



愛高實業(香港)有限公司
HICO INDUSTRIAL (HK) LIMITED

**PRODUCT
SPECIFICATION**

PRO GOLFER

| | |
|---------------|--------------|
| Product Code: | HCS-T011-1 |
| Version: | 1.2 |
| Date: | May 23, 2003 |

Hong Kong 香港

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Pro Golfer (HCS-T011-1)

GENERAL DESCRIPTION

The PRO GOLFER is a single-chip micro-controller that is preprogrammed for digital watch applications. Featured with *4 DATED GOLFING RECORDS*, *2 COUNTDOWN TIMER*, and *5 SCHEDULE ALARMS*, it could be a useful tool for golf players.

FEATURES

- Real Time Clock
 - Hour, Minute, Second, Year, Month, Day, Day of Week
 - Auto leap year adjustment from 2000 to 2049
 - Auto setting on Day of Week
 - 12 or 24 hour display format by user option
 - Hourly chime
- Dual Time Clock
 - Another time display with user adjustable Hour and Minute
- Alarms
 - Five independent schedule alarms with adjustable Hour, Minute, Month and Day
- Countdown Timer
 - Two countdown timers ranging from 1 to 240 minutes
 - Linked operation
 - Alert signal when countdown to zero
- Chronograph
 - Count up to 23 hours 59 minutes 59.99 seconds with 1/100 second resolution
 - Split time display
- Golfer Record
 - Four dated records that can store individual hole performance with standard PAR info for 18-holes course
 - Display of per hole and per course performance against standard PAR
- Night Mode (Bonding Option)
 - EL backlight will be activated with any key operation during 7:00 PM to 7:00 AM
- Operates with 3 volts Lithium battery
- Operates with 4 push buttons
- Output signal for EL backlight control (active HIGH)

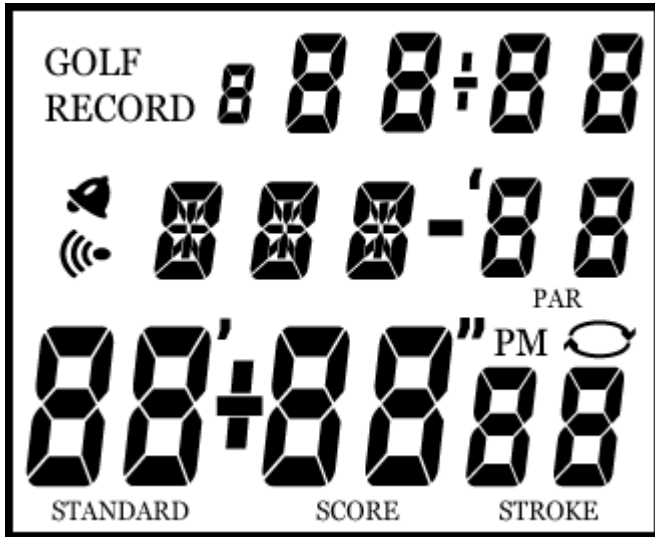


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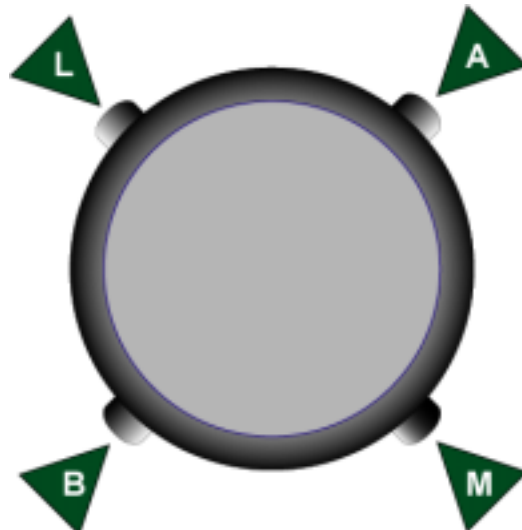
Pro Golfer (HCS-T011-1)

LCD PATTERN



- Operating Voltage: 4.5V
- Duty Cycle: 1/5
- Bias: 1/3
- Viewing Direction: 6H
- Connection: Top and Bottom

BUTTON LAYOUT





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Pro Golfer (HCS-T011-1)

FUNCTIONAL FLOWCHART

Real Time Clock



Golfing Record



Schedule Alarms



Countdown Timers



Dual Time Clock



Chronograph





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Pro Golfer (HCS-T011-1)

FUNCTIONAL DESCRIPTIONS

1. System Defaults

- System Defaults will be initialized upon system startup

| MODE | ELEMENT | SETTING |
|--------------------|----------------|-------------------------------|
| Real Time | Time | 12:00:00 AM |
| | Date | Wednesday 2003-01-01 |
| | Display format | 12-hour |
| | Hourly chime | Disabled |
| Dual Time | Time | 12:00 AM |
| Schedule Alarms | Time | 12:00 AM |
| | Date | None |
| | Alert | Disabled |
| Chronograph | Total Time | 0 hour 0 minutes 00.00 second |
| | Status | Stopped |
| Countdown Timer | Time | 1 minute |
| | Status | Stopped |
| Golfing Record | Records | All cleared |

2. Auto Return

- The normal display will be resumed in any time setting if no key operation for 1 minute.

