# Strom Heat Only Boiler INSTALLATION GUIDE 1st ISSUE

# REMEMBER TO REGISTER WWW.STROMLTD.COM/GUARANTEE



THE FUTURE OF HEATING IT'S ALL IN THE DETAILS...



# INTRODUCTION

Please read the whole manual before attempting installation and follow these installation instructions carefully following the correct operating instructions to ensure long life of this Strom Electric Boiler. These instructions must be conserved and given to any new user.

All boilers come with a full **2-year warranty** from the date of registration unless purchased with a promotional warranty. The warranty relates to any manufacturing defects and covers the replacement of any faulty parts and labour costs. The warranty will not cover damage to the boiler through poor installation, and any consequent water damage or leaks into the boiler - All plumbing must be checked before the boiler is left with the end user for normal operation and water tightness. The warranty will not cover charges that have not been organised by Strom Ltd.

This appliance is not intended for use by anyone (including children) with reduced physical, sensorial or mental capacities, or lack of experience with the appliance, unless they have been given supervision or instruction by a competent person responsible for their safety.

### BY FITTING THIS BOILER YOU AGREE:

- YOU HAVE CARRIED OUT ALL HEAT LOSS CALCULATIONS ON THE PROPERTY AND ARE SURE THAT THIS BOILER IS SUITABLE FOR THE APPLICATION.
- YOU HAVE CARRIED OUT A VOLTAGE AND LOAD TEST TO DETERMINE THE CORRECT SIZED BREAKER & CABLE IS USED.
  - THAT THE BOILER IS FITTED IN A MANOR AND LOCATION WHERE IT CANNOT BE
     ACCESSED BY UNAUTHERISED/UNQUALIFIED PERSONS.
- TO BE BOUND TO THE TERMS AND CONDITIONS ON THE LAST PAGE OF THIS MANUAL.
  - THE BOILER HAS BEEN RECEIVED IN GOOD CONDITION

# **RELEVANT STANDRARDS**

This electric boiler must be fitted in accordance with the following: -

- The local building regulations
- UK building regulations

### **BS EN 12828**

Heating systems in buildings: Design for water-based heating systems.

### **BS EN 12831**

Heating systems in buildings: Method for calculation of the design heat load

#### **BS EN 14336**

Heating systems in buildings: Installation and commissioning of water-based heating systems

#### BS7671

Requirements for electrical installations. IEE Wiring Regulations. Seventeenth edition

#### **BS EN 7593**

Code of practice for treatment of water in heating systems

- 1. Load Check
- A load check should be taken into consideration when installing high output boilers
- 2. Central heating design
- Detailed recommendations are provided in BS EN 12828 and BS EN 6700

### 3. Location

- The boiler can be installed in almost any location, but consideration should be given to the potential of frost or damp conditions, and to the future maintenance of the equipment. Clearance should be allocated for the removal of the front panel if necessary and for air flow into the boiler. The boiler must be installed in an upright position, failure to do so will invalidate the warranty The wall where the boiler is being sited should be strong enough to support the weight of the boiler when full. The surface to be mounted on should be made of non-combustable materials and have a heat tolerance in excess of 100°C.



# BOILER SPECIFICATION

	SINGLE PHASE BOILERS (230V)			
Product Code	SBSP6H	SBSP9H	SBSP11H	SBSP15H
Heat Output	6kW	9kW	11kW	14.4kW
Amps at 230VAC	26A	41A	48A	62A
Minimum Breaker Size	32A	45A	50A	63A
Minimum Cable Size	2.5mm <sup>2</sup>	6mm²	10mm²	10mm <sup>2</sup>
Heating Temperature Range	20℃ - 80℃			
Heating Pressure Range	0.5 - 1.5 Bar			
Heating Flow & Return Size	3/4" Male (We recommend flexi hoses or push fit irons)			
PRV Connection Size	15mm Compression			
ERP Rating (Heating)	D	D	D	D

# Electric Boilers WHATS IN THE BOX?

- 1. BOILER
- 2. INTEGRATED WALL MOUNTING BRACKET
- 3. WALL MOUNTING GUIDE
- 4. 3 x EXPANDING WALL BOLTS
- **5. INSTALLATION MANUAL**



# **INSTALLATION SCHEDULE**

Please ensure that all steps of the installation schedule are carried out in this order, and only this order. Failing to carry out the installation in this order may result in damage to the boiler and incorrect function of the system.

# **PRIOR TO INSTALLATION**

### 1. HEAT LOSS CALCULATION.

Correctly calculate the correct size unit for the properties heating demand. We regret to inform you that after installation there is no way to boost the output of the unit so it is important you get the correct unit for the property. Strom are unable to assist with these calculations.

### 2. PUMP & EXPANSION CALCULATION

Strom Heat Only Boilers do not feature internal expansion, pumps or relief valve, you should ensure that a suitable vessel and pump has been specified and fitted. It is recommended that you use a sealed system kit incoporating Heating Vessel, Pressure Guage, and Relief Valve, if not please make sure all these items are individually accounted for in the installation.

### 3. VOLTAGE & LOAD CALCULATION.

Typically the UK single phase supply is 230V, all our technical data is based on this, however you should do a measurement and correctly determine the correct input voltage, this will determine the size of breaker required. All our breaker recommendations are only that, and should be checked against your requirements.

Strom Electric Boilers are fixed resistance devices, as a result as Voltage goes up so too does the draw of the appliance, all our boilers are rated at 230V therefore any varience from this must be taken into account when calculating the correct breaker and cable size.

All of these considerations must be made prior to at least installation but preferably before purchase is made. Regretably once the box to the boiler has been opened we are unable to accept returns of the product unless the product is faulty or does not operate as advertised by Strom.

#### **IMPORTANT**

It is important that once you start installing the boiler you do not leave it unattended with power connected or water in the circuits unless the whole installation and all steps have been completed. If you intend to leave the boiler unattended without completing the installation you should ensure that no leaks are present or possible, and that the electric have been isolated.

## **INSTALLATION**

1. COMPLETE SYSTEM PIPING. SEE PAGE 12

2. WALL MOUNT THE BOILER. SEE PAGE 23

3. CONNECT, FILL & FLUSH BOILER SEE PAGE 25

4. CHECK ALL WATER CONNECTIONS SEE PAGE 28

5. MAKE ELECTRICAL CONNECTION SEE PAGE 29

6. WIRE AN EXTERNAL THERMOSTAT SEE PAGE 30

7. CHECK ELECTRIC CONNECTIONS SEE PAGE 31

8. POWER ON THE BOILER SEE PAGE 32

9. SET BOILER PARAMETERS SEE PAGE 33

10. SET PUMP SPEED & PURGE AIR SEE PAGE 34

### **POST INSTALLATION**

1. PROGRAM THERMOSTAT. REFER TO MANUFACTURERS MANUAL

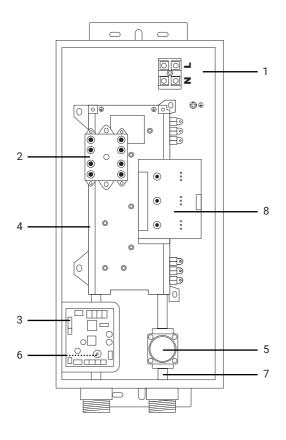
2. TEST HEATING SEE PAGE 36

3. COMPLETE CHECK LIST SEE PAGE 37

4. ASK OWNER TO REGISTER REFER TO www.stromltd.com/guarantee



# HEAT ONLY SCHEMATIC



1.	Power Connection Terminals	5.	Dedicated Heating Flow Sensor
2.	Thermal Cut-Outs	6.	Temperature Sensor For Heat Flow
3.	Control PCB (thermostat connections)	7.	Temperature Sensor For Heat Return
4.	Heating System Patented Heat Exchanger	8.	Triac Control Board

# **DISPLAY INFORMATION**



### RESERVED FOR FUTURE UPGRADE

This Icon is currently reserved in case of future update to the unit made by Strom.



### **HEAT REQUIRED**

This Icon means that the boiler has a thermostat connection and it is currently calling for heat



### **HEATING ELEMENT ON**

When this Icon is lit the heating element inside the boiler is active. This lit can only be lit when the heating required and pump indicators are active.



### FROST PROTECTION

This boiler features simple frost protection and is designed to protect the boiler. Where a boiler is to be used in an unheated room an external frost stat should be connected inline with the manufacturers guidance.



#### SET TEMPERATURE REACHED

The boiler has now reached the target temperature when this indicator is lit, the symbol will continue to show until the temperature differential set in the boiler has been met.



#### PUMP INDICATOR

The pump indicator will flash when it is expecting a flow from the external pump, if the indicator is lit steady then the boiler has detected an ample flow from the external pump.

# **BUTTON CONFIGURATION**



**POWFR** 



MENU



INCREASE



**DECREASE** 



# SYSTEM PIPING

The boiler must be installed by a competent and certified plumber or heating engineer and systems should be designed to meet the current building regulations in force at the time of installation.

Strom Limited are not responsible for faulty installations which are performed by unqualified tradespeople.

### **DESIGN NOTES:**

### ISOLATION VALVES:

For ease of removal from the system full bore isolation valves should be fitted on the flow and return pipework from the boiler. Do not use standard ball valves, as this can restrict the flow in and out of the boiler and result in detrimental performance.

#### AUTOMATIC AIRVENTS

An automatic air vent should always be fitted at the highest point in a system to aid in purging the system of any air, it may also be necessary to install more than one depending on the pipework lay out.

### **AUTOMATIC BYPASS VALVE**

An automatic bypass valve is integral to any system and MUST be installed as part of this installation. The ABV should be fitted to begin opening as the first valve, radiator, or actuator shuts in the system, this stops excess pressure from building in the system on the flow side. Failure to fit and set the ABV can result in poor performance and premature boiler failure.

#### WATER CONNECTIONS

For filling the heating system, reference should be made to BS EN 14336. There must be no connection between the central heating systems and the main water supply, and all local water bylaws must be observed. Any connection made between the mains water and heating system must be disconnected after use.

#### WATER PURGES

Install purges in the radiators and any high points in the heating system to aid in removing air.

### **DRAIN POINT**

A drain point should be fitted at the lowest point of the heating system. It is not acceptable to drain the boiler through a safety valve as debris can prevent the correct operation of the valve.

### **HEATING EXPANSION VESSEL. RELIEF VALVE & PRESSURE GUAGE**

It is important that the installer fit and supply all three items in conjunction with this installation. The Expansion Vessel must be sized in accordance with the Vessel Manufacturers recommendations. Failure to fit any of these three items may cause failure of the boiler and render warranties and guarantees null and void.

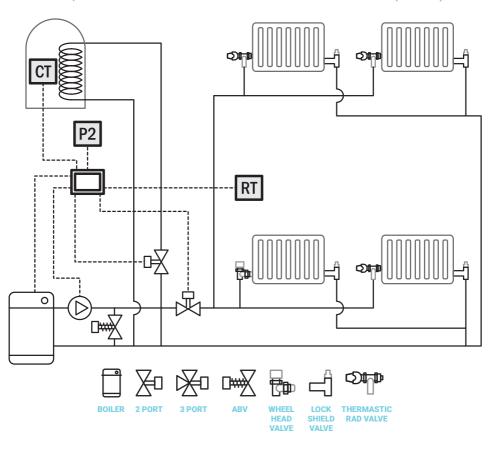
### Remember to include:

Heating Vessel, Pressure Relief Valve(s), Airvent(s), Pump(s), Drain Off(s), & Pressure Gauge.

# **Electric Boilers**

### **HEAT ONLY BOILER**

PROGRAMMER, ROOM THERMOSTAT & TRV'S - 2 PORT VALVE CONTROL (<150m²)



ROOM STAT

**PROG** ROOM **STAT** 

MULTI

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TWO CHAN

ONE CHAN **PROG** 

STAT

JUNCT. BOX

WIRING



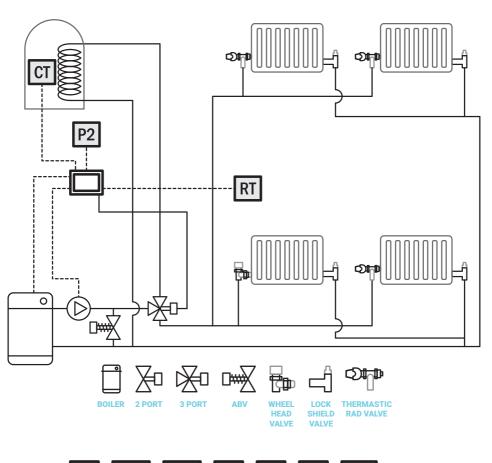
# PART L COMPLIANT LAYOUTS

### Remember to include:

Heating Vessel, Pressure Relief Valve(s), Airvent(s), Pump(s), Drain Off(s), & Pressure Gauge.

### **HEAT ONLY BOILER**

PROGRAMMER, ROOM THERMOSTAT & TRV'S - 3 PORT VALVE CONTROL (<150m²)



ROOM

PROG ROOM STAT P3+

MULTI TWO CHAN CHAN PROG PROG

TWO CHAN

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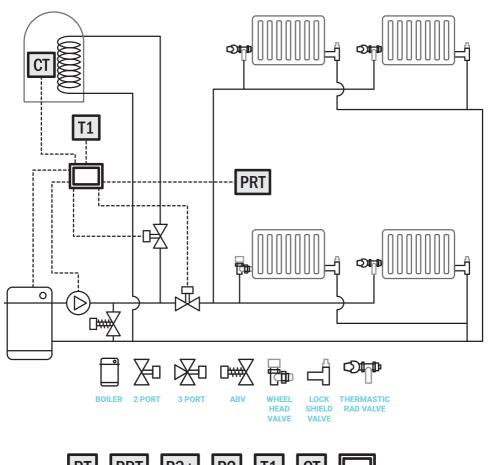
WIRING

### Remember to include:

Heating Vessel, Pressure Relief Valve(s), Airvent(s), Pump(s), Drain Off(s), & Pressure Gauge.

