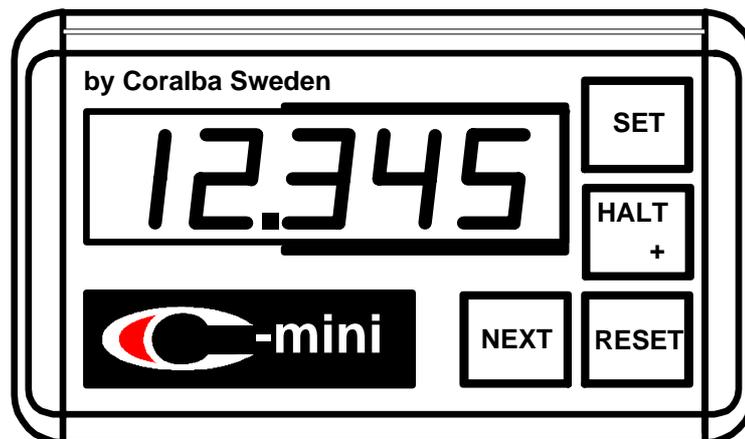


MANUAL FOR C-mini



Jemba ab

Väpnarvägen 10, S-691 53 KARLSKOGA, Sweden

Tel: +46-586-55640, Fax: +46-586-31451

www.jemba.se, E-mail: info@jemba.se

GB

TABLE OF CONTENTS

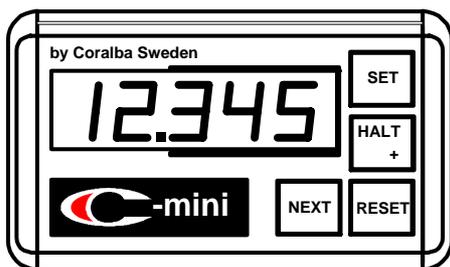
	Page
1 INTRODUCTION	3
2 HOW TO START	3
2.1 PULSE GENERATOR.....	3
2.2 ELECTRICAL CONNECTIONS	4
2.2.1 Power on /off.....	4
3 CALIBRATION	5
3.1 CALIBRATE C-MINI, FIXED DISTANCE OF 1000	5
4 FUNCTIONS	6
4.1 MEANS OF HANDLING	6
4.1.1 Selector key.....	6
4.1.2 Operator keys.....	7
4.1.3 Remote controls	8
5 ADVANCED USE AND PRACTICAL EXAMPLE	8
5.1 USE DURING A RALLY	8
5.2 CALIBRATE C-MINI ON AN ARBITRARY DISTANCE.....	9
6 OTHER CORALBA PRODUCTS	10
6.1 C-RALLY	10
6.2 C-GIANT	10
6.3 C-VIEW	10
7 TROUBLE SHOOTING	11
7.1 ERROR CODES.....	11
7.2 PROBLEM SOLVING.....	11
8 SUMMARY OF FUNCTIONS FOR THE KEYS	11
9 INDEX	12

1 INTRODUCTION

Edition תשתתת

You have now received one of the latest instruments in Corlaba's well known product spectre of high quality measuring instruments for rallying. **C-mini** has been designed to fit the user that wants a high quality instrument with limited functions, compared to our more advanced instruments. (see section 6 Other Coralba products)

C-mini is used for measurements in conjunction with rallies. It is the best choice if you need a small but reliable tool. The instrument has been developed by Coralba after many years of experience of the co-drivers special needs in his stressful situation. Therefore **C-mini** has all the main functions that will make a co-driver perform his duties **RAPIDLY**, **SECURELY** and **EFFICIENTLY**.



In addition to distance and speed information it also gives an automatic measurement of the time on a special stage and time of day.

As a standard **C-mini** has connections for two remote controls. They may be used to reset the intermediate distance to zero and to freeze all values for instance on the finishing line of a special stage.

A complete set of **C-mini** consists of:

- instrument including cables and screws for fastening at the back
- pulse generator for your vehicle
- documentation

2 HOW TO START

- A) Before you start mounting your instrument, please check that you have everything you need for your installation. If not please contact your dealer.
- B) Fit your pulse generator according to separate instruction for your type of pulse generator and vehicle.
- C) Connect your electrical wires according to chapter 2.2 *Electrical connections*.
- D) Fasten the instrument in a safe place with the screws at the back of the unit. You are **not allowed** to use longer screws than the enclosed.
- E) Calibrate your instrument, see chapter 3 *Calibration*.
- F) Your **C-mini** is now ready for professional measuring with a very high accuracy.

