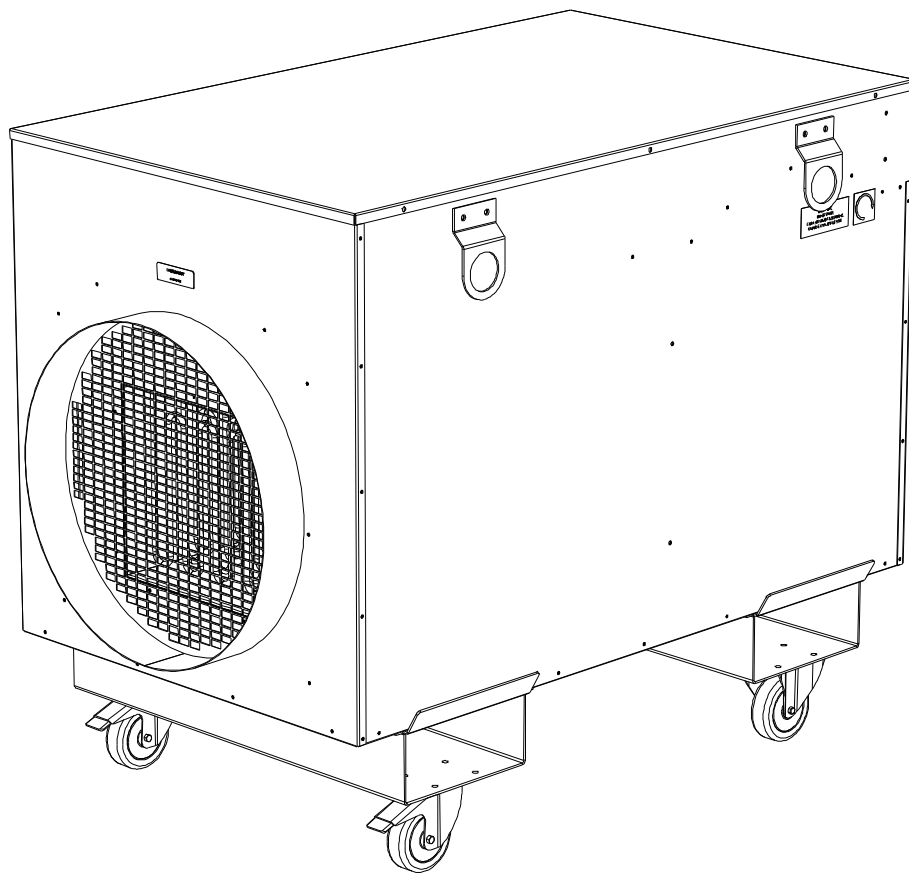


FHE42-16 ELECTRIC HEATER PRODUCT MANUAL



FHE42. 3 PHASE 400v ELECTRIC HEATER

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 use in the vicinity of a pool, bath or shower.
- Do not place anything on top of the appliance.
- An air gap of at least 600mm 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.
- 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 30M of duct. Ducting should be kept as taught and straight as possible.
- The machine is phase rotationally sensitive. Incorrect connection of the supply may result in the fan motor running backwards. It is critical that this is checked during commissioning.
- The fan motor is fitted with a 'run-on' device and is liable to start without notice.
- The emergency stop button should not be used to shut the machine down under normal conditions. Failure to follow the correct shutting down sequence will damage the machine and will invalidate the warranty.

Specifications:

The FHE42 is a 42Kw 3 phase industrial electric fan heater.

The appliance is connected to a 63Amp 3P+N+E ~ 50Hz power supply and comes fitted with the appropriate plug.

The machine runs at a nominal 58 Amps.

The machine is phase rotationally sensitive ! The 3 phase Neutral connection is unused.

The FHE42 is fitted with a high quality forward curved motorised impellor which will allow it to operate with up to 30M of 500mm duct.

The FHE42 is fitted with an internal thermostat as standard.

The control circuit voltage is reduced using a Safety isolating transformer to 24v and the machine is fitted with a 24v remote thermostat socket as standard.
(Remote thermostat optional).

The FHE42 is supplied with heavy duty locking castors, forklift pockets and lifting eyes.

Setup and operation:

To start:

- Please note ! The control panel is at the rear of the appliance.
- Site the machine on a firm level surface and apply the castor brakes. Do not operate the machine without applying the brakes!
- Connect the mains cable to the power supply.
- If using the internal thermostat ensure that the thermostat selector switch is set to position '1' 'Internal thermostat'.
- Turn the rotary switch to 'Fan Only' and press the yellow 'Start' button. This will start the fan motor.
- **CHECK THE FAN ROTATION IS CORRECT !** A label on the side of the machine clearly shows the correct rotation of the fan. Should the fan rotation be incorrect stop the machine immediately. Rectification of the supply phase sequence will need to be carried out by a suitably trained person.
- The FHE42 is fitted with two heat settings. Turn the rotary switch to 21Kw for half heat and 42Kw for full heat.
- Turn the thermostat to the desired room temperature.
Please note! the thermostat will cycle the heater elements on and off and will not effect the operation of the fan motor.

Using the optional remote thermostat:

- **Ensure that the power supply is disconnected before fitting the remote thermostat.**
- **Unclip the remote thermostat socket protective cap and connect the remote thermostat plug to the socket. Ensure the retaining clip is re-engaged.**
- **Set the thermostat selector switch to position '2' 'External thermostat'. This will over-ride the internal thermostat. The remote thermostat is now operational.**

To stop:

- **Turn the rotary switch to 'Fan only' and allow to run for a minimum of five minutes to cool the heating elements.**
- **Turn the rotary switch to 'Off'.**
- **If the unit is not in regular daily use disconnect from the supply.**
- **Do not use the emergency stop button to switch the machine off during normal use! This will de-energise all circuits and prevent the fan from cooling the elements.**

Protective /safety devices:

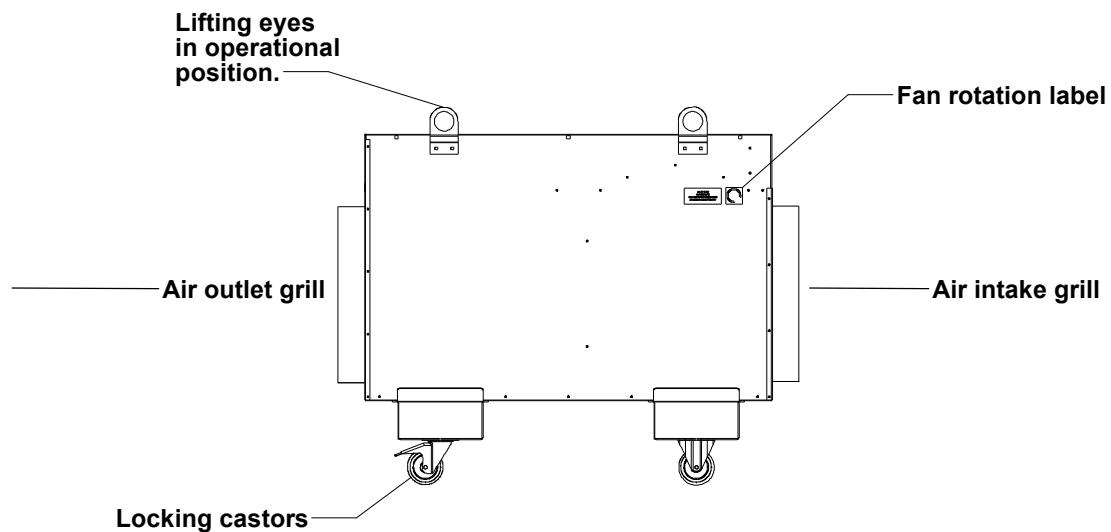
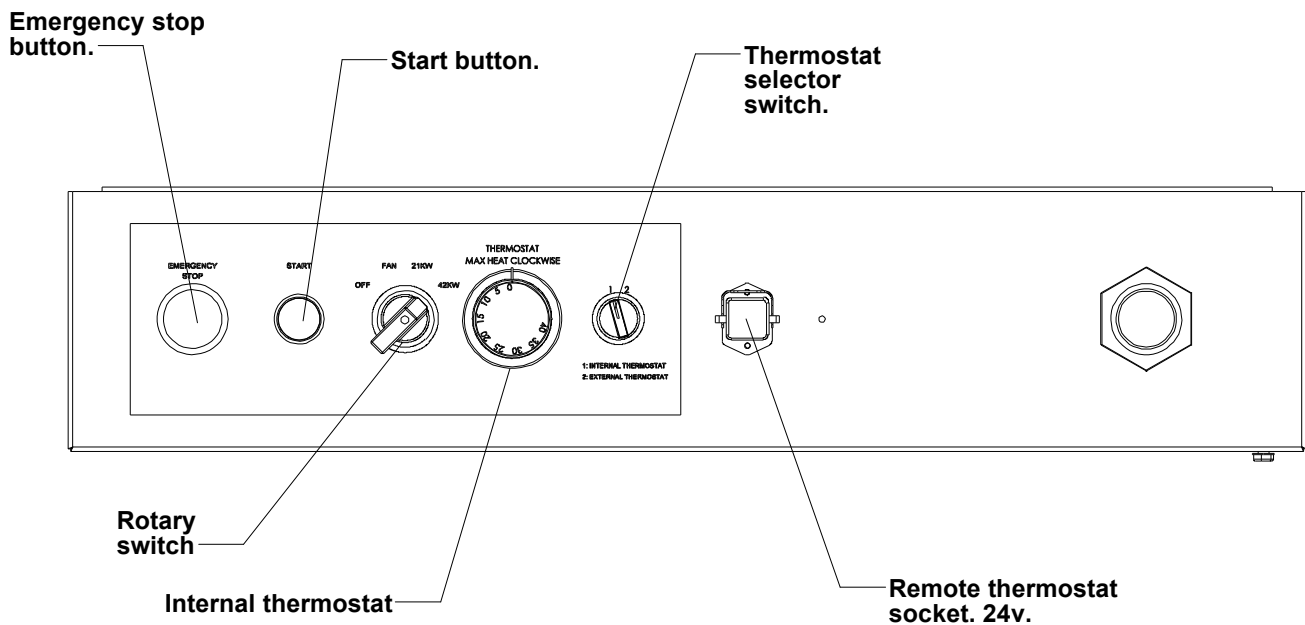
- **The FHE42 is fitted with internal safety limit thermostats. Should the maximum design temperature be exceeded these will shut down the heating elements and leave the fan running. These devices will automatically reset as the temperature reduces.**
- **The FHE42 is fitted with a 'Fan run-on' thermostat. Should the machine be shut down without sufficiently cooling the elements this will re-engage the fan motor contactor and run the fan to further cool the machine. This device will automatically re-set after operation. (This can take a significant time)**
- **Further element protection is provided by a thermal protective device within the fan motor windings. When detecting a pre-determined temperature rise this will shut down the heating elements. This device will automatically re-set as the temperature reduces.**
- **The fan motor is protected by a thermal overload device. This will operate should excessive current be detected in the circuit. This device will de-energise both the heating element circuits and the fan motor circuit. This device will automatically re-set when the machine has cooled. The machine will have to be manually re-started once the fault has been rectified.**
- **The FHE42 is fitted with 3 MCBs. Two control the heater element circuits and one the fan motor circuit. These should only trip in the event of a fault and further investigation would be required.**
- **The FHE42 is fitted with an 'emergency stop' button. This switch will de-energise all control circuits. The emergency stop button should not be used to shut the machine down under normal conditions.**

Using the lifting eyes:

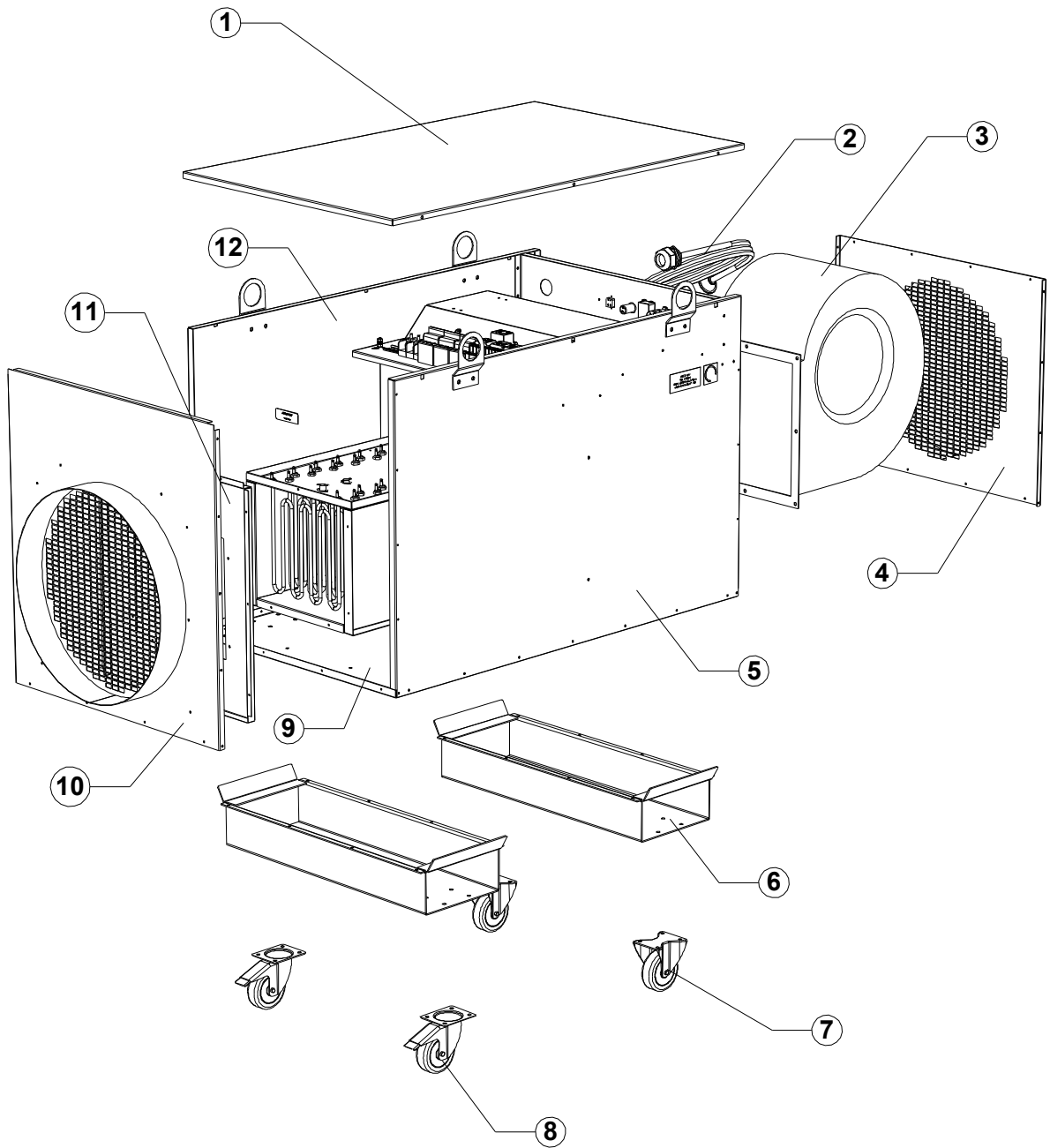
The FHE42 is shipped with the lifting eyes in a downward position. In order to use the lifting eyes they will need to be rotated through 180°.

- Ensure the power supply is disconnected.
- Remove the top panel fixing bolts with a 10mm spanner.
- Remove the lifting eye nuts and bolts with a 13mm spanner.
- Rotate the lifting eyes through 180° and re-attach the fixings.
- Fit the top panel. Do not run the machine with the top panel unsecured!

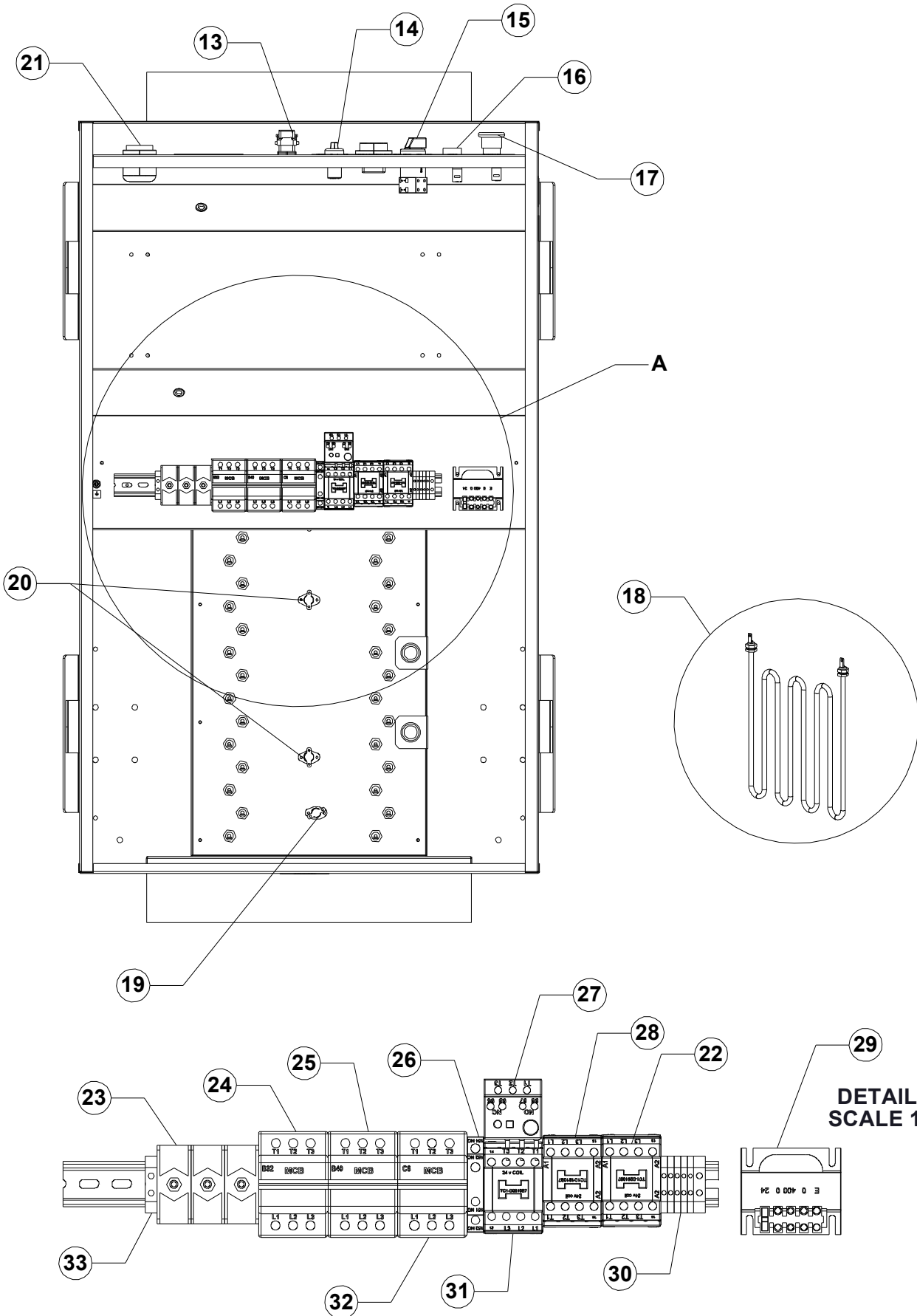
Control Panel:



EXPLODED VIEW



EXPLODED VIEW



SPARE PARTS		
1	BW020272	TOP PANEL
2	EL020118	MAINS CABLE ASSEMBLY
3	FA010315	FORWARD CURVED FAN ASSEMBLY
4	BW020279	REAR PANEL
5	BW020276	RIGHT SIDE PANEL
6	BW020280	FORKLIFT POCKET
7	ME010221	100mm FIXED CASTOR
8	ME010220	100mm SWIVEL CASTOR
9	BW020277	BASE PANEL
10	BW020278	FRONT PANEL
11	BW020279	GALVANISED CHASSIS ASSEMBLY
12	BW020275	LEFT SIDE PANEL
13	EL020523	REMOTE SWITCH SOCKET
14	EL030141	2 POSITION ROTARY SWITCH
15	EL030129	POWER SELECTOR ROTARY SWITCH
16	EL030137	START BUTTON ASSEMBLY
17	EL030136	EMERGENCY STOP BUTTON ASSEMBLY
18	HE010113	230v 2665 HEATING ELEMENT
19	EL010309	35C NO THERMAL CUTOUT
20	EL010301	80C NC THERMAL CUTOUT
21	ME040208	M40 CABLE GLAND C/W LOCKNUT
22	EL030812	40A CONTACTOR
23	EL020420	M6 STUD TERMINAL
24	EL010209	32A TYPE B MCB
25	EL010231	40A TYPE B MCB
26	EL030810	DE190 AUXILLARY CONTACT
27	EL010224	DE190 FAN OVERLOAD
28	EL010225	32A CONTACTOR
29	EL030618	400v-24v 50VA TRANSFORMER
30	EL020421	2.5mm DIN MOUNT TERMINAL
31	EL010226	9A CONTACTOR
32	EL010227	6A TYPE C MCB
33	EL020403	DIN MOUNTED END STOP

Maintenance:

