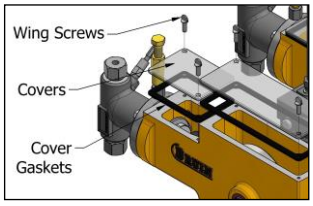
Installation and Troubleshooting

BR2400

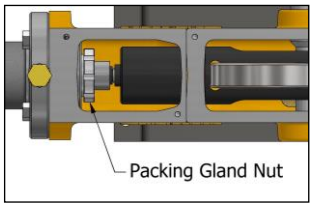
Electric Driven Chemical Injection Pump

INSTALLATION

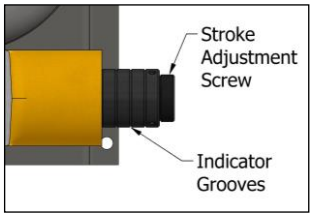
Step 1: Mount pump in desired location. Bolt holes are provided for permanent mounting (see dimensional drawing).



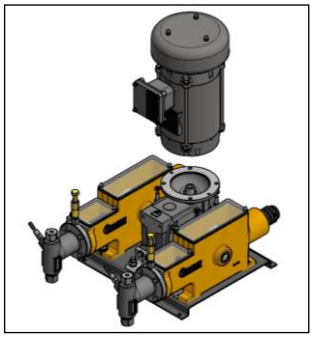
Step 2: Remove covers by removing the wing screws. Lubricate the crosshead with a NLGI Grade 2 multipurpose grease (ie. Unirex EP 2 Grease) and the plunger with a suitable packing lubricant grease (Teflon or Graphite based packing lubricant is recommended, but an equivalent suitable lubricant like a Molybdenum disulfide based lubricant can be substituted). All plunger sizes incorporate a grease jack assembly which allows injection of grease into the plunger packing area. Lubrication sticks (BA-3179) are available for most fluids.



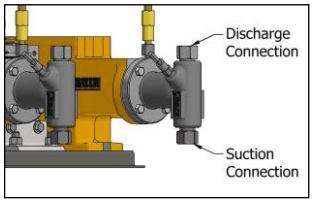
Step 3: Check the packing gland nut to make sure the packing is snug but do not over tighten. For optimum operation and packing life, the packing should not be too tight. Over tightening the packing could result in premature packing wear. Reinstall the covers with wing screws ensuring the gaskets are in place.



Step 4: Select desired stroke length by turning the adjusting screw assembly, clockwise rotation decreases the effective stroke length, counter-clockwise rotation increases the effective stroke length. A full stroke length (2") will pump the maximum volume shown in the specifications, for approximately 50% volume, use a 1" stroke, etc. Each groove on the crosshead assembly is equal to a 25% change in stroke length.

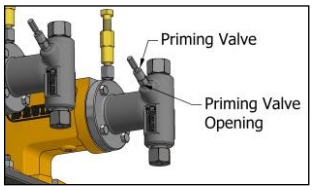


Step 5: Ensure the reducer is filled with oil and is firmly bolted. *Note: Don't mix synthetic and non-synthetic or mineral oil, gearbox is factory filled with 400 ml (13.5 oz) ISO 460 Synthetic Oil. Note: After the first 85 hours of operation and every 2500 hours of operation thereafter, drain and flush gearbox with oil before refilling.* If pump was ordered without a motor, mount motor onto reducer. The pump input shaft speed should not exceed 1800 RPM and will operate the pump in either direction of rotation (CW or CCW). *Note: Installation of an overload protector in the motor circuit is recommended.*



Step 6: Connect the suction and discharge lines to the pump head. *Note: Arrow on pump head indicates direction of fluid flow.* Ensure the suction line contains a sufficient strainer to prevent foreign matter from entering the pump, which could result in plunger or check valve damage. A line check should be installed on the discharge line at the point of injection.

Part Number BA-0676 is a brass ¼" line check valve sufficient for use up to 3000 psig.
Part Number BA-0675 is a stainless steel ¼" line check valve sufficient for use up to 6000 psig.
Part Number BB-0283 is a stainless steel ½" line check valve sufficient for use up to 6000 psig.



Step 7: Open the priming valve and start the power source, the pump head will begin to prime. Once the pump discharges fluid without bubbles from the priming valve opening, close the priming valve for operation.

Step 8: Check the plunger packing for leaks and tighten the packing gland nut as required until leakage stops. Packing should only be adjusted after pressure has been removed from the pump head, **never adjust packing against pressure.** During the "break in period", a slight leak is beneficial to allow the packing to 'set in'. Packing should be checked periodically after start up.

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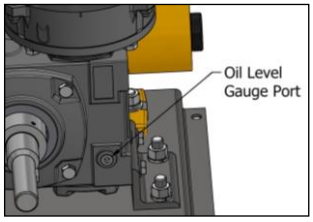
TROUBLESHOOTING

Pump operates but fails to pump fluid or reach required discharge pressure:

- Ensure priming valve is completely shut and not leaking.
- Ensure drive clip is in place and not broken.
- Check stroke adjustment and ensure plunger movement.
- Check for leaks around bottom bushing, top bushing and packing.
- Inspect and clean bottom seat, top seat, balls and ball check spring.
- Inspect for damage and replace components if necessary.

Oil Level Inspection:



With the unit stopped, check the units oil level in the "oil level gauge port" by removing the port plug (or visually inspecting the oil level gauge port) and ensuring that the oil level is between the bottom of the gauge port and its midpoint. (Try to limit the amount of oil that may drain from the assembly when checking the oil level.) The correct port to check is the one located below the out shaft horizontal plane.

When changing the oil in the gearbox:

Do not mix synthetic and non-synthetic or mineral oil. The gearbox is filled with 400 ml (13.5 oz) ISO 460 (or AGMA 7) Synthetic Oil. Between switching types first flush the reducer with a general purpose solvent such as kerosene before refilling with oil. Do not use "all purpose" oils, automotive engine or gear oil, or any lubricant not specially formulated for worm gear service. *Note: Bruin Instruments offers an ISO 460 oil refill for the BR2400 gearbox (BPG460-0400).* Using them may result in severe worm wheel wear and failure. With the unit stopped, fill the unit. to the center of the sight gauge with the proper lubricant. Approximately 400 ml of oil will be needed to correctly fill an empty gearbox. Do **NOT** overfill. Excessive oil levels will result in a higher operating temperature.

Lubricants must meet or exceed these standards:		
15° to 60° F (-9° to 16° C)	AGMA 7	cSt @ 104°F (40°C): 414-506
50° to 125° F (10° to 52° C)	AGMA 8	cSt @ 104°F (40°C): 612-748