USER GUIDE

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DESCRIPTION OF BLUNIK II

BLUNIK II is a device with all the necessary functions for regularity rallies.

- ✓ Precision watch balanced by temperature
- ✓ Possibility of synchronizing watch to a tenth of a second
- ✓ Precision distance measurements
- ✓ Intelligent use of wheel sensors
- ✓ Possibility of correcting the distance at any time
- ✓ Programmable speed tables
  - o Permits 100 changes in average
  - o Possibility of change in average in external reference points
  - o Possibility to correct the time and the average within a stage
- ✓ Adaptation to all kinds of rallies
  - o Regularity with averages
  - o Regularity by stage (Portugal)
  - o Regularity with tables (Costa Brava)
  - o Italian regularity
  - o Circuit regularity
  - o Criteria-type regularity

Constantly evolving software. Free updates possible.

DESCRIPTION OF PARAMETERS

ADJUSTMENT OF PARAMETERS

With the **PARAM** button you can adjust specific parameters on your BLUNIK, according to your needs and wishes.

The following parameters can be adjusted and/or modified at the initial **OUT OF STAGE** screen. This means that, when you are in a stage, you can only access certain parameters.
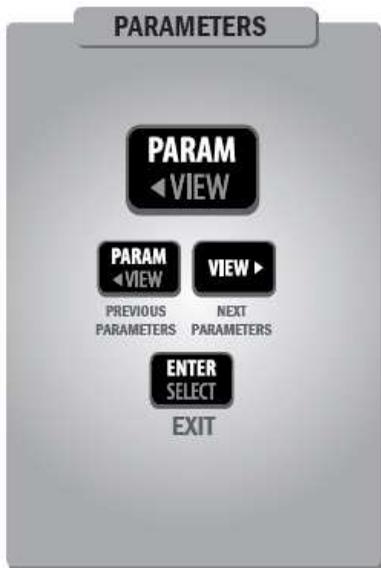
- CLOCK SYNCHRO
- TIRES
- CALIBRATION
- SENSORS
- BLUE LED
- NIGHT LIGHTING
- Last Digit
- DIFFERENCE
- DISTANCE UNITS
- Corrections
- START KEY
- START in STAGE
- Interval/Measurement
- Sensor Voltage
- TRIP TOTAL

Parameter: CLOCK SYNCHRO

To synchronize the BLUNIK clock, enter the exact hour, minute, and second. When the reference clock displays the desired time, press **ENTER**.

Your clock is now synchronized!
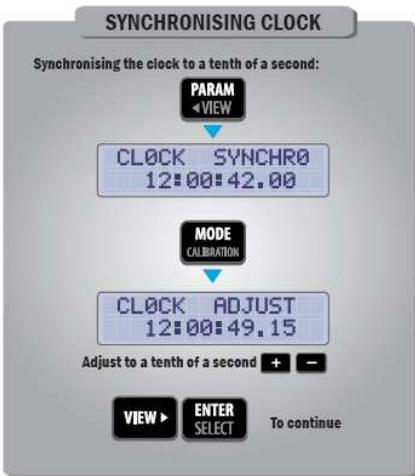
If there is a small difference of tenths of a second, return to the clock set up and press the **MODE** button to go to the **CLOCK ADJUST** screen.

Using the **+** or **–** keys, adjust the time shown on the clock higher or lower by a tenth of a second. Exit using the **ENTER** button.

Parameter: TIRES

With this parameter you can select up to 4 different kinds of wheels (A, B, C, D).

For example: dry, rain, snow, or dirt tires.
This is also very helpful if you use more than one vehicle. BLUNIK can be easily transported from one car to another, as the features of different cars can vary.

Note that each one of the four tire options has its own specific calibration and its own sensor selection configuration. In addition, it also memorizes the appropriate voltage for each sensor. (Sensor Trigger).

The saved parameters are:
- Parameter: Calibration
- Parameter: Sensor Selection
- Parameter: Sensor Trigger

Parameter: CALIBRATION

BLUNIK's calibration helps to adjust the measurement of distance. It is important to note that this is the measurement put forth by the Rally organizer, not necessarily the actual distance.

Theoretical Calibration. If the sensor only receives one impulse per rotation of a tire, the theoretical calibration parameter is the diameter of the tire in mm multiplied by 20.

For example:
If you have a 550mm wheel, the calibration will be 11000/001.
If there are two impulses per wheel, the calibration will be 5500/001.
This calibration is an approximation due to the difficulty of precisely measuring a wheel's diameter.

In order to achieve the proper calibration, use the following recommended procedure:

Calibration Procedure

From the current screen, press the **ZERO** button at the exact point where the calibration zone begins.

Cover the calibration zone.

Once you have arrived at the end of the zone, stop the vehicle and press the **ZERO** button again.

To calculate the calibration, press the **CALIBRATION MODE** button and enter the exact distance covered according to the roadbook provided by the organizer. Then press **ENTER** to exit.

BLUNIK is now calibrated!

Correcting the Calibration

With this option you can modify the calibration. This means that you can enter the calibration from your own calculations.

BLUNIK uses the following formula:

$$\textbf{New calibration} = \frac{\textbf{current calibration x RoadBook distance}}{\textbf{distance covered}}$$

On the same screen you can also adjust the number of impulses BLUNIK takes into account:

       001 = All,
       002 = every other,
       004 = every fourth,
         Etc.

BLUNIK has a limit of pulses per second. This means that it has a speed limit in the acquisition of pulses. Therefore, you must take this feature into account when adjusting the number of impulses.

