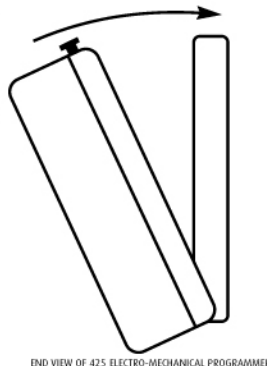


FITTING THE PROGRAMMER

If surface wiring has been used, remove the knockout/insert from the bottom of the programmer to accommodate it. Loosen the two 'captive' retaining screws on the top of the unit. Now fit the programmer to the HCL9 backplate, line the lugs on the programmer with the flanges on the HCL9 backplate. Swing the top of the programmer into position ensuring that the connection blades on the back of the unit locate into the terminal slots in the backplate. Tighten the two 'captive' retaining screws to fix the unit securely, then switch on the mains supply.



END VIEW OF 425 ELECTRO-MECHANICAL PROGRAMMER

The tappets can now be set to suit the User's requirements. Please refer to the User's Guide provided.

GENERAL INFORMATION

Before handing over the installation to the user, always ensure that the system responds correctly on all control programmes and that other electrically operated equipment and controls are correctly adjusted.

EXPLAIN HOW TO OPERATE THE CONTROLS AND HAND OVER THE USERS OPERATING INSTRUCTIONS TO THE USER.

SPECIFICATION: CORONET - DIADEM - TIARA

MODELS:

Coronet: Single Circuit 13(6)A 230V AC
Diadem: Double Circuit 6(2.5)A 230V AC
Tiara: Double Circuit 6(2.5)A 230V AC

Contact type: Micro dis-connection(Voltage free)

Motor Supply: 230-240V AC 50Hz

Double Insulated

Enclosure Protection: IP 20

Max. Operating Temperature : 55°C

Dirt protection: Normal situations.

Independently mounted control for surface mounting.

Purpose of Control: Electronic Time Switch

Operating time limitation: Continuous

Type 1 Action

Case material: Thermoplastic, flame retardant

Dimensions: 153mm x 112mm x 33mm

Clock: 24 hour

Programme selection: 24 Hours, On all day, Twice, Off

Operating periods per day: Two

Override: Instant advance

Backplate: HCL9 - 9 Pin terminal connection

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LEAFLET No P27673
ISSUE 12

INSTALLATION INSTRUCTIONS
CORONET - DIADEM - TIARA



HORSTMANN

The 425 Range of traditional Electro-mechanical Programmers offer a simple yet effective way of controlling your environment. The twin circuit Diadem and Tiara will also allow you to have independent control of Hot water and Central heating.

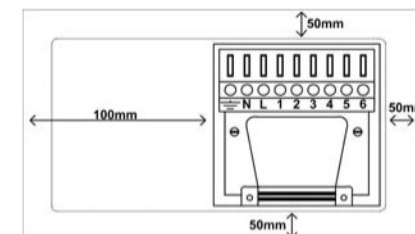
INSTALLATION AND CONNECTION SHOULD ONLY BE CARRIED OUT BY A SUITABLY QUALIFIED PERSON AND IN ACCORDANCE WITH THE CURRENT EDITION OF THE IEE WIRING REGULATIONS.

WARNING : ISOLATE MAINS SUPPLY BEFORE COMMENCING INSTALLATION

FITTING THE HCL9 BACKPLATE

Once the HCL9 backplate has been removed from the packaging please ensure the programmer is re-sealed to prevent damage from dust, debris etc.

The HCL9 Backplate should be fitted with the wiring terminals located at the top and in a position which allows the relevant clearances around the programmer. (See diagram)



DIRECT WALL MOUNTING

Offer the plate to the wall in the position where the programmer is to be mounted, remembering that the HCL9 Backplate fits to the right hand end of the programmer.

Mark the fixing positions through the slots in the HCL9 Backplate(Fixing centres 60.3mm), drill and plug the wall, then secure the plate in position. The slots in the HCL9 Backplate will compensate for any misalignment of the fixings.

WIRING BOX MOUNTING

The HCL9 Backplate may be fitted directly on to a single gang steel flush wiring box complying with BS4662, using two M3.5 screws.

425 Electro-Mechanical Programmers are suitable for mounting on a flat surface only, they must not be positioned on a surface mounted wall box or on unearthed metal surfaces.

ELECTRICAL CONNECTIONS

All necessary electrical connections should now be made. Flush wiring can enter from the rear through the aperture in the HCL9 Backplate. Surface wiring can only enter from beneath the programmer and must be securely clamped.

