipped Rail Cutters

- Carbide-tipped rail bits for long life and quick, efficient cutting through rust and corrosion

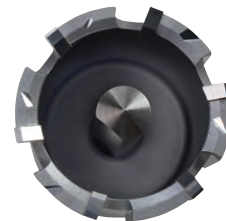
1-3/8" Depth

Order No.	Diameter	Order No.	Diameter
4-1-124 C	3/4"	4-1-140 C	1-1/4"
4-1-128 C	7/8"	4-1-142 C	1-5/16"
4-1-130 C	15/16"	4-1-144 C	1-3/8"
4-1-132 C	1"	4-1-146 C	1-7/16"
4-1-134 C	1-1/16"	4-1-148 C	1-1/2"
4-1-136 C	1-1/8"	4-1-152 C	1-5/8"
4-1-138 C	1-3/16"	4-1-154 C	1-11/16"



Pilot Pin for 4-Series

Order No.	Description
For 3/4" Shanks	
4-3-102	3/4" - 1-11/16" dia., 1-3/8" depth

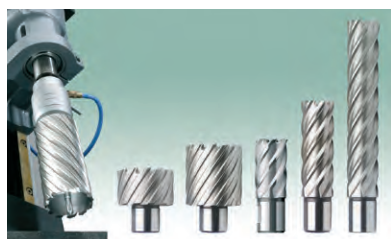


47-Series Lightning Rail Cutters

- Cobalt rail bits for increased wear resistance
- Thick cutter wall for extra durability and extended tool life
- Turn-style mounting allows quick and easy installation without tools.

1-1/4" Depth

Order No.	Diameter	Order No.	Diameter
47-1-124 C	3/4"	47-1-140 C	1-1/4"
47-1-128 C	7/8"	47-1-142 C	1-5/16"
47-1-130 C	15/16"	47-1-144 C	1-3/8"
47-1-132 C	1"	47-1-146 C	1-7/16"
47-1-134 C	1-1/16"	47-1-148 C	1-1/2"
47-1-136 C	1-1/8"	47-1-152 C	1-5/8"
47-1-138 C	1-3/16"	47-1-154 C	1-11/16"



Unibroach® Cobalt Cutters

- 5% cobalt for increased wear resistance
- 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.
- 3/4" shank is standard for cutters up to 3" dia.
- Metric cutters available on request
- See our price list for part numbers

➤ See pages 65-71 for Drill Accessories

Carbide-Tipped Hole Saws

CARBIDE-TIPPED HOLE SAWS



Cut holes in steel plate up to 3/8" thick



Model EHB 16/2.4
S R/L C: 2-speed,
variable-speed drill
with safety clutch

- Tungsten carbide-tipped cutting edges last longer and can be run at higher feeds and speeds to create holes of exceptional quality and accuracy
- One-piece construction; diameters from 9/16" to 4 1/2"

Designed for use with hand-held drills – recommended drills include our EHB 16 series or other hand-held drills with slip clutch – see page 72



1-Series Carbide-Tipped Hole Cutters

1" effective length
Center twist pilot drill
Safety Collar Stop

3/8" shank on cutters up to 3-1/4" dia.
1/2" shank on cutters 3-5/16" dia. and larger

2-Series Carbide-Tipped Hole Cutters Extra Heavy Duty

5/8" effective length
Spring-loaded Pilot Pin

Cutters feature milled, 3-flat shank designed to fit 1/2" chucks.



Order No.	Diameter
1-1-118*	9/16"
1-1-120*	5/8"
1-1-122	11/16"
1-1-124	3/4"
1-1-126	13/16"
1-1-128	7/8"
1-1-130	15/16"
1-1-132	1"
1-1-134	1-1/16"
1-1-136	1-1/8"
1-1-138	1-3/16"
1-1-140	1-1/4"
1-1-142	1-5/16"
1-1-144	1-3/8"
1-1-146	1-7/16"
1-1-148	1-1/2"
1-1-150	1-9/16"
1-1-152	1-5/8"
1-1-154	1-11/16"
1-1-156	1-3/4"
1-1-158	1-13/16"
1-1-160	1-7/8"
1-1-162	1-15/16"
1-1-164	2"

Order No.	Diameter
1-1-166	2-1/16"
1-1-168	2-1/8"
1-1-170	2-3/16"
1-1-172	2-1/4"
1-1-174	2-5/16"
1-1-176	2-3/8"
1-1-178	2-7/16"
1-1-180	2-1/2"
1-1-182	2-9/16"
1-1-184	2-5/8"
1-1-186	2-11/16"
1-1-188	2-3/4"
1-1-190	2-13/16"
1-1-192	2-7/8"
1-1-194	2-15/16"
1-1-196	3"
1-1-198	3-1/16"
1-1-1100	3-1/8"
1-1-1102	3-3/16"
1-1-1104	3-1/4"
1-1-1106	3-5/16"
1-1-1108	3-3/8"
1-1-1110	3-7/16"
1-1-1112	3-1/2"

Order No.	Diameter
1-1-1114	3-9/16"
1-1-1116	3-5/8"
1-1-1118	3-11/16"
1-1-1120	3-3/4"
1-1-1122	3-13/16"
1-1-1124	3-7/8"
1-1-1126	3-15/16"
1-1-1128	4"
1-1-1136	4-1/4"
1-1-1144	4-1/2"

1-Series Accessories

Order No.	Description
1-1-drill	Center Pilot Drill
1-1-spring	Spring
1-1-screw	Screw

Order No.	Diameter
2-1-118	9/16"
2-1-120	5/8"
2-1-122	11/16"
2-1-124	3/4"
2-1-126	13/16"
2-1-128	7/8"
2-1-130	15/16"
2-1-132	1"
2-1-134	1-1/16"
2-1-136	1-1/8"
2-1-138	1-3/16"
2-1-140	1-1/4"
2-1-142	1-5/16"
2-1-144	1-3/8"

2-Series Accessories

Order No.	Description
2-1-pilot	Pilot/Ejector Pin
2-1-screw	Screw



* These cutters do not include springs.

Accessories

Starter Kits

CS Unitec starter kits offer the essentials you need to begin drilling. We have three 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 56-57 for more information on HSS annular cutters.



Armor-Plated TiAlN Carbide-Coated 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 58-59 for more information on Armor-Plated TiAlN Carbide-Coated annular cutters.

Other annular cutter kits are available – contact CS Unitec for details.



HSS Steel Cutter Starter Kit with Power Cleaner

ZST 200S 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 Cleaner (POW 200)
1 quart high-performance cutting oil (ZHS 006)

See pages 56-57 for more information on HSS annular cutters.



See page 70 for more information on the Power Cleaner (POW 200) and Power Worker magnetic stick (POW 100)



Accessories

Coolants and Cutting Pastes

Coolant extends the life of cutting tools – Ideal for cutting steel, stainless steel and hard metals

ProLube™

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



**Water soluble
16:1**

ProLube™

Paste (12 oz. tub) – Part No. **CS 7030-712**

Liquid (1 gallon) – Part No. **CS 7010-504**



- High-performance
- Liquid coolant is concentrated for dilution with water
- Eco-friendly

Paste (tube) – Part No. **ZHS 570**

Paste (12-pack tubes) – Part No. **ZHS 572**

Paste (2.2 lb. tub) – Part No. **ZHS 550**

Liquid (1 quart) – Part No. **ZHB 001**

Upgrade your drill's cooling system: see page 67 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 N**

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 up to 8" depth of cut
- See price list for part numbers



**Shown at right:
2-piece pin for
3" and 4" depth
cutters with
8mm pilot hole
(Part No. 7-3-402).**

