

**Installation & Service**  
**C62-991-2400A3**

# Hydra-Cell®

## INDUSTRIAL VALVES

**Models:**

**C62/63/64-A/D**

**Diaphragm Bypass Pressure  
Regulating Valves**

**IMPORTANT**

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

Model No. \_\_\_\_\_

Serial No. \_\_\_\_\_

Date of Purchase \_\_\_\_\_

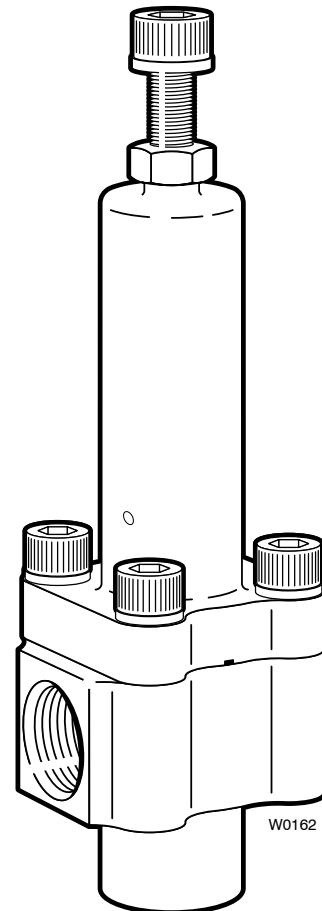
When ordering parts or making inquiries about this pump, please mention the model and serial numbers.



**WANNER ENGINEERING, INC.**

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**C62 Shown**

# C62/63/64-A/D Contents

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# C62/63/64-A/D Specifications

Capacity	Maximum		Minimum	
	gpm	l/min	gpm	l/min
<b>C62-A/D</b>	14	53	1	3.8
<b>C63-A/D</b>	25	94	1	3.8
<b>C64-A/D</b>	40	151	1	3.8

Pressure Range Model Configuration	AA	DA	AB	DB
	psi	bar	psi	bar
<b>C62-</b>	75-500	5-35	500-2500	35-172
<b>C63/64-</b>	75-1000	5-69	1000-2500	69-172

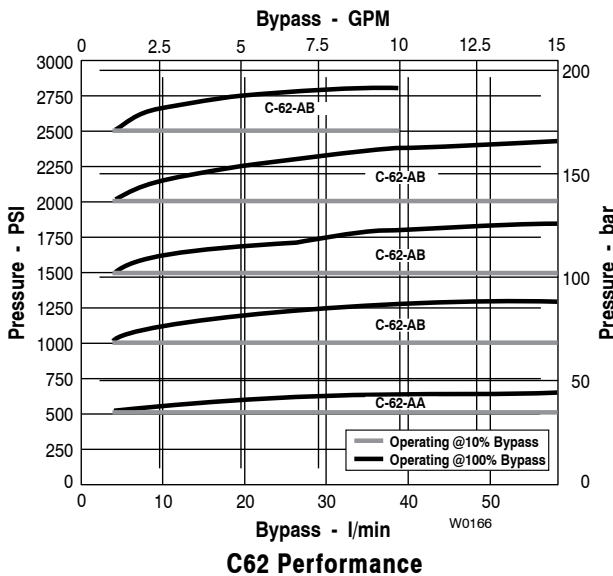
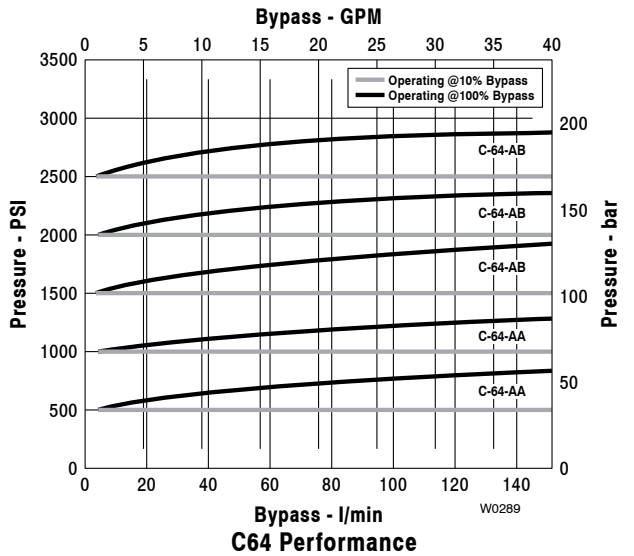
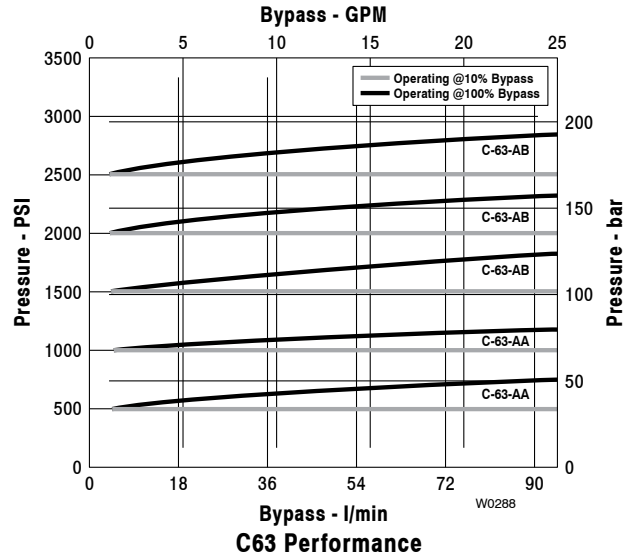
**Max Temperature:** 200°F (93°C)

**Inlet and Outlet Ports:**

<b>C62-AA/AB</b>	3/4" NPT
<b>C62-DA/DB</b>	3/4" BSPT
<b>C63-AA/AB</b>	1" NPT
<b>C63-DA/DB</b>	1" BSPT
<b>C64-AA/AB</b>	1-1/4" NPT
<b>C64-DA/DB</b>	1-1/4" BSPT

**Weight**

<b>C62-A/D</b>	4 lbs (1.8 kg)
<b>C63-A/D</b>	6.2 lbs (2.8 kg)
<b>C64-A/D</b>	7.2 lbs (3.3 kg)



# C62/63/64-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. Correctly sized, pressure-rated flexible hose is preferred.

## Mounting Position

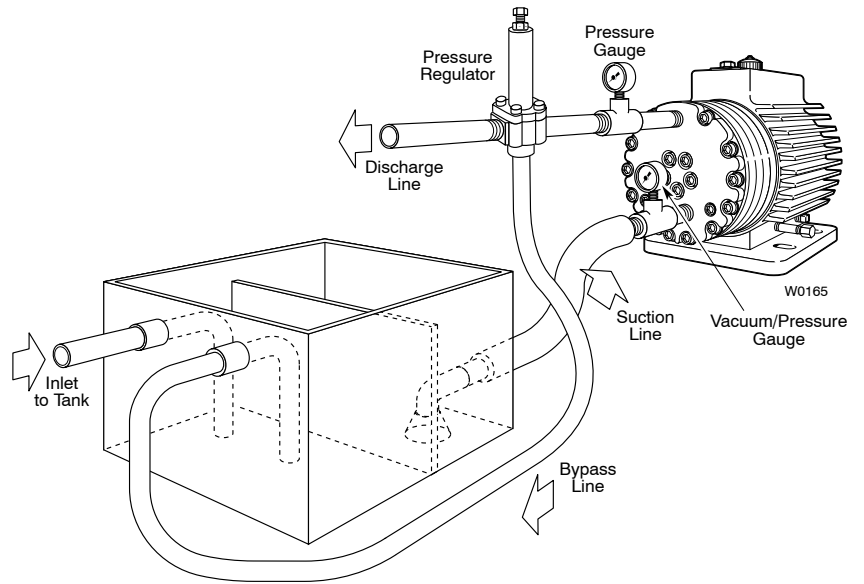
The preferred mounting position is vertical with the adjusting bolt at the top. This allows easy access when servicing the regulator components.

## 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.

When the system is operating, set the pressure regulator to bypass 10% of the rated flow for smoothest operation and minimal pressure spiking when the system closes.

If volatile fluids will be pumped, ground the valve with a grounding screw to discharge any accumulation of static electricity. Use a 10-32 grounding screw for NPT models or a M6 x 1 grounding screw for BSPT models.

# C62/63/64-A/D Valve Operation

## Bypass/Pressure Adjustment

**Note:** The lock nut (2) must be used when operating or adjusting the regulator. It acts as a spacer to prevent the bypass valve from being inadvertently locked shut.

### Systems with Shutoff Guns or Valves

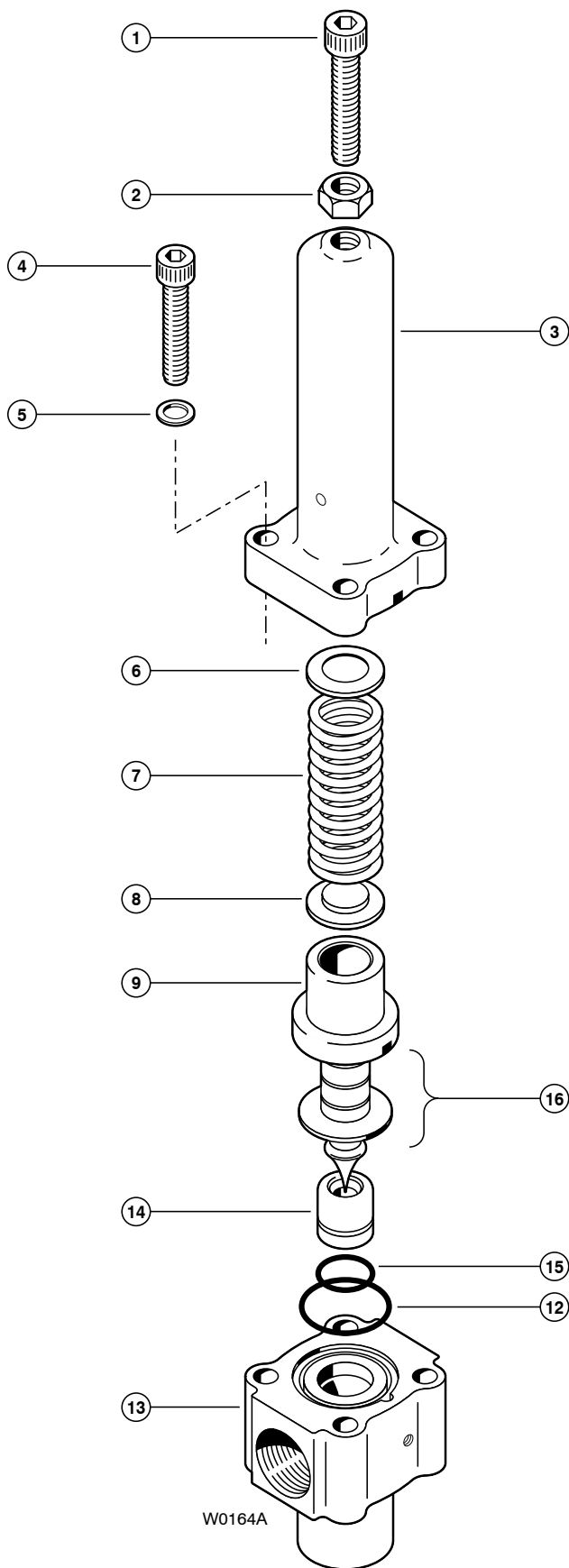
1. Turn off system.
2. Be certain all shutoff guns and valves are closed.
3. Loosen lock nut (2) and use 10 mm allen wrench (for Model C62) or wrench (for Models C63 and C64) and turn adjusting bolt (1) counterclockwise until there is no longer any force on spring in regulator.
4. With an accurate pressure gauge installed upstream from regulator, start system and let it run for a few minutes to remove any air.
5. With air removed, turn adjusting bolt clockwise until you reach desired pressure.  
**Note:** Do not exceed maximum rated pressure of pump or regulator.
6. Recheck bypass pressure each time and readjust if necessary. Turn adjusting bolt clockwise to increase or counterclockwise to reduce pressure.
7. When both pressure and flow have been set, turn lock nut (2) clockwise to secure adjustment.

### Systems without Shutoff Guns or Valves

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

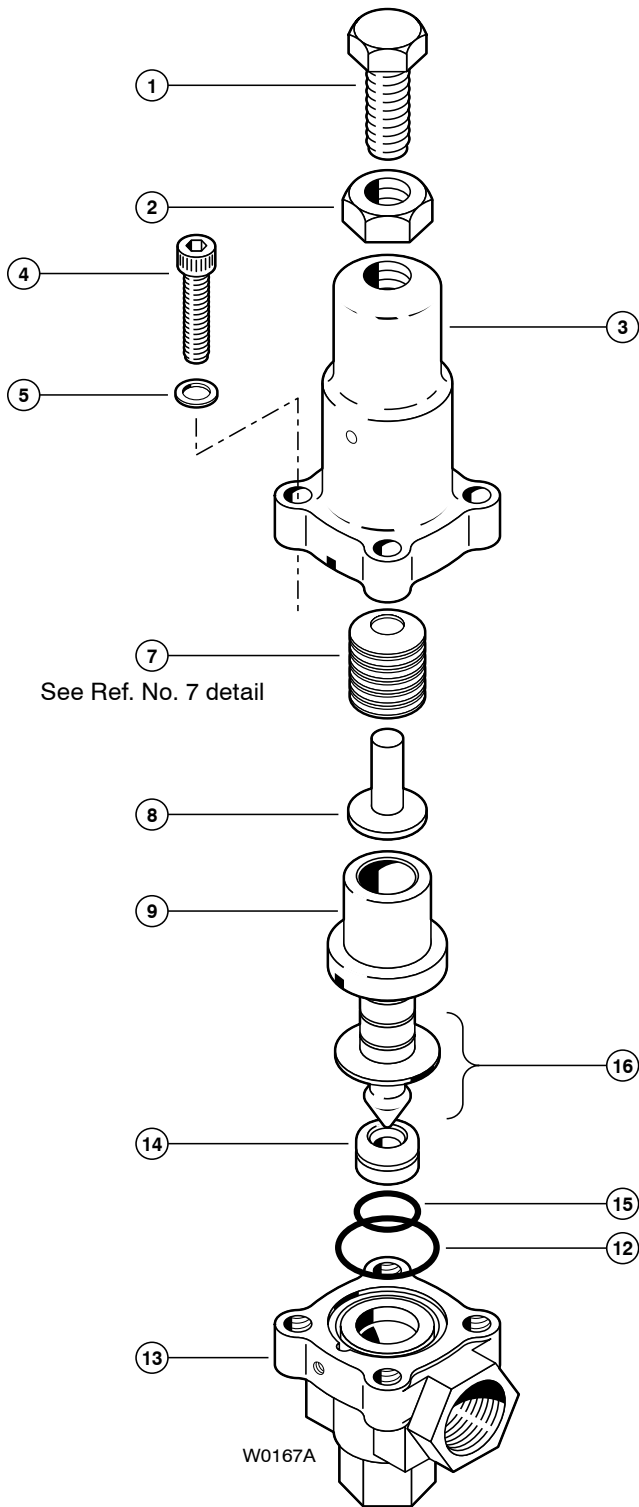
1. Turn off system.
2. Be certain all nozzles and orifices are open.
3. Loosen lock nut (2) and use 10 mm allen wrench (for Model C62) or wrench (for Models C63 and C64) and turn adjusting bolt (1) counterclockwise until there is no longer any force on spring in regulator.
4. With an accurate pressure gauge installed upstream from regulator, start system and let it run for a few minutes to remove any air.
5. With air removed, turn adjusting bolt clockwise until you reach desired pressure.  
**Note:** Do not exceed maximum rated pressure of pump or regulator.
6. If system discharge pressure is less than desired, check pump speed, delivery, and size of nozzle or orifice.
7. When pressure and flow have been set, turn lock nut (2) clockwise to secure adjustment.

