



**SPECIFICATION - GMP SERIES
MULTI POSITION INDUCED DRAFT
GAS FURNACE**

EARLY MODELS WITH HOT SURFACE IGNITION

AND

LATER MODELS WITH DIRECT SPARK IGNITION

A.G.A. Approval No. 5113

Technical Manual

**MAY 2008
Edition**

DISTRIBUTED BY
AIR GROUP AUSTRALIA
28 Division Street
Welshpool WA 6106
Telephone (08) 9350 2200
Facsimile (08) 9353 4225
www.airgroup.com.au

INDEX

	Page
Specifications	4
Clearances from combustibile surfaces	5
Cabinet details	5
Blower details	7 - 11
Ignition system	12 - 16
Operation flow chart and fault analysis codes	17 - 19
Flue Blower details	20
Location of safety controls	21
Wiring diagram and instructions - Thermostat	22
Indoor blower motor speeds	22
Wiring diagram - Hot Surface Ignition	23
Wiring diagram - Direct Spark Ignition	24 - 25
Safety Instructions	26

SPECIFICATIONS GMP SERIES

Australasian Distributor - Air Group Australia
 28 Division Street
 Welshpool WA 6106
 Phone (08) 9350 2200 Fax: (08) 9353 4225

Manufacturer - Goodman Manufacturing Company
 1501 Seamist, Houston, Texas 77008 USA

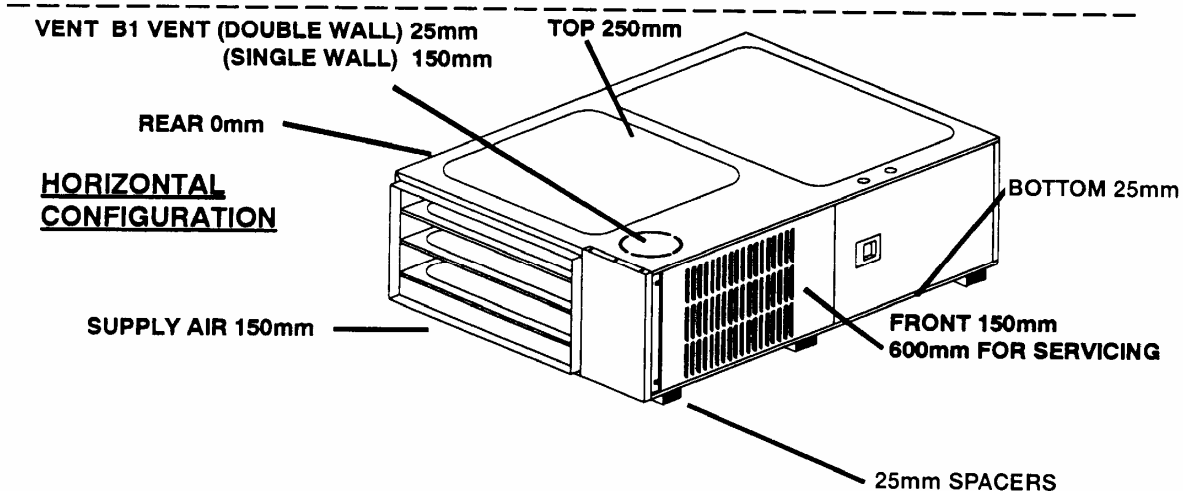
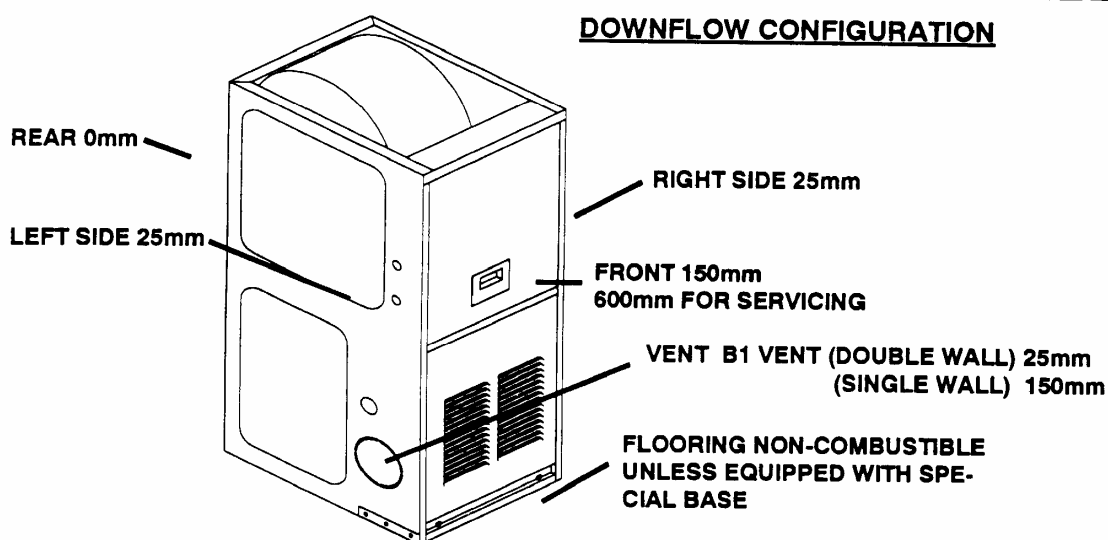
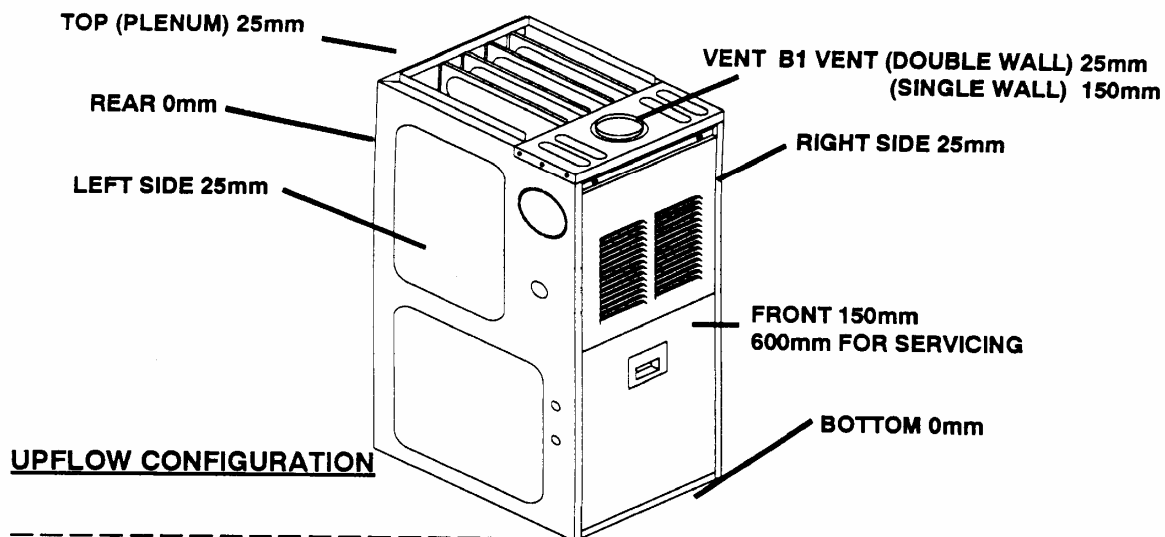
Gas Fired Forced Air Central Furnace

Upflow, Downflow or Horizontal Position

For Indoor Installation Only

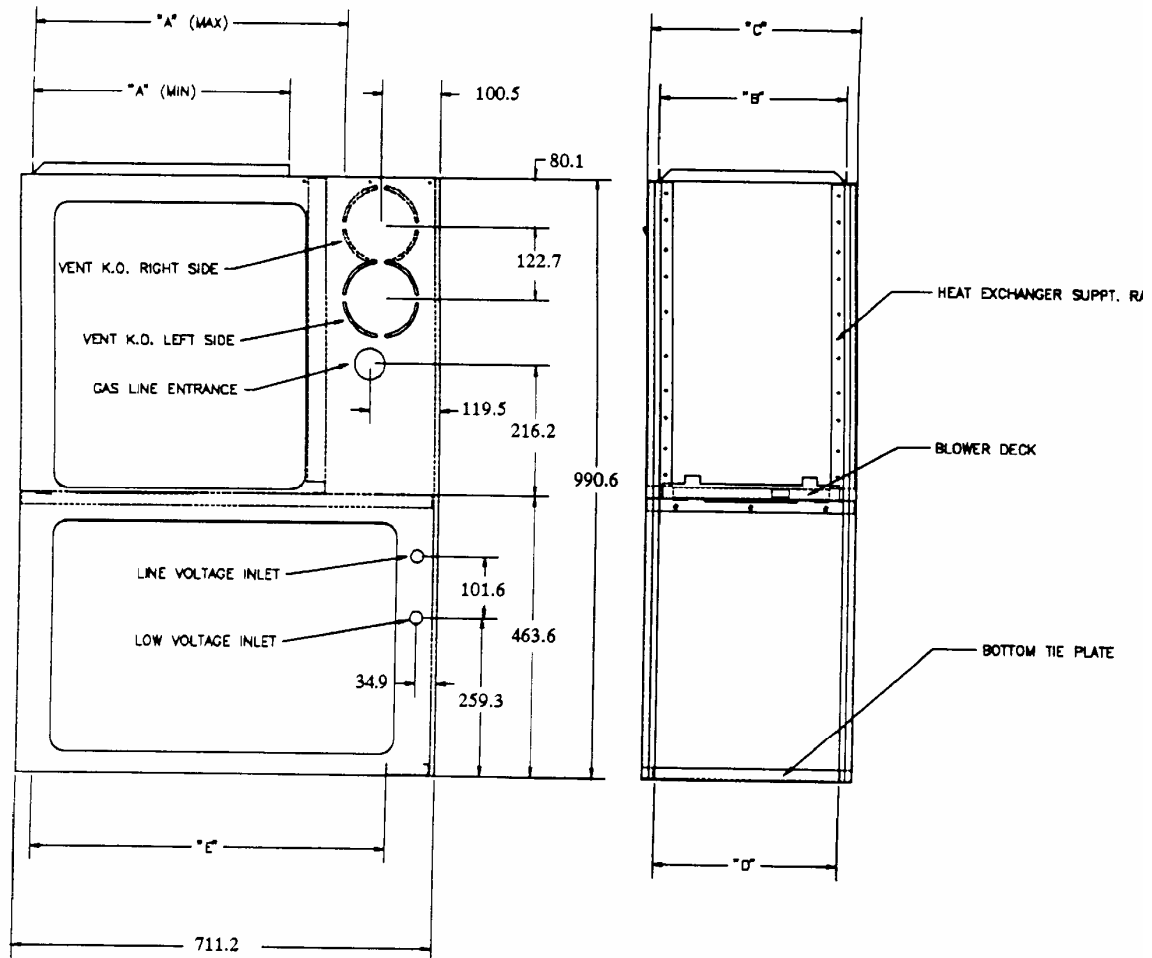
MODEL NUMBER	GMP070	GMP110	GMP135	GMP150	GMP170
Gas Input Mj/Hr (Natural Gas)	47.4	72.7	97.0	121.2	145.6
Gas Output Kw/Hr (Natural Gas)	11.9	18.2	24.3	30.4	36.6
Gas Input Mj/Hr (LP Gas)	42.2	63.3	84.4	105.5	126.6
Gas Output Kw/Hr (LP Gas)	10.6	15.9	21.2	26.5	31.8
Temperature Rise - Deg. C.	11.1 - 27.8	19.4 - 36.1	19.4 - 36.1	25.0 - 41.7	19.4 - 36.1
Length - mm	991	991	991	991	991
Width - mm	356	356	445	533	622
Depth - mm	711	711	711	711	711
Blower Motor - Amps FLA	1.4	1.4	2.55	3.7	4.1
Blower Motor - H.P.	1/4	1/4	1/2	3/4	3/4
Flue Motor - Watts	35	35	35	35	35
Flue Connection - mm	100	100	100	100	100
Duct Connection - mm - Supply Air	350	350	400	450	500
- Return Air	350	350	400	450	2 x 450
Weight - Kg	52.0	56.2	66.2	75.3	79.8
Air Quantity - L/s 100 Pa ESP High	555	555	802	968	968
L/s 40 Pa ESP Low	425	425	656	732	732

