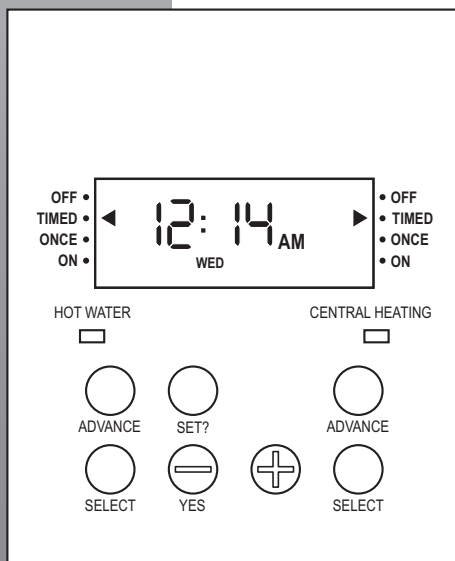


INSTALLATION & OPERATING INSTRUCTIONS

DIGITAL TWIN CHANNEL PROGRAMMER

FOR USE WITH THE FOLLOWING GREENSTAR HIGH EFFICIENCY APPLIANCES:

GREENSTAR HE 25, 27, 30 COMBI
GREENSTAR HE R25, R30 COMBI
GREENSTAR HIGHFLOW 440 COMBI
GREENSTAR HE 27, 28 SYSTEM
GREENSTAR HE R28 SYSTEM



67206/2251-00.1W6



**WORCESTER**
Bosch Group

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1 SYMBOLS AND SAFETY PRECAUTIONS

1.1 EXPLANATION OF SYMBOLS

WARNING SYMBOLS

	Safety instructions in this document are framed and identified by a warning triangle which is printed on a grey background.
--	---

	Electrical hazards are identified by a lightning symbol surrounded by a warning triangle.
--	---

Signal words indicate the seriousness of the hazard in terms of the consequences of not following the safety instructions.

- **NOTICE** indicates possible damage to property or equipment, but where there is no risk of personal injury.
- **CAUTION** indicates possible personal injury.
- **WARNING** indicates possible severe personal injury.
- **DANGER** indicates possible risk of life.

IMPORTANT INFORMATION

	Notes contain important information in cases where there is no risk of personal injury or material losses and are identified by the symbol shown on the left. They are bordered by horizontal lines above and below the text.
--	---

ADDITIONAL SYMBOLS

Symbol	Meaning
▶	a step in an action sequence
→	a reference to a related part in the document or to other related documents
•	a list entry
–	a list entry (second level)

Tab. 1 Symbols

1.2 SAFETY PRECAUTIONS

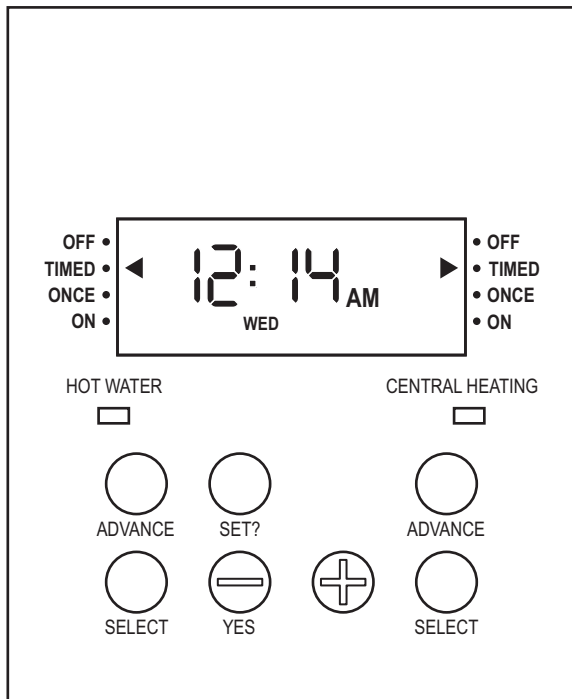
IF YOU SMELL GAS:

- ▶ **DO NOT** SMOKE OR STRIKE MATCHES
 - ▶ **DO NOT** TURN ELECTRICAL SWITCHES ON OR OFF
 - ▶ PUT OUT NAKED FLAMES
 - ▶ OPEN DOORS AND WINDOWS
 - ▶ KEEP PEOPLE AWAY FROM THE AFFECTED AREA
 - ▶ TURN OFF THE CONTROL VALVE AT THE GAS METER
 - ▶ CALL YOUR GAS COMPANY
- OR**
- ▶ CALL THE EMERGENCY NUMBER 0800 111 999

APPLIANCE OPERATION

This appliance must only be operated by a responsible adult who has been instructed in, understands and is aware of the appliance's operating conditions and effects.

