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Made in Italy



USER MANUAL

**Static multi-axis leveling platform
for 3D Laser Scanner or Robotic Total Stations**

Level-Plane 21 is a static multi-axis platform created for automatic (non dynamic) leveling to ensure total verticality of the equipment with accuracy of +/- 15" (or +/-3" with manual control) in all vehicle inclination conditions.

The structure is made of anodized aluminum, externally with a PVC cover to protect the mechanical and electrical parts from severe weather conditions and dust, removable to ensure internal inspections - IP66.

The top is made of stainless steel, specially designed for topographic tribrach with standard 5/8".

Powered by cable connection to the car-lighter-12 V - 5 A. (it's also possible to use autonomous power source, with 12V battery available as accessory)

The control of LP21 bluetooth version is possible through an APP, which can be installed on any Android device.

The Bluetooth module complies to the standard regulation CE, FCC, IC and TELEC

Level-Plane 21 can be mounted on vehicle roof bars or topographic tripod.



Bluetooth version with Android App (included)

Radio control version (radio controller included)

**ATTENTION !!!!**

**READ CAREFULLY THE PRESENT INSTRUCTION
MANUAL BEFORE USING THE EQUIPMENT**

**IT IS STRICLY FORBIDDEN THE USE OF THIS
EQUIPMENT TO PEOPLE AGED LESS THAN 18**

ASSEMBLY

Level-Plane 21 is shipped in a rigid carry case designed to insure its integrity during the transportation.

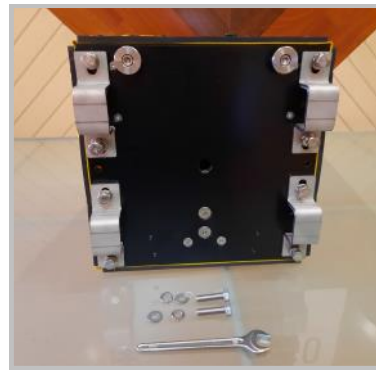


Level Plane 21 is equipped with roof bar brackets for mounting on the top of the vehicle.

The weight of the platform is about 7 kg and must be mounted or dismounted without any other tools.

Before mounting check that the distance between two bars is of 14 cm.

During the assembly operation please wear work gloves and work carefully.



Fix the Level-Plane 21 on the bars using the four brackets supplied with the appropriate bolts.

Connect the power cable **(B)** to the leveler's plug **(A)**



The leveler will automatically activate and the green light will turn on



INSTRUCTIONS OF USE

with topographic tripod

Set the leveler on the tripod using the 5/8" screw and connect the battery to its power connector



Install the tool on the Quick Bracket and mount it on the leveler, lock with the supplied knobs



Battery charging

Release the battery connectors



Connect the battery poles to the battery charger connectors respecting the positive and negative poles.



Connect the battery charger to the electricity



INSTRUCTIONS OF USE

RADIO CONTROL VERSION



In the Radio version of the LP21 the leveler is equipped with a dedicated radio controller and a battery charger.

The autonomy of the radio control is about 8 hours.



After activating the leveler, turn on the controller by using the button positioned on the top.

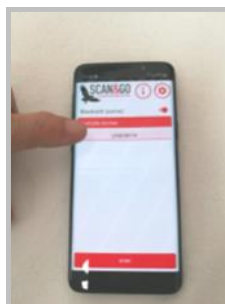
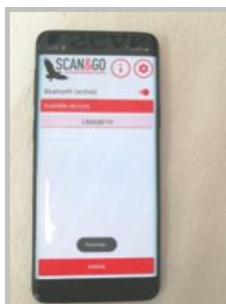
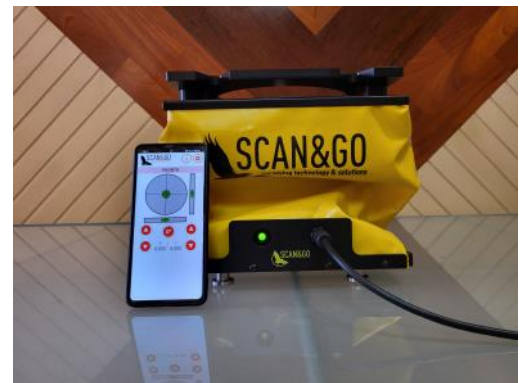
Remember to turn off the controller in the end of the working day.

