GRÄSSLIN
A GE Power Controls Company

INSTALLATION AND USER INSTRUCTIONS
TOWERCHRON QE1/QE2

Congratulations. You are the proud owner of a new GRÄSSLIN TOWERCHRON QE. We recommend that you read the operation instructions carefully so that you can make the best use of all features offered by this product.
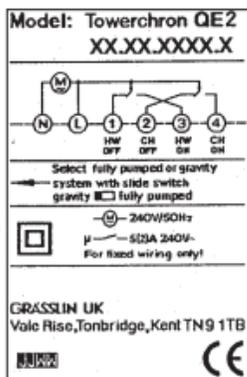
QE1

QE2

TECHNICAL DATA

Dimensions	156x85x42 [mm]
Power supply	240V/50Hz
Rating	5A (2A)/240V, per channel
Memory locations	28 per channel
Battery	permanently fixed re-chargeable (not replaceable)
Battery reserve	500 hours plus (after 70 hours charge)
Installation	double insulated
Fitting	surface mounted or single gang plaster depth socket outlet
Maximum ambient temperature	50 °C
Type 1 Action	type 1B
Micro disconnection	type 1B
Pollution protection	normal pollution situation

INSTALLATION PROCEDURE

Remove QE1/QE2 from packing and prepare it for use on fully pumped or for gravity hot water systems.
For gravity hot water systems no action is required.

For fully pumped systems the switch
located at the rear of the "QE2" must
be moved to the right-
into the "fully pumped" position.

Model: Towerchron QE2
XX.XX.XXXX.X

Select fully pumped or gravity
system with slide switch
gravity ▢ fully pumped
240W/50Hz
μ — 5(2)A 240V~
For fixed wiring only!

GRASSLIN UK
Vale Rise, Tonbridge, Kent TN9 1TB

NB • Installation must be carried out by a qualified electrician and conform to current IEE Regulations.
NB • Mains supply must be suitably fused (usually 3 amps) and provision made for Class A circuit disconnection.

NB • Control is suitable for fixed wiring only.
NB • If the unit is to be surface wired:
- Remove backplate by slackening fixing screw and separate the plate from the timeswitch
- Remove the knock-out from the backplate and the timeswitch
- Screw backplate to wall with counter sunk No. 8. Wood screws, using fixing holes provided.
NB • For socket box mounting:
- Use the centre two holes and fit backplate to box using machine screws
- To ensure clearance for the down flap, ensure that there is a minimum of 4 cm clearance under the unit when mounted

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"TOWERCHRON QE1"

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"TOWERCHRON QE2"

Open here, if you are programming Towerchron QE1.
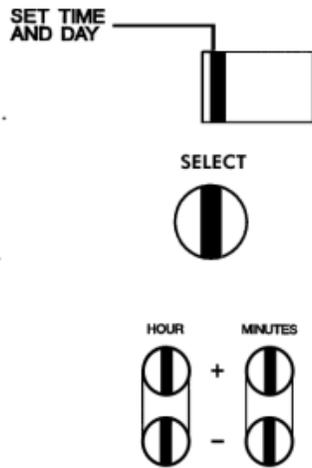
♀

"TOWERCHRON QE1"

APPLICATIONS (QE1)
- Any simple time switching application up to the stated rating
- Domestic heating systems where both heating and hot water services are required to switch ON and OFF at the same time
- Controlling a "combi" or "combination boiler"

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PROGRAMMING YOUR "TOWERCHRON QE1"

SETTING CURRENT TIME AND DAY

⇨ Open the keypad cover

⇨ Make sure that the slide switch is on position **"SET TIME AND DAY"** to left.
If the battery is in a fully discharged condition at the moment of installation
then the screen will be blank. The screen will start to display approximately
2 minutes after plugging into mains supply. Now operate the "RESET" button.

⇨ Press the **"RESET"** button with a dull pointed instrument once

⇨ Press the "DAY" button until the actual day is marked

⇨ Repeatedly press **"HOUR +/-"**, then "MINUTES +/-" buttons until
current time is displayed.

NB • If you are setting the clock in wintertime (GMT): The clock is now
correctly set.
If you are setting the clock in summertime (BST): Press
the **"SUMMER/WINTER"** button once. The arrowhead at the bottom
of the display moves to indicate Summertime, and the clock is
correctly set.

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START THE INBUILT STANDARD PROGRAM

⇨ Move the slide switch to position "RUN PRESET PROGRAM".

NB • The inbuilt standard program is now active.

RUN PRESET
PROGRAM

VIEW THE INBUILT STANDARD PROGRAM

⇨ Make sure that the slide switch is on position **"RUN PRESET PROGRAM"**.

RUN PRESET PROGRAM

⇨ Repeatedly press the **"VIEW PRESET"** button

VIEW PRESET

NB • Each press displays, one step at a time, the ON and OFF times for
heating and hot water. Standard program is shown in the table.

	ON	OFF	ON	OFF
Monday to Friday	6.30 a.m.	8.30 a.m.	4.30 p.m.	10.30 p.m.
Saturday to Sunday	8.00 a.m.	11.00 a.m.	4.00 p.m.	11.00 p.m.

To return to time of day

⇨ Press the **"CLEAR"** button
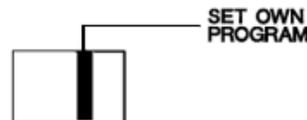⇨ The preset programm is activated

CLEAR

SETTING YOUR OWN TIME PROGRAM

It is recommended that you write down the switching times.
The following day groups are selectable: Mon...Fri, Sat + Sun, Mon...Sat,
Mon...Sun or any individual day.
⇨ Move the slide switch to position **"SET OWN PROGRAM"**

1. To set "ON" time and day combination:
   ⇨ Press **"HOUR +/-"** then **"MINUTES +/-"** buttons
   ⇨ Press **"DAY"** button to select day/day groups

2. To store "ON" time and view the next program space
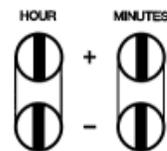   ⇨ Press the **"SELECT"** button

3. To set the first "OFF" time and day combination
   ⇨ Press **"HOUR +/-"** then **"MINUTES +/-"** buttons
   (the day/day groups that were selected during "ON" time
   programming are still in memory for this "OFF" time)

4. To store "OFF" time and view the next program space
   ⇨ Press **"SELECT"** button

SELECT

Repeat steps 1 to 4 to enter further "ON" and "OFF" times.
28 program spaces are available.

After completing your own program:
⇨ Move the slide switch to position **"RUN OWN PROGRAM"**

RUN OWN
PROGRAM

NB • The current time is displayed and your own
program is now active.

VIEW/MODIFY/DELETE YOUR ENTERED PROGRAM SELECTIONS

⇨ Move the slide switch to position **"SET OWN PROGRAM"**

To view/modify your entered ON/OFF times:
⇨ Press the **"SELECT"** button repeatedly

NB • While you are viewing any program selection, you can modify the contents with the "DAY", "HOUR" and "MINUTES" button.

To delete your entered ON/OFF times:
⇨ Press the **"SELECT"** button repeatedly until the desired ON or OFF time to be deleted appears.

⇨ Press the **"CLEAR"** button. The selection displayed will be deleted.

To return time of day:
⇨ Move the slide switch to **"RUN OWN PROGRAM"**

MANUAL OVERRIDE FUNCTIONS

While the timeswitch is in the "RUN PRESET PROGRAM" or "RUN OWN PROGRAM" mode, and without having to open the keypad cover, you can manually override the program without disrupting the original settings by pressing the "SELECT" button.

TMD (Timed)

When the "RUN PRESET PROGRAM" or "RUN YOUR OWN PROGRAM" mode is active, the arrow points to TMD

| **BOOST** To switch ON for 1 hour | Press the **"SELECT"** button until the arrow in the display points to **BOOST** | The timeswitch will automatically retun to the timed function after 1 hour. | |
| **ADV** To switch ON (or OFF) early | Press the **"SELECT"** button until the arrow in the display points to ADV (Advance) | The timeswitch will automatically go back to the timed function according to the next programmed entry. | |

|			
CONST To switch ON permanently	Press the **"SELECT"** button until the arrow in the display points to CONST (Constant)	The timeswitch stays ON permanently until you move the arrow by using the "SELECT" button again.	
OFF To switch OFF permanently	Press the **"SELECT"** button until the arrow in the display points to OFF	The timeswitch stays OFF permanently until you move the arrow by using the "SELECT" button again.	

INTERNAL WIRING DIAGRAM (QE1)
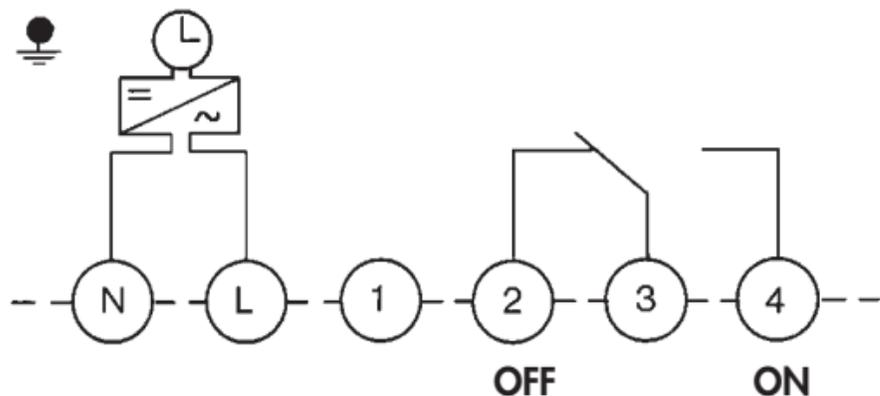
NB • Carry out wiring installation using appropriate diagram as shown.

NB • When the TOWERCHRON QE1 timeswitch is to be used with a combination boiler, always refer to the boiler manufacturer instructions concerning wiring before using the information contained in this manual. In some cases, the boiler manufacturers instructions will contain information regarding removal of certain link wires and will always indicate the fuse rating for the mains electrical supply.

NB • Plug in unit and secure to the base by tightening fixing screw.

