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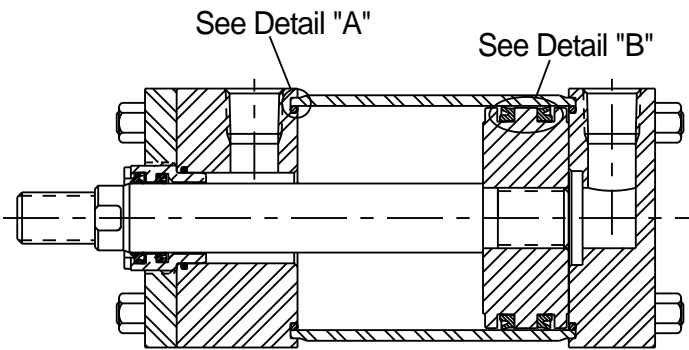
Piston Seal Kits

Issued: May, 2000

Supersedes: March, 1995

Piston and Cylinder Body Seals

For Series "2AN" and "MAN" Air Cylinders



Piston Seal Kits

PK kits for Series 2AN and MAN cylinders contain 2 each of the following:

- symbol 42, Lipseal, piston
- symbol 47, O-ring, cylinder body to head and cap seal
- symbol 129, wick
- symbol 130, washer } 14" bore only (Style 2)

Cylinder Body Seal Kits

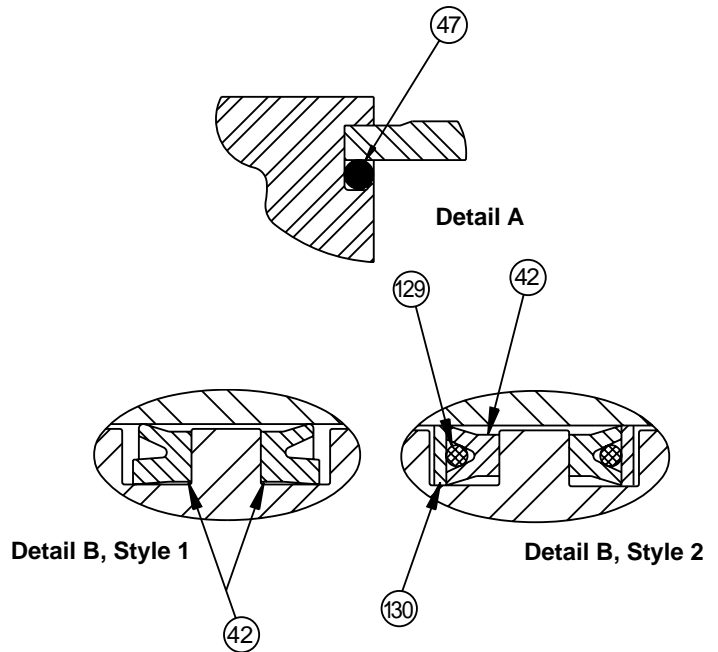
CB kits for Series 2AN and MAN Air Cylinders contain 2 each of:
symbol 47, O-rings

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 distributor.

Service kits contain seals of Nitrile (Buna-N) elastomers for standard fluid service. These seals are suitable for use when air is the operating medium.

The recommended operating temperature range for these seals is -10° F. to +165° F.



Parker Lube-A-Cyl...

is recommended for use in air cylinders during normal operation, and particularly when servicing and re-assembling cylinders. It is a multi-purpose lubricant in grease form, that provides lubrication without deteriorating effects on synthetic seals. Particularly recommended for use in low pressure air cylinders because of its special ability to adhere to metal surfaces. 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°F (+177°C). Lube-A-Cyl is packaged in 4-oz. tubes, a sufficient quantity for average size air cylinder. One application should last for a period of from 6 to 18 months, depending upon service. Lube-A-Cyl is available in 4-oz. tubes. Order by part #0761630000.

