INSTALLATION, COMMISSIONING AND SERVICING INSTRUKTIONS

BRINK

"FLAIR" SERIES WARM AIR HEATERS

A LOW-NOx appliance

CE

Gas-category	: I_2H
Appliance category	: C12/C32
Supply pressure	: 18 - 25 mBar

STORE NEAR HEATER

WARNING: THESE APPLIANCE MUST BE EARTHED

Installer : .....

Address : .....

Place : .....

Telephone : ..... Date : .....

Type air-heater : ..... Serial nr. : .....

Distributed by: **J O H N S O N and S T A R L E Y. Ltd**

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"Flair" series warm air heaters

FLAIR heaters are supplied ready for use.
All control equipment is fitted and checked at the factory.
On site, the heater must be connected to the electrical mains supply, the gas supply, the flue gas exhaust and the combustion air supply.

The heaters are supplied for natural gas operation only.

They have a control unit fitted with a microprocessor which monitors and regulates the safe working of the equipment.
They also have an operating pcb enabling the remote control of a number of functions.
The Brink room thermostat supplied will provide the functions listed below:

1. Setting the room thermostat switch to '0' turns the heater off.
2. Setting the room thermostat switch to ' ' turns on the heater fan to run continuously regardless of the air temperature.
3. Setting the room thermostat switch to '0' and then returning it to position '1' will reset the heater remotely.
4. If the room thermostat switch is set to '1', the heater fan will not start up until the air temperature has reached approximately 40° C.

Operation of the heater may be checked from a distance by observing the lamp in the lower panel.
This will light up as soon as power is supplied to the multifunctional control.

Components check

1 = *Air ciculating fan*
2 = *Flue gas exhaust ϕ80*
3 = *Flue gas fan*
4 = *Service button*
5 = *Not applicable*
6 = *Electrical connections*
7 = *Control unit*
8 = *Reset button*
9 = *Display panel*
10 = *Capacitor flue gas fan*
11 = *Burner pressure test point*
12 = *Protective grille*
13 = *Combustion air supply ϕ80 mm*
14 = *Gas connection 1/2 in BSP*
15 = *Differential pressure switch*
16 = *Combined fan delay control and Overheat limit device*
17 = *Multifunctional control*
18 = *Burner*
19 = *"Heater on" lamp*

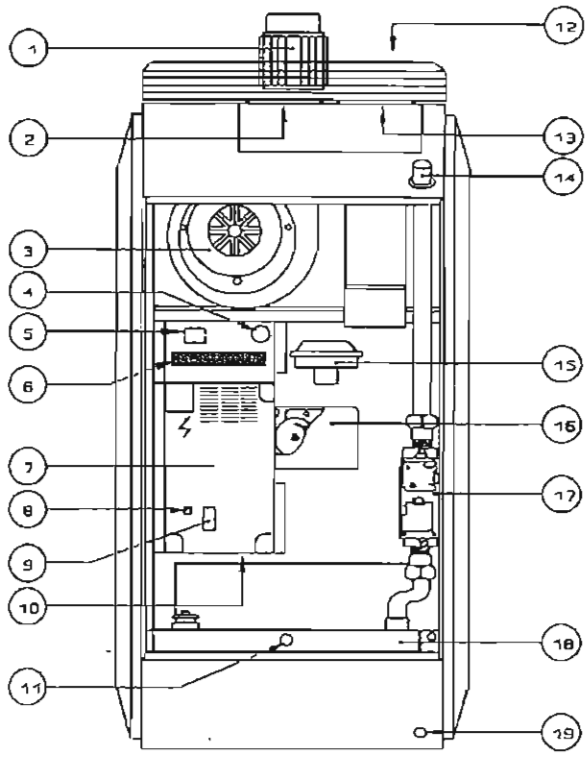

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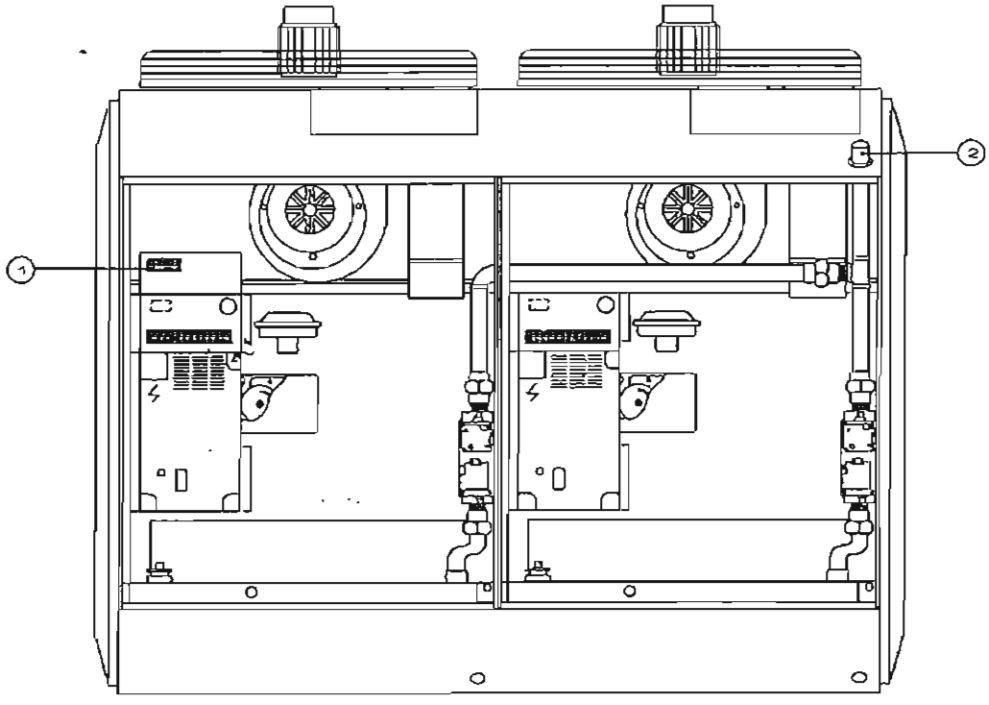
Fig. 3: Models B-16 IGX to B-60 IGX



1 = *Electrical connection*
2 = *Gas supply 1/2 in*

Fig. 4: Models B-80 IGX & B-92 IGX

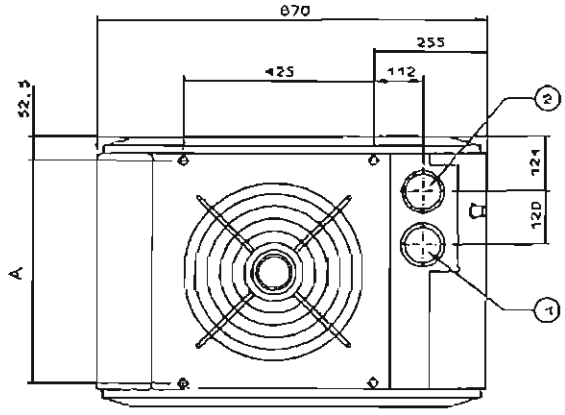
Table 1: Supply and exhaust system

TECHNICAL DATA										
Type	B-16 IGX	B-20 IGX	B-27 IGX	B-33 IGX	B-40 IGX	B-46 IGX	B-53 IGX	B-60 IGX	B-80 IGX	B-92 IGX
Output [kW]	16.0	19.6	28.0	32.8	39.7	45.4	52.2	56.8	79.4	90.8
Input [kW] (gross)	20.0	24.5	35.0	41.0	50.0	57.0	64.0	71.0	100.0	114.0
Input [kW] (net)	18.0	22.0	31.5	36.9	45.0	51.3	57.4	63.9	90.0	102.6
Main injector diameter [mm]	2.45									
Crosslighting injector diameter [mm]	0.7	0.7	0.9	0.9	1.1	1.1	1.3	1.3	1.1	1.1
Burner setting pressure [mbar]	5.9	8.7	6.4	8.6	6.5	8.3	6.5	8.0	6.5	8.3
Max. electricity consumption [kW]	0.180	0.220	0.250	0.305	0.425	0.490	0.440	0.440	0.850	0.980
Nominal air output @ 20°C [m^3/h]	1360	1670	2320	2795	3380	3870	4490	5140	6760	7740
Diffusion radius [m]	12	15	18	21	23	25	27	29	31	31
Overheat cut-off [°C]	85									
Overheat limit [°C]	120	120	65	65	55	55	100	100	55	55
Gas connection [in]	1/2"									
Weight [kg]	74	74	100	100	124	124	148	148	248	248
Flue gas connection [mm] ϕ	80								80 (2x)	
Combustion air connection [mm] ϕ	80								80 (2x)	
Height [mm]	870									
Width [mm]	460	460	610	610	760	760	910	910	1450	1450
Depth [mm]	870									
Power supply	240V~ 50Hz									
Gas supply pressure	20 mbar									
Protection status	IP 20									

CHAPTER 2: INSTALLATION

This type of air heater is usually installed in a suspended position.
For this purpose, four sets of adjustable brackets are supplied with the heater.
See Figs. 5 & 6 for dimensions of fixing points.

If desired, the heater can be installed on a base.
The base must consist of a steel frame with an open platform.
Allowance must be made for the discharge grille.

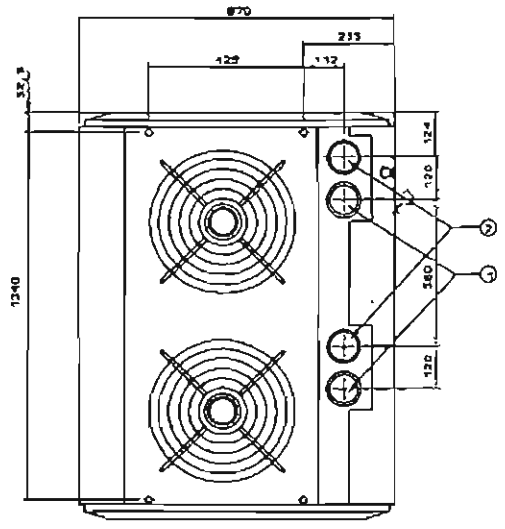


1 = Flue gas exhaust
2 = Combustion air supply

WP3879

TYPE	B - 16 IGX	B - 20 IGX	B - 27 IGX	B - 33 IGX	B - 40 IGX	B - 46 IGX	B - 53 IGX	B - 60 IGX
A	355	355	505	505	655	655	805	805

Fig. 5: Suspension points (Models B-16 IGX to B-60 IGX)