2.1 Pulse generator

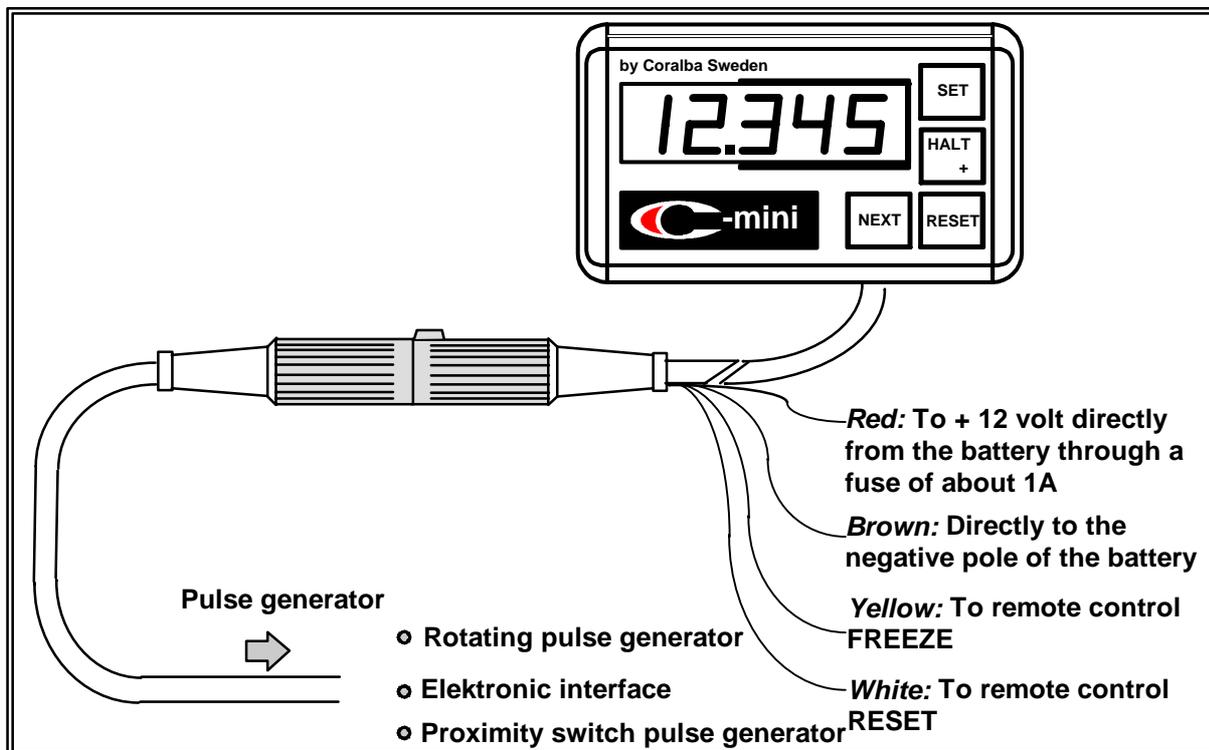
The pulse generator may be of different types, depending of what kind of vehicle you shall equip with C-mini:

- Rotating pulse generator with universal fittings
- Rotating pulse generator with special fittings
- Interface for a vehicle with electronic speedometer
- Proximity switch pulse generator

Depending on which type is required for your vehicle the pulse generator is fitted in different ways. See enclosed sheet, actual for your vehicle.

2.2 Electrical connections

Make sure great care is taken in connecting **C-mini** as damage may occur to the unit if it is connected incorrectly. The system should have negative ground.



Red cable (power) is connected to +12 volt directly from the battery through a fuse of about 1 A.

Brown cable is connected to the negative pole directly on battery.

Yellow cable is connected to an earth giving remote switch to control the freeze function. (Switch not included).

White cable is connected to an earth giving remote switch to control the reset function of TRIP 1. (Switch not included).

Make sure all connections are done professionally. The cables should be fixed to avoid damage. Most disturbances in function that occur are caused by poor connections to the power supply, not least the ground lead.

2.2.1 Power on /off

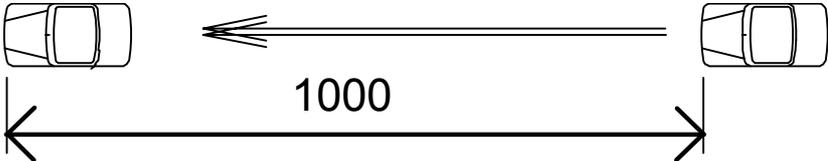
When the instrument has not been used for 7 min it will automatically switch itself into an idling mode where the display and the keyboard are totally dark. When **C-mini** is operated or the car is moved it is automatically turned on again.

3 CALIBRATION

3.1 Calibrate C-mini, fixed distance of 1000

To enable the **C-mini** to measure accurately it must be calibrated. The dimensions of tyres and transmission ratios influence the performance and therefore it is important to calibrate **C-mini** if these are altered.

Check tyre pressure and inflate, as necessary. Then you need to have an exact calibrating distance of 1000. (See chapter 5.2 Calibrate C-mini, arbitrary distances.)

Procedure	C- mini shows
Select TRIP or SPEED, by pressing 	Selected register
Keep  depressed for at least 3 secs	Current calibrating constant
Press 	".d r i l e ."
Drive 1000	Display alternates with ".d r i l e ." and counted number of pulses.
	
Press 	Your new calibrating constant.
	During this procedure you may exit by pressing RESET or NEXT.
Press 	TRIP 1

Check the accuracy by travelling over your calibrating distance whilst measuring its length. If all factors are correct the length should correspond exactly. A normal precision is better than 0.03% (0.3 m/km). Also the speed is now calibrated. If the calibrating constant is greater than 10 000 you should contact your supplier to get a different interface for your speed signal.

Even if **C-mini** is disconnected from the power supply it will keep its calibrating constant in memory. The value may of course be changed by using the standard SET procedure as described in chapter 4.1.2 Operator keys .

4 FUNCTIONS

You have now calibrated your instrument and are ready for using your **C-mini** for measurements with a high level of accuracy. You will in this chapter be familiar with every function of your new instrument.

C-mini is controlled by keys and remote controls.

The keyboard has two different kinds of keys:

- Selector key:  will select different registers and display their values.
- Operator keys:    will operate on the value in the selected register.

The basic philosophy for **C-mini** is that when you press any of the keys you do not influence any other register in the instrument other than the one that you see in the display. The register in the display is called the current register. While pressing  to select a new register the display shows a leading text telling you which current register will be shown when you release the key.

The different registers/functions are selected by repeatedly pressing the key, until you have done a loop back to the first register. For every press the leading text tells you which current register will be shown next.

4.1 Means of handling

The use of the different keys and remote controls will be described below.

4.1.1 Selector key

The following registers may be selected by pressing  repeatedly.

Leading text	Function	Appropriate keys
.TRI P.1	(triP.1) is used to measure the intermediate distances as the white remote control will reset TRIP 1 whether or not TRIP 1 is shown in the display.	  
.TRI P.2	(triP.2) is used to measure the total distance from the start of the section, as it automatically gives a time measurement. A quality of TRIP 2 is to stop and reset TIME ON STAGE when TRIP 2 is zeroed. See section TIME ON STAGE below.	  
.SSHr.	(SS-Hr) This register is used to measure the elapsed time from the start of a special stage to the finish or to next time control. It is stopped and zeroed automatically when you reset TRIP 2 to zero. It is automatically started when TRIP 2 starts to count. In that way you synchronise your time recording to the organisers clocks at every start of a special stage.	
.SPEED	(.SPEED) A precision speedometer, shows the exact speed of your vehicle.	
.Hour.1	(.Hour.1) Time of day. It may also be used as a stop watch.	  

4.1.2 Operator keys

With the operator keys you set values and operating modes for the **C-mini**. The following operations can be achieved.

