

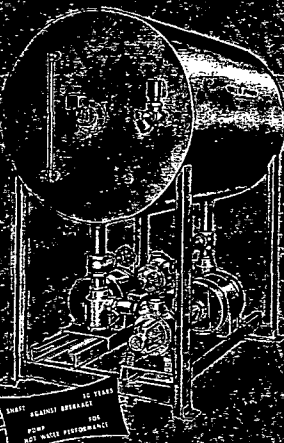
# ROTH

## PACKAGED BOILER FEED UNITS

### DUPLEX MODELS

### Certified Hot Water Performance in Factory Assembled Systems for Boilers of 40 to 500 HP Operating at Pressures up to 200 PSI.

The Roy A. Roth Company will certify the hot water performance of any model taken from the selection table (page 4) at the stated capacity and pressure listed therein when such certification is requested with the purchase order. Certification will be based upon a special hot water test run upon the pump ordered. A small additional charge will be made to cover the cost of the hot water test. All pumps on these units will deliver at least 50% of rated capacity at 210°F.



ROTH turbine boiler feed pumping units are a line of factory assembled systems for boilers from 40 to 500 HP operating at pressures up to 200 PSI. Factory assembly reduces costly erection labor on the job site and insures factory responsibility for the proper selection and function of the entire unit.

ROTH boiler feed units consist of one or more motor driven pumps combined with a hot water storage tank or receiver and an automatic make-up valve to replace system losses. These units are used with most fire tube and scotch marine boilers when operated for process steam at pressures above 20 PSI. They are also used in modified form with water tube boilers.

The motor driven pump operates intermittently and is controlled by a special float switch or pump controller mounted on the boiler water column, starting the pump at low water level and stopping it at high water level.

Water pumped from the vented receiver is usually at least 70% hot condensate and varies from 180°F up to boiling point, depending on the amount of flash steam returned.

Boiler feed pumps with low suction head tend to lose capacity as water temperature approaches 212°F. By lowering the suction head to zero and raising the water temperature to 212°F it is possible to vapor lock any turbine or centrifugal pump. For this reason the buyer should be protected against hot water fall-off by performance guarantees in which suction head and temperatures are clearly stated as in the selection table (see page 4). All pump models furnished with ROTH Boiler Feed Units are thoroughly charted for performance in handling water close to boiling point and are rated for their capacity at 206°F.

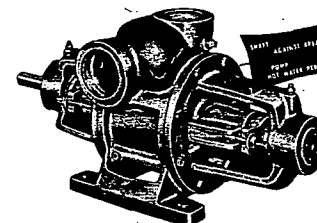
In addition to certified hot water performance, ROTH engineering has resulted in many other design improvements assuring long, dependable operation. By eliminating ball bearing end-play, impeller position is permanently maintained. The new ROTH pumps have heavier shafts than any previously manufactured equipment and are covered by a written guarantee (see page 12).

Other components of ROTH Boiler Feed Units are manufactured with equal care. Welded steel receivers are of 3/16 inch copper-bearing steel and internally coated with a rust-resistant phenolic resin

lining. Large diameter piping between receiver and pump eliminates pressure drop and includes a large strainer especially made for use on these units. Mechanical make-up valve for receivers up to 100 gallon capacity is float operated. A solenoid valve controlled by a float switch is supplied for units with 180, 250, 350, and 500 gallon receivers.

Available at additional cost are the following items:

- (1) Separable tank cradles instead of welded legs available on all sizes.
- (2) Dished head receivers made to 75 lb. ASME specifications, with or without code stamp can be substituted for 3/16 inch steel flat head receivers.
- (3) Perforated tube heaters with manual or automatic temperature-controlled steam valves.
- (4) Magnetic starters, alarm bells, pressure gauges, and signal lights.
- (5) Motorized valve in place of solenoid valve.

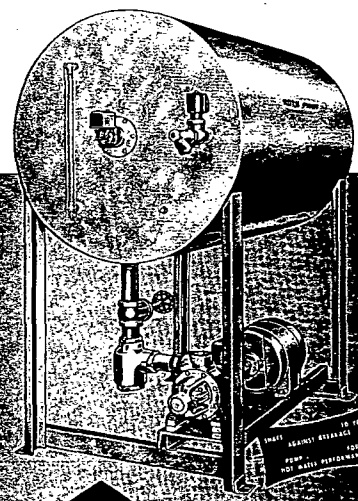


**ROTH TWO-STAGE TURBINE POWER PLANT PUMPS** delivering up to 200 PSI at 1750 RPM are standard on this line of equipment. Large passages between stages, special suction entrance modification, and the inherent vapor handling characteristics of the ROTH turbine impeller contribute to this pump's ability to efficiently handle hot water at high pressure differential and low suction head.

### SPECIFICATION FORM

Furnish and install as called for on the drawings one ROTH Model \_\_\_\_\_ (specify simplex or duplex) boiler feed unit suitable for \_\_\_\_\_ GPM at a discharge pressure of \_\_\_\_\_ PSI. The unit shall consist of the following components:

- (1) One (substitute two for duplex) ROTH Model \_\_\_\_\_ standard fitted power plant pump certified by the manufacturer for a minimum of \_\_\_\_\_ GPM at 206°F water at \_\_\_\_\_ PSI with 4 ft. suction head. The pump shall be guaranteed by the manufacturer for one year against defects in workmanship and material and shall be guaranteed for ten years by the manufacturer against shaft breakage when flexible coupled to a motor of recommended rating. The pump shall contain an internal system for relief of pressure on the packing to insure maximum packing life.
- (2) One non-code welded steel receiver made of 3/16" thick copper-bearing steel with phenolic resin lining, integral supports, and connection for inlet, outlet, drain, vent, make-up valve, thermometer, and gauge glass. (Substitute if desired one dished head receiver built to ASME code for unfired pressure vessels rated 75 lb. working pressure with or without ASME inspection stamp but with separable cradle supports and connections for inlet, outlet, vent, drain, thermometer, gauge glass and make-up valve also with hand hole or manhole for cleanout per ASME code depending on the diameter of the receiver.)
- (3) One fresh water make-up valve consisting of a 3/4 inch solenoid valve (specify 1 inch on 500 gallon receivers) controlled by a float switch mounted on the receiver for \_\_\_\_\_ phase \_\_\_\_\_ volt current, (substitute 3/4" float operated mechanical valve with pressure reducing valve set for 15 PSI for units with 60 and 100 gallon receivers).
- (4) Piping between the receiver and pump to consist of one (substitute two for duplex) vertical section containing a gate valve and one (substitute two for duplex) horizontal section connected by Roth L-Type strainer to insure minimum pressure drop between receiver and pump.
- (5) One (substitute two for duplex) 1750 RPM drip proof motor for \_\_\_\_\_ phase \_\_\_\_\_ volt current. Motor shall not be loaded in excess of NEMA service factor for integral drip proof motors. Make shall be General Electric, Louis Allis, Howell or equal.
- (6) One (substitute two for duplex) magnetic starter of approved type suitable for the above motor, with holding coil for \_\_\_\_\_ volts.
- (7) Gauge glass of proper size.
- (8) Tank thermometer.
- (9) When provision for heating water in the receiver is required add, "One brass perforated tube heater installed in the receiver." When automatic temperature regulated heater is required specify, "One brass perforated tube heater installed in the receiver connected to one temperature controlled regulating valve mounted on the heater connection."



### SIMPLEX MODELS

ROTH Boiler Feed Units have been designed in simplex or duplex models with or without packaged cradles and down units. Both are available and manufactured to the highest standards of precision and reliability. ROTH equipment is guaranteed for ten years.

ROY A. ROTH COMPANY TURBINE PUMP DIVISION ROCK ISLAND, ILLINOIS