

# 5632-HT4-13

## USER INSTRUCTIONS



Melfred Borzall housings are built to last. They are machined from high quality, US alloy steel and feature contoured pockets to eliminate stress concentrations, reducing the risk of cracking. Our unique lid design allows for a dual method of securing the lid using both larger locking bolts and a roll pin to keep your investment safe in tough conditions. Further protection is provided by our one-of-a-kind built-in sonde cushioning. We've also made our housings easy to use by engraving the direction of drilling, housing and lid part numbers for easy identification. Include redesigned dual super nozzles which jet off of centerline to aid steering and you've got the top of the line. Here at Melfred Borzall, we've thought of everything; so you don't have to.

**Important!** Read and understand the manufacturer's manual(s) for the directional drilling machine, locating equipment and all attachments including additional safety manual(s) provided with this tool.



**Danger!** **Do not use a pipe wrench to remove directly coupled tools.** The rod could rotate causing the device to strike you causing serious injury or death.



**Danger!** **Stay clear of rotating drill stem and tooling.** You can become caught in the rotating drill stem or tooling causing serious injury or death.



**Danger!** **Do not wear loose clothing.** Loose articles of clothing can become tangled around the drill stem or tooling causing serious injury or death.

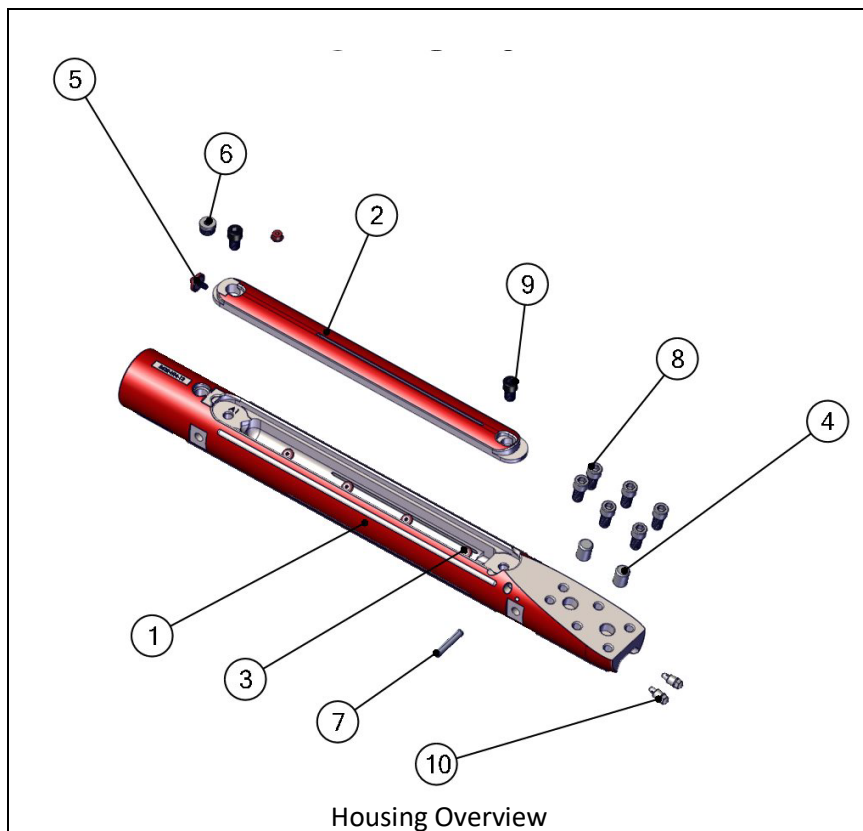


