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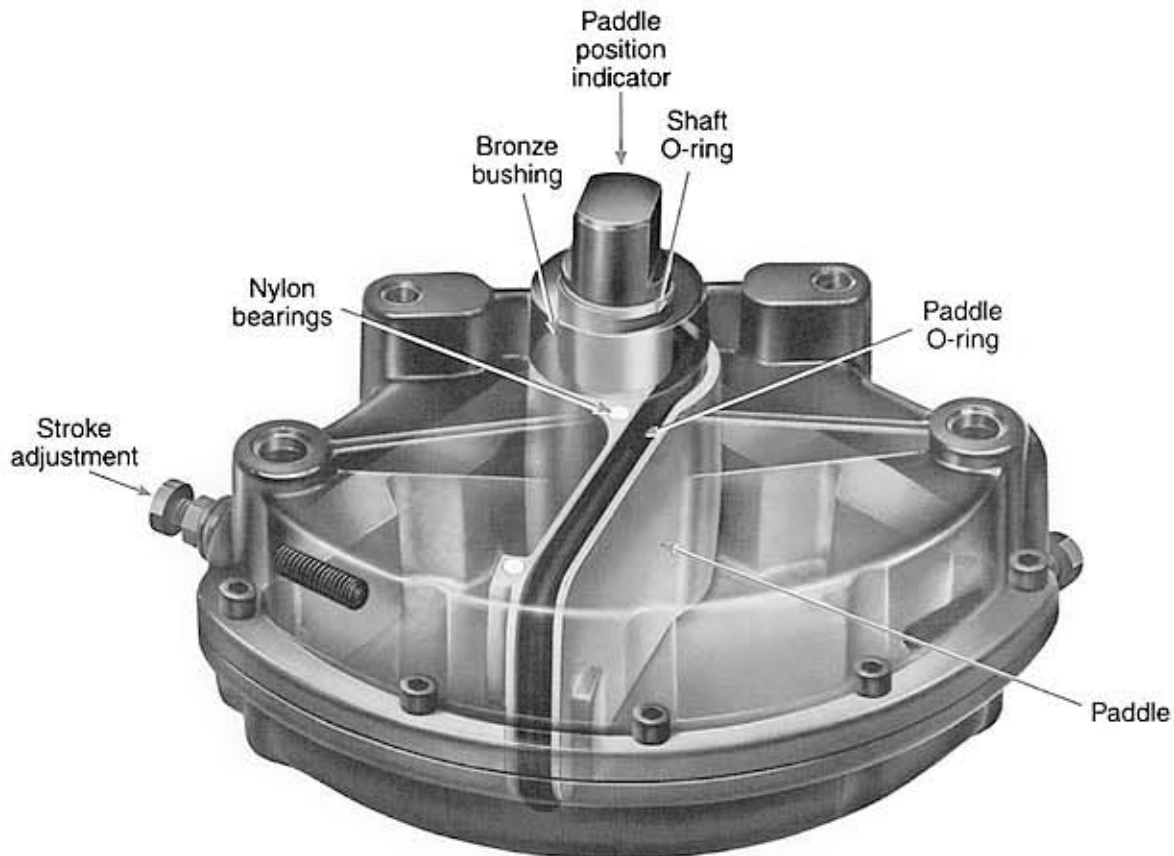
Installation, Operation & Services Instructions

CRANE ChemPharma Matryx®
Vane Type Actuators

CRANE®

ChemPharma Flow Solutions

www.cranepharmaceutical.com



Matryx vane type actuators are compact 90° rotary action pneumatic devices intended to operate quarter-turn valves.

They are designed for pressures (supply and/or exhaust) up to 120 PSIG maximum.

⚠️ WARNING

EXPLOSION. DO NOT EXCEED PRESSURE RATINGS.

For models MX60 through MX3000: 120 PSIG. Excessive pressure may rupture the actuator and cause personal injury and/or property damage.

Installation.

1. Matryx Vane Actuators are shipped from the factory with an indicator line stamped on the shaft ends which shows the position of the vane paddle. This indicator should be used in determining the mounting orientation of the actuator on the valve.

