IV. AUTO BLOWDOWN AND AUTO ON/OFF TIMECLOCKS

The "HC" steam generator, with an optional auto blowdown system, will automatically purge the steam boiler. Working in conjunction, the Time Clock and electrically motorized valve, which allows blowdown on boilers, prevents excessive mineral and scale build-up.

A. Installation

1. Auto Blowdown Drain Valve (plumbing)

Attach the main blowdown drain valve to 3/4" indirect drain (most local codes require a blowdown tank). A strainer must not be used with the valve. Note: the drain line must be angled downward, allowing gravity to properly drain the machine.

2. Auto Blowdown (electrical)

All wiring is done at the factory so that no special electrical wiring is necessary.

B. Operation

First decide the TIME OF DAY you require the boiler to blowdown. It is recommended to select a time while the boiler is in use, but under low demand. For best results program the Timer to blowdown every day of use for a period of 5 minutes.

The blowdown will begin with the Timer "ON" command and end with the Timer "OFF" command. See Page 9 and 10.

C. SETTING AUTOMATIC ON/OFF TIME CLOCK

The Steam Generator will turn ON with the Timer "ON" command and OFF with the timer "OFF" command. See Page 9 and 10.

IMPORTANT. The Auto Blowdown Timer and Auto On/Off Timer are two separate timers. If your steam generator only has one timer, then only one of these two options can be programmed. Check with the installer to see which option has been purchased.

V. STEAM GENERATOR OPERATION

A. Place START, WATER SOLENOID, and STEAM SOLENOID switches in the ON position. The Water Solenoid Valve will open and the boiler will fill to its proper level (one-half to two-thirds of the sight glass full) and automatically shut-off.

B. When there is adequate water in the boiler the power contactor will energize and the red power light will illuminate indicating that the boiler is heating up.

NOTE: This boiler is equipped with a Solid State Liquid Level Control System. Water level is maintained in the boiler, by a ground potential signal between each stainless steel water level probe and the boiler, and operates by sensing the electrical resistance of water.

Both the water feed and low water cut-off functions are regulated by a low voltage electrical signal that activates the control relay(s), depending on the water level within the boiler which, in turn, energizes the water solenoid valve and/or power contractor.

C. When adequate steam has been generated from the boiler and the desired temperature reached in the steamroom the steam solenoid valve will close: when controlled by the ST-200C. The steamroom is now ready for use. **Note:** When the steam solenoid valve closes the red pilot light above the toggle switches will go out only after steam pressure builds to approximately 8 to 10 PSI within the boiler.

The boiler will maintain an 8 to 10 PSI steam pressure by use of a pressure control which is supplied as standard equipment. The pressure control will cycle the unit ON and OFF automatically when the steam solenoid valve is OFF and the room temperature control is satisfied. If the solenoid valve is OPEN, the pressure in the boiler will drop and the red light will stay ON.

D. If a ST-200C Temperature Control System (Thermostat) is provided, set the dial to the desired TEMPERATURE (Dial Calibration: 1 to 10 setting for comfort level). (Refer to Section III for Operating Instructions.)

E. If an Automatic ON/OFF Time Clock is provided, set "the timer cycle" in order to operate the steambath generator.

VI. STEAM GENERATOR MAINTENANCE

A. MANUAL BLOWDOWN (Only if not equipped with Automatic Blowdown)

The boiler should be blown down on a daily basis to purge the vessel of mineral deposits and possible scaling. For effective blowdown, the STEAM, WATER, and START switches must be placed in the OFF position. The drain valve should be opened completely, allowing the boiler water to exit through your drainage piping into an indirect drain. Now, place the water solenoid switch in the ON position allowing the system to flush through for approximately 5 minutes. Close the drain valve and allow the boiler to fill with water until the proper level has been reached. The generator is again ready for use, place the START and STEAM switches in the ON position.

B. PERIODIC INSPECTION

CAUTION: Disconnect all power to boiler before servicing. Service should be performed by a qualified person.

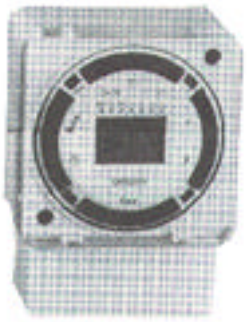
1. Check electrical connections periodically, to ensure that they are tight.

2. Remove Liquid Level Probe periodically to check for deposits. Check that the bottom union, which attaches the water level probe assembly is clean of deposits. If necessary, clean stainless steel probes and teflon insulated tubing by removing all foreign matter. Extreme care should be exercised so that porcelain insulators are not damaged during the removal of Liquid Level Probe. This will ensure proper conductivity and operation of boiler.

3. Remove flange-type element to clean any scale that might have built up on sheath of heating element(s). Be careful when cleaning heating element, not to deform the rods.

Digi 20 Series
One Circuit Electronic
24 Hour or 7 Day Time Switches

FIGURE 7. Auto Blowdown and Auto ON/OFF Timeclock



Digi 20A
(surface mounting)

Operating Instructions

APPLICATION

Time based control of lighting, ventilating, heating, cooling or other electrical loads in commercial and industrial applications. The Digi 20 time switches are programmable for 24-hour or 7-day schedules.
The Digi 20A is intended for either surface or rail mounting. The control is completely enclosed in a plastic housing and includes a terminal cover and sub-base for installation and hard wiring.
The Digi 20E is intended for flush (panel) mounting.
All units are supplied with a clear plastic dust cover.

TECHNICAL DATA

Output-1 SPDT relay with dry contacts
Switch Rating: 16A/277VAC resistive
1 OOOW tungsten @ 240VAC; 50OW @ 120VAC
1/2 hp @ 120VAC; 1 hp @ 240VAC
100 hour capacitor back-up of memory and display
Supply voltages: Separate Models - 24VAC/DC, 120VAC,
208/240VAC, all 50/6OHz (refer to product label)
Shortest switch time-1 minute
Ambient Temperature Range -20° F to 140° F (28 °C to 60° C)
VA required: 120V & 240V models: 4VA
24V model: 2VA @ 24VAC, 1VA @ 24VDC
Screw terminal connections (Digi 20A)
1/4" quick connects (Digi 20E)
Accuracy ± 4 minutes per year

WIRING

1. Disconnect the power.
2. Wire input to timer Ⓜ to the proper voltage marked on the unit. Wiring to incorrect voltage will avoid the warranty.
3. Connect wiring according to the wiring diagram. The terminals on the Digi 20A sub base will accommodate 10 to 24 AWG wire.