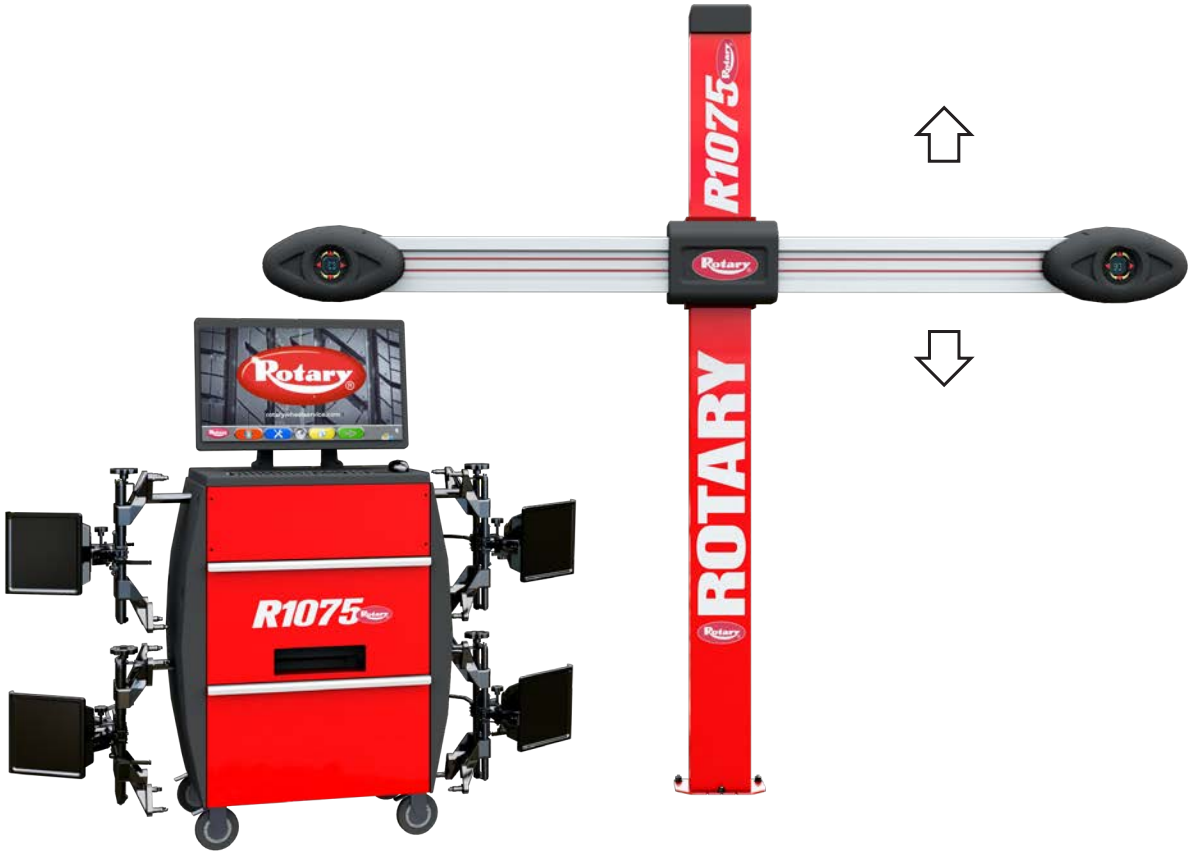
RWA3D1075



OPERATION & MAINTENANCE MANUAL

IMPORTANT Any damage caused by failure to follow the instructions in this manual or improper machine use shall relieve the manufacturer of all liability.

CO12430

OM161000
REV.-06.12.24

SYMBOLS USED IN THE MANUAL

	SYMBOLS
	FORBIDDEN!
	Mandatory! Operations or jobs to be per-formed compulsorily
	Hazard! Be especially careful
	Useful information and Tips

TABLE OF CONTENTS

0. WARNINGS

Any damage resulting from failure to observe the instructions contained in this manual and from improper use of the machine exempts Rotary from any responsibility.

0.1. Important Safety Instructions

When using your garage equipment, basic safety precautions should always be followed, including the following:

- Read the instructions and the entyremanual before using or working on the wheel aligner. This manual is an integral part of the product and is intended to provide the user with instructions on the use of the RWA1075 wheel aligner. Therefore, keep it, for the entyreoperating life of the machine, in a known and easily accessible place and consult it whenever uncertainties arise. All product operators must be able to read the manual.
- Do not operate equipment with a damaged cord or if the equipment has been dropped or damaged – until it has been examined by a qualified service person.
- Check that the power supply complies with the specifications shown on the plate. The plate with the voltage and frequency data is located on the back of the equipment. Please note the information on the plate. NEVER connect the appliance to a voltage or frequency other than those indicated.
- Properly arrange the power cable of the wheel aligner. This product has a built-in 3-wire plug with grounding. It only fits into a socket with built in grounding. If it is not possible to insert the plug into a socket of this type, please consult an electrician. Do not modify or misuse the plug. If an extension cord is necessary, a cord with a current rating equal to or more than that of the equipment should be used. Cords rated for less current than the equipment may overheat. Care should be taken to arrange the cord so that it will not be tripped over or pulled.
- Always unplug equipment from electrical outlet when not in use.
- Never use the cord to pull the plug from the outlet. Grasp plug and pull to disconnect.
- To reduce the risk of fire, do not operate equipment in the vicinity of open containers of flammable liquids (gasoline).
- Adequate ventilation should be provided when working on operating internal combustion engines.
- To reduce the risk of electric shock, do not use on wet surfaces or expose to rain.
- Use only as described in this manual. Use only manufacturer's recommended attachments.
- ALWAYS WEAR SAFETY SHOES & SAFETY GLASSES.
- To reduce the risk of injury, never overload the drawers or shelves. Refer to loading instructions.
- To reduce the risk of electric shock or fire, never overload receptacles. Refer to markings for the proper load on receptacles.
- Keep people and animals ,any objects away from the lifting beam.

When the equipment is turned off:

- Do not turn off the PC, contained within the equipment, by unplugging or using the switch of the PC itself, but use the procedure described see. para. 6.2 on p. 16 Incorrect shutdown of the PC can cause "corruption" of the files contained in the HARD-DISK.
- The shutdown procedure described see para. 6.2 on p. 16 does not intervene on the supports for power supply for the cameras, which therefore continue to be powered. So please also shut down the power supply for the cameras.

In emergency conditions and before any maintenance work:

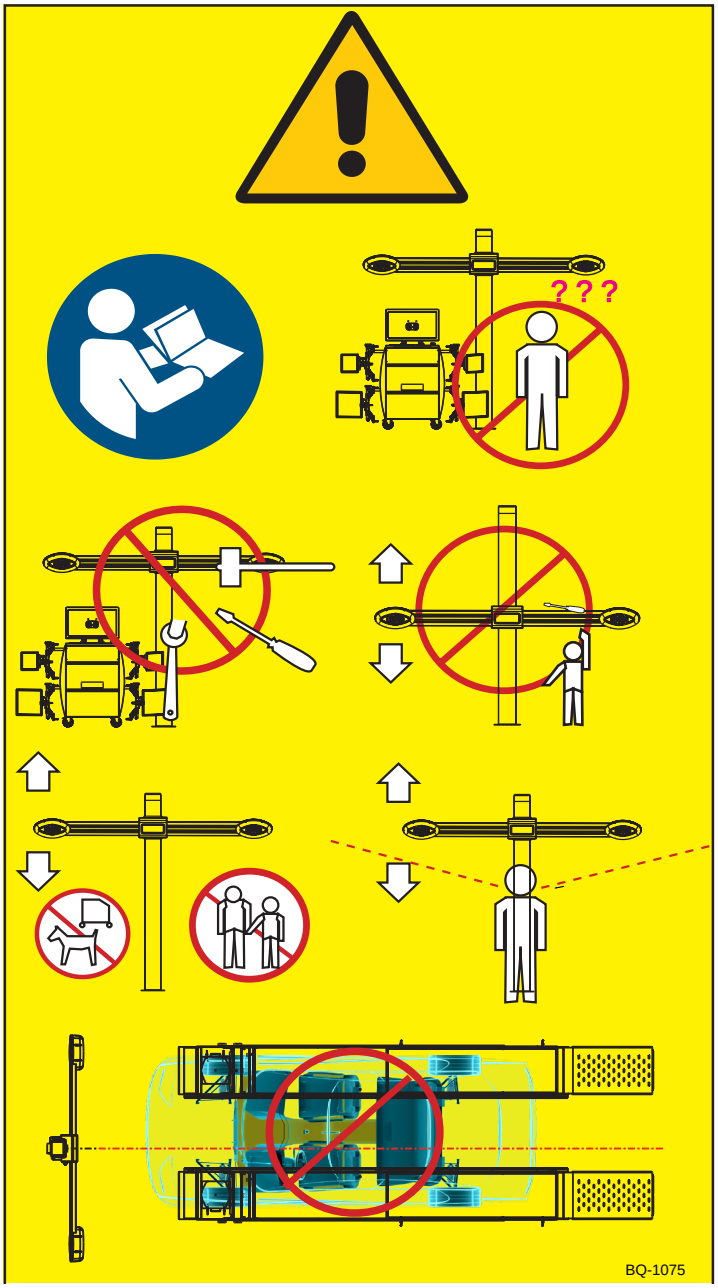
- Isolate the machine from power sources, with the appropriate main switch of the machine and remove the plug from the power socket.
- Do not try to maintain this unit arbitrarily, as opening or removal of the doors could expose you to dangerous voltages; maintenance interventions must only and exclusively be carried out by authorised service personnel.

Work environment and equipment cleaning:

- The work environment must be kept clean, dry, not exposed to atmospheric agents and sufficiently lit.
- Avoid cleaning the equipment with jets of water and compressed air.
- To clean plastic panels or shelves, use a damp cloth (in any case avoid liquids containing solvents).

Rotary may at any time make changes to the models described in this manual for technical or commercial reasons.
SAVE THESE INSTRUCTIONS DO NOT DISCARD!!

Important warning notices



1. Read original operating instructions.
2. Never place any objects on the lifting beam.
3. Keep people and animals away from the lifting beam.
4. Only authorised person are allowed to operate the aligner.
5. Never pull or push the lifting beam.
6. Watch the lifting beam when raising and lowering.
7. Centre the vehicle & alignment lift to the centre of the lifting beam

1. INTENDED USE

The RWA1075 system is equipment intended for detection of all the characteristic angles of vehicles. Two-axle cars and light commercial vehicles can be tested with maximum wheelbase of 5450mm.
Detection of the angles is carried out by two cameras mounted to the tower located at the front of the lift. These cameras identify the position in space of the targets positioned on the wheels.
The data transmission from the cameras to the cabinet takes place via cable.
The operation range of the equipment is the below:
- Temperature : from 0 °C to 40 °C
- Pollution degree - Class 3
- Overvoltage category - CAT II
- Maximum Elevation level - 3000 m above sea level (asl)

2. TRAINING OF DESIGNATED PERSONNEL

Only specially trained and authorised personnel may use the equipment. In order to ensure machine management are optimal and for measurements to be carried out efficiently, the designated personnel must be properly trained to learn the necessary information in order to achieve an operating mode that is in line with the instructions provided by the manufacturer. For any uncertainties relating to use and maintenance of the machine, consult the instruction manual of the machine or individual equipment (PC, monitor, printer ...); if in doubt, do not interpret, it is advisable to consult the authorised service centres or the Rotary technical assistance directly.

2.1. General prevention measures

- During operation and maintenance of this machine, it is absolutely essential to comply with all the safety and accident-prevention regulations in force.

- The equipment must be used only by authorised and adequately trained personnel.

- It is not allowed to store heavy objects (weighing more than 15Kg) in the compartments inside the cabinet, such as turntables.

- This equipment must only be employed for the use for which it is expressly designed. Rotary declines all responsibility for damage to persons, animals and property caused by improper use of the machine.

- The installation of accessories and spare parts must be performed by authorised personnel and original accessories and spare parts must be used.

- The machine must only work in places where there is no danger of explosion or fire.

- The removal or modification of safety devices or of warning signs placed on the machine can cause serious danger.

- Before carrying out any maintenance on the system, it is necessary to disconnect the power supply. If in doubt, do not interpret, contact Rotary technical assistance in advance in order to receive information to be able to perform operations in conditions of maximum safety.

- Prevent unauthorised personnel from approaching the wheel aligner during use.

- The operator should wear safety footwear to prevent foot damage, caused by accidental fall of clamps. Use footwear with certified protection according to the rule EN ISO 20345 standard.

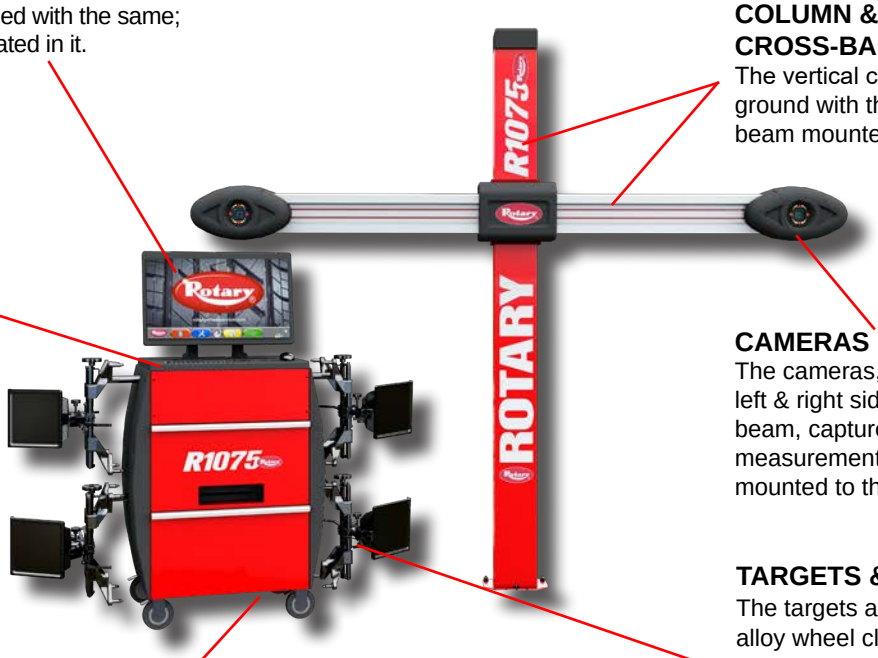
3. EQUIPMENT COMPOSITION

3.1. Cabinet & Tower of the RWA1075

MONITOR
There is a 27" high definition colour monitor.
The instructions on use and maintenance are shown in the manual supplied with the same; follow the instructions indicated in it.

COLUMN & MOVEABLE CROSS-BAR
The vertical column is fixed to the ground with the horizontal cross-beam mounted to the column.

Keyboard & mouse



CAMERAS
The cameras, positioned on the left & right side of the cross-beam, capture the alignment measurements by the 4 four targets mounted to the vehicle.

TARGETS & CLAMPS
The targets are mounted to 4-point alloy wheel clamps with each target marked to indicate position on the vehicle.

