INSTRUCTION MANUAL

Installation • Operation
Parts • Service

Hydra-Cell®
INDUSTRIAL VALVES

IMPORTANT

Record your Regulator model number and serial number here for easy reference:

Model No. _____

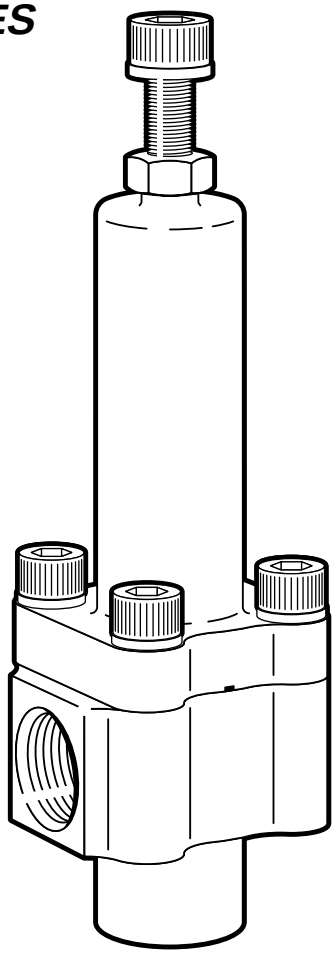
Serial No. _____

Date of Purchase _____

When ordering parts or making inquiries about this Regulator, please mention the model and serial numbers.

MODELS: C62-A; C62-D

DIAPHRAGM BYPASS PRESSURE REGULATING VALVES



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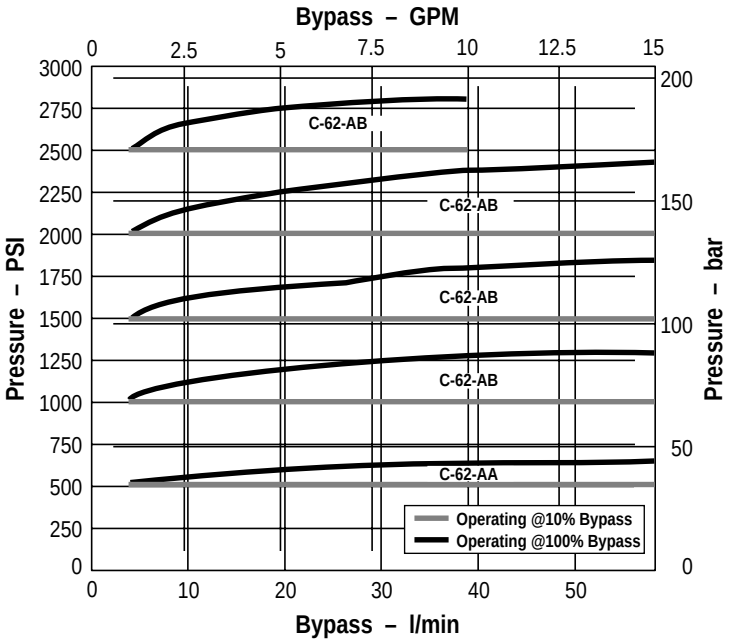
C62-A/D Contents

C62-A/D Specifications

Capacity	**Maximum**		**Minimum**	
	gpm	l/min	gpm	l/min
	14	53	1	3.8
Pressure Range	**Model Configuration**			
C62-	**AA**	**DA**	**AB**	**DB**
	psi	bar	psi	bar
	75-500	5-35	500-2500	35-172
Max Temperature:	200°F (93°C)			
Inlet and Outlet Ports:				
C62-AA/AB	3/4” NPT			
C62-DA/DB	3/4” BSPT			
Dimensions: (H x W x D)				
	8.6 x 2.7 x 2.3 in			
	(219 x 69 x 58 mm)			
Weight				
C62	4 lbs (1.8 kg			



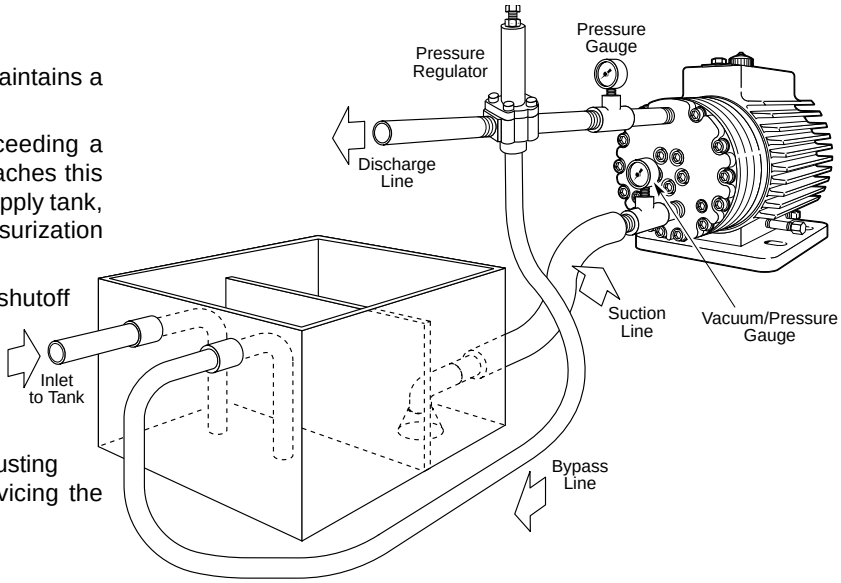
C62-A/D Installation

Location

The bypass pressure regulating valve (Regulator) maintains a stable system pressure by changing the flow.

The Regulator prevents system pressure from exceeding a preset (adjustable) maximum. As the system approaches this maximum pressure, excess fluid is bypassed (to a supply tank, or back to the pump inlet). This prevents overpressurization and system failures.

Install the Regulator between the pump outlet and a shutoff device in the discharge plumbing. Appropriately sized, pressure-rated flexible hose is preferred.



Mounting Position

The preferred mounting position is vertical with the adjusting bolt at the top. This allows easy access when servicing the Regulator components.

Connections

When operated as a backpressure regulator, a secondary pressure relief valve should be installed and set to relieve when pressures exceed the operating maximum.

For best operation as a bypass valve, the bypass line should return to the supply tank. If you must plumb the bypass line back to the pump inlet, have it enter the inlet line as far from the pump as possible. Contact the pump manufacturer, as a pressure regulator may be required in the pump inlet.

The bypass or outlet lines should be as large as the ports of the regulating valve. Do not install shutoff valves or other restrictions.

Install a high-quality, industrial pressure gauge upstream from the valve to monitor system pressure. Failure to do so may result in over-pressurization and premature failure of pumping system components.

If volatile fluids will be pumped, ground the valve with a #10-32 grounding screw (to discharge any accumulation of static electricity).

C62-A/D Valve Operation

The locking nut (2) must be used when adjusting the Regulator and during operation as it is a spacer that prevents the bypass valve from being inadvertently locked shut.

Pressure Adjustment

Systems *with* Shutoff Guns or Valves

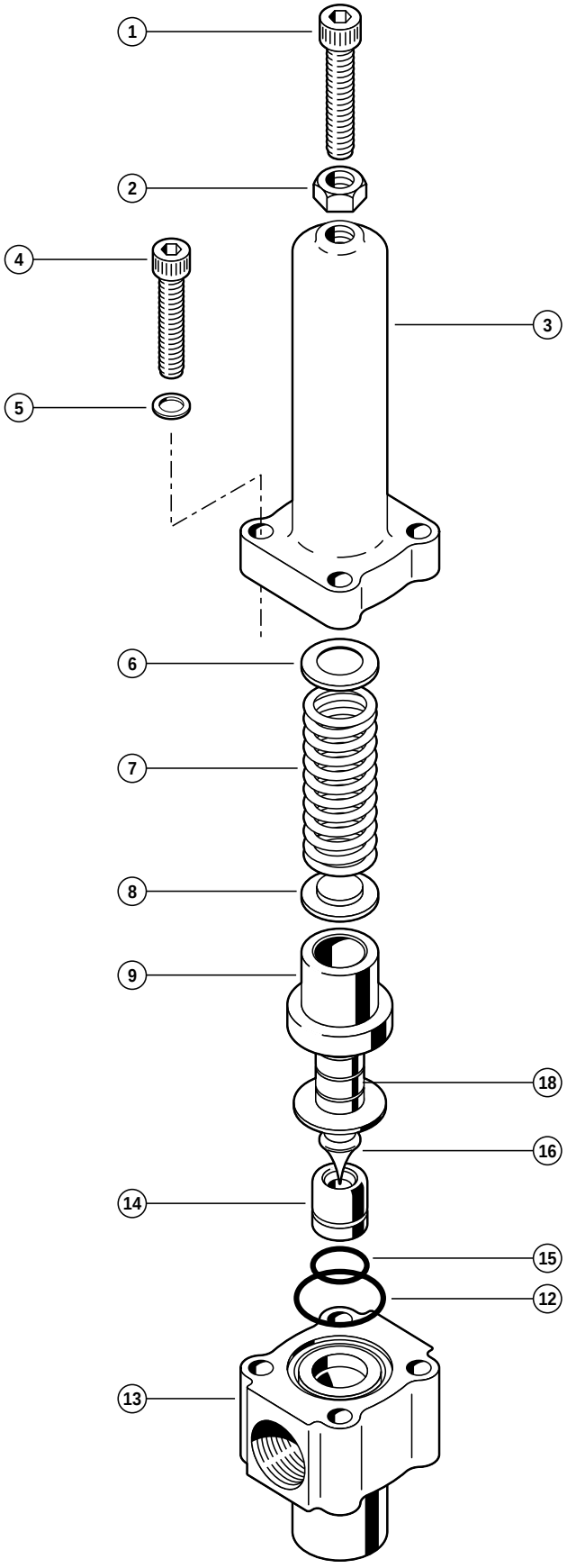
1. Turn off system.
2. With a 10 mm allen wrench turn the adjusting bolt (1) counterclockwise until there is no longer any force on the spring in the Regulator.
3. Be certain that the piping and all valves and nozzles are open.
   With an accurate pressure gauge installed upstream from the valve, start the system and let it run for a few minutes to remove any air.
4. With the air removed, turn the adjusting bolt clockwise until you reach the desired pressure.
   Do not exceed the maximum rated pressure of the pump or Regulator.
5. Recheck the bypass pressure each time and readjust if necessary. Turn the adjusting bolt clockwise to increase or counterclockwise to reduce the pressure.
6. When both the pressure and the flow have been set, turn the lock nut (2) clockwise to secure the adjustment.

