



ULTRAK 498 STOPWATCH WITH PRINTER INSTRUCTION MANUAL

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*Perchlorate Material-special handling may apply.
See www.dtsc.ca.gov/hazardouswaste/perchlorate.

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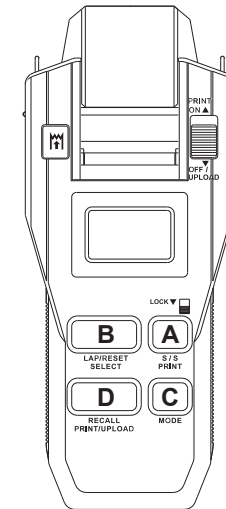
FEATURES:

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 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



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CLOCK

- Hour, minute, seconds, month, date, day and alarm
- 12/24 hour and month/date or date/month display user select able

BATTERY INSTALLATION

In the stopwatch, two types of batteries are used -- 4 pieces of 1.5V AA size alkaline battery and 1 piece of CR2032 Lithium battery. The AA size alkaline batteries supply the power for both printer and CPU. The 3V CR2032 battery is for back up purpose. Printing is not available when only the CR2032 battery is installed.

To replace batteries remove the battery lid as shown in Fig.1. Replace the AA size alkaline batteries according to the polarities shown on the case. To replace the CR2032, unscrew the positive metal contact and replace the battery into the position shown in Fig. 1 with positive side face up. Re-screw the metal contact.

****:** Always replace at the same time with all 4 pieces of new AA size high capacity alkaline batteries.

You do not need to reset the stopwatch if the clock keeps running after changing of batteries.

If all batteries are dead and the clock is out of order, you need to press the reset key (Fig. 1) to reset the stopwatch after battery replacement. The stopwatch will then switch to clock mode automatically. Slide back the battery lid to complete the battery replacement procedure.

2

****:** Remove all the AA size alkaline batteries if the stopwatch will not be used for a long time to avoid battery leakage that may damage the stopwatch.

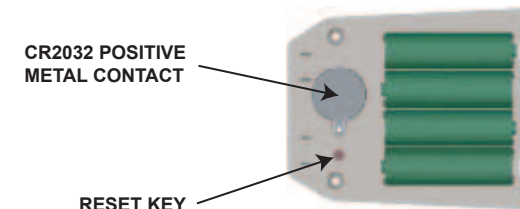


Fig. 1

CHRONOGRAPH OPERATION

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

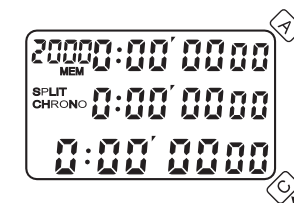


Fig. 2

3

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.

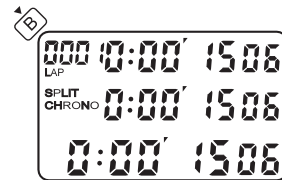


Fig. 3

** 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

4

Press B to display the 2nd **LAP** time, as shown in Fig.5.



Fig. 5

Press A to stop, as shown in Fig.6.

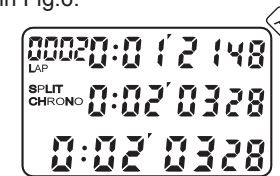


Fig. 6

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.

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

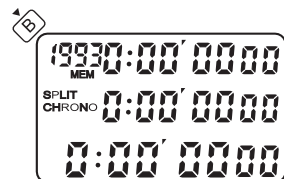


Fig. 7

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.

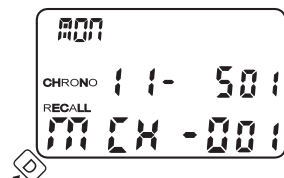


Fig. 8

6

** 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.

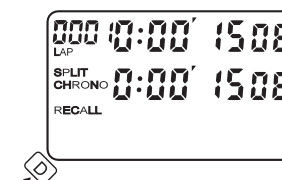


Fig. 9

7

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

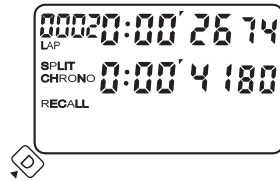


Fig. 10

Press D again shows the stopped time, as shown in Fig.11.

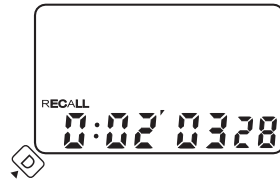


Fig. 11

8

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



Fig. 12

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



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).

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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).

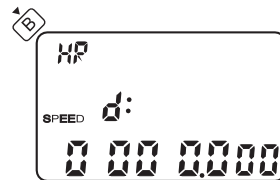


Fig. 14

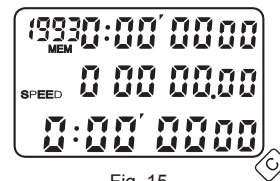


Fig. 15

10

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

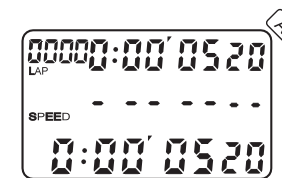


Fig. 16

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.

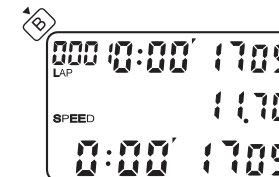


Fig. 17

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**** 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.

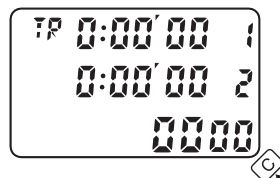


Fig. 18

12

Press and hold B button for 2 seconds will 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.**

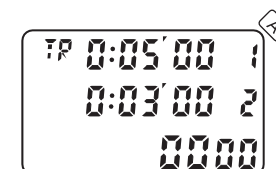


Fig. 19

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.**

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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 (when the printer is on). When the stopwatch is in the process of printing, an indicator moves from right to left. When printing is complete **PRINT END** is displayed.

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

**** 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 slide 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).**

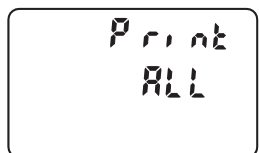


Fig. 20

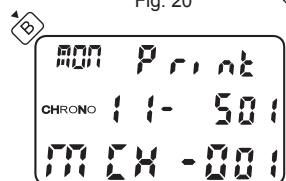


Fig. 21

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

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

**** If the above process is wrongly done with the display switched to UPLOAD ALL, the display will be freezed until the printer is switched off.**

UPLOAD MODE

The **PRINTER** must be switched **OFF** in **UPLOAD MODE**.

In Fig. 20 press D button once will switch to **UPLOAD ALL** 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**.

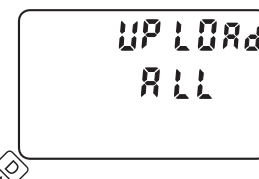


Fig. 22

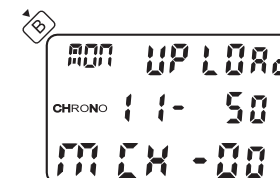


Fig. 23

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

**** If the printer is wrongly turned on during the **UPLOAD** process, **NO** or **irrelevant data** will be uploaded to the PC.**

TIME

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

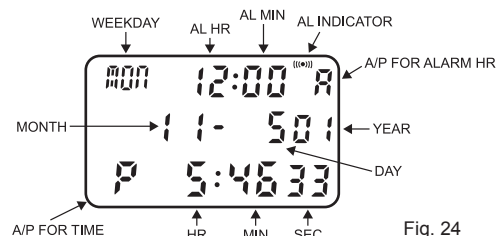


Fig. 24

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Press and hold B button for 2 seconds 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 **24 HOUR** 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.

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BATTERY LOW INDICATION

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



Fig. 25

**** Only replace the CR2032 with the 4 pieces AA size alkaline batteries installed. This can retain the stopwatch's memories and settings.**

LOADING OF PAPER

1. Use thermal paper roll size: Width 37mm x Diameter 30mm max.
2. Pull out the paper cover by pressing both side of the cover slightly, as shown in Fig. 26.
3. To ensure smooth insertion, cut the corner of the thermal paper as shown in Fig 27.
4. Switch on the printer by sliding up the ' PRINT ON / OFF ' switch.
5. Insert the end portion of the paper into the paper insertion slot, as shown in Fig. 28.

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6. Press the ' PAPER FEED SWITCH ' (Fig. 29) until the end of paper is about 1 cm out from the paper cutter.
7. Replace the paper cover to its original position.



Fig. 26



Fig. 27



Fig. 28

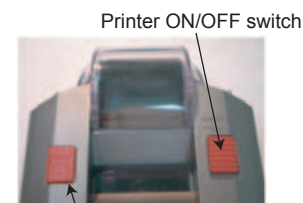


Fig. 29
Paper Feed switch

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****:** Do not pull paper out from the printer, this will cause damage to the printer. For replacing the paper roll before it is used up, tear the paper off and press the ' PAPER FEED SWITCH ' until the remaining paper is out completely.

****:** Do not touch the surface of the paper as it may cause poor printing.

****:** Always store the paper rolls in a cool, dry place and keep away from direct sunlight.

OPTIONAL ACCESSARY(FOR UPLOAD):

To upload data to computer, the computer must have the ' DigiLink Upload Software ' installed (please see **DigiLink upload program**).

Follow the steps below to connect the computer and the stopwatch:

1. Shut down the computer.
2. Plug the USB upload cable into the USB socket of the computer.
3. Insert the telephone-plug end of the connector cable into the right hand side of the stopwatch labeled ' PC ' (Fig. 30)
4. Plug the jack end of the connector cable into the socket of the upload cable completely (Fig. 31).



Fig. 30



Fig. 31

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DigiLink UPLOAD PROGRAM MANUAL

A) Digilink program & driver installation

B) Program Functions:

- 1) Download memorized records
- 2) Real time Download
- 3) Saving records
- 4) Delete record
- 5) Export file
- 6) Print Setup/Print

C) Program uninstallation

A) Digilink program & driver installation:

- 1) Insert the CD disk labelled DigiLink program to the CD Rom drive.
- 2) Follow the on-screen instructions to install the Digilink program and the AU9720 driver to the PC.
- 3) Restart
- 4) After restart, plug in the USB upload cable with the stopwatch connected.
- 5) Take note from the display the COM port no. through which the driver is connected to the PC.

[Note: In case the Com port no. assigned is not within 1 to 4, go to the control panel to adjust. You can view the port number by first clicking the ' Control Panel ' and choose ' System '. Then, click the ' Hardware ' in the System Properties and choose ' Device Manager '. The port number can be found in the ' USB to Serial Bridge Controller ' inside the Ports (COM&LPT).

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The port number can be changed by right clicking the ' USB to Serial Bridge Controller ' and choose ' Properties '. The Communication Port properties window will pop up, choose ' Port Settings ' and click ' Advanced '. Then, you can choose another port (COM1-COM4) in the Com port number.]

- 6) Double click the 'DigiLink' icon on the desktop.
- 7) From the program pull down menu, click 'SETTING' and select 'PORT'. A list of COM port no.(COM1-COM4) will be displayed. Match this COM port no. to the one noted in A5 and click 'OK' to accept. If an incorrect port number is selected, nothing will be transferred to the computer.
- 8) Continue function. This function located in the 'SETTING' pull down menu. Click 'Continue' for either enable or disable. This function affects the way of saving race record into file.
A 'tick' symbol appearing next to 'Continue' means it is enabled. All race records will be saved in one file, each time executing 'Download' function. DigiLink program will not prompt the user to save file unless start download new record or exit program. If tick symbol is not appearing (disabled). DigiLink will prompt the user to save each race record into a file before next race record start transferring to the computer. For example, if user transfers 3 race records to the computer, DigiLink program will prompt the user to save the first and second record. The user has to save the last record by clicking 'Save' or 'Save as' in the pull down menu, or the computer will prompt to save the last record until the user start transfer new race record or exit the DigiLink program.

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B) Program Functions:

- 1) Download memorized records from stopwatch:
At the main screen of the DigiLink program click 'FILE' from the pull down menu and then select 'Download'. Press stopwatch start button to transfer all records stored in the stopwatch. When all records have been transferred to the computer, the stopwatch will show 'UPLOAD END' on the display for 2 second. Click "Disconnect" then 'Back' button to return to main screen.
- 2) Real time Download:
User can transfer data to computer simultaneously when operate the stopwatch in Chrono mode. Please note that the record number in DigiLink program always start from MCH-000 every time in this mode. Therefore the race record number can be different in DigiLink program and stopwatch. DigiLink program allows user to record maximum 10000 laps from stopwatch. Any laps exceeding 10000 will not be saved in the record.
- 3) Saving files:
When saving files to computer. Default file name format will be suggested by DigiLink e.g. file name MCH-001-010925, will be suggested for record number MCH-001 and recorded on 25th September 2001. User can change the file name if needed.

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- 4) Delete records:
To delete record, first select unwanted race record by clicking the down arrow button next to it in 'Record Cell'. Click 'DELETE RECORD' then click 'OK' to accept the delete record dialog.
- 5) Export files:
The DigiLink program allows user to export files in the text format. Select 'EXPORT' then click 'TEXT' from the 'FILE' pull down menu. 'SAVE AS WINDOWS' will be displayed; user can save the file to another file name and path in your computer. Because the exported file is in text format, it can be opened by Windows note pad, Microsoft WORD or EXCEL programs for further processing.
- 6) Print Setup/Print:
Select the printer and print orientation in 'PRINT SETUP' of the 'FILE' pull down menu. Click 'PRINT' in the 'File' pull down menu will print the current race file immediately.

C) Program uninstallation:

To remove DigiLink program, go to CONTROL PANEL, double click ADD and REMOVE, select 'DigiLink version 1.1' then click REMOVE. This will completely remove the DigiLink program from the computer.

For uninstalling the AU9720 driver, go to CONTROL PANEL, double click ADD and REMOVE, select 'USB CDC Device Driver', then click REMOVE. The AU9720 driver will then be removed from the computer.