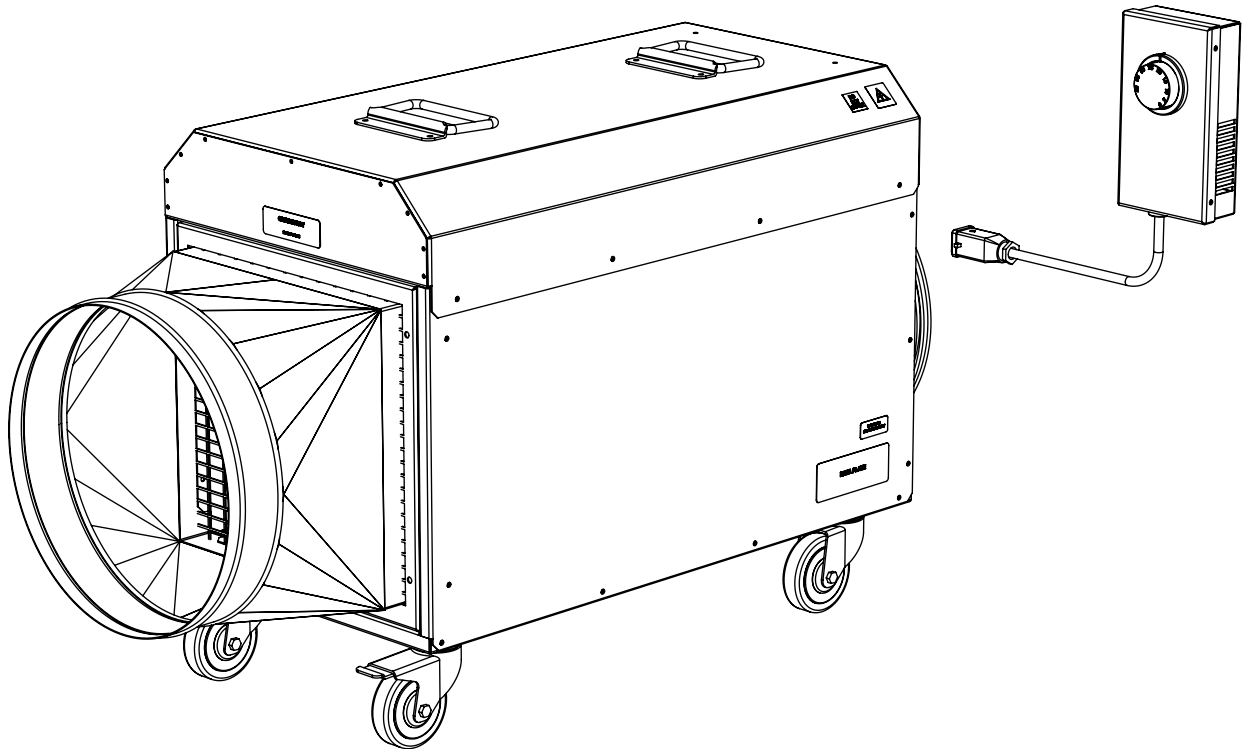


# FFHT32



## FFHT32-18D 3 PHASE 400V ELECTRIC HEATER

### PRODUCT MANUAL

# WARNINGS

**These instructions should be read by:**

**The specifying engineer.  
The installation engineer.  
The user.  
The service engineer.**












- **Failure to follow these instructions may result in risk of personal injury or damage to the equipment.**
- **Damage due to a failure to follow these instructions will invalidate the warranty.**
- **The appliance must be commissioned & serviced by qualified engineers in compliance with local regulations.**
- **The appliance must be switched off and disconnected from the power supply before any work is carried out.**
- **There are no user controls inside the appliance casing.**
- **Do not cover the appliance.**
- **Do not use in the vicinity of a pool, bath or shower.**
- **An air gap of at least 300mm should be allowed at the rear of the unit to ensure a clear airflow. Do not site the unit close to soft fabrics or combustible materials. Do not obstruct the outlet grill.**
- **Allow the unit to cool by running fan only for a minimum of 5 minutes before switching off.**
- **Do not disconnect the appliance from the supply under load.**
- **For internal use only. Do not use out of doors.**
- **Extension cables should be correctly rated for the load, fully unwound and never run through water or over sharp edges.**
- **Ensure that locking castors are engaged before running the unit.**
- **This unit can operate with a maximum of 10M of 300mm duct. Ducting should be kept as taught and straight as possible.**
- **The machine is not phase rotationally sensitive.**
- **This is a class 1 product and requires an Earth connection.**
- **Warning! Fan liable to start without warning.**
- **Do not use this appliance with plastic ducting.**

TECHNICAL SPECIFICATIONS. FFHT32-18	
Heating capacity.	18 kw
Power supply.	400v. 3P+N+E. 32A. 50Hz.
Maximum running current.	26A
Airflow.	1533.6 M3h
Weight .	27 kg
Noise level at 3M.	73 dB(A)
IP Rating.	IP20
Maximum operating temperature.	40 °C +/- 3°C
Maximum ducting length (300mm duct) See P6.	10M
Temperature rise at 15 °C ambient. (Nominal)	74 °C

### Standards applied:

BE EN 12100. 2010.  
 BS EN 60335-1. 2012.  
 BS EN 60335-2. 2009.  
 BS EN 61000.

MACHINE AND INSTRUCTION ICONS	
	Important information
	Warning. In order to avoid overheating, do not cover the heater.
	Safety limit thermostat.
	Fan on/off
	Heat setting I on/off.
	Heat setting II on/off
	Thermostat. (Onboard)
	Thermostat. (Remote)
	Risk of electric shock. Isolate from power supply before removing cover.

## **Specifications:**

The FFHT32 is an 18kw 3 phase industrial electric fan heater.

The appliance is connected to a 400v 32Amp 3P+N+E 50Hz power supply and comes fitted with the appropriate 5 pin plug. A neutral is required. This appliance requires an Earth connection.

The machine is not phase rotationally sensitive !

The FFHT32 is fitted with a high quality axial fan which will allow it to operate with up to 10M of 300mm duct. (See P 6)

The FFHT32 is fitted with an onboard thermostat as standard. It is also supplied with a remote thermostat as standard. (See P 5)

The FFHT32 is supplied with locking castors to the front of the machine.

## **Setup and operation:**

### **To start:**

- Please note ! the control panel is at the rear of the appliance. (See P7)
- Site the appliance on a firm level surface and apply the castor brakes. Do not operate the unit without applying the brakes.
- Connect the machine to the appropriate power supply.
- Switch the fan rocker switch to I. ( please note! the heat rocker switches will not operate the heating elements unless the fan switch is on).
- Switch the heat rocker switch to I- 12kw or I+II- 18kw.
- Set the thermostat to the desired temperature.

### **To stop:**

- Switch the heat rocker switches to 0 and allow the fan to run for a minimum of five minutes to cool the machine. Failure to follow this procedure will damage sensitive components and invalidate the warranty.
- Switch the fan rocker switch to 0 when the heat has dissipated.
- If the heat has not fully dissipated the fan may 'run on' automatically. (see P7)
- If the heater is not in regular daily use disconnect from the power supply.

## **Heating a room or enclosure to temperatures above 40 °C:**

The FFHT32 uses thermal protective devices that will shut the machine down if operated in an ambient temperature above 40 °C.

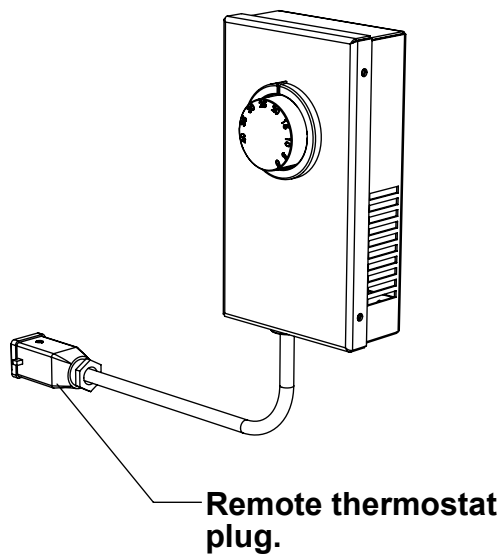
To heat a room or enclosure to temperatures exceeding 40 °C it will be necessary to site the unit outside of the area and duct the hot air in. The ducting should be kept as short as possible and insulated duct is recommended.

To control the temperature above 40 °C a remote digital thermostat should be used. These can be supplied as an optional extra.

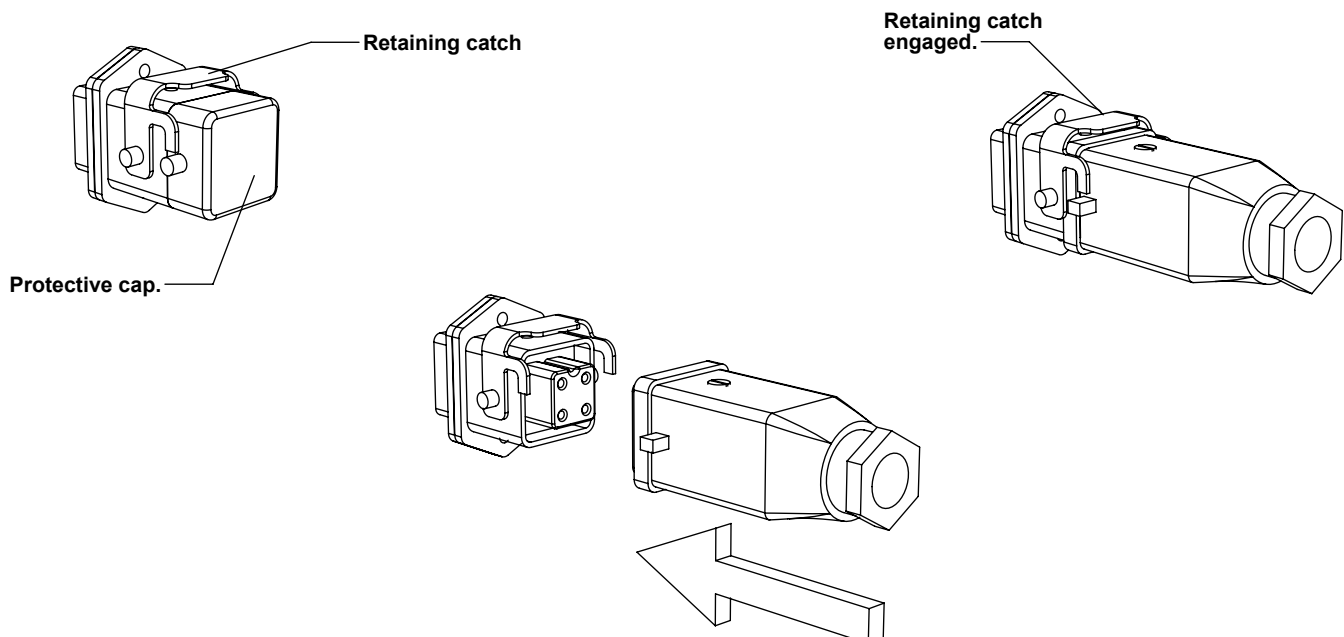
## Using the remote thermostat:

- Set the onboard thermostat to 0. Please note! failure to set the onboard thermostat to 0 will prevent the remote thermostat from operating.
- Lift the retaining catch and remove the protective cap from the remote thermostat socket. The thermostat socket is located on the control panel at the rear of the machine.
- Fit the remote thermostat plug to the socket and secure in place with the retaining catch.
- The remote thermostat is now ready for use.
- Always refit the protective cap when not in use.

## Remote thermostat:

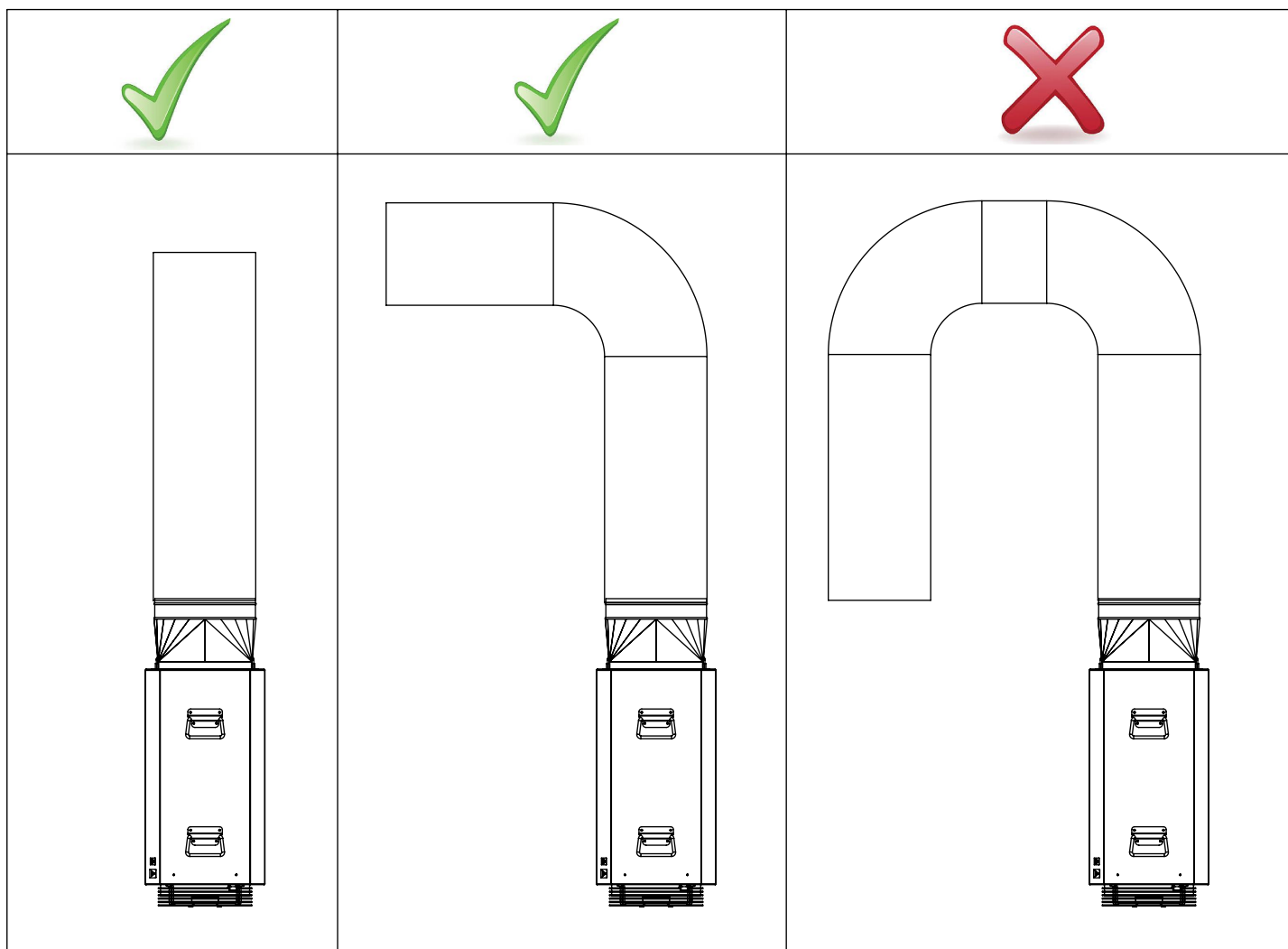


## Remote thermostat socket::



## Using flexible ducting:

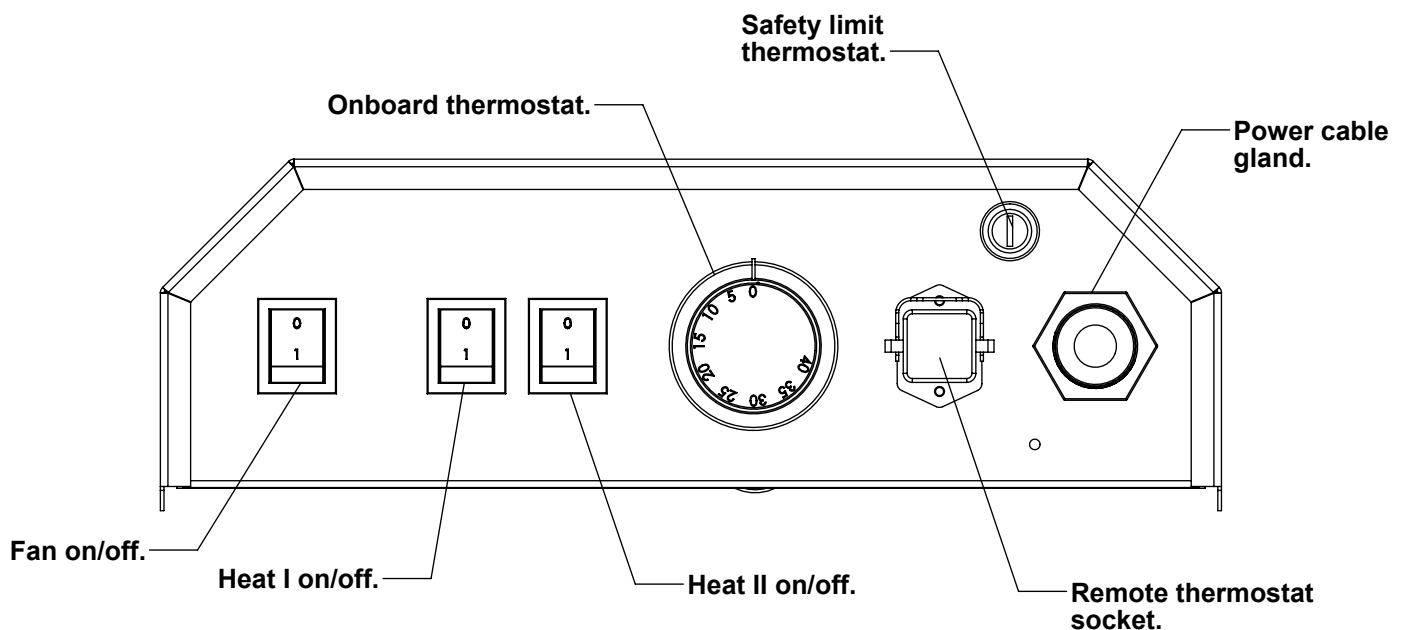
- This appliance is designed to be operated with a maximum flexible duct length of 10M.
- 300mm ducting should be fitted. Do not use reducers.
- Aluminium foil duct is recommended. Do not use plastic flexible duct.
- Always keep duct lengths to a minimum.
- Always keep duct runs as straight as possible.
- Poorly run flexible ducting can cause overheating of the machine. Do not run ducting through 180 degrees.



## Protective /safety devices:

- The FFHT32 is fitted with a safety limit thermostat. This is a fail-safe device. Should the maximum design operating temperature be exceeded it will shut down the heater. This device requires a manual reset and should only operate in the event of a fault. Any activation of this safety device should be investigated by a competent engineer.
- The FFHT32 is fitted with a limit thermostat. Should the maximum operating temperature be exceeded it will shut down the heating elements and leave the fan running. This device will automatically reset once the temperature falls to an acceptable level.
- The machine is fitted with an automatic fan run-on thermostat. If the machine is shut down without running on fan only for 5 minutes to cool down, this device will activate and allow the fan to keep running. This should not be used to routinely shut down the machine.

