Actuator Division

500 South Wolf Road Des Plaines, IL 60016 USA (847) 298-2400 For Canada: 160 Chisholm Drive Milton, Ontario Canada L9T 3G9 (905) 693-3000 Bulletin 0926-G-M2

Series P1D_S Complete Seal Kit Issued: March 2005 Supercedes: None



P1D Seal Kits

Complete seal kits consisting of:

- A Piston seals
- **B** Cushioning seals
- C Combined piston rod seal and scraper ring
- D O-rings

Order Codes

Cyl. Bore	P1D Cylinder Version		
	Standard		
mm	P1D-S, P1D-T, P1D-C, P1D-F		
32	SK032P1D01		
40	SK040P1D01		
50	SK050P1D01		
63	SK063P1D01		
80	SK080P1D01		
100	SK100P1D01		
125	SK125P1D01		



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Gland Seal Kits

(Gland Cartridges & Rod Seals) For P1D Series Air Cylinders Removable Gland Version

Pneumatic Service Temperatures:

Nitrile Seals: -10° F. (-23° C.) to +165° F. (+74° C.) Fluorocarbon Seals: -10° F. (-23° C.) to +250° F. (+121° C.)



Figure A

GLAND CARTRIDGE KIT (RG) Kit contains 1 each of the following: symbol #14, Gland, threaded cartridge type. symbol #41, Rod Lipseal. symbol #45, O-Ring, gland to head.

symbol **#104**, Rod Wiper.

Servicing the Rod Gland

(Cylinder disassembly is not required)

Fluid leakage around the piston rod at the gland area will normally indicate a need to replace the gland seals.

The P1D Series Gland is a unique cartridge design. It is threaded into the cylinder head and all sizes are removable without disturbing the end cap fasteners.

To Remove the Gland Cartridge

- A) Inspect the piston rod to be sure it is free of burrs or other foreign material that would prevent sliding the cartridge off the rod.
- B) Disconnect any attachments to the piston rod end thread.
- C) Lubricate the rod with supplied lubrication.
- D) Unscrew the gland cartridge from the head using appropriate wrench.
- E) Slide the cartridge off over the piston rod.
- F) Make sure the gland to head O-Ring (symbol #45) is also removed from the assembly.
- G) Remove all seals from the gland, inspect the gland (symbol #14) for wear & replace if necessary.



Service kits of expendable parts for fluid power cylinders are stocked in principal industrial locations across the U.S.A. and other countries.

For prompt delivery and complete information, contact your nearest

ROD SEAL KIT

For Canada:

Milton, Ontario

(905) 693-3000

Canada L9T 3G9

160 Chisholm Drive

 (RK) Kit contains 1 each of the following: symbol #41, Rod Lipseal. symbol #45, O-Ring, gland to head. symbol #104, Rod Wiper.

Installation

- 1) Reinspect the surface of the piston rod for scratches, dents and other surface damage and make the necessary repairs.
- 2) Clean and lubricate the surface of the piston rod with supplied lubrication.
- If replacing complete gland cartridge proceed to step #6. If gland (symbol #14) is not worn, replace seals only using appropriate rod seal kit (RK) and proceed as follows.
- 4) Lubricate gland seal groove and new Rod Lipseal (symbol #41) and install in gland groove. The seal should be installed orientated as shown in Figure A.
- 4a) Repeat for new Rod Wiper (symbol #104).
- 5) Install new gland to head o-ring (symbol #45) in position on gland as pictured above. Be careful not to cut the O-Ring.
- Lubricate all seals (including symbol #45) and inside bearing surfaces of gland with supplied lubrication or clean light oil.
- Slide the gland cartridge onto the piston rod, squaring it with the threads in the head, and tightening (clockwise) until seated firmly against the head.
- 8) Torque the gland cartridge to the specifications shown below.

CAUTION: Make sure the gland is sufficiently tight. Failure to do so may result in loosening during operation.

