English

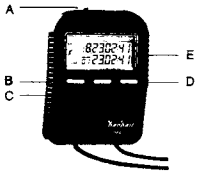
MAGMA

Model	250.1950-00
Timing Range	Upper display 23 h. 59 min., 59 sec., 99/100 sec. Lower display 59 min., 59 sec., 99/100 sec.
Memory Timing Range	59 min., 59 sec., 99/100 sec.
Memory	14 memories 7 in the lower display 7 in the upper display
Perpetual Memory (TM)	Stored memories can be cleared and entered continuously
Timing Unit	1/100 sec.
Display	Dual display LCD
Display Size	1 3/4" * 3/4"
Digit Size	1/4" (5.5 mm)
Temperature Range	- 14 F + 140 F (- 10° C + 60° C)
Case	Water protected, ABS
Case Size	3 1/2" h * 2 1/2" w * 1" d
Weight	Approx. 3 oz with battery (90 g)
Battery	Size AA 1.5 V leakproof
Battery Replacement	Remove the battery cover by pressing groove, located on the bottom of the case (see diagram).

Load battery as per diagram inside battery compartment with correct polarity (+/-). Replace cover.

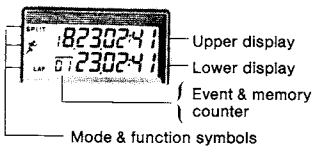
Battery Service	1. When display becomes weak display will fade. 2. Every 1 to 2 years. Batteries may leak if in use or not.

Configuration



		A	B	C	D
Reset	Returns memory, Internal clock, and display to zero.	x	x		
Mode	Selects timing functions			x	
Start/Stop		x			
Display	Shows display running			x	
Set	Set button	x			x
Memory	Memory recall. Internal clock and display remain active.		x		
Memory clear	Clears memory only and is ready for recording new memories. Internal clock and display remain active.		x		x
Alarmstop	Stops alarm		X		

Diagram E (display screen)



Counter	
Reset	Simultaneously press A and B

Mode Selection	Press C. Timing functions can be selected as follows: **Split** Intermediate times/ Cumulative split (upper display) **Lap** Single times-snap back/ Pole/Element (lower display) **Add** Addition times/Time out (lower display)
Modes	
Mode	Split/Add mode selection button C
Add	Addition time lower display
Start	Press A - running time shown with symbol
Stop	Press A - stopped time shown with symbol
Reset	Simultaneously press A and B
Addition	
Start	Press A - running time shown with symbol
Stop	Press A - time is interrupted repeat start/stop as many times as required. The event counter will increase by one on each start and stop up to 99, then roll over to 00 again.
Memory	Press B - symbol M will appear left of center with memory counter showing one for the first memory recall. The memories are being exactly recalled in the order recorded, split times in the upper display and addition times in the lower display.

Memory	Press B once = memory one will be displayed. Press B twice = memory two will be displayed etc., up 7 memories.
	Split times see recorded in the upper display
7 x memories 3 x start times 4 x stop times	01 02 03 04 05 06 07 x x x x x x x
start times =	intermediary times, start of addition times
stop times =	intermediary times + total time
	Addition times see recorded in the lower display
7 x memories 3 x start times 4 x stop times	01 02 03 04 05 06 07 x x x x x x x
start times = stop times =	start of addition times addition times
Reset	Simultaneously press A and B
Mode/Split	Split/lap mode selection button C intermediate time upper display.
Start	Press A - running time shown with symbol
1st Intermediate Time	Press A - running time shown with symbol, display is frozen and shows 1st intermediate time. Internal clock is still running.
2nd Intermediate Time and Subsequent Time	Press A - running time shown with symbol. Repeat start/stop as many times as required. The event counter will increase by one on each start and stop at 00 again.
Display	Press C - Actual running time can be seen again.

Memory	Press B - symbol M will appear left of center. The intermediate (split) time will appear in the upper display.
	Press B once = first single time will be displayed. Press B twice = second single time will be displayed etc., up to 7 memories.
	7th memory will show.
	Upper display total time of all single times.
	Lower display - each of 7 single times with the 7th single time being the last single time recorded.
	The first six single times are recorded and the 7th being the last.
	With a running diplay, memory can be recalled by pressing B, and display will automatically return to the running display.
Memory Clear	Simultaneously press B and D clears memory only and is ready for recording new memories. Internal clock and display remain active.
Reset	Simultaneously press A and B
Pre-set Time	
Mode	In split, add, and lap functions, regular timekeeping (24 hr.) can be incorporated into the timing process.
Set	Depress D and hold the 1/100 sec. digit which is blinking. Press A and each successive press of D will subsequently display numbers 1 through 9. Select required number and release D. Repeat until all the required time/numbers are entered right to left.
	Both displays can be programmed.

Start	Press A - running time shown with symbol. Timing starts from preset time in count up.
Stop	Press A - time will run according to mode selection.
Display	Press C - actual running time can be seen again.
Memory	Will operate per mode selection.
Mode	Press C - for function selection see D.
CD	Countdown timer with two alarms.
Set	Depress D and hold the 1/100 sec. digit which is blinking. Press A and each successive press of D will subsequently display numbers 1 through 9. Select required number and release D. Repeat until all the required time/numbers are entered right to left.
	Both displays can be programmed.
Start	Press A - timer counts down from preset time in the upper display.
Stop	Press A - the count down is stopped. Start/stop as many times required.
Dual Countdown	Two countdown times can be entered. The first countdown time is shown in the upper display. At 00.00.00 the alarm rings for 5 seconds and automatically repeats the countdown time. The second countdown timer is shown in the lower display. At 00.00.00 the alarm rings for 5 seconds and automatically repeats the first countdown time entered. Then the second countdown time entered, continueously until reset.

Alarm	At 00.00.00 the alarm sounds for five seconds and at the same time the countdown time is automatically repeated again.
Alarm Stop	Press B left margin reset simutaneously press A and B.

Special Model **Magma with terminals for external control**

Model number 250.1952-00

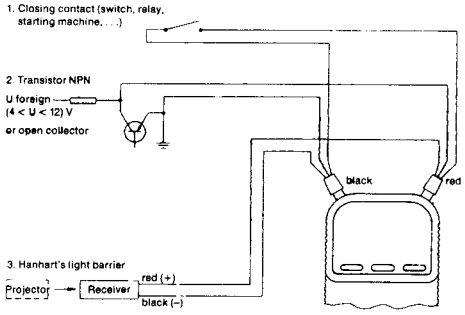
a) Connect wires to terminals with correct polarity (+/-). Screw up plug and insert wire in hole. Screw down plug to tighten wire. Also, banana plug with two mm OD can be utilized for this connection.

b) The stopwatch is started or stopped with a minimum pulse of 35 ms. The mode selection with determine the other timing functions.

c) The rebounding time for external switches (light barriers) must be less than 5 ms.

d) The following combination as per diagram can be utilized. (1 for start and 3 for stop)

Examples of possible connections



MAGMA

hanhart

This stopwatch made under the most stringent production and control methods, by specialists using only the best materials, is guaranteed for

1 (one) year

from date of original purchase against defects in material and workmanship. If this stopwatch should become defective within this period you are entitled to get it repaired or exchanged free of charge.

Defects resulting from abuse of the stopwatch are not covered by this guarantee: for instance, if contact springs are corroded by batteries which have leaked.

Shopowner and co-garantor: