



**radius**

**PROFESSIONAL  
HDD TOOLS**

**HDD**

**TOOLING CATALOG**

## Why Use Radius Tools?

At Radius HDD, we are committed to HDD tools. It's all we do. While a number of our customers are business heads, owners and managers, we constantly work directly with the "men in the mud". That is where our business started and will always be focused. By listening, watching and working with HDD operators and crews we hear first hand what works and what doesn't. That input - your input - directly drives our business.

After years of experience developing HDD tools for other OEM's, Riff Wright and David Bullock founded Radius Tools in 2003 to focus solely on creating the next generation of HDD tools. Radius HDD initially offered tool repair services to boring contractors across the country.

While repairing all brands of HDD tooling in the shop and in the field, the Radius HDD team saw first hand the successes and failures of other manufacturers' tool designs. By working directly with contractors, Radius developed tooling that addressed the problems drillers were encountering with their existing tools. Problems such as damaging elliptical drilling processes, teeth ripping out of their pockets, cracking, interior water port damage, premature wear, housing door failures and lost sondes were all addressed in the design of the Radius rock bit and sonde housing.

With increasing domestic and international sales, Radius HDD has tripled in size since the introduction of its first bit and housing and the product line continues to develop and grow. For 2009, Radius expands its MAXIMUS line of oversized bits and housings with BRUTUS the monstrous 10" Rock Bit with 4-1/2" or 6-1/2" API PIN connection that cuts a 12"-14" hole. In response to the small rig operators, Radius unveils its new HOT SHOT line of 2-3/4" tooling with a patent pending pullback device designed to allow a very quick and easy transition from boring to pullback.

The Radius team remains driven to develop and build innovative tools. We will continue to work in the mud with contractors to listen, learn and understand the challenges you face everyday. We are proud of every driller that puts their confidence in our tool and will continue working everyday to earn that trust.

## Table of Contents

**NEW FOR 2009!**

Radius FTTP and Small Rig Tooling 4

**NEW FOR 2009!**

Meet Brutus... Ultimate Maxi-Rig Bit 5

Radius Rock Bit Features & Benefits 6

Radius Rock Bit Sizes & Specs 7

Sonde Housing Features & Benefits 8

Sonde Housing Sizes & Specs 9

Subs and Connections list 10

Parts, Kits & Accessories 12

**NEW FOR 2009!**

Radius Chase Tool 14

Radius Gear 15

### Legal Speak...

All mention to the companies, brands and marks listed in this catalog are for reference only. Radius HDD Tools is not affiliated with these businesses except to denote compatibility between various products and offer HDD tools that are truly "bad to the bone..."

Ditch Witch, Subsite, JetTrak are brands and/or marks of Charles Machine Works, Perry OK | Digitrak and Eclipse are brands and/or marks of Digital Control Inc. (aka DCI) Kent, WA | Vermeer and Firestick are brands and/or marks of the Vermeer Corporation, Pella, IA | Astec Underground is a brand of Astec Industries, Loudon, TN | Straight Line is a brand of Finco Inc. Newton, KS

Specifications subject to change. Radius HDD and Radius MAXIMUS and the Radius HOT SHOT are marks of Radius HDD Company, Weatherford TX. Patents pending on various designs shown herein.



Made for the world  
in the USA

## NEW FOR 2009 Radius FTTH and Small Rig Tooling

### TRB-2750

The Radius 2-3/4" series tool is designed for the smaller 7K - 12K rigs and for the contractors who know that profitability in FTTP and the short shot market requires accuracy and speed.

The TRB-2750 offers increased durability and steering in tough conditions but unlike other older style rock bits the Radius Hot Shot has a patent pending pulling eye that connects easily to the bit for quick attachment and pull back.

The recessed water ports offer optimum fluid placement for a smooth pull and with the housing still attached the beacon can be used to monitor your depth and location.

**SLH-2750 - 2-3/4" DCI & Subsite**  
compatible sonde housings

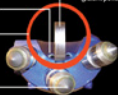


Fluid ports positioned to optimize flow around the conduit for easier pull.

Pulling eye designed to keep lead product centered in the hole

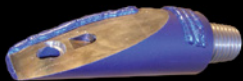
Cutting teeth offer protection against snags and obstructions that could hinder pullback.

Radius pullback attachment allows for quick and easy connections to conduit (patent pending)



### Radius Bullet Bits

Designed specifically for FTTP bores, the Bullet bit is the ideal tool to get an accurate pilot shot through soft ground with just a 2-3/4" hole diameter. A counter bored pulling eye gets the install finished quickly!



