Cylinder and Accumulator Division
500 South Wolf Road
Des Plaines, IL 60016
(847) 298-2400

Service Bulletin HY08-1137-M1
Series CHD & CHE
Hydraulic Cylinders
Issued: June 2024
Supersedes: September 2008

Series CHD & CHE Hydraulic Cylinders

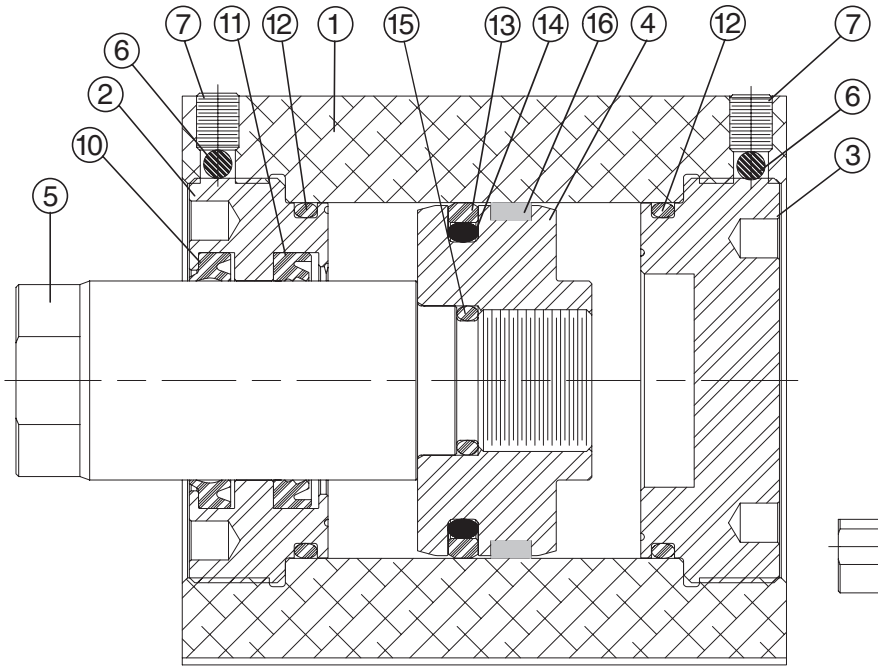
Parts Identification, Maintenance Instructions & Seal Kits

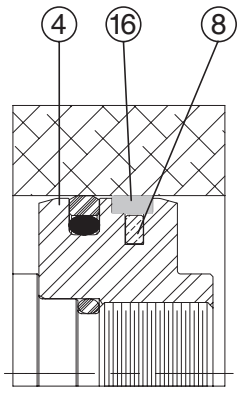
Service Kits

Service kits for Series CHD & CHE cylinders simplify the ordering and maintenance process. They contain subassemblies that are ready for installation and are supplied with full instructions. When ordering service kits, please refer to the identification plate on the cylinder body, and supply the following information:

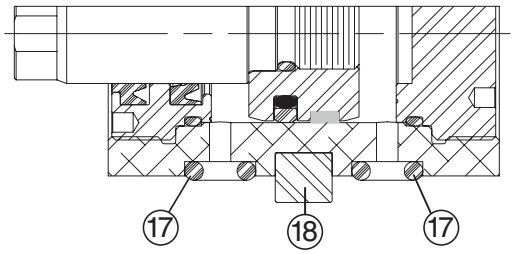
Serial Number - Bore - Stroke - Model Number - Fluid Type

Parts Identification Drawing – Standard Piston





Series CHE
Magnetic Piston Option



Series CHD - C & CN Mount
Manifold Port Option

Item No.	Description	Material	Item No.	Description	Material	
					Standard	**Fluorocarbon**
1	Cylinder Body - CHE	Aluminum Alloy (Hard Anodized)	10	Rod Wiper	PUR	Fluorocarbon
	Cylinder Body - CHD	Steel	11	Rod Seal	PUR	Fluorocarbon
2	Gland	Nodular Iron	12	End Seal	PUR	Fluorocarbon
3	Cap	Nodular Iron	13	Piston Seal	PUR	Filled PTFE
4	Piston – Standard	Nodular Iron	14	PS Energizer	NBR	Fluorocarbon
	Piston – with Magnet	Aluminum Alloy	15	Piston-to-Rod o-ring	PUR	Fluorocarbon
5	Piston Rod	Carbon Steel (Hard Chrome Plated)				
6	Ball	Nylon	16	Piston Wear Band	Glass-reinforced nylon	Glass-reinforced nylon
7	Set Screw	Alloy Steel				
8	Magnet	Sintered NdFeB[1]	17	Manifold Port Seal	PUR	Fluorocarbon
			18	C & CN Mount Key	Steel	

[1] Neodymium Iron Boron

Operating Fluids and Temperature Ranges

The table shows the main types of fluid used with hydraulic cylinders. If the operating conditions of the particular application cannot be met by the groups described, please consult the factory and supply complete application details.

