



GasApps Australia P/L

MultiTimer

MKII

Manual

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GENERAL DESCRIPTION

The MultiTimer MKII seen in Fig 1 below is designed to control dual 240VAC solenoid valves for the dispensing of BOC Gases Envirosols products. These products include Pestigas, Deodourgas, Ripegas and Bactigas. Please note that the MK4 Spacecontroller is the only BOC Ltd approved dispensing equipment for use with Insectigas. Although limited approval is given to the use of solenoid valves for the automatic dispensing of Envirosols other than Insectigas, it is essential that only approved solenoid valves (#730016) and timers are used.

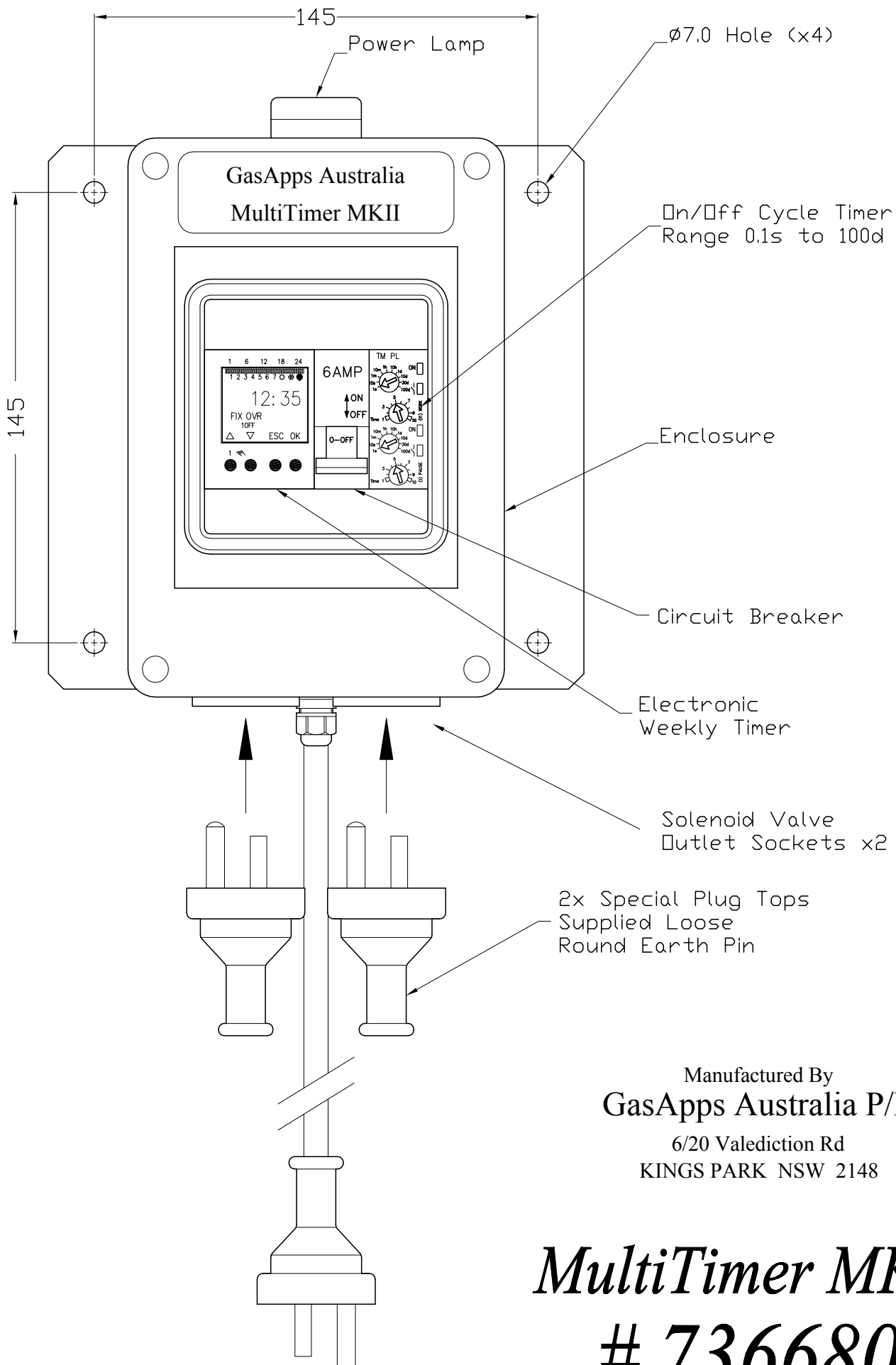
The MultiTimer MKII incorporates an electronic digital seven-day time clock in conjunction with an ON/Off Cycle timer. The combination of these two timers allow the operator to set up dual external solenoid valves to pulse ON and OFF (adjustable ON and OFF from 0.1s to 100d) during any period of time which is controlled by the seven-day time clock.

