



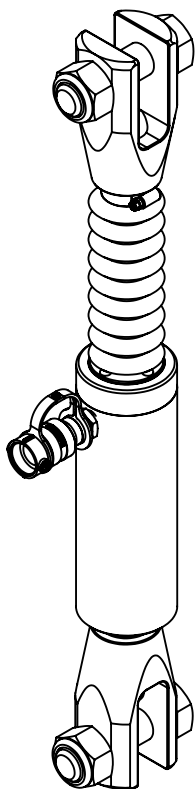
Single Acting Pull Cylinders Instruction Manual

MODELS: HPB1006
HPB1006A
HPB3006A

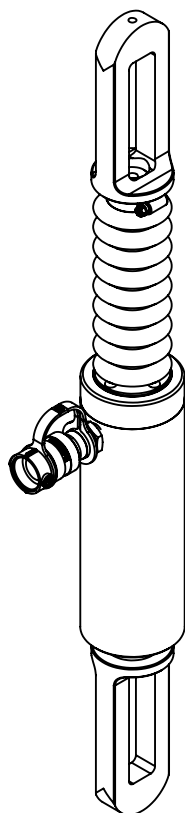
10 Ton capacity
10 Ton capacity
30 Ton capacity

SFA Companies 10939 N. Pomona Ave. Kansas City, MO 64153
 Tel: 888-332-6419 * Fax: 816-448-2142
 E-mail: sales@bvahydraulics.com Website: www.bvahydraulics.com

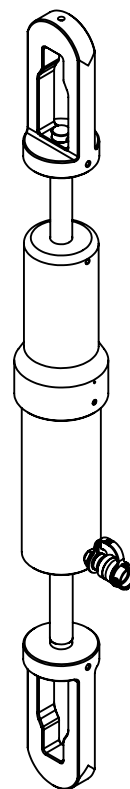
Maximum Operating Pressure 10,000 PSI



HPB1006



HPB1006A



HPB3006A



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

SAFETY AND GENERAL INFORMATION

Save these instructions. For your safety, read and understand the information contained within. The owner and operator shall have an understanding of this product and safe operating procedures before attempting to use this product. Instructions and safety information shall be conveyed in the operator's native language before use of this product is authorized. Make certain that the operator thoroughly understands the inherent dangers associated with the use and misuse of the product. If any doubt exists as to the safe and proper use of this product as outlined in this factory authorized manual, remove from service immediately.

Inspect before each use. Do not use if leaking, broken, bent, cracked or otherwise damaged parts are noted. If the cylinder has been or suspected to have been subjected to a shock load (a load dropped suddenly, unexpectedly upon it), discontinue use until checked out by a BVA Hydraulics authorized service center. Owners and operators of this equipment shall be aware that the use and subsequent repair of this equipment may require special training and knowledge. It is recommended that an annual inspection be done by qualified personnel and that any missing or damaged parts, decals, warning/safety labels or signs be replaced with BVA Hydraulics authorized replacement parts only. Any cylinder that appears to be damaged in any way, is worn or operates abnormally shall be removed from service immediately until such time as repairs can be made.

PRODUCT DESCRIPTION

BVA Hydraulics Single Acting Pull Cylinder is designed for rated capacity pulling jobs. A wide variety of applications exist for this category of product. Special skill, knowledge and training may be required for a specific task and the product may not be suitable for all the jobs described above.

Unsuitable applications would include applications that call for a device to move, level or support persons, animals, hazardous materials, mobile homes/dwellings in general, mirrors and/or plate glass, and/or to connect/secure hatches, components, etc. between bulkheads. The user ultimately must make the decision regarding suitability of the product for any given task and therefore accept responsibility for that decision. Immediately after lifting, loads must be supported by appropriate mechanical means.