2 GENERAL INFORMATION



SPECIFICATIONS

- Twin channel programmer for CH and DHW mounted into the boiler fascia
- Factory set date and time
- Automatic switch over to and from Day light savings time (GMT - BST)
- Seven day programmer
- Three ON/OFF periods per day
- Pre-programmed ON/OFF periods
- Dedicated advance buttons
- 12 hour digital display
- Holiday functions
- Pre-wired connector

TECHNICAL DATA

DESCRIPTION	UNITS	PROGRAMMER
Electrical supply	Volts d.c.	24
Ambient operating temperatures	°C	0 to +50
Humidity operating range	% non-condensing up to 45°	30 - 95
Class of protection		II
Degree of protection	IP	20
Battery back up: programme		Always
Battery back up: time		Always
Battery back up: display	hours	None
Shortest switching period	minutes	1
DHW & CH on/off periods	number/days	3
DHW & CH programmes	days	7

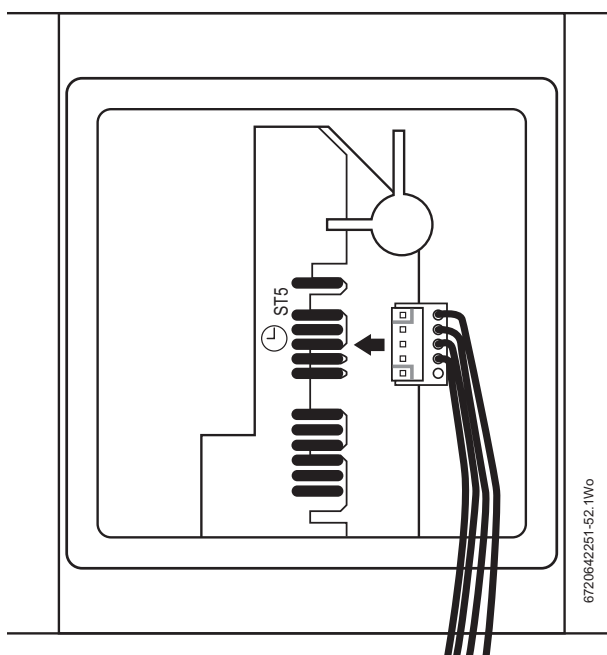
Tab. 2

3 FITTING THE PROGRAMMER



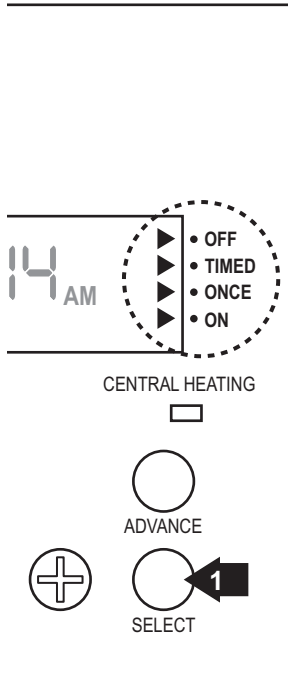
WARNING: Disconnect the electrical mains supply and turn off the gas supply before working on the appliance.

1. Refer to the applicable appliance manual for instructions and remove the outer casing.
2. Remove the fascia cover plate by releasing the clip at the top and withdraw the cover plate from the front.
3. Connect the programmer plug to the four way connection on the PCB, see figure below.
4. Push the programmer into position ensuring that the lead is not trapped and the clip is properly engaged.
5. Replace the appliance casing.