Systems *without* Shutoff Guns or Valves

Note: When making this adjustment, you must be able to observe the amount of fluid being bypassed.

1. Turn off the system.
2. Turn the adjusting bolt (1) counterclockwise until there is no longer any force on the spring in the Regulator.
3. With an accurate pressure gauge installed upstream from the Regulator, start the system and let it run for a few minutes to remove any air.
4. Be certain all nozzles and orifices are open.
5. When all air has been removed, begin turning the adjusting bolt clockwise until you reach the desired system pressure.
   Do not exceed the maximum rated pressure of the pump or the regulator.
6. If the system discharge pressure is less than desired, check the pump speed and delivery and the size of the nozzle or orifice.
7. When both the pressure and the flow have been set, turn the lock nut (2) clockwise to secure the adjustment.

C62-A/D Parts



Ref #	Part Number	Description	Quantity/ Pump
1	C62-004-2010	Adjusting Bolt	1
2	C62-005-1000	Lock Nut	1
3	C62-003-1210	Valve Top	1
4	G35-029-2010	M10 Socket Cap Screw	4
5	G25-048-2011	Lockwasher, hi-collar	4
6	C62-030-1000	Retainer, spring top	1
7	C62-018-3101	Spring, 75-500 psi; 5-35 bar	1
	C62-018-3103	Spring, 500-2500 psi; 35-172 bar	1
8	C62-029-1000	Plunger Guide, top	1
9	C62-024-1210	Sleeve, guide	1
12	C62-011-2111	O-ring, Viton	1
	C62-011-2118	O-ring, Teflon	1
13	C62-002-1000	Body, valve, brass, NPT	1
	C62-002-1002	Body, valve, 316 SST, NPT	1
	C62-002-1017	Body, valve, Hastelloy C-276, NPT	1
	C62-002-1006	Body, valve, brass, BSPT	1
	C62-002-1004	Body, valve, 316 SST, BSPT	1
	C62-002-1018	Body, valve, Hastelloy C-276, BSPT	1
14	C62-006-1000	Seat, valve, 316 SST	1
	C62-006-1001	Seat, valve, 17-4 PH SST	1
	C62-006-1017	Seat, valve, Hastelloy C-276	1
15	D40-047-2111	O-ring, valve seat, Viton	1
	D40-047-2118	O-ring, valve seat, Teflon	1
16	C62-023-1200	Plunger Assembly, 316L SST	1
	C62-023-1203	Plunger Assembly, 17-4 PH SST	1
	C62-023-1217	Plunger Assembly, Hastelloy C-276	1
18	C62-025-1000	Plunger Guide	1
–	C62-022-2400	Name Plate (specify model and serial number)	1
–	A01-115-3400	Regulator Grease	1

C62-A/D Troubleshooting and Maintenance

Troubleshooting

Excess Pressure Required to Bypass Fluid

- Regulator pressure not properly adjusted
- Not enough fluid being continuously bypassed
- Nozzles worn

Fluid Leaking from Hole in Regulator Top

- Worn Seals

System Losing Pressure

- Nozzles worn
- Pump RPM reduced
- Regulator pressure not properly adjusted
- Worn pump components
- Worn Regulator seat or plunger
- System drawing in air
- Too much fluid being bypassed

Pressure Spikes

- Minimum bypass of 10% not being maintained
- Nozzles worn
- Regulator pressure not properly adjusted

Visual Indicators of Malfunction

If there is fluid coming from either weep hole (refer to drawing), then fluid is going around or through the diaphragms and the Regulator should be taken down for inspection.

