HAMWORTHY
heating products

MARSHALL BOILER SEQUENCE CONTROL SYSTEM

USER'S OPERATING INSTRUCTIONS

THESE INSTRUCTIONS SHOULD BE READ AND UNDERSTOOD BEFORE ATTEMPTING TO OPERATETHE MARSHALL SYSTEM

MARSHALL BOILER SEQUENCE CONTROL SYSTEM WITH OPTIMISING TIME CONTROL AND OUTSIDE TEMPERATURE COMPENSATION

USER'S OPERATING INSTRUCTIONS

NOTE: THESE INSTRUCTIONS SHOULD BE READ AND UNDERSTOOD BEFORE ATTEMPTING TO OPERATE THE MARSHALL SYSTEM.

THE MARSHALL SYSTEM IS INTENDED FOR USE ONLY IN COMMERCIAL/LIGHT INDUSTRIAL APPLICATIONS.

THIS BOILER SEQUENCE CONTROL SYSTEM COMPLIES WITH THE ESSENTIAL REQUIREMENTS OF THE ELECTROMAGNETIC COMPATIBILITY DIRECTIVE 89/336/EEC AMENDED BY 91/263/EEC AND 92/31/EEC.

PUBLICATION NO. 500001056
ISSUE 'C'
MAY 1996
056_USER.WPD

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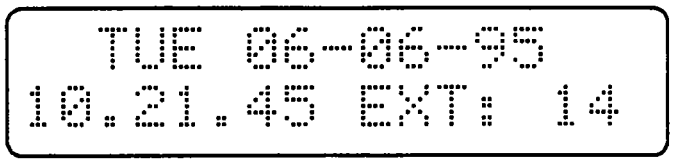
1.0 RUN MODE DISPLAY SCREENS

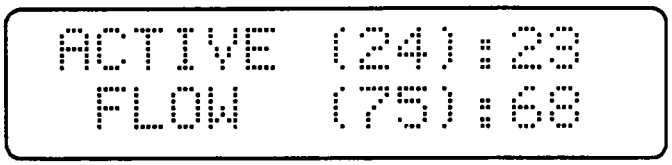
1.1 Clock Screen

This screen displays the date, time and the external (outside air temperature) sensor reading.
If an external sensor is not connected, the sensor temperature will read '??'.

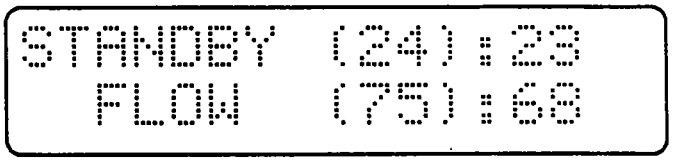


1.2 System Temperature Screen

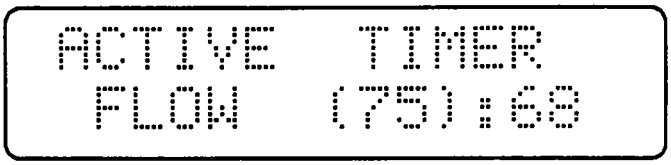
This screen displays the room comfort level and water flow temperature settings (in brackets), and also the actual room sensor and water flow sensor readings.



The display also shows the status of the heating system - in 'Active' or 'Standby' mode.

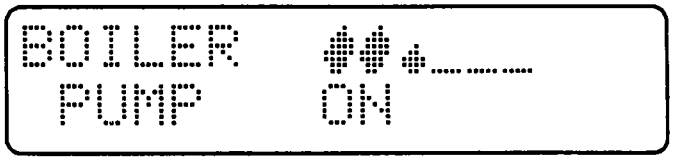


If the Optimiser function is not used the room comfort level setting and room sensor reading are replaced by the legend 'TIMER'.

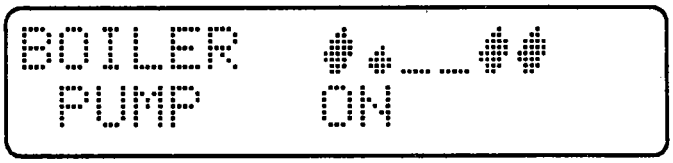


1.3 System Status Screen

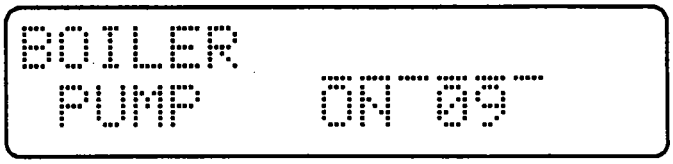
This screen displays the boiler and circulation pump status. The flame symbols represent the boilers. A small flame symbol represents a boiler on at low fire (high/low control boilers only), a large flame represents a boiler on at high fire.