# USER INSTRUCTIONS

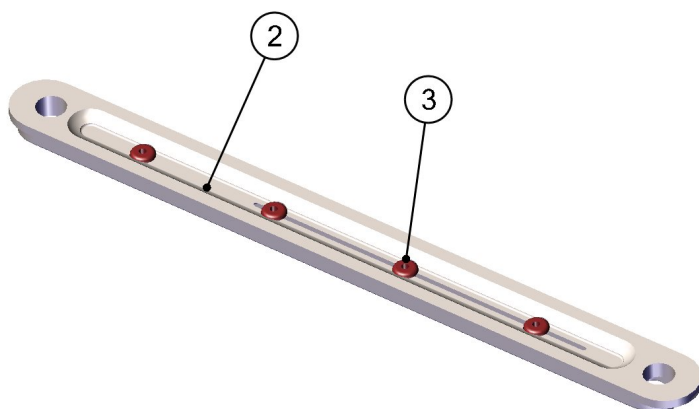


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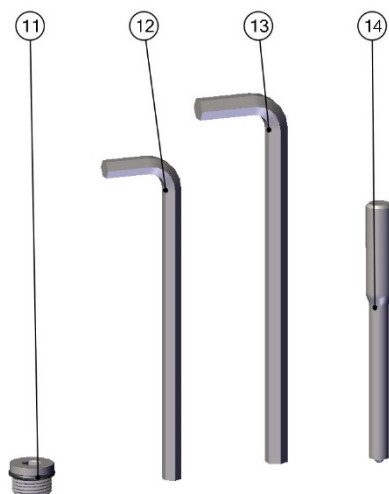
## In The Box



# USER INSTRUCTIONS



Lid and 5000-BUMPER1-SHORT



Loose parts

# USER INSTRUCTIONS

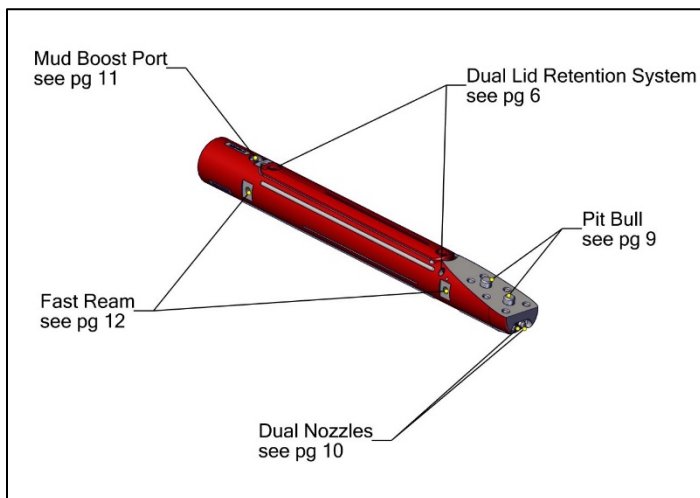
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# USER INSTRUCTIONS

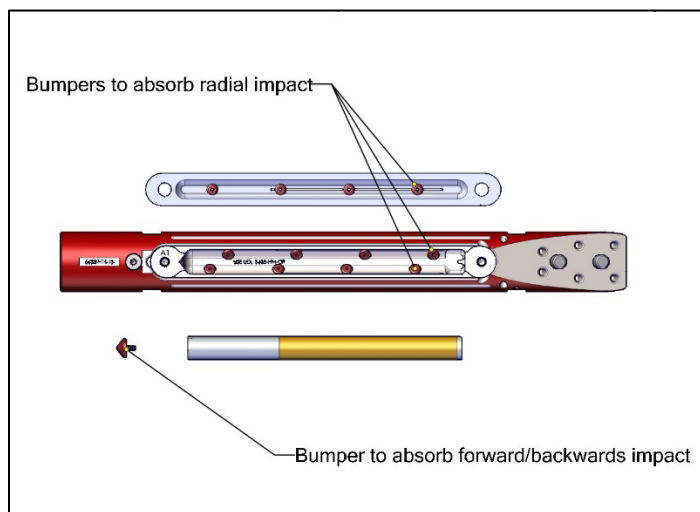
ID	Part Number	Description	REQ	SPARE
1	5632-HT4-13	Premium Sonde Housing	1	-
2	5632-HT4-CP	Sonde Pocket Cover Plate	1	-
3	5000-BUMPER1-SHORT	Sonde Pocket Bumper	12	-
4	DP-075-100	Pit Bull Pin	2	-
5	5000-BUMPER2	Sonde End Bumper	1	-
6	PLUG-0.75-16	Mud Boost Plug	1	-
7	RP-038-200	Lid Locking Pin	1	4
8	SHCS-1/2x1	1/2"-13x1" Socket Head Cap Screw	6	-
9	SHCS1/2x3/4	1/2"-13x3/4" Socket Head Cap Screw	2	-
10	2600-1712	1/8" Compact Super Nozzle	2	-
11	NOZ-0.25-0.75-16	Mud Boost Nozzle	-	1
12	AW-5/16	5/16" Allen Wrench	-	1
13	AW-3/8	3/8" Allen Wrench	-	1
14	PUNCH-RP-038	Roll Pin Punch	-	1

# USER INSTRUCTIONS

## External Features



## Internal Features



# USER INSTRUCTIONS

## General Precaution

1. Lock out the drilling machine, following the manufacturer's instructions, before doing any work to tools or drill stem.