### **HEAT ONLY BOILER**

PROGRAMABLE ROOM THERMOSTAT & TRV'S - 2 PORT VALVE CONTROL (<150m²)







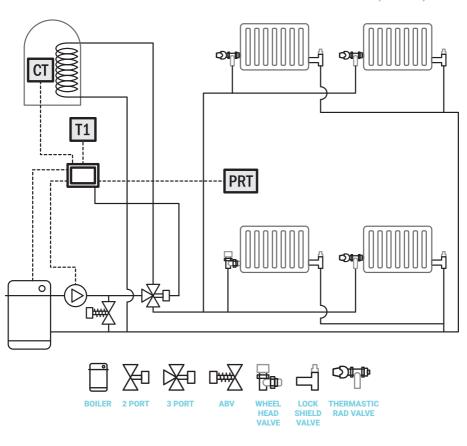
# PART L COMPLIANT LAYOUTS

### Remember to include:

Heating Vessel, Pressure Relief Valve(s), Airvent(s), Pump(s), Drain Off(s), & Pressure Gauge.

### **HEAT ONLY BOILER**

PROGRAMABLE ROOM THERMOSTAT & TRV'S - 3 PORT VALVE CONTROL (<150m²)



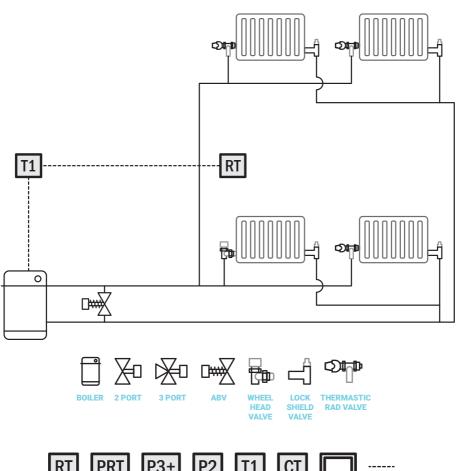


### Remember to include:

Heating Vessel, Pressure Relief Valve(s), Airvent(s), Pump(s), Drain Off(s), & Pressure Gauge.

### **COMBINATION BOILER**

PROGRAMMER, ROOM THERMOSTAT & TRV'S - 2 PORT VALVE CONTROL (<150m²)





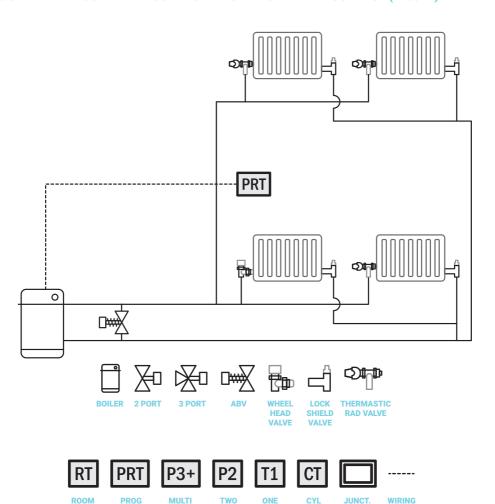


### Remember to include:

Heating Vessel, Pressure Relief Valve(s), Airvent(s), Pump(s), Drain Off(s), & Pressure Gauge.

### **HEAT ONLY BOILER**

PROGRAMABLE ROOM THERMOSTAT & TRV'S - 2 PORT VALVE CONTROL (<150m²)



**PROG** DIAGRAMS PROVIDED AS GUIDANCE ONLY, FINAL DESIGN SHOULD BE DECIDED UPON BY A QUALIFIED PLUMBER INLINE WITH CURRENT PART L GUIDELINES.

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PROG

STAT

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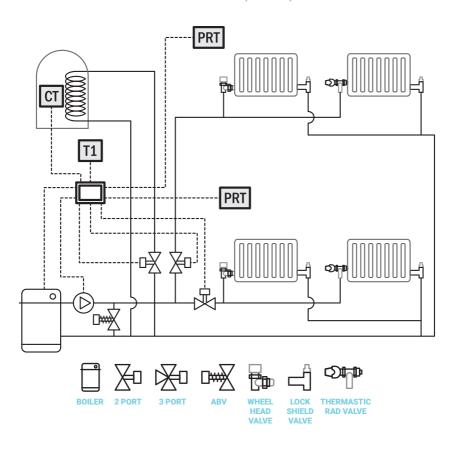
**PROG** 

### Remember to include:

Heating Vessel, Pressure Relief Valve(s), Airvent(s), Pump(s), Drain Off(s), & Pressure Gauge.

### **HEAT ONLY BOILER**

PROGRAMMABLE ROOM THERMOSTATS & TRV'S (150m<sup>2</sup>+)







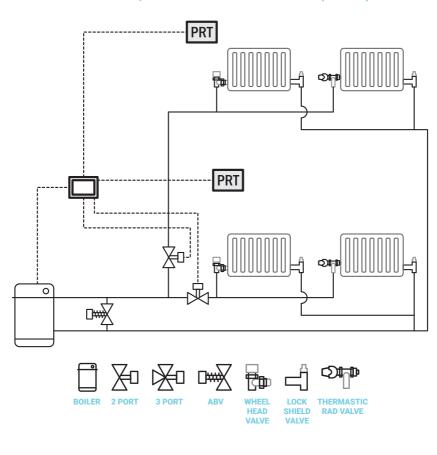
# PART L COMPLIANT LAYOUTS

Remember to include:

Heating Vessel, Pressure Relief Valve(s), Airvent(s), Pump(s), Drain Off(s), & Pressure Gauge.

### **HEAT ONLY BOILER**

MULTI CHANNEL PROGRAMMER, ROOM THERMOSTATS & TRV'S (150m²+)



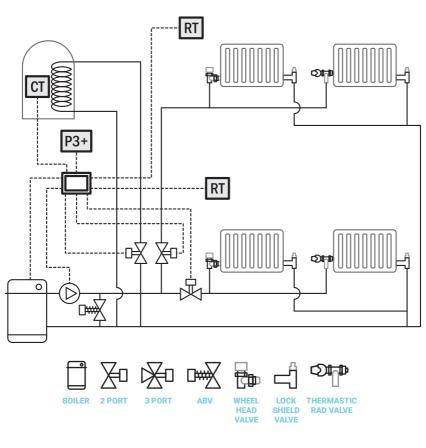


### Remember to include:

Heating Vessel, Pressure Relief Valve(s), Airvent(s), Pump(s), Drain Off(s), & Pressure Gauge.

### **COMBINATION BOILER**

PROGRAMMABLE ROOM THERMOSTATS & TRV'S (150m<sup>2</sup>+)











ONE



CYL





STAT ROOM CHAN CHAN CHAN STAT BOX
STAT PROG PROG PROG



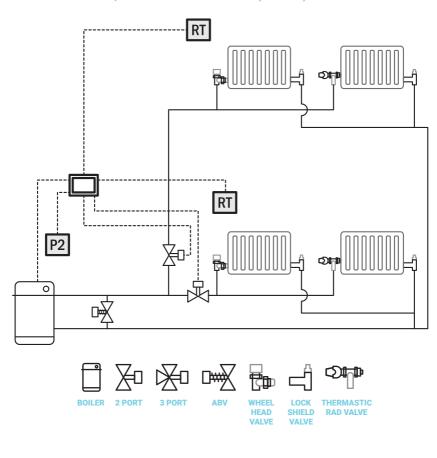
# PART L COMPLIANT LAYOUTS

Remember to include:

Heating Vessel, Pressure Relief Valve(s), Airvent(s), Pump(s), Drain Off(s), & Pressure Gauge.

