

Ministry of Consumer & Commercial Relations
Fuels Safety Branch

STANDARD G/P NO.1

Installation, Operation & Maintenance STANDARD

- for an -

AIR TO LIQUID TYPE HEAT RECLAIMER

Used in Conjunction With an Appliance which has

a

Gas or Propane, Gas and Oil or Propane and
Oil Dual or Combination Fuel Burner or Burners

1. Scope

1. These requirements shall apply to the installation, operation and
1 maintenance of a Heat Reclaimer installed within the venting system of an appliance with a gas or propane, gas and oil or propane and oil dual or combination fuel burner or burners.

2. General

2. "Heat Reclaimer (flue pipe type) for the purpose of this Standard
1 means a device that is intended to be installed within the venting system of an appliance to transfer heat from the flue gases through metal to liquid.

2. A heat reclaimer shall not be used with an appliance installed in a
2 one or two family dwelling, in mobile housing or in a recreational vehicle.

2. A heat reclaimer shall not be used with an appliance approved with
3 a draft hood or equipped with a draft regulator.

2. A heat reclaimer installed in accordance with the requirements of
4 this Standard is exempt from subsection 4.2.8 of the Fuel Oil Code.

2. Subject to the regulations, no person shall install, alter, purge,
5 activate, repair, service or remove any appliance or any equipment or other thing employed or to be employed in the handling or use of a hydrocarbon unless he is the holder of a certificate for the purpose. (Energy Act Section 14 (1)).

2.6 The manufacturer shall

(a) Ensure the heat reclaimer is in compliance with the requirement herein, and

(b) Provide for the user of a heat reclaimer installation and maintenance requirements, including those specified herein.

2.7 The installer shall ensure the heat reclaimer by design, is compatible with the associated appliance and its venting system and the installation is in compliance with the requirements herein.

2.8 The user of heat reclaimer shall ensure the implementation of inspection and maintenance requirements herein.

3. Heat Reclaimer

- 3.1 Installation of a heat reclaimer shall in no way impair the safe venting of the products of combustion from the associated appliance.
- 3.2 Where a heat reclaimer is installed within the vent connector of an appliance, the flue gas temperature downstream of the heat reclaimer shall be sufficient to ensure a minimum temperature of 300°F (148°C) at the entrance to the chimney over the full firing range of the burner or burners.
- 3.3 Where a heat reclaimer is installed within a chimney directly connected to the flue outlet of an appliance, the flue gas temperature downstream of the heat reclaimer shall be in accordance with the heat reclaimer manufacturer's design criteria, but in no case shall the temperature at the exit of the chimney be less than is necessary to provide effective venting over the full firing range of the burner or burners.
- 3.4 Visual temperature indicators shall be provided at both the flue-gas inlet and outlet of a heat reclaimer.
- 3.5 An approved normally closed differential pressure switch shall be provided to measure the pressure drop across the heat reclaimer and shall,
 - (a) be interlocked and set to shut off the supply of fuel to the appliance if the pressure drop exceeds the theoretical or manufacturer's designed pressure drop by 50% and
 - (b) following initial set-up, or required service, have the access to the housing containing the adjustable compression spring sealed, or be provided with other suitable means which will prevent unauthorized adjustment of the switch.
- 3.6 A mandatory manual reset function shall be required to restart the appliance following a shut down caused by the differential pressure switch.
- 3.7 A heat reclaimer shall be protected against undue pressure by means of a suitable pressure relief valve installed in the discharge liquid line as close to the outlet of the heat reclaimer as is practicable.

3.8 A heat reclaimer shall be equipped with a low-water fuel cut-off device, except where the heat reclaimer is installed;

- (a) on a boiler under continuous attendance by a certified operator, or
- (b) on a boiler not under continuous attendance by certified operator, provided,
 - (i) the heat reclaimer is an integral part of the boiler feed-water system,
 - (ii) the boiler is equipped with a low-water fuel cut-off device that serves no other purpose, and
 - (iii) the low-water fuel cut-off device cannot be rendered inoperative.

3.9 Where a by-pass arrangement utilizing a damper is provided to ensure continued operation of an appliance in the event of heat reclaimer malfunction, the installation of a by-pass arrangement is subject to the requirements of subsections 3.5 and 3.6.

4. Marking

4.1 A heat reclaimer shall be plainly marked in a permanent manner with at least the following;

- (a) manufacturer's name
- (b) manufacturer's model number
- (c) minimum inlet flue-gas temperature
- (d) minimum outlet flue-gas temperature
- (e) designed pressure drop through heat reclaimer
- (f) clearances from combustible material
- (g) electrical ratings, if applicable
- (h) direction of air flow through heat reclaimer

5. Installation

The installation shall be in accordance with the heat reclaimer

5.1 manufacturer's installation instructions.

5.2 The clearance from a heat reclaimer to combustible material shall be a minimum of 18 inches (450mm).

When the combustible material is protected as specified in the following Table,

Table 5.3 Clearances

With Specified Forms of Protection

<u>Type of Protection</u>	<u>Required Clearance with No Protection</u>	
	18 inches (450mm)	
	Clearance may be Reduced to Inches	
		(mm)
No. 28 MSG sheet metal spaced out from the heat reclaimer 1 inch (25mm) by noncombustible spacers and of such width that the shortest distance to any combustible surface is at least 18 inches (450mm)	9	(225)
Ceramic tiles or equivalent noncombustible material on noncombustible supports spaced out at least 1 inch (25mm) by noncombustible spacers	9	(225)
No. 28 MSG (0.30mm) sheet metal spaced out from combustible surfaces at least 1 inch (25mm) by noncombustible spacers	9	(225)
5.4 A heat reclaimer shall be suitably supported. The vent connector alone shall not be used for this purpose.		
5.5 The installation of a heat reclaimer shall be performed in a manner which will ensure that the appliance, complete with the heat reclaimer, will continue to be in compliance with the Regulations.		
5.6 Immediately upon completion of the installation, complete appliance combustion tests including draft and temperatures shall be performed by either the heat reclaimer manufacturer, or by a person certified for the purpose, to establish safe operating conditions, and the test results shall be kept on the [premises for inspection by the Fuels Safety Branch, or if requested, by the fuel distributor.		
6. <u>Maintenance</u>		
6.1 The user shall ensure compliance with the following intervals not exceeding twelve (12) months by the person in one of the categories identified in Clause 5.6, and the test results and service records shall be kept on the premises for inspection by the Fuels Safety Branch, or, if requested, by the fuel distributor;		

- (a) complete appliance combustion tests, and
- (b) if necessary, any service or repair resulting from the tests required in (a).