Recharge the controller for the next day, when the battery charger led turns green, the recharge is complete.

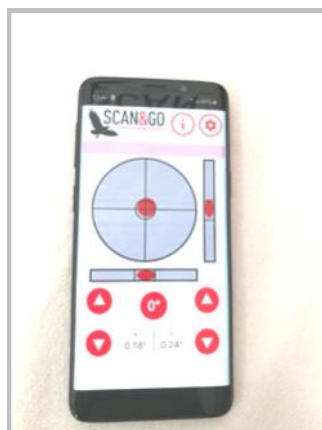
BLUETOOTH CONTROL VERSION

Activate the Level-Plane as described above, start the application on the Android device. (PHONE OR TABLET)
Activate Bluetooth and scan to find the leveler to be used on the Android device

Select the device and enter the **PIN code 3141**



After the activation the software screen will appear this way



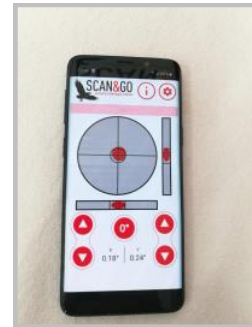
INSTRUCTIONS OF USE

The inclination of the plane platform is shown in hundredth of degrees in both longitudinal and transverse axes and the message "**BY HAND**" appears on the numeric display of cable controller.

Radio version



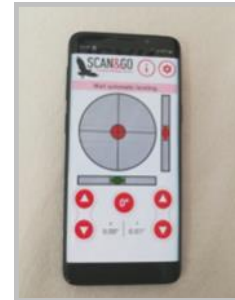
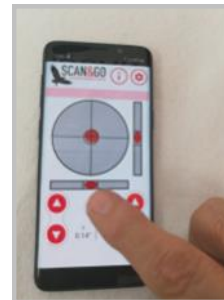
Android App



By pressing for a few seconds the button with the indication 0° (fig.1), the system proceeds automatically reaching the horizontal plane on both axes. During the procedure on the display is written **AUTOMATIC LEVELING**.



fig.1



When on the radio control unit, the angular values reach 0.00° on both axes and the message "BY HAND" returns on the display or on the Android App appears message "READY". It means the platform is leveled (fig.2).



fig.2



INSTRUCTIONS OF USE

MANUAL MOVEMENT OF THE ENGINES TO IMPROVE LEVELING

Acting on the engines works in the same way as if they were the screws of a topographic Tribach.
Move the motors in the **OPPOSITE DIRECTIONS TO EACH OTHER** (fig. 1 – fig. 2).



fig.1

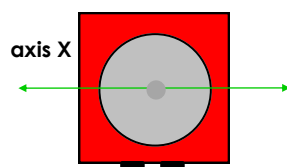
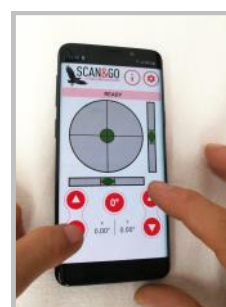


fig.2



Press the two buttons with the same intensity.



INSTRUCTIONS OF USE

MANUAL MOVEMENT OF THE ENGINES TO IMPROVE LEVELING

Acting on the engines as if they were the screws of a topographic Tribach.

