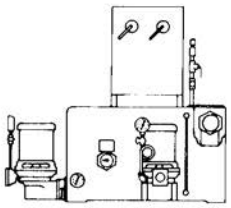
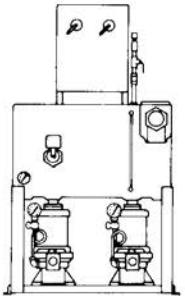
Domestic® Pump Series CBM™ and CBEM™ Boiler Feed Units

Guide Specification Index





PART 1 GENERAL

1.01 SECTION INCLUDES

A. Unit shall be a Domestic heating boiler feedwater series CBM, simplex or duplex units, as manufactured by Bell & Gossett.
B. Furnish and install extended life pumps with capacities as indicated in the plans.

1.02 RELATED SECTIONS

A. Section 23 53 13 – Boiler Feedwater Pumps

1.03 REFERENCES

A. HI - Hydraulic Institute.
B. ANSI - American National Standards Institute.
C. NEMA - National Electrical Manufacturers Association.
D. UL - Underwriters Laboratories.
E. ETL - Electrical Testing Laboratories.
F. CSA - Canadian Standards Association.
G. NEC - National Electric Codes.
H. ISO - International Standards Organization.
I. IEC - International Electrotechnical Commission.

1.04 SUBMITTALS

A. Submittal data cover sheet.
B. Unit description sheet.
C. Dimensional print(s).
D. Sales bulletin.
E. Piping diagram(s).
F. Wiring diagram(s).
G. Installation, operation & maintenance manual.

1.05 QUALITY ASSURANCE

A. The manufacturer shall have a minimum of 30 years experience in the design and construction of heating boiler feedwater equipment.
B. The pump 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. The manufacturer shall carry a minimum product liability insurance of $5,000,000.00 per occurrence.
C. The Unit shall be Listed by Underwriters' Laboratories, Inc as a Packaged Pumping System.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Subject to compliance with these specifications, the following manufacturers shall be acceptable:
   1. Bell & Gossett Domestic series CBM simplex or duplex.
   2. Pre-approved equal.

2.02 COMPONENTS

A. Cast iron receiver
   1. The boiler feed receiver shall be of close grained cast iron construction (warranted for 20 years from the date of shipment against failure due to corrosion).
   2. The receiver shall be sized for a minimum of five minutes net storage based on the boiler evaporation rate.
   3. The receiver shall offer maximum protection from corrosion and feature an inlet, vent and overflow opening to provide a means of secondary venting.
   4. The water make up shall be installed on the receiver of capacity equal to one boiler feed pump. The make up assembly shall consist of:
      a. One electric solenoid that shall be packless, piston pilot operation type with cushioned closing feature and epoxy resin molded waterproof coil.
      b. One water level float switch.
      c. One Y-strainer located upstream of the solenoid valve.
   5. (Low water cut off float switch for pump protection)
B. Water pump Items in parentheses denotes optional items
   1. Duplex units shall consist of two water pumps. Simplex units shall consist of one water pump. Each pump shall be a two-staged, series B35, bronze fitted centrifugal design pump, close-coupled to a 3500 RPM motor, permanently aligned, and flange mounted for vertical operation. Each pump 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).
   2. The pumps shall include:
      a. One cast Iron volute with:
         1) One discharge gauge port tapping.
         2) One drain tapping.
      b. One dynamically balanced enclosed bronze centrifugal impeller.
      c. One renewable bronze wearing ring.
      d. One stainless steel shaft.
      e. Carbon/ceramic/Buna N/stainless steel mechanical seal suitable for 250oF (121°C) operation.
      f. One bronze propeller stem.
      g. One bronze diffuser.
      h. One cast bronze, axial flow, first-stage impeller.
   3. Each pump shall be sized for two times the system return rate.
   4. Each motor shall meet NEMA design specifications with wetted portion stainless steel shaft, Open Drip Proof enclosure type (Totally Enclosed Fan-Cooled or Explosion Proof as required) and shall be the size, voltage, insulation class, duty rating and enclosure called for in the plans.
   5. Capacities and electrical characteristics for the pump shall be scheduled on the drawings.
D. (Manual 3-valve by-pass around the water make-up solenoid consisting of:
   1. Two ball valves to isolate the solenoid valve.
   2. One gate valve for the direct water feed line.)
E. (Air gap fitting for make-up valve.)
F. (Water level gauge glass for visual tank level inspection.)
G. (Lifting eye bolts for unit placement.)
H. (A dial thermometer.)
I. (Pump discharge pressure gauge/ one per pump.)
J. (Bronze fitted butterfly isolation valve (up to 75 GPM (284 L/M) pump capacity) between the pump suction and receiver for easy isolation of the pump and motor assembly for servicing/ one per pump.)
K. (Cast iron inlet basket strainer with vertical self-cleaning bronze screen and large dirt pocket for sediment collection. The screen shall be easily removable for cleaning, requiring no additional floor space for servicing. This option ships loose for field installation.)
L. (Consolitrol® NEMA 2, UL Listed electrical panel mounted and wired with drip lip and piano hinged door is available with the following options:)
   1. (NEMA 4 and NEMA 12 Electrical panels mounted and wired as required.)

