



HENSON TOOLS, L.L.C.

Milling Tools and Manufacturing



FBI "BEAR CLAW" MILL

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CONTACT INFORMATION

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For additional information on mills refer to:

www.mhbits.com

With over 50 years experience and knowledge of down hole tooling and manufacturing, Henson Tools, L.L.C. continues innovative solutions to milling and drilling problems.

Serving the Oil & Gas exploration and Construction & Utility industries, the company is committed in providing sound customer service with a quality product at a fair price.

Hosting a product line which fits the demand for your down hole milling projects, it becomes much easier to base your purchase decision on

Customer Satisfaction

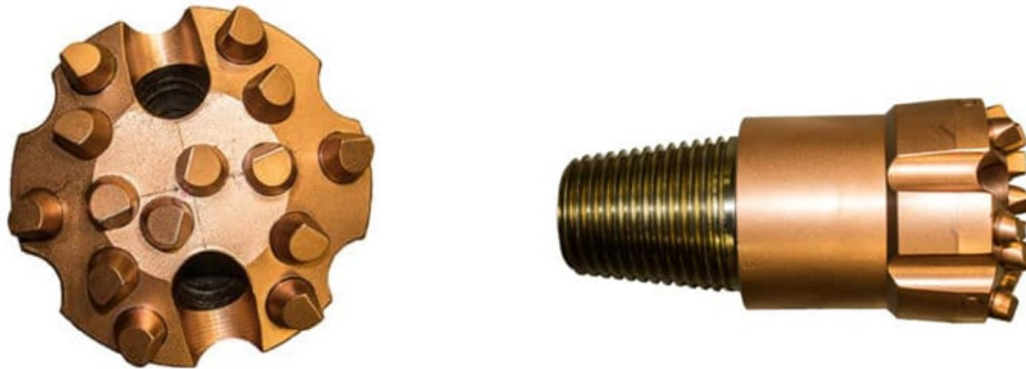
The manufacturing plant maintains a reliable track record with a current 99.09% success/failure ratio. (Some things are beyond our control!)

Your Cost Savings

Milling time can be significantly reduced, thereby lowering rig time and labor cost. Milling runs through cement are reported to average 100 ft. per hour, exceeding the norm by 100%.

Reasonable, competitive pricing provides excellent value and ensures a quick return on the investment.

FB1 “Bear Claw” Mill



USES

**Full Body “Bear Claw” Mills are recommended for milling cement.
Not recommended for milling formation or metal.**

GENERAL

**Carbide inserts range in size from 5/16 in. to 5/8 in.
Mill size from 1 3/4 in. to 6 1/2 in. in 1/8 in. increments.
Circulation ports from 5/16 in. for motor application to 1 1/4 in. for reverse
circulation.
Bodies manufactured from 4140 HT Steel.**

BENEFITS

**Custom sizes available with minimal lead time.
Special grades of carbide inserts for durability.
Full body design (no fishing for lost cones).
Large chisel inserts for fast penetration rates.
Weight and RPM can be adjusted for maximum penetration rates without
worry of bearing failures or damage to mill.
CNC machined bodies and threads for accuracy.**

FBC “Chomp” Mill



USES

Full Body “Chomp” Mills are recommended for use in applications that involve milling cast iron and other metals, or a combination of cement and metal.

GENERAL

Carbide inserts range in size from 5/16 in. to 5/8 in.

Mill size from 1 3/4 to 6 1/2 in 1/8 in increments.

Circulation ports from 5/16 in. for motor applications to 1 1/4 in. for reverse circulation.

Bodies manufactured from 4140 HT steel.

BENEFITS

Custom sizes available with minimal lead time.

Special grades of carbide inserts for durability.

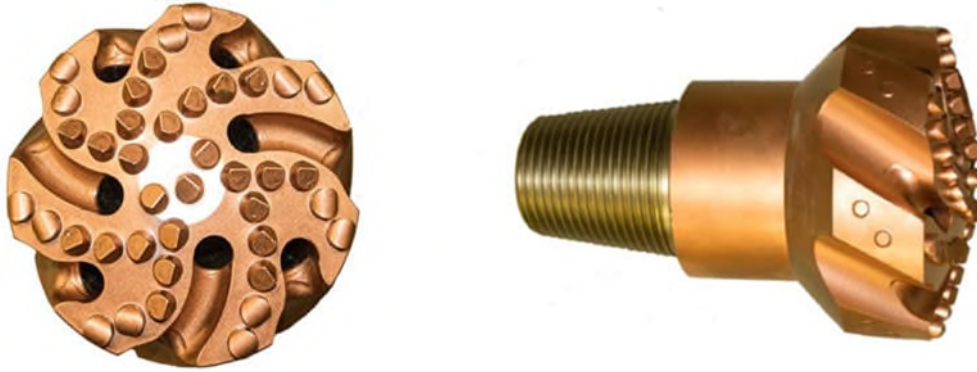
Domed inserts to minimize insert failure.