Parameter: SENSORS

SENSOR

Sensor selection

(A) <u>L</u>eft Only
(A) <u>L</u>eft Slw.Wh
(A) <u>R</u>ight Only
(A) <u>R</u>ight Fst.Wh
(A) <u>R</u>ight Fst.Wh
(A) <u>B</u>oth Fst.Wh
(A) <u>B</u>oth Slw.Wh
(A) <u>B</u>oth Average

+ **−**   **MODE** CALIBRATION
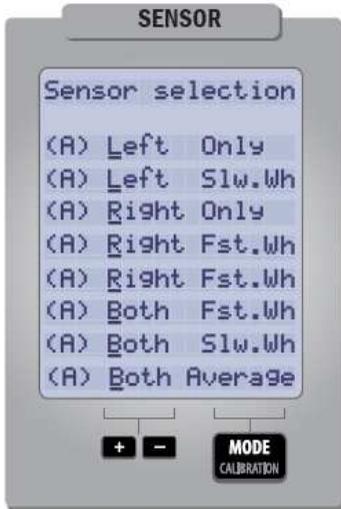
BLUNIK collects positioning data through one or two sensors. Installing two sensors is highly recommended, as this will increase precision considerably.

With the **"Sensor selection"** parameter you can tell the device which sensors you want to be active and in which mode.

You can also initially choose between three basic options:
- "Left Only"   Left wheel sensor activated.
- "Right Only"   Right wheel sensor activated.
- "Both Average"   Both sensors activated.

With the "Both Average" option, and by pressing the **MODE** button, you have the option of choosing three modes:
- "Both Fast Wheel"   In this mode, the device works with both sensors at the same time, but taking the fastest wheel as its reference (this is very useful for vehicles that tend to have wheels come off the ground on curves, as it takes the supporting wheel as its reference).

- "Both Slow Wheel"   In this mode, the device works with both sensors at the same time, but taking the slowest wheel as its reference (this is very useful for vehicles with sensors installed on traction wheels, considering that if they slide when accelerating, it takes the slowest wheel - that which is not sliding - as its reference).

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- "Both Average"   In this mode the device takes the average of both sensors.

The possibility of installing two sensors and using the "Both" mode has the great advantage of continuing to count normally with the active sensor in the case of a broken sensor, and it indicates if there is a failure in one of the sensors.

Checking the proper operation of the sensors

The reading from the sensors depends directly upon their proper mechanical installation. Therefore, it is essential to check the sensors.

BLUNIK has a function to check if the impulses from the sensors are correct.

To access this function, enter the "**Calibration**" parameter:

```
* Calibration *
(A)  04903  /002
```

Press the **MODE** button and the following screen will appear:

```
L_ 00        000
R_ 00        000
```

- **L_00**: Indicates the impulses with an error larger than 25% in relation to the previous impulse (Left wheel).
- **R_00**: Indicates the impulses with an error larger than 25% in relation to the previous impulse (Right wheel).
- **000**: Indicates the number of meters that the wheel has traveled in regards to the right. The top line shows the left wheel, and the bottom line shows the right. This appears when your vehicle is turning on a curve.

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Note: The values for these last two indicators should not vary while you travel along a straight stretch. In the case that they do vary, this means that there is an error in the sensor that counts less.

Parameter: BLUE LED
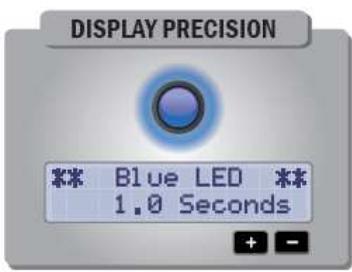
The **Blue LED** indicates proper regularity monitoring.

The **Blue LED** parameter is the marginal value of this indicator that shows you the acceptable accuracy.

Users can modify this parameter from 0.1" to 9.9".

RED
Throttle

GREEN
Brake

BLUE
OK

Parameter: NIGHT LIGHTING
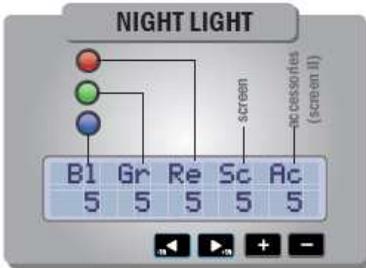
With this option you can manage the level of brightness for the three indicator lights, as well as the BLUNIK screen and the accessory screens in night mode.

Strength levels range from 1 (minimum lighting) to 5 (maximum lighting).

Changing the screen brightness

Press the **PARAM** button twice to display the lighting selection screen.

Here you can choose the type of screen lighting:
- BRIGHT/DAY   Day lighting.
- DARK/NIGHT   Night lighting.

You can adjust the nighttime brightness level in advance using the night lighting parameter.

Parameter: Corrections
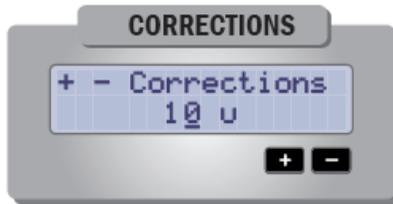
By default, the **+10** and **-10** buttons correct the distance in units of 10. With the CORRECTIONS parameter, you can change the correction units to less than 10 units.

Parameter: Last digit
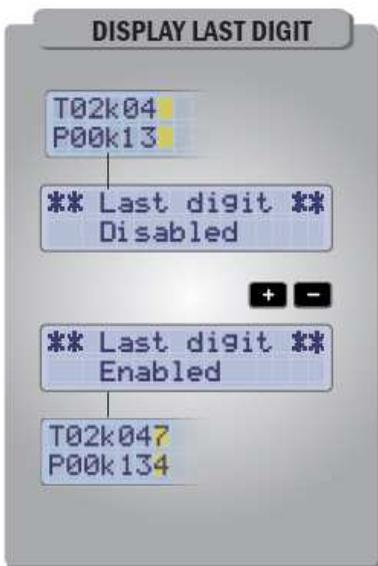
This section allows you to visualize partial and total kilometers in meters or decameters, if you so wish.
With either option the accuracy of the sensor reading is the same.

This option only affects the visualization of BLUNIK.

Parameter: DIFFERENCE

DISPLAY DIFFERENCE

T00k92
-00.3s

* Difference *
Time

＋ −

* Difference *
Distance

T01k952
-00k117

BLUNIK allows you to visualize the regularity in meters or seconds. In other words, it allows you to see the delays or advances that you have relative to the ideal (according to the stage programming) in meters or seconds.