2. (NEMA 7 control panels mounted and wired as required.
3. (Magnetic starters with thermal overload protection/ one per pump. Starters may be provided with disconnect devices, either:)
   a. (Fusible disconnect with cover interlock. Not provided on NEMA 7 panels.)
   b. (Circuit breaker type with cover interlock.)
4. (One fused control circuit transformer when the motor voltage exceeds 250V.)
5. (Three types of selector switches:)
   a. ("Off-Hand-Lead-Lag" l selector switch.)
   b. ("Auto-Off-Hand" selector switch).
   c. ("P1/B1"-pump 1 feeds boiler 1, etc., selector switch.)
6. (Pump running pilot lights/ one per pump.)
7. ("Push to Test" buttons/ one per pump.)
8. (One numbered terminal strip.)
9. (Auxiliary contacts on the magnetic starters normally open for remote monitoring of pump operation / one per pump.)
10. (A removable control component mounting plate.)
11. (Elapsed time meters (UL)/ one per pump.)
12. (An audible alarm to indicate water level conditions.)
    a. (Audible alarm is available with or without silencing relay.)
    b. (A tank mounted level switch should be provided with audible alarm.)
    c. (Alarm may be provided with alarm light to provide visual indication of alarm condition.)
13. (One single point power connection. Not applicable for Simplex units.)
14. (One electrical alternator for Duplex operation.)
15. (Control power switching relay shall allow the switch over of control power from one pump to the other in the event of a power failure or pump failure.)

M. (Liquid tight conduit suitable for NEMA 2, NEMA 4 & NEMA 12 applications. NEMA 7 units shall be supplied with suitable conduit.)

PART 3 EXECUTION

3.01 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 and piping diagrams. Installation and operation instructions shall also be provided.
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. The factory shall provide a certified test report.
I. Unit shall be a Domestic series CBM or CBEM as manufactured by Bell & Gossett, Morton Grove, IL.

END OF SECTION

Domestic® Series CBM™ Simplex Boiler Feed Unit

STANDARD UNIT FEATURES:

- Cast Iron Receiver. All Simplex Receivers have a blanked opening for a second pump. Receiver sized for 5 minute net storage.
- Cast Iron Receiver warranted for 20 years from date of shipment against failure due to corrosion.
- Series B35™ 2′ NPSH Pump with drip-proof motors. Pump capacity sized for 2 times the return rate.
- Float switch, solenoid valve and "Y" strainer water makeup assembly.

OPTIONAL EQUIPMENT AS SPECIFIED:

- Water level gauge with shut off valve
- Dial Thermometer
- Inlet Basket Strainer
- Discharge Pressure Gauge
- Suction Butterfly Valve
- Lifting Eye Bolts
- NEMA 2 — U.L. Listed Control Panel
- TEFC or Explosion Proof motors and controls
- 3 Valve bypass around solenoid water makeup valve
- Low water cut off float switch*
- High or low water alarm and required control*
- Air gap fitting

9 SOLID REASONS TO CHOOSE DOMESTIC®

- Close grained, corrosion resistant cast iron receiver
- Quiet ball-bearing type motor
- Bronze-fitted 2′ NPSH centrifugal pump
- Mechanical Seal construction
- Stainless steel pump shaft
- Renewable bronze pump wearing ring
- Factory wired and tested before shipment
- Packaged construction for compact installation
- Engineered Reliability

*Availability dependent upon receiver size

Domestic® Series CBM™ Duplex Boiler Feed Unit

STANDARD UNIT FEATURES:

- Cast Iron Receiver. Receiver sized for 5 minute net storage.
- Cast Iron Receiver warranted for 20 years from date of shipment against failure due to corrosion.
- Series B35™ 2′ NPSH Pump with drip-proof motors. Pump capacity sized for 2 times the system rate.
- Float switch, ½″ solenoid valve and "Y" strainer water makeup assembly.