The mains supply terminals are intended to be connected to the supply by means of fixed wiring.

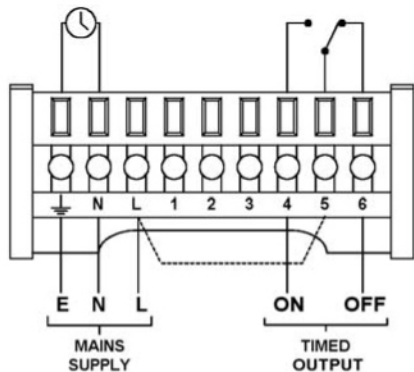
The recommended cable sizes are 1.0mm² or 1.5mm² for a Diadem/Tiara and 1.5mm² for a Coronet.

ELECTRICAL CONNECTIONS

425 Electro-Mechanical Programmers are double insulated and do not require an Earth connection but an Earth terminal is provided on the HCL9 Backplate for terminating any cable Earth conductors. Earth continuity must be maintained and all bare Earth conductors must be sleeved. Ensure that no conductors are left protruding outside the central space enclosed by the HCL9 Backplate.

INTERNAL WIRING DIAGRAMS

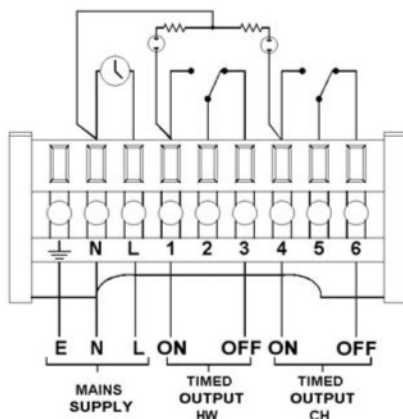
CORONET



When used to control MAINS VOLTAGE SYSTEMS Terminals L and 5 should be electrically linked by means of a suitable piece of sleeved conductor. When used to control EXTRA LOW VOLTAGE SYSTEMS these links MUST NOT be fitted.

DIADEM / TIARA

Neon shown is only on the 425 Diadem.



When used to control MAINS VOLTAGE SYSTEMS Terminals L, 2 and 5 should be electrically linked by means of a suitable piece of sleeved conductor. When used to control EXTRA LOW VOLTAGE SYSTEMS these links MUST NOT be fitted.

INTERLOCKING - DIADEM AND TIARA ONLY.

If a Diadem or Tiara is used on Gravity Hot water/Pumped Central heating systems the selector slides must be interlocked for correct programme selection. This is achieved by rotating the interlock located at the top of the HW programme slide.

This is achieved by first selecting Twice on the HW selector slide, then selecting the Off position on the CH selector slide, this will reveal the screwdriver slot in the interlock. Position the screwdriver in the slot and rotate anti-clockwise until the slot is almost horizontal (a stop will prevent the interlock from being turned too far).

Check for correct operation of programme slides. This should result in the HW selector slide moving up to match any CH selection (twice, all day and 24 Hours). When the CH slide switch is returned to any of the lower position (all day, twice and off), the HW slide switch will stay in the uppermost position reached and will have to be manually moved to the desired new position.

TYPICAL WIRING DIAGRAMS

Example circuit diagrams for some typical installations are shown below. These diagrams are schematic and should be used as a guide only.

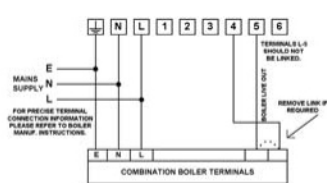
Please ensure that all installations comply with the current IEE regulations.

For reasons of space and clarity not every system has been included and the diagrams have been simplified, for instance some Earth connections have been omitted.

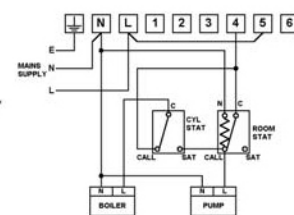
Other control components shown in the diagrams i.e. Valves, RoomStats etc are general representations only. However the wiring detail can be applied to the corresponding models of most manufactures e.g. Horstmann, Honeywell, Danfoss Randall, ACL Drayton etc.

Cylinder and Room Thermostat Key:

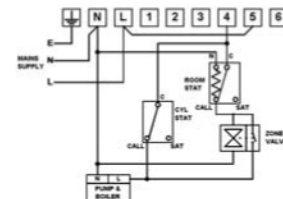
C = Common CALL = Call for heat or break on rise SAT = Satisfied on rise N = Neutral



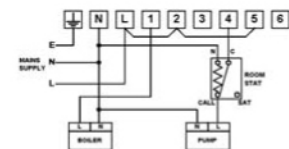
425 Coronet controlling typical combination boiler installation via room thermostat.



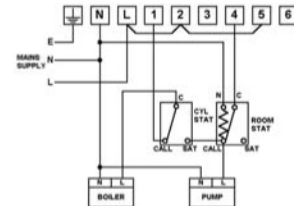
425 Coronet controlling gravity Hot water with pumped Heating via room stat and cylinder stat.



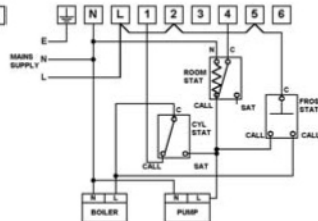
425 Coronet controlling fully pumped system via room stat, cylinder stat and using a 2 port spring return valve with auxiliary switch on heating circuit.



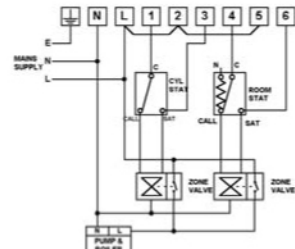
425 Diadem/Tiara controlling gravity Hot water with pumped Heating via room stat.



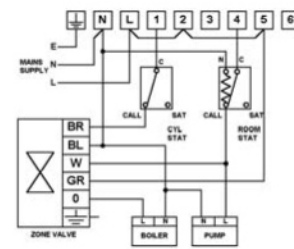
425 Diadem/Tiara controlling gravity Hot water with Pumped Heating via room stat and cylinder stat.



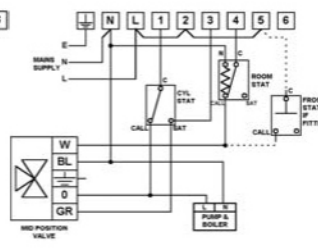
425 Diadem/Tiara controlling gravity Hot water with pumped Heating using a 2 port spring return valve with auxiliary switches via a room stat and cylinder stat.



425 Tiara controlling fully pumped system using two motorised 2 port valves with auxiliary switches via room stat and cylinder stat.



425 Diadem/Tiara controlling gravity Hot water with pumped heating using a 2 port spring return valve with changeover auxiliary switch on the Hot water circuit



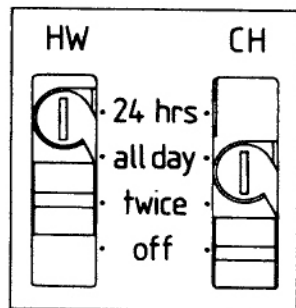
425 Tiara controlling fully pumped system using a mid position valve via room stat and cylinder stat.

NEON INDICATOR - DIADEM ONLY

The neon indicator will illuminate when the appropriate Hot water and/or Central Heating circuits of the time control are ON, even if the circuit is switched OFF by the Thermostats. However, with certain Fully pumped systems, the neon indicator may remain lit when the time control is in the OFF position. This does not affect the normal operation of the unit.

GRAVITY OR FULLY PUMPED SYSTEMS 425 DIADEM - TIARA

Gravity - On this type of system it is possible to have Hot water without Central heating, but not Central heating without Hot water. In this case the installer would have interlocked the select switches. (See diagram)



Fully Pumped - On this type of installation the selectors are not interlocked and Hot water and Central heating programmes can be set independently of each other.

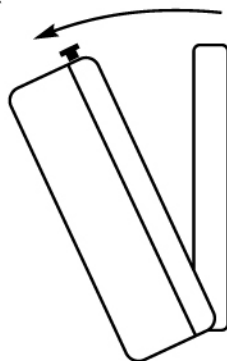
REMOVING THE PROGRAMMER

For your safety removal should only be carried out by a qualified person.

WARNING: THE UNIT MUST BE ISOLATED FROM THE MAINS SUPPLY BEFORE REMOVAL.

The time control can be removed from its Backplate without disturbing the wiring. To remove the unit, loosen the two captive screws on the top of the unit and firmly pull the control from the top and down in an arc motion.

Replacing the unit is the reverse of the above instruction, first engaging the lugs in the flange at the bottom of the Backplate.



END VIEW OF 425 CORONET-TIARA-DIADEM

SERVICE AND REPAIR

This programmer is NOT user serviceable. Please do not dismantle the unit. In the unlikely event of a fault developing please contact a local heating engineer or a qualified electrician.

