

any gas control that has been under water.

This appliance is not for use with glass doors.

#### **GENERAL INFORMATION**

This unit has been modified by having the Regency L234 insert installed and tested by Labtest Certifications. This appliance has been tested in accordance with National Safety Standards and has been certified by Lab Test for installation and operation as described in this manual. Contact Malm Fireplaces for questions regarding installation or operation of this unit.

Please read all the instructions before beginning your installation. Check with your local building code agency to ensure compliance with local codes. In the absence of local codes the installation must comply with National Fuel Gas Code ANSI Z22.3.1. In Canada, current CAN/CGA-B149.1 and B149.2 installation codes.

Installation and repair should be done by a qualified service person. The appliance should be inspected before use and at least annually by a qualified service person. More frequent cleaning may be required due to excessive lint from carpeting, bedding material, etc. It is imperative that control compartments, burners and circulating air passageways of the appliance must kept clean.

Unpack all parts from cartons carefully inspecting all parts. If any parts are damaged or missing, contact shipper or dealer immediately.

Do not install this appliance using damaged parts.

#### GAS SUPPLY

For use with natural gas or propane gas, depending on which option you have ordered. The minimum inlet gas supply pressure for the purpose of input adjustment:

	NATURAL	L.P. (PROPANE)
Min. Supply Pressure (in. wc/kPa):	5" (1.25 kpa)	12" WC (2.99 kpa)
Low Setting Manifold Pressure (in. wc/kPa):	1.1" WC (0.27 kpa)	2.9" WC (0.72 kpa)
Max. Manifold Pressure (in. wc/kPa):	3.8" WC (0.95 kpa)	11" WC (2.74 kpa)
Orifice Size:	42 DMS	54 DMS
Minimum Input:	12,500 Btu/h (6.89 kW)	11,000 Btu/h (6.30 kW)
Maximum Input:	23,500 Btu/h (3.66 kW)	21,500 Btu/h (3.22 kW)

- a. The supply system should include a manual shut-off valve and union in the line, so that the heater can be disconnected for servicing.
- b. The appliance must be isolated from the gas supply piping system by closing its individual manual shut-off valve during any pressure testing of the gas supply piping system at test pressures equal to or less than 1/2 psig (3.5 kPa).
- c. A 1/8 inch N.P.T. plugged tapping is provided, for test gauge connection, on the elbow adjacent to the gas control valve.

#### **CLEARANCES**

Make sure that minimum clearances to combustible materials are maintained during installation including adequate space for the proper operation and servicing of the heater.

The minimum clearances from the appliance to combustibles are shown on figures 1 and 2. Place the appliance on a flat, solid, continuous surface (i.e. wood, tile, concrete, metal). When placed on carpet the carpet and pad must not be so thick that movement of the unit occurs when walking or stepping close to the unit. If movement is noticed remove the padding directly below the base of the unit. This should eliminate any movement.

The decorative cover connector pipe is a cover for the 3 inch flex. The clearance required for the cover pipe is 4 inches from combustibles.



#### WARNING

Children and adults should be alerted to the hazards of high surface temperature and should stay away to avoid burns or clothing ignition. Young children should be carefully supervised when they are in the same room as the appliance. Toddlers, young children, and others may be susceptible to accidental contact burns. A physical barrier is recommended if there are at-risk individuals in the house. To restrict access to a fireplace or stove, install an adjustable safety gate to keep toddlers, young children, and other at-risk individuals out of the room and away from hot surfaces.

#### CAUTION

Any safety screen or guard removed for servicing an appliance must be replaced prior to operating the appliance. If the barrier becomes damaged, the barrier shall be replaced with the manufacturer's barrier for this appliance.

Clothing or other flammable material should not be placed on or near the appliance.

#### **GAS LINE ATTACHMENT**

The gas supply line must be installed at the rear center of the gas unit. This supply line must be a minimum of 1/2", black iron type pipe. A separate manual shut off valve should always be used. Check with local codes for its required placement and valve type. In general it must be placed within 6' of the appliance. This valve is not provided.



## Venting Detail

SUPPORT BOX WITH 46DVA-GK Converts the two 3 inch flex to the Duravent DirectVent Pro 4 x 6-5/8 inch vent.