The White Power Lamp indicates when the unit is plugged into mains 240VAC 50Hz power. A 6A circuit breaker is also included and can be used as an ON/OFF switch.

This unit has been fitted with two special solenoid outlet sockets and is supplied with two loose matching plug tops. The socket outlet and plug top are rated for 240VAC 50Hz 10A



Fig 1



GasApps Australia
MultiTimer MKII

Ø7.0 Hole (x4)

On/Off Cycle Timer
Range 0.1s to 100d

Enclosure

Circuit Breaker

Electronic
Weekly Timer

Solenoid Valve
Outlet Sockets x2

2x Special Plug Tops
Supplied Loose
Round Earth Pin

240VAC 50Hz
Power Inlet

Manufactured By
GasApps Australia P/L
6/20 Valediction Rd
KINGS PARK NSW 2148

MultiTimer MKII
736680

SYSTEM FEATURES

SEVEN DAY TIME CLOCK

The seven-day single channel time clock is capable of storing 70 different programme times, i.e. 70 ON/OFF switches. These programmes can be set to run on any individual day or any combination of days within a week. The time clock includes four programming buttons and a LCD screen. Program memory is battery backed up with a typical life span of three years.

NOTE: Always clear existing/old programs before attempting to input a new program. All previous programmes should be deleted to avoid any confusion between the old and new programs.

NOTE: Always turn OFF all gas cylinders before setting or adjust the weekly time clock. It's important to ensure that the program is running correctly before gas is turned ON.

ASYMMETRICAL CYCLE TIMER

The Asymmetrical **Cycle Timer** controls the length of time in which the solenoid valves are ON and OFF. Both the ON and OFF times can be adjusted independently from 0.1 second to 100 days. The top two wheels marked “(t1 WORK)” are used to adjust the length of time in which the solenoid valves will switch ON (energise) for. The bottom two wheels marked “(t2) PAUSE” are used to adjust the length of time in which the solenoid valves will switch OFF (de-energise) for.

The diagram shows a control panel with four rotary dials. The top two dials are labeled (t1) WORK ON and the bottom two are labeled (t2) PAUSE OFF. Each dial has a scale from 1 to 10 and a percentage range of 10% to 100%. The top two dials also have time unit markings: 10m, 1h, 10h, 1d, 10d, 30d, 100d. The bottom two dials have similar markings. To the right of the dials are two ON/OFF switches. A table titled 'Time Ranges' is provided to the right of the diagram.

Time Ranges	
1s	0.1...1s
10s	1...10s
1m	6s...1min
10m	1...10min
1h	6min...1h
10h	1...10h
1d	0.1...1day
10d	1...10days
30d	3...30days
100d	10...100days

Setting Examples For Cycle Timer

Required Time	Required Wheel Settings			
	Solenoid ON Time		Solenoid OFF Time	
	RANGE (t1 work)		RANGE (t2 pause)	
	top Wheel 1	second Wheel 2	third Wheel 3	fourth Wheel 4
8 seconds ON 18 minutes OFF	1s	8	0.1h	3
2 seconds ON 8 minutes OFF	1s	2	60s	8
12 seconds ON 2 minutes OFF	6s	2	60s	2
0.5 seconds ON 30 seconds OFF	0.1s	5	6s	5
1 minute ON 2 hours OFF	60s	1	1h	2

WARNING! It's important not to cycle the solenoid valves too frequently as both the cycle timer and the valves have a limited life cycle. It is recommended to program the ON time for 1 second or more and the OFF time for 5 seconds or more.

GENERAL SPECIFICATIONS

Dimensions	: 175mm wide x 175mm high x 117mm deep
Weight	: 1kg
Power Requirements	: 240VAC 50Hz x 10AMP
Protection	: IP55
Cycle Timer	: 240VAC, On/OFF Cycling, Electronic (range 0.1s – 100d)
Seven-Day Timer	: 240VAC, Electronic, Digital Display, 3 years Battery Backup
Circuit Breaker	: 6 AMP 240VAC Single Phase
LED Power Lamp	: White, 240VAC
Inlet Power	: 240VAC Plug Top c/w 1.8m Power Lead (Australian Standard)
Outlet Power	: 240VAC 50Hz Socket Outlet, 3 Pin
Temperature Range	: -5°C to +40°C
Mounting	: Wall Mount 145 x 145, 7mm Holes

INSTALLATION INSTRUCTIONS

Mounting the MultiTimer MKII

The MultiTimer MKII is a IP55 weatherproof enclosure; however it is recommended that the unit be installed undercover away from direct sunlight and in a secure area. This unit must be installed by a qualified electrician, as there are 240VAC terminals exposed inside. A 240VAC 50Hz 10A power point will need to be available to plug the unit into.

The unit is supplied with a rear PVC mounting plate with four mounting holes 145mm x 145mm x 7.0mm

WARNING

Always disconnect the mains power supply before removing the front cover.

The external solenoid valves (#730016) will need to be wired up to the special plug tops provided in the kit. See Fig 1, and Fig 2.



Fig 2

PROGRAMMING WEEKLY TIME CLOCK

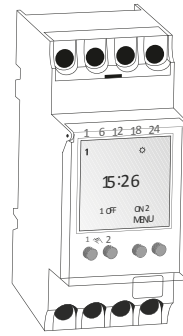


Fig 3

INTRODUCTION

The seven-day single channel timer (Fig 3) is capable of storing Seventy different programme times, ie. 70 **ON/OFF** switches. These programmes can be set to run on any individual day or any combinations of days within a week. The time clock includes four buttons on the front panel. The LCD displays 12 or 24hr Time, Day Number of the week, Switch status ie. ON or OFF, Auto, FIX ON, FIX OFF Modes.

DISPLAY AND FUNCTION KEYS

Switch-off commands have a higher priority than switch-on commands.

The central line of the display, in which the adjusted values and selected menu items are displayed larger. Flashing means that an entry is required. If you do not enter anything within two minutes, the timer switches back to automatic operation.

MAINSOFF appears on the display when the device is not supplied with power.

LOW BATT appears on the display when a battery change is required within the next two weeks.

The programs are retained after a reset, although you will need to readjust date and time. Press all 4 buttons at the same time to reset the device.

DISPLAY

- A Function displays of the two left keys
- B Switching state displays (ON/OFF/OVR/FIX)
- C 3 display lines
- D Weekdays, The assignment can be changed in the DATETIME menu, for example to
1 = Sunday, Default setting 1 = Monday
- E Programmed switching times
- F Radio antenna
- G Display of summer/winter time
- H Function displays of the two right keys

