

Installation Instructions & Owners Maintenance Guide

DT-M



Direct-Temp for Multi Fuel

L-Vent / Vent System for Pellet, Corn and other Bio-Fuel Burning Appliances

Introduction

Direct-Temp for Multi-Fuel Stoves (DT-M) is a unique venting system designed to vent flue gases produced by burning corn or other bio-fuels.

DT-M is a concentric vent system that converts any conventional corn-burning or multi-fuel burning stove into a Direct Vent System. The inner wall is constructed of superferritic AL29-4C stainless steel for exhausting flue gases, while the annular space between the flue and the outer jacket brings in combustion air for the appliance.

⚠ WARNING

Failure to follow the installation instructions could cause FIRE, CARBON MONOXIDE POISONING, OR DEATH. If you are unsure of installation requirements, call the phone number listed on the instructions, 1.800.433.6341 or visit www.selkirkcorp.com

Model	Flue Size	Outer Diameter	Clearance to Combustibles	Min. Framing Dimension
3"/5"	3"(76mm)	5"(127mm)	1"(25mm)	7"x7"(178x178mm)
4"/7"	4"(103mm)	7"(178mm)	1"(25mm)	9"x9"(229x229mm)

Table 1. Minimum Clearance & Framing

Listing

DT-M has been tested and listed by Underwriters Laboratories, Inc. in accordance with UL641, the Standard for Low Temperature Gas Venting Systems. DT-M is also Listed to ULC/ORD-C441 for Pellet Vents and to ULC-S609 the Standard for Low Temperature Gas Venting Systems in Canada. DT-M is approved for venting listed pellet, corn and other multi-fuel stoves that do not exceed flue gas temperatures of 570° F (300°C).

Minimum Clearance and Framing

DT-M requires a minimum of 1"(25mm) airspace clearance to combustibles materials. "Combustibles" include framing lumber, insulation, plaster, plywood, paneling and other building materials. The airspace is required for the safe operation of the vent. Do not fill this space with insulation or any other material. NOTE: If other sources of combustion air are provided, the Intake Air Snout may be closed off with non-combustible material such as aluminum tape. In such cases, the minimum clearance remains at 1"(25mm).

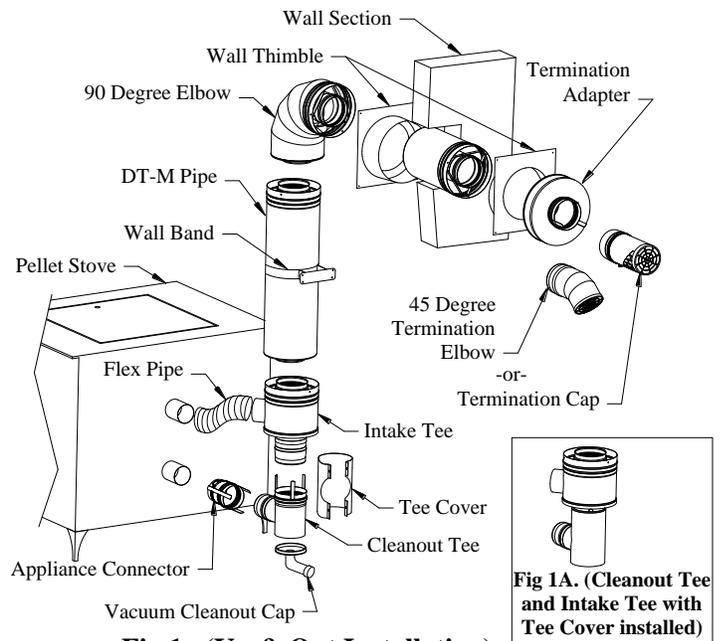


Fig 1A. (Cleanout Tee and Intake Tee with Tee Cover installed)

Pre-Installation Guidelines

- The appliance manufacturer's instructions take precedence over this document.
- Read all instructions before beginning the installation.
- Failure to conform to any of these requirements may result in an unsafe installation and will void any manufacturer warranty.
- **Practice Safety.** Vent sections have sharp edges. Wear safety goggles and gloves when handling and installing.
- Do not mix DT-M parts with vent from any other system.

