BLUNIK II PLUS — MANUAL

ENG


BLUNIK II PLUS

CONTENTS

1. INTRODUCTION

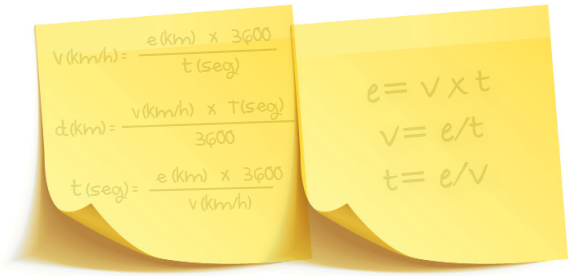
This manual aims to explain a little about the world of tests done in classic cars.

There are different organised activities that can be done in a vehicle (car or motorbike):

- **Concentrations.**
- **Navigation rallies.** Tests that rely on skill following a route using maps, road books, etc.
- **Regularity rallies.** Tests in which, apart from following a set route, we have to comply with certain times and speeds. They are usually run on public roads and respecting driving regulations.
- **Speed rallies.** They are run on circuits closed to the traffic with maximum safety measures both in the vehicle and on the road. Specially prepared vehicles are required.
- **Regularity sport rallies.** This is a mixture of regularity and speed and always run on circuits closed to traffic.

1.1. WHAT IS A REGULARITY RALLY?

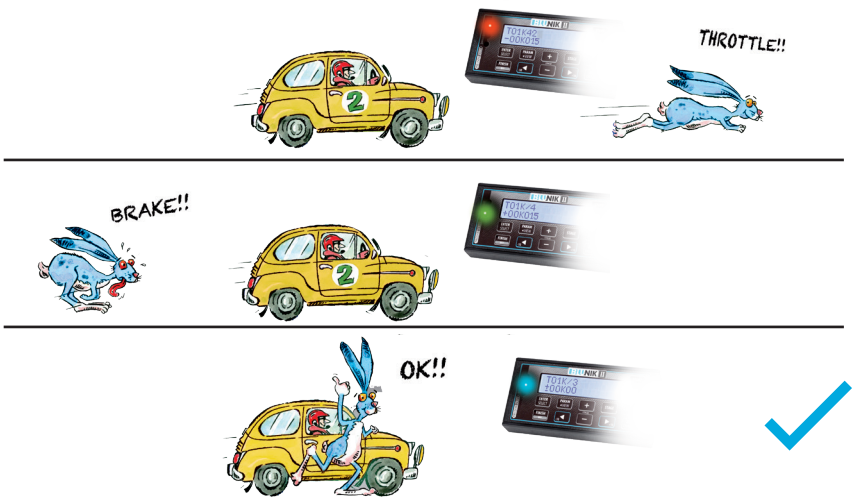
A **regularity rally** is a style of rally in which absolute speed is not the principal objective, but rather the control of the speed, the time and the distance travelled.



The organiser of a regularity rally gives us a route to follow (Road book) and some specifications about speeds, times and distances with which we have to comply (regulation).

There are many ways of giving us these specifications. We can be set points that we have to pass irrespective of the time. We can be given specific times for passing certain points. We can also be given the average speed that we have to meet for a set distance. They can set reproducing the same times as in a previous run through the same area as a specification. The variations are almost infinite.

The organiser monitors our stage times at the opportune points. The objective is to deviate as little as possible from the set times.



It is as if we had to chase a hare. It would be very easy; but since we cannot see the hare, we just have to imagine it.

Our clock must be perfectly synchronised with it. Easy! We have to measure the distance in exactly the same way. Difficult!

To put it another way: The hare runs the **theoretical distance** in the theoretical time and we follow the **actual distance** in real time.

- We will be penalised for any time or distance deviation.
- We will be penalised for being outside the time limits.
- We will be penalised for not following the same route.

The classification is established with the sum of all the penalties. Whoever has the lowest penalties wins the rally.

+info: ***RALLY LANGUAGE*** *— page:029*

Nowadays some regularity rally organisers measure the road with extreme precision (in metres) and take our stage times in tenths of a second.

Some of the participants in these precision rallies achieve spectacularly tight results. With your **Blunik II Plus**, you can also manage this.

In a badly measured rally it is almost impossible to achieve good results. It all becomes a matter of luck. When we realise that the measurements are no good, it is already too late to make corrections. Whatever we do, our results will only get worse.

When a rally is well measured, but timed with little precision (manually or by GPS) if we go round with maximum precision, we increase the possibilities of our times being better than our rivals. Over greater distances, the inaccuracy of the timekeeping affects us less.

1.2. HOW TO PARTICIPATE IN A REGULARITY RALLY

- We will need a vehicle that complies with the specifications laid down in the rally regulations.
- We have to be a 2 person team: pilot and co-pilot.
- We need a good understanding of what a regularity rally is.
  - It is not a race. It is not a question of speed.
  - They will monitor that we follow the route.
  - They are going to monitor lap times at certain points along the route.
- Our automobile must have a certain level of preparation.
  - Mechanically reliable.
  - Some kind of distance measurer. The vehicles own can be used as to start with.
  - A clock/stop-watch.

- Some kind of system allowing us to compare the organiser's parameters without own route. Time/distance tables set at different speeds printed out on paper are usually used.

By using these elements well we can now manage an acceptable classification in a regularity rally.

CO-PILOT TASKS

- Follow the road book (route).
- At set intervals determine the time difference. Or determine the distance difference every so often.
- Tell the pilot whether he needs to accelerate of slow-down.
- Compensate for the automobile tracking if it is not the same as the organiser's.

PILOT TASKS

- Drive skilfully, controlling the car to perfection.
- Follow the navigator's orders.
- Sometimes this is not easy, some of the imposed measures can be very tricky to stick to on twisty roads.

2. WHAT DOES THE BLUNIK II PLUS CONTRIBUTE TO REGULARITY?

BLUNIK II PLUS uses the **accumulated experience** of many pilots and co-pilots from all types of regularity rallies.

It brings together all the necessary functions for precision regularity in a single device.

PRECISION REAL DISTANCE MEASUREMENT (ODOMETER)

The BLUNIK II measures distance from information from sensors installed in the non-driving wheels of our automobile.

The BLUNIK II has a calibration system with accuracy of +/-1m in 10km.

The BLUNIK II has special functions to compensate for the majority of common errors in the way the sensors work.

The BLUNIK II can adapt itself to the organiser's way of measuring distances and our way of driving.

PRECISION CLOCK-STOPWATCH

The BLUNIK II PLUS clock has hours, minutes, seconds and tenths of a second, with great accuracy and an ease of synchronisation with the official time of any rally

RAPID CALCULATOR OF SPACE/TIME/DISTANCE TABLES.

The BLUNIK II includes practically all the systems used by the different organisers of regularity rallies.

The BLUNIK II constantly calculates the **theoretical distance** depending on the imposed speed and the time elapsed.

The BLUNIK II makes all the necessary calculations with maximum precision using a super-fast microprocessor.

It also always has the possibility of **recalculating from the start** so as to correct all types of situation that is imposed after the start.

BLUNIK II OPERATING MODE

The BLUNIK II works with the concept of distance. It continually compares the **theoretical distance** with the **actual distance** travelled. The device tells us at all times about the difference between these two distances.

The regularity indications are by coloured lights (LED), numbers, graphics and/or noises.

BLUNIK II BUTTONS

The BLUNIK II keypad has only 12 keys. These keys are **real "clicking" keys** so as to avoid entry errors.

EL BLUNIK II PLUS is designed so that you can access the majority of its functions with the **minimum presses of the keys.**

BLUNIK II SCREEN-DISPLAY

The BLUNIK II screen has 2 lines of 16 characters. At any given point of the rally only the necessary information is displayed on the screen. **Too much information is bad information.**

BLUNIK II POWER SOURCE

The BLUNIK II is powered by the automobile battery. It has an internal battery so that the BLUNIK can be turned on outside the vehicle to program it or set the time. The BLUNIK II works perfectly without the internal battery.

Some of the BLUNIK II accessories do not work if it is not connected to the automobile battery.

If the power source is not correct, this message appears:

BLUNIK ACCESSORIES

- B-SCREEN II — Screen for the pilot.
- B-SPORT DRIVE — Racing-line compensator.
- B-SPORT CALCULATOR — Racing-line compensator + Calculator.
- B-ACOUSTIC DRIVE — Audible alert.
- B-SUPER-ACOUSTIC DRIVE — Powerful audible alert.
- B-PAD — Number keypad.
- B-DATA-FAST — New element for fast data entry. NEW
- B-REMOTE — Remote control.
- B-PEDAL — Pedal to mark distances accurately.

3. BLUNIK II PLUS OPERATION

The BLUNIK II PLUS does the mathematical, mechanical and boring part of the regularity rally and leaves the strategic and sporting part in the hands of the pilot and co-pilot.

It is the co-pilot that thinks and decides what to do at any given time, using the BLUNIK functions. We need to know the BLUNIK II well for it to do what we decide quickly, efficiently and without mistakes.

**** Let's start by studying the functions of the keys (there are only 12).***

By using BLUNIK we can forget about the 'fear' of pushing buttons. In very few cases can the erroneous pressing of a BLUNIK II button cause a serious error and even if it does, there is always a way of fixing it, if we understand the BLUNIK well.

