

**NOT FOR
RETROFIT
IN CANADA**

DO NOT TURN DAMPER MANUALLY WITH OR WITHOUT ELECTRICAL POWER OR MOTOR DAMAGE WILL OCCUR, USE THE SERVICE SWITCH.



**LIMITED 5 YEAR WARRANTY ON MOTORIZED CONTROLLER
LIMITED 25 YEAR WARRANTY AVAILABLE TO HOMEOWNER**

SPECIFICATIONS, INSTALLATION INSTRUCTIONS, AND TROUBLESHOOTING GUIDE FOR EFFIKAL AUTOMATIC VENT DAMPER RVGP-KS-BKF SERIES FOR USE ON LISTED GAS FIRED BOILERS WITH A DRAFT HOOD.

WARNING

READ INSTRUCTION BOOKLET CAREFULLY AND COMPLETELY BEFORE PROCEEDING WITH THE INSTALLATION.

- The Effikal RVGP Series Automatic Damper must be installed by a qualified installing agency in accordance with the manufacturer's installation instructions. The definition of a Qualified Installation Agency is: any individual, firm, corporation or company which either in person or through a representative is engaged in, and is responsible for, the installation and operation of gas appliances and automatic vent damper devices, who is experienced in such work, familiar with all the precautions required, and has complied with all the requirements of the authority having jurisdiction. The qualified installer shall fill in the installer's name, address and installation date on the label attached to the vent damper device.
- Do not negate the action of any existing safety or operational controls.
- When servicing controls, all wires must be LABELED prior to disconnection. Wiring errors can cause improper and dangerous operation.
- Device must be installed by a qualified installer, in compliance with local codes or the National Fuel Gas Code (ANSI Z223.1 NFPA 54) and the National Electric Code (ANSI C1-NFPA 70).
- Device conforms to ANSI Z21.66 and ADDENDA. CGA and AGA design certified.
- Use only with a listed gas fired boiler equipped with a draft hood, the outlet area of which is not greater than the inlet area of the device.
- Install after the boiler draft hood, as close to the draft hood as practicable, and without modification to the draft hood or the vent damper.
- Locate in a venting system or section of a venting system so that it services only the single boiler for which it is intended.
- A minimum clearance of 6 inches (153mm) between the damper device and combustible construction must be maintained and that there be provisions for access and service of the damper device.
- Position indicator and service switch must be accessible to the user.
- The installer must fill in the label on the side of the controller cover.
- This device must be installed only on a boiler connected to a factory built chimney or vent complying with a recognized standard, or a masonry or concrete chimney lined with a lining material acceptable to the authority having jurisdiction.
- This vent damper device shall not be installed on an appliance with an automatic valve having a manual opener unless the manual opener has been rendered in-operative or the automatic valve has been replaced with a redundant automatic valve not equipped with a manual opener.

TO THE USER

For continued safe operation, the appliance-device combination should be inspected annually by a qualified service agency. It is recommended that the homeowner examine all flue product carry areas of the appliance, its vent system, and the damper device, with particular attention given to deterioration from corrosion or other sources. This examination should be performed prior to and during each heating season. Also use Exhibit A, page 2 and Final Inspection, page 7.

CAUTION

Install this plug in hole in damper blade on all boilers equipped with intermittent ignition systems *only*. DO NOT install this plug on standing pilot systems. Failure to follow these instructions can cause nuisance odor problems and minor property damage due to moisture if ignored.

IMPORTANT

THE STEP-BY-STEP INSPECTION AND INSTALLATION PROCEDURES AS SPECIFIED IN EXHIBITS A AND B MUST BE FOLLOWED. THE QUALIFIED INSTALLER MUST FILL IN LABEL ON THE SIDE OF THE CONTROLLER.

EXHIBIT A

PROCEDURE FOR SAFETY INSPECTION OF AN EXISTING APPLIANCE INSTALLATION

The following procedure is intended as a guide to aid in determining that an appliance is properly installed and is in a safe condition for continuing use.

This procedure is predicated on a central furnace, boiler and water heater installations, and it should be recognized that generalized procedures cannot anticipate all situations. Accordingly, in some cases deviation from this procedure may be necessary to determine safe operation of the equipment.

- a. This procedure shall be performed prior to installation of the automatic vent damper device.
- b. If it is determined there is a condition which could result in unsafe operation, the appliance should be shut off and the owner advised of the unsafe condition. Do not install the automatic vent damper device until the unsafe condition has been corrected.

The following steps are to be followed in making the safety inspection:

1. Conduct a gas leakage test of the appliance piping and control system downstream of the valve in the supply line to the appliance.
2. Visually inspect the venting system for proper size, horizontal pitch and vent termination, and determine there is no blockage or restriction, leakage, corrosion and other deficiencies which could cause an unsafe condition.
3. Determine that the chimney or vent is acceptable to the authority having jurisdiction.
4. Shut off all gas to the appliance and shut off any other fuel-gas burning appliance within the same room. **Use shutoff valve in the supply line to each appliance.**
5. Inspect burners and crossovers for blockage and corrosion.
6. **Applicable only to furnaces** — inspect heat exchanger for cracks, openings or excessive corrosion.
7. **Applicable only to boilers** — inspect for evidence of water or combustion product leaks.
8. Insofar as is practical, close all building doors and windows and all doors between the space in which the appliance is located and other spaces of the building. Turn on clothes dryers. Turn on any exhaust fans, such as range hoods and bathroom exhausts, so they will operate at maximum speed. Do not operate a summer exhaust fan. Close fireplace dampers. If, after completing Steps 9 through 14, it is believed sufficient combustion air is not available, refer to local codes, or in the absence of local codes, to the **NATIONAL FUEL GAS CODE, ANSI Z223.1—1996 (NFPA 54)**, for guidance.
9. Place in operation the appliance being inspected. Follow the lighting instructions. Adjust thermostat so appliance will operate continuously.
10. Determine that the pilot(s), when provided, is burning properly and that main burner ignition is satisfactory by interrupting and reestablishing the electrical supply to the appliance in any convenient manner.
If the appliance is equipped with a continuous pilot(s), test the pilot safety device(s) to determine if it is operating properly by extinguishing the pilot(s) when the main burner(s) is off and determining, after 3 minutes, that the main burner gas does not flow upon a call for heat.
If the appliance is not provided with a pilot(s), test for proper operation of the ignition system in accordance with the appliance manufacturer's lighting and operating instructions.
11. (a) Visually determine that main burner gas is burning properly: i.e., no floating, lifting or flashback. Adjust the primary air shutter(s) as required.
(b) If the appliance is equipped with high and low flame controlling or flame modulation, check for proper main burner operation at low flame.
12. Test for spillage at the draft hood relief opening after 5 minutes of main burner operation. Use the flame of a match or candle, or smoke from a cigarette, cigar or pipe.
13. Turn on all other fuel-burning appliances within the same room so they will operate at their full inputs. Follow lighting instructions for each appliance.
14. Repeat Steps 11 and 12 on the appliance being inspected.
15. Return doors, windows, exhaust fans, fireplace dampers and any other fuel-gas burning appliances to their previous conditions of use.
16. **Applicable only to furnaces** — Check both the limit control and the fan control for proper operation. Limit control operation can be checked by blocking the circulating air inlet or temporarily disconnecting the electrical supply to the blower motor and determining that the limit control acts to shut off the main burner gas.
17. **Applicable only to boilers** —
 - (a) Determine that the water pumps are in operating condition.
 - (b) Test low water cutoffs, automatic feed controls, pressure, and temperature limit controls, and relief valves in accordance with the manufacturer's recommendations to determine they are in operating condition.

