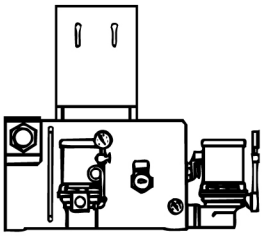
Bell & Gossett
a xylem brand

SPECIFICATIONS
225C

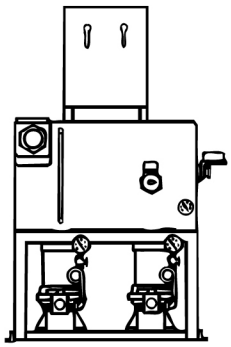
Domestic® Pump Series CB™ and CBE™ Condensate Return Units

Guide Specification Index

For condensate up to 210°F (99°C) at sea level. Domestic Series CB units include a wide range of cast iron receiver sizes, from 23 to 250 gallon (87 to 946L) capacity. They will handle systems up to 22,500 lbs./hr. condensate or 90,000 sq. ft. EDR. The Series CB unit is floor mounted with low inlet and designed for systems with low return lines.



Series CBE units feature a cast iron receiver elevated 24" above the floor and will handle 212°F (100°C) condensate at sea level. Receiver sizes for Series CBE units range from 23 to 250 gallon (87 to 946L) capacity up to 34,000 lbs./hr. condensate or 135,000 sq. ft. EDR.

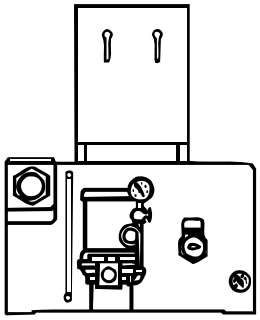


Guide Specification

Domestic® Series CB™ Simplex 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™ simplex condensate pumping unit as manufactured by Bell & Gossett
  1. (1) Cast iron receiver
  2. (1) Water pump
  3. (1) Float switch and all accessories
  4. <u>(1) Pump Control Panel</u>

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 to have provisions for future addition of second pump.
  4. Receiver shall be furnished with:
     - a. (1) Externally adjustable 2-pole float switch
     - b. <u>(1) Dial pressure gauge for pump discharge</u>
     - c. <u>(1) Water level gauge glass</u>
     - d. <u>(1) Dial thermometer</u>
     - e. <u>(2) Lifting eye bolts</u>
     - f. <u>(1) Bronze fitted, butterfly isolation valve (up to 75 gpm [284 L/M] pump capacity) between pump suction and receiver</u>
     - g. <u>(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.</u>
- B. WATER PUMP
  1. The water pump 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. <u>CONTROL PANEL</u>
  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. <u>(1) Combination</u> magnetic contactor with adjustable thermal overload protection <u>with fused disconnect and cover interlock</u>
     - b. <u>(1) "Auto-Off-Hand" selector switch</u>
     - c. <u>(1) Numbered terminal strip</u>
     - d. <u>(1) Fused control circuit transformer when the motor voltage exceeds 230 Volts</u>
     - e. <u>(1) Pump running pilot light</u>

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.

Domestic® Series CB™ Simplex Condensate Unit

STANDARD UNIT FEATURES:

- Cast Iron Receivers for years of dependable service. All simplex receivers have a blanked opening for second pump.
- Cast Iron Receiver warranted for 20 years from date of shipment against failure due to corrosion.
- Centrifugal Series B35™ 2' NPSH pump with drip-proof motor. Pump capacity sized 2 times the system return rate.
- Float switch, 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.
- High level alarm with silencing relay.

10 SOLID REASONS TO CHOOSE DOMESTIC®:

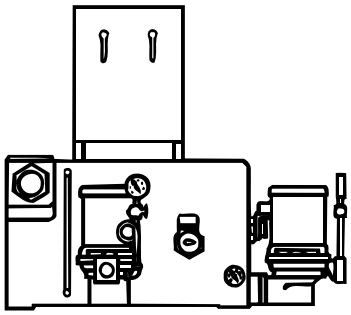
- Close grained, corrosion resistant cast iron receiver.
- Quiet ball-bearing type motor.
- Bronze-fitted centrifugal pump.
- Mechanical seal construction.
- Stainless steel pump shaft.
- Renewable bronze pump wearing ring.
- Factory wired and tested before shipment.
- Package construction for compact installation.
- Engineered reliability.
- 100 years of experience.

Guide Specification

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:
     - b. Change the operating sequence automatically after each cycle.
     - c. Provide simultaneous operation under peak load conditions.
     - d. 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.