With either option the accuracy is the same.

Parameter: Distance Units

DISPLAY UNITS

P001k090

Distance Units
Kilometers

＋ −

Distance Units
Miles

P001m257

With this parameter you can define the unit of measurement you wish to use with your device: kilometers or miles.

Parameter: START KEY

With this parameter you can define how BLUNIK will work when you press **START** to activate a specific stage.

- **"START PROCEDURE - Synchro"**: When you press **START**, the stage indicated on the home screen at this time will start (ST00, ST01, ST02, etc.) and will act in the following way:
    - If you press **START** between the 45th second before and the 14th second after the start time, BLUNIK will synchronize the departure time to 00 seconds.
    - If you press **START** between the 15th second and the 44th second after the start time, BLUNIK will synchronize the departure time to the 30th second.

- **"START PROCEDURE - Training"**: When you press the **START** button, the stage indicated on the home screen at that moment will start (ST00, ST01, ST02, etc.), counting from the exact moment in which you press **START**.

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- **"START PROCEDURE – with Offset"**: When a stage starts, do not set the total distance to zero. The distance on the screen before starting will save.

*Note***:** When using Offset, you must remember to remove it at the end of the stage. Otherwise, it will remain on for when you use the same stage the next time.

Parameter: START in STAGE

This parameter indicates the function that the **START** button executes <u>during an active stage</u>.

Normally we will set the parameter in "mixed" stages or in circuits. "Mixed" meaning those that are at average speed and at some point become imposed tables (or vice versa).

<u>Example 1</u>:

Mixed Stages

Begin the stage with an average speed, and move to the imposed tables at a specific kilometer.

Program a stage with **AS** (Average Speed) and the following with JP (Imposed Table).

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Use the **START** button to move from one stage to the next.

Circuit

Within a circuit make a reference point turn, with the others copying the same time as the first.

Program the stage with **Le** (LEARN).

Use the **START** button to move within the same stage, from **Le** to **Co** (COPY TIME).

The following **START** keystrokes restart **Co**.

Use **Next Stage (T=0)** to carry out the function, and set the timer to 0.

Parameter: Interval/Measurement - Gap Marker

This contains two values that you can modify:

- The freezing time of the stopwatch on the "Chrono View" screen, when passing the distance set by the GAP MARKER. This affects the stopwatch whether or not you are in Imposed Table Mode.
- The distance set in the imposed table.

For example: In the imposed table, with 200-meter intervals, you can set the parameter to "every **200** u".

The time range for freezing the stopwatch goes from 0" to 8", while that of distance set in the tables can be defined from 50 meters to 300 meters at intervals of 10 meters.

Parameter: Sensor Voltage

BLUNIK has compatible connections with inductive proximity sensors for 2 and 3 cables.
With this parameter, adjust the detection voltage on the different types of sensors that are compatible with your device.

Note: to obtain the voltage, consult the device manufacturer.

For more information, support, and manuals see: http://www.blunikracing.com/.

Parameter: TRIP TOTAL

TOTAL TRIP

** TRIP TOTAL **
01k040

ZERO
CALCULATE

** TRIP TOTAL **
00k000

This parameter shows the total distance covered from the last setting of the parameter to zero.

It is useful to know the total accumulated distance for all of the stages of the rally, for one stage, for one road section, or for the entire rally.

PROGRAMMING A STAGE

A "Stage" is the part of a race that can be just one road section or a timed stretch followed by a connection to the next stage.

BLUNIK has a capacity of 45 programmable stages.

Stage number   Stage start time

```
ST10 AS XX:XX:XX
°00k000 T0h30m00
```

Initial distance   Time allotted to stage
(normally 00k000)

For more information, see "How to Program a Stage" on our website: http://www.blunikracing.com/.

Operating mode for a stage:
- With the + and – buttons, choose the stage to program (ST01, ST02….etc.).
- Press **STAGE** to program the current stage.
- With the following keys <-, ->, +, - you can browse the BLUNIK screen. On this screen you can modify the stage's start time (upper right), as well as the time allotted to the stage (lower right).
- With the **MODE** key, BLUNIK allows 7 operating modes per stage:

AS MODE	AVERAGE SPEED	Go at an average speed
JP MODE	IMPOSED TABLE (JP)	Go to tables
LE MODE	LEARN TIME	Register lap time
Co MODE	COPY TIME	Copy lap time
PC MODE	PARTIAL COPY	Regularity by stage
RT MODE	REGULARITY TEST	Italian regularity
FS MODE	FIXED SPEED	Travel at fixed speed

AS MODE: AVERAGE SPEED

There are up to 24 changes in average allowed within stages 0 to 39 and up to **100** changes in average allowed within stages 40 to 45.
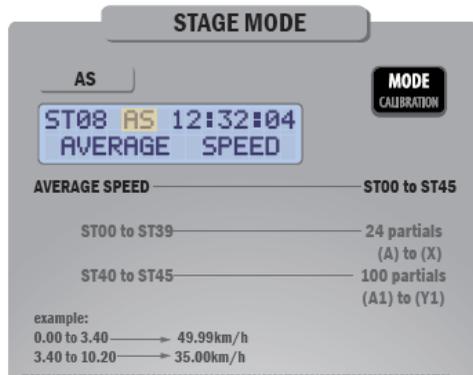
Program a stage in "AS" Mode

From the screen:

```
ST10 AS XX:XX:XX
°⌐00k000 T0h30m00
```

Press **VIEW** and enter the first average and its distance. Press **VIEW** again, enter the second average and its distance, and so on, and so forth.

