

### DOOR CYLINDERS 10305-001 & 10305-091 SERVICE INFORMATION

#### INSTALLATION

Before installing this cylinder, all air lines in the system should be blown clean to remove any moisture or loose material. Also, the area in which the cylinder is to be mounted should be free of any foreign objects, which may damage the cylinder barrel. To further ensure a long, trouble-free service, an efficient air filter should be installed in the system's supply line.

Start the installation by removing one cotter pin and clevis pin from the clevis on the cap end of the cylinder. Set the cylinder into the mounting position with the cap clevis mating with the mounting eye. Reinstall the clevis pin through the clevis lugs, and the cotter pin into the clevis pin. Spread the ends of each cotter pin so that they will not fall out. You can now connect the piston rod end to the mounting bracket, noting proper alignment to eliminate any binding.

Remove the thread protectors from each pipe port in the head and cap; connect air lines from the directional control valve. Use pipe dope on the air line fittings, not any kind of tape. Be sure no foreign matter enters the ports or air lines during the time they are open.

If the cylinder is to be painted, be sure that the piston rod is covered, the ports are closed, and the clevis pin is covered where it rides in the clevis.

The supply air and atmospheric (ambient) condition must be maintained within a temperature range of -40°F to +225°F.

#### OPERATION

When the cylinder installation is completed correctly, air pressure delivered from the directional valve to the port on the cap end of the cylinder will extend the piston rod. A shift of the valve to exhaust that air and to apply air pressure to the port on the head end will retract the piston rod.

#### ADJUSTMENTS

No adjustments are required after the cylinder is installed and properly aligned.

#### MAINTENANCE

It is recommended that this cylinder be completely disassembled approximately every five years for cleaning, inspection, and replacement of all rubber parts. The first examination on this particular application will determine if the period between service should be extended or shortened.

**DISASSEMBLY** – Use care not to destroy or scratch any parts during this procedure.

1. Remove the rod eye (14) from the piston rod (6).
2. With the cylinder lying horizontal on the floor, remove the four tie bolts (13) on the head end.
3. Remove the tie bolts.
4. Using a mallet, tap the cap (1) away from the tube (2) and remove the tube seal "O" ring (8).
5. Hold the end of the piston rod (6) and using the mallet, tap the head (3) carefully away from the tube (2) just far enough to allow your hand to reach between the head and tube to grab and support the piston rod. Now continue to tap the head off of the rod.
6. Pull the piston rod upright to a vertical position and then pull the tube (2) off of the piston rod assembly.

7. Clamp the piston rod in a vise, protecting the rod's surface, and remove the piston (10) from the piston rod (6) by unscrewing nut and sliding the piston off of the rod.
8. Remove the piston "O" ring (9), and two piston seals (7).
9. Remove from the head (3) the tube seal "O" ring (8), the rod wiper (4) and the rod seal (5).

#### CLEANING & INSPECTION

1. Clean all metal parts with a non-flammable solvent and wash all elastomer or rubber parts with soap and water. Rinse everything thoroughly and blow them dry with a low pressure air jet.
2. Inspect all parts and throw away all those that are to be replaced due to damage, wear or age. Give particular attention to the recommended replacement parts as indicated on the parts list.

**REASSEMBLY** – Use the exploded view as a guide and lubricate all seals and grooves with Shell Oil Company's Aeroshell Grease 14.

1. Assemble the rod seal (5) into the head (3), making sure the concave side of the seal faces the inside of the cylinder.
2. Install the rod wiper (4) in the head (3) with the sharp edge facing the outside.
3. Clamp the piston rod (6) in a vise, install the piston "O" ring (9) and slide the piston (10) onto the rod. Fasten the piston into place using a torque wrench and tighten to 500 ft-lbs using Loctite 277.
4. Install piston seals (7) onto the piston (10) with the flat side of the seals facing the inside of the piston.
5. Set the piston rod assembly on end, protecting the rod's surface. Slide the head assembly (3) down over the piston rod (6) being careful not to cut or damage the wiper (4) or rod seal (5).
6. Lay the piston rod over towards its side and push it through the head until the piston is about four inches from the head.
7. Set the tube (2) on end and wipe some grease on the inside at the very top.
8. Insert the tube seal "O" rings (8) into the head (3) and the cap (1).
9. Fit the greased end of the tube on to the piston. Carefully run a screwdriver around the first seal to assist the entry into the tube. Push the tube forward until it enters the groove in the head (3).
10. Slide the tie bolts (13) through the holes in the head.
11. Install the cap (1) onto the tube and slide the tie bolts up to the threaded holes in the cap.
12. Using a torque wrench, tighten the tie bolts (13) alternately on opposite sides to 70 ft-lbs. DO NOT tighten one side first.
13. Torque rod eye (14) onto the piston rod (6) to 700 ft-lbs using Loctite 277 until it shoulders.
14. The reassembly is complete, therefore test the cylinder for correct operation and any evidence of leakage. DO NOT exceed 150 PSIG air pressure.

ITEM	PART NUMBER	PART NAME	QTY
			18" 21"
	P191067 10305-001		
	P188780 10305-001		
1	P188698-00001	CAP	1 X X X
2	P191977	TUBE	1 X X
3	P188699-00001	HEAD ASSEMBLY (8 thru 30)	1 X X X
3A	P188703	LATCH	1 X X X
3B	P46131-1	1/8" SHIM	6 X X X
3C	P49569-433	STUD	2 X X X
3D	P48773-2	NUT	4 X X X
4	P49605-00005	ROD WIPER	1 X X X
5	P49418-00006	ROD SEAL	1 X X X
6	P188611-00210	PISTON ROD	1 X X
6		PISTON ROD	1 X X
7	P48118	PISTON SEAL	2 X X X
8	P49708-00279	O-RING, TUBE SEAL	2 X X X
9	P49708-00032	O-RING, PISTON	1 X X X
10	P187702	PISTON	1 X X X
11	P50686-00122	CAP CLEVIS PIN	1 X X X
12	P49813-00051	COTTER PIN, (3/16" X 3")	2 X X X
13	P49810-00071	TIE BOLT	4 X X
13		TIE BOLT	4 X X
14	P191975	ROD EYE	1 X X X
15	P197714	SEAL KIT	1 X X X

  

DIMENSION "A"	18"	21"	
DIMENSION "B"	39.875	42.875	
DIMENSION "C"	30.76	33.76	
	27.18	30.22	

  
  

**14" PP CYLINDER ASSEM**

**Rexroth**  
Bosch Group  
**America**

**TORQUE NOTES**  
ITEM 13 @ 70 FT-LBS (IF G. TUBE)  
ITEM 14 @ 700 FT-LBS

  

\* INCLUDED IN SEAL KIT AND RECOMMENDED TO BE REPLACED WHEN CYLINDER IS SERVICED.