GENERAL INSTALLATION INSTRUCTIONS (QE1)
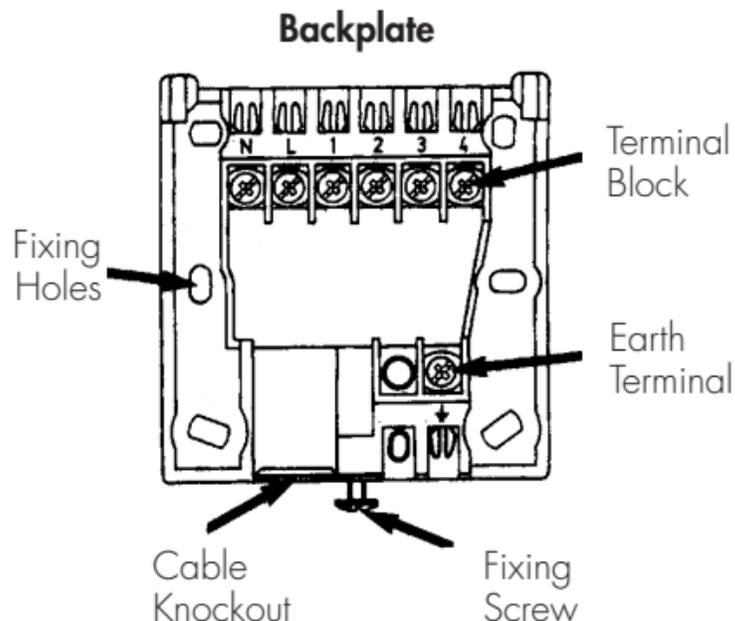
Backplate

The TOWERCHRON QE1 is double insulated, so earth protection is not required. However, in the backplate a terminal for earth continuity is provided which should be used if earth conductors are present in your cable. Make sure that the earth conductors are sleeved to prevent accidental contact with live parts.

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WIRING INSTALLATION INSTRUCTIONS (QE1)

Simple circuit for domestic central heating boiler with gravity hot water supply
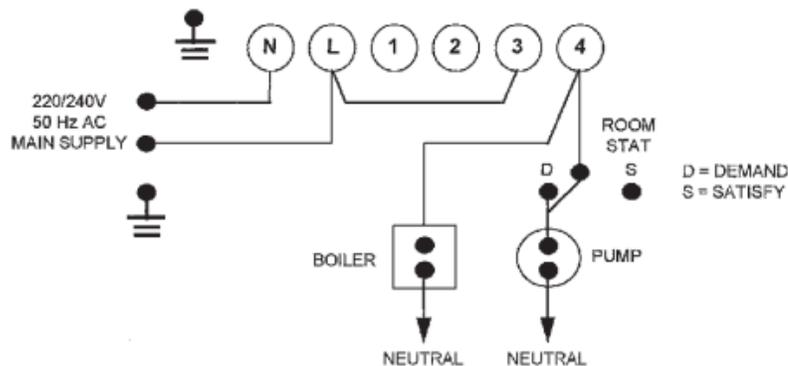
This diagram is correct for mains operated systems.
The link wire L-3 must be fitted by the installer.

Room Stat Conversion Chart

	E	N	COM	DEM	SAT
Tower SS	E	4	1	2	
Tower RS	E	4	1	3	
ACL TS 142	E	4	1	2	
Drayton RTE	E	4	1	2	3
Honeywell T6160B		2	1	3	4
Landis & Gyr RAD5		4	6	2	
Switchmaster SRT2	5		1	3	2
Sunvic TLX2259	E	4	3	1	

NB • TOWERCHRON QE1 is ideally suited for controlling combination boilers. The following basic circuit diagrams apply for range indicated.

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IMPORTANT NOTE:

It is important that you always refer to the Boiler Manufacturers Instructions concerning electrical wiring before using the information contained in this manual. In some cases the Boiler Manufacturers Instructions will contain information regarding removal of certain link wires and will always indicate the fuse for the main electrical supply.
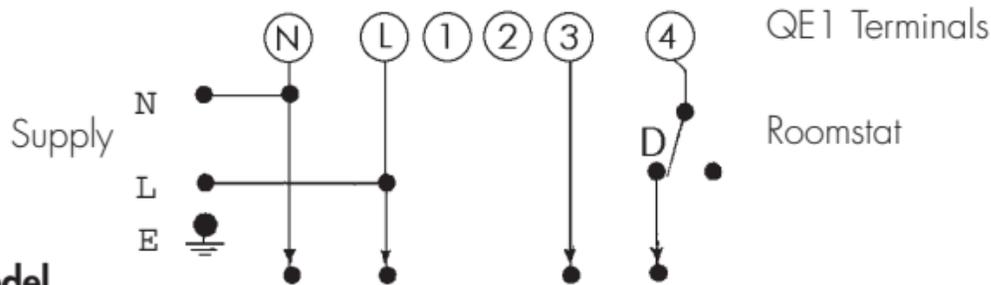
Combination boiler model	N	L (PH)	3	4
Chaffoteaux Celtic 2.20 OFF	N	PH	7	6
ELM Leblanc GVM 420	See special circuit			
Glowworm Fuelsaver	N	L	8	7
Ravenheat	N	L	C	D
Saunier Duval SD 620F	N	L	2	3
Saunier Duval SD 123C	N	L	2	1
Saunier Duval SD 235C	N	L	2	1
Saunier Duval SD 135V	N	L	2	1
Saunier Duval SD 625M	See special circuit			