OPTIONAL EQUIPMENT AS SPECIFIED:

- Water level gauge with shut off valve
- Dial Thermometer
- Inlet Basket Strainer
- Discharge Pressure Gauges
- Suction Butterfly Valves
- Lifting Eye Bolts
- NEMA 2 — U.L. Listed Control Panel
- TEFC or Explosion Proof motors and controls
- 3 Valve bypass around solenoid water makeup valve
- Low water cut off float switch*
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*Availability dependent upon receiver size

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Unit shall be a Domestic® heating boiler feedwater series CBEM, simplex or duplex units, as manufactured by Bell & Gossett.
B. Furnish and install extended life pumps with capacities as indicated in the plans.

1.02 RELATED SECTIONS

A. Section 23 53 13 – Boiler Feedwater Pumps

1.03 REFERENCES

A. HI - Hydraulic Institute.
B. ANSI - American National Standards Institute.
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B. Unit description sheet.
C. Dimensional print(s).
D. Sales bulletin.
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F. Wiring diagram(s).
G. Installation, operation & maintenance manual.

1.05 QUALITY ASSURANCE

A. The manufacturer shall have a minimum of 30 years experience in the design and construction of heating boiler feedwater equipment.
B. The pump 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. The manufacturer shall carry a minimum product liability insurance of $5,000,000.00 per occurrence.
C. The Unit shall be Listed by Underwriters' Laboratories, Inc as a Packaged Pumping System.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Subject to compliance with these specifications, the following manufacturers shall be acceptable:
   1. Bell & Gossett, a Xylem brand Domestic series CBEM simplex or duplex.
   2. Pre-approved equal.

2.02 COMPONENTS

A. Cast iron receiver
   1. The boiler feed receiver shall be of close grained cast iron construction (warranted for 20 years from the date of shipment against failure due to corrosion).
   2. The Domestic Series CBEM shall be elevated 24 in. on fabricated steel frame.
   3. The receiver shall be sized for a minimum of five minutes net storage based on the boiler evaporation rate.
   4. The receiver shall offer maximum protection from corrosion and feature an inlet, vent and overflow opening to provide a means of secondary venting.
   5. The water make up shall be installed on the receiver of capacity equal to one boiler feed pump. The make up assembly shall consist of:
      a. One electric solenoid that shall be packless, piston pilot operation type with cushioned closing feature and epoxy resin molded waterproof coil.
      b. One water level float switch.
      c. One Y-strainer located upstream of the solenoid valve
   6. (Low water cut off float switch for pump protection)

B. Water pump Items in parentheses denotes optional items
   1. Duplex units shall consist of two water pumps. Simplex units shall consist of one water pump. Each pump shall be a two-staged, series B35, bronze fitted centrifugal design pump, close-coupled to a 3500 RPM motor, permanently aligned, and flange mounted to the suction piping under the receiver, for vertical operation. Each pump shall deliver its full capacity with condensate temperatures up to 212°F (100°C) at sea level at 2 ft. NPSH (net positive suction head).
   2. The pumps shall include:
      a. One cast Iron volute with:
         1) One discharge gauge port tapping.
         2) One drain tapping.
      b. One dynamically balanced enclosed bronze centrifugal impeller.
      c. One renewable bronze wearing ring.
      d. One stainless steel shaft.
      e. Carbon/ceramic/Buna N/stainless steel mechanical seal suitable for 250ºF (121°C) operation.
      f. One bronze propeller stem.
      g. One bronze diffuser.
      h. One cast bronze, axial flow, first-stage impeller.
      i. Each pump shall be sized for two times the system return rate.
      j. Each motor shall meet NEMA design specifications with wetted portion stainless steel shaft, Open Drip Proof enclosure type (Totally Enclosed Fan-Cooled or Explosion Proof) and shall be the size, voltage, insulation class, duty rating and enclosure called for in the plans.
      k. Capacities and electrical characteristics for the pump shall be scheduled on the drawings.

D. (Manual 3-valve by-pass around the water make-up solenoid consisting of:
   1. Two ball valves to isolate the solenoid valve.
   2. One gate valve for the direct water feed line.)
E. (Air gap fitting for make-up valve.)
F. (Water level gauge glass for visual tank level inspection.)
G. (Lifting eye bolts for unit placement.)
H. (A dial thermometer.)
I. (Pump discharge pressure gauge / one per pump.)
J. Bronze suction isolation gate valve (up to 75 GPM (284 L/M) pump capacity) between the pump suction and receiver for easy isolation of the pump and motor assembly for servicing / one per pump.
K. (Cast iron inlet basket strainer with vertical self-cleaning bronze screen and large dirt pocket for sediment collection. The screen shall be easily removable for cleaning, requiring no additional floor space for servicing. This option ships loose for field installation.)

L. (Consolitrol® NEMA 2, UL Listed electrical panel mounted and wired with drip lip and piano hinged door is available with the following options:)
   1. (NEMA 4 and NEMA 12 Electrical panels mounted and wired as required.)
   2. (NEMA 7 control panels mounted and wired as required.
   3. (Magnetic starters with thermal overload protection / one per pump. Starters may be provided with disconnect devices, either:)
      a. (Fusible disconnect with cover interlock. Not provided on NEMA 7 panels.)
      b. (Circuit breaker type with cover interlock.)
   4. (One fused control circuit transformer when the motor voltage exceeds 250V.)
   5. (Three types of selector switches:)
      a. ("Off-Hand-Lead-Lag" selector switch.)
      b. ("Auto-Off-Hand" selector switch).
      c. ("P1/B1"-pump 1 feeds boiler 1, etc., selector switch.)
   6. (Pump running pilot lights / one per pump.)
   7. ("Push to Test" buttons / one per pump.)
   8. (One numbered terminal strip.)
   9. (Auxiliary contacts on the magnetic starters normally open for remote monitoring of pump operation / one per pump.)
   10. (A removable control component mounting plate.)
   11. (Elapsed time meters (UL) / one per pump.)
   12. (An audible alarm to indicate water level conditions.)
      a. (Audible alarm is available with or without silencing relay.)
      b. (A tank mounted level switch should be provided with audible alarm.)
      c. (Alarm may be provided with alarm light to provide visual indication of alarm condition.)
      13. (One single point power connection. Not applicable for Simplex units.)
   14. (One electrical alternator for duplex pump operation.)
   15. (Control power switching relay shall allow the switch over of control power from one pump to the other in the event of a power failure or pump failure.)

M. (Liquid tight conduit suitable for NEMA 2, NEMA 4 & NEMA 12 applications. NEMA 7 units shall be supplied with suitable conduit.)

PART 3 EXECUTION

3.01 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 and piping diagrams. Installation and operation instructions shall also be provided.
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. The factory shall provide a certified test report.
I. Unit shall be a Domestic series CBM or CBEM as manufactured by Bell & Gossett, Morton Grove, IL.

END OF SECTION

Domestic® Series CBEM™ Simplex Boiler Feed Unit

STANDARD UNIT FEATURES:

- Cast iron receiver mounted on a fabricated steel stand. All simplex receivers have a blanked opening for a second pump. Receiver sized for 5 minute net storage.
- Cast Iron Receiver warranted for 20 years from date of shipment against failure due to corrosion.
- Series B35™ 2′ NPSH Pump with drip-proof motor. Pump capacity sized 2 time system return rate.
- Float Switch, solenoid valve and "Y" Strainer water make-up assembly.
- Suction piping with isolation valve.

OPTIONAL EQUIPMENT AS SPECIFIED:

- Water level gauge with shut off valve
- Dial Thermometer
- Inlet Basket Strainer
- Discharge Pressure Gauge
- Lifting Eye Bolts
- NEMA 2 — U.L. Listed Control Panel
- TEFC or Explosion Proof motors and controls
- 3 valve bypass assembly around solenoid water make up valve
- Low water cut off float switch*
- High or low water alarm and required control*
- Air gap fitting

9 SOLID REASONS TO CHOOSE DOMESTIC®

- Close-grained, corrosion resistant cast iron receiver
- Quiet ball-bearing type motor
- Bronze-fitted 2′ NPSH pump
- Mechanical Seal construction
- Stainless steel pump shaft
- Renewable bronze pump wearing ring
- Factory wired and tested before shipment
- Packaged construction for compact installation
- Engineered Reliability

*Availability dependent upon receiver size

Domestic® Series CBEM™ Duplex Boiler Feed Unit

STANDARD UNIT FEATURES:

- Cast iron receiver mounted on a fabricated steel stand. Receiver sized for 5 minute net storage.
- Cast Iron Receiver warranted for 20 years from date of shipment against failure due to corrosion.
- Series B35™ 2′ NPSH pump with drip-proof motors. Pump capacity sized 2 times system return rate.
- Float Switch, solenoid valve and "Y" Strainer water make-up assembly.
- Suction piping with isolation valves.

OPTIONAL EQUIPMENT AS SPECIFIED:

- Water level gauge with shut off valve
- Dial Thermometer
- Inlet Basket Strainer
- Discharge Pressure Gauges
- Lifting Eye Bolts
- NEMA 2 — U.L. Listed Control Panel
- TEFC or Explosion Proof motors and controls
- 3 valve bypass assembly around solenoid water make up valve
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- Renewable bronze pump wearing ring
- Factory wired and tested before shipment
- Packaged construction for compact installation
- Engineered Reliability

*Availability dependent upon receiver size

Domestic® Series CBM™ and CBEM™ Units

Description of Standard and Optional Equipment and Controls

Cast Iron Receivers — Close grained cast iron construction. These receivers offer maximum protection from corrosion and feature an inlet, vent and an 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, a unit of Xylem Inc., 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′ NPSH Centrifugal Pumps — Series B35 centrifugal pumps are close-coupled to 3500 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 suitable for 250°F operation. They are designed to handle condensate up to 210°F. at sea level when used with floor level receivers, and 212°F condensate when receivers are elevated 2 ft. or more.

Series B35™ 2′ NPSH Pumps are equipped with a seal cavity bleed line to provide seal lubrication and permit operation at a no flow shutoff condition minimizing the probability of premature seal failure.

Electric Motors — Drip-proof, ball bearing motors are standard. Standard voltages are: Three phase — 208-230/460V. Single phase — 115/230V. Single phase motors 2 hp and smaller have built-in overload protection.

Special 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.

Magnetic Starters — can be furnished in Consolitrol® 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.

Starters are provided with manual reset overload relays as standard for the protection of all windings of 1 and 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.

Control Power Switching Relay — When a transformer is not used, each pump control circuit shall be completely independent of the other. If a transformer is required, the control power will be supplied downstream of pump #1's disconnect switch. A control power switching relay should be supplied to allow the switch over of control power from pump #1 to pump #2 in the event of a failure or a no power condition of pump #1.

Selector Switches — can be furnished with "Auto-off-Hand" positions for all single units and duplex pumps except when "Lead-Lag" controls are supplied. Selector switches with "Off-Hand-Lead-Lag" positions are furnished with Lead-Lag" controls.

Manual Sequence Control (Lead-Lag) — for duplex units, consists of 2 selector switches used in conjunction with 2 magnetic starters. 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 fails. Two level boiler control required.

Electric Alternator — for duplex units. This control consists of an automatic electrical sequence relay used in conjunction with 2 magnetic starters and 2 selector switches. When magnetic starters and selector switches are furnished, the alternator is installed in "Consolitrol" control cabinet. This control provides for (1), automatic transfer of operating sequence after each cycle (2), simultaneous operations of both pumps under peak load conditions and (3), automatic operations of the inactive or lag pump if the lead pump or its control fails. Two level boiler control required.

Control Circuit Transformers — are available. They are required for all JIC specifications and voltages exceeding 230 volt. When combination magnetic starters are provided, a control circuit disconnect switch is used to allow unit operation while one pump is disconnected from power.

Boiler Level Control — refer to catalog Section 190 Boiler Feed Piping & Controls. Indicate piping arrangement desired in specification and on purchase order. (Automatic stand-by protection of second pump requires a 2 level pump control independent of boiler low water cut off and alarms.)

Water Make-up Assembly — consists of a piston pilot-operated valve controlled by a float switch. Valves are available in sizes suitable for most applications. Specify available water supply pressure.

Companion Flanges — All pumps have NPT discharge connections as standard. Pumps with 2″ or larger discharge (and high head 1½″ discharge pumps) are furnished with the NPT connection in a removeable companion flange.

Bronze Isolation Gate Valve — used with elevated receivers (Series CBEM) and factory installed in suction piping. They provide for removal and repair of one pump without shutting down the syste...

Butterfly Isolation Valves — Installed between pump suction and receiver. Series CBM receivers are available for pump capacities up to 75 gpm. The valves feature bronze fitted construction to provide effective corrosion resistance; they permit the removal of one pump on duplex units 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.

Three Valve By-Pass — this popular option provides for easy service of the solenoid make-up valve, and shut-off of the make-up supply. Furnished completely assembled when ordered with the unit.

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

xylem
Let's Solve Water

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