		-					
		RG - Rod Gland Cartridge Kit		RK - Roo	Gland To Head		
Dava	Rod		FLUOROCARBON		FLUOROCARBON	Torque Units	
Bore		NITRILE Seals	Seals	NITRILE Seals	Seals		
Size	Dia.	Consisting of: 1 ea.	Consisting of: 1 ea.	Consisting of: 1 ea.	Consisting of: 1 ea.		Metric
		Sym. #14, 41, 45 & 104	Sym. #14, 41, 45 & 104	Sym. #41, 45 & 104	Sym. #41, 45 & 104	00/1	Wiethe
mm	mm	Part No.	Part No.	Part No.	Part No.	Ft Lbs	N-m
32	12	RG0P1D0121	RG0P1D0125	RK0P1D0121	RK0P1D0125	35 - 40	47 - 54
40	16	RG0P1D0161	RG0P1D0165	RK0P1D0161	RK0P1D0165	40 - 45	54 - 61
50, 63	20	RG0P1D0201	RG0P1D0205	RK0P1D0201	RK0P1D0205	45 - 50	61 - 68
80, 100	25	RG0P1D0251	RG0P1D0255	RK0P1D0251	RK0P1D0255	45 - 50	61 - 68
125	32	RG0P1D0321	RG0P1D0325	RK0P1D0321	RK0P1D0325	70 - 75	95 - 102
160,200	40	RG0P1D0401	RG0P1D0405	RK0P1D0401	RK0P1D0405	85 - 90	115 - 122

Bulletin 0926-G-M1

Series P1D_G Rod Gland/Seal Kit Issued: March 2005

Supercedes: None

32-125mm Bore Sizes



Symbol Number	Description
1	Head
7	Сар
14	Gland
15	Cylinder Body
17	Piston
18	Cushion Sleeve
19	Tie Rod
23	Tie Rod Nut
34	Piston Rod
41	Lip Seal-Rod
42	Lip Seal-Piston

160, 200mm Bore Sizes



Symbol Number	Description		
45	O-Ring-Head to Gland		
47	O-Ring-End Seal		
69	O-Ring-Needle Valve		
70	Needle Valve		
104	Wiper, Rod		
105	Cushion Check Seal-Head		
106	Cushion Check Seal-Cap		
121	Wear Strip		
159	Magnetic Ring		
160	Fastener-Tie Bolt		
161	Needle Valve-Retainer		

_	Rod	RG - Rod Gland Cartridge Kit		RK - Rod Seal Kit		Gland To Head Torque		Footonor Polt Torque	
Bore		NITRILE Seals	FLUOROCARBON Seals	NITRILE Seals	FLUOROCARBON Seals	Gianu To Head Torque		i asterier bolt forque	
Size	Dia.	Consisting of: 1 ea.	Consisting of: 1 ea.	Consisting of: 1 ea.	Consisting of: 1 ea.	LISA	Metric	LISA	Metric
		Sym. #14, 41, 45 & 104	Sym. #14, 41, 45 & 104	Sym. #41, 45 & 104	Sym. #41, 45 & 104	UUA	WICUIC	UUA	Wictric
mm	mm	Part No.	Part No.	Part No.	Part No.	Ft Lbs	N-m	In - Lbs	N-m
32	12	RG0P1D0121	RG0P1D0125	RK0P1D0121	RK0P1D0125	35 - 40	47 - 54	32 - 36	3.6 - 4
40	16	RG0P1D0161	RG0P1D0165	RK0P1D0161	RK0P1D0165	40 - 45	54 - 61	32 - 36	3.6 - 4
50	20	RG0P1D0201	RG0P1D0205	RK0P1D0201	RK0P1D0205	45 - 50	61 - 68	72 - 82	8 - 9
63	20	RG0P1D0201	RG0P1D0205	RK0P1D0201	RK0P1D0205	45 - 50	61 - 68	72 - 82	8 - 9
80	25	RG0P1D0251	RG0P1D0255	RK0P1D0251	RK0P1D0255	45 - 50	61 - 68	216 - 228	24 - 26
100	25	RG0P1D0251	RG0P1D0255	RK0P1D0251	RK0P1D0255	45 - 50	61 - 68	216 - 228	24 - 26
125	32	RG0P1D0321	RG0P1D0325	RK0P1D0321	RK0P1D0325	70 - 75	95 - 102	30-31 FtLbs	40 - 42
160	40	RG0P1D0401	RG0P1D0405	RK0P1D0401	RK0P1D0405	85 - 90	115 - 122	35-36 FtLbs	47 - 49
200	40	RG0P1D0401	RG0P1D0405	RK0P1D0401	RK0P1D0405	85 - 90	115 - 122	80-81 FtLbs	108 - 110

	PK - Pisto	on Seal Kit	CB - Cylinder Body End Seal Kit		
Bore	NITRILE Seals	FLUOROCARBON Seals	NITRILE Seals	FLUOROCARBON Seals	
Size	Consisting of: 2 ea Sym. #42 & 47 plus 1 each symbol #121	Consisting of: 2 ea Sym. #42 & 47 plus 1 each symbol #121	Consisting of: 2 ea. Sym. #47	Consisting of: 2 ea. Sym. #47	
mm	Part No.	Part No.	Part No.	Part No.	
32	PK032P1D01	PK032P1D05	CB032P1D01	CB032P1D05	
40	PK040P1D01	PK040P1D05	CB040P1D01	CB040P1D05	
50	PK050P1D01	PK050P1D05	CB050P1D01	CB050P1D05	
63	PK063P1D01	PK063P1D05	CB063P1D01	CB063P1D05	
80	PK080P1D01	PK080P1D05	CB080P1D01	CB080P1D05	
100	PK100P1D01	PK100P1D05	CB100P1D01	CB100P1D05	
125	PK125P1D01	PK125P1D05	CB125P1D01	CB125P1D05	
160	PK160MP001	PK160MP005	CB160MP001	CB160MP005	
200	PK200MP001	PK200MP005	CB200MP001	CB200MP005	

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Series P1D_G Piston Seal Kit Issued: March 2005 Supercedes: None

Piston Seal Kits

(Piston & Cylinder Body Seals) For P1D Series Air Cylinders Service kits of expendable parts for fluid power cylinders are stocked in principal industrial locations across the U.S.A. and other countries. For prompt delivery and complete information, contact your nearest Parker distributor or office.



PISTON SEAL KIT

 (PK) Kit contains 2 each of the following: symbol #42, Lipseal, piston. symbol #47, O-Ring, cylinder body to head & cap,
1 each - symbol #121, Wear Strip.
(See "Servicing the Piston Seals" on opposite side)

Service kits of expendable parts for fluid power cylinders are available for either Class 1, or Class 5 fluid service.

Standard Seals - Class 1 Service are standard, and contain Nitrile seals for standard fluid service. These seals are suitable for use when air is the operating medium.

The recommended operating temperature range for Class 1 seals is: -10° F. (-23° C.) to $+165^{\circ}$ F. ($+74^{\circ}$ C.)

Fluorocarbon Seals - Class 5 Service kits contain Fluorocarbon seals and are especially suited for elevated temperature service. The recommended temperature range for Class 5 seals is: -10° F. (-23° C.) to $+250^{\circ}$ F. ($+121^{\circ}$ C).

CYLINDER BODY END SEAL KIT

(CB) Kit contains 2 each of the following: symbol #47, O-Ring, cylinder body to head & cap.

Warning - The piston rod to piston threaded connections are secured with an anaerobic adhesive which is temperature sensitive. Cylinders specified with Viton seals are assembled with an anaerobic adhesive having a maximum operating temperature rating of +250° F. (+121° C.). Cylinders specified with other seal compounds are assembled with an anaerobic adhesive having a maximum operating temperature of +165° F. (+74° C.). These temperature limitations are necessary to prevent the possible loosening of the threaded connections. Cylinders originally manufactured with Class 1 seals that will be exposed to ambient temperature service. Contact the factory immediately and arrange for the piston to rod connection to be properly reassembled to withstand the higher temperature service.

