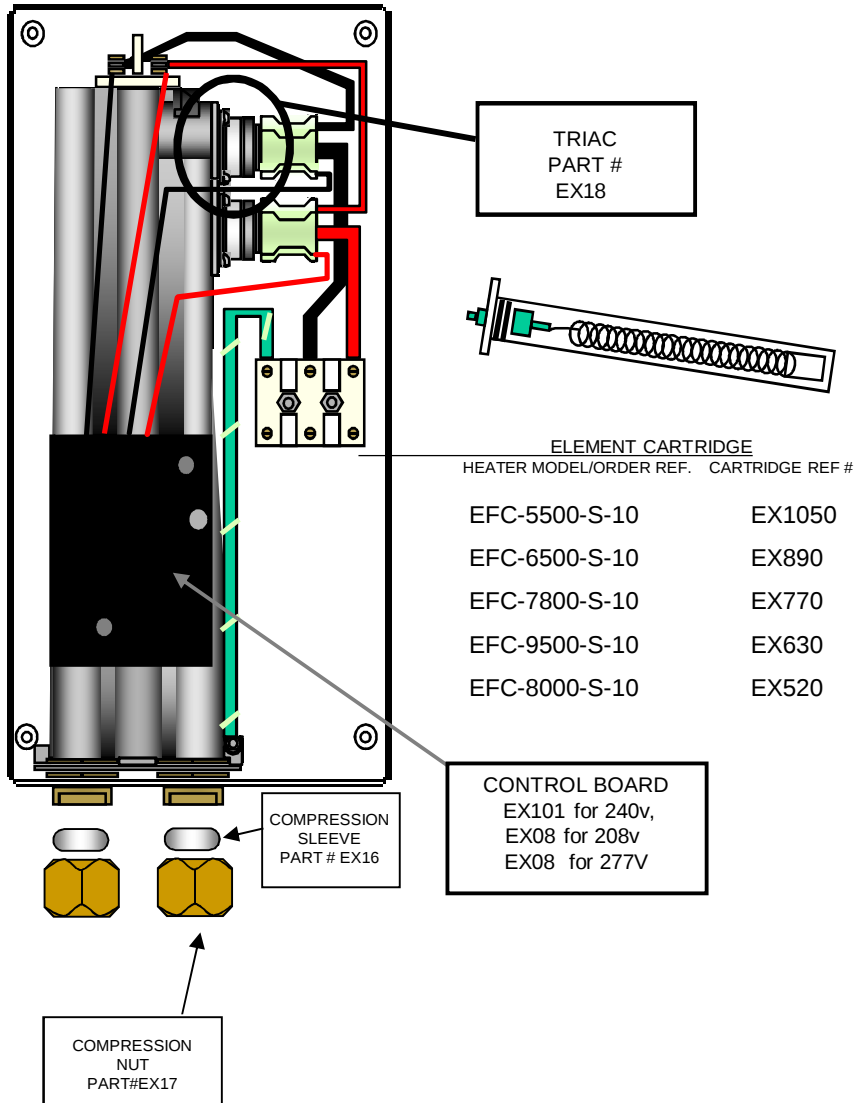


Replacement Parts for ðFlow Controlled Units

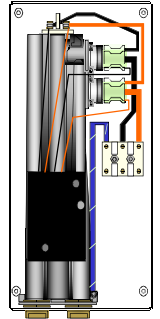


ELECTRIC INSTANTANEOUS TANKLESS WATER HEATER INSTALLATION GUIDE AND OWNERS MANUAL

ðFlow Controlled

MODELS COVERED:

EFC-5500-S-10	240V	EFC-8300-S-10	208V
EFC-6500-S-10	240V	EFC-6000-S-10	277V
EFC-7500-S-10	240V	EFC-8000-S-10	277V
EFC-9500-S-10	240V	EFC-9000-S-10	277V
EFC-10000-S-10			277V



WARNING
BEFORE ATTEMPTING INSTALLATION OF THIS UNIT OR MAKING ANY ADJUSTMENTS TO THE UNIT, BE SURE CIRCUIT BREAKER IS OFF TO PREVENT DANGER OF SERIOUS ELECTRIC SHOCK.
FAILURE TO GROUND THE SYSTEM MAY RESULT IN SERIOUS INJURY OR DEATH

INSTALLER/ CONSUMER RESPONSIBILITIES

READ THIS MANUAL CAREFULLY BEFORE ATTEMPTING TO INSTALL OR OPERATE THIS WATER HEATING UNIT. IF THE SAFETY RULES ARE NOT FOLLOWED, THE UNIT WILL NOT OPERATE PROPERLY AND COULD CAUSE DEATH, SERIOUS BODILY INJURY AND/OR PROPERTY DAMAGE.

WARRANTY OF THIS WILL DEPEND ON PROPER INSTALLATION AND OPERATION. THE WARRANTY WILL BE VOID IF THE DESIGN HAS BEEN ALTERED IN ANY WAY WHATSOEVER. THE MANUFACTURER OF THIS UNIT WILL NOT BE LIABLE FOR ANY DAMAGES BECAUSE OF FAILURE TO COMPLY WITH THE INSTALLATION AND OPERATING INSTRUCTIONS OUTLINED ON THE FOLLOWING PAGES.

THE INSTALLATION MUST CONFORM WITH THE INSTRUCTIONS IN THIS MANUAL AND LOCAL CODES, OR IN THE ABSENCE OF LOCAL CODES, WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE. THE N.E.C. IS AVAILABLE FROM UNDERWRITERS LABORATORIES, 333 PFINGSTEN RD., NORTHBROOK, IL. 60062

IF ASSISTANCE IS REQUIRED OR ANY QUESTIONS ARISE CONTACT TECHNICAL SERVICE DEPARTMENT TOLL FREE:1-800-343-3393.
HAVE THE INFORMATION LISTED BELOW BEFORE CALLING:
MODEL NO. _____ SERIAL NO. _____ INSTALLATION DATE _____

GENERAL

This Flow Controlled water heating unit is specifically designed to take in cold water only and heat it to temperatures suitable for the normal domestic usage up to a maximum of 140° F(60°C). To obtain optimum performance and energy savings, this unit should be located as close as possible to the point of use. This unit is supplied with compression rings and nuts suitable for direct coupling to 1/2"(5/8 OD) copper or plastic piping. Do not use additional screwed fittings or standard pipe dope. The use of such materials will void the warranty.

DO NOT SOLDER PIPES WHILE THE UNIT IS INSTALLED

(serious damage to the electronic flow switch will result).

This heater must have its own independent circuit, using a correctly rated breaker and wires suitable for at least 75 °C operation.

WARNING

Failure to ground this system may result in death or serious injury.

MOUNTING THE UNIT

1.

TROUBLE SHOOTING

SYMPTOM: NO HEAT INDICATOR LIGHT OFF

1) ELECTRIC SUPPLY IS OFF

Turn on the main circuit breaker.

2) NO OR LOW WATER FLOW

Ensure that the minimum flow rate to switch on your heater is met.

6EFC-1000,9500,9000,8300 Models minimum flow rate = 0.75 gals. per minute

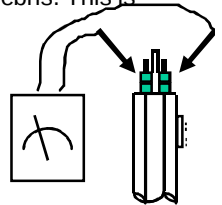
6EFC-8000,7500,6500 Models minimum flow rate = 0.6 gals. per minute

6EFC-6000,5500 Models minimum flow rate = 0.5 gals. per minute

Also check that the inlet filter screen is clear from any debris. This is located in the brass inlet boss.

3) WATER CONNECTIONS ARE REVERSED

Cold water inlet = right side, hot water outlet = left side.



4) ELEMENT BURNED OUT

TURN OFF THE circuit breaker!

Using an ohmmeter test the resistance of the heating element across the two threaded termination rods on top of the element.

The resistance reading should be under 10 ohms.

If the resistance is much greater than this value, call Technical service for a replacement element.

SYMPTOM: NO HEAT OR LOW TEMPERATURE WITH INDICATOR LIGHT ILLUMINATED.

1) WATER FLOW TOO HIGH

Reduce the water flow by using an outlet ball valve. See TABLE 1 for temperature rise at various flow rates.

2) INCORRECT POWER SUPPLY

Make sure that the unit is connected to the voltage supply specified on the rating label on the the front cover of the unit.

3) ELEMENT BURNED OUT

TURN OFF THE CIRCUIT BREAKER!

Repeat the steps from paragraph 4) above.

MOUNTING THE UNIT

- 1) The unit should be mounted as close to the point of use as possible.
- 2) This unit must only be mounted in the vertical position with the water fittings at the bottom of the unit. Mounting other than in the vertical position WILL cause element burn out.
- 3) The cold water inlet is on the right hand side and the hot water outlet is on the left hand side. Under NO circumstances can these be reversed.
- 4) Leave a minimum of 86" **ABOVE** the unit for easy replacement of the element.
- 5) The heater should be fixed to the wall using the four mounting holes at each corner of the backplate.

NOTE: The heater should be installed below the level of all hot water outlets serviced by this unit.

NOTE: PRESSURE RELIEF DEVICE

This unit is not required by UL to have a Pressure and Temperature safety relief valve (PTRV). Consult local codes to find out if one is required in your area.

If local codes require the use of temperature and pressure relief valve one should be installed on the outlet hot water pipe before the outlet ball valve.

OPERATING THE WATER HEATER

IMPORTANT

Before switching on the power at the circuit breaker the hot water circuit must be free of air pockets or premature failure of the heating element will occur. To do this, open all hot water faucets one at a time for a minute or two until the water flow is continuous and free from gurgling and from visible air pockets.

- 1) With inlet and outlet BALL VALVES fully open, turn on all hot water outlets serviced by the unit.
- 2) Run for 5 minutes, turning faucet on and off repeatedly.
- 3) Switch on electric supply at circuit breaker.
- 4) The power indicator light should now illuminate.
NOTE: At this point water temperature may not be very hot.
- 5) Using the OUTLET BALL VALVE slowly reduce water flow until desired temperature is achieved at hot water outlet.