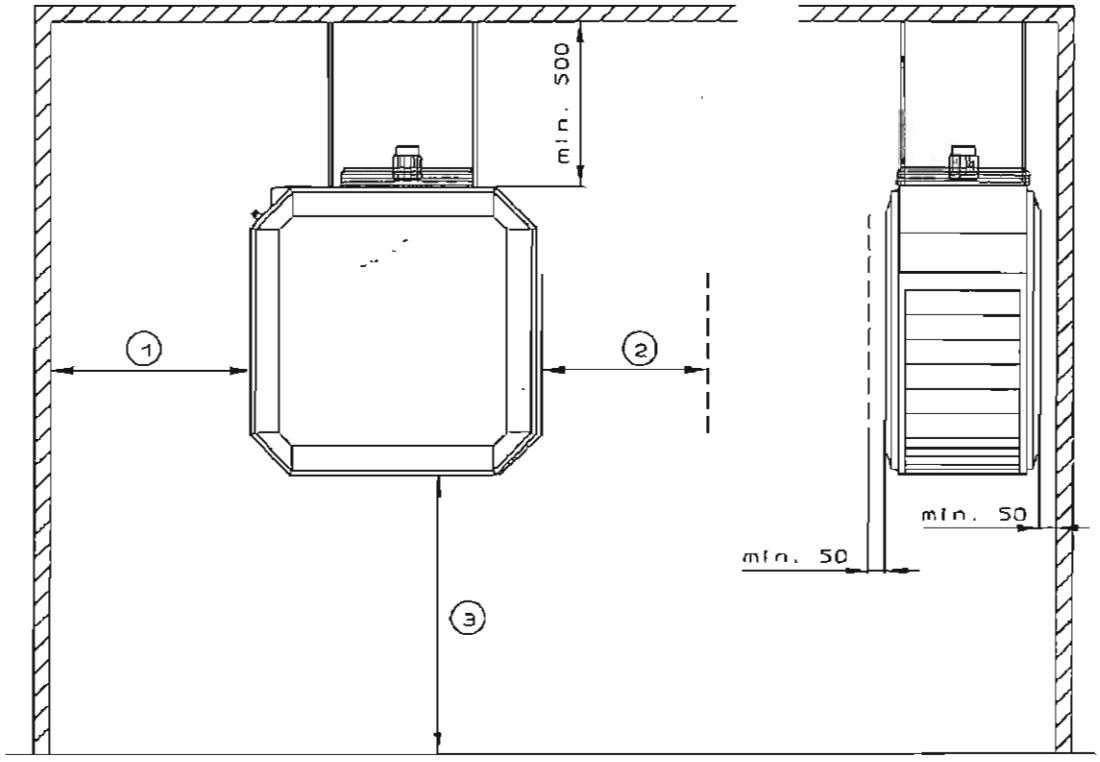
1 = Flue gas exhaust
2 = Combustion air supply

WP3880

Fig. 6: Suspension points (Models B-80 IGX & B-92 IGX)

Heater Clearances (see BS 6230)

For safety and maintenance reasons, a certain minimum space must be kept free around the heater.
The minimum distances are shown in Fig. 7.



1 = Connection side; min. 600 mm
2 = Blow out side; min. 2000 mm
3 = Not applicable

WP3681

Fig. 7: Minimum heater clearances

CHAPTER 3: GENERAL REQUIREMENTS

Related Documents (refer to latest issues):

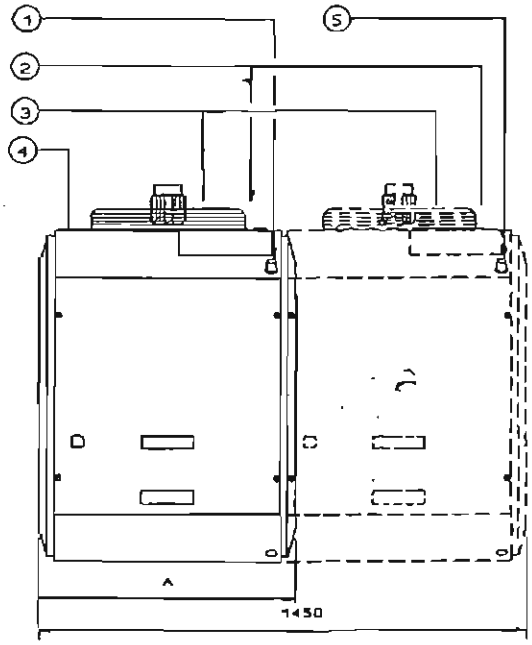
These appliances MUST BE installed in accordance with the relevant requirements of the Gas Safety (Installation and Use) Regulations (as amended), the Building Regulations and the I.E.E. Wiring Regulations for electrical installations.
They should be in accordance also with any relevant requirements of the local Region of British Gas and Local Authority and the relevant recommendations of the following:

- Building Standards (Scotland) (Consolidation) Regulations.
- BS 5440 Pt.1 (Flues for Gas Appliances).
- BS 6230 Installation of Gas-fired Forced Convection Air Heaters for Commercial and Industrial Space Heating (2nd family gases).
- British System Design Manual 'Gas Fired Warm Air Heating'.
- Model and Local Authority Bylaws.

and the following Codes of Practice:
- IM/2 Purging procedures for non-domestic gas installations.
- IM/5 Soundness testing procedures for industrial and commercial gas installations.
- IM/11 Flues for commercial and industrial gas fired boilers and air heaters.
- IM/16 Notes on installation of pipework (excluding domestic installations of 25mm and below).

IMPORTANT: It is the law that all gas appliances are installed by competent persons e.g. Corgi dealers, in accordance with the Gas Safety (Installation and Use) Regulations (as amended). Failure to install appliances correctly could lead to prosecution.

General appliance dimensions



1 = Gas connection B-16 IGX to B-60 IGX
2 = Combustion air supply
3 = Flue gas exhaust
4 = Electrical connections
5 = Gasconnection B-80/92 IGX

WP3882

Type	B-16 IGX	B-20 IGX	B-27 IGX	B-33 IGX	B-40 IGX	B-46 IGX	B-53 IGX	B-60 IGX	B-80 IGX	B-92 IGX
A	460	460	610	610	760	760	910	910	1450	1450

Fig. 8: General dimensions

Flue gas connection (see BS5440:Part 1 Section 8)

The connection with the flue gas exhaust MUST be made in accordance with the requirements contained in these installation instructions.
Failure to make the connection in this way will render the CE approval invalid.
The recommended material is Brink gastight thin-walled flue gas exhaust pipe (available from Johnson & Starley; see Fig. 9).

If the supply of combustion air and the discharge of flue gas takes place through the roof, the specially designed terminals (see Figs. 10 & 11) must be used for the roof feedthrough (available from Johnson & Starley).

If the supply of combustion air and the discharge of flue gas takes place through an outside wall, the specially designed terminals (see Figs. 12 & 13) must be used (available from Johnson & Starley).

The diameter of the flue gas connection is 80 mm.
A split collar should be fitted to provide for flue maintenance or inspection.

The maximum length and diameter of the flue system can be calculated by means of the figures given in Table 2 on page 12.

If the flue gas is discharged through an outside wall according to the above table, the exhaust may be fitted with a fall to the outside.

Combustion air connection

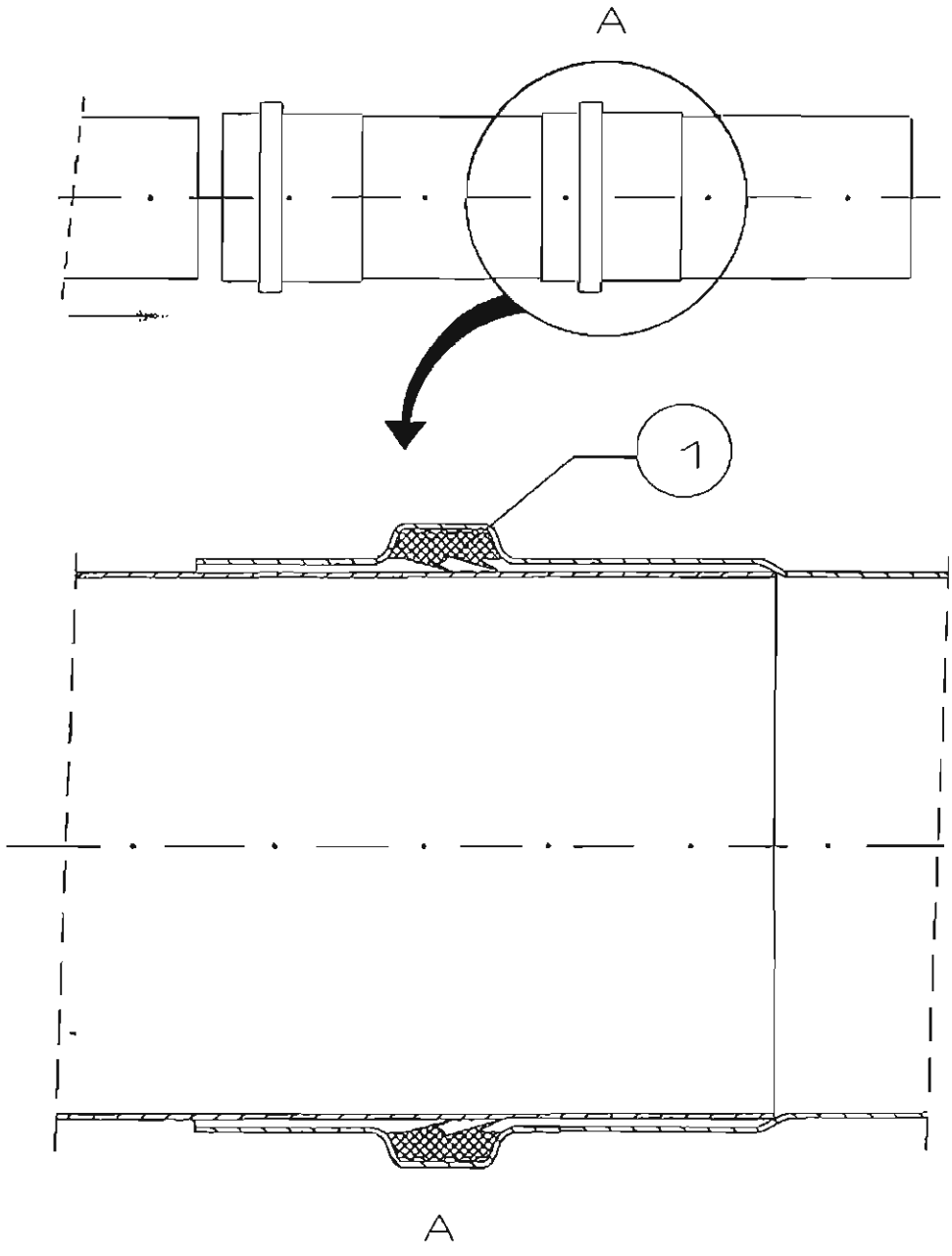
The connection of the pipe used for the supply of combustion air must be made according to the requirements contained in these installation instructions.
The recommended material for the combustion air supply system is Brink gastight aluminium pipe.

The diameter of the combustion air connection is 80 mm.
A split collar should be fitted to provide for flue maintenance or inspection.

The maximum length and diameter of the air supply pipe may be calculated by means of the data given in Table 2 and Fig. 10.

This combustion air supply system may be connected to the roof terminal.

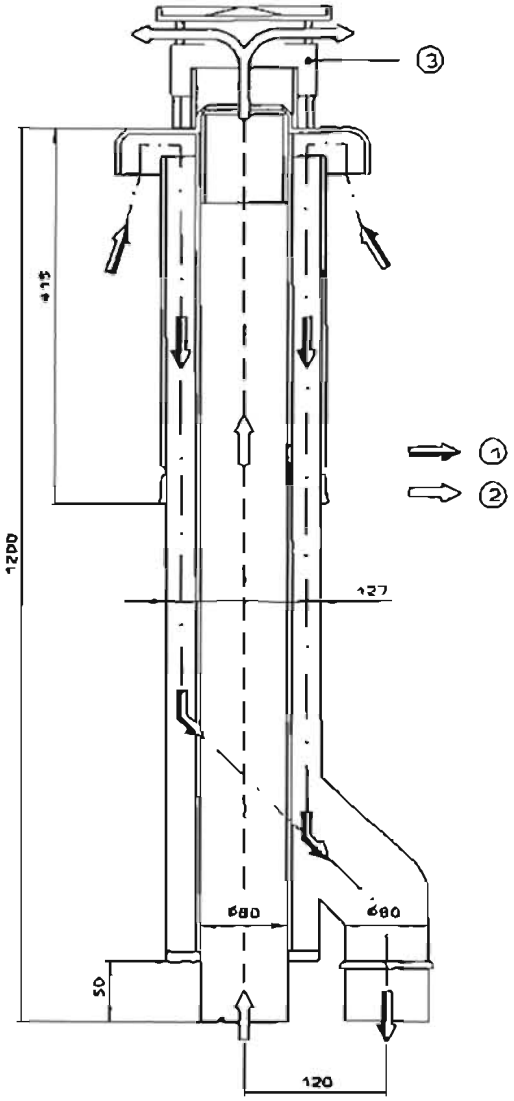
NOTE: If your particular conditions differ from those described in these installation instructions, please contact Johnson & Starley for advice on correct discharge and supply lengths.

