



BLIZZ
timing

Mediometro SPEED V4.0

users' manual
ENGLISH

1. Introduction

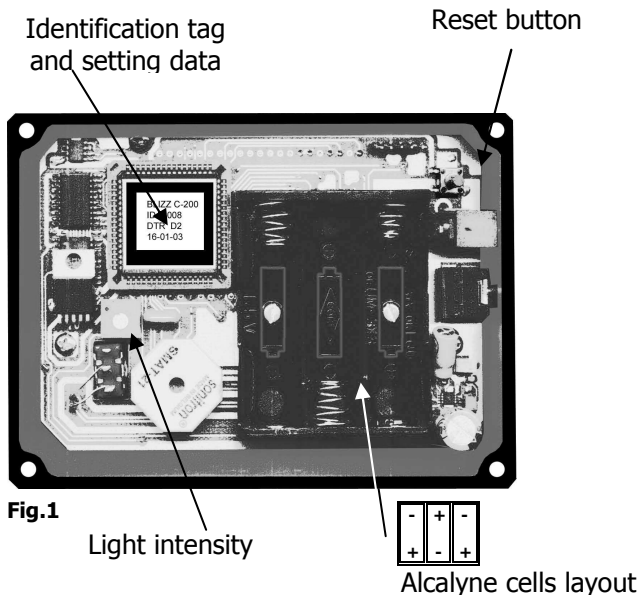
SPEED is a high precision chronometer computing extremely complicated and sophisticated mathematical data and generating an algorithm capable to keep the required average speed at extremely high precision levels with the support of Distance record Instruments like Trip Masters, Twin Master, Retrotrip. etc

Easy usage, versatility allow easy control of the various functions during the most critical phases of the race.

Marco Aghem

2. Getting Started

Open the Chronomer's package and verify its integrity. Remove the top of the plastic box by a screw driver (a 3 mm dia)



If necessary, adjust light intensity of the lcd display.

2.1 Feeding

Install three 1.5V alcalyne cells (size AA-MN1500- LR 6 dia 14mm, length 50mm, Duracell or Energizer) in the appropriate compartment respecting correct polarity. If correct polarity is not respected, rapid discharging may occur but no damage to the chonometer since it is properly shielded.

After cells insertion press reset button (photo 1).


In case of mal-function press the reset key on the right external side of the chronometer plastic top with a 1 mm dia pin (a paper clip). Do not unscrew the 4 screws.

“RESET” function will re-start all circuits and clock from 00:00:00:00 (to be synchronized) without interfering with time checks and ability trials times already stored. A voltage stabilizer converts the cells variable voltage into a constant voltage of about 4,5V.


If the initial voltage of the cells of 4.8 V decrease to 3.4 V, a “discharged cells alarm” is activated: the lower part of the display starts flashing until the cells are replaced with new ones.



In case on no usage of the chronometer for a period exceeding 30 days it is highly recommended to remove the cells.


2.2 Switch ON

To switch on the chronometer press  ON-OFF for about 2,5 seconds. All the segments of the LCD display and the chronometer model **SPEED-4** will be shown. After the sound signal (4 KHz):” be be beep” test is performed, clock mode is activated.

2.3 Switch OFF


Switch off of the chronometer can be made only when ability trials are not running. To check it just press .


Press RESTORE  +  simultaneously to stop the running ability trial.



To switch off the chronometer keep  ON-OFF pressed for 2.5 seconds till the display switches off.

3 Clock function

Clock function is displayed **CL** (left side of display).

Press  to enter the clock function. Important: if button is pressed for more than 2.5 seconds the chronometer switches off.

Time is displayed in 24h format (HH-MM-SS). If  button is pressed for the second and third time, the clock and the last split time are shown in sequence

Pressing , the sound signal is activated. A 4 KHz beep (50 milliseconds) will scan every second. Pressing  for the second time the sound signal is deactivated. Active sound signal is displayed **C.L**.


3.1 Setting the time and synchronization

Press  to set time

CL Hr :00 will be displayed, press  and  to set HOURS then press  again.

CL Pr :00 will be displayed, press  and  to set MINUTES then press  again.

At this point **Sync** will be displayed, and you have two options:

1- pressing  only hours and minutes are updated and not seconds.

2-press **START** to synchronize time manually with an official clock unit DCF 775 or with an external switch. Hours and minutes at the moment are updated while seconds and hundreds of seconds are set to zero. When seconds exceed 30, one unit will be added to the minutes count.

3.2 Split time and memory recall

By pressing **START** the split time is displayed (minutes, seconds and hundreds of seconds) .

