

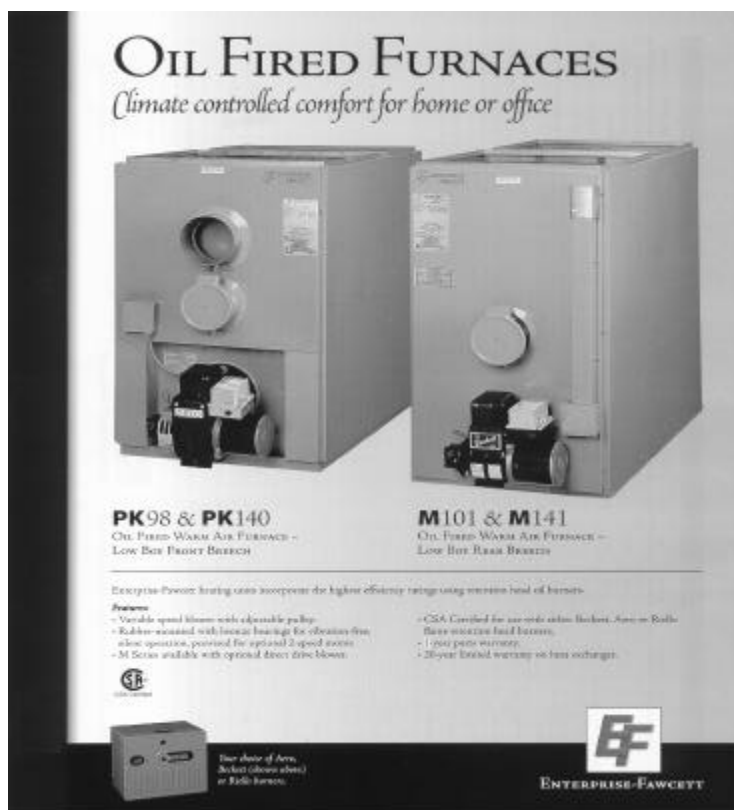
ENTERPRISE FAWCETT

OIL FIRED WARM AIR FURNACES

Models ---- PK98 ---- PK140 Front Breech
Models ---- M101 ---- M141 Rear Breech

OIL FIRED WARM AIR FURNACES

Models PK98/PK140 Front Breech and Models M101/M141 Rear Breech



INSTALLATION, OPERATING, MAINTENANCE AND HOME OWNER INSTRUCTIONS:

Read these instructions carefully and save for future reference. Consult your local authorities concerning local fire safety regulations. Installation must be made in accordance with the Local, Provincial or State codes in your area which may differ from this manual. Always comply with the most severe application. Proper installation and use will ensure safe and satisfactory performance. Improper installation or use could result in voiding your warranty.



ENTERPRISE FAWCETT
Making Wood Stoves Since 1852

73 Lorne Street
Sackville, NB
E4L 4A2

We reserve the right to make improvements and design modifications without notification.

Phone: 506-536-1160
Fax: 506-536-1820
Email: enterpri@nbnet.nb.ca

INSTALLATION

The installation of the unit will be in accordance with regulations of the authorities having jurisdiction. All units must be installed on non-combustible flooring unless otherwise stated on the CSA rating plate. Installation clearances must be shown on the CSA rating plate. Access must be provided for service of the blower and oil burner. It is strongly recommended that the furnace be connected to an approved vent or lined masonry chimney which is capable of creating a draft of not less than 0.02 inches water column.

The oil tank installer must supply and install a shut-off valve at the tank outlet. The oil tank installer also must supply and install an oil filter between the tank and burner. Filter should be serviced annually.

It is recommended that the electrical supply to the furnace be from a separate circuit of not less than 20 amps rating. An emergency switch capable of cutting power to the furnace should be installed in the living area or at the top of the basement stairs.

If the furnace is installed in an enclosed room, a means of providing combustion air to the burner must be available. It is recommended that the combustion air inlet have a free area of one square foot for one gallon input to the burner.

CAUTION

- 1) **DO NOT START THE BURNER UNLESS THE BLOWER ACCESS DOOR IS IN PLACE.**
- 2) **DO NOT TAMPER WITH THE FURNACE OR CONTROLS, CALL A QUALIFIED SERVICE TECHNICIAN.**
- 3) **NEVER BURN GARBAGE OR PAPER IN THE HEATING SYSTEM.**
- 4) **NEVER LEAVE PAPER, RAGS OR COMBUSTIBLES WITHIN THE REQUIRED CLEARANCES OF THE FURNACE.**
- 5) **DO NOT USE GASOLINE, CRANKCASE OIL, OR ANY OIL CONTAINING GASOLINE IN THE FURNACE.**

CONTROLS

The controls consist of a control (fan and limit), protectorelay (primary control) and a blocked vent safety switch.. As a general rule these controls are not repairable. If a control is defective, it should be replaced, by a qualified servicer, with a new control of the same make and model number.

OIL BURNER

The burner should be cleaned and adjusted by a licensed burner technician. The burner motor should be lubricated with a few drops of #20 lubricating oil.

COMBUSTION CHAMBER

The combustion chamber is made from a high temperature fibre. It will easily withstand normal flame temperatures but could be damaged if roughly handled or cleaned with a scraper or wire brush. If cleaning is required, do it gently with a light vacuum cleaner.

CLEANING FURNACE

Replace the filter as needed – dirty filters reduce the efficiency. Remove the smoke pipe and clean. Vacuum the inside of the heat exchanger and bottom of radiator through the fire inspection door. Replace and secure the smoke pipe.

CHANGING OF AIR FILTERS

Remove the blower compartment door and remove rear filters first, then the second filter, if a second filter is used. Replace the second filter first, then the rear. Use ULC or CSA approved filters of the same size and replace door. The blower should be cleaned and the motor oiled regularly with #20 lubricating oil.

ADJUST BLOWER PULLEYS

Adjust the blower pulleys so that the belt flexibility is ½” to ¾”.

ADJUST BURNER AND START UP

- 1) Set thermostat above room temperature. Open the oil valves and purge the air from the oil line, pump and bleed port of the oil pump.
- 2) Do not attempt to start burner when excessive oil has accumulated, in the presence of oil vapour or when the combustion chamber is hot.
- 3) The furnace requires adequate combustion air, one square foot free area for each gallon firing rate.
- 4) To obtain normal efficiency, set draft regulator at 0.02” W.C. with a 0-1 smoke reading
- 5) Check safety controls for proper operation.
- 6) Turn off electrical supply and close oil supply by turning the valve to off position on the oil supply line for extended shut down periods.

FOR AERO, FAFC 2, FAFC 3 and BECKETT AF35 BURNERS ONLY:

(burner installation instructions also packed with burner)

- 1) Remove the three nuts and washers from threaded studs on furnace around burner blast tube opening.
- 2) Check for any damage.
- 3) Check free length of blast tube (See set-up guide attached for selected burner).
- 4) Place service gasket over the three threaded studs.
- 5) Carefully insert burner blast tube into the opening provided and secure with the three washers and nuts.
- 6) Secure the BX cable from the burner to the junction box. See drawing number 1S3185 for wire connections.
- 7) The thermostat must not be installed on an outside wall where it may be affected by radiant heat or excessive drafts. Check correct setting of heat anticipator on the thermostat (.2 amp).

FOR RIELLO BURNERS ONLY:

(burner installation instructions also packed with burner)

- 1) Remove the three nuts and washers from threaded studs on furnace around burner blast tube opening.
- 2) Check for any damage.
- 3) Check free length of blast tube (See set-up guide attached for selected burner).
- 4) Place service gasket over the three threaded studs.
- 5) Carefully insert burner blast tube into the opening provided and secure with the three washers and nuts.
- 6) Secure the BX cable from the burner to the junction box. See drawing number 1S3186A for wire connections.
- 7) The thermostat must not be installed on an outside wall where it may be affected by radiant heat or excessive drafts. Check correct setting of heat anticipator on the thermostat (.2 amp).

ADDITIONAL HOMEOWNERS INSTRUCTIONS

- a) Install the safety switch in a place with easy access and out of the area of the unit. If possible, the top of the basement stairs.
- b) Do not store material around the furnace within these clearances:

| | |
|----------------------|-----|
| Unaccess side | 2" |
| Access side | 24" |
| Rear of front breach | 24" |
| Rear of back breach | 24" |
| Top | 1" |
| Front | 24" |
| Flue Pipe | 9" |
| Base | 0 |
- c) Make sure no combustibles are stored around the furnace (eg: boxes, rags, paper, etc.)
- d) Make sure the unit has enough combustion air in an enclosed room. Have at least a 96 square inch free flow area at ceiling and floor to supply enough air for the oil burner to operate properly. Keep the area around these openings clear so there is no blocking of the vents.
- e) Make sure nothing is obstructing the return air register so there is a free flow.
- f) When renovations are being carried out, unit maintenance should be done before and after the work is completed. Maintenance could be done again in 1 – 2 months after and also change filters.
- g) Make sure the furnace is checked by a qualified service technician and started. Check oil pressure and air, blower and all controls. Check fuel supply and filters for leaks.

**ENTERPRISE FAWCETT
RESIDENTIAL OIL FURNACE**

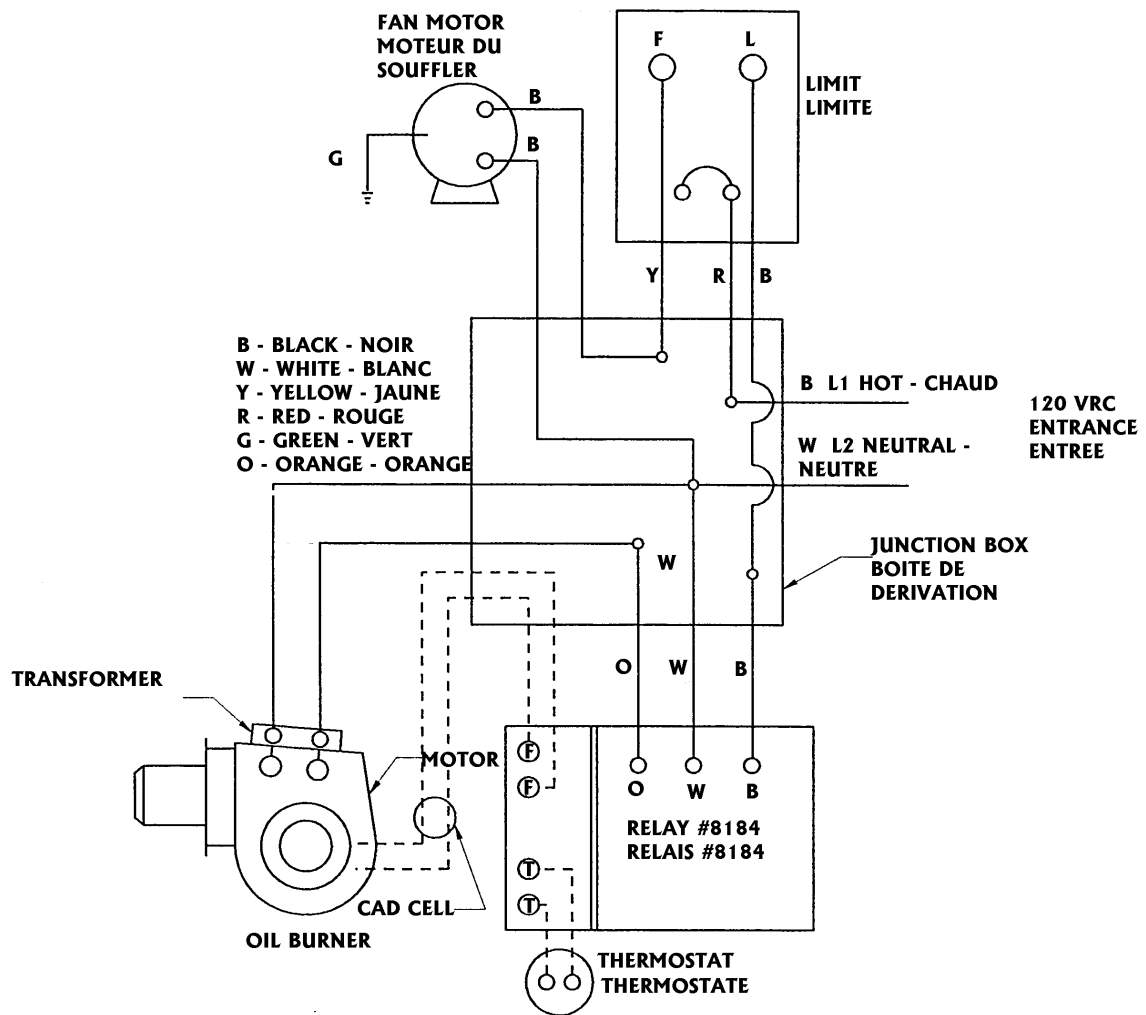
M SERIES - REAR BREECH

PK SERIES - FRONT BREECH

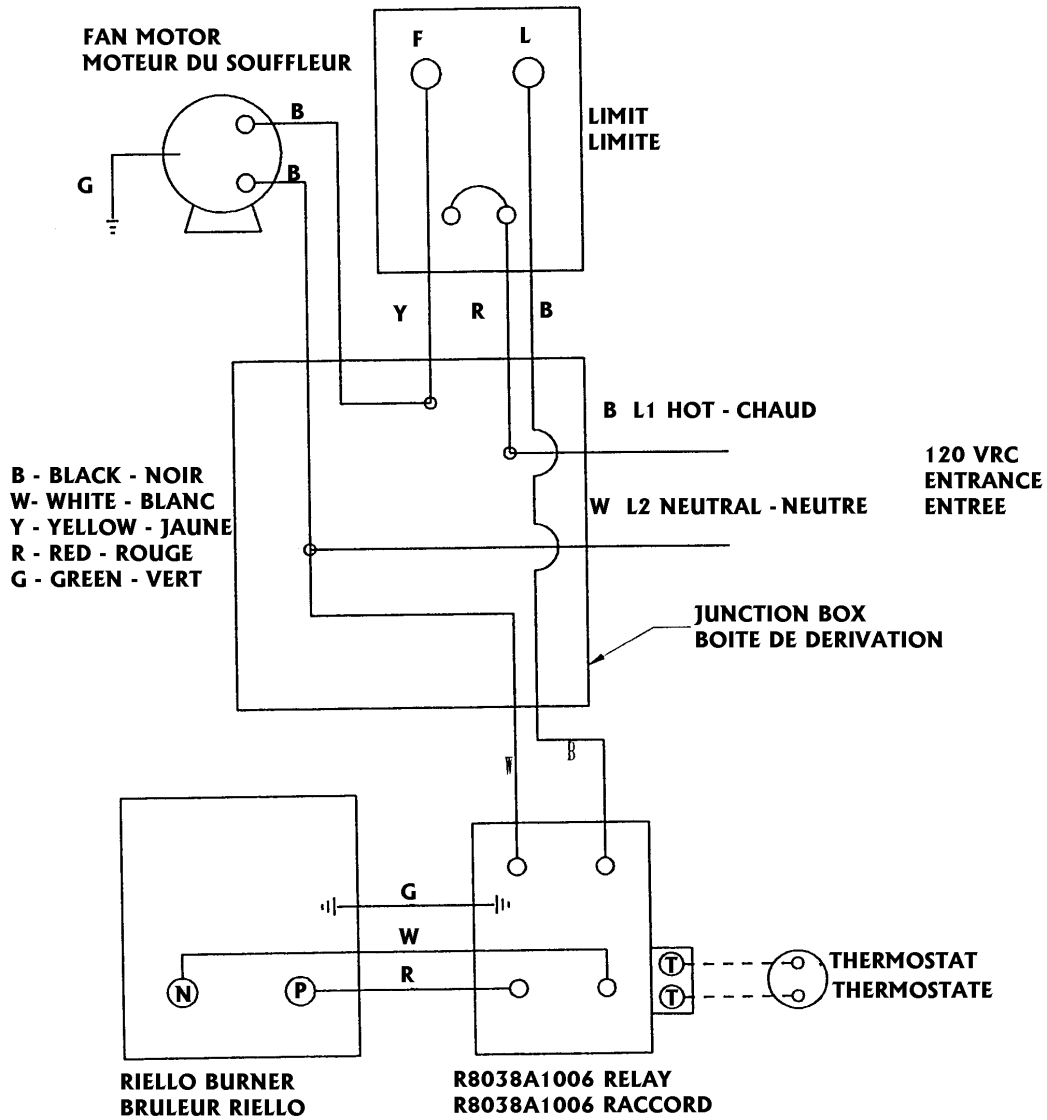
| Appliance Model | Burner Make | Model | Insertion Length | Nozzle Delavan Size & Type | Pressure Pump PSI | BTU Output | Turbulator Setting | Air Setting |
|-----------------|-------------|----------|------------------|----------------------------|-------------------|------------|--------------------|-------------|
| M101A | Aero | FAFC-2 | 3C" | W .65-80° | 100 | 78,000 | | |
| M101A | Aero | FAFC-2 | 3C" | W .75-80° | 100 | 90,000 | | |
| M101A | Aero | FAFC-2 | 3C" | W .85-80° | 100 | 102,000 | | |
| M101B | Beckett | AF35YHHS | 3 ½" | B .65-80° | 100 | 78,000 | | 6/0 |
| M101B | Beckett | AF35YHHS | 3 ½" | B .85-70° | 100 | 102,000 | | 10/1 |
| M101R | Riello | F3-6 " | 3C" | W .60-80° | 120 | 77,000 | .05 | 3.5 |
| M101R | Riello | F3-6 " | 3C" | W .65-80° | 135 | 88,000 | 1.5 | 4.0 |
| M101R | Riello | F3-6 " | 3C" | W .75-80° | 130 | 97,000 | 2.0 | 4.5 |
| M101R | Riello | F5-6 " | 3C" | W .75-80° | 146 | 103,000 | 1.5 | 2.2 |
| M141A | Aero | FAFC-3 | 3C" | W 1.00-80° | 100 | 118,000 | | |
| M141B | Beckett | AF35YY | 3 ½" | B 1.00-80° | 100 | 120,000 | | 6/0 |
| M141B | Beckett | AF35YY | 3 ½" | B 1.20-70° | 100 | 141,000 | | 9/0 |
| M141R | Riello | F5-6 " | 3C" | W .85-60° | 146 | 121,000 | 2.5 | 3.5 |
| M141R | Riello | F5-6 " | 3C" | W 1.00-60° | 146 | 141,000 | 3.5 | 3.5 |
| PK98A | Aero | FAFC 2X | 5¾" | A .85-80° | 100 | 96,500 | | |
| PK98R | Riello | F3-6 " | 5¾" | W .65-60° | 135 | 84,000 | 1.5 | 3.0 |
| PK98R | Riello | F3-6 " | 5¾" | W .75-60° | 130 | 94,000 | 2.0 | 3.4 |
| PK140A | Aero | FAFC-2 | 5 " | A 1.20-80° | 100 | 136,000 | | |
| PK140R | Riello | F5-6 " | 5 " | B .85-60° | 140 | 114,000 | 2.0 | 2.4 |
| PK140R | Riello | F5-6" | 5 " | B 1.00-60° | 145 | 136,000 | 2.5 | 2.9 |
| PK98B | Beckett | AF90XN | 5¾" | W .75- 80° | 100 | 87,000 | | 8 |
| PK98B | Beckett | AF90XN | 5¾" | W .85-80° | 100 | 97,000 | | 10/1 |
| PK140B | Beckett | AF90XN | 5" | W1.00-80° | 100 | 114,000 | | 10/4 |
| PK140B | Beckett | AF90XN | 5" | W1.20-80° | 100 | 134,000 | | 10/5 |

NOTE: MAXIMUM BTU OUTPUT WITH AERO BURNER ON M141A IS 118,000 BTU.

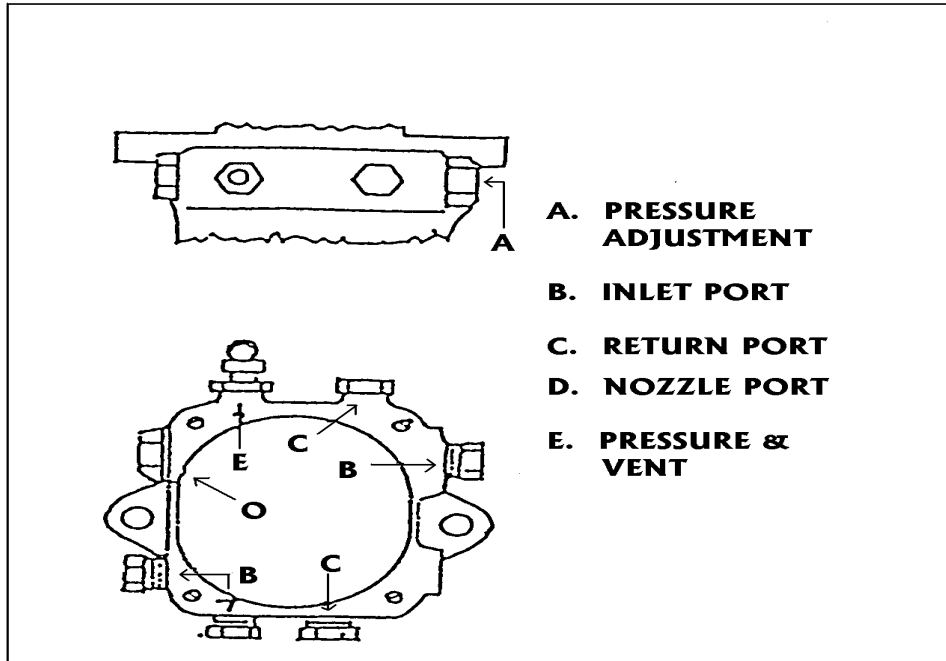
AERO, FAFC2 & FAFC3, BECKETT AF35 - WIRING DIAGRAM #1S3185 DIAGRAMME DU FILAGE



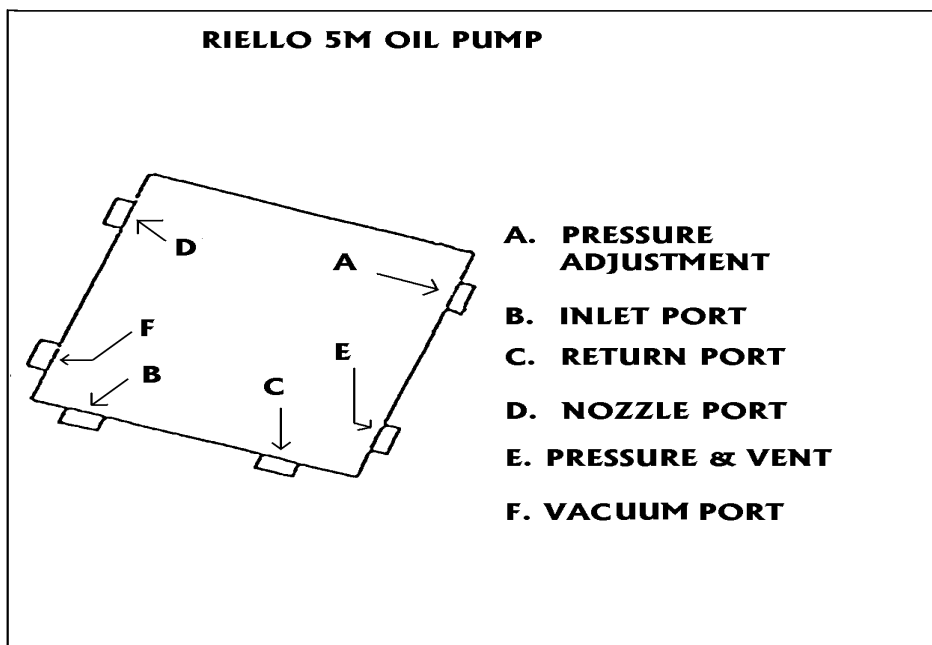
RIELLO BURNER WIRING DIAGRAM #1S186-A
TREFILAGE #1S3186-A POUR BRULEUR RIELLO



AERO & BECKETT OIL PUMP

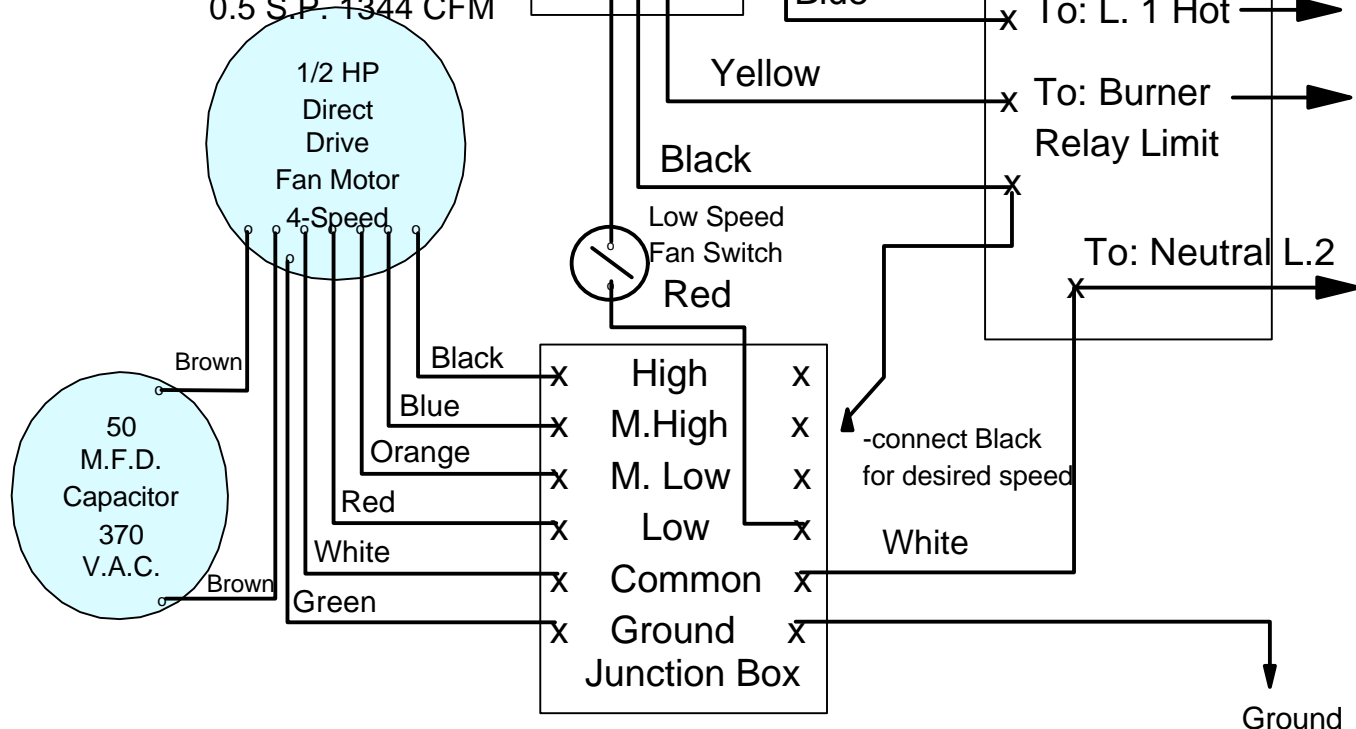


RIELLO 5M OIL PUMP



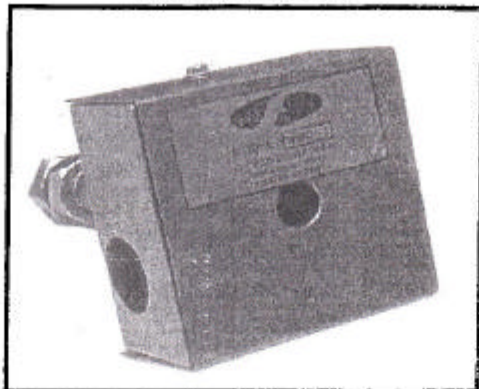
ENTERPRISE FAWCETT Direct Drive Fan Wiring Diagram

| | | |
|--------------|----------|----------|
| Low Speed | 0.2 S.P. | 917 CFM |
| | 0.5 S.P. | 813 CFM |
| M-Low Speed | 0.2 S.P. | 1151 CFM |
| | 0.5 S.P. | 981 CFM |
| M-High Speed | 0.2 S.P. | 1410 CFM |
| | 0.5 S.P. | 1202 CFM |
| High Speed | 0.2 S.P. | 1592 CFM |
| | 0.5 S.P. | 1344 CFM |



OIL FIRED SECONDARY SAFETY SWITCH KIT

Model: WMO-1



ITEMS SUPPLIED IN THIS KIT:
1-Secondary safety switch assembly
2-5/8" x 11 UNC Hex Jam Nut

Installation of a Secondary Safety Switch is recommended for Oil fired systems. This device is installed to detect flue gas spillage from a blocked flue system and/or inadequate draft.

This device **MUST** be installed by a qualified installer in accordance with the manufacturer's installation instructions. Wiring **MUST** be in accordance with the National Electrical Code and applicable local codes.

INSTALLATION

1. Pierce a 5/8 dia. Hole into the vent pipe near the appliance outlet. Remove one of the securing nuts from the pipe of the safety switch. Tighten the other securing nut onto the pipe as far as possible. (See Figure 1)
2. Insert the threaded pipe end into the pierced hole, then install the securing nut, then install the securing nut, which was removed in step 1, and tighten securely. (See Figure 2)

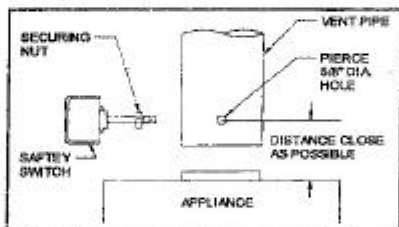


Figure 1

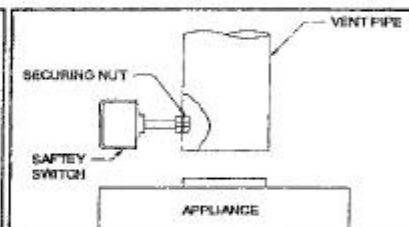


Figure 2

CAUTION: Disconnect electrical power supply when wiring safety switch.

3. Wire safety switch in series into the limit circuit to primary control or as an optional location into the orange wire from the primary to the burner. (See Diagram A and B on reverse side of this instruction sheet) Route wiring with an accepted wiring enclosure in accordance with the National Electrical Code and applicable local codes.



FIELD CONTROLS
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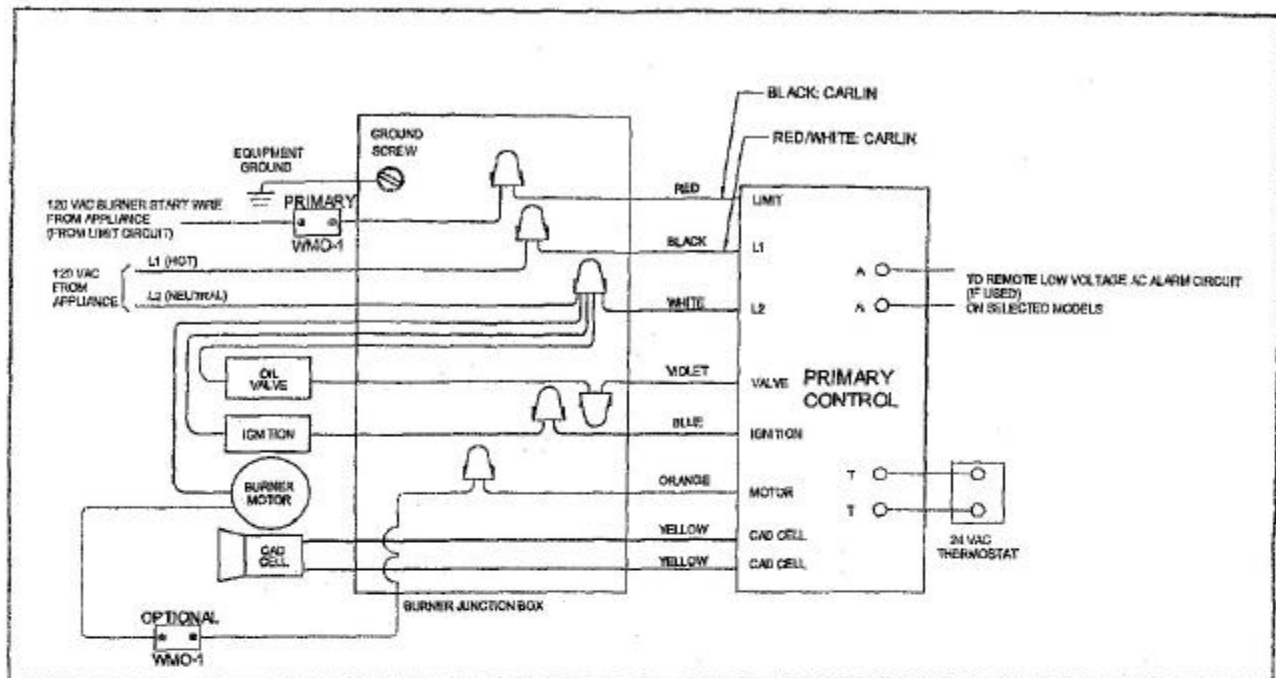


Diagram A
Honeywell R7184B & Carlin 60200-02

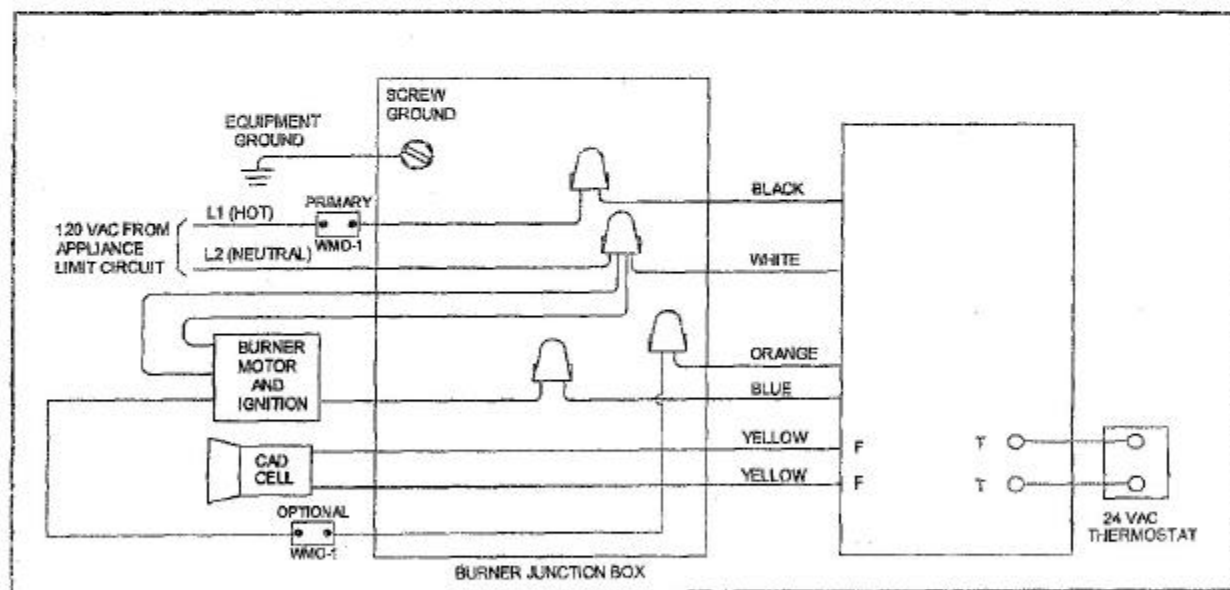
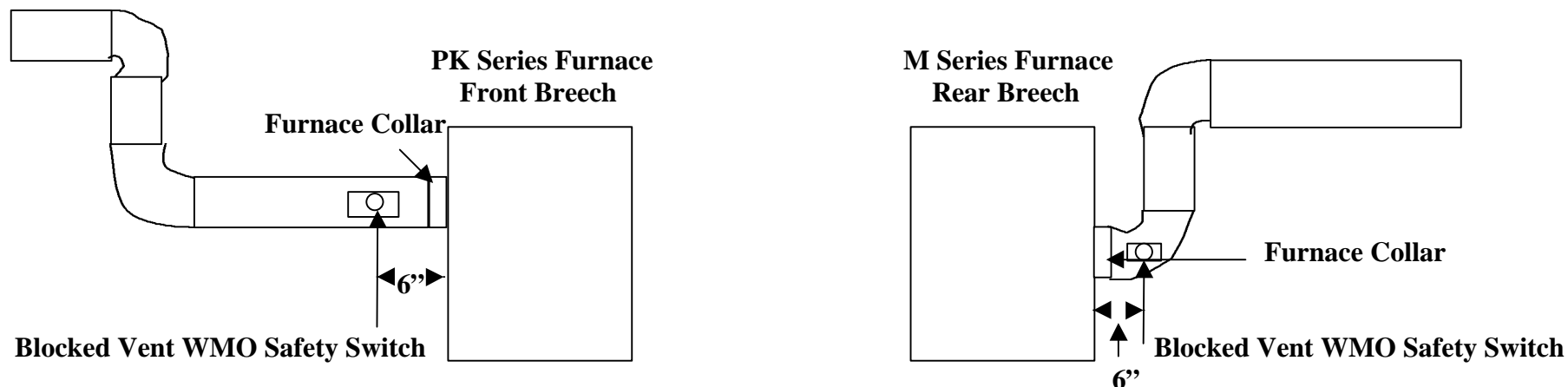


Diagram B
Honeywell R8184G



PM 46086800 Rev B 02/05

OIL FIRED SECONDARY SAFETY SWITCH



- The Oil Fired Secondary Safety Switch is to be installed within 6 inches of the Furnace Collar whether it is an elbow or strait duct coming off of the furnace collar, as it is to detect flue gas spillage from a blocked flue system and/or inadequate draft.
- It is to be wired into the fan limit control box as per diagram A or B in your leaflet included with the Safety switch kit.
- This device **MUST** be installed by a qualified installer in accordance with the installation instructions provided.

