

USER GUIDE



42KW FAN HEATER



WARNINGS



- 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 taut 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. FF42-21

Heating capacity.	42kW
Power supply.	400v. 3P+N+E. 63A. 50Hz.
Maximum running current.	61A
Airflow.	3956 m ³ h
Weight .	111 kg
Noise level at 3M.	68 dB(A)
IP Rating.	IP20
Maximum operating temperature.	40 °C +/- 3°C
Maximum ducting length (500mm duct) See P8.	20m
Temperature rise at 24 °C ambient. (Nominal)*	57 °C

* Readings taken at centre of outlet grill at 150mm.

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. Low heat. 17kW
	Heat setting II. Full heat. 42kW
	Thermostat. (Onboard)
	Thermostat. (Remote)
	Emergency stop button
	Power supply fault warning lamp.
	Read the manual.
	Risk of electric shock. Isolate from power supply before removing cover.

Specifications:

The FF42-21 is an 42kW 3 phase industrial electric fan heater.

The appliance is connected to a 400v 63Amp 3P+N+E 50Hz (The Neutral is unused) power supply and comes fitted with the appropriate 5 pin plug. This appliance requires an Earth connection.

The FF42 is fitted with a high performance forward curved fan which will allow it to operate with up to 20m of 500mm duct.

The FF42 is fitted with an on-board thermostat as standard. It is also supplied with a remote thermostat socket for the fitting of an optional remote thermostat.

The FF42 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.
- 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. Ensure the plug is pushed fully home and the locking ring is engaged.
- The fan motor is phase rotationally sensitive. The machine is fitted with a phase failure relay to prevent operation should the power supply phases be out of sequence or in a fault condition. In the event of a supply problem the power supply fault warning lamp will illuminate.
- Turn the rotary switch to 'Fan only' and press the yellow 'Start' button to start the fan motor.
- Turn the rotary switch to either low heat (17kW) or full heat (42kW).
- Set the thermostat to the desired temperature. Ensure the thermostat selector switch is set to 'On-board thermostat' or 'Remote thermostat' if one is fitted.

To stop:

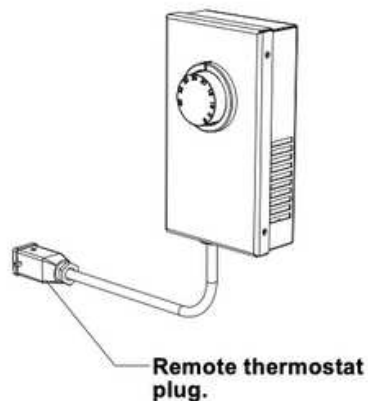
- Turn the rotary switch to 'Fan only' and allow the fan to run for a minimum of five minutes to cool the machine. Failure to follow this procedure will damage sensitive components and invalidate the warranty.
- Turn the rotary switch to '0' when the heat has dissipated. Do not use the emergency stop button to routinely turn the machine off.
- If the heat has not fully dissipated the fan may 'run on' automatically. It may take a few minutes to sufficiently cool the machine.
- If the heater is not in regular daily use disconnect from the power supply.



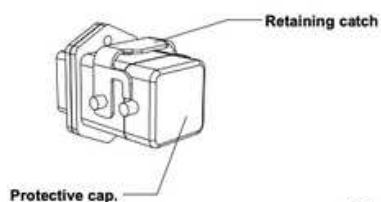
THERMOSTAT

Using the remote thermostat:

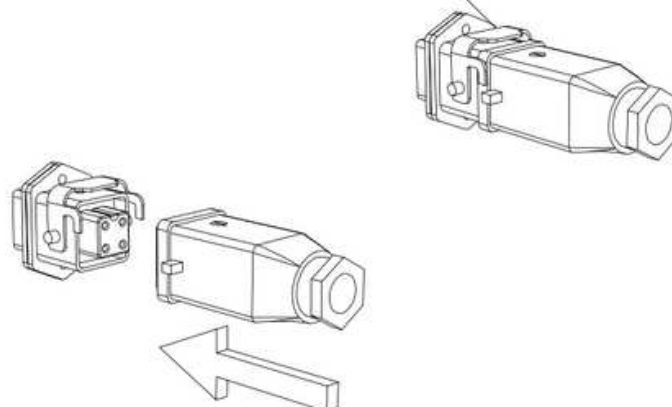
- Set the thermostat selector switch to 'Remote thermostat'. (See P9).
- Lift the retaining catch and remove the protective cap from the remote thermostat socket. The thermostat socket is located on the control panel at the rear of the machine.
- Fit the remote thermostat plug to the socket and secure 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 socket::

