**Description:**

The BJ-MP12 has a 3/4 medium pressure female inlet connection. It is capable of working pressures up to 22,000 psi (1500 bar) and flow rates of 10 to 60 gpm. Speed is controlled by a viscous fluid; a thick fluid (BJ 048-S) is used for speeds of 10 to 80 rpm, and a thinner fluid (BJ 048-F) is used for speeds of 50 to 200 rpm. The fluid in the swivel can be changed to provide either fast or slow rotation. The heads have either 1/4 npt ports or a special port to receive an extension nipple with an O-ring seal, shown at right.

Stamped or engraved on the BJ nozzle head is an R followed by a number, such as R12 or R35. This number is the offset of the head that makes it rotate. This number must match the flow range given in the table below. If your flow is 20 gpm, you should have a head with R35 on it. If it has an R20 or R12 on it, the tool will not rotate, because not enough rotating force (torque) will be produced. If the head is an R60, the tool will spin too fast and wear out quicker.

**Operation:**

Make sure there is an operator controlled dump in the system, operated by the person closest to the cleaning job. Flush out the high pressure hoses before connecting BJV to hose end. It is recommended that the hose be marked a few feet from the end with a piece of tape so the operator knows when to stop on the way back out. Once the BJV is attached to the hose end, position it in the pipe or vessel to be cleaned. The high pressure seal may leak initially; it should stop when pressure is increased and rotation begins. Close the dump and slowly bring up to pressure the first time, to make sure no nozzles are plugged and that the jet thrust is correct. The swivel should begin to slowly rotate. Once operating pressure is reached, feed the tool into the pipe to begin the cleaning job. Allow the jets time to do their work by feeding the hose out at a controlled rate. Once the work is complete and the tool is disconnected from the hose, blow out all water to prolong the life of the tool. A small amount of oil can be blown into the inlet nut as well.

**Troubleshooting:**

**Head will not rotate:** First try rotating head by hand and see if it feels rough or gritty to turn. If it does, the tool must be disassembled and repaired. If the head starts to rotate but jet pressure is increased it slows down and stops, it likely has bad bearings. If the tool feels okay, check to see if any nozzles are plugged; even if a nozzle is only partially blocked it can keep the head from rotating. Nozzles must be removed from the head to properly clean them; it does not do any good to poke the material plugging the nozzle back into the head, as it will just replug a nozzle. If none of these are the problem, the jets are too small or the head offset is not correct; refer to the above description about the head offset and double check the nozzle sizes to make sure they are correct for the expected flow rate.

**Head spins too fast:** Check the nozzle sizes and head offset to make sure they are correct; refer to the description section above. If these are correct, it is likely that the swivel is low on viscous fluid, or the viscous fluid has water in it. The best thing to do is drain all the fluid, wipe the parts clean and refill with the proper fluid. Check that the shaft seals are still good and will keep the fluid from leaking out.

**Seal Leak:** The seal may initially leak at low pressures, but should pop closed as pressure is increased. If operating pressure is reached and the seal is leaking the shaft seals are still good and will keep the fluid from leaking out. If the tool feels okay, check to see if any nozzles are plugged; even if a nozzle is only partially blocked it can keep the head from rotating. Nozzles must be removed from the head to properly clean them; it does not do any good to poke the material plugging the nozzle back into the head, as it will just replug a nozzle. If none of these are the problem, the jets are too small or the head offset is not correct; refer to the above description about the head offset and double check the nozzle sizes to make sure they are correct for the expected flow rate.

**Seals wear out quickly:** The tool must be disassembled and inspected. The carbide sleeve should be checked for being installed in the right direction, and it should not have any chips or erosion marks on it. Check the bore of the seal holder (BJK 120) for groove, replace it if it has a groove.

**Maintenance:**

‘Blow out all water with compressed air before storing tool!’

Keeping the tool full of viscous fluid is the most important maintenance procedure for long tool life. It should be done when the tool begins to rotate faster than usual; this can occur between 55 and 100 hours.

1. Hold swivel upright as shown. Remove the Port Screws (BJ 026) from the Inlet Nut and the Body.
2. Fill the Syringe (BC 410) by unscrewing the handle and pouring the correct viscosity viscous fluid in from the back end.
3. Thread Syringe into port in Body; squeeze fluid into swivel. Repeat until clean fluid comes out port in Inlet Nut. Remove Syringe and install Port Screws.
4. Inspect the Seat (BJ 011-C) for chips or erosion pits. The H.P. Seal (BJ 012-TRO) and the Inlet Seat (BJK 122) should begin to slowly rotate. Once the work is complete and the tool is disconnected from the hose, blow out all water to prolong the life of the tool. A small amount of oil can be blown into the inlet nut as well.

**Available Maintenance Kits:**

**BJK 600 Service Kit** (Includes items needed for maintenance)

**BJK 602 Seal Kit** (Includes parts needed for one seal change)

**BJK 610 Overhaul Kit** (Includes parts needed for tool rebuild)

**BJK 612 Tool Kit** (Includes tools to aid assembly)

For terms and conditions of sale see: http://www.stoneagetools.com/terms
For limited warranty see: http://www.stoneagetools.com/warranty
For applicable patents see: http://www.sapatents.com

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**Detail View:**

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

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**Offset** | **R60** | **R35** | **R20** | **R12**
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Flow | 10 - 15 gpm | 15 - 24 gpm | 24 - 40 gpm | 40 - 60 gpm
**Disassembly:**

1. Remove the Port Screw (BJK 026) from the Inlet Nut (BJK 002). Unscrew the Inlet Nut from the Body.
2. Remove the O-Ring (BJK 117) from the Inlet Nut; push out the Seal Holder (BJK 120) and Inlet Seat (BJK 122) with the Seat (BJ 011-C) and H.P. Seal (BJ 012-TRO).
3. Remove the Wave Springs (BJ 014-D).
4. Remove the Shaft Seal (BJ 010-D) from the Inlet Nut only if it is damaged.
5. Remove the O-Ring (BJ 008) and Weep Seal (BJ 021-S) from the Inlet Nut.

6. Push the Shaft (BJK 001) with Bearings out of the Body.
7. Remove the Retaining Ring (BJ 032) from the Body, followed by the Piston (BJ 028).
8. Remove the Shaft Seal (BJ 010-D) from the Piston only if it is damaged.
9. Carefully remove Bearings (SG 009) from Shaft. Do not ding the Shaft.
10. Remove the O-Ring (BJ 072) and Backup Ring (BJ 071) from Shaft.

**Assembly:**

1. Install Shaft Seal (BJ 010-D) in Inlet Nut (BJK 002) as shown.
2. Place O-Ring (BJ 008) over threads of Inlet Nut.
4. Install Shaft Seal (BJ 010-D) in Piston (BJ 028) as shown.
5. Place O-Ring (BJ 030) in groove around Piston.

7. Press Bearings (SG 009) onto Shaft (BJK 001).
8. Insert Fill Tube (HC 064) thru shaft seal in Piston, up to shoulder on Fill Tube.
10. Slide Shaft into Body, allowing Shaft to push out the fill tube. Fluid should come up around shaft.
11. Place Wave Springs (BJ 014-D) on top of bearing. Add viscous fluid until the wave springs are covered.
12. Apply anti-seize to the threads of inlet nut, thread into Body and tighten to 60 ft-lb. Install the Port Screw (BJ 026).
13. Install the H.P. Seal (BJ 012-TRO) and Seat (BJ 011-C) in Seal Holder (BJK 120) as shown in the Maintenance Section.
14. Install Seal Holder and Inlet Seat (BJK 122) in Inlet Nut as shown in the Maintenance Section.
15. Install Backup Ring (BJ 071) and O-Ring (BJ 072) on Shaft. The O-Ring should be nearest the end of Shaft.