



1074 Kenran Industrial Dr.
St. Louis, MO 63137
Phone: 1-800-381-9968

HUMCO ENGINE CONTROLS

Rexroth Associated Components Three-Position Cylinder Spring Centered



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The three-position cylinder is a fixed position device when controlled by a four-way, three-position, exhaust-center, control valve such as the "A" or "D" PILOTAIR® Valve. The cylinder has a wide range of applications, being particularly suited for shifting transmissions and positioning hydraulic valves. It is corrosion-resistant and constructed of lightweight, die-cast, anodized aluminum heads, pistons and body.

Maximum stroke of the piston rod is one inch on each side of the center position, making a total piston rod travel of two inches. External envelope dimensions of the cylinder do not change, but shorter strokes are available in increments of 1/16-inch for each position. The complete piece number of the cylinder and the piece number of the piston stop will have an identical four-digit suffix. The first digit denotes the stroke in inches; the last three digits show the stroke in thousandths of an inch.

INSTALLATION & ADJUSTMENT

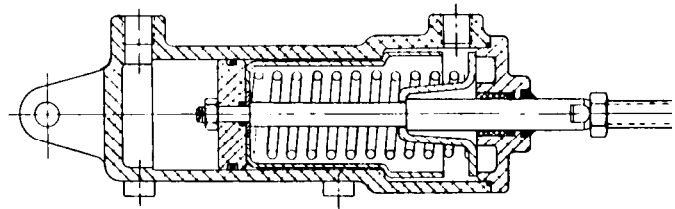
Because cylinders are installed at the end of an air system, they are vulnerable to dirt and moisture carried through the air lines. Therefore, before installing the three-position cylinder, all air lines in the system should be blown clean. It is recommended that the cylinder mounted with the ports facing down. Gravity can then assist in preventing foreign material from accumulating in the cylinder by removing it through the control valve exhaust.

In providing a mounting for the cylinder, an adjustable link must be included between the piston rod and the lever to which the rod is connected. The cylinder stroke should be checked in its center position when aligned with the lever to be operated. Check for exact register, making sure the clevis pin is free from load in the center position.

This procedure will allow any inaccuracies in leverage ratio or manufacturing tolerance to be absorbed at the extremes of the stroke where exact registration is of least importance. Also, any inaccuracies will be divided between the extreme positions. When alignment is done at one of the extreme positions, inaccuracies are all in the same direction.

OPERATION

Maximum operating pressure of the three-position cylinder is 150 psi at a temperature range of -40° F to 180° F. The cylinder is held in its center position by a coil spring caged on the piston rod. When air pressure is supplied to the cap-end port, the piston rod moves to its extended position. When pressure is supplied to the head-end port, the piston rod moves to its retracted position.



ASSEMBLY VIEW

MAINTENANCE

Periodically disassemble the cylinder for cleaning, inspection and lubrication. Clean all metal parts with a nonflammable solvent, and wash all rubber parts with soap and water. Rinse thoroughly and blow dry with a low-pressure air jet. Replace those parts which are damaged or worn.

Reassemble the cylinder, using the exploded and assembly views as reference. No special tools are required. To avoid cutting or nicking the piston O-ring, carefully insert the piston rod assembly into the cylinder bore with the piston tilted at a slight angle. As the assembly proceeds, lubricate all O-rings with Dow Corning 55M grease.

Max. operating pressure: 150 psi (10.3 bar)
Temperature range: -40°F to 180°F (-40°C to 82°C)

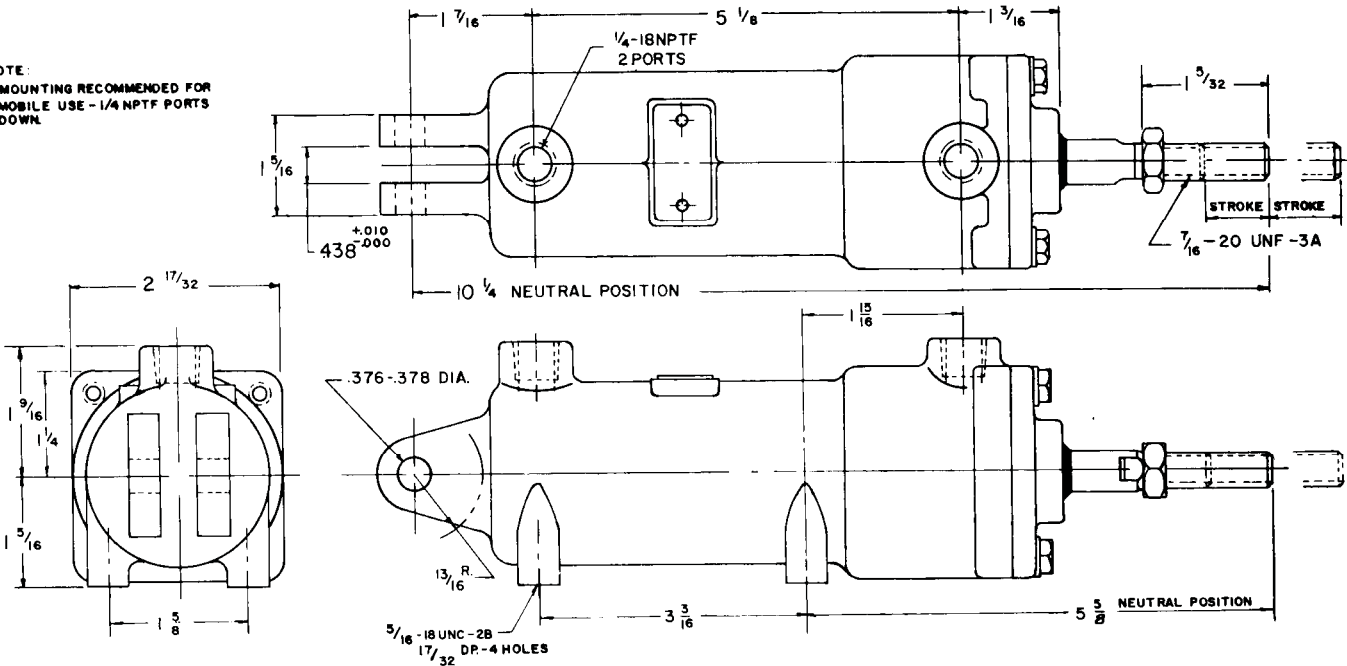


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NOTE:
 MOUNTING RECOMMENDED FOR
 MOBILE USE - 1/4 NPTF PORTS
 DOWN



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Part No.	Old Part No.	Stroke*
R431004060	P-057378-00312	0.312
R431004053	P-057378-00375	0.375
R431004053	P-057378-00438	0.438
R431004055	P-057378-00500	0.500
R431004056	P-057378-00625	0.625
R431004057	P-057378-00688	0.688
R431004058	P-057378-00750	0.750
R431004059	P-057378-00875	0.875
R431004060	P-057378-01000	1.000
R431004943	P-059211-00000	1.062

*Effective stroke each side of center.

Repair kit part no. R431005249 (old part no. P-059819-K0000)