EXHIBIT B

PROCEDURE FOR INSTALLING ELECTRICALLY OPERATED AUTOMATIC VENT DAMPER DEVICES ON EXISTING APPLIANCES

This procedure is intended as a guide to aid in safely installing an electrically operated automatic vent damper device on an existing appliance.

This procedure is based on the assumption that the history of the specific appliance has been one of safe and satisfactory operation.

This procedure is predicated on central furnace, boiler and water heater installations, and it should be recognized that generalized procedures cannot anticipate all situations. Accordingly, in some cases deviation from this procedure may be necessary to determine safe operation of the equipment.

The following steps are to be followed in making the modifications:

1. Perform a safety inspection of the existing appliance installation. See Exhibit A for the recommended procedure for such a safety inspection.
2. Shut off all gas and electricity to appliance. **To shut off gas use the shutoff valve in the supply line to the appliance.**
3. Install the automatic vent damper device in strict accordance with the manufacturer's installation instructions. Make certain the device is not located in that portion of the venting system which serves any appliance other than the one for which the damper is installed.
4. Make certain wiring connections are tight and wires are positioned and secured so they will not be able to contact high temperature locations.
5. When an additional automatic valve has been incorporated or an existing gas control replaced, conduct a gas leakage test of the appliance piping and control system downstream of the shut off valve in the supply line to the appliance.
6. Visually inspect the modified venting system for proper horizontal pitch.
7. (a) The damper must be in full open position before the gas valve(s) opens.
(b) The damper must remain in the full open position while the gas valve(s) is open.
(c) The gas valve(s) must be closed before the damper begins its return to the closed position.
(d) The damper shall remain in the closed position during the off cycle of the appliance.
8. Determine the amperage draw of the gas control circuit and damper device.
 - (a) Check appliance transformer for adequate capacity.
 - (b) Check heat anticipator in comfort thermostat to determine it is properly adjusted.
9. Sequence the appliance through at least three normal operating cycles.
10. Insofar as is practical, close all building doors and windows and all doors between the space in which the appliance is located and other spaces of the building. Turn on clothes dryers. Turn on any exhaust fans, such as range hoods and bathroom exhausts, so they will operate at maximum speed. Do not operate a summer exhaust fan. Close fireplace dampers.
11. Place appliance in operation. Follow the lighting instructions. Adjust thermostat so appliance will operate continuously.

12. Test for spillage at the draft hood relief opening after 5 minutes of main burner operation. Use the flame of a match or candle, or smoke from a cigarette, cigar or pipe.
13. (a) Visually determine that main burner gas is burning properly: i.e., no floating, lifting or flashback. Adjust the primary air shutter(s) as required.
(b) If the appliance is equipped with high and low flame controlling or flame modulation, check for proper main burner operation at low flame.
14. Determine that the pilot(s), when provided, is burning properly and that main burner ignition is satisfactorily by interrupting and reestablishing the electrical supply to the appliance in any convenient manner.
If the appliance is equipped with a continuous pilot(s), test the pilot safety device(s) to determine if it is operating properly by extinguishing the pilot(s) when the main burner(s) is off and determining, after 3 minutes, that the main burner gas does not flow upon or call for heat.
If the appliance is not provided with a pilot(s), test for proper operation of the ignition system in accordance with the appliance manufacturer's lighting and operating instructions.
15. Applicable only to furnaces — Check both the limit control and the fan control for proper operation. Limit control operation can be checked by blocking the circulating air inlet or temporarily disconnecting the electrical supply to the blower motor and determining that the limit control acts to shut off the main burner gas.
16. Applicable only to boilers —
(a) Determine that the water pumps are in operating condition.
(b) Test low water cutoffs, automatic feed controls, pressure and temperature limit controls, and relief valves in accordance with the manufacturer's recommendations to determine they are in operating condition.
17. Label the damper device with information as to:
(a) Name of qualified agency responsible for damper installation.
(b) Date of installation.

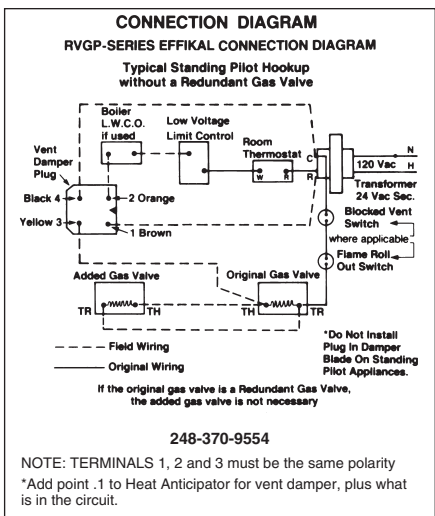
For continued safe operation, the homeowner should check all flue product carrying areas of the appliance, its vent system, and the damper device at least once a year.

Particular attention should be given to the replacement of parts deteriorated by corrosion or other sources. Such replacement must be done by a qualified installing agency, who shall carry out an annual inspection of the appliance-device combination.

Determine if the appliance has a redundant gas valve. If it has a redundant gas valve proceed to install the damper assembly.
WARNING: If the appliance does not have a redundant gas valve install an additional gas valve or a redundant gas valve.