Planning and Layout

- Refer to the appliance installation instructions for proper layout requirements and restrictions.
- When locating appliance, consider the building structure and locate appliance so that the vent will not interfere with ceiling joists, wall studs, electrical wiring or water pipes.
- Refer to the appliance installation instructions and **Table 1** for selecting the proper size of venting. Note: Some appliance manufacturers allow the venting to be larger in diameter than the flue outlet. In such cases, a 3" to 4" In increaser may be used to increase the vent from 3" to 4".
- Determine the type of installation and termination (vertical or horizontal) that will be installed and obtain the necessary parts to complete the installation (See Figs. 1, 2, and 3 for installation examples and their required parts).
- See **Table 1** for minimum framing dimensions when penetrating walls, ceiling joists or roof joists.
- The vent system should be enclosed in occupied areas. Refer to "Enclosures" section for enclosure guidelines.
- Horizontal Terminations should be located so that they do not pose possible injury or a fire hazard. Refer to "Rules for Horizontal Terminations" section for guidelines on proper location.

To Install:

1. Attach Appliance Connector or Increaser/Appliance Connector to the flue collar on the appliance.
 - a. To ensure a good seal, prepare the connection by applying RTV sealant to the outer surface of the crimped end of the Pipe Connector (See Fig. 4).
 - b. Slide the crimped end of the Appliance Connector into the flue collar of the appliance until a good, tight seal is achieved.
 - c. Secure the connection by tightening the integrated hose clamp down onto the outside surface of the flue collar.
2. Connect the remaining system parts to the Appliance Connector.
 - a. If venting horizontally, connect vent sections directly to the Pipe Connector (See Fig 2).
 - b. If the vent planning was to include a vertical rise, a Tee section or 3" to 4" tee increaser must be used to turn the vent vertical. A Tee Cover is installed around the tee to provide a barrier against radiant heat from the vent. Position tee so that it is vertical, and the cleanout tee cap is at the bottom (See Fig. 1). Expand the seam of the Tee Cover and wrap it around the Tee so that the snout of the Tee passes through the hole in the Tee Cover. Connect Tee to the Appliance Connector, Intake Tee and Tee Cap. Note: A Vacuum Cleanout Cap (VCC) may be

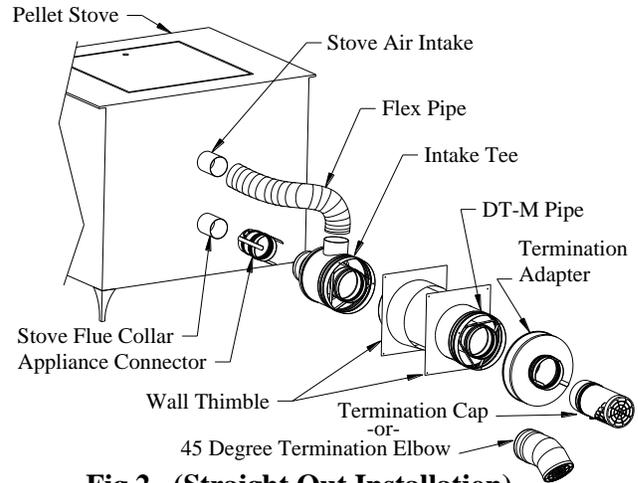


Fig 2. (Straight Out Installation)