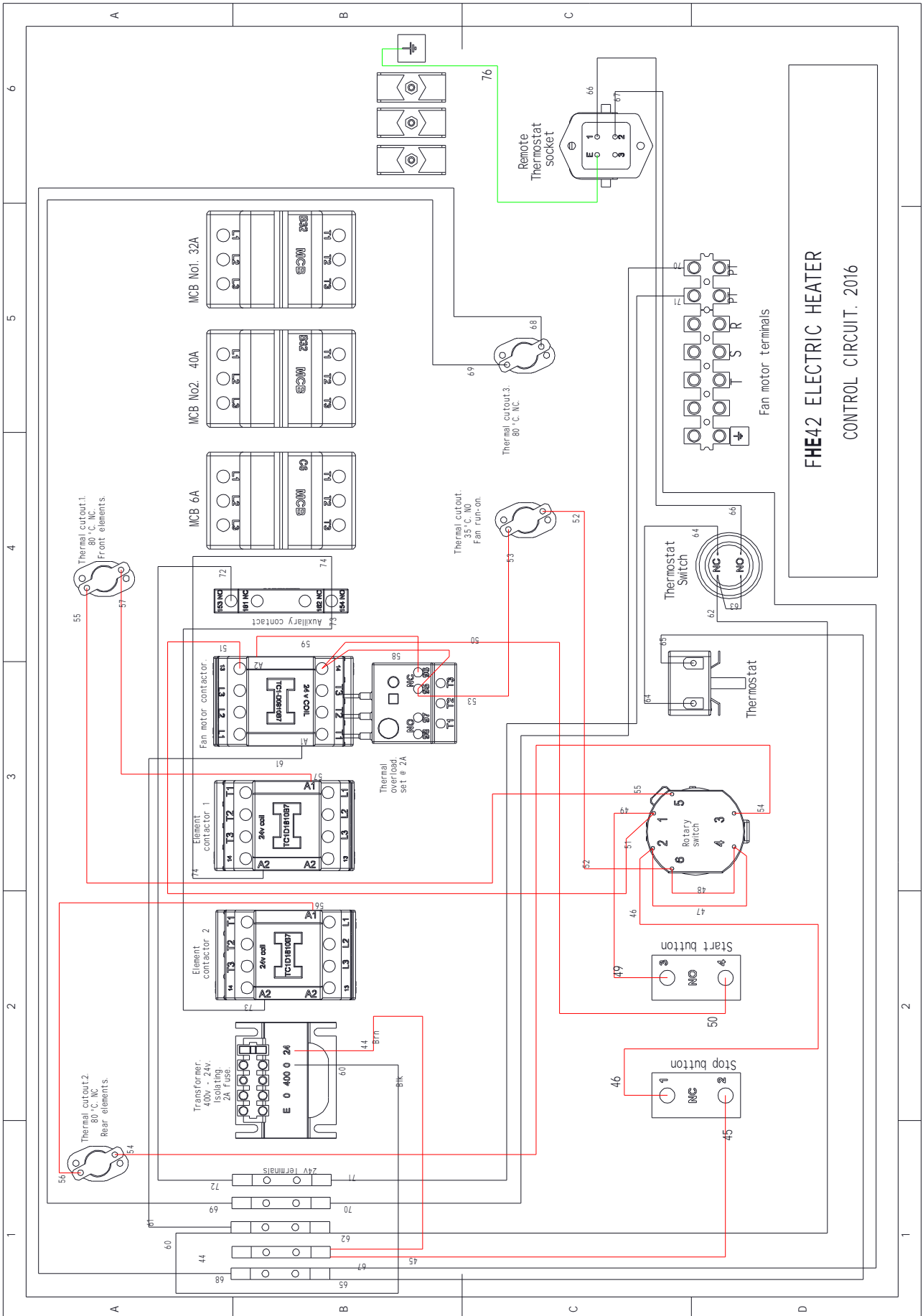
Fan motors, elements and switch gear are not customer serviceable components. General maintenance should include regular inspection of:

- 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.

Fault finding:

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. CHECK MCB'S
	FAULTY ROTARY SWITCH.	CHECK SWITCHES AND REPLACE IF NECESSARY.
	FAULTY THERMOSTAT.	CHECK THERMOSTAT AND REPLACE IF NECESSARY.
	FAULTY CONTACTOR.	CHECK CONTACTOR AND REPLACE IF NECESSARY.
	THERMOSTAT SELECTOR SWITCH INCORRECTLY SET.	CHECK SETTING AND CORRECT.
FAN MOTOR NOT RUNNING.	POWER SUPPLY INTERRUPTED.	CHECK POWER SUPPLY. CHECK MCB'S.
	FAULTY ROTARY SWITCH OR CONTACTOR	CHECK SWITCH AND CONTACTOR REPLACE IF NECESSARY.
	FAN OVERLOAD TRIPPED.	RESTART THE MACHINE. INVESTIGATE CAUSE OF TRIPPING.

FHE42 WIRING DIAGRAMS



FHE42 ELECTRIC HEATER
CONTROL CIRCUIT. 2016