### **VENTING**

#### THE APPLIANCE MUST NOT BE CONNECTED TO A CHIMNEY FLUE SERVING A SEPARATE SOLID FUEL BURNING APPLIANCE.

This appliance is designed to be attached to two 3" (76mm) co-linear aluminium flex running the full length of the chimney connector from the unit to the support box. The flue length must be a minimum length of 8' (2.44m) and a maximum of 35' (10.7m).

Periodically check that the vent is unrestricted. Masonry chimneys may take various contours which the flexible liner will accommodate. However, keep the flexible liner as straight as possible, avoid unnecessary bending.

Alternative Approved Venting Components\*

46DVA-VCH High Wind Cap 46DVA-GK 3" Co-linear Adaptor with flashing

We recommend using the Simpson Dura-Vent System 46DVA-GK adapter and 46DVA-VCH high-wind cap. The Air Intake pipe must be attached to the inlet air collar of the termination cap.

\*NOTE: Simpson Duravent can only be used with 3" liners.

Vent Run	Vent Restrictor Position	Burner Aeration Setting	
8' to 20'	1"	3/16"	
20' to 35'	3/4"	3/16"	

**NOTE:** See instructions in the "Vent Restrictor Position" section on positioning of the vent restrictor.

#### Vertical Minimum and Maximums

The flue length must be a minimum length of 8' (2.44m) and a maximum of 35' (10.7m). Periodically check that the vent is unrestricted

#### Horizontal Minimum

The minimum connector legnth is 30" from the top of the unit to the top of the connector prior to the elbow.

For additional venting options see page 11 of the Regency L234 Manual provided in this manual.

The unit is a vented appliance and must be connected to a chimney/flue in accordance with the code, using the chimney manufacturer's instructions.

### VERTICAL INSTALLATION

The 34ZDV is installed with the use of 2 - 3" flex tubes. One for the exhaust and one for the air intake. It is very important to connect them to the correct couplings. The Exhaust must be connected to the Exhaust fitting at the support box. The Intake must be connected to the Intake connector. If the flex tube is cut mark the ends prior to cutting.

**Step 1**. The Dura Vent DirectVent Pro 4" x 6 5/8" coaxial pipe must have a 1" clearance to combustibles when passing through ceilings, walls, roofs, enclosures, attic rafters, or other nearby combustible surfaces. Do not pack air spaces with insulation. Check the appliance manufacturer's instructions for maximum vertical rise of the venting system and any maximum horizontal offset limitations.

The support box must be mounted in the ceiling. The placement must be in an area that is clear of roof rafters or joists. Avoid hip supports or engineered rafters or beams. Elbows are available that should in most installations allow you to avoid these areas. Follow DuraVent's instructions for the proper installation of their DirectVent Pro 4" x 6 5/8" pipe that is run from the support box through the roof.

The 3" Flex and Dura Vent DirectVent Pro venting is available from your dealer or directly from Malm. It is not included in the price of the unit.

**Step 2.** Set the Zircon in the desired location. Drop a plumb bob down from the ceiling to the position of the appliance flue exit, and mark the location where the vent will penetrate the ceiling. Drill a small hole at this point. Next, drop a plumb bob from the roof to the hole previously drilled in the ceiling, and mark the spot where the vent will penetrate the roof (Fig. 13). Determine if ceiling joists, roof rafters, framing or other materials will obstruct the venting system. You may wish to relocate the appliance, or to offset, to avoid cutting load-bearing members. There is a 1-7/8" offset from the center of the support box to the center of the DirectVent Pro 4" x 6 5/8" center. The Support Box can be installed with this offset oriented in any direction.

**Step 3.** To install Support Box in a flat ceiling cut a square hole in the ceiling 13" x 13" centered on the hole drilled in Step 2. Frame the hole as shown (Fig. 14).

**Step 4.** Install the support box with the bottom of the box 1" below the finished ceiling. Nailing strips are provided that can be used to secure the box to the framing and then sheet rocked over or can be used a trim over sheet rock already in place.

**Step 5.** Assemble the desired DirectVent Pro Pipe Sections and Elbows necessary to reach from the Support Box. Ensure that all Pipe and Elbow connections are in their fully twist-locked position.

**Step 6.** Cut a hole in the roof centered on the DirectVent Pro pipe from the Support Box. The opening should be of sufficient size to allow a 1" minimum clearance to combustibles. Continue to assemble Pipe Sections and Elbows as necessary to reach up through the roof line. Galvanized Pipe and Elbows may be utilized in the attic, as well as above the roof line. The galvanized finish is desirable above the roof line, due to higher corrosion resistance.