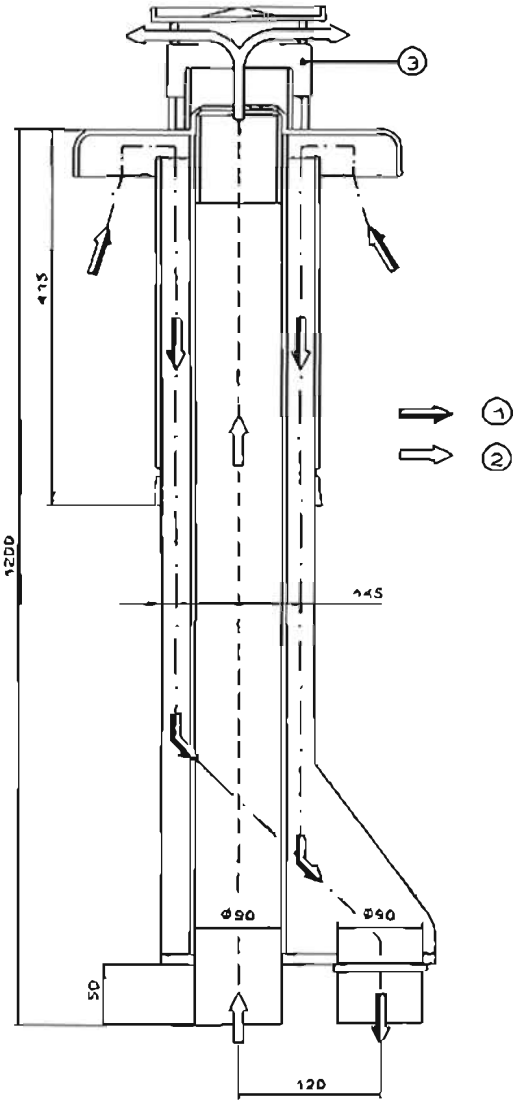


1 = Silicone sealing for fixation and tightness

WP3883

Fig. 9: Silicone sealing for fixation and tightness





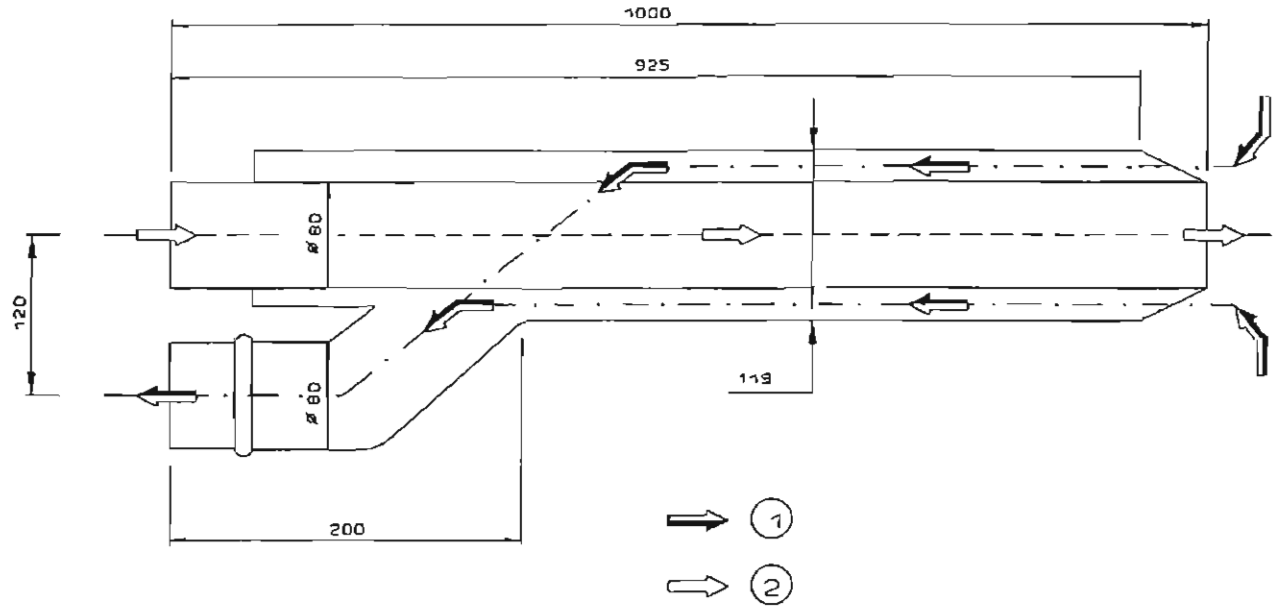
1 = Combustion air
2 = Flue gases
3 = Flue cover

WP3892

WP3884

Fig. 10: Vertical feedthrough 80mm dia

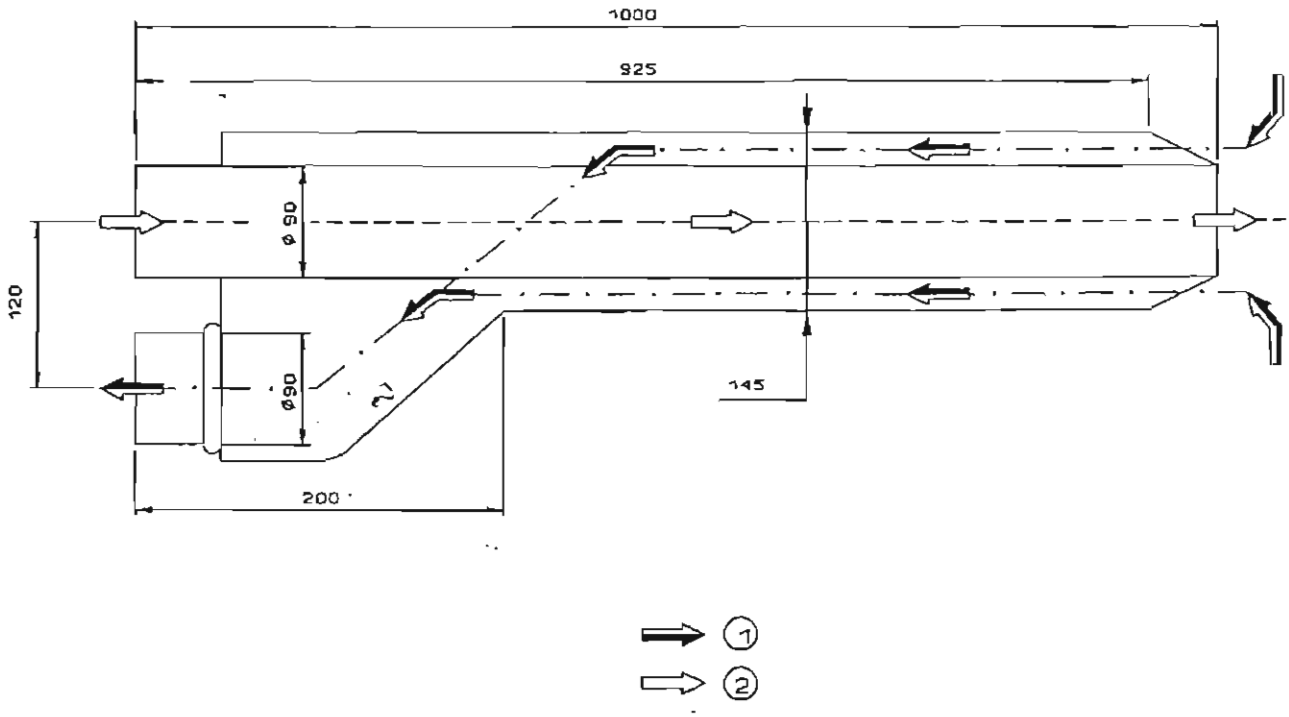
Fig. 11: Vertical feedthrough 90mm dia



1 = Combustion air
2 = Flue gases

WP3727

Fig. 12: Horizontal feedthrough 80 mm dia



1 = Combustion air
2 = Flue gases

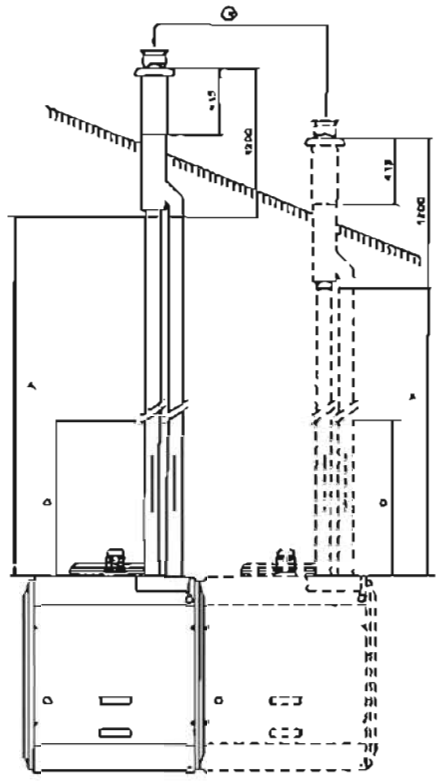
WP3885

Fig. 13: Horizontal feedthrough 90 mm dia

Supply and exhaust system

Table 2: Supply and exhaust system

Heater	Length single wall supply an dexhaust system [m]					
	Outlet ϕ80 Pipe ϕ80		Outlet ϕ90 Pipe ϕ90		Outlet ϕ90 Pipe ϕ100	
	Max. length A	Dry length D	Max. length A	Dry length D	Max. length A	Dry length D
B-18IGX	15.0	5.5	-	-	-	-
B-20IGX	15.0	7.0	-	-	-	-
B-27IGX	15.0	9.5	-	-	-	-
B-33IGX	13.0	11.5	-	-	-	-
B-40IGX	10.0	10.0	-	-	-	-
B-46IGX	3.5	3.5	11.5	11.5	-	-
B-53IGX	2.0	2.0	9.5	9.5	-	-
B-60IGX	-	-	5.0	5.0	8.5	8.5
B-80IGX	10.0 2X	10.0 2X	-	-	-	-
B-92IGX	3.5 2X	3.5 2X	11.5 2X	11.5 2X	-	-

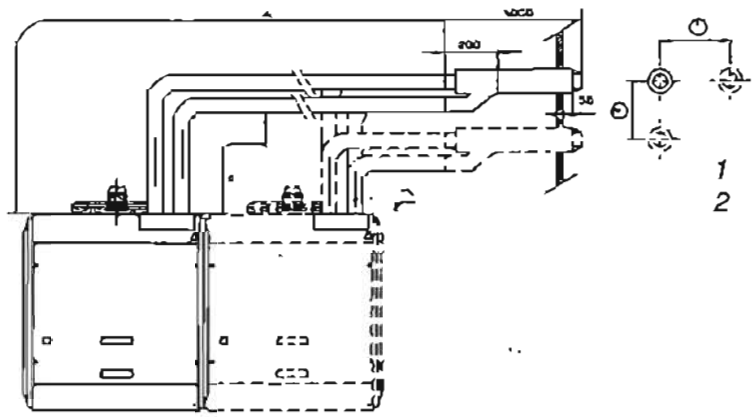


1 = Min. 680

WP3886

Fig. 14 : Vertical supply and exhaust system.