Key	Used with register	Function
	<i>.Err P.1</i> <i>.Err P.2</i> <i>.Hour.1</i> <i>.CALd1</i>	<p>Start input of a new value into the register that is shown in the display. The input is carried out in the following way:</p> <ul style="list-style-type: none"> • Start the input by pressing SET. The leftmost digit flashes. (If TIME is shown the digits are scrolled one position so that the 10 hour digit is made visible and flashing). The keys will now get new functions: • HALT/+ will increase the value of the flashing digit by 1. If you keep the key depressed it will repeat automatically. • NEXT will accept the current value of the digit and make next digit (to the right) active (flashing). • SET will confirm the complete value and return to normal operation. • RESET will exit from the input mode and retain your old value. <p>When the rightmost digit is accepted you will retain normal mode with your new value.</p>
	<i>.Err P.1</i> <i>.Err P.2</i> <i>.Hour.1</i>	<p>Toggle stop and count for current register. It is used for instance if you visit a service area off route and don't want to include travelled distance to the trip. NOTE! Only current register is invoked when you press the key. A red indicator in the key indicates that current register is set to halt.</p>
Keep  depressed for about 3 sec	<i>.Err P.1</i> <i>.Err P.2</i> <i>.SPEED</i>	<p>Will start the special calibrating procedure, see section 3 CALIBRATION.</p>
	<i>.Err P.1</i> <i>.Err P.2</i> <i>.Hour.1</i>	<p>Reset current register to zero. NOTE! Only current register is invoked when you press the key. Also see "White remote control" below.</p>

4.1.3 Remote controls

The options for the two remote controls on **C-mini** are:

Remote controls	Invoke on register	Function
White cable	TRIP 1	Zeroes TRIP 1. NOTE! This is done whether or not TRIP 1 is shown (current) or not.
Yellow cable	TRIP 2 SS.Hr. SPEED Hour.1	Freezes all registers. Measurement is however not stopped. At next activation the freeze function will cease and current values will be shown. When the values are frozen (e. g. on the finishing line of a special stage) you can select time on stage and time of day on the finishing line with  . This function can be used any time except when you carry out a calibration or setting a value.

5 ADVANCED USE AND PRACTICAL EXAMPLE

5.1 Use during a rally

During a rally it may be a good idea to use the registers in the following way:

- **TRIP 1** is used to measure the distances between the levels in the road-book. It is zeroed with the aid of the white remote control, which usually is installed as a foot operated switch.
- **TRIP 2** is used to measure the total distance from start of a SS (or road section) to next time control. Its value is zeroed when the car stands still on the start line. At that moment the stage time is also zeroed and it will automatically start measuring time on stage when the car starts.
- **TIME ON STAGE** is used to measure the time of special stages as well as for the road section following it. At the finishing line of the special stage you freeze the tripmeter with the yellow remote control, which could be a mini button (available from Jemba). As you get your time at the STOP CONTROL you compare time on stage and time of day on your time card to the values from your **C-mini** which are measured at the finishing line by selecting the values with . When you are ready you press the yellow remote control once more and the freeze status will cease. Before you enter next TC you check that time on stage shows your schedule time for the road section. You don't even need to calculate your scheduled time!
- **SPEED** is used to calibrate the standard speedometer of the car.
- **TIME** is used to get time of day. At the start it is synchronised to the organiser's clock by using the SET function. At all TCs and SSF it is used to check that you get correct time on your time card.

5.2 Calibrate C-mini on an arbitrary distance

Procedure	C- mini shows
Select TRIP or SPEED, by pressing 	Selected register
Keep  depressed for at least 3 sec	Current calibrating constant
Press 	".d r i l e. "
Drive the calibrating distance	The display alternates between ".d r i l e. " and the number of pulses counted.
	
Press 	Your new calibrating constant is shown.
Give the length of your calibrating distance.	
See section 4.1.2 <i>Operator keys</i>	
During the whole procedure RESET acts as "cancel" and NEXT escapes (back one step).	
Press 	TRIP 1

Check the precision by measuring the calibrating distance. It should be exactly correct. Normal precision is better than 0.03% (0.3 m/km). Also speed will now show correct values. If the calibrating constant is greater than 10 000 you should contact your supplier to get a different interface for your speed signal.

Even if **C-mini** is disconnected from its power supply it will keep its calibrating constant in its memory.