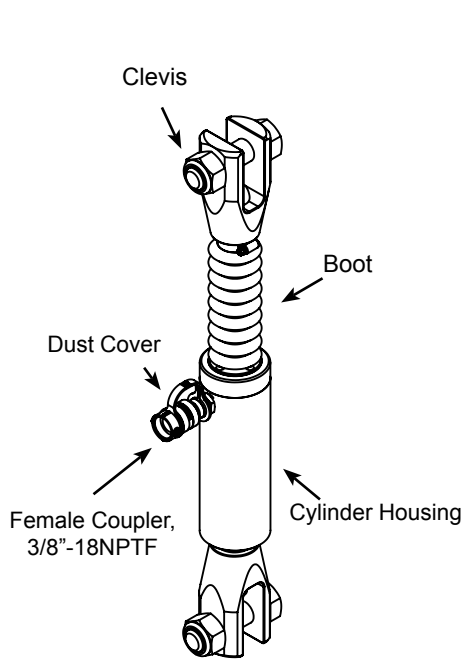
⚠ WARNING: NEVER use hydraulic cylinder as a support device.

⚠ WARNING: Always check connections before using. Alteration of these products is strictly prohibited. Use only those adapters and attachments provided and approved by the manufacturer.

⚠ WARNING: To reduce the risk of personal injury and/or property damage, ensure that the rated working pressure of each pressurized attachment be equal to or greater than the rated working pressure developed by the hydraulic pump.

BEFORE USE

1. Before using this product, read the owner's manual completely and familiarize yourself thoroughly with the product, its components and recognize the hazards associated with its use.
2. Verify that the product and the application are compatible. If in doubt, call BVA Hydraulics Technical Service (888) 332-6419.
3. Inspect before each use. Do not use if bent, broken, leaking or damaged components are noted.
4. Replace worn or damaged parts and assemblies with BVA Hydraulics authorized replacement parts only. Lubricate as instructed in Maintenance Section.
5. Ensure method of confirming load is accurate and working properly. Have gauge or load cell accuracy verified by qualified personnel on a yearly basis.



⚠ WARNING



Failure to comply with the following warnings may result in **personal injury** as well as **property damage**.



- Study, understand, and follow all instructions provided with and on this device before use.

• The user must be a qualified operator familiar with the correct operation, maintenance, and use of cylinders.



Wear protective gear when operating hydraulic equipment.



This device is **NOT** suitable for use as **support** device! As the load is lifted, use blocking and cribbing to guard against a falling load. Stay clear of a lifted load before it is properly supported. Never rely on hydraulic pressure to support a load.



Crush Hazard. Keep hands and feet away from cylinder and workpiece during operation.



- Do not exceed rated capacity of the cylinder or any equipment in the system. The cylinder is designed for a max. pressure of 10,000 psi.
- Do not connect a cylinder to a pump with higher pressure rating.
- Do not subject cylinder to a shock loads, a load dropped suddenly, causing the system pressure to exceed rated pressure.



The system operating pressure must not exceed the pressure rating of the lowest rated component the system. Install a pressure gauge or other load measuring instrument to monitor the operating pressure. Burst hazard exists if hose, connection or any other component in the system exceed its rated pressure.



Specifications

Model Number	Cylinder Capacity	Stroke	Cylinder Effective Area	Pressure at Capacity	Oil Capacity	Min. Used Height	Max. Used Height	Outside Dia.	Cylinder Bore Dia.	Collar		Weight
										Thread	Thread Length	
	(tons)	(in)	(in ²)	(psi)	(in ³)	(in)	(in)	(in)	(in)		(in.)	(Lbs.)
HPB1006	10	5.95	2.44	10,000	14.48	21.02	28.88	3.35	2.17	M85 x 2	1	37.7
HPB1006A						22.24	28.17					26.5
HPB3006A	30	6.1	6.33		38.63	42.72	48.82	4.50	3.35	-	-	79.4

OPERATION

Operate the hydraulic pump to advance and retract the cylinder. **Do not** continue pumping when cylinder is fully extended. Internal pressure will build up and may damage the seal of the cylinder.

⚠ WARNING: NEVER rely on hydraulic pressure alone to secure a load! NEVER allow personnel to work or pass under a load until the load is secured by cribbing, blocking, or other mechanical means.

