

The TIMEX® SSQ® watch is designed to withstand water pressure to 50 lbs. p.s.i.a. (equals immersion to 80 feet below sea level) and is dust-resistant, as long as window, control buttons and case remain intact.

**Servicing your TIMEX SSQ.**

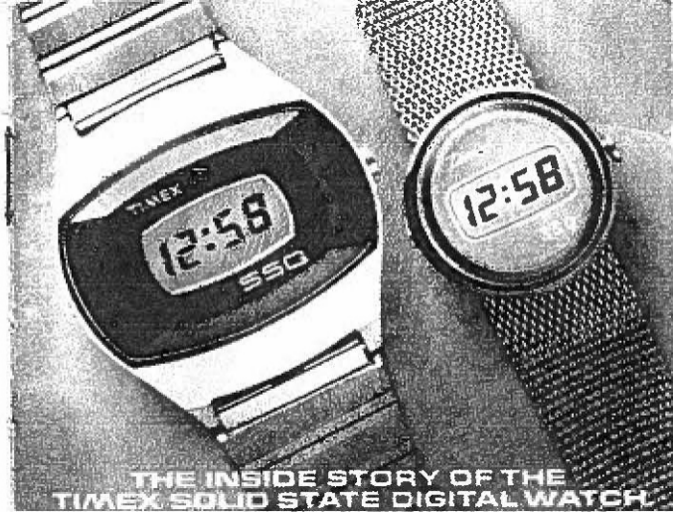
**NOTE:** If watch stops or shows incorrect time for no apparent reason, make sure that the raised button has not been inadvertently rotated out of the normal "on" position.

If your TIMEX SSQ should ever need servicing, send it by first class insured mail to:

**Timex Corporation  
P.O. Box 2740  
Little Rock, Arkansas 72203**

or take it to an Authorized Timex Service Center in your area. (This will be listed in the yellow pages of your telephone directory under "Watch Repair".)

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**THE INSIDE STORY OF THE  
TIMEX SOLID STATE DIGITAL WATCH**

# CONGRATULATIONS.

You are now the owner of a solid state digital watch—one of the most accurate and dependable watches in the world.

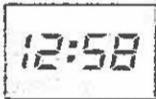
The TIMEX® SSQ® watch has many advantages unavailable in conventional timepieces. It is designed to be practically maintenance free since it has no mainspring, no balance wheel, no gears. The time appears as a constant digital readout—clear and uncluttered. Press the button once and it shows the date momentarily. Press it twice and seconds will be counted off. The TIMEX SSQ is also programmed to compensate automatically for months which have less than 31 days, except when February has 29 days.

The information in this booklet will help you to understand how the TIMEX SSQ works and why it is so dependable.

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## The Liquid Crystal Display System.



Your TIMEX SSQ shows you the time or the date or counts off seconds. But how does it work?

In the TIMEX SSQ 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 or the date.

Simple? It *would* seem so. Yet it took the results of space-age technology to refine and engineer this revolutionary system of indicating time.



1. Polarizing film.



2. Top glass plate with electrodes in the form of segmented numbers.



3. Liquid crystals confined by spacer.



4. Bottom glass plate with electrodes.



5. Polarizing film with reflector backing.

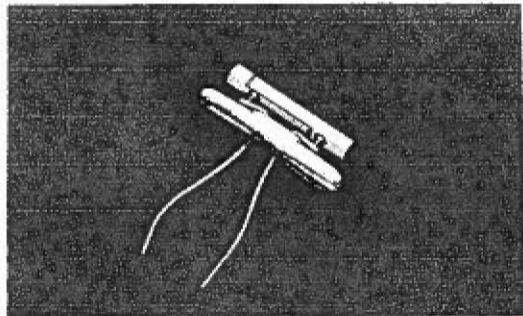
## The "excitable" Quartz Crystal.

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.

There's a quartz crystal in the official time system at the U.S. Naval Observatory. And there's a quartz crystal inside your TIMEX SSQ.

The quartz crystal in your TIMEX SSQ is designed to vibrate 32,768 times per second. The rhythm of these pulsations is extremely stable. Thus the quartz crystal can act as a dependable time standard, maintaining a constant rate with great precision.

Just how this remarkable accuracy is achieved is described on page 8.



**Quartz crystal (enlarged) that vibrates 32,768 times per second.**

## What makes the TIMEX SSQ so accurate.

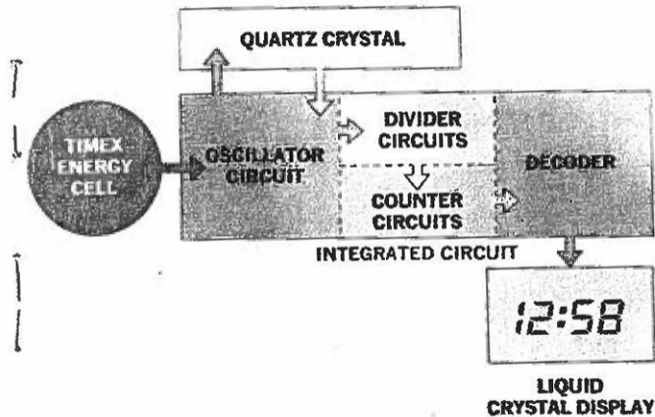
This is the timekeeping system of the TIMEX SSQ. All its major circuits are integrated on a tiny silicon chip containing over 2,000 transistors in an area approximately  $\frac{1}{4}$  inch square. The system is powered by a small TIMEX Energy Cell.

The oscillator circuit drives the quartz crystal, which oscillates 32,768 times a second, producing electrical pulses which are applied 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 of the data.

This electrical timekeeping system makes the TIMEX SSQ accurate to within 10 seconds per month.

\*Regulation of the quartz crystal is achieved by the use of a trimmer capacitor.



## Starting your TIMEX SSQ.

To start your watch simply rotate the raised button so that the flat side is towards the back of the watch (as illustrated). After the watch has been set according to the instructions on pages 12 and 13, it may be operated as follows:



## Operation of your TIMEX SSQ.

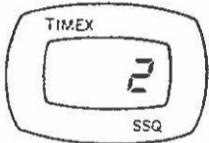
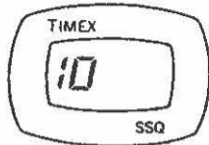
1. To display month and date, press the raised button once. The date will be displayed momentarily and then the time will reappear.
2. To display seconds, press the raised button twice. Seconds will remain displayed until the raised button is pressed again and then the time will reappear.
3. To display alternating time and date, press the recessed button once (using a pointed object such as a ball point pen). To return watch to time display only, press recessed button repeatedly until normal time display with flashing colon appears.

## How to set your TIMEX SSQ.

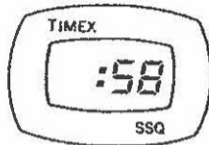
**To set month:** Press recessed button until month (no colon shows) appears on the left of the display. Press raised button and hold in until number representing proper month appears.\*

**To set date:** Press recessed button until date (no colon shows) appears on the right of display. Press raised button and hold in until proper date appears.\*

**To set hour:** Press recessed button until hour (colon shows) appears on left of display and "A" (AM) or "P" (PM) appears on right of display. Press raised button and hold in until correct AM or PM hour appears.\*



**To set minutes:** Press recessed button until minute (colon shows) appears on right of display. Press raised button and hold in to set one or two minutes ahead of correct time. Press recessed button once to display time (colon not flashing). At the exact instant when the correct time (i.e., a time signal) is the same as the displayed time, press the raised button once. (Colon will start flashing.) Seconds are automatically set to zero when minutes are set.



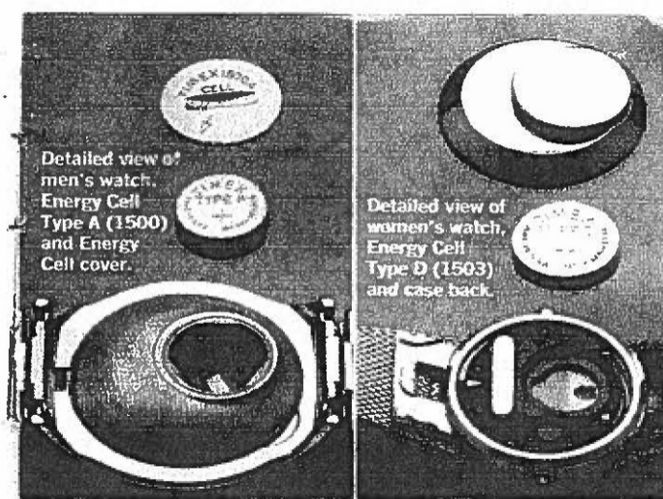
*\*Note—After having set this feature, press recessed button repeatedly to display next feature to be set, or the time.*

## How to change the Energy Cell.

The TIMEX Energy Cell provides power for more than one year. At replacement time, proceed as follows:

1. Insert an edge (a dime, for instance) into the Energy Cell cover and turn the arrow to the "open" mark. On the woman's watch insert knife blade under case back opening tab and pry off case back.
2. Insert a new Energy Cell\* with the positive side (+) facing up (as illustrated). Warning: We recommend you use a genuine TIMEX Energy Cell, Type A(1500) for the man's watch; Type D(1503) for the woman's. Use of an Energy Cell not meeting TIMEX specifications may cause your TIMEX SSQ to malfunction.
3. Replace Energy Cell cover, press in and rotate until arrow lines up with "close" mark. On the woman's watch press case back firmly into place.
4. Reset all features of your watch according to instructions on pages 12 & 13.

\*Do not dispose of old Energy Cell in fire.



Detailed view of  
men's watch,  
Energy Cell  
Type A (1500)  
and Energy  
Cell cover.

Detailed view of  
women's watch,  
Energy Cell  
Type D (1503)  
and case back.