Figure 1

MEASURING CABINET
The measuring cabinet is used for all the measurement operations. The cabinet is equipped with PC for processing and managing the measurements received from the cameras
Power supply: 1 phase 50/60HZ 110 V AC maximum current 10A
1 phase 50/60HZ 220V-240VAC maximum current 5A

Wifi dongle for database download and software upgrade from internet which is located under the top cover.

Power fuse N
QF2-10A---110V
QF2-5A----220-240V

Power fuse L
QF2-10A---110V
QF2-5A----220-240V

Main power switch

Power supply inlet

Connection for wires from cross-beam.

Power supply output fuse 12V（QF4 -5A）

Power supply output fuse 5V（QF3 -10A）

Camera power switch

Figure 2: Rear of cabinet

3.2. Management PC

The software is installed on the management PC, located inside the cabinet.
The management PC has the following features:

- Processor 3.6GHZ.
- RAM 8 Gb.
- 8 USB; 1 LAN Ethernet 10/100/1000 Mb.
- Integrated Windows 10 IoT ™ operating system, standard operating system in English.
- Screen output 1366x768 Pixels HD Ready.
- Hard Disk 256 Gb.

3.3. Clamps with target

The machine is supplied with 4-point clamps with adjustment handle to adjust to rim diamater (for rims 10” to 24”) including removable claws. and quick locking units.

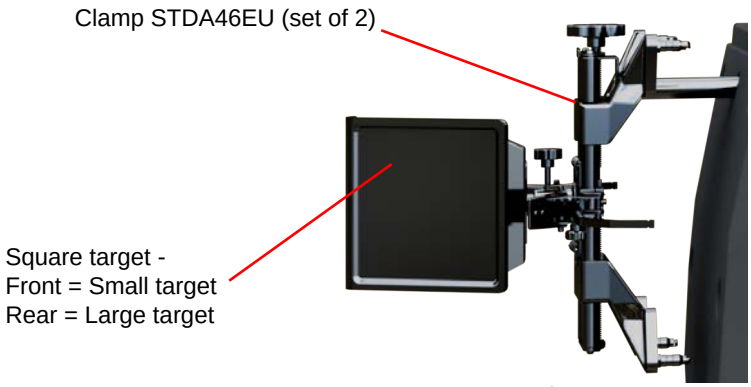


Figure 3

They are marked Front Left and Right and Rear Left and Right, according to the following table (See Figure 4):
FL = FRONT LEFT(small target)
FR = FRONT RIGHT(small target)
RL = REAR LEFT(big target)
RR = REAR RIGHT(big target)

Attention: The target with clamp was mounted and fixed in the factory. The TID process has already been completed. (Detail TID process see the installation instructions) Do not remove the target from the clamp in the field. If the target becomes loose or is removed from the clamp, the TID process needs to be carried out by authorised personnel (see figures above).

Each target also has a number that identifies with the cross-beam and calibration files in the PC, please do not mix targets from other alignment machines.

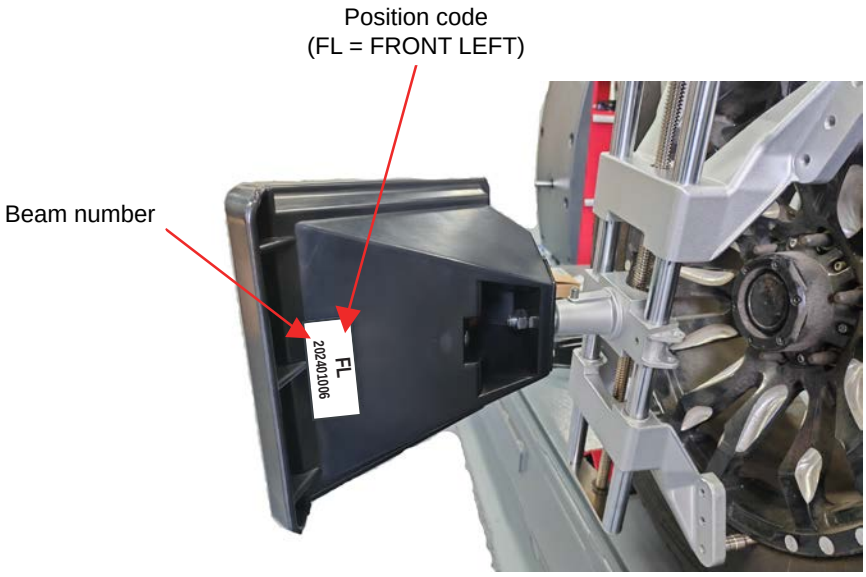


Figure 4

3.4. Others

3.4.1. Turn plates STDA124(Optional)

The STDA124 turn plates have a plate with a 360 mm diameter.

The STDA124 is the recommended turn plate, but please refer factory for other options also available.

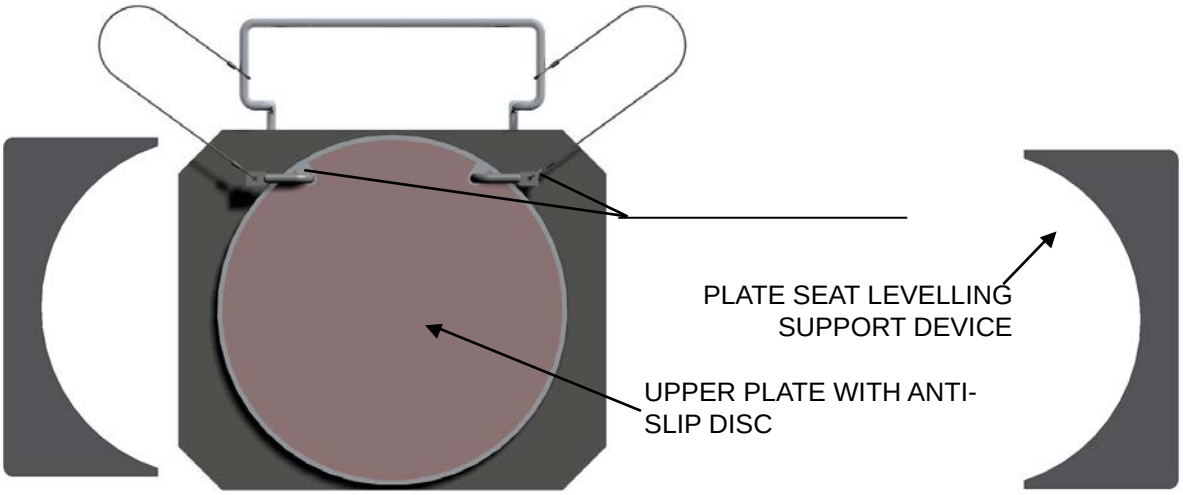


Figure 5

3.5. Brake pedal despressor

It is a tool used to lock the brake pedal during the preliminary measurement operations. It is to be used as shown in the instructions that appear during the program.

Figure 6

3.6. Steering wheel lock

It is a tool used to hold the steering wheel in a fixed position. It is used before the adjustment procedure as shown in the instructions that appear during the program.

Figure 7

4. EQUIPMENT CHARACTERISTICS

4.1. Safety devices

The wheel aligner is equipped with the safety device (main switch and fuse) located on the rear of the machine, see figure 2 on page. 6.

The main switch deactivates the power supply of the machine when placed in the "0" position.

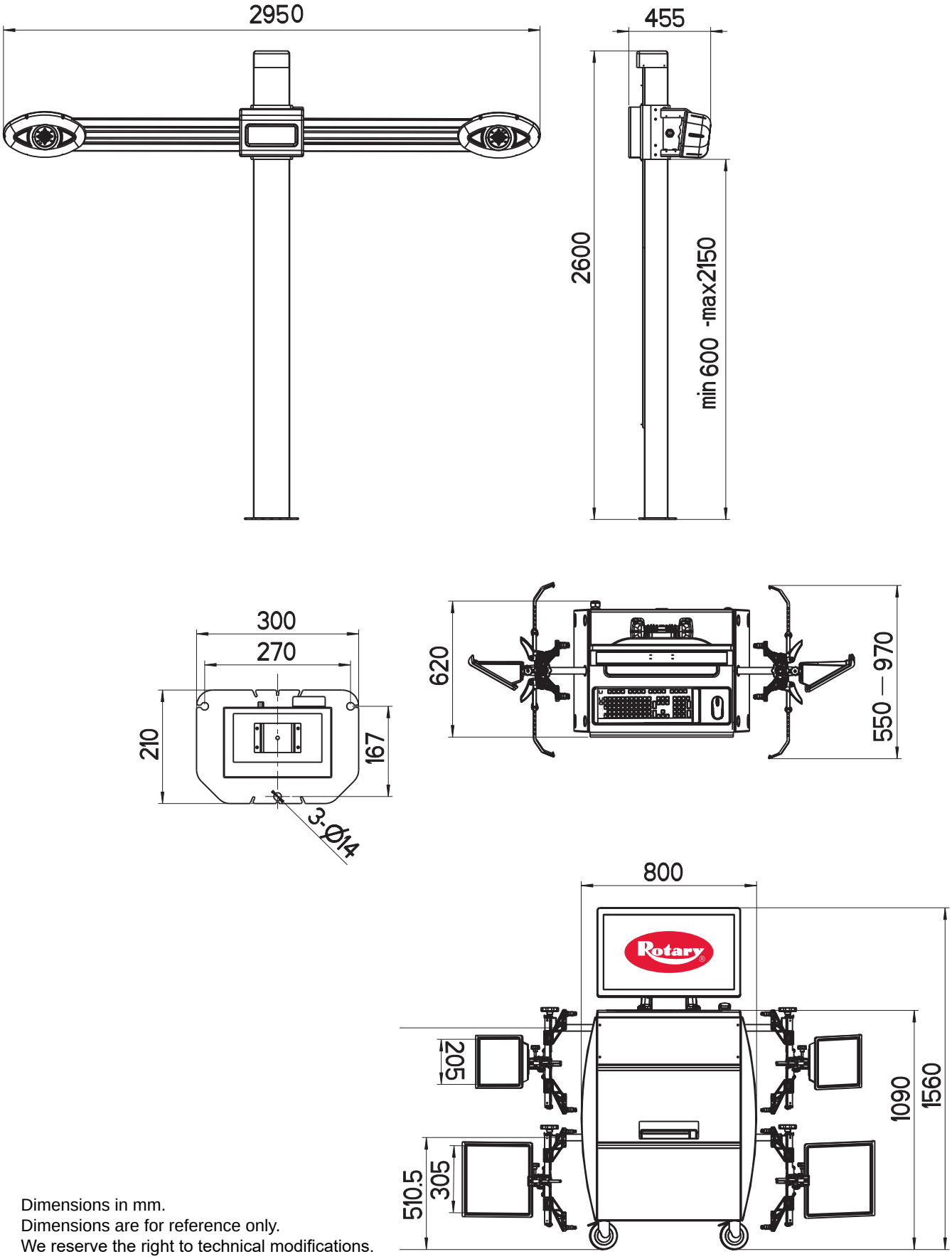
The fuse can be automatically disconnected when the current is too large, so as to ensure the safety of electricity.

4.2. Precision measuring range

Measurement	Precision	Measuring range
Camber	± 0.01°	± 56°
Castor	± 0.02°	± 32°
KPI/SAI	± 0.02°	± 32°
Toe	± 0.01°	± 42°
Thrust Angle	± 0.02°	± 36°
Max. Steering Angle	± 0.02°	± 42°
Wheel Track	± 2.6 mm	≤ 2650 mm
Wheel Base	± 2.6 mm	≤ 5450 mm
Wheel Deviation	± 2.6 mm	≤1800 mm

4.3. Overall dimensions

RWA1075



- Dimensions in mm.
- Dimensions are for reference only.
- We reserve the right to technical modifications.

Figure 8

5. TRANSPORT AND INSTALLATION

5.1. Transport and unpacking

The machine is supplied packed in three boxes with pallet to facilitate transportation. To transport the machine to the point where it will be installed, use lifting and transport means such as forklifts or lift equipped with forks.
The machines must be stored in a dry and ventilated place (permitted temperature -25° + 55°C).
The packaging must never be overturned or arranged horizontally, the pallet must always rest on a flat and solid surface, do not stack other packages on top, the arrangement must allow easy reading of the indications.

DURING UNPACKING ALWAYS WEAR GLOVES TO AVOID POSSIBLE INJURIES CAUSED BY CONTACT WITH THE PACKAGING MATERIAL (NAILS, ETC.).

The packaging material (plastic bags, polystirene, nails, screws, wood, etc.) must be collected and disposed of according to the regulations in force, with the exception of the pallet, which could be reused for subsequent handling of the machine.

5.2. Installation

Install the machine in a dry, covered, sufficiently lit place, possibly enclosed or in any case protected from atmospheric agents. Before positioning the equipment, make sure that the chosen location is suitable for the regulations in force on workplace safety and check the minimum distances from walls or other obstacles. See Figure 9 & 10.

Figure 9: Overall view of aligner installation

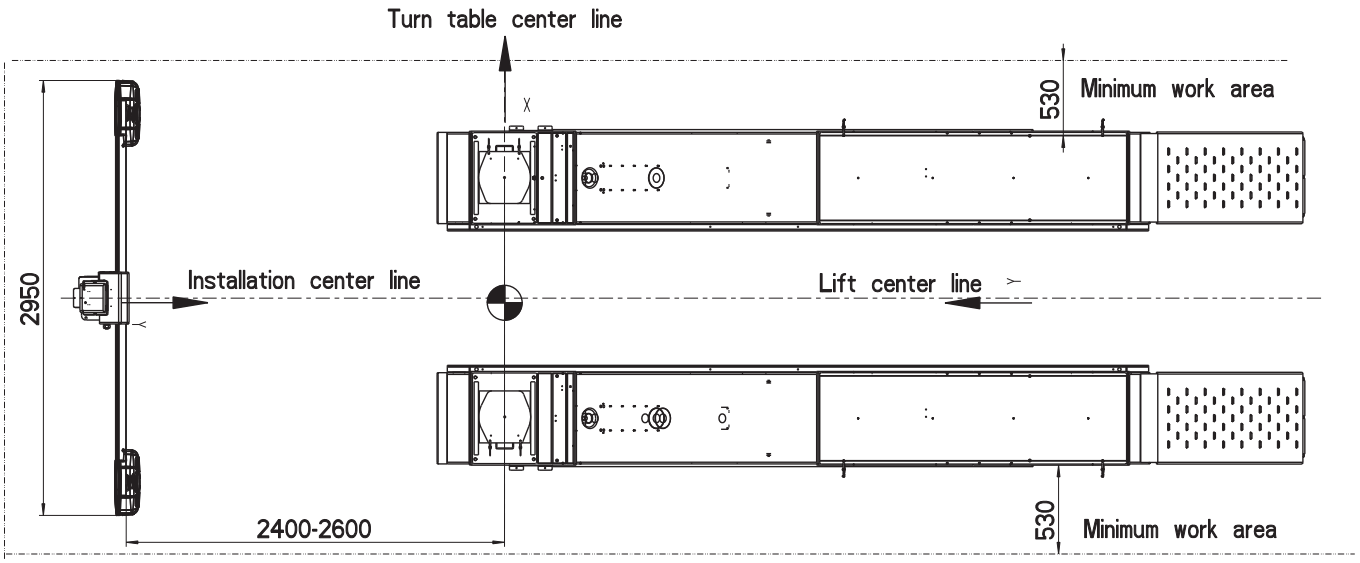


Figure 10: Aligner installation bay

5.2.1. Set up the column

• Position column in bay using dimensions show in figure 10. Using a block and tackle (or similar device that increases mechanical advantage), stand the column up using suitable lifting equipment.

