



BR2400

Electric Drive Chemical Injection Pump

MAINTENANCE

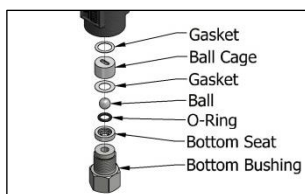


Disconnect power source and ensure pressure is removed from pump head prior to performing any maintenance. Hazardous pressures can result in serious injury or property damage.

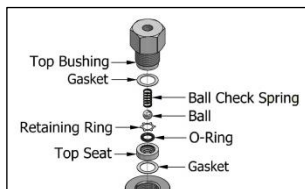
Pump Head Maintenance

Pump Head Assembly

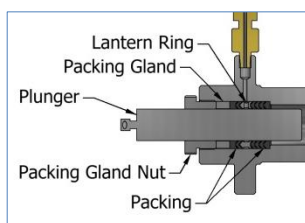
Step 1: Ensure all parts are clean and free from damage (see Inspection section). Lubricate all O-rings with petroleum based lubricant; lubricate packing and plunger with a suitable packing lubricant grease (Teflon or Graphite based packing lubricant is recommended, but an equivalent suitable lubricant like a Molybdenum disulfide based lubricant can be substituted).



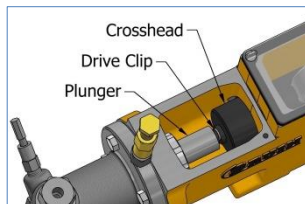
Step 2: Install O-ring into bottom seat. Place the 1/2" ball into bottom seat and the gasket (the widest of the four gaskets) onto the seat and cover ball with ball cage. Place gasket onto ball cage and insert into suction end of body. Thread bottom bushing into suction end of body utilizing a thread sealant. Tighten bottom bushing.



Step 3: Install O-ring and retaining ring into the top seat. Install top seat into body with a gasket on both sides of seat. Place 3/8" ball and ball check spring into top bushing. Thread top bushing into body utilizing a thread sealant. Tighten top bushing.



Step 4: Install packing with lantern ring in body, ensuring it is installed in the correct order and orientation. *Note: The "V-Ring" point should be pointing outward and the lantern ring in line with the grease jack.* Place plunger packing gland on packing. Loosely thread packing gland nut into the body. Carefully insert plunger into packing. Install grease jack lubricating assembly onto pump head.



Step 5: Install head assembly into housing, ensuring plunger fits into the crosshead assembly and install drive clip. Install and tighten hex bolts.

Step 6: Install gasket and cover with wing screws. Install and tighten priming valve into body utilizing a thread sealant.

Pump Head Disassembly

Step 1: Disconnect power source, ensure all pressure is removed from pump head assembly and isolate fluid discharge and suction lines. Open and remove priming valve. Disconnect fluid discharge and suction lines.

Step 2: Remove the cover, to get access to and remove drive clip from the crosshead assembly.

Step 3: Remove the hex bolts and the pump head assembly from the housing.

Step 4: Loosen and remove top bushing, ball check spring, ball, gaskets, and top check valve seat. Remove the retaining ring and O-ring from the top check valve seat.

Step 5: Loosen and remove bottom bushing, bottom check valve seat, ball, ball cage and gaskets. Remove the O-ring and retaining ring from the bottom check valve seat.

Step 6: Unthread packing gland nut and remove plunger, plunger packing gland, packing and lantern ring.

Housing Maintenance

Housing Assembly

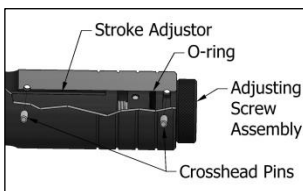
The following Steps 4 through 12 are for one housing assembly.

Step 1: Ensure all parts are clean and free from damage (see Inspection section).