A bend of 15° is equivalent to 0.25 m of straight pipe.
" " 30° " " 0,30 m " "
" " 45° " " 0,50 m " "
" " 90° " " 1,00 m " "



1 = Min. 220 mm
2 = Min. 220 mm

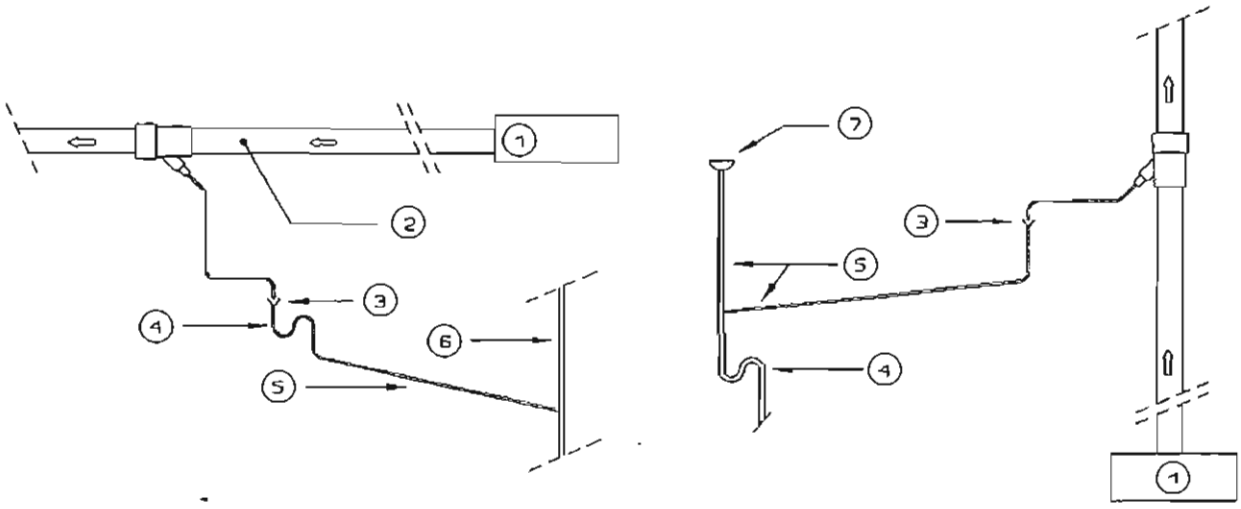
WP3887

Fig. 15 : Horizontal supply and exhaust system.

NOTE: Dry exhaust length D is the maximum permissible length without formation of condensation.
If your particular conditions differ from those described in these installation instructions, please contact Johnson & Starley for advice on correct discharge and supply lengths.

Condensation outlet

If the length of the flue gas exhaust pipe exceeds the dry length stated in Table 2, you are advised to contact Johnson & Starley.
In this situation it will always be necessary to fit a condensation outlet in the flue gas exhaust pipe (see Fig. 16).
The condensation outlet must be ordered separately, and can be used with either a vertical or a horizontal flue gas system.
The condensation can legitimately be discharged into the internal drainage system as shown in Fig. 16.
The condensation outlet pipe should be installed in such a way that it slopes continuously downward and away from the unit at an angle of at least 3°(6 mm per 100 mm, 3/4 in per foot run) to assist flow, and in such a position that the risk of mechanical damage is minimised.
Insulate the pipe to protect against freezing.
Run the pipe internally as far as possible.



1 = Heater
2 = Fit with fall towards heater.
3 = Funnel
4 = Air trap
5 = Connection pipe
6 = Standpipe
7 = Wash basin

Fig. 16: Connection of condensation outlet to drainage system

Gas Supply (see BS 6230 and IM/16)

An independent gas supply pipe from the meter is to be preferred wherever possible.
However, when this is not possible, the pipe must be capable of taking the complete input of the heater and all other gas appliances being served by this same pipe.
This supply should be suitably sized to conform to British Standards requirements of no more than 1.0 mbar (0.4 in wg) pressure drop between the meter and the appliance.

The ½ in union gas cock (supplied) must be fitted in the gas inlet of the heater for easy isolation during servicing.
The gas pipe should be so fitted and installed as to be durable, substantial and gas tight.

During installation, either the multifunctional control must not yet have been connected to the gas supply, or the gas supply must have been turned off immediately before the multifunctional control to avoid damage to the control.

CHAPTER 4: COMMISSIONING

Ensure Gas and Electrical supplies are off.

Test for soundness and purge the whole gas pipe.
To assist in determining where a gas connection may not be tight, a leak detection fluid should be brushed around the connection.
Under no circumstances should a flame be used to locate a gas leak.

To switch the heater on:

1. Set the room thermostat to the lowest setting.

2. Turn on the electrical supply to the heater.

3. Open the gas cock.

4. Set the room thermostat to the desired temperature.

5. After a delay of about 25 seconds the heater will light.
   a. An airheater with lamps on the control unit will be in the following state if the heater has lighted correctly:

green - on
red - off

   b. An airheater with an display on the control unit will be in the following state if the heater has lighted correctly:

5

If the burner fails to ignite, the lamps or display will indicate the reason (see page 20 Fault Finding).

NOTE: When starting the heater for the first time, it may be necessary to repeat the starting procedure a few times to purge the gas supply pipe.

The air circulation fan will start up when the air temperature within the heater reaches about 40°C.

To turn the heater off:

1. Set the room thermostat to the lowest setting.

2. Close the gas cock.

3. Wait until the air circulation fan stops before switching off the electrical supply.

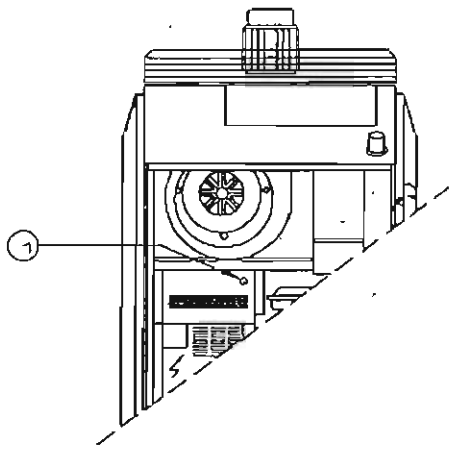
4. Allow the heater to operate for 15 minutes then check burner setting pressure and, if necessary, adjust to output required (see Table 1).
   The burner setting pressure (measured at the burner) is set to the correct value at the factory.

To check the burner setting pressure:

- Remove the front cover of the air heater.
- Loosen the small screw at the pressure test point by three turns (see Fig. 18).
- Connect a pressure test gauge to the pressure test point and check the static pressure.
- With the room thermostat calling for heat, start up the heater.
- Press the service button (see Fig. 17).
  For the duration of one heating cycle the service button will bypass the differential pressure switch.
- Wait until the burner has ignited (this takes about 25 seconds).
- Take a reading of the burner pressure.

To adjust burner setting pressure (if necessary):

- Remove the maximum burner pressure adjustment cover screw on the multifunctional control (see Fig. 18) and turn the adjusting screw, clockwise to raise the burner pressure, and anticlockwise to lower it.
- Check the gas consumption if necessary (see page 17).
- After correct adjustment, turn off the burner by setting the room thermostat to 'NO HEAT', remove the pressure test gauge, tighten the pressure test point screw and refit the burner pressure adjustment cover screw.
- Replace the front cover, taking care to fasten it securely to avoid air leaks.



1 = Service button

Fig. 17: Position of service button

To check the gas consumption:

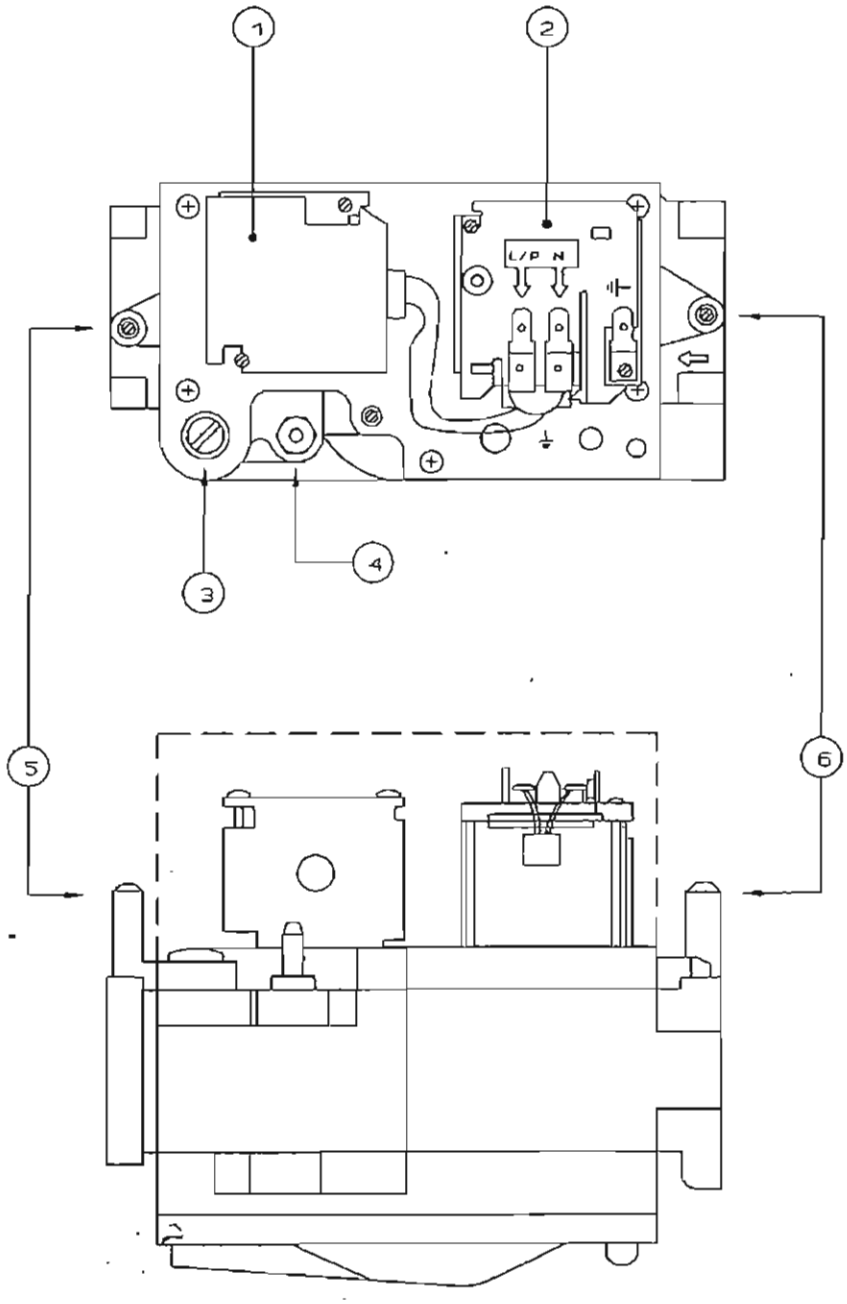
Turn off all other gas appliances connected to the same gas meter.

Using a stopwatch or wristwatch, record the gas consumption during a period of sixty seconds. From this reading, calculate the consumption in m^3/h or l/min.

Use the data in Table 3 to check whether the gas consumption corresponds with the relevant design figure.