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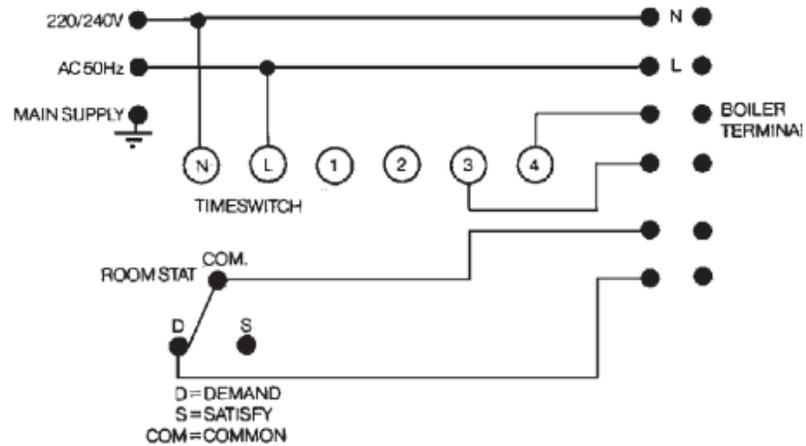|			
Vaillant VCW 20/1 T3W	1MP	2R	3	4
Vaillant VCW 25/1 T3W	1MP	2R	3	4
Vaillant VCW SINE 18 T3W	1MP N	2R L	3	4
Vaillant VCW GB 182 EH	1	2	3	4
Vaillant VCW GB 242 EH	1	2	3	4
Vokera 18/72 MCF	N	L	4	5
Vokera 21/84 MCF	N	L	4	5
Vokera 21/84 Turbo	N	L	4	5
Vokera 18/72 DMCF	N	L	3	4
Vokera 21/84 DMCF	N	L	3	4
Vokera 21/84 DC Turbo	N	L	3	4
Vokera 20/80 RS Turbo	N	L	3	4
Worcester Heatslave Senior 12	N	L	2	4
Worcester Heatslave Senior 20430	N	L	2	4
Worcester Heatslave Senior 6	N	L	2	6
Worcester Heatslave 9-24 RSF	N	L	1	2
Worcester Heatslave 9-24 BF	N	L	1	2
Worcester Heatslave 9-24	N	L	1	2
Worcester Heatslave High Flow BF	N	L	2	2
Worcester Heatslave High Flow OF	N	L	2	3

BOILER TERMINAL NUMBERS

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SAUNIER DUVAL SD625M

Always use the special 24V thermostat supplied with this boiler, and wire as indicated in boiler instructions, substituting time switch terminals A and B for terminals 3 and 4 respectively on QE1.

Boiler with Timeswitch and Room Thermostat

ELM Leblanc GVM 420

220/240V
AC 50Hz
MAIN SUPPLY

N
L

N L 1 2 3 4

TIMESWITCH

BOILER
TERMINAL

ROOM STAT   COM.

D   S

D = DEMAND
S = SATISFY
COM = COMMON
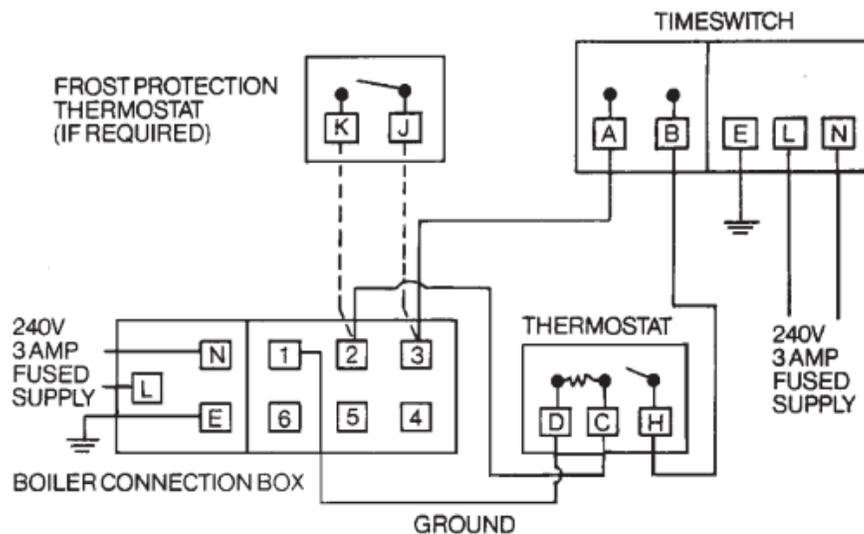
Open here, if you are programming Towerchron QE2.

"TOWERCHRON QE2"

APPLICATIONS (QE2)
- Fully pumped central heating systems using mid position valves, spring return valves or "power open", power closed valves.
- Gravity hot water, pumped heating systems with or without motorised valves fitted into the domestic hot water primary circuit.

Important note:
For fully pumped systems the switch located at the rear of the "QE2" must be moved to the right - into the "fully pumped" position.
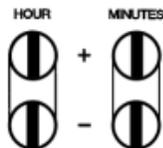
PROGRAMMING YOUR "TOWERCHRON QE2"

SETTING CURRENT TIME AND DAY

⇨ Open the keypad cover

⇨ Make sure that the slide switch is on position **"SET TIME AND DAY"** to the left.

If the battery is in a fully discharged condition at the moment of installation then the screen will be blank. The screen will start to display 2 minutes after plugging into mains supply. Now operate the "RESET" button.

⇨ Press the **"RESET"** button with a dull pointed instrument once

⇨ Press the "DAY" button until the actual day is marked

⇨ Repeatedly press **"HOUR +/-"**, then **"MINUTES +/-"** buttons until current time is displayed.

NB • If you are setting the clock in wintertime (GMT): The clock is now correctly set. If you are setting the clock in summertime (BST): Press the "Summer/Winter" button once. The arrowhead at the bottom of the display moves to indicate Summertime, and the clock is correctly set.

START THE INBUILT STANDARD PROGRAM

⇨ Move the slide switch to position **"RUN PRESET PROGRAM"**.

RUN PRESET
PROGRAM

NB • The inbuilt standard program is now active.

VIEW THE INBUILT STANDARD PROGRAM

⇨ Make sure that the slide switch is on postion **"RUN PRESET PROGRAM"**.

⇨ Repeatedly press the **"COPY"** button.

NB • Each press displays, one step at a time, the ON and OFF times for heating and hot water. Standard program is shown in the table.

HEATING SIDE ◄——————————————————————► **HOT WATER SIDE**

ON and OFF times for **HEATING** and **HOT WATER**

	ON	OFF	ON	OFF
Monday to Friday	6.30 a.m.	8.30 a.m.	4.30 p.m.	10.30 p.m.
Saturday to Sunday	8.00 a.m.	11.00 a.m.	4.00 p.m.	11.00 p.m.

To return to time of day

⇨ Press the **"CLEAR"** button

CLEAR

The preset program is activated.

SETTING YOUR OWN HEATING/HOT WATER PROGRAM

Both Heating and Hot Water will be turned ON and OFF at the same time.
It is recommended that you write down the switching times (sheet attached).
The following day groups are selectable:
Mon…Fri, Sat + Sun, Mon…Sat, Mon…Sun or any individual day.

⇨ Move the slide switch to position **"SET OWN PROGRAM"**

The first program is displayed.

1. To set "ON" time and day combination:
   ⇨ Press **"HOUR +/-"** then **"MINUTES +/-"** buttons
   ⇨ Press **"DAY"** button to select day/day groups

2. To copy the first "ON" time for Hot Water:
⇨ Press **"COPY"** button
The arrows on the Hot Water side of the display will flash to confirm the
copy instruction has been carried out.

The display now jumps to the next free program space so that the OFF time can be input. Repeat steps 1 to 2 to enter further "ON" and "OFF" times.
28 program places are available.

After completing your own program:
⇨ Move the slide switch to position **"RUN OWN PROGRAM"**

NB • The current time is displayed and your own program is
now active.

SETTING YOUR OWN HEATING/HOT WATER PROGRAM

(Heating and hot water will be turned ON and OFF at different times)

1. Setting your own heating times:
⇨ Move the slide switch to position **"SET OWN PROGRAM"**

The first program space is displayed.

1. To set Heating "ON" time and day combination:
⇨ Press the **"HOUR +/-"** then **"MINUTES +/-"** buttons
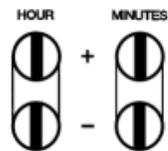⇨ Press the "DAY" button to select day/day groups

2. To store Heating "ON" time and view the next program space
⇨ Press the **"HEATING"** button

3. To set the first Heating "OFF" time and day combination
⇨ Press the **"HOUR +/-"** then **"MINUTES +/-"** buttons
(the day/day groups that were selected during "ON" time
programming are still in memory for this **"OFF"** time)

4. To store Heating "OFF" time and day combination
⇨ Press the **"HEATING"** button

The next free program place is displayed.

Repeat steps 1 to 4 to enter further "ON" and "OFF" times.

After completing your own program:
⇨ Move the slide switch to position **"RUN OWN PROGRAM"**

NB • The current time is displayed and your own progrm
is now active.

SETTING YOUR OWN HOT WATER TIMES:

⇨ Move the slide switch to position **"SET OWN PROGRAM"**
Press the **"HOT WATER"** button.
The first program place is displayed.