KEY INTERFACES

- I Right Keys
- J Left keys with manual switch function in automatic mode

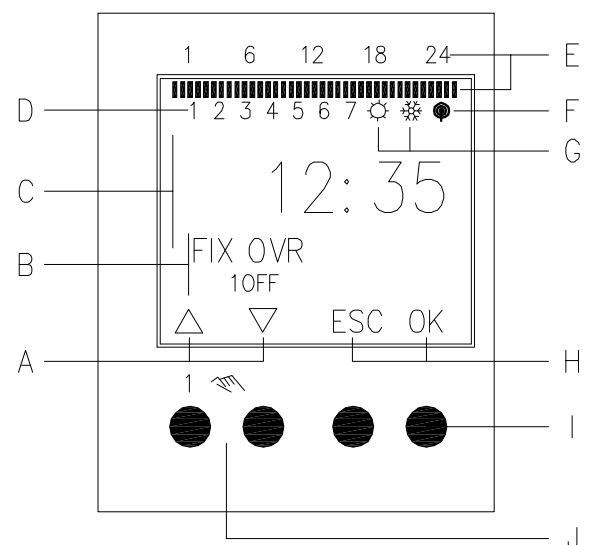
FUNCTION DISPLAYS OF THE TWO LEFT KEYS:

Scroll upwards in the menu, Scroll downwards in the menu

Accept selection/proposal

+Brief key press = +1 / long key press (about 2 sec) = fast forward

-Brief key press = -1 / long key press (about 2 sec) = fast forward



FUNCTION DISPLAYS OF THE TWO RIGHT KEYS:

MENU Leaves Automatic mode and enters Programming mode

ESC Brief key press = one step backward, Long key press (about 2 sec) = Back to Automatic mode

OK Make a selection and accept

EDT Change programs in "Read mode"

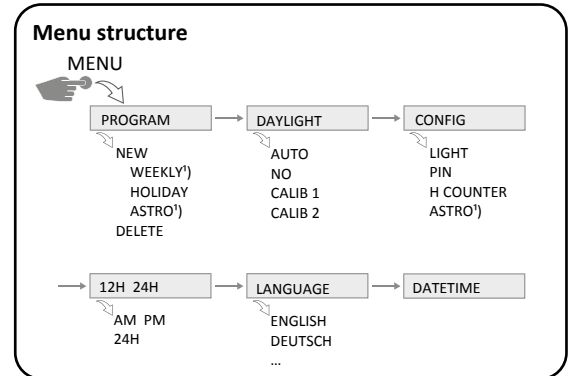
NO Do not execute command

YES Execute command

DEL Delete

MENU STRUCTURE

This diagram shows the menu structure layout of the time clock. The menu screen can be accessed by pressing any button. Press either right key once and then press the $\Delta \nabla$ keys to access each parameter.



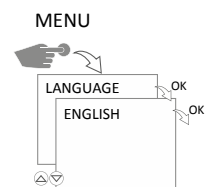
LANGUAGE MENU

Select the language parameter and press OK. This allows you to select your preferred language by pressing the $\Delta \nabla$ keys, when satisfied press OK.

Note: English is the default language.

Select menu language

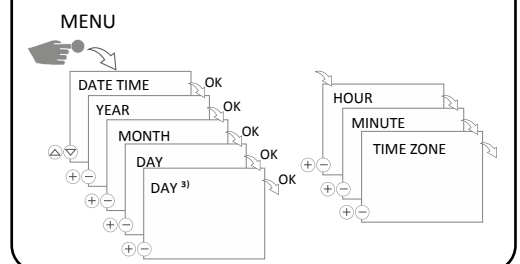
When delivered, the timer is in automatic mode with preset time, date (CET) and menu in English. Press the Menu button to make settings. Then select the desired setting.



SETTING CLOCK TIME (EG, THURSDAY, 13/7/2017, 17:22)

- Press the right button > **PROGRAM**
- Press the left/UP Δ button once > **DATE TIME**
- Press the OK/Right button > eg **2017:07:22**
- **YEAR** is Flashing, Press +/- to select the correct **YEAR** & then press **OK** > eg **2017**
- **MONTH** is Flashing, Press +/- to select the correct **MONTH** & then press **OK** > eg **2017:07**
- **DAY** is Flashing, Press +/- to select the correct **DAY** & then press **OK** > eg **2017:07:13**
- **DAY** number of week is Flashing, Press +/- to select the **DAY** number & then press **OK** > **4**
- **HOUR** is Flashing, Press +/- to select the correct **HOUR** & then press **OK** > eg **17:00**
- **MINUTE** is Flashing, Press +/- to select the correct **MINUTE** & then press **OK** > eg **17:22**
- **GMT** is flashing, Press +/- to select the correct **HOUR** & then press **OK** > eg **+10:00**
- Press **ESC** to return to the main screen

Set date and time



DELETE OLD PROGRAMS

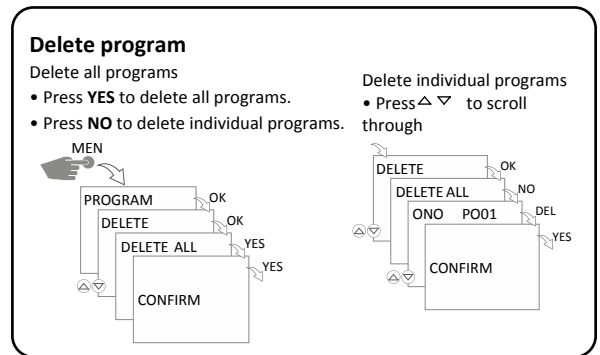
All previous programmes should be deleted to avoid any confusion between old and new programs.

To clear all existing programs.

Press.. MENU > PROGRAM, OK > DELETE, OK > DELETE ALL, YES > CONFIRM, YES > ESC > ESC.

To confirm that all program locations are free

Press ... > MENU > PROGRAM, OK > REVIEW, OK > ALL, OK > NO PROGRAMS (is displayed for 1s)
>ALL, ESC > NEW, ESC > PROGRAM, ESC



TYPICAL PROGRAM

Always turn OFF all gas cylinders before attempting to set or adjust the weekly time clock. It's important to insure that the program is running correctly before gas is turned ON. A typical program might look like this...

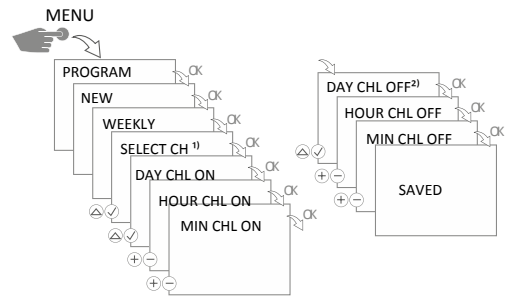
Time Clock ON at 07:00am Monday to Friday

Time Clock OFF at 05:00pm Monday to Friday

Time Clock ON at 02:00pm Saturday and Sunday

Time Clock OFF at 08:00pm Saturday and Sunday

Greate a weekly program ¹⁾



1. Press the **MENU KEY**.
2. Confirm **PROGRAM** by pressing **OK**.
3. Confirm **NEW** by pressing **OK**.
4. Confirm **WEEKLY** by pressing **OK**.
 - ▷ Free memory locations are briefly displayed.
5. When prompted, select channels Δ and confirm by pressing \bar{u} **OK**
 - ▷ The weekly display is flashing.

ON command:

6. Select the desired days Δ and confirm by pressing \bar{u} **OK**
7. Enter hour (+/-) \bar{u} **OK**
8. Enter minutes (+/-) \bar{u} **OK**

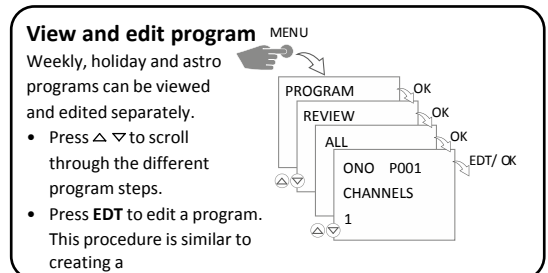
OFF command:

9. When prompted, select desired days Δ and confirm by pressing \bar{u} **OK**
10. Enter hour (+/-) \bar{u} **OK**
11. Enter minutes (+/-) \bar{u} **OK**

PROGRAMS CAN BE VIEWED AND EDITED BY PRESSING

>MENU > PROGRAM, OK > UP ARROW > REVIEW, OK > ALL, OK

Use the up and down arrows to toggle through and view all program steps



TIME CLOCK MODES

The time clock can operate in four different modes which can be selected by the **1** key on the left hand side. The four modes are as follows...

