

TIMEX®

M-490



TIME

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**Congratulations.**

You are now the owner of a TIMEX® LIVING ROCK Digital Watch which features:

**Constant Readout** There is a continuous display of hours, minutes and seconds; or you may choose to display the date in place of seconds.

**Split Second Stopwatch** There are two different ways to count elapsed time within one hundredth of a second.

**Automatic Calendar Adjustment** There is no need to adjust your TIMEX. It is programmed to automatically compensate for months with less than 31 days except for February which is programmed for 29 days.

**Night Light** There is a built-in Night Light so your display can be viewed in darkness.

**100% Solid State Construction** There is no balance wheel, mainspring, or gear, so your TIMEX LIVING ROCK should be virtually maintenance free.

The information in this booklet will help you to understand how your TIMEX LIVING ROCK works.

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### How to operate your TIMEX® LIVING ROCK

1. Press lamp (left) button to illuminate watch for viewing in the dark.
2. To display month and date and AM or PM, press the right button once and hold. The month, date, and an "A" or "P" will appear.
3. To change the right digits of the display from showing seconds to showing the date or to change the right digits of the display from showing the date to showing seconds, press the right button three times in rapid succession.

Left Button Right Button

Recessed Button



Month

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4. To put the watch into the stopwatch mode depress the left button 3 times in rapid succession and the stopwatch mode will appear.
5. To start timing, press the right button once and observe that the far right two digits are counting one hundredths of a second, the middle two digits are counting minutes, and the left two digits are counting seconds. \*Hours are not shown; however, odd or even hours are indicated by means of the colon and dash. From zero to one hour a dash over a dot will appear. From one to two hours a dot over a dash over a dot (similar to a division sign) will appear. From two hours to three hours the dash over the dot will reappear.
6. To stop timing, press the right button once and observe that the display has stopped timing and odd or even hours, minutes, seconds and hundredths of a second will appear.

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operation

7. To reset the time to all zeros in the stopwatch mode, press the left button and the right button simultaneously and release.
8. To operate the split time feature of the TIMEX LIVING ROCK. If several time intervals and total time of an event are required, press the left button once while the stopwatch is running. The display will stop, showing odd or even hours, minutes, seconds and one hundredths of a second, however, the stopwatch will continue to run internally.
9. To return the watch from split time to the normal stopwatch mode, press the right button twice and the running stopwatch will appear.
10. To return to normal time, press the left button three times in rapid succession. The time/date or time will appear.

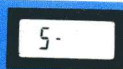
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Left Button Right Button



Recessed Button



Month

## How to set your TIMEX LIVING ROCK

**To Set Month:** Each time the recessed button is pressed, a different function will appear in the display window of your watch. Press the recessed button repeatedly until a number with a dash (-) appears on the left side of the display as illustrated. This number represents a month, e.g. 5 is May. Press the right button and hold in until the number representing the proper month appears.

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Date



AM or PM



Hour



Minutes

**To Set Date:** Press the recessed button until the date (dash shows) appears in the centre of the display as illustrated. Press the right button and hold in until the proper date appears.

**To Set AM or PM:** Press the recessed button until "A" or "P" appears (dash shows) on the right side of the display as illustrated. Press the right button until the correct AM or PM designation appears.

**To Set Hour:** Press the recessed button until the hour (colon shows) appears on the left side of the display as illustrated. Press the right button and hold in until the correct hour appears.

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**To Set Minutes:** Press the recessed button until the minute (colon shows) appears in the centre of the display as illustrated. Press the right button and hold in until the correct minute appears.

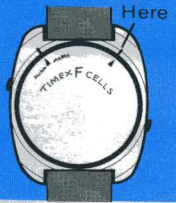
The exact time is set as follows:—  
Press the right button and hold in (approx. 3 seconds) to set one minute ahead of the correct time, then release. At the exact instant when the minute of correct time is the same as that displayed, press the right button once and release immediately. \*You need not set seconds since the seconds are automatically set to zero. Press the recessed button once. Your watch is now ready for normal operation.

\*If the displayed time advances before the time signal is given, press the right button once and release immediately.

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setting

Pry Up Here



One Battery  
Inserted + Side  
Up - Other With  
+ Side Down

### How to change your Energy Cells

Two genuine TIMEX Energy Cells—Type F (1505)—provide the power to operate your TIMEX LIVING ROCK. To replace the energy cells, proceed as follows:

1. All genuine TIMEX energy cell packs contain a special case opener. Insert the thin edge into the opening under the case back and carefully pry the case back off. Note: The side marked with a plus sign (+) is placed up on one cell and down on the other.

