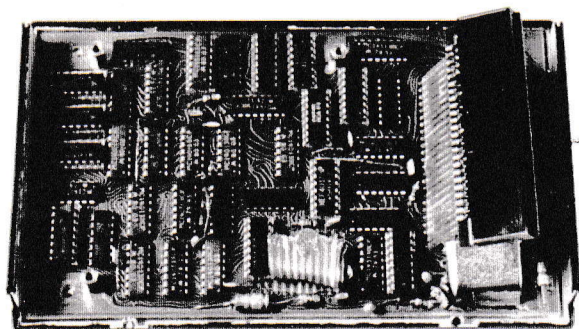
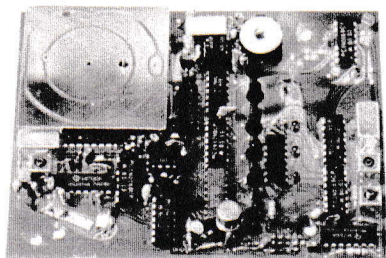
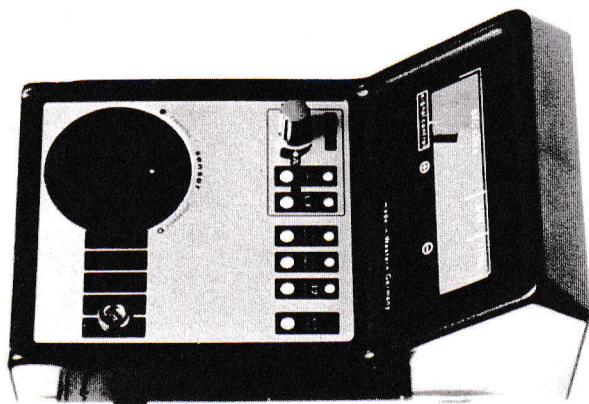


TIME⁻VERS⁺IT⁻IME VEF



INSTRUCTION
MANUAL

EVERSi+TiME VERSi+



INSIDE VIEW OF YOUR VERSi+TiME

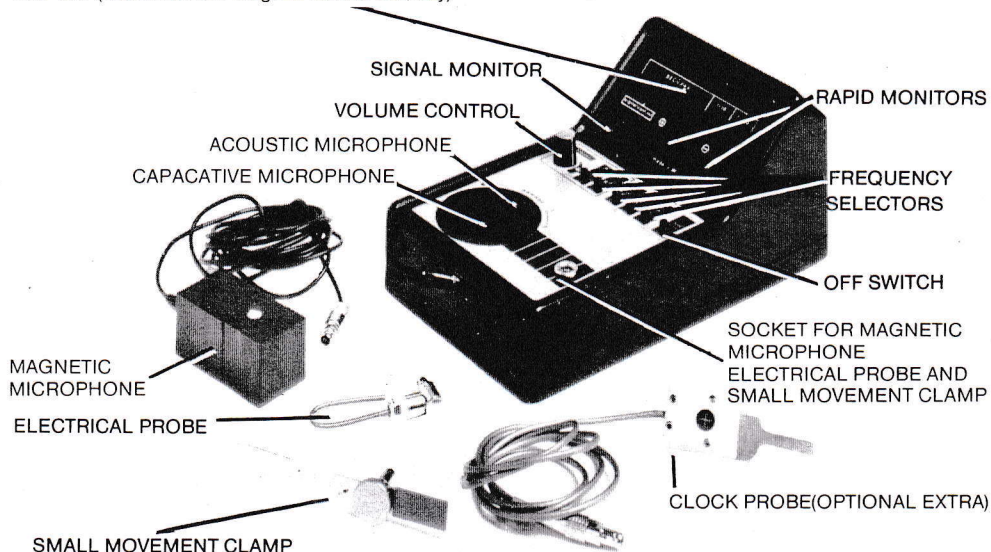
If your machine is not working satisfactorily please contact, or return it to, our Horological Tool Department. Attempting to repair the machine yourself will invalidate the guarantee

TIME VERSI⁺ TIME VEF

VERSI⁺ TIME controls and times
All quartz watches. 32KHz.
4.19MHz. 7.86KHz. 27KHz. 64Hz.

Transistor clock movements
Quartz clock movements 4.19MHz.
All mechanical movements including
pin lever.

DISPLAY (measurement range ± 199.99 sec/day)



TECHNICAL SPECIFICATION

Mains voltage: 220-240V A/C

Operating voltage: 12V D/C

Size 110 x 190 x 50 mm

Weight 550gms.

Measuring range 199.99 secs per
day max.

Guaranteed accuracy 0.02 secs per
day

Fully guaranteed two years.

EVERSi⁺Ti⁻ME VERSi⁺

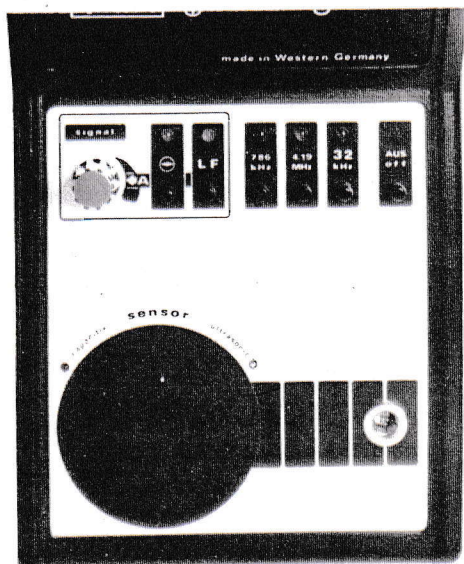
Setting Up

- Connect din plug to socket in the back of the instrument ensuring that the locating grooves are correctly positioned.
- Ensure that the transformer voltage is set to 220V.
- Connect transformer to adaptor provided and connect to mains supply.
- The timer is now switched on although the display is not illuminated
- Allow approximately two minutes for the quartz and thermostat to reach their working temperatures.
- To use the timer simply depress the appropriate frequency button.
- It is not necessary to switch off the mains current when the machine is not in use. Depress the off button which will keep it on stand by.

To Check Quartz Watches (32KHz)

- Depress 32KHz frequency button. Place watch, face up or down gently on the acoustic microphone. Signal monitor will show continuous light.
- After two seconds a reading will appear together with a digital indication on the left of gain or loss e.g.

+00	1	4
-----	---	---
- The above indicates a watch with a gaining rate of 00.14 (14/100) seconds per day.
- A fluctuation of 0.02 is quite acceptable.
- Fluctuations can be caused by temperature inefficiencies in the crystal of the watch.



TIME VERSI+TIME VEF

To Trim Quartz Watches

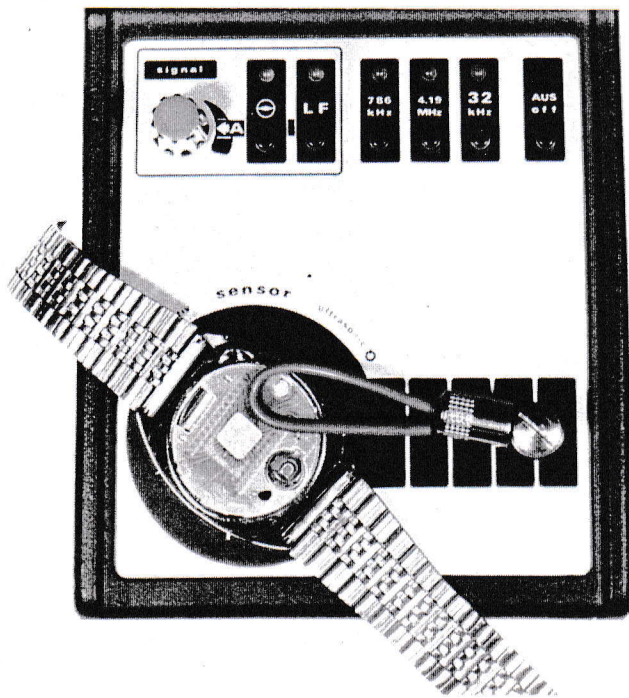
- Remove watch back
- Place watch face down on the capacitive microphone (dark area) as far as possible from the acoustic sensor.
- Insert electrical probe into socket (see page 1).
- Position the watch to centralise the trimmer within the loop of the electrical probe.
- Depress 32KHz frequency button.
- Ensure that signal monitor light is constantly lit.
- When trimming, place side of hand or finger against top of electrical probe post. This not only totally cuts out any electrical interference from your body but allows greater accuracy.
- The first stage of trimming is done with the aid of the rapid monitors. If the watch is

gaining or loosing excessively the appropriate monitor will flash rapidly. Place trimmer blade into locating slot or square on the trimmer and turn steadily until the monitor flashes slowly.

- Now make use of digital read out display to bring timing within acceptable tolerances.

Notes:

- Quality quartz movements can be timed quite easily to an accuracy of 0.02 seconds per day, but with cheap movements containing poor quality trimmers this is not always possible, and rarely expected. We consider + 0.10-0.15 is a good figure to work to in these types.
- Always use a trimming tool, never a screwdriver.
- See also special measuring facilities on page 9.



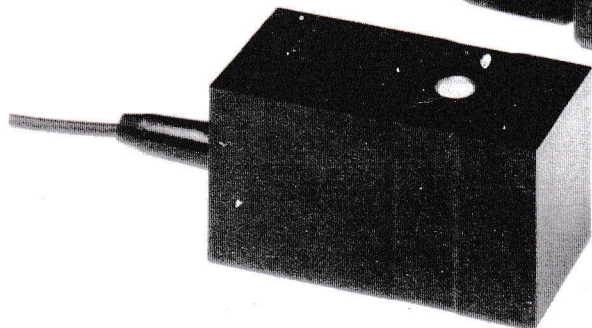
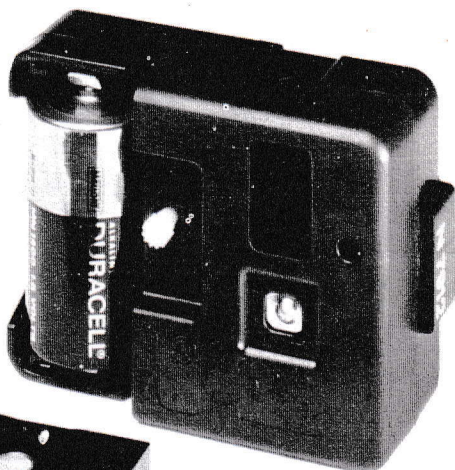
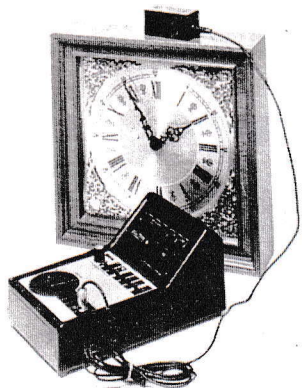
EVERSi+TiME VERSi+

Quartz Clock Movements with seconds (4.19MHz)

- Insert lead from magnetic microphone into socket at front right hand of timer.
- Depress LF button.
- Set volume control to A.
- Draw the side of the microphone marked with a cross along the movement until the signal monitor pulses steadily.
- After two seconds a reading will appear.
- Regulate movement to required accuracy.

Notes:

- Quartz movements other than 4.19MHz are normally only found in radio alarm clocks.
- Signal monitor will pulse at the rate of the stepping motor from which the signal is being taken.
- The magnetic microphone has a generous lead to enable checking of wall clocks whilst hanging in position. Reading can be taken through the dial.
- Depending on movement quality 0.10 seconds per day would normally be acceptable.
- In certain cases it may be necessary to turn the movement to obtain the strongest signal.



TIME VERSI⁺TIME VEF

QUARTZ LCD

- Place watch face down on capacitive microphone and hold in place with small movement clamp.
- Depress LF button.
- Set volume control to position A.
- Read off gain or loss rate from display.

HYBRID QUARTZ WATCHES

- Take the LCD reading from display as described above.
- Take analogue reading from stepping motor as described on page 9.

WATCHES WITH DIGITAL FREQUENCY CONTROL (DFC)

- This type of watch has no trimmer, but the I.C. emits a correction signal at predetermined intervals. Although it is not possible to regulate this type, Versitime can be used for quality control on new watches.
- A watch with DFC can be quickly identified because erratic readings will be obtained when checked in the normal way.

8.10.14 Sec Cycle:

- The correction step interval is programmed into the I.C during manufacture and normally occurs every 8.10 or 12 seconds.
- Because the quartz in this type does not vibrate exactly at 32,768 it is necessary to take the reading from the stepping motor.