FIX ON... This means that the relay output is **ON** permanently and ignores any programmed time switches. The Actuator/Valve will rotate to and stop at the **F** fill position.

FIX OFF... This means that the relay output is **OFF** permanently and ignores any programmed time switches. The Actuator/Valve will rotate to and stop at the **S** spray position.

OVR... The Override function (temporary program overwrite) allows the user to switch the relay **ON** or **OFF** early depending on the current channel status. The Override function applies only to the current program and remains active until the next program change. After that, the timer returns to Automatic mode.

AUTO... In Automatic mode the pre-programmed times determine when the time clock relay switches **ON** and **OFF**. This could also be the referred to normal operating mode.

Automatic/Manual mode

- Manual switch: Duration ON / Duration OFF / OVR / Automatic mode
- Left button = channel 1

Press 1x = FIX ON = Duration ON
 Press 2x = FIX OFF = Duration OFF
 Press 3x = OVR = Override mode
 Press 4x = Automatic mode



Override mode

The Override function (temporary program overwrite) allows the user to switch ON or OFF early. This depends on the current channel status. The Override function applies only to the current program and remains active until the next program change. After that, the timer returns to Automatic mode.

BATTERY BACKUP

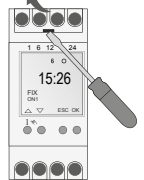
The clock has 70 memory locations and a 3-year backup battery (CR2450) which can be replaced easily when a **LOW BATT** symbol appears on the screen.

The internal backup battery is capable of backing up the time, date and switching programs for a period of up to 3 years after an initial charge of 70 hours. The Spacecontroller unit will not operate without 240VAC power.

Battery change

Before changing the battery, the device must be disconnected from the power supply! Date and time will be lost!

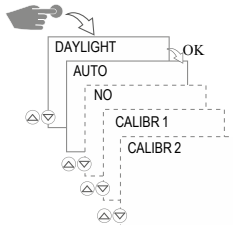
1. Lift the battery compartment using a screwdriver.
2. Take the battery out of the support.
3. Insert new (Lithium battery type CR2032) battery into support.
 - Observe polarity of the battery!
4. Push battery support downward until it engages.
5. Dispose of the battery in an environmentally friendly manner.



DAYLIGHT SAVING

The clock has an automatic daylight saving capability. This is also called summer time and winter time and can be set to automatic **AUTO** or off **NO**.

Switchover summertime / wintertime MENU



The following settings are Possible:

- AUTO**
 In-factory default setting as specified by law (USA or EU). It will be recalculated every year.
- NO**
 No changeover.

CALIBR 1 (AUTO)

Manual Programming.

The programmed summer/winter time will be recalculated automatically for each year.

- The change-over always takes place on the first Sunday of the selected month, if the entered date lies between 1. and 15.
- The change-over always takes place on the last Sunday of the selected month, if the entered date lies between 16. and 31.
- The time change-over occurs on the respective Sunday from 2 to 3 o'clock (summertime) or from 3 to 2 o'clock (wintertime)

CALIBR 2 (FIX)

Manual Programming.

The change-over takes place every year always on the same date.



WARRANTY

GasApps Australia Pty Ltd warrants the design of the MK4 Spacecontroller System for a period of 12 months from the date of invoice. GasApps will not accept any liability whatsoever for any alterations or modifications, made to any part of the equipment supplied, without written and signed authorisation from GasApps Australia Pty Ltd. This Manual is supplied for the guidance of installers and operators to enable them to install and operate the equipment in accordance with its design specifications. The long-term operation of the components and the unit as a whole depends highly on maintenance procedures and gas quality. This is solely dependent on the operator or buyer. GasApps Australia Pty Ltd will not accept any liability for equipment failure due to poor quality gas and lack of maintenance. Installation of electrical and gas connections must be made in accordance with BOC and GasApps specifications. GasApps Australia Pty Ltd accepts no liability whatsoever for the consequences of any actions by persons other than GAA employees, which are not in accordance with the procedures set out in this Manual.