When the 'Weekly shift' function is used the display shows which is the lead boiler by the sequence of the flame symbols. This example shows boiler 5 as the lead boiler.

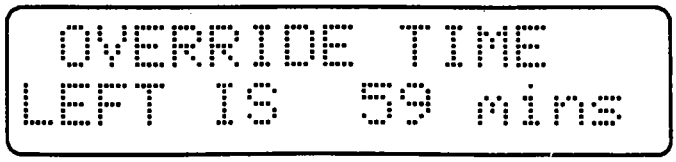


When the required room comfort level is acheived or at the end of an 'Active' period the boilers are shut down and the pump run on function operates. This is shown on the display by a countdown timer, which counts down in minutes until the pump is switched off. The pump status then reads 'OFF'.

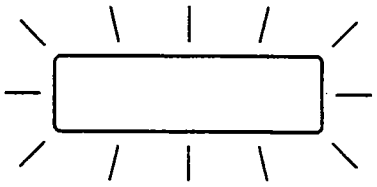


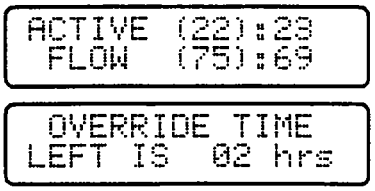
1.4 Override Time Remaining Screen

This screen alternates with the other Run mode screens when an override has been programmed. It shows the remaining time that the controll will be overriden in hours, until the last hour from when it counts down in minutes.

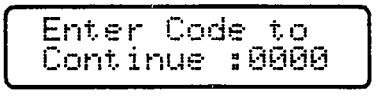
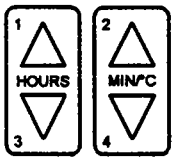
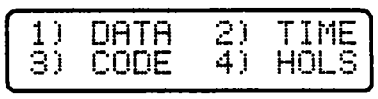


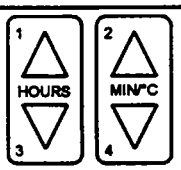
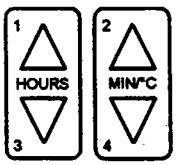
2.0 RUN MODE FUNCTIONS

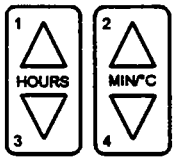
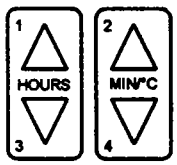
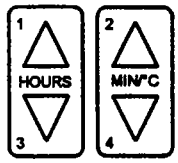
Operation	Key	Display
2.1 Display Illumination		
To illuminate the display press any key. **Note:** After ten minutes the illumination is automatically switched off unless another key is pressed. If the unit is in Program mode, after a furthur five minutes the unit will automatically return to Run mode.	RUN	
2.2 View Run Mode Screens		
To cycle through the three Run mode screens press the RUN key.	RUN RUN RUN	TUE 06-06-95 10.21.45 EXT: 14 ACTIVE (24):23 FLOW (75):68 BOILER PUMP ON
2.3 Override Comfort Level Setting		
1) To override the current 'Active' or 'Standby' comfort level temperature setting ensure that the System Temperature screen is displayed. **Note:** This function is only available if the Optimiser function is used.		ACTIVE (24):23 FLOW (75):69
2) To adjust the setting use the right hand up/down arrow keys. **Note:** There is a slight delay between pressing the key and the displayed temperature setting changing.	2 MIN/°C 4	ACTIVE (22):23 FLOW (75):69
2.4 Override Timeclock (Do NOT attempt to use this function if an external timeclock is connected)		
1) From any of the Run mode screens press the '3' key and the override screen is displayed.	HOURS 3	OVERRIDE TO 1) ON or 2) OFF
2) To override to on (Active) press the '1' key, or to override to off (Standby) press the '2' key. The 'override duration' screen is displayed.	1 HOURS 2 MIN/°C	ENTER OVERRIDE (04 hrs MAX):00
3) Use the right hand up/down arrow keys to enter the required override duration in hours.	2 MIN/°C 4	ENTER OVERRIDE (04 hrs MAX):03

Operation	Key	Display
4) Press the PROG key to initiate the override. The Run mode screen will be displayed, and it will alternate with the 'override time remaining' screen. The override time counts down in hours until the last hour from when it counts down in minutes. At the end of the override period the unit reverts to normal operation.		
5) To cancel the override repeat the above sequence of operations, but enter an override duration of '00' hours. The unit will revert to normal operation.		
2.5 Remote Override Switch Operation		
If a remote override switch is connected to the Marshall system, the Master controller can be overridden to on (Active), by turning this switch on. The system will remain in the Active position until the remote override switch is turned off.		

3.0 PROGRAM MODE FUNCTIONS

Operation	Key	Display
3.1 Enter Programme Mode		
1) To enter Programme mode press the PROG key and the code entry screen will be displayed.		
2) Enter the first two digits of the code using the left hand up/down arrow keys and the second two digits using the right hand up/down arrow keys. **Note!** The user's code is initially factory set to '0000'.		
3) To enter the code press the PROG key. If the code entered is incorrect an error message is displayed and the unit will return to Run mode. When the correct code is entered the unit will display the User's Setup Menu screen.		 
2.1 Data Option		
1) To view or set the comfort level and heating switching time settings press the '1' key. The 'Active' comfort level setting screen is dispayed. **Note:** If the Optimiser function is not being used this screen is not displayed.		

Operation	Key	Display
2) To adjust the 'Active' comfort level setting use the right hand up/down arrow keys.		ENTER REQUIRED ACTIVE TEMP :20
3) To enter the new setting press the PROG key. The 'Standby' comfort level setting screen is displayed. **Note:** If the Optimiser function is not used this screen is not displayed.		ENTER REQUIRED STANDBY TEMP:20
4) This setting can be changed using the same procedure as for the 'Active' setting. When the new setting is entered using the PROG key, the first heating switching time setting screen is displayed. **Note:** If an external time clock is used this screen is not displayed.		ENTER HEATING SWITCHING TIMES ACTIVE TIME1 MON S:07.00 E:18.00
5) To return to the User Setup Menu screen at any point whilst viewing or setting the heating switching times, press the RUN key.		1) DATA 2) TIME 3) CODE 4) HOLS
6) To set the start time of the first 'Active' (on) period for Monday, use the left hand up/down arrow keys to change the hours and the right hand up/down arrows to change the minutes.		ACTIVE TIME1 MON S:06.30 E:18.00
7) To enter the new start time press the PROG key. **Note:-** 1. When the Optimiser function is used the start time is the time at which the required comfort level is to be reached, NOT the time at which the heating is switched on. 2. If the time settings for this Active period do not require changing, pressing the PROG key will bring up the next period time setting screen (see 2.9).		ACTIVE TIME1 MON S:06.30 E:18.00
8) The end time of the Active period is set in the same way as the start time. **Note:** If only the end time of the period requires changing the start time must be adjusted away from its initial setting and then returned to it before pressing the PROG key, to allow the end time to be adjusted.		ACTIVE TIME1 MON S:06.30 E:17.30
9) Press the PROG key to enter the end time. The second Active period time setting screen is displayed. **Note:** The Active period can be disabled by entering '00.00' for both start and end times.		ACTIVE TIME2 MON S:00.00 E:00.00

