

# PISTON *Bully*

**Description:** Robust Piston Based Design provides cost effective hole enlargement / conditioning. Piston activate with pressure differential across the the nozzles.

**Application:** Suitable for all type of reaming and hole conditioning applications. Tool can be configured for both down reaming and back reaming as well as casing scraping.

## Features and Benefits

- ❑ The *Piston Bully* multi-nozzle configuration allows for optimum hydraulics during shoe drill out operations as well effectively cleaning and cooling the cutting structure.
- ❑ The unique latch mechanism is simple, reliable and effective; drop ball or dart pressure up system releases ~10% of shop setting (no shear pins).
- ❑ Ability to configure the tool with:
  - ❑ Dual rows of heavy set PDC cutter pistons ensuring enlarged hole size even in the most demanding well bore conditions
  - ❑ Dual rows of mild steel for casing scraping ensuring clean undamaged casing
- ❑ Once activated positive surface pressure drop confirms tool activation
- ❑ Configurable nozzles to allow operator flexibility in dealing with drill string hydraulics.
- ❑ Patented spline bar wear bushing system eliminates leak path and exterior bolting to retain pistons, thus ensuring tool reliability.
- ❑ Compatible with all drilling BHA's.



The Piston Bully offers unique features while maintaining it's strong rigid design

**High Value - High Performance**  
**Less Cost per Stage**

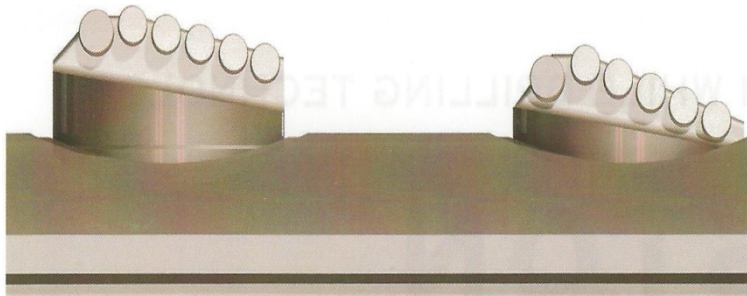


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# PISTON Bully



Advanced cutting structure of the Piston Bully significantly reduces reactive torque. This is accomplished by utilizing staggered engagement, with the first row of pistons cutting 60% of the wellbore enlargement, followed by the upper set of pistons cutting the remaining 40%. This configuration optimizes steerability and ROP while reducing vibrations.

Piston Bully Reamer Specifications	588-UR	838-UR	975-UR
Min. Pilot Hole Size	152.40 mm (6.00 in)	215.9 mm (8.50 in)	260.34 mm (10.25 in)
Max. Hole Opening Size	177.7 mm (7.000 in)	250.825 mm (9.875 in)	269.88 mm (10.625 in)
Max. Body O.D	149.225 mm (5.875 in)	212.725 mm (8.375 in)	263.525 mm (10.375 in)
Overall length	1838.325 mm (72.375 in)	1898.64 mm (74.750 in)	2095.5 mm (82.50 in)
Fishing Neck Diameter	120.65 mm (4.750 in)	171.45 mm (6.750 in)	203.2 mm (8.000 in)
Top Connection	3 Yzi.F. BOX	4 Yzi.F. BOX	6 5/8 REG. BOX
Bottom Connection	3 Yzi.F. PIN	4 Yzi.F. PIN	6 5/8 REG. PIN
Cutter Piston Diameter	47.625 mm (1.875 in)	69.85 mm (2.750 in)	76.20 mm (3.00 in)
Number of Cutter Pistons	6	6	6
Cutter Type	PDC	PDC	PDC
Mandrel Inner Diameter	28.575 mm (1.125 in)	41.275 mm (1.625 in)	47.625 mm (1.875 in)
Annular Flow Area in Min. Pilot Hole (in.2)[%]	2564.511 mm <sup>2</sup> (3.975 in <sup>2</sup> ) [14%]	4680.636 mm <sup>2</sup> (7.255 in <sup>2</sup> ) [13%]	4680.636 mm <sup>2</sup> 15.62 in <sup>2</sup> [18.93%]
Annular Flow Area with Cutters Activated (in.2)[%]	10266.43 mm <sup>2</sup> (15.913 in <sup>2</sup> ) [41%]	15058.679 mm <sup>2</sup> (23.341 in <sup>2</sup> ) [31%]	11612.88 mm <sup>2</sup> (18.00 in <sup>2</sup> ) [21.19%]
Recommended Max. Flow Rate	1.325 m <sup>3</sup> /min (350 gpm)	2.839 m <sup>3</sup> /min (750 gpm)	4.542 m <sup>3</sup> /min (1200 gpm)
Standard Activation Method	Parting Pin	Parting Pin	Parting Pin
Optional Activation Method	Pressure Differential	Pressure Differential	Pressure Differential
Back Ream Capability	Yes	Yes	Yes



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