

**txp

Special Check-out Guide Using Test Resistor

A 220 ohm ¼ watt resistor, initially supplied with unit, may be connected in place of probe to aid in troubleshooting to determine if problem is in the controller or with the probe. The test resistor represents 2500 micro mho of conductivity.

1. Turn power OFF and remove 4 screws holding front control panel to gain access to power board.
2. Disconnect probe wires and insert Test Resistor as shown on the Boiler-Matic 3000/4000 Wiring Detail on page 7. Re-secure front panel.
3. Turn SET-POINT knob to 2500 micromhos.
4. Turn power ON. If CAL light is extinguished, use a small tip screwdriver or alignment tool turn CAL potentiometer clockwise until the CAL light just illuminates. If CAL light illuminates, turn CAL potentiometer counter-clockwise until the CAL light just extinguishes.

Note: If calibration problems are encountered it may be because multi-turn CAL potentiometer has been adjusted out of normal calibration range. This applies to units manufactured after 05/99. Try the following calibration steps. Adjust the CAL potentiometer clockwise @10 turns. If CAL light has not illuminated, adjust the CAL potentiometer counter-clockwise @20 turns. If CAL light still has not illuminated, adjust CAL potentiometer again clockwise @30 turns. The potentiometer in units manufactured before 05/99 were of the type that have a distinct beginning and end position. If problem still persists controller is defective.

5. Leave CAL potentiometer set at the point where the CAL light is just extinguished.
6. Turn SET-POINT knob to 2000 on dial and CAL light should illuminate. If it does not illuminate, retrace calibration steps taking special care to adjust to point when CAL light is just extinguished.
7. To speed up the process on BM3000 units, record the settings of the DURATION and INTERVAL potentiometers and turn both fully counter-clockwise (not applicable to BM4000).
8. If unit is not in blow with BLO light illuminated depress RESET button to start blow down sample period. The CAL light should be illuminated at 2000 micomho setting and when BLOW light illuminates it should stay illuminated indefinitely. Electric valve should be open if wired to controller.
9. After 60 seconds have passed, turn SET-POINT knob to 3000 micromhos. The CAL light and BLO light should both extinguish. The electric valve if attached should close also checking out valve function. If BLO light on panel is illuminated but there is no valve function, check wiring to valve and if correct suspect defective power board.
10. Turn SET-POINT knob to 2000 the CAL light should illuminate.

11. After an interval of 2.5 to 3 minutes BLO light should illuminate and remain illuminated as before until the set point is changed to a setting higher than 2500 to extinguish CAL light.
12. If steps 3 through 11 conditions are met, controller is okay. Remove test resistor, reconnect probe, reset DURATION and INTERVAL potentiometers.
13. If steps 3 - 11 are not met, the controller is defective. Replace or return for repair.
14. Initial Calibration procedure (page 12) must be performed to recalibrate controller to the desired value to maintain total dissolved solids (TDS) in the boiler system.
15. If a problem persists with probe hooked up, inspect probe and probe wiring.

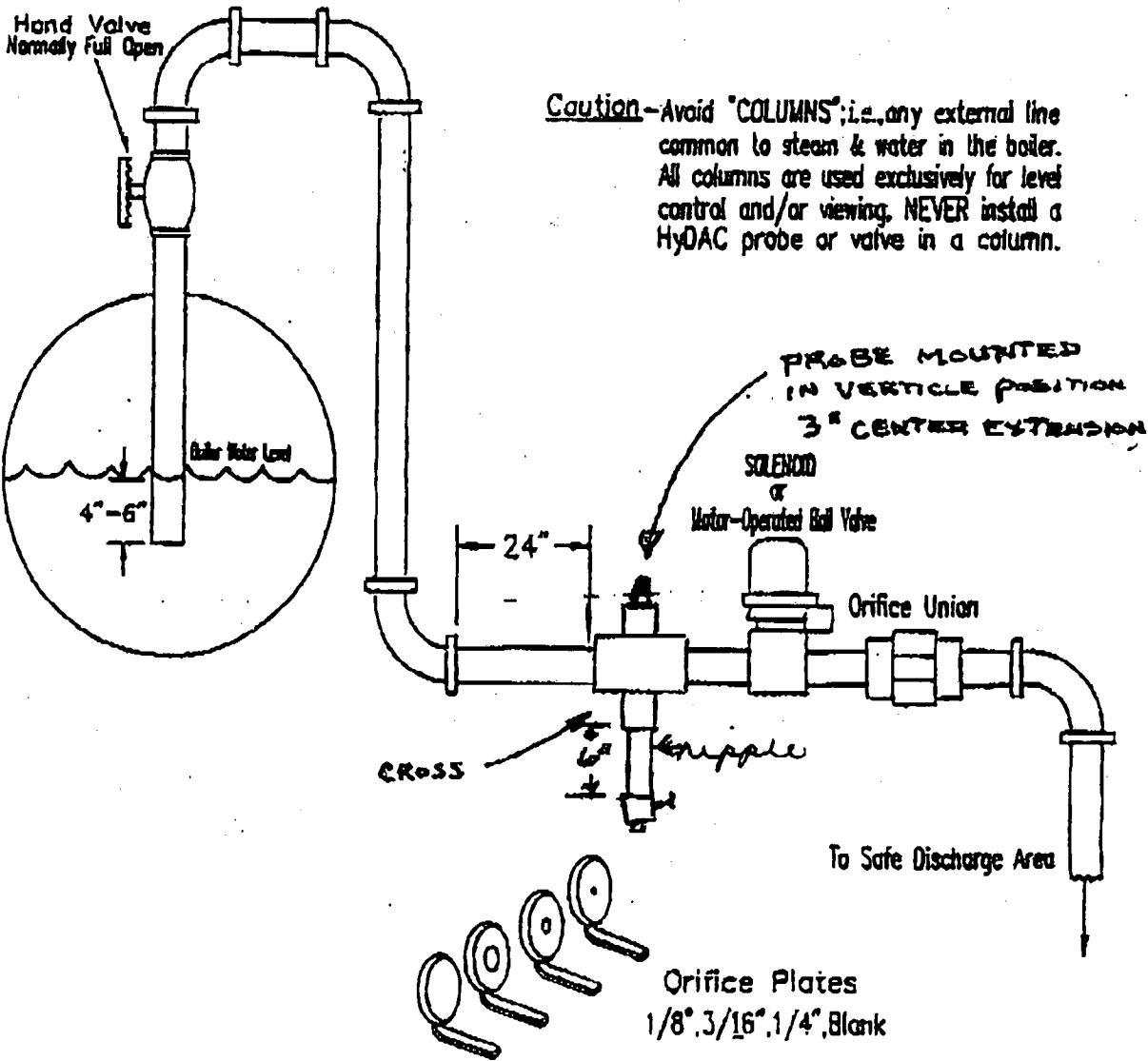
Quick spot check when no cal light lights – place short across probe terminals even with probe still in place Cal light should come on. If not there is a problem with controller.

For intermittent output power to load problem- lightly tapping on relay with insulated screw driver handle will verify possible cold solder connection at relay leads or at terminal strip.

Intermittent lost of power indicated by power LED going ON and OFF – Press or tap lightly on power transformer.

BLO and cal LED's on but no power LED- check to make sure IDC cable connector on correctly not over one pin or on backwards.

How To Install A Surface Blow-Down Line In "Packaged" Fire Tube Boilers



NOTE: Standard Piping to be 3/4" NPT

*Low pressure applications
below 50 psig
(to prevent steam flashing)*