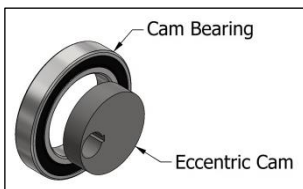
Step 2: Bolt down the reducer onto the base plate. Leave bolting loose to allow reducer to move freely during remainder of assembly process.

Step 3: Insert keys into the drive shaft. Center the drive shaft into the reducer and tighten fasteners.

Step 4: Ensure the shaft bearings and crosshead bearings are installed in the pump housing, allowing the driveshaft to be properly orientated when the housing is correctly bolted to the base plate. Press the screen into the hole in the bottom of the housing.

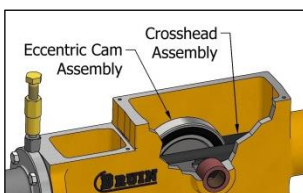


Step 5: Using a petroleum based lubricant, grease the O-ring and slide it into position on the adjusting screw assembly. Screw the stroke adjuster onto the adjusting screw assembly. Slide the stroke adjuster into the crosshead assembly and insert the crosshead pins to hold it in place.

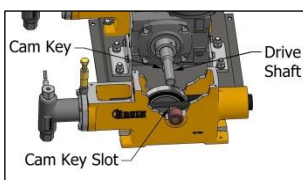


Step 6: Insert crosshead assembly into the housing with the longer slot facing up.

Step 7: Press eccentric cam into the cam bearing to create the eccentric cam assembly.



Step 8: Place the eccentric cam assembly into the large slot of the cross head assembly.



Step 9: Slide housing onto the base with the drive shaft going through the housing, crosshead assembly and the eccentric cam assembly. The slot in the eccentric cam must be lined up with the drive shaft cam key for the housing to properly slide on. *Note: The cam key must be horizontally located or it will not fit through the crosshead assembly.*

Step 10: Bolt down the housing onto the base plate. Install second housing assembly in the same manner for a duplex unit. Tighten reducer bolting.

Step 11: Bolt the head assembly into the housing with the plunger lining up to the cross head assembly and insert the drive clip.

Step 12: Install gasket and cover with wing screws.

Step 13: Mount the motor onto the reducer.

Housing Disassembly

The following Steps 3 through 9 are for a single housing assembly.

Step 1: Disconnect power source, ensure all pressure is removed from pump head assembly and isolate fluid discharge and suction lines. Open and remove priming valve. Disconnect fluid discharge and suction lines.

Step 2: Remove the motor. Two threaded holes in the reducer flange are provided to assist motor removal.

Step 3: Remove wing screws, covers and gaskets from housing.

Step 4: Remove drive clip from plunger/crosshead assembly. Unbolt and remove head assembly from housing. See Pump Head Disassembly instructions for further disassembly of pump head assembly.

Step 5: Remove bolts holding housing onto base plate and slide it off the drive shaft. The cam key must be aligned horizontally to allow drive shaft removal.

Step 6: Remove the eccentric cam assembly out of the crosshead assembly and housing.

Step 7: If necessary, press out the eccentric cam from the cam bearing.

Step 8: Slide the crosshead assembly out of the housing.

Step 9: Push out crosshead pins holding stroke adjustor and adjusting screw assembly in the crosshead assembly. Unscrew the stroke adjustor off the adjusting screw assembly.

Step 10: Unscrew the fasteners on the reducer and slide out the drive shaft. *Note: The keys on the drive shaft are not attached and can fall out.*

Step 11: Unbolt the reducer from the base plate.

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INSPECTION

Inspect all components for damage. Replace or repair parts as necessary. The following is a guideline of what to inspect:

- Inspect all threads, seals and packing for damage.
- Inspect body seal areas for corrosion, pitting, or damage. Seal areas on the body include the packing area and the area below the top seat and ball cage.
- Inspect balls, top seat, bottom seat and ball check spring for corrosion or damage.
- Inspect plunger for wear, scarring, or damage.
- Inspect ratchet and bearing for wear or damage.
- Inspect housing and all other components for damage.