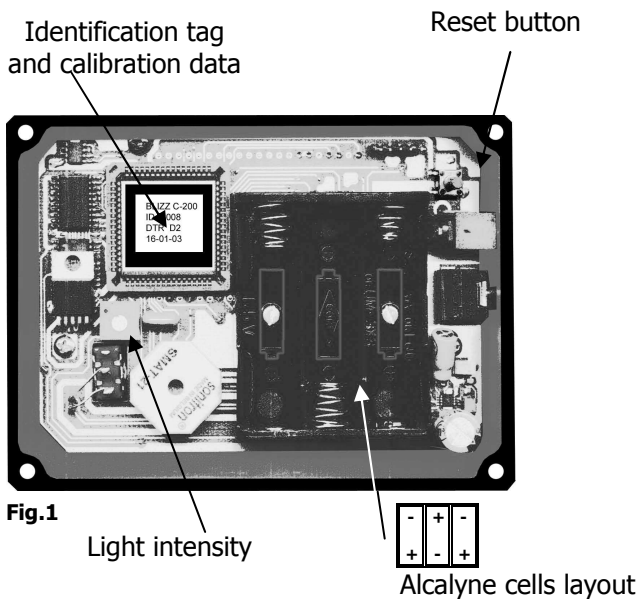*C-200 V2.0*

users' manual
ENGLISH

1. Introduction

C-200 is a high precision chronometer specifically engineered for the Italian regularity car races.

The chronometer is the result of a long racing experience built up in the course of many years, with the purpose of combining high precision, versatility, simple usage and easy data entry.

2. Getting Started

Remove the top of the plastic box by a screw driver (a 3 mm dia)

Identification tag
and calibration data

Reset button

Fig.1

Light intensity

Alcalyne cells layout

If necessary, adjust light intensity of the lcd display.

2.1 Feeding

Install three 1.5V alkaline 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 chronometer since it is properly shielded.

After cells insertion press reset button (photo 1).

Note: 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 deleting 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 decreases 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 of no usage of the chronometer for a period exceeding 30 days it is highly recommended to remove the cells.

3. 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 C200-2 will be shown. After the sound signal (4 Khz):" be be beep" test is performed, clock mode is activated.

3.1 Switch OFF

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

Press RESTORE 🔊 + 💡 simultaneously to stop the running ability trial or time check.

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

4 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 .

4.1 Setting the time and synchronization

Press SET to set time

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

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

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

1- pressing SET only hours and minutes are updated and not seconds.
2-press **START** to synchronize time manually or by an official clock unit DCF 775 connected to the 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.

4.2 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.

5. Setting of the C-200 chronometer

240 time values can be stored in the C-200_2 memory: 120 Ability Trials and 120 Time Checks. A progressive identification number is automatically assigned to each series of Ability Trials or Time Checks set.

All Ability Trials and Time Checks times can be modified with the exception of the running one.

Note: **In case an Ability Trial is changed into a Time Check or viceversa, all the subsequent events will be automatically cancelled.**

5.1 Ability Trial and Time Check

-Ability Trial

The Ability Trial imposed times recorded in the chronometer's memory will be activated by pressing the START switch . At the same time the relevant count down will start.

-Time Checks

Time Checks times are the times (transit times) recorded in the chronometer's memory.

Pressing the START switch the count down from the synchronized official time stored to the imposed transit time is activated.

Any modification to the transit time will automatically update the count down.

5.2 Setting of the Ability Trials

(P= ABILITY TRIAL = time to run a distance)

(C= TIME CHECK = transit time at check point)

To store the Ability Trials or Time Checks in the memory press and then .

P=Ability Trial or C=Time Check are displayed. Select P or C pressing or and press to confirm.

The progressive sequential number of the event to be set (P01 or C01) is displayed on the right side. Press to confirm.

Hr:00 will be displayed.

Set Hr (hours)

Pressing and (if and are kept pressed for more than half a second the numerical sequence starts running at a speed of five numbers per second) select Hr and confirm pressing .

Set Pr (minutes)

Press and select Pr , press to confirm

Set Sc (seconds)

Press and select Sc, press to confirm

Set Cn (hundreds of seconds)

Press and select Cn, press to confirm.

A sound beep will confirm that the times set are stored in the memory.