TO INSTALL AN ADDITIONAL GAS VALVE:

- a. Shut off the gas and electricity to the gas burner (use the manual shut off valve in the supply line to the appliance).
- b. Locate a position in the supply line between the appliance automatic gas valve and the burner.
- c. Both gas valves must terminate the main gas supply to the burner(s). Both gas valves must be piped in series and wired in parallel. See Connection Diagram below.
- d. Install an approved appropriately sized single circuit automatic gas valve in this location downstream of the existing automatic gas valve. (Follow the valve manufacturers instructions for flow directions and position).
- e. Restore gas line supply, conduct a leak test on the gas piping and control system downstream of the appliance shut off valve.



I. INTRODUCTION The Effikal RVGP Series automatic vent damper was developed to increase the efficiency of boilers by reducing standby losses from the boiler and the conditioned air space. The damper

closes the chimney vent when the burner is off and fully opens it before the burner is on. The concept is similar to the opening and closing of a fireplace damper, except the operation is completely automatic. Interlocks have been added, which prevents burner operation unless the damper is in an open position. A closed damper substantially reduces standby losses on boilers.

II. DESCRIPTION A closed damper prevents residual heat in the boiler from being drawn up the chimney vent by the chimney's natural draft. A closed damper will also prevent conditioned air from being pulled through the draft hood and up the chimney by the same stack effect, if it is located within the conditioned space.

When heat is required, the damper rotates to the open position before the burner circuit is energized. If the damper does not rotate to the open position, the burner circuit will not be energized. When properly installed, the electrical circuits in this product are designed not to override the existing limit and safety controls of the boiler.

III. GENERAL INFORMATION Damper vane and sectional material is made of stainless steel. Shipping Weight w/Metal Shield Harness.

Vent Size	RVGP-KS-BKF
4	3 lbs. 6.4 oz.
5	3 lbs. 8.4 oz.
6	3 lbs. 14.4 oz.
7	4 lbs. 6.7 oz.
8	5 lbs. 3.8 oz.
9	8 lbs. 1.5 oz.
10	8 lbs. 12.4 oz.
12	9 lbs. 9.1 oz.

IV. ELECTRICAL

- (MINIMUM WIRING REQUIREMENTS)24 VAC, 18 Gauge, 105 C
- (THERMOSTAT HEAT ANTICIPATION)0.1A PLUS CURRENT DRAW FOR CONTROL CIRCUIT
- (POWER DRAW REQUIREMENT)3W AT 24 VAC WHEN OPENING OR CLOSING
- (TIMING)OPENS IN 15 SECONDS
CLOSES IN 15 SECONDS
- (CHARACTERISTICS)POWER OPEN
POWER CLOSE

V. FEATURES

- SERVICE SWITCH — ELIMINATES NUISANCE CALL BACKS
- FIVE YEAR LIMITED WARRANTY ON MOTORIZED CONTROLLER FROM DATE OF INSTALLATION.
- 25 YEAR LIMITED WARRANTY ON MOTORIZED CONTROLLER AVAILABLE.
- REDUNDANT INTERLOCK SWITCHES.
- POWER OPEN, POWER CLOSE; EXTENDS PRODUCT LIFE. SELF CLEANING ACTION.
- 24V OPERATION FOR EASY, LOW-COST WIRING.
- SUPPLIED WIRING HARNESS IS COMPATIBLE WITH MANUFACTURERS RECEPTACLE CONFIGURATION.

UNPACKING INSTRUCTIONS

The Effikal RVGP-Series Automatic Gas Vent Damper is packaged in a single carton containing a stainless steel pipe assembly, a knock out plug, a motorized controller and instruction booklet. Inspect for damage prior to the installation. A wiring harness is required for the installation.

- A. The harness may already be attached to the motorized controller per the boiler manufacturer's request.
- B. The harness may already be attached to the boiler.
- C. The harness may be packaged with the vent damper but not attached to the motorized controller per the boiler manufacturer's request.
- D. A harness may need to be purchased.

EXPLANATION OF MODEL NUMBERS

R	= REDUNDANT
V	= VALVE
G	= GAS
P	= PLUG IN AT DAMPER
A	= ADAPTER PLATE WITH COUPLING
NUMBER	= VENT PIPE SIZE
B	= BRUSH THAT PROVIDES A TIGHT SEAL
K	= KNOCKOUT FOR STANDING PILOT
F	= FLAT ROD IN PIPE ASSEMBLY
KS	= CIRCUIT BOARD MODEL

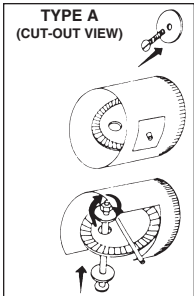
THE DAMPER MUST BE IN THE OPEN POSITION BEFORE COMBUSTION TAKES PLACE.
THE DAMPER MUST BE IN THE OPEN POSITION WHEN THE APPLIANCE MAIN BURNER(S) IS OPERATING.
THE GAS VALVE(S) MUST BE CLOSED BEFORE THE DAMPER BEGINS ITS RETURN TO THE CLOSED POSITION.

HOW TO INSTALL KNOCKOUT PLUG IN DAMPER BLADE ON GAS FIRED BOILERS (INTERMITTENT IGNITION SYSTEMS ONLY.) DO NOT INSTALL KNOCKOUT ON STANDING PILOT SYSTEMS

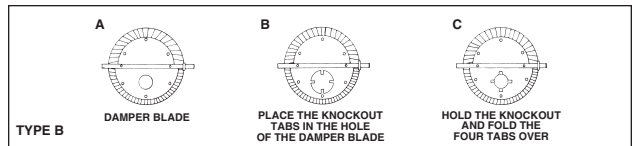
CAUTION

DO NOT TURN DAMPER MANUALLY – MOTOR DAMAGE WILL OCCUR. USE THE SERVICE SWITCH (SEE FIGURE 6).

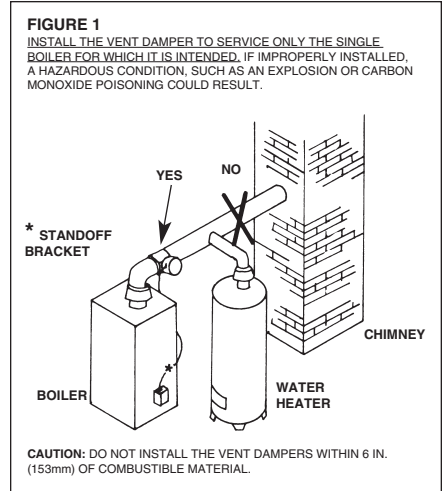
The hole in the damper blade provides the minimum vent area required by code for continuous pilot systems. Failure to follow these instructions can cause nuisance odor problems and minor property damage due to moisture if ignored.



1. Remove 2 washers, 1 roundhead slotted machine screw, and 1 8-32 kee nut from plastic bag.
2. Place the machine screw through 1 washer.
3. Place damper assembly horizontally.
4. With one hand take the washer and machine screw and come in from one side of the pipe assembly UNDER the damper blade.
5. Push the machine screw up through the knockout opening.
6. With the other hand take the washer and keep nut and enter from the opposite side of the pipe assembly.
7. Place the washer over the machine screw.
8. Put kee nut onto machine screw and hand tighten.
9. Make sure the knockout opening is totally covered.
10. Tighten with pliers, adjustable wrench, or 11/32 wrench.



ADD .1 TO THE HEAT ANTICIPATOR OF THE ROOM THERMOSTAT PLUS CURRENT DRAW FOR CONTROL MODULE.



TO INSTALL THE DAMPER ASSEMBLY
DISCONNECT POWER SUPPLY TO PREVENT ELECTRICAL SHOCK OR EQUIPMENT DAMAGE.

CAUTION!

Installer, do not egg shape the pipe during this installation or the shafts from the controller to the pipe will not line up properly. A pipe forced out of round is not covered under our 5 year warranty program. See figure 3.

Install the damper device after the appliance drafthood, as close to the draft hood as practical, and without modification of either the draft hood or the vent damper device.

Locate a position in the vent pipe between the drafthood and the chimney for the damper assembly. The vent damper device must be located in a venting system so that it serves only the single appliance for which it is installed (see Figure 1).

WARNING!

To be used only with an appliance bearing a marking showing the make and model of the device. Canadian Requirement.

INSTALLING THE VENT DAMPER IN HORIZONTAL AND VERTICAL VENTS:

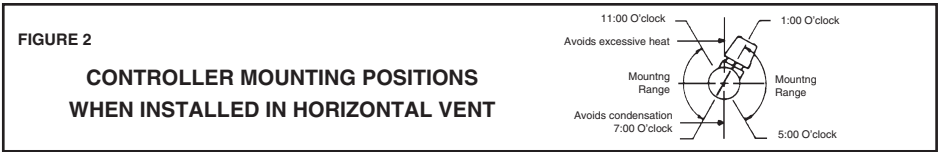
For vertical vent damper installation, mount the vent damper in any position.

For horizontal vent damper installation, mount the vent damper motorized controller to either side of the vent. See Figure 2.

The vent damper device shall be connected to a chimney or vent complying with a recognized standard, or a masonry or concrete chimney lined with a lining material acceptable to the enforcing authority.

A minimum clearance of 6 inches (153 mm) between the device and combustible construction must be maintained and that there be provisions for access and service of the damper device.

To avoid nuisance odor problems, obtain the most radical pitch to the chimney as possible. Remove any appropriate section from the female end of the vent pipe and reinstall vent pipe and damper assembly. For dimensional data, see Figure 4.



HOW TO AVOID NUISANCE NO HEAT CALLS

- A. Do not turn damper manually or motor damage will occur. Use the service switch. (See fig. 6)
- B. Do not pull on the motorized controller or twist to locate the damper assembly.
- C. If self tapping screws are not sharp enough to penetrate the stainless steel pipe assembly, it may be necessary to drill 3 holes 120 degrees apart at the inlet and outlet of the pipe assembly. This should avoid egg shaping the pipe assembly. (See Fig. 3 & 7)



The damper device must be installed in the vent pipe with the crimped end and directional arrow pointed toward the chimney, the damper position indicator visible and the controller unit accessible for wiring. See Figure 5.

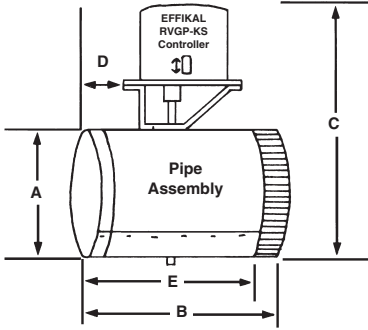
The motorized controller is premounted to the stainless steel pipe assembly. Make sure the controller is secured to the pipe assembly. The flat rod must be engaged into the slot of the CAM. This slot protrudes through the base plate of the controller. See Figures 3 & 7.

The vent damper position indicator is located on the stainless steel pipe assembly. This is opposite the motorized

controller. The device is equipped with a service switch for placing the damper in the open position. The service switch is recessed into the cap of the motorized controller. See Figure 6. It has been appropriately marked hold "open" or "automatic." The position indicator and service switch must be accessible to the user.

Secure the damper assembly at each end to the vent pipe with three 1/2" sheet metal screws or pop rivets spaced around the circumference of the vent pipe. If necessary, provide a suitable hanger to support the damper assembly independent of the venting system. See Figure 7.

FIGURE 4



DIM. A TUBE SIZE	DIM. B LENGTH	DIM. C TOTAL HEIGHT	DIM. D	DIM. E
4"	6"	9 $\frac{1}{2}$ "	15/16"	4 $\frac{1}{2}$ "
5"	6"	10 $\frac{1}{2}$ "	15/16"	4 $\frac{1}{2}$ "
6"	6 $\frac{1}{2}$ "	11 $\frac{1}{2}$ "	1 $\frac{1}{2}$ "	5 $\frac{1}{2}$ "
7"	7-1/16"	12 $\frac{1}{2}$ "	1 $\frac{1}{2}$ "	5 $\frac{1}{2}$ "
8"	8-1/16"	13 $\frac{1}{2}$ "	1 $\frac{1}{2}$ "	6-13/16"
9"	10 $\frac{1}{2}$ "	14 $\frac{1}{2}$ "	2 $\frac{1}{2}$ "	8 $\frac{1}{2}$ "
10"	12 $\frac{1}{2}$ "	15 $\frac{1}{2}$ "	3 $\frac{1}{2}$ "	10 $\frac{1}{2}$ "
12"	12 $\frac{1}{2}$ "	17 $\frac{1}{2}$ "	3 $\frac{1}{2}$ "	10 $\frac{1}{2}$ "

FIGURE 5

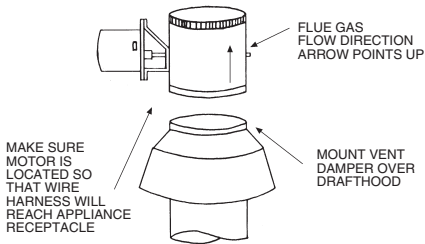
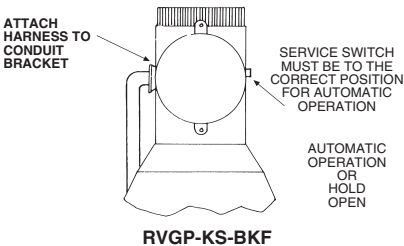


FIGURE 6



CAUTION

PLUG IN APPLICATIONS:

For plug in applications, locate the vent damper receptacle on the appliance per the manufacturers instructions and follow accordingly. For additional plug in connections see Figure 8, 9, & 10.

