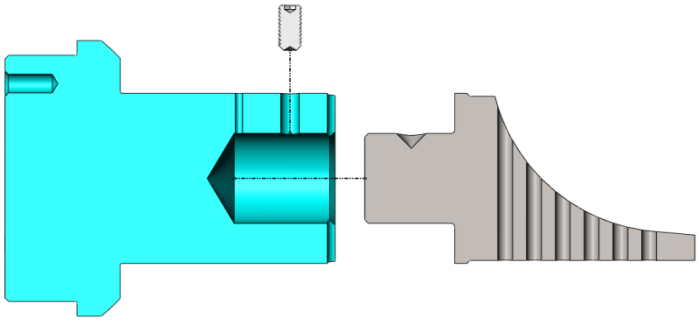
Ball Catcher Assemblies

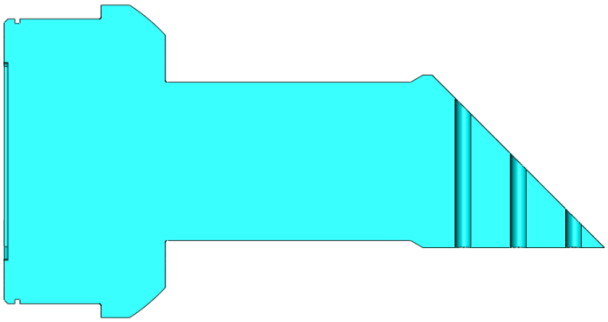
MSI Technical Bulletin 017
Subject: Review of current ball catcher assemblies (BCA series) offered by MSI.

The intent of this bulletin is to familiarize our customer base with the improved ball catcher assemblies that MSI has to offer. The bulletin highlights the improvements that have been made in the BCA series based on what was learned from the first ball catcher assembly (TA0165) manufactured by MSI.

1) The blank plug with integral screen in TA0165 was separated into two pieces in the BCA series, which makes the screen replacement more economical for the end user. When the time comes to replace the screen after erosion takes place, the user just needs to replace the screen insert in the BCA series. The screen insert is made out of stainless steel for corrosion protection, and can be produced with several different hole patterns to meet specific operating requirements.

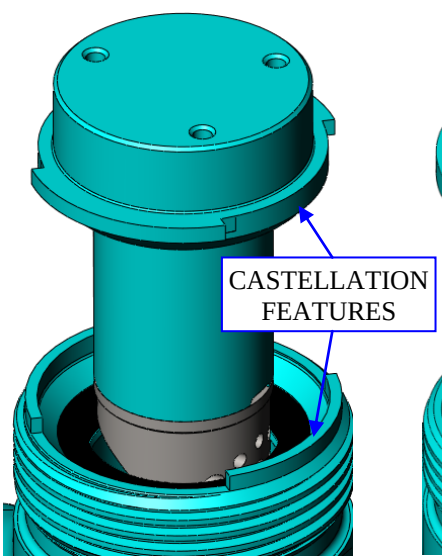


BCA series plug/screen assembly

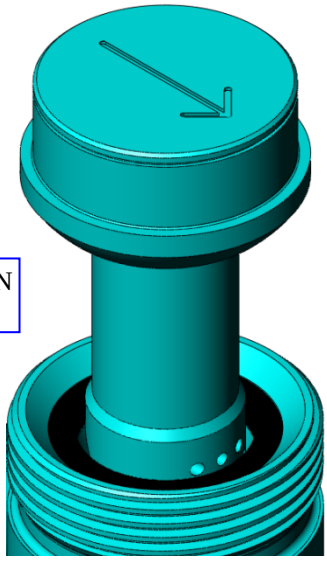


TA0165 plug with integral screen

2) The blank plug in TA0165 is bi-directional, but it doesn't lock in place and it has been reported that when the wingnut is tightened, the plug rotates and gets slightly misaligned. The plug/insert subassembly in the BCA series is bi-directional too, but it locks into position with castellation features on the plug and Tee body to prevent any misalignment.

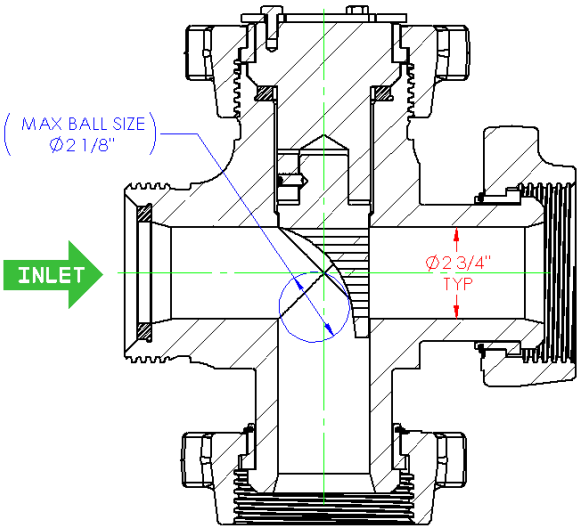


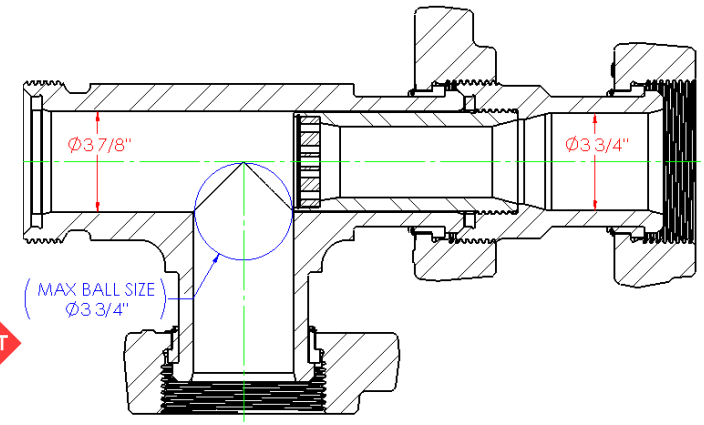
BCA series positive alignment

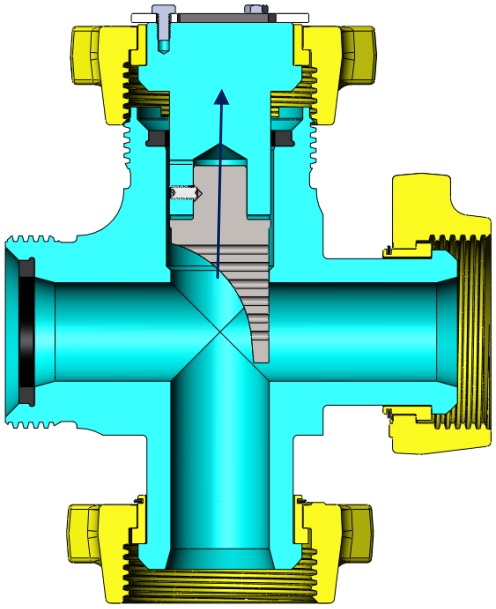


TA0165: no positive alignment

3) The TA0165 assembly has an internal opening of 1.94, so the max fracturing ball size that can pass through there would be around 1-7/8". The BCA series was designed for a 2-1/8" max ball size (see left image below). So the user has a wider range of frac balls they can catch with these assemblies. MSI also offers a BCA in-line version ball catcher that can catch up to 3-3/4" max ball size (see right image below) with a replaceable screen.



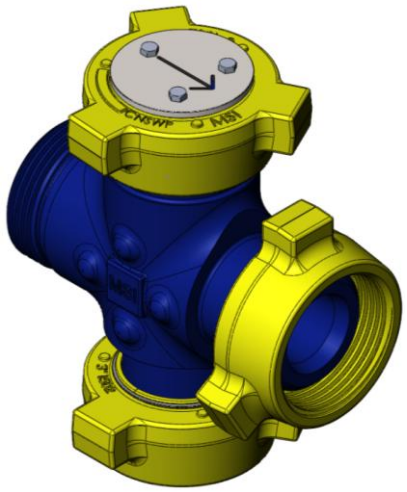




4) It has been reported that the flow direction arrow in the TA0165 plug was sometimes very hard to see after several coatings of paint. The BCA series uses a retainer plate with an arrow that is machined through the plate and will always be recognizable. The retainer plate keeps the wingnut in place relative to the plug at all times; this allows the wingnut to aid in the plug/insert subassembly removal. As the wingnut is loosened, the retainer plate pulls the plug out of the bore at the same time (about ⅓rd of the way out), breaking any initial friction that might be present. The retainer plate can be installed in only one position relative to the plug/screen subassembly; therefore, the arrow will always represent the direction that the flow should be going.

Usage Notes:

- *Due to the nature of the screen insert function, it will gradually erode. Erosion will vary depending on many factors (fluid type, velocity, solid particles present…). It is recommended that the user keeps replacement screen inserts available to avoid down time.*
- *Please note that this product was designed to catch frac-balls during fracturing operations.* ***This product is NOT design to be used as trash catchers (such as catching material from drilled out bridge plugs).*** *If not used properly, premature erosion and/or damage to this or other equipment can occur.*



You may contact an MSI representative at sales@diwmsi.com or engineering@diwmsi.com if you have any further questions or concerns.

MSI is a division of Dixie Iron Works, Ltd
300 W. Main St.
Alice, Texas 78332, USA
Phone: 800-242-0059
Fax: 361-664-4840
www.diwmsi.com