Operation	Key	Display
10) The remaining three of the four Active periods for Monday are set using the same procedure as for the first. Once this has been carried out the 'Copy' screen is displayed.		PRESS 4 TO COPY, PROG TO CONTINUE
11) If the heating switching times for the next day are to be the same as those for the day just set, they can be copied by pressing the '4' key.		-- TUESDAY -- --- COPIED ---
12) If the heating switching times for the next day are to be different press the PROG key to continue.		ACTIVE TIME1 TUE S:07.00 E:18.00
13) The heating switching times for the remaining days are set using the same procedure. When the last time setting is entered the unit will return to the User Setup Menu screen.		1) DATA 2) TIME 3) CODE 4) HOLS
3 Time Option		
1) To set the correct time and date press the '2' key from the User Setup Menu screen. The clock setting screen will be displayed.		ENTER NEW CLOCK SETTING :10.28
2) Enter the correct clock setting, using the left hand up/down arrow keys for the hours and the right hand up/down arrow keys for the minutes.		ENTER NEW CLOCK SETTING :11.31
3) Press the PROG key to enter the new clock setting. The date setting screen will be displayed.		ENTER NEW DATE SETTING:06-06-95
4) Enter the correct date setting, using the left hand up/down arrow keys for the day and the right hand up/down arrow keys to set the month and year.		ENTER NEW DATE SETTING:07-05-95
5) Press the PROG key to enter the new date setting. The unit will return to the User Setup Menu screen.		1) DATA 2) TIME 3) CODE 4) HOLS
3.4 Code Option		
1) To change the User Setup code press the '3' key from the User Setup Menu screen. The User code setting screen is displayed.		PLEASE ENTER NEW USER CODE :0000
2) Enter the new User code, using the left hand up/down arrow keys for the first two digits and the right hand up/down arrow keys for the second two digits.		PLEASE ENTER NEW USER CODE :1001

Operation	Key	Display
3) Press the PROG key to enter the new code. The unit will return to the User Setup Menu screen.	PROG	1) DATA 2) TIME 3) CODE 4) HOLS
3.5) Hols Option		
1) To set a holiday period during which the heating system is in Standby (off), press the '4' key from the User Setup Menu screen. The 'Holiday Start' setting screen is displayed.	MIN/°C 4	HOLIDAY PERIOD START:00-06-95
2) Enter the start date of the holiday period using the left hand up/down arrow keys for the day and the right hand up/down arrow keys for the month and year. **Note:** The start date is first day of the holiday period NOT the last day on which the heating is rquired to be on.	1 HOURS 3 / 2 MIN/°C 4	HOLIDAY PERIOD START:24-12-95
3) Press the PROG key to enter the start date. The 'Holiday Length' screen will be displayed.	PROG	HOLIDAY PERIOD LENGTH :00
4) Enter the length of the holiday period (days) using the right hand up/down arrow keys. **Note:** Entering '00' will disable the holiday function.	2 MIN/°C 4	HOLIDAY PERIOD LENGTH :09
5) Press the PROG key to enter the holiday length. The unit will return to the User Setup Menu screen.	PROG	1) DATA 2) TIME 3) CODE 4) HOLS
3.6 Return to Run Mode		
To return to Run Mode press the RUN key. The Run mode screen will be displayed and the unit will implement the setting changes.	RUN	BOILER PUMP ON----

HAMWORTHY
heating products

Customer Services

CUSTOMER SERVICES

APPLICATION
To supplement the detailed Technical Information Booklets, technical advice on the application and use of the Hamworthy Heating Product Range is available from Poole and through the regional Sales offices and Accredited Agents.

COMMISSIONING
A commissioning service is offered for all the Hamworthy Heating Products. Commissioning by the manufacturer ensures the most efficient performance is achieved safely and ensures correct operation.

Hamworthy commissioning reports are detailed and definitive. Such information reports on the original status of the plant are essential for future routine maintenance and fault finding situations.

ROUTINE SERVICE
Hamworthy offer routine service contracts for all products. Planned maintenance of equipment by routine servicing reduces operational costs considerably below that associated with repair or breakdown approach. Regular servicing by Hamworthy trained staff ensures that all equipment is operating to optimum efficiency.

The frequency of visits to maintain installations up to required level is variable depending upon the equipment type and usage.

BREAKDOWN SERVICE, REPAIR, REPLACEMENT
Even when the commissioning and routine servicing has been carried out to the highest standard there are always occasions when the unexpected breakdowns occurs. Hamworthy provide a rapid response breakdown, repair or replacement service through its regional offices and Accredited Agents located throughout the UK.

SPARE PARTS
A comprehensive spares parts service is operated from our head office at Poole providing delivery, even for out of date items in most cases. In some instances spares may be available from regional offices and Accredited Agents.
Delivery of parts and components is normally from stock within 7 days. However, a 24 hour service is available for breakdowns and emergencies for the additional cost of the courier.

For your spares enquiries and orders please contact Carol Miller on 01202 665566.

To help Carol and her staff help you, please give as much detail as possible of the product type, serial number or any other identifying marks or codes.

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HAMWORTHY
Heating Products

Offices and Agents throughout the world

Hamworthy Engineering reserve the right to make changes and improvements which may necessitate alteration to the specification without prior notice.