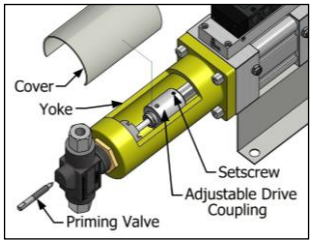
Installation and Troubleshooting

BRX3

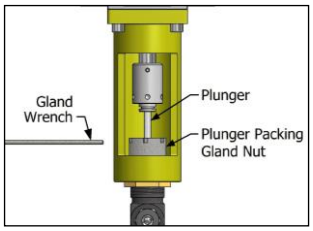
Pneumatically Operated Chemical Injection Pump

INSTALLATION

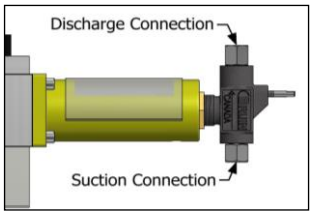
Step 1: Mount pump in desired location. Bolt holes are provided for permanent mounting (see dimensional drawing).



Step 2: Ensure the priming valve in the pump head is in the opened position. Remove yoke cover and set the desired stroke length position by loosening the set screw and rotating the adjustable drive coupling. *Note: Rotating the coupling clockwise increases the effective stroke length up to 1 inch, rotating it counter-clockwise decreases the effective stroke length until no effective stroke will take place.* Once the stroke length is set, position the adjustable drive coupling with the set screw orientated on the flat of the piston rod and tighten the set screw. *Note: Do **NOT** tighten the set screw on the threads of the piston rod as this will damage the threads making further stroke adjustment difficult.*

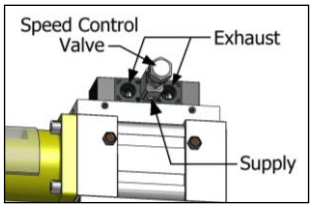


Step 3: Lubricate plunger with a suitable packing lubricant grease (Teflon or Graphite based packing lubricant is recommended, but an equivalent suitable lubricant like a Molybdenum disulfide based lubricant can be substituted). Check plunger packing gland nut with gland wrench to make sure packing is snug but do not over tighten. For optimum operation and packing life, the packing should not be too tight. <u>Over tightening the packing could result in the pump stalling and/or premature packing wear.</u> Once you are satisfied with how tight the packing and gland nut are, reinstall yoke cover.



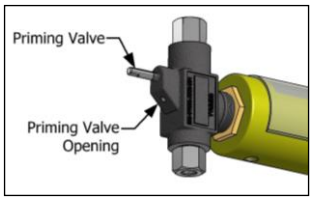
Step 4: Connect suction and discharge lines to the pump head. *Note: Arrow on pump head indicates direction of fluid flow*. The suction line should contain a sufficient strainer to prevent foreign matter from entering the pump, which could result in plunger or check valve damage. The discharge line should be 5/16" tubing minimum. 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.

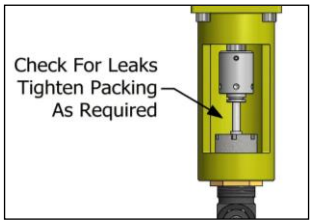


Step 5: Ensure the speed control valve is in the closed position and connect the gas supply line. To prevent moisture or debris from entering the pump, a filter should be installed on the supply line. Ensure supply pressure is sufficient to provide required differential pressure. **A regulator is required if the supply gas pressure exceeds 250 psig.** Connect gas exhaust line.

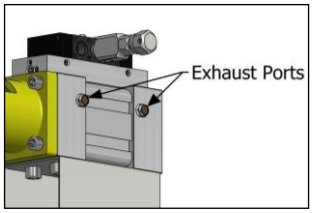
Step 6: With the supply gas pressure set to less than 250 psig, slowly open the speed control valve and the pump will begin to operate. Open the speed control valve until pump is operating at the desired rate. ***Note: As supply gas is supplied, the pump will begin to stroke, ensure yoke cover is on pump and keep fingers and other obstacles out of pump internals.***



Step 7: 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 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. *Note: Keep the gland wrench handy for future packing adjustments.*



Step 9: Once the pump reaches full pressure, alter the stroke rate by adjusting the speed control valve and/or the supply pressure (250 psig maximum) and/or the exhaust pressure until desired flow rate is achieved. Further volume control is available by using the stroke adjustment option by setting the adjustable drive coupling. *Note: For correct operation the small exhaust ports must have zero back pressure and the screen on the air vent must not be blocked.*

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TROUBLESHOOTING

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

- Ensure priming valve is completely shut and not leaking.
- Ensure plunger drive clip and adjustable drive coupling are in place and not broken.
- Ensure adjustable drive coupling has not loosened off, resulting in no effective plunger stroke.
- Check for leaks around bottom bushing, top bushing and packing.
- Inspect and clean bottom seat, top seat, check balls and check valve spring.
- Inspect for damage and replace components if necessary.

Pump fails to operate:

- Ensure speed control valve is open and not blocked.
- Check pump differential pressure and ensure that it is adequate. Increase differential pressure if possible.
- Pump parameters are set so that pump operates at too slow of a speed, increase pump stroking rate and adjust stroke for desired pumping volume.
- Ensure air vents are not blocked.
- Inspect cylinder for piston seal or rod seal leakage.
- Inspect for any excessive scarring to cylinder and/or rod.