Full body design (no fishing for lost cones).

Wide range of applications (cement, cast iron, etc.)

CNC machines bodies and threads for accuracy.

FB1CS “Hurricane” Mill



Uses

FB1CS “Hurricane” Mills are recommended for milling cement and composite plugs.

General

Domed inserts on the OD for durability

Chisel inserts in the inner rows for faster penetration

Mill sizes from 1- 3/4 to 6- 1/2 in 1/8 inch increments.

1/4 to 1/2 in. circulation ports for motor applications or standard circulation. Bodies manufactured from 4140 HT steel.

Benefits

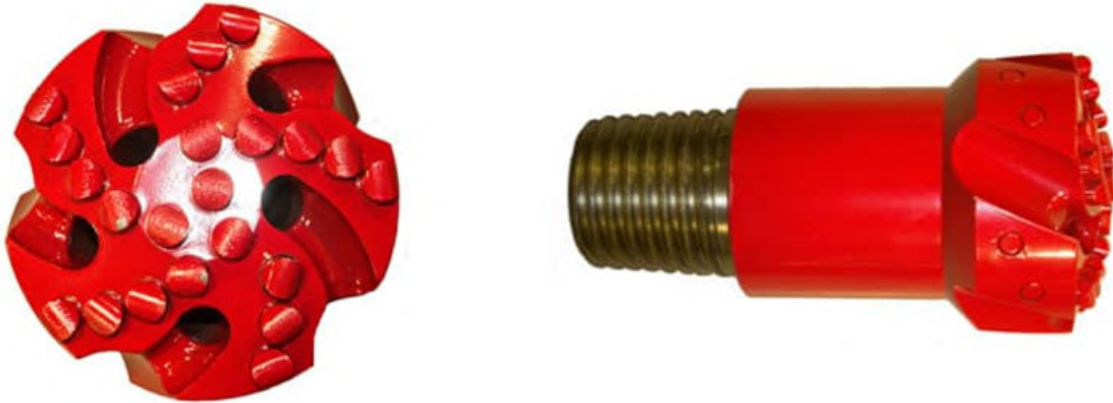
Special grade of carbide for durability.

Full body design (no fishing for cones)

Spiral design with channels for improved cleaning and circulation.

CNC machined body and threads for accuracy.

FBCS 'Hurricane' Mill



Uses

FBCS 'Hurricane' Mills are recommended for use in applications that involve milling composite and cast iron plugs, other metal and cement.

General

3 /8 domed inserts

Mill sizes from 1-3/4 to 6-1/2 in 1/8 inch increments.

1/2 in. circulation ports for motor applications or standard circulation.

Spiral design with channels for improved cleaning and circulation.

Bodies manufactured from 4140 HT steel.

Benefits

Special grade of carbide for durability.

Full body design (no fishing for cones)

Domed inserts to minimize insert failure.

Wide range of applications (cement, composite, cast iron etc.)

CNC machined bodies and threads for accuracy.

FB1S “Hurricane” Mill



Uses

FB1S “Hurricane” Mills are recommended for milling cement and composite plugs. Not recommended for milling metal.

General

5/16” to 1/2” chisel carbide inserts

Mill sizes from 1-3/4 to 6-1/2 in 1/8 inch increments.

1/2 in. circulation ports for motor applications or standard circulation.

Bodies manufactured from 4140 HT steel.

Benefits

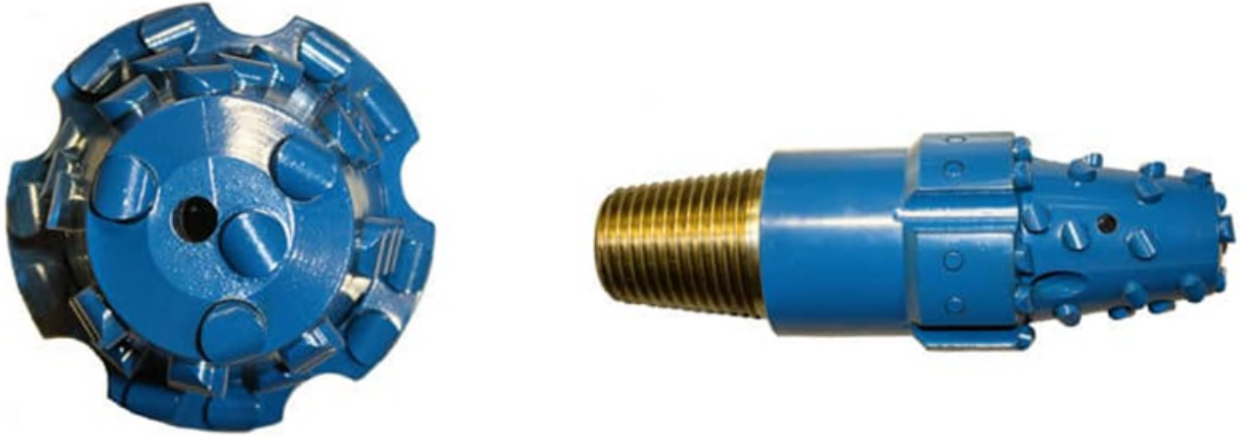
Special grade of carbide for durability.

Full body design (no fishing for cones)

Spiral design with channels for improved cleaning and circulation.

CNC machined body and threads for accuracy.

FBCT “Aardvark” Tapered



USES

Full body “Aardvark” Mills are recommended for milling high pressure composite plugs. Can also be used for cement & cast iron milling.

GENERAL

Carbide inserts range in size from 5/16 in. to 1/2 in.

Mill sizes from 1 3/4 in. to 6 1/2 in. in 1/8 in. increments.

Circulation ports from 5/16 in. for motor application to 1-1/4 in. for reverse circulation. Bodies manufactured from 4140 HT steel.

BENEFITS

Custom sizes available with minimal lead time. Special grades of carbide for durability.

Unique design for rapid milling of composite plugs. Can be used for milling multiple plugs (from 1 - 20). CNC machined body and threads for accuracy.

PDC MILLS



USES

PDC mills are used for milling extremely hard and abrasive materials.

Uses range from milling hard cement and sand to milling hard scales, such as barium scale.

NOT TO BE USED WHEN ANY METAL WILL BE ENCOUNTERED.

GENERAL

Mill size from 1 3/4 in. to 6 1/2 in. in 1/8 in. increments.

Circulation ports from 5/16 in. to 1 1/4 in.

1 3/4 in. – 2 7/8 in. mills use 3/8 in. PDC post type inserts.

3 in. – 6-1/2 in. use 5/8 PDC post type inserts.

Bodies manufactured from 4140 HT steel.

BENEFITS

Custom sizes available with minimal lead time.

PDC inserts for extended wear and abrasion resistance.

Ability to mill very hard cement and scale without changing mills. (As opposed to carbide inserted mills).

Full body design (no fishing for lost cones).

CNC machined bodies and threads for accuracy.

Mill Specifications:

Material: 4140 Heat Treated Steel

Inserts: Carbide Inserts of various grades depending on application

Motor Applications:

Weight on Mill:

3,000-10,000 lbs. depending on motor specifications and driller discretion for optimal performance

Rig Applications: Lbs./ In. Mill Diameter

3 - 4	2000 - 6000
4 - 5	3000 - 6000
5 - 6	3000 - 9000
6 - 7	3000 - 9000

RPM

Motor Applications: Up to 400 RPM or Operator's discretion

Rig Applications: 80 - 120

Weight and RPM to be adjusted to attain optimum ROP

AVAILABLE THREAD PATTERNS **&**

MAKE UP TORQUE RECOMMENDED FOR MILL PINS

Ft. - Lbs.

1" AMMT	550
1-1/4" AMMT	770
1-1/2" AMMT	1290
2 3/8 API REG	3480
2 7/8 API REG	6650
3 1/2 API REG	9080
4 1/2 API REG	17940
2-3/8 PAC	2960
2-3/8 PAC DSI	3550

***All threads manufactured with hardened and certified gages.**