## Rear view. Control panel:

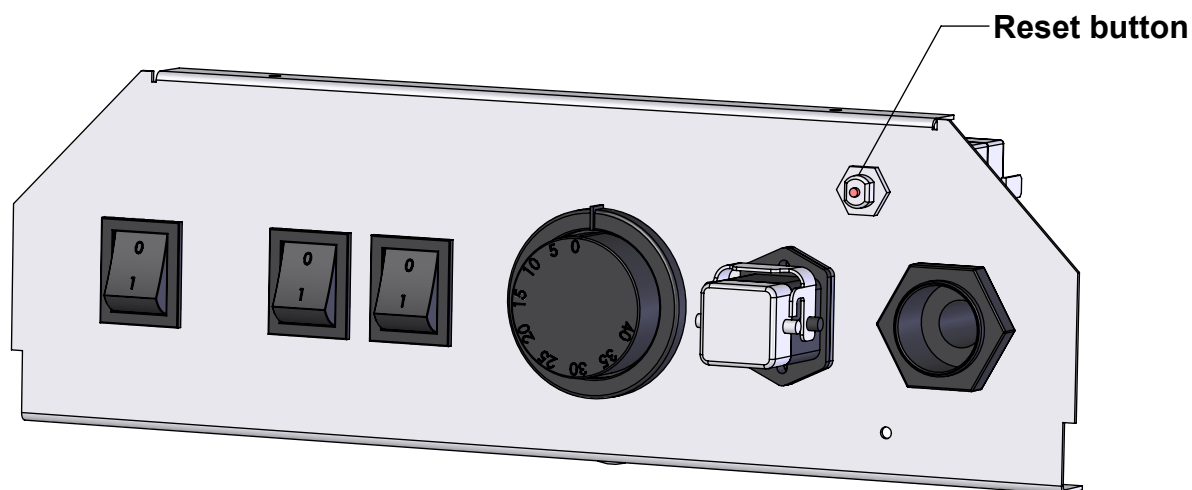


## Safety limit thermostat:

### Checking and resetting the safety limit thermostat:

