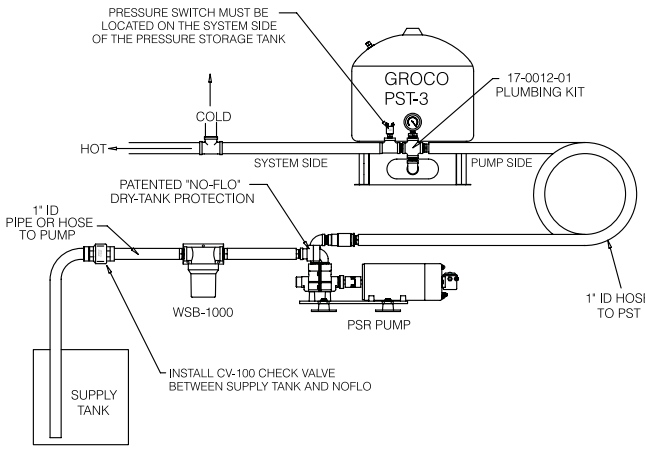
400-0004 Series: Paragon Senior Water Pressure Systems

Installation, Operation, and Maintenance

WARNING: On/off operation for 400-series pumps is controlled by adjustable pressure switch #69-A. DO NOT use 400-series pumps aboard gasoline-powered vessels or where combustible fumes may be present. Due to the open design of #69-A, 400-series pumps are not UL listed or CE recognized.

Use model PSR where UL listing or CE recognition is required.

INSTALLATION: The motor and circuitry are not waterproof. Install the pump in a dry, well ventilated location not more than 10-feet above the water supply. If the pump will have a flooded inlet the pump may be oriented in any position; if the pump must self-prime orientation must be upright.



Mount the pump to a sturdy platform using the four (4) mount feet included. Operation will be quieter if mounted to a solid surface.

PLUMBING: Before making plumbing connections pour water into the pump inlet to aid in initial priming. 400-0004 develops substantial pressure and suction; plumbing lines must be rigid pipe or heavily reinforced hose. The inlet to the pump must be 1″ ID. Install WSB-1000 (1″ NPT ports) pump strainer in the inlet line between the supply tanks and the pump in a location that can be easily serviced.

The discharge line between the pump and the Pressure Storage Tank must be 1″ ID minimum, and must be free of filters, valves or any other device. (See note about filters and purifiers) The plumbing size after the pressure storage tank may be reduced if desired.

Install CV-100 check valve (included) anywhere between supply tank and NOFLO™.

Use a foot or two of hose at the pump inlet and discharge to help isolate vessel plumbing from pump pulsations.

PRESSURE STORAGE TANK: 400-0004 requires the use of a Pressure Storage Tank. Use only GROCO® PST-2, PST-3, PST-4 or PST-5.

Multiple PSTs may be plumbed in parallel if desired. DO NOT use a single PST-1 because it does not have sufficient storage capacity.

IMPORTANT: Before applying power to 400-0004, the air charge in the PST must be checked and adjusted to 28-30 PSIG. There is an air valve on the tank at the opposite end from the plumbing connection. Remove the protective cap and check and set air pressure with no water pressure present; use a standard tire gauge to check the pressure. Excess pressure can be released by depressing the center of the valve. Use a hand pump such a bicycle pump to add air if necessary.

WATER FILTERS AND PURIFIERS: We do not recommend the use of filters as they will seriously restrict the flow and pressure you desire. If you choose to utilize such a filter, it must be installed after the PST. DO NOT install a filter between the supply tank and the pump.

ELECTRICAL: Do not connect the pump to the boat's bonding system.

Proper wire size is essential. Refer to the wire size selection information included with this product. For DC models connect positive (+) to the solenoid terminal with the red tag (remove the tag). Connect ground (-) to the bronze stud directly beneath the solenoid. Protect the pump with a dedicated circuit breaker.

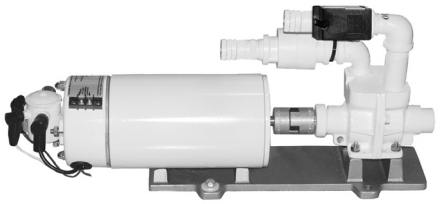
Voltage	Breaker
400-0004-12	50-A
400-0004-24	30-A
400-0004-32	20-A

START-UP: In preparation for start-up, check all plumbing and electrical connections. Open all faucets and shower heads half-way. Apply power at the circuit breaker; the pump will run and should self-prime within 30 seconds. If the pump does not prime within 30-seconds the dry-tank protection system will turn the pump off. Interrupt power at the breaker panel to reset the pump control.

As water flows smoothly from each shower head and faucet, shut it off. When all outlets have been shut off the pump will pressurize the system and shut off. Note that it will take several minutes to fill the PST(s) and the water heater(s).

DRY TANK SHUT-DOWN: These are the dry-tank conditions under which your Paragon Pump will turn off.

* NOFLO™ has sensed the absence of water at the pump inlet for 30-seconds
* The pump has run continuously for 10-minutes



Paragon Pumps are equipped with a patent-pending dry tank protection system called NOFLO™, which senses the presence of water at the pump inlet. Some purified water such as reverse-osmosis water or reclaimed water may not be sensed by NOFLO™. If this happens the pump may turn off even though water is present.

A jumper wire is installed across the NOFLO™ terminals. The jumper disables NOFLO™ and permits the pump to operate with purified waters. Dry running protection is still provided by a built-in 10-minute timer.

To enable NOFLO™ remove the jumper wire. During normal operation NOFLO™ will sense the absence of water and turn the pump off after 30-seconds of continuous dry running. If your Paragon pump ever shuts off when you know that water is present and the pump has not exceeded 10-minutes of continuous running, reconnect the jumper wire to disable NOFLO™.

Interrupt power at the breaker panel to reset the pump control.

WINTERIZATION: Freezing will damage your pump and the connected plumbing. To winterize pump the supply tank(s) dry. Shut off power when the faucets begin to pass air. Disconnect inlet and outlet hoses to drain the connecting plumbing and remove WSB-1000 bowl. Pour an ounce or two of potable alcohol (your favorite scotch will do fine) into the pump. Reconnect the hoses to prevent evaporation. DO NOT use automotive antifreeze to winterize as it may be poisonous.

MAINTENANCE: Check the WSB-1000 inlet strainer at least monthly. Check the air charge in the PST at least monthly. This is done with no system water pressure present. With a tire gauge check the air charge. It should be the same as the cut-on pressure of the pump (28-30 psi). Add or remove air as needed before pressurizing the system.

DO NOT lubricate any part of the pump.

SERVICE NOTE:

* Pumps made after S/N 880101 use ″J″ series motors, and replacement motors are ″J″ series. If you are replacing a 4″ diameter ″G″ series motor P-7004-D base is required.
* Pumps made after S/N 030101-01 include NOFLO™ dry-tank protection. Older pumps may be upgraded to this configuration with the addition of the proper Control Assembly. Refer to the control chart on on the reverse side.

CONTROL#	ON/OFF	DRY-TANK PROTECTION	COMMENT
P-6001-A	Pressure Switch	Thermal Switch	NLA - see individual parts
P-6001-B	Pressure Switch	Thermal Switch	Between S/N 880101-020630
P-6001-E	Pressure Switch	NOFLO™ + Timer	After S/N 020101

	Item	Part Number	Description	Qty
	1-14	P-9000	Pump Assembly	1
	1,10	P-9001/9002 Set	Pump Castings set	1
	2	P-9009 Set	Carbon Bearings (2)	1
●	3	P-9014 Set	Impellers (2)	1
	4,14	P-9003/4 Assy	Shaft and Eccentrics Set	1
	5	P-9006	Separator	1
● ●	6	P-9005	Seals (2) (before S/N 850101)	1
● ●		2-010	O-Ring (2) (after S/N 850101)	1
● ●	7	2-041	O-Ring (before S/N 860101)	1
● ●		2-042	O-Ring (after S/N 860101)	1
	8	P-9007	Impeller Guide	1
	9	1420X34HS	Bolts	2
● ●	11	P-9015	Seal	1
	12	P-9020	End Cap	1
	13	1032x316SS	Set Screw	2
	15	P-7005	Coupling	1
● ●	16	P-7006	Coupling Spyder	1
	17	(Voltage)-J	Motor	1
	18	P-7004-D	Base	1
	19	1420X214HS	Bolts	4
	20	P-9022-B	Mount Foot Set (4)	1
●	NS	WSA-1001	Filter Basket	1
●	NS	WSA-1002	Strainer Gasket	
	25-31	See Control Chart	Control Assembly	1
	25	P-6003 (Voltage)	Solenoid	1
	26	P-6012	Thermal Switch	1
	NS	NOFLO 7500	Dry Tank Protection (see control chart)	1
	27	See Control Chart	Control PCB	1
	31	J End Cap	Motor End Cap	1
	32	P-6010	Solenoid Boot, large	2
	33	P-6011	Solenoid Boot, small	2
	NS	P-9021-A	Check valve	1
	NS	69-A	Pressure Switch	
	NS	P-8005-A	Pressure Gauge	1
		P-8005-B	Pressure Gauge (oil filled)	1
●		PSR REGULAR	SERVICE KIT	
●		PSR MASTER	SERVICE KIT