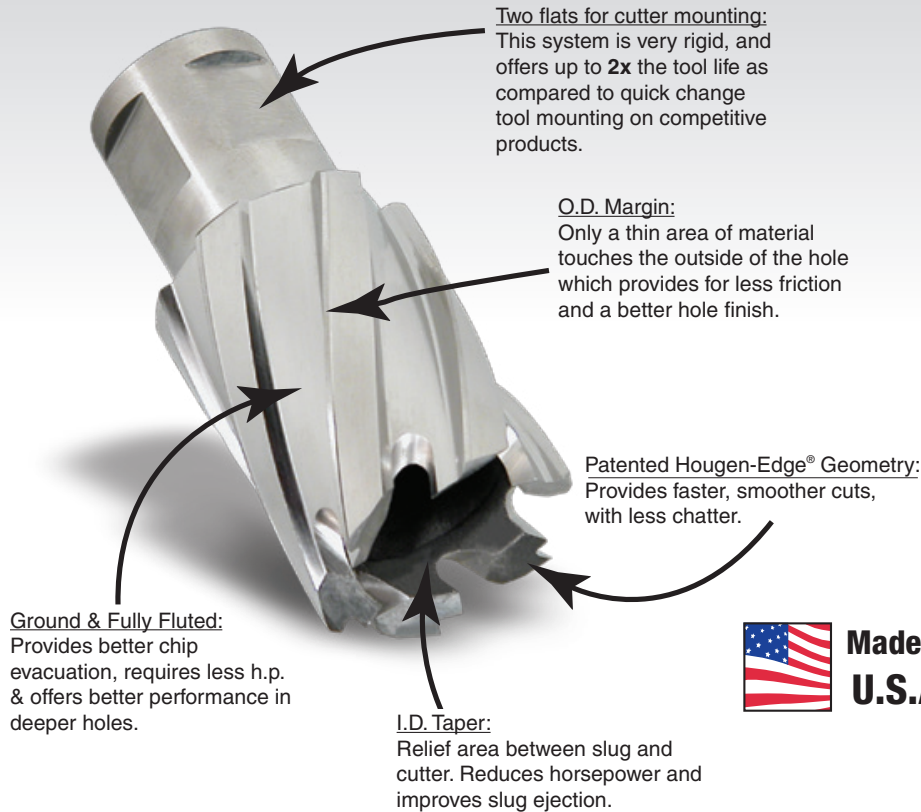


## HOUGEN® CUTTER COMPARISON CHART

										
Tool Series:	Rotacut™	Extended Reach	Holcutter™	Carbide Holcutter™	Rotaloc™	Rotaloc Plus™	"12,000-Series"	Copperhead™	"42/43,000"	
Diameter Range Min. / Max.	1/4" to 1-1/2" (6mm - 25mm)	3/8" to 9/16" (6.4mm)	1 1/16" to 3" (3.2mm)	1 1/16" to 3" (3.2mm)	1/2" to 1-1/16" (12mm - 27mm)	7/16" to 1-3/8" (12mm - 35mm)	7/16" to 2-3/8" (12mm - 60mm)	9/16" to 2" (14mm - 60mm)	3/4" to 3-1/16"	
Max. Depth of Cut	1/4" to 1/2" (6.4mm - 12.7mm)	1/4" (6.4mm)	1/8" (3.2mm)	1/8" (3.2mm)	3/4" - (19mm) Stack Geometry	1" - (25mm)	1" to 6" (25mm to 152mm)	1" to 4" (25mm to 102mm)	2" or 3" (50mm or 76mm)	
Mounting	3/8" or 1/2" Triple Flat Shank	3/8" Triple Flat Shank	3/8" Triple Flat Shank	3/8" or 1/2" Triple Flat Shank	Bayonet Style	Bayonet Style	3/4" Double Flat or Fusion™ Shank	3/4" Double Flat or Fusion™ Shank	3/4" Weldon or 1-1/4" Weldon	
Cutter Material(s) Available	M2 HSS	M2 HSS	M2 HSS	Carbide Tip	M42 HSS	M2 HSS	M2 HSS, M2 TIN Coat, or M42 TIN	Carbide Tip	M2 HSS or M2 TIN Coat	
Can be Resharpened	===== Disposable =====									
Available Grind Down (Within Limits)										
Max. Application Hardness Rating	275 BHN (28.5 HRC)	275 BHN (28.5 HRC)	275 BHN (28.5 HRC)	450 BHN (47.2 HRC)	350 BHN (37.7 HRC)	275 BHN (28.5 HRC)	275 BHN (28.5 HRC)	450 BHN (47.2 HRC)	275 BHN (28.5 HRC)	
Recommended Lubrication	Slick-Stik™	Slick-Stik™	Slick-Stik™	Slick-Stik™	Slick-Stik™	Slick-Stik™	Rotamagic™	Rotamagic™	Rotamagic™	
Aluminum	===== High RPM & Fast Feed Rates Suggested =====									
Mild Steel										
Harder Steel		Good			Better	Good	Standard - Good TIN - Better		Standard - Good TIN - Better	
Stainless Steel	Good		Recommend Speed Reducer		Good		TIN Coat or Premium Recommended		TIN Coat Recommended	