### **COMBINATION BOILER**

TWIN ZONE PROGRAMMER, THERMOSTATS & TRV'S (150m<sup>2</sup>+)





# WALL MOUNTING THE BOILER

#### **IMPORTANT**

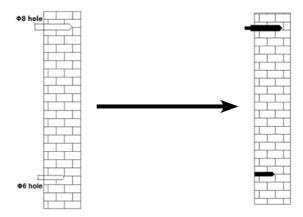
When choosing a location to mount the boiler it is important that you consider clearance, servicing the boiler, and safe and suitable operation.

The boiler should be fitted out of the reach of children, people of deminished responsability, and people who may otherwise access the boiler internals without the proper skills and qualifications as opening the boiler should only be done by a qualified electrican after first isolating the electrical supply. If there is the possibility that the boiler could be opened without first isolating the electrical supply then you must install it in a fashion that prevents access to the boiler, such as a lockable cupboard.

In terms of clearance strom recommend at least 100mm from all fixed obstructions on all sides of the boiler.

Please ensure that the designated wall for mounting the boiler has the structural integrity to support the unit when full. The following guidance is provided for sound solid brick wall mounting, your mounting may vary. The mounting surface should be made of a non combustable material rated to in excess of 100°C.

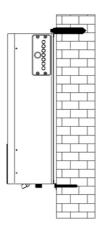
- Using a drill create 6 holes as per the including wall mounting diagram. The upper holes should be Φ8 diameter, and the lower holes Φ6.
- 2. Secure the 3 supplied  $\Phi$ 8 expansion bolts into the top three holes.





# WALL MOUNTING THE BOILER

3. Hang the boiler from the top three bolts before securing the boiler to the wall using standard fastenings at the bottom.



4. Please make sure that the boiler is now firmly fixed in position and unable to move. Failure to secure the boiler may cause damage to the wall and boiler in the future.

# Electric Boilers WATER CONNECTIONS

### **MAKING CONNECTIONS:**

- The connections for flow and return must be carried out according to the colour scheme and labelling marked on the boiler.
- The connections for mains water inlet and outlet must be carried out according to the colour scheme and labelling marked on the boiler.
- When tightening or loosening threaded connections, always use suitable tools such as open-end adjustable spanners. Do not use pipe wrenches, extensions or unsuitable tools that may cause damage or water leaks.
- High temperature flexible hoses are recommended for all connections, however if you are using irons
  please ensure that you secure both connections and do not apply more torque than necessary as you may
  split in the internal pipework of the boiler or weaken it, both will render the warranty void and increases the
  chances of a leak that would not be covered by the warranty.

### **HEATING FLOW & RETURN:**

These connections are 3/4" for connection to 22mm pipe. Suitable diameter service valves should be installed at the flow and return to allow the boiler to be isolated for maintenance without draining the entire heating system. We recommend flexi-hoses as overtightening irons may damage the boiler internals which is not covered under warranty.



# FILLING & FLUSHING

### **FLUSHING:**

The system must be flushed to 10% of mains PPM (chloride and otherwise) or lower to ensure that the water system is not detrimental to the lifespan of the boiler. If the boiler is being installed into an existing heating system, a power flush must be carried out on the radiators and pipework to remove any potential debris.

### **HEATING SYSTEM INITIAL FILL:**

Ensure that both flow and return isolation valves fitted as part of your installation are fully open. With the filling loop in your system connected open the valve fully and allow the system to fill slowly until the pressure gauge reads between 1 and 1.5 bar, at which point the valve should be shut. Ensure that you add inhibitor to your system, refer the manufacturers guidance for diluation rates. For the moment please leave the filling loop connected until you have purged the air out of the system.

# CHECK WATER CONNECTIONS

It is important not only to check for leaks on the pipework installed by yourself, but also to check the internals of the boiler for any leaks over a few hours after installing the boiler.

Every boiler is pressure tested inside our factory however after a long journey and installation it can sometimes by necessary to tighten connections when water escapes occur. Please do not unnecessarily tighten connections, or over tighten them, only as required in the few hours after intial installation.

If you are unable to check for leaks in the few hours after installation please drain down and only fill the system again when you have the time to do so.



# **ELECTRICAL CONNECTIONS**

### **POWER SUPPLY:**

The supply cable to the boiler should be of sufficient size to carry the load capacity required. It should be wired through a linked isolator switch with minimum contact gaps of 3mm in every pole, and the system protected by a suitably rated circuit breaker.

It is essential that the boiler is properly earthed, and the wiring tested to current IEE regulations.

The following table shows the specification for the full selection of Strom Boilers, please check carefully your model and read off from the table below. Calculations should always be done to ensure that the information is correct for your circumstances, as variences in installations can change the breaker size and or cable size, for instance voltage varies from property to property and does not necessarily follow any regional variences.

Rated Boiler Output	6kW	9kW	11kW	14.4kW
Single / Three Phase	Single	Single	Single	Single
Rated Voltage	230VAC	230VAC	230VAC	400VAC
Current (A) @ Rated Voltage	26	41	48	62
Minimum MCB/RCB (A)	32	45	50	63
Minimum Cable Size (mm²)	2.5	6	10	10

The terminal connection block is at the top right-hand side of the boiler and is accessible via the removal of the front panel. The supply cable should be safely routed to this point through the cable entry point at the top of the right-hand panel of the boiler.

Ensure the connection cables are correctly wired into the correct terminals and are securely in position.

Remember an electric boiler is a fixed resistance device, if the voltage goes up so to does the draw. This will need to be accounted for in the sizing of the cable and breaker.

# **CABLE TYPE:**

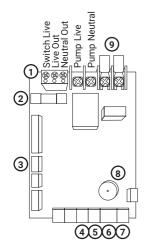
For ease of installation Strom always recommend a multi strand high temperature flexible cable such as HO7 cable, please consult your electrical distributor, and always make sure that size of cable is correct for the number of amps used as different cables can have different ratings at different core sizes. Please remember to check the manufacturers specific current carrying capacity of the cable you have chosen to install.

# CONNECTING EXTERNAL THERMOSTAT

Because no programming or temperature control can be done by the boiler itself it is necessary to fit an external thermostat. It is recommended that you fit time and temperature control in the form of seperate programmer and thermostat(s) or in the form of all in one programmable thermostat(s). More information can be found on system types on page 11.

The following information is provided as a guide only and refers to Strom manufactured heating controls, however you should follow the guidance of the manufacturer when connecting the thermostat to the Strom Boiler. We regret that we cannot offer any wiring advice of competitor products, and can only refer in those circumstances to the connections on our boiler.

### **BOILER WIRING:**



The PCB control board for the heating circuit is located in the right hand side of the boiler between the pump and the main electrical supply point.

- 1. Terminal Block
- 6. Return Temperature Sensor

2. 6 Amp Fuse

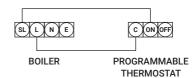
7. Heating Flow Sensor

3. Traic Control

- Buzzer
- 4. Display Connection
- 9. Power Supply
- 5. Flow Temperature Sensor

## THERMOSTAT WIRING:

(Provided as an example using Strom Programmable Thermostat)



The switch live signal on the boiler must be wired in such a way that the heating zones are fully opened before activating the boiler, this could be via a microswitch on an actuator or using a time delay relay if a microswitch actuator is not available.

### **PUMP WIRING:**

The heating pump for the system must be wired as per the board diagram above.

All wiring must be carried out in accordance with current IEE BS7671 wiring regulations.

All electrical connections must be made by a qualified electrician.



# CHECKING ELECTRICAL CONNECTIONS

It is important before powering on the boiler for the first time that all electrical connections are checked, this is not only your own connections but also the factory made ones too. Whilst all factory made connections are tested at the factory it is possible that during transit or installation connections may have come loose.

For Screwed connections please check for cable movement and tighten with a Screwdiver if necessary and for ribbons and push plastic connectors please gently apply pressure to make sure they are firmly seated. Please check the following connections:

- 1. The main power supply connections to the unit, both installer and factory made.
- 2. The spade connections labelled as number 9 on the PCB control board opposite.
- 3. The thermostat connections labelled as number 1 on the PCB control board opposite.
- 4. Push connectors labelled 3 7 if present on the PCB control board opposite.
- 5. All terminations on the heating elemement (these are the braided connections).
- 6. All connections made on the PCB above the heating element (these are braided connections).
- 7. All earth terminations both factory made and installer made.

# POWERING ON THE BOILER

### **IMPORTANT**

Before powering on the boiler for the first time please make sure you have completed the following:

- 1. All aspects of the manual proceeding this section have been completed as instructed.
- 2. The fitted thermostat or programmer is set to the off position, or where off is not possible the thermostat is set to the lowest possible temperature.
- 3. Make sure that the boiler casing front panel is secured.
- 4. The boiler can now be powered on by activating power at the breaker in the consumer unit. The boiler will initially power on in standby mode. The power button will bring the boiler out of standby mode, but for the time being leave the boiler in this mode so that the boiler settings can be configured.



# SET THE BOILER PARAMETERS

The boiler has 2 key parameters that need to be set in order to make the boiler function correctly:

#### **BOILER FLOW TEMPERATURE**

This should be set to the design temperature of the heating system, in many cases on existing properties with standard radiator systems 65°C will be correct, however underfloor heating systems and low temperature radiator systems may be as low as 35°C. If this is not adjusted on set correctly the boiler may cycle and experience overheating problems. If a hot water cylinder is present most systems would be remain set at 65°C

### **BOILER DIFFERENTIAL**

When the boiler finally reaches the flow temperature set on the boiler the heat exchanger will turn off to allow heat to dissipate in the system. It will only fire again when the temperature drops by the number degrees set in this setting. For example if FLOW is set as 65°C and dIFF is set as 15°C when the boiler flow hits 65°C it will not reactivate until 50°C is reached.

# **CHANGING THE SETTINGS:**

To change the boiler target flow temperature settings, with the boiler still in the standby position press the Menu button (see page 9) the Heat Required Icon should not light up, using the up and down button press set the required temperature in degrees celcius.

Pressing the Menu button again will cause the Target Temperature Reached Icon to light up, here you can set the temperature differential.

You can continue to cycle between these two options to change the settings as required.

Press and hold the power button for a few seconds waiting for the boiler to beep and for the Admin menu to be exited.

# SET PUMP SPEED & PURGE AIR

Before moving the boiler out of standby mode please check and complete the following actions:

- 1. The boiler has been properly configured in the previous step.
- 2. Your airvents in the system are open
- 3. Set your pump speed according to system design and manufacturers instructions.

The boiler can now be activated, press and hold the power button until the boiler bleeps and exits standby mode.

Activate the thermostat so that it is now calling for heat, the Heat Required symbol should now be lit and your external pump should have fired.

While the pump is running you should begin to purge all air from the system by bleeding all radiators and airvents in the system. Once bled the system should run almost silently with very little noise coming from the boiler or pump. Once all air is purged you can begin to alter the pump speed to suit your needs, normally a 15 to 20 degree differential between the flow and return is desireable, and the pump speed can be increased or decreased to achieve this differential.

You should also now take the time to set the Automatic Bypass Valve on the system, with all TRV's on the system open and the pump set at the correct speed set the Autobypass Valve to only just closed, now confirm you have the correct setting by closing only one of the TRV's, the bypass valve should now start to allow small amounts of water to pass.

Finally now that all the air has been purged from the system check the final pressure reading of the heating circuit, and top up if required. Once set please disconnect the filling loop, and ensure that all connections are capped off until required again at a future date.



# **TESTING HEATING**

Before completing the installation checklist please take the time to check the Heating Circuit. This final check is important to ensure that you do not have to reattend site at a later date to correct any issues.

### **HEATING TEST**

- 1. Set the thermostat to a temperature approximately 4-5 degrees above current room temperature and ensure that the boiler fires.
- 2. Leave the boiler running for several minutes and check that the radiators are beginning to get warm.
- 3. After approximately 15 minutes check the temperature differential between the flow and return is approximately 15 to 20°C, if not please refer to setting the pump speed on page 34.
- 4. Wait until the thermostat reaches temperature and deactivates the boiler.
- 5. Now set the thermostat 4-5 degrees higher and waiting for a few minutes check to see if the boiler successfully fires again.
- 6. Return the thermostat to its required position to complete testing.

# PLUMBERS CHECKLIST

# PLUMBER TO COMPLETE...

COMPANY NAME:		
PLUMBERS NAME:		
COMPANY ADDRESS:		
COMPANY TELEPHONE:		
DATE OF INSTALLATION: / / PRODUCT CODE:		
WAS THIS A EXISTING INSTALL OR NEW INSTALL?  EXISTING  NEW INSTALL		
HOW MANY HEATING ZONES ARE INSTALLED? 1 2 3+		
HAS THE FILLING LOOP BEEN REMOVED & CAPPED OFF? YES NO		
WAS AN ABV FITTED? AT WHAT SETTING?  YES NO SETTING:		
WHAT IS THE HEATING PRESSURE SET AT? Bar		
WHAT IS THE INCOMMING MAINS PRESSURE? Bar		
WHAT HAS THE BOILER FLOW TEMPERATURE BEEN SET AT? °C		
WHAT HAS THE BOILER DIFFERENTIAL TEMP. BEEN SET AT? °C		
WHAT PUMP SPEED HAS BEEN SET ON THE BOILER?		
NOTES:		
BY SIGNING YOU AGREE THAT YOU HAVE INSTALLED THE BOILER IN ACCORDANCE WITH THIS MANUAL AND THAT THE BOILER IS WORKING AS INTENDED WITHOUT ANY LEAKS AND ALL INSTALLER MADE AND FACTORY MADE CONNECTIONS HAVE BEEN CHECKED.		
SIGNED: DATE:		