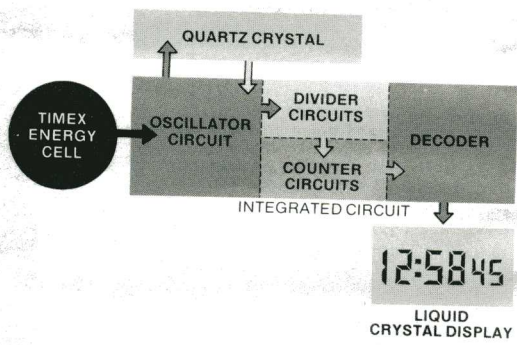


2. Remove the energy cells carefully.\*  
\*Do not dispose of old energy cells in fire or attempt to recharge.
3. Insert two new TIMEX Energy Cells—Type F (1505) as shown in the illustration.  
Caution: Be sure to place the plus (+) side up on one cell and down on the other. (See illustration). If placement of energy cell is not correct, the watch may be permanently damaged.
4. Realign the case back and press it firmly into place. Reset the month, date and time. (Refer to setting instructions).

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energy cells



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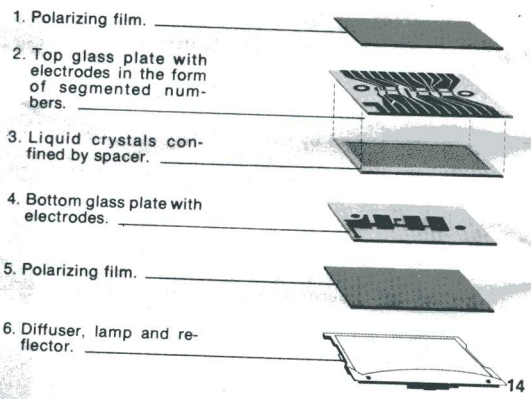
### How your TIMEX LIVING ROCK works

A schematic drawing of the TIMEX Digital timekeeping system is shown on Page 12. All of the system's major circuits are integrated into a tiny silicon chip containing over 2,000 transistors in a space less than 1/5 of an inch on a side. The system is powered by two small TIMEX Energy Cells. Energy from the cells is directed through an oscillator circuit, which causes the quartz crystal to send electrical pulsations to the divider circuits.

The divider circuits then reduce these electrical pulses to one pulse per second. These once per second pulses are counted, and by means of the logic circuits in the decoder section, are directed to the appropriate electrodes on the liquid crystal display to show the time or date.

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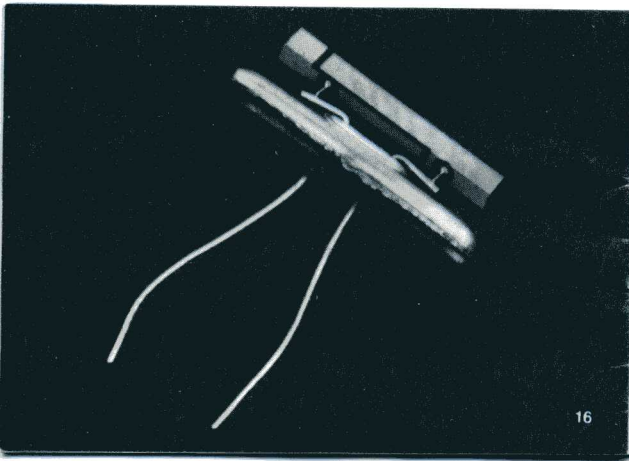
system



### The Liquid Crystal Display (LCD) System

Your TIMEX LIVING ROCK shows you the time, date, or seconds. But how does the display work?

In the TIMEX LIVING ROCK a thin, transparent layer of highly-purified liquid crystal material is sealed between glass plates. These plates carry transparent electrodes in the shape of segmented numerals. When an electrical field is applied across opposite electrodes, the numerals turn dark, allowing you to read the time, date or seconds. With a push of a button, a light will illuminate the display to allow viewing in the dark.



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### The "Excitable" Quartz Crystal

Quartz is probably as old as our planet. It is a common mineral with an uncommon characteristic. It seems inert. But when connected to proper electronic circuits, it will pulsate at a steady, unvarying rate.

The quartz crystal in your TIMEX LIVING ROCK is designed to vibrate at ultra high frequencies, and the rhythm of these pulsations is extremely stable. Thus, the quartz crystal creates a dependable time standard, maintaining a constant rate with great precision.

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crystal

**Care and Servicing of your  
TIMEX LIVING ROCK**

**SERVICE:** If your TIMEX LIVING ROCK should ever need servicing, send it by registered mail to:

**TIMEX SERVICE DEPARTMENT  
DUNDEE DD2 3XL  
SCOTLAND**

**CARE:** When your TIMEX Energy Cells are depleted, they should be replaced promptly. We recommend that you use genuine TIMEX Energy Cells Type F (1505) which are normally available from the outlet where you purchased your watch. Should you have any problems obtaining replacements they can be obtained from the above address. TIMEX LIVING ROCK watch is water resistant and conforms to B.S. 3637 (Part 2) equivalent I.S.O. 2281 (Part 1).