⚠ WARNING: To help prevent material fatigue if the cylinder is to be used in a continuous application, the load should not exceed 85% of the rated capacity.

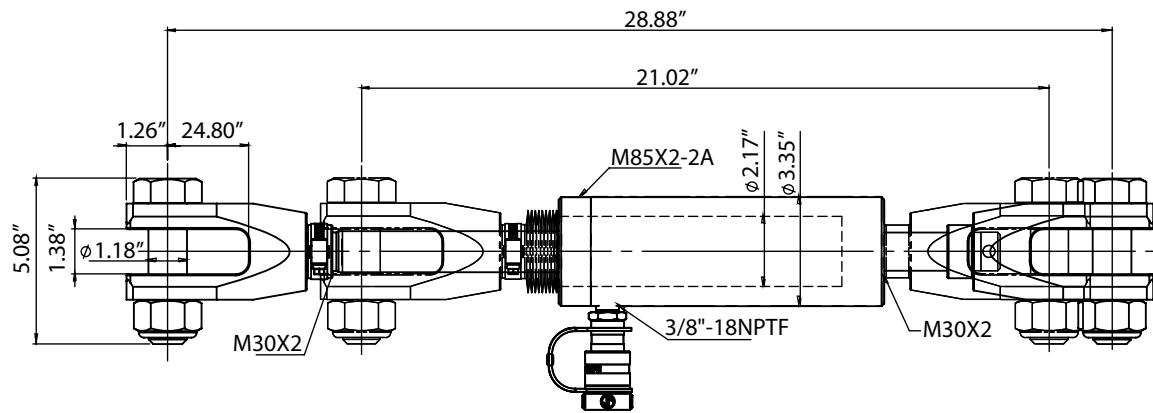


Figure 4- HPB1006 Specifications

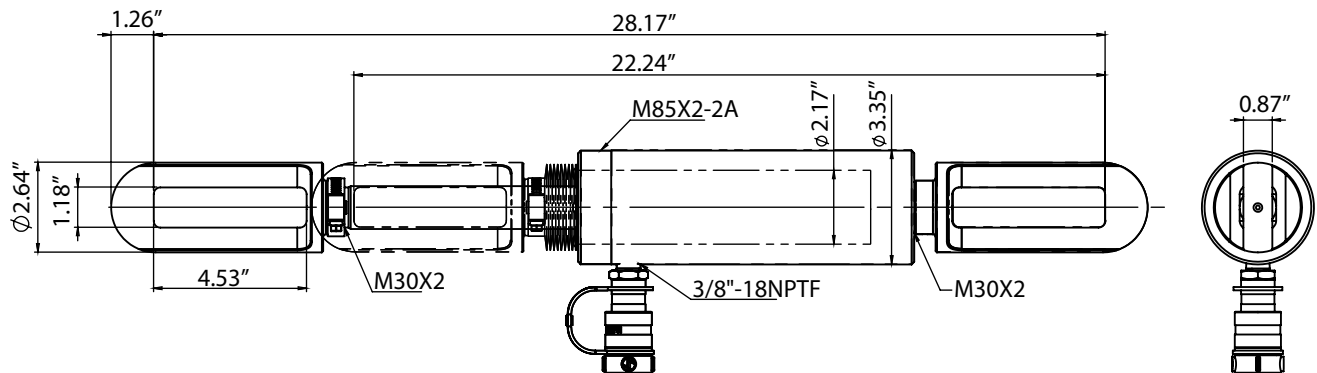
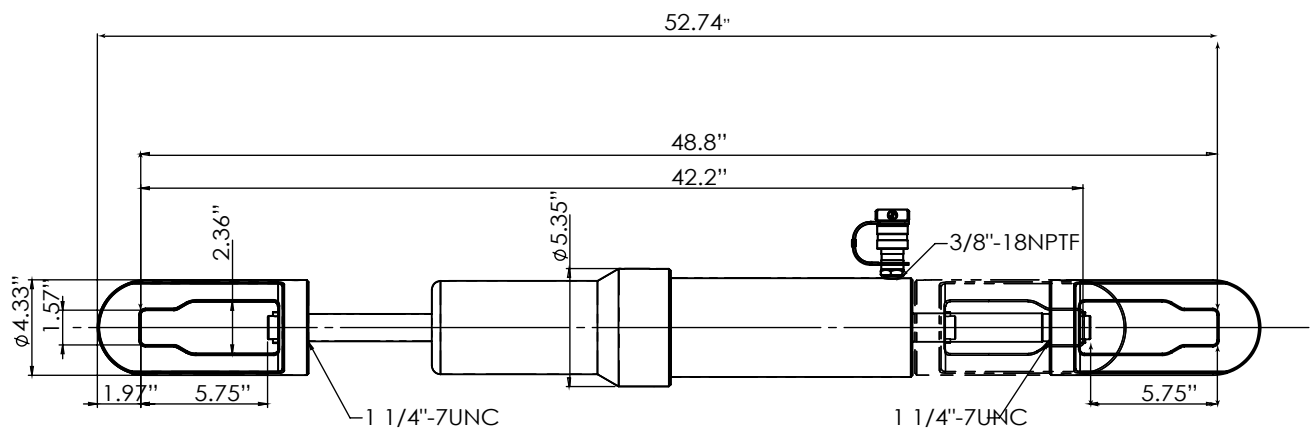


Figure 5- HPB1006A Specifications



MAINTENANCE (cont.)

NOTICE: Do not attempt to grasp with pliers or wrench without first wrapping the jaws of such tool with rags or similar padding.

How to bleed air from system:

1. Place pump at a higher elevation than the hose and cylinder as shown in Figure 7.
2. Operate pump to fully extend and retract the cylinder 2 or 3 times. The objective is to force the air bubbles up hill and back to the pump reservoir.
3. Follow pump instruction manual to bleed the air from pump reservoir. On most pumps, air can escape by opening the oil filler plug/screw.

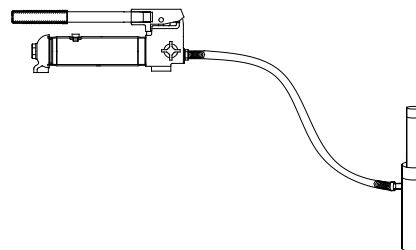


Figure 7 - Illustration to bleed air from system

TROUBLESHOOTING GUIDE

The following information is intended as an aid in determining if problem exists. Cylinders should be repaired only by authorized BVA Service Center. For repair service, contact service center in your area.

Symptom	Possible Causes	Corrective Action
Erratic action	• Air in system or pump cavitation. • External leakage in cylinder. • Cylinder sticking or binding.	• Vent the system (refer to figure 2). • Contact service center. • Contact service center.
Cylinder will not extend, or respond to pressurized fluid	• Overload condition. • Loose couplers. • Faulty couplers. • Improper valve position. • Oil level in pump is low. • Pump not operating. • Air-locked pump.	• Remedy overload condition. • Tighten couplers. • Replace both female and male couplers. • Close release valve or change valve position. • Fill and bleed the system. • Check pump's operating instructions. • Prime pump per pump operating instructions.
Cylinder extend only partially	• Oil level in pump is low. • Overload condition. • Cylinder is sticking or binding.	• Fill and bleed the system. • Remedy overload condition. • Contact service center.
Cylinder move slower than normal	• Loose connection or coupler. • Restricted hydraulic line or fitting. • Pump not working correctly. • Cylinder seals leaking.	• Tighten connection or coupler. • Clean and replace if damaged. • Check pump's operating instructions. • Contact service center.
Cylinder responds to pressurized fluid, but system does not maintain pressure	• Overload condition. • Pump or valve malfunctioning. • Cylinder seals leaking.</	



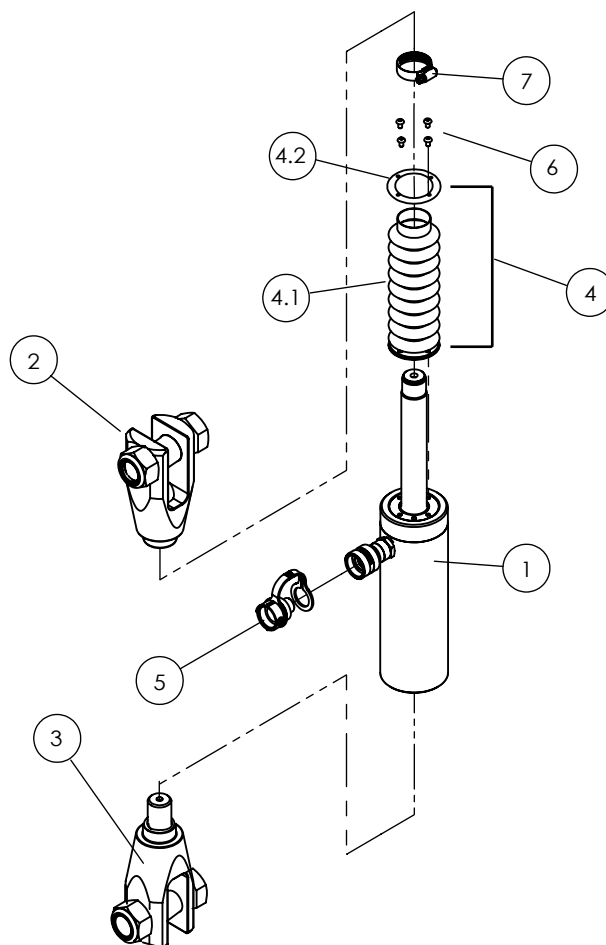
Single Acting Pull Cylinders Service Parts

MODELS: HPB1006

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Note: Not all components of the pump are replacement items, but are illustrated as a convenient reference of location and position in the assembly sequence.

No.	Description	Part No.	Qty.
1	Pull Cylinder	HP1006 (see pg 10 for deatil)	1
2	Clevis Eye - Female	CP10-B	1
3	Clevis Eye - Male	CP10-A	1
4	Rubber Bellow	H20-4-2801-108	1
4.1	Rubber Bellow	H20-6-2815-101	1
4.2	Flange Plate	H20-6-2816-103	1
5	Dust Cover	CDC38	1
6	Screw	659-1-0050-008	4
7	Strap	H20-6-2817-105	1



Note: To ensure safe and reliable performance, replace worn or damaged parts with BVA Hydraulics Authorized Replacement Parts only.



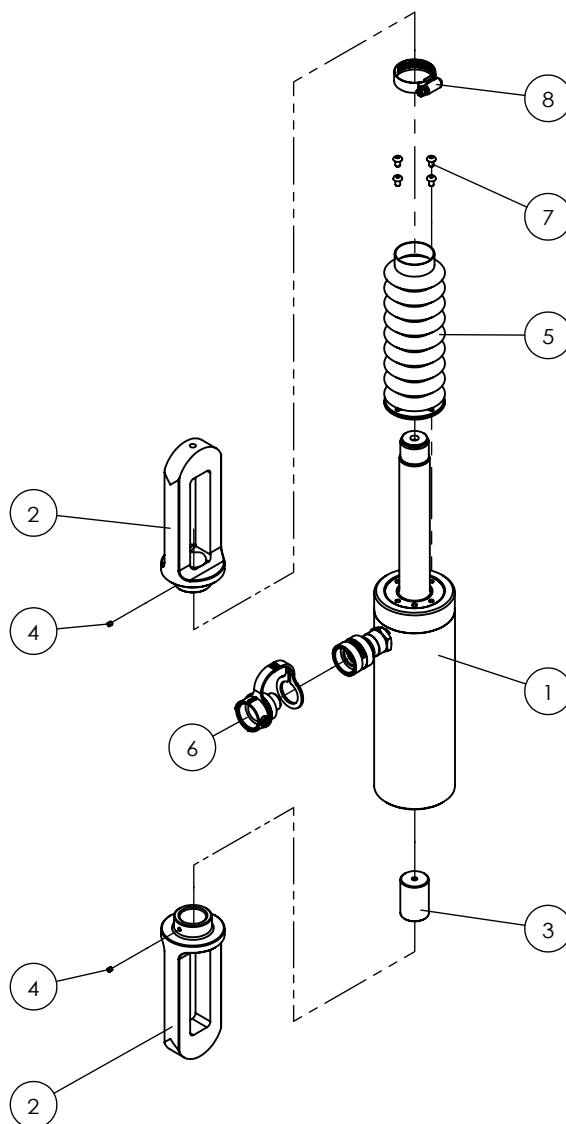
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No.	Part No.	Qty.	Description
1	HP1006 (see pg 10 for detail)	1	Pull Cylinder
2	H20-6-2813-107	2	Tang
3	H20-6-2814-109	1	Insert Screw
4	644-1-0040-204	2	Screw
5	H20-4-2801-108	1	Rubber Bellow
6	CDC38	1	Dust Cover
7	659-1-0050-200	4	Screw
8	H20-6-2817-105	1	Strap



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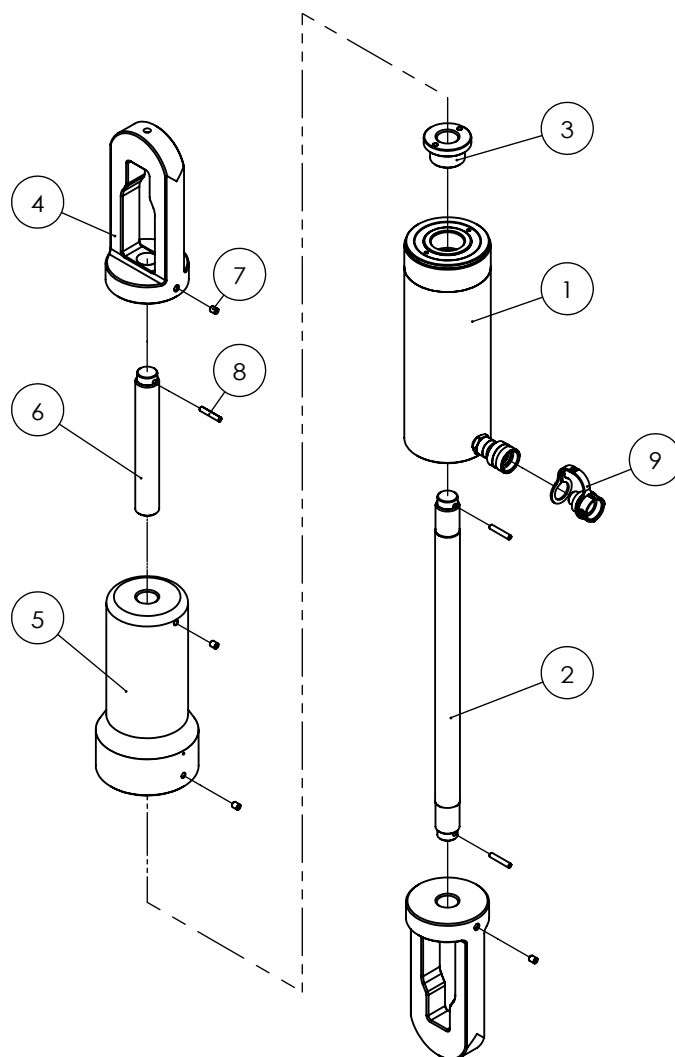
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No.	Description	Part No.	Qty.
1	30 Ton Hollow Hole Cylinder	HC3006T (See Page # 11 for detail)	1
2	Thread Rod	H33-6-1326-100	1
3	Saddle	H33-6-1327-102	1
4	Link	H33-6-1328-104	2
5	Cylinder Adaptor	H33-6-1329-106	1
6	Thread Rod	H33-6-1330-101	1
7	Screw	644-1-0080-004	4
8	Spring Pin	601-4-0060-030	3
9	Dust Cover	CDC38	1



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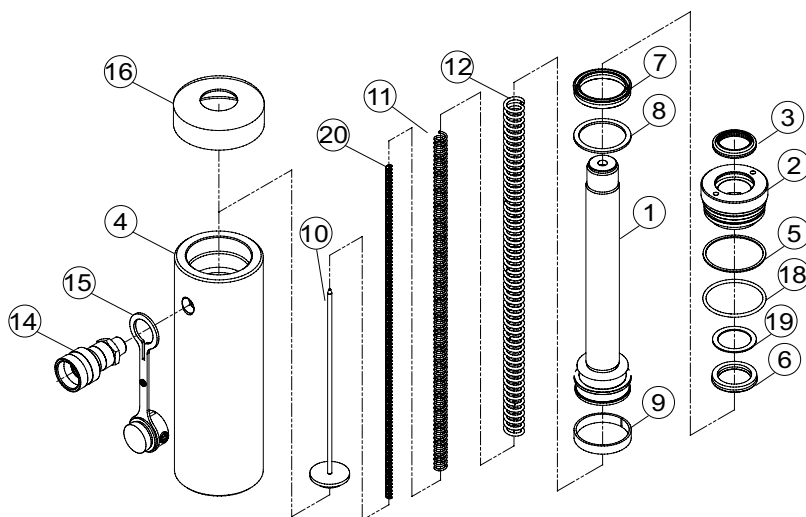
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No.	Part No.	Qty.	Description
1	N/A	1	Ram
2	H20-5-1804-105	1	Upper-bearing
3	*	1	Wiper Seal
4	N/A	1	Cylinder
5	*	1	Back-up ring
6	*	1	U-Cup
7	*	1	U-Cup
8	*	1	Back-up ring
9	H20-6-1214-100	1	Bearing
10	H20-3-1413-108	1	Guide Rod
11	511-2-0125-103	1	Comp. spring
12	511-2-0200-101	1	Comp. spring
13	-	1	Lower Bearing
14	CH38F	1	Female Coupler 3/8-18NPTF
15	CDC38	1	Dust Cover
16	H20-6-2306-100	1	Protecting-cap
17	-	1	Threaded Adapter
18	-	1	O-Ring
19	-	1	Back-up ring
20	511-2-0069-109	1	Comp. spring
*	H20-3-9910-102		Repair kit