# ELECTRICIANS CHECKLIST

ELECTRICIAN TO COMPLETE
COMPANY NAME:
ELECTRICIANS NAME:
COMPANY ADDRESS:
COMPANY TELEPHONE:
DATE OF INSTALLATION: / / / / /
WHAT IS THE INCOMING MAINS VOLTAGE AT THE FUSE BOARD? VAC
WHAT IS THE INCOMING MAINS VOLTAGE AT THE APPLIANCE? VAC
WHAT SIZE BREAKER HAS BEEN FITTED FOR THE BOILER?
WHAT IS THE DRAW OF THE APPLIANCE FOR HEATING?  AMPS
WHAT IS THE DRAW OF THE APPLIANCE FOR HOT WATER?  AMPS
WHAT SIZE CABLE WAS INSTALLED TO THE APPLIANCE? . MM <sup>2</sup>
WHAT IS THE APPROXIMATE CABLE RUN TO THE BOILER?
WHAT TYPE OF CABLE HAS BEEN USED?
NOTES:
BY SIGNING YOU AGREE THAT YOU HAVE INSTALLED THE BOILER IN ACCORDANCE WITH THIS MANUAL AND THAT THE BOILER IS WORKING AS INTENDED WITHOUT ANY LEAKS AND ALL INSTALLER MADE AND FACTORY MADE CONNECTIONS HAVE BEEN CHECKED.
SIGNED: DATE:

# FAULT FINDING

ERROR CODE	POTENTIAL CAUSE	SOLUTION	
E1	Loose connections between heating outlet temperature sensor & PCB	Check the wiring and reseat connection if loose.	
	Faulty temperature sensor for heating outlet.	Call Strom on 0333 344 24 74	
E2	Loose connection between the heating return temperature sensor & PCB	Check the wiring and reseat connection if loose.	
	Faulty temperature sensor for heating return.	Call Strom on 0333 344 24 74	
E3	Heating system flow temperature overheating.	Check that there is sufficient system circulation. If the boiler has been set for temperatures in excess of 75°C please reduce to between 70 & 75.	
E4	Heat exchanger overheating.	The boiler will automatically begin circulating again once the heat exchanger has cooled.	
E5	Inadequate Flow	The boiler requires a minimum flow rate of 3lpm, please check:	



# **Electric Boilers**FAULT FINDING

EA	Power supply to the boiler is too high.	Check supply voltage & correct. Re-check all wiring to the unit.	
	Power supply failure.	Re-check all wiring to the unit.	
Indicators on the control panel are off.	Loose connection from the control board to main PCB.	Check the wiring and reseat connection if loose.	
	Display board failure.		
Control panel is not registering touch commands.	Display board failure.		
	Heating element failure	Thermal Cut-out triggered	
Heating temperature is	Thermal cut-out failure		
low/the device is not heating up.	Triac burnout		
	Control board failure		

# **Electric Boilers**BOILER MAINTENANCE

### STROM BOILERS DO NOT REQUIRE PARTICULAR MAINTENANCE OTHER THAN THE FOLLOWING:

The heating system must be filled and maintained when the water is cold, between a pressure of 1 - 1.5 bar. Frequent refilling of the system can cause scaling, corrosion and damage to a heating system and should be avoided wherever possible. Regular pressure loss could be indicative of a leak within the system and should be investigated. When the system is refilled always check the level of inhibitor in the system and re-fill where necessary.

#### UNDER NO CIRCUMSTANCES SHOULD THE BOILER BE SWITCHED ON WHEN THE SYSTEM IS DRY.

The boiler contains an installed frost-protection program. For this to operate, power must be supplied to the boiler at all times. Anti-freeze can be added to the heating system (no more than 20% by volume) if the boiler is going to be stood unused for long periods of time. Otherwise, the boiler should be disconnected from the electricity supply and the system fully drained to avoid any frost damage.



# WARRANTY INFORMATION

All Strom products are supplied in accordance with standard Terms & Conditions (available on request or via our website). This Policy also applies in addition to our terms and conditions to any Strom Electric Boilers and by fitting this product you are agreeing to be bound by these Terms & Conditions and this Policy. This Policy sets out the Warranty Period and exclusions which apply to Electric Boilers, for other products please see our website or their corresponding manuals. This Policy is subject to our Standard Terms and Conditions and should be read in conjunction with those terms. We reserve the right to amend this policy at any time.

### Warranty Details:

Subject to the exclusions set out below and any applicable points in our Terms and Conditions, faulty parts and products will be replaced or repaired free of charge by Strom, or one of its representatives during the applicable Warranty Period. Where work is carried out by personnel not associated with Strom, or without Strom's knowledge we will be unable to cover the associated costs, parts, and labour charges. If Strom or its representatives are unable to attend your property in a timely manor we reserve the right to allow third parties to undertake the work once a pre-agreed cost has been agreed with Strom directly (agreements via third parties will not be accepted).

### Exclusions:

- 1. This policy only applies where:
  - The product is installed and used strictly in accordance with the Terms and Conditions and the instructions supplied with the product; and
  - ii. the failure is not due to accident, misuse, abuse, unsuitable water conditions (including contaminants or inappropriate water pressure), limescale build up, or to any alteration, modification or repair by any party not expressly nominated by Strom.
  - iii. Unsuitable water conditions include:
    - a) Private water supplies that are not regulated by water authorities
    - b) Hard water that is left untreated
    - c) Water additives that lead to product corrosion
    - d) The absence of corrosion inhibitor in heating circuits
- 2. This warranty does not cover damage resulting from non-operation of the product or consequential damage to any other goods, furnishings or property.
- 3. This warranty does not apply to any consumables associated with the product.
- 4. Installations that have not been carried out by person/s that do not hold the relevant qualifications required in their field to carry out the works undertaken (we reserve the right to ask for a copy of the electrical installation certificate)
- 5. Warranties are non-transferable and must be purchased as new from one of our distributors.

### Warranty Periods:

All Strom Boilers comes with a standard out of box warranty of 1 year, however by completing the included promotional guarantee procedure within 45 days of purchase (please see warranty documentation) the warranty will be extended to the offered promotional duration free of charge. The promotional period may vary dependent on supplier, model, or package purchased. All details set out in the included warranty documentation.

# **TERMS & CONDITIONS**

#### CONDITIONS OF SALE

ose order for the Goods is accepted by the Comp

of the Goods or whose order for the Goods is accepted by the Company "Company" means Storn Limited. "Company" means Storn Limited. "Company" means the contract for the company and the Buye "Contract" means the contract for the purchase and sale of the Goods "Goods" means the goods which the Company is to supply and which the Buye agrees to buy in accordance with these conditions.

Price" means the price for the Goods including transport and insurance (if an 1.2 Any reference in these Conditions to any provision of a statute shall construed as a reference to that provision as amended re-enacted or extende

2.8 ASIS OF SALE
2.1 The Company shall sell and the Buyer shall purchase the Goods in acco

1.1.2 (if the Company does not submit a guidation and following a request or supported order from the Buyer for Goods) in accordance with the Company's offer upon the Company's offer which shall govern the Contract to the exclusion of any other terms, subject to which shall govern the Contract to the exclusion of any other terms, subject to which any such quotation or offer is accepted, or purported to be accepted. 2.2. Any variation to these Conditions (including any special terms and conditions greed between the parties) shall be rapplicable unless agreed in writing by the

Company 2.3 Any advice or recommendation given by the Company or its employees or agents to the Buyer or its employees or agents as to the storage application or use of the Goods when it on the control many the Company is followed for of the Goods when it is not controlled in which by the Company is followed for the best label for any such advice or recommendation which is not so confirmed the liable for any such advice or recommendation which is not so confirmed 2.4 Any typographical derical or other error or omission in any sales literature quadration grow fails to the company of the such processing the such and of the Foreignes which is such as the company of the such and of the Foreignes which is such as the confirmed and of the Foreignes which is such as the confirmed and on the Foreignes which is such as the confirmed and the foreign such as the confirmed and the

any reserves the right to improve and/or modify any specificati nensions without notice.

