

# ***STRAIGHTLINE***

PROFESSIONAL ROCK REAMING SOLUTIONS







**SETTING A NEW DIRECTION.** STRAIGHTLINE PUSHES THE ENVELOPE IN MANUFACTURING AND DESIGN. THE PROOF IS IN THE HOLE.

# YOUR SOLUTION FOR BACK REAMING ROCK

Rocks come in all shapes and sizes, intermittent to solid, soft to extremely hard. So it is safe to say not all rock is created equal. To insure that our customers achieve maximum productivity, StraightLine custom designs and manufactures each tool to match your specific jobsite condition. Each custom-built hole opener begins with a thorough understanding of your soil condition, the drill used and the final hole diameter required. Armed with this information, StraightLine hole opener designers work with the contractor to determine if the backream can be performed in a single pass or if multiple reaming passes will be required.

Our designers then determine tool diameter. Next, threaded connections are matched to the drill, which in turn determines the shaft diameter. Then the diameter and quantity of the cones are selected. Finally, the characteristics of the cones are chosen.\* Throughout the tool selection process, StraightLine will marry your specific needs to their expertise to insure you get the best tool to achieve smooth cutting and deliver long service life.



## Cone Selection \*

Success begins with the proper selection of cone type and size. The cone's cutting structure is selected based on the rock formation. The cone's ideal size is based on the tool diameter.



## Proper Cone Spacing

Central to the success of the tool is minimizing the distance between the individual cones and between the cones and the shaft or front stabilizer.



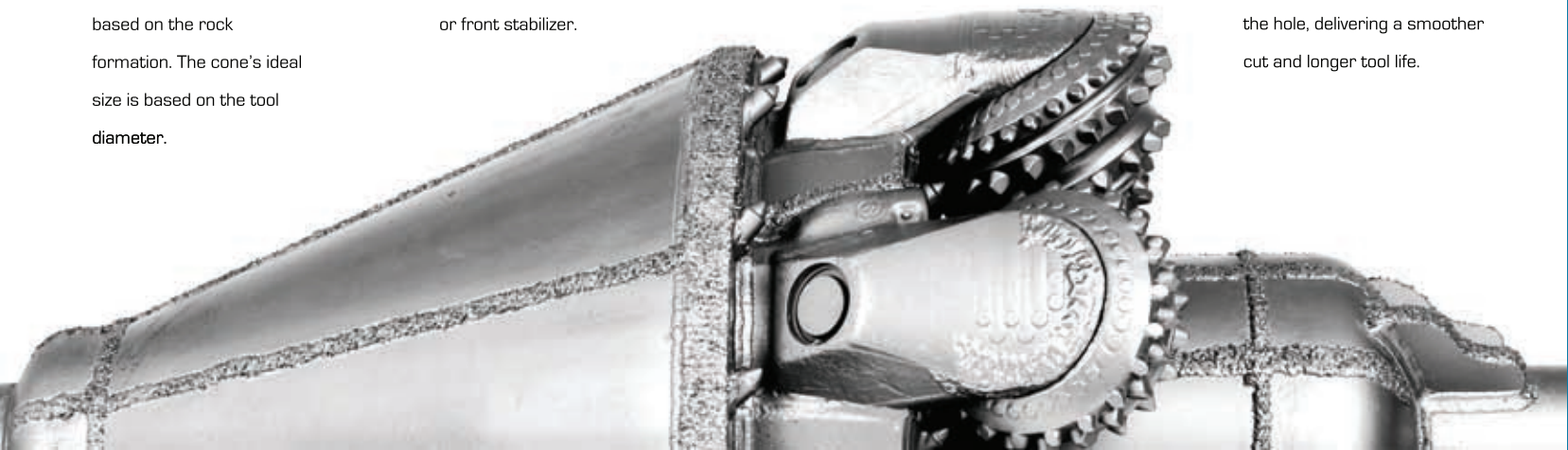
## Pushback Cap

Pushback caps provide a tapered surface on the back side of the reamer to assist pushing the tool backwards when required.