• Concrete shall have a compression strength of at least C20/25 and a miniumn thickness of 100 mm. Drill 3 holes with required diameter in concrete floor, using holes in the column base plate as a guide .

• Using the horse shoe shims (provide by installer or similar parts), shim the column vertical to level ground. Tighten anchor bolts to an installation torque.

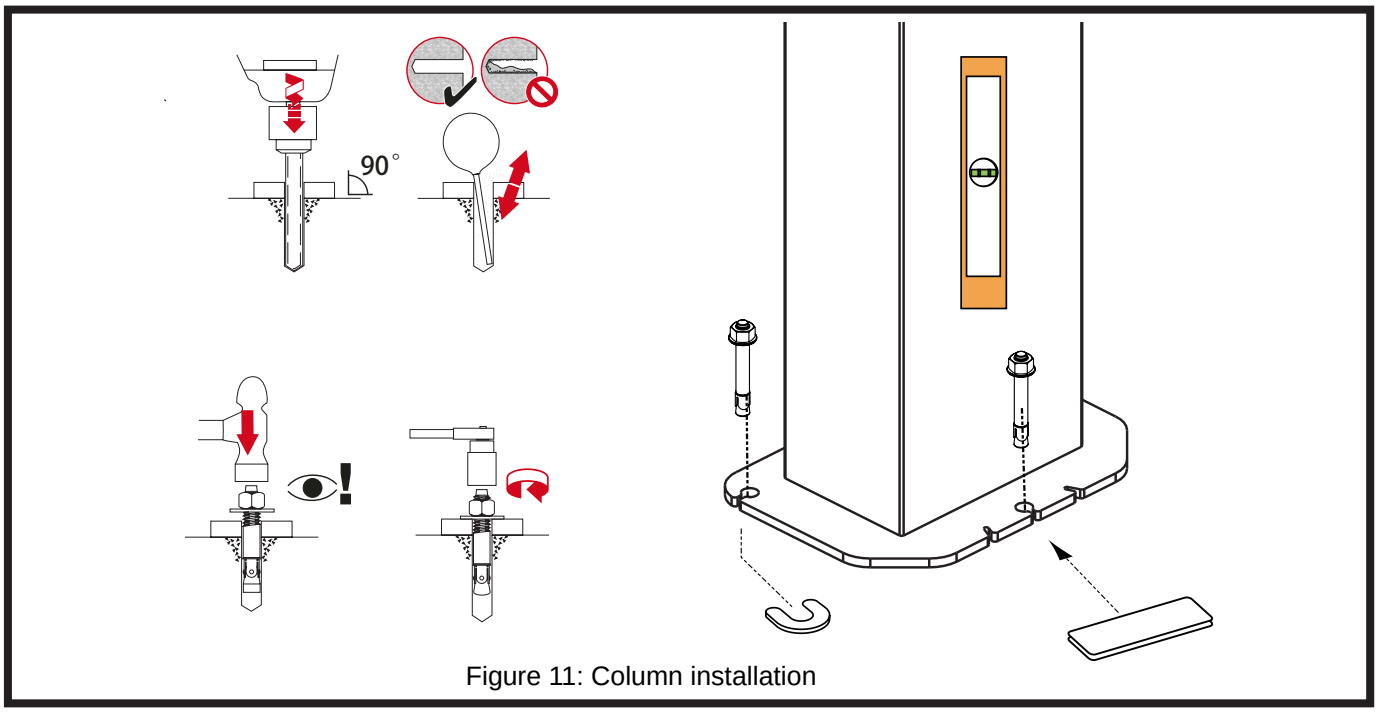


Figure 11: Column installation

5.2.2. Connection of crossbeam

• Loosen the 4 nuts in the column connection slider, then take the crossbeam from the package, and connect it to the column connection slider using the connection bolts. See figure 12.

• Tighten the 4 nuts after checking the level of the cross-beam. If necessary, adjust the column until level.

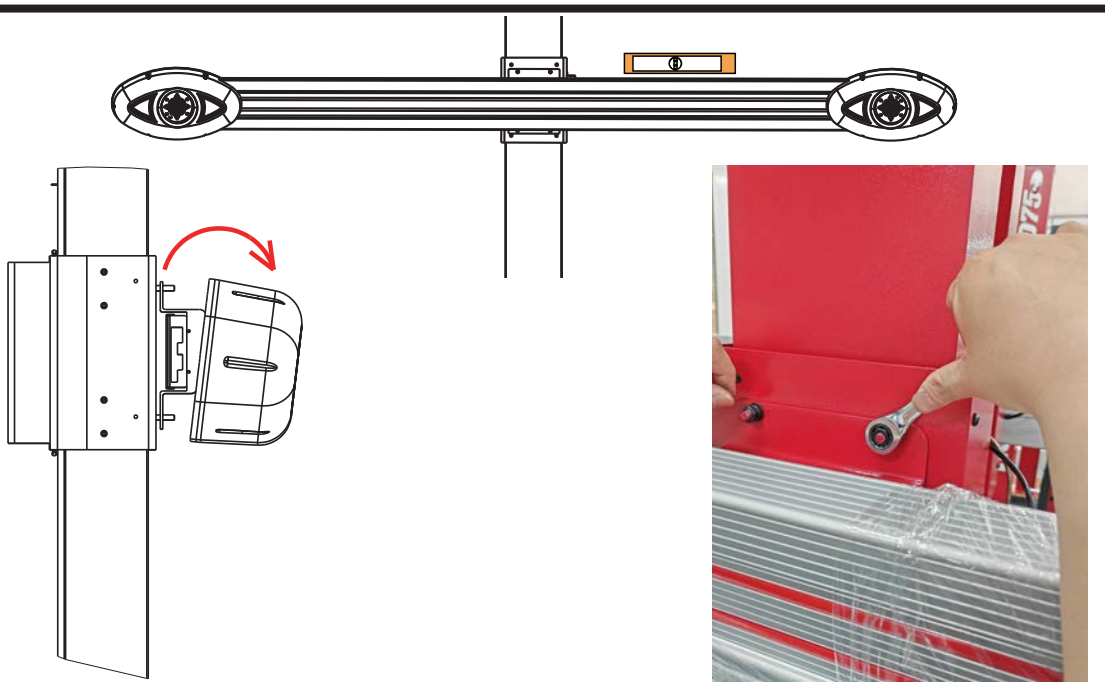


Figure 12: Crossbeam connection

5.2.3. Cabinet assembly

The cabinet is supplied with the PC already installed, with the power supply cables for the monitor & printer in position.
The caster wheels and wheel clamp hooks are preinstalled from the factory.
The assembly of the cabinet consists of fixing the monitor and printer (Note: Printer to be supplied by customer).

Figure 13: Cabniet assembly

5.2.4. Cable connection and cover assembly

• For the right side, insert cables through the plastic nut in the right side cover and connect cables.
• For the left side, after cables are connected mount the left side cover.
• Mount the front plastic cover using the 8 screws, noting it maybe necessary to adjust the side cover for proper fiment.
• Open the rear panel of the cabinet and connect the cables from the cross-beam to the cabinet, noting the USB cable plugs into the PC whilst the 5-pin plug plugs into the inlet available inside of the cabinet.

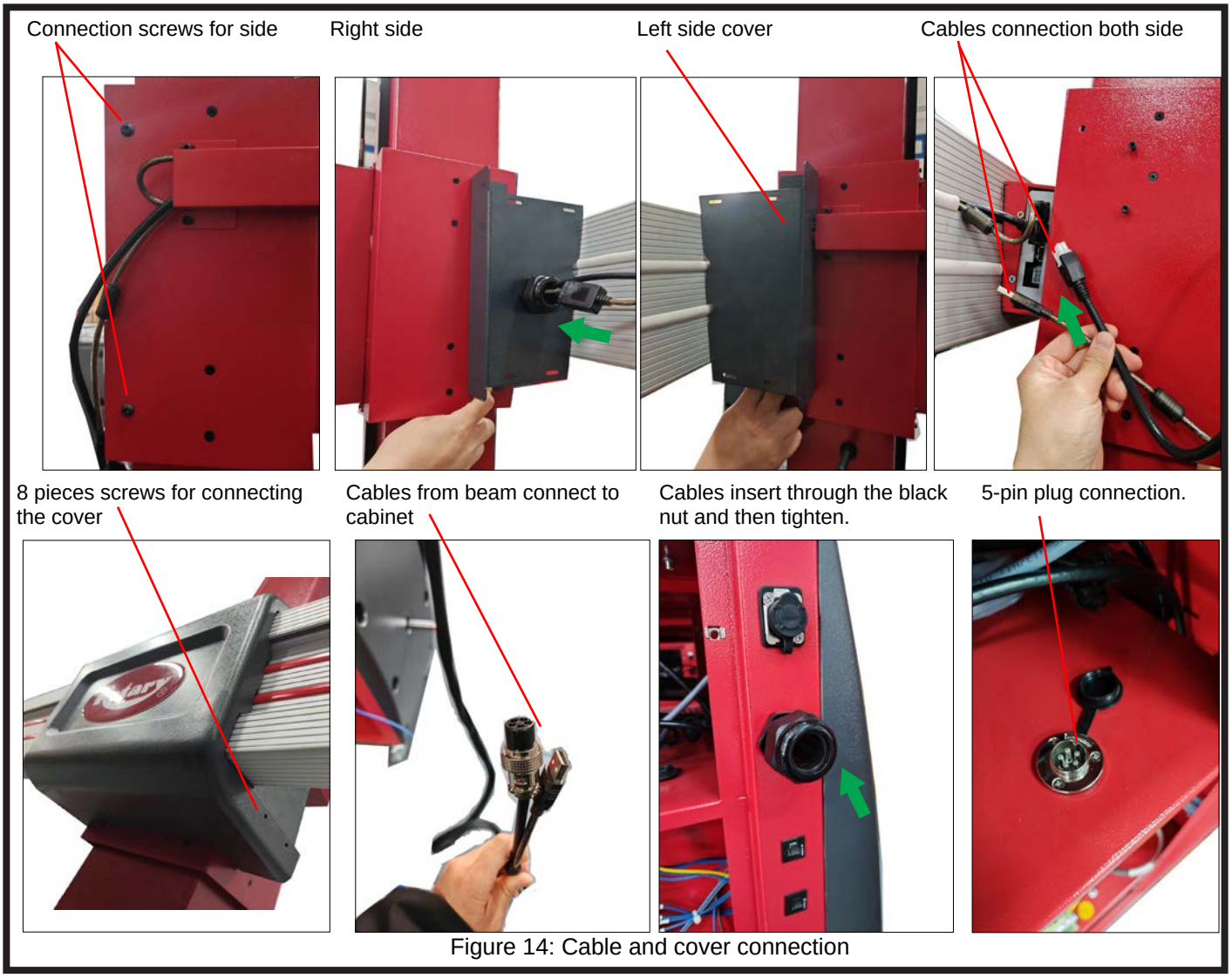


Figure 14: Cable and cover connection

5.2.5. Electrical connection

Before connecting the machine, check carefully:

- that the characteristics of the power line correspond to the requirements of the machine indicated on the relative plate;
- that the grounding line is present and that it is adequately sized (section greater than or equal to the maximum section of the power cables);
- that all the components of the power line are in a good condition;

Connect the machine to the mains using the supplied 3-pole plug to the socket on the wall. If the plug supplied is not suitable for the one on the wall, equip the machine with the plug in accordance with the local laws and current standards and regulations. This operation must be performed by experienced and qualified personnel.

5.2.6. Clamp / Target assembly

The targets are mounted to the clamps at the factory and shipped with the target angles set. Do not remove of adjust the targets from the clamps. If any adjustments are made after the factory, the TID process needs to be performed.

- Mount the upper & lower clamp hanging hooks to the cabinet.
- Mount the rim grabbing claw to the clamp
- Mount the tyregrabbers to the clamp.
- Hang all clamps on the machine using the hooks mounted to the cabinet.

Upper hook

Lower hook

Rim grabbing claw

Tyre grabber arms

Figure 15

5.2.7. Remove the balance weight stop bolt

For shipping, the column has a stop bolt installed to ensure the balance weight located in the column does not move during transit. Once the column is installed, this stop bolt needs to be removed prior to machine use. Remove the bolt and replace the plastic cap provided.

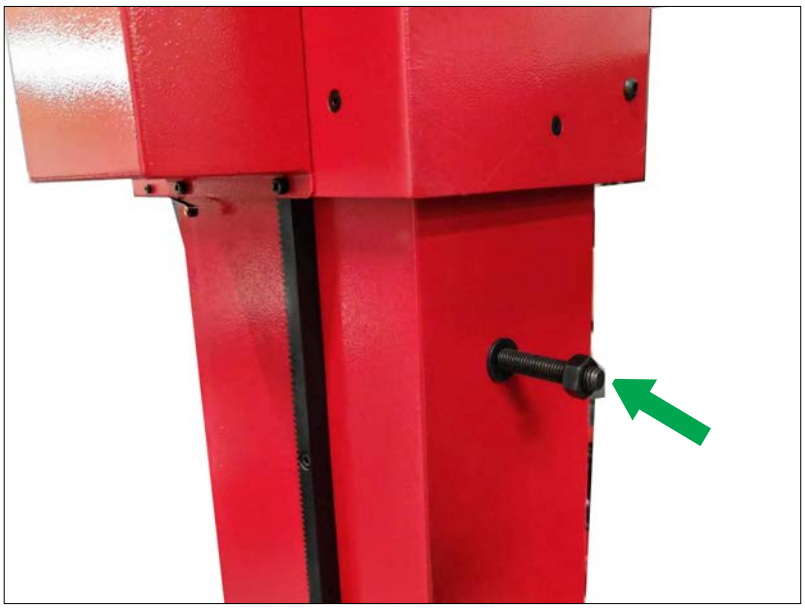


Figure 16: Balance weight stop bolt located on left side of column

With assembly now complete, the machine is now setup and ready for use.
Note: Before an alignment can be performed, it's important that the database is updated & configured, refer para. 10 on page 50.

6. SWITCHING THE EQUIPMENT ON AND OFF

6.1. Switching on

To turn the equipment on and to be able to access the program, it is necessary to use the dedicated main power switch located on the rear panel of the cabinet. See figure 2. Important: Both the main power switch & camera power switch need to be turned on to perform a wheel alignment.

At the end of the PC initialization process, using the Windows operating system, the program is automatically activated and the home screen page is displayed on the monitor. From the home screen it is possible to activate all the functions of the equipment.

