



FLINT & WALLING

Zoeller Family of Water Solutions™

CITY PRESSURE BOOSTER PUMP INSTRUCTION MANUAL

MODEL #VP05, VP10



For loose, missing or damaged parts, or if the unit does not seem to be operating properly, please call before returning unit to the place of purchase.



Phone No.: 1-800-742-5044

Service Hours:

Monday thru Friday - 7:30 am to 5:00 pm EST

GENERAL SAFETY INFORMATION

Please read and understand this manual before attempting to assemble, operate or install this product. For questions, please call customer service at 1-800-742-5044 (7:30am - 5:00pm EST Mon. - Fri.)

⚠ This is a **SAFETY ALERT SYMBOL**. When you see this symbol on the pump or in the manual, look for one of the following signal words and be alert to the potential for personal injury or property damage.

⚠ DANGER Warns of hazards that **WILL** cause serious personal injury, death or major property damage if ignored.

⚠ WARNING Warns of hazards that **CAN** cause serious personal injury or death, if ignored.

⚠ CAUTION Warns of hazards that **MAY** cause minor personal injury, product or property damage if ignored.

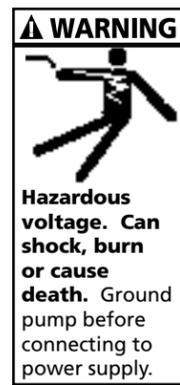
IMPORTANT: Indicates factors concerned with operation, installation, assembly or maintenance which could result in damage to the machine or equipment if ignored.

NOTE: Indicates special instructions which are important but are not related to hazards.

⚠ CAUTION

Customer Alert on Potential Water Damage: As with any product subject to a continuous supply of incoming water, a water alarm to monitor the pump area is strongly recommended to alert the customer to the potential for water damage which may result from water line failure, product damage or incorrect installation.

PUMP SAFETY INFORMATION



⚠ WARNING SHOCK HAZARD

1. Meet United States National Electrical Code and local codes for all wiring.
2. Do not handle a pump or pump motor with wet hands or when standing on a wet or damp surface or in water.
3. Follow wiring instructions in this manual when connecting to power lines.
4. Always disconnect power source before performing any work on or near the motor or its connected load.
5. Risk of electric shock - This pump has not been investigated for use in swimming pool areas or marine areas.
6. Protect electrical cord. Replace or repair damaged or worn cords immediately.
7. To reduce the risk of electric shock, connect only to a properly grounded, grounding-type receptacle.

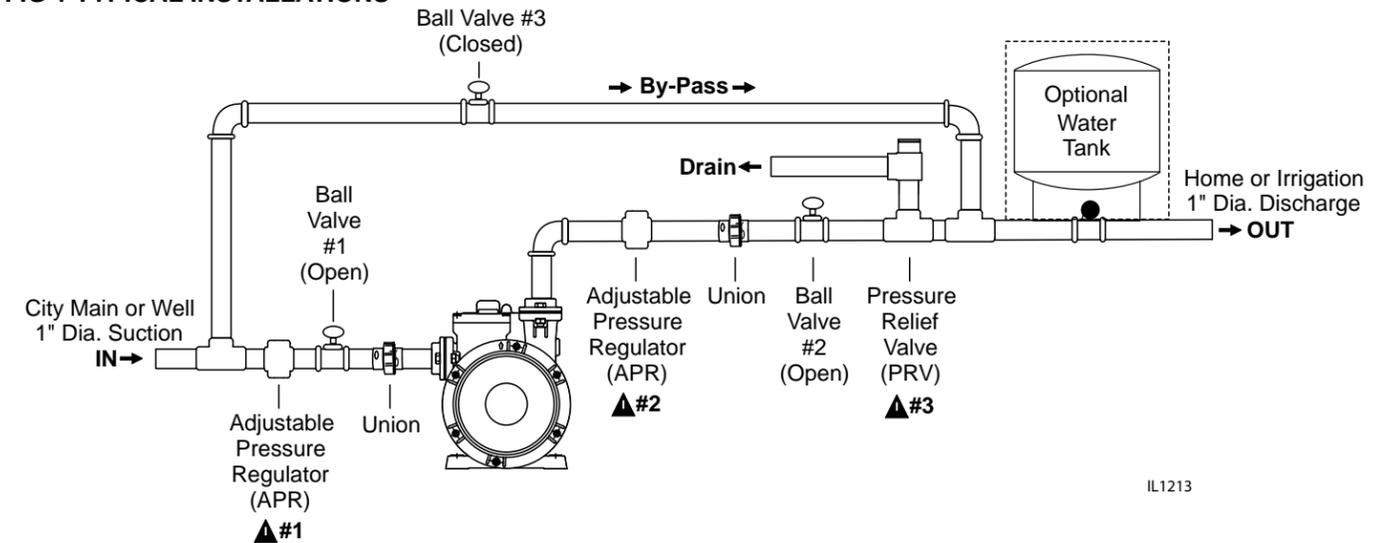
⚠ WARNING Do not use to pump flammable or explosive fluids such as gasoline, fuel oil, kerosene, etc. Do not use in flammable and/or explosive environments.

⚠ WARNING Hazardous pressure! Install pressure relief valve in discharge pipe. Release all pressure on system before working on any component.

⚠ CAUTION GENERAL SAFETY

1. This pump has been evaluated to work with water only.
2. Wear safety glasses when working with pumps.
3. Periodically inspect pump and system components.
4. Do not insert finger or any object into pump or motor openings.
5. Secure the discharge line before starting the pump. An unsecured discharge line will whip, possibly causing personal injury and/or property damage or puncture.
6. Do not touch an operating motor or engine. They are designed to operate at high temperatures.

FIG 1 TYPICAL INSTALLATIONS



IL1213

1/2 HP PERFORMANCE

See charts below for expected system pressure at various incoming line pressure / flow rates.

Inlet PSI	VP05 System Pressure (PSI) at Flow Rates (GPM)						
	3	6	9	12	15	18	21
10	44	39	32	25	17		
20	54	49	42	35	27		
30*	64	59	52	45	37		

⚠ CAUTION Do not exceed 30 input PSI for P/N VP05

*Note: Increase tank PSI (see FIG 3) if inlet PSI will exceed preset tank setting 26 psi.

1 HP PERFORMANCE

Inlet PSI	VP10 System Pressure (PSI) at Flow Rates (GPM)						
	3	6	9	12	15	18	21
10	66	61	54	46	37	29	18
20	76	71	64	56	47	39	28
30	86	81	74	66	57	49	38
40**	96	91	84	76	67	59	48
50**	106	101	94	86	77	69	58

⚠ CAUTION Do not exceed 50 input PSI for P/N VP10

**Note: Increase Tank PSI (see FIG 3) if inlet PSI will exceed preset tank setting 36 psi.

GENERAL PUMP INSTALLATION / SETUP (FIG 1)

City booster pump installation is shown per FIG 1. During pump use, insure ball valves #1 and #2 are open, and ball valve #3 is closed.

⚠ WARNING #1 An Adjustable Pressure Regulator (APR#1) is required on the suction side of the pump (see fig 1) if the incoming water pressure can exceed the maximum input pressure.

⚠ WARNING #2 An Adjustable Pressure Regulator (APR#2) is required on the Discharge (See fig 1) to insure maximum water pressure does not exceed local plumbing codes.

⚠ WARNING #3 A Pressure Relief Valve (PRV) connected to a drain is required (see fig 1) to safe guard plumbing from exceeding max pressures if the Pressure Regulators fail. Typically the PRV would be set 5 psi higher than the APR#2.

NOTE: Optional external water tank can be used to decrease the on/off cycle rate of the pump system, which can extend the life of the pump. (Typical tank 3 gallon draw down.) Set tank PSI equal to pump tank PSI.

⚠ CAUTION The entire system must be air and water tight to maintain prime. Use thread tape on all connections to insure no leaks. Hand tighten all threads and then add additional half turn with wrench.

NAMEPLATE DATA

Model	VP05	VP10
HP	1/2	1
Volts	115	115
HZ/Ph	60/1	60/1
Amp	6.0	11
Amb	40C	40C
Class	B	B
Rating	Cont	Cont

LOCATION

CAUTION

Indoor/outdoor area – insure draining thru pressure relief valve is available in order to avoid damage in case of leakage.

Outdoor area – unit should be covered by a weather proof housing, insure adequate ventilation.

FREEZING (OR REMOVING PUMP FOR MAINTENANCE)

CAUTION

The pump and all piping must be protected from freezing. If freezing weather is forecast, and the unit will be exposed to temperatures less than 32°F (0°C), remove the pump by closing off ball valves #1 and #2, (see FIG. 1) and removing the pump, using the union connections. Store pump in a heated area. Open ball valve #3 to allow city water to pass forward if desired. Insure the piping is adequately protected from the cold environment.

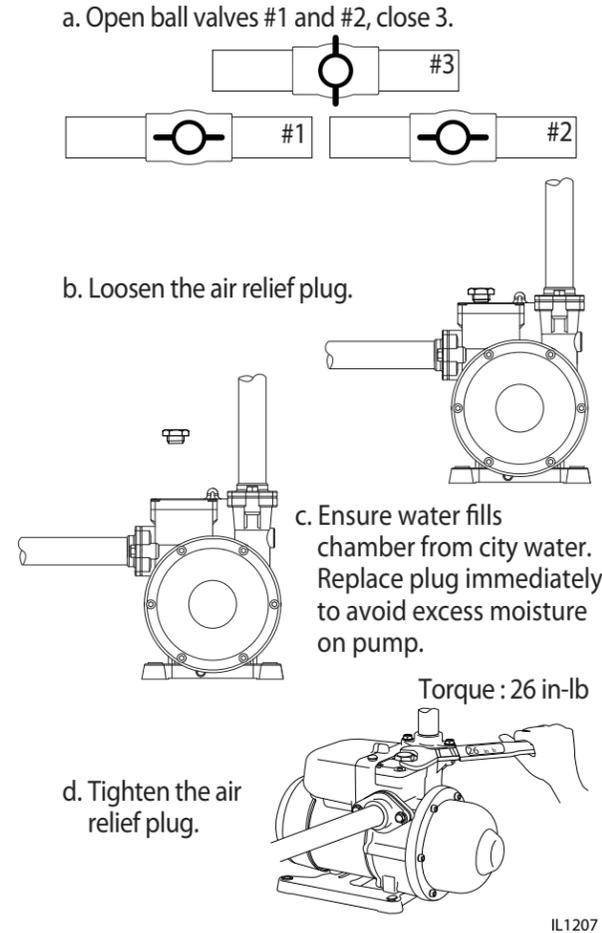
OPERATING CONDITIONS

Ambient temperature range 32°F (0°C) to 104°F (40°C).

PRIMING

After installation (with the pump OFF), open ball valves #1 and #2, and slowly unthread the air relief plug (FIG 2). Allow inlet water pressure to fill the pump cavity and remove in-line air pockets. After the pump cavity fills with water, retighten the air relief plug.

FIG 2 PRIMING ILLUSTRATION

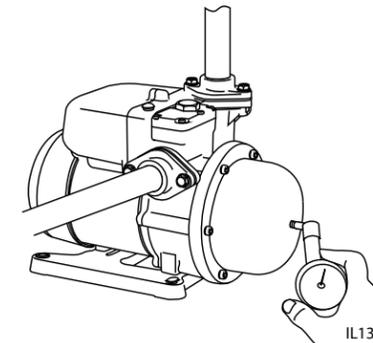


CAUTION

If unit is shut down for extended period of time or air enters into the system, it may be necessary to repeat the above priming instructions to insure the internal pump cavity is running with water to avoid dry running damage to the internal seals.

Checking and Setting Tank PSI – Factory tank PSI settings are 26 PSI (1/2 hp) and 36 PSI (1 hp). If the inlet PSI is HIGHER than the factory settings, increase the tank PSI to be approximately 5 PSI higher than incoming pressure. To check the tank air pressure, turn off power, open a tap on the discharge line to release pressure from the pump, unscrew the black plastic cover and apply a pressure gauge to the valve as shown in FIG 3. Add tank pressure as required, due to the tanks small volume, minimal air volume is needed to increase tank pressure. Reinstall black plastic cover.

FIG 3 SET TANK PRESSURE



NOTE: If using optional water tank (FIG. 1), set both tanks to the same pressures.

GENERAL OPERATION GUIDELINES

- **What Causes The Unit To Start?** – The pump will turn ON when the flow rate is greater than 0.7 GPM or when the pressure output is less than the pump pressure activation point (approximately 25 psi - 1/2hp, 35 psi - 1hp).
- **Dry Run Protection** - After the unit recognizes a continual low flow of water, the unit will shut down to protect itself from running dry. Hourly, it will turn on to sample the water flow requirements, and return to shut down if running dry. The home owner can fix the run dry issue and return the pump to normal operation by unplugging the pump for 5 seconds.
- **Dead Head Protection** - If there is no water demand (discharge is shut off), the unit will shut down to protect the pump from damage. Once water flow is restarted, the pump will re-start the power automatically.
- **Rapid Cycle Protection** – If the unit cycles repeatedly on/off, the unit will shut down to protect the pump life. The optional water tank not maintaining pressure could be a potential cause. Hourly, it will turn on to sample the water flow requirements, and return to shut down if the problem persists. The home owner can fix the concern and return the pump to normal operation by unplugging the pump for 5 seconds.

TROUBLESHOOTING



Before ANY work with the pump, SHUT OFF the electrical supply and ball valves #1 and #2 to prevent electrical shock and water damage.

Problem	Cause	Correction
Pump does not start or shuts down,	No power supply.	Connect the electricity supply.
	Incorrect voltage.	Pump is 115 Volt only. It will not start with 230V supply.
	Incorrectly plumbed.	Confirm FIG 1 installation is correct. Confirm ball valves #1 and #2 are open in suction and discharge. Confirm ball valve #3 is closed on bypass.
	Blocked inlet	Check if pump suction inlet screen is blocked. See FIG 5.
	Insufficient water supply	Insure water source is providing sufficient water.
Pump starts when no water is consumed.	Pipe leaking.	Insure all threads have 3 wraps of Teflon tape + hand tight + 1/2 turn with wrench.
	Tank pressure is low.	See FIG 3 to check and add air pressure to the tank.
	Air in the system.	Insure all threads have 3 wraps of teflon tape + hand tight + 1/2 turn with wrench. Re-prime unit.
Pump does not shut down when water is not consumed.	Blocked check valve.	See FIG 4. Confirm check valve is free of debris and functions freely.

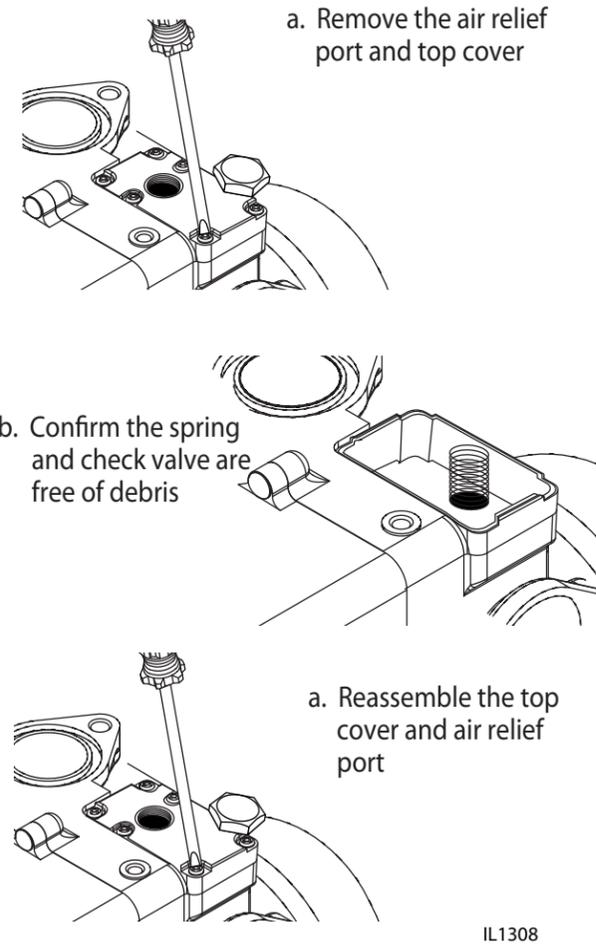
MAINTENANCE REQUIREMENTS

- Pressure Tank Charge – should be checked every 3 months to confirm tank air pressure. See FIG 3 for description to check air pressure.

Note – tank pressure should be set approximately 5 psi higher than the expected incoming pressure.

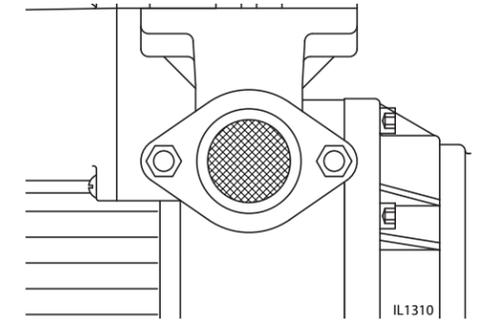
- Internal Check Valve – if Teflon tape or debris enters into the pump cavity, the operation of the internal check valve can be restricted. This may create an erratic or poor performance with the pump. To clean the check valve see FIG 4.

FIG 4 – INTERNAL CHECK VALVE

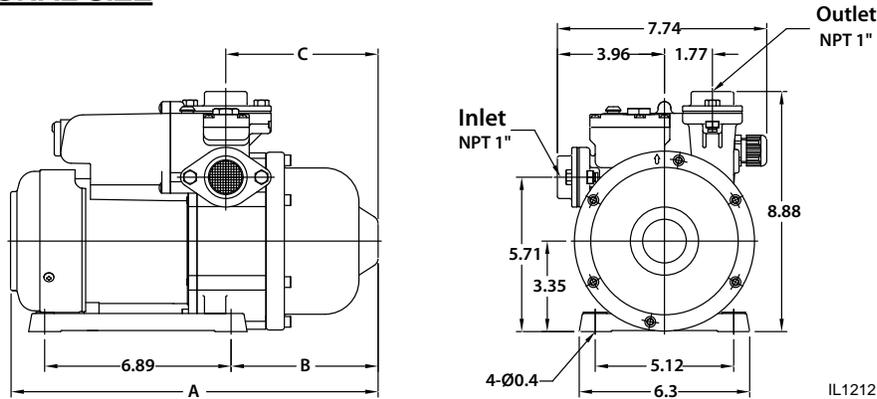


- Pump Suction Inlet Screen – if internal debris blocks or restricts the inlet suction screen (FIG 5), manually clean with hands.

FIG 5 – INLET SCREEN



OUTLINE / DIMENSIONAL SIZE



DIMENSIONS CHART C

Model	A (in.)	B (in.)	C (in.)
VP05	13.56	5.43	5.63
VP10	16.42	6.46	6.65

LIMITED WARRANTY

This product is warranted for one year from the date of purchase. Subject to the conditions hereinafter set forth, the manufacturer will repair or replace to the original consumer, any portion of the product which proves defective due to defective materials or workmanship. To obtain warranty service, contact the dealer from whom the product was purchased. The manufacturer retains the sole right and option to determine whether to repair or replace defective equipment, parts or components. Damage due to conditions beyond the control of the manufacturer is not covered by this warranty.

THIS WARRANTY WILL NOT APPLY: (a) To defects or malfunctions resulting from failure to properly install, operate or maintain the unit in accordance with printed instructions provided; (b) to failures resulting from abuse, accident or negligence or use of inappropriate chemicals or additives in the water; (c) to normal maintenance services and the parts used in connection with such service; (d) to units which are not installed in accordance with normal applicable local codes, ordinances and good trade practices; and (e) the unit is used for purposes other than for what it was designed and manufactured.

RETURN OF WARRANTED COMPONENTS: Any item to be repaired or replaced under this warranty must be returned to the manufacturer at Kendallville, Indiana or such other place as the manufacturer may designate, freight prepaid.

THE WARRANTY PROVIDED HEREIN IS IN LIEU OF ALL OTHER EXPRESS WARRANTIES, AND MAY NOT BE EXTENDED OR MODIFIED BY ANYONE. ANY IMPLIED WARRANTIES SHALL BE LIMITED TO THE PERIOD OF THE LIMITED WARRANTY AND THEREAFTER ALL SUCH IMPLIED WARRANTIES ARE DISCLAIMED AND EXCLUDED. THE MANUFACTURER SHALL NOT, UNDER ANY CIRCUMSTANCES, BE LIABLE FOR INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES, SUCH AS, BUT NOT LIMITED TO DAMAGE TO, OR LOSS OF, OTHER PROPERTY OR EQUIPMENT, LOSS OF PROFITS, INCONVENIENCE, OR OTHER INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY TYPE OR NATURE. THE LIABILITY OF THE MANUFACTURER SHALL NOT EXCEED THE PRICE OF THE PRODUCT UPON WHICH SUCH LIABILITY IS BASED.

This warranty gives you specific legal rights, and you may have other rights which vary from state to state. Some states do not allow limitations on duration of implied warranties or exclusion of incidental or consequential damages, so the above limitations may not apply to you.

WARRANTY VALID IN CANADA AND MEXICO.