To set additional Ability Trials or Time Checks, press 🔲 and so on…

5.3 Modification of a Time Check

In case the start time needs to be changed (f.i. increased or decreased number of competitors), if the time measurement is in operation

Press 🔲 + 🔲 simultaneously to stop the relevant count down.

Press 🔲 and change the Time Check (transit time) pressing 🔲 and 🔲 and press 🔲 to confirm.

All C: n will be displayed.

Select "n"= no and confirm with 🔲 : the modification will be restricted to the specific Time Check

Select "y" and confirm with 🔲 : all the subsequent Time Checks will be automatically delayed or anticipated reflecting such modification.

5.4 Combined Ability Trials and Time Checks

Ability Trials and Time Checks may be single or combined (combined = the end of the first sector coincides with the start of the following one)

In case of combined Ability Trials and/or Time Checks (P and/or C) the setting operations should take into consideration that the various sectors belong to a "single" event. As a consequence at the end of a single event or a series of combined events, pressing the start

switch 🔲 to get the split time (advance or late transit time), the first event of the following series of combined events will be activated.

At this point pressing 🔲 + 🔲 **RESTORE** simultaneously, the activated Ability Trial or Time Check is stopped and restored to its originally set time, ready for a new start.

5.5 Modification of a running Ability Trial or Time Check

While it is always possible to modify a Time Check, **no modification of an Ability Trial time is allowed.**

5.6 Displaying of Ability Trials and/or Time Checks, and Split Times.

Press 🔲 and 🔲 or 🔲 until the Ability Trial and/or Time Check times stored in memory is displayed:

P (Ability Trial) followed by its sequential number and Hr (hours) Pr (minutes) Sc (seconds) set
C (Time Checks) followed by its sequential number and Hr (hours) Pr (minutes) Sc (seconds) set

Pressing 🔲 for the second time the hundreds of seconds set are displayed.

Pressing 🔲 for the third time the split time of the specific event is displayed.

The following symbols may be displayed:

No split = uneffected split

Lost = uneffected time start (restored by pressing RESTART switch)

UdF = under-flow advance split (exceeding 1' 59".99)

Ouf =over-flow late split (exceeding 1'59".99)

-20.15 = advance split

0.08 = late split

the end = last event set

5.7 Deleting of memorized events

TOTAL DELETE function deletes all the stored events from the memory. This function is activated only when the display shows the CL function and can be recalled by pressing ◀◀ + ⊞ + ▶▶ simultaneously until dELEtE :n is displayed. Press ◀ or ▶ to change n (no) into y (yes) and press SET for the memory total delete.

Pressing SET when n (no) is displayed, no value is cancelled.

6. Start

To start and Ability Trial or a Time Check, press the START switch 🔴 or the external switch.

6.1 Split Time

Pressing START switch 🔴 the subsequent event is activated. The split time will be displayed for 15" seconds .
The hundreds of seconds displayed indicate:

advance split (transit time) : from 51 to 99
00 : 00
late split (transit time) : from 1 to 50
split times exceeding 50 hundreds of seconds will be stored in memory but not displayed.

6.2 Stop of running Ability Trial and or Time Check

At any time a running Ability Trial or Time check can be stopped pressing 🔊 + 💡 RESTORE (see paragraph 5.4)

7. Restart function

In case, for accidental reasons the start switch 🔴 has not been pressed at the end of an Ability Trial or Time Check. Pressing ⊞ +▶▶ (RESTART) simultaneously anchoring to the previous Ability Trial or Time Check (at 00 time) is activated. The relevant split time will be displayed as LOSt

7.1 Auxiliary "Back" function

Whenever during the course of a series of combined Ability Trials or Time Check, the START

Switch [START] is accidentally pressed, press [⏪] + [⊞] (BACK) simultaneously to return to the count down of the previous Ability Trial or Time Check. **This operation can be effected only once for each event.**

7.2 Crosslight function

At any time, while all the other functions are in operation it is possible to return to the Clock

function pressing [⏱]. To return to the running event it is absolutely necessary to press [⊞].