3. Auto Advance

- In any time or date setting, press and hold [A] for more than 2 seconds will activate Auto Advance function. Current selected digits will be adjusted at a rate of 5 steps per second until [A] is released.

4. EL Backlight Control

- Press [L] in any mode will activate the EL Backlight Control for 3 seconds. The Control will be deactivated after 3 second regardless the status of [L].
- During Night Mode enabled period, i.e. 7:00 PM to 7:00 AM, any key operation will activate the EL Backlight Control for 3 seconds.

5. Alert Signals

- Alert signals will be played based on the following priority:
Timer 1, Timer 2, Alarm 1, Alarm 2, Alarm 3, Alarm 4, Alarm 5, Hourly Chime
- Alert signals will be activated in sequence according to the above ranking except Hourly Chime, which will only be activated if no other alert occurred concurrently.

6. Key Reset

- Press [A], [B] and [M] key simultaneously will reset the MCU



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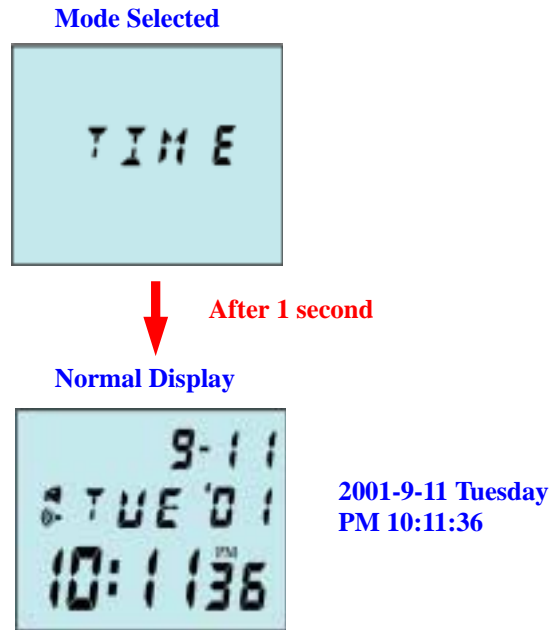
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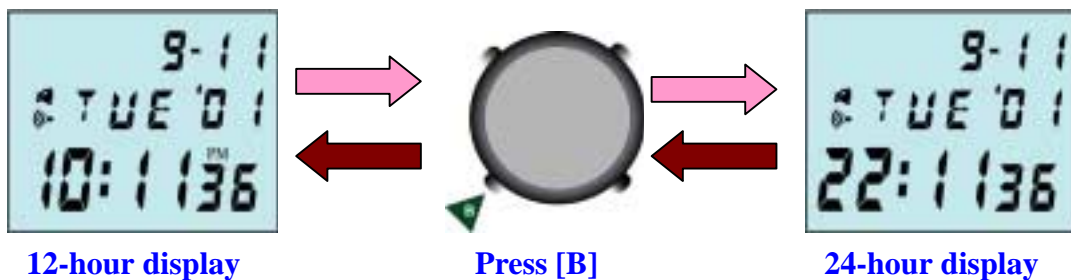
OPERATIONAL INSTRUCTIONS

1. Real Time Clock

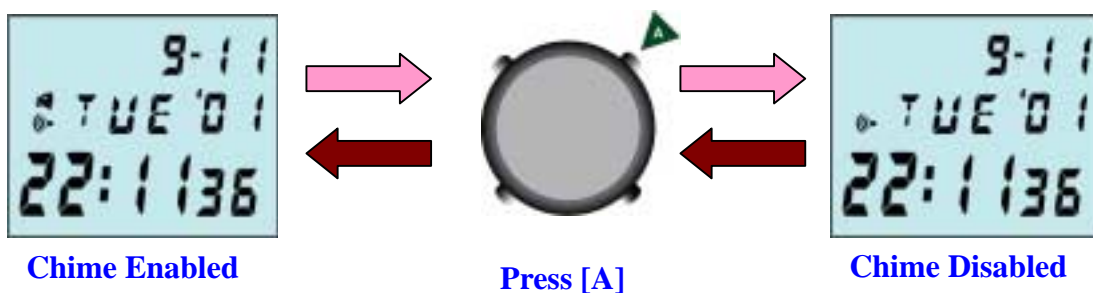
- Basic display



- Select 12/24-hour display system



- Enable or Disable Hourly chime





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Pro Golfer (HCS-T011-1)

- Adjusting the Time and Calendar
 - Press and Hold [M] for 2 seconds to activate Time and Calendar setting



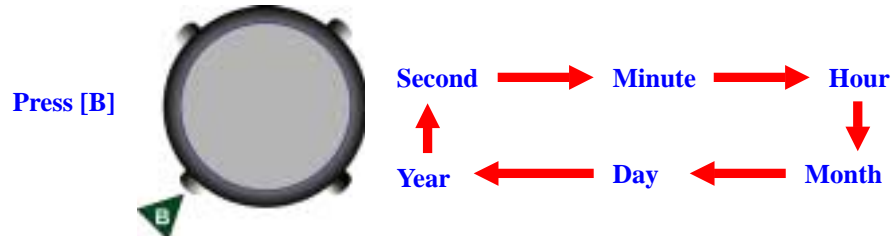
Press and Hold
[M] for 2 seconds

- Once activated, the SECOND digits will start blinking for adjustment:



Symbols in RED denotes blinking
at 1Hz for second adjustment

- Use [B] to select the blinking digits according to the following sequence:



- Use [A] to adjust the blinking digits



Press [A]

- Press [M] once to confirm setting



Press [M]

- On exit, the validity of the date setting will be checked. For invalid date setting, date will be reset to the first day of the current month.



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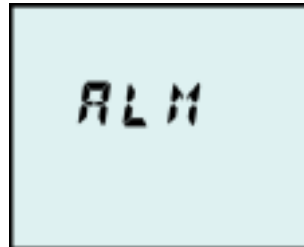
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Pro Golfer (HCS-T011-1)

2. Alarms

- Mode entry

Mode Selected



After 1 second

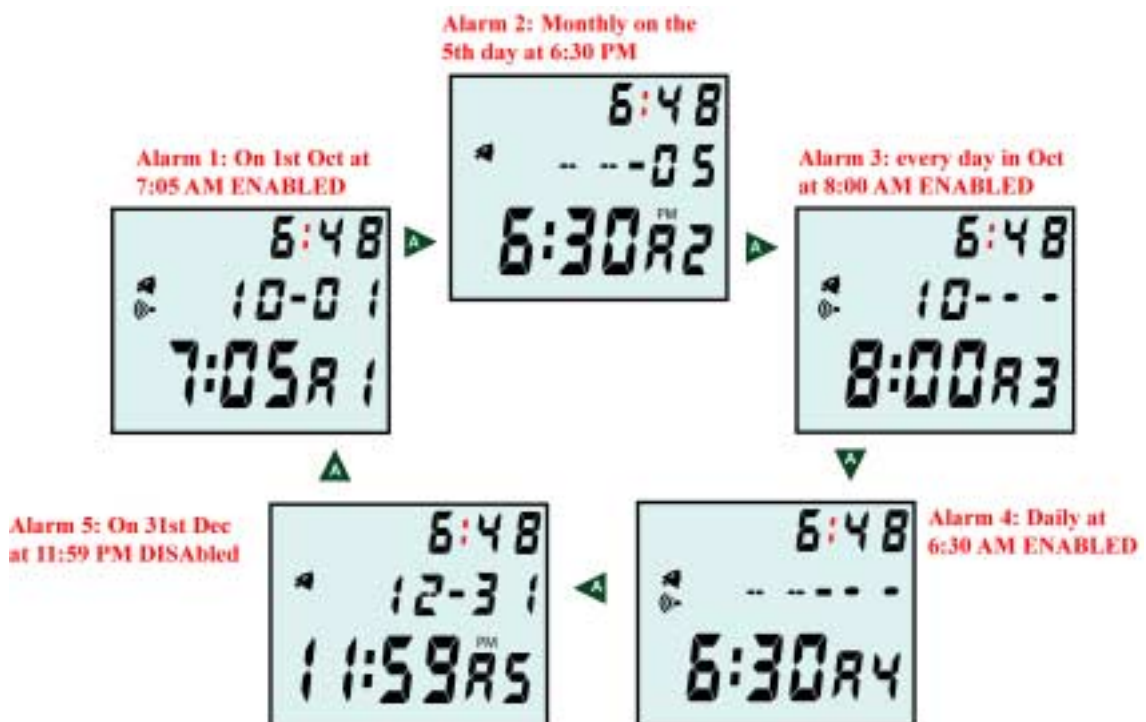
Normal Display



Current Time: 9:02 PM
Alarm 1 set to: 3rd October
7:50 AM

The “:” denotes
blinking at 1Hz

- Mode entry display will be shown for 1 second. Then, the last selected alarm (default is Alarm 1) will be displayed.
- Operating the Alarm
 - Use [A] to select the alarm to be displayed with the following sequence:
 - Alarm 1, Alarm 2, Alarm 3, Alarm 4, Alarm 5, Alarm 1,





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- Use [B] to enable/disable the alert for the current selected alarm.



- Operating the Schedule Alarm
 - All Schedule Alarm are operated identically with only difference in the alert tone.
 - The Alarms can be adjusted to alert at the desired time with the following options:
 - Daily (both Month & Day are set to "--")
 - Monthly at specific day (Month set to "--" with Day set to desired day)
 - For specific month (Month set to desired month with day set to "--")
 - At specific date
- Adjusting the Alarm
 - Activate the setting



Press and Hold
[M] for 2 seconds

- Use [B] to select the blinking digits according to the following sequence:



Minute → Hour
↑ ↓
Day ← Month

Press [B]



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Pro Golfer (HCS-T011-1)

- Use [A] to adjust the blinking digits



Press [A]

- Use [M] to confirm the setting and exit



Press [M]

3. Dual Time Clock

- Basic display

Mode Selected



After 1 second

Normal Display



Current Time: 11:20 AM
Dual Time: 6:20:37 PM

The ":" will be blinking
for each second updated

- Adjusting the Dual Time
 - Only HOUR and MINUTE can be adjusted, SECOND will be synchronized with Real Time Clock.



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Pro Golfer (HCS-T011-1)

- Activate the setting



**Press and Hold
[M] for 2 seconds**

- Use [B] to select the blinking digits according to the following sequence:



Minute ↔ Hour

Press [B]

- Use [A] to adjust the blinking digits



Press [A]

- Use [M] to confirm the setting and exit



Press [M]



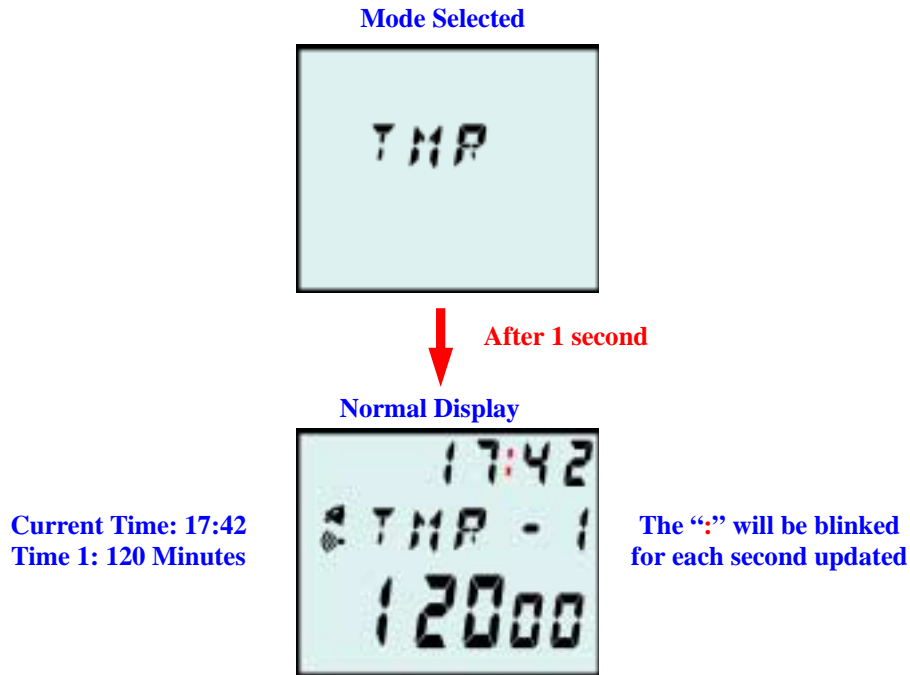
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Pro Golfer (HCS-T011-1)

4. Countdown Timer

- Basic display



- Use [B] to select between Timer 1 and Timer 2



- Operating the Timer
 - Both Timer 1 and Timer 2 are operated identically. The only difference is the tone of the timeout alert.
 - Use [A] to start/stop the counting



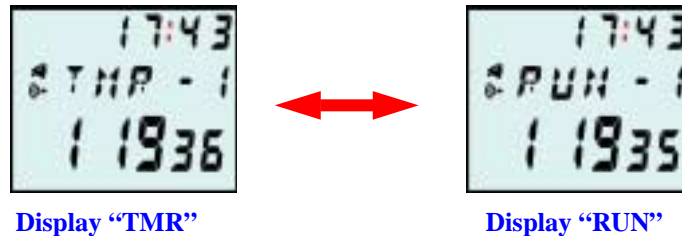


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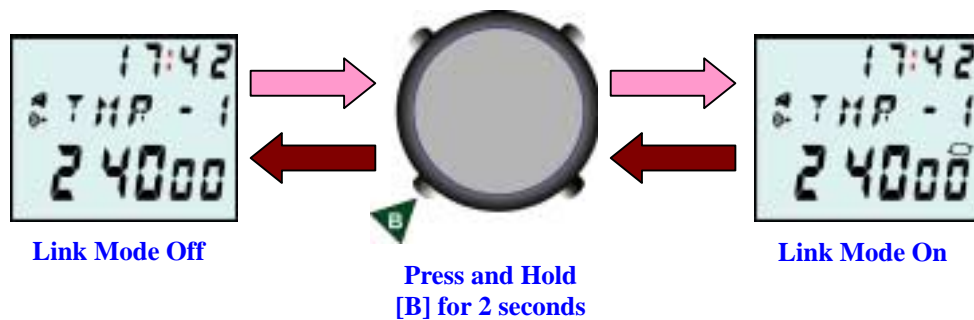
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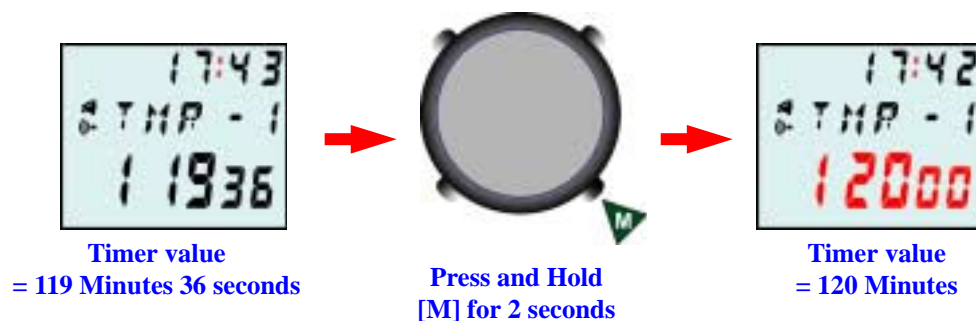
- When Timer counting down, the following screens will be displayed alternatively.



- Press and Hold [B] 2 seconds while timer stopped to enable or disable linked operation:



- Upon counting down to zero, the Timer will be stopped automatically. Alert signal will be on for 10 seconds.
- Adjusting the Timer
 - Activate the setting (only in STOPPED state)



- * The digit in **RED** will be blinked for Timer value adjustment at 1Hz
- * Upon entering into Setting Mode, Timer value will be reload.
- * If Timers are operating in LINKED mode, upon entering into the setting, both Timers will be stopped automatically.

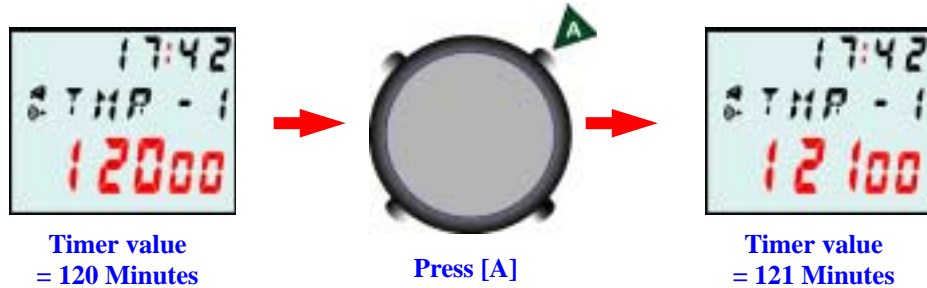


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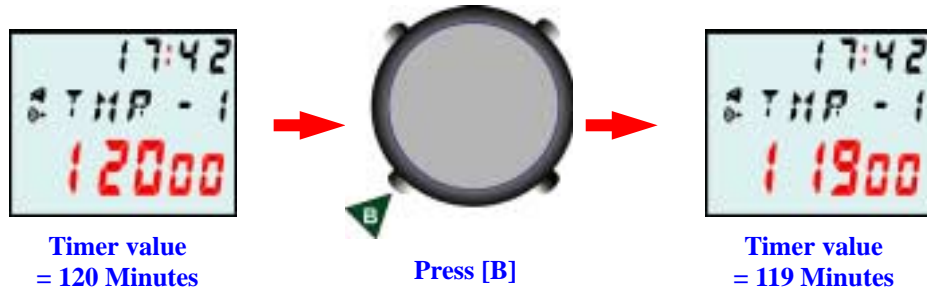
Pro Golfer (HCS-T011-1)

- Press [A] for Timer Value increment:



Maximum Timer value is 240 Minutes

- Press [B] for Timer Value decrement:



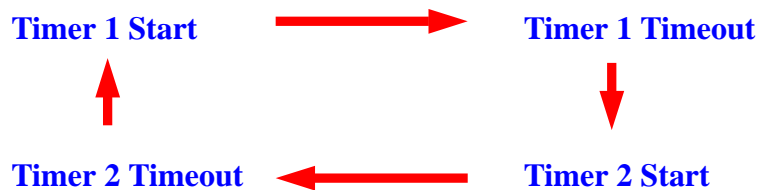
Minimum Timer value is 1 Minute

- Use [M] to confirm the setting and exit



- Linked operation

- Timer 1 and Timer 2 can be linked to operate in series, i.e. timer will start counting from the preset time duration immediately after the timeout of another timer.



The loop will be repeated endlessly until user stops the timer.



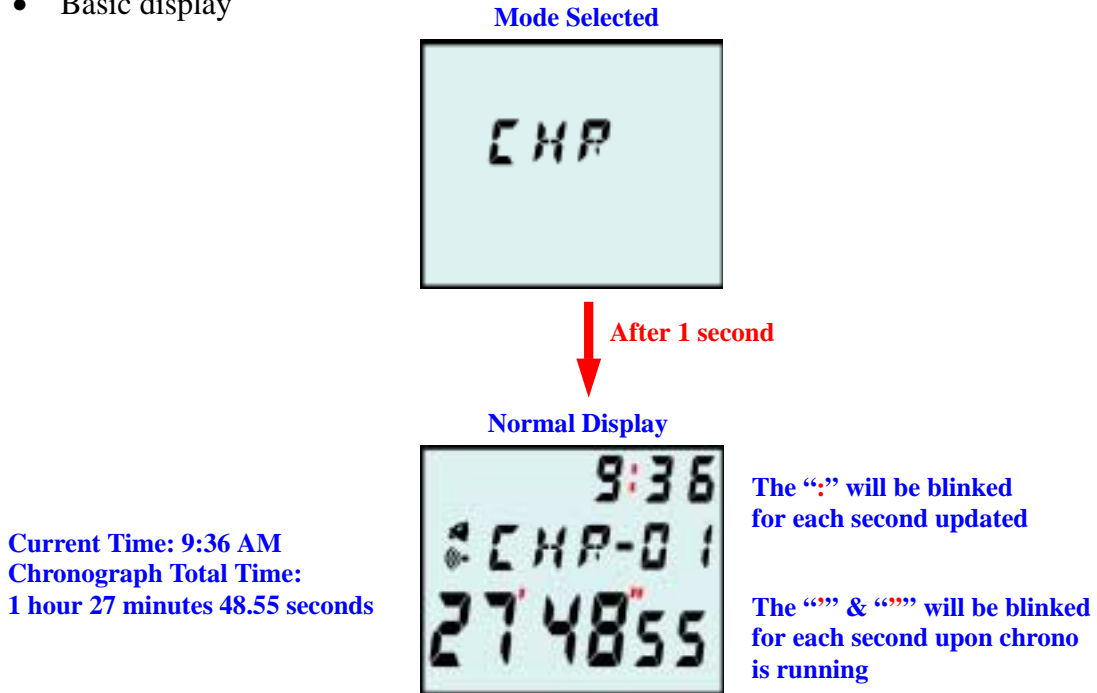
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Pro Golfer (HCS-T011-1)

5. Chronograph

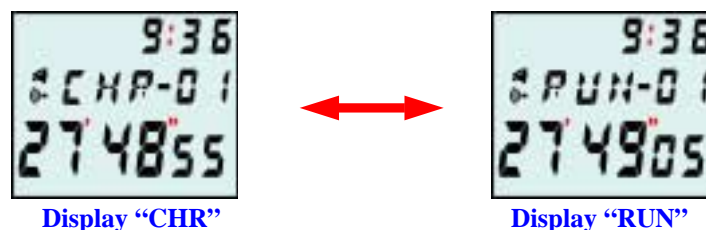
- Basic display



- Operating the Chronograph
 - Use [A] to start/stop counting.



- When Chronograph is counting up, the following screens will be displayed alternatively:



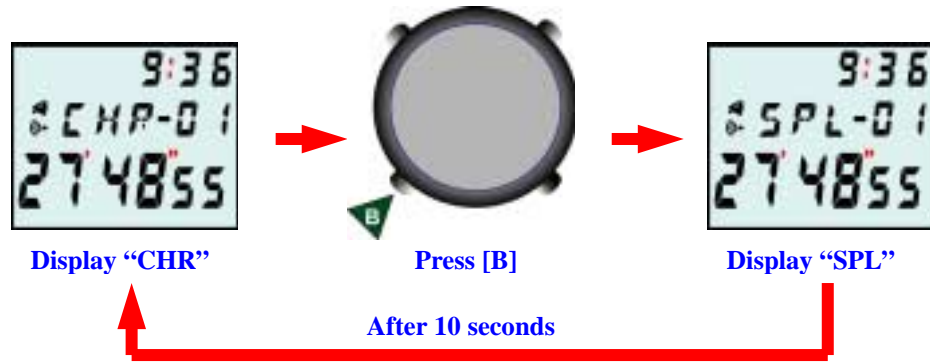


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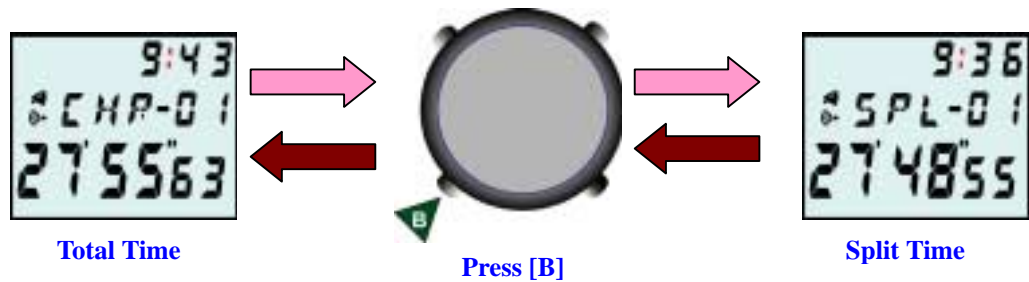
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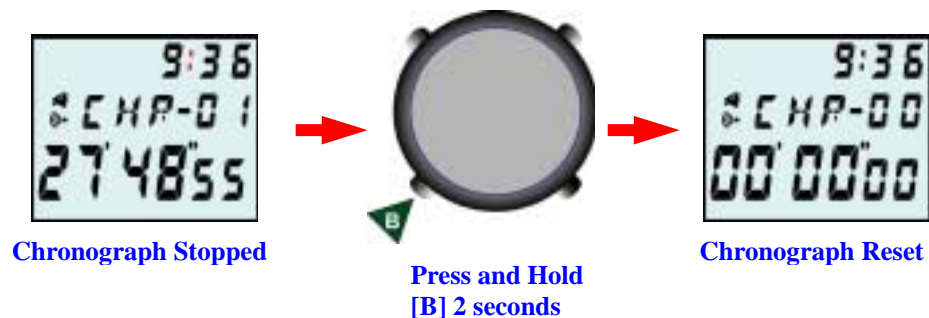
- To take split time, press [B] once:



- Maximum count is 23 hours 59 minutes 59.99 seconds. When maximum count is reached, counting will stop.
- Press [B] to recall split record while chronograph stopped, and press [B] again to resume chronograph total time.



- Press and Hold [B] 2 seconds while chronograph stopped to reset the chronograph.





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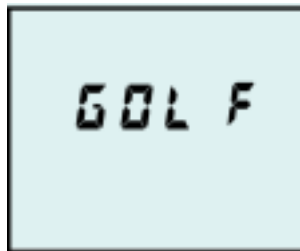
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Pro Golfer (HCS-T011-1)

6. Golfing Record

- Mode entry (displayed for 1 second)

Mode Selected



After 1 second

Normal Display

Date: June 18th
Hole: 11
PAR: 4
Stroke: 3
Standard Score: 43
Player's Score: +02



- Retrieve stored records (Record Review)
 - Select GOLFING RECORD from CHRONOGRAPH by pressing [M] button



Press [M]

- Data for Hole 1 of the 1st record will be displayed:





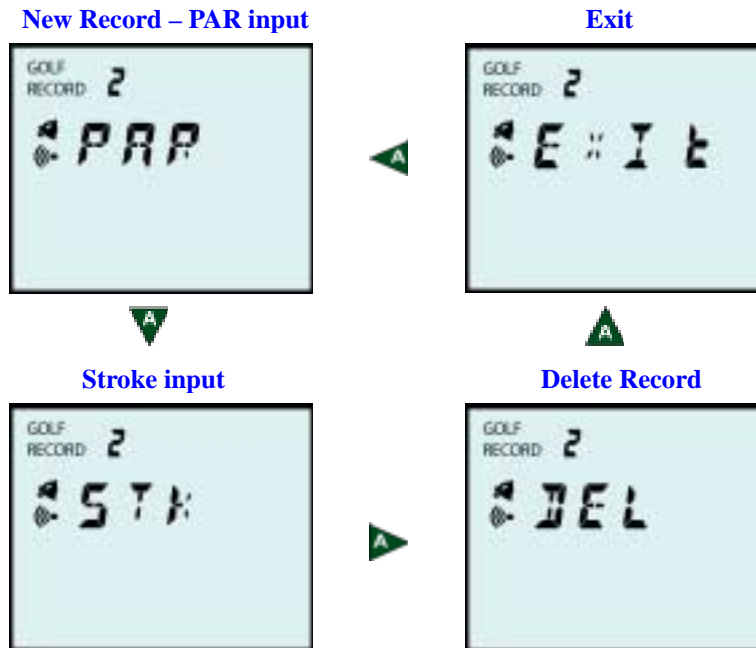
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- Use [A] to scroll through the Menu based on the following sequence:

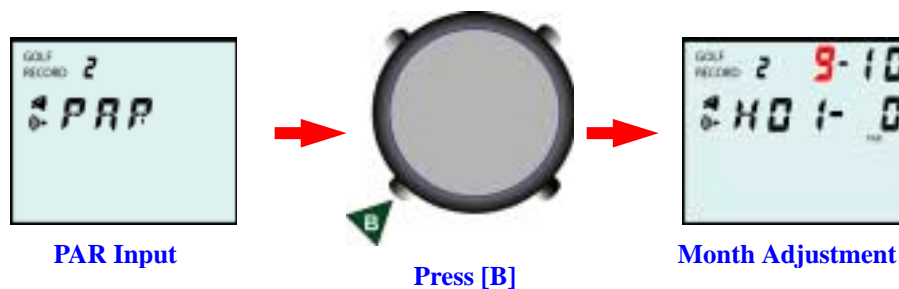
MENU SELECTION FLOWCHART



- Use [B] to select the function desired:



- New Record – PAR input
 - Select “PAR” in the Functional Menu, the following screen will be displayed:



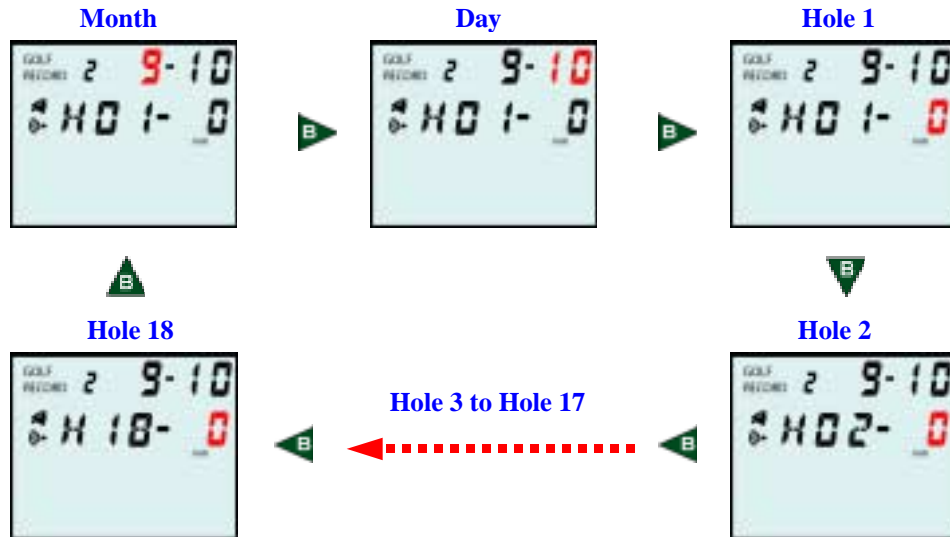


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- Use [B] to select digits to blink based on the following sequence:

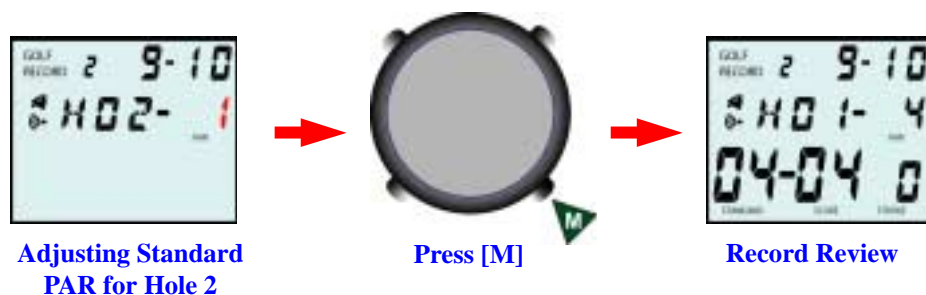


The digit in RED will be blinked for adjustment at 1Hz

- Use [A] to adjust blinking digits



- Press [M] to finish the setting and exit to Record Review. If complete setting had been located, the holes with incomplete data (PAR=0) will be displayed automatically together with an error tone.



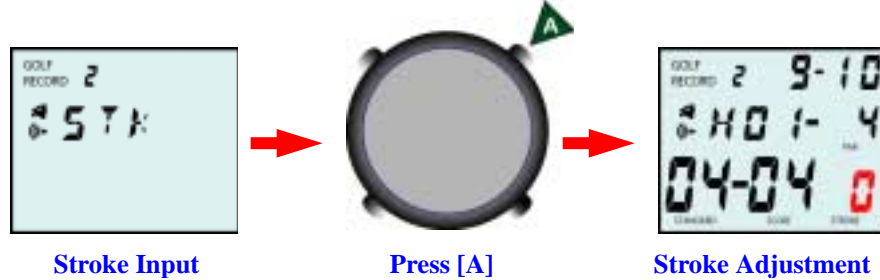


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Pro Golfer (HCS-T011-1)

- Stroke input
 - To input/edit stroke data in a record, select the desired record in Record Review and then choose "STK" in the Functional Menu.



- Use [A] to add one stroke. Maximum number of stroke will be 9.

Standard: Standard Score up to current hole

Score: Player's accumulated score up to current hole

Stroke: No. of stroke played (Blinking)
New Record, default = 0
Old Record, data stored



The Stroke digit in **RED** will be blinked for Stroke adjustment at 1Hz



- * **Standard:** Maximum Standard is 99, if the value over 100, STANDARD Icon in **RED** will be flashed at 1 Hz and count up from 0 again.



- * **Score:** Maximum Score is 99, if the value over 100, SCORE Icon in **RED** will be flashed at 1 Hz and count up from 0 again.



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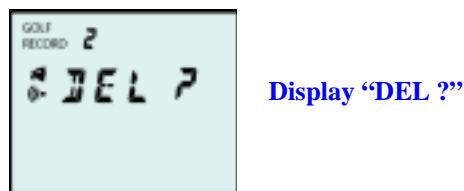
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Pro Golfer (HCS-T011-1)

- Use [B] to proceed to next hole



- Press [M] to exit stroke editing and back to Record Review.
- Delete Record
 - To delete a record, select that record in Record Review and choose “DEL” in the Functional Menu, the following screen will be displayed:



- Press [A] to confirm deletion and return to Record Review with the next record in sequence being displayed.
- Press [B] to cancel deletion and return to Record review
- Exit Record
 - To exit Functional Menu and return to Record Review, select “EXIT” in Functional Menu and press [B].
- Additional Operations
 - In any state of Golfing Record, press [L] to display the Real Time Clock with the EL Backlight Control being activated.