2.6 The Company reserves the right to improve amour monity any specifications, designs and dimensions without notice.
2.7 For the avoidance of doubt nothing in these Conditions or any Contract shall confer on any third party any benefit nor the right to enforce any term of these Conditions or any Contract whether pursuant to the Contracts (Rights of Third

#### 3. THE PRICE AND PAYMENT

3.1.1 the Company's quoted price which shall only be valid for 30 days from its date after which time the Price may be altered by the Company and shall be subject to

after which time the Price may be altered by the Company and shall be subject to the Company reading.

The Company regularly are quoted the Price Isolard in the theory carrier price Isolard in the theory of the Company to the Price Isolard in the theory carrier price Isolard of the Company set by the Company to the Buyer from time to time.

21 Except as otherwise stated in the Company's quotation or in any price Isol of the Company or otherwise agreed in viviling between the Buyer and the Company is of the Company is ordined to Company is ordined to Company is ordined and Isolardice.

3.3 The Price and any other sums payable by the Buyer to the Company is exclude or any applicable by the Buyer to the Company is excluded or any interest to the Buyer shall be distinguished to any applicable value Added Tax, which the Buyer shall be distinguished to any applicable value Added Tax, which the Buyer shall be addingly labels to

3.3 The Pitce and any other sums populies by the Bigner to the Company is exclused of any applicable by the Add off zar, within the Bugs of all the additionally laids to clear page of the Add off zar, within the Bugs of all the additionally laids to Company, the Company any microne the Bugs of and the Company, the Company any microne the Bugs of the Pitce of the Goods on at any prime after believey of the Cooks, for any statistient of the Goods on and any prime after televery of the Cooks, for any statistient of the Goods on the Cooks of the Cooks of the Cooks of the Soods, in other control the Cooks of the Cooks of the Cooks of the Soods, in other control the Bugs of the Goods on the Cooks of the Bugs of the Goods of the Cooks of the C

of the Goods.
3.5 Saw as otherwise agreed in writing, payment of the Price and VAT shall be due within the agreed period from the date of the invoice without deduction or set off. Time for payment shall be of the seisment on the due date then without prejudice 3.8 if the Buyer fails to make any payment on the due date then without prejudice to any other right for remedy available to the Company the Company shall be

to any other ingit to the contract or suspend any further deliveries to the Buyer at 5.5 appropriate any payment made by the Buyer to such of the Goods (or the 3.6.2 appropriate any payment made by the Buyer to such of the Goods (or the Goods Supplied under any other contract between the Buyer and the Company) as the Contract of the Goods (or the Goods Supplied under supplied to propose the Contract of the Cont

Buyer) and 3.6.3 charge the Buyer interest (both before and after any judgement) on amount unpaid at the rate of 8% per cent per annum above Barclays Bank base rate from time to time until payment in full is made (a part of a month b treated as a full month for the purpose of calculating interest)

4. THE GOODS tity and description of the Goods shall be as set out in the

4. THE GOODS
4.11 The quantity and description of the Goods shall be as set out in the Connany's quantition or in the Company's offer (as the case may be), and 4.11 The quantity quantities or the connany's quantities or the connany's offer (as the case may be), and Company's quantities or of where there is no quantities of the Company's Iterature and brochuse for the Goods in question.
4.2 The Buyer shall be responsible to the Company for ensuring the courses of the 4.2 The Buyer shall be responsible to the Company for ensuring the connany of the company for the connany for the connany for the connany of the company for the connany for the connany for the connany of the company for the connany for the form the connection with or paid or agreed to the connany for the conna

carrying out any work in respect of the Goods or otherwise as a result of

by the Company shall remain the property of the Company and may not be disclosed by nor used by nor copied or otherwise reproduced by the Buyer withou the prior written consent of the Company.

5. DELIVERY OF GOODS
5.1 Unless otherwise agreed in writing the Company shall deliver the Goods to such delivery address as specified by the Buyer to the Company at such time as the Goods or part thereof (as the case may be) are ready for delivery.

Goods or part thereof (as the case may be) are ready for delivery.

And that advance the Company of any local or internal laws, byelaws or rules relating to parking or loading of vehicles at the delivery address and that advance the presponsible for examing that access to the delivery address is whotly by a road with a surface capable of withstanding the weight and size of a vehice carrying the Goods.

a venice carrying the Goods.

54 Any dates quoted for delivery of the Goods are approximate only and the Company shall not be liable for any delay in delivery of the Goods howsoever caused Time for delivery shall not be of the essence unless previously agreed by the Company in writing The Goods may be delivered by the Company in advance of

the Delivery Dalle upon giving reasonable notice to the Buyer 5.5 Where the Goods are to be delivered in installments each delivery shall constitute a separatic contract and failure by the Company to deliver any one or more of the installments in accordance with these Conditions or any claim by the three Contracts as whole as regulated 5.6 if the Buyer fails for any reason whatsoever to take delivery of the Goods or fails to give the Company adequate delivery instructions at the time stated for delivery (otherwise than by reaction any cause beyond the player's necessible cortion of by available to the Company the Company may. 5.6.1 store the Goods until actual delivery and charge the Buyer for the reasonable costs (including insurance) of returning the Goods to the Company's persions. 5.6.2 sell the Goods at the best price readily obtainable and offer deducting all reasonable storage and selling expenses account to the Buyer for the reasonable costs and selling responses account to the Buyer of the reasonable storage and selling expenses account to the Buyer for the excess one

30.2 set the Goods at the best price readily obtainable and differ deducting all reasonable storage and selling expensels account to the Buyer for the excess over the Price or charge the Buyer for any shortfall below the Price or 36 goods may not be returned to the Company except by prior written permission 35 goods may not be returned to the Company except by prior witten permission to the price of the P

6. RISK AND RETENTION OF TITLE
6.1 goods supplied by the Company shall be at the Buyer's risk immediately upon delivery to the Buyer or into catody on the Buyer's behalf or to the Buyer's Order.

Incompany to the Buyer or into catody on the Buyer's behalf or to the Buyer's Order.

Incompany the Buyer of Buyer's Order of Buyer's Order or Buyer's Order Or

the Company which, at the time of payment of the hat pince on use goods was the Company which, at the time of payment of the hat pince on use goods and the Company of the

winding up or to apply for an administration order.

6.5 the Buyer hereby grants to the Company an irrevocable license to enter at any time any vehicle or premises cowned or occupied by the Buyer or in the possession of the Buyer for the purposes of repossessing and recovering any such goods the property in which has remained in the Company under paragraph (2) above. The Company shall not be responsible for and the Buyer will indemnify the Company against liability in respect of damage caused to any vehicle or premises in such repossession and removal being damaged which it was not reasonably practicable

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affol accord one to any, appears.

5.7 in the event that the Buyer shall seal any of the goods pursuant to clause (5).

6.7 in the event that the Buyer shall seal any of the goods pursuant to clause (5).

Hered, the Buyer shall forthwith inform the Company in writing of such sale and of the identity and address of the third party to whom the goods have been sold.