2. Before mounting, the actuator and the valve must be placed in the same position (fully counter-clockwise or fully clockwise). Check the valve and actuator mounting surfaces, bracket, stem adapter and valve stem for proper orientation and fit.

⚠️ WARNING

VALVE & ACTUATOR DAMAGE. Once installed, leave at least 1/16-inch axial clearance between the end of the actuator shaft and the drive coupling to prevent valve and actuator damage.

3. Utilize all mounting holes provided on the actuator and assure a full bolt diameter of thread engagement into the actuator housing as a minimum.

4. Tighten all bolts and nuts uniformly, taking care to center the actuator on the valve stem.

5. Actuators are shipped from the factory with the travel stops adjusted for approximately 90° rotation.

It is usually necessary to make slight adjustments to the stop adjusting screws after the actuator is installed on the valve.

Refer to the valve manufacturer's recommendations for specific instructions.

If valve manufacturer's instructions are not available, adjust the open position actuator stop to allow for full opening of the valve.

6. Actuate the valve closed and adjust the closed position actuator stop to ensure that the valve is completely seated in the closed position.

7. Cycle the valve back and forth to check for repeatability of seating.

8. Be sure that the actuator travel stops are what ends the rotation. This will prevent prolonged shaft loading and maximize the life of compensators.

⚠ WARNING

MASSIVE LEAKAGE. To reduce the possibility of inadvertent valve disassembly and line entry, replace or rework all valves using old style cover mounted brackets. Temporarily tag these valves until permanent corrective action is taken. See the Important Safety Bulletin (PN 331120) for details.

Speed of operation.

The speed of operation is determined by a number of factors such as the distance from the pressure source, supply line and control valve sizes, the torque requirement of the valve, pipeline flow conditions, and the size of the actuator. Due to the interaction of these variables, it is difficult to specify a normal operating time.

⚠ WARNING

ACTUATOR DAMAGE. The 90° stroke for the MX3000 must exceed two seconds to prevent actuator damage.

The 90° stroke for other Matryx models must exceed one second to prevent actuator damage.

Slower stroke times may be obtained by using smaller orifices, lower supply pressure, or flow control valves to meter the supply and exhaust.

Clean, dry air or gas is essential for long service life and satisfactory operation. If instrument air of this type is not available, it is recommended that an in-line filter be installed to prevent foreign particles (above 40 microns) from entering the actuator.

New air lines often contain scale, metal chips and other debris which will damage control valves and actuator seals.

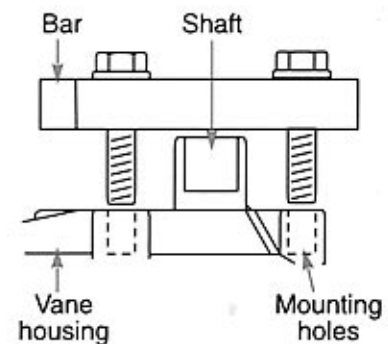
Maintenance.

Matryx Vane Actuators will give long, dependable service on dry instrument air before any maintenance is required.

When leakage is detected, new seals should be installed as soon as possible to avoid irreparable damage to the actuator. See the following servicing instructions.

Service instructions.

1. Disconnect air and electrical supplies from actuator. Allow air in actuator to vent.
2. Remove actuator from valve and disconnect any accessories from the vane housing.
3. Remove cover screws from flange joint.
4. Carefully separate body halves by wedging them apart with a thin tool or by using a jackscrew. (Xomox does not supply the jackscrew.)



⚠ WARNING

HAZARDOUS PROJECTILES. DO NOT use compressed air to separate body halves. Compressed air will cause rapid separation and can result in personal injury.

5. Remove paddle and inspect bearing area for excessive wear.
6. Remove both stop adjusting screw assemblies (thread-seal, washer, locknut and stop adjusting screw). Discard thread-seals.
7. Clean paddle and inside surfaces of actuator with an environmentally safe solvent and inspect surfaces for wear.
8. Remove silicone sealant on paddle and joint surface of actuator with a fine grade abrasive and, if necessary, an environmentally safe solvent.