From the factory set, the aligner already to be set up with dummy version. the license and code already beed entered into PC.

New installation for the software

New installation for the license activation

License paperwork and USB disk located inside cabinet

Factory set with dummy version home page

Figure 17

Attention, please keep the license paperwork and USB disk inside the cabinet package for future maintenance .

6.2. Switching off

To turn off the machine, first activate the appropriate button from the software. The PC will perform normal shutdown procedure. Secondly, turn off power to the machine using the main power switch located on the rear panel, refer figure 2 on page 8.

ATTENTION:The PC shutdown procedure does not affect the power for the cameras on the cross-beam. Please turn off power to the cameras using the camera power switch located on the rear panel, refer figure 2 on page 8.

	PC KEYPAD	DESCRIPTION
		Activates the switching off procedure of the equipment

7. PROGRAM CONFIGURATION

To be able to configure the program, select the F2  key on the home screen, as explained see on p.16.

A configuration menu is accessed that can be used to change the characteristics of the program according to requirements.

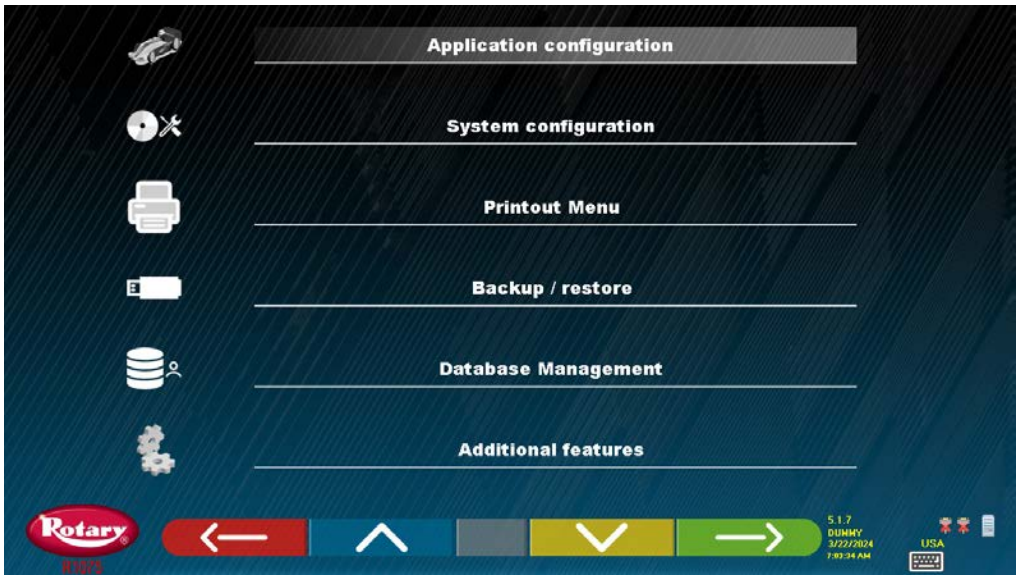


Figure 18

Application Configuration: It is possible to select the language from those available; it is possible to configure the association of events such as run-out, steering, adjustment with "beep" sounds to facilitate the user in the procedure

System configuration: the program displays the screen shown in - Figure 19-
It is possible to change the system parameters (measure Unit and Resolution), Groups configuration,and windows program.

Prints Menu: It is possible to customise the print by entering the data for the workshop, to choose the type of print required and to select the default printer (if there are more than one connected).

Backup / Restore: In order not to risk losing the vehicle and customer database data, it is advisable to create a backup copy (save). A “flash disk” USB key is used for this operation.
It is possible to recover lost or deleted data, if the backup operation was performed, with the restore procedure.

Database Management, see para. 10 on p.52.

Additional features : the program displays the screen from where it is possible to access the TEST or camera calibration (RCP and TID) applications (reserved for specialist and authorised personnel).

	PC KEYPAD	DESCRIPTION
		Returns to the home screen.
		Moves the selection up.
		Moves the selection down.
		Confirms the selection.

7.1. DATABASE Groups Configuration

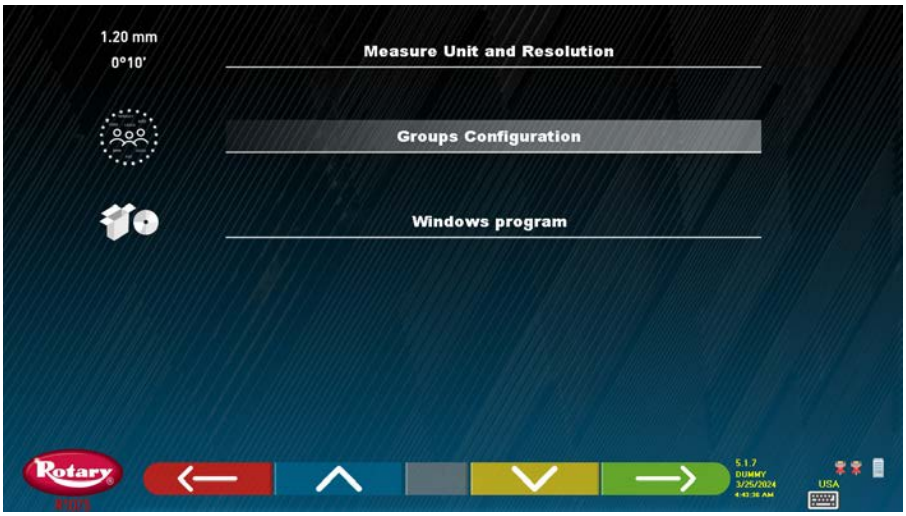


Figure 19

Select the "Groups configuration" option in the system configuration page as explained in figure 19.
It is possible to change the system parameters, the database profile and to specify which components are present in the equipment and what type they are.
The screen that appears next is the following:

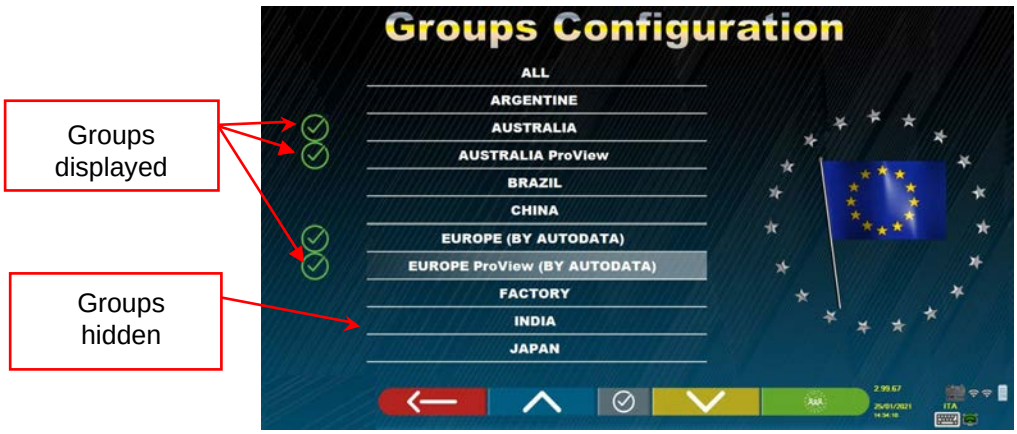
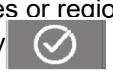


Figure 20

The Groups Configuration of Figure 20 displays a list, with the various profiles of the DATABASE, containing the MAKES of vehicles in circulation in different countries or regions of the world.
It is possible to hide and/or display, using the F5 key  , any profile in order to manage the Database according to requirements.
By selecting any group and pressing F4 it is  also possible to customise the profile hiding and/or displaying the makes present, with the F5 key 

7.2. Miscellaneous

Select "Additional Features" from the program configuration page, as explained see figure 18. Then select “Miscellaneous”. It is possible to find 3 "Miscellaneous" options where there are various selections to customise particular set-up procedures.

In "Miscellaneous 1" it is possible to set: the automatic switch-off function of the F1 key on the home page. It is also possible to enable adjustment on Fast Check, to skip the videos, steering and to choose the type of database search. It is possible to set the Standard or “Quickcheck” QC4 or QC2 procedure mode.

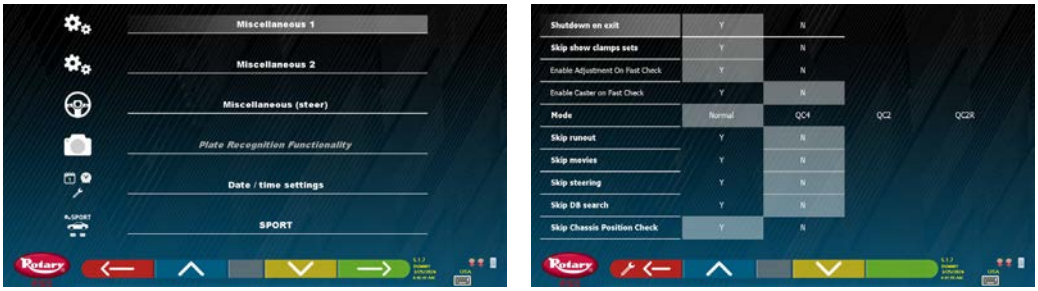


Figure 21

In “Miscellaneous 2” it is possible to enable and/or disable certain functions such as Set Back live, CASTER/KPI adjustment , to set the average value for the ride height and to set the functions of the "Test Drive" and the display of the diagnosis summary.

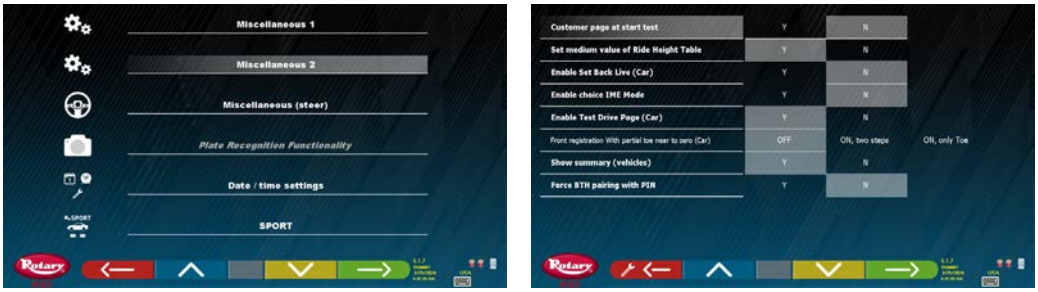


Figure 22

The options for setting of the steering procedures are available in "Miscellaneous Steering" (start from the left or right side, choose the left or right driving side, single or automatic steering mode).

Figure 23

In "Plate Recognition Functionality" (N.B. this menu option is only available if the manufacturer has granted the authorization for their country, relating to their licese , see figure 17 it is possible to enable this option

Figure 24

To exit the page, press the F1 key  .

8. DIAGNOSIS AND ADJUSTMENT OF A VEHICLE

8.1. Home screen

When the equipment is switched on (see para. 6.1 on p.16), the initial screen of the program appears, from where it is possible to select various functions.

8.2. Preliminary operations

Figure 25 Home screen

	PC KEYPAD	DESCRIPTION
	F1	Turns off the equipment
	F2	Program configuration
	F3	Accesses the customer database of the saved tests
	F4	Selects the list with the various database profiles

Press key F4 to continue.

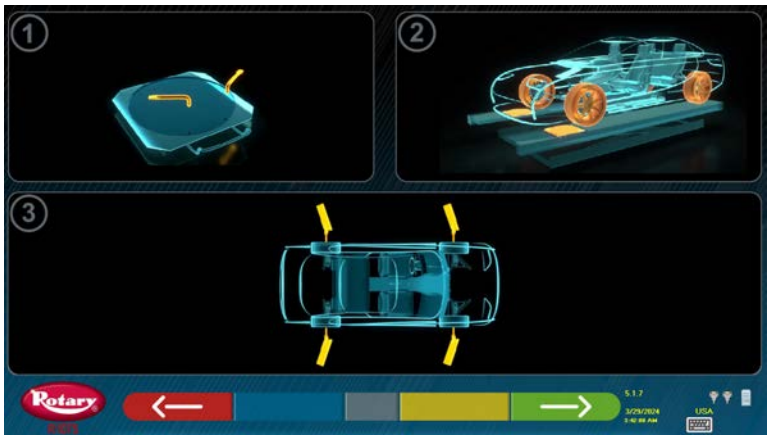
8.2.1. Preliminary vehicle control operations

Before starting to check the geometric set-up of a vehicle, the following checks must be carried out:

- Check and possible eliminate any gaps on suspensions and on the steering linkage
- Check and if necessary eliminate possible hardening or yielding of the elastic parts of the suspensions.
- Adjust the tyrepressure to the values prescribed by the manufacturer.
- Position and distribute any loads foreseen by the manufacturer.

8.2.2. Preparing for measurements

Before proceeding and selecting the vehicle technical data page (see para. 8.4 on p. 24), the vehicle can be prepared for measurement as follows:



	PC KEYPAD	DESCRIPTION
	F1	Returns to the previous page
	F4	Continued on the next page

Figure 26

- Prepare for measurements by locking the turn plates and all the rear slip plates
- Position the vehicle on the lift correctly, with the front wheels on the turn plates
- Mount the clamps with the four targets on the wheels. To avoid clamps falling, please use the safety rope.

Figure 27

(*) It is important to mount the clamps with the targets and switch on the 2 measuring cameras in this preliminary phase, to allow the system to recognise and "connect" the 4 targets positioned on the wheels.
The time that elapses in the subsequent phases of make and model selection and display of technical data is consequently used by the system also for the recognition and optimisation of the 4 targets.

(**) The system takes a few seconds to complete correct recognition of the targets; during this phase, and in the subsequent ones in which measurements are carried out, symbols appear in the lower right part of the screen that represent the progress of the recognition of the 4 targets. See legend below.

 = Target recognized (GREEN symbol)

 = Target not recognized (BLACK symbol)

ALWAYS be careful to position the vehicle centreed on the runway, it must be as centred as possible, in order to speed up and optimise the search and engagement of targets and subsequent measurements.

8.3. Selecting the make and model of a vehicle

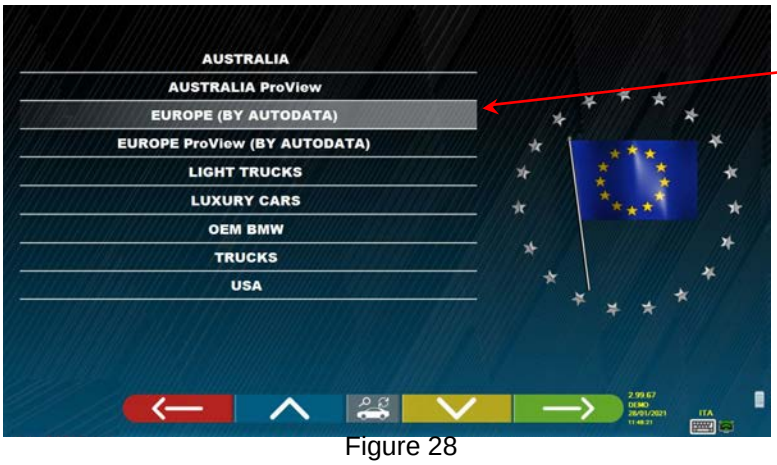


Figure 28

Press the F4 key  to select a vehicle make and model. The program shows the list of makes of the selected group (see Figure 30)

Or press the F5 key  to search using the keys (model / make / year) or through the V.I.N (Vehicle Identification Number) which is a unique serial number used by the automotive industry to identify motor vehicles. The V.I.N. consists of a plate with 17 alphanumeric characters usually located inside the engine compartment. See Figure 29. This search only works with the USA Database (STDA110U).