Press  to recall current time.

Press  again and the last split time stored will be displayed.

4 Setting of the SPEED chronometer

The SPEED can memorize 10 ability trials numbered from 1 to 10 (ability trial 10 will be displayed as “0” due to lack of digits in the display)

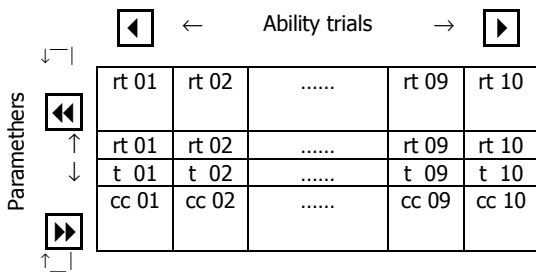
4.1 Reading of the parameters

Press **rt**

Press **←** and **→** to visualize the ability trial stored values.

Press **⏪** and **⏩** to visualize the parameters stored for each ability trial (speed-rt, corrective ratio-cc, time to run 100 meters-t.) as follows:

When a parameter is displayed, pressing **←** and **→** the same parameter of the previous or the following Ability trial will be shown.



Legend of the various functions:

rt speed per hour in kilometers, miles, knots etc. or any other distance unit having a numerical value between 799,999 and 6,000

t = time to run 100 meters (seconds and hundreds of seconds)

cc = corrective ratio

$$cc = \frac{\text{distance displayed on personal tripmaster}}{\text{real distance or distance declared by the car race organization committee}}$$

The correct tripmaster value is cc= 1.00000

Any value between 0.00001 and 9.99999 is correct.




In case the unit measure adopted by the organizing committee is different from the one in use by personal instruments you should use an appropriate corrective ratio as a conversion rate.


If the symbol **X no Set** (X = ability trial sequence number) appears, it means that the ability trial has not yet been set.

4.2 Setting of the ability trials

Press **rt** and then press **SET**.


Any speed rate between 6,00 Km/h and 799,99 Km/h can be set. If a speed rate exceeding this range is set, it will not be accepted.


Press  and  to select the numerical sequence number, then press  to confirm.




The symbol  followed by sequential number will be shown on the left side of the display while the speed rate 000.000 to be set will be displayed on the right side.

In case the values were previously stored in memory, they will be displayed on the display. The first digit, (hundreds) and a small segment will start flashing alternatively to indicate the digit to be set.




Press  and  to select the required number.

Press  and if the value is correctly stored the next digit will start flashing in sequence towards the last digit.

The symbol  followed by the ability trial sequence number will start flashing in the left part of the display. In the right side of the display 1.00000 will be shown. The first digit and a small segment will start flashing alternatively to indicate the digit to be set.




Press  and  to select the required number. Press  to confirm and the small segment will move to the next digit.




A corrective ratio must be set for every ability trial (either be the same fore every ability trial or modified according to personal requirements); for example to compensate changes in tires pressure or rolling shape.

After having set both the speed rate and the corrective ratio the chronometer starts computing with a precision rate up to 0,2 ns. To modify the stored data (speed rate and corrective ratio), press  and ,  to locate the required number.

When the chronometer is operating any ability trials times can be set and/or modified. Exception is made for the running one.

4.3 Resetting of the memory

TOTAL DELETE function erases all the stored data and values from the memory. This function is activated only when the display shows the **CL** function and can be recalled by pressing ,  and  simultaneously. Until **dELEtE** is displayed.

Press  and  to change n (no) into y (yes) and press  for the memory total delete.

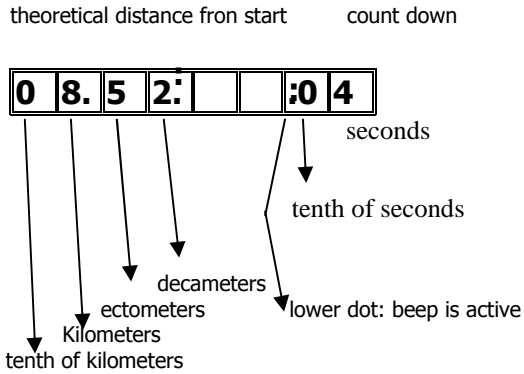
Pressing  when n (no) is displayed, no data are modified or cancelled.

5.1 Start of the ability trial


Press  (regularity test)

Press  and  to select the ability trial you want to start.


Press **START**.