# HOUGEN® "12,000-SERIES" CUTTERS - SIMPLY THE BEST



**Two flats for cutter mounting:**  
This system is very rigid, and offers up to **2x** the tool life as compared to quick change tool mounting on competitive products.

**O.D. Margin:**  
Only a thin area of material touches the outside of the hole which provides for less friction and a better hole finish.

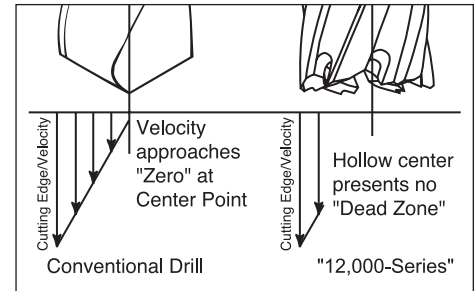
**Patented Hougen-Edge® Geometry:**  
Provides faster, smoother cuts, with less chatter.

**Ground & Fully Fluted:**  
Provides better chip evacuation, requires less h.p. & offers better performance in deeper holes.

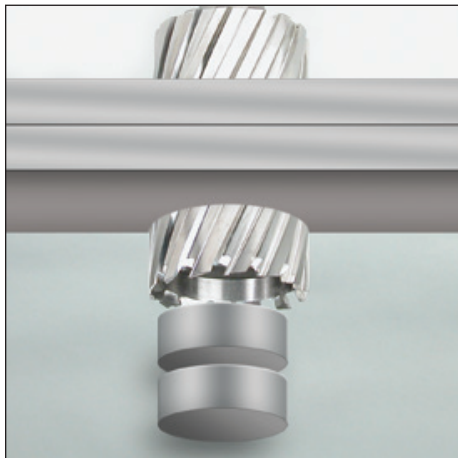
**I.D. Taper:**  
Relief area between slug and cutter. Reduces horsepower and improves slug ejection.

 **Made in U.S.A.**

Hougen "12,000-Series" cutters were the original annular cutters invented over 35 years ago. With the most features of any annular cutter, "12,000-Series" cutters provide the best performance in the largest variety of materials. Compared to traditional tooling (twist drills, etc.) "12,000-Series" cutters can multiply your cutting speed by up to 3 times. And you get longer tool life, a more accurate hole, a better finish, with no burrs. Hougen cutters maximize feed rates because up to 10 cutting edges distribute the cutting load evenly. "12,000-Series" cutters convert a smaller area to chips, requiring less horsepower and thrust. The Hougen-Edge® feature is a patented tooth geometry that provides long tool life, less chatter, and extended resharpenability. The slug also offers a higher scrap value than loose chips.