7.3 Reading of the times stored in memory

Pressing [P/C] the times stored in memory may be accessed and displayed (see paragraph 5.6)

8. Backlighting

The C-200 Chronometer is backlighted for usage in dim light conditions.
Backlight can be activated both manually or automatically. Backlight will be automatically activated during the count down in accordance with duration time previously set. Switch off can

be effected manually pressing [💡] (switch on and switch off mode).
After one minute the backlight will automatically switch off to reduce power consumption. For the same reason in case of discharged cells the maximum backllight duration is 5 seconds.

8.1 Setting of the Backlight

To set the backlight parameters press [⏱] to enter clock function then press [P/C] and [💡] simultaneously.The symbol LIGht:12 (backlight duration in seconds) will be displayed press

[◀] or [▶] until the desired time is displayed and press [SET] to confirm.
Important note : Light :00 means that backlight will never be automatically activated, and LIGht:AL means that backlight will be activated in the last 60"

Press [SET] and LEVEL:25 is displayed. Backlight will switch on at the set level. To change the

light intensity level press [◀] or [▶] up to the desired value and press [SET].
Important note: LEVEL:00 means that backlight will never be activated.

9. Sound Beep

The Sound Beep will automatically start during the count down at the desired time previously

set and will remain active till the count down stops at 00. Pressing [🔊] during the count down a 4kHz beep sound, is activated. In case the count down exceeds 30 seconds, at 30 seconds a 4kHz be be beep signal is automatically activated.

9.1 Setting of C-200 sound beep

To set the sound beep parameters press [⏱] to access to clock function then press [P/C] + [🔊] simultaneously the symbol BEEP :10 (automatic activation of beep during count down) will be

displayed. To change the activation time during the count-down press [◄] or [►] up to the desired value and press [SET] to confirm.

Important note: BEEP:00 means that Beep will never be automatically activated, and BEEP:AL means that beep will be activated in the last 60 " of the count down.

10. External plugs
Two plugs on the left side of the C-200 chronometer allow connection to the external switch (upper) and the cuffs or amplifier (lower).

10.1 External switch and synchro

The C-200 can be activated by both a start 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 [START] (on the C-200 front side), when the C-200 is in 'stand by' condition the current absorption increases from 1 µA to 3000 µA, Please ensure that the start switch [START] is not kept pressed (the use of the special protective cap is recommended)

10.2 Audio output
The cuffs or amplifier extenal plug has a current output of 10 mA with a maximum voltage of about 8 V.
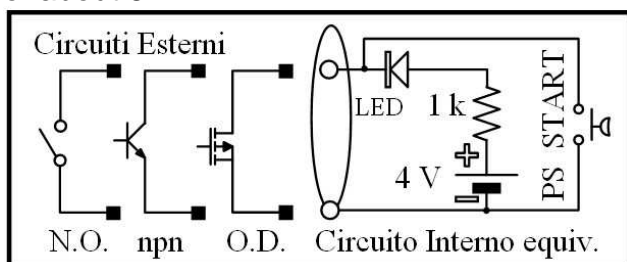
11. Dtr techincal features
The C-200 chronometer is implemented by a subsystem manufactured by EM-marin (SWATCH Group). This system is based on a pure digital technique which compensates the frequence of the oscillator.
The calibration of the chronometer is effected at 25°C. An inside thermometer detects the temperature and provides adequate compensation.
To display the chronometer temperature (which may significantly differ from the external temperature) press [◄] + [►] simultaneously.
t=   17℃ will be displayed.
To avoid interferences, if the backlight is active, the light will be automatically switched off (for less than a second) during reading.
Compensation in temperature will remain active when the chronometer is off.

12. Technical features

Hardware	Microprocessor 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 drived
Power	n 3 batteries 1,5 V Alkaline SIZE AA MN 1500 LR6 (ø 14 mm, l= 50 mm) (ø 14 mm, l= 50 mm)

Power absorption	stand-by	~1 µA
	Working	~2.8 mA
	with backlight	5÷200 mA

Life	switched off	>2 years
	normal working	>1000 h
	on reserve	>100 h
	with backlight Level 99	>15 h

Precision	between -0℃ e 50℃ ±2 ppm with calibrati on 25℃ ±0.5 ppm

13. 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, exposure 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.