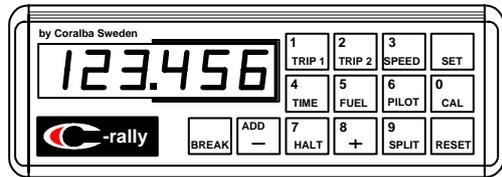
The calibrating constant may also be set with the normal SET procedure. See section 4.1.2. *Operator keys* .

Calibrating over a fixed distance of 1000 m is carried out as a particularly simple procedure. See section 3.1. *Calibrate C-mini, fixed distance of 1000.*

6 OTHER CORALBA PRODUCTS

6.1 C-rally

C-mini is a mini version of **C-rally**. **C-rally** is a base instrument which has all the basic functions, including fuel management functions, needed by the co-driver during a rally.



6.2 C-giant

C-giant is a professional version of **C-rally**. It is extended in a way that the efficiency of the co-driver is brought to an optimum. The most important qualities are three display windows where the user defines the contents and its formats exactly as it suits him the best and two remote controls with a learn function, allowing him to define them completely after his own mind. **C-giant** is available in two versions: with and without a communication connector for **C-view**.



6.3 C-view

C-view is an extra remote display unit for **C-giant**. It is used by the driver as well as by the co-driver. It can display any of the registers which are present in the **C-giant** where it is connected. The unit may be locked to a certain register, so that it always shows the same register (i.e. for permanent fuel). You may connect a number of **C-view** to the same **C-giant**.



7 TROUBLE SHOOTING

This section contains some information about the error codes that may be shown and some help on how to trace an error.

7.1 Error codes

Under special circumstances an error code is shown as an information that the built in test functions have discovered an error. The following error codes are available:

Code	Probable reason	Proposed action
SUEFF	Bad power supply.	Contact your dealer for service.
CALEF	Bad power supply.	Calibrate the instrument. See section 3 CALIBRATION.

7.2 Problem solving

This section contains a description of the most common problems for our customers.

Problem	Probable reason	Proposed action
Trip and time will not count.  Is flashing	Yellow remote control has been activated by mistake.	-Activate yellow remote control again.
No light in the instrument, not even if you press a key.	Bad power supply.	-Check the power supply. '+' as well as '-'. - Check the fuse.
The instrument lights up when you press a key, but it will not count.	The instrument doesn't get any pulses from the pulse generator.	-Check all connectors between the pulse generator and the instrument. -Fit a new pulse generator.
The instrument counts incorrectly.	Bad calibrating constant.	-Check the calibrating constant. -Calibrate the instrument.
The instrument counts backwards all the time.	Internal error.	- Contact your dealer for service.

8 SUMMARY OF FUNCTIONS FOR THE KEYS

Normal mode	Key	Input mode
Select next register.		Accept current value for a digit and select next digit.
Enter input mode.		Accept entered value and resume to normal mode.
Stop/Start counting. Will enter calibration procedure if depressed for 3 seconds.		Increase value by 1 (automatic repetition)
Reset current register to zero.		Exit from input mode and retain your old value.

9 INDEX

brown cable.....	4	operator key	7
calibrate C-mini	5	operator keys	6
calibrate C-mini on an arbitrary distance..	9	power off	4
C-giant.....	10	precision.....	5
co-driver	10	problem solving	11
connections	4	proximity switch pulse generator.....	3
Coralba products.....	10	pulse generator	3
C-rally.....	10	red cable	4
current register	6	remote control	8
C-view	10	remote reset.....	4
disturbance.....	4	road section.....	8
electrical connections.....	4	road-book.....	8
electronic speedometer.....	3	rotating pulse generator	3
error code.....	11	selector key	6
exact speed.....	6	SET	7
finishing line	8	SET procedure	5; 9
fit pulse generator	3	special stage	8
foot switch	8	speed	5
freeze	8	speedometer	8
freeze function.....	4	start line.....	8
HALT/+	7	TC	8
handling.....	6	time card	8
installation	3	time on SS.....	8
keyboard	6	transmission	5
loop	6	trouble shooting.....	11
memory	5	turn on	4
mini button.....	8	tyres	5
mounting	3	white cable	4
on /off	4	yellow cable.....	4