When the harness is not attached to the motorized controller. The harness must be routed through the conduit bracket. Place the harness receptacle into the damper plug. Then securely fasten the harness to the conduit bracket. See Figure 6.

The RVGP-KS series damper must be electrically connected with all automatic gas valves in the system.

Ensure all connections are tight and that wires cannot touch hot surfaces. If necessary, use standoff brackets. See Figure 1.

When the harness is used the jumper must be removed from the receptacle before the harness plug can be connected to the appliance.

Once the vent damper is plugged into the control system and operated through one complete cycle, the control circuit will operate only when the vent damper is in the control circuit. Plug in type controls with internal fuses.

WIRING

All electrical work and material used in the installation shall be in accordance with local electrical codes in absence of codes consult the National Electrical Code.

To protect the thermostat heat anticipator turn off the appliance power supply before proceeding with the wiring.

CAUTION

MICROPROCESSOR THERMOSTATS:

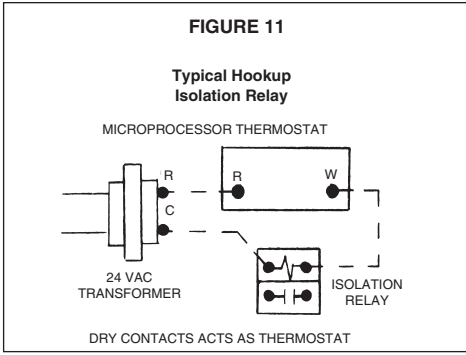
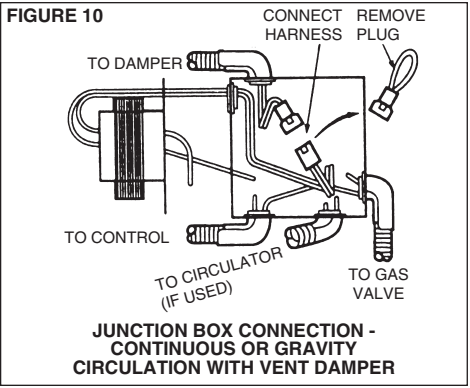
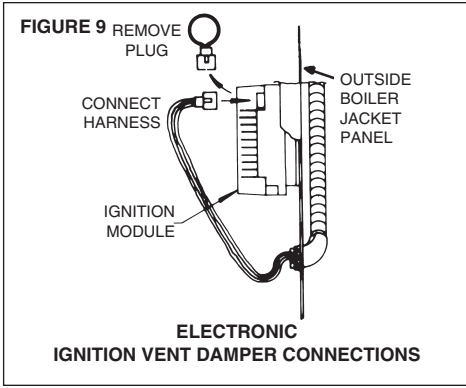
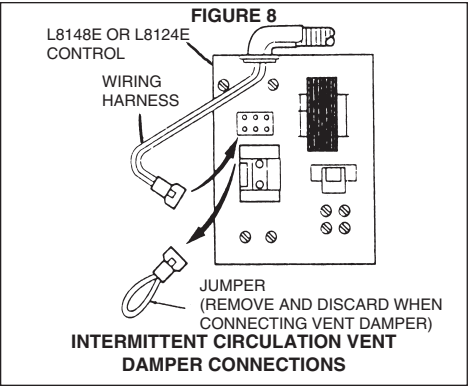
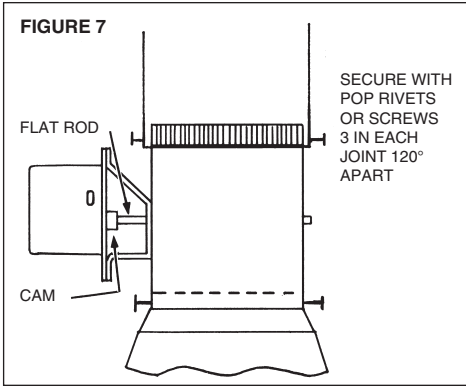
An isolation relay is required when a microprocessor based thermostat is connected electrically to the vent damper. This primarily occurs with steam boilers and forced air furnaces. When the vent damper is energized to open a voltage drop occurs for 15 seconds which does not allow the thermostat to rob power to maintain the program. Thermostat battery life is reduced. When the battery runs down, erratic cycling may occur. For typical hook up of an isolation relay, see Figure 11.

The vent damper operates on 24 VAC Systems only. Do not install if the system operates off 120 VAC or millivoltage to avoid possible damage to the system and system shut down.

WARNING

Do not use the Effikal Dampers with Honeywell L8148 or L8124 with man/auto switch because the switch can override the safety interlocks in the system wiring, causing a hazardous condition.

All wiring from the EFFIKAL RVGP-Series gas vent damper controller shall be routed clear of mechanical injury and high temperature locations as directly as possible along building construction or the gas fuel line to the gas burner controls. Secure with insulated staples, wire ties, stand off brackets or tape as required. Make sure all the wiring connections are neat and tight, and done in a workmanlike manner.



WARNING

FINAL INSPECTION

WARNING

- The service switch must be in the automatic position. See Figure 6.
- Check the operation of the automatic damper 3 times with the boiler operating controls for proper sequence.
- The damper must be in the open position before combustion takes place.
- The damper must be in the open position when the appliance main burner(s) is operating.
- The gas valve(s) must be closed before the damper begins its return to the closed position.

PERFORM TEST PROCEDURE OF EXHIBITS A & B.