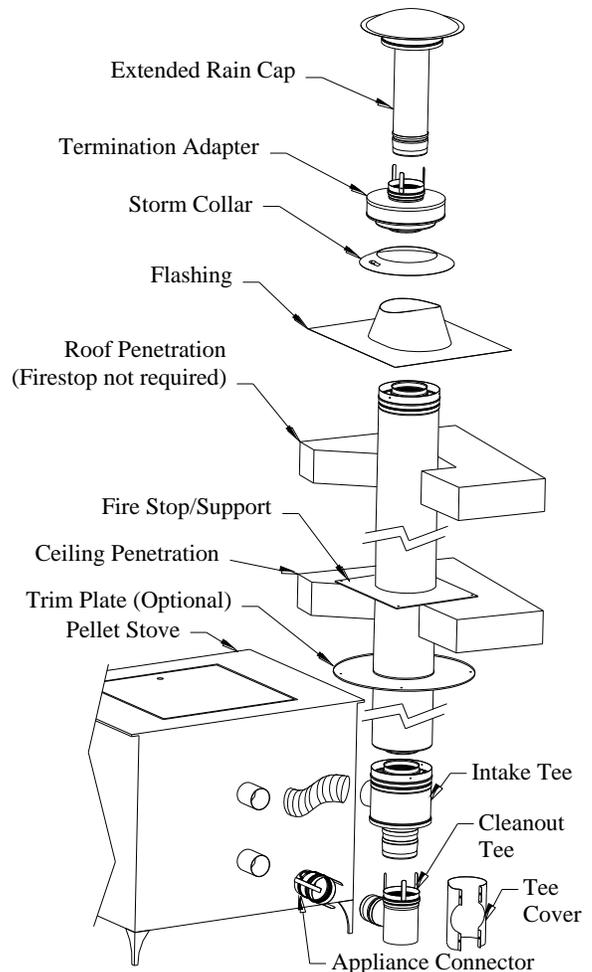


Fig 3. (Through-The-Roof Installation)

installed in place of a standard Tee Cap to facilitate in future maintenance and cleaning of the system. See “Vacuum Cleanout Cap” Section for installation and maintenance instructions (See Fig. 1). After the Tee is properly connected to the adjoining items, complete Tee Cover installation by clamping the Cover shut with the hardware provided (See Fig. 1A).

3. Ring and Tab Joint Assembly (See Fig. 5).
 - a. DT-M connector components use a Ring and Tab Connection Method.
 - b. To connect, slide the lock ring away from the end to allow clearance for the tabs extending from the female end.
 - c. Engage the two sections making sure the tabs stay to the outside of the vent.
 - d. After the sections are fully engaged, slide the lock ring down over the tabs, making sure all tabs are contained within the lock ring.
 - e. Bend the tabs back over the lock ring to complete the joint. Note: Termination parts have a hose clamp in place of the lock ring. In such cases, the hose clamp should be tightened down over the tabs. Bending the tabs over the clamp is not required.

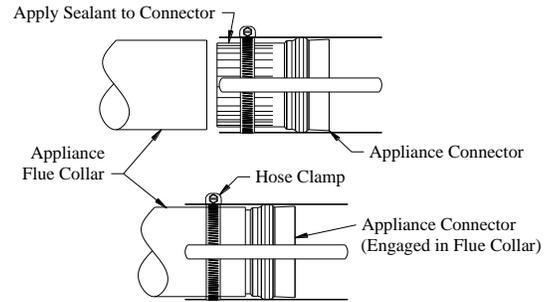


Fig 4. (Installing Appliance Connector)

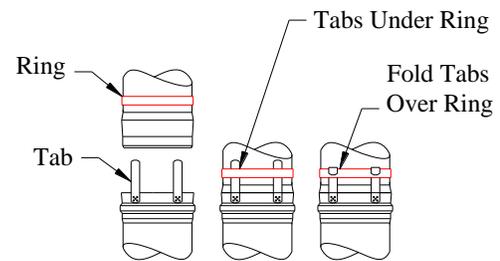


Fig 5. (Ring and Tab Connection)

