

TAG-HEUER CHRONOPRINTER 505.....QUICK OPERATING GUIDE

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NOTE: THE MAIN INSTRUCTION MANUAL WILL GIVE YOU GENERAL INFORMATION ON PROCEDURES, MAINTENANCE, AND TECHNICAL SPECIFICATIONS. PLEASE REFER TO IT BEFORE OPERATING THE CP505. THIS WILL SERVE AS A REMINDER TO GET MAXIMUM BENEFIT FROM YOUR NEW TAG-HEUER INSTRUMENT.

A. HOW THE CHRONOPRINTER WORKS:

Your Chronoprinter 505 (we will refer to it as CP505) is extremely well suited sequential timing, especially when used in MANUAL MODE. In this mode, you must enter, via the keyboard, a car number TWICE for each racer: first before the racer starts, and again before the racer finishes. By doing this, the CP505 will calculate the elapsed (or net) time for each racer, and store that time in memory. This will allow you to print out sorted results at any time during or after the competition.

If you forget to enter a bib number before a racer starts or finishes, the CP505 will still print a time of day. You can always go back and reassign the bib number later. Because of this feature, the chances of losing a time resulting in a re-run is minimal.

With the CP505, you can put as many racers on course as you can reasonably handle. It is important that the person operating the CP505 be in communication with the person starting the racers. Once the timing operator has keyed in the car number, he call tell the starter to send the racer. The timing official can then be ready to re-key the bib number of the racer approaching the finish.

The timing official should have a clear view of the course so he can identify the racer approaching the finish line.

The CP505 can also block signals coming from the start or finish sensors using the INPUT BLOCKING keys. Refer to the main user manual for input blocking characteristics.

B. STANDARD TIMING SET-UP

The standard configuration calls for a separate start and finish location, with the timer located near the finish line.

The start gate is usually in a remote location connected by 2-conductor cabling. Plug one end into the start sensor, and the other end into INPUT 1 of the timer.

The finish gate is connected by 2-conductor cabling to INPUT 2 of the timer.

When connecting your start and finish sensors, be sure to respect polarity with the color-coded banana plugs:

BLACK = GROUND, GREEN = SIGNAL (+5)

For information on more elaborate configurations (back-up start and finish gates, split (mid-course) sensors, common start/finish lines), ask your dealer for guidance. TAG-Heuer manufactures the full range of accessories designed to accommodate the most elaborate installations.

Refer to the main user manual for information on external power to back up the internal batteries for extended use and to power the internal heater.

REMEMBER: ALWAYS USE INTERNAL BATTERIES EVEN IF AN EXTERNAL POWER SOURCE IS USED.
C. BEFORE STARTING THE RACE:

1. Turn timer on to MANUAL MODE.
2. If you want to set the time at zero, press ENTER and go to step # 4, or
3. Enter a four digit time of day (ex: 12:49). Check the LCD to be sure the time is correct. If not, press ERROR to start over. If correct, press ENTER to verify.
4. Select timing precision:
1/1000: press ENTER
1/100: press "0" then ENTER
1/10: press "0" twice then ENTER
1: press "0" three times, then ENTER
(Pressing "0" four times will return you to 1/1000).
5. If you want the clock to start from zero when the first racer leaves the start gate, go to step #7.
6. Synchronize the timer with a master clock by pressing INPUT 1 when the master clock reaches the time of day preset on the timer.
7. Remove the input blocking bars on the LCD by pressing the corresponding keys on the timer. You may momentarily block either input 1 and 2 by pressing the appropriate key as an object passes through the gate.

D. TIMING A RACE IN MANUAL MODE:

As explained before, you must enter the competitor number for each racer twice: once before racer starts and again before he finishes. The following example shows how to manipulate the CP505 with two racers on course at a time:

OPERATOR ACTION	response from CP505
1. ENTER BIB # FOR FIRST RACER---	number appears on LCD
2. START FIRST RACER----->	time appears on LCD and printer
3. ENTER BIB # FOR SECOND RACER-->	number appears on LCD
4. START SECOND RACER----->	time appears on LCD and printer
5. ENTER BIB # FOR FIRST RACER---	number appears on LCD
6. FINISH FIRST RACER----->	times appear on LCD and printer
7. ENTER BIB # FOR THIRD RACER---	number appears on LCD
8. START THIRD RACER----->	time appears on LCD and printer
9. ENTER BIB # FOR SECOND RACER-->	number appears on LCD
10. FINISH SECOND RACER----->	times appear on LCD and printer
ETC.	

IMPORTANT NOTE: If you forget to enter a bib number before a start or finish, simply write the number on the printer tape next to the appropriate time-of-day. See step #D below for how to re-assign a bib number to a time-of-day.

If you key in a wrong bib number by mistake, you correct the mistake by first pressing the ERROR key, and then keying in the correct number.

If you want to block out unwanted signals at either the start or finish gate (eg: a spectator crossing the finish line during a run, or a DNF racer finishing out of sequence), you can momentarily press the INPUT BLOCKING KEY for input 1 (start) and/or input 2 (finish).

E. TIMING A RALLY:

1. Synchronise timer with master clock (such as WWV).
2. Pre-enter official start time for each car, using technique as described in section F. below.
3. As car approaches each check point, enter car number then press INPUT 2 key when he crosses.

F. SPECIAL FUNCTIONS

1. TO RE-ASSIGN A BIB NUMBER TO A TIME-OF-DAY:

- A. Block both input 1 and input 2 by holding down both input blocking keys until the left and right bars appear on the LCD.
- B. Enter the bib number in question (you should have written it down on the printer tape).
- C. If the bib number is correct, press ENTER. The LCD will flash all zero's.
- D. Enter the time exactly as it appears on the printer tape next to where you've written the bib number.
- E. Once you have entered the correct time:
Press the INPUT 1 key if it was a START time-of-day, or
Press the INPUT 2 key if it was a FINISH time-of-day.
- F. The timer will print the new information and store it in memory.
- G. Unblock the inputs and resume timing as per normal.

2. TO ELIMINATE A SINGLE COMPETITOR FROM MEMORY: follow the steps as described in section D, except do not enter a time-of-day.

Instead, simply press INPUT 2 after step #3. The printer will say "out." Use this for removing DSQ's from memory.

3. PROCESSING DNF'S: DNF's require no special processing, since their finish time-of-day and net times are never processed in the first place. It may be helpful for record-keeping, to write DNF next to their start time-of-day on the printer tape.

4. TO PRINT NET TIMES IN ASCENDING ORDER: Press the CLASS button any time during or after the run. The timer will proceed to print the times and also display them on the LCD.

If a timing impulse is received during printing, and the inputs are not blocked, printing of net times will be aborted in favor of processing the signal impulse.

5. TO ERASE THE CONTENTS OF THE MEMORY: Press the ENTER and ERROR keys simultaneously. Do this only if you are sure you don't want to save the times collected so far.

NOTE:

The CP505 does not combine first and second run times. To do this effectively, it is recommended you utilize a computer with specific software designed for skiing. Reliable Racing Supply has information available on special software packages designed to allow your PC to work on-line or off-line with your CP505. Software is available for Solo II, Solo I, and Pro-Solo racing.

G. DUAL HEAD-TO-HEAD RACING

1. DIFFERENTIAL TIMES. It is possible to determine the winner and margin of victory using only one CP505 in AUTO MODE, and two HL2-11 Infrared Sensors.

Using two 2-conductor cables, connect the "red course" sensor into INPUT 1, and the "blue course" sensor into INPUT 2. In this way, if a time given on the printer tape is preceded with a "1," it is to be regarded as a "red" finish time. Inversely, a time preceded with a "2" will be a "blue" finish time.

Follow the start up procedures as described above for zero time-of-day and 1/1000 precision. Start the clock by pressing INPUT 1 before the first two racers begin. In the following example, the racer on the red course crossed his finish line before the racer on the blue course crossed his finish line:

```
|
|
start internal clock-----|-> 000  1      0.000 |
|
red course finish-----|->  1  1      8.968 |
blue course finish-----|->  1  2      9.390 |
manual line feed-----|->                |
```

The above indicates that the red course was the winner. By simple subtraction, the margin of victory was .422 (9.390 - 8.968 = .422). Since in most dual races, the competitors finish relatively close together, you generally need to subtract only the seconds and thousandths to determine the margin. It is helpful to have a calculator handy to do the subtraction. You can then write in the margin of victory to the left of the set of times printed, as done in the above example.

2. INDIVIDUAL ELAPSED TIMES

In order to get independant elapsed times for each racer on both red and blue courses, it is necessary to use TWO sets of equipment, one dedicated to the red course, the other dedicated to the blue course. Each set includes a CP505, and 2 HL2-11 finish gates. To run the race, follow the guidelines as described in section D (above). The bib numbers of racers on the red course must be keyed into the CP505 that is dedicated to the red course. The bib numbers of racers on the blue course must be keyed into the CP505 dedicated to the blue course.

Since this method of timing requires more attention on the part of the timing official, we recommend you time only one pair at a time, in the following manner:

```
ENTER BIB NUMBER FOR RACER ON "RED" COURSE
ENTER BIB NUMBER FOR RACER ON "BLUE" COURSE
START BOTH RACERS
ENTER BIB NUMBER FOR RACER ON "RED" COURSE
ENTER BIB NUMBER FOR RACER ON "BLUE" COURSE
FINISH BOTH RACERS
etc.
```

You can subtract one net time from another to determine the differential time (margin of victory) between red and blue course.

H. QUICK-MODE ELAPSED TIMING FOR TRAINING AND TESTING.

Use the following procedure to get elapsed times for a single competitor, and only if you do not need to print or store the times in memory. This procedure requires you to turn the CP505 OFF then ON before each new racer starts. But since the printer

switch in the OFF position, you can ready to CP505 very quickly for each racer. This mode is useful if you do not need to keep track of bib numbers, but only need an elapsed time for training or testing sessions.

TO OPERATE IN QUICK MODE:

* first make sure printer switch is in OFF position before commencing further.

1. turn timer ON to AUTO MODE.
2. press ENTER twice.
3. press both INPUT BLOCKING KEYS.
4. racer starts through input 1.
5. racer finishes through input 2 (view the time on the LCD).
6. turn timer off and repeat sequence for next racer.

FOR QUESTIONS ON OPERATION OF YOUR CP505, OR COMPUTER PROGRAMS FOR YOUR PC, CALL 800-274-6815 AND ASK FOR TIMING SALES & SERVICE.