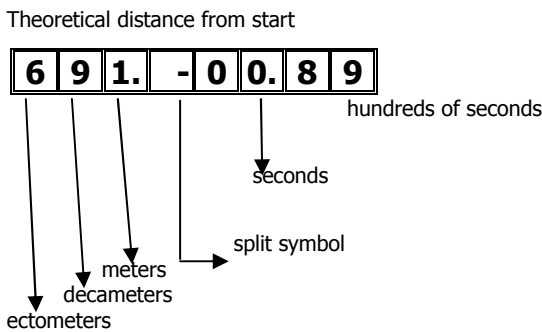


The first 4 digits on the left of the display show the theoretical distance from start (precision:10 meters). The two digits on the right side of the display show the countdown in seconds to the next 100 meters.

A sound beep is automatically activated of every 100 meters. Press  to deactivate sound beep. For sound beep setting see chapter number 7.



5.2 Split

Pressing **START** the split is displayed. To go back to the normal function press .



After the split, the distance is displayed on the left side with the precision of 1 meter. On the right side, the count down in seconds to the next 100 meters is displayed.

5.3 Stop of ability trials

The running ability trial can be stopped (RESTORE)  ,  simultaneously. No stop is allowed if the ability trial is not displayed.

Pressing RESTORE the ability trial is restored, ready for a new start.

5.4 Combined ability trials

This functions is applicable whenever a change in the average speed ratio becomes necessary either at the end, the beginning or at a detectable point in the course of any ability trial.


Keep [*] pressed and press **START** to recall the following ability trial with all its parameters previously set.


The built up distance will not be modified but its computation will be made at the modified parameters (average speed, cc) of the following ability trial.

5.5 Display of the running ability trial number

To visualize the running ability trial press [#]: the data and times will be displayed for 2.5 seconds.

5.6 The Crosslight function

At any time, while all the other functions are operative, by pressing , we will return immediately to the average speed function.




If the average speed function is not active, press , to return to the the last selected ability trial.

During the setting procedure, this function is deactivated until storage operations are terminated.

5.7 Set of count meter

In case the countmeters cannot be set to zero or whenever the use of the count meter is prohibited by the Race Committee the value displayed on the countmeter can be stored in the memory and taken as a starting point for the computation.

Press   simultaneously and 00.0. will be displayed.

Press  and  and  the tenths, the units for kilometers and hundreds of meters.

The above values are automatically cancelled at the end of the ability trial pressing

(RESTORE)   simultaneously.

The following ability trial will start from 00, if the value displayed on the countmeter has not been stored as outlined above.








6 Setting of backlight





The SPEED chrono is backlighted for usage in dim light conditions.

Press  to switch on and/or switch off backlight.

Backlight time can be set manually according to personal requirements, and can vary from a minimum of 1 second to a maximum of almost an hours (99 x 36 = 3,564 seconds). After this time the light switches off automatically. For the same reason, in case of discharged cells the maximum backlight duration is 5 seconds.

We recommend to set backlight at 60 seconds, (equivalent to one minute) and set the desired number of minutes (from one to 36) on SCALE.


To set backlight parameters, press  to enter clock function. Then press  and  simultaneously. The word **LIGHT :12** (backlight duration in seconds) will be displayed. Press ,  and  to set seconds. Press  to confirm: **SCALE:1** (multiplying factor from 1 to 36 of time previously set on Light) will be displayed.

Press  and **LEVEL: 25** is displayed. Backlight will switch on at the set level. To change level press ,  up to the desired value and press .

Important Note: **LEVEL :00** means that backlight will never be activated .

7 Setting of Sound Beep




When an Ability Trial starts the beep is automatically activated, shown on the display with the little dot before the seconds countdown.


The sound beep can be activated or deactivated pressing . When the clock function is operative, a 4 kHz beep sound, perfectly synchronized with the seconds, is activated. The beep sound duration is 50 ms.

When an ability trial is running and other functions are operative and consequently the running distance cannot be displayed, the sound beep duration is reduced to 5 ms only.

Important note:

If clock function is visualized, the sound beep is not activable to avoid confusion with the clock sound beep.

To set the sound beep parameters press  to access to clock function then press   simultaneously.

The sound beep can be adjusted pressing  and  simultaneously.

10 = one sound beep every 10 meters



100 = one sound beep every 100 meters

110 = one loud beep every 100 meters and a dim beep every 10 meters.

Press  and , and the following symbols will be displayed:

Y (= yes) = active sound beep

N (=no) = deactivated sound beep.

Pressing  and then  the sound beep is deactivated.

8 External plugs

Two plugs in the left side of the SPEED chronometer allow connection to the external switch (upper) and the cuffs or amplifier (lower).