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SPECIFICATIONS

| Model | Type of Unit | Input US GPH | Output BTU/HR | Nozzle | Beckett Oil Burner | Aero Oil Burner | Riello Oil Burner | 60°W Nozzle | Blower | 2.WC | .5 WC | Motor | Belt | CFM Range at .2 & .5 SP | Air Filter Size |
|--------|--------------|-----------------|------------------|--------|-----------------------|--------------------|----------------------|----------------|--------|--------|---------|--------|-----------|----------------------------|--------------------|
| PK 98 | Low-boy | .75 | 86,000 | 80°W | AF90XN | FAFC-2X | 40-F3 | .65 | A10-10 | N/A | N/A | 1/3 HP | 3 1/4 x 6 | 950-1300 | ① 20"x25"x1" |
| | Front Breech | .85 | 98,000 | 80°W | AF90XN | FAFC-2X | 40-F3 | .75 | A10-10 | N/A | N/A | 1/3 HP | 3 1/4 x 6 | 950-1300 | ① 20"x25"x1" |
| PK 140 | Low-boy | 1.00 | 118,000 | 80°W | AF90XN | FAFC-2 | 40-F5 | .85 | A10-10 | N/A | N/A | 1/2 HP | 3 1/2 x 5 | 960-1400 | ② 16"x25"x1" |
| | Front Breech | 1.20 | 136,000 | 80°W | AF90XN | FAFC-2 | 40-F5 | 1.00 | A10-10 | N/A | N/A | 1/2 HP | 3 1/2 x 5 | 960-1400 | ② 16"x25"x1" |
| M 101 | Low-boy | .65 | 78,000 | 80°W | AF35YHHS | FAFC-2 | 40-F3 | .60 | G-10 | G-10DD | 4-Speed | 1/2 HP | 3 1/2 x 6 | Direct 815 | ② 16"x24"x1" |
| | Rear Breech | .75 | 90,000 | 80°W | AF35YHHS | FAFC-2 | 40-F3 | .65 | G-10 | G-10DD | 4-Speed | 1/2 HP | 3 1/2 x 6 | Belt 840 | ② 16"x24"x1" |
| M 141 | Multi-fired | .85 | 101,000 | 80°W | AF35YHHS | FAFC-2 | 40-F3 or F5 | .75 | G-10 | G-10DD | 4-Speed | 1/2 HP | 3 1/2 x 6 | to | ② 16"x24"x1" |
| | Low-boy | 1.00 | 118,000 | 80°W | AF35YY | FAFC-3 | 40-F5 | .85 | G-10 | G-10DD | 4-Speed | 1/2 HP | 3 1/2 x 6 | 960 | ② 16"x24"x1" |
| | Rear Breech | 1.10 | 130,000 | 80°W | AF35YY | N/A | N/A | N/A | G-10 | G-10DD | 4-Speed | 1/2 HP | 3 1/4 x 5 | to | ② 16"x24"x1" |
| | Multi-fired | 1.20 | 141,000 | 80°W | AF35YY | N/A | 40-F5 | 1.00 | G-10 | G-10DD | 4-Speed | 1/2 HP | 3 1/4 x 5 | 1400 | ② 16"x24"x1" |

Both the PK and M model furnaces are approved for use with L-vent pipe and Tjernland SSIC "Sideshot" vent.

The M series only is available with direct drive blower.

All models operate with flue draft of -.02"WC.

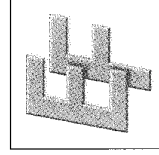
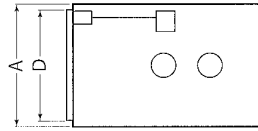
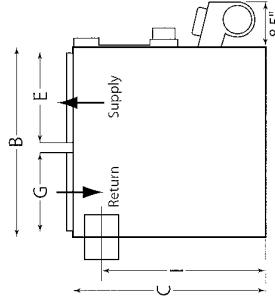
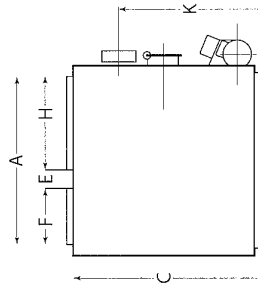
Burners

Units are CSA Certified for use with all of these Flame Retention Head Burners:

B = Beckett

A = Aero

R = Riello



| Model | A | B | C | D | E | F | H | K | Smoke Pipe | Weight |
|--------|-------------------|------------------|-------------------|------------------|----------------|--------------|------------------|--------------|-------------|--------------------|
| PK 98 | 43 7/8" 111 cm | 27 1/4" 69 cm | 42" 106 cm | 25 3/4" 65 cm | 3 1/2" 8 cm | 14" 36 cm | 22 1/4" 56 cm | 32" 81 cm | 7" 17 cm | 280 lbs. 127 kg |
| PK 140 | 43 7/8" 111 cm | 27 1/4" 69 cm | 49 7/8" 126 cm | 25 3/4" 65 cm | 3 1/2" 8 cm | 14" 36 cm | 22 1/4" 56 cm | 35" 89 cm | 8" 20 cm | 360 lbs. 163 kg |

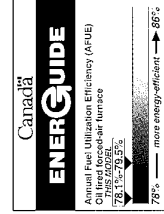
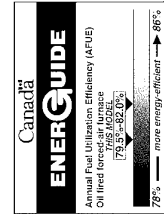
| Model | A | B | C | D | E | G | Smoke Pipe | I | Weight |
|----------|------------------|---------------|---------------|------------------|--------------|--------------|-------------|--------------|--------------------|
| M Series | 23 3/4" 60 cm | 47" 119 cm | 43" 109 cm | 22 1/2" 57 cm | 22" 56 cm | 20" 51 cm | 7" 18 cm | 38" 97 cm | 280 lbs. 127 kg |



VERIFIED FOR ENERGY PERFORMANCE

M101 / M141
SERIES

PK98 / PK 140
SERIES



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