- Set up Versitime as described under special measuring facilities on page 9.

- In order to obtain an accurate timekeeping figure a reading must be taken over a period which allows for the correction step.

- It is not possible to tell in advance how often this step occurs so the test must be on a trial and error basis.
10 SECOND CORRECTION STEP.

- Wait for display to blink (this occurs every two seconds) then depress LF button.

- Keep LF button depressed until the display blinks four times, then release.

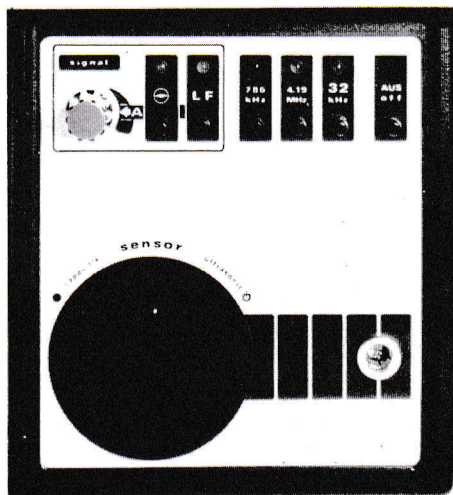
- The figure which appears on the screen is the average timekeeping figure allowing for the correction step.

- Should the reading still be erratic carry out the test over 8 seconds, etc.

E VERSI⁺T⁻IME VERSI⁺

Quartz Digital 27KHz.

- Pocket calculator/watch
- Place watch on acoustic microphone
- Set volume control to maximum.
- Depress LF button.
- Time and adjust as 32KHz (Page 3)



Quartz Digital 786KHz.

- Place watch face down on capacitive microphone.
- Place small movement clamp into socket on front right hand side of timer, and bring into contact with the watch case. This will provide good earthing and eliminate outside interference.
- Depress 786KHz frequency button.
- Time and adjust as 32KHz (Page 3).

Notes:

- There are very few watches of the above frequency.
- Should a new frequency become popular we will be able to change the filter ensuring your Versitime will keep pace with future developments.



TIME VERSUS TIME VEF

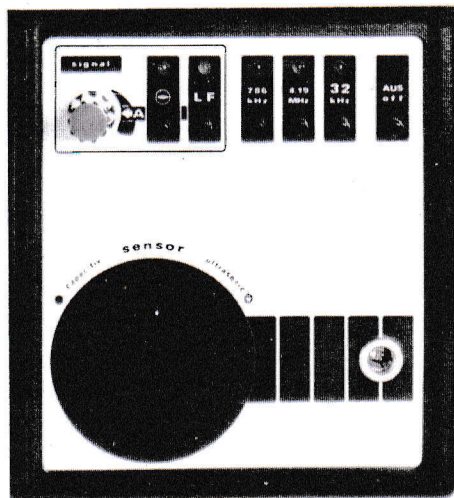
Mechanical watches.

- Place watch on acoustic microphone.
 - Set volume control to position A.
 - Depress button with balance wheel sign.
- sign.
- The timer will automatically select the correct train.
 - Signal monitor pulses to beat of watch (18.000 21.600 etc.).
 - A delay of eight seconds will occur before the initial reading appears.
 - Time and adjust.

Note: Because of the nature of mechanical watches, poising errors etc., will show in the readings obtained. To obtain the best results take the mean average of several readings i.e. +7, +9, +6, +4, +8 +6.

Divide total by number of readings
 $6 \div 40$. The watch has an average gaining rate of 6.66 seconds per day.

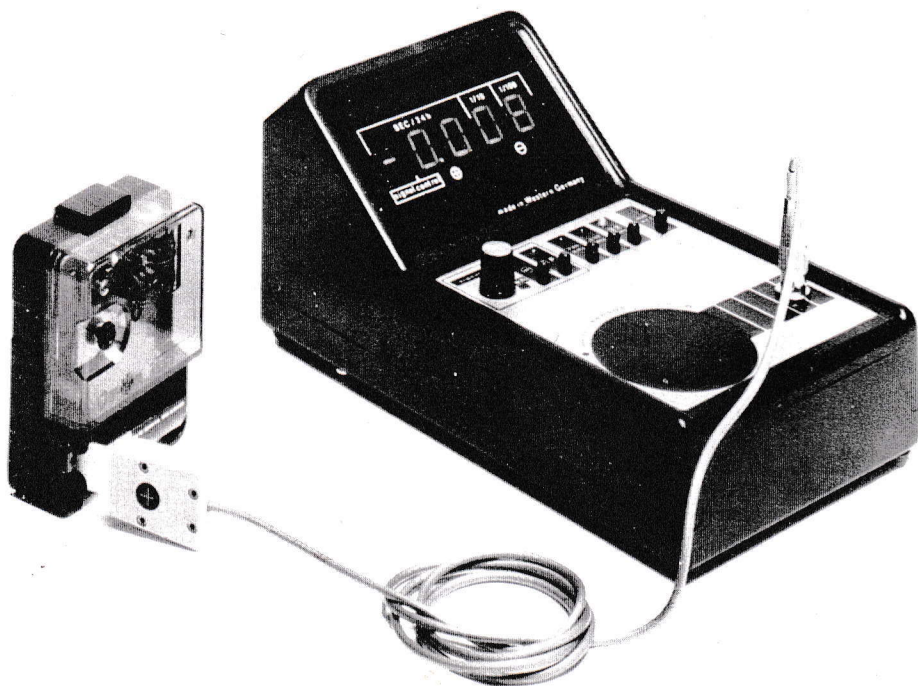
With some small watches it is beneficial to use the small movement clamp for extra stability.



EVERS⁺IT⁻IME EVERS⁺IT⁻

Transistor Clock Movements.

- Due to the nature of construction of transistor battery movements it is necessary to use the clock probe for effective timing (optional extra).
- The probe lead is inserted in the front right hand socket of the machine and the probe inserted between the positive battery terminal and battery contact.
- Depress LF button.
- Set volume control to A.
- The gaining or losing rate will register after a delay of approximately four seconds.



TIME VERSI TIME VEF

Special Measuring Facilities.

Reading from stepping motor using the magnetic microphone.

If it is not possible to take a reading from the quartz crystal as described on page three which sometimes happens where the module is housed in a very thick case or the quartz emits a low impulse, a reading can be obtained from the stepping motor as follows:

Connect magnetic microphone into socket at front right hand side of timer.

Place watch, back down onto the side of the microphone marked with a cross.

Press LF button.

Adjust volume control until signal monitor pulses steadily.

The signal monitor will pulse at the rate of the stepping motor, normally every second.

In rare cases the motor steps only four times per minute, and this is indicated by the signal monitor pulsing every 15 seconds.

Gain or loss rate is indicated in the usual manner.

Battery Check.

Battery failure is often incorrectly diagnosed when a quartz watch fails to function.

To check pre-supposed battery failure without opening watch adopt the following procedure.

Check the watch in the manner described on page three.

1. If a reading is obtained the quartz crystal is receiving power from the battery,

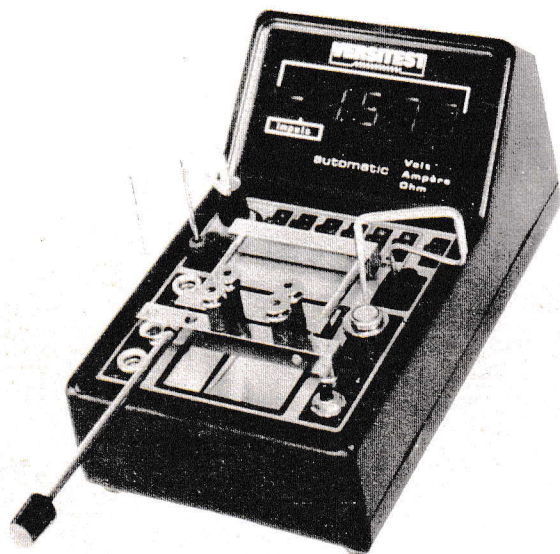
and the fault must lie elsewhere.

2. Check the watch through the stepping motor as described above. If a reading is obtained, the stepping motor is receiving power and the fault must be other than in the battery.

If readings are obtained from both the above tests there is no fault in the electrical circuit and failure is almost certainly mechanical.

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VERSITEST



VERSITEST used in conjunction with **VERSITIME** ★ provides you with all you'll ever need for controlling and fault finding in quartz watches, more accurately, more quickly than ever before. Both machines are available at a price that's well within your budget.

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