Table 3: Gas consumption

Heater	Consumption [m^3/h]	Consumption [l/min]
B - 16 IGX	1.9	16.6
B - 20 IGX	2.3	38.3
B - 27 IGX	3.3	55.0
B - 33 IGX	3.9	65.0
B - 40 IGX	4.7	78.3
B - 46 IGX	5.4	90.0
B - 53 IGX	6.1	101.7
B - 60 IGX	6.7	111.7
B - 80 IGX	9.4	156.6
B - 92 IGX	10.8	180.0



1 = Main gas valve
2 = First safety valve
3 = Maximum burner pressure adjustment screw
4 = Not applicable
5 = Burner pressure test point
6 = Supply pressure test point

WP3721

Fig. 18 : Multifunctional control

To adjust the combined fan delay control and overheat limit device:

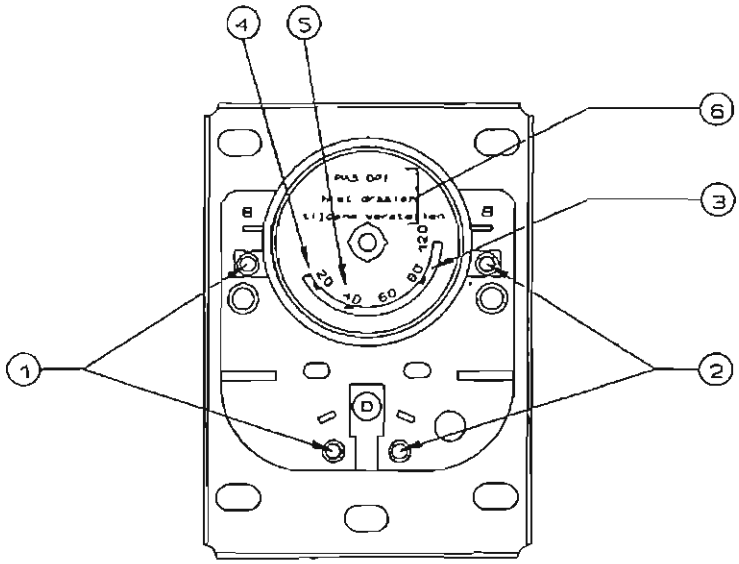
Check that both the fan delay control and overheat limit device (Fig.3) are set correctly, as follows:

Fan delay control

The fan delay control which switches on the heater fan must be set to 30° C (switch off temperature, left tappet) and 40° C (switch on temperature, middle tappet).

Overheat limit device

The tappet on the right controls the overheat limit temperature.
For setting right tappet see table 1.



1 = Fan delay control
2 = Overheat limit device
3 = Maximum temperature
4 = Switch off temperature heater fan
5 = Switch on temperature heater fan
6 = Caution!
Do not turn during adjustment

WP3722

Fig. 19 : Combined fan delay control and overheat limit device

To adjust the overheat cut-off device

It will operate if the heater casing temperature rises excessively, or if air movement through the heater slows or stops.

After the overheat cut-off device has been activated, the heater must be reset, the fault responsible having first been rectified (see page 21 Fault Finding), by means of the reset button on the control unit, or by setting the thermostat toggle switch to '0' and then back to '1'.

Fault finding

IMPORTANT: If an electrical fault occurs after installation of the appliance, preliminary earth continuity, polarity and resistance to earth checks should be carried out with a multimeter. On completion of any service/fault-finding task which has required the breaking and remaking of electrical connections, then checks of continuity, polarity, and resistance to earth must be repeated.

NOTE: When purging or checking gas supplies, ensure that there is adequate ventilation to the room or cupboard, and all naked lights are extinguished.

Fault indications

The microprocessor of the control unit indicates a fault by means of two lamps, red and green or by means of an display.Consult the fault diagnosis section (see page 21) for interpretation of the lamp/ display conditions.When a fault is indicated, the wiring to the circuit concerned should also be checked for loose connections and shorting. If necessary, contact Johnson & Starley for guidance. Once the fault has been rectified, the heater can be restarted by pressing the reset button on the control unit, or by setting the thermostat toggle switch to '0' and then back to '1'.

Control unit with two lamps		
green	**red**	
on	**off**	= working position

Control unit with display panel
Display condition
0 = No heat demand **2** = Diff. pressure switch still open **3** = Diff. pressure switch closed **4** = Ignition **5** = Burner operation

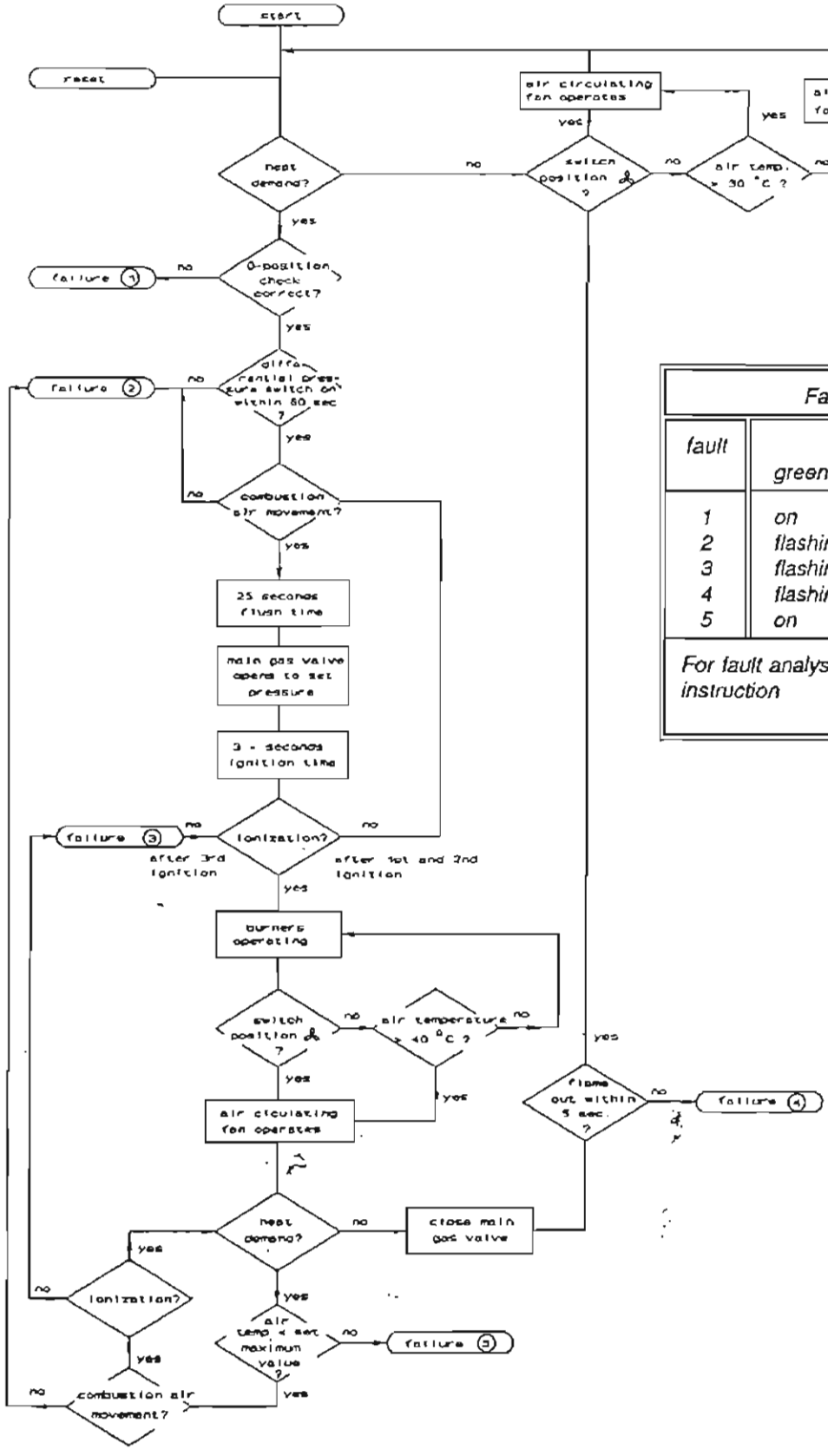
Failure			
Control unit with two lamps		**Control unit with flashing display**	
green lamp	**red lamp**		
off	off	-	= No power supply/Fault in burner unit.
on	flashing	0	= Overheat limit device tripped.
on	on	1	= Diff. pressure switch closed on start.
both flashing at same time		2	= Diff. pressure swotch not closing within one minute.
-		3	= Diff. presssureswitch open during operation.
flashing	off	4	= No flame signal.
-		5	= Flame failure.
flashing	on	6	= Flame simulation.
flashing alternately		-	= Fault in burner unit.
off	flashing	-	= 24 Volt short circuit.

Fault diagnosis

Heat called for	Control unit with: Lamps green	red	Display	Fault	
yes	on	off	0	Control-unit not responding.	- Roomthermostat not set high enough. - Roomthermostat circuit broken - Roomthermostat defective.

Heat called for	Lamps green	red	Numer. Display flashing	Fault	Possible causes
yes	on	flashing	0	Overheat limit	- Heater fan device tripped - Insufficient air movement - Broken fuse; only control unit with display panel (1,25A T)
yes	on	off	1	Diff. pressure switch already on at start.	- Diff. press. switch connected incorrect. - Diff. pressure switch defective.
yes	both flashing at same time		2	Waiting for tripping of diff. pressure switch.	- Flue gas fan defective. - Flue gas fan not pulling insufficient combustion air.
	-		3	Diff. pressure switch opens during operation.	- Check air movement and flue gas system.
yes	flashing	off*	4	No flame in lighting phase after lighting three times	- Gas cock closed. - Multifunctional control defect.
yes	-		5	Flame signal disappears during operation.	- Multifunctional control defect. - No gas
no	flashing	on	6	Flame signal given incorrectly*	- Multifuntional control open after end of heat requirement.
yes	off	flashing	-	24 volt short	- Short in multifunctional control circuit. - Short in wiring.
yes	flashing alternately		-	Microprocessor error.	- Microprocessor defective. - Short in wiring between multifunctional control and earth.

* Five seconds after the end of the heating period, flame ionisation is measured and should not be present.
If ionisation is detected after five seconds, the controller will shut down.



Fault indication			
fault	lamp green	lamp red	display
1	on	on	1
2	flashing at same time		2
3	flashing	off	4
4	flashing	on	6
5	on	flashing	0
For fault analyses, see the installation instruction			

WP3667

Fig. 20: Flowdiagram

CHAPTER 5: SERVICING (refer to Figs. 3 & 4 for parts layout)

IMPORTANT: Before commencing any servicing or exchange of components, always turn off the gas supply and isolate the electrical supply.
After completing any service work always test for gas soundness.

The heater must be serviced at least once a year by a competent person to ensure efficient and safe operation.

1. Operate the appliance and check for correct function of the burner and controls.

2. Remove the front cover of the heater by unscrewing the four large slot-head screws with their nylon washers.

3. Disconnect the gas union on the top of the burner bar.
Undo the four screws and remove the burner bar and burners.
Thoroughly clean the burners with a soft brush.
Under no circumstances should the burner holes be enlarged, distorted or brushed strongly.
Replace the burner bar and burners.

4. Check whether the heat exchanger is dirty:
Top: Remove the flue gas fan mounting plate together with the fan, and inspect to see whether the heat exchanger is dirty.
Bottom: Inspect to see whether the heat exchanger is dirty.

   If necessary, use compressed air to clean the heat exchanger from below.
Reassemble all items in reverse order.

5. Check that the burner ignition sequence operates correctly (see page 15).

6. Check the burner setting pressure and adjust if necessary (take a gas consumption reading if required) (see page 16).

7. Check the operation of the combined fan delay control and overheat limit device.

NOTE: If the flue gas fan is removed, new sealing rings should be fitted upon reassembly (see exploded view for part numbers).

INSTALLATIONS INSTRUCTIONS

FOR

ELECTRICIAN

CHAPTER 6: ELECTRICAL CONNECTIONS

Mains

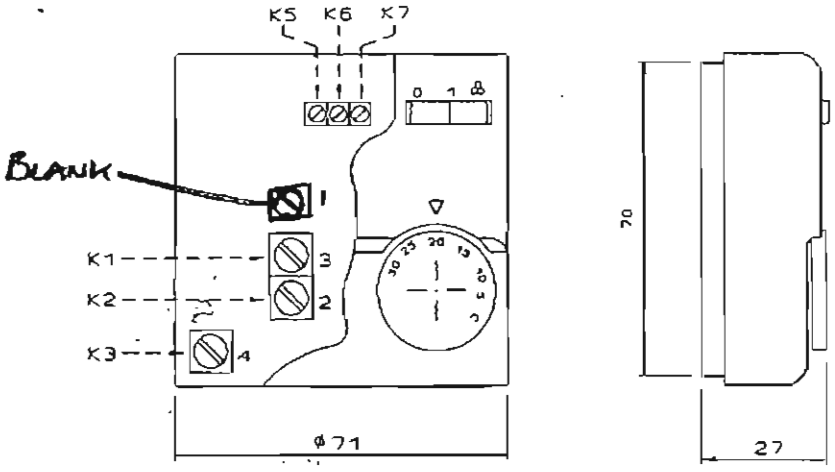
A single phase 240V 50Hz mains connection from a fused spur with double pole switch, fused at 13amps, is needed.
Location of connections is shown on the wiring diagrams (Figs. 24/ 25/ 26/ 27/ 28/ 29).
All wiring must be to I.E.E. Regulations for electrical installations.
Use 3-core heat resisting cable to BS6500.
The power lead to the heater must be connected by means of the terminal strip in the heater according to the wiring diagram.
To make this connection, the fitted coupling nut PG-13.5 must be used so as to ensure that it is pull-resistant and airtight.

Thermostat location and connection

A 24V room thermostat is supplied loose with each appliance.
The thermostat should be located where there is free air circulation approximately 1,5m (5ft) from the floor.
Avoid the following locations:

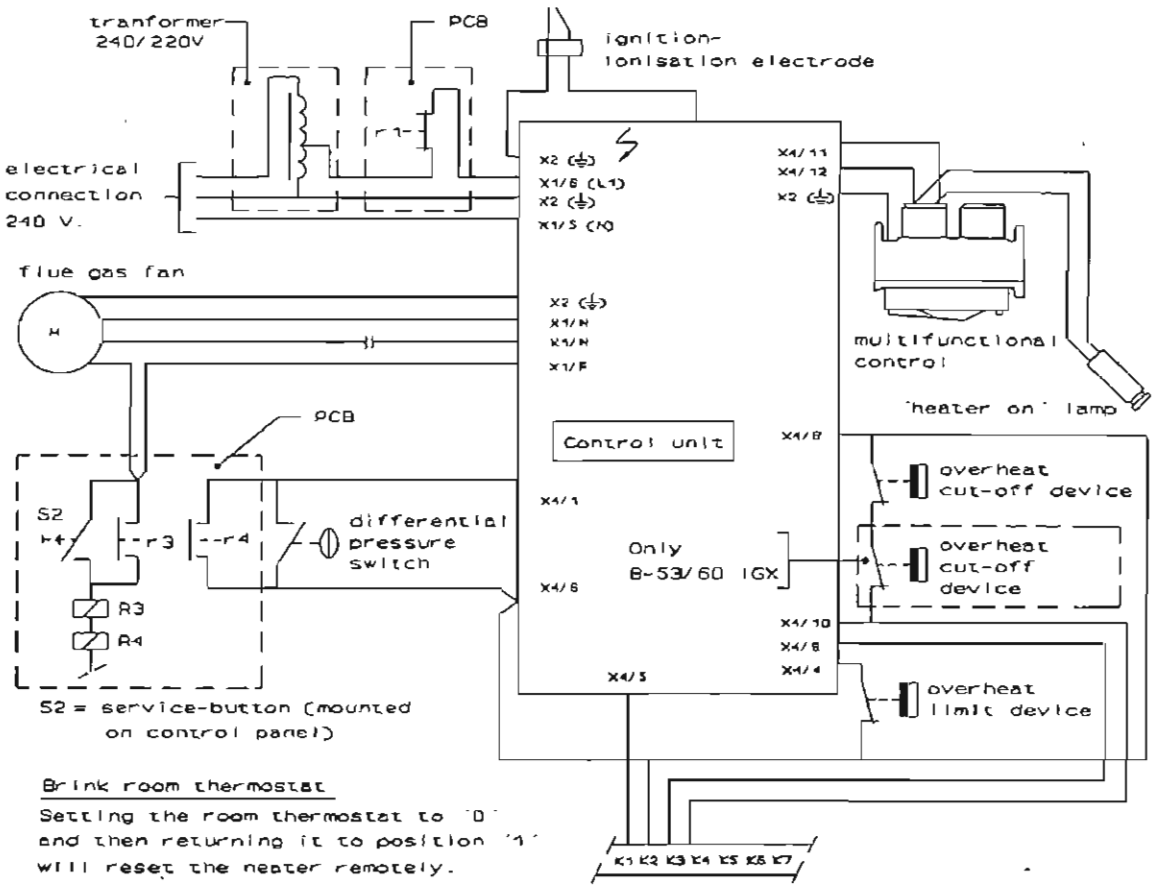
- In a position where temperature is greatly affected by the sun or any other heat source.
- Near an outside door or windows, or on outside walls.
- Where affected by warm air ducts, diffusers, waste pipes or the heater itself.
- Where subject to vibration.

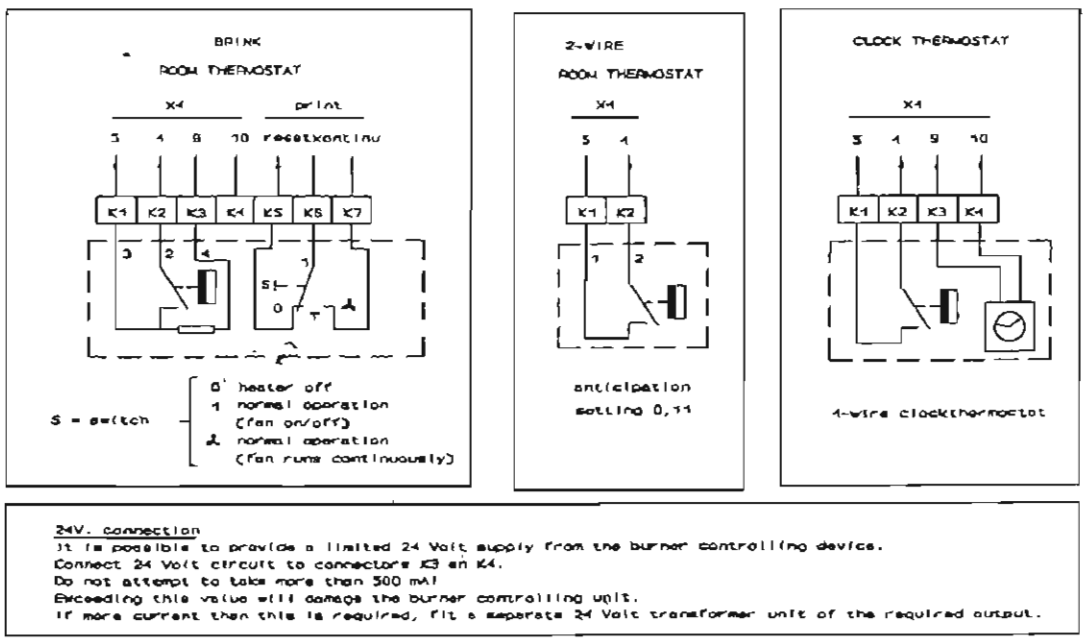
Connect the thermostat to the air heater as shown in the wiring diagram, using 0,75mm² six-core (minimum) sheathed cable.



WP3085

Fig. 21: Room thermostat connections





24V. connection
It is possible to provide a limited 24 Volt supply from the burner controlling device.
Connect 24 Volt circuit to connectors K3 en K4.
Do not attempt to take more than 300 mA!
Exceeding this value will damage the burner controlling unit.
If more current than this is required, fit a separate 24 Volt transformer unit of the required output.

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Fig. 23: Connections burner controlling device

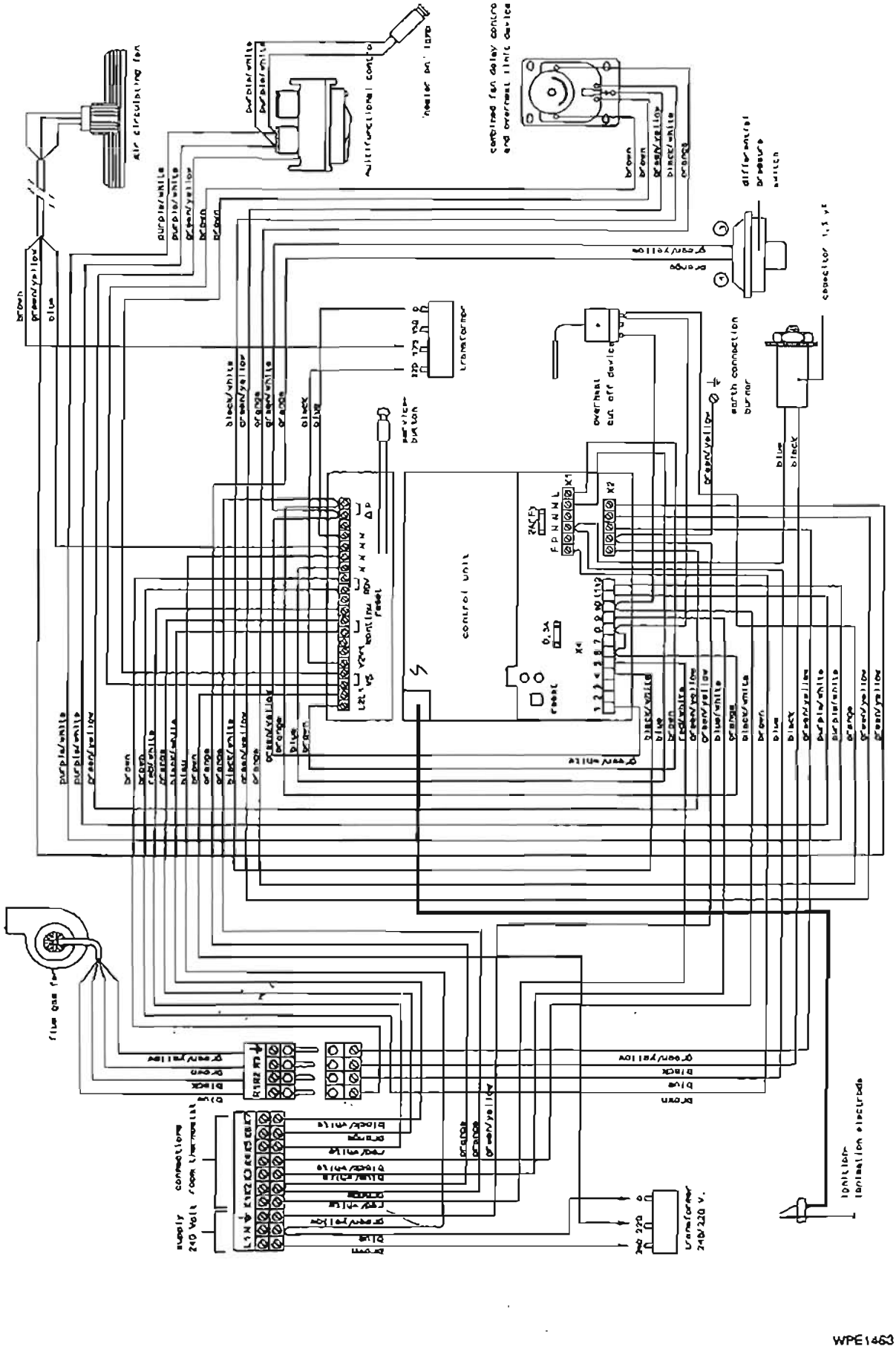
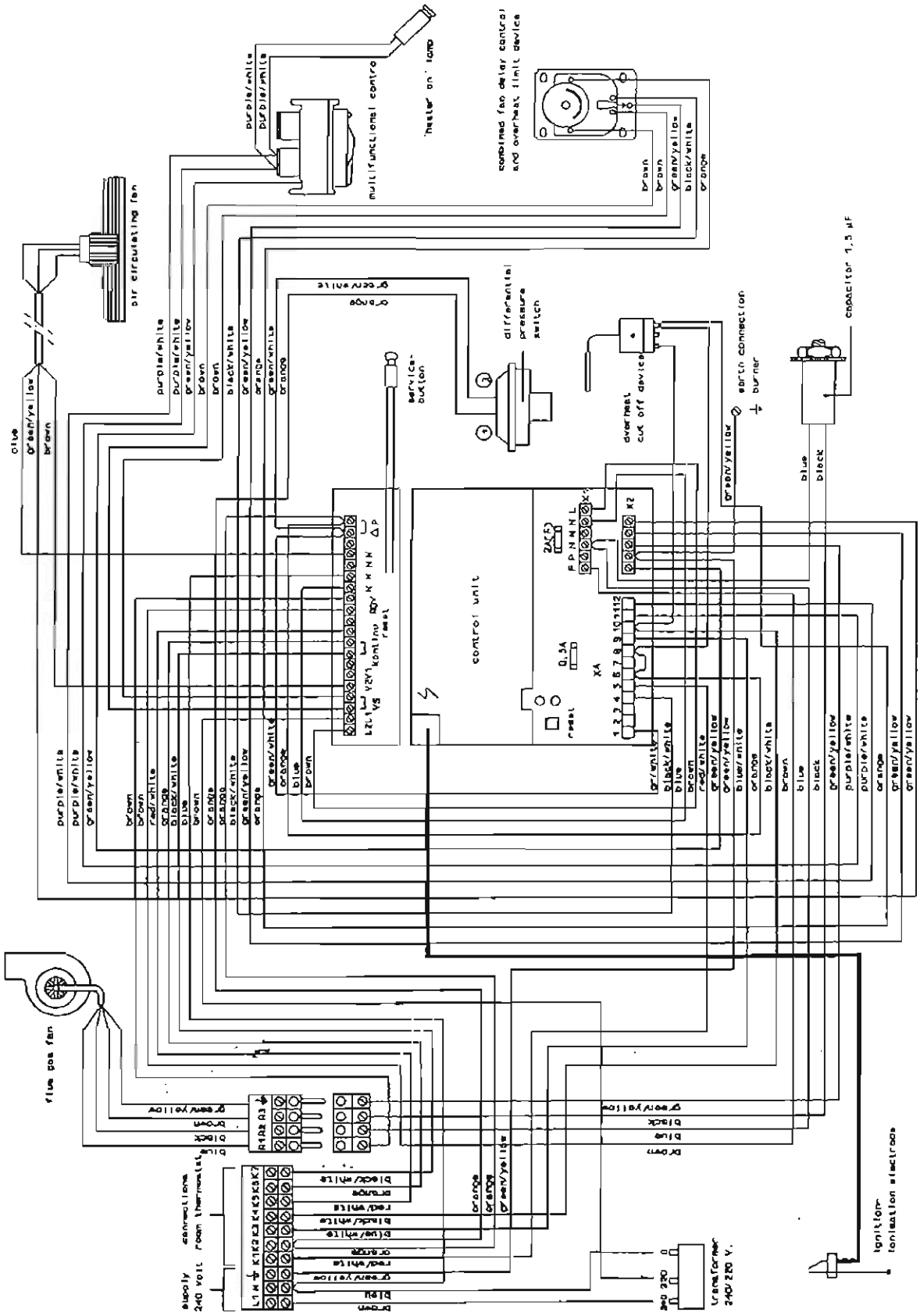


