

## 16.0 ANNUAL MAINTENANCE AND INSPECTION

This unit must be inspected at the beginning of every heating season by a Qualified Technician.

### Annual Inspection Checklist

- 1. Lighting is smooth and consistent, and the combustion fan is noise & vibration free.
- 2. The condensate freely flows from the unit, and is cleaned of sediment.
- 3. Relief Valve and air vents are not weeping.
- 4. Low water cut off is tested (remove and clean as per manufacturer's instructions)
- 5. Examine all venting for evidence of leaks. Ensure vent screens are cleaned and clear of debris.
- 6. Check the burner plate for signs of leaking.
- 7. The combustion chamber must be inspected and cleaned.
- 8. Listen for water flow noises indicating a drop in boiler water flow rate.  
The hydronic system may need to be flushed to eliminate hard water scale  
(Use Fernox DS-40 Descaler, NTI PN: 83450; see Table 10-1).

### Combustion Chamber Cleaning Procedure

Units operating with LP Gas or in an industrial environment will have to be cleaned a minimum of once per year. Other applications will require the combustion chamber to be cleaned after the first year of operation, with subsequent cleanings scheduled based on the condition of the combustion chamber at the time. Unless a step is identified as model specific, the following combustion chamber cleaning procedure is the same for all models.



**Crystalline Silica** - Read carefully the warnings and handling instructions pertaining to Refractory Ceramic Fibers before commencing any service work in the combustion chamber. Take all necessary precautions and use recommended personal protective equipment as required.

### Cleaning Checklist

- 1. Initiate a post-purge cycle to clear any gas from the combustion chamber, then turn gas valve off.
- 2. Access the combustion chamber by removing the aluminum burner door assembly of the boiler.
- 3. Remove, or cover, the insulation disc located in the back of the combustion chamber to avoid damaging it during the cleaning process. The disc is held in place with a 2.5mm "Allen-head" screw.
- 4. Use a vacuum with a high efficiency filter to remove any loose debris or dust.
- 5. Wet the inside of the combustion chamber with water. Use a garden hose with a trigger nozzle to direct pressurized water through the gaps between the heat exchanger tubes. The water should pass in-between the heat exchanger tubes and exit via the condensate drain. This process may require the use of some dry rags or plastic to protect electrical components from being damaged by dripping or spraying water.
- 6. Use a nylon or other non-metallic brush to loosen the incrustations and any other contaminants that have remained stuck on and in-between the tubes.
- 7. Repeat steps 5 and 6 until the heat exchanger is clean and water from the condensate drain runs clear.
- 8. Re-install the insulation disc to the back of the combustion chamber (see Table 17-1, Item 31 – part number 83112).
- 9. Inspect the insulation disc located on the back-side of the burner door. Replace if damaged (see Table 17-1, Item 34 – part number 82767-1).
- 10. Re-install the burner door, gas-supply and Air-inlet pipe, check for gas leaks.
- 11. Perform the Operational Check List detailed in Section 15.0.



Replace any gaskets or insulation discs that show any signs of damage and do not re-use. Failure to follow these instructions may result in fire, property damage or death.

Item	Part #	Models	Description
26	83012	Lx150 (US), M100(V) (US), Ti100-150 (US)	Heat Exchanger ASME, Lx/Ti100-150 (Not Lx150E), US Only
26	82596	M100(V) (CAN), Ti100-150 (CAN)	Heat Exchanger Kit Ti100-150 (Kit includes p/n: 83395)
26	82647 (82597)	Ti200	Heat Exchanger Assembly ASME Ti200 (Kit includes p/n: 83396)
27	83042	Lx150-200, M100(V), Ti100-200, Ts80	Y Drain Fitting 5/8" White
28	82011	Combi (T/Ti), M100(V)	Heat Exchanger, Brazed Plate LA1430
29	82160	Combi (T/Ti), M100(V)	3 Way Valve VU54S2016B, 3/4"
30	82913 (83510)	M100(V), Tft60-399, Ti100-400, Tx51-200, Tx151C, Tx200C	Condensate Trap
31	83112 (83112-1)	Lx150-800, M100(V), T150-200, Ti100-400, Ts80	Trinity Divider Plate Insulation Kit c/w Screws & Washers
32	82770	Lx150-500, M100(V), Ti100-400, Ts80	Burner Door Viton Gasket (Not Lx600-800)
34	82767-1	M100(V), Ti100-200, Ts80	Cast Aluminum Burner Door Kit – <b><u>NOT FOR USE W/ Lx300-400 OR Ti400</u></b>
35	82159	Combi (T/Ti)	3 Way Actuator VU444A1007B
36	82762 (82762-1)	Lx150-500, M100(V), Tft60-399, Ti100-400, Ts80, VM110, VM110P	Flame Rod Lx/Ti/Ts/Tft/VM (60-500) (Includes p/n: 82774)
37	82099	Lx150-300, M100(V), T150-200, Tft60-250, Ti100-200, Ts80, Tx200, Tx200C	1-1/2" MJ Coupling
39	82622-1	Ti100-200	Air Inlet Assembly Ti100-200
40	82104-1	Ti100-200	Air Metering Elbow Ti100-200
41	83291-1(100/150)	Ti100-150 CAN	Flue Adapter Replacement Kit (Canadian Ti100-150 manufactured before 6/7/2010)
41	83291-1 (100.3/150.3)	Ti100-150 US	Flue Adapter Replacement Kit (US Ti100-150 manufactured before 6/7/2010)
41	84170	Ti100-200, Ts80	Flue Outlet Adapter SS (All Ts80, Ti100-200 manufactured after 6/7/2010)
41	83291-1(200)	Ti200	Flue Adapter Replacement Kit (Ti200 manufactured before 6/7/2010)
42	82368	M100(V), T150-200, Ti100-150 (CAN), Combi (Ti)	Compression Nut Washer, Water Connection, 3/4"
49	82662	Lx150-800, M100(V), Ti100-400, Ts80	Air Switch Huba 604.E021180 (Set @ .2" wc)
52	82013	T150-200, Ti100-200	Sentry 2100 Version T2.2
60	82457 (83190)	Lx150-400, M100(V), T150-200, Tft60-399, Ti100-400, Ts80	Transformer 24V, 40VA
61	82058	M100(V), T150-200, Ti100-400	Ignition Module, Fenwal