For example:

TABLE OF AVERAGE SPEED		
From 0.00 km to 2.13 km	⟶	at 50 km/h
From 2.13 km to 3.21 km	⟶	at 48 km/h
From 3.21 km to 9.49 km	⟶	at 47 km/h
From 9.49 km to 13.94 km	⟶	at 43.89 km/h (calculated link) *OPTIONAL

50 km/h to 2.130 km

50 km/h to 2.130 km

50 km/h to 2.130 km

To enter the average speed again, press **PARAM VIEW**.
Press **ENTER** to exit the stage-programming mode.

Optionally, after entering the last partial of the timed part, if you press **VIEW** you can enter a final partial (up to the end of the stage) that will be the road section. Press **ZERO CALCULATE**.
BLUNIK will calculate the average speed for the road section.
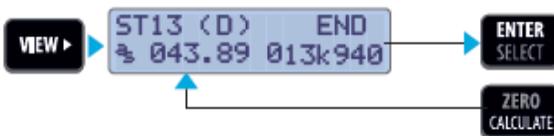
Change in average "TO EXTERNAL REFERENCE POINT"

If there is a change in average "TO EXTERNAL REFERENCE POINT" (change the average if you see a specific kilometric point on a sign post or on any reference listed by the organizer) to an unknown distance, proceed in the following manner:
Program the stage as described above, but when programming the distance, leave it at 000k000.

Note: in the case of a <u>change in average in an "external view reference point,"</u> you cannot finish programming the stage by pressing **ZERO**, because the updated average distance is unknown.

If the external reference point average is unknown, program an approximate average. If you know the actual average, enter STAGE and change it. BLUNIK will recalculate.

JP MODE: Imposed Tables (JP)

Use this mode for imposed tables.

In this mode, BLUNIK will indicate the estimated time, in terms of your vehicle's speed, at which you will arrive at the next 100 meters, or any other interval of measurement that you define in the "GAP MARKER" parameter.

BLUNIK knows <u>the distance</u> (total kilometers) at all times, and <u>knows the speed at which you are moving</u>. With these two values, BLUNIK calculates <u>the time at which you will arrive at the next 100 meters</u> or any other interval of measurement that you define in the "GAP MARKER" parameter (50, 150, 200 meters...).

If BLUNIK shows <u>more seconds than those that the navigator sees on the table, it means that you are behind and therefore must accelerate.</u> On the other hand, if BLUNIK <u>shows fewer seconds, it means that you are ahead and therefore must brake.</u>

As we don't know any regularity speed, you only need to program the departure time in **"JP"** Mode. You do not need to program the time spent in the stage.

Programming a stage in IMPOSED TABLES.

From the screen:

```
Time    T12:00:25
ST01    S12:00:10
```
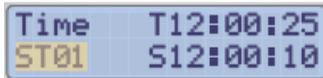
- With the **+** and **-** keys, choose the stage to program (ST01, ST02…etc.).
- Press **STAGE** to enter into the stage's parameters.
- With the **<-**, **->** and **+**, **-** buttons, enter the stage's departure time.
- Press **MODE** to select **"JP."**
- Press **ENTER** to exit.

```
ST08 JP 12:32:04
IMPOSED   TIME(JP)
```
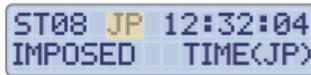
Note: In **"JP"** mode it is not possible to finish programming the stage with the **ZERO** key.

You will see the following screen within the stage:

Total distance   Speed
```
T01k214 = S 59.7
N01k300   01.59.4
```
Next partial   Approx. passage time
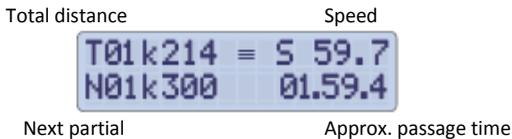
Beforehand, we must not forget to set the **"Gap Marker"** parameter in terms of the imposed table's reference interval (every 100, 200, or even every 90 meters for example):

- Press **PARAM** then **VIEW** to get the following screen:

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```
         GAP   MARKER
       2 S every 100u
```

- With the **<-** and **->** buttons you can move the cursor.
- With the **+** and **-** keys you can modify the second and meter values.
- Press **ENTER** to exit.

LE MODE: LEARN/CO: COPY TIMES

- In **LEARN** mode, BLUNIK records the lap times for the entire stage.
- In **COPY TIMES** mode, BLUNIK shows the recorded lap time.

BLUNIK makes it possible to **copy stages** with these two parameters. In order to do this, you do an initial lap of the stage in **"LEARN (Le)"** mode, and then in **"COPY (Co)"** mode if you wish to repeat the same stage.

To copy stages, use only stages from **ST40** to **ST45**. Stages **ST40** to **ST44** have a time capacity of **20 minutes** each, while stage **ST45** has a capacity of up to **60 minutes**.

In any event, if you use up the time in **ST40** (20'), your device will not stop and it will use time from the following stage (ST41) and so on, and so forth.
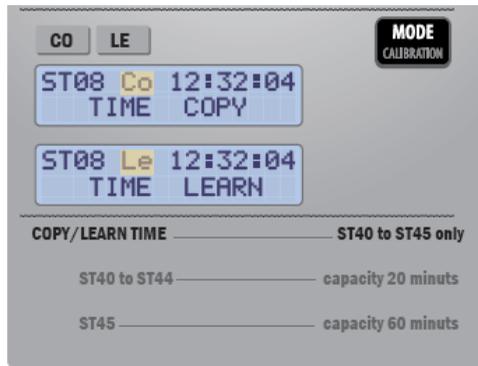
Programming a stage in LEARN (LE)

In this type of stage, use the following process to copy:
- The first lap in the stage (reference lap) must be done in LEARN (LE) mode.

From the following screen:

```
Time    T12:00:25
ST01    S12:00:10
```
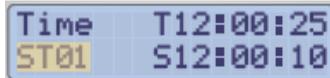
With the + and - buttons you must select a stage to program (from ST40 to ST45 only).
Press **STAGE** to edit the stage.

Press **MODE** to get to **"LE."**

```
ST40 Le 12:25:40
    TIME LEARN
```

Press **ENTER** to exit programming.

The process to start the stage is the following:

Press **ENTER/SELECT** to enter the stage.

In a LEARN or COPY section, you cannot use the programmed time for the automatic start. You can only use the **START** key, which will work in Training mode, even with Synchro mode activated.

BLUNIK shows the following screen while registering the stage:
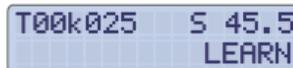
```
T00k025    S 45.5
           LEARN
```

Indicate the end of the stage by pressing **FINISH** **FINISH**

The process to copy the consecutive laps in the stage is the following:

Use the **+** and **-** buttons to choose the stage previously programmed in **LEARN (LE)**, with the one in which you conducted the reference lap.
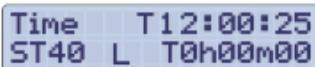
```
Time    T12:00:25
ST40  L   T0h00m00
```

Press **STAGE** to edit the stage.