	PK - Pisto	on Seal Kit	CB - Cylinder Body End Seal Kit		
Bore	NITRILE Seals	FLUOROCARBON Seals	NITRILE Seals	FLUOROCARBON Seals	
Size	Consisting of: 2 ea Sym. #42 & 47 plus 1 each symbol #121	Consisting of: 2 ea Sym. #42 & 47 plus 1 each symbol #121	Consisting of: 2 ea. Sym. #47	Consisting of: 2 ea. Sym. #47	
mm	Part No.	Part No.	Part No.	Part No.	
32	PK032P1D01	PK032P1D05	CB032P1D01	CB032P1D05	
40	PK040P1D01	PK040P1D05	CB040P1D01	CB040P1D05	
50	PK050P1D01	PK050P1D05	CB050P1D01	CB050P1D05	
63	PK063P1D01	PK063P1D05	CB063P1D01	CB063P1D05	
80	PK080P1D01	PK080P1D05	CB080P1D01	CB080P1D05	
100	PK100P1D01	PK100P1D05	CB100P1D01	CB100P1D05	
125	PK125P1D01	PK125P1D05	CB125P1D01	CB125P1D05	
160	PK160MP001	PK160MP005	CB160MP001	CB160MP005	
200	PK200MP001	PK200MP005	CB200MP001	CB200MP005	

Lubrication Provided

Is recommended for use in air cylinders during normal operation, and particularly when servicing and reassembling cylinders. It is a multi-purpose lubricant in grease form that provides lubrication without deteriorating effects on synthetic seals. It produces a thin film which will not blow out with exhaust air. It provides piston, rod and seal lubrication, and has excellent resistance to water and mechanical breakdown with temperature range of -10° F. (-23° C.) to $+350^{\circ}$ F. ($+177^{\circ}$ C.). It is also an FDA approved, food grade grease.

The lubrication is packaged in 1.5 oz. tubes, a sufficient quantity for average size air cylinder. One application should last for a period of 6 to 18 months depending upon service. Order by part number 9127394541 for standard temperature, and part number 9127394521 for high temperature.

Servicing the Piston Seals

Disassemble the cylinder completely, remove the old seals and clean all the parts. The cylinder bore and piston should then be examined for evidence of scoring. (The light scratch marks usually present on both cylinder bore and piston will generally have no detrimental effects on the performance of the cylinder.)

Apply lubrication to O.D. of piston and all grooves. Install one piston Lipseal (sym. # 42) in the groove nearest the rod. The two "lips" of this seal should face toward the rod end of the piston. If required, install the magnetic ring (sym. # 159) in the bottom of the middle groove. (See detail "1" below) Next, install the wear strip (sym. # 121) in the top of the middle groove – (See detail "2" below). Coat the inside of the cylinder body with lubrication and insert the piston - cap end first - into the cylinder body as shown in detail "3" below.

Next, turn the cylinder body on its side and push the piston and rod assembly through the barrel just far enough to expose the groove for the second Lipseal. (See detail "4" below.) Be careful not to move the piston too far so as to expose the wear strip (sym. # 121). If the piston should move too far, push the piston and rod assembly completely through the cylinder body and again start the piston from the original end. Now install the second Lipseal (sym. # 42) in the exposed groove with the two "lips" facing away from the rod and pull the piston into the cylinder body.

The piston and rod are securely locked together with anaerobic adhesive. This threaded connection should only be disassembled or reassembled by factory trained personnel.

NOTE: An extreme pressure lubricant (such as molybdlenum disulphate) should be used on the tie rod threads and bearing faces to reduce friction and tie rod twist.

Assemble both cap and head, complete with cylinder body O-Rings (sym. # 47), to each end of the cylinder body. Install end cap fasteners or tie rods and tighten to appropriate torque, using opposite corner to corner torquing sequence. (See table on side 1). After screws are torqued, firmly torque the rod gland against the head using an appropriate adjustable wrench.



For Canada: 160 Chisholm Drive Milton, Ontario Canada L9T 3G9 (905) 693-3000