Move the motors in the **SAME DIRECTION** (fig. 1 –fig. 2).



fig.1

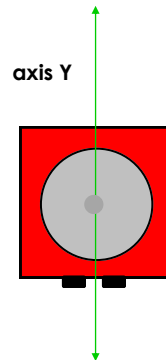
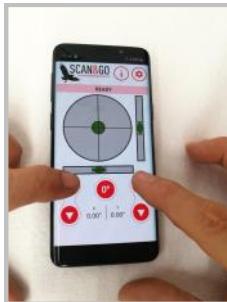
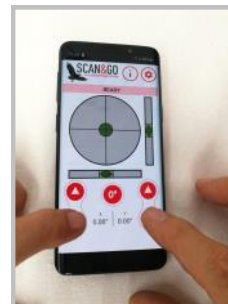
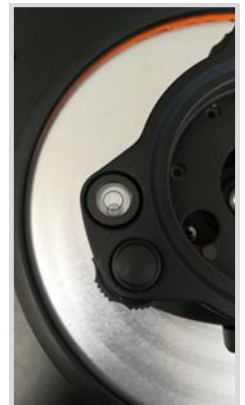


fig.2



Press the two buttons with the same intensity.



ISTRUCTIONS OF USE

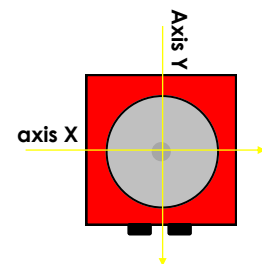


ATTENTION !!!!

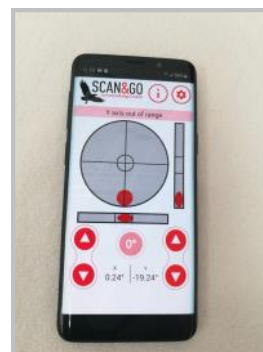
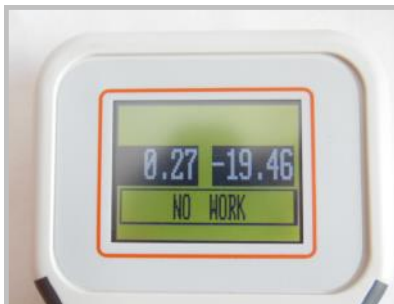
OPERATING LIMIT

Operating limit maximum shooting ground slope along the longitudinal axis of the vehicle (**axis L**) $\pm 19^\circ$

Operating limit maximum shooting ground slope along the perpendicular axis of the vehicle (**axis T**) $\pm 24^\circ$



If the leveler exceeds one or both operating limits ($\pm 19^\circ$ **axis L** and $\pm 24^\circ$ **axis T**), the display of cable controller shows "**NO WORK**", the Android App shows "**X AXIS OUT OF RANGE**" it means that the leveling can't be continued



The leveler remains blocked until the inclination isn't within the consented operating limits and on the display of cable controller reappears written "**BY HAND**", while on the Android App appears normal screen



REQUIREMENTS OF SAFE USE

Level Plane 21 platform is delivered calibrated and ready for use.

It is advisable to check periodically the timing and conditions of use, the calibration values of the instrument, using the same laser scanner or other external auxiliary systems (visual bubble, electronic bubbles, etc.).

Moving with instrumentation mounted may be used only for **SHORT TRIPS**, on job sites, with speeds less than 5 km / h, avoiding bumps, vibrations, excessive inclinations.

The manufacturer is not liable for:

- * misuse of the platform.
- * damages of the platform or the supporting bars because of the road march.
- * unauthorized modifications or intervention of the product.
- * non-compliance with safety regulations, and other regulations regarding the specific use of the product (for example regulations regarding transport for moving the platform mounted on the roof of a vehicle, from one site to another).
- * total or partial non-observance of the instructions and/or lack of maintenance.
- * use of non-original spare parts or not specific spare parts for the model.
- * environmental exceptional events.

Prohibited the use of the platform in the installer mode different from the original configuration and delivery processes other than those provided by the manufacturer.

