



PROJECT:

PHONE (573) 882-1133

FAX (573) 882-1175

Date:

## Domestic Water Booster Pump Test Procedure

<b>Project:</b>	
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<b>Date:</b>	
<b>Pump Tag:</b>	
<b>Building:</b>	
<b>Location:</b>	

First Test Date	Re-Test Date	Reason for Re-Test	Seasonal Test Required

### Conditions of Testing

Ambient Conditions					
DB		WB		RH	
Bar Press		Wind Speed		Wind Dir	

Occupancy Schedule							
M-F		Saturday		Sunday		Holiday	

Setpoints	Design	Actual
Temperature Sensor		
Static Pressure Sensor		

**Describe Overrides / Status and Operating Condition of Equipment:**



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**Test Participants**

<b>Manufacturers:</b>	
<b>Contractors:</b>	
<b>Building Owner / Representatives:</b>	
<b>Commissioning Specialists:</b>	

**Test Instruments**

Instrumentation				
Manufacturer/Model	Serial Number	Range	Accuracy/Resolution	Last Calibration Date

**Approvals.** This filled-out test procedure has been reviewed. Its completion is approved with the exceptions noted below.

Mechanical Contractor	Date	Controls Contractor	Date
Electrical Contractor	Date	Sheet Metal Contractor	Date
TAB Contractor	Date	General Contractor	Date
Commissioning Authority	Date	Owner's Representative	Date



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**System Description**

**Domestic Water Booster Pump Sequence of Operation:**

*(Insert Sequence of Operation here)*

**Sensor Calibration Verification**

Check the sensors listed below for calibration and adequate location. All field-installed sensors and gages, and all actuators (dampers and valves) on this piece of equipment shall be calibrated in accordance with Specification Section 01810. All test instruments shall have had a certified calibration within the last 12 months: **Y/N**\_\_\_\_\_. Sensors installed *in* the unit at the factory with calibration certification provided need not be field calibrated.

Sensor	Location OK	1 <sup>st</sup> Gage or BAS Value	Instrument Measured Value	Final Gage or BAS Value	Pass Y / N

**Device Calibration Verification**

All field-installed sensors and gages, and all actuators (dampers and valves) on this piece of equipment shall be calibrated in accordance with Specification Section 01810. All test instruments shall have had a certified calibration within the last 12 months: **Y/N**\_\_\_\_\_. Devices installed *in* the unit at the factory with calibration certification provided need not be field calibrated.

Device or Actuator Tag & Location	Procedure / State	1 <sup>st</sup> BAS Value	Site Observation	Final BAS Value	Pass Y / N



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**Load Verification Testing**

Load Parameter	Design	Actual	Comments
GPM			
Pressure			
RPM			
Voltage			
Amperage			

**Functional Testing Record  
General**

Function / Mode	Test Method: Manual, Automatic, Either or Both	Required Seasonal Test Y or N
1. Test each sequence in the sequence of operations, and other significant modes and sequences not mentioned; including startup, shutdown, unoccupied & manual modes and power failure. Test functionality of this piece of equipment or system in all control strategies or interlocks that it is associated with.	Manual	
2. Verify schedules and setpoints to be reasonable and appropriate	Review	
3. Speed controls	Both	
4. Sensor calibration checks on any controlling temperature or pressure sensor	Manual	

**Test Procedure**

Test Procedure	Expected Response	P	F	Comments	Req'd Retest



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Test Procedure	Expected Response	P	F	Comments	Req'd Retest
Standby check. HOA in Auto position. Unit commanded Off by BAS	Verify by visual inspection that: a) Pump is off.				
HOA in Auto position. Unit commanded On by BAS.	Verify by visual inspection that: a) System maintaining pressure setpoint. b) Pump may be on.				
With units running at low flow condition, open valves to increase flow.	Verify by visual inspection that: a) System maintaining pressure setpoint. b) Record pressure: _____psig c) Lag pump stages On.				
Record full load running amps for each pump. _____rated FL amps x _____srvc factor = _____ (Max amps). Running less than max?	Pump runs within design parameters.  Record FLA: _____A				
With unit running at high flow condition, close valves to decrease flow.	Verify by visual inspection that: a) System maintaining pressure setpoint. b) Record pressure: _____psig c) Lag pump stages Off.				
With unit running at low flow, close all valves until unit stops. Once unit stops, open valve for very low flow.	Verify by visual inspection that: a) Hydrostatic tank maintaining pressure setpoint.				



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Test Procedure	Expected Response	P	F	Comments	Req'd Retest
Verification of safeties and alarms.	Record setpoints and time delays: a) Low suction pressure alarm (x second delay) b) Low suction pressure shutdown c) Low system pressure alarm (30 second delay) d) High system pressure alarm e) High system pressure shutdown f) Pump failure g) BAS failure contacts				

**Required Monitoring**

All points listed below shall be trended by the BAS for the period indicated.

Point	Trend Interval (min.)	Minimum Time Period of Trend	Hard Copy? (Y/N)	ASCII File? (Y/N)
Pressure				
Pump status				
Alarm				

**Remarks:**

**Acceptance Criteria** (referenced by function or mode ID)

For the conditions, sequences and modes tested, the fans, integral components and related equipment respond to changing conditions and parameters appropriately as expected, as specified and according to acceptable operating practice.

<b>Comments with Acceptance Criteria:</b>
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Construction Management

University of Missouri-Columbia

Planning, Design & Construction  
Campus Facilities

117 General Services Building  
Columbia, MO 65211-3200

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**\*Fill out all form fields before signing!**

Name	Organization	Title	Signature

University of Missouri Commissioning Authority

(Place Digital Locking Stamp Here)