**Booster Start-up Guide**

**INSTALLATION AND OPERATING INSTRUCTIONS**

**Packaged Pressure Booster Systems VFD operated:**

**Storage** - Make sure that all components are kept as clean as possible. Do not remove the crating or plastic wrapping until the unit is ready for installation.

**Uncrating** - After removal of the unit from the crate, check to see that the equipment is in good order and that all components are received as called for on the packing slip. Any shortages or damage should be reported immediately.

**Location** - Locate the unit where it is easily accessible only electrical connection required at the panel. For inspection and servicing. Provide adequate room for pump withdrawal and also for access to the interior of the control panel.

**Foundation** - The foundation should be sufficiently substantial to absorb any vibration and to form a permanent rigid support for the base plate. A good concrete foundation should be approximately 2-1/2 times the weight of the packaged unit.

**Foundation Bolts** - Foundation bolts of the proper size should be arranged as shown in the sketch, with a pipe sleeve embedded in the concrete to permit adjustment of the bolts after the concrete has been poured. Use sleeves with a diameter 2-1/2 times the diameter of bolts.

**Leveling** - When the unit has been placed on its foundation, insert metal wedges approximately 1" thick on either side of the foundation bolts under the base plate. Adjust the wedges until the suction and discharge headers are truly horizontal. Check this by means of a spirit level on the suction and discharge flanges. When leveling is complete, the foundation bolts should be tightened evenly and firmly. Do not over tighten the bolts at this stage.

**Piping** - Both the suction and discharge pipes should be independently supported so that no strain is imposed on the packaged unit when the pipes are connected. All connecting pipe work should be accurately located-do not attempt to force the suction and discharge pipes into position.

**Incoming Supply** - The incoming power supply should be brought into VFD’s to the main terminals. Note that this is the only electrical connection required.

**Initial Run** - Open the main supply valve and also the isolating valves on the suction and discharge sides of the packaged unit. Turn all the pump selector switches on VFD’s to the "Off" position and close the main disconnect switch. Switch pump No. 1 to the "On" or "Hand" position for a brief period and check the rotation of the motor. This should correspond to the directional arrow i.e. clockwise when looking down on top of the motor.

If the motor is running the wrong way, interchange two of the connections at the main supply terminals in the control panel. This will ensure proper rotation of the other pumps since all motors are phased for the same rotation on test before the unit is shipped. After correct rotation has been established, switch pump No. 1 to the "On" or "hand" position and run the pump for a few minutes to check for noise, vibration, etc., and any leaks in the pipework. Repeat this procedure for the other pump(s) in the package.

**Adjustments** – Should be performed as per the manufacturer’s VFD I and O manuals.

**Automatic Operation** – To set the unit for automatic operation, turn all the isolating valves to the fully open position, close the main disconnect and switch all pumps to the "Auto" position.

**Tank precharge pressure (if applicable)** – If a tank I use with the booster it should precharged 5-10 Psig above city pressure.

The following is a step-by-step guide to starting up and commissioning Flo Fab Booster systems. One check sheet is to be completed per system! You must follow and fill out all fields below to ensure that all aspects of the booster is checked and set up for proper operation. Once complete, this sheet requires that end-user / general contractor sign off on the work rendered as final approval that the pump is functioning as intended.

NO CHECK SHEET + STARTUP DATA SHEET = INCOMPLETE STARTUP! UNLESS STATED OTHERWISE ALL FIELDS ARE MANDATORY!

Project Name: Site Contact Name:

Building Address: Site Contact Tel. #:

Contractor Name: Your Company:

Your Name: Pump Model:

Booster Serial #: Pump Serial #(s): Sales Order #:

NOTES: • GC = General Contractor • BAS = Building Automation System

**Pre-Startup Package:** Yes No N/A

Do you have the Booster Order Annexe?

Do you have a copy of the electrical wiring diagram?

Do you have a copy of the Installation and Operation Manual?

OPTIONAL: Do you have the pump-specific variable speed curve with duty point indicated?

**Pre-Startup Arrangements:** Yes No N/A

Verify with GC that water and power is available and ready to the pump

Verify with GC that pumps can be run without damage to system

Verify with GC that BAS is wired VFD’s and ready to go (IF APPLICABLE)

Verify with GC that BAS contractor will be there on site to meet you (IF APPLICABLE)

**Before Power Up Checklist:**

Done YES or NO / N/A

 Check booster installation for proper mounting as per Installation & Operation Manual instructions

 Check incoming voltage across the lines and record here: L1 \_\_\_\_\_\_\_\_ L2 \_\_\_\_\_\_\_\_ L3 \_\_\_\_\_\_\_\_ Note: Voltage should be no more than +/- 10% of design voltage

 Check if booster set is to be controlled remotely by BAS start / stop contact with BAS contractor: YES: Check if BAS dry contact is wired across terminals inside VFD’s.

 NO: Move on to the next step. Note: See VFD I & O Maunual for open and close positions.

 Open up and bleed pump seal flush line to verify no air is locked inside seal / seal lines. If the pumps are Vertical Multi Stage (PSM) pumps, make sure the vertical column is bled for air by cracking open the bolt located at the top of the stages.

 Check alignment of pump (horizontally mounted pumps only)

 Record the actual suction pressure from the gauge here: Suction \_\_\_\_\_\_\_\_\_\_\_\_\_\_ Psi Verify if suction pressure is within range of design suction pressure on Order Annex.

**Unit is now safe to turn power on. Once on, make sure all VFDs are in the “AUTO” position. To set default settings you need to consult the VFD manufacturer’s I and O manuals.**