8.1 External switch and syncro

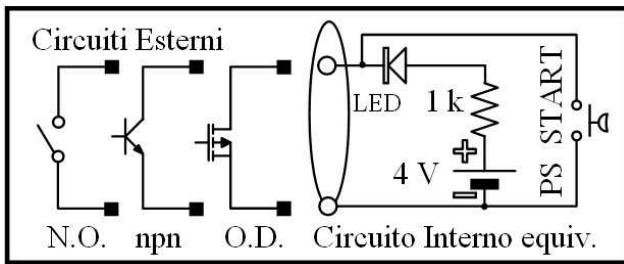
The SPEED can be activated by both a switch **START**, by an external switch or by an 'official time' electronic starter. In the last case, make sure that correct polarity is respected.(see sketch below).

A Voltage exceeding ± 7 V. may cause permanent damages.

Caution: pressing the start switch when the BEEP is in 'stand by' condition the current absorption increases from 1 μ A to 3000 μ A, Please ensure that the red start switch is not kept pressed.

8.2 Audio output



The cuffs or amplifier external plug has a current output of 10 mA with a maximum voltage of about 8 V.



9 Dtr technical features

The SPEED chronometer is implemented by a subsystem manufactured by EM-marin (SWATCH Group). This system is based on a pure digital technique which compensates the frequency of the oscillator.

The calibration of the chronometer is effected at 25°C. An inside thermometer detects the temperature and provides adequate compensation.

To display the chronometer temperature (which may significantly differ from the external temperature) press  and  simultaneously for 2.5s.

$t = 17^{\circ}\text{C}$ will be displayed first.

To avoid interferences, if the backlight is active, the light will be automatically switched off during reading.

Compensation in temperature will remain active when the chronometer is off.

10 Technical features

Hardware	Microprocessore RISC 8 bit low power absorption	
Clock	Gruppo Swatch Em-Marin RTC V3025	
Mechanics	122 x 89 x 33 (+10 PS START) mm - weight 315 g	
Display	LCD ½", 8 digits, mcu driven	
Power	n 3 batteries 1,5 V Alcaline SIZE AA MN 1500 LR6 (ø 14 mm, l= 50 mm)	
Power absorption	stand-by	~1 μ A
	Working	~2.8 mA
	with backlight	5÷200 mA
Life	switched off	>2 anni
	normal working	>1000 h
	on reserve	>100 h
	with backlight Level 99	>15 h
Precision	between -0°C e 50°C \pm 2 ppm with calibration 25°C \pm 0.5 ppm	



11 Warranty

BLIZZ Chronometers and the relevant electronic components are guaranteed for 24 months from the purchase date against defects in material and workmanship. Should the chronometers become defective within this period Blizz will repair and substitute all components that will prove to be defective in material and workmanship. Shipping charges will be at customers charge.

Defects resulting from abuse and or incorrect use of the chronometer, static high tension, dipping in liquids, expose to high temperatures, are not covered by this guarantee.

Cells and or damages caused by cells(i.e. leakage) are not covered by this guarantee.

Important note:

The chronometer working features are thoroughly accepted at the purchase by the buyer.

Should the buyer detect any working defects, these should be notified to the Seller who, in its own discretion, will try to solve the problem before replacing the product.

The buyer uses the chronometer at his own risk. The seller will by no means pay for damages of whatever nature caused by usage of the chronometers.

12 Declaration of Conformity

Declaration of Conformity

Self certification as per Guida Nist 951

Manufacturer's name and address: BLIZZ di Marco Aghem
Via Guido Rossa 22
10024 Moncalieri - Italy

Blizz certify that:

Type of Product	Centesimal chronometers
Product name	SPEED

Is in conformity with the following regulations in force

Regulations 73/23 EEC (Safety measures):

IEC950: 1991 / EN 60950: 1993

Regulation 89/336/EEC (EMC):

EN55022: 1993 - Classe B

EN 50082-1: 1997

EN61000-4-3: 3V/m

ENV50204: 10V/m

IEC 801-2: 1991 - 4kV CD - 8kV AD

IEC 801-4: 1988 - 1kV AC - 0,5kV I/O

IEC 801-5: 1993 - 2kV C.mode -1kV D.mode

IEC 801-6: 1993 - 3Vemf C.mode

The Chronometer SPEED, standard model, equipped with brand new Cells Duracell Plus AA mod MN 1500 , internal switch, Internal sound beep passed all quality control tests
Turin, 10 November 2002 Marco Aghem Quality Control Manager.

13 The Speed Chronometer



14 Notes