## Why use Stack-Cut Geometry?



Hougen "12,000-Series" Annular Cutters with a Stack-Cut tooth geometry must be used whenever two or more plates are being drilled simultaneously. When drilling multiple pieces with traditional cutters, after the first piece is drilled, you need to stop and remove the slug before continuing on thru the second piece. Not a problem with stack cutters. Drill straight thru without stopping.

Many sizes of "12,000-Series" cutters are available from stock with stack cut geometry. All sizes are available by special request with stack-cut geometry.

Stack-Cut\* and Flat Bottom Grooving Tooth Geometry is available on the following Series of Cutters:

- "12,000-Series"
- "42/43,000-Series"
- "22/23,000-Series"
- RotaLoc Plus™

Hougen's Technical Service Department should be contacted whenever special tooth geometry and applications will be necessary.

*\*NOTE: Stack-Cut geometry is a standard feature of RotaLoc™ Cutters.*

## Carbide Cutters



Copperhead™ Carbide tipped cutters are premium tools with unique Hougen features. Designed for harder, rough, rusted, or more abrasive materials, but offer excellent performance in mild and structural steel applications.

These cutters feature a full length flute to pull chips out when deep in the hole. A thinner cutter wall improves cutting speed, while special Hougen tooth geometry optimizes cutter life and hole finish. Plus they now are available with two different shanks: the standard two flat 3/4" shank and the Fusion style shank that fits Hougen mag drills and competitive tool-less arbors.

# HOUGEN® "12,000-SERIES" ANNULAR CUTTERS

For use with Hougén® Portable Magnetic Drills and many competitive models on materials up to 275 BHN (28.5 HRC). They are made of hardened M2 high speed steel and are precision ground for excellent performance throughout the cut and long tool life. They require less horsepower and thrust to cut, and last much longer than traditional holemaking methods. "12,000-Series" cutters have a 3/4" diameter double-flatted shank. Modified end tooth geometry is also available for drilling in stacked plate applications. For extended tool life and lower cost per hole "12,000-Series" Cutters are resharpenable.



 Made in U.S.A.

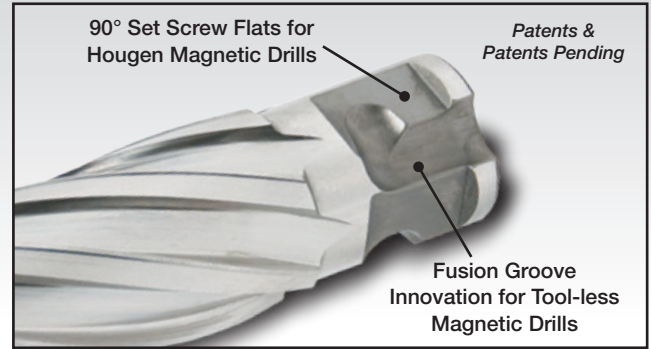
Cutter Dia. (Inches)	Decimal Equivalent	Part No.		
		1" D.O.C.	2" D.O.C.	3" D.O.C.
Use with Pilot		10531	10532	
7/16	.4375	12114	12214	----
1/2	.5000	12116	12216	----
9/16	.5625	12118	12218	----
Use with Pilot		10527	10528	24131
5/8	.6250	12120	12220	----
11/16	.6875	12122	12222	----
3/4	.7500	12124	12224	3-12224
13/16	.8125	12126	12226	3-12226
7/8	.8750	12128	12228	3-12228
15/16	.9375	12130	12230	3-12230
1	1.0000	12132	12232	3-12232
1-1/16	1.0625	12134	12234	3-12234
1-1/8	1.1250	12136	12236	3-12236
1-3/16	1.1875	12138	12238	3-12238
1-1/4	1.2500	12140	12240	3-12240
1-5/16	1.3125	12142	12242	3-12242
1-3/8	1.3750	12144	12244	3-12244
1-7/16	1.4375	12146	12246	3-12246
1-1/2	1.5000	12148	12248	3-12248
1-9/16	1.5625	12150	12250	3-12250
1-5/8	1.6250	12152	12252	3-12252
1-11/16	1.6875	12154	12254	3-12254
1-3/4	1.7500	12156	12256	3-12256
1-13/16	1.8125	12158	12258	3-12258
1-7/8	1.8750	12160	12260	3-12260
1-15/16	1.9375	12162	12262	3-12262
2	2.0000	12164	12264	3-12264
2-1/16	2.0625	----	12266	3-12266
2-1/8	2.1250	----	12268	3-12268
2-3/16	2.1875	----	12270	3-12270
2-1/4	2.2500	----	12272	3-12272
2-5/16	2.3125	----	12274	3-12274
2-3/8	2.3750	----	12276	3-12276