CLEARANCES FROM COMBUSTIBLE MATERIALS - GMP SERIES



CABINET CONSTRUCTION - GMP SERIES

ALL DIMENSIONS IN MILLIMETRES



Cabinet Material - All Models = 0.66mm low carbon steel with baked enamel finish.

Blower Deck Material - All Models = 1.067mm aluminized steel.

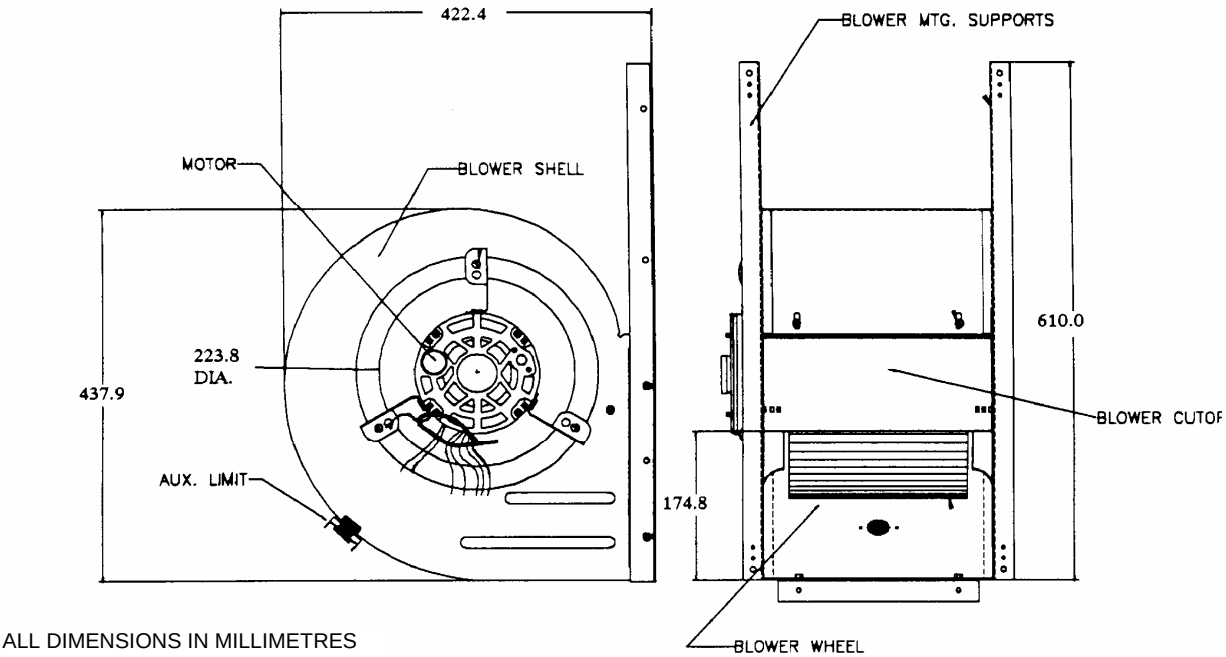
Bottom Tie Plate - All Models = 1.067 low carbon steel with baked enamel finish

Heat Exchanger Support Rails - All Models = 0.864mm aluminized steel.

Model	Supply Air Flange *			Return Air Opening *		Cabinet Width
	A max.	A min.	B	E	D	
GMP 070	514	435	318	610	318	356
GMP 110	514	435	318	610	318	356
GMP 135	514	435	406	610	406	445
GMP 150	514	435	495	610	495	533
GMP 170	514	435	584	610	584	622

* Note.... Supply and return air reverse orientation in downflow configuration.

GMP 070 BLOWER ASSEMBLY



MOTOR DATA

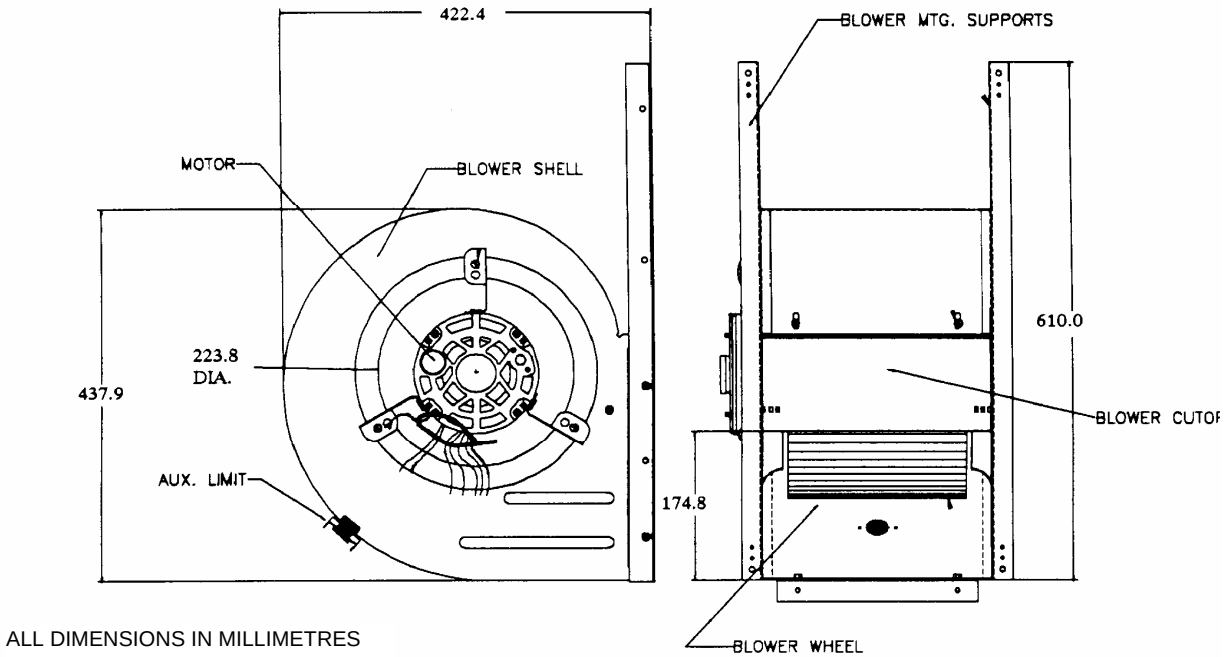
VOLTAGE / PH / Hz	220-240 / 1 / 50
ROTATION (LEAD END)	CCW
AMPS - FLA	1.4
AMPS - LRA	3.0
HORSEPOWER	1/4
PART No.	B13400-502
CAPACITOR (P/N B9456-51)	7.50µF/370V