4 PROGRAMMER CONTROLS

4.1 CENTRAL HEATING



1. Press **SELECT** button to choose:

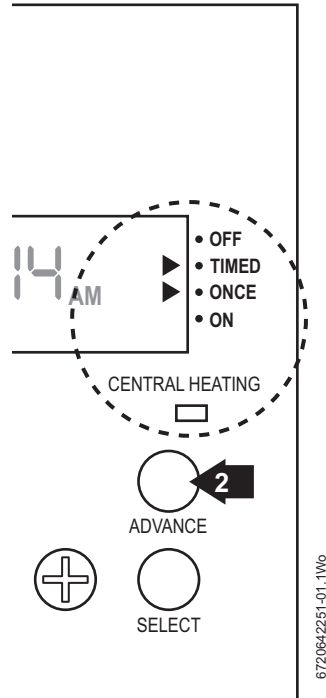
- ▶ **OFF** = constantly off
- ▶ **TIMED** = up to three **ON** and three **OFF** time periods as per programme
- ▶ **ONCE** = **ON** from first **ON** and **OFF** after the third **OFF** period
- ▶ **ON** = constantly on

2. Press **ADVANCE** button:

- ▶ **CENTRAL HEATING** light on (heating stays on until next OFF period)

-or-

- ▶ **CENTRAL HEATING** light off (heating stays off until next ON period)

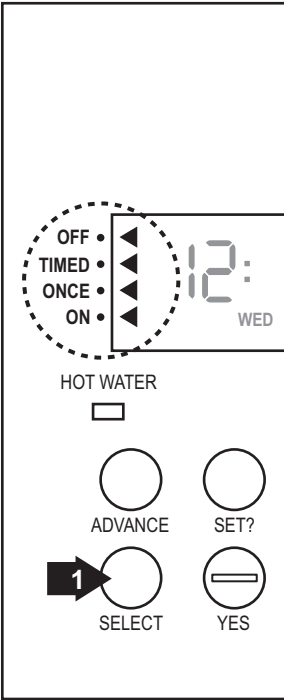


6720642251-01_11Wo



ADVANCE will not function with constant **ON** or **OFF** selected.

4.2 HOT WATER



1. Press **SELECT** button to choose:

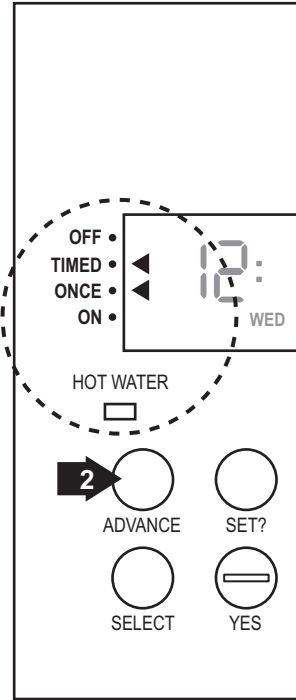
- ▶ **OFF** = constantly off
- ▶ **TIMED** = up to three **ON** and three **OFF** time periods as per programme
- ▶ **ONCE** = **ON** from first **ON** and **OFF** after the third **OFF** period
- ▶ **ON** = constantly on

2. Press **ADVANCE** button:

- ▶ **HOT WATER** light on (hot water stays on until next OFF period)

-or-

- ▶ **HOT WATER** light off (hot water stays off until next ON period)

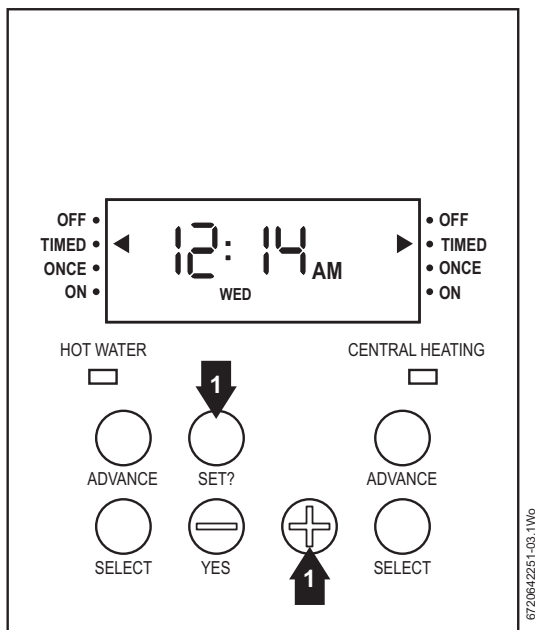


672064/2251-02.1/Wo



ADVANCE will not function with constant **ON** or **OFF** selected.

