Shrouded Banshee® Tube Spinner (BNS13)

For applicable patents see: http://www.sapatents.com

The **Shrouded Banshees** are self-rotating swivels designed for tube cleaning on the end of a rigid lance. The shroud allows the tool to be pushed against the material being removed without stopping rotation of the head. Because of the shroud surrounding the head, no rearward facing pulling jets can be used in the head; all the jets point forward resulting in a pushing thrust force that must be resisted by the rigid lance and machine.
WARNING: the Shrouded Banshee is not designed to be used on a manually hand fed flex lance. The only alternative to use the Shrouded Banshee manually on a flex lance is to use a pulling nozzle between the hose end and the inlet to the Banshee to balance against the thrust force. However, the Shrouded Banshees can be used with flex lances that are used with powered equipment not in the hands of waterblast users.

Nozzle Heads:

The standard head design (BNS 043-A) has five forward facing jets at 20, 30, and 40 and 60 degrees. Each head is capable of a range of pressure and flow as shown in the chart. The pushing thrust force of the jets ranges from 15 to 40 pounds (depending on operating pressure). The nozzle heads are wear items that will need to be replaced after 20 to 60 hours, depending on water filtration and operating pressure. The wrench flats on the BN13 shaft are 13/64 in. or 5 mm and the inlet nut and body have 7/16 in. flats; these wrenches are available from StoneAge. The Shroud is threaded onto the Body and must be removed to access the head.

Tool Specs

Part Number	Inlet Connection	Max Presure
BNS13-P2	1/8 NPT	15kpsi / 1035 bar
BNS13-BSPP	1/8 BSPP	18kpsi / 1250 bar
BNS13-MP4L	1/4-28 Left Hand	22kpsi / 1500 bar
BNS13-MP4R	1/4-28 Right Hand	22kpsi / 1500 bar
BNS13-MP6L	3/8-24 Left Hand	22kpsi / 1500 bar
BNS13-MP6R	3/8-24 Right Hand	22kpsi / 1500 bar

The diameter of the tool and inlet nut connection determines the model and part number. The tool can be used at operating pressures from 1000 psi to 22,000 psi, depending on the inlet connection.

Head Options

Part	Pressure Range (psi)	Flow
BNS13 -043 A	8,000 -22,000 psi	6-9 gpm

Recommended Head/Shaft Assembly Torque (using Anti-Seize)	
BNS13	70 in-lbs

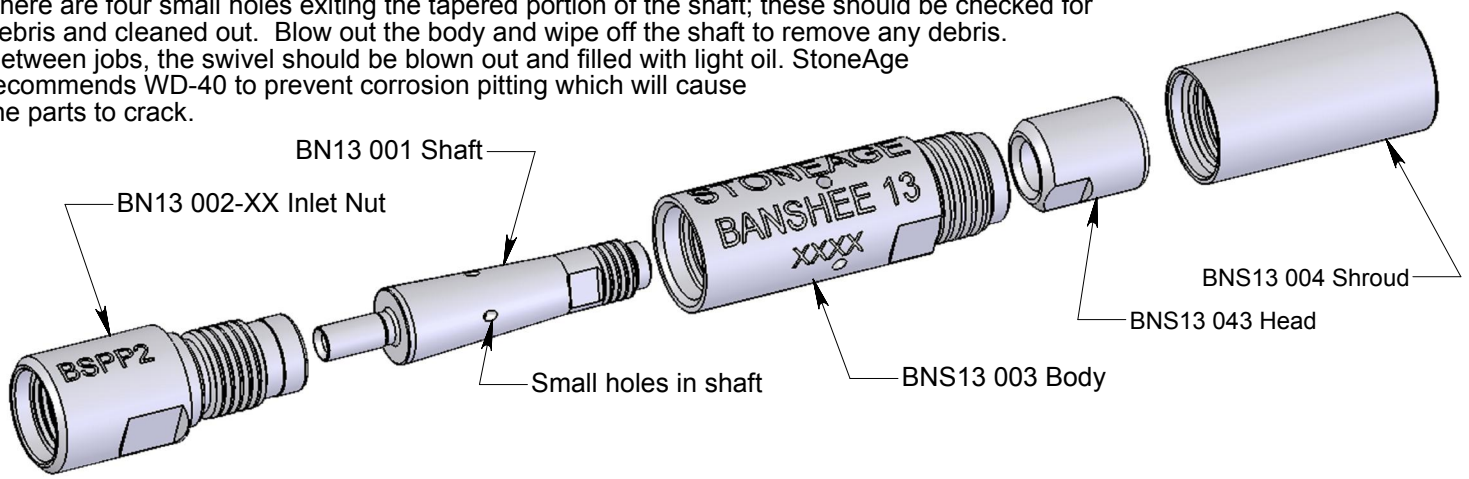
Operation:

We recommend that the entire system be flushed out before installing the Banshee on the end of the lance. The swivels require a clean water supply for reliable operation; filtration to 25 micron particulates or smaller is recommended. Once the system is flushed, attach the Banshee and place it in an open tube while the operating pressure is being set. When the tool is at operating pressure, the water exiting the tool through the leak paths will keep external debris from entering the tool. If the tool is not under pressure, it should not be left inside a plugged tube. Doing so could allow debris to enter and prevent rotation or cause damage to the tool. If the tool does not rotate when the dump valve is closed, the operator should try closing the dump valve slowly a few times to build up pressure slowly until normal operation is achieved. This also flushes debris out of the tool.

The drilled nozzle head will last between 20 and 60 hours. Worn jets decrease the cutting rate. The tool may begin to hydraulic when cleaning plugged tubes. This occurs if the jets are not effectively cutting the material into smaller pieces.
When using the Shrouded Banshee in plugged tubes, it can be pushed against the deposit. However, it will advance as soon as the jets clean an opening the size of the tool itself. If it is desired to completely clean the tube to the wall, the feed rate of the tool must be slowed to ensure adequate cleaning.

Maintenance:

If the Banshee stops rotating, check the nozzle orifices in the head for plugging; if one becomes plugged the swivel will likely not rotate. If this does not solve the problem, the swivel should be disassembled and inspected.
There are four small holes exiting the tapered portion of the shaft; these should be checked for debris and cleaned out. Blow out the body and wipe off the shaft to remove any debris.
Between jobs, the swivel should be blown out and filled with light oil. StoneAge recommends WD-40 to prevent corrosion pitting which will cause the parts to crack.



Warning: Use correctly sized open end wrench to fit flats provided on the Inlet Nut when attaching tool to lance. Do not use Pipe Wrench or pliers with teeth as this can crush and crack the hardened steel body, leading to tool breakage in operation.

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