Cutter Dia. (Metric)	Decimal Equivalent	Part No.		
		25mm D.O.C.	50mm D.O.C.	76mm D.O.C.
Use with Pilot		10531	10532	
12mm	.4724	12312	12412	----
13mm	.5118	12313	12413	----
14mm	.5512	12314	12414	----
15mm	.5906	12315	12415	----
Use with Pilot		10527	10528	24131
16mm	.6299	12316	12416	----
17mm	.6693	12317	12417	----
18mm	.7087	12318	12418	----
19mm	.7480	12319	12419	12519
20mm	.7874	12320	12420	12520
21mm	.8268	12321	12421	12521
22mm	.8661	12322	12422	12522
23mm	.9055	12323	12423	12523
24mm	.9449	12324	12424	12524
25mm	.9843	12325	12425	12525
26mm	1.0236	12326	12426	12526
27mm	1.0630	12327	12427	12527
28mm	1.1024	12328	12428	12528
29mm	1.1417	12329	12429	12529
30mm	1.1811	12330	12430	12530
31mm	1.2205	12331	12431	12531
32mm	1.2598	12332	12432	12532
33mm	1.2992	12333	12433	12533
34mm	1.3386	12334	12434	12534
35mm	1.3779	12335	12435	12535
36mm	1.4173	12336	12436	12536
37mm	1.4567	12337	12437	12537
38mm	1.4961	12338	12438	12538
39mm	1.5354	12339	12439	12539
40mm	1.5743	12340	12440	12540
41mm	1.6142	12341	12441	12541
42mm	1.6535	12342	12442	12542
43mm	1.6929	12343	12443	12543
44mm	1.7323	12344	12444	12544
45mm	1.7717	12345	12445	12545
46mm	1.8110	12346	12446	12546
47mm	1.8504	12347	12447	12547
48mm	1.8898	12348	12448	12548
49mm	1.9291	12349	12449	12549
50mm	1.9685	12350	12450	12550
51mm	2.0079	12351	12451	12551
52mm	2.0472	12352	12452	12552
53mm	2.0866	12353	12453	----
54mm	2.1260	12354	12454	----
55mm	2.1654	12355	12455	----
56mm	2.2047	12356	12456	----
57mm	2.2441	12357	12457	----
58mm	2.2835	12358	12458	----
59mm	2.3228	12359	12459	----
60mm	2.3622	12360	12460	----

All Cutters are available with **stack geometry**.  
To order: add 'S' to end of part no. ie...12226S.  
(Some sizes may take 7-10 days. Call for availability).

# HOUGEN® "12,000-SERIES" FUSION™ ANNULAR CUTTERS

Designed for convenience with all the quality and characteristics of the "12,000-Series" cutters with the added benefit of the Fusion™ shank for use in Hougén® drills and competitive tool-less magnetic drills. "12,000-Series" Fusion™ Cutters provide 2x the tool life when used in Hougén® magnetic drills.



Cutter Dia. (Metric)	Decimal Equivalent	Part No.	
		1" D.O.C. (25mm)	2" D.O.C. (50mm)
Use with pilot		10531	10532
12mm	.4724	82312	82412
13mm	.5118	82313	82413
14mm	.5512	82314	82414
15mm	.5906	82315	82415
Use with pilot		10527	10528
16mm	.6299	82316	82416
17mm	.6693	82317	82417
18mm	.7087	82318	82418
19mm	.7480	82319	82419
20mm	.7874	82320	82420
21mm	.8268	82321	82421
22mm	.8661	82322	82422
23mm	.9055	82323	82423
24mm	.9449	82324	82424
25mm	.9843	82325	82425
26mm	1.0236	82326	82426
27mm	1.0630	82327	82427
28mm	1.1024	82328	82428
29mm	1.1417	82329	82429
30mm	1.1811	82330	82430
31mm	1.2205	82331	82431
32mm	1.2598	82332	82432
33mm	1.2992	82333	82433
34mm	1.3386	82334	82434
35mm	1.3779	82335	82435
36mm	1.4173	82336	82436

Cutter Dia. (Metric)	Decimal Equivalent	Part No.	
		1" D.O.C. (25mm)	2" D.O.C. (50mm)
Use with pilot		10527	10528
37mm	1.4567	82337	82437
38mm	1.4961	82338	82438
39mm	1.5354	82339	82439
40mm	1.5743	82340	82440
41mm	1.6142	82341	82441
42mm	1.6535	82342	82442
43mm	1.6929	82343	82443
44mm	1.7323	82344	82444
45mm	1.7717	82345	82445
46mm	1.8110	82346	82446
47mm	1.8504	82347	82447
48mm	1.8898	82348	82448
49mm	1.9291	82349	82449
50mm	1.9685	82350	82450
51mm	2.0079	82351	82451
52mm	2.0472	82352	82452

All Cutters are available with **stack geometry**.  
To order: add 'S' to end of part no. ie...82325S.  
(Some sizes may take 7-10 days. Call for availability).

## "12,000-SERIES" TAP DRILL SIZES

A clean, accurate hole helps to make tapping an easier task. You can achieve that task easily with these tap drill size "12,000-Series" Cutters. Kit #12007 contains five popular sizes of tap drills.

Cutter Dia. (Inches)	Decimal Equivalent	Thread	Part No.	
			1" D.O.C.	2" D.O.C.
Use with Pilot			10531	10532
7/16	.4375	1/2-13	12114	12214
29/64	.4531	1/2-20	----	12010
31/64	.4844	9/16-12	----	12011
33/64	.5156	9/16-18	----	12012
17/32	.5313	5/8-11	12117	12217
37/64	.5781	5/8-18	----	12014
19/32	.5938	11/16-11	----	12219
Use with Pilot			10527	10528
21/32	.6563	3/4-10	12121	12221
11/16	.6875	3/4-16	12122	12222
23/32	.7188	1/2-14 NPT	----	12223
49/64	.7656	7/8-9	----	12020
25/32	.7812	7/8-9	12125	12225
13/16	.8125	7/8-14	12126	12226
7/8	.8750	1-8	12128	12228
59/64	.9219	1-12	----	12025

## PILOTS - "12,000-SERIES"

The pilot serves three functions when used with "12,000-Series" cutters in a portable magnetic drill; 1)

Locate the holes center point, 2) Initiate coolant flow to the center of the tool, 3) Eject the slug at the end of the cut. Always use a sharp pilot for best results.



Part No.	Description
10527	1" D.O.C. Pilot (5/8" - 2-3/8" & 16mm - 60mm)
10528	2" D.O.C. Pilot (5/8" - 2-3/8" & 16mm - 60mm)
10531	1" D.O.C. Pilot (7/16 - 9/16" & 12 - 15mm)
10532	2" D.O.C. Pilot (7/16 - 9/16" & 12 - 15mm)
24131	3" D.O.C. Pilot (3/4" - 2-3/8" & 19mm - 52mm)
4-10528	4" Pilot for Extended Reach "12,000-Series"
6-10528	6" Pilot for Extended Reach "12,000-Series"
Pilots for Old Style "12,000-Series" Cutters	
10533	1" D.O.C. Pilot (1/2" - 11/16" & 13mm - 18mm)
10534	2" D.O.C. Pilot (1/2" - 11/16" & 13mm - 18mm)