4. Connect the stove air intake to the air intake on the Intake Tee. The connection can be made using Selkirk’s Combustion Air Kit (CAK) or with other noncombustible 3" diameter flexible pipe and hose clamp.
 - a. Slide the flex pipe over the combustion air snout on the Intake Adapter and secure by tightening hose clamp.
 - b. Cut the flex pipe to the length necessary to reach the combustion air inlet of the pellet stove.
 - c. Fit the flex pipe over the pellet appliance combustion air inlet and secure with a hose clamp. If the combustion air inlet on the appliance is less than 3" in diameter it may be necessary to reduce the diameter of the flex to ensure a secure connection. This can be done by making parallel cuts around the circumference of the flex pipe. Overlap the cut edges to reduce the end diameter of the flex down to the diameter of the outlet on the appliance and secure with hose clamp.
5. Connect remaining DT-M vent parts as needed to route the system out of the building.
6. Joint Assembly for DT-M concentric parts.
 - a. The female end of each vent segment has a red seal in the inner vent. The female end should always point away from the appliance (See Fig 6).
 - b. Engage the male end of the adjoining pipe into the female end.
 - c. Push firmly until the joining ends have bottomed out. When fully assembled, the ends will overlap by 1".
 - d. Using the pilot holes in the overlapping vent as a guide, secure sections by screwing the self-tapping screws through the pilot hole and into the inner overlapping vent.
7. See “Adjustable Length” section for situations where a nonstandard length of pipe is required.
8. Refer to “Support” section for instructions to provide adequate support for the vent system.

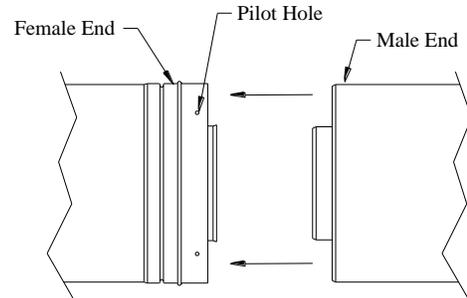


Fig 6. (DT-M Joint Assembly)

9. Where the vent passes through a wall or ceiling, a wall plate should be installed. See “Fire Stop/Support/Wall Plate” section for proper installation instructions.
10. When terminating vertically through the roof, see “Tall Cone Flashing” section.
11. Install Termination Adapter (VT). The VT can be recognized by the presence of an extra housing around the outlet end of the adapter which provides a passage way for intake air. This intake air passage way must remain free from obstruction at all times.
 - a. Connect the inlet end of the VT to the vent extending through the roof or wall. Join parts using the standard DT-M joint connection method. Note: For Horizontal installation, the VT must be at least 7" from the wall (See Fig 7), and at least 12" from the Roof in vertical installations (Note: 24" or higher may be required in regions where a large amount of snow falls).
12. Depending on type of installation or termination option selected (Vertical or Horizontal), refer to the corresponding section below.

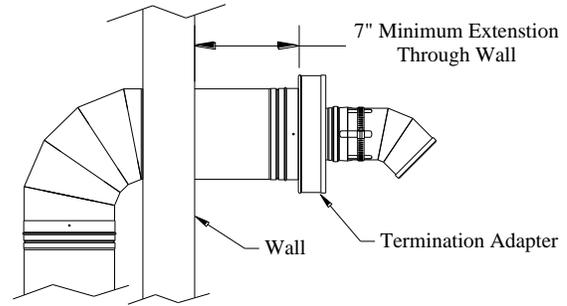


Fig 7. (Minimum Extension Through Wall)

HORIZONTAL TERMINATION OPTIONS

Mitered Termination Screen

The Mitered Termination Screen is a straight length of vent with a spark arrestor integrated into the end. It is designed to direct flue gases perpendicularly away from the outside wall of the building. (See Figs 1 & 2)
 To Install: Engage termination with pipe. Ensure that the mitered portion of the vent is rotated to the bottom. To secure, see Step 3, Ring and Tab Joint Connection Method.

45 Degree Termination Elbow

The 45 Degree Termination Elbow is used in through-the-wall installations and provides for redirection of exhaust gases if needed or desired. (See Figs. 1 & 2)
 To Install: See Step 3, Ring and Tab Joint Connection Method.

VERTICAL TERMINATION OPTIONS

Extended Rain Cap

The Rain Cap is intended for use in all installations in which the vent terminates in a vertical orientation. The cap provides necessary protection of the vent system from rain and other elements. The cap has an extended collar to prevent flue gases from entering/contaminating the intake air. The Rain Cap should be located a sufficient distance from the roof so that the discharge opening is at least two (2) feet above the roof surface, or nearby structure. Additional pipe lengths are available for extending the height of the cap if necessary.

To Install: Connect rain cap using the Ring and Tab Joint Connection Method (See step #3).

Adjustable Section

The DT-M Adjustable Section (AJ) serves as a variable length between other components when specific lengths cannot be utilized. The AJ has an installed length that adjusts from 12.5" to a maximum of 19.5".

To install:

1. Before assembling, moisten the gaskets on the Outer Vent Section with the silicone lubricant provided. (See Fig 8)
2. Slide the Inner Vent Section into the Outer Vent Section. Adjust to the overall desired length.

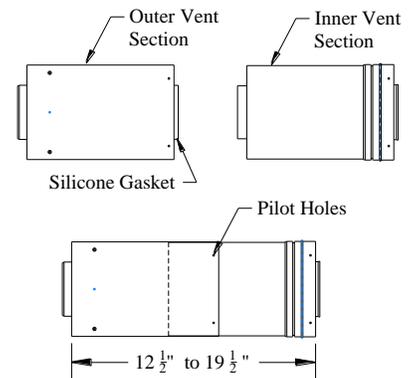


Fig 8. (Adjustable Length)

- Secure the two sections together by installing the self-tapping screws provided, through the pilot holes in the Outer Vent Section, and into the Inner Vent Section.
- Connect the Adjustable Section to the existing vent system using the DT-M joint assembly method.

Support Method	Vertical Support	Horizontal Support
Support Clamp	30'	6'
Wall Band	8'	6'
Fire Stop/Support	30'	6'

Table 2. Support Capabilities

Support

DT-M must be properly supported. See support options below and refer to Table 2 for Support capabilities.

- **Support Clamps:**

Support Clamps may be suspended from rods or cables and used as a saddle to rest the vent in or they may be used in pairs to clamp around the vent and suspended from a single rod or cable (See Figs. 9 & 10).

- **Wall Band:**

The wall band (WB) provides vertical or horizontal support for DT-M pipe and establish 1" clearance to combustibles.

To Install: Using the included hardware, secure the mounting plate to the ceiling or wall at the necessary location. Route DT-M vent pipe through the clamp band and tighten the bolt on the bolt tabs to secure the vent (See Fig. 11).



Fig 9. (Support Clamp as a saddle)

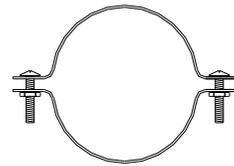


Fig 10. (Support Clamp Around)

Wall Thimble

The Wall Thimble (WT) is used when the vent pipe passes through a wall (See Fig. 12).

To Install:

- Prepare a framed opening in the wall. Refer to Table 1 for proper framing dimension.
- From one side of the wall, position one half of the WT so that the shield extends into the wall section and secure plate to the wall.
- From the opposite side of the wall, slide the other half of the WT into the wall so that the two shields engage. Secure the wall plate to the wall.
- Slide the DT-M vent through the WT.
- Using silicone sealant, seal any gaps between the vent pipe and the WT, and between the WT and the wall.

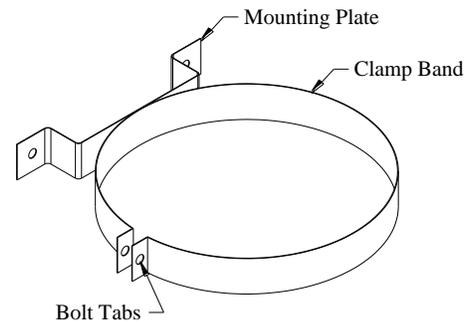


Fig 11. (Wall Band)

Fire Stop/Support

The Fire Stop/Support/Wall Plate (FS) can be used as a fire stop and/or a support plate (See Fig 13).

To Install:

- Prepare a framed opening in the ceiling. Refer to Table 1 for proper framing dimension.
- Position the FS so that the Spacer Tabs extend into the ceiling section.
- Secure to ceiling using appropriate fasteners.
- Slide the DT-M vent through the FS.

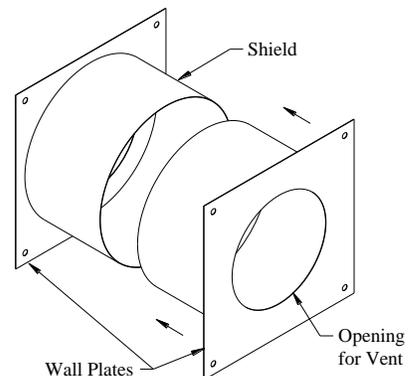


Fig 12. (Wall Thimble)

Tall Cone Flashing

- Prepare an opening in the roof. Refer to Table 1 for proper clearance dimension. NOTE: Sloped roofs will require larger dimensioned openings in the direction of the slope (up/down). Insure opening provides 1" airspace between pipe and combustible roofing materials.
- Apply weather stripping or outdoor caulking to the bottom of the flashing base.

3. Secure flashing to the roof using common construction methods.
4. Install vent pipe sections through the flashing.
5. Install Storm collar and position it down at the flashing opening.
6. Using silicone sealant, seal the gap between the vent pipe and the Storm Collar.

Enclosures

The vent system should be enclosed in occupied areas, closets, storage rooms, and accessible attics. This does not apply to the portion of the system that is in the same room as the appliance.

Enclosures help to:

- Establish proper clearance from blown-in or other insulation in unoccupied attics.
- Protect the vent from cold temperatures which may improve the operation of the appliance.
- Reduce internal condensation and metal deterioration due to the buildup of residue from products of combustion.

Enclosures may be built of ordinary drywall or plywood at the required minimum of 1 INCH AIRSPACE CLEARANCE. The vent installer should take all necessary precautions to assure that this 1 inch minimum airspace is maintained.

NOTE - Enclosures maintaining the minimum airspace clearance are especially important in attics insulated with CELLULOSE type insulation which may be composed of old newspapers and other cellulose materials which are very susceptible to ignition of a fire.

RULES FOR DISTANCES FROM HORIZONTAL EXIT TERMINATIONS

General vent layout is shown in Figures 1 through 3.

The termination of a sidewall vent serving a pellet/corn burning appliance shall be located to avoid personal burn injury, fire hazard and interference with or damage to adjacent properties.

A clear space of at least 1m (3ft) shall be provided from the termination to any building projection, adjacent wall, or any combustible materials such as trees, shrubs, fencing, etc.

Guards shall be provided around the termination of the sidewall venting system to prevent:

- (a) Individuals from accidentally running into the venting system;
- (b) Mechanical damage from occurring as a result of vehicle traffic.

In selecting the location for the appliance and the vent, it is necessary to take into account the rules of NFPA 211, ULC/ORD-C441 and any applicable local codes.

When installed in the USA:

Selkirk recommends installing the referenced terminations in accordance with the guidelines for “Direct Vent” termination locations per NFPA211. These guidelines are:

- The vent terminal of a direct vent appliance with an input of 10,000 Btu/hr (2930 W) or less shall be located at least 6 in. (152 mm) from any opening into a building.
- The vent terminal of a direct vent appliance with an input of over 10,000 Btu/hr (2930 W) but not over 50,000 Btu/hr (14,650 W) shall be located not less than 9 in. (229 mm) from any opening through which vent gases could enter a building.
- The vent terminal of a direct vent appliance with an input over 50,000 Btu/hr (14,650 W) shall be located not less than 12 in. (305 mm) from the opening.
- In all cases, the bottom of the vent terminal and the air intake shall be located at least 12 in (305 mm) above grade.