Fig. 24: Wiring diagram B-16/27 IGX.



WPE1464

Fig. 25: Wiring diagram B-20/33 IGX.

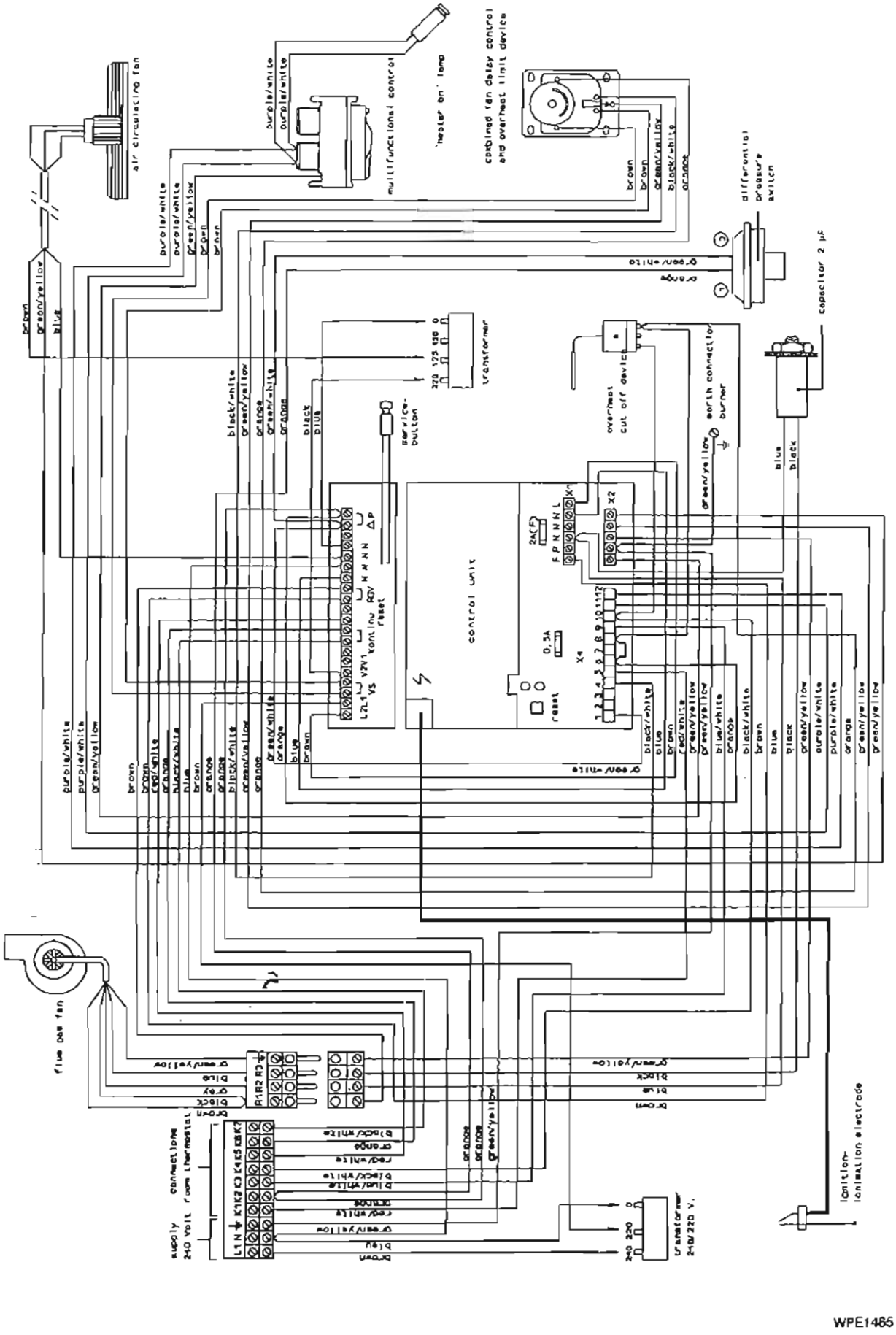


Fig. 26: Wiring diagrams B-40 IGX.

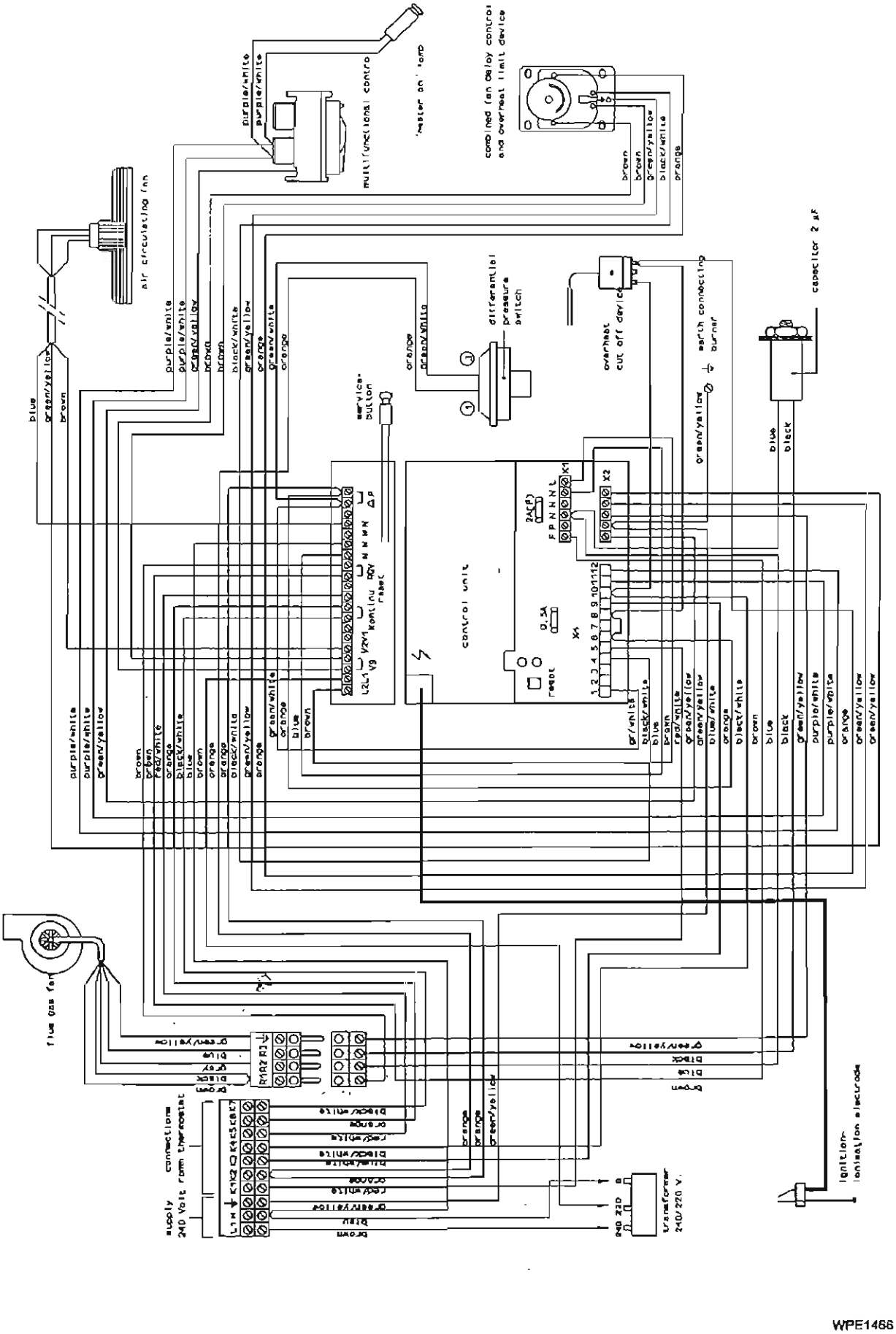


Fig. 27: Wiring diagram B-46 IGX.

