



AURORA[®]

MODELS 221-222,
221S-222S,
BFSX-BFDX-BFDL
**CONDENSATE AND
BOILER FEED UNITS**

INSTRUCTION AND REPAIR MANUAL

NOTE! To the installer: Please make sure you provide this manual to the owner of the equipment or to the responsible party who maintains the system.

CALIFORNIA PROPOSITION 65 WARNING:

▲ WARNING This product and related accessories contain chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

SERVICE

Your Aurora unit requires no maintenance other than periodic inspection and occasional cleaning. The intent of inspection is to prevent breakdown, thus obtaining optimum service life. For repair and parts replacement for your Aurora pump(s) refer to Instruction Manual section 6, item 323. Copies are available through your local Aurora Pump Sales Office. Defective float switches and mechanical alternators can be returned to their respective manufacturers for repair.

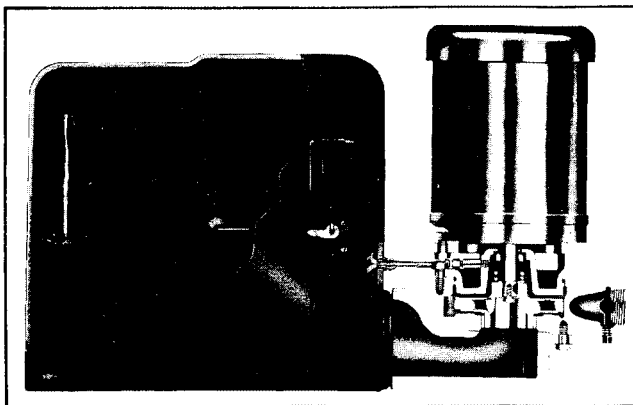
REPAIRS

The unit may be disassembled using the illustrations and text provided. Although complete disassembly is covered, it will seldom be necessary to completely disassemble your Aurora unit.

Inspect removed parts at disassembly to determine their reusability. Cracked castings should never be reused. All packing and gaskets should be replaced with new ones at reassembly. (For minor pump repair, remove the four nuts and disassemble the complete pump and motor from the pump casing as illustrated in Figure 1. Replacement of seal and impeller can be easily accomplished without further disassembly.)

DISASSEMBLY (See Figure 2.)

1. Close return valve and discharge gate valve and drain receiver by removing plug (10). (Tanks without isolation valve only.)
2. Disconnect the electrical lines from pump. Identify leads with tags for ease of reassembly.
3. Turn isolation valve to closed position.
4. Disconnect relief line from receiver (11).
5. Disconnect discharge piping from pump casing only if necessary.



A. Model 221 unit assembled

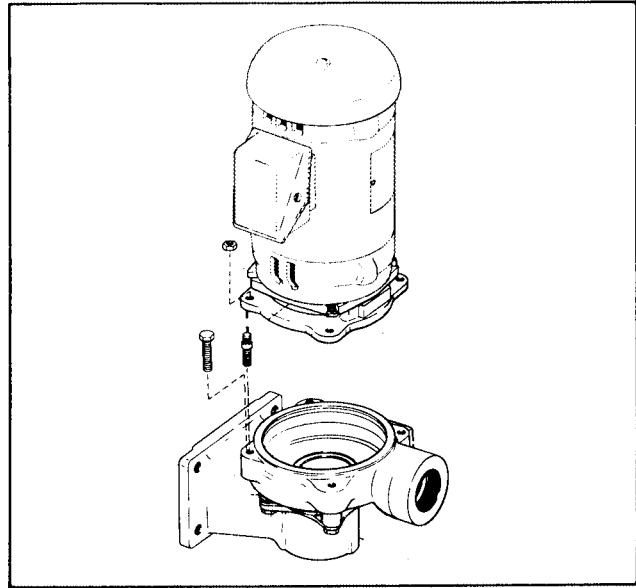


Figure 1. Pump Assembly Removal

6. Remove four nuts (1) and slide pump (2) from studs. Discard gasket only if necessary.

7. For simplex units only, remove plug (3), cover (4) and gasket (5) if desired. Remove studs (6) only if replacement is necessary.

8. Remove float switch (7) or alternator (8) as required. For simplex only, remove plug (9) if desired. Additional plugs (10) & (12) may be removed if necessary. Plugs (13) and (17) available on steel receivers only.

9. For boiler feed units only remove solenoid valve (15) and nipple (16).

10. Inspect all parts for workability. Remove any gasket residue from receiver to assure ease of reassembly.

Reassembly. The unit can be assembled as desired. Care should be taken not to damage the stud threads when installing the pump. Assemble the float switches or alternators taking care not to disturb their adjustment. Complete reassembly and installation as follows:

1. Connect relief line from pump to receiver.
2. Check that all plugs and electrical controls are secure with all switches in precise vertical position.
3. Be sure discharge piping is properly supported before connecting to pump. Unsupported piping could cause strain on the pump casing. Connect discharge piping to pump.

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4. Refer to Installation Section 2, Item 6 of this manual for proper electrical wiring. Connect leads from float control to pump and from float control to power supply.

5. Open return valve and let receiver fill. Check for leaks around pump suction base and cover plate on simplex units.

6. Turn isolation valve, if furnished, to the OPEN position.

CAUTION

Be sure relief line is connected between pump and receiver or the mechanical seal will run dry and be damaged.

Starting Pump After Reassembly. Do not operate pump until receiver has at least 5 inches of water. This minimum level is required to provide adequate lubrication to the mechanical seal and prime the pump. Check rotation prior to running the pump. Proper rotation is indicated on the casing with an

arrow. Engage pump and open discharge gate valve. After a period of continuous operation, inspect suction base mounting for leaks, receiver stud nuts for tightness and proper support of discharge piping. Be sure that the pump cycles on and off with the varying water levels.

SERIES 220 List of Parts (See Figure 2)

- | | |
|----------------------------|--------------------------------------|
| 1. Nut | 12. Plug |
| 2. Pump and Motor Assembly | 13. Plug (Steel Receiver Only) |
| 3. Plug | 14. Water Gauge (Std. B.F. Unit)* |
| 4. Cover | 15. Solenoid Valve (Std. B.F. Unit)* |
| 5. Gasket | 16. Nipple |
| 6. Stud | 17. Plug (Steel Receiver Only) |
| 7. Float Switch | 18. Isolation Valve (Optional) |
| 8. Alternator | |
| 9. Plug | |
| 10. Plug | |
| 11. Receiver | |

*B.F. Boiler Feed

NOTE

WHEN ORDERING SPARE PARTS ALWAYS INCLUDE THE UNIT TYPE, SIZE, SERIAL NUMBER, AND THE PIECE NUMBER FROM THE EXPLODED VIEW IN THIS MANUAL.

ORDER ALL PARTS FROM YOUR LOCAL AUTHORIZED DISTRIBUTOR, FACTORY BRANCH SALES OFFICE OR THE FACTORY AT NO. AURORA, ILLINOIS.

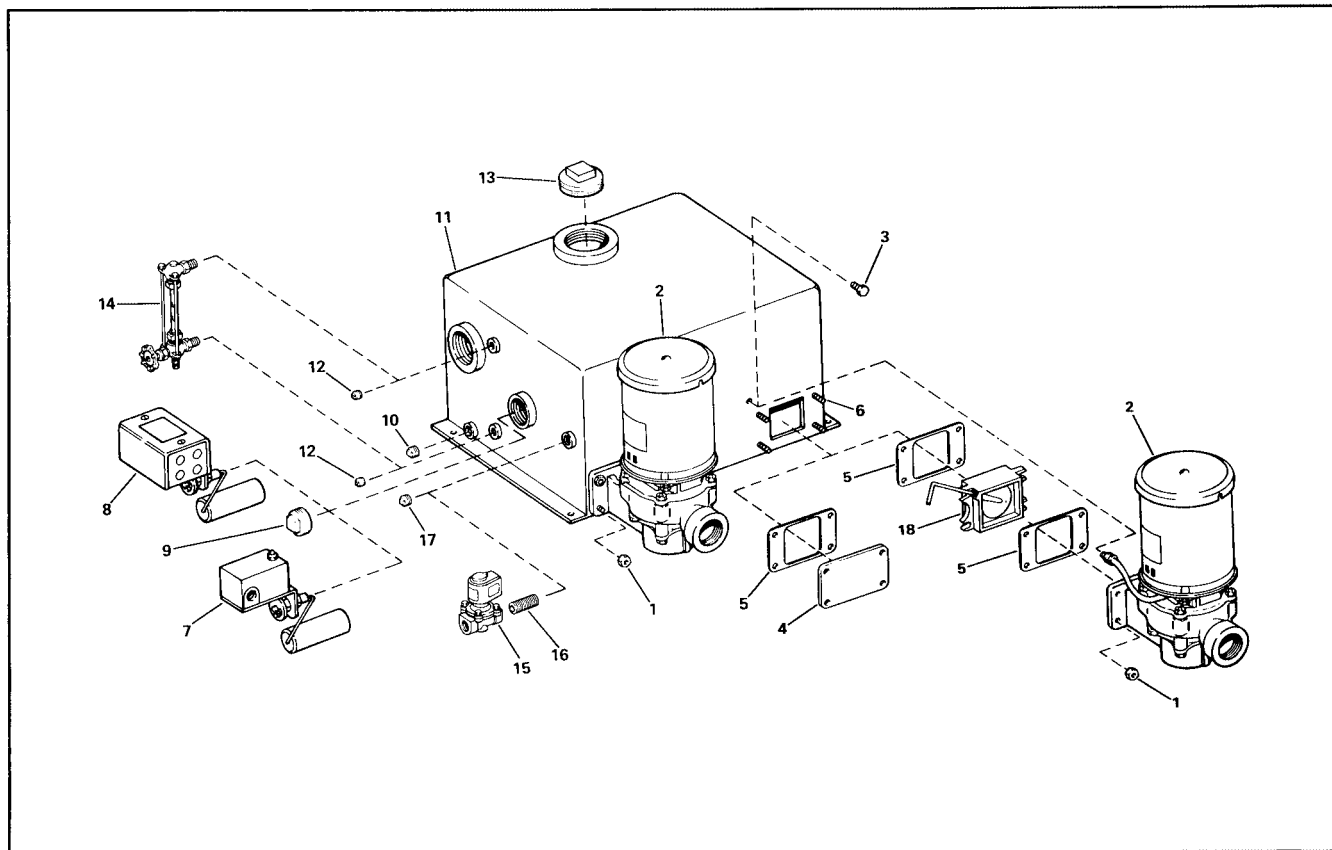


Figure 2. Series 220 Exploded View

WARRANTY

Seller warrants equipment (and its component parts) of its own manufacture against defects in materials and workmanship under normal use and service for one (1) year from the date of installation or start-up, or for eighteen (18) months after the date of shipment, whichever occurs first. Seller does not warrant accessories or components that are not manufactured by Seller; however, to the extent possible, Seller agrees to assign to Buyer its rights under the original manufacturer's warranty, without recourse to Seller. Buyer must give Seller notice in writing of any alleged defect covered by this warranty (together with all identifying details, including the serial number, the type of equipment, and the date of purchase) within thirty (30) days of the discovery of such defect during the warranty period. No claim made more than 30 days after the expiration of the warranty period shall be valid. Guarantees of performance and warranties are based on the use of original equipment manufactured (OEM) replacement parts. Seller assumes no responsibility or liability if alterations, non-authorized design modifications and/or non-OEM replacement parts are incorporated. If requested by Seller, any equipment (or its component parts) must be promptly returned to Seller prior to any attempted repair, or sent to an authorized service station designated by Seller, and Buyer shall prepay all shipping expenses. Seller shall not be liable for any loss or damage to goods in transit, nor will any warranty claim be valid unless the returned goods are received intact and undamaged as a result of shipment. Repaired or replaced material returned to customer will be shipped F.O.B., Seller's factory. Seller will not give Buyer credit for parts or equipment returned to Seller, and will not accept delivery of any such parts or equipment, unless Buyer has obtained Seller's approval in writing. The warranty extends to repaired or replaced parts of Seller's manufacture for ninety (90) days or for the remainder of the original warranty period applicable to the equipment or parts being repaired or replaced, whichever is greater. This warranty applies to the repaired or replaced part and is not extended to the product or any other component of the product being repaired. Repair parts of its own manufacture sold after the original warranty period are warranted for a period of one (1) year from shipment against defects in materials and workmanship under normal use and service. This warranty applies to the replacement part only and is not extended to the product or any other component of the product being repaired. Seller may substitute new equipment or improve part(s) of any equipment judged defective without further liability. All repairs or services performed by Seller, which are not covered by this warranty, will be charged in accordance with Seller's standard prices then in effect.

THIS WARRANTY IS THE SOLE WARRANTY OF SELLER AND SELLER HEREBY EXPRESSLY DISCLAIMS AND BUYER WAIVES ALL OTHER WARRANTIES EXPRESSED, IMPLIED IN LAW OR IMPLIED IN FACT, INCLUDING ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Seller's sole obligation under this warranty shall be, at its option, to repair or replace any equipment (or its component parts) which has a defect covered by this warranty, or to refund the purchase price of such equipment or part. Under the terms of this warranty, Seller shall not be liable for (a) consequential, collateral, special or liquidated losses or damages; (b) equipment conditions caused by normal wear and tear, abnormal conditions of use, accident, neglect, or misuse of said equipment; (c) the expense of, and loss or damage caused by, repairs or alterations made by anyone other than the Seller; (d) damage caused by abrasive materials, chemicals, scale deposits, corrosion, lightning, improper voltage, mishandling, or other similar conditions; (e) any loss, damage, or expense relating to or resulting from installation, removal or reinstallation of equipment; (f) any labor costs or charges incurred in repairing or replacing defective equipment or parts, including the cost of reinstalling parts that are repaired or replaced by Seller; (g) any expense of shipment of equipment or repaired or replacement parts; or (h) any other loss, damage or expense of any nature.

The above warranty shall not apply to any equipment which may be separately covered by any alternate or special warranties.

PERFORMANCE: In the absence of Certified Pump Performance Tests, equipment performance is not warranted or guaranteed. Performance curves and other information submitted to Buyer are approximate and no warranty or guarantee shall be deemed to arise as a result of such submittal. All testing shall be done in accordance with Seller's standard policy under Hydraulic Institute procedures.

LIABILITY LIMITATIONS: Under no circumstances shall the Seller have any liability under the Order or otherwise for liquidated damages or for collateral, consequential or special damages or for loss of profits, or for actual losses or for loss of production or progress of construction, regardless of the cause of such damages or losses. In any event, Seller's aggregate total liability under the Order or otherwise shall not exceed the contract price.

ACTS OF GOD: Seller shall in no event be liable for delays in delivery of the equipment or other failures to perform caused by fires, acts of God, strikes, labor difficulties, acts of governmental or military authorities, delays in transportation or procuring materials, or causes of any kind beyond Seller's control.

COMPLIANCE WITH LAW: Seller agrees to comply with all United States laws and regulations applicable to the manufacturing of the subject equipment. Such compliance shall include: The Fair Labor Standards Acts of 1938, as amended; Equal Employment Opportunity clauses of Executive Order 11246, as amended; Occupational Safety and Health Act of 1970 and the standards promulgated thereunder, if applicable. Since compliance with the various Federal, State, and Local laws and regulations concerning occupational health and safety, pollution or local codes are affected by the use, installation and operation of the equipment and other matters over which Seller has no control, Seller assumes no responsibility for compliance with those laws and regulations, whether by way of indemnity, warranty, or otherwise. It is incumbent upon the Buyer to specify equipment which complies with local codes and ordinances.



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