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USERS INSTRUCTIONS
425 DIADEM - TIARA - CORONET

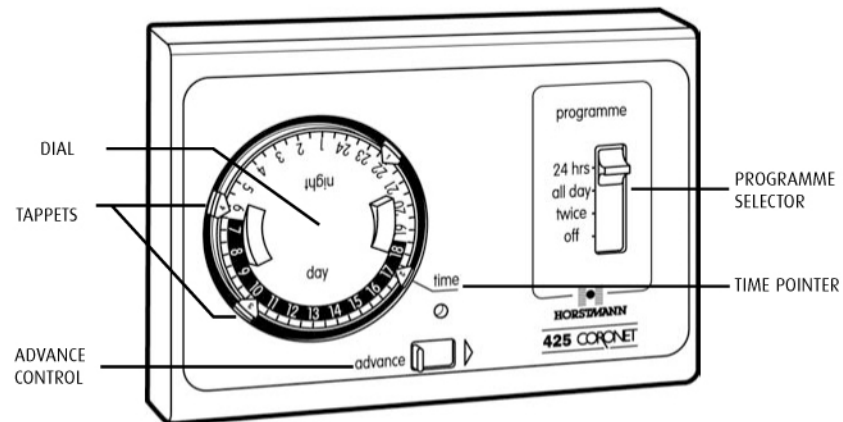


HORSTMANN

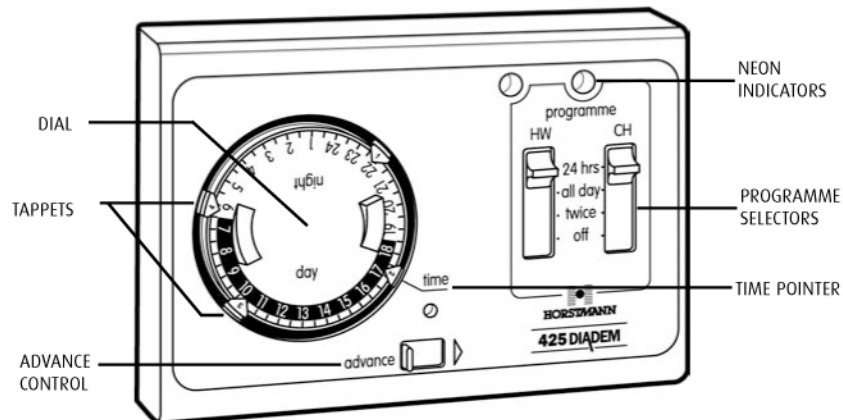
The 425 Range of traditional Electro-mechanical Programmers offer a simple yet effective way of controlling your environment. The twin circuit Diadem and Tiara will also allow you to have independent control of Hot water and Central heating.

GET TO KNOW YOUR PROGRAMMER

FRONT VIEW OF 425 CORONET

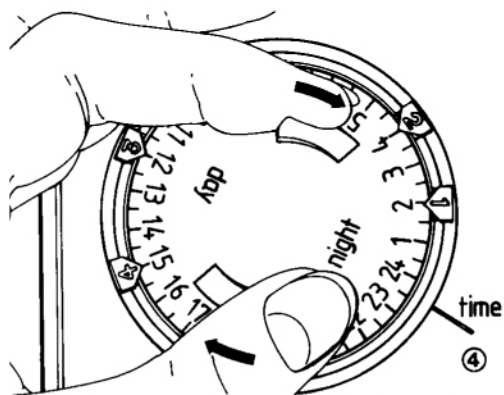


FRONT VIEW OF 425 TIARA - DIADEM (NEON INDICATOR ON DIADEM ONLY)



SETTING THE TIME

The dial rotates clockwise and makes one complete revolution every 24 hours. To set the correct time turn the dial clockwise by hand (Using the levers on the clock face) until the correct time of day is against the line marked TIME. (See diagram)



SETTING THE ON/OFF TIMES

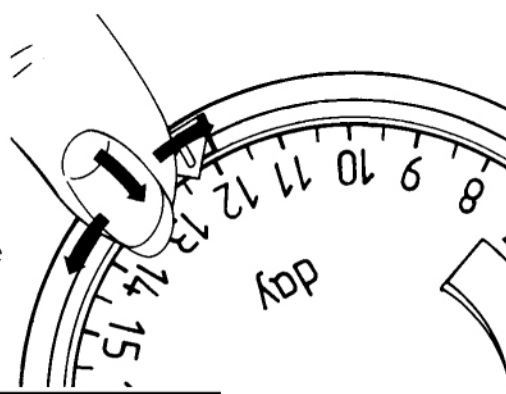
The four setting tappets, coloured red and blue, are moved around the circumference of the dial to set your required ON and OFF times.