### Flat Blade Adaptors

Use your favorite Vermeer, Ditch Witch or after market blades. Available for all size Radius sonde housings.





# BRUTUS

## KING OF ROCK BITS

Brutus was developed for Maxi-Rig operators who need a tool that offers increased steering ability and control for long deep bores in conditions that simply do not require the effort or expense of a mud motor.

Today's large pipeline bores are no longer just down and up shots. The ability to maneuver inside easements and tighter bore paths is becoming a critical skill for today's Maxi-Rig operating team.

Brutus, along with the rest of the Maximus line of oversized bits, gives you that control.

Designed to cut a 12"-14" hole, Brutus is available with a pin connection ranging from 4-1/2" to 6-1/2" API thread and a 9' long tail shaft which allows power tong removal.

With a mighty 1-3/4" diameter tooth shank, the cutting teeth are designed specifically to cut and roll which increases their productivity and durability in the hole. A smaller tooth shank just won't cut it on these bores.

Specifically designed carbide buttons and hard surfacing are applied not only to offer superior protection in tough conditions, but also to thoroughly grind the cuttings into a smaller more floatable size which assists greatly in keeping the pilot hole flushed.

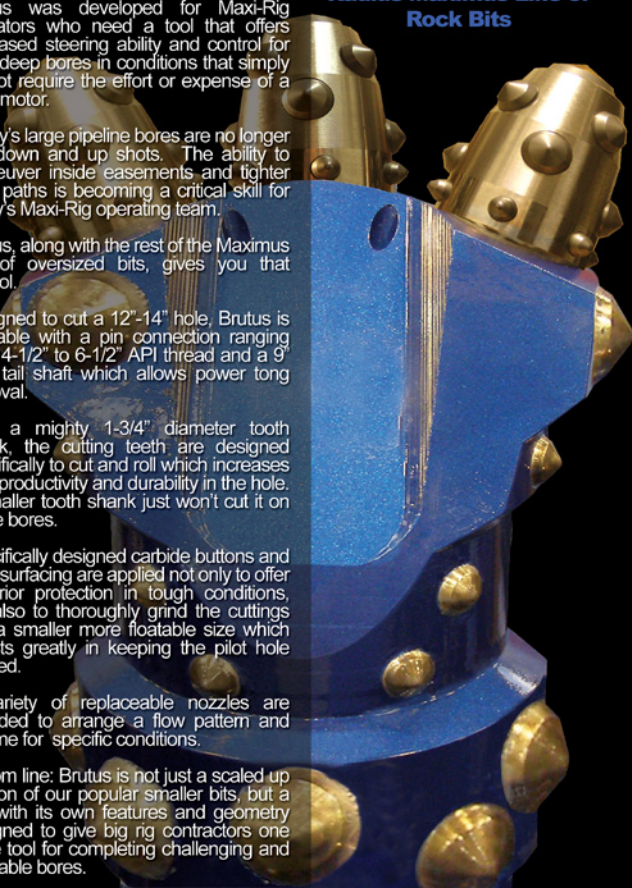
A variety of replaceable nozzles are provided to arrange a flow pattern and volume for specific conditions.

Bottom line: Brutus is not just a scaled up version of our popular smaller bits, but a tool with its own features and geometry designed to give big rig contractors one more tool for completing challenging and profitable bores.

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## NEW FOR 2009

The latest addition to the  
Radius Maximus Line of  
Rock Bits



## Radius Rock Bit Features



### Improved cutting geometry

Teeth are angled directly into the cut, directing the cutting force along the tooth shank for more rigid cutting action, improved steering and longer tooth life.

### Recessed fluid ports

Minimizes clogging and reduces damage from body wear and internal high pressure fluid damage.

### Increased crown protection

Radius offers almost TWICE the carbide protection. More carbide means longer tool life.

### Re-enforcing secondary crown

Radius offers increased support of the cutting tooth which also allows for the shortest "knock-out" holes of any bit. A BIG DEAL to those who have ever had to remove broken teeth in the field.

### Soldered carbide buttons

Soldering allows carbide buttons to be placed anywhere on the tool. A pressed in button limits the location, size and placement of carbide minimizing the durability of the tool. We put the protection where it belongs, not just where it will fit!

### Raised wear pad

Lifts the crown to keep the teeth "perpetually in the cut" and better crushes the spoils to float faster and easier out of the hole.

### Innovative carbide placement

One thing we've seen alot of in our business is worn bits. But from that we can determine how and where to place carbide buttons to offer the best protection possible. The crown, leading edges and trailing profiles all require unique button placement to provide such protection. The nice geometric button patterns on other rock bits simply does not offer the same level of protection.

### Standardized connections

Compatible on all HDD rigs, Radius promotes proven threaded connections such as API Regular and IF thread forms for more standard (and affordable) subs and connections.

## Radius Rock Bit Sizes & Specs



### TRB-2750

Fits 2.75" dia housing | Cuts 4" hole  
 2" API IF PIN Connection  
 Designed for HDD Rigs 7-16K  
 Two 3/16" Fluid Ports | Crown dia: 3.5"



### TRB-3000

Fits 3" dia housing | Cuts 4.5"- 5" hole  
 2" API IF PIN Connection  
 Designed for HDD Rigs 12-20K  
 Two 3/16" Fluid Ports | Crown dia: 4.0"



### TRB-3500

Fits 3.5" dia housing | Cuts 5"- 6" hole  
 2-3/8" API REG PIN Connection  
 Designed for 20 - 40K Size HDD Rigs  
 Two 3/16" Fluid Ports | Crown dia: 4.75"



### TRB-4500

Fits 4.25" dia housing | Cuts 6"-7" hole  
 2-7/8" API REG PIN Connection  
 Designed for 40 - 60K Size HDD Rigs  
 Two 1/4" Fluid Ports | Crown dia: 5.50"



### TRB-5000 **Radius Maximus**

Fits 5" dia housing | Cuts 8" - 9" hole  
 3-1/2" API REG or IF PIN Connections  
 Designed for 60 - 100K Size HDD Rigs  
 Two 3/8" Fluid Ports | Crown dia: 6.50"



### TRB-6000 **Radius Maximus**

Fits 6" dia housing | Cuts 10"-12" hole  
 4-1/2" API REG or IF PIN Connections  
 Designed for 100 - 200K Size HDD Rigs  
 Two 3/8" Fluid Ports | Crown dia: 8.0"

## Radius Rock Housing Features

### The first side load housing designed specifically for tough conditions

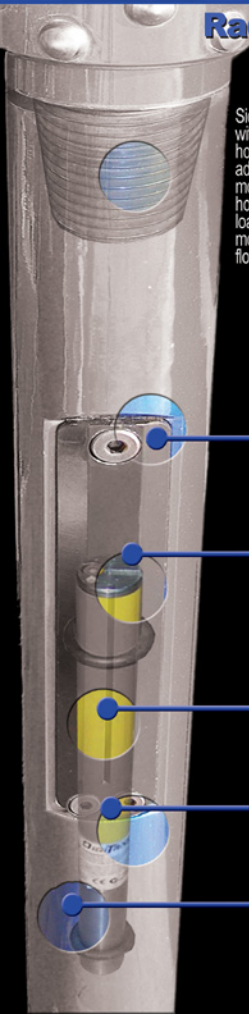
Side load housings were originally designed for use in soft to mild conditions with flat blades. As early rock bits developed, side load housings had trouble holding up to the higher torque loads encountered in tougher bores. To address the problem tooling manufactures focused on a number of lid or door modifications which has worked to some degree but still tend to fail. Radius, however, went to the root of the problem and completely re-designed a side load sonde housing specifically for rock drilling. So tough in fact, even mud motor operators are switching from their end load housings to our new high-flow side-load design.

Standard API thread connection for Bits, Blades, Rollercones & Mud Motors.

**STANDARD UNITS** for boring with rock bits

**HIGH FLOW UNITS** for use with Mud Motors & Bits

**NON-MAGNETIC UNITS** for today's geo-nav systems



#### The shortest and thickest lids on the market

Designed to wear longer and resist flexing far better than any other side load housing. 3/4" and 1" thick! This housing IS rock solid!

#### Electronically Universal

Interchangeable sonde blocks allow the use of all brands of locating beacons and transmitters.

**SUBSITE** and **RADIODETECTION**

**DCI (DIGITRAK)** including the new 19" Eclipse and **WIRELINE** transmitters as well as geo-navigation beacons.

#### Reduced sonde window patent pending

Reduced sonde window design minimizes the damaging effects of heavy torque in tough conditions that cause other side load housings to flex and fail.

#### Recessed sonde cavity patent pending

Offers increase strength and less flexibility. You get the protection of an endload housing while providing the accessibility of a Side Load unit.

#### Interchangeable tail-piece

Allows connection to all HDD boring rigs including manufacturer's quick connection systems.