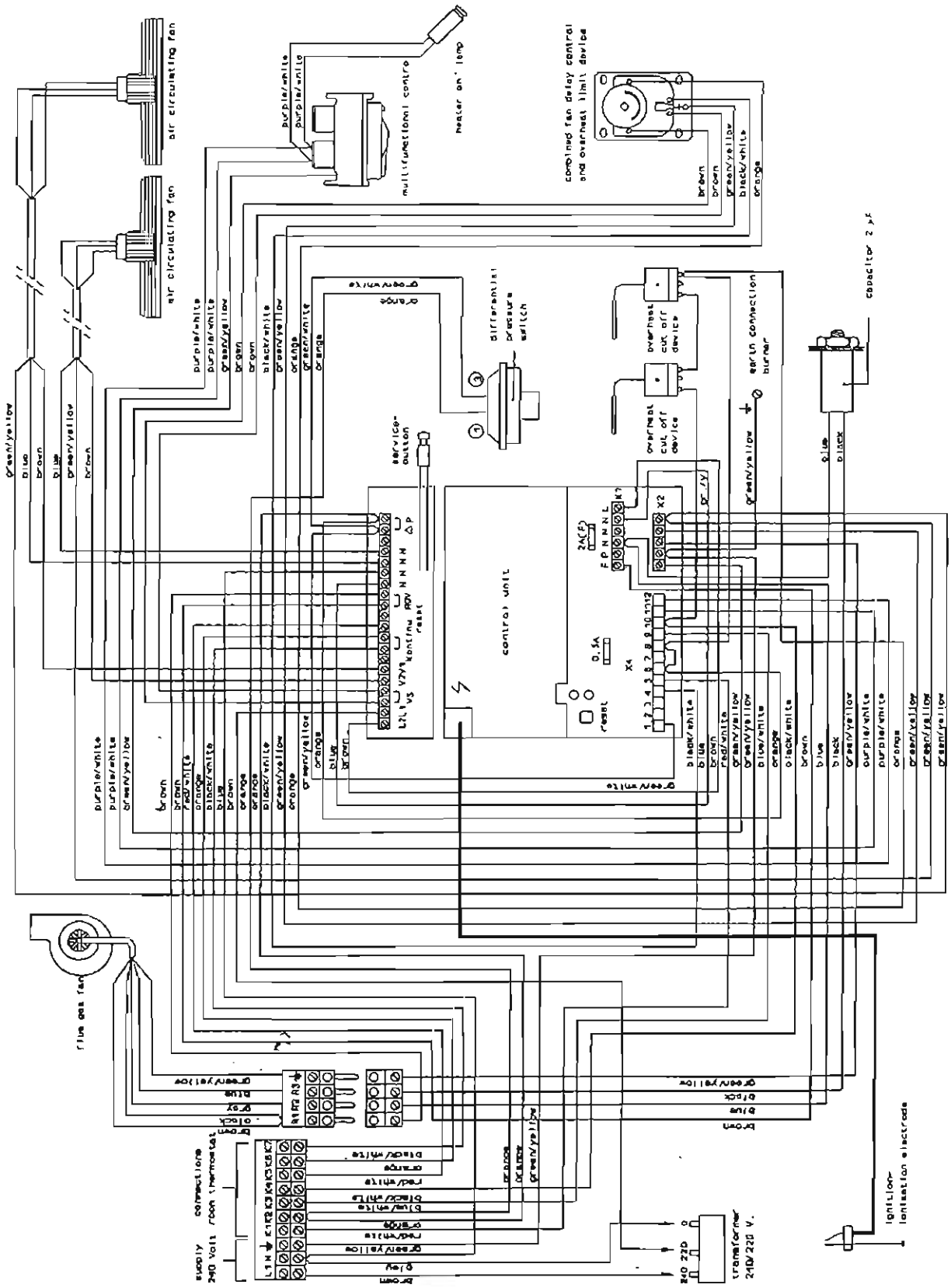


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Fig. 28: Wiring diagram B-53/60 IGX.

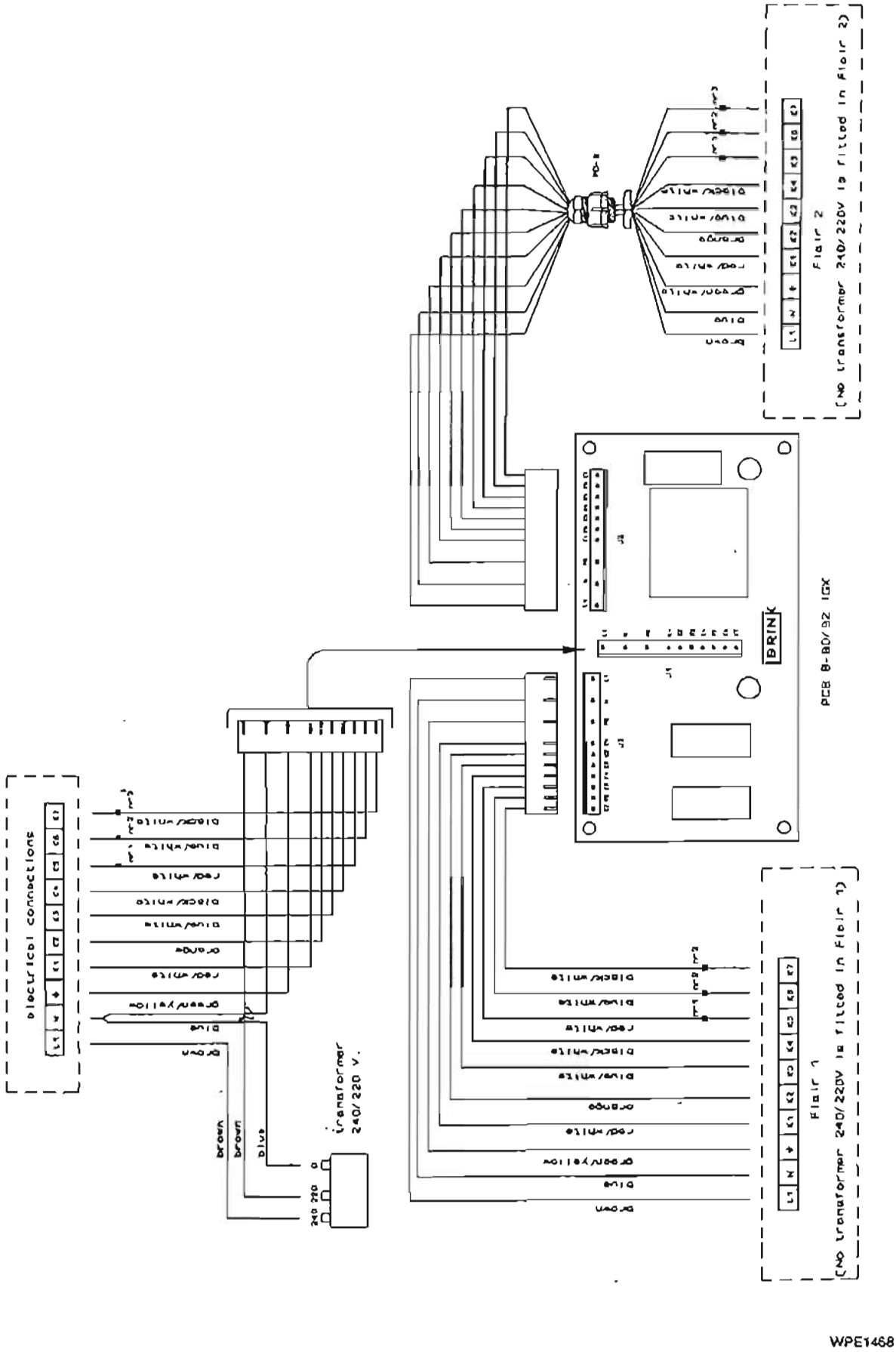

Fig. 29: Wiring diagram B-80/92 IGX.

CHAPTER 7: INSTRUCTIONS FOR USER

If the building is unoccupied, ensure that the 'Instructions for User' are left at or near the meter for the User.
Leave also these Installation Instructions at or near the meter for use on future service calls.
If the building is occupied, hand the User Instructions over and make sure the User knows:

- How to operate the thermostat.
  Also that the User knows that, after a power failure, the time control may need to be reset.

- How to turn the heater on and off and switch off the electricity supply to the heater.

- That the air grilles on the heater must not be obstructed.

- That the heater must be serviced at least once a year by a competent person to ensure efficient and safe operation.

CHAPTER 8: REMOVAL OF COMPONENTS FOR SERVICING/REPLACEMENT

Parts required for servicing

If any parts need to be replaced, it is advisable to state the part name and number when ordering, also the type of heater, the heater serial number and year of manufacture (see exploded view).

Example: Heater : Flair B-20 IGX
Serial number : 005521952001
Part name : Differential pressure switch
Part number : 511402
Number off : 1

NOTE: The type of air heater, the serial number and year of manufacture are stated on the data badge affixed to the inside of the heater.

To remove and replace components

IMPORTANT: Before commencing any servicing or exchange of components, always turn off the gas supply and isolate the electrical supply.
After completing any service work always test for gas soundness.

To remove Air Circulating Fan
With electrical supply disconnected.
- Disconnect the fan connections from the printed circuit board, noting their position, and withdraw the fan cable.
- Undo four screws to release the fan, then ensure that the fan cable is free, and withdraw the fan.

To remove Flue gas fan
With electrical supply disconnected.
- Disconnect the electrical connection to the fan, noting the colours of the wires.
- Undo three screws from the flue gas motor and withdraw the motor.
- Refitting is the reverse of this procedure.

To remove control unit
With electrical supply disconnected.
- Undo four screws on the control unit and remove the front panel.
- Disconnect the electrical connections from the control unit.
- Withdraw the control unit.
- Refitting is the reverse of this procedure.

To remove Overheat cut-off device
With electrical supply disconnected.
- Disconnect the electrical connection from the overheat cut-off device.
- Undo two screws.
- Remove the phial from the sensor tube.
- Refitting is the reverse of this procedure.

To remove Differential pressure switch
With electrical supply disconnected.
- Disconnect the two pipes from the differential pressure switch.
- Disconnect the electrical connection from the differential pressure switch.
- Undo two screws from the switch and remove the switch.
- Refitting is the reverse of this procedure.

To remove Combined fan delay-control and Overheat limit switch
With electrical supply disconnected.
- Remove the cover from the switch.
- Disconnect the electrical connection to the switch, noting the colours of the wires.
- Remove three fixing screws and withdraw the switch assembly.
- Refitting is the reverse of this procedure.
- Check fan and limit switch settings.

To remove Multifunctional Control
With gas and electricity supplies disconnected.
- Disconnect the electrical connections to the multifunctional control.
- Break the union on the inlet side and on the outlet side of the multifunctional control, ensuring that the sealing washer is retained.
- Remove the remaining gas fittings from the multifunctional control and retain.
- Refitting is the reverse of this procedure.

To remove Burner
With gas and electrical supplies to the appliance turned off.
- Remove front panel from the air heater.
- Disconnect the burner gas feed pipe and spark electrode.
- Remove the four self tapping screws and carefully withdraw the burner.
- Refitting is the reverse of this procedure.

Main burner cleaning
- With the burner assembly removed, clean the main burners and cross-lighting bar and cooling bars by brushing thoroughly with a soft brush.
  Under no circumstances must slots or holes be enlarged, distorted or brushed strongly.

To remove Main Injector
- With burner assembly removed.
- Unscrew the injectors from their housings, noting that the cross-lighting injector is a different diameter to the main injectors.
- Clean as necessary. Under no circumstances must the hole be enlarged or distorted. If replacing an injector, ensure that it is correctly marked.

If you have a problem in obtaining a spare part, please contact Johnson & Starley Spares Department at the address below.

BRINK - LUCHTVERWARMING B.V.
R.D. Bügelstraat 4, Postbus 24
7950 AA Staphorst, Holland.

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