Bore Size	PK Piston Seal Kit Nos. For Series 2AN & MAN Cylinders	CB Cylinder Body Seal Kit For Series 2AN and MAN	Rod Dia.	Gland Cartridge Wrenches Part No.	Spanner Wrenches Part No.
1 1/2"	PK1502 AN01	CB152H L001	5/8"	069590 0000	011676 0000
2"	PK2002 AN01	CB202H L001	1"	069591 0000	011676 0000
2 1/2"	PK2502 AN01	CB252H L001	1 3/8"	069592 0000	011703 0000
3 1/4"	PK3202 AN01	CB322A 0001	1 3/4"	069593 0000	011677 0000
4"	PK4002 AN01	CB402A 0001	2"	069594 0000	011677 0000
5"	PK5002 AN01	CB502A 0001	2 1/2"	069595 0000	011677 0000
6"	PK6002 AN01	CB602A 0001	3 1/2"	069597 0000	011677 0000
7"	PK7002 AN01	CB702A 0001	4"	069598 0000	011678 0000
8"	PK8002 AN01	CB802A 0001	4 1/2"	083777 0000	011677 0000
10"	PK9002 AN01	CB902A 0001	5"	069599 0000	011678 0000
12"	PK9202 AN01	CB922A 0001	5 1/2"	069600 0000	011678 0000
14"	PK9402 AN01	CB942A 0001			

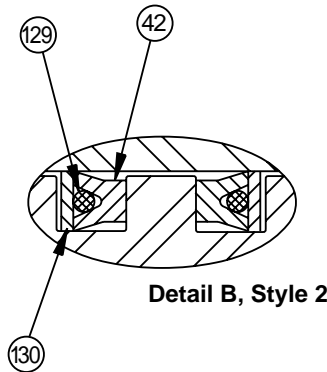
Servicing The Piston Seals

The piston is sealed and securely locked to the piston rod with anaerobic adhesive. This threaded connection should only be disassembled or reassembled by factory trained personnel.

Disassemble the cylinder completely, remove the old seals and clean all of the parts. The cylinder bore and the piston should then be examined for evidence of scoring. Replace all damaged parts. Lubricate the **entire** interior surface of the cylinder bore with a thin film of "Lube-A-Cyl" grease.

Install one piston seal in the groove nearest the rod. The two "lips" of this Lipseal should face toward the rod end of the piston.

In addition on 14" bores only, thoroughly soak both sets of wicks and washers in standard petroleum base lubricating oil, Union Oil "UN-ax-AW-315" or equivalent. Install the flat washer, symbol 130 and wick symbol 129 on the side facing pressure. See Detail B, Style 2.



Apply "Lube-A-Cyl" to the outside diameter of the piston and seal. Then insert the piston in the cylinder body as shown in Figure 1. Next, turn the cylinder body on its side and push the piston through the barrel just far enough to expose the groove for the second seal (See Figure 2 below). Be careful not to move the piston too far so as to expose the first seal. If this is done, the "lip" of this Lipseal

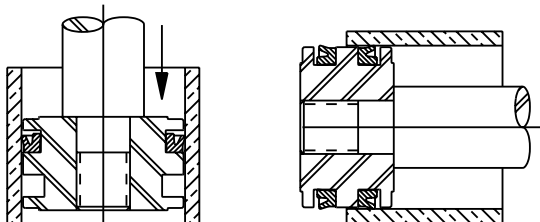


Figure 1

Figure 2

Retainer Bolt Torque* For Cylinders with Round or Small Square Gland Retainer

Screw Size	Torque	Torque
#10	15 in.-lbs.	17 cm-kg
1/4"	60 in.-lbs.	69 cm-kg
5/16"	10 ft.-lbs.	14 N-m
3/8"	20 ft.-lbs.	27 N-m
7/16"	35 ft.-lbs.	48 N-m

*-0%, +5% tolerance

may slip past the cylinder body and be damaged when the piston is pulled back into the cylinder body. If the piston should move too far, pass the piston rod completely through the cylinder body and again start the piston from the original end. Install the second lipseal (and wicks and washers, if required), in the exposed grooves as shown in Figure 2. Lubricate the same as the first seal and pull the piston into the cylinder body. Proceed to assemble cylinder heads, tie rods and tie rod nuts as follows:

"O" rings (symbol 47) should be lightly coated with lubricant then worked into place by hand. Cylinder body can then be assembled to the cap by rocking it down over the seal until the end of the cylinder body is in metal-to-metal contact with the cap. Install "O" ring (symbol 47) in head. Head is then fitted over the rod and assembled to cylinder body. Rock gently into place until body and head are in metal-to-metal contact.

Next, screw gland part way into gland retainer and slip both gland and retainer over the end of the rod. Tighten entire assembly, torquing tie rod nuts to the values specified. Finally, using a gland wrench, firmly seat the gland.

With an intermediate trunnion mounted cylinder, care must be taken to prevent binding the cylinder body when repositioning the trunnion collar. Proper reassembly of this type of cylinder is as follows:

After the piston seals have been inserted and the piston is in the cylinder body, slip the trunnion collar over the cylinder body to its approximate position.

Fit the cap with its seal onto the body. Then "stud" into the trunnion collar the four tie rods that connect the cap to the trunnion collar. Bring up the four tie rod nuts at the cap. Distances from inner face of cap to finished face of trunnion collar should then be made equal at all four tie rods when all four tie rod nuts are in contact with the cap.

Finally, when the assembly is ready for final tightening, it may be necessary to adjust the tie rod nuts at the cap when torquing the tie rod nuts at the head in order to position the trunnion collar in its final position.

NOTE: An extreme pressure lubricant (such as molybdenum disulphate) should be used on the tie rod threads and nut bearing faces to control friction and reduce tie rod twist. Tie rod twist can be eliminated by chalking a straight line on each tie rod before torquing, and backing off the nut after torquing so this line is straight again. This is particularly important on long-stroke cylinders.

Tie Rod Torque*

Cyl. Bore Size	Series 2AN, MAN					
	Cylinder Body Material					
	Steel		Brass		Fiberglass	
1 1/2"	60 in.-lbs.	69 cm-kg	36 in.-lbs.	42 cm-kg	-	-
2" & 2 1/2"	11 ft.-lbs.	15 N-m	72 in.-lbs.	83 cm-kg	-	-
3 1/4"	25 ft.-lbs.	34 N-m	18 ft.-lbs.	24 N-m	-	-
4"	25 ft.-lbs.	34 N-m	18 ft.-lbs.	24 N-m	-	-
5"	60 ft.-lbs.	81 N-m	44 ft.-lbs.	50 N-m	-	-
6"	60 ft.-lbs.	81 N-m	44 ft.-lbs.	50 N-m	-	-
8"	110 ft.-lbs.	149 N-m	80 ft.-lbs.	108 N-m	-	-
10"	148 ft.-lbs.	201 N-m	113 ft.-lbs.	153 N-m	78 (ft.-lbs.)	106 (N-m)
12"	172 ft.-lbs.	233 N-m	148 ft.-lbs.	201 N-m	78 (ft.-lbs.)	106 (N-m)
14"	275 ft.-lbs.	373 N-m	228 ft.-lbs.	309 N-m	118 (ft.-lbs.)	160 (N-m)

*(-0%, +5% tolerance). When assembling the cylinder, be sure to torque the tie rods evenly.

WARNING

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

This document and other information from Parker Hannifin Corporation, its subsidiaries and authorized distributors provide product and/or system options for further investigation by users having expertise. It is important that you analyze all aspects of your application, including consequences of any failure and review the information concerning the product or system in the current product catalog. Due to the variety of operating conditions and applications for these products or systems, the user, through its own analysis and testing, is solely responsible for making the final selection of the products and systems and assuring that all performance, safety and warning requirements of the application are met.

The products described herein, including without limitation, product features, specifications, designs, availability and pricing, are subject to change by Parker Hannifin Corporation and its related companies at any time without notice.

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