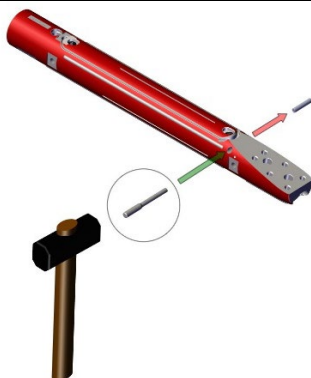


## Dual Lid Retention

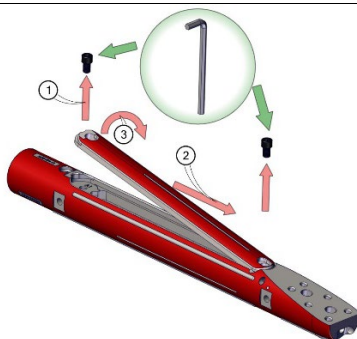
This housing utilizes both bolts and a roll pin as a redundant method of retaining the lid. The bolts do not clamp the lid but prevent it from sliding and uncovering the tabs at either end. The pin also prevents the lid from sliding and uncovering the tabs.

1. Remove Lid Locking Pin (Item 7) using PUNCH-RP-038 (Item 14) and a hammer to drive the punch.


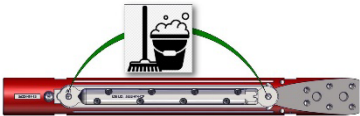
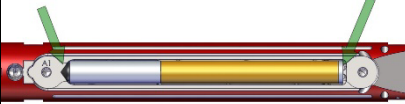

Note: The lid pin hole also serves as a cleanout port to remove any debris that may prevent the lid from sliding forward.



2. Remove the lid bolts. Then remove the lid by sliding it forward and prying up from the back.

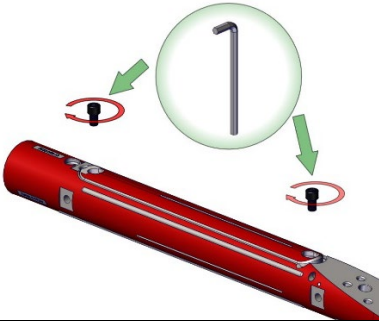
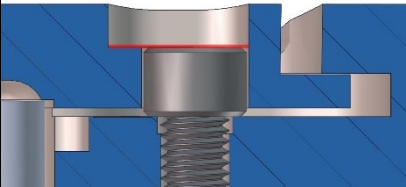

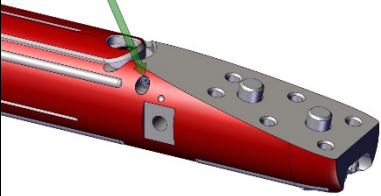


# USER INSTRUCTIONS

<p>3. Thread 5000-BUMPER2 (Item 5) into the back of DigiTrak sonde (sonde not included). <u>Hand-tighten only</u>.</p> <p>Install the transmitter so that the indexing notch in the transmitter seats around the mating tab in the housing pocket. When properly secured, the sonde will resist rotation within the pocket.</p>	 <p>The diagram illustrates the assembly of the bumper and transmitter into the sonde housing. A red arrow points from a small black pin to a yellow and silver bumper assembly. Another red arrow points from this assembly into the back of a red sonde housing, which has a silver mating tab visible on its side.</p>
<p>4. Ensure that the bolt holes are completely clear of any debris as unclean holes can prevent bolts from properly securing the lid.</p>	 <p>The diagram shows a red sonde housing with a silver lid. A green arrow points from a cleaning icon (a bucket with a brush and bubbles) to the bolt holes on the housing, indicating that these areas must be cleaned before securing the lid.</p>
<p>5. Check that transmitter and bumper assembly are seated properly. When properly secured, the sonde will resist rotation within the pocket.</p>	 <p>The diagram shows a cross-section of the red sonde housing. A yellow and silver bumper assembly is seated inside, with a silver transmitter positioned behind it. Green arrows point to the bumper and transmitter, indicating they should be checked for proper seating.</p>
<p>6. Reinstall lid by installing forward tab into housing, rotating lid down, and sliding lid towards rear of the housing.</p>	 <p>The diagram illustrates the steps to reinstall the lid. A red lid is shown above a red sonde housing. Red arrows and numbers indicate the sequence: (1) sliding the lid towards the rear, (2) rotating the lid down, and (3) installing the forward tab into the housing.</p>