Domestic® Series CB™ Duplex Condensate Unit

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®:

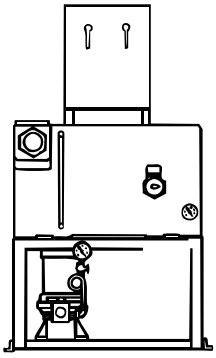
- Close grained, corrosion resistant cast iron receiver.
- Quiet ball-bearing type motor.
- Bronze-fitted centrifugal pump.
- Mechanical seal construction.
- Stainless steel pump shaft.
- Renewable bronze pump wearing ring.
- Factory wired and tested before shipment.
- Package construction for compact installation.
- Engineered reliability.
- 100 years of experience.

Guide Specification

Domestic® Series CBE™ Simplex 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 CBE™ simplex condensate pumping unit as manufactured by Bell & Gossett
  1. (1) Elevated cast iron receiver
  2. (1) Water pump
  3. (1) Float switch 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
- D. The manufacturer shall have a minimum of 20 years experience in the design and construction of condensate return equipment.
- E. 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.
- F. The manufacturer shall carry a minimum product liability insurance of $5,000,000.00 per occurrence.
- G. 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™ CBE™
  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 to have provisions for future addition of a second pump.
  3. Receiver shall have an inlet, vent and an overflow opening to provide means of secondary venting, shall be elevated 24" (610mm) on fabricated steel frame.
  4. Receiver shall be furnished with:
     - a. (1) Externally adjustable 2-pole float switch
     - b. (1) Dial pressure gauge for pump discharge
     - c. (1) Water level gauge glass
     - d. (1) Dial thermometer
     - e. (2) Lifting eye bolts
     - f. (1) Suction piping with isolation valve between receiver and pump suction
     - 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 PUMP
  1. The water pump 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. (1) Combination magnetic contactor with adjustable thermal overload with fused disconnect and cover interlock
     - b. (1) "Auto-Off-Hand" selector switch
     - c. (1) Numbered terminal strip
     - d. (1) Fused control circuit transformer when the motor voltage exceeds 230 Volts
     - e. (1) Pump running pilot light
     - f. (1) Alarm with silencing relay

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

Domestic® Series CBE™ Simplex Condensate Unit

STANDARD UNIT FEATURES:

- Cast Iron Receiver mounted on a steel frame. All simplex receivers have a blanked opening for second pump.
- Cast Iron Receiver warranted for 20 years from date of shipment against failure due to corrosion.
- Centrifugal Series B35™ 2' NPSH pump with drip-proof motor. Pump capacity sized 2 times the system return rate.
- Float switch, double pole and externally adjustable. Stainless Steel float and stainless steel rod.
- Suction piping isolation valve.
- 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.
- 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.
- 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.
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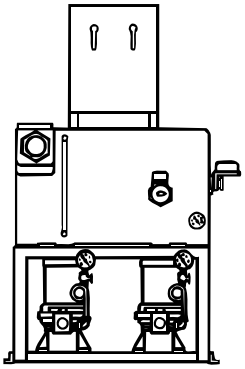

PART 1 – GENERAL

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  2. (2) Water pumps
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PART 2 – PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS
- A. Subject to compliance with these specifications, the following manufacturers shall be acceptable:
  1. Bell & Gossett Domestic™ CBE™
  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 be elevated 24" (610mm) on fabricated steel frame.
  3. 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. Suction piping with isolation valve between receiver and pump suction
     - f. (2) Lifting eye bolts
     - 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 PUMP
  1. The water pump 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 magnetic contactor with adjustable thermal overload 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.
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3.1 INSTALLATION
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- 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 CBE™ as manufactured by Bell & Gossett, Morton Grove, IL.

Domestic® Series CBE™ Duplex Condensate Unit

STANDARD UNIT FEATURES:

- Cast Iron Receiver mounted on a steel frame.
- 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 motors. 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.
- Suction piping isolation valves.
- 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.
- 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.
- 2 Types of automatic alternation; Mechanical or Electrical.
- Rigid Conduit.
- 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.

Domestic® Series CB™ and CBE™ Units

Description of Standard and Optional Equipment and Controls

Receivers – Close grained, cast iron construction. These receivers offer maximum protection from corrosion and feature an inlet, vent and overflow opening to provide a means of secondary venting.

Cast Iron Receiver Warranty – The Cast Iron Receiver is warranted for 20 years from date of shipment against failure due to corrosion. In the event of receiver failure due to corrosion, the receiver will be replaced free of charge with transportation charges prepaid to any location within the continental U.S.A. Labor charges for replacement are not allowed nor shall Bell & Gossett, be liable for any special indirect or consequential damages. All implied warranties of merchantability and fitness for a particular purpose are hereby disclaimed.