4.3 PRE-SET PROGRAM



If you need to restore the factory preset program times then:

1. Press the **SET?** and **PLUS** buttons together to restore the default program times as shown in table 3.



Two **ON/OFF** periods can be used instead of three by setting the 2nd **ON/OFF** times to 12:00 as shown in the default table 3.

One **ON/OFF** period can be achieved by setting the 2nd and 3rd **ON/OFF** times to the same time. See page 14 **SETTING PROGRAMS** if changes are required to the pre-programmed settings.

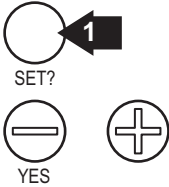
	1st	1st	2nd	2nd	3rd	3rd
	ON	OFF	ON	OFF	ON	OFF
	AM	AM	PM	PM	PM	PM
Central heating						
MON to FRI						
Time	6:30	8:30	12:00	12:00	4:30	10:30
SAT & SUN						
Time	7:00	9:00	12:00	12:00	4:00	11:00
Hot water						
MON to FRI						
Time	6:30	8:30	12:00	12:00	4:30	10:30
SAT & SUN						
Time	7:00	9:00	12:00	12:00	4:00	11:00

Tab. 3 Default program periods

4.4 SETTING THE TIME

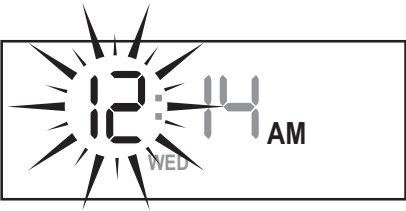
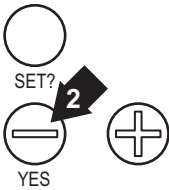


The time is preset and normally does not need to be adjusted.
British Summer Time and GMT changes are adjusted automatically.
Press **SET?** repeatedly to step through “Setting the time” to reach the next section



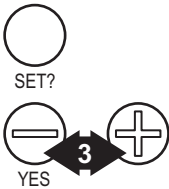
6720642251-04.1Wo

1. Press the **SET?** button to show **SET** and **CLOCK?** in the display.



6720642251-05.1Wo

2. Press **YES** to display the time with the hours flashing.

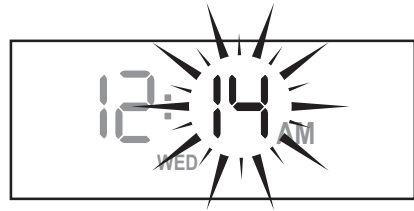
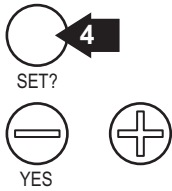


6720642251-06.1Wo

3. Press the **PLUS** or **MINUS** button to correct the hour, taking note of the AM or PM shown.

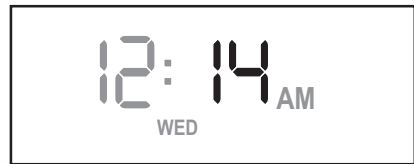
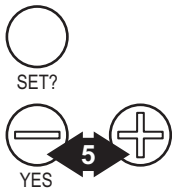


Hold down either the **PLUS** or **MINUS** button to speed up the display changes.



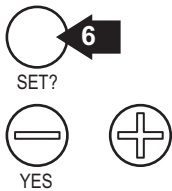
6720642251-07.1Wo

4. Press the **SET?** button to set the correct hour and then the minutes will flash.



6720642251-08.1Wo

5. Press the **PLUS** or **MINUS** button to correct the minutes.



6720642251-09.1Wo

6. Press the **SET?** button to set the correct minutes, **SET** and **DATE?** then appear in the display.

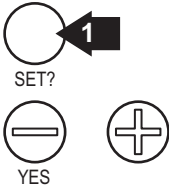


If you do not wish to change the date, press **SET?** until the normal display is resumed. Alternatively do not press any buttons and the display will revert to the normal display after two minutes.

4.5 SETTING THE DATE

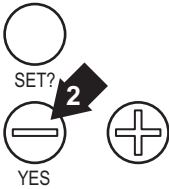


The date is preset and does not normally need to be changed.
Press **SET?** repeatedly to step through “Setting the date” to reach the next section



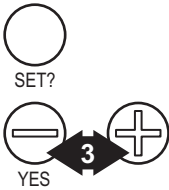
6720642251-10.1Wo

1. Press the **SET?** button to show **SET** and **DATE?** in the display.



6720642251-11.1Wo

2. Press **YES** to display the date with the year flashing.

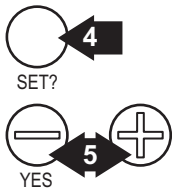


6720642251-12.1Wo

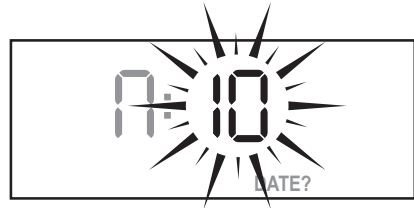
3. Press **PLUS** or **MINUS** to correct the year.



Hold down either the **PLUS** or **MINUS** button to speed up the display changes.

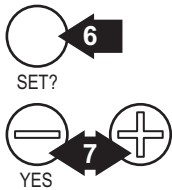


4. Press the **SET?** button to set the correct year and the month will flash on the display.

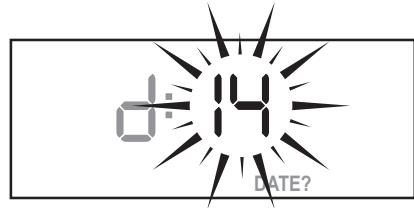


6720642251-13.1Wo

5. Press **PLUS** or **MINUS** to correct the month.

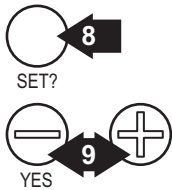


6. Press the **SET?** button to set the correct month and the day will flash on the display.

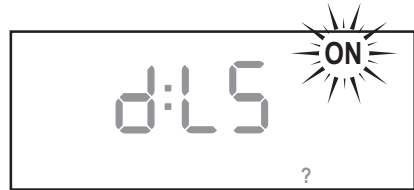


6720642251-14.1Wo

7. Press **PLUS** or **MINUS** to correct the day.



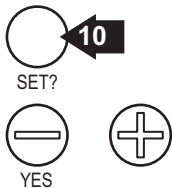
8. Press the **SET?** button to set the correct day and the current DLS status will start flashing.
9. Press **PLUS** or **MINUS** to turn DLS on or off.



6720642251-15.1Wo



British Summer Time and GMT time change are automatically adjusted if DLS is turned on.



10. Press **SET?** to return to normal operation.



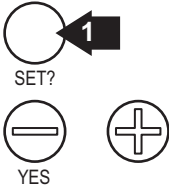
6720642251-16.1Wo

4.6 SETTING THE PROGRAMS



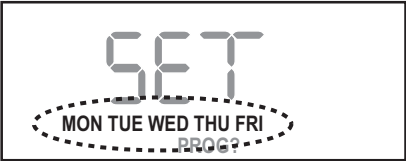
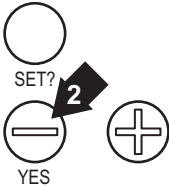
If you require different ON/OFF times during the week, refer to “Setting individual weekdays” refer to page 17

4.6.1 SETTING CH MON - FRI



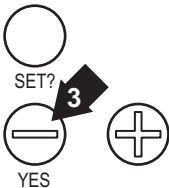
6720642251-17.1Wo

1. Press **SET?** until **SET** and **PROG?** are shown on the display.



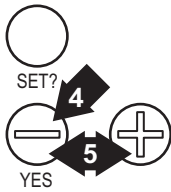
6720642251-18.1Wo

2. Press **YES** to enter program.



6720642251-19.1Wo

3. Press **YES** to select MON - FRI.

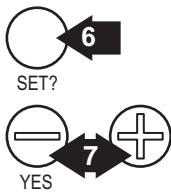


6720642251-20.1Wo

4. Press **YES** to select **CH**.
5. Press **PLUS** or **MINUS** to change the ON time.

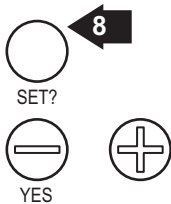


Hold down either the **PLUS** or **MINUS** button to speed up the display changes.



6720642251-21.1Wo

6. Press **SET?** to set the ON time and select the OFF time.
7. Press **PLUS** or **MINUS** to change the OFF time.



To set 2nd & 3rd on/off times go back to 

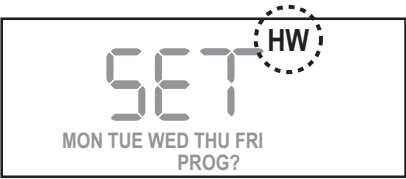
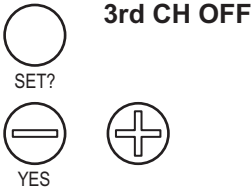
6720642251-22.1Wo

8. Press **SET?** to set the OFF time and select the next ON time.
Repeat operations 5 to 8 to set the 2nd and 3rd CH ON/OFF times.



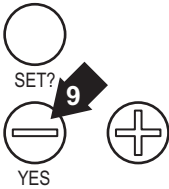
After pressing **SET?** for the 3rd CH OFF time the display shows **SET HW MON - FRI.**

4.6.2 SETTING HW MON - FRI



6720642251-23.1Wo

9. Press **YES** to select the 1st ON time.



6720642251-24.1Wo

10. Press **SET?** to set the ON and OFF times as before.
Repeat operations 5 to 8 to set the 1st, 2nd and 3rd **HW ON/OFF** times.



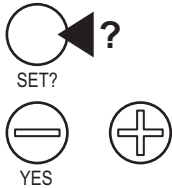
After pressing **SET?** for the 3rd **HW OFF** time the display shows **SET MON**, refer to the next section.

4.6.3 SETTING INDIVIDUAL WEEKDAYS



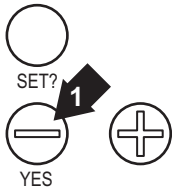
If you do not require individual weekday times, press **SET?** until **SET SAT - SUN** are displayed and continue with page 20

- If you do not wish to change the settings for the day displayed, then press **SET?** until the day you want to change is displayed.



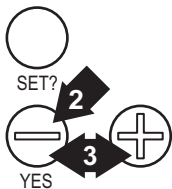
6720642251-25.1Wo

4.6.4 SETTING CH INDIVIDUAL WEEKDAYS:



6720642251-26.1Wo

1. Press **YES** to select weekday.

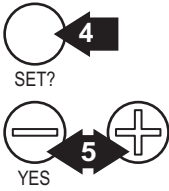


6720642251-27.1Wo

2. Press **YES** to select **CH**
3. Press **PLUS** or **MINUS** to change the ON time.

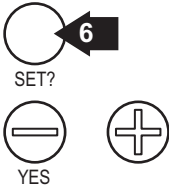


Hold down either the **PLUS** or **MINUS** button to speed up the display changes.



6720642251-28.1Wo

4. Press **SET?** to set the ON time and select the OFF time.
5. Press **PLUS** or **MINUS** to change the OFF time.



To set 2nd & 3rd on/off times go back to 

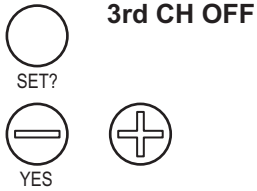
6720642251-29.1Wo

6. Press **SET?** to set the OFF time and select the next ON time.
Repeat operations 3 to 6 to set the 2nd and 3rd **CH ON/OFF** times.



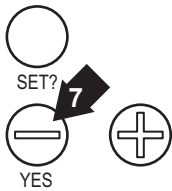
After pressing **SET?** for the 3rd **CH OFF** time, the display shows **SET HW** for that weekday.

4.6.5 SETTING HW INDIVIDUAL WEEKDAYS



672064/2251-30.1Wo

7. Press **YES** to select the 1st ON time.
Repeat operations 3 to 6 to set the 1st, 2nd and 3rd **HW ON/OFF** times.



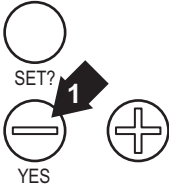
672064/2251-31.1Wo

8. After pressing **SET?** for the 3rd **HW OFF** time **SET** and the next weekday are displayed.

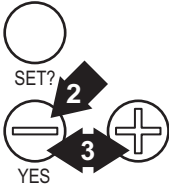


After completing the steps above for **FRI** the display shows **SET SAT SUN**, refer to next section.

4.6.6 SETTING CH SAT - SUN



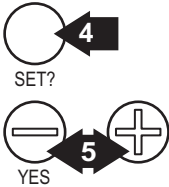
1. Press **YES** to select weekend.



2. Press **YES** to select **CH**.



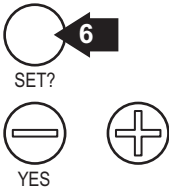
3. Press **PLUS** or **MINUS** to change the ON time.



4. Press **SET?** to set the ON time and select the OFF time.



5. Press **PLUS** or **MINUS** to change the OFF time.



To set 2nd & 3rd on/off times go back to

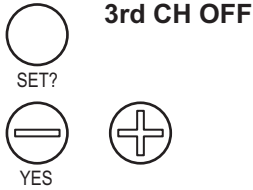


6. Press **SET?** to set the OFF time and select the next ON time.
Repeat operations 3 to 6 to set the 2nd and 3rd **CH ON/OFF** times.

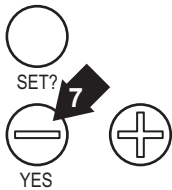


After pressing **SET?** for the 3rd **CH OFF** time, the display shows **SET HW SAT - SUN.**

4.6.7 SETTING HW SAT - SUN:



6720642251-36.1Wo



6720642251-37.1Wo

7. Press **YES** to select the 1st ON time.
Repeat operations 3 to 6 to set the 1st, 2nd and 3rd **HW ON/OFF** times.



After pressing **SET?** for the 3rd **HW OFF** time, the display shows **SET SAT**.

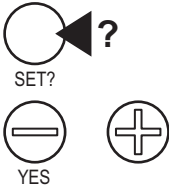
Refer to the next section.

If you do not require individual weekend times, press **SET?** until the normal display is resumed.

4.6.8 SETTING INDIVIDUAL WEEKEND DAYS:



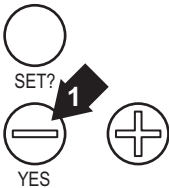
If you do not require individual weekend times, then press **SET?** until the normal display is shown



6720642251-38.1Wo

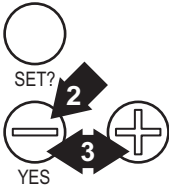
- If you do not wish to change the settings for **SAT**, then press **SET?** to move to **SUN**.

4.6.9 SETTING CH INDIVIDUAL WEEKEND DAYS



6720642251-39.1Wo

1. Press **YES** to select day displayed.

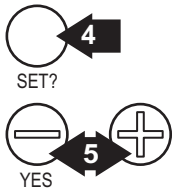


6720642251-40.1Wo

2. Press **YES** to select **CH**.
3. Press **PLUS** or **MINUS** to change the ON time.



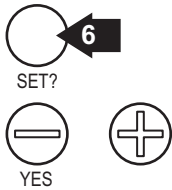
Hold down either the **PLUS** or **MINUS** button to speed up the display changes.



6720642251-41.1Wo

4. Press **SET?** to set the ON time and select the OFF time.

5. Press **PLUS** or **MINUS** to change the OFF time.



To set 2nd & 3rd on/off times go back to



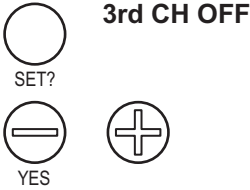
6720642251-42.1Wo

6. Press **SET?** to set the OFF time and select the next ON time.
Repeat operations 3 to 6 to set the 2nd and 3rd **CH ON/OFF** times.



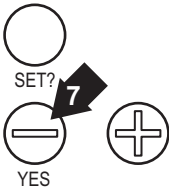
After pressing **SET?** for the 3rd **CH OFF** time, the display shows **SET HW** for that day.

4.6.10 SETTING HW INDIVIDUAL WEEKEND DAYS



6720642251-43.1Wo

7. Press **YES** to select the 1st ON time.
Repeat operations 3 to 6 to set the 1st, 2nd and 3rd **HW ON/OFF** times.

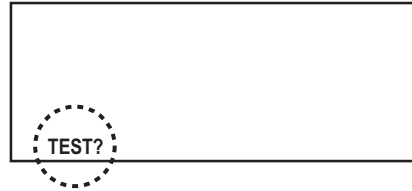
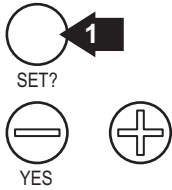


6720642251-44.1Wo



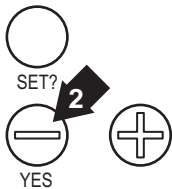
After completing the steps above, the display shows **TEST?**. Refer to the next section to check your **CH** and **HW** settings. If you do not require to check the program settings, then press **SET?** until the normal program is displayed.

4.6.11 TESTING THE PROGRAMMES



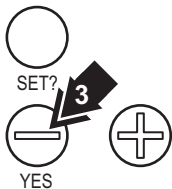
6720642251-45.1Wo

1. Press the **SET?** button until **TEST?** is displayed.



6720642251-46.1Wo

2. Press **YES** to enter the test program.



6720642251-47.1Wo

3. Press and hold down the **YES** button to continuously cycle through all the programmed ON and OFF times for each day of the week.

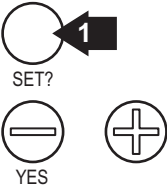
The display pauses when a set program time is shown with the **HOT WATER** and **CENTRAL HEATING** lights ON or OFF according to the program settings.



To temporarily stop the display advancing, release the **YES** button, then press **YES** again to continue.

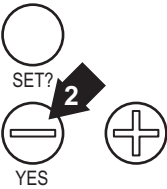
- To change the program settings, refer to **SETTING THE PROGRAMS**.
- Press the **SET?** button to return to the normal run mode.

4.6.12 SETTING HOLIDAYS



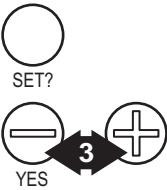
6720642251-48.1Wo

1. Press the **SET?** button until **SET** and **HDAY?** is displayed.



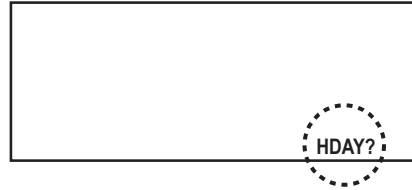
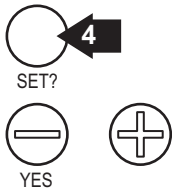
6720642251-49.1Wo

2. Press **YES**, the display shows **00**.



6720642251-50.1Wo

3. Press **PLUS** or **MINUS** to set the number of days you require the system to be off.



6720642251-51.1W6

4. Press **SET?** and **HDAY** is displayed to show that there is no demand for heating from the programmer.



The program will return to normal operation after the set number of days.

- To cancel the holiday setting and return to normal operation, press any button.



The programmer counts any pass through midnight as one day. For example, if you do not want the heating ON from Saturday evening until Tuesday morning, set for three days.

5 MAINTENANCE AND SPARES

5.1 MAINTENANCE

- ▶ The programmer requires no maintenance.
- ▶ The outer casing can be wiped clean using a dry cloth, do not use polish or detergents.

5.2 SERVICING

- ▶ The unit cannot be serviced.
- ▶ Should the existing unit fail to function correctly, check that the times and program settings are correct.

5.3 REPLACEMENT PARTS

- ▶ Twin channel digital programmer replacement spare parts number: 8 716 105 531 0

CONTACT INFORMATION

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