These tappets work in pairs to switch the system ON and OFF.

- No 1 (red) 1st ON and No 2 (blue) 1st OFF
- No 3 (red) 2nd ON and No 4 (blue) 2nd OFF

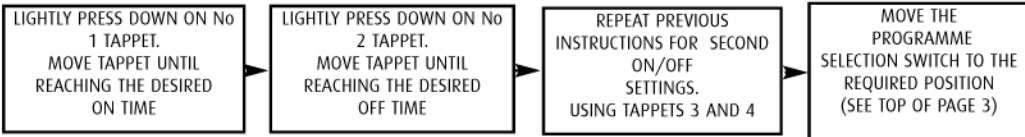
The tappets may be moved in either direction. (See diagram)

Please ensure that you press and hold down any tappet that is to be moved, release tappet only once correct time position has been reached. Tappets cannot be moved across the Time line. The position of the dial may have to be altered to set the initial ON/OFF time.

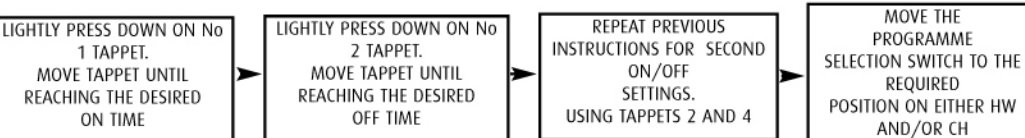


Please ensure the clock is set to the correct current time after altering the ON/OFF settings.

CORONET - SETTING THE ON/OFF TIMES



DIADEM - TIARA - SETTING THE ON/OFF TIMES



PROGRAMME SELECTIONS

24 Hrs - The system will be permanently ON

All Day - The system will switch ON from tappet 1 (red) and OFF at tappet 4 (blue). Tappets 2 and 3 are ignored.

Twice - The system switches ON at tappet 1 (red), OFF at tappet 2 (blue), ON at tappet 3 (red) and OFF at tappet 4 (blue).

Off - The timer continues to operate but the system will be permanently OFF

SWITCH STATE INDICATOR

Located above the ADVANCE switch, the switch state indicator shows you the number of the tappet which operated last.

Eg. If the system was switched ON by tappet 1 at 7:00am and it is now 9:00am, providing that no further tappets operations have past, a number 1 should show in the aperture. If the switch state indicator does not agree with the programme set on the dial, rotate the dial one whole turn and reset to the correct time of day. This will ensure that the switch state corresponds to the last tappet operation.

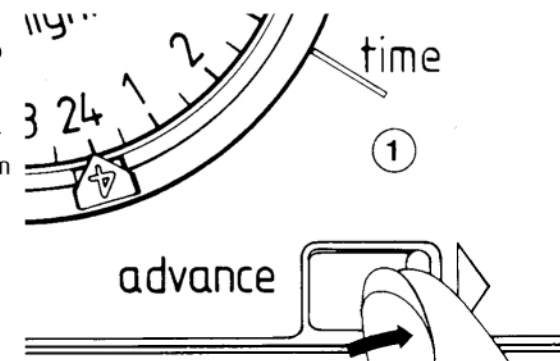
ADVANCE CONTROL

The Advance control allows you to start an ON or OFF period early without altering the tappet, time or programme selection settings. Moving the advance control to the extreme right brings forward the operation of the next tappet. The switch state indicator then changes to the appropriate number. When the next tappet passes the Time line, normal operation returns.

When the programme selector is in the All Day position, tappets 2 and 3 do not operate. If you require to switch the system OFF for the day after the morning switch ON, you will need to step forward with the advance switch until the number 4 is shown in the switch state indicator.

If you wish to switch ON and OFF by hand or vice versa, before the next automatic switching operation, the Advance control must be operated until the switch state indicator is returned to the correct automatic sequence.

EXAMPLE, If you turn the system ON again after the preset night shut down time, when you turn it OFF before retiring make sure to operate the advance switch again until the number 4 is displayed in the switch state indicator so that the red tappet number 1 will switch the system ON in the morning.



DO NOT OPERATE THE ADVANCE SWITCH WHEN A TAPPET IS AGAINST THE TIME LINE.