NOTE: The water temperature is proportional to the flow through the heater. The lower the flow the higher the temperature and vice versa.

- 6) Check performance of flow switch by opening and closing outlet valve a few times. The power indicator light should illuminate **ONLY** when water is flowing through the unit. For expected temperature rise at various rates of flow see table 1.

NOTE: An EFC-9500-s-10 (9.5 kW) unit at 240 V will deliver 1 gallon per minute at 65°F temperature rise. For example, with incoming water temperature at 45°F the unit will produce 1 gallon per minute at 110°F.

- 7) It is possible that drawing off cold water at comparatively high rates of flow elsewhere in the building at the same time that the heater is working, could cause premature element failure. Care should be taken not to starve the unit of cold water. To prevent this from happening, open fully the main valve on the cold supply to the building and throttle back the control valves to the other cold water outlets.

Note: The unit comes with two faucet mounted aerators, these should be mounted on both the faucets served by this unit. The single comes with one faucet mounted aerator and 3/8" compression fittings with integral flow restrictor.

PLUMBING CONNECTIONS

NOTE:

ALL PLUMBING AND MOUNTING MUST BE COMPLETED BEFORE PROCEEDING WITH THE ELECTRICAL HOOK-UP.

- 1) The unit is supplied with compression fittings. USE THESE: DO NOT USE THREADED PIPE FITTINGS. DO NOT USE PIPE DOPE OR TEFLON TAPE ON THIS INSTALLATION. Ensure the inlet filter supplied with this unit is in place.

- 2) Ensure that the pipes are correctly aligned with the inlet and outlet bosses in order to avoid excessive stress on the heater body molding.

NOTE: Run water through the supply pipe to remove all debris from the pipe before connecting to the unit. Failure to do so could damage the flow switch.

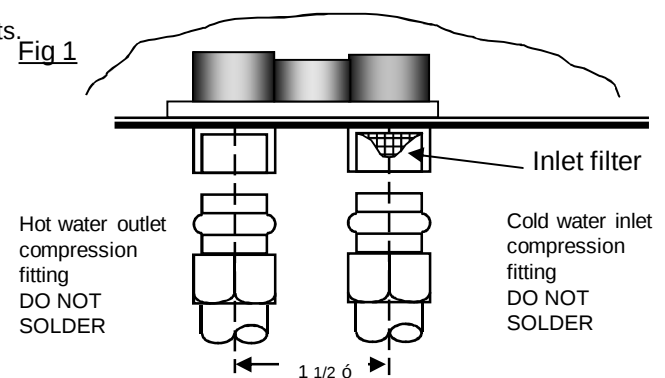
- 3) Install isolating valves (full flow ball valve type) on both inlet and outlet pipes. This allows the unit to be isolated for maintenance purposes. (Fig. 2)

- 4) When all plumbing is complete, inspect the system for water leaks at all plumbing connections. If a water leak is present take corrective action. If a water leak is at the compression fitting, slowly tighten compression nut until the water leak ceases.

Fully open both inlet and outlet ball valves.

Run all hot water outlets fed by this heater one at a time for a minute or two until the water flow is continuous, and free from gurgling and from all visible air pockets.

Fig 1



TEST THE INSTALLATION FOR LEAKS BEFORE CONNECTING THE ELECTRICAL SUPPLY.

ELECTRICAL CONNECTIONS

WARNING
BEFORE BEGINNING ANY WORK ON THE INSTALLATION
BE SURE THAT THE CIRCUIT BREAKER IS OFF
TO AVOID ANY DANGER OF SHOCK.

This water heating unit must have its own independent circuit using insulated, UL listed, 3 wire cable of the appropriate size suitable for use up to 75 °C protected by the correctly rated circuit breaker.

TABLE 1.

RATINGS OF EFC UNITS

	240	3,500 W	15	48	32	24
EFC-5500-S-10	240	5,500 W	23	75	50	37
EFC-6500-S-10	240	6,500 W	27	88	59	44
EFC-7500-S-10	240	7,500 W	31	-	68	51
EFC-9500-S-10	240	9,500 W	39	-	86	65
EFC-6000-S-10	277	6,000 W	22	81	55	41
EFC-8000-S-10	277	8,000 W	29	-	73	55
EFC-9000-S-10	277	9,000 W	33	-	82	61
EFC-10000-S-10	277	10,000 W	36	-	91	68
EFC-8300-S-10	208	8,300 W	39	-	76	57

* Units rated at 240 Volts. Units can operate at 220V or 208V with reduced output.

Wire entry into the unit should be made through the lower right hand corner of the backplate via one of the two knockout holes provided.

The main wires should be connected to the slots in the terminal block marked L1 and L2 (N). The ground lead **must** be connected to the slot marked $\oplus$. Failure to ground the system may result in death or serious injury.

WARNING:
This water heater must not be switched on if there is
a **possibility** that the water in the heater is frozen.

FIGURE 2