BLOWER WHEEL DATA

DIAMETER	282.6
WIDTH	152.4
QTY. OF BLADES	48
PART No.	B13680-34

COMPLETE BLOWER ASSEMBLY PART No. 25682-06S

GMP 110 BLOWER ASSEMBLY



MOTOR DATA

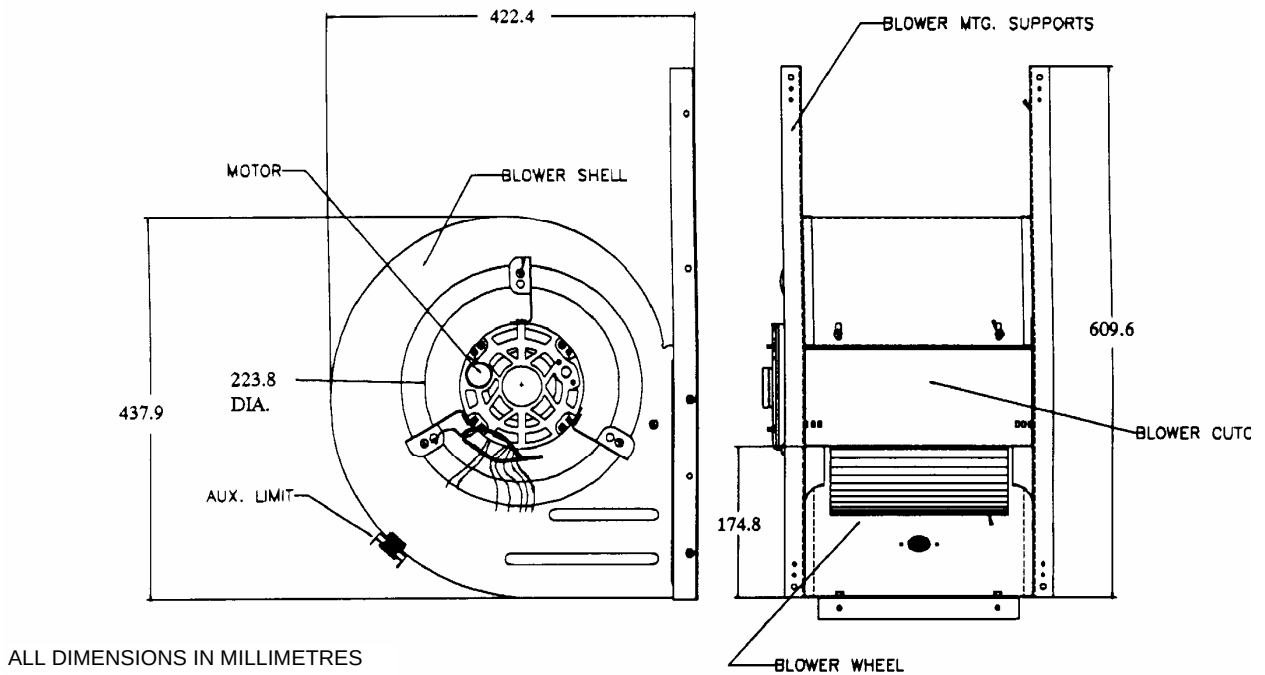
VOLTAGE / PH / Hz	220-240 / 1 / 50
ROTATION (LEAD END)	CCW
AMPS - FLA	1.4
AMPS - LRA	3.0
HORSEPOWER	1/4
PART No.	B13400-502
CAPACITOR (P/N B9456-51)	7.50 μ F/370V

BLOWER WHEEL DATA

DIAMETER	282.6
WIDTH	152.4
QTY. OF BLADES	48
PART No.	B13680-34

COMPLETE BLOWER ASSEMBLY PART No. 25682-06S

GMP 135 BLOWER ASSEMBLY



MOTOR DATA

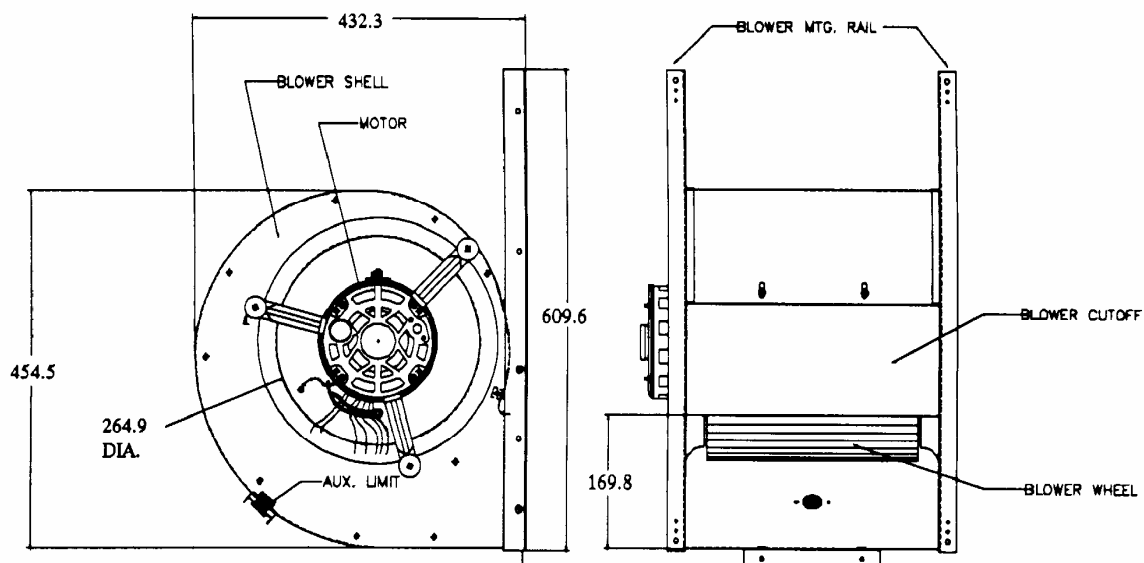
VOLTAGE / PH / Hz	220-240 / 1 / 50
ROTATION (LEAD END)	CCW
AMPS - FLA	2.55
AMPS - LRA	5.7
HORSEPOWER	1/2
PART No.	B13400-503
CAPACITOR (P/N B9456-52)	10.00µF/370V

BLOWER WHEEL DATA

DIAMETER	282.6
WIDTH	203.2
QTY. OF BLADES	48
PART No.	B13680-16

COMPLETE BLOWER ASSEMBLY PART No. 25682-07S

GMP 150 BLOWER ASSEMBLY



ALL DIMENSIONS IN MILLIMETRES

MOTOR DATA

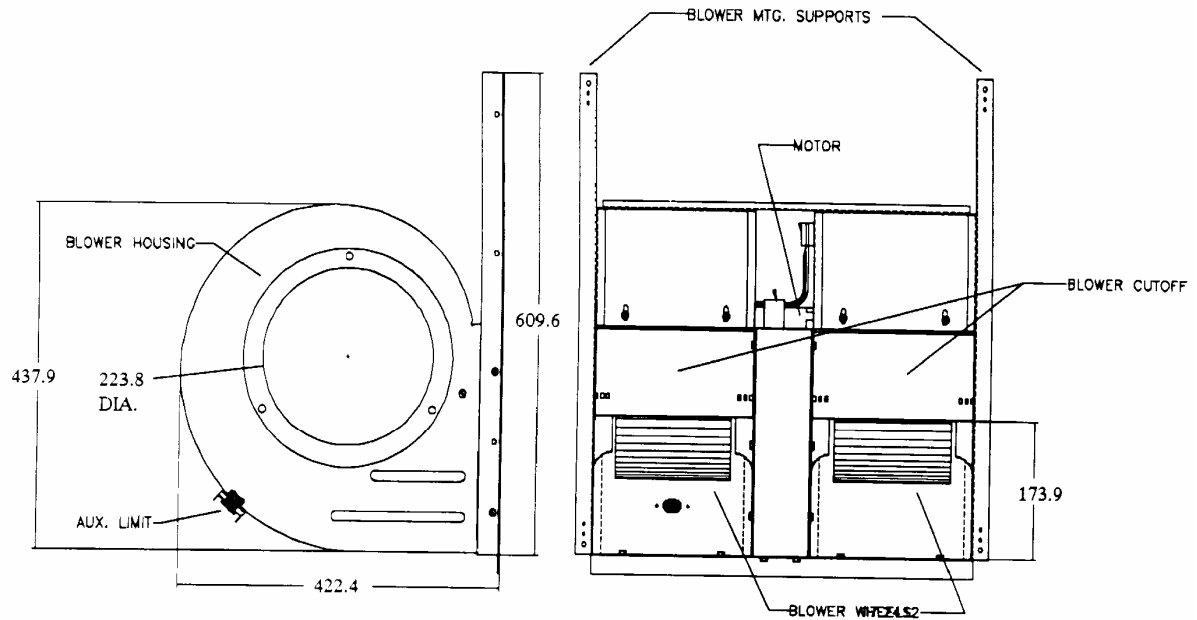
VOLTAGE / PH / Hz	220-240 / 1 / 50
ROTATION (LEAD END)	CCW
AMPS - FLA	3.7
AMPS - LRA	6.5
HORSEPOWER	3/4
PART No.	B13400-523
CAPACITOR (P/N B9456-53)	15.00µF/370V

BLOWER WHEEL DATA

DIAMETER	301
WIDTH	273
QTY. OF BLADES	54
PART No.	B13680-00

COMPLETE BLOWER ASSEMBLY PART No. 25682-08S

GMP 170 BLOWER ASSEMBLY



ALL DIMENSIONS IN MILLIMETRES

MOTOR DATA

VOLTAGE / PH / Hz	220-240 / 1 / 50
ROTATION (LEAD END)	CCW
AMPS - FLA	4.1
AMPS - LRA	7.6
HORSEPOWER	3/4
PART No.	B13400-522

BLOWER WHEEL DATA (2 REQ'D)

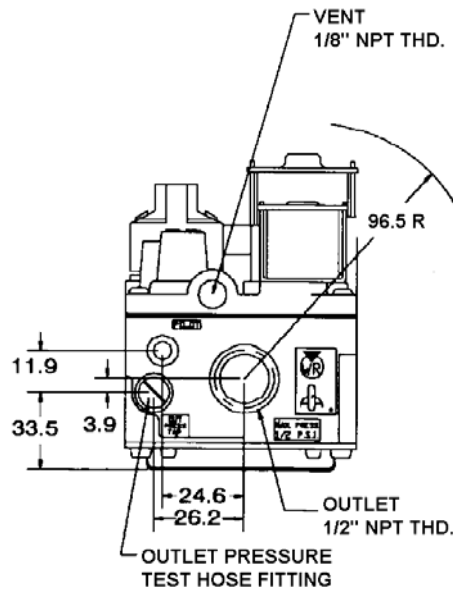
DIAMETER	270
WIDTH	152
QTY. OF BLADES	48
PART No. LEFT	B13680-34
PART No. RIGHT	B13680-46

COMPLETE BLOWER ASSEMBLY PART No. 25682-09S

GMP IGNITION SYSTEM COMPONENTS - ALL MODELS

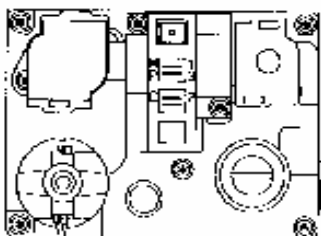
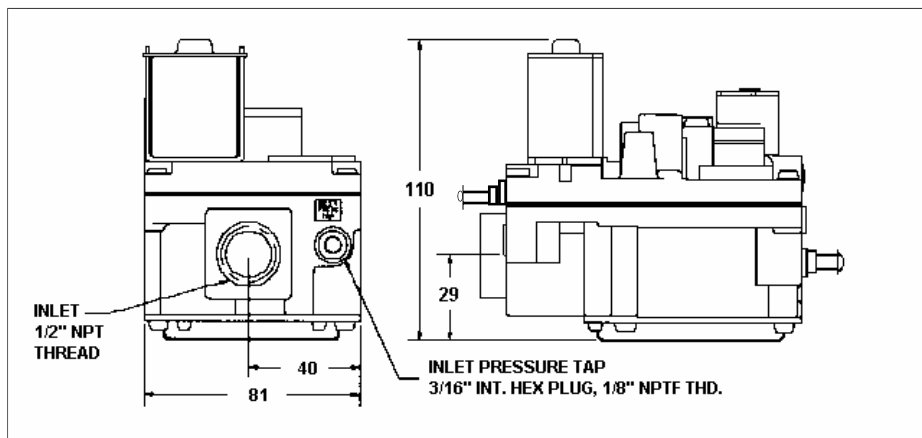
GAS VALVE