6.8 if, before properly in the goods passes to the Buyer under paragraph (3) above the goods are or become affixed to any fand or building owned by the Buyer it is described that on shiftsands shall not have the effect of passing the state of the sharp of the sh e goods are or become aimene to any faint on bullang towers by the super in so, every agreed and declared this such afficiation shall not have the effect of passing shall be provided by the provided by the provided by the provided by the all pass to the Buyer under prinargiach (3) hereof, the goods are or become affixed any land or bullding (whether or not owned by the Buyer), the Buyer shall 8.1 ensure that the goods are capable of being removed without material injury such hand or bullding.

to such land or building.
6.8.2 take all necessary steps to prevent title to the goods from passing to the landtord of such land or building.
6.8.3 forthwith inform the Company in writing of such affiscation and of the address of the land or building concerned. The Buyer warrants to repair and make good any damage caused by the effationation of the goods to or their removal from any land or building and to indermify the Company against all loss damage or iliability the Company may incur or sustain as a result of afficiation or removal. Insight of the company may incur or sustain as a result of afficiation or removal. The company is the support of the support of the post of the property in the good to any of them are local, soften, damaged or destroyed:

6.9.1 the Buyer shall assign to the Company the benefit of any insurance claim in

### WARRANTIES AND LIABILITY -FOR PRODUCTS INSTALLED IN THE UK ONLY

A wakenities And Disability - For Michigan Carlos in the Loc North 7.1 subject to the following provisions, the Company warrants that the Goods will their delivery to the Buyer, unless a period of different charation is specified in the product installation instructions in respect of that product and/or its specific warranty terms, or specified components thereof. 7.2 The warranty in clause 7.1 is igneen by the Company subject to the following the company of the Company of the Company of the Company subject to the following the Company of the Compa

At the warranty in success in a non-stability in respect of any defect in the Goods arising from any information drawing design or specification supplied by the Buyer. 72.2 the Company shall be under no liability in respect of any defect arising from fair wear and tear willful dramage neeligence abnormal working conditions failure to follow the Company's instructions (whether oral or in writing) imsure or alteration or repair of the Goods without the Company's approval or alteration or repair of the Goods without the Company's approval or the Stability of the Company's approval or the Company's approval or the Company's approval or the Stability of Company's approval or the Company's approval or the Company's Condition of the Company's Cond

Goods. Any such costs incurred shall be claimed by the buyer or the buyer or cut customer's insurance party.

7.2.4 the above warranty does not extend to parts materials equipment not manufactured by the Company in respect of which the Buyer shall only be entitled to the benefit of any such warranty or guarantee as is given by the manufacturer

to the befield or any such variency assume that the control of the

As suggest, de expressly provides in these communities and other warrantines contained in a contract of the contract of the communities of the contract of the

7.10 Where failed Goods are returned to the Company and subsequently found to have no fault found or failed due to reason(s) outside these terms and conditions, the Company reserves the right to claim any subsequent costs entailed, from the

uper.

11 Without prejudice to the provisions of clauses 75,76,77,73 and 710 the

tritle lability of the Buyer under or in connection with the Contract shall not

not be could be provided to the contract shall not

be could be provided to the contract shall not

the contract by reason of any deby in performing or any failure to perform any

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any cause beyond the Company's resconable control Without limiting the

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reasonable control:

7.12.1 act of god, explosion, flood, tempest, or inclement weather, fire or accident,
7.12.2 war or threat of war, sabotage, insurrection, civil disturbance or requisition,
7.12.3 act, restrictions, regulations, pely-laws, prohibitions or measures of any kind
on the part of any Governmental, Parliamentary or Local Authority,
7.12.4 imports or operator, regulations or embargos,

7.12.4 imports or exports, regulations or embargor;
7.12.5 strikes, lockouts or other industrial action or trade disputes (whether employees of the Company or of a third party).
7.12.5 purple, lockouts or other industrial action or machinery.
7.12.7 power failure, failure of tele-communications lines, failure or breakdown of plant, machinery or welchides.
7.12.8 theft or melicibides.

7.12.9 defaults for any reason whatsoever of suppliers or sub-contractors of the

8. INSOUNEKY OF THE SUTVEN
8.1.1 This clause applies if:
8.1.1 the Buyer makes any composition or voluntary arrangement with its creditors flowing an individual or firm becomes bankrupt or (being a company) becomes or composition or voluntary arrangement with its creditors from the purpose of amolganization or creditors (and the purpose of amolganization or creditors) are amountarion or more into force in expect of the Buyer (within the meaning of the Insolvency Act 1986); or 18.1.2 an encombinator takes possession or a receiver or manager or administrative receiver or administrator is appointed of any of the property or assets of the buyer.

or
8.1.3 the Buyer ceases or threatens to cease to carry on business or
8.1.4 the Company reasonably apprehends that any of the events mentioned above
is about to occur in relation to the Buyer and notifies the Buyer accordingly
8.2 if this clause applies then without prejudice to any other right or remedy A2 in this clabes appress their winhout prejudice or any other right or remedy wavailable to the Company the Company shall be entitled to stop any Goods in transit, cancel the Contract or suspend any further deliveries under the Contract without any liability to the Buyer and if the Goods have been delivered but not paid for the Price shall become immediately due and payable notwithstanding any

HEALTH AND SAFETY INFORMATION

By gray agrees and undertakes with the Company to ensure that the provisions all instruction manuals including health and safely instructions and any other monastion or document reliating to the use of the Goods provided by the instructions and any other manual control of the cooks are fully implemented so as to ensure so far as is a consonably particular bett the Goods will be all and without this go be will be the following the self-and without this go be will be death of the self-and without this go be will be death and the self-and single control of the self-and se

ract is personal to the Buyer which may not assign or dispose of any 10.1 The Contract is personal to the Buyer which may not assign or aspose of any of its rights or obligations or otherwise delegate any of its obligations under the Contract without the written consent of the Company.
10.2 The Company shall be entitled to assign its rights and obligations under the Contract and to sub-contract or otherwise delegate any of its obligations under the Contract.

10.3 Any motice required or permitted to be given by either party to the other unbeing. Here Conditions have been writing including a facinities addressed to that other may at the relevant time have been notified pursuant to this provision to the party giving the notice and shall be deemed to have been received by the party to whom it was addressed, if sent by facsimile upon its transmission if during a normal business day and otherwise on the next business day and if sent by post, 72 hours business day and otherwise on the next business day and if sent by post, 72 hours to the party of th

business day and otherwise on the next business day are st verificially and otherwise on the next business of the Contract by the Bluer and an area of the contract and any subsequent breach of the same or any other provision 10.5 if any provision of the contract is held by a Court or other provision 10.5 if any provision of the contract is held by a Court or other provision of the contract and the contract and the remainder of the provision of the contract and these Conditions and the remainder of the provision of the contract and these Conditions shall be governed by the laws of England 10.7 the parties hereby subsets to the non-exclusive production of the Contract and these Conditions shall be governed by the laws of England 10.7 the parties hereby subsets to the non-exclusive production of the Contract.

tours.

10.8 The Buyer shall indemnify the Company for all costs and damages, including attorneys' fees, suffered by the Company as a result of the Buyers actual or threatened breach of these terms and conditions.

#### 11. INFORMATION

and safe use of the Goods and the Buyer shall at all times obey and comply wit the Company's instructions or other information relating to the use of the Goods