We can trust our BLUNIK device. It is very reliable and is designed so that we don't go wrong for silly mistakes like forgetting to press **ENTER.**

The buttons need pushing when it's logical to push them. The BLUNIK will never call us stupid for making the mistake of not pushing a button!

3.1. BUTTON ACTIONS

Turn the device on with the 

button.

Turn the device off by holding the 

button until it turns off.

BUTTON 

To access the programming of the parameters.

To move from one parameter to the next we use 

To go back to the previous parameter we use 

We always finish parameter programming with 

Within the parameter programming the following keys are also used:

BUTTON 

To access the programming of the sectors.

To move from one screen to the next we use 

To return to the previous we use 

We always finish sector programming with 

Within the sector programming the following keys are also used:

BUTTON VIEW ▸

The only function of this button is to change the screen.

It can always be pushed with no danger of making a false manoeuvre.

BUTTON ENTER SELECT

This is the BLUNIK executive button.

This button pre-activates the selected sector so that it becomes the active sector (activating the count-down).

BUTTON START ON

This button directly activates the selected sector, if it isn't already.

This sector becomes the active sector (**BLUNIK Active**).

The START ON on activating the sector always sets the **real total distance** to ZERO.

+info: ***START MODES*** *— page:039*

+info: ***START BUTTON ACTIONS*** *— page:040*

BUTTON FINISH OFF

This deactivates (terminates) the sector. It is the most "dangerous" button. This is why in order to terminate a sector we have to push it **twice.**

FINISH OFF + FINISH OFF

+info: ***FINISH BUTTON ACTIONS*** *— page:043*

BUTTON MODE CALIBRATION

This determines the distance counting mode (with **BLUNIK active**). It serves to change the operational of the sector that we are programming. It is also used for calibration.

+info: ***HOW TO CALIBRATE*** *— page:037*

BUTTON ZERO CALCULATE

Sets the **Partial distance** counter to zero.

It also serves to run the different calculations that the BLUNIK II performs.

+info: ***CALCULATIONS PERFORMED BY THE ZERO/CALCULATE BUTTON*** *— page:044*

OTHER BUTTONS:

When we are in Parameter or sector programming:

Buttons [−] [+] To input data.

Buttons [-10 ◀] [▶ +10] To input data.

When we are in **BLUNIK Inactive.**

Buttons [−] [+] To change the selected sector.

When we are in **BLUNIK Active.**

Buttons [−] [+] To correct **Total Distance.**

Buttons [-10 ◀] [▶ +10] To correct **Total Distance** with a single click.

+info: ***DATA VALIDATION*** *— page:032*

+info: ***DISTANCE CORRECTIONS*** *— page:043*

3.2. BLUNIK II PLUS PARAMETERS

Let's start to familiarise ourselves with the Parameters.

The parameters are usually programmed or reviewed before starting each rally. Sometimes during a rally it may be necessary to adjust a value. The BLUNIK shows us the most appropriate parameters for each circumstance.

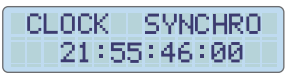
We push the [PARAM ◀ VIEW] to access the parameter programming.

We can move between the Parameter screens by using the buttons [VIEW ▶] and [PARAM ◀ VIEW]. To vary the parameters we use [-10 ◀] [▶ +10] [−] [+]

To abandon the Parameter Screens we use [ENTER SELECT]

QUICK DESCRIPTION OF THE BLUNIK II PLUS PARAMETER SCREENS

CLOCK



This is the screen to synchronise the clock.

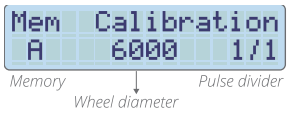
+info: ***HOW TO SYNCHRONIZE THE CLOCK*** *— page:031*

DAY/NIGHT

Allows the alteration of the brightness.

+info: ***CHANGING THE BRIGHTNESS OF THE LIGHT*** *— page:032*

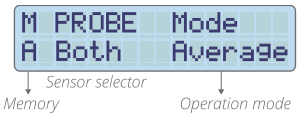
CALIBRATION



Screen showing us our calibration and the memory selected.

+info: ***MEMORIES*** *— page:031*
+info: ***HOW TO CALIBRATE*** *— page:037*
+info: ***SENSOR VERIFICATION*** *— page:037*

SENSOR SELECTOR



Screen for selecting with which sensor/s we want to measure and how we want to measure.

+info: ***MEMORIES*** *— page:031*
+info: ***SENSOR SELECTION*** *— page:034*

ACCURACY

We use this screen to decide on our precision level during the **Timed sections.**

Blue: as of what precision margin we want the blue light to turn on.

Decal: how many seconds we want to be permanently ahead or behind. With the MODE CALIBRATION button we change the Signal.

Corr: Corrections with the -10 ◀ ▶ +10 buttons are 10mts by default. We can reduce this value if we wish.

+info: ***PRECISION ADJUSTMENTS*** *— page:041*
+info: ***DISTANCE CORRECTIONS*** *— page:043*

ADJUSTMENTS

This screen only appears in **BLUNIK Active.** It is for the provisional calibration and offsetting of the time.

Calib Adj: This is for a temporary adjustment of the calibration:

- For example, if it starts to rain, our wheels will turn more and our BLUNIK II will measure more metres.
- To correct this we adjust *Calib Adj* to -1.0m/km.
- By pressing MODE CALIBRATION we change the symbol.

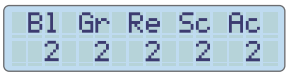
Decal: When we want to lap ahead or behind, we can use this parameter.

- With the MODE CALIBRATION button we change the indicator.
- With less we go behind.
- With more we go ahead.

In manually Timed Rallies to the second or in rallies where the decimals are truncated it may be advantageous to go with a 0.5 second delay (program -0.5 sec).

Note: The values we enter into this screen are only valid while the BLUNIK remains Active.

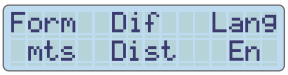
ILLUMINATION



Screen where we can adjust the brightness of the lights and the screens for Night time.

+info: ***CHANGE THE BRIGHTNESS OF THE NIGHT TIME LIGHT*** *—page:032*

FORMAT



With this screen we can format the *Trip / Dif. format / Language.*

- **Form**: The distance format can be changed between metres and decimetres.
- **Dif:** We can choose the regularity difference in metres or in seconds.
- **Lang:** We can choose screen languages between French or English.

START BUTTON

START Function *START in STAGE*

Actions of the START ON button.

+info: ***START BUTTON ACTIONS*** *— page:040*

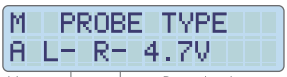
TABLES GAP

Acoustic signal activated (If ACOUSTIC DRIVE connected)

Screen to determine the gap in JP mode.

+info: ***IMPOSED TABLES MODE (JP)*** *— page:049*

SENSOR CONNECTION



Memory *Detection ite*
Left sensor *Right sensor*

Screen for configuring the electrical characteristics of the sensors used.

+info: ***MEMORIES*** *— page:031*

TRIP TOTAL

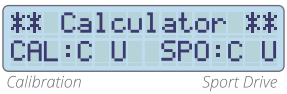
This is an absolute Trip total. This can only be reset from this screen by pressing ZERO CALCULATE

SPORT DRIVE

Layout compensator.
If it is installed.

+info: ***B-SPORT DRIVE*** *— pág:052*

SPORT CALCULATOR



Calculator.
If it is installed.

+info: ***B-SPORT CALCULATOR*** *— pág:053*

ACOUSTIC DRIVE

Acoustic drive.
If it is installed.

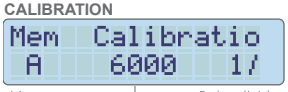
+info: ***B-ACUSTIC DRIVE*** *— pág:054*

In BLUNIK Active we have access to the following screens

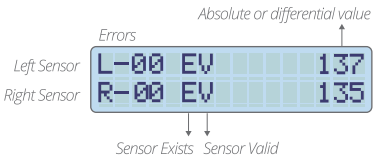
DAY/NIGHT

Allows the selection of the brightness.

CALIBRATION



SENSOR VERIFICATION



SENSOR SELECTOR

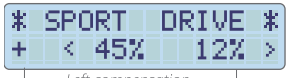
CLOCK ADJUST

And also optionally to these parameters:

TABLES GAP

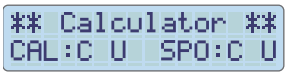
When the sector is in JP Mode (Tables).

SPORT DRIVE



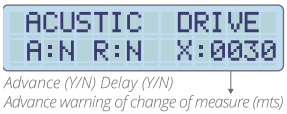
If we have it installed.

SPORT CALCULATOR



If we have it installed.

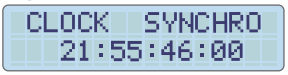
ACOUSTIC DRIVE



If we have it installed.