Part No. B12826-14

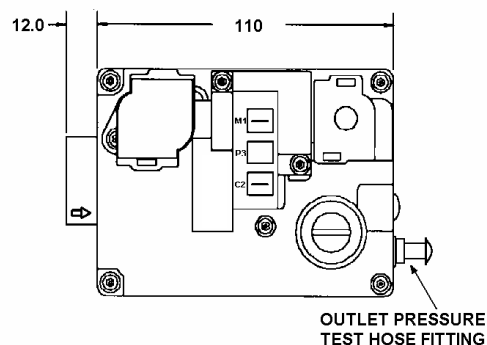


NOTES;

- 1) 24V, 50/60 Hz, 0.30 Amps.
- 2) Regulator is set at factory, but outlet gas pressure should be checked by gas fitter.
- 3) All dimensions in Millimetres
- 4) Two styles of valves are available, one with a Blue knob to isolate and another with a Toggle Switch. Both valves are compatible with all furnaces.
- 5) Gas Pressures - 0.88 KPa (Natural Gas)
- 2.6 KPa (LPG)



Old Style with Blue Isolator Knob



New Style with Isolator Toggle Switch

GMP IGNITION SYSTEM COMPONENTS

HOT SURFACE IGNITION

50 HZ HOT SURFACE MODULE - NO LONGER AVAILABLE

Part No. B18099-09

Ignition Type: Hot Surface Ignition (HSI)

Supply Voltage: 220/240 - 1 - 50

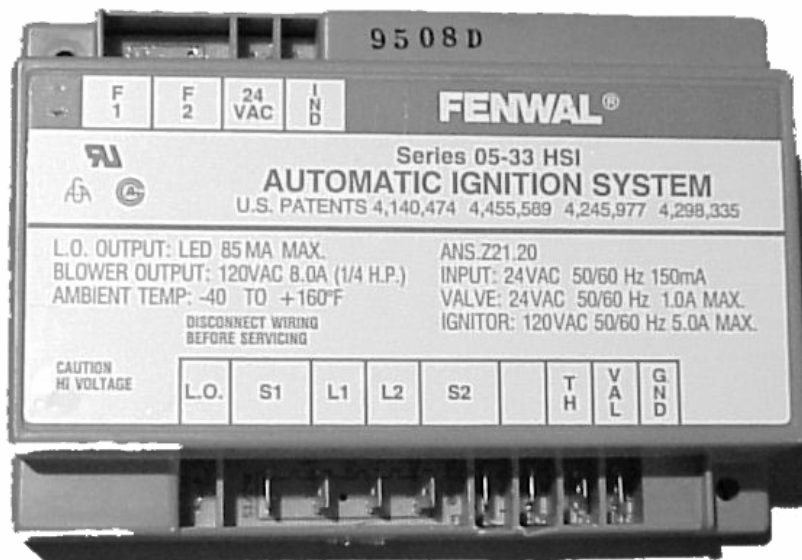
Ignitor Voltage: 110V

Tries for Ignition: 2

Gas Valve Voltage: 24V

Igniter Heat Up Period: 17 seconds

Used in conjunction with the Timed Fan Control to operate the Igniter, Gas Valve and Safety Switches.



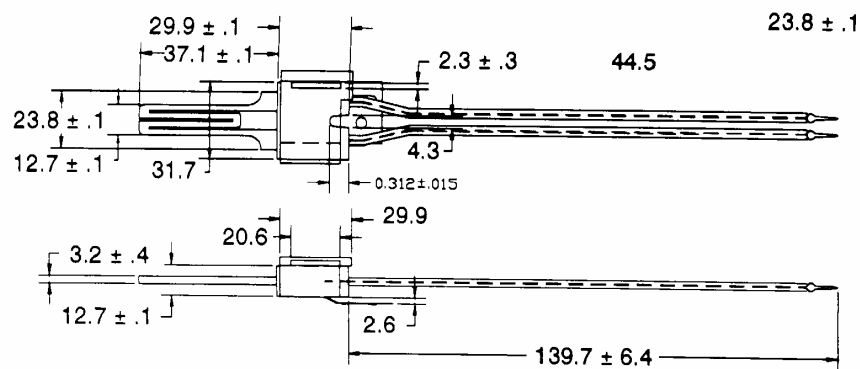
GMP IGNITION SYSTEM COMPONENTS

HOT SURFACE IGNITION

HOT SURFACE IGNITER - NO LONGER AVAILABLE

Part No. B14010-09S

Ignition Type: Hot Surface Ignition (HSI)
Supply Voltage: 110V (138V Max.)
Steady State Current: 4.25 to 4.75 Amps
Warm Up Time (to 980 °C): 17 seconds
Igniter Material: Recrystallized Silicone Carbide

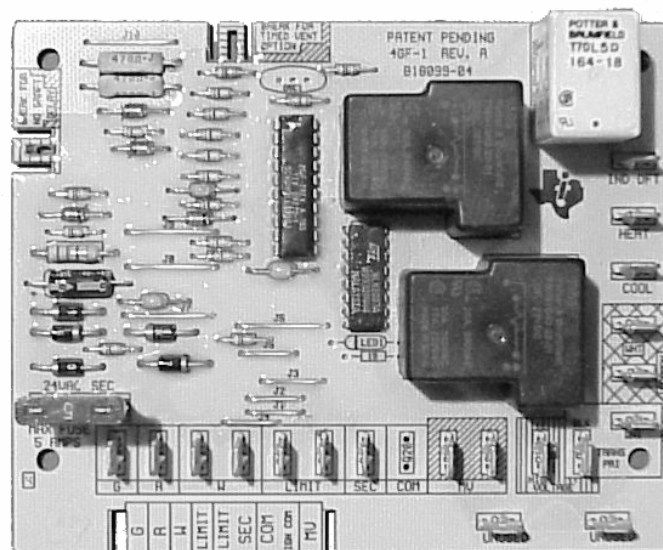


TIMED FAN CONTROL - NO LONGER AVAILABLE

Part No. B18099-04

Ignition Type: Hot Surface Ignition (HSI)
Low Voltage Fuse Protection: 5 Amps
Supply Voltage: 220/240 - 1 - 50
Indoor Blower Off Delay: Selectable - 180 seconds, not adjustable.

Used in conjunction with the Hot Surface Module to control the Flue Blower and Indoor Blower.



GMP IGNITION SYSTEM COMPONENTS - ALL MODELS

DIRECT SPARK IGNITION

DIRECT SPARK IGNITION MODULE -

Part No. B18099-20 No longer available

Ignition Type: Direct Spark Ignition (DSI)

Supply Voltage: 220/240 V

Ignitor Voltage: 22KV open circuit

Tries for Ignition: 2

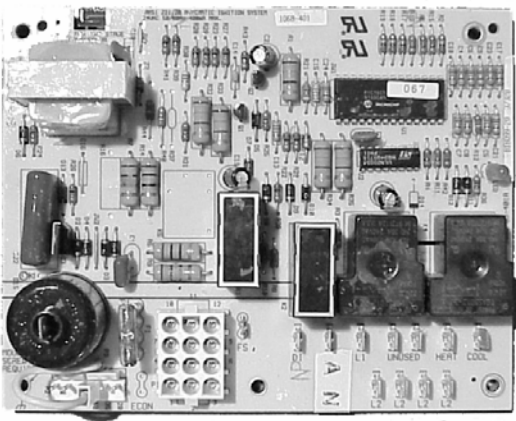
Gas Valve Voltage: 24V

Indoor Blower Off Delay: Selectable - 120, 135 and 150 seconds.

Low Voltage Fuse Protection: 3 Amps

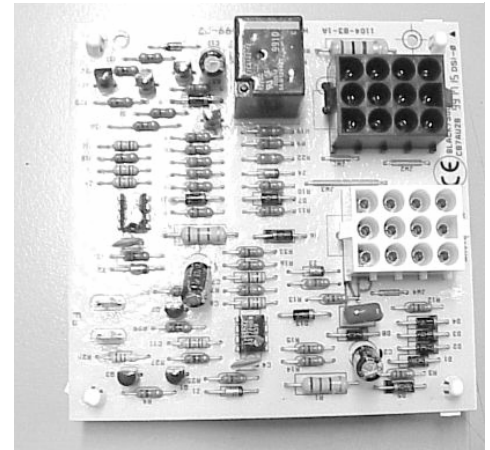
VER 1 1999—2002

B18099-20 No longer available



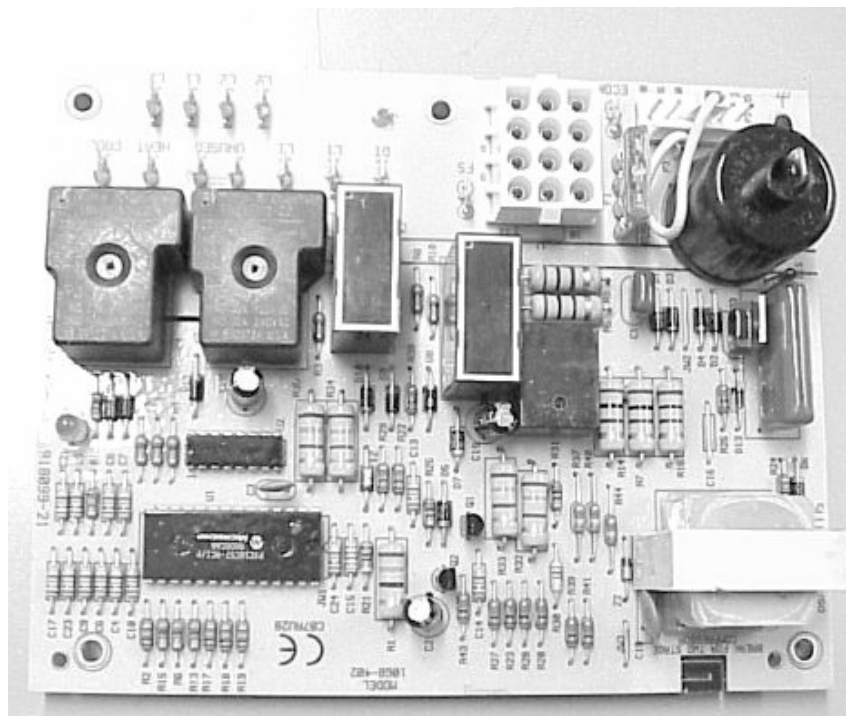
VER 2 2003

B18099-22



VER 2 2003

B18099-21



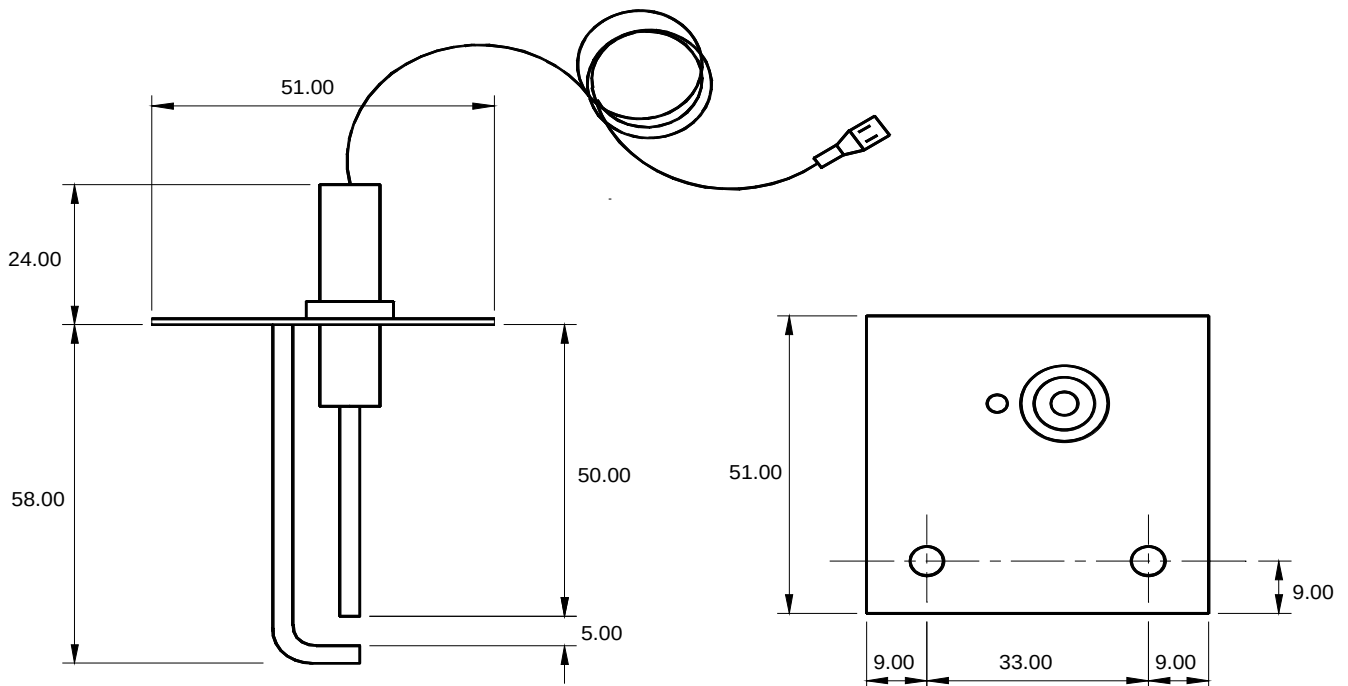
GMP IGNITION SYSTEM COMPONENTS - ALL MODELS

DIRECT SPARK IGNITION

DIRECT SPARK IGNITOR

Part No. B14010-14

Ignitor Voltage: 22KV open circuit

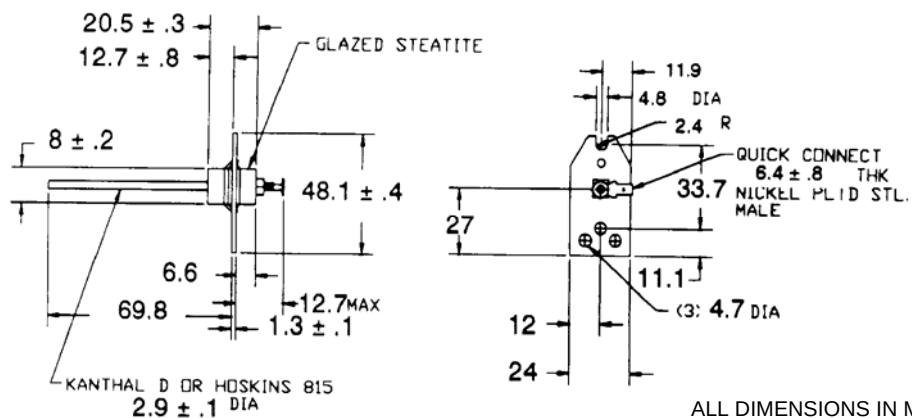


Connection: 6.4mm Quick Connect Spade
Lead Length: 760mm

FLAME SENSOR

Part No. B11726-06

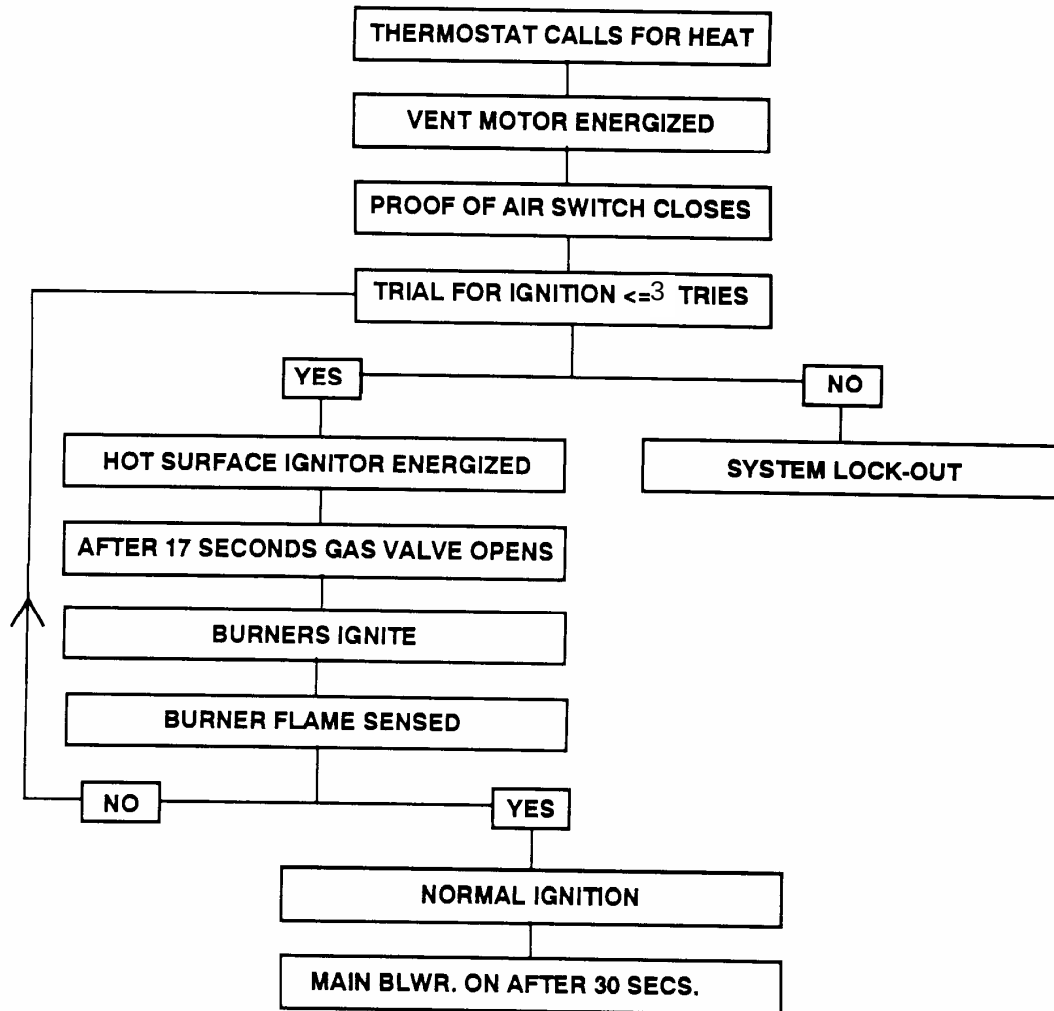
Connection: 6.4mm Quick Connect Spade



ALL DIMENSIONS IN MILLIMETRES

IGNITION SYSTEM SEQUENCE

HOT SURFACE IGNITION



Note: If any of the safety circuit "Opens" the gas valve will immediately turn off until this condition resets.

FAULT ANALYSIS CODES

DIRECT SPARK IGNITION

A green LED is provided to indicate system faults as follows;

Steady ON - Control OK.

Steady OFF - Internal control fault or no power.

1 Flash - Lockout due to failed ignition or flame dropouts.

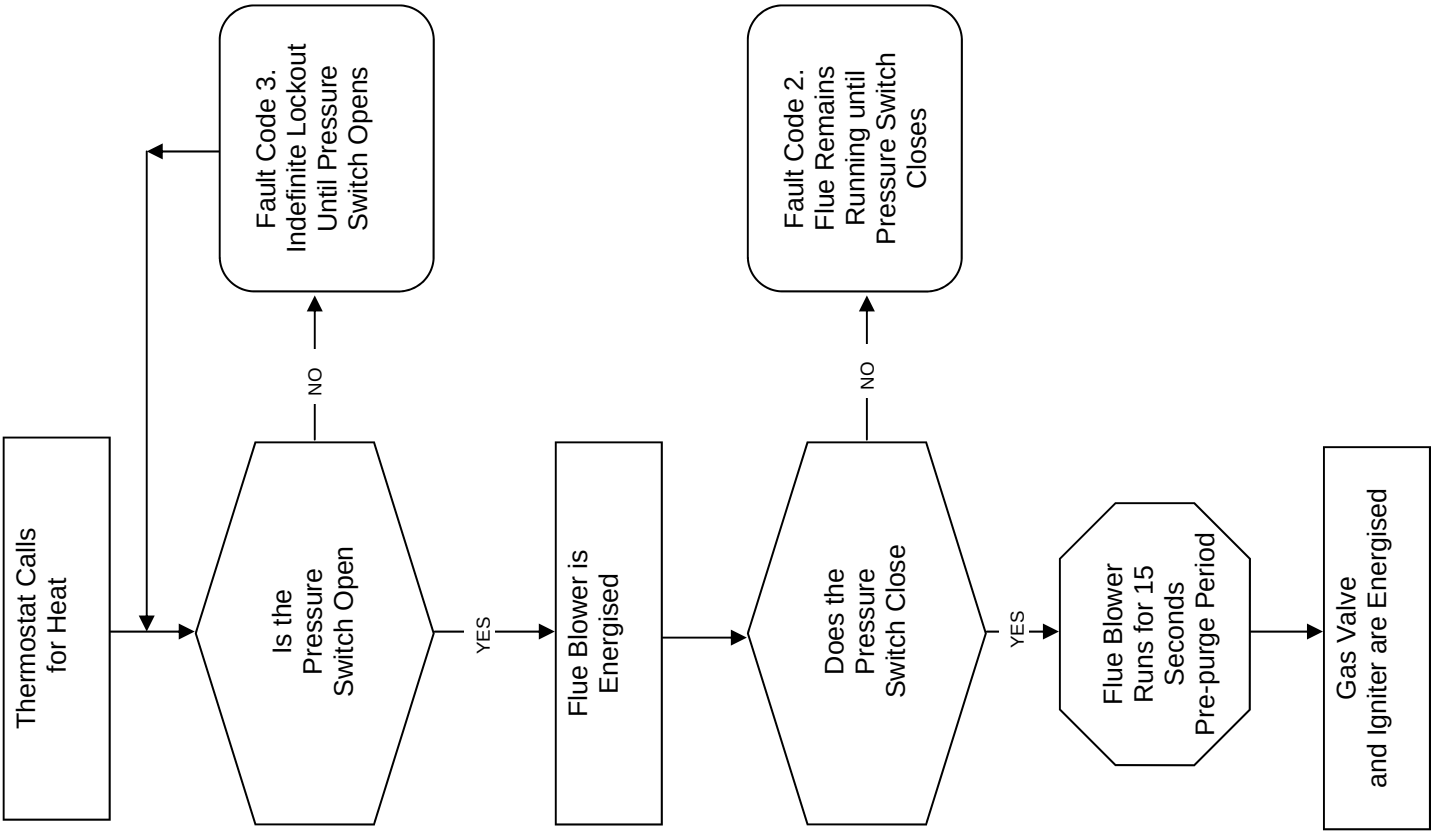
2 Flashes - Pressure switch is open with flue motor ON.

3 Flashes - Pressure switch is closed with flue motor OFF.

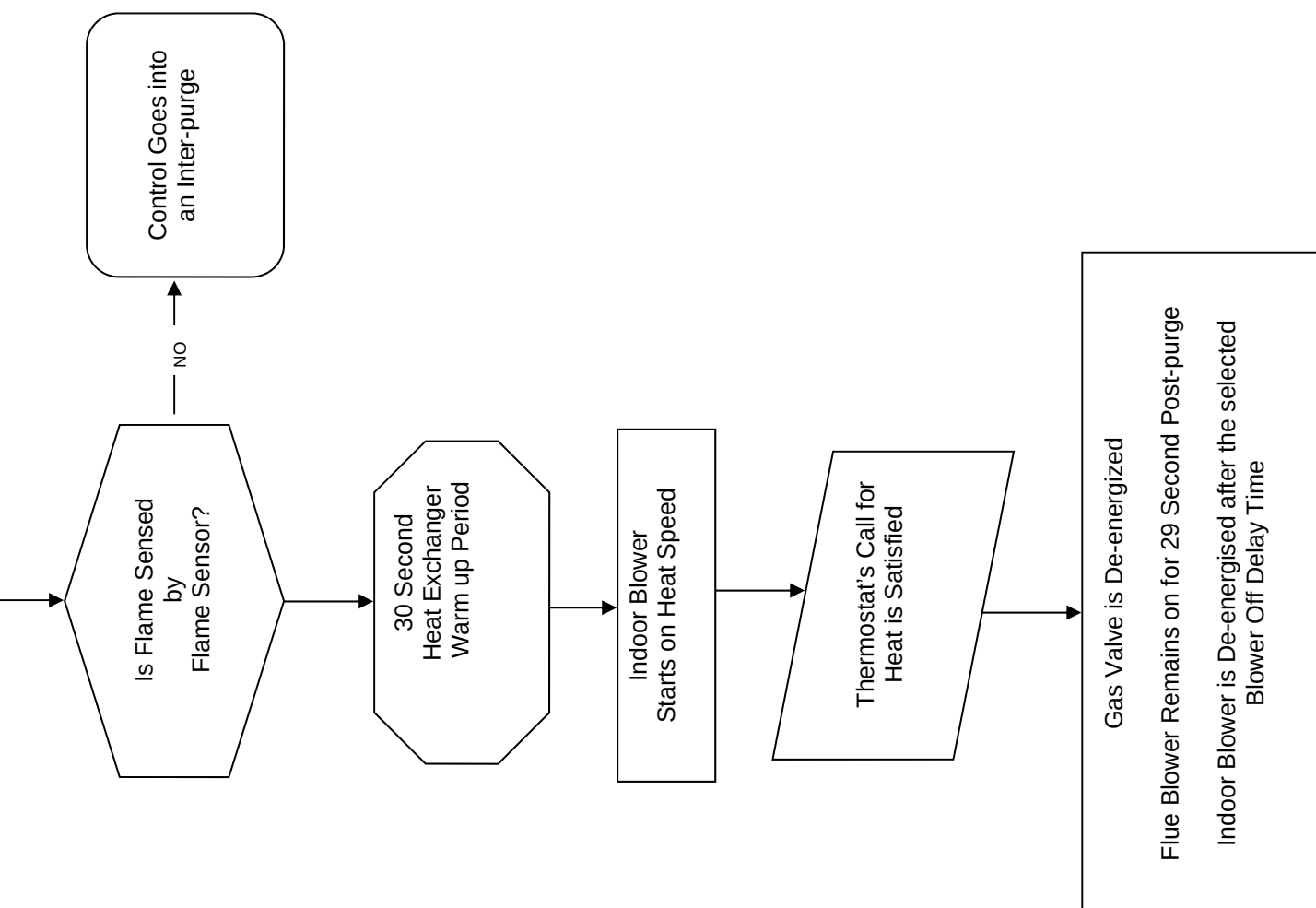
4 Flashes - Limit switch is open.

5 Flashes - Flame detected with gas valve closed.

The flash rate is 0.25 seconds ON, 0.25 seconds OFF, with a 2.0 second pause between flash codes.



OPERATION FLOW CHART



FLUE BLOWER - ALL MODELS

Complete Assembly Part No. B18590-505

MOTOR DATA

Manufacturer: Fasco

Voltage / Ph / Hz: 220-240 / 1 / 50

Watts: 35

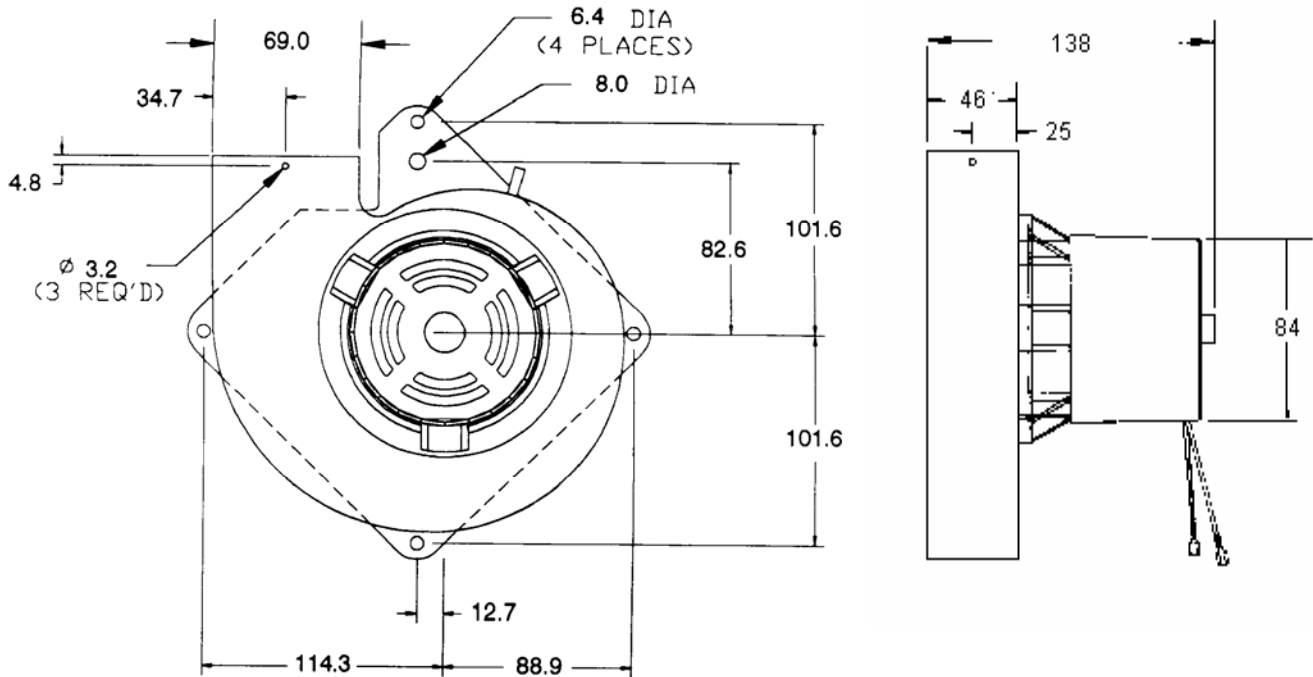
R.P.M.: 2600

BLOWER DATA

Diameter: 115

Width: 33

Qty. of Blades: 26

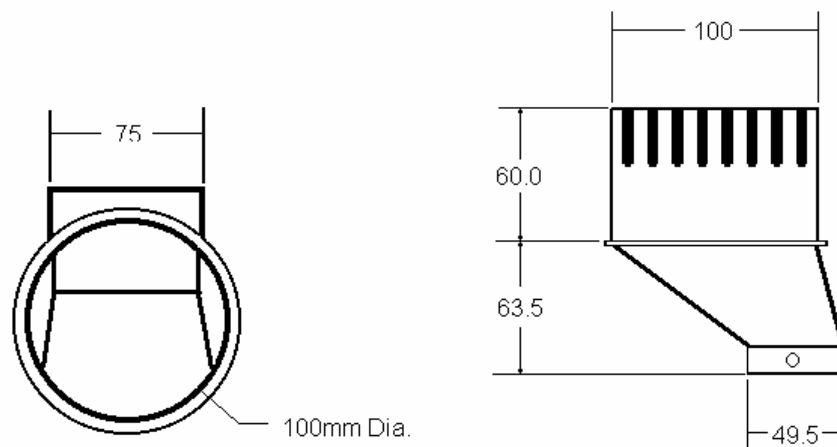


FLUE CHIMNEY - ALL MODELS

Part No. B25235-00

Material: Base - Ryton, GE Superc

Collar - Stainless Steel



ALL DIMENSIONS IN MILLIMETRES

GMP LOCATION OF SAFETY SWITCHES - ALL MODELS

MAIN LIMIT

Location: Heat Exchanger
Purpose: To prevent excessive outlet air temperatures
Qty. Per Unit: One

Model	PART NUMBER	TEMP °C (°F)	LENGTH mm
GMP 070	13709-12S	115 (240)	178
GMP 110	13709-08S	71 (160)	178
GMP 135	13709-03S	115 (240)	76
GMP 150	13709-12S	115 (240)	178
GMP 170	13709-12S	115 (240)	178

AUXILLIARY LIMIT

Part No.: B13701-55
Location: Blower Housing
Temp: 49 °C (120 °F)
Purpose: To prevent excessive filter temperatures
Qty. Per Unit: One

FLAME ROLL-OUT

Part No.: B13701-54
Location: Burner box and blower deck
Temp: 177 °C (350 °F)
Purpose: To terminate burner operation if flame roll-out is present
Qty. Per Unit: Four

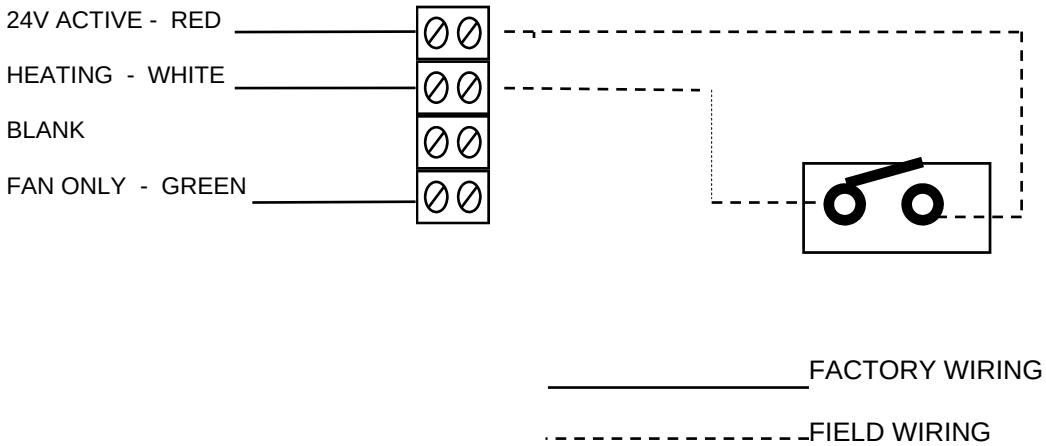
AIR PRESSURE SWITCH

Location: Top left of cabinet
Purpose: To ensure correct operation of venting system
Qty. Per Unit: One

Model	PART NUMBER
GMP 070	B13701-26
GMP 110	B13701-33
GMP 135	B13701-26
GMP 150	B13701-26
GMP 170	B13701-42

GMP THERMOSTAT WIRING - all models

TERMINAL BLOCK MOUNTED ON DOOR SWITCH COVER



INDOOR BLOWER MOTOR SPEEDS

In normal heating mode (Red and White connected via the thermostat), the “HEAT” terminal on the DSI circuit board is energised. Therefore the Indoor Blower will run on the speed tapping that is connected to the “HEAT” terminal.

In Fan Only mode (Red and Green connected via a switch), the “COOL” terminal on the DSI circuit board is energised. Therefore the Indoor Blower will run on the speed tapping that is connected to the “COOL” terminal.

The Neutral wire, (White, Purple or Yellow) from all indoor blower motors is connected to “L2” on the circuit board.

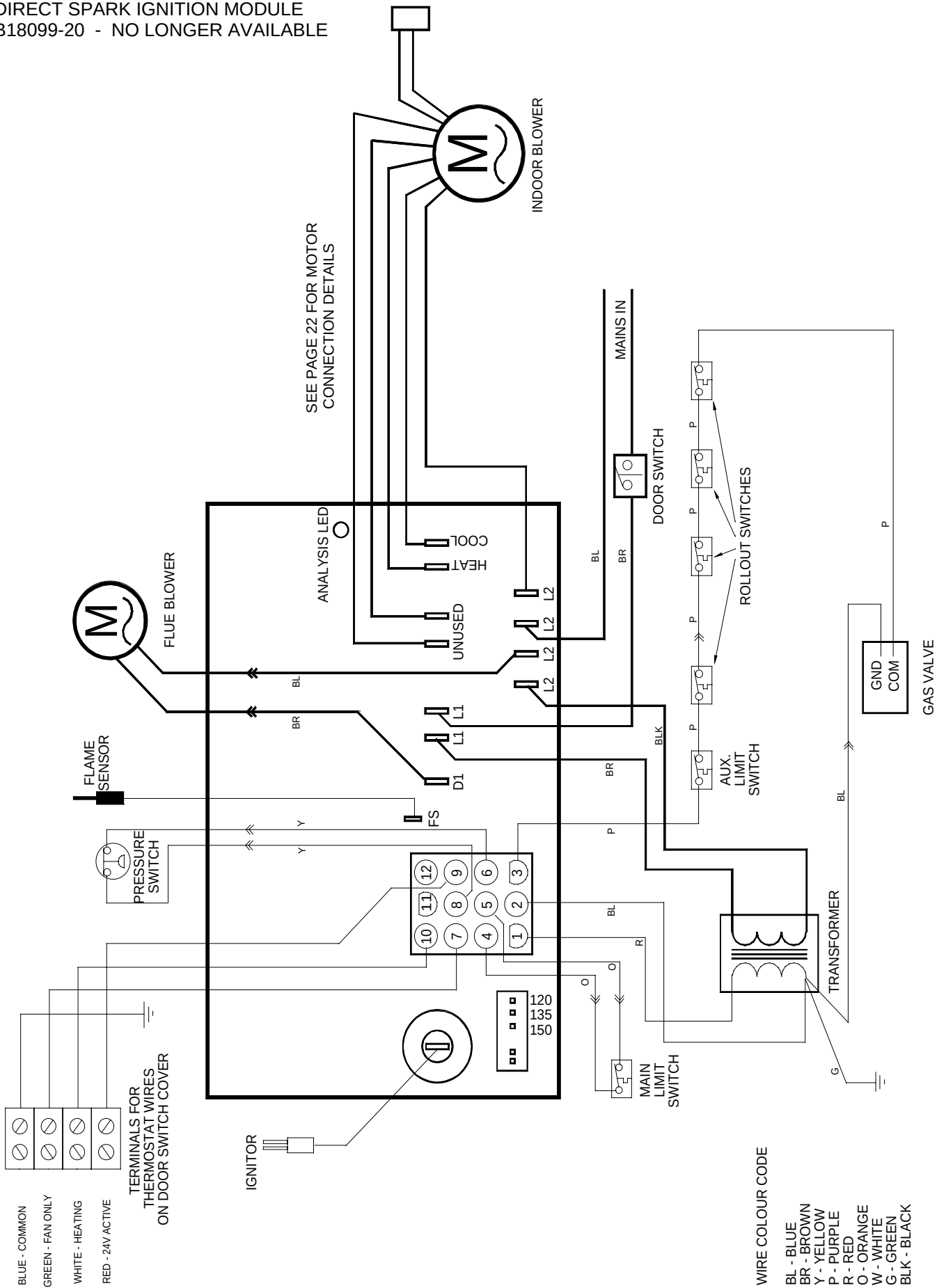
E.g., The GMP150 fan motor has 3 speeds, Low (Red), Medium (Blue or Orange), and High (Black).

Connect the Black wire to “HEAT” terminal on the circuit board and the Red wire to “COOL” terminal. The Indoor Blower will run at High speed while heating and low speed while in fan only. The Blue or Orange wire is placed on one of the “UNUSED” terminals.