Note: the search mode is selected using the F5 key  : Through search keys model make name/year or VIN (Figure 29) or through manual selection (Figure 30).

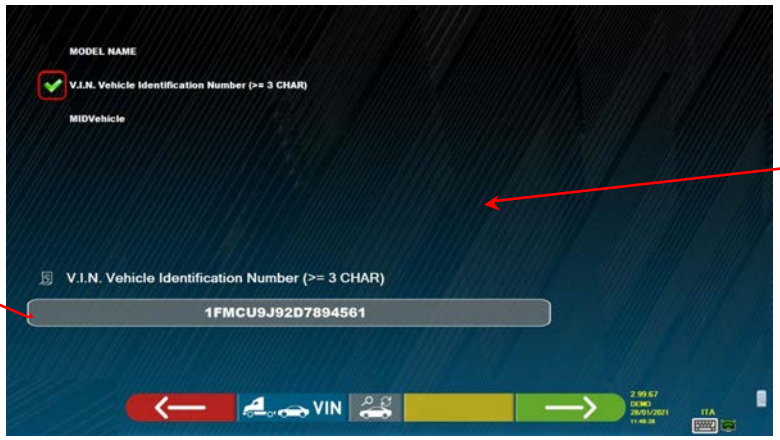


Figure 29

Press the key  to move the cursor from entering "model name" to entering "VIN". Press the key  to continue and display the list of all the vehicles that meet the search criteria introduced above, then select the correct vehicle and display the page of the technical data of the chosen vehicle (see para. 8.4 on p. 24)

In order to select the make and model of a vehicle, press the key  on the home screen. (Figure 25) or on the database profiles page (Figure 31). The program displays the following page:

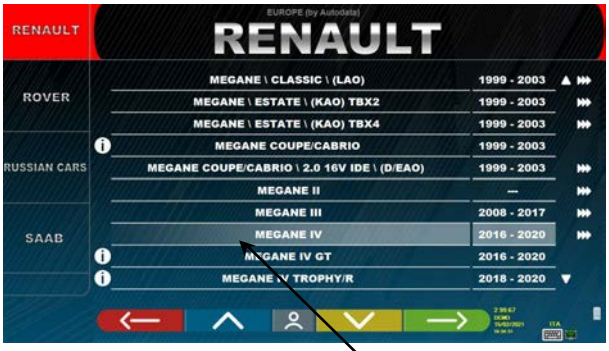


Figure 30

It is necessary to select the make and model of the vehicle on which to operate.
NOTE: To speed up the selection operation, it is possible to press on the PC keypad the name of the make or model being sought, or part of the name and then scroll through the list until finding the one that is required.

	PC KEYPAD	DESCRIPTION
		Returns to the home screen (see para. 8.1 on p. 20)
		Moves the selection up.
		Moves the selection down.
		Confirms the selection and continues to the next phase
		Sets the order: alphabetical or date order (ascending or descending)

8.4. Display of selected vehicle technical data

When a vehicle is chosen (see para. 8.3 on p. 22), a screen appears with the measurements and tolerances that the manufacturer has provided.

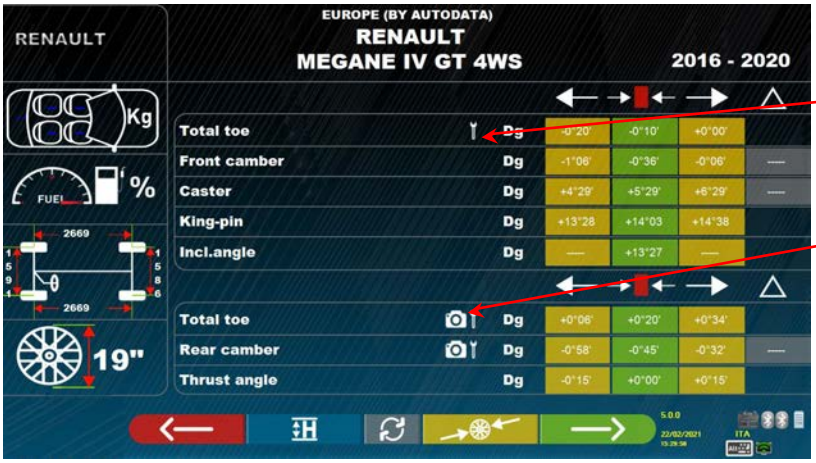


Figure 31

	PC KEYPAD	DESCRIPTION
	F1	Returns to the vehicle selection (see para. 8.3 on p. 22)
	F2	Possibility to enter data of ride height or inclination, as provided by the manufacturer (see para. 8.4.1 on p. 25and see para. 8.4.2 on p. 26)
	F5	Displays the next page of the vehicle technical data
	F3	Varies the rim diameter value
	F4	Continues with the Run-out operations (see para. 8.6 on p. 30)

Press the key to confirm the choice of the vehicle and proceed to the next phase (Run-out compensation procedure - see para. 8.5 on p. 28).

8.4.1. Display of ADDITIONAL MEASUREMENTS on RIDE HEIGHTS

Manufacturers (e.g. Mercedes, Renault) provide angle tolerance values according to particular measurements on the vehicle chassis. When the selected vehicle has angle tolerance values connected to additional measurements on the chassis, the technical data page (Figure 32) will feature the key [H]

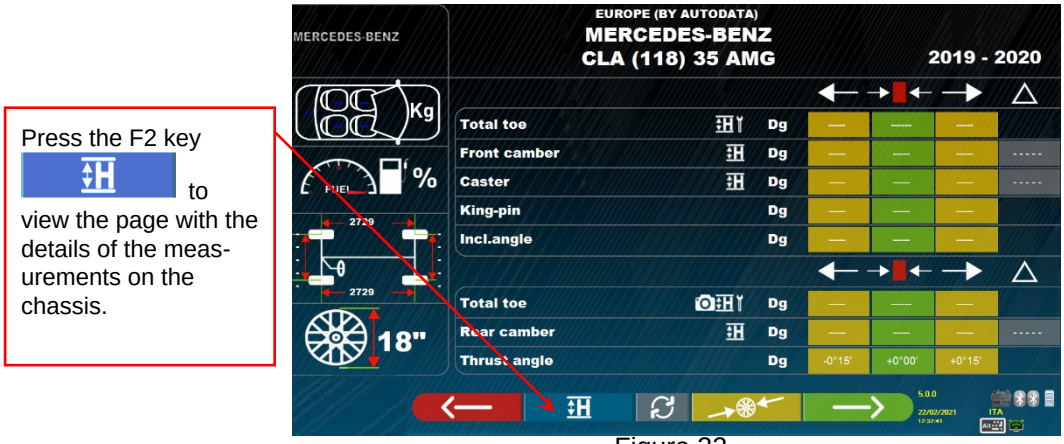


Figure 32

By pressing the key [H] the program will display a page like the example in Figure 33, where the measurements required by the manufacturer must be entered.
The measurements can be entered by selecting them from the tables, as in the example on the left, or it is possible to directly enter the values as in the example on the right; to change the entry mode press the key [↻]

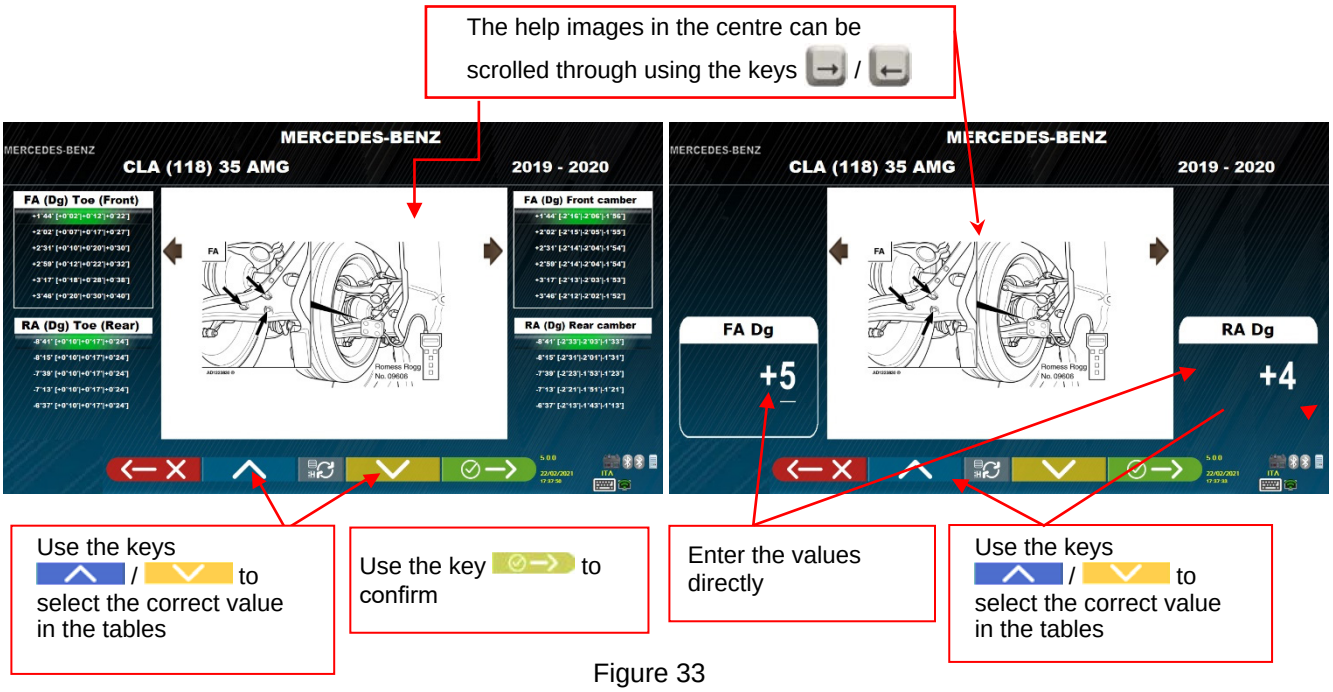


Figure 33

Press the F4 key [✓→] to confirm the entered values.

8.4.2. Display of CHECK MEASUREMENTS on RIDE HEIGHTS

Some manufacturers (e.g. Citroen, Peugeot) provide tolerance values referring to particular measurements on the vehicle chassis (control values).

When the selected vehicle has tolerance values with control values, the technical data page (Figure 34) includes the key  . Press the key to display the page with the details of the control values.

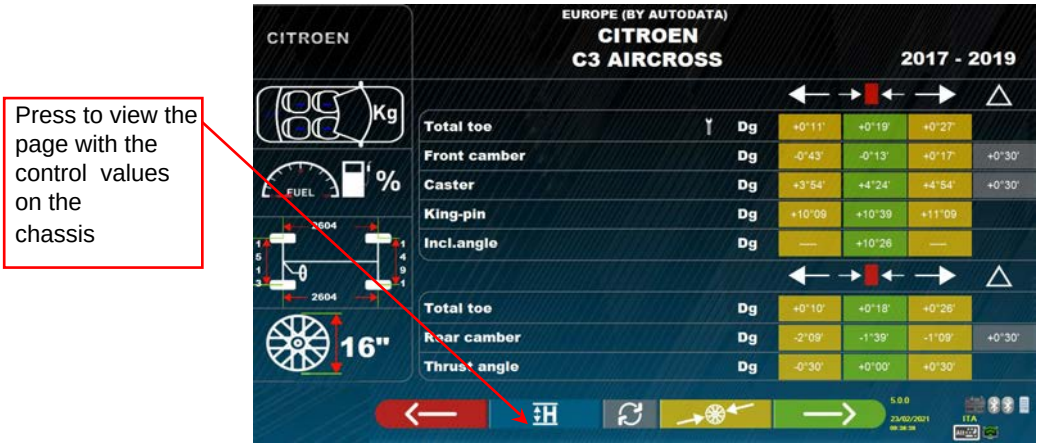


Figure 34

The program displays a page as in the example of Figure 35, press F9 to enlarge the image.

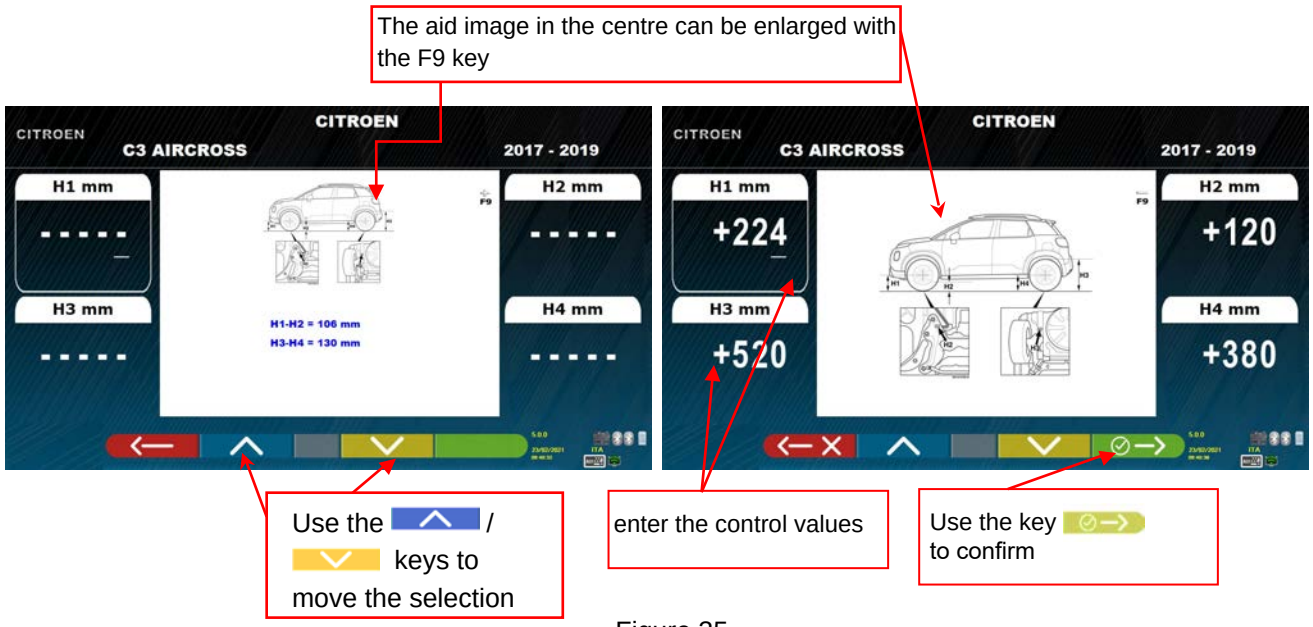


Figure 35

Enter the control values, and press the F4 key  to confirm the entered values.

8.4.3. Display of images for AID in ADJUSTMENT

For various vehicles of some manufacturers, images are available to assist in adjustment, which indicate the adjustment modes on the various angles of the vehicle, such as the camber and caster of the front axle or the camber and toe of the rear axle.

When the selected vehicle has assistive images for adjustment, on the technical data page (Figure 36) there is a symbol  next to the angle indication.
Press the ALT+F3 “ ” keys to view these images

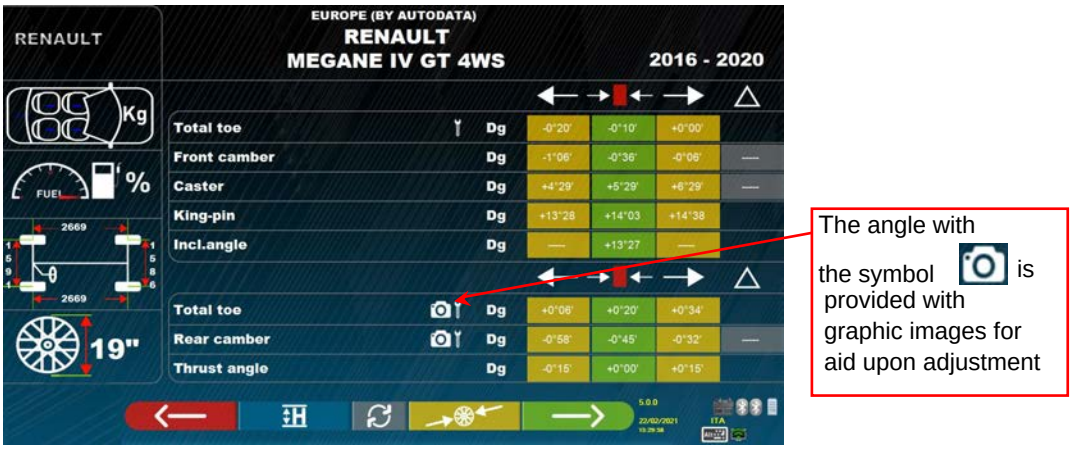


Figure 36

The program displays a page as in the example of Figure 37, use the F2 key  to view the various enlarged images.

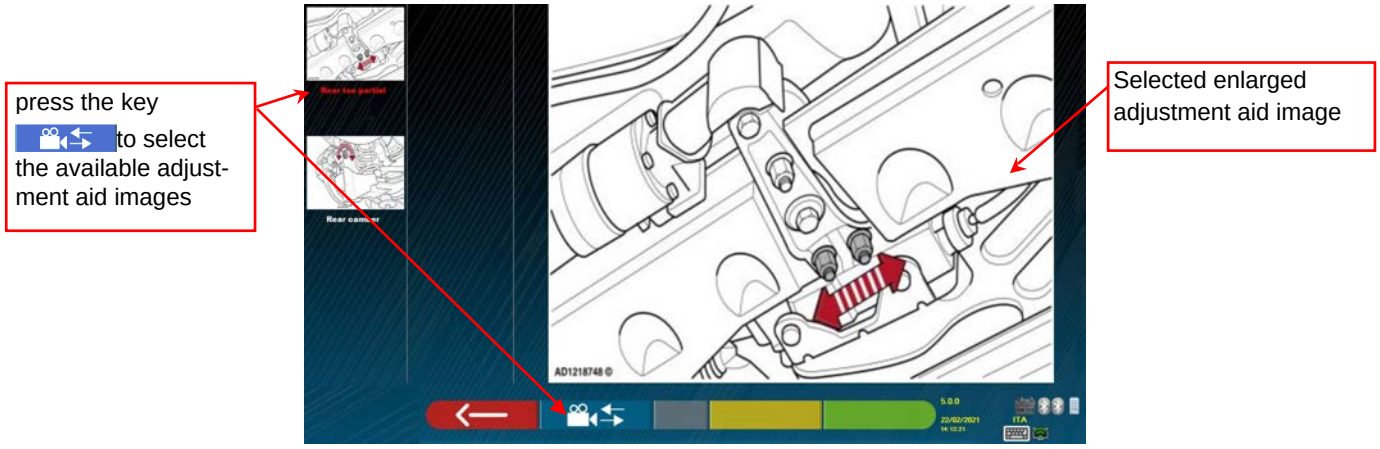


Figure 37

Press the key  to return to the vehicle technical data page.
Note: also during the later adjustment phase (see para. 8.11 on p. 34), if there are images for adjustment aid, an F1 key  is available, to be able to view them if necessary.

8.5. Push run-out with automatic acquisition

The run-out procedure is useful to compensate for any inaccuracy of the rims and improper clamp mounting.

It is possible to activate this procedure even after running the vehicle diagnostics, by selecting the dedicated option in the menu (see chap. 8.15 - Preliminary operations).
In order to carry out the run-out procedure, it is necessary to have performed the preparation as explained see para. 8.2.2 on p. 20.

It is necessary to lift the beam up and down by clicking either the raise or lower buttons. The beam lifting function has both an automatic or manual function allowing for the correct positioning of the cameras. You can check the targets position on the view window. When performing run-out, the targets always remain visible to the cameras. If positions are not acceptable, the next step will not appear.

Figure 38

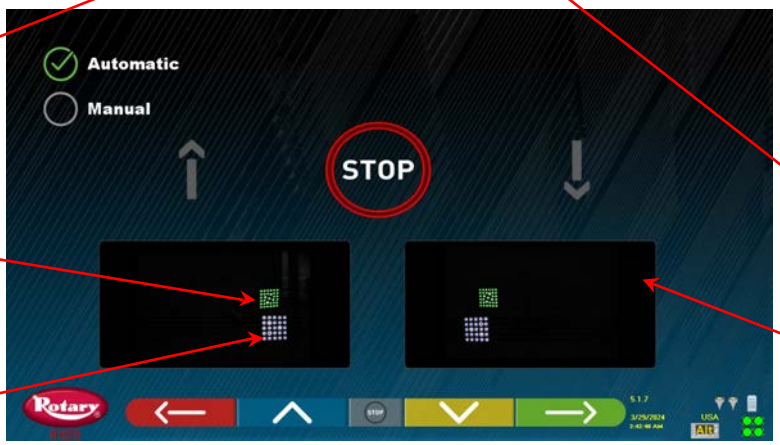


Figure 39

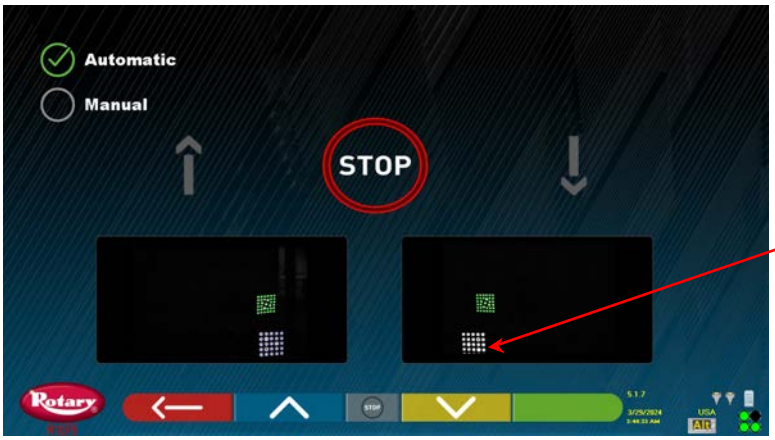


Figure 40

Press the F4 key 
The following screen appears: Indicates that all 4 targets are ready for use.

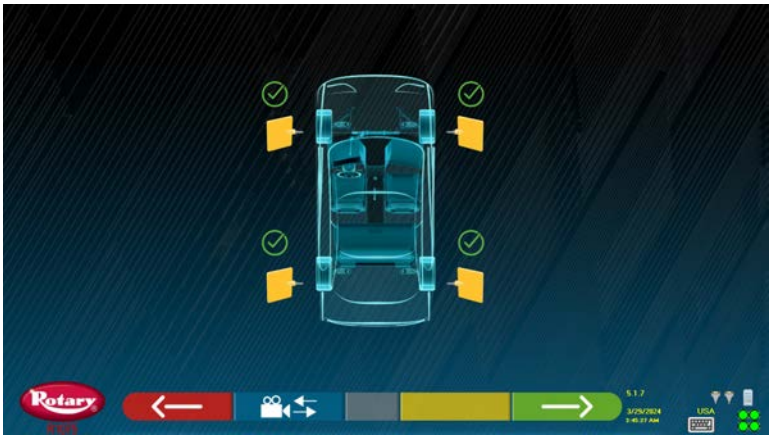


Figure 41

Press the F4 key 
The following screen appears:

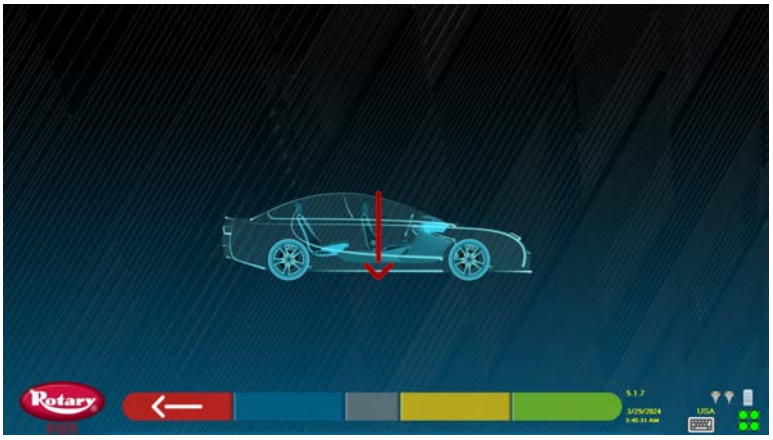


Figure 42

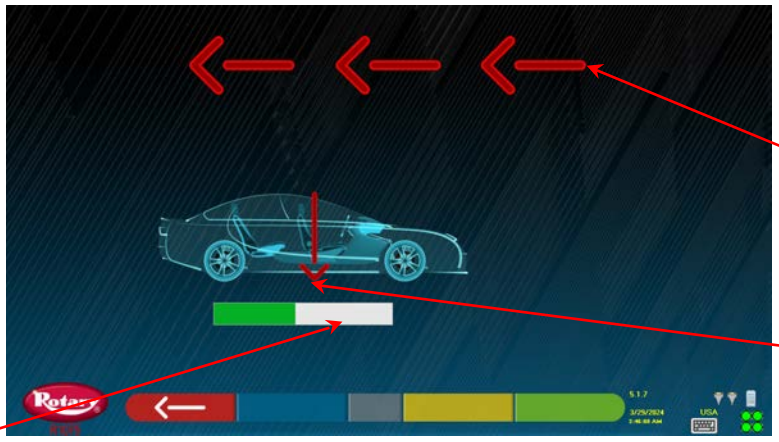


Figure 43

To perform the push off centre operation, it is advisable to carefully follow the visual instructions that appear on the screen.

When ready, move the vehicle back very slowly until the arrow of the vehicle matches the point of arrival.

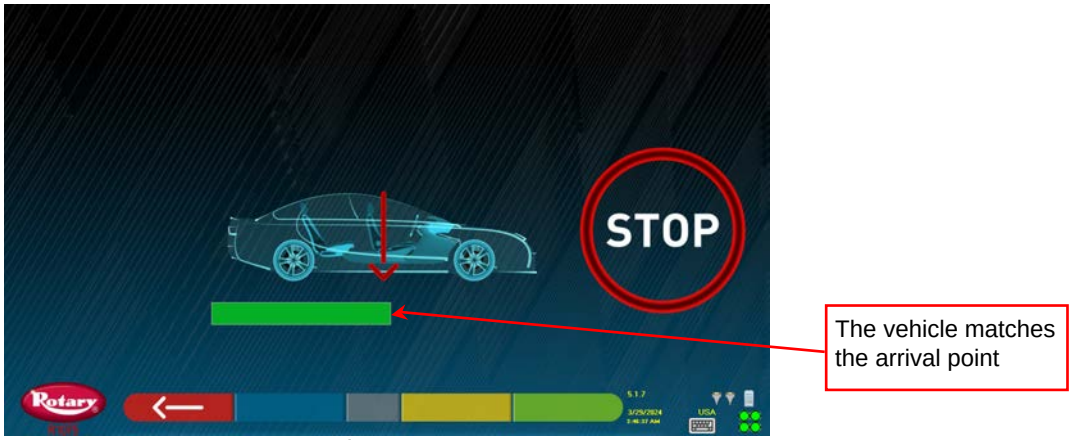


Figure 44

“STOP” is displayed for a few seconds, which is the time necessary for the program to acquire the measurements, after which the program displays the screen indicated below: Start moving the vehicle backwards, very slowly, until the arrow of the vehicle matches the point of arrival.

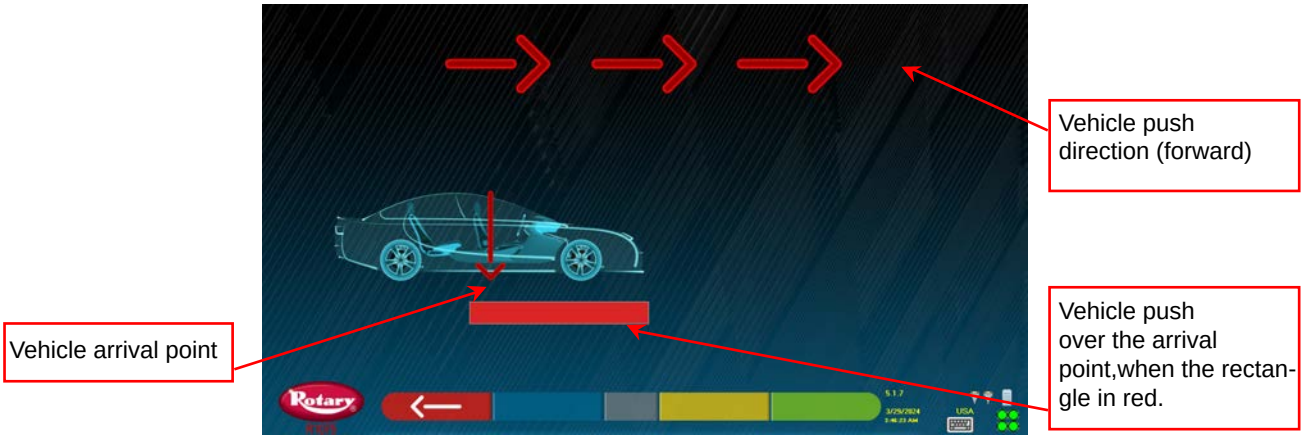


Figure 45

As soon as the vehicle matches the arrival point, “STOP” is displayed for a few seconds, that is the time necessary for the program to acquire the measurements, after which the program displays the following screen:

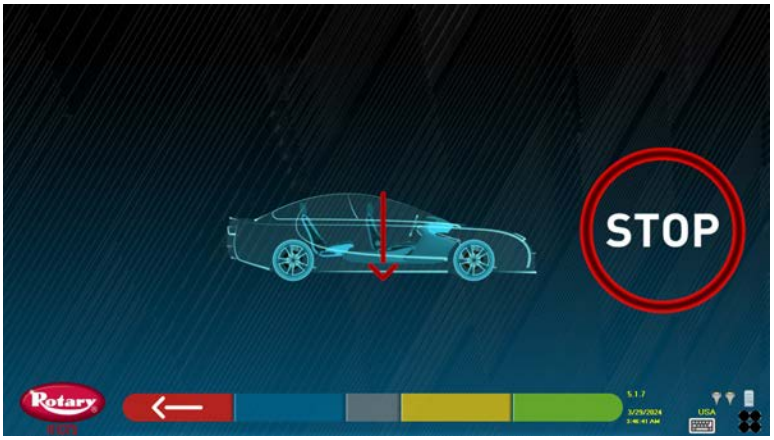


Figure 46

To repeat the operation, having already advanced in the program, it is possible to return to this page by pressing the F1 key and then repeat the operations mentioned above. When the run-out has been performed, the program automatically proceeds to the next step.

8.6. Preparing for measurements

After carrying out the run-out procedure, as explained in para. 8.5 on p. 28-30, it is necessary to prepare the vehicle for the measurements. The following screen will appear:

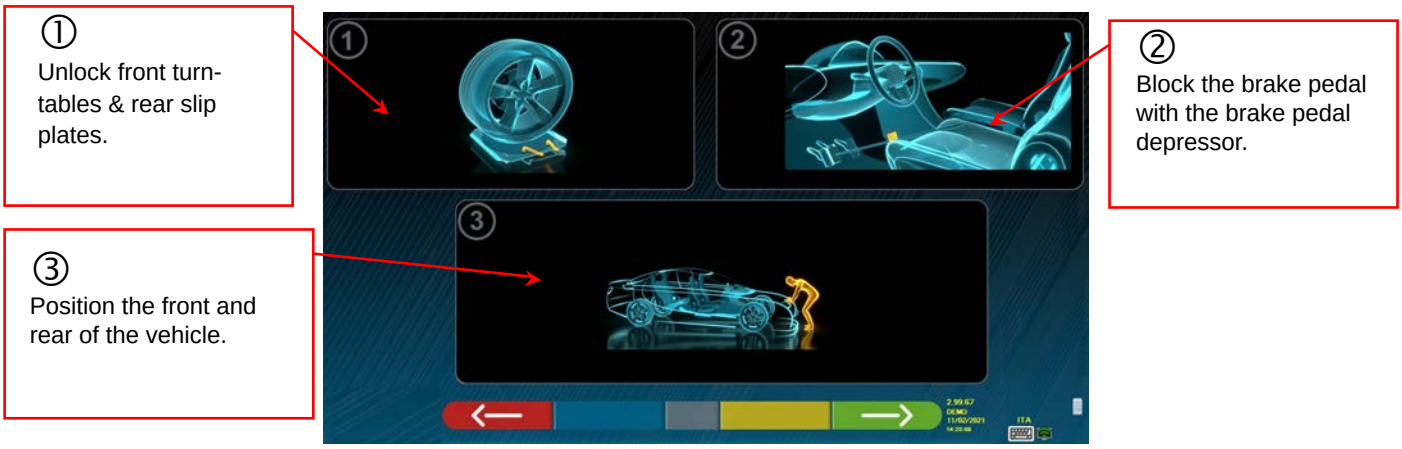


Figure 47

	PC KEYPAD	DESCRIPTION
		Returns to the run-out procedure (see para. 8.5 on p. 28)
		Continues to the alignment procedure (see para. 8.7 on p. 31)

1) Unlock the locating pins from the front turn tables and rear slip plates.
2) Brake the wheels with the handbrake and lock the brake pedal with the brake pedal depressor. (It is necessary in the case of steering for the correct calculation of the KPI).
3) Position the front and rear of the vehicle (only necessary if the vehicle was previously raised and the suspension discharged).

Press the key  to continue.

8.7. Aligning of the vehicle / direct measurements

To perform the vehicle alignment procedure and the consequent detection of direct angles, it is necessary to have first performed the measurement preparation operation as explained in para. 8.6 on p. 31.
When alignment is achieved, the "STOP" sign image appears, indicating that the program is acquiring the vehicle data measurements. The program proceeds automatically only after the wheels have been aligned.

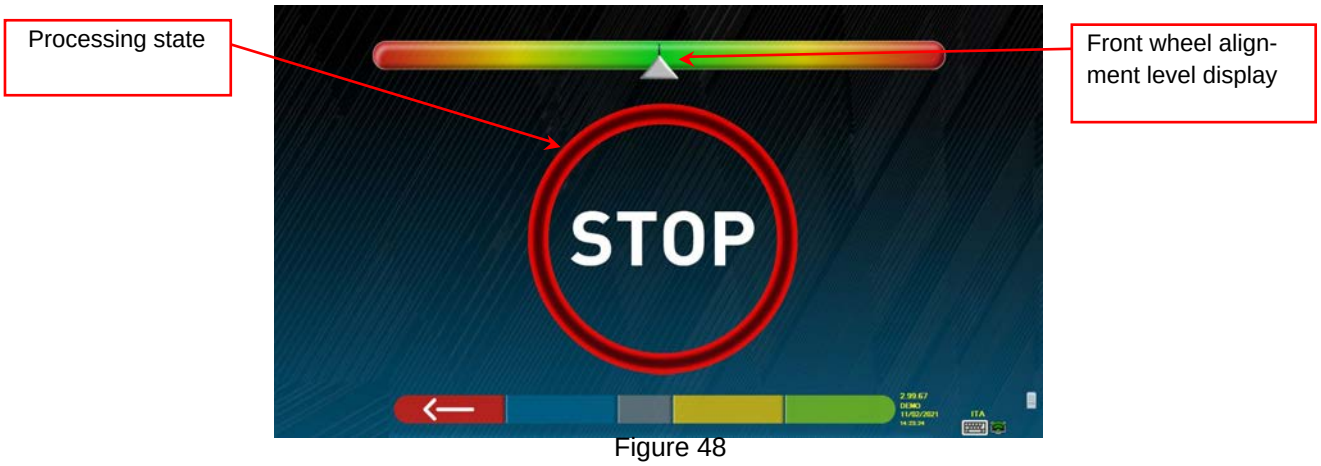


Figure 48

	PC KEYPAD	DESCRIPTION
		Returns to preparation of the measurements. (see para. 8.6 on p. 31)

8.8. Steering procedure

Once the wheels have been aligned (see para. 8.7 on p. 32), it is possible to perform the steering procedure, designed to determine the measurements of:

- CASTER
- KPI/SAI
- Included Angle

(*) Type of steering to be performed:

Figure 49

	PC KEYPAD	DESCRIPTION
		Repeats the alignment and levelling procedure (see para. 8.7 on p. 32)
		Press this key to select the type of steering to be performed. (*)
		displays the graphic-geometric representation of the vehicle axles (see para. 8.14.1 on p. 41)
		Displays the vehicle diagnosis page (see para. 8.9 on p. 33)

- 20° steering
- ACK steering (20° with steering geometry)
- Steering at 10°
- Maximum steering

The steering procedure can also be skipped: the measurement values of the data indicated above will not be obtained.

To skip the procedure, select the F4 key and view the vehicle diagnosis page directly.

8.9. Vehicle diagnoses

After carrying out the steering procedure (see para. 8.8 on p. 32), a summary page of the diagnosis is presented which displays a summary of the measurements taken (Figure 50).
The left side shows the reference data of the vehicle selected in the database, whilst, the right side shows the measurement data obtained from performing the steering procedure. The values highlighted in green indicate readings are within tolerance, whilst the vales in red are not. For values highlighted grey, this indicates there is no tolerance for that angle.

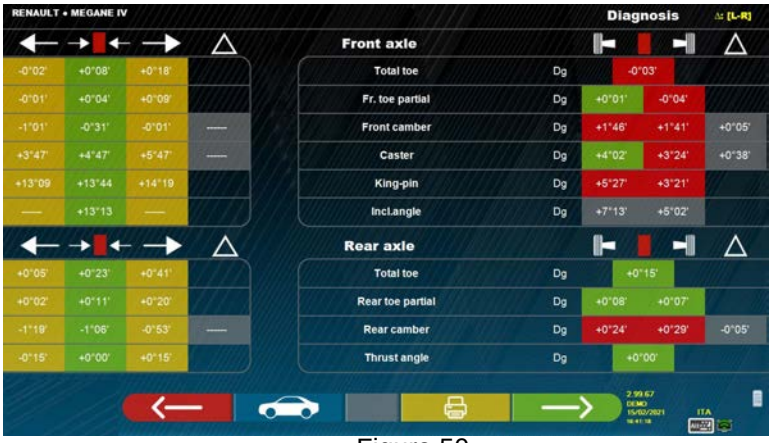


Figure 50

	PC KEYPAD	DESCRIPTION
		Repeats the steering procedure. (see para. 8.8 on p. 32)
		Displays the vehicle technical data (can be changed if necessary). (see para. 8.4 on p. 27)
		Allows printing of the measurements taken of the diagnosis (see para. 8.15 on p. 42).
		Displays the vehicle adjustment preparation page (see para. 8.10 on p. 33)

At this point the vehicle can be prepared for adjustment (see para. 8.10 on p. 33), confirming with the F4 key.

8.10. Preparation for adjustment

By selecting the F4 key from Figure 50 (see para. 8.9 on p. 34), it is necessary to prepare for adjustment. Follow the visual instructions that appear on the screen to complete the preparation for adjustment. Press the F4 key to continue.

1. Position the steering straight.
2. Lock the steering wheel with the appropriate tool and proceed.

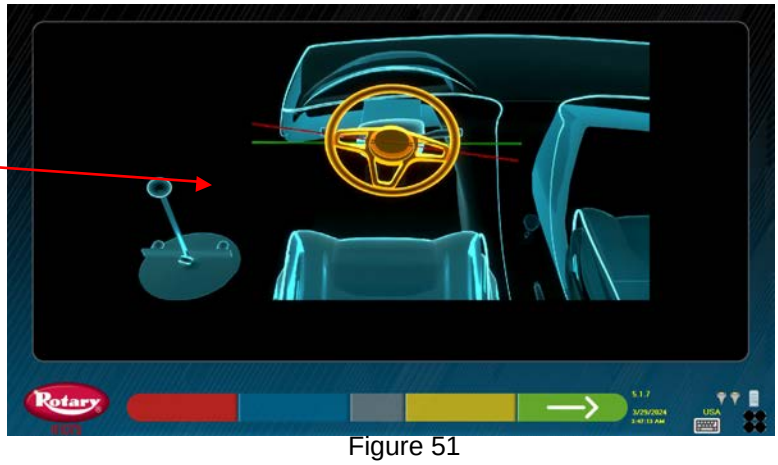


Figure 51

8.11. Rear axle adjustment

The rear axle adjustment procedure is reached by pressing the F4 key shown in Figure 58, after performing the adjustment preparation operations (see para. 8.10 on p. 34).
Record, where permitted, in the following order:

• Rear camber - Rear partial toe

Figure 52

	PC KEYPAD	DESCRIPTION
	F1	Displays graphic images (only if present in the Database) to help you record the angles (see para. 8.4.3 on p. 27)
	F5	“Jack-Hold” procedure (adjustment with wheels raised)
	F3	displays the graphic-geometric representation of the vehicle axles (see para. 8.14.1 on p. 41)
	F4	Continues with front axle adjustment. (see para. 8.12.1 on p. 37)

Note: For the RWA1075 series, during the adjustment phase, it is possible to associate the angle adjustment to a “Beep” sound (they can be set in the “Sound Configuration” option of the “Application Configuration” menu - see para. 7 on p. 17).
By pressing the space bar, a symbol appears below the angle indication and a “Beep” will be emitted with a variable frequency in relation to the value itself.
Beep with very slow frequency → value out of tolerance
Beep with slow frequency → value near the tolerance
Beep with fast frequency → value in tolerance
Continuous beep → value exactly in the centre of the tolerance

Press the space bar repeatedly to move the symbol that matches the association of the sound to the angle to be recorded. Press the space bar again to remove the symbol and thus to deactivate the “Beep”.

8.12. Front axle adjustment

The front axle adjustment procedure can be reached by selecting it on the rear axle adjustment page (Figure 53) and after performing the adjustment preparation operations (see para. 8.10 on p. 34).
The recommended order of the angles to be recorded is as follows: CASTER – CAMBER – TOE

ATTENTION: By entering this phase, the incidence values are “FROZEN” (there is a grid over the incidence values indicating that they are “frozen”.

To unfreeze these values, press the F5 key to bring the selection on the INCIDENCE value, then press the F1 key (on this occasion it is represented by the icon). Or advance to the summary (see para. 8.13 on p. 39) and press F1, the program will display an auxiliary function menu page (see para. 8.14 on p. 41), then select “Record incidence”.
Having recorded the incidence values, or even if they are not recorded and they are found to be correct, it is advisable to “FREEZE” them again; Press F1 again and the grid will appear over the incidence values, indicating that they are “frozen”.

Figure 53

	PC KEYPAD	DESCRIPTION
	F1	Repeats the steering procedure. (see para. 8.8 on p. 33) *by selecting on INCIDENCE (appears) freeze/unfreeze the values
	F2	“Jack-Hold” procedure (adjustment with wheels raised)
	F5	Select the Castor/Camber:
	F3	It carries out toe-in adjustment with steered wheels
	F4	Repeats the adjustment operations (see para. 8.11 on p. 35)

(*) It is possible to display alternatively the partial toe or the total toe, by pressing the Shift + F5 keys simultaneously.

Then perform adjustment of the front axle

8.12.1. Front toe in adjustment with steered wheels

Front toe-in adjustment procedure with steered wheels is started by pressing F3  from front adjustment page.

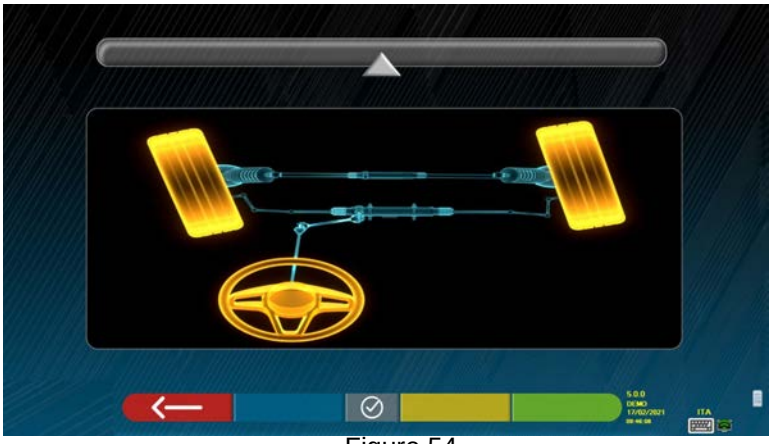


Figure 54

The Figure below appears, prompting to steer Left or Right and then press F5 to confirm.
Note: The steering level indicator is displayed only to give the operator feedback on the value that must remain within the maximum alignment reading (approximately 22÷24°).
After pressing F5, the page indicated in Figure 55. appears. To record the partial toe, it is necessary to “defrost” with F2  (LH partial toe) or F3 (RH partial toe).

Having finished adjustment, press the F1 key  to go back to the front adjustment phase (see para. 8.12 on p. 36). The program prompts steering back to centre before displaying the front adjustment page (Figure 53).

Figure 55

8.12.2. “Jack-Hold” Procedure

From the measurement adjustment page (see para. 8.11 on p. 35 and see para. 8.12 on p. 36) press the key  to carry out the JACK-HOLD procedure (adjustment with wheels raised).
Follow the visual instructions that appear on the screen: Lift the vehicle

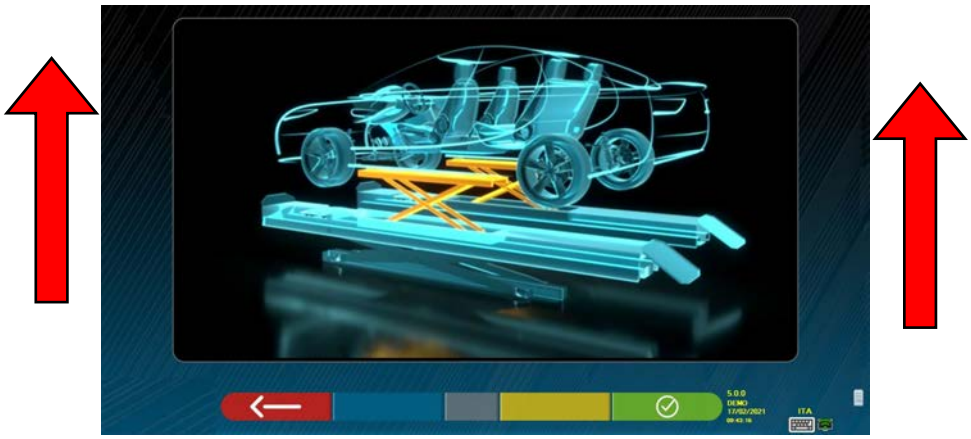


Figure 56

When the vehicle is raised, press the button  to confirm; with the vehicle raised it is now possible to record.

By pressing the key  it is possible to pass from the rear to the front adjustment and vice versa;

Figure 57

At the end of the adjustment, press the button  to lower the vehicle and confirm with the key  when it is correctly placed on the rear steer.
At this point, the program displays the adjustment data again (see para. 10.12 on p. 36) press the key  to diplay the summary page (see para. 8.13 on p. 39)

8.13. Summary of DIAGNOSIS and ADJUSTMENT data

This screen appears following completion of all the adjustment on the vehicle, after pressing the F4 key in the previous adjustment phase, see Figure 53.

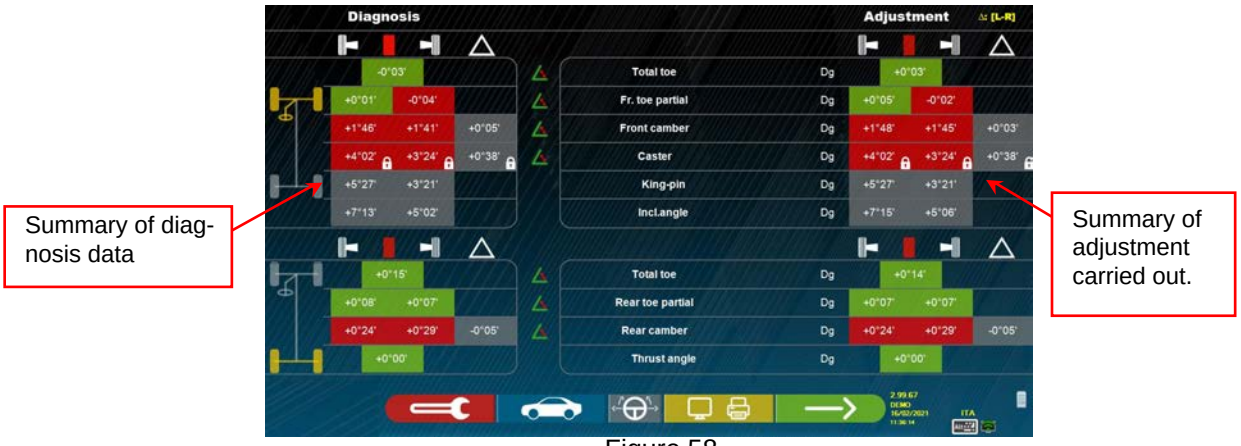


Figure 58

	PC KEYPAD	DESCRIPTION
		Displays the auxiliary functions menu. see para. 8.14 on p. 41
		Displays the vehicle technical data page.
		Performs the “TEST DRIVE” procedure. see para. 8.13.1 on p. 40
		Operations completed! Customer data entry and printing. see para. 8.15 on p. 43
		Returns to the rear adjustment phase. see para. 8.11 on p. 35

8.13.1. “Test Drive” procedure - steering wheel alignment check

From the measurement summary page (see para. 8.13 on p. 39) press the key  to perform the “Test Drive” procedure (steering wheel alignment check).

Follow the visual instructions that appear on the screen:

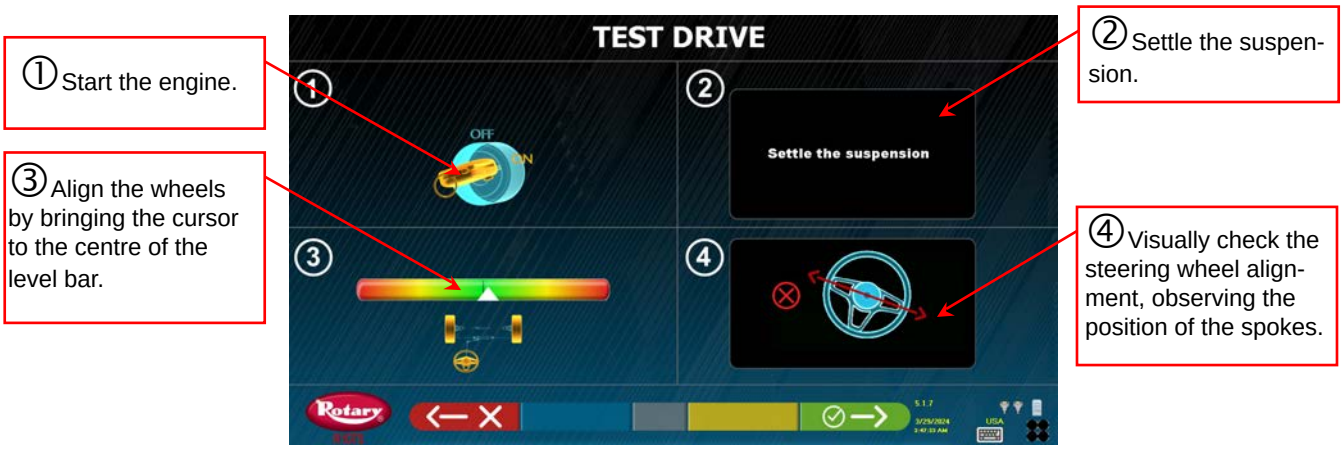


Figure 59

If the “Test Drive” procedure has a positive outcome (the position of the spokes is correct), press the key  to confirm; the summary page will be displayed again (see para. 8.13 on p. 39) and it will be possible to end the test.

If the “Test Drive” procedure has a negative outcome (the position of the spokes is not correct) press the key  . There will be a prompt to re-check the correctness of the partial toe angles (they must be carefully distributed) in the front axle adjustment procedure (see para. 8.13 on p. 39) and then it will be possible to end the test.

Figure 60

Before continuing, there will be a prompt to turn off the engine. Press the key  to continue.

NOTE: It is necessary to activate the “Miscellaneous 2” option in the menu in advance (see para. 7.2 on p. 19).

8.14. Auxiliary functions menu

To be able to perform certain accessory operations or to be able to repeat some phases of the program, in case these are not satisfactory or have not been carried out, select the F1 key  on the summary page (see para. 8.13 on p. 39).

Access is provided to a menu of auxiliary functions, which are used to perform the following procedures:

PRELIMINARY OPERATIONS: see para. 8.2.1 on p. 20

TOE CURVE: By following the illustrations that appear on the screen, the toe curve can be recorded as follows: - Position the vehicle, press F4

- Place the appropriate tool under the front axle, press F4
- Adjust the previous partial toe as prescribed by the manufacturer, press F4
- Remove the tool from the axis and press F4, the program returns to the adjustment phase.

CHASSIS DIAGNOSIS: A graphic-geometric representation of the axles of the vehicle being worked on can be displayed, see para. 8.14.1 on p. 44 .

DATABASE: It is used to view the vehicle selection (see para. 8.3 on p. 22) and possibly to select a different vehicle.

CASTER ADJUSTMENT : see para. 8.12 on p. 36.

TEST DRIVE PROCEDURE: see para. 8.13.1 on p. 40.

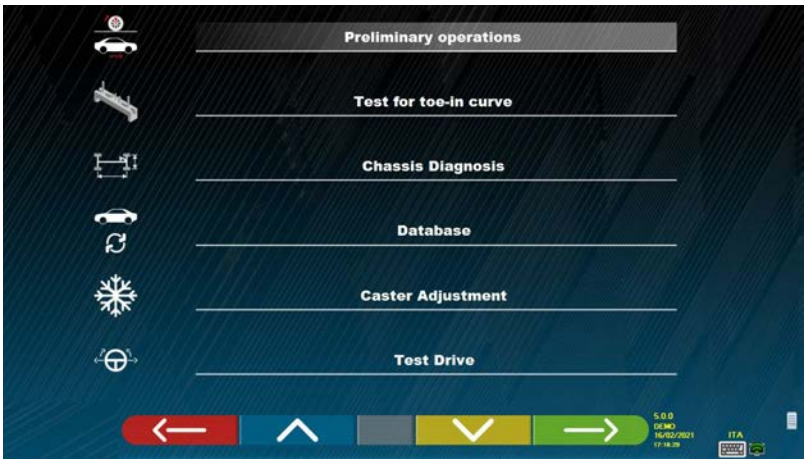


Figure 61

	PC KEYPAD	DESCRIPTION
		Returns to the previous registration page (see para. 8.12 on p. 36)
		Moves the selection up.
		Moves the selection down.
		Confirms the selection.

8.14.1. Chassis diagnosis

By selecting the specific option in the "auxiliary functions" menu” (see para. 8.14 on p. 41), or by pressing the F3 key during the steering phase (see para. 8.8 on p. 33) or in the rear adjustment (see para. 8.11 on p. 35), a graphical-geometric representation of the axles of the vehicle being worked on is dis played, see the example below.

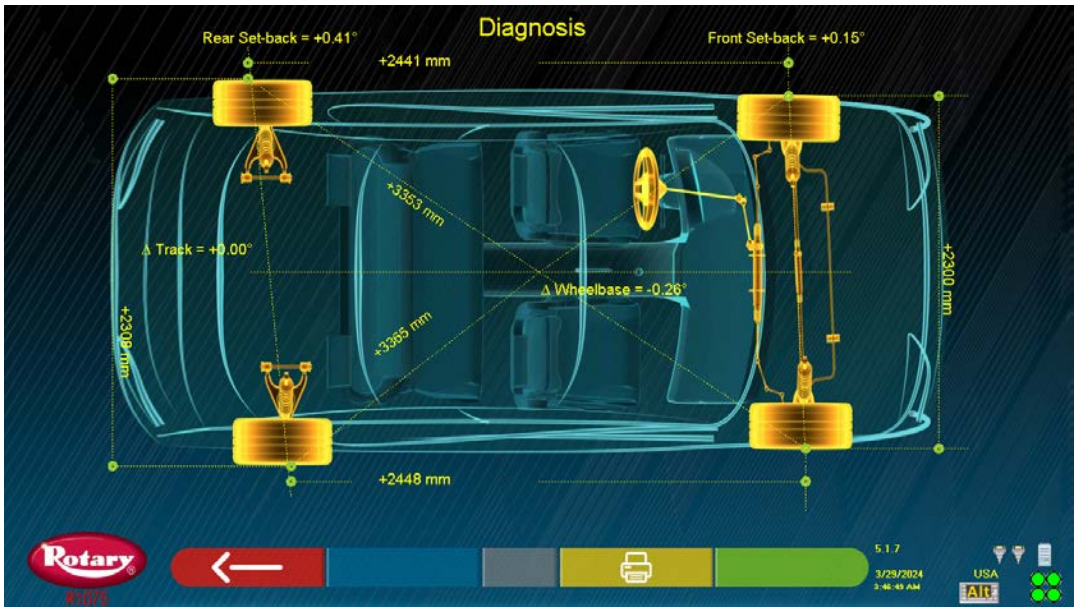


Figure 62

This page displays the distance in mm of the wheelbase and of the track. There are also the diagonals between the four corners of the vehicle's quadrilateral. The measurement of the pitch takes into account the adjustment of the clamps used and the pins / spacers, also represented graphically
This measurement is performed during the vehicle alignment phase (see para. 8.7 on p. 32), for this reason they are considered as “diagnosis” values.

If the vehicle alignment is performed again (e.g. repeated preliminary operation), the values are saved as "adjustment" values; The display of the “diagnosis” or “adjustment” measurements can be changed by pressing the F5 key 
By pressing the F3 key  on this page, the program will allow printing of the “Chassis Diagnosis”measurements.

8.15. Printing of measurements taken

By selecting the following key on the “SUMMARY” page (see para. 8.13 on p. 39), is presented following screenshot:

Figure 63

	PC KEYPAD	DESCRIPTION
		Repeats the steering procedure. (see para. 8.8 on p. 33)
		Stores the test in the "customer database" of the tests carried out (*).
		Displays a print preview of the test performed (see para. 8.15 on p. 43)
		Returns to the home page without storing the test

(*) The data contained in the "customer database" can be accessed from the home screen using the F3 key  (see para. 8.1 on p. 20)

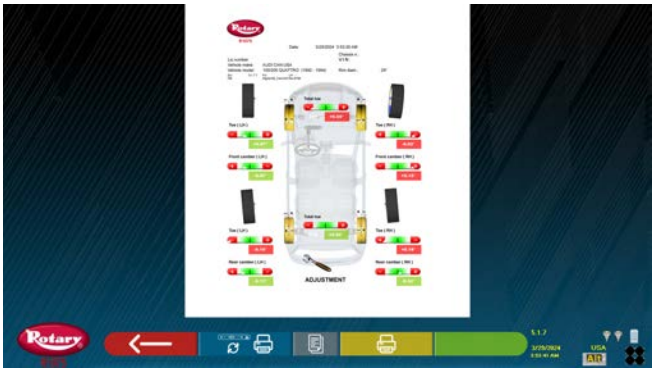


Figure 64

	PC KEYPