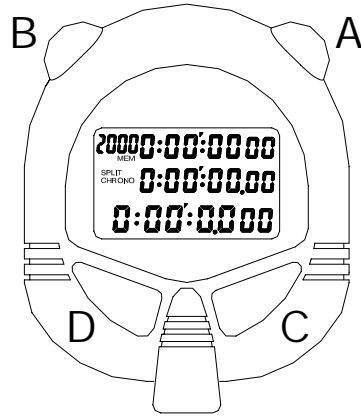**Ultrak 499**
INSTRUCTION MANUAL
FEATURES:

FIG. 1

CHRONOGRAPH

- 2000 memories
- Segregated memory (capability to memorize LAP times of different races)
- User Selectable *LAP/SPLIT* or *LAP/SPEED* display
- Average and best lap time display
- Automatic release of LAP time after 10 seconds to allow progress monitoring.
- Data can be printed by printer (optional) at operation or selectively by race later
- Data can be uploaded to computer through upload cable with software (cable and software optional)

TIMER

- Dual timers which start one after another for use in training programs.
- Can be used as ordinary countdown timer if 2nd timer is not set

CLOCK

- Hour, minute, seconds, month, date, day and alarm

12/24 hour and month/date or date/month display user selectable

CHRONOGRAPH OPERATION

Press C to go to the CHRONOGRAPH MODE.
The display as shown in Fig. 2.   Press A to start.

Fig. 2

Press B to get the 1st LAP time.   The LAP time is shown at the top row, the SPLIT time at the middle row and the running total time is shown at the lower row, as shown in Fig.3.

Fig. 3.

** 10 seconds later the display will automatically be released to show the running LAP and SPLIT times to allow the user to keep track of progress, as shown in Fig. 4.

Fig. 4

Press B to display the 2nd LAP time.
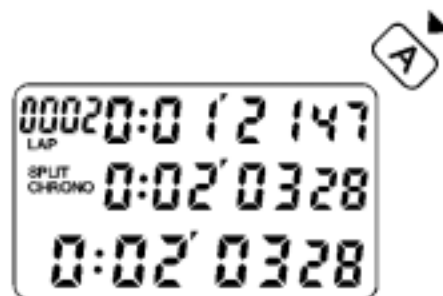

Fig. 5.

Press A to stop.

Fig. 6.

Press B to reset and be ready for the next race, as shown in Fig. 7. The counter at the top left corner displays the memory left for further races. Further races can be recorded by pressing A and B buttons as above.

** Since 5 memories are used for memorizing the date and number of the race, the memory left will be 1993 as shown below.

Fig. 7.

Press D to recall data stored. The display which we call the RACE RECORD is as shown in Fig. 8.   The display shows the date in which the race was recorded and *MCH-001*
(*MSP* for SPEED mode) stands for the first race recorded in LAP/SPLIT mode at that date.
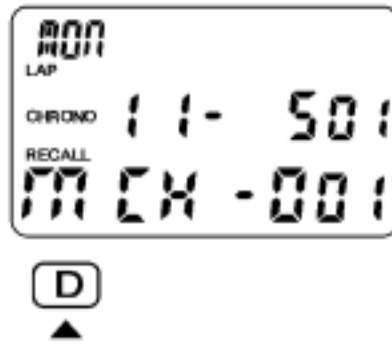

Fig.8

**Pressing B button when the stopwatch is displaying the RACE RECORDS will show the next RACE RECORD   (if there is) and the LAP TIMES in this RACE RECORD can be recalled by pressing D.

** Pressing and hold A button when the stopwatch is displaying the RACE RECORDS will clear the memories in that race record (when the contents in this race record are cleared the display will show **CLEARED** and sounds a long beep, if A is released before **ED** appears the memories will not be cleared) and continuously holding A button after this will clear the memories of all races (display will show **ALL CLEARED** and display will return to as shown in Fig.2. Memories are available for storage when they are cleared.

Press D again to recall the 1st LAP data, as shown in Fig.9.

Fig.9.

Press D to recall the 2nd LAP data, as shown in Fig.10.

0002 0:00' 26 74
LAP
SPLIT
CHRONO 0:00' 4 180
RECALL

D

Fig.10.

Press D again shows the stopped time, Fig. 11.

RECALL
0:02' 0328

D
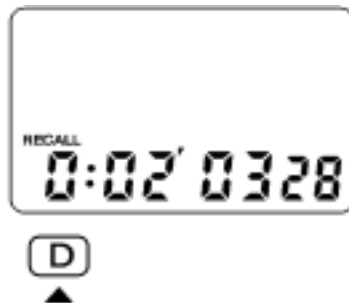
Fig.11.

Press D again to show the average LAP time, as shown
 in Fig.12.

AVE 0:00' 20 90
CHRONO
RECALL

D

Fig.12.

Press D again to show the Best LAP time, as shown in Fig.13.

BES0:00' 1506

CHRONO

RECALL

D ▲   Fig.13.

** The AVERAGE calculation and BEST record do not take into account the last
   section of time before STOP. Therefore, in order for the stopwatch to keep track of
   the average and best records of all Laps, always use the B button until the end of
   the race.   Pressing D again will go to the next race records or return to the 1st
   race records (if there is no further race).

In the CHRONO MODE before the start of a race, such as in Fig.7, push and hold B
for 2 seconds will go to the SPEED SET mode as is shown in Fig.14.   The first digit in
the lowest row is flashing to indicate setting of the thousandth digit of distance.   Push
A to set and B to select the next digits.   The highest setting for distance is 9999.999.
After the digits are set press B again to set the TIME unit with the top left corner **HR**
flashing.   Use A to set to HR (for /hour), MIN (for /minute) or SEC (for /second).
When the distance and time unit are set, press C button to return to the SPEED
MODE (Fig. 15).   (Pushing C button anytime during the setting will return to the
SPEED mode).

▲ B

HR

SPEED **d:**

0 00 0.000   Fig.14.

19930:00' 0000
MEM

SPEED **0:00 0000**

0:00' 0000

C ▲   Fig.15.

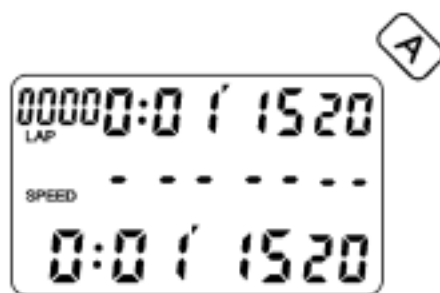Press A to start, the display is as shown in Fig.16.

Fig.16.

Press B to get the 1st LAP time at the top row and the speed at the middle row, as shown in Fig.17.   If for example the distance is set to 200 meters and time unit set is in seconds, the speed calculated from a LAP time of 17.09 seconds is 11.70 m/sec. Using the B button the LAP times and their corresponding speeds can be displayed. Recall operations in the SPEED mode are the same as that in the LAP/SPLIT mode.

Fig.17.

** **BASE 3 STROKE/FREQ**-- if the distance is set to 180 and time unit to seconds, the speed reading for 3 strokes gives the number of strokes / minute.

** **MEMORY USED UP**-- When all the memories have been used the 4 digit LAP counter at the top left corner will start blinking to indicate all memories have been used up.   All further LAP memories will not be recorded in the memory unless some memories are cleared as previously indicated.   When there is no memory left pressing A to start a race will sound 3 short beeps.

** ***Do not leave the stopwatch running if not in use*** as that drains a higher power from the battery.

TIMER OPERATION

Press C button until the stopwatch goes to the TIMER mode.   The display is as shown in Fig.18.   The top row is the display for the 1st timer and the middle row is the display for the 2nd timer.
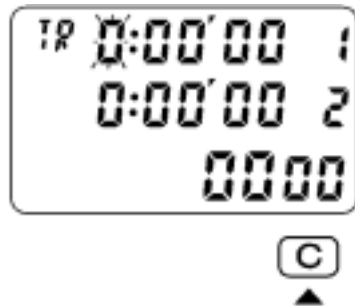

Fig.18.

Press and hold B button for 2 seconds to go into the SET TIMER mode with the hour digit of the 1st timer blinking.   Press A button to set to desired hour for countdown. Press B to go to the first digit in minutes and press A to set minutes.   Similarly by using B and A buttons the desired countdown times for the 1st and 2nd timers can be set.

**Pressing C button once any time during this TIMER setting sequence will complete the setting and the timer is ready to start upon pressing the A button.
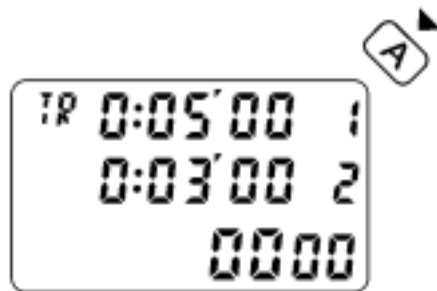

Fig.19.

Press A to start countdown with the "*1*" at the top right corner blinking and the timer setting counting down.   When the 1st timer approaches zero, the timer gives 4 beeps and the 2nd timer starts counting down immediately.   When the 2nd timer approaches zero, it gives 2 beeps and the 4 digit counter at the lowest row advances by 1 automatically.   At any time during countdown pressing A will stop counting.

** If only the 1st timer is set the timer is used as an ordinary countdown timer and will give 5 times 4 beeps when the set time is up.   The 4 digit counter also advances by 1 automatically when the timer reaches zero.

PRINT MODE

Press C button to go to the PRINT ALL mode as shown in Fig.20.   Pressing A button will print all recorded memories to the printer (if printer is connected).   When the stopwatch is in the process of printing, an indicator moves from right to left. When printing is complete *PRINT END* is displayed.
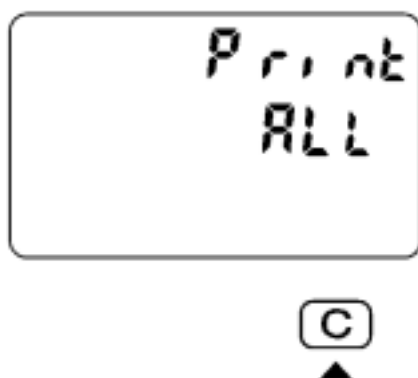

Fig.20.

Pressing B at the PRINT ALL mode will go to the PRINT RACE mode with display as shown in Fig.21.

Fig.21.

Pressing A in this mode will only print the memories in this race.   Press B to select particular race to print.
Pressing C any time during this printing process will stop printing immediately.

** If the chronograph is not reset (i.e. still running or stopped), it will not be possible to
     upload and the display will show *PRINT 0*, there will not be any action upon
pressing A or B.

UPLOAD MODE

In Fig. 20 press D button once will switch to UPLOAD MODE as shown in Fig.22.
Pressing A button will UPLOAD ALL recorded memories to computer (if computer is connected).   When the stopwatch is in the process of uploading, an indicator moves from right to left. When upload is complete **UPLOAD END** is displayed.
press D button to return to PRINT MODE.

Fig.22.

Pressing B at the UPLOAD ALL mode will go to the UPLOAD RACE mode with display as shown in Fig.23.

Fig. 23.

Pressing A in this mode will only upload the memories in this race. Press B to select particular race to upload.
Pressing C any time during this uploading process will stop printing immediately.

** If the chronograph is not reset (i.e. still running or stopped), it will not be possible to upload and the display will show **UPLOAD 0**, there will not be any action upon pressing A or B.

TIME

Press C to go to the TIME MODE.   The display is as shown in Fig.24.
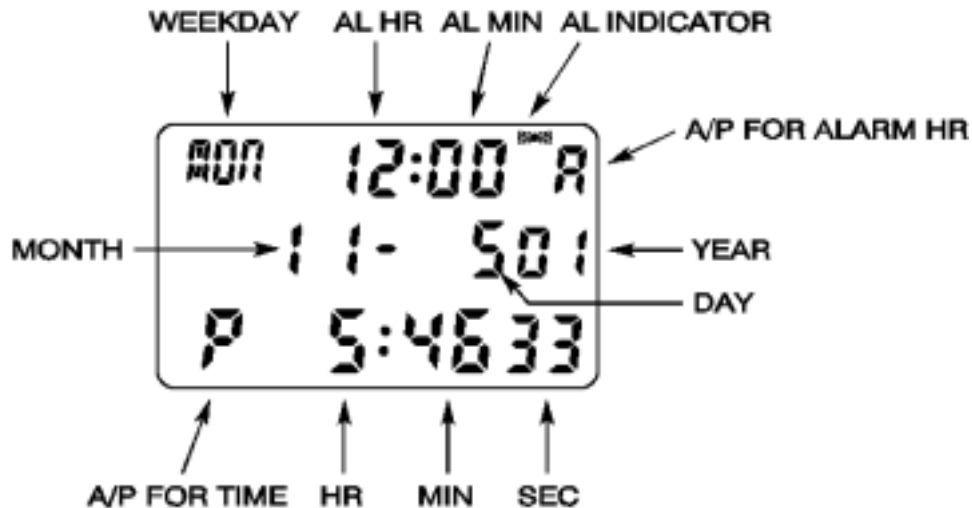

Fig.24.

Press and hold B button will go into the TIME SET mode with the AL HOUR blinking. Press A to set the AL HOUR.   Press B to select digits in the following sequence: AL HR, AL MIN first digit, AL MIN 2nd digit, AL OFF/ON, YEAR last digit, YEAR 1st digit, MONTH, DATE, 12/24HR selection, HOUR, MIN 1st digit, MIN 2nd digit, and SECONDS.   Press A to set the blinking digits.   Pressing C any time during this setting sequence will complete the setting procedure and return to the normal TIME display as shown in Fig.24.   If 12HR option is selected the calendar will be shown as MONTH/DATE/YEAR and time will be displayed in 12 HOUR system.   If 24HR option is selected, the calendar will be displayed as DATE/MONTH/YEAR and time will be displayed in 24HOUR system.

The calendar automatically adjusts for weekday and odd and even months including February of leap years up to year 2089.

Press D in the TIME mode to arm or disarm the alarm.   When the alarm is armed the alarm indicator will be turned on and the alarm will sound at the preset alarm time.

CARE OF YOUR STOPWATCH

*WATER-RESISTANCE
The stopwatch is designed to withstand accidental contact with water such as splashes or rain, but it is not designed for use in water.   Do not operate the buttons when the stopwatch is wet.

*TEMPERATURE
Do not leave your stopwatch under direct sunlight or in very high temperatures for a long time, or the display may become black.   Do not leave your stopwatch in very low temperature as this may cause a slight time loss or gain and the change of digits becomes slow.   In both cases the above conditions will be corrected when the stopwatch returns to normal temperature.

*SHOCKS
Be careful not to drop your stopwatch or hit it against hard surfaces as it may cause mechanical damages.

*STATIC ELECTRICITY
The integrated circuit in your stopwatch can be affected by static electricity.   If the static electricity is very strong a permanent damage can occur.   Be careful of the screen of the TV set and the wearing of clothing made of synthetic materials in dry weather; in such cases a very strong static electricity can be generated.

*MAGNETISM
Not affected.

*CHEMICALS
Do not expose your stopwatch to solvents such as gasoline and alcohol, spray of cosmetics, cleaners, paints etc as they may cause damage to the stopwatch.

BATTERY CHANGE

When the battery low indicator lights up, as shown in Fig.25, battery replacement is necessary.

Fig.25.

1. Unscrew and remove the back cover.
2. Unscrew the battery contact.
3. Replace with fresh Lithium battery CR2032 or equivalent.
4. Before putting in the fresh battery make sure that the triangular contact is in the triangular slot under the battery.
5. Use a small metal tool (such as a tweezers or screw driver) to momentarily short circuit the AC pad next to the battery.
6. Re-screw the back cover.
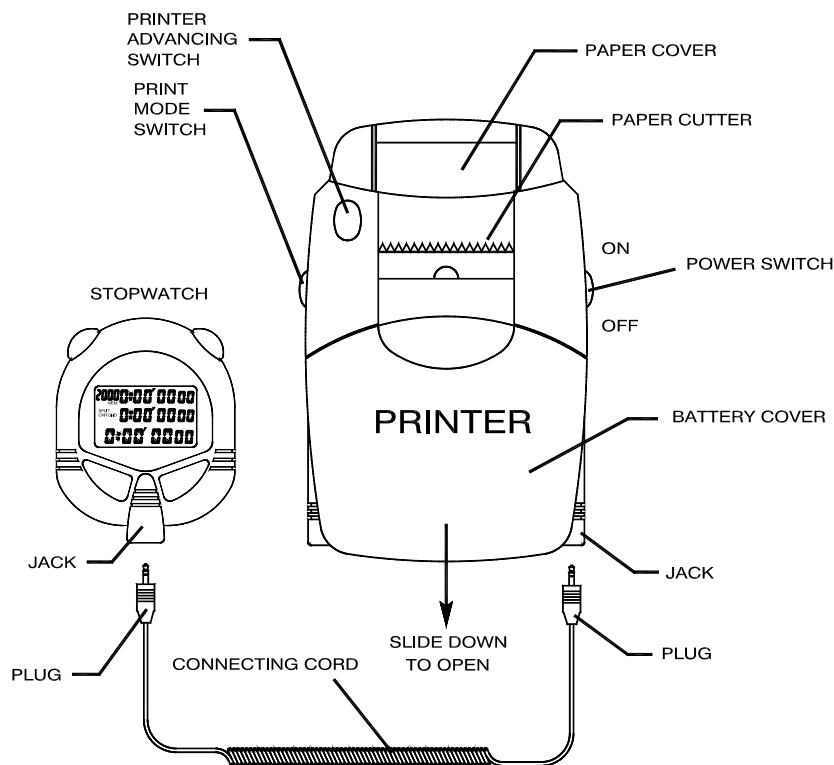
SYSTEM PRINTER 499-P (Optional)

Fig.26.

BATTERY INSERTION

1. With the POWER SWITCH in the OFF position press and slide down the battery cover.
2. Put in 4 pcs of AA size batteries in polarities as shown in the battery compartment.
3. Slide up the battery cover until it clicks closed.

** Always use batteries of the same manufacturer and replace all batteries at the same time,

** If the printer will not be used for a long time, remove the batteries from the battery compartment.

PAPER INSERTION

1. Open the paper cover.
2. Cut the end portion of the roll of thermal paper straight.
3. Turn on the printer.
4. Insert the end portion of the paper into the paper insertion slot in the correct way as shown in Fig.27.

5. Keep pressing the PAPER ADVANCING SWITCH until the end of paper is 2-3 cm
   out from the printer.
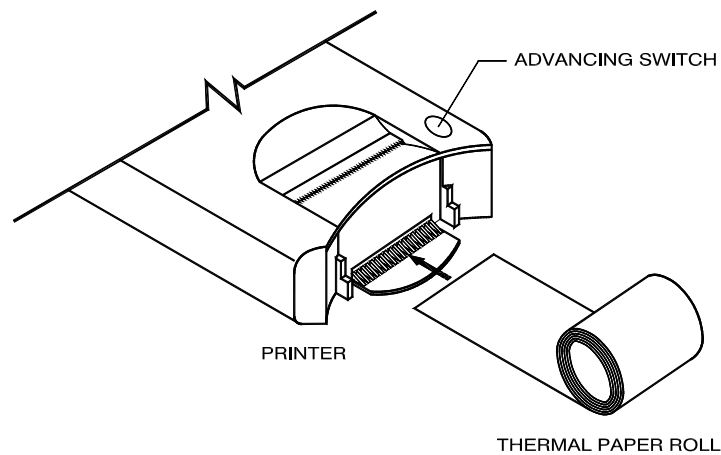6. Put the roll of paper into the paper compartment and close the paper cover.

ADVANCING SWITCH

PRINTER

THERMAL PAPER ROLL

Fig.27.

** **NEVER**   pull paper from the reverse direction, this may damage the printer. For
      replacing the roll of paper before it is used up, first tear off the paper and press
      the PAPER ADVANCING SWITCH until all the remaining paper is out.
** Do not touch the paper on the right side as it may cause poor printing.
** Always store the paper rolls in a cool, dry place and keep away from direct sunlight.

CONNECTION TO PRINTER
1. Insert both plugs of the connecting cord to the printer and stopwatch with the power
of the printer turned off.   Always hold the plug as illustrated in Fig.28.   Either plug
can be inserted into either jack. Be sure that both jacks are inserted all the way in the
stopwatch and printer.
2. After use, turn off the power of the printer, then remove the plugs.   After removing
the plug from the stopwatch, remember to insert the rubber cap to the jack to
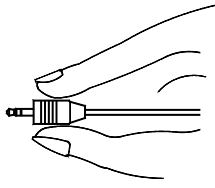keep it away from dust and moisture.

Fig.28.

OPERATION

IMMEDIATE PRINT-OUT

1. Switch the stopwatch to 'PRINT ALL' mode as shown in Fig. 20.
2. Connecting the stopwatch to the printer, slide the power switch to ON, the paper will advance by 1 line.
3. Slide the PRINT MODE SWITCH to the TOP position. Only the SPLIT or SPEED (depending on whether the stopwatch is in CHRONO or SPEED mode) will be printed. If this switch is slid to the DOWN position, both LAP and SPLIT or LAP and SPEED will be printed. (In SPEED mode, if B is pressed while the previous record is still being printed, that SPEED record cannot be printed in real time. The memories still record the full data for recall or upload).
4. Press button A of the stopwatch to start the race. The YEAR, MONTH and DATE, START together with the CHRONO mode will be printed, as shown in Fig.29(a) and 29(b). The M at Fig.29b means that the time unit in the SPEED distance setting is minutes (H for hour and S for seconds).
5. Press A button to stop. The print-out is as shown in Fig.30.

2001　8 20
START

Fig. 29(a)　LAP/SPLIT

2001　　8 20
START

Fig. 29(b)　LAP/SPEED

/S/0:00'29 35

Fig.30.

Remarks:

- Do not pull out the paper when the printer is not in operation.
- Do not print if there is no paper in the printer.
- Keep the printer from high moisture or dusty environment.
- Do not subject the printer to violent shocks.
- Do not put the printer under direct sunlight or near high temperature.   The case may be deformed or damaged.
- Do not wipe the case with a cloth moisturized with chemicals.   This may discolor or deteriorate the printer.
- Keep the jack away from moisture.
- Remember to turn off the power switch if the printer is not in operation to avoid battery consumption.
- Replace the batteries when the printing slows down, getting poor, light or messy print-outs, paper not advanced normally or
- cannot be printed.