Model	Motor Speeds	Speed Wire Colours		
		Low	Med	High
GMP 070	2	Red	XXX	Black
GMP 110	2	Red	XXX	Black
GMP 135	2	Red	XXX	Black
GMP 150	3	Red	Blue or Orange	Black
GMP 170	3	Red	Blue or Orange	Black

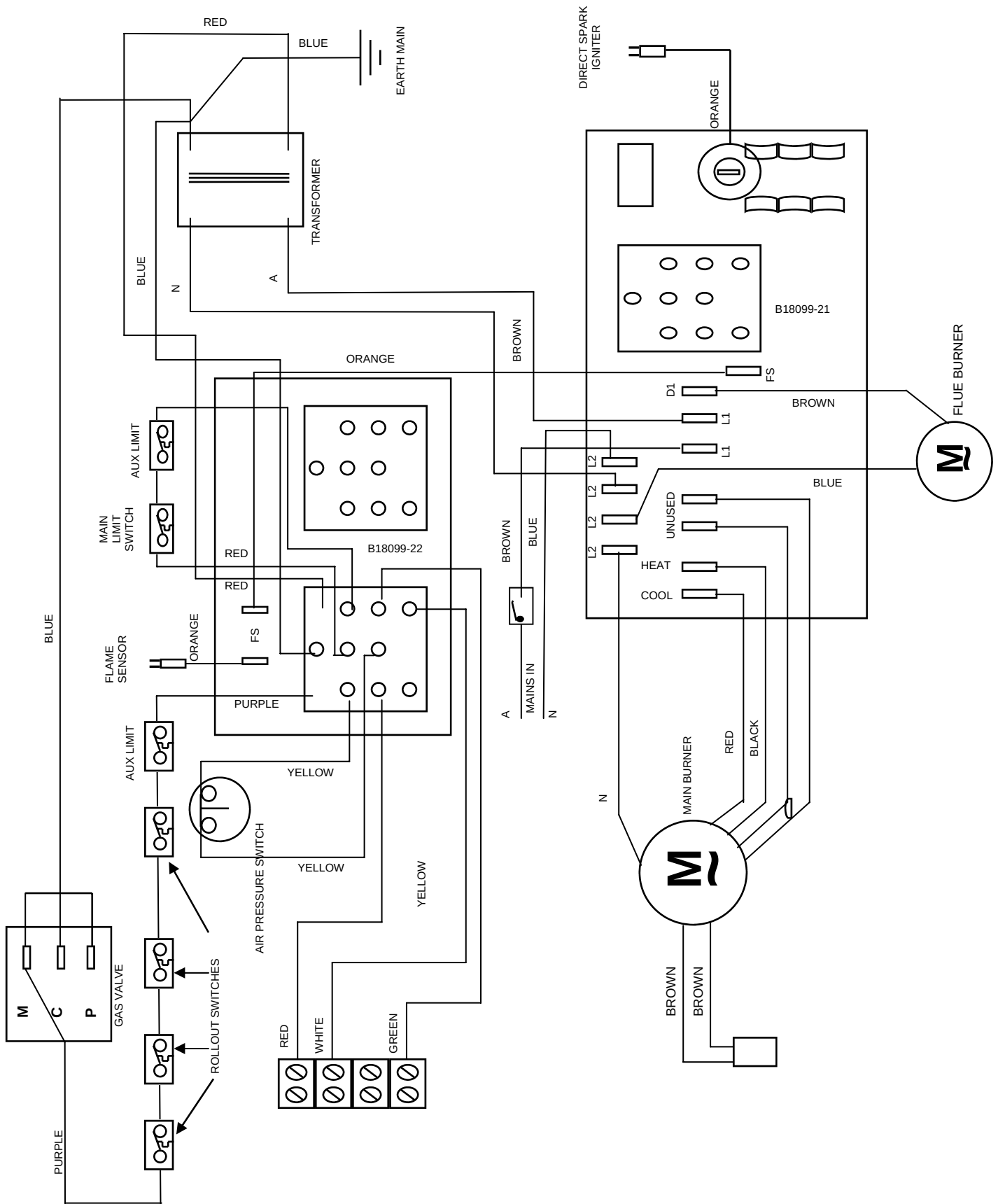
GMP WIRING DIAGRAM - ALL MODELS

DIRECT SPARK IGNITION MODULE
B18099-20 - NO LONGER AVAILABLE



GMP WIRING DIAGRAM - DIRECT SPARK IGNITION VERSION 2

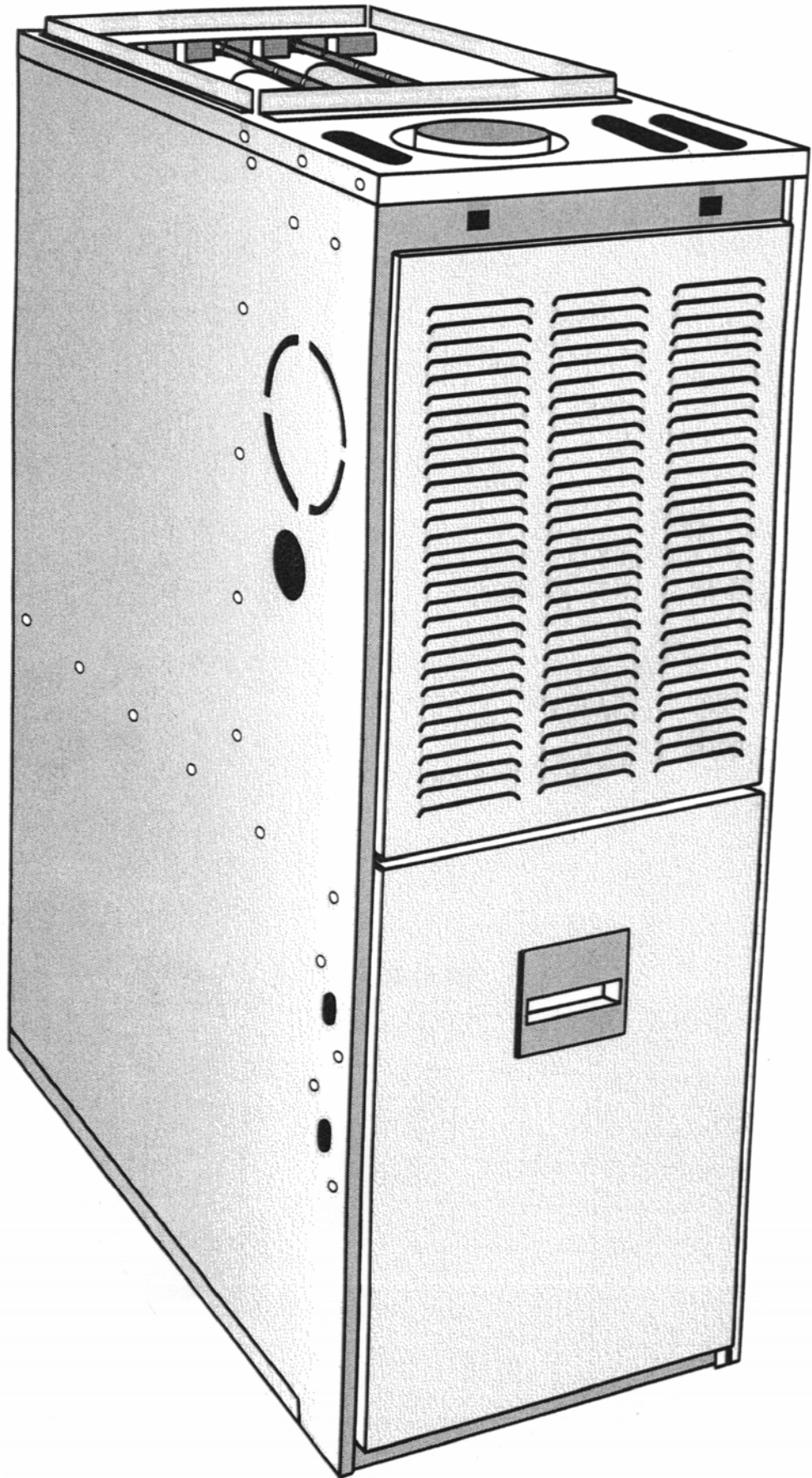
2003 - 2007



LIGHTING INSTRUCTIONS

These instructions are also on the furnace.

FOR YOUR SAFETY, READ BEFORE OPERATING			WARNING: Improper installation, adjustment, alteration, service or maintenance can cause injury or property damage. Refer to the user's information manual provided with this furnace. For assistance or additional information consult a qualified installer, service agency or the gas supplier. This furnace must be installed in accordance with the manufacturers instructions and AG 601 Gas Installation Code <u>COMMISSIONING INSTRUCTIONS</u> Prior to initial start-up open doors and windows as some non-toxic vapour and/or odour may be present. This is normal and these discharges will dissipate after running for a short time.
 WARNING  If you do not follow these instructions exactly, a fire or explosion may result causing property damage, personal injury or loss of life.			
A. This appliance does not have a pilot. It is equipped with an ignition device which automatically lights the burners. Do not try to light the burners by hand. B. BEFORE OPERATING smell around the appliance area for gas. Be sure to smell next to the floor because some gas is heavier than air and will settle on the floor. WHAT TO DO IF YOU SMELL GAS • Do not try to light any appliance. • Do not touch any electric switch. • Do not use any telephone in your building. • Immediately call your supplier from a	• If you cannot reach your gas supplier, call the fire department. C. Use only your hand to move the gas control switch or knob. Never use tools. If the gas control switch or knob will not operate, don't try to repair it, call for a qualified service technician. Force or attempted repair may result in a fire or explosion. D. Do not use this appliance if any part has been under water. Immediately call a qualified service technician to inspect the appliance and to replace any part of the control system and any gas control which has been under water.		
OPERATING INSTRUCTIONS			
1. STOP !! Read the safety information above on this label. 2. Set the thermostat to the lowest setting. 3. Turn off all electric power to the furnace. 4. This appliance is equipped with an automatic ignition system which automatically lights the burners. Do not try to light the burners by hand. 5. Remove control access panel. 6. Move the gas control switch or knob to "OFF".	7. Wait five (5) minutes to clear out any gas. STOP ! Follow "B" in the safety information above on this label. If you don't smell gas, go to the next step. 8. Move the gas control switch or knob to "ON". 9. Replace control access panel. 10. Turn on all electric power to the furnace. 11. Set the thermostat to the desired setting. 12. If the appliance will not operate, follow the instructions "To Turn Off Gas To Appliance" and call your service technician or gas supplier.		
TO TURN OFF GAS TO APPLIANCE			
1. Set the thermostat to it's lowest setting. 2. Turn off all electric power to the appliance if service is to be performed. 3. Remove control access panel.	4. Move the gas control switch or knob to "OFF". Do not force. 5. Replace control access panel.		
FOR YOUR SAFETY Do not store or use petrol or other flammable liquids in the vicinity of this or any other appliance.			



FM123/0608