Prohibited the use of the platform in presence of functional anomalies and discrepancies in the rules of use and safety instructions given in this manual. If needed, please ask and wait for intervention of the staff in charge.

- The instructions, drawings and documentation contained in this document are of reserved technical nature, strict property of the manufacturer and may not be reproduced in any manner, either wholly, or in part.
- The manufacturer reserves the right to make changes and improvements at any time, without any modification to this manual, and without prior notice.
- This document must be kept for future reference, until the scrapping of the machine and should be available to operators.
- If the machine is sold or hired, the seller or the hirer has the obligation to deliver the manual to the new owner or user.
- The original instructions are provided by the manufacturer in Italian or English.
- This document assumes that the places where the machine has been sent, subject to compliance with current safety and hygiene in the country of use.
- If the manual is lost or damaged, you can request a copy from the dealer providing the data of the model, serial number and year of manufacture.
- Do not use the manual for purposes other than the use and maintenance of the machine.



INSTRUCTIONS FOR DEMOLITION

The demolition of the machine must be done by specialized in such activities personnel and provided with adequate expertise.

The disassembled components must be separated according to the nature of the materials they are made in compliance with the applicable laws of "separate waste collection and disposal".

In reference to the European Directives WEEE (waste electrical and electronic equipment, RAEE in Italy) the electrical and electronic components, marked with symbol must be disposed of in special authorized collection centers or returned, installed on the machine to the retailer when a new purchase.

Waste electrical and electronic equipment may contain substances that may pollute the environment and the people for whom it is recommended to dispose of them properly.

The illegal disposal of electrical and electronic components shall be punished with sanctions the laws in force in the territory in which detection of the infringement.

WARRANTY

- **The product warranty is of 12 months from the date of the Invoice.**
- SCAN & GO S.r.l. will support, at its discretion, the repairment and / or replacement of parts with manufacturing defects or damages during the warranty period, after having evaluated the fail-ure.
- The shipping cost of the damaged/defective parts during the warranty period, and the labour for its removal and replacement , are not included in the warranty, and may be approved only after prior written request and consequent authorization.
- The warranty does not cover cases of normal wear and tear, negligence in use, improper maintenance and improper use.
- The warranty lapses in case the 'machine' is equipped with non-original accessories or parts.
- In no event SCAN & GO srl will cover the expenses, for loss or damage of any kind resulting from the use more or less correct or from the partial or total malfunctioning of the equipment.
- The goods travel at the risk of the recipient, any damage incurred during the shipment must be claimed at the delivery by the courier in charge.

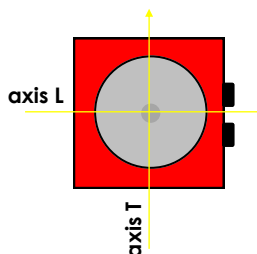
The manufacturer is deemed non-responsible in the case of:

- 1) inappropriate use of the leveler
- 2) use of the equipment, against to any other applicable national regulations;
- 3) serious lack of attention in the maintenance;
- 4) interventions or unauthorized modifications;
- 5) use of non-original parts or replacing parts;

TECHNICAL DATA

TECHNICAL DATA

- | | |
|--|-----------------|
| • Accuracy with manual leveling | +/- 3" |
| • Accuracy with automatic leveling | +/- 15" |
| • Weight | 7 kg |
| • Maximum load | 35 kg |
| • External dimensions | 25x25x h 20 cm |
| • Temperature limit during the use of the equipment | - 30° C + 55° C |
| • Storage temperature limit | - 45° C + 70° C |
| • Power supply | 12V |
| • Protection class | IP66 |
| • Maximum operating limit shooting ground slope along the longitudinal axis of the vehicle - AXIS L | +/- 19° |
| • Maximum operating limit shooting ground slope along the perpendicular axis of the vehicle - AXIS T | +/- 24° |





NEW surveying technology & solutions



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