Notes:

(1) If exact lengths or distances must be met between Elbow offsets or elsewhere, use the Pipe Extensions to adjust onto standard Pipe Sections (2) If an offset is necessary in the attic to avoid obstructions, it is important to support the vent pipe in order to avoid excessive stress on the Elbows. Wall Straps or plumbers tape may be used for this purpose (Fig. 16).

(3) Wherever possible, use 45° Elbows instead of 90° Elbows. The 45° Elbow offers less restriction to the flow of flue gases and intake air.



**Step 7.** Slip the Roof Flashing over the Pipe Section(s) protruding through the roof. Use a nonhardening sealant between the Roof Flashing and the roofing to prevent water leakage. Secure the base of the Roof Flashing to the roof with roofing nails. Ensure the roofing material overlaps the top edge of the Roof Flashing (Fig. 18). Verify that you have at least the minimum clearance to combustibles at the roof line and in the attic

**Step 8.** Continue to add Pipe Sections until the height of the system (before adding the Cap) meets the minimum building code requirements as described in (Table 3 and Fig. 17). Note that for steep roof pitches, the vent height must be increased. In high wind conditions, nearby trees, adjoining roof lines, steep pitched roofs, and other similar factors can result in poor draft, or down drafting. In these cases, increasing the vent height or switching to the High Wind Termination Cap may help to solve the problem.

**Step 9.** Slip the Storm Collar over the Pipe Section, and push it down to the top of the Roof Flashing (Fig. 18). Use non-hardening sealant between the Storm Collar and the Pipe Section.

**Step 10.** Holding the bottom of the Termination Cap only, twist lock the cap onto the last Pipe Section protruding above the roof line.

#### Notes:

 For multi-story vertical installations, a Ceiling Firestop is required at the second floor, and any subsequent floors (Fig. 19). Refer to Table 1, page
Cut and frame a square opening for installation of the Ceiling Firestop.

(2) If Vent passes through any occupied areas above the first floor, including closets and storage spaces, it must be enclosed. The enclosure may be framed and sheet rocked with standard construction materials, but required 1" clearance to combustibles must be maintained. Do not fill required air spaces with insulation.

(3) If venting system passes through an attic space the Attic Insulation Shield or a chase enclosure must be installed to prevent contact between Pipe Sections and the insulation or other debris. For the Attic Insulation Shield, nail the base to floor of attic and adjust shield for appropriate insulation level, then attach the collar at the top of assembly (Fig. 19).





Figure 15

There is a 1-7/8" offset from the center of the support box to the center of the DirectVent Pro 4" x 6 5/8" center. The Support Box can be installed with this offset oriented in any direction.



# CATHEDRAL CEILING

**Step 1**. Follow installation Steps 1 and 2 under Vertical Terminations.

**Step 2.** Using the plumb bob, mark Figure 18 the center line of the venting system on the ceiling and drill a small hole through the ceiling and roof at this point. From the roof, locate the drill hole and mark the outline of the Cathedral Ceiling Support Box.

**Step 3.** Remove shingles or other roof covering as necessary to cut the rectangular hole for the Support Box (refer to Table 1 for dimensions). Cut the hole 1/8-inch larger than the Support Box outline.

**Step 4.** Lower the Support Box through the hole in the roof until Support Box protrudes at least 1-inch below the low side of the ceiling (Fig. 20). Align the Support Box both vertically and horizontally with a level. Temporarily tack the Support Box in place through the inside walls and into the roof sheathing.

**Step 5.** Using tin snips, cut the Support Box from the top corners down to the roof line, and fold the resulting flaps over the roof sheathing. The flaps may be trimmed as needed (Fig. 21). Before nailing it to the roof, run a bead of nonhardening sealant around the Support Box, to make a seal between the Support Box and the roof. Clean out any combustible material from inside the Support Box.

**<u>Step 6</u>**. Follow Steps 4 and 5 (page 14) of the Vertical Installation Instructions.

**<u>Step 7</u>**. Follow Steps 7 through 10 (page 15 & 16) of the Vertical Installation Instructions.

**Step 8.** Install the black Trim Collar around the outside of the Cathedral Ceiling Support Box. The two pieces of the Trim Collar slide over one another to allow for easy adjustment around the Support Box. Using the six (6) screws provided, secure the four corners and the overlapping sections of the Trim Collar to the underside of ceiling. You may want to pre-drill the holes for the overlapped sections for ease of installation (Fig. 22).

TABLE 3				
ROOF PITCH	MINIMUM HEIGHT			
	Feet	Meters		
Flat to 7/12	1	0.3		
Over 7/12 to 8/12	1.5	0.46		
Over 8/12 to 9/12	2	0.61		
Over 9/12 to 10/12	2.5	0.76		
Over 10/12 to 11/12	3.25	0.99		
Over 11/12 to 12/12	4	1.22		
Over 12/12 to 14/12	5	1.52		
Over 14/12 to 16/12	6	1.83		
Over 16/12 to 18/12	7	2.13		
Over 18/12 to 20/12	7.5	2.29		
Over 10/12 to 21/12	8	2.44		





### **DuraVent DirectVent Pro GENERAL MAINTENANCE**

Conduct an inspection of the venting system annually. Recommended areas to inspect are as follows: 1. Check areas of the Venting System which are exposed to the elements for corrosion. These will appear as rust spots or streaks, and in extreme cases, holes. These component should immediately be replaced.

2. Remove the Vertical Termination Cap and shine a flashlight down the Vent. Remove any bird nests, or other foreign material.

3. Check for evidences of excessive condensation, such as water droplets forming in the inner liner, and subsequently dripping at joints. Continuous condensate can cause corrosion of caps, pipe, and fit-tings. It

may be caused by having excessive lateral runs, too many elbows, and exterior portions of the system being exposed to cold weather.

4. Inspect joints to verify that no Pipe Sections or Fittings have been disturbed or loosened.

Also check mechanical supports such as Wall Straps or plumbers tape for rigidity.

Pipe Sections and the insulation or other debris. For the Attic Insulation Shield, nail the base to floor of attic and adjust shield for appropriate insulation level, then attach the collar at the top of assembly (Fig. 19). For a chase enclosure, it may be constructed out of sheetrock or similar building materials and framed around the support box or the pipe, maintaining the 1" clearance to combustibles. For vaulted ceilings a chase enclosure must be constructed as the Attic Insulation Shield can not be installed.

# **Unit Connector to Support Box Connection**

3 inch flex is used from the unit connectors to the support box. It is mandatory that the ends be connected to the correct connections on the support box. The exhaust from the unit must be connected to the corresponding exhaust connector on the support box. Failure to properly connect the unit exhaust connector to the support box exhaust connection could result in damage to the venting and or unit. The flex pipe is not included with the unit. It is available from Malm or your dealer in 25' and 35' lengths.

**Step 1.** Determine the length of flex needed from the unit connectors to the Support Box. If additional flex lengths are needed connect two sections together using 3 inch connectors.

**Step 2.** Cut the flex to the length needed. Select a length to be the Exhaust length and mark both ends.

**Step 3.** Connect the section of flex marked as the Exhaust in Step 2 and Sheet Metal Screw the Flex Pipe to the Exhaust Connector at Top of unit hood.

**Step 4.** Connect the non-marked vent to the Intake Connector at the top of the unit connector.

**Step 5.** The unit connector pipe covers the 3" flex. The Standard unit includes enough connector pipe for a ceiling height of 96 inches or 8 feet from the floor to the ceiling. This is consists of 3 - 24 inch lengths of pipe.

- 1 Connector Pipe
- 1 Mid Pipe Section
- 1 Slip Pipe Section

**Step 6.** Thread the two flex tubes thru the Starter Pipe Section and place the Starter Section into the unit hood.

**Step 7.** Insert the Slip Pipe Section into the Mid Section only as far as necessary to make the flex connection at the Support Box connectors. This should be about 4 inches below the Support Box.

**Step 8.** Slide the Mid and Slip pipes over the 3 inch flex as you insert the Mid Pipe Section into the top of the Starter Pipe Section.

**Step 9.** Connect the marked Exhaust flex tube to the Exhaust connector at the Support Box by sheet metal screws or hose clamps.

**Step 10.** Connect the Intake flex tube to the Intake connector of the Support Box by sheet metal scews or hose clamps and make certain that the connections are secure.

**Step 11.** Extend the slip section into the Support Box. Make sure that the cleats on the end of the pipe are locked into the Support Box.



# 34" Zircon Direct Vent Through the Wall Vent Installation

The 34 Zircon Direct Vent can be installed with a through the wall kit available from Malm. The through the wall vent kit consists of the following:

- 1 Inner and Outer support box.
- 1 Dura Vent 46DVA-GK flex to 4" x 6" to Direct Vent Pro.
- 1 Dura Vent 46DVA-HSCH High Wind Sconce Termination.

The clearance to combustibles for the DirectVent Pro coaxial vent is 2" on the top of the pipe to a combustible and 1" on the sides and bottom.

A minimum clearance of 12" must be maintained from the top of the cover pipe or elbow to the ceiling.

The horizontal run of venting must be level, or have a 1/4-inch rise for every 1-foot of run towards the termination. Never allow the vent to run downward. A downward slope can trap heat and become a possible fire hazard.

The first step is to locate the center of the horizontal pipe location. The minimum height is 68" from the floor to the center of the support box. This is a minimum height and may be exceeded. The vent is required to be a minimum of 18" below any eves or roof overhang.



The location of the Horizontal Vent Termination on an exterior wall must meet all local and national building codes, and must not be easily blocked or obstructed. Termination clearances are as follows:

- (a) Clearance above the ground, veranda, porch, deck, or balcony: 12 inches minimum.
- (b) Clearance to a window (operable or fixed closed) or door: 12 inches minimum.
- (c) Vertical clearance to a ventilated soffit located above the Termination Cap (if soffit extends a horizon-
- tal distance of 2 feet out over the center line of the termination): 18 inches minimum.
- (d) Clearance to an unventilated soffit: 12 inches minimum.
- (e) Clearance to an outside corner: as tested by appliance manufacturer.
- (f) Clearance to an inside corner: as tested by appliance manufacturer.
- (g) Not to be installed above a meter/ regulator assembly within 3 feet horizontally from the center line of the regulator.
- (h) Clearance to a service regulator vent outlet: 6 feet minimum.
- (i) Clearance to non-mechanical air supply inlet to a building or the combustion air inlet to any other appliance: 12 inches minimum.
- (j) Clearance to a mechanical air supply inlet: 6 feet minimum.
- (k) Clearance above a paved sidewalk or paved driveway located on public property: refer to local code.
- (I) Clearance under a veranda, porch, deck or balcony: 12 inches minimum.

If the location has a stud blocking the installation it must be cross framed prior to installation of the support box.

The support box requires a 13 1/4 x 13 1/4 framing.

The support box must be installed with the Exhaust connector at the bottom of the box.

Nailing flanges are included that can be attached to the support box if needed. They can be set at 1/2" from the face of the support box. 1/2" sheetrock can then be placed over the nailing strips for a flush finish to the box.

Secure the support box by screwing the box through the nailing flange to the support framing. Once the inner support box is placed into the framing the outer support box is installed over the inner support box. The width of the wall will determine how far the box will extend from the outside wall.

Seal the support box to the side of the house with a high grade UV sealant.

The termination sconce can now be installed. The 4" x 6 5/8" pipe from the sconce slips through the back of the support on onto the 4" x 6 5/8" pipe from the 46DVA-GK. Attach the termination sconce with sheet metal screws to the outer box.

Seal the back of the sconce to the outer support box where the two pieces meet, Seal over all sheet metal screws.





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2. Remove the Vertical Termination Cap and shine a flashlight down the Vent. Remove any bird nests, or other foreign material.

3. Check for evidences of excessive condensation, such as water droplets forming in the inner liner, and subsequently dripping at joints. Continuous condensate can cause corrosion of caps, pipe, and fit-tings. It

may be caused by having excessive lateral runs, too many elbows, and exterior portions of the system being exposed to cold weather.

4. Inspect joints to verify that no Pipe Sections or Fittings have been disturbed or loosened. Also check mechanical supports such as Wall Straps or plumbers tape for rigidity.

Pipe Sections and the insulation or other debris. For the Attic Insulation Shield, nail the base to floor of attic and adjust shield for appropriate insulation level, then attach the collar at the top of assembly (Fig. 19). For a chase enclosure, it may be constructed out of sheetrock or similar building materials and framed around the support box or the pipe, maintaining the 1" clearance to combustibles as required by the appliance manufacturer. For vaulted ceilings a chase enclosure must be constructed as the Attic Insulation Shield can not be installed.



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