ARMSTRONG

FILE NO.:	62.85
DATE:	Mar. 2, 2010
SUPERSEDES:	62.85
DATE:	Mar. 1, 1996

START-UP CHECK LIST
PRESSURE BOOSTER SYSTEM

Prior to going to the jobsite confirm:

⇒ Unit is fully piped
⇒ Water and power are available to unit
⇒ Air compressor available to precharge tank if booster is furnished with a no-flow shutdown drawdown tank

The following tools will be needed:

⇒ adjustable wrench
⇒ medium size common and Philips screwdriver
⇒ open end wrench
⇒ pressure gauge with air chuck (for checking drawdown tank precharge)
⇒ small common jewelers type screwdriver
⇒ combination voltmeter / amprobe
⇒ flashlight

STARTUP DATE:	**ORDER No.:**	**SERIAL No.:**

TOTAL DISCHARGE PRESSURE	**SUCTION PRESSURE**	**BOOST PRESSURE**	**TOTAL GPM**
_____ **PSI**	_____ **PSI**	_____ **PSI**	_____ **GPM**

PHASE _____ **Hz** _____ **VOLTS** _____ **STARTED BY:**

*Applies to units with No - Flow shutdown option

☐	- 1 -	• Open panel door • Compare incoming voltage on top side of the disconnect switch to nameplate on the panel door • Record voltage L 1 _____ L2 _____ L3 _____ WARNING: The three leads on the top side of the disconnect have live power. DO NOT TOUCH
☐	- 2 -	• Verify that power is *off* by checking for voltage on the bottom side of the disconnect switch
☐	- 3 -	• Compare nameplate on the panel door to voltage and HP rating and ensure it matches what was ordered Record panel s/n: _____
☐	- 4 -	• Check the inside of the control panel for damage • Ensure all relays are tight in their sockets and that all wire connections are tight • Ensure circuit breakers are in the "ON" position WARNING: The three leads on the top side of the disconnect have live power. DO NOT TOUCH
☐	- 5 -	• Check the motor overload relay settings • They should be set to the motor full load amps as a minimum and the service factor amps as a maximum
☐	- 6 -	• Check the overload relay, the red colored button should be pushed out • If the red button is pushed in, reset the starter by pushing the white button
☐	- 7 -	• If the unit is equipped with time clock alternation, set the time clock as required (Follow instructions inside panel) • If nothing has been specified alternation at 2:00 AM is suggested as a starting point
☐	- 8 -	• Close panel door
☐	- *9 -	• Check the drawdown tank air charge - The tank must be empty of water when checking the air charge • Tank should be air charged 3 - 5 PSI less than the pump restart pressure at the tank location Example: Booster restart pressure of 60 PSI Tank next to booster at same elevation - Air charge 55 to 57 PSI Tank 50 ft. above booster - Restart pressure at tank = 60 PSI - 50 ft.(21.7 PSI) = 38.3 PSI Air charge 33.3 to 35.3 PSI
☐	- *10 -	• During initial startup it is suggested to leave the water shutoff valve to the drawdown tank closed
☐	- 11 -	• Inspect the booster pumps and piping system for visible damage • Check for loose fitting, crimped tubing, etc.
☐	- 12 -	• Check that all needle valves, gauge cocks and pressure switch shutoff's are open
☐	- 13 -	• Check the aquastat setting • For units with thermal bleed only, set to 120° • For units with no-flow shutdown, set to 90°
☐	- 14 -	• Verify that the incoming suction pressure meets or exceeds what was specified • If suction pressure doesn't meet or exceed specifications contact engineer or contractor to correct the problem • If the unit is to be operated with less suction pressure than specified contact the factory for guidance in resetting the affected controls

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START-UP CHECK LIST
PRESSURE BOOSTER SYSTEM

☐	- 15 -	• Open the suction side gate valves and let the system fill with water • Inspect all fittings and tubing connections for leakage and correct
☐	- 16 -	• If the building system has not been filled with water slowly open the suction side ball valves approx. 1/3 open • Allow the system to fill • Ask the contractor to open several faucets at high points to vent all air • After the system is full and vented close all faucets
☐	- 17 -	• Check that all H-O-A switches on the panel are off and turn the main disconnect ON • The POWER ON lamp will light
☐	- 18 -	• Check the motors for freedom of rotation and proper direction by "Bumping" each pump ("Bumping" is placing the H-O-A switch to the HAND position for approx. 2 seconds and then turning it off) • All motors on commercial pumps should have clockwise (CW) rotation when viewed from the motor end (opposite end from pump shaft)
☐	- 19 -	• To correct rotation on three phase motors reverse any two of the three leads at the bottom of the starter • DO NOT reverse leads at the main disconnect switch • Close panel door and verify motor rotation
☐	- 20 -	• Run each pump individually in the hand position for approx. 3 - 5 minutes and check the following: a) Unusual noise or vibration b) Leakage at pumps or piping Note: The pump shaft seal may weep slightly until the seal faces seat themselves • During operation the building system should pressurize to specified conditions • On 6500 systems flush line may need bleeding • Read and record amperage values for all 3 pumps M1 (L1 L2 L3) M2 (L1 L2 L3) M3 (L1 L2 L3) Amperage _____ _____ _____ • If motor amperage or voltage difference is greater than 15% please inform factory
☐	- 21 -	• After all pumps have been run individually turn on Pump 1 in the HAND position • Fully open all the discharge gate valves • Let the building system fully pressurize
☐	- *22 -	• Slowly open the water shutoff valve on the drawdown tank if so equipped and let the tank fill
☐	- 23 -	• Place Pump 1 to the AUTO position
☐	- 24 -	• Place all other pumps in the AUTO position • Initially the other pumps may start due to the demand of filling the system created by Pump 1 • If there is little or no demand in the building, the other pumps should shutoff in approx. 5 minutes or less

STARTUP IS NOW COMPLETE

The Armstrong Pumps Inc. representative certifies that this system is operating in accordance with information as submitted by sales representative and warranty is per Armstrong's terms of sale and warranty (file no.: 9.10).

Started by: _____ Date: _____
(Print Name above)

Company: _____

_____

Accepted by: _____ Date: _____
(Print Name above)

Company: _____ Accepted: _____

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