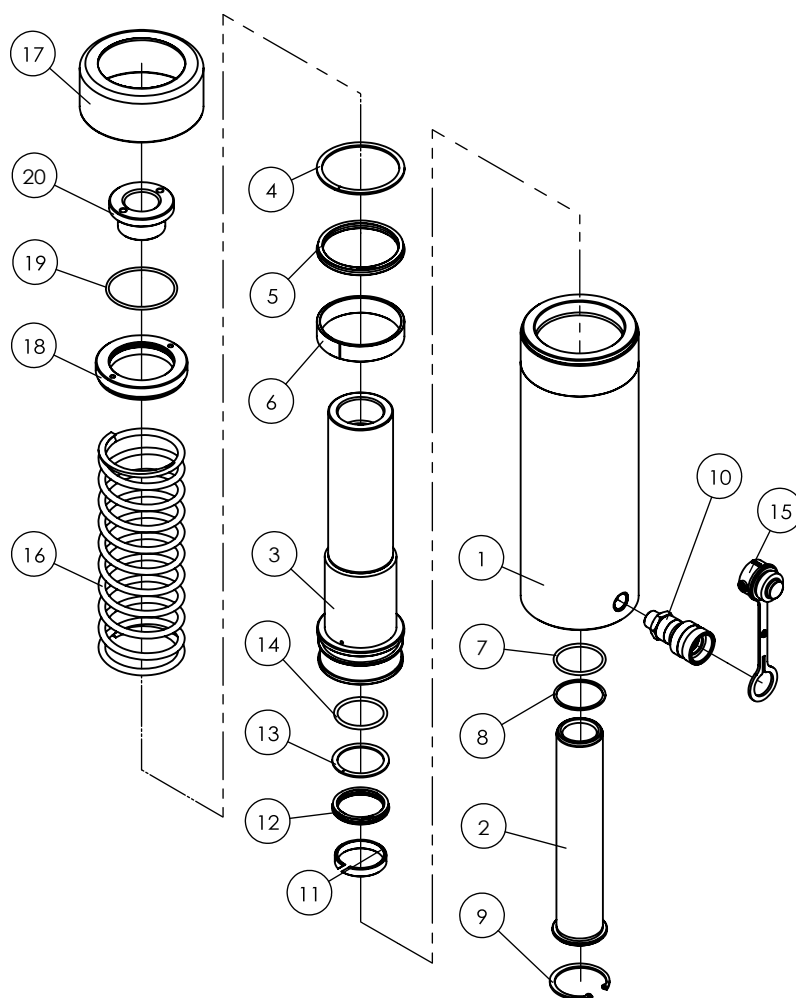
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No.	Part No.	Qty.	Description
1	N/A	1	Cylinder
2	N/A	1	Center tube
3	N/A	1	Plunger
4	*	1	Back-up ring
5	*	1	U-Cup
6	H32-6-1130-106	1	Bearing
7	*	1	O-Ring
8	*	1	Back-up ring
9	666-5-0550-100	1	C-clip
10	CH38F	1	Coupler
11	H32-6-1129-101	1	Bearing
12	*	1	U-Cup
13	*	1	Back-up ring
14	*	1	O-Ring
15	CDC38	1	Dust cap assy.
16	512-2-0835-101	1	Comp. spring
17	H32-6-2307-104	1	Protecting-cap
18	H32-6-1823-107	1	Upper-bearing
19	*	1	O-Ring
20	H32-6-1104-206	1	Saddle
	H32-3-9901-103	1	Repair kit



LIMITED LIFETIME WARRANTY

BVA Hydraulics®, represented in the United States by SFA Companies ["SFA"] warrants this product to be free from defects in material and workmanship for the life of the product as long as the original purchaser owns the product. The warranty is non-transferable and is subject to the terms, exclusions, and limitations described below:

- Damaged components, including but not limited to bent rams, dented or crushed cylinder walls, broken welds or couplers as well as worn out seals, o-rings and springs are the result of misuse and not covered by warranty and BVA Hydraulics will not provide any warranty credit for such damaged components.
- This warranty does not cover ordinary wear and tear, overloading, alterations (including repairs or attempted repairs not performed by BVA Hydraulics or one of its authorized personnel), improper fluid use, or use of the product in any manner for which the product was not intended or the use of which is not in accordance with the instructions or warnings provided with the product.
- In the unlikely event that a BVA Hydraulics product fails due to material defect in workmanship, you may contact SFA for disposition. In such cases, the customer's sole and exclusive remedy for any breach or alleged breach of warranty is limited to the repair or replacement of the defective product.
- Under no circumstances is BVA Hydraulics liable for any consequential or incidental damage or loss whatsoever.
- THIS WARRANTY IS LIMITED TO NEW PRODUCTS SOLD THROUGH AUTHORIZED DISTRIBUTORS AND OTHER CHANNELS DESIGNATED BY BVA HYDRAULICS. NO AGENT, EMPLOYEE OR OTHER REPRESENTATIVE OF BVA HYDRAULICS IS AUTHORIZED TO MODIFY THIS WARRANTY.
- THE FOREGOING IS EXCLUSIVE AND IS IN LIEU OF ALL OTHER EXPRESS AND IMPLIED WARRANTIES, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FOR A FITNESS FOR A PARTICULAR PURPOSE.
- Components not manufactured by BVA Hydraulics including certain motor systems, gasoline engines, and other are not covered by this warranty and instead are covered by the manufacturer's separate manufacturer's warranty provided in the package.
- BVA Hydraulics' liability in all cases is limited to, and will not exceed the purchase price paid for the product.