# USER INSTRUCTIONS

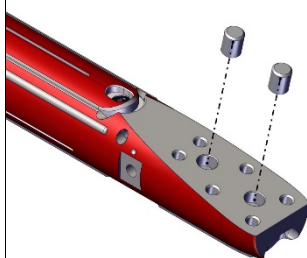
<p>7. Install the bolts using the provided 3/8" Allen Wrench (Item 14). Tighten each bolt to the recommended torque of 124lb-ft.</p> <p><b>Replace bolts with new after 10 uses.</b></p>	
<p>8. Ensure that the bolts are properly seated by verifying that the bolt head is level with the machined shelf beside the hole.</p>	
<p>9. Locate the lid pin hole. It will be just forward of the lid opening, running from the 3 o'clock to 9 o'clock position.</p> <p>Align the pin with the hole and tap in with a hammer.</p>	
<p>10. Tap pin into place until pin is sub-flush on both ends.</p>	

# USER INSTRUCTIONS

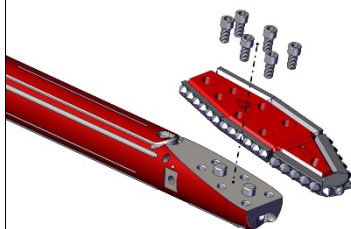
## Pit Bull/Blade

By adding dowel pins to strategic areas of the blade-mating surface on Melfred Borzall's side-load housings and bit bodies, then aligning those with drilled holes in blades, the shear force is relieved from the bolts. As the dowel pins take all the lateral shear force, it increases the bolts ability to hold the blade to the steer face. This patent pending feature is included in your housing and nearly Melfred Borzall's entire blade line-up is Pit Bull compatible. In the event you need to use a blade that does not include the Pit Bull feature, you can simply remove the pins from the steer face.

1. Insert the included dowel pins into the holes in the steering face. The pins should slide in. Clean out holes if necessary to ensure pins do not stick out more than 7/16" from steer face.



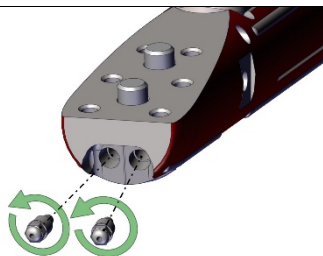
2. Install the directional blade of your choice onto the housing steer face. Tighten each bolt to the recommended torque of 124lb-ft.



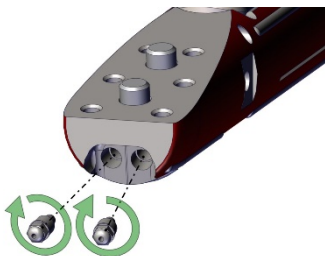
# USER INSTRUCTIONS

## Dual Nozzles

1. Use a 7/16" wrench or socket (not supplied) to unscrew the nozzles.



2. Insure threads on new nozzles are wrapped with Teflon tape and screw into housing using 7/16" socket or wrench. MBI manufactures nozzles with a 1/8" (included) and 3/16" jet size (may be purchased separately as part number 2600-1718).

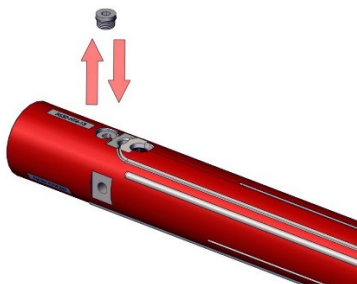


# USER INSTRUCTIONS

## Mud Boost Port

The mud boost port, located just behind the sonde lid, provides additional mud flow during pullback.