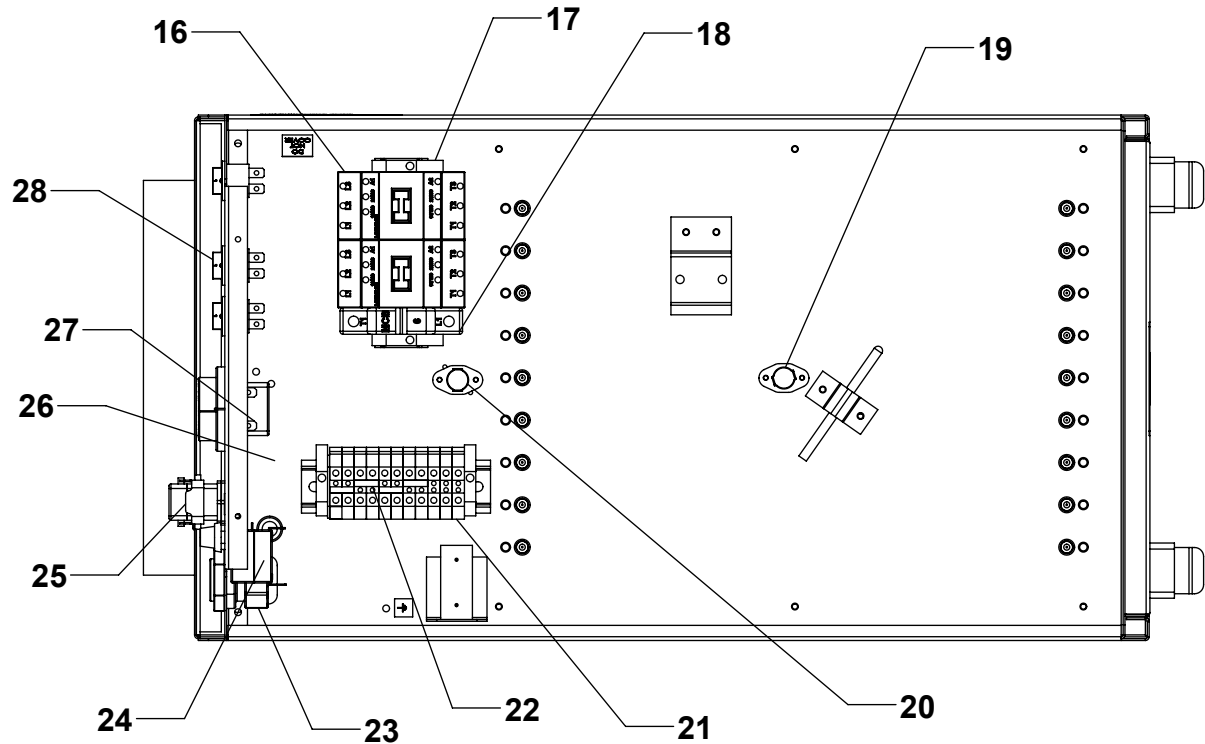
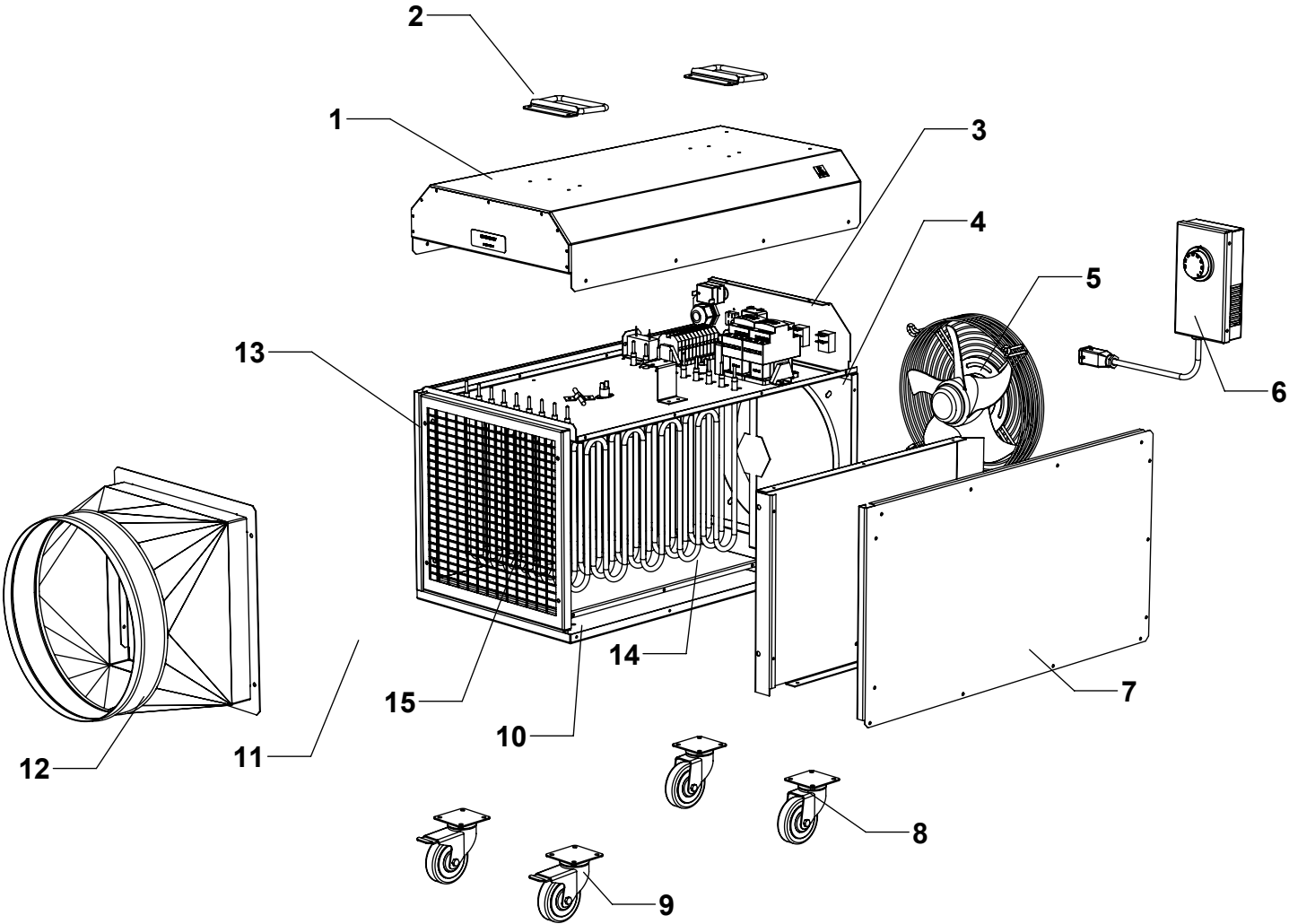
Should the safety limit thermostat activate the causes should be investigated.

- Remove the black plastic screw cover from the safety limit thermostat.
- If the reset button is noticeably pronounced the reset has activated.
- To reset the thermostat press the reset button. Allow the machine to fully cool down before resetting.
- Always replace the screw cap after resetting.





Exploded view:



## Spare parts:

Drawing No	Description	Part No
1.	TOP PANEL	BW0202101
2.	TRUNK HANDLE	ME040316
3.	CONTROL PANEL	BW0202102
4.	REAR PANEL ASSEMBLY	BW0202103
5.	250mm AXIAL FAN ASSEMBLY. 230v. (Remco)	FA010134
6.	REMOTE THERMOSTAT ASSEMBLY	EL040125
7.	RIGHT SIDE PANEL	BW0202105
8.	75mm CASTOR FIXED.	ME0101223
9.	75mm CASTOR SWIVEL C/W BRAKE	ME010222
10.	BASE PANEL	BW0202106
11.	FRONT GRILL	BW0202107
12.	OUTLET ASSEMBLY	BW0202108
13.	LEFT SIDE PANEL	BW0202109
14.	GALVANISED METALWORK SET	BW0202110
15.	2000w 230v ELEMENT	HE010118
16.	32A 230v CONTACTOR	EL030814
17.	DIN MOUNTED END STOP	EL020403
18.	MCB 6A SINGLE POLE TYPE C	EL010222
19.	70 DEGREE THERMAL CUT-OUT. NC	EL010311
20.	50 DEGREE THERMAL CUT-OUT. NO	EL010312
21.	6mm TERMINAL ASSEMBLY	EL020424
22.	TERMINAL LINK	EL020426
23.	PG21 CABLE GLAND C/W LOCK NUT	ME040204
24.	SAFETY LIMIT THERMOSTAT	EL030417
25.	REMOTE THERMOSTAT SOCKET	EL020523
26.	CAPACITOR 3uf	EL030319
27.	THERMOSTAT C/W BEZEL & KNOB	EL030409
28.	1/0 ROCKER SWITCH	EL030235
29.	5 CORE 4mmX1.5M CABLE C/W 32A 5 PIN PLUG. (Not shown)	EL020128

