

Parallelagon™ Series: Parallel PSR Pumps Installation, Operation, and Maintenance

THE CONCEPT: Parallelagon™ provides automatic on-line back-up by having two pumps, one AC and one DC, plumbed and powered in parallel. Regardless of the power source that you are using, the appropriate pump is automatically selected. Plus, in the event of a problem with one pump, there will always be a back-up ready for operation.

AC and DC power are supplied to Parallelagon™, and both breakers are normally left on. The primary pump is the AC pump, and it will provide system pressure whenever AC power is available. When AC power is not available, the DC pump automatically takes over. The DC pump will not operate when AC power is present.

INSTALLATION: The motors and circuitry are not waterproof. Install in a dry well ventilated location not more than 10-feet above the water supply. Install upright if the pumps must self-prime. Orientation may be vertical if the inlet to the pumps is flooded (see drawing below).

Four (4) mount feet are provided. Mount Parallelagon™ to a sturdy surface for most quiet operation.

PLUMBING: Fasten 17-0012-01 plumbing kit to the pressure storage tank (PST) with the pressure switch on the system side as shown. To aid in initial priming, pour water into the pumps inlet before connecting the hose from the supply tank. Plumbing to the pumps from the water supply, and from the pumps to the PST must be 1" ID heavily reinforced hose, free of valves and filters. Plumbing after the PST may be reduced.

PRESSURE STORAGE TANK: Parallelagon™ requires the use of a PST. Select the largest size (PST-2, PST-3, PST-4 or PST-5) that will fit into the available space. Multiple small PSTs may be plumbed in parallel. Do not use a single PST-1 as it does not have sufficient storage capacity.

IMPORTANT: Before applying power, check and adjust the air charge in the PST. With **NO WATER PRESSURE** in the system the PST air charge should match the pumps cut-on pressure

(28-30 PSIG). Remove the protective cap to check and adjust the air charge. Use a standard tire gauge to check and a bicycle pump to add air if necessary.

PRESSURE SWITCH: A 10-foot wire harness is provided to connect the pressure switch (mounted on 17-0012-01 plumbing assembly at the PST) to the terminal block marked "pressure switch" on the control box (mounted between the pump motors).

WATER FILTERS AND PURIFIERS: We do not recommend the use of filters as they will restrict the flow and pressure you desire. If you choose to use a filter or purifier, it must be located after the PST. **DO NOT** install a filter between the pumps and the PST.

DCELECTRIC: Proper wire size is essential (Refer to the Wire Size Selection Chart).

Voltage	Breaker
PSR 12V	50-A
PSR 24V	30-A
PSR 32V	20-A

Provide a dedicated DC breaker. Connect DC (+) and DC (-) to the 5/16" bronze studs on the control box. Proper polarity must be observed.

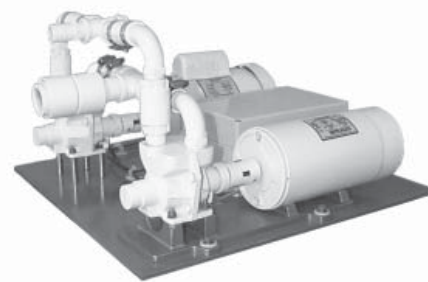
ACELECTRIC:

Proper wire size is essential.

Provide a dedicated AC breaker. Use 12-gauge wire for runs up to 100-feet from the power source. Remove the control box cover and make AC power connections through the bulkhead connector and to the terminal block marked "L, N, and G".

Voltage	Breaker
PSR 115VAC	10-A
PSR 230VAC	5-A
PSR 230-50VAC	5-A

START-UP: Open all faucets and shower-heads half-way. Apply power at the DC breaker only. The DC pump should self-prime and begin to pressurize the system. As water flows smoothly from each faucet or shower-head, shut it off. When the system is pressurized to 50 PSIG the pump will shut off. Note that it will take several minutes to fill the water heater and the PST on initial start-up.



Turn on the AC breaker, and open a faucet to release system pressure. When system pressure drops to approximately 30 PSIG, the AC pump will operate, and will turn off when system pressure reaches 50 PSIG. Note that the DC pump will not operate unless there is no AC power present.

DRY-TANK PROTECTION: These are the conditions under which Parallelagon™ will shut down:

- * NOFLO™ has sensed the absence of water at the pump inlet for 30-seconds
- * Either pump has run continuously (without cycling) for 10-minutes

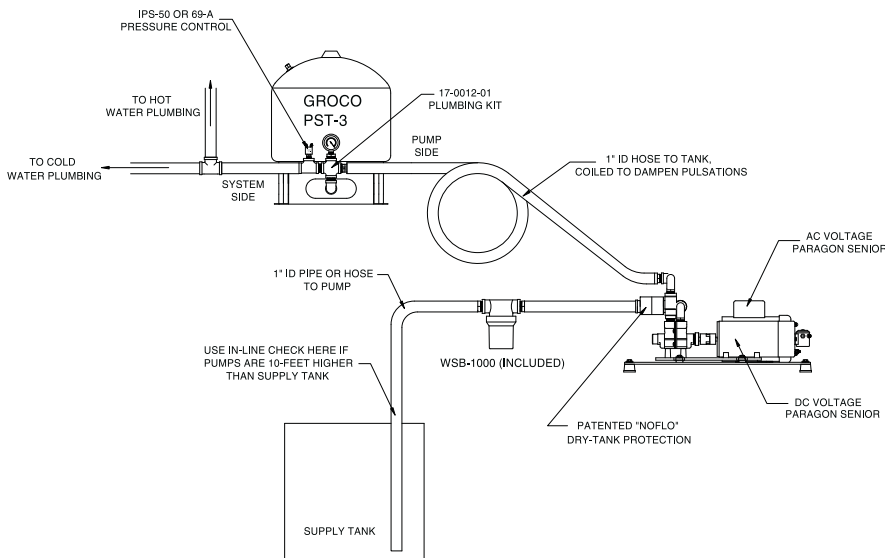
NOFLO™ senses the presence of water at the pumps inlet. Some highly purified water or reclaimed water may not be sensed by NOFLO™. In this instance the system would shut down even if there is water present. NOFLO™ has a jumper across its terminals to permit the system to operate with purified water. Dry running protection is still provided by the 10-minute timer.

After initial start-up has been completed, enable and test NOFLO™ by disconnecting the jumper wire. Release pressure to cycle either pump, and allow the pump to run for more than 30-seconds. If the pump shuts off and you are certain that water is present, and you have not exceeded the continuous 10-minute timer limit, this means the water is too pure to be sensed by NOFLO™. In this case, re-connect the jumper to disable NOFLO™.

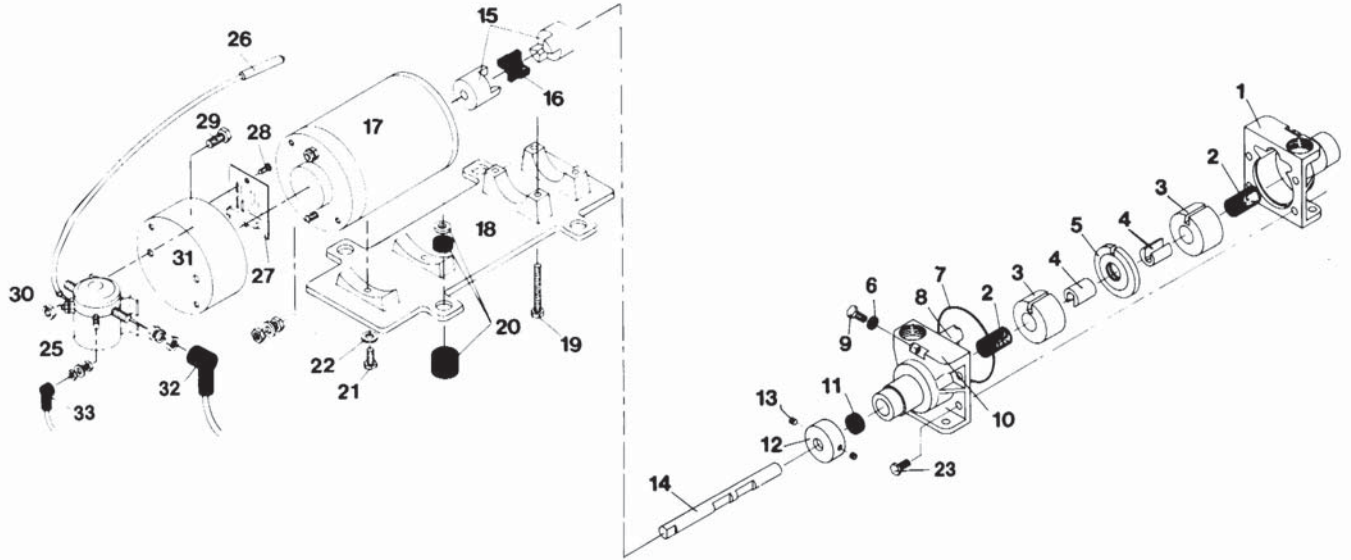
Interrupt power at the breaker panels to reset the pump control.

WINTERIZATION: Freezing will damage the pumps and the connected plumbing. To winterize, first allow the system to pump the supply tanks dry. Shut off power when the faucets begin to pass air. Disconnect inlet and outlet hoses to drain the connecting plumbing, and remove the WSB-1000 strainer bowl. Pour a small amount of potable alcohol into the pumps inlet. **DO NOT** use automotive antifreeze as it may be poisonous.

MAINTENANCE: Clean WSB-1000 filter basket at least monthly. Check the air charge in the PST at least monthly. This is done with no system water pressure present. **DO NOT** lubricate any part of the pumps.



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	Item	Part Number	Description	Qty
	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	2
	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, DC	1
		115VAC-J	Motor, AC	
	18	P-7004-D	Base	1
	19	1420X2HS	Bolts	4
	20	P-9022-B	Mount Foot Set (4)	1
•	NS	WSA-1001	Filter Basket	1
•	NS	WSA-1002	Strainer Gasket	1
	NS	NOFLO 1000	Dry Tank Protection (see control chart)	1
	31	J End Cap	Motor End Cap	1
	NS	P-9021-A	Check valve	1
	NS	IPS-50	Pressure Switch, UL & CE	1
		69-A	Pressure Switch, Non-UL	1
	NS	P-8005-B	Pressure Gauge (oil filled)	1
	NS	12-0013-11	Control, 12V/115V	1
		12-0013-21	Control, 24V/115V	
		12-0013-31	Control, 32V/115V	
	NS	P-7004-G	Base	1
•		PSR REGULAR	SERVICE KIT	
•		PSR MASTER	SERVICE KIT	