

**SPECIFICATIONS** Domestic Pump CB Duplex Condensate Return Unit

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Domestic® Series CB™

Duplex Condensate Unit

For up to 210°F (99°C)

Note: Optional accessories are underlined.

**PART 1 – GENERAL**

**1.1 SECTION INCLUDES**

A. Unit shall be a Domestic™ Series CB™ duplex condensate pumping unit as manufactured by Bell & Gossett

1. (1) Cast iron receiver

2. (2) Water pumps

3. (2) Float switches and all accessories

4. (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 manufacturer 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™ CB™

2. Pre-approved equal

**2.2 COMPONENTS**

A. CONDENSATE RECEIVER

1. The condensate 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 shall have an inlet, vent and an overflow opening to provide means of secondary venting.

3. Receiver shall be furnished with:

a. (2) Externally adjustable 2-pole float switches

b. (2) Dial pressure gauges for pump discharge

c. (1) Water level gauge glass

d. (1) Dial thermometer

e. (2) Lifting eye bolts

f. (2) Bronze fitted, butterfly isolation valves (up to 75 gpm [284 L/M] pump capacity) between pump suction and receiver

g. (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 PUMPS

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

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

3. Each pump gpm shall be sized for 2 times the system return rate.

4. Each pump shall be close-coupled to a 3500 rpm, vertical, drip-proof motor and shall deliver its full capacity with condensate temperatures up to 210°F (99°C) at sea level, at 2 ft. NPSH (net positive suction head).

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

6. Each pump shall include:

a. Axial flow, first-stage dynamically balanced, cast bronze impeller

b. Bronze straightening vanes

c. Renewable bronze casing wear ring

d. Stainless steel shaft

e. Discharge gauge port tapping

f. 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 contactors with adjustable thermal overloads with fused disconnect and cover interlock for each motor

b. (2) “Auto-Off-Hand” selector switch

c. (1) Numbered terminal strip

d. (2) Pump running pilot lights

e. (1) Electrical alternator

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

g. (1) Control power switching relay

2. The electrical alternator shall:

a. Change the operating sequence automatically after each cycle.

b. Provide simultaneous operation under peak load conditions.

c. Operate the second pump automatically, should the active pump or its controls fail.

3. When a transformer is required, the control power will be supplied downstream of pump number one’s disconnect switch.

4. The control power switching relay shall allow the switch over of control power from pump number one to pump number two in the event of a failure or a no power condition of pump number one.

**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 manufacturer 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 CB™ as manufactured by Bell & Gossett, Morton Grove, IL.

**STANDARD UNIT FEATURES:**

• Cast Iron Receiver for years of dependable service.

• Cast Iron Receiver warranted for 20 years from date of shipment against failure due to corrosion.

• (2) Centrifugal Series B35™ 2' NPSH pumps with drip proof motor. Each pump capacity sized 2 times the system return rate.

• (2) Float switches, double pole and externally adjustable. Stainless Steel float and stainless steel rod.

• Carbon/ceramic mechanical seal rated for 250°F (121°C) for maximum life.

• Stainless Steel pump shaft.

• Quiet ball bearing motor.

• Superior mechanical seal.

• Factory wired and tested before shipment.

• Removable bronze wearing ring.

**OPTIONAL EQUIPMENT AS SPECIFIED:**

• Oversize receivers to 250 gallon (946L).

• Water level gauge with shutoff valve.

• Dial Thermometer.

• Inlet Basket Strainer.

• Discharge Pressure Gauge.

• Suction Butterfly Valve.

• Lifting Eye Bolts.

• NEMA 2 – U.L. Listed Control Panel mounted and wired with liquid tight flexible conduit.

• TEFC or Explosion-Proof motor and controls.

• Rigid Conduit.

• 2 Types of automatic alternation; Mechanical or Electrical.

• High level alarm with silencing relay.

**10 SOLID REASONS TO CHOOSE DOMESTIC®:**

• Close grained, corrosion resistant cast iron receiver.

• Quiet ball-bearing type motor.

• Bronze-fitted centrifugal pump.

• Mechanical seal construction.

• Stainless steel pump shaft.

• Renewable bronze pump wearing ring.

• Factory wired and tested before shipment.

• Package construction for compact installation.

• Engineered reliability.

• 100 years of experience

###### END OF SECTION



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