14. Declaration of Conformity

Declaration of Conformity
Self certification as per Guide Nist 951

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

Blizz di Marco Aghemy certify that:
Type of Product   Centesimal chronometers
Product name   C-200

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 – B Class
                                           EN 50082-1: 1997
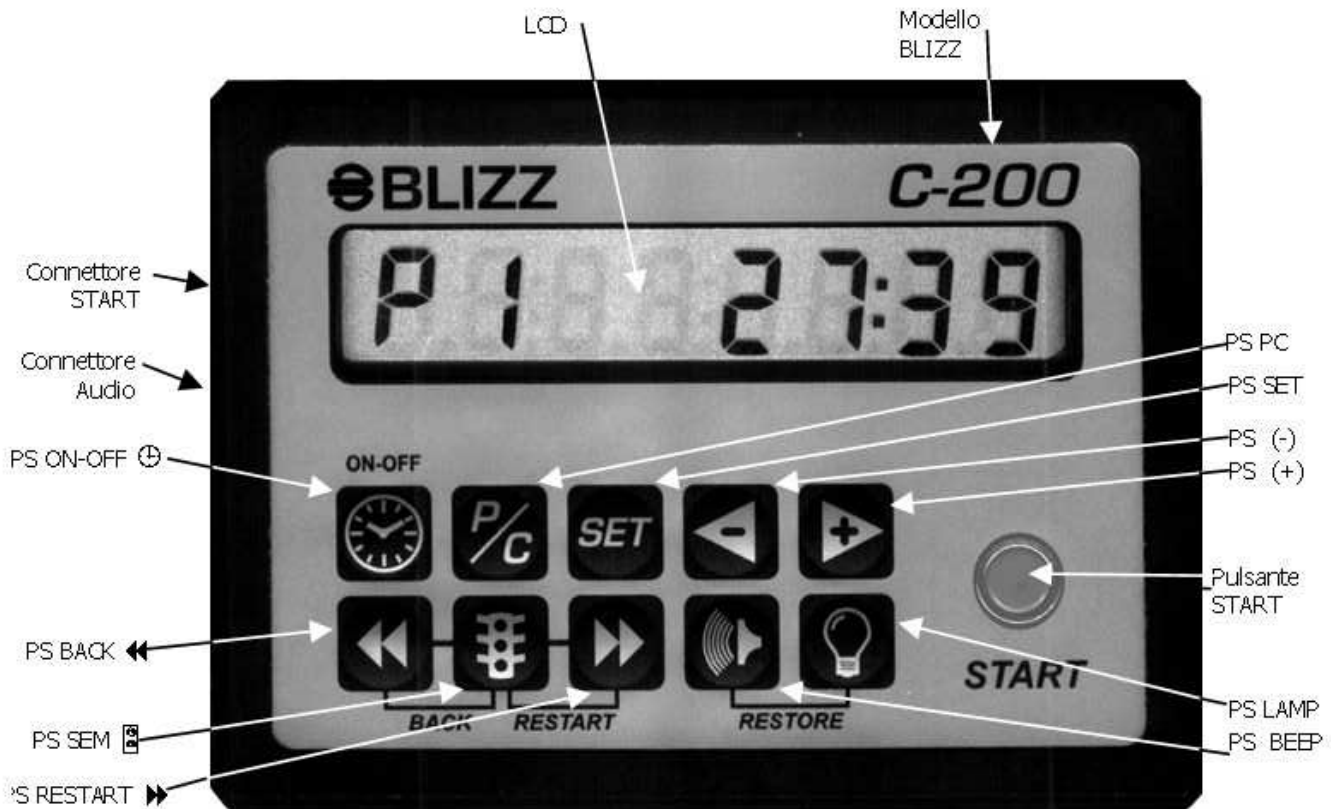   EN61000-4-3: 3V/m
                                           ENV50204: 10V/m
                                           IEC 801-2: 1991 - 4kV CD - 8kV AD
                                           IEC 801-4: 1988 - 1kV AC - 0,5kV I/O
                                           IEC 801-5: 1993 - 2kV C.mode -1kV D.mode
                                         IEC 801-6: 1993 - 3Vemf C.mode

The Chronometer C-200, standard model, equipped with brand new Cells Duracell Plus AA
mod MN 1500 , internal switch, Internal sound beep passed all quality control tests
Turin, 10th November 2002 Marco Aghem, Quality Control Manager.

15. The C-200 Chronometer

16. Notes