



Rotary Hole Openers - Section 8

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Please call for custom options and other accessories.

Overview

The Mills Machine Holeopener is used to **enlarge or ream an existing pilot hole** or can be run above a pilot bit to **simultaneously drill and enlarge a hole**. These rugged tools are built for the toughest drilling applications.

For most drillers, the use of Hole Openers has gone from being an optional operation to becoming a standard practice. Several advantages to using Holeopeners is described on the reverse side of this page. The primary reasons for using holeopeners are **economy, accuracy, speed and flexibility of size**. With **over 45 years of experience**, Mills Machine can custom design and manufacture the exact tool for your individual requirements.

Fabricated Roller Cone (see Rotary Holeopeners, in this catalog)

Fixed Arm Roller Cone (see Rotary Holeopeners, in this catalog)

Drag Bit, fixed and replaceable blade (see Rotary Drag Bit in this catalog)

Claw Bit (see Rotary Claw Bit in this catalog)

Holeopeners or **Roller Back Reamers** are available for **Horizontal Road Boring** or **Horizontal Directional Drilling** applications. Configurations include Roller Cone, Drag (blade) Type or Claw (bullet) Type in any size and with any connection. These rugged units are manufactured with a reverse pitch on the cutters for pulling back through the pilot hole.

We also manufacture a line of **Free Bore Bits** and **Casing Push Bits** for the Horizontal Road Boring market. Configurations include Roller Cone, Drag (blade) Type or Claw (bullet) Type in any size and with any hex connection. The **Roller Cone** type features a special **Positive Cam Lock Design** for pushing casing as you drill. This type of bit is made to cut very **hard rock** formations. **Blade and Bullet** configurations are offered with flip-out cutters for **soft to medium** formations.

Advantages of Hole Openers

1. Cost and availability of large tricone rock bits.

Large diameter rock bits are expensive and difficult to find compared to the economy of Holeopeners using smaller rock bit segments.

2. Large diameter holes with small rigs.

Large holes can be drilled with smaller rigs by opening the hole up in stages. A smaller hole requires less power.

3. Straighter hole.

Drill a straighter hole by drilling a pilot hole, then attaching the pilot bit to the bottom of a holeopener, which will then follow the existing hole.

4. Cutter replacement.

To extend the initial cost investment of a Holeopener, the cutters on most any design can be replaced. Bolt-on drag bit and claw holeopeners can be replaced in the field. Fixed blade and roller cone holeopeners may require factory replacement.

5. Sizes and formations available.

Holeopeners can be manufactured in any size and made to drill any formation from soft clay to hard granite.

6. Surface casing and starter holes.

Holeopeners provide a convenient way to drill larger diameter holes for setting surface casing and shallow starter holes.

7. New jobs.

With the capability of drilling larger diameter holes, several job markets could open up. For example: mining air shafts, elevator holes, power line holes, municipal waterwells, foundation holes and mouse or rat holes for drill pipe storage.

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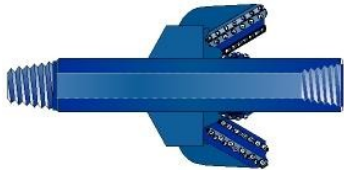
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Horizontal Roller Cone Hole Openers (Back Reamers)

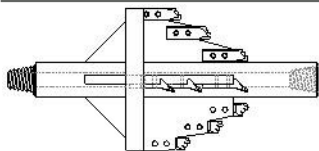


Mills Machine has 40 years of experience behind our full line of Horizontal Roller Cone Hole Openers (Back Reamers). Available in sizes from 6" to 120" (150mm to 3 meters), Mills Machine can manufacture larger Hole Openers to meet any specific design. These ruggedly constructed units are made from 4142 heat-treated alloy steel and feature the roller rock bit cutters of your choice.

Horizontal Hole Openers are available in single, double, or multiple stages with a regular or flat-plate design. The front and back necks can be as long or as short as you desire, featuring breakouts, flats, or lugs as needed. Circulation can be standard or reverse for horizontal or raised bore drilling. Circulation can also be fluid or air depending on your rig capabilities.

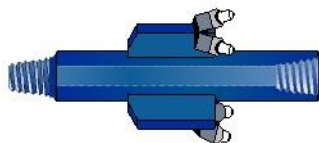
Cutter styles available include Steel Tooth or TCI button bits in New, Retip or Rerun condition with Regular or Sealed Journal Bearings. We also offer any thread size and an unlimited number of custom designs.

Horizontal Drag Type Hole Openers (Back Reamers)



Mills also manufactures large drag (blade) type hole openers (back reamers) for horizontal drilling utilizing a vast array of cutter configurations including our very own heavy duty bolt on digger teeth in a scoop type step (soft to medium) or straight type chevron (medium to hard). Many different options are available including any thread, number of blades or mixture of different types of cutters.

Horizontal Bullet Type Hole Openers (Back Reamers)



All of our Claw bit designs offer rapid penetration, drill as fast or faster than a drag bit while being as tough as a roller rock bit. They feature economical, inexpensive field replaceable cutters. Many different options are available including any thread, number of blades or mixture of different types of cutters.

Fabricated Roller Cone Hole Openers



Mills Machine has been manufacturing Split Bit Type Roller Cone Hole Openers for over 45 years. These ruggedly constructed, high-quality units are made from 4142 heat-treated alloy steel and split roller rock bit cutters. Each hole opener is custom manufactured for your specific application.

Sizes Range from 5 1/2" to 118"

One, Two, or Multiple Stage Designs

Regular or Reverse and Air or Fluid Circulation as shown at left

Any Thread or Flange Size

Steel Tooth or TCI Button in New, Retip, or Rerun Condition

Soft, Medium, or Hard Formation Cutters

Extended Top or Bottom Neck with Flats

Fabricated Fixed Cutter or Bolt-on Cutter Design

Blade and Bullet Cutter Designs are available.

Please call for custom options and other accessories.

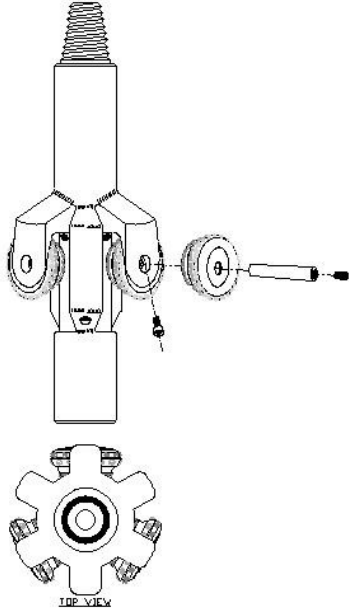
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Fixed Arm Roller Cone Hole Openers with Replaceable Cutters



Mills Machine Company has been a manufacturing fabricated cutter (split bit) hole openers for over 45 years. In 1994 we started working with some companies in Louisiana to secure prints and specifications to build oil field type hole openers with demountable roller cones.

These hole openers are manufactured from a solid piece of 4142 heat-treated alloy steel and the arms are fabricated into the body. The roller cones are held in place by sliding the cutter journal into a cam lock slot and then a load pin is inserted through the journal to hold the cutter in place. These rugged Hole openers feature cutters that are interchangeable with one of the most popular name brand Oil Field Hole Opener Manufacturers.

Fixed Arm roller cone hole openers range in size from 10 5/8" to 26" diameter. We offer open or sealed bearing construction with Steel Teeth or TCI Buttons in soft, medium, and hard formations. The bit is available in a Single or Double Stage design depending on the pilot hole and enlarged hole size. The Holeopeners are available with either 3 or 6 jets. We are one of the very few manufacturers that have ever made a Two-Stage Hole Opener in this design.

The cutters are field-replaceable and can be disassembled to replace the bearings and seals. Steel tooth cutters can be retipped to extend the life of the cutter.

The top connection includes breakout flats or extended fishing neck. The bottom connection will be made to fit your pilot bit. We can also, furnish a bull nose to guide the hole opener.

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