## Front Stabilizer

When a gap greater than 2" exists between the cones and the shaft, tools are fitted with a stabilizer to help center the tool in the hole, delivering a smoother cut and longer tool life.





# ATTENTION TO THE LAST DETAIL

Precision machined components along with state-of-the-art fixtures deliver precise cutter geometry which yields smooth cutting and maximum service life.

Hard surfacing is applied on all wear surfaces to minimize wear on the tool.

Exceptional craftsmanship completes the tool.

## STANDARD FEATURES

- When a gap greater than 2" exists between the cones and the shaft, tools are fitted with a stabilizer to help center the tool; forcing the cuttings to the outside and delivering smoother cutting and longer tool life.
- All hole openers are fitted with pushback caps on the back side of the reamer to assist pushing the tool backwards when required.
- Based on your specific jobsite conditions, the cone style, either Mill Tooth or Tungsten Carbide Insert bits, are chosen. \* \* Performance is fine tuned by the cutting structure selection \*.

All StraightLine Hole Openers utilize sealed

- friction bearings and are gage protected for maximum service life.\*

\* See chart on back of brochure.

\*\* Bits are available in both NEW or PREMIUM RE-RUN condition.



OUR CUSTOMERS MAKE THE DIFFERENCE. AT STRAIGHTLINE OUR CUSTOMERS HAVE THE LAST WORD:

“In my work area there is a variety of rock types varying from very hard granite to soft shale. However, it is rare to find a hole opener that delivers cutting performance and durability. I have found the Straightline hole openers to be the exception. The combination of the built-in stabilizer and cutters matched to my rock conditions translate into fast, and exceptionally smooth cutting. These tools do work better, last longer, and are more durable and stronger than any I have ever used.”

← **Keith and Penny Avery**

Owners of K & P Utility Contractors, Inc.  
Morganton, North Carolina

**STRAIGHTLINE**  
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	Formation	Series	Hardness Range (PSI)	Type	Bearing, Gage Protection
Mill Tooth Bits	Soft Formations	1	Up to 6,000 (PSI)	1	Standard Roller Bearing
				2	
				3	
				4	
	Medium Formations	2	Up to 6,000 (PSI)	1	Roller Bearing, Air Cooled
				2	
				3	
				4	
	Hard Formations	3	6,000 - 15,000 (PSI)	1	Roller Bearing, Gage Protected
				2	
				3	
				4	
Tungsten Carbide Insert Bits	Soft Formations	4	6,000 - 15,000 (PSI)	1	Sealed Roller Bearing
				2	
				3	
				4	
	Soft to Medium Formations	5	15,000 - 25,000 (PSI)	1	Sealed Roller Bearing, Gage Protected
				2	
				3	
				4	
	Medium Hard Formations	6	15,000 - 30,000 (PSI)	1	Sealed Friction Bearing
				2	
				3	
				4	
	Hard Formations	7	25,000 - 40,000 (PSI)	1	Sealed Friction Bearing, Gage Protected
				2	
				3	
				4	
	Extremely Hard Formations	8	40,000 + (PSI)	1	Sealed Friction Bearing, Gage Protected
				2	
				3	
				4	



## PROFESSIONAL DRILLING SOLUTIONS

Reamers Originated from Experience.

StraightLine has been producing down-hole tools for 25 years; today StraightLine produces more parts and tools for the HDD Industry than any other manufacturer...period.

Our product specialists have logged many thousands of hours of hands-on drilling experience in every kind of ground condition imaginable. We've stood side by side with drilling contractors worldwide as they've dealt with their toughest bores. And we've taken that specialized knowledge of the underground and translated it into our unique Reamer designs, right down to the last detail.

Take the next steps toward success:

- Identify the Formation
- Determine the Diameter
- Call an Expert
- We take care of the rest...