Series B35, 2 ft. NPSH Centrifugal Pumps – Series B35 Centrifugal pumps are close-coupled to 3,500 rpm motors, permanently aligned and feature two-stage bronze fitted construction. They include axial flow, bronze, first-stage impeller, enclosed bronze, centrifugal second-stage impeller, renewable bronze wearing ring, stainless steel shaft and mechanical seal rated 250°F (121°C) for maximum life. They are designed to handle condensate up to 210°F (99°C) at sea level when used with floor-level receivers, and boiling condensate when receivers are elevated 2 ft. or more.

Series B35 pumps feature a seal cavity bleed line to provide a means of seal lubrication and permit the pump to operate at a no-flow condition reducing the probability of premature seal failure or pump damage.

Electric Motors – Drip-proof, ball bearing motors are standard. Standard voltages are: Three phase – 208-230/460V. Single phase – 115/230V. Single phase motor 2 H.P. (1.5KW) and smaller have built-in overload protection.

Special Motors – Motors wound for other than standard voltages are available at extra cost. When open, drip-proof construction is not adequate, motors with totally enclosed or explosion-proof enclosures or special insulation can be furnished.

Combination Magnetic Starters – are available with fusible disconnect switches or circuit breakers. Safety cover interlocking switches are furnished with combination starters. Enclosures are available to comply with JIC specifications. NEMA 2 enclosures are standard.

Magnetic Starters – can be furnished in consolidated control cabinets (NEMA 2 – U.L. Listed Control Panels are standard) to comply with NEMA or JIC specifications. Combination magnetic starters are available with fusible disconnect switches or circuit breakers. All disconnect devices are furnished with cover interlock for each motor.

Starters are provided with 3 overload relays as standard for the protection of all windings of 3-phase motors against open circuit and/or unbalanced conditions.

A starter is capable of interrupting ten times motor full load current, but short circuit currents may be many times greater. Fuses or a circuit breaker must be installed ahead of the starter to clear any such faults that may occur to protect the line wiring.

Selector Switches – "Auto-Off-Hand" selector switches provide a means of shutting off pumps and a means of testing in the "Hand" position. "Auto-Off-Hand" selector switches are used on simplex units or duplex units with automatic alternator. "Off-Hand-Lead-Lag" selector switches may be furnished on duplex units with 2 float switches to provide manual alternation. This control provides for, (1) manual selection of the active pump, (2) simultaneous operation of both pumps under abnormal load conditions and (3) automatic operation of the inactive or lag pump if the lead pump or its control fail. Selector switches are available only when magnetic starters are provided.

Automatic Mechanical Alternator – consisting of 2-level, mechanical, double pole, alternating switches, operated by 1 float. Can be furnished for Series CB or CBE units in place of 2 float switches. This control, (1) automatically alternates operation of the two pumps, (2) provides simultaneous operation of both pumps to deliver double capacity under peak conditions and (3) automatically operates the second pump should the active pump or its controls fail.

Automatic Electric Alternator – This control consists of an automatic electrical sequence relay used in conjunction with 2 magnetic starters, 2 level switches and 2 selector switches. This control provides for, (1) automatic transfer of operating sequence after each cycle, (2) simultaneous operation of both pumps under peak load conditions and (3) automatic operation of the inactive or lag pump if the lead pump or its controls fails.

Control Circuit Transformer – is available and required for all JIC specifications and motor voltages over 230V.

Control Power Switching Relay – should be supplied in Duplex or Triplex units when individual pump disconnect switches are specified and a control power transformer is required. This relay is recommended in order to maintain control power in the event of pump #1's disconnect switch is turned off or pump #1 fails. In this event the control power will be automatically supplied by pump #2.

Butterfly Isolation Valve – to permit the removal of one pump on duplex units without necessitating system shutdown. These are installed between pump suction and Series CB receiver and are available for pump capacities up to 75 gpm. Bronze fitted construction is standard to provide effective corrosion resistance.

Bronze Isolation Gate Valve – used with elevated receivers (Series CBE) and factory installed in suction piping. They provide for removal and repair of one pump without necessitating system shutdown.

Inlet Basket Strainer – Cast iron with vertical, self-cleaning bronze screen and large dirt pocket. The screen is easily removable for cleaning and requires no additional floor space for servicing.

Float Switches – Standard float switches are double pole, externally adjustable, side mounted, heavy duty type.

Accessories – Dial thermometer, dial pressure gauge and gauge glass are heavy duty, manufactured by reputable firms for industrial service.

Companion Flanges – Standard for pumps having a 2" or larger discharge.

xylem
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