



# Tanner White Paper Series

## Champion Cutting Tools Annular Cutters Help Get the Job Done



### Cutting Tool Trend: The Shift Towards Carbide Tipped Annular Cutters in Magnetic Drill Presses

“A custom glass company in Miami Florida needed to drill hundreds of 3/4” holes in a steel I-beam and needed an efficient solution for the job. They decided to purchase Champion’s RotoBrute AC35 magnetic drill press along with a CT150-3/4 carbide tipped annular cutter & BruteLube wax to maximize tool performance. The operator drilled over 300 holes with the original annular cutter purchased!”



“A specialty contractor in Puerto Rico needed to reinforce all of the cellular towers in Humacao by drilling through 1” structural steel. Using another brand’s annular cutter he was only yielding 8-10 holes before the tool burned out. Productivity increased tremendously when he put Champion’s RotoBrute AC35 and CT200 carbide tipped annular cutters to the test. He was able to drill over 200 holes per cutter- saving him time and money!”

“ drilled over 300 holes with the original annular cutter ”

### Why Invest in a RotoBrute Magnetic Drill Press?

Magnetic Drill Presses are a great tool to help increase productivity and efficiency when drilling high quantities of large diameter holes in structural steel or other metals. They are ideal for use in steel fabrication/erection, plant maintenance, refineries, power generation, mining, construction, bridgework, and ship building.

A major advantage of using a Champion Cutting Tool Rotobrute Magnetic Drill Press vs. a handheld electric power drill is the ability to cut with an annular cutter vs. a twist drill. Twist drills cut from the center of their point outward while converting the entire diameter of the hole into chips. Annular cutters cut along the periphery of the hole. A center slug is ejected from the cutter, which allows for faster drilling and creates a cleaner cut.





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*High speed steel annular cutters were introduced over forty years ago and are still widely used today.*



## High Speed Steel Annular Cutters

RotoBrute small diameter, high speed steel annular cutters are a great, economical option for use with a magnetic drill press. RotoBrute's XL Series annular cutters are made up of M2 steel and Plus20 Surface Treatment, which give the cutters 20% higher performance and 20% higher performance than standard high speed annular cutters.

### HSS Cutting Options

- XL100:** 1" Depth of Cut  
From 7/16" to 4" Diameter
- XL200:** 2" Depth of Cut  
From 7/16" to 4" Diameter
- XL300:** 3" Depth of Cut  
From 3/4" to 4" Diameter

\*\*Pilot Pins not included with cutters

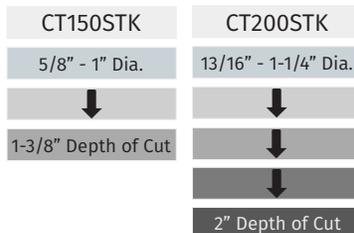
Always looking to improve and innovate, Champion Cutting Tool introduced carbide tipped annular cutters in 2005

## Carbide Tipped Cutting Options

- CT150:** 1-3/8" Depth of Cut  
From 9/16" to 1-9/16" Diameter
- CT200:** 2" Depth of Cut  
From 9/16" to 4" Diameter
- CT300:** 3" Depth of Cut  
From 3/4" to 4" Diameter
- CT400:** 4" Depth of Cut  
From 3/4" to 2" Diameter

\*\*Pilot Pins not included with cutters

Carbide Tipped Stack Cutters also available for drilling through multiple plates



## Carbide Tipped Annular Cutters

Carbide Tipped Annular Cutters were engineered to cut holes in cast iron, steel, and ultra-hard or exotic alloys. RotoBrute Carbide Tipped Annular Cutters have a superior Triple Edge Carbide Tooth Cutting feature that outperform ordinary high speed steel annular cutters and twist drills. Two sets of three cutting tips, each with different geometries, are used to balance the cutting forces. This means that the cutter can be fed at higher speeds, creating smoother drilling.

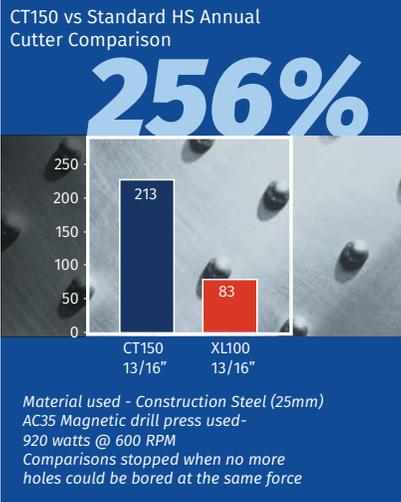
For maximum tool performance, RotoBrute CT annular cutters are recommended for use with RotoBrute magnetic drill presses for best performance. However, the new and improved CT150 and CT200 cutters feature a universal shank for compatible use with most magnetic drill presses in the market.



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## CT Advantage



Champion Cutting Tools  
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## Operating Instructions

- Insert pilot pin into the body of the cutter
- Insert cutter into the magnetic drill press arbor
- Securely fasten the set screws using a hex key
- Use the pilot pin to help align cutter in desired location
- Begin drilling using light feed pressure until the cutter has drilled 1/8" deep
- Apply medium feed pressure once the cutter has engaged in material
- Upon completion of the cut, withdraw cutter, shut motor off, and remove chips that may have wrapped around the cutter

## Advantages of RotoBrute Carbide Tipped Annular Cutters

### Longer Tool Life

- A CT150-13/16 was tested in an AC35 Magnetic Drill Press against the XL100-13/16 when drilling 25mm construction steel. The CT150 cut 213 holes and the XL100 cut 83 holes. This is an advantage of 256%.

### Save You Money

- Increase Productivity
- When cutting at least 2" deep and 1-1/8" diameter, carbide tipped hole cutters (CT200-1-1/8") cost less than high speed steel cutters (XL200-1-1/8")

### Greater Depth of Cut

- RotoBrute CT400 can drill holes up to 4" deep



## Drilling Conditions

BruteLube cutting fluid or wax is recommended for best tool performance and longer cutting tool life.