Seal Classes	Typical Fluids	Temperature Range
1 – Standard Nitrile & Polyurethane	Hydraulic Oil, MIL-H-5606 Oil	-23°C (+10°F) to +74°C (+165°F)
5 – Optional (At extra cost) Fluorocarbon Seals	High Temperature	-23°C (+10°F) to +121°C (+250°F) Class 5 seals may be operated up to +204°C (+400°F) with reduced service life
Note: Class 5 seals are not suitable for use with Skydrol fluid, but can be used with hydraulic oil if desired.		

Service Kit Numbers

Rod Gland and Rod Seal Kits

Rod Ø	Rod Gland (w/o pilot[1]) Kits		Rod Seal Kits	
	Class 1	Class 5	Class 1	Class 5
	Consists of 1 ea. of items #2, 6, 10, 11, & 12		Consists of 1 ea. of items #6, 10, 11, & 12	
12	RGCHE01201	RGCHE01205	RKCHE01201	RKCHE01205
14	RGCHE01401	RGCHE01405	RKCHE01401	RKCHE01405
18	RGCHE01801	RGCHE01805	RKCHE01801	RKCHE01805
22	RGCHE02201	RGCHE02205	RKCHE02201	RKCHE02205
28	RGCHE02801	RGCHE02805	RKCHE02801	RKCHE02805
36	RGCHE03601	RGCHE03605	RKCHE03601	RKCHE03605
45	RGCHE04501	RGCHE04505	RKCHE04501	RKCHE04505
56	RGCHE05601	RGCHE05605	RKCHE05601	RKCHE05605

[1] Pilot gland is required for AN, CA, CN, J, MN and TN mounting styles. For Gland Kit with pilot change 'CHE0' in kit number to 'CHEP'. E.g. RGCHEP1201.

Complete Seal Kits

Bore Ø	Class 1	Class 5	Gland & Cap Torque Specifications	
	Consists of 1 ea. of items #10, 11, 13, 14, 16 & 2 ea. of items #6 & 12		Nm	ft. lbs.
20	SKCHE02001	SKCHE02005	18-19	13-14
25	SKCHE02501	SKCHE02505	31-33	23-24
32	SKCHE03201	SKCHE03205	68-71	50-53
40	SKCHE04001	SKCHE04005	95-100	70-74
50	SKCHE05001	SKCHE05005	95-100	70-74
63	SKCHE06301	SKCHE06305	136-143	100-105
80	SKCHE08001	SKCHE08005	203-213	150-158
100	SKCHE10001	SKCHE10005	237-249	175-184

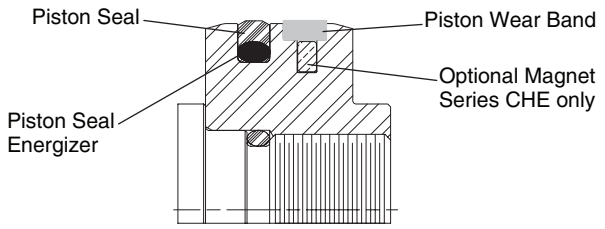
Servicing Piston Seals

When a cylinder is overhauled, a new piston seal assembly is required. The piston seal is included in an SK – Complete Seal Kit. An SK includes the following items: piston seal (13), piston seal energizing ring (14), piston wear band (16), piston rod seal (11), piston rod wiperseal (10), two gland and cap o-rings (12) and two nylon balls (6).

Cylinders should always be reassembled with new gland and / or cap end seal o-ring(s) (12) on the end(s) removed to service the cylinder. One o-ring is included with each Rod Gland Kit and Rod Seal Kit.

Install the piston seal energizing ring followed by the piston seal. Assemble the wear band in the groove. Lubricate the cylinder body with a light oil and insert the piston.

Note: AII Series CHD cylinders include a piston wear band and Series CHE cylinders shipped from mid-2008 to current include a piston wear band. The Series CHE magnetic piston option in this design incorporates a two piece magnet in a groove under the wear band. If the magnet halves are removed from the piston, care should be taken to reinstall them in the correct orientation. Each magnet half is marked with a white dot that must assembled toward the piston seal. When assembled correctly there will be a slight repelling force between the magnet halves. If magnet halves attract each other they are not assembled correctly and will fail to signal the switch.



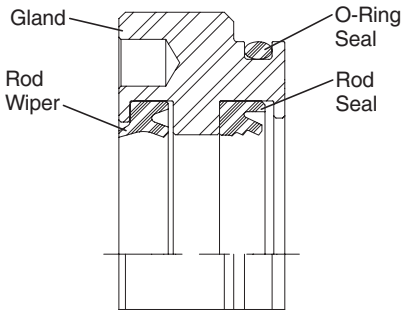
Servicing Rod Gland Seals

Fluid leakage from the piston rod at the gland normally indicates worn gland seals. The cylinder should, if possible, be removed for overhaul, or the piston rod disconnected.

The CHE gland is a cartridge design consisting of a bronze gland, primary lipseal, double lip wiperseal, and end seal o-ring. It is threaded into the cylinder body.

Removal

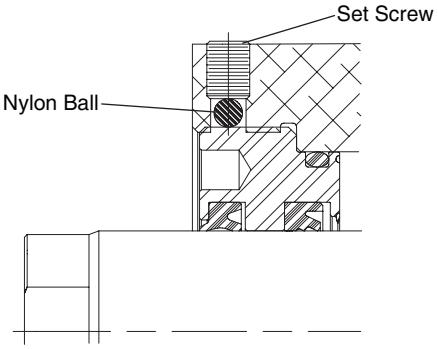
1) Inspect the piston rod to make sure it is free from burrs or damage which would prevent the gland sliding off the rod.
2) Loosen set screw (7)
3) Unscrew the gland using pins in spanner holes and slide the gland off the piston rod.
4) Remove the seals using a sharp pointed instrument, taking care not to damage the gland. Clean and inspect the gland bore and seal grooves. If any wear is present replace with a gland cartridge kit containing seals of the correct group.



Gland Installation

Inspect the surface of the piston rod for damage which could cause early seal failure. When fitting the gland over the rod thread, a slight rotary motion will help prevent damage to the seals. In addition, shim stock or other thin, tough material can be wrapped around the threads to protect the seal lips.

1) Ensure that the kit contains seals of the correct type. Lubricate the gland and seals, and fit the rod wiper (10) into the groove closest to the outside face of the gland.
2) Install the rod seal (11) in the groove, **with the lips facing the pressure (cylinder) side of the gland.**
3) Each Rod Gland Kit and Rod Seal Kit contains an end seal o-ring (12) that should be replaced before reinstalling the gland.



4) Lubricate the gland and seals. Slide the gland cartridge over the piston rod and thread it into the cylinder body. Utilizing pins in spanner holes in the face of the gland, torque the gland to the value listed on page 2.
5) Install the nylon ball (6) included in the kit and torque the set screw to the value in the table.

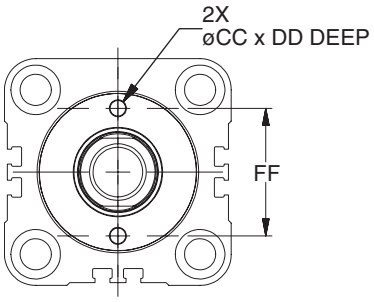
Set Screw Torque

Bore Ø	Torque (lb-in)
20, 25	11 - 13
32 - 63	32 - 38
80, 100	58 - 71

Spanner Hole Dimensions

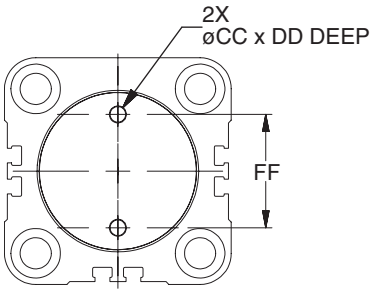
Gland Spanners

Bore Ø	CC	DD	FF
20	2.25	2.5	22
25	2.75	3	25
32	3.5	3.5	30
40	4.5	4.5	35
50	5.5	5.5	45
63	6.5	6.5	55
80	8.5	8.5	70
100	10.5	10.5	85



Cap Spanners

Bore Ø	CC	DD	FF
20	2.25	2.5	15
25	2.75	3	18
32	3.5	3.5	25
40	4.5	4.5	32
50	5.5	5.5	40
63	6.5	6.5	50
80	8.5	8.5	63
100	10.5	10.5	80



⚠ 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 technical 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 product described herein, including without limitation, product features, specifications, designs, availability and pricing, are subject to change by Parker Hannifin Corporation and its subsidiaries at any time without notice.

Offer of Sale

The items described in this document are hereby offered for sale by Parker Hannifin Corporation, its subsidiaries or its authorized distributors. This offer and its acceptance are governed by provisions stated on a separate page of this catalog in the document entitled "Offer of Sale".

Cylinder and Accumulator Division
500 South Wolf Road
Des Plaines, IL 60016
(847) 298-2400