• SEE AVAILABLE 25 YEAR WARRANTY ON FOLLOWING PAGE •

LIMITED WARRANTY EFFIKAL

Effikal International Inc. will repair or replace, free of charge, any of its motorized controllers which fail within five (5) years from date of original installation due to a result of faulty design, workmanship or materials. Effikal International Inc. will not be responsible for labor or service charges incidental to the removal and replacement of a defective part. Replacements for material claimed defective are subject to adjustment after material claimed defective has been returned to Effikal International Inc. by prepaid transportation for inspection. This warranty does not extend to failures occurring because of damage incurred in or resulting from shipment or accident in transit, improper installation, alteration, abnormal use, defective repair, or exposure to abnormal environment. There are no warranties of either merchantability or fitness for a particular purpose, Effikal International Inc assumes no liability for consequential damages, loss of goodwill, production, income or labor in replacing defective products, which result from use or misuse of its products.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. Some states do not allow limitations on how long an implied warranty lasts, and some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you.

Inquiries to the manufacturer concerning this warranty should be directed to:

EFFIKAL INTERNATIONAL INC.
143 NORTHPOINTE DRIVE, ORION, MICHIGAN 48359
ATTN: RETURN GOODS/WARRANTY DEPARTMENT

For prompt and efficient response, the Effikal owner should apply for warranty claims via written notice, to the representative or dealer selling the product.

NOTICE TO CONTRACTOR

UPON COMPLETION OF THE EFFIKAL DAMPER INSTALLATION, FILL IN THE INFORMATION INDICATED BELOW AND LEAVE THIS INSTRUCTION BOOKLET WITH THE HOMEOWNER.

INSTALLER: _____

ADDRESS: _____

PHONE NUMBER: _____

DATE INSTALLED: _____

DAMPER SERIAL NO.: _____



Name _____ Registration # _____
 Street _____
 City _____ State _____ ZIP _____
 Phone (____) _____
 Type of heating appliance: (Check one)
 Hot Water Boiler Steam Boiler Furnace
 Effikal Information
 Number of Effikals _____ Series No.(s) _____
 Installed at this address _____ (outside cap) _____
 Installed by _____
 Address _____
 Phone (____) _____

I am interested in the "25 YEAR-LIMITED-LIFETIME WARRANTY."
 I understand that the \$100.00 registration fee is per installed Effikal unit.
 This is good only for original homeowner (purchaser) at the original address of installation.
 a \$100.00 registration fee per Effikal unit installed is enclosed:
 YES NO
 Signature _____ Date _____

----- CLIP HERE AND MAIL -----

DEAR EFFIKAL CUSTOMER,

Your Installer has already made you aware that Effikal International Inc., the manufacturer of the Effikal Automatic Damper System, offers a "25 year Limited Lifetime Warranty" on all Effikal parts.

The Effikal Damper already comes with a 5 year warranty on parts, which no other electric damper offers. This new offer is supplemental to the original automatic 5 year warranty. This does not mean that 25 years will be added to the original 5 year warranty, but instead, the customer is purchasing a total package of 25 years from date of purchase. We feel our damper will maintain its quality under normal conditions, and that it will last the life of your furnace or boiler.

This warranty applies only to residential gas users, sizes four (4) through eight (8) inch of the RVG/P series dampers.

The administration of this kind of program is very costly. That is the reason we ask for a \$100.00 registration fee per installed Effikal unit. This fee entitles you to a registration number, which will create an efficient system, that should be easy for you to use, in case of a claim.

In order to participate in this program, the following conditions must be met:

1. The form must be filled out and returned to Effikal International Inc., 143 Northpointe Drive, Orion, Michigan 48359
2. A \$100.00 registration fee (money order or personal check made payable to EFFIKAL INTERNATIONAL INC.) has to accompany the forms.
3. Registration must be submitted to Factory within 90 days from the date of installation.

After this has been completed, Effikal International Inc. will return the original form with a registration number. This registration number entitles you to repair or replacement of the unit. Only controllers are included in this warranty. Any service call must be paid by the homeowner. The manufacturer reserves the right to either repair or replace the unit, depending on the condition and age of the unit.

Any unit sent to the factory will be sent back to the homeowner in the same "condition" it was received. This means that the unit may not be updated if changes had been made since the original purchase.

This warranty is extended to only one homeowner, and at the original address of installation. If the original owner sells his/her home the warranty cannot be extended to the new owner.

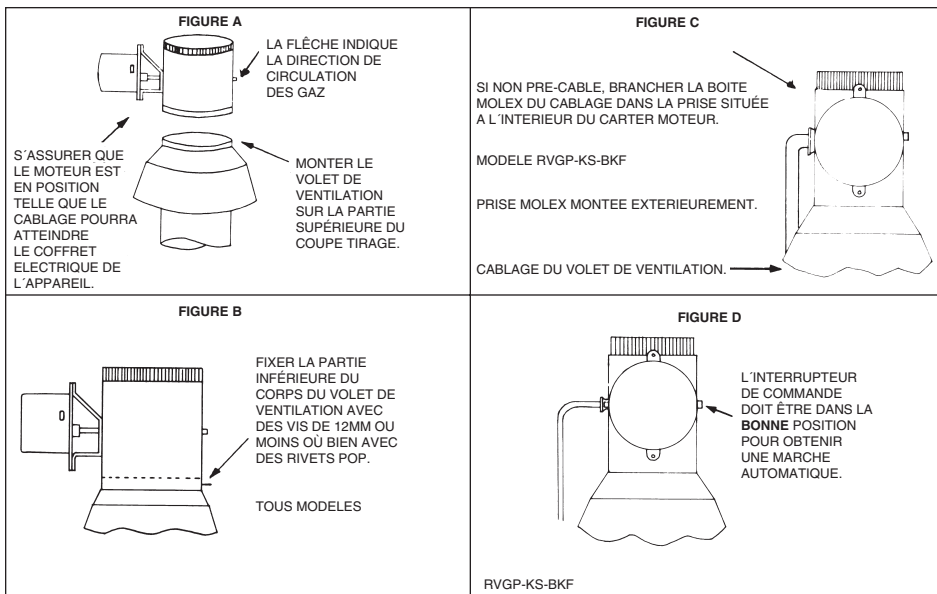
LIMITED WARRANTY

Effikal International Inc. will replace, free of charge, any of its controllers which fail within twenty-five (25) years from date of original installation due to a result of faulty design, workmanship or materials. Effikal International Inc. will not be responsible for labor or service charges incidental to the removal and replacement of a defective part. Replacements for material claimed defective are subject to adjustment after material claimed defective has been returned to Effikal by prepaid transportation for inspection. This warranty does not extend to failures occurring because of damage incurred in or resulting from shipment or accident in transit, improper installation, alteration, abnormal use, defective repair, or exposure to abnormal environment. There are no warranties of either merchantability or fitness for a particular purpose, Effikal International Inc. assumes no liability for consequential damages, loss of goodwill, production, income or labor in replacing defective products, which result from use or misuse of its products. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. Some states do not allow limitations on how long an implied warranty lasts, and some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you. Inquiries to the manufacturer concerning this warranty should be directed to:

EFFIKAL INTERNATIONAL INC., 143 Northpointe Drive, Orion, Michigan 48359, Attn: Return Goods/Warranty Department

For prompt and efficient response, the Effikal owner should apply for warranty claims via written notice to the representative or dealer selling the product.