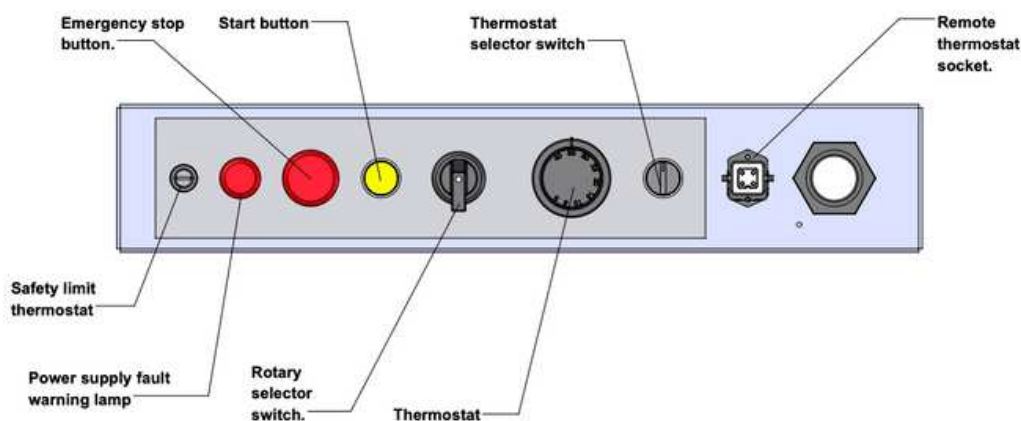


Retaining catch engaged.



PROTECTIVE /SAFETY DEVICES

- The FF42 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 contactors (The fan will continue to run). 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 FF42 is fitted with limit thermostats. Should the maximum operating temperature be exceeded they will shut down the heating elements and leave the fan running. These devices 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.
- The FF42 is fitted with an 'Emergency stop' button. This should not be used to routinely shut down the machine.
- The FF42 is fitted with a phase failure relay. In the event of a power supply problem the Power supply fault lamp will illuminate.



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



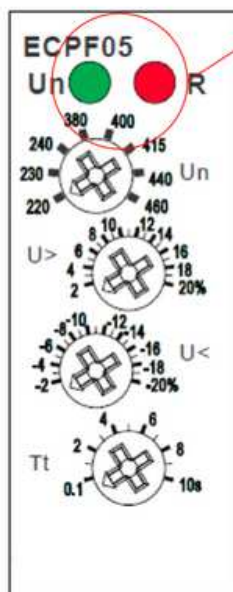
Phase failure relay:

Should the power supply fault warning lamp illuminate investigation will be required by a qualified electrician. Under no circumstances should untrained operatives carry out this testing.

The phase failure relay will prevent operation of the machine for the following faults:

- 1: Phase sequence incorrect.
- 2: The loss of a supply phase.
- 3: Low or high supply voltage.

The fault can be identified by inspection of the relay when the machine is connected to the power supply. See below for the phase failure relay fault codes.



Phase failure relay

Fault code lamps:

- 1: Both lamps illuminated. Normal operation.
- 2: Green lamp only illuminated. Voltage high/ low.
- 3: Green lamp flashing. Phase sequence incorrect.
- 4: No lamps illuminated. Phase loss.

Phase failure relay settings:

- 1: Un--- 415
- 2: U>--- 10%
- 3: U<--- 10%
- 4: Tt--- 4

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 and circuit breakers.
- 3: Regularly check the contactors for signs of heat. Replace if necessary.



Troubleshooting

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 ROTARY SWITCH.	CHECK SWITCH 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	THERMOSTAT SELECTOR SWITCH INCORRECTLY SET	(SEE P 5&9)
	REMOTE THERMOSTAT PLUG INCORRECTLY FITTED	GO THROUGH FITTING STEPS ON P7.
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 ROTARY SWITCH	REPLACE ROTARY SWITCH
TEMPERATURE RISE INSUFFICIENT.	THE MACHINE SHOULD DELIVER A TEMPERATURE RISE OF APPROXIMATELY 57°C AT AMBIENT TEMPERATURE OF 24°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.	