

**SPECIFICATIONS** Domestic Pump VL Duplex Vacuum Heating Unit

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Domestic® Series VL™

Duplex Vacuum Heating Unit

Note: Optional accessories are underlined

**Part 1 – GENERAL**

**1.1 SECTION INCLUDES**

A. Unit shall be a Domestic Series VL™ duplex vacuum heating and condensate pumping unit as manufactured by Bell & Gossett and shall consist of:

1. (1) Cast iron receiver

2. (2) Dual purpose pumps

3. (2) Multijet vacuum producers

4. (2) Discharge valve assemblies

5. (2) Vacuum and float controls

6. (1) Pump Control Panel

**1.2 REFERENCES**

A. HI - Hydraulic Institute

B. NEMA - National Electric Manufactures Association

C. UL - Underwriters Laboratories

D. CSA - Canadian Standards Association

E. ISO - International Standards Organization

F. IEC - International Electrotechnical Commission

**1.3 SUBMITTALS**

A. Submittals shall include the following:

1. Submittal data cover sheet

2. Unit description sheet

3. Dimensional print

4. Sales bulletin

5. Piping diagram

6. Wiring diagram

7. Instruction manual

**1.4 QUALITY ASSURANCE**

A. The manufacture shall have a minimum of 20 years experience in the design and construction of condensate return equipment.

B. The manufacturer shall be fully certified by the International Standards Organization per ISO 9001. Proof of this certification shall be furnished at the time of submittal.

C. The manufacturer shall carry a minimum product liability insurance of $5,000,000.00 per occurrence.

D. All control cabinet components shall be U.L. listed or recognized. The control panel assembly shall be listed by Underwriters Laboratories, Inc.

**PART 2 – PRODUCTS**

**2.1 ACCEPTABLE MANUFACTURERS**

A. Subject to compliance with these specifications, the following manufacturers shall be acceptable:

1. Bell & Gossett Domestic VL™

2. Pre-approved equal

**2.2 COMPONENTS**

A. CAST IRON RECEIVER

1. The receiver shall be of close grained cast iron construction (warranted for 20 years from the date of shipment against failure due to corrosion).

2. Receiver inlet centerline shall be no higher than 14.5 inches (368mm) as shown on the drawings.

3. Condensate discharge shall be controlled by a solenoid operated discharge valve.

4. Receiver shall be furnished with:

a. Control equipment:

1.) (2) Vacuum switches

2.) (2) Float switches

b. (1) Vacuum gauge

c. (1) Angle Thermometer

d. (2) Multijet vacuum producer

e. (2) Solenoid operated discharge valve

f. (1) Vacuum breaker

g. (1) Water level gauge glass for visual tank inspection

h. (2) Lifting eye bolts

i. (1) Cast iron inlet strainer with vertical self-cleaning bronze screen and large dirt pocket shall be mounted on the receiver. The screen shall be easily removable for cleaning, requiring no additional floor space for servicing.

B. WATER PUMP

1. The water pumps shall be centrifugal design, bronze fitted with enclosed cast bronze centrifugal impeller, permanently aligned and flange mounted for vertical operation.

2. Capacities and electrical characteristics for the pump shall be scheduled on the drawings.

3. Each pump shall be close-coupled to a 1750 or 3500 rpm, vertical, drip-proof motor.

4. Carbon/ceramic mechanical shaft seal shall be rated for 250°F (121°C).

5. The pump shall be rated and tested according to the latest ASRAE Standard Code for Return Line Low Vacuum Heating Pumps 5.5 inches Hg and 160°F (71°C).

6. Each pump shall include:

a. Dynamically balanced cast bronze impeller

b. Renewable bronze wearing ring

c. Stainless steel shaft

d. Discharge gauge port tapping

e. Drain tapping

C. CONTROL PANEL

1. The control panel shall be a mounted and wired NEMA 2 control cabinet with drip lip and piano hinged door enclosing the following:

a. (2) Combination magnetic contactor with adjustable thermal overload protection with fused disconnect and cover interlock

b. (2) “OFF – Float Only – Float and Vacuum – Continuous” selector switch

c. (1) Numbered terminal strip

d. (1) Fused control circuit transformer when the motor voltage exceeds 230 Volts

e. Electrical alternator

**PART 3 – EXECUTION**

**3.1 INSTALLATION**

A. Install equipment in accordance with manufacturer’s instructions.

B. Power wiring, as required, shall be the responsibility of the electrical contractor. All wiring shall be performed per manufacturer’s instructions and applicable state, federal, and local codes.

C. All factory wiring shall be numbered for easy identification and the numbers shall coincide with those shown on the wiring diagram.

D. All interconnecting wiring between the pump controls and control panel shall be enclosed in liquid tight flexible conduit.

E. The unit shall be factory tested as a complete unit and the unit manufacture shall furnish elementary and connection wiring diagrams, piping diagrams, installation and operation instructions.

F. The unit manufacturer shall furnish, mount on the unit and wire a NEMA 2 control cabinet with drip lip and piano hinged door.

G. The unit shall be shipped completely assembled.

H. Certified test report shall be provided by the factory.

I. Unit shall be a Domestic Series VL™ as manufactured by Bell & Gossett, Morton Grove, IL.

END OF SECTION



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