NOTE: Only the HOMEOWNER may apply for this guarantee.



- A. Monter le volet de ventilation sur le coupe-tirage de l'appareil aussi près que possible du coupe-tirage et sans modifier ni le coupe-tirage ni le volet de ventilation.
- B. Ce volet de ventilation doit être positionné dans un système de mise à l'air libre de manière à ce qu'il ne serve seulement l'appareil pour lequel il a été prévu.
- C. Monter le corps du volet de ventilation sur la chaudière en suivant les instructions du fabricant.
- D. L'indicateur de position du volet est à l'opposé du contrôleur motorisé. Ce dispositif est équipé avec un interrupteur de commande pour mettre le volet en position ouverte. Cet interrupteur dépasse du couvercle du contrôleur motorisé. Les indications « OUVERT » ou « FERME » sont clairement marquées. L'indicateur de position ainsi que l'interrupteur doivent être facilement accessibles par l'utilisateur.
- E. Il doit être prévu une distance minimum de 153mm entre toute construction inflammable et le volet de ventilation ainsi que des possibilités d'accès pour l'entretien.
- F. **ATTENTION!** A être utilisé uniquement avec un appareil indiquant la marque et le modèle de ce dispositif. L'appareil sera relié à une cheminée ou une mise à l'air

libre conforme à une norme reconnue ou à une cheminée en ciment ou en maçonnerie avec un recouvrement intérieur acceptable par les autorités responsables.

ATTENTION ! Ce dispositif doit être installé par un installateur qualifié se conformant aux instructions d'installation préconisées par le fabricant. Une installation incorrecte pourrait présenter des dangers tels que explosion ou d'empoisonnement par l'oxyde de carbone.

AVERTISSEMENT ! Installeur, ne pas déformer le tuyau pendant l'installation, les axes du contrôleur au tuyau risqueraient de ne pas être alignés. Un tuyau déformé n'est pas couvert par notre garantie de 5 ans.

- G. Ajouter 0-1 à l'anticipateur de température de la pièce plus le courant nécessaire au module de contrôle.
- H. Le volet doit être en position ouverte lorsque le brûleur de l'appareil est en marche.
- I. Pour mettre le volet en position pleine ouverture. Mettre l'interrupteur de commande en position maintien ouverte. L'interrupteur de commande dépasse du bouchon du contrôleur motorisé du volet de ventilation. Vérifier la position du volet en regardant l'indicateur de position situé à l'opposé du contrôleur motorisé.

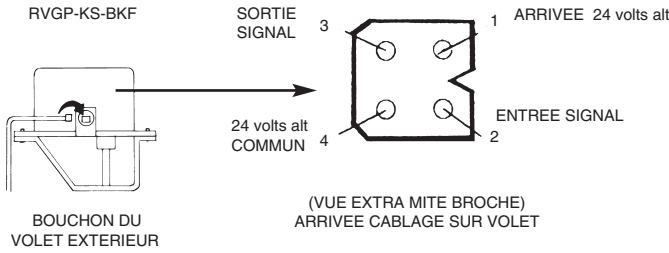
LE VOLET DE VENTILATION DOIT ÊTRE OUVERT POUR QUE LA COMBUSTION SE PRODUISE.

MODELE BRANCHABLE VOLET DE VENTILATION EFFIKAL RVGP DIAGNOSTIC DES PANNES

ATTENTION!

AVANT DE FAIRE L'ENTRETIEN DES COMMANDES, ETIQUETER TOUS LES FILS AVANT DE LES DEBRANCHER. DES ERREURS DE CABLAGE PEUVENT CAUSER UN FONCTIONNEMENT INEFFICACE ET DANGEREUX.

NE PAS OUVRIR LE VOLET MANUELLEMENT CAR LE MOTEUR SERA ENDOMMAGE. UTILISER L'INTERRUPTEUR DE COMMANDE POUR BY-PASSER DISPOSITIF.



TOUTES LES LECTURES SONT PRISES DE LA BOITE DE CABLAGE. NE PAS POUSSER LES CONDUCTEURS DANS LA BOITE DE CABLAGE. CELA OUVRIR LES FICHES ET FOSERA DES PROBLEMES DE CONTACT!

24 volts alt COURANT 4 & 1 4 & 2 4 & 3	SEQUENCE DE L'OPERATION		AVERTISSEMENT
	TOUT LE TEMPS LORS DE DEMANDE DE CHALEUR PENDANT COMBUSTION	OUVERT OU FERME OUVERT OU EN COURS D'OUVERTURE VOLET OUVERT	NE PAS ANNULER L'ACTION DE TOUTE COMMANDE DE SECURITE OU DE FONCTIONNEMENT PRESENTE.
PAS DE COURANT 4 & 1	LA POSITION 4 EST COMMUNE LA POSITION 1. MAUVAIS REGLAGE 2. TRANSFORMATEUR DEFECTUEUX 3. FIL CASSE OU DESSERRE	1 EST ALIMENTEE 24 VOLTS ALT 4. FUSIBLE SAUTE OU DISJONCTEUR DISJONCTE 5. INTERRUPTEUR PRINCIPAL POSITION ARRET 6. CABLAGE NON BRANCHE DANS COFFRET DE L'APPAREIL	
PAS DE COURANT 4 & 2 COURANT 4 & 1	1. LE THERMOSTAT N'A PAS DEMANDE DE CHALEUR 2. ANTICIPATEUR DE CHALEUR GRILLE 3. FIL CASSE OU DESSERRE	4. MAUVAIS REGLAGE, NIVEAU OU PRESSION CONTROLE EAU INTERROMPU 5. INTERRUPTEUR MARCHE ARRET OBSTRUCTION ORIFICE AERATION, OU RETOUR DE FLAMME	
COURANT EN 4 & 1 4 & 2 SUR VOLET OUVERT	ATTENTION POUR DIAGNOSTIC SEULEMENT. S'ASSURER QUE LE VOLET EST EN POSITION OUVERTE. UTILISER L'INTERRUPTEUR DE COMMANDE POUR MAINTENIR LE VOLET EN POSITION OUVERTE. RELIER 2 & 3, SI L'APPAREIL DEMARRE SEPARER 2 & 3 AINSI QUE LA PRISE A L'ARRIERE DU VOLET. SI L'APPAREIL NE DEMARRE PAS, REMPLACER LE CONTROLEUR DU VOLET. NE PAS REMPLACER L'ENSEMBLE DU TUBE.		
SI UN CONTROLLER DE VOLET N'EST PAS DISPONIBLE, METTRE L'INTERRUPTEUR DE COMMANDE EN POSITION MAINTIEN OUVERTURE. CE CI DEVRAIT MAINTENIR LE VOLET EN POSITION OUVERTE ET PERMETTRE A L'UTILISATEUR D'OBTENIR DE LA CHALEUR EN AUTOMATIQUE. RENOYER OU REMPLACER LE CONTROLEUR CELUI CI EST COUVERT PAR UNE GARANTIE DE 5 ANS A PARTIR DE LA DATE D'INSTALLATION ORIGINALE. L'ENSEMBLE DU TUBE NE SERA PAS PRIS EN GARANTIE.			
COURANT EN 4 & 1 4 & 2 4 & 3 VOLET OUVERT PAS DE COMBUSTION	1. VERIFIER QUE L'ARRIVEE DE GAZ EST OUVERTE 2. INTERRUPTEUR DE NIVEAU D'EAU, INTERRUPTEUR DE SECURITE DE RETOUR D'AIR CHAUD, INTERRUPTEUR DE RETOUR DE FLAMME 3. FIL CASSE OU DESSERRE	4. PIECE DEFECTUEUSE DANS L'APPAREIL EN AVAL DU VOLET	
LE VOLET TOURNE CONTINUELLEMENT	REEMPLACER LE CONTROLLEUR DU VOLET NE PAS REMPLACER L'ENSEMBLE COMPLET		
VOLET GRIPPE	1. VERIFIER QUE DES VIS N'EMPECHENT PAS LE FONCTIONNEMENT 2. S'ASSURER QUE L'ENSEMBLE TUBE N'EST PAS DEFORME PAR L'ORIFICE D'AERATION OU PAR LA CHEMINEE 3. S'ASSURER QUE L'EXTREMITÉ RESSERREE DE L'ORIFICE D'AERATION N'EST PAS TROP ENFONCEE ET EMPECHE LE MOUVEMENT DU VOLET		
NOTA IMPORTANT	LE VOLET DOIT ETRE EN POSITION OUVERTE AVANT LE COMMENCEMENT DE LA COMBUSTION		

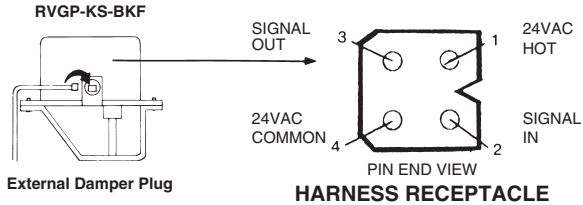
**THIS IS NOT A WIRING DIAGRAM.
REFER TO PAGE 3 FOR WIRING DIAGRAM**

PLUG-IN MODEL EFFIKAL RVGP SERIES TROUBLE SHOOTING GUIDE

CAUTION

WHEN SERVICING CONTROLS ALL WIRES MUST BE LABELED PRIOR TO DISCONNECTION. WIRING ERRORS CAN CAUSE IMPROPER AND DANGEROUS OPERATION. Do not turn damper open manually or motor damage will result, use the service switch.

**DO NOT CUT
PLUG OFF
OF DAMPER
CONTROLLER
OR WARRANTY
WILL BE VOID.**



All readings are taken from harness receptacle.

Do not push meter leads into harness receptacle. This opens the pins and will create connection problems!

24 V.A.C. POWER 4 & 1 4 & 2 4 & 3	NORMAL SEQUENCE OF OPERATION All Times Calling for Heat During Combustion	Open or Closed Open or Opening Damper Open	WARNING Do not negate the action of any existing safety or operational controls
NO POWER 4 & 1	POSITION 4 IS COMMON 1. Off on limit (120 VAC) 2. Bad Transformer 3. Loose or broken connections 4. Blown fuse or circuit breaker		POSITION 1 IS HOT 24VAC 5. Disconnect switch off 6. Harness not plugged into appliance Receptacle
NO POWER 4 & 2 POWER ON 4 & 1	1. Thermostat not calling for heat 2. Burned out heat anticipator 3. Loose or broken connections		4. Off On Operating limit, pressure control or low water cut off. 5. Off On blocked vent switch or flame Roll out
POWER ON 4 & 1 4 & 2 DAMPER OPEN	WARNING for trouble shooting only. Make sure power is in the open position. Use the service switch to keep the damper in the open position. Place a jumper between 2 & 3 if the appliance fires remove jumper & plug receptacle back into damper controller plug. If appliance does not fire replace damper controller. <u>Do not replace the pipe assembly.</u>		

If a damper controller is not available place the service switch in the hold open position. This should keep the damper in the open position and allow the customer to have automatic heat. Return or replace the controller at your convenience. The controller carries a 5 year warranty from the original date of installation. Pipe assembly will not be warranted.

POWER ON 4 & 1 4 & 2 4 & 3 DAMPER OPEN NO COMBUSTION	1. Check to make sure gas is on 2. Off on low water cut off, blocked vent switch or flame roll out switch WHEN JUMPER IS IN PLACE — FOR TROUBLE SHOOTING ONLY	3. Loose or broken connections 4. Defective component in appliance after the vent damper
DAMPER ROTATES CONTINUOUSLY	Change the damper controller <u>Do not change the entire damper assembly</u>	
DAMPER STICKS	1. Make sure no screws are obstructing damper blade 2. Make sure damper pipe assembly is not egg shaped caused by the vent pipe or chimney opening 3. Make sure the crimped end of the vent pipe is not shoved in so far to obstruct the damper blade	4. For additional information see page 5.
IMPORTANT	DAMPER MUST BE OPEN BEFORE COMBUSTION TAKES PLACE If all steps have been tried and vent damper problems persist, call 248-370-9554	

**VERIFY SAFE AND PROPER OPERATION
BEFORE LEAVING THE JOB SITE.**

**DO NOT REPLACE THE ENTIRE DAMPER ASSEMBLY –
REPLACE ONLY THE MOTORIZED CONTROLLER.**