# C62-A/D Parts

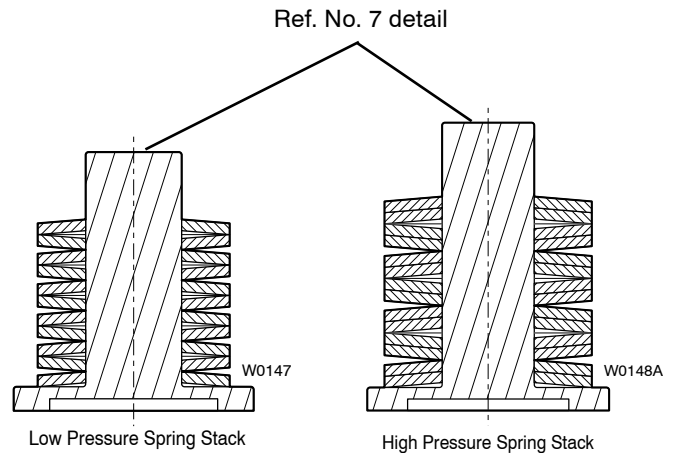


Ref. No.	Part Number	Description	Quantity/ Pump
1	C62-004-2010	Adjusting Bolt.....	1
2	C62-005-1000	Lock Nut.....	1
3	C62-003-1210	Valve Top.....	1
4	G35-029-2010	M10 Socket Cap Screw.....	4
5	G25-048-2011	Lockwasher, hi-collar.....	4
6	C62-030-1000	Retainer, spring top.....	1
7	C62-018-3101	Spring, 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, PTFE.....	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
	C62-006-1002	Seat, valve, tungsten carbide.....	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, PTFE.....	1
16	C62-023-1200	Plunger Assembly, 316L SST.....	1
	C62-023-1201	Plunger Assembly, tungsten carbide.....	1
	C62-023-1203	Plunger Assembly, 17-4 PH SST.....	1
	C62-023-1217	Plunger Assembly, Hastelloy C-276.....	1
-	C62-022-2400	Name Plate (specify model and serial number).....	1
-	A01-115-3400	Regulator Grease.....	1

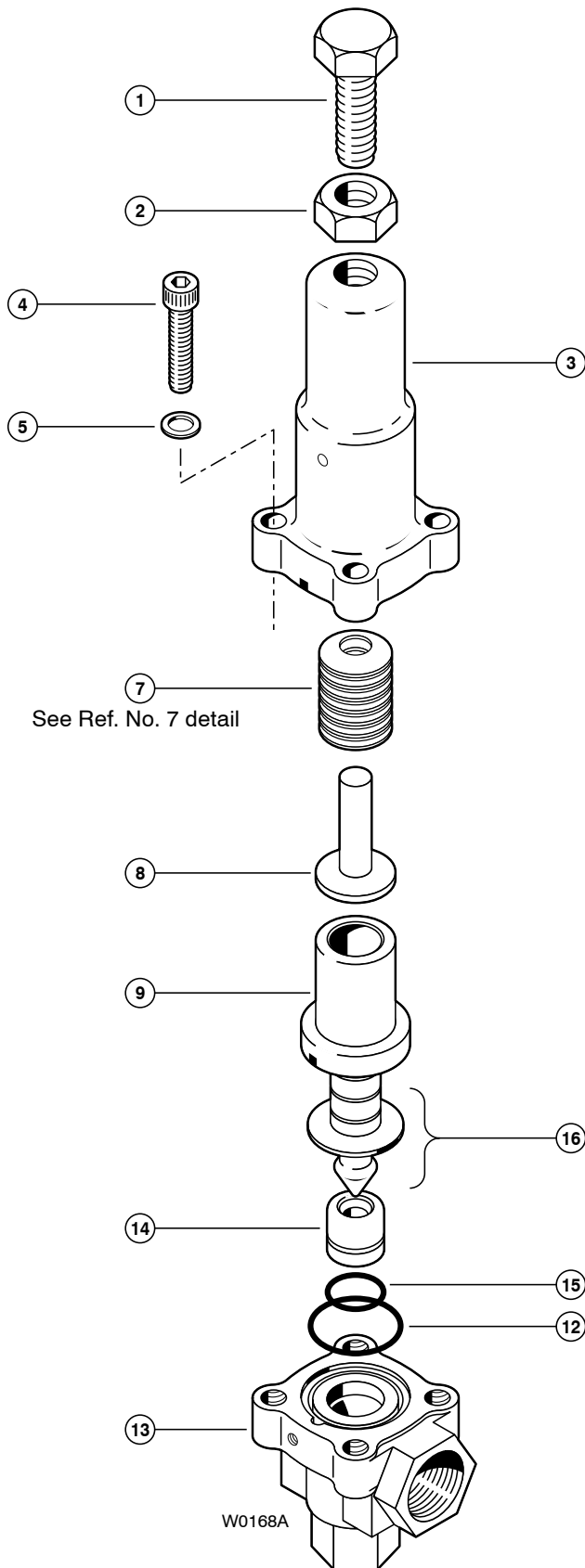
# C63-A/D Parts



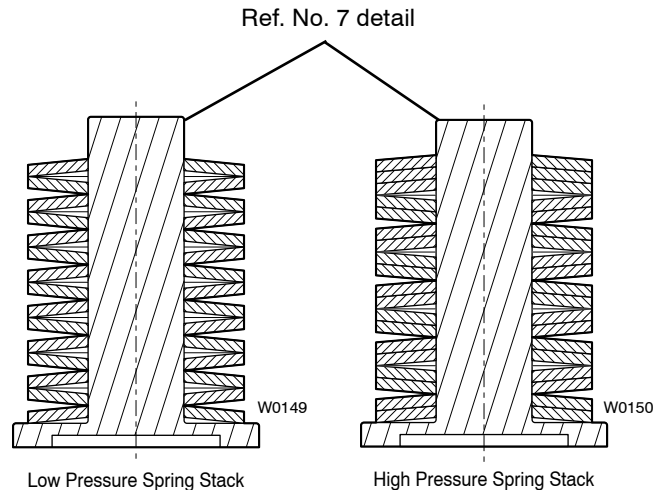
Ref. No.	Part Number	Description	Quantity/ Pump
1	C63-004-1013	Adjusting Bolt, low pressure .....	1
	C63-004-1014	Adjusting Bolt, high pressure.....	1
2	C23-005-1000	Lock Nut.....	1
3	C63-003-1003	Valve Top.....	1
4	G35-081-2010	M12 Socket Cap Screw.....	4
5	G35-084-2010	Lockwasher, hi-collar .....	4
7	C63-018-3107	Spring disks, low pressure, .....	
		34 x 16.3 x 2 mm, .....	
		75-1000 psi; 5-70 bar .....	11
		Spring disks, high pressure .....	
		1000-2500 psi; 70-172 bar .....	14
8	C63-029-1003	Plunger Guide, top .....	1
9	C63-024-1213	Sleeve, guide .....	1
12	D25-074-2111	O-ring, Viton.....	1
	D25-074-2118	O-ring, PTFE.....	1
13	C63-002-1000	Body, valve, brass, NPT .....	1
	C63-002-1002	Body, valve, 316 SST, NPT.....	1
	C63-002-1006	Body, valve, brass, BSPT .....	1
	C63-002-1004	Body, valve, 316 SST, BSPT.....	1
14	C63-006-1000	Seat, valve, 316 SST.....	1
	C63-006-1001	Seat, valve, 17-4 PH SST .....	1
15	C63-010-2111	O-ring, valve seat, Viton .....	1
	C63-010-2118	O-ring, valve seat, PTFE .....	1
16	C63-023-1200	Plunger Assembly, 316L SST .....	1
	C63-023-1203	Plunger Assembly, 17-4 PH SST .....	1
-	C63-022-2400	Name Plate (specify model and serial number) .....	1
-	A01-115-3400	Regulator Grease.....	1



# C64-A/D Parts



Ref. No.	Part Number	Description	Quantity/ Pump
1	C64-004-1013	Adjusting Bolt, low pressure .....	1
	C64-004-1014	Adjusting Bolt, high pressure .....	1
2	C24-005-1000	Lock Nut .....	1
3	C64-003-1001	Valve Top.....	1
4	G35-081-2010	M12 Socket Cap Screw.....	4
5	G35-084-2010	Lockwasher, hi-collar .....	4
7	C64-018-3101	Spring disks, low pressure, .....	15
		40 x 18.3 x 2 mm, .....	
		Spring disks, high pressure, .....	19
		1000-2500 psi; 70-172 bar .....	
8	C64-029-1000	Plunger Guide, top .....	1
9	C64-024-1210	Sleeve, guide .....	1
12	D25-074-2111	O-ring, Viton .....	1
	D25-074-2118	O-ring, PTFE.....	
13	C64-002-2000	Body, valve, brass, NPT .....	1
	C64-002-2002	Body, valve, 316 SST, NPT .....	
	C64-002-2006	Body, valve, brass, BSPT .....	
	C64-002-2004	Body, valve, 316 SST, BSPT.....	
14	C64-006-1000	Seat, valve, 316 SST.....	1
	C64-006-1001	Seat, valve, 17-4 PH SST .....	
15	C63-010-2111	O-ring, valve seat, Viton .....	1
	C63-010-2118	O-ring, valve seat, PTFE .....	
16	C64-023-1200	Plunger Assembly, 316L SST .....	1
	C64-023-1203	Plunger Assembly, 17-4 PH SST .....	
-	C63-022-2400	Name Plate (specify model and serial number) .....	1
-	A01-115-3400	Regulator Grease.....	1



# C62/63/64-A/D Troubleshooting/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 fluid is coming from either weep hole (see parts drawing), then fluid is going around or through the diaphragms. The regulator should be disassembled and inspected.

If the gauge pressure has dropped significantly from the set pressure (with everything else in the system the same), the regulator should be disassembled and inspected.

## Disassembly and Internal Inspection

1. Shut off pump.
2. **Relieve system pressure until gauge reads zero.**
3. Turn adjusting bolt (1) counterclockwise until there is no force on spring to allow pressurized fluid out of system.  
**Note: When disassembling, use a marker pen to index orientation of guide sleeve (9), plunger assembly (16), and valve seat (14) if they are to be reused.**  
**Note: When removing the plunger assembly (16) from the valve body (13), the valve body O-ring (12) may adhere to the bottom diaphragm.**
4. If O-ring (12) is PTFE type, replace it with new one prior to reassembly.
5. Remove plunger assembly (16) from guide sleeve (9), and inspect for excessive wear on plunger guide O.D. (18), for grease in its grease grooves, and for wear on I.D. of guide sleeve (9). If surfaces are rough or uneven, replace parts.

6. Inspect diaphragms for splits, cracks, abrasion or plastic deformation that would cause diaphragms to flex unevenly or cause diaphragms to allow pumped fluid to vent to atmosphere or back of regulator. Replace as needed.

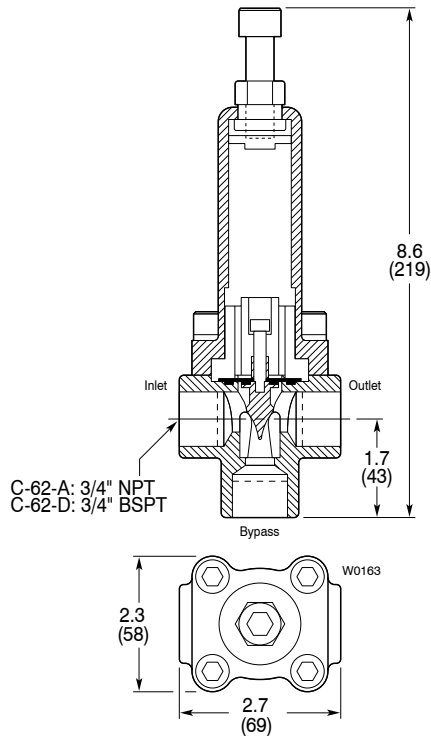
**Note: If valve seat (14) needs to be removed for inspection or replacement, it is easier to detach the plumbing from the return (bypass) line, then to push through the discharge port on the valve seat from below.**

7. If contact area on valve seat (14) or plunger assembly (16) has uneven surfaces from physical contact or from passing fluid, replace both.

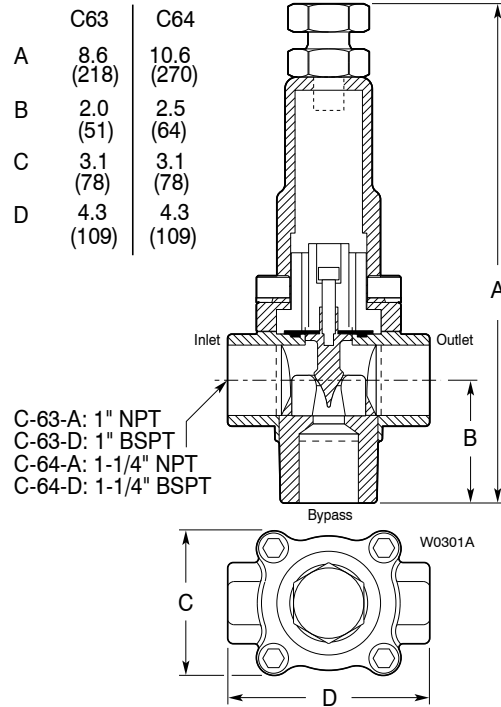
## Reassembly

1. Apply Wanner Regulator Grease #A01-115-3400 to grease grooves on O.D. of plunger guide (18).
2. Slide bolt-head end of plunger-and-guide assembly (16,18), into back (small) end of guide sleeve (9) and almost up to diaphragms, then retract it.
3. Remove all excess grease from under diaphragms and from back end of guide sleeve.
4. Align marker pen lines made during disassembly and slide plunger-and-guide assembly (16,18), into front (large) end of guide sleeve,
5. To reinstall valve seat (14) into valve body (13).
  - a. Check and clean pocket in valve body of any foreign material that could prevent normal positioning of valve seat.
  - b. Apply grease to valve seat O-ring (15).
  - c. Align marks on valve seat and valve body. Slide gently into body's counterbore by applying uniform firm force to top of valve seat.
6. Apply regulator grease to bottom threads of adjusting bolt (1).
7. Make certain that bottom of guide sleeve and mating pilot counterbore in body are clean and free of debris.
8. Align combination of plunger-and-guide assembly (16,18) contained in guide sleeve (9) with valve body.
9. Install top plunger guide (8), spring (7), spring top retainer (6), and valve top (3).
10. Start four M10 cap screws (4,5), and torque alternately in an "X" pattern to 35 ft-lbs (48 N-m).  
**Note: When done, there should be 0.005-0.010 in (0.13-0.25 mm) clearance between the valve top and the valve body.**

# C62/63/64 Dimensions



**C62 Dimensions**



**C63/C64 Dimensions**

## Limited Warranty

Wanner Engineering, Inc. extends to the original purchaser of equipment manufactured 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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