## **Maintenance:**

**Always isolate the machine from the power supply before Carrying out any maintenance.**

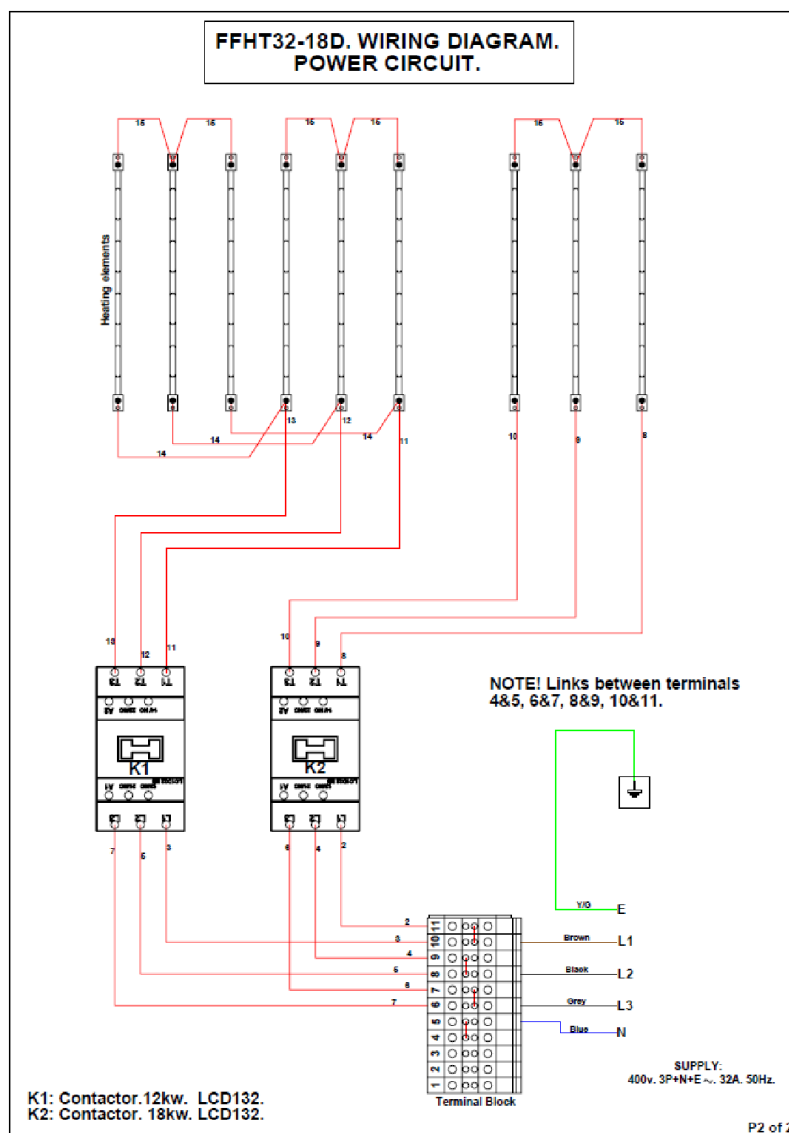
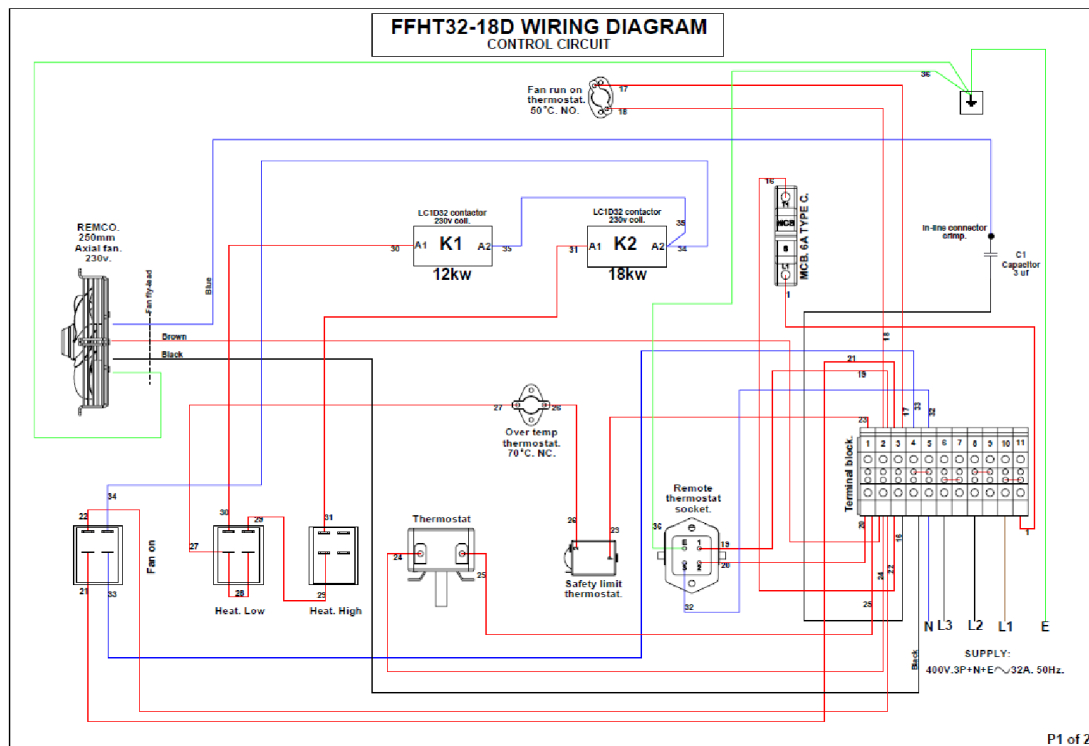
Fan motors, elements and switch gear are not customer serviceable components. General maintenance should include regular inspection of:

- 1: Mains cable. Check for signs of damage to the insulation. Replace if necessary.
- 2: Air intake & outlet grills: ensure grills are free from accumulated debris. blow out with compressed air if required.
- 3: Fixings: Check all fixings are present and secure.

**Maintenance carried out by a competent person:**

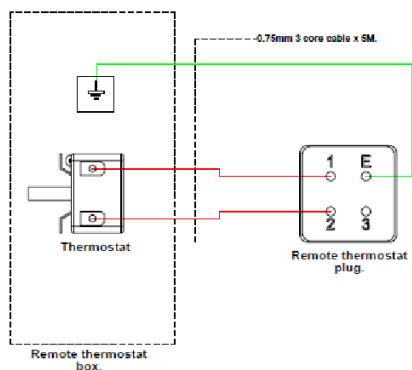
- 1: Internal cables should be inspected for signs of heat damage and replaced when necessary.
- 2: All cable connections should be regularly checked and tightened. Particular attention should be paid to the connections at the contactors.
- 3: Regularly check the contactors for signs of heat. Replace if necessary.

FAULT	POSSIBLE CAUSE	SOLUTION
NO HEAT OUTPUT.	FANS AND OR HEATING NOT SWITCHED ON.	CHECK ALL SWITCHES ARE ON.
	THERMOSTAT INCORRECTLY SET.	TURN THERMOSTAT KNOB FULLY CLOCKWISE.
	POWER SUPPLY INTERRUPTED.	CHECK POWER SUPPLY.
	FAULTY ROCKER SWITCH.	CHECK SWITCHES AND REPLACE IF NECESSARY.
	FAULTY THERMOSTAT.	CHECK THERMOSTAT AND REPLACE IF NECESSARY.
	FAULTY CONTACTOR.	CHECK CONTACTOR AND REPLACE IF NECESSARY.
REMOTE THERMOSTAT NOT SWITCHING THE HEATING ELEMENTS	ONBOARD THERMOSTAT INCORRECTLY SET	SET ONBOARD THERMOSTAT TO 0. (SEE P 5)
	REMOTE THERMOSTAT PLUG INCORRECTLY FITTED	GO THROUGH FITTING STEPS ON P5.
SAFETY LIMIT THERMOSTAT HAS ACTIVATED	AMBIENT ROOM TEMPERATURE TOO HIGH	DO NOT OPERATE IN AN AMBIENT TEMPERATURE ABOVE 40°C.
	EXCESSIVE DUCT LENGTH OR POORLY ROUTED DUCTING	SHORTEN DUCT LENGTH OR RE-ROUTE
	FAN MOTOR FAILURE	TEST FAN MOTOR AND REPLACE IF REQUIRED.
	CORRECT SHUTDOWN PROCEDURE NOT FOLLOWED	ALLOW THE MACHINE TO FULLY COOL AND FOLLOW CORRECT SHUTDOWN PROCEDURE. (SEE P4)
	FAILED SAFETY LIMIT THERMOSTAT	THE SAFETY LIMIT THERMOSTAT IS A FAIL-SAFE DEVICE. CHECK THE CAPILLARY TUBE AND BULB FOR SIGNS OF DAMAGE. REPLACE IF REQUIRED.
FAN MOTOR NOT RUNNING.	POWER SUPPLY INTERRUPTED.	CHECK POWER SUPPLY.
	FAN MOTOR OVER HEATED	THE FAN MOTOR HAS A HIGH TEMPERATURE PROTECTIVE DEVICE FITTED INTO THE WINDINGS. ALLOW THE MACHINE TO FULLY COOL AND ATTEMPT TO START.
	FAULTY ROCKER SWITCH	REPLACE ROCKER SWITCH
TEMPERATURE RISE INSUFFICIENT.	THE MACHINE SHOULD DELIVER A TEMPERATURE RISE OF APPROXIMATELY 74°C AT AMBIENT TEMPERATURE OF 15°C. SHOULD THE MACHINE FAIL TO DO THIS CHECK THE POWER SUPPLY AND THAT THE THERMOSTAT IS TURNED FULLY CLOCKWISE. IT SHOULD BE NOTED THAT THE MAXIMUM AMBIENT TEMPERATURE THE MACHINE WILL RUN AT IS 40°C +/- 3°C. ABOVE THIS THE HEATING ELEMENT CONTACTORS WILL NOT OPERATE.	



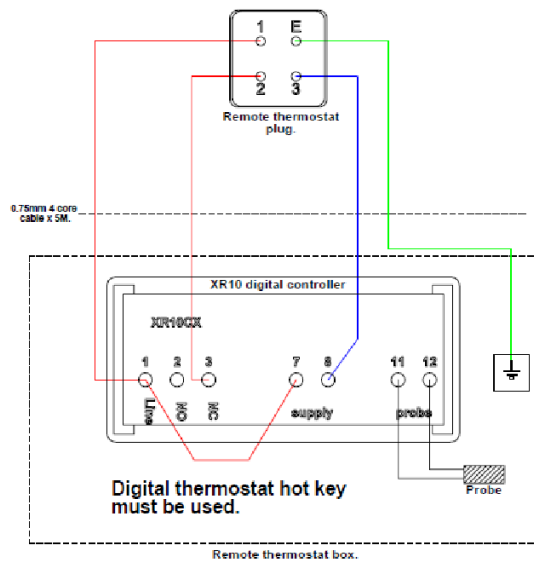
# **FFHT32-18D. WIRING DIAGRAM. REMOTE THERMOSTAT.**

## **MECHANICAL THERMOSTAT. STANDARD PART.**



Ensure blue cable is appropriately labelled at each end.

## **DIGITAL THERMOSTAT. OPTIONAL EXTRA.**



Digital thermostat hot key must be used.

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