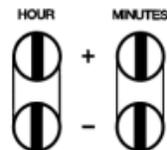1. To store Hot Water "ON" time and day combination:
⇨ Press the **"HOUR +/-"** then **"MINUTES +/-"** buttons
⇨ Press the **"DAY"** button to select day/day groups

2. To store Hot Water "ON" time and view the next program space
⇨ Press the **"HOT WATER"** button

3. To set the first Hot Water "OFF" time and day combination
⇨ Press "HOUR +/-" then "MINUTES +/-" buttons
(the day/day groups that were selected during "ON" time
programming are still in memory for this "OFF" time)

4. To store Hot Water "OFF" time and day combination:
⇨ Press the **"HOT WATER"** button

The next free program place is displayed.

Repeat steps 1 to 4 to enter further "ON" and "OFF" times.
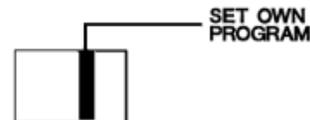
After completing your own program:
⇨ Move the slide switch to position **"RUN OWN PROGRAM"**

NB • The current time is displayed and your own program
   is now active.

VIEW/MODIFY/DELETE YOUR ENTERED PROGRAM SELECTIONS

⇨ Move the slide switch to position **"SET OWN PROGRAM"**

To view/modify your entered program selections:

To view Heating times:
⇨ Press the **"HEATING"** button repeatedly

To view Hot Water times:
⇨ Press the **"HOT WATER"** button repeatedly

NB • While you are viewing any program selection, you can modify the contents with the "DAY", "HOUR" and "MINUTES" button.

To delete your entered program selections:

To delete Heating times:
⇨ Press the **"HEATING"** button repeatedly until the desired ON or OFF
  time to be deleted appears.
⇨ Press the **"CLEAR"**-button. The selection displayed will be deleted.

To delete Hot Water times:
⇨ Press the **"HOT WATER"** button repeatedly until the desired ON or OFF
  time to be deleted appears.

⇨ Press the **"CLEAR"** button. The selection displayed will be deleted.

To return to time of day:
⇨ Press the **"RUN OWN PROGRAM"** button

HOT WATER

HOT WATER

CLEAR

RUN OWN
PROGRAM

MANUAL OVERRIDE FUNCTIONS

With the time switch is in the **"RUN PRESET PROGRAM"** or **"RUN OWN PROGRAM"** mode, and without having to open the keypad cover, you can manually override either program without disrupting the original settings by pressing the "Select" button.

TMD

When the **"RUN PRESET PROGRAM"** or **"RUN YOUR OWN PROGRAM"** mode is active, the arrow points to TMD (Timed),

BOOST To switch ON for 1 hour	Press the **"HEATING" or "HOT WATER"** button until the arrow in the display points to BOOST	The programmer will automatically return to the timed function after 1 hour.	
ADV To switch ON (or OFF) early	Press the **"HEATING" or "HOT WATER"** button until the arrow in the display points to **ADV** (Advance)	The programmer will automatically go back to the timed function according to the next programmed entry.	

|		
CONST To switch ON permanently	Press the **"HEATING" or** **"HOT WATER"** button until the arrow in the display points to **CONST** (Constant)	The programmer stays ON permanently - until you move the arrow by using the **"HEATING"** or **"HOT WATER"** button again.
OFF To switch OFF permanently	Press the **"HEATING"** or **"HOT WATER"** button until the arrow in the display points to **ADV** (Advance)	The programmer stays OFF permanently - until you move the arrow by using the **"HEATING"** or **"HOT WATER"** button again.

GENERAL INSTALLATIONS INSTRUCTIONS (QE2)
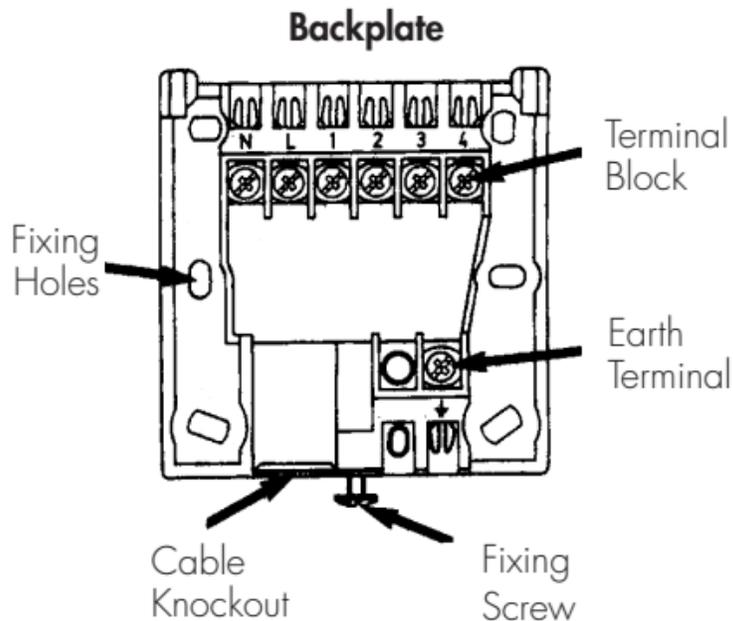
Backplate

The TOWERCHRON QE2 is double insulated, so earth protection is not required. However, in the backplate a terminal for earth continuity is provided which should be used if earth conductors are present in your cable. Make sure that the earth conductors are sleeved to prevent accidental contact with live parts.

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INTERNAL WIRING DIAGRAM (QE2)
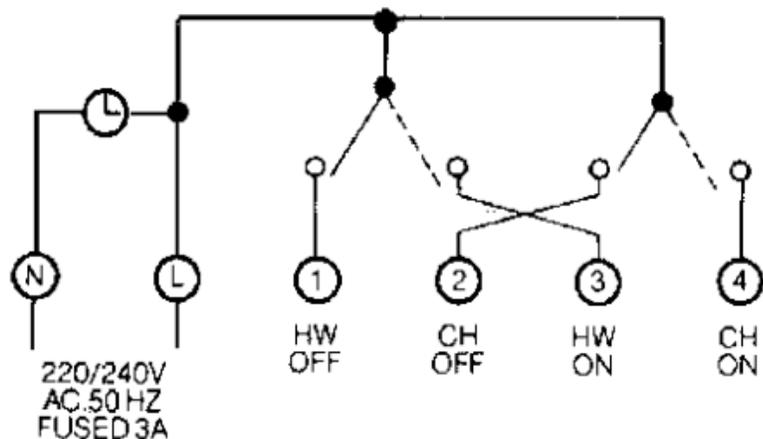
**NB** • Carry out wiring installation using appropriate diagram as shown.

NB • Plug in unit and secure to the base by tightening fixing screw.

Important note:

For fully pumped systems the switch located at the rear of the "QE2" must be moved to the right - into the "fully pumped" position

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## WIRING INSTALLATION INSTRUCTIONS (QE2)

Gravity Hot Water/Pumped Heating - System with roomstat controlled pump
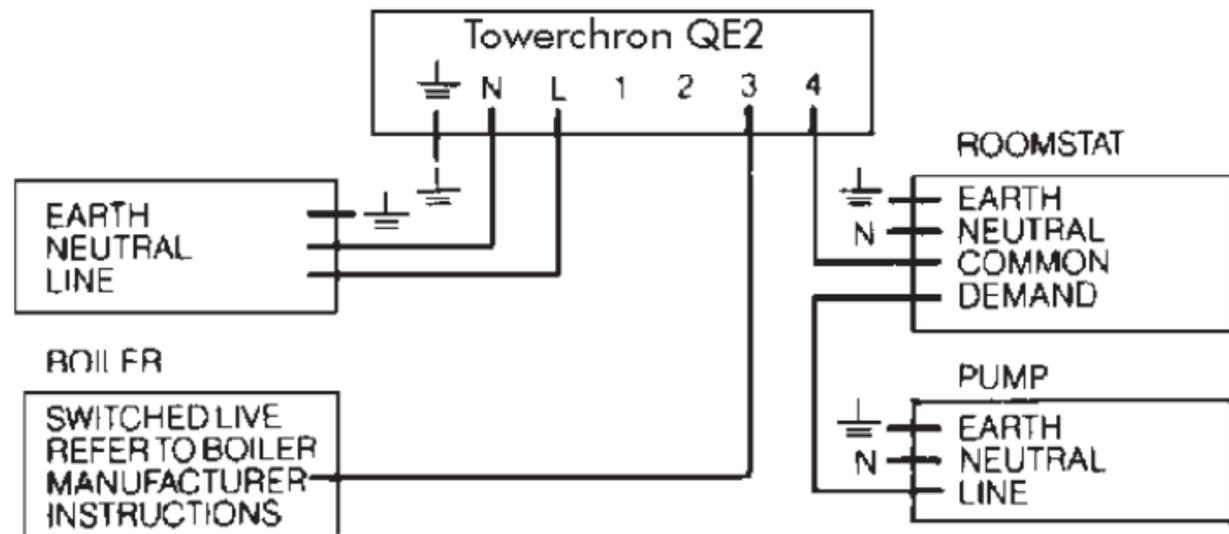
The following wiring diagrams are schematic only (for clarity the earth and neutral connections are omitted). We suggest when wiring systems, a suitable wiring centre is used (the Tower controls wiring centre is purpose made and gives full information for wiring this programmer into compatible equipment).

Gravity Hot Water/Pumped Heating System Two Port Valve in D.H.W. with Room and Cylinder Stats
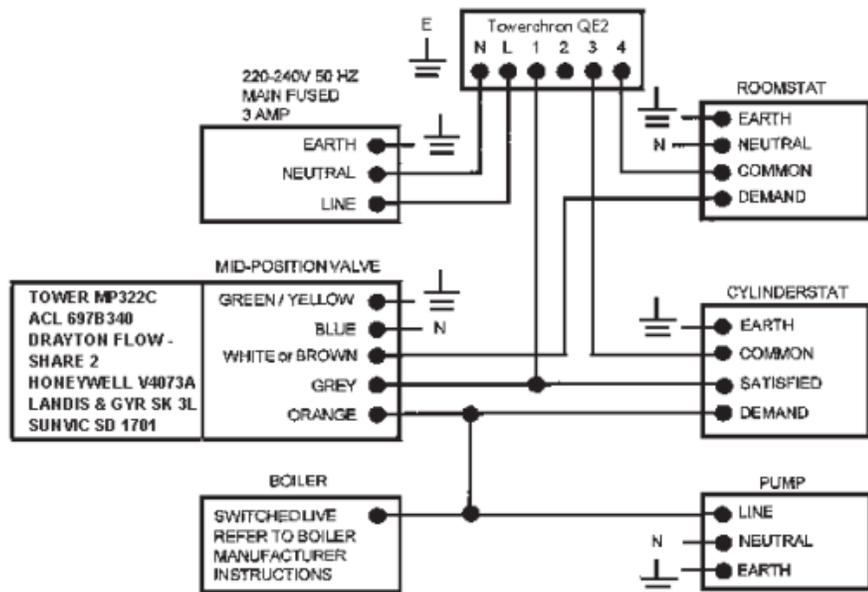**Note: Only valves with "change over" switches are suitable**
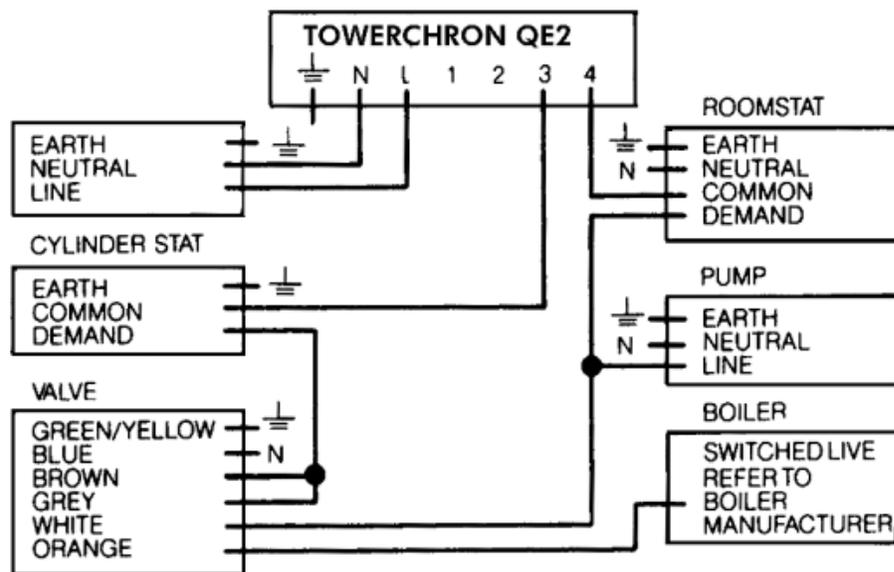
Fully Pumped System using 2 Port Spring Return
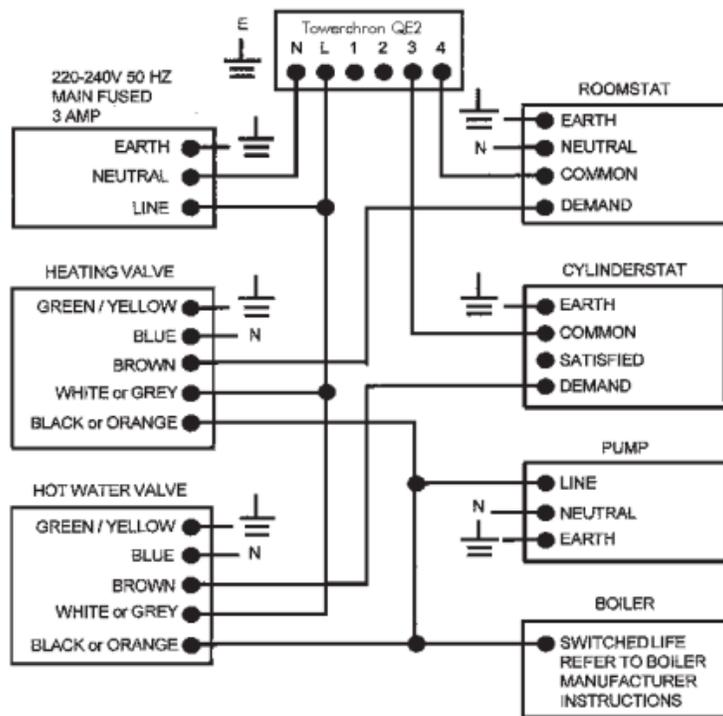
Fully Pumped System using 3 Port Mid-Position Valve

Conversion Chart for Room / Cylinder Thermostats

Cylinder Stats

	E	COM	DEM	SAT
Tower CS1		RED	BLK	YEL
ACL HTS 2				
Drayton CS1	E	1	2	3
Honeywell L641 A	C	1	2	
Landis & Gyr RAM21		1	2	3
Switchmaster SCT1		1	2	3
Sunvic SA 2451	E	3	1	2

Room Stats

	E	N	COM	DEM	SAT
Tower SS	E	4	1	2	
Tower RS	E	4	1	3	
ACL TS 142	E	4	1	2	
Drayton RTE	E	4	1	2	3
Honeywell T 6160B		2	1	3	4
Landis & Gyr RAD5		4	6	2	2
Switchmaster SRT2	5		1	3	
Sunvic TLX2259	3	4	3	1	