If the gauge pressure has dropped significantly from the set pressure, everything else in the system being the same, the Regulator should be taken down for inspection.

Disassembly and Internal Inspection

First shut off the pump. **Then relieve system pressure until the gauge reads zero.** Turn the adjusting bolt (1) counterclockwise until there is no force on the spring, allowing the pressurized fluid to leave the system.

When disassembling, use a marker pen to index orientation of guide sleeve (9), plunger assembly (16), and valve seat (14) if you intend to reuse them. Also, when removing the plunger assembly (16) from the valve body, the valve body o-ring (12) can adhere to the bottom diaphragm.

If this o-ring is Teflon, replace it with a new one prior to reassembly.

Remove the plunger assembly (16) from the guide sleeve (9), and inspect for excessive wear on the plunger guide O.D. (18), for grease in its grease grooves, and for wear on the I.D. of the guide sleeve (9). If the surfaces are rough or uneven, the parts should be replaced. Inspect the diaphragms for splits, cracks, abrasion or plastic deformation that would cause the diaphragms to flex unevenly or to permit pumped fluid to vent to atmosphere or to the back of the Regulator.

If the valve seat (14) needs to be removed for inspection or replacement, it is easier to detach the plumbing from the return (bypass) line, then push through the discharge port on the valve seat from below.

If the contact area on the valve seat (14) or the plunger assembly (16) have an uneven surface from physical contact or from passing fluid, they should both be replaced.

Reassembly

Apply Wanner Regulator Grease #A01-115-3400 to the grease grooves on the O.D. of the plunger guide (18). Slide the bolt-head end of the plunger-and-guide assembly (16,18), into the back (small) end of the guide sleeve (9) and almost up to the diaphragms, then retract it. Remove all excess grease from under the diaphragms and from the back end of the guide sleeve.

Now slide the plunger-and-guide assembly (16,18), into the front (large) end of the guide sleeve, aligning the marker pen lines made when disassembling.

To reinstall the valve seat (14) into the valve body (13), check for and clean the pocket in the valve body of any foreign material that could prevent normal positioning of the valve seat. Apply grease to the valve seat o-ring (15), align the marks on the seat and body, and apply a uniform firm force to the top of the valve seat. It should slide gently into the body's counterbore.

Also, apply regulator grease to the bottom threads of the adjustment bolt. Be certain that the bottom of the guide sleeve and mating pilot counterbore in the body are clean and free of debris.

Now align the combination of the plunger-and-guide assembly contained in the guide sleeve with the valve body. Follow with the top plunger guide (8), spring (7), spring top retainer (6), and valve top (3).

Get the four M10 cap screws (4,5) started, and torque alternately in an "X" pattern to 35 ft-lbs (48 N-m). When done, there should be 0.005-0.010 in (0.13-0.25 mm) clearance between the valve top and the valve body.

Limited Warranty

Wanner Engineering, Inc. extends to the original purchaser of equipment manufacturerd by it and bearing its name, a limited one-year warranty from the date of purchase against defects in material or workmanship, provided that the equipment is installed and operated in accordance with the recommendations and instructions of Wanner Engineering, Inc. Wanner Engineering, Inc. will repair or replace, at its option, defective parts without charge if such parts are returned with transportation charges prepaid to Wanner Engineering, Inc., 1204 Chestnut Avenue, Minneapolis, Minnesota 55403.

This warranty does not cover:

1. The electric motors (if any), which are covered by the separate warranties of the manufacturers of these components.

2. Normal wear and/or damage caused by or related to abrasion, corrosion, abuse, negligence, accident, faulty installation or tampering in a manner which impairs normal operation.

3. Transportation costs.

This limited warranty is exclusive, and is in lieu of any other warranties (express or implied) including warranty of merchantability or warranty of fitness for a particular purpose and of any noncontractual liabilities including product liabilities based on negligence or strict liability. Every form of liability for direct, special, incidental or consequential damages or loss is expressly excluded and denied.

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