Alternatively, some code authorities may require terminations to be located in accordance with NFPA211 “Mechanical Draft Systems” requirements. In such cases, the following guidelines apply.

Terminations for mechanical draft systems shall be located:

- Not less than 3 ft. (0.91 m) above any forced air inlet located within 10 ft. (3m).

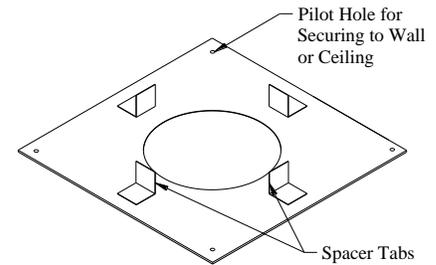


Fig 13. (Fire Stop/Support)

- Not less than 4 ft. (1.2m) below, 4 ft. (1.2m) horizontally from, or 1 ft. (305m) above any door, window or gravity inlet into any building.
- Not less than 2 ft. (0.6m) from an adjacent building and not less than 7 ft. (2.1m) above grade when located adjacent to public walkways. So that flue gases are not directed so they jeopardize people, overheat combustible structures, or enter buildings.

When installed in Canada:

For a Horizontal Termination ULC/ORD-C441 states that: Vent length must not exceed 1200mm (48"). The Termination must not be located:

- Within 1.8 m (6 ft) of a mechanical air supply inlet to a building.
- Above a gas meter/regulator within 900 mm (36") horizontally of vertical centerline of the regulator.
- Within 1.8 m (6 ft) of a gas service regulator vent outlet or within 1m (3ft) of an oil tank vent or an oil tank fill inlet.
- Less than 300 mm (12") above grade level or any surface that may support snow, ice, or debris.
- Within 1 m (3 ft) of a building opening or air inlet of another appliance.
- Within 1m (3ft) of the property boundary.
- Underneath a veranda, porch or deck.
- Less than 2.1m (7ft) above any public sidewalk, lane, street, or right-of-way.

MAINTENANCE REQUIREMENTS

Refer to the appliance manufacturer’s maintenance instructions for recommendations relative to required maintenance of your appliance.

DT-M when used as an L-Vent system, requires periodic inspection and cleaning with an appropriately sized brush. DO NOT USE chemical cleaners to clean your venting system.

Frequency of necessary vent system cleaning will vary with the appliance, vent system configuration and climate. Certain appliances or fuels may give off more fine dust than others. In any case it is recommended that the complete assembly be inspected and cleaned (if any buildup has occurred) at the beginning of each heating season and at least monthly thereafter.

TO INSPECT AND CLEAN

Note: Be sure appliance is turned off and vent system is cool before performing any maintenance.

Remove the termination cap by loosening the hose clamp, then rotating and pulling until it disengages. Remove the tee cap(s) by loosening the hose clamp and pulling the cap off. Inspect system. If necessary clean by running a brush through the system several times in each direction.

NOTE - Be sure that tee and termination caps are reinstalled and secured when Inspection/Cleaning is completed and before the system is put back in use.

Vacuum Cleanout Cap

The Vacuum Cleanout Cap (VCC) installs at the base of a tee and replaces a standard tee cleanout cap. The VCC provides a more convenient method for removing ash the collects in the base of the tee (See Fig. 1).

To Install: If present, remove existing tee cap. Position VCC so that the cleanout fitting will be accessible once installed. Apply high temperature sealant to the engaging surface of the VCC so that an air tight seal will be formed once installed. Engage cap into base of tee. Secure VCC by running a self-tapping screw through the pilot hole in the lower side of the tee and into the VCC.

To Cleanout tee using the VCC: Unscrew the fitting at the end of the VCC nozzle. Mate a hose from a Shop Vac or similar vacuum to the VCC nozzle and vacuum out any ash that has collected in the tee. When cleaning is complete, replace the cap fitting by screwing it back on to the end of the cleanout nozzle.