```
ST40 Le 12:32:04
°F00k000 T0h00m00
```

Press the **MODE** key to select **COPY (CO)** mode.
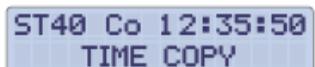
```
ST40 Co 12:35:50
    TIME COPY
```
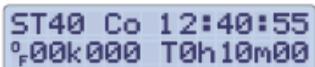
```
ST40 Co 12:40:55
°F00k000 T0h10m00
```

Press the **ENTER** button to exit the programming.

Now you can press the **START** key at the beginning of the stage and exit using the normal process. BLUNIK shows the difference in meters or in seconds with the stage in its first lap. You will see the following screen:
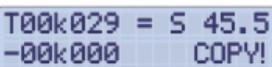
```
T00k029 = S 45.5
-00k000     COPY!
```

Press **FINISH** **FINISH**   at the end of the stage.

PC MODE: PARTIAL COPY

Use this mode to make "Regularity Tests by Stage" calls.

To do so, proceed in **AS** Mode: You can program as many partials or stages as the test provides at the chosen average speed (it will be the same in different partials), and with corresponding differences.

At the conclusion of the first stage, press **START** when passing through the reference point at the end of the stage. BLUNIK will calculate the actual average speed - in terms of slowing down or accelerating. At this time, the new average calculated speed in the first partial will be the reference speed in the following partials (or stages).
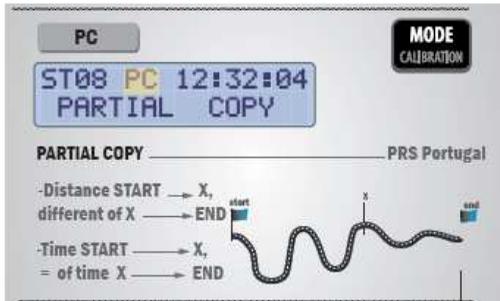
FS MODE: FIXED SPEED

This mode is useful for those stages in which you must maintain a specific fixed speed.
BLUNIK shows your acceleration or decrease in speed in Km/h regarding imposed speed.
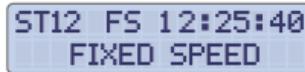
RT MODE: REGULARITY TEST

You must enter the lap times and the kilometers for the partials.

For more information, contact BLUNIK.

PROCESS FOR STARTING A STAGE

Start process at a programmed time

From the following screen:
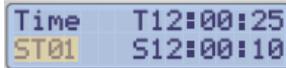
```
Time    T12:00:25
ST01    S12:00:10
```

With the **+** and **-** keys you can choose the stage you wish to begin (ST01, 02, 03…).
Press **ENTER/SELECT** to choose the stage. You will see the start time:
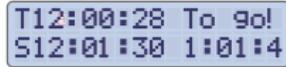
```
T12:00:28 To go!
S12:01:30 1:01:4
```

and the countdown. The **Red** LED will light up.
Press **START** at the beginning of the stage. The total distance will reset to zero.

```
T00k00  ⊥ S 00.0
To go!    0:45:0
```

You will see the countdown and the **Red** LED on the screen, which will flash **10 seconds** before departure and will turn **Green** at the starting time.

Delayed start process

From the following screen:

```
Time    T12:00:25
ST01    S12:00:10
```
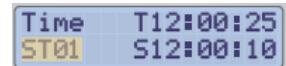
With the **+** and **-** buttons choose the stage you wish to begin.
Press **ENTER/SELECT** to choose the stage and to see the following screen:
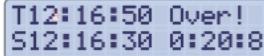
```
T12:16:50 Over!
S12:16:30 0:20:8
```

The lights will flash **Red** and **Green**, meaning that the start time has passed.

Press **START** at the starting point of the stage. You can press the button while driving, though it is advisable to do so while stopped, as it will result in better accuracy. The distance will start (T00K000).

The "regularity" screen will appear automatically.

Start process without programmed time

From the following screen:

```
Time    T12:00:25
ST01    S12:00:10
```
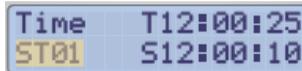
With the **+** and **-** buttons choose the stage you wish to begin.
Press the **START** button at the stage's exact start time and BLUNIK will start up.

The departure process will be different depending on your BLUNIK's parameters:

- If you select the parameter:

```
** START  KEY **
  Synchro
```

When you press the **START** button, BLUNIK will begin the stage shown on the start screen at that time (ST00, ST01, ST02, etc.), and will act in the following manner:

- If you press **START** between the 45th second before and the 14th second after the start time, BLUNIK will synchronize the departure time to 00 seconds.

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- If you press **START** between the 15th second and the 44th second after the start time, BLUNIK will synchronize the departure time to the 30th second.

- Selecting the parameter:

```
** START  KEY **
   Training
```

Immediately begin the stage shown on the start screen at this time (ST00, ST01, ST02, etc.) by pressing **START**.

- If you select the parameter:

```
** START  KEY **        ** START  KEY **
 Synchro  Offset          Training Offset
```

BLUNIK will begin the stage that is shown on the start screen at this time (ST00, ST01, ST02, etc.) when under the Synchro or Training option. However, it will not reset the total distance to zero. Instead, it will continue from the distance from the previous road section.

LEARN/COPY start process

The **START** key always works in Training.

FLY START "Launched" start process

Use the following parameter:

```
** START  KEY **
    Training
```

Exit by pressing **START**.

## ACTIONS IN AN ACTIVE STAGE

From this moment, BLUNIK will show you the time (in seconds) or the distance (in meters) that you are delayed. The LED will remain **Red** until you reach the desired average.

## Different screens within a stage

The following five views are possible while BLUNIK is timing a section or a stage:

- REGULARITY SCREEN

```
total trip                    speed
T00k076  ⊥ S  99.7
-00k146    ⅍=98.36
difference            imposed speed
```

- PARTIALS SCREEN

```
total trip                    speed
T00k299  = S  99.7
P00k299    ⅍=98.36
partial trip          imposed speed
```

- CHRONO SCREEN

total trip   speed
```
T00k357 ⊥ S  99.7
C:00:18.3 =98.36
```
chrono   imposed speed

- ROAD SECTION SCREEN

time   regressive trip
```
T12:05:20 01k480
R09:39.2 ↘=98.36
```
regressive chrono   imposed speed

- GRAPHICS SCREEN
  Accessed by holding down the **VIEW** button.

```
███          S 49.2
███████████
```
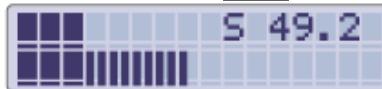
BLUNIK typically displays the regularity screen (the default screen) when beginning the stage.

To change the view, press **VIEW**.
If any errors occur during a stage, you can modify any parameter: average speed, stage start time, average changed distance, etc. To do so, press **STAGE**, modify the incorrect parameter, and exit by pressing **ENTER**.

BLUNIK recalculates all of the information to show the correct data.

PARAM Button pressed with active stage

Parameter: TIRE PRESSURE

```
TIRES Pressure
    0.0 bar
```
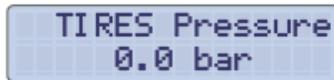
You can check the increase or the decrease in tire pressure in your tires due to weather conditions by entering into the "Tire Pressure" parameter.

Thus, if it has been calibrated at a low temperature that subsequently increases to a high temperature, your tire pressure will be affected by an increase in pressure and the diameter of the tire will be greater. This may lead to a variation in calibration.

With this parameter, by entering how much your tire pressure has increased or decreased into your BLUNIK, you can make an estimated calculation and vary the calibration to adapt to the tire's new diameter.

1.0 bar = 10 calibration units
Each car requires personalized values.
At the beginning of each stage the Tire Pressure is set to 0.0 bars.

PARAM + VIEW Button

Parameter: CALIBRATION

Within the timed section you can recalibrate the device to suit your needs, as is also the case in the "out of sector" view.

Adjust the measurement within a stage or section

It is useful to regularly verify your measurement with that of the RoadBook. To do so, when passing the external reference point marked in the roadbook, press **ZERO**. At this time, the screen will freeze on "Partial View" for 5 seconds. From this, you can check the distance against the indicated reference point and correct your measurement if necessary, using the **<-** and **->** keys.
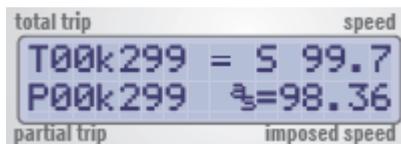
You can correct this by pressing **+10** or **-10**.

If the distance to cover is very large, and you want to add meters, press the ✚ key and the following screen will appear, in which you can enter the number of meters you wish to add:

```
UPDATE  TOTAL
+ 0000 Units
```

If you need to subtract meters, press the ➖ key and the following screen will appear, in which you can enter the number of meters you wish to subtract:

```
UPDATE  TOTAL
- 0000 Units
```

MODE Button

Modifying the reading mode for the distance within a stage
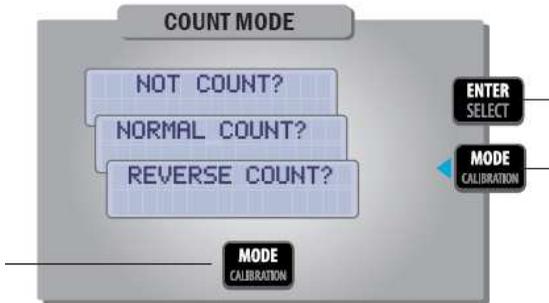
You can stop sensor readings or make it subtract meters. To do so, you must select the way in which the sensor counts kilometers by pressing the **MODE** key.

- Press **MODE** until you see the desired method of counting:
    - **STOP COUNT**
    - **REVERSE COUNT**
    - **NORMAL COUNT**
- Once you select the mode, press **ENTER** to exit.

On the BLUNIK screen, **N**, **R**, or **=** appear depending upon your selection.

END OF STAGE PROCESS

When finishing the timed section, press the **FINISH** key *__once__* at the finish line. The screen will freeze for fifteen seconds and will show you how many meters you have manually added or subtracted in the section, as well as how many meters BLUNIK has automatically corrected in the "Sport Drive" function (if it is available).

- Screen **without** Sport Drive available

Total stage distance   Speed

```
T02k573 F S052.0
-00k095     060.0
```

Difference in meters   Meters added by the navigator

- Screen **with** Sport Drive

Total stage distance   Meters corrected by Sport Drive

```
T02k573 F -030.0
-00k095     060.0
```

Difference in meters   Meters added by the navigator

Press **VIEW** to continue navigating the road section**.**

When arriving at the end of a road section or stage, press **FINISH** *__twice__* to get the following screen:

```
Time   T12:00:25
ST01   S12:00:10
```
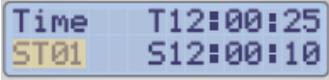
You can now choose the new stage.

EXTRA FUNCTIONS

Modifying a different stage from the current one

To modify a different stage from the current one, press the **STAGE** key
twice.
Using the **+** and **-** keys, choose the section you wish to modify. Once
modified or programmed, exit using **ENTER**.

You can change and edit the stage, but it will not affect the current one.

Calculating the start time

On the home screen for **STAGE**, the **ZERO CALCULATE** button calculates
the start time in terms of the previous stage.

Calculate lap time in terms of distance or vice versa

On the partial STAGE screen with the changes in average, the **MODE**
button calculates lap time in terms of distance or vice versa.

LEARN with average

The lap times in stages 30 to 35, which are programmed to an average
speed, are automatically saved in stages 40 and 45 (as if you were in
LEARN mode).

Example:
- Program the ST30 with the average speed and complete the
  stage. This records automatically, like with LEARN in ST40.
- Move to ST40 and program it in COPY mode, where you
  calculate the recorded section from ST30.

Calibration within a stage

You can calibrate within a stage. To calibrate, press **MODE CALIBRATION**
three times.
The calibration distance to be adjusted is the measurement between the
last two **ZERO** keystrokes.
The **START** button is also considered a **ZERO**.

Hiding the Display (Instantaneous Speed and Average)

In certain rallies the use of devices that show either the instantaneous
speed or average speed is prohibited.
- BLUNIK does not show, nor calculate the average speed.
- You can hide the instantaneous speed by pressing:

Press MODE until it leaves 24 h

Will be displayed:

  in Blunik II

  in Screen II

Note: Once set, it is impossible to deactivate the hide mode for the next
24 hours of use.

BLUNIK BASIC

BLUNIK offers new features with version 4.xx or later. You can choose:

Language
- English
- French

Mode
- Basic
- Monte-Carlo
- BLUNIK II

To access this option, hold down the **START** button for three seconds when turning on BLUNIK.

For more information, support, and manuals see: http://www.blunikracing.com/.
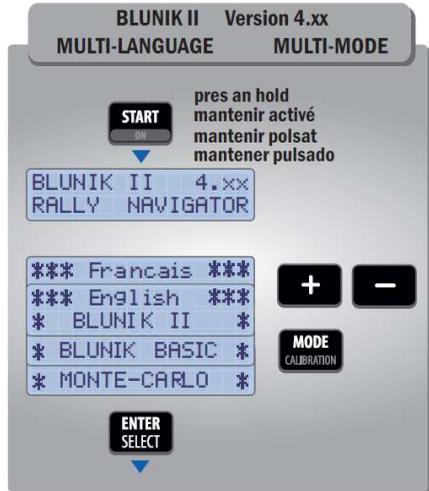
BLUNIK MOTECARLO

Long Monte-Carlo sections (Interconnected Stages)

In Monte-Carlo style races, there are no specific start times for the sections, although there is an allotted time to complete each leg. In other words, there is no specific time limit for each section, but rather a total time allotted for the stage.

You can program BLUNIK II so that stage **ST00** acts as a guide for an entire section – as if you had two separate BLUNIK devices. At the end of each timed section, go back to **ST00**, as it will keep the distance and time for the section under control.

How to program stage ST00 for long stretches (full section):
Enter into **STAGE** and press **MODE** to select **L** mode (Long Link). Set the distance to zero by pressing **ZERO**. Program the start time, total section time, and first partial (A) using the total distance of the section (calculate the average speed by pressing **ZERO**).

Program the remaining stages normally.

When you arrive at the timed section, press **FINISH** **FINISH** (twice). Then select the corresponding stage (ST01, ST02…) and press **START** at the starting point.

At the end of every timed section, press **FINISH** **FINISH** (twice) and BLUNIK II will automatically return to stage ST00.

For more information, support, and manuals, see:
http://www.blunikracing.com/

BLUNIK II ACCESSORIES

SPORT DRIVE

BLUNIK's Sport Drive accessory corrects possible road cuts due to sport driving.

BLUNIK adds up the units of distance according to a percentage determined by the driver. The percentage can be programmed differently in terms of the layout of the road.

This is very useful in Sport Regularity where the road is closed and you can take advantage of its entire width. You can indicate the compensation percentage to BLUNIK in terms of the layout. Normally, this percentage will be more to the left than to the right as it is more typical to cut in that direction. The percentage may vary depending on the road and your driving style, meaning that practicing in advance is necessary.


For a regularity at 50km/h (open road), you will usually drive on the right-hand side of the road and make a minimal cut so that the compensation rates will be lower.

Proceed in the following manner to access and configure the parameter:

Press **PARAM** then **VIEW** to get to the following screen:

The **MODE** key allows you to modify settings if you want Sport Drive to add or subtract meters.

With the **<**, **>**, and **+**, **-** buttons, you can modify the percentage.

Note: You can apply a different percentage to left curves and right curves.

SPORT CALCULATOR

SPORT DRIVE now contains calculation capacity, which allows for variation of SPORT DRIVE calibration and/or percentages in terms of corrections of distance covered.

You can apply a different percentage to left curves and right curves.

Note: This accessory is only compatible with BLUNIK II versions 4.03 and later. If you have a previous version, you must update the software.

SPORT CALCULATOR adjusts the calibration of your BLUNIK in terms of the corrections in distance that the copilot makes. Likewise, modify the percentage values for SPORT DRIVE based upon these corrections. It is essential that the measurement references be correct. Otherwise, your SPORT CALCULATOR will be useless.

With the **PARAM** key, you can access the SPORT CALCULATOR parameters:

```
* Calculator **
CAL:CU     SPO:CU
```
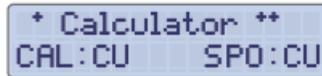
CAL: Calibration	C=Calculate	U= Update
SPO: SPORT DRIVE	C=Calculate	U= Update

C (Calculate and adjust): This option calculates and adjusts the calibration and/or the Sport Drive values each time that you correct the total distance while you compete in the timed section.

U (Update): This option updates and modifies the calibration and/or Sport Drive in the internal memory of your BLUNIK when you press the **FINISH** key.

Procedure:

During the timed section, press the **ZERO** key when passing the correct distance reference point.

The total distance is displayed frozen in the upper part of the screen and should match.

If the distance is incorrect, you can correct it with the **+/-** or **+10/-10** keys.

Once you have done so, the calibration parameters and/or Sport Drive will correct themselves after a few seconds.

This occurs as many times as you adjust the distance when passing a reference point.

You must press the **ZERO** key and then correct it.

If you do not want the SPORT CALCULATOR to adjust when you correct the distance, press the **ZERO** key again, immediately after correcting the distance.

If you want to permanently cancel your SPORT CALCULATOR, undo its programming in the parameter view.

```
 * Calculator **
CAL:       SPO:
```
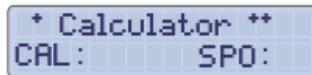
Note: You can quickly cancel the programming by pressing **ENTER** then **ZERO**.

This is extremely useful if you have any incident within the section (you mistakenly crossed, spun out or left the track, etc.), since setting the correct distance on the following reference point, or adjusting the calibration or Sport Drive is a major inconvenience.

In the case of an incident, first cancel the SPORT CALCULATOR function (**ENTER** + **ZERO**) and then adjust the distance using the following reference point.

ACOUSTIC DRIVE / SUPER ACOUSTIC DRIVE

The ACOUSTIC DRIVE accessory gives you the possibility of having audio warnings in different situations within a stage.

To access the configuration screen, follow these steps:
Press **PARAM** then **VIEW** to get to the following screen:
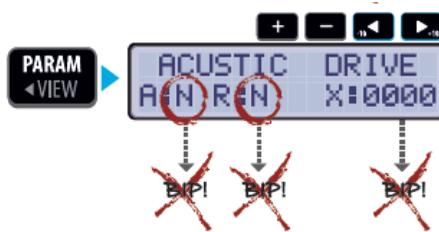
You have multiple possibilities:
If you want BLUNIK to give you an audio warning when you are off track, either while ahead or behind the margin of the fixed regularity in the **blue** LED parameter, configure BLUNIK as follows:

> "Y" (Yes) for the parameters
> "A" (Advance) and
> "R" (Behind)

With the **<**, **>**, **+**, **-** buttons, enter the modifications and exit by pressing **ENTER**.

If you want BLUNIK to warn you when you are approaching a change in speed, you must configure the X:0000 parameter. Using the **<-**, **->**, **+**, **-** keys, indicate the anticipated meters that you want and confirm by pressing **ENTER/SELECT**.

If you want BLUNIK to give you an audio warning at the interval when you are doing a stage with imposed tables, you can use the **"GAP MARKER"** parameter to configure the set distance on the imposed table, without leaving the interval parameter for freezing the stopwatch screen at zero.

Using the **<-**, **->**, **+**, **-** keys, enter the meters and confirm by pressing **ENTER/SELECT**.

Note: You can enter a distance TAG during a special with the **ENTER** key. The ACOUSTIC DRIVE will beep XXXX meters before the distance to the exact distance.

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SUPER ACOUSTIC DRIVE has more power and volume control. It has an RCA exit for helmets.

SCREEN II

Driver screen.

Reduce the driver's reaction time to the navigator's orders and make driving more comfortable by not having to look away.
The LEDs, just like the BLUNIK, show the driver whether the speed at which he/she is driving is average, too fast, or too slow. In addition to instantaneous speed, a segment bar will show you, graphically and numerically, how ahead or behind you are, or whether you are within the average.
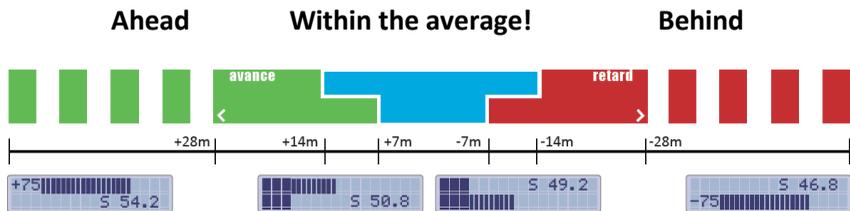
With the side button, you can switch screens between the graphic view of the regularity and the "in the stage" view.

MEGA SCREEN II

Characters larger than SCREEN II. Only one line.

BLUNIK PAD

Numerical keypad for quickly and conveniently entering data when programming stages.

# BLUNIK REMOTE

For working remotely with BLUNIK.
This is very useful for navigators who are strapped in and have limited mobility.

CONNECTIONS AND CABLING

CONNECTIONS

(two -wire probes)

Connector SubD 9

Wire	Connection
Red wire	+12V DC(of car battery)
Black wire	0V DC(of car battery)
Blue wire	Left sensor (negative)
Blue-white wire	Right sensor (negative)
Brown wire	Sensor common interface(positive)
Yellow wire	Pedal connection
Green wire	Screen Plus
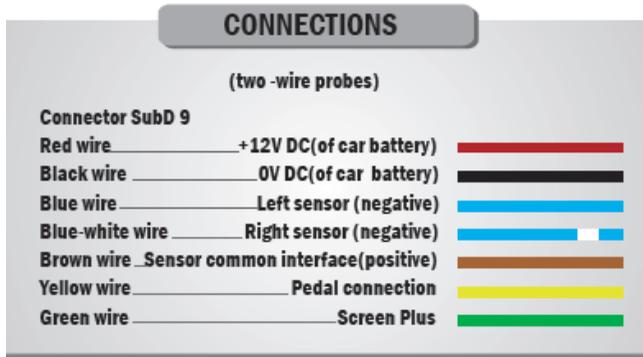
The electrical and sensor installations for BLUNIK must be done at a mechanic in order to achieve appropriate performance.

It is advisable that the car battery's 12V DC power that feeds the BLUNIK pass through a specific fuse protection, and not pass through accessory mode.

For more information, please see our website: http://www.blunik.com.