9. Lubricate internal surfaces with supplied or recommended grease.

⚠WARNING

O-RING DAMAGE. In some situations oil mist lubricators may increase O-ring wear. Oil dilutes the grease film and can increase O-ring wear.

10. Replace shaft O-rings and paddle O-ring. Lubricate with supplied or recommended grease.

11. Place paddle in bottom half of actuator housing at mid-stroke position.

12. Coat housing joint surface with high quality silicone sealant and replace top housing.

13. With paddle rotated to right side, snug down screws on left side, shoulder bolt first. Rotate paddle to left side of actuator and snug down screws on right side, shoulder bolt first.

14. Tighten all screws securely.

⚠WARNING

SEAL DAMAGE. Sealant must set for at least four hours before the actuator is pressurized to maintain seal integrity.

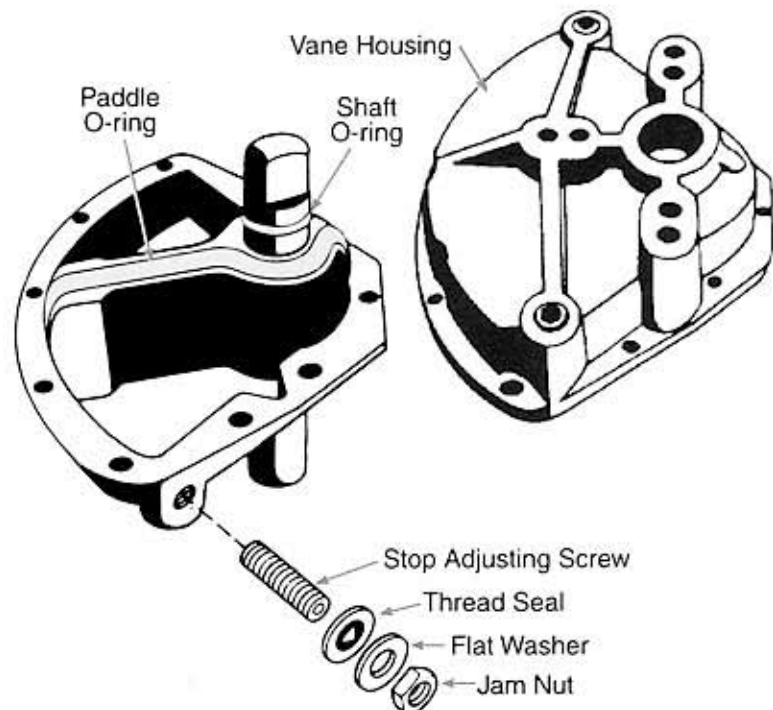
15. Using a wrench, rotate shaft from one side to the other several times manually to wipe sealant from joint.

16. Lightly oil stop adjusting screws.

17. Turn new thread seal into place on stop adjusting screw. **DO NOT SLIDE IT OVER THE THREADS.** Reinstall stop adjusting screw in actuator.

18. Reinstall flat washers and jam nuts on stop adjusting screws.

19. Readjust stop adjusting screws to approximate the 90° position.



Replacement parts.

Replacement parts for Matrix Actuators may be obtained by ordering the appropriate seal kit as listed below.

Actuator Model	Buna-N Seal Kit	Viton Seal Kit
MX60	600678	600684
MX200	600679	600685
MX450	600680	600686
MX750	600681	600687
MX1250	600682	600688
MX3000	600683	600689

When ordering, include both the actuator model number and the seal kit part number.

The seal kits listed above consist of one paddle O-ring, two shaft O-rings, two thread seals, and a container of grease.

More help.

For more detailed information concerning your particular application, contact your nearest Xomox Automation & Service Center.

To enhance performance, a variety of Matrix options and accessories are available.

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CRANE ChemPharma Flow Solutions™

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CRANE ChemPharma Flow Solutions Include: Pipe - Valves - Fitting - Actuators - Pumps



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