1. The housing is shipped with a plug installed (Item 6, PLUG-0.75-16). To utilize this feature, the plug must be removed and the mud boost nozzle installed (Item 12, NOZ-0.25-0.75-16).



2. Using the supplied 5/16" Allen wrench, unscrew the plug.



3. Install Item 11 (NOZ-0.25-0.75-16) by screwing into the port using the 5/16" Allen wrench.



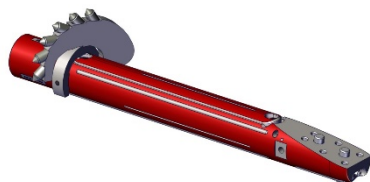
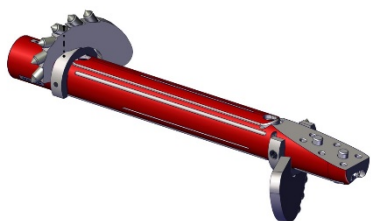
# USER INSTRUCTIONS

## FastReam

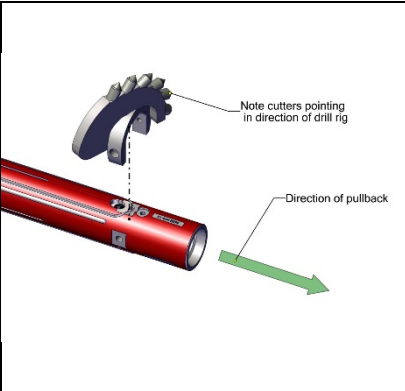
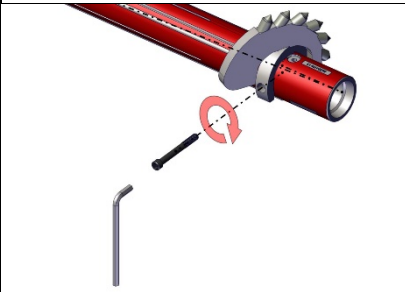
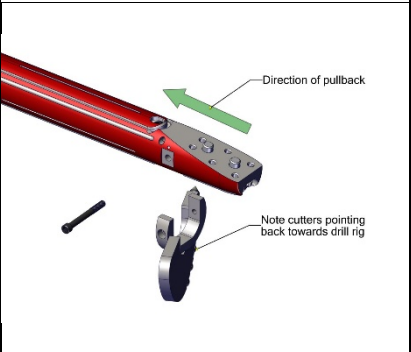
Your Melfred Borzall housing includes the Patented FastReam feature. This allows quick attachment of Tornado-style reamer blades to enable back reaming without removing the housing and attaching a dedicated reamer.

There are several different styles and sizes of blades to use. The blades can be sized differently to progressively cut a larger hole, can be the same size, or a single blade can be used.

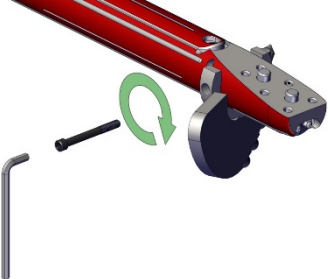
When using the FastReam feature, Melfred Borzall recommends using a FastReam adapter that provides additional Mud Boost ports.



# USER INSTRUCTIONS

<p>1. First install rear blade. Insure cutters are facing towards the rear of the housing (back towards drill rig). Install FastReam blade from the top of the housing so that cutters are just in front of the mud boost port. The blade should fit into all three notched flats.</p>	
<p>2. Secure blade using the cross bolt through the FastReam blade and hole in housing. Use the correct size Allen wrench to tighten to 81ft-lbs.</p>	
<p>3. If desired, install the front FastReam blade. Insure cutters are facing towards the rear of the housing (back towards drill rig). Install FastReam blade from the bottom of the housing. The blade should fit into all three notched flats.</p>	

# USER INSTRUCTIONS

<p>4. Secure blade using the cross bolt through the FastReam blade and hole in housing. Use the correct size Allen wrench to tighten to 81ft-lbs.</p>	
<p>After completion of the bore, remove the components from the housing body and clean all parts thoroughly.</p>	