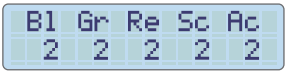
PARAMETERS WITH ACCESS ONLY IN BLUNIK INACTIVE

CLOCK

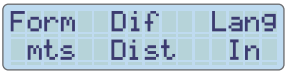


ACCURACY

ILLUMINATION

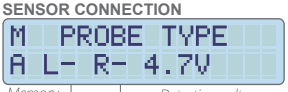


FORMAT



START BUTTON

SENSOR CONNECTION



TRIP TOTAL

3.3. STAGE PROGRAMMING

Only with the BLUNIK Inactive can we change the stage selected with:

The selected stage is the one we are going to program by pushing 

Access to the programming of the selected stage is made pressing 

To change the screen press 

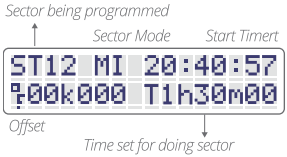
and 

To return to the start screen press 

The stage programming allows the configuration of the operational mode of each of the stages.

+info: ***STAGE RELATED CONCEPTS*** *— pág:033*
+info: ***PROGRAMMING A DIFFERENT STAGE*** *— pág:034*
+info: ***DATA VALIDATION*** *— pág:032*

INITIAL SECTOR SCREEN



Stage programming start screen.

We move around this screen by pressing -10 ◀ ▶ +10 and we change the values by pressing + −

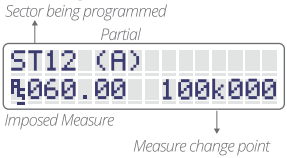
- Option to enter the start time.
- Option to enter the stage time.
- We normally keep the offset at 0.

By pressing MODE CALIBRATION we change the stage Operational Mode.

+info: ***STAGE OPERATIONAL MODES*** *— page:033*
+info: ***PROGRAMMING A DIFFERENT STAGE*** *— page:034*
+info: ***CALCULATIONS RUN BY PRESSING THE ZERO/CALCULATE BUTTON*** *— page:044*
+info: ***USE OF OFFSET*** *— page:043*

Press VIEW ▸ to go to the following screens:

PARTIAL SCREEN



Partial Screens.

+info: ***CHANGE IN AVERAGE TO EXTERNAL REFERENCE*** *— page:042*
+info: ***UNKNOWN AVERAGE CHANGES*** *— page:042*
+info: ***CALCULATIONS RUN BY PRESSING THE ZERO/CALCULATE BUTTON*** *— page:044*

4. INSTALLATION AND CONNECTION

4.1. CONNECTION

Blunik II requires connection to the car battery and to the wheel sensors. This installation should be done just once at a mechanical workshop that has experience in this kind of assembly. The information that the mechanic requires id on the website.

www.blunik.com

4.2. THE WHEEL SENSORS

The sensors installed on the wheels of our car are the most important and

most delicate part of the installation. Pay proper attention to the correct operation of the sensors.

+info: ***SENSOR SELECTION*** *— page:034*
+info: ***SENSOR VERIFICATION*** *— page:037*

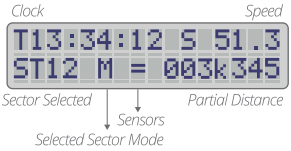
5. HOW TO USE BLUNIK II PLUS

We turn the BLUNIK II on by pressing START ON

VERSION

This screen appears for a few seconds on turning the BLUNIK on. It tells us the version. Then the **BLUNIK Inactive** screen appears:

BLUNIK INACTIVE



5.1. SUMMARY OF BUTTON ACTIONS WITH BLUNIK INACTIVE

From the **BLUNIK Inactive** screen, we can perform various actions:

- Press FINISH OFF continuously to turn BLUNIK off.
- Press + − to change the Stage selected.
- Press VIEW ▸ to see the scheduled start time of the selected Stage.
- Press -10 ◂ ▸ +10 to modify the distance (Partial).
- Press ZERO CALCULATE to set the distance (Partial) to zero.
- Press PARAM ◂ VIEW PARAM ◂ VIEW to change the illumination.
- Press PARAM ◂ VIEW to access the parameter programming.
- Press STAGE to access the stage programming.
- Press MODE CALIBRATION to calibrate.
- Press ENTER SELECT to pre-activate the Stage Selected. Countdown.
- Press START ON to effectuate the start. Zero Total distance.

+info: ***STAGE RELATED CONCEPTS*** *— page:033*

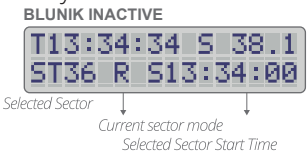
5.2. CALIBRATION

+info: **MANUAL CALIBRATION** — page:037
+info: **AUTOMATIC CALIBRATION** — page:038
+info: **IMPORTANCE OF DISTANCE MEASUREMENT** — page:029
+info: **MEMORY** — page:031

5.3. START PROTOCOL – ACTIVATE A STAGE

+info: **START MODES** — page:039
+info: **START BUTTON ACTIONS** — page:040

Always from the **BLUNIK Inactive** screen



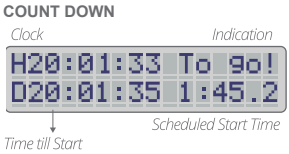
By pressing VIEW ▸ we can see the scheduled start time of the Selected Stage.

By pressing + − we can change the Selected Stage.

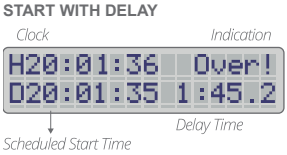
We can effectuate the start in two possible ways:

Start with the SCHEDULED START TIME in the stage configurations:

By pressing ENTER SELECT pre-activate the selected Stage that appears on the **BLUNIK Inactive** screen.



Before starting, if we start on time.



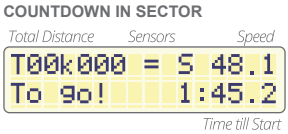
If we start with a delay.

The lights also give us information:

- Red Light: more than 10 seconds to go.
- Flashing Red Light: more than 0 seconds to go.
- Green Light OK.
- Flashing Red/Green Light: we are starting with a delay.

To complete the start protocol we have to press START ON

Real total distance is set to zero and the stage is activated. If we press the button early, the following screen appears:



Summary of the SCHEDULED START:

- Press ENTER SELECT
- The Selected Stage becomes the Pre-activated stage.
- The BLUNIK starts to control the start time of the sector.
- Press START ON (when the vehicle is at the 0 distance point).
- The BLUNIK puts Zero for the TOTAL distance.
- The BLUNIK also changes to **BLUNIK Active.**
- From this moment the BLUNIK controls the Time and the distance.

DIRECT START (without PROGRAMMING the start time):

- Press START ON (when the vehicle is at the 0 distance point and it is the start time).
- The Selected Stage becomes the Active stage.
- The TOTAL distance goes to Zero.
- The BLUNIK also changes to **BLUNIK Active.**
- From this moment the BLUNIK controls the Time and the distance.

If the **START BUTTON Parameter** is programmed to **FlyStart** the start time will be the exact time that we pressed START ON

If the **START BUTTON Parameter** is programmed to **Syncro** the start time will adjust to 0 or 30 seconds.

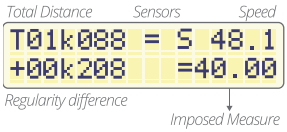
From second 45' to 15' it adjusts to second 0, from second 15' to 45' it adjusts to second 30'. We can verify the actual Start time by pressing STAGE

5.4. SCREENS WITH BLUNIK ACTIVE

With **BLUNIK Active** we can move to the following screen by pressing VIEW ▸

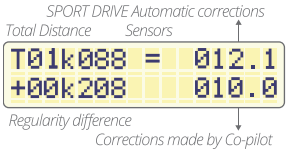
The PARAM ◂ VIEW button is only for programming the parameters and not for accessing the previous screen. Screens that we can find with **BLUNIK Active**:

REGULARITY



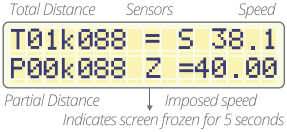
Information on Regularity.

INFO



(If it is installed).
Information on corrections made.

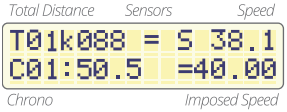
PARTIAL



We can always access this screen by pressing ZERO CALCULATE

The **TOTAL** and **PARTIAL** measures will remain in the screen for 5 seconds so you can take a note. A **Z** is displayed on the screen. At the same time the distance of the next Partial is set to **Zero**. Internal the BLUNIK always keeps counting.

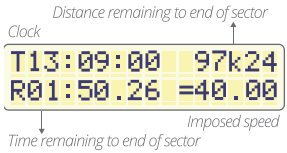
CHRONO



On the Chrono screen, pressing ZERO CALCULATE fixes the Chrono for 5 seconds.

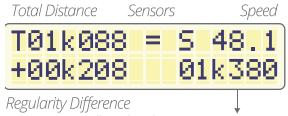
Optional screens:

LINK



This screen will only appear if you have programmed the total stage time.

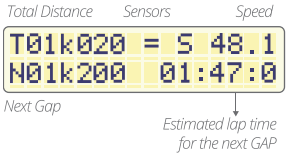
UPDATE TOTAL



Screen for directly updating the **Total distance** is accessed by pressing ENTER SELECT

*+info: **DISTANCE CORRECTIONS** — page:043*

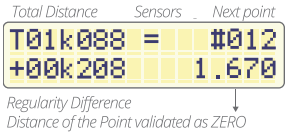
JP TABLES



Only if the stage has been programmed in *JP mode.*

+info: ***IMPOSED MEASURES MODE (JP)*** *— page:049*

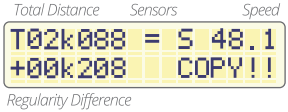
ROAD BOOK



Only if the stage has been programmed in *RB mode.*

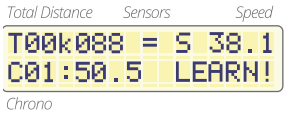
+info: ***ROAD BOOK MODE*** *— page:047*

COPY



Only if the stage has been programmed *in COPY* mode.

LEARN



Only if the stage has been programmed in *LEARN mode.*

5.5. ACTIONS WITH BLUNIK ACTIVE – TIMED SECTION

5.5.1. Distance corrections

While we are with **BLUNIK Active**, normally the first kilometres are the **Timed sector**. From the end of the **Timed sector** we find ourselves in a link.

During the whole sector, but mainly in the **Timed sector** we must verify that our **Actual total distance** is correct.

At certain points of the Road Book we can press ZERO CALCULATE and the screen will display the distance at that point for 5 seconds *(Freeze)*. If we consider it necessary to correct it, we can use the buttons:

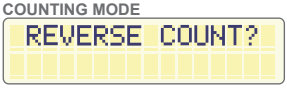
During the link, if we have programmed an average, we can have control over out schedule.

+info: ***DISTANCE CORRECTIONS*** *— page:043*

5.5.2. Our route errors

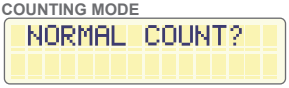
In the event of our error on the route, we have the option to stop the distance count or count in reverse. By pressing we access MODE CALIBRATION different counting modes.

COUNTING MODE



COUNTING MODE

COUNTING MODE



We have to confirm by pressing ENTER SELECT

The counting mode different from Normal appears on the screen in place of the sensors:

R for *REVERSE COUNT* and N for *NOT COUNT*. If we have **ACOUSTIC DRIVE** this will also remind us acoustically.

5.5.3. Verifications

By pressing STAGE we can enter the stage programming to verify the actual Start Time that BLUNIK is using in this stage.

We can also verify the averages and distances programmed. Any value that we vary will be taken into account by BLUNIK and recalculated from

the beginning of the stage. We exit by pressing ENTER SELECT

The start time registered in the BLUNIK is what determines the calculation of the **theoretical distance.**

By pressing PARAM ◂ VIEW we can verify or reprogram our Parameters. Any value that we change will be taken into account only from that moment. We exit by pressing ENTER SELECT

5.5.4. Compensations

Circumstances can occur that can vary our measurements. This can be due to temperature differences, tyre wear, different route, etc.

If we detect systematic measurement differences, we can compensate for them in various ways.

WE CAN USE THE ADJUSTMENTS SCREEN

ADJUSTMENTS

For example: the temperature has dropped a lot. Our wheel has got smaller. We have to reduce the calibre.

We adjust Calib Adj to -1.0m/km (for example).

This calibration modification will only be valid during this sector.

If we want to go a little ahead or a little behind, in time, we can use the Offset adjustment.

By pressing + − we vary the tenths of a second and by pressing MODE CALIBRATION we change the signal.

WE CAN ALSO USE THE SPORT DRIVE

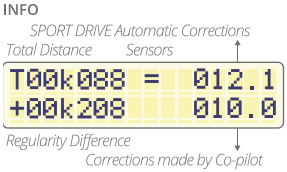
+info: ***B-SPORT DRIVE*** *— page:052*

5.5.5. Light intensity

+info: ***CHANGE THE INTENSITY OF THE NOCTURNAL LIGHT*** *— page:032*

5.5.6. How to finish a stage — deactivate a stage

When we reach the End of the **Timed sector** we can press FINISH OFF once to show the information screen:



This screen will disappear after a while.

We can also press VIEW ▸ to move to the next screen and continue the stage.

At the end of the stage, press FINISH OFF FINISH OFF to return to **BLUNIK Inactive**.

Pressing FINISH OFF cancels ACOUSTIC. To reactivate ACOUSTIC press ENTER SELECT

Pressing FINISH OFF also serves to turn BLUNIK off (press and hold).

+info: ***FINISH BUTTON ACTIONS*** *— page:043*

5.6. BUTTON ACTION SUMMARY WITH BLUNIK ACTIVE

Press VIEW ▸ to do to the next screen.

Press PARAM ◂ VIEW PARAM ◂ VIEW to change the illumination.

Press FINISH OFF once to freeze the Info screen.

Press FINISH OFF FINISH OFF to finish the stage and go to BLUNIK Inactive.

Press ◀ -10 ▶ +10 to directly modify the real total distance.

Press + − to modify the real total distance.

Press ENTER SELECT to put a distance in the real total distance.

Press ZERO CALCULATE to set the partial distance to zero.

Press PARAM ◂ VIEW to access the Parameter programming.

Press STAGE to access the stage programming.

Press MODE CALIBRATION to change the method of counting distance.

Press MODE CALIBRATION MODE CALIBRATION MODE CALIBRATION to calibrate.

Press START ON to validate an average change to an External reference

6. MORE INFORMATION

6.1. RALLY LANGUAGE

En los rallys se usa un lenguaje especial que puede diferir un poco en In Rallies a special language is used that can differ a little in different countries.

A **timed section** is the part of the route that will be timed.

A **Stage** is the interval between two stops for the cars.

When a stop is longer and the cars can regroup, a new **section** starts.

When the stop is more than 8 hours, a new leg starts. A link from the start of the Rally to the start of the first **timed section** is a **section**.

The route from the start of the **timed section** to the next **timed section** is also a **section**.

The part of a **stage** that is not a **timed section** we call a **link**.

6.2. THE IMPORTANCE OF DISTANCE MEASUREMENTS

There is no standardised way of determining a reference distance that is valid for all rallies.

The kilometres of roads and highways are not measured with sufficient precision for them to be directly used as a reference section of a regularity rally. This is why the organiser establishes a **calibration section**, where a reference distance is established for the whole rally.

The measurement provided by the organiser depends on different parameters:

- The route and driving style of whoever measured it.
- How it was measured: front or rear wheels. Measurement with the left wheel, right wheel or average.
- The circumstances under which it was measured. Heat, cold, rain, etc.
- A good organiser should communicate these parameters.
- The route could be on the right, in the centre of the right lane, on the racing line, etc.
- In straight zones the measurement will always be the same wherever the sensors are mounted.
- In zones with corners:
  - A car does not measure the same with the front wheels as with the rear wheels.
  - Also, the left wheel measures different from the right.

The difference between climbs and descents can also be something to bear in mind, especially if the position of the sensors in the car of the organiser is the opposite of our car.

How to adapt to the measurements of the organiser.

The BLUNIK II allows us:

- To calibrate with great precision.
- To recalibrate (if required) with **BLUNIK Active.**
- To choose with which sensor we measure (Right, left or both)
  - To take the average of the measurements when we measure with both.
- To compensate for different tyre temperatures / pressures.
- With SPORT DRIVE we can correct:
  - The differential effect between front and rear wheels
  - The route taken by our driver.
- To correct the differences with the Road book references or those that we have taken ourselves. (Regularity Sport).

Each time we correct a distance we are recognising that we are going a bit wrong. It is better to try to modify our calibration or our SPORT DRIVE percentage so as to minimise corrections.

The SPORT CALCULATOR can help us with these corrections.

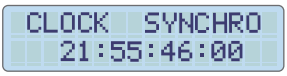
The BLUNIK II, without us noticing:

- Compensates for the bad measurement of the sensors when our car lifts a wheel or when it skids or locks.
- Controls that the sensors are operating correctly at all times.

6.3. HOW TO SYNCHRONISE THE CLOCK

Only when we are in **BLUNIK Inactive**, enter the parameter programming by pressing PARAM ◂ VIEW

CLOCK



By using + − -10 +10 we set a future time.

Synchronise with ENTER SELECT / Do not synchronise with VIEW ▸

If we only wish to adjust the tenths, we enter the parameter programming by pressing PARAM ◂ VIEW

CLOCK

By pressing MODE CALIBRATION we access the fine adjustment mode.

ADJUST CLOCK

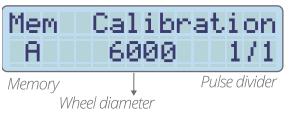
By pressing + − we can directly modify the tenths of a second (it takes a while to adjust).

We exit this screen by pressing ENTER SELECT or with VIEW ▸

6.4. MEMORIES

So that the BLUNIK II can be used with different sets of tyres or different vehicles, it has **4 memories: A B C D.**

CALIBRATION



Only from the *Calibration screen* can the selected memory be chosen.

Saved in the memories are:

- The parameters of the CALIBRATION screen.
- The parameters of the SENSOR ACTIVATION screen.
- The parameters of the SENSOR CONNECTION screen.

6.5. DATA VALIDATION

We do not normally need to validate the data that we input into the BLUNIK. It is recorded exactly as entered.

If we have not varied anything, nothing changes. If we change data, it stays changed.

There are only a few cases where we have to validate the data by pressing ENTER SELECT

- To synchronise the clock.
- To change the counting mode with MODE CALIBRATION
- Too add or subtract distances with + −

In these cases VIEW ▸ works like the ESCAPE key on a computer if we don't wish to execute the function.

6.6. CHANGE THE INTENSITY OF THE NOCTURNAL LIGHT

Only with **BLUNIK Inactive**:

From the Parameters screen the light level that we wish to use at night can be adjusted.

The level goes from 1 to 5.

- **Bl** Blue light.
- **Gr** Green light.
- **Re** Red light.
- **Sc** BLUNIK screen.
- **Ac** accessory screens.

You can always change from **DAY to NIGHT** by pressing PARAM ◂ VIEW repeatedly.

6.7. STAGE RELATED CONCEPTS

BLUNIK Inactive. When we are not running a stage.

When we turn the BLUNIK on, or when we finish a stage with FINISH OFF FINISH OFF and before starting the next stage.

BLUNIK Active. When we are running a stage. (*Timed SECTION or link).*

As soon as we Activate the Selected Stage by pressing START ON the stage becomes Active and the BLUNIK also turns to **BLUNIK Active.**

- Selected Stage. This is the stage indicated in the bottom left corner of the screen when we are in **BLUNIK Inactive.**
- Only from the **BLUNIK Inactive** screen can the selected stage be changed by pressing + −
- We access the Selected Stage programming by pressing STAGE
- We pre-activate the Selected Stage when we press ENTER SELECT
- We also directly activate the Selected Stage by pressing START ON
- Stage being programmed. This is the stage that we are programming when we press STAGE
- As soon as we activate the Selected Stage by pressing ENTER SELECT the countdown starts and the stage goes to Pre-active Stage.
- Active Sector. This is the stage that we are running with **BLUNIK Active.**

+info: ***PROGRAM A DIFFERENT STAGE*** *— page:034*

6.8. STAGE OPERATION MODES

Types of stage that can be programmed with BLUNIK II PLUS:

	IMPOSED MEASURE	(AVERAGE SPEED)	regularity to average.
R	IMPOSED MEASURE	(ROAD BOOK)	regularity to average + Roadbook.
L	LONG LINK	(LONG LINK)	Total control of a stage.
L	LEARN	(TIME LEARN)	Record lap times.
C	COPY	(TIME COPY)	Copy lap times.
J	TABLES	(IMPOSED TIME)	Imposed tables.
P	PRS PORTUGAL	(PARTIAL COPY)	Portugal Historic Rally PRS.

IMPOSED MEASURE	(AVERAGE SPEED)	stages 0 to 39 - 24 Changes in average.
IMPOSED MEASURE	(AVERAGE SPEED)	stages 40 to 45 - 100 Changes in average.
IMPOSED MEASURE	(ROAD BOOK)	stages 1 to 32 - 256 Figures.
LONG LINK	(LONG LINK)	stage 0 only.
LEARN	(TIME LEARN)	stages 40 to 44 - 20 minutes each.
LEARN	(TIME LEARN)	sector 45 - 120 minutes.
COPY	(TIME COPY)	stages 40 to 45.
TABLES	(IMPOSED TIME)	stages 00 to 45.
PORTUGAL PRS	(PARTIAL COPY)	stages 00 to 45.

BEWARE!

Stages 30 to 35 in imposed measures are always registered in stages 40 to 45 as if it was in LEARN.

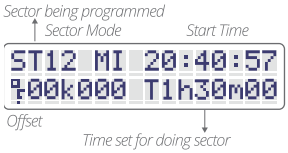
*+info: **IMPOSED MEASURE MODE** — page:046*
*+info: **ROAD BOOK MODE** — page:047*
*+info: **LONG LINK MODE** — page:048*
*+info: **IMPOSED TABLES MODE (JP)** — page:049*
*+info: **LEARN/COPY MODE** — page:049*
*+info: **PARTIAL COPY MODE** — page:050*

6.9. PROGRAMMING A DIFFERENT SECTOR

When we are in stage programming, we are normally programming the Selected or Active Stage.

If we want to program another stage, we can do it without modifying anything in the Selected or Active Stage in the BLUNIK at that time.

INITIAL SECTOR SCREEN



To do this we press **STAGE** for a second time and we can change the number of the stage being programmed.

6.10. SENSOR SELECTION

SENSOR SELECTOR

From the **SENSOR SELECTOR** screen, by pressing **+** **−** we can determine which sensors are going to measure the distance:

- Both –Measures with the average of the two sensors.
- Left – Measures with the left sensor.
- Right – Measures with the right sensor.

By pressing MODE CALIBRATION we can determine how the sensors will act:

- **Only:** Only measures this sensor. The other is cancelled.
- **Average:** Takes the average of the sensors without corrections
- **F.W (fast wheel):** In the event that one sensor goes much more quickly than the other. Only counts the fast one.
- **S.W (slow wheel):** In the event that one sensor goes much more quickly than the other. Only counts the slow one.

By pressing -10 +10 **FWD** (front-wheel drive) or **RWD** (rear-wheel drive) can be modified.

DISTANCE MEASUREMENT. THE NEED FOR 2 SENSORS.

To achieve the maximum precision in distance measurement we need to have a sensor on each side of the car, on the non-drive wheels.

The signals given by these sensors have to be very regular.

A signal for each revolution is an acceptable minimum, five signals for each revolution would be a maximum and two signals for each revolution **is ideal.**

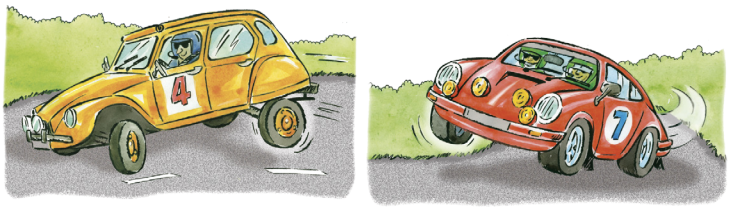
ADVANTAGES OF INSTALLING TWO SENSORS

Redundancy. A sensor can fail without it being a serious problem because the BLUNIK with only one sensor will continue to work.

The **FAST WHEEL** and **SLOW WHEEL** functions can be used.

One wheel can lock on braking or stop touching the ground and stay stopped (this often happens with front-wheel drive cars) and can thus falsify the distance measured.

The BLUNIK II has the **FAST WHEEL** function to compensate for these undesirable effects.



- It can measure with the desired wheel in concordance with the measurement system of the organiser.
- The **SPORT DRIVE** accessory can be used.

The BLUNIK continuously verifies the perfect functioning of the sensors and is very demanding with the information received from them. Any irregularity is detected and reported.

BLUNIK II incorporates a measuring system especially designed for precision regularity rallies.

To do this it requires a correct installation of the wheel sensors.

The BLUNIK II continuously verifies the sensors, detecting the majority of possible anomalies.

From the information supplied by the 2 sensors the BLUNIK II can measure the distances with great precision.

The BLUNIK II is not limited to making the measurement with the 2 sensors, apart from this it detects when one wheel is stopped due to not touching the ground or locking during braking and compensates for the error produced *(Fast Wheel)*. It also detects when a drive wheel skids and turns without moving the car forward *(Slow Wheel)*.

The corrections made by the BLUNIK II PLUS take Drive into account. The same correction is not necessary for locking the front wheel of a rear-wheel drive vehicle as for lifting a wheel in a front-wheel drive vehicle.

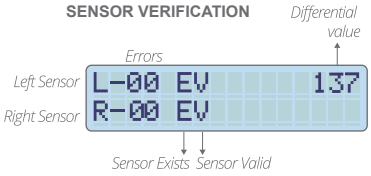
The BLUNIK II can measure with two sensors but take into account only the left or only the right to adapt as precisely as possible to the method used by the organiser to measure the Road book.

The BLUNIK II has an accessory called **SPORT DRIVE**. This component is capable of calculating the curvature of the route followed and adding or subtracting metres as required for the route difference between the organiser and the driver. It also compensates for the difference caused by the organiser using the front sensor and us the rear, and vice versa.

The route of the rear wheels of a car is always a little shorter on corners than the front wheels.

It is in regularity sport races that the utility of **SPORT DRIVE** is most appreciated.

6.11. SENSOR VERIFICATION



To verify the perfect functioning of the sensors we enter the Calibration screen and then press MODE CALIBRATION

- By pressing ZERO CALCULATE we set everything to zero.
- By pressing MODE CALIBRATION we see other parameters.
- By pressing VIEW ▸ we exit the sensor verification.

6.12. SENSOR INFORMATION

The indication of the functioning of the sensors is indicated with lines that move. The fact that the lines are moving assures us that the sensor is working to perfection.

In place of the moving lines, the following may be displayed:

- F finish activated.
- R reverse count activated.
- N counting deactivated.
- L ling link activated.

To the right of the lines a letter may appear:

- L Left wheel faster.
- R Right wheel faster.
- B Both sensors with problems.

If serious sensor anomalies occur, a message appears on the screen.

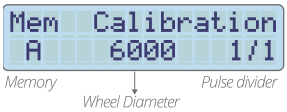
L PROBE FAIL !! or R PROBE FAIL !!

If the sensor failure message appears on the screen, the mechanical problem with the sensors must be fixed **immediately**.

6.13. MANUAL CALIBRATION

The distance measurement of the BLUNIK is made using sensors mounted on the wheels. Thus the calibration is based on the diameter of the wheel.

CALIBRATION



One of the parameter programming screens is that of Calibration.

- Assuming that a revolution of the car wheel gives us two signals, the parameter to enter is the diameter of the wheel in mm x 10.
- If the wheel only gives one signal per revolution we have to enter double the diameter in mm x 10.
- If there are four signals we enter the normal diameter but with the signal divider adjusted to 1/2 (1 signal every 2).

Number of impulses per revolution of the wheel:	*Calibration parameters*	
1	Diameter x 20	1/1
2	Diameter x 10	1/1
4	Diameter x 10	1/2
5	Diameter x 8	1/2
5	Diameter x 12	1/3
8	Diameter x 10	1/4

6.14.AUTOMATIC CALIBRATION

The BLUNIK II from the measurement of a Partial distance.

Each time that we press ZERO CALCULATE we set the Partial distance to zero and store the previous partial.

By pressing START ON we also start the Partial.

Calibrate with **BLUNIK Inactive.**

- Verify the selected memory.
- Situate the vehicle on the calibration start point. Press ZERO CALCULATE

BLUNIK INACTIVE

Z tells us that we have pressed ZERO CALCULATE

Drive to the point indicated as the end of the calibration, for example if we have been told 5400 mts. Then press ZERO CALCULATE

BLUNIK INACTIVE

We have measured *5123 mts*. We press MODE CALIBRATION

ROAD BOOK MEASURE

We correct the Road Book distance to 5400 with: + − -10 +10

ROAD BOOK MEASURE

We press ENTER SELECT to validate or VIEW ▸ to abandon the operation.

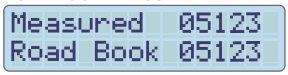
CALIBRATION CONFIRMATION

Calibration while running a sector **(BLUNIK Active)**. Pressing START ON initially works as a first ZERO CALCULATE if the calibration coincides with the start of the stage.

Let's suppose that we want to calibrate a partial of 5400 according to the Roadbook.

The procedure is identical to the previous, except for the MODE CALIBRATION key that we have to press three times until the Calibration screen appears.

ROAD BOOK MEASURE



Correct the Road. Book distance to *5400 with:* + − -10 +10

ROAD BOOK MEASURE

We press ENTER SELECT to validate or VIEW ▸ to abandon the operation.

CALIBRATION CONFIRMATION

6.15. START MODES

- Rallies with a start based on route card without schedule control. (Portugal Rally for example).
  - In these rallies we calculate the start times ourselves using our Route Card. We have to effectuate the start at our exact start time.
- Rallies based on Route Card with controlled schedule. (Rallies on closed roads).

- In these Rallies we calculate with the route card the time of entering the following time control.
- We are given the theoretical start time by a steward and the real start time we have to effectuate under the control of the starting steward. This will be the Real start time.

- Rallies with free-start (Monte-Carlo rally style).
  - In these Rallies it is us that decide the start time.
- Fly Start. In some cases the start is launched and the state time is taken as the exact time that we pass the starting cell.
- We also use Fly Start in practices so as not to have to wait for the exact second to start.

+info: ***START BUTTON ACTIONS*** *— page:040*

6.16. START BUTTON ACTIONS

When we use START ON to activate a stage, it always sets the real **Total** and **Partial** distances to Zero.

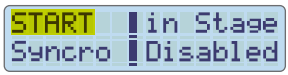
When we are with **BLUNIK Active**, pressing START ON acts to validate the changes in external reference measure that we have programmed.

+info: ***EXTERNAL REFERENCE MEASUREMENT CHANGES*** *— page:042*

With the START key parameter, we can configure other actions.

Left side of the screen. START Function.

START BUTTON



START Function — START in STAGE

We can choose the action mode of the START ON key on directly activating a stage: Syncro or FlyStart.

We can also activate the automatic offset by pressing MODE CALIBRATION

If we have programmed **START** with **FlyStart**, when we make a non-scheduled start, the start time will be the exact time we press **START.**

In the event that we have programmed **START** with **Syncro** the start time that BLUNIK uses will synchronise to 0 or 30 seconds, from second 45 to 15 it adjusts to second 0, from second 15 to 45 it adjusts to second 30.

+info: ***USE OF OFFSET*** *— page:043*

Right side of the screen. START in STAGE.

START BUTTON

START Function *START in STAGE*

Function performed by pressing 

when we use it with **BLUNIK Active**

- **Disabled –** Function deactivated.
- **Next Sta –** Next stage – Keep Clock.
- **Next S 0 –** Next Stage – Clock starts from Zero.

When dealing with **IMPOSED MEASURES** or **TABLES** type stages.

In the event of the **START** in **STAGE** function being enabled this key directly activates the next stage. The option for the clock not to be reset to zero can be chosen.

When dealing with sections in **LEARN** mode or **COPY** mode.

- Doesn't change stage. Changes mode.
- If it is in LEARN, goes to COPY.
- If it is already in COPY returns to COPY with the same database.
- This is very useful for regularity tests on circuits.

+info: ***LEARN/COPY MODE*** *— page:049*

Note: The START in STAGE function is always deactivated on turning the BLUNIK II on so as to avoid possible errors in subsequent rallies. The function of activating External Reference measure changes is always activated.

6.17. PRECISION ADJUSTMENTS

When we are in a **Timed section** it is important to regulate the precision of the *BLUE light* well.

If we leave a very wide margin we are going to be penalised a few points despite having the Blue light the whole time. If we put it too low, the requirements will rise and perhaps we will spend the whole stage in Green or Red without being able to maintain the Blue.

The offset can be used in Rallies where the tenths are rounded off, leaving only the seconds.

The corrections to *+-10 mts* can be good for some rallies, but for others

+-2mts may be better.

Examples:

Blue	*Decal*	*Corr*	
0.3s	+00.0s	02mt	Precision Rally.
1.0s	+00.0s	10mt	Timed GPS rally.
1.0s	-00.5s	10mt	Timed GPS or Manual rally.

6.18. EXTERNAL REFERENCE MEASURE CHANGES

In some rallies we have to change measurement at points where the distance is not given. The point is only indicated using a photo or a Figure in the Road book (external reference).

When programming the Stage:

- We program the measures normally.
- Putting 000k000 at the unknown distances.

During the **Timed section** (**BLUNIK Active**)

When the next measurement change is unknown, the BLUNIK II tells us by displaying **START!** in the part of the screen corresponding to the imposed measure.

Exactly as we pass each of the external reference points we press START ON

The distance measured on pressing **START** will immediately be entered in the position that had been programmed as 000k000 and the BLUNIK II will recalculate the delay or advance depending on the measurements.

If on pressing **START we are behind** the measurement will immediately change and recalculate retroactively. If on pressing **START we are ahead** the measurement will change later.

6.19. UNKNOWN MEASUREMENT CHANGES

When we are not given one of the measurements of a partial until we reach the point at which we must change.

When we are not given one of the measurements of a partial until we reach the point at which we must change.

During the **Timed section** (**BLUNIK Active**)

By pressing STAGE we change the corresponding measurement and press ENTER SELECT

The BLUNIK will make the corresponding calculations.

6.20. DISTANCE CORRECTIONS

With **BLUNIK Inactive:**

We can only correct the distance by pressing -10 ◀ ▶ +10

With **BLUNIK Active:**

We can correct the distance by pressing -10 ◀ ▶ +10

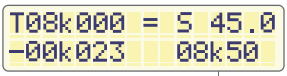
VARY TOTAL

We can also correct the distance by pressing and + − confirming by pressing ENTER SELECT

Do not confirm with VIEW ▸

We can modify the **TOTAL** distance directly. To do this we press ENTER SELECT and the screen will display:

VARY TOTAL



New distance we want to put

We modify the distance to modify and confirm by pressing ENTER SELECT (VIEW ▸ to not confirm).

6.21. FINISH BUTTON ACTIONS

When we are with BLUNIK Active.

When we reach the Finish of the **Timed section**, we can press FINISH OFF once and the information screen will be displayed.

At the end of the stage, we press FINISH OFF FINISH OFF (twice) to return to **BLUNIK Inactive.**

Pressing FINISH OFF cancels ACOUSTIC. To reactivate, press ENTER SELECT

Pressing FINISH OFF and holding serves to turn off the BLUNIK *(press and hold).*

6.22. OFFSET USE

Offset Function. This is used, unlike Zero, when a stage does not start at 0 distance.

Utility of Offset:

- In some Rallies the Road book is continuous, without resetting to Zero at the start of a stage.
  We have to put the stage start distance in the offset of the initial stages screen.
  The BLUNIK II will tell us the Total distance in concordance with the Road book but apply the measures with respect to the Zero of the stage.

- Out-of-phase starting point.
  - In the event that a starting point does not coincide with that shown in our Road book.
    If the starting point is *"XX mts further"* we have to put this distance in Offset.

    This can be done automatically by programming the parameter with the START button, pressing MODE CALIBRATION activates the offset. Set the partial distance to zero by pressing ZERO CALCULATE at the starting point in our Road book. When we press START ON to activate the stage, the partial distance measured by BLUNIK II goes to Offset automatically.

In other words BLUNIK II calculates according to the organiser's distances but shows us the distances of our Road book.

6.23. CALCULATIONS MADE BY THE ZERO/CALCULATE KEY

Initial screen of the stage programming.

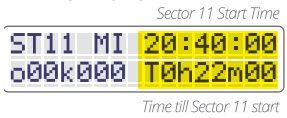
Action of the ZERO button:

- Puts the offset distance to 0.
- Calculates the start time of the current stage.

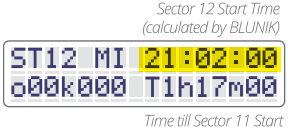
Stage start time = Previous stage start time + Time allocated for previous stage.

Previous stage (that we do not see on the screen).

INITIAL SECTOR SCREEN



Current stage (that we see on the screen).



On pressing ZERO CALCULATE the BLUNIK II adds the 22 minutes to 20h40 of stage 11 so as to calculate 21h02 as the start time for stage 12.

In other words BLUNIK II can help us to add the minutes of the route card correctly.

On the partial stage programming screens.

Operation of the MODE CALIBRATION key to calculate **e=v×t** and **t=e/v**

From the partial STAGE screens, the MODE CALIBRATION key calculates the lap time till the change of average. If we modify the lap time and press MODE CALIBRATION again, it will calculate the new distance that corresponds to the modified time.

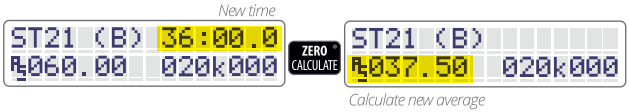
This can be useful when we want to calculate lap times for a set distance. Also when we are told that we have travel at an average for a certain time.

Pressing MODE CALIBRATION calculates lap times at km 20 *(t=e/v)* taking the previous partials into account.

Pressing MODE CALIBRATION calculated the new distance for the lap time *(e=v*t)* taking the previous partials into account.

Operation of the ZERO CALCULATE key to calculate *v=e/t*

If we change the time.



The average calculated is that of partial B.

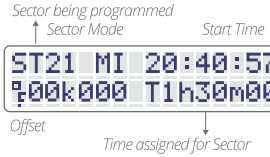
Calculate the average of a link v=e/t:

Let´s assume a 60km stage. We have a stage time of 1h30. The **timed section** is 25km.

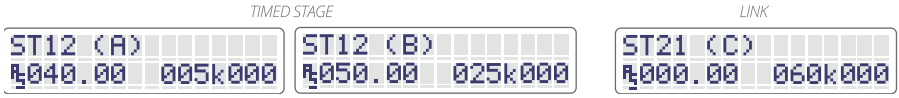
- from Km 0 to Km 5 at 40km/h — Partial (A).
- from Km 5 to End of timed section (25km) at 50km/h — Partial (B).
- from Km 25 to the end of the section (60km) is the link — Partial (C).

We do not have the average and we want to calculate it:

INITIAL SECTOR SCREEN



On the initial Section screen we enter the total time for the section. We then program the partials.



From the Partial (C) screen we press ZERO CALCULATE and obtain:

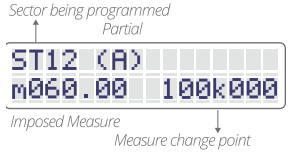
That is, we have to maintain an average of over *35.89 km/h* to reach the next section.

If any partial distance is at zero, to make changes of visual average this calculation cannot be made until we have made the change of average.

6.24. "IMPOSED MEASURE" MODE

To program a section to imposed measure we have to program the averages or speeds and the change points of the average on the Partial screens.

PARTIAL SCREEN



For example, in BLUNIK format:

- at 50km/h till km 5.
- at 40km/h till km 7.
- at 20km/h till km 10.

For example, in another format it is translated to BLUNIK format:

- at 50km/h for 5 km = till km 5.
- at 40km/h for 2 km = till km 7.
- at 20km/h for 3 km = till km 10.

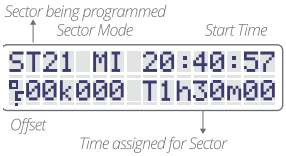
+info: ***DATA VALIDATION*** *— page:032*
+info: ***CALCULATIONS MADE BY THE ZERO/CALCULATE KEY*** *— page:044*

6.25. "ROAD BOOK" MODE

For this mode only sections 1 to 32 can be used.

When we access the Initial section-programming screen

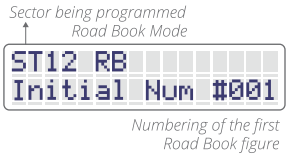
INITIAL SECTOR SCREEN



By pressing MODE CALIBRATION we select RB mode Roadbook.

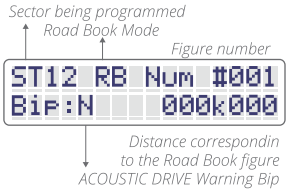
By pressing PARAM ◂ VIEW we go from the Initial screen in imposed measures programming mode to the Initial screen in Road Book mode where we can enter the initial numbering of the Road Book figures.

INITIAL SECTOR SCREEN



Pressing VIEW ▸ takes us to the following screens.

ROAD BOOK SCREEN



Where we can enter the distances.

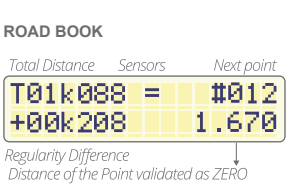
Pressing PARAM ◂ VIEW goes back to the previous Partial.

Pressing MODE CALIBRATION activates the *Bleep* in this Partial.

OPERATION OF BLUNIK II PLUS IN ROAD BOOK MODE

THE RB (road book) operation mode is compatible with AS mode (imposed measure).

When we activate a sector in RB mode, a new screen appears:



From this screen: by pressing ZERO CALCULATE we can begin validating the figures.

Pressing ZERO CALCULATE functions as partial from other screens. Pressing ENTER SELECT functions to return to the RB screen.

6.26. "LARGO ENLACE" MODE

In rallies like the Monte-Carlo Rally, the stage starts are free but there is a set time to complete each section.

BLUNIK II can be programmed so that section ST00 is the control of a complete stage. It is as if we have two BLUNIK.

At the end of each Timed section we return to ST00 with the distance and time controlled.

To program the section ST00 for a long link we have to go into **STAGE** and press MODE CALIBRATION to get **LL mode (Long Link).**

To set the distance to zero we have to press ZERO CALCULATE from this screen.

Program the start time and press ENTER SELECT

Other sections are programmed normally. At the end of each Timed section we press FINISH OFF FINISH OFF and return to ST00.

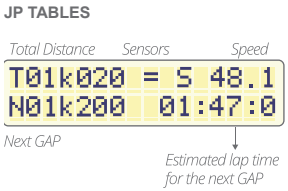
On reaching a Timed stage, we press FINISH OFF FINISH OFF , we select the corresponding sector and we press START ON at the start.

Note: We can only set the Total distance of ST00 to zero from the INITIAL STAGE by pressing Zero.

When the BLUNIK has section 0 programmed in LL occasionally an L will appear in the place of the Sensors.

6.27. "IMPOSED TABLES" MODE (JP)

When a Rally gives us tables to follow, we can use the JP mode. In this operation mode the BLUNIK II continuously calculates the lap time for the next point N of the table.



The indication N01k200 is the distance for which the BLUNIK II calculates the lap time.

When the Total distance of BLUNIK II reaches the distance N, it recalculates this adding the programmed gap.

The **GAP TABLES** parameter determines the interval (GAP) that is added to **N**.

If we have **ACOUSTIC DRIVE** it will warn us each time that we reach **distance N** and we jump to the next.

If we have **B-DATA-FAST** we can modify **distance N** continuously as we see fit.

If the BLUNIK shows us a lap time later than that indicated by the table, we have to accelerate.

If the BLUNIK shows us a lap time earlier than that indicated by the table, we have to slow down.

When we use the BLUNIK with the **JP mode** the averages and changes of average programmed in **IMPOSED MEASURE** mode are not lost. In this way we can combine **TABLES** and **MEASURES** in the same section without the need to use **START** in **STAGE**.

6.28. MODO "APRENDER / COPIAR"

The **LEARN/COPY** operating mode is implemented in sections 40 to 45.

- Sections 40 to 44 have a capacity of 20 minutes.
- Section 45 has a capacity of 120 minutes.
- If we use a single section, this can use the capacity of the following. For example, if we only use Section 40, the capacity is 220 minutes.

The **learn** function records a time/distance table in the BLUNIK II database.

The **copy** function reproduces the time/distance table recorded. It gives us indications as if it were a regularity section.

The start of a *"learn section"* or in a *"copy section"* never uses the Synchronised **START KEY**, even if it is activated.
The start time of a *"learn section"* cannot be programmed.

"Learn section" with imposed measure.
Sections 30 to 35 are always recorded as learn in the database of sections 40 to 45.

Regularity on a circuit:
To use the learn/copy function on a circuit we have to enable **START** in **STAGE** on the **START KEY** screen. We will program the sector in learn.
On starting the reference lap we press 

On finishing the reference lap and starting the first lap we push 

again and the BLUNIK will go from lean to copy. On each lap we press 

again.

+info: ***START BUTTON ACTIONS*** *— page:040*

6.29. "PARTIAL COPY" MODE

Regularity by sections.

In rallies like Portugal Historic Rally tests are usually set in which we have to repeat the same time over different distances.

For more information, consult ***info@blunik.com***

6.30. SCREEN II SCREEN FOR THE DRIVER

- External screen just for the driver.
- Enables the monitoring of regularity to the tenth of a second, at a glance, without taking your eyes off the road. With this, many drivers have achieved the prized 0.0 points at many secret controls.

SCREEN II is an accessory for Blunik II and Blunik II Plus, which aims to give more information to the driver and release the navigator at tense difficult to navigate moments.

It is a graphic regularity indicator perfect for the driver.

It reduced the driver's reaction time to the navigator's orders, and makes driving more comfortable by not having to look away.

Drivers that have tried it don't let it go, and many achieve the "magic" of 0.0 points.

It is not programmed. Does not calculate anything.

It has just one button to choose the type of view.

Screen contrast is adjusted via the Blunik.

Blunik II accessory: Connect and go. With 1.5m connection cable included. If you have other accessories connected, **you will need a Multi-Cable accessory.**

VERSIONS

The latest version available is the 3.00.

If you have an earlier version, you can update free. (ask for information at **info@blunik.com**)

INNOVATIONS

Access to the new "Timing screen".

Two Screen II can be connected at a time to the same Blunik II so you can always see the "Timing screen" *(The Multi-cable accessory is required).*

If we have BLUNIK II PLUS, it will indicate on the screen the imposed measure specifying whether this is going to go up or down.

6.31. B-SPORT DRIVE

Route compensator.

Sport Drive is a Blunik accessory that applies your "cut" percentage square the distance with the Road Book.

Did you know that in regularity rallies it's more important to follow the road book line and not cut?

In **regularity sport rallies or regularity rallies on closed roads** corners are cut, thus using the Blunik route compensator is the best you can do to square the distances and stick to the regularity.

In **rallies on open roads**, it seems simpler to follow the same route as the organiser, but are you really sure that your driving style is always exactly the same as the road book? The SPORT DRIVE route compensator is the accessory you need.

An ingenious driver and engineer designed SPORT DRIVE. You can tell this fantastic Blunik II accessory how you are going to drive and it will intelligently subtract the metres when you cut a corner.

You will manage to square the metres with the road book whatever your driving style.

You will discover how many metres you cut, and what your style is in your most familiar sections.

Incredible but true. Only when you use it will you believe what it does. BLUNIK II Accessory. Connect and go. Connection cable included. **If you have other cables connected, you will need a Multi-Cable Accessory.**

The options and parameters related to SPORT DRIVE are configured with the Blunik when the device is connected. ***(Plug and Play style).***

NOTE

This is a device for advanced navigators. We recommend you practice with it before going on a rally.

6.32. B-SPORT CALCULATOR

Route compensator and calculator to adjust the calibration.

Sport Calculator is a Blunik accessory for **expert navigators** that want even greater precision.

Sport Calculator is the perfect complement for Blunik II to lead the regularity rallies where a few decimals can put you on, or take you from, the podium.

Sport Calculator is a Blunik accessory that applies your "cut" to square the distance with the road book.

Ideal for regularity sport rallies, regularity rallies on closed roads and open roads.

Incorporates the route compensator, automatic calibration corrector and route factor corrector.

The different styles of rally and timing make us think more, study and know more. Fantastic for those who are already experts, a little nerdy, and that bang their heads to save decimals at every opportunity.

Sport Calculator is a 2 in 1.

DRIVE FUNCTIONS

A phenomenal apparatus so as to manage to square the metres with the road book whatever your driving style.

It measures what you cut, when you cut, and subtracts it so you stick exactly to the road book.

CALCULATOR FUNCTIONS

Corrects you calibration.

Is it the case that when you finish a section and the distance doesn't square, you think about changing the calibration of the Blunik II?

Well, this is the answer, with the advantage that it does it during the section (not afterwards) to save you points in classification.

It corrects the route factor (SPORT DRIVE percentage) when you correct metres to square with the road book.

Incredible but true. Only when you use it will you believe what it does.

Accessory for BLUNIK II version 4.03 and above. Connect and go. With connection cable included. **If you have other accessories connected, you will need a Multi-Cable Accessory.**

The options and parameters related with SPORT CALCULATOR are configured with the Blunik when the device is connected. *(Plug and Play style).*

NOTE

This is a device for advanced navigators. We recommend you practice with it before going on a rally.

6.33. B-ACUSTIC DRIVE

Acoustic warning for regularity and changes of average.

Did you know that acoustic signals reach our brains more quickly? The quicker you have the information, the quicker you react and/or are aware of the changes of average.

Acoustic warning for regularity.

"Piiiu, piiiu" if you are behind.
"Pooow, pooow" if you are ahead.

Blunik II Accessory. Connect and go. With connection cable included. **If you have other accessories connected, you will need a Multi-Cable Accessory.**

Te avisa acústicamente de los cambios de media, del atraso y/o del adelanto que llevas.

Automatic acoustic warning of the changes of average, of the delay and/or advance that you have.

If you are the driver and you are concentrating on the road, the information reaches you at the ideal moment without you noticing. It is a great help in regularity while you concentrate on the road.

If you are the navigator and at stressful times you worry about not coping with everything, the ACOUSTIC DRIVE does it for you: a bleep and the regularity continues!

Ideal for those on motorbikes.

NOTE

It is not tiresome or annoying since it stops insisting when it sees you cannot reach the average.

It is not programmed. It does not calculate.

The options related with Acoustic Drive are configured with the Blunik when the device is connected. *(Plug and Play style).*

6.34. B-SUPER-ACUSTIC DRIVE

Acoustic warning for regularity and changes of average. With adjustable volume and headphone connection option.

Did you know that acoustic signals reach our brains more quickly? The quicker you have the information, the quicker you react and/or are aware of the changes of average.

Acoustic warning for regularity.

"Piiiu, piiiu" if you are behind.
"Pooow, pooow" if you are ahead.

Blunik II Accessory. Connect and go. With connection cable included. **If you have other accessories connected, you will need a Multi-Cable Accessory.**

Automatic acoustic warning of the changes of average, of the delay and/or advance that you have.

If you are the driver and you are concentrating on the road, the information reaches you at the ideal moment without you noticing. It is a great help in regularity while you concentrate on the road.

If you are the navigator and at stressful times you worry about not coping with everything, the ACOUSTIC DRIVE does it for you: a bleep and the regularity continues!

Ideal for those on motorbikes.

NOTA

It is not tiresome or annoying since it stops insisting when it sees you cannot reach the average.

It is not programmed. It does not calculate.

The options related with Acoustic Drive are configured with the Blunik when the device is connected. *(Plug and Play style).*

MORE THAN AN ACOUSTIC DRIVE

SUPER ACOUSTIC DRIVE has all the functions of the ACOUSTIC DRIVE and 2 more:

- Volume regulation with a potentiometer.
- It has an RCA audio output so you can connect it to you helmets.

6.35. B-PAD

Number pad to program sections with Blunik II. Program when you want with greater ease.

B-PAD is a number pad to enter data more comfortably when you are programming sections with the Blunik.

Remember that with Blunik II you can program sections the day before, 1 hour before, when you are on the link, just at the start and even during the section itself. With the B-Pad it can be done with greater ease.

It is light, resistant and extra-flat. It can be fixed with Velcro wherever you want.

Blunik II Accessory. Connect and go. With connection cable included. **If you have other accessories connected, you will need a Multi-Cable Accessory.**

It is not programmed. It does not calculate.

6.36. B-DATA-FAST

In demanding regularity rallies, with changes of average, short links, sections with tables and many other regularity tests, entering the data in the Blunik is greatly improved by the B-DATA FAST.

New accessory for the Blunik II Plus so as to enter data quickly and efficiently even when the car is racing and moving a lot.

If you are someone who programmes everything to the last detail and in the sections with tables you want to be on top of everything, B-DATA FAST is ideal for you.

Also with B-DATA FAST you can follow the tables sections much better, even if the tables are irregular.

FUNCTIONS

Potentiometer for data entry:

- Key PARAM ◂ VIEW
- Key VIEW ▸
- Arrow key -10 ◀
- Arrow key ▶ +10

Blunik II Accessory. Connect and go. With connection cable included. I**f you have other accessories connected, you will need a Multi-Cable Accessory.**

It is not programmed. It does not calculate.

Only works with BLUNIK II PLUS.

6.37. B-REMOTE

Remote keypad for Blunik II. If you want to have the Blunik keys close to your road book and fully to hand, B-Remote is ideal.

B-Remote is a remote Blunik II keypad. It has the most useful functions used during the regularity stages.

Very useful for navigators harnessed to the "bucket" and with reduced mobility.

The ZERO key is special, acting when you stop pressing **so as to be more precise at each partial measure point.**

It is light, resistant and extra-flat. It can be fixed with Velcro wherever you want.

Blunik II Accessory. Connect and go. With connection cable included. **If you have other accessories connected, you will need a Multi-Cable Accessory.**

It is not programmed. It does not calculate.

6.38. B-PEDAL

Pedal to link to your Blunik so as to be able to mark partial distances with your foot. Providing maximum precision. Useful for navigators in bucket seats and harnesses.

Allows the navigator to do the **"ZERO" function with a foot.**

Very useful for navigators harnessed to the "bucket" and with reduced mobility.

Acts when you stop pressing so as to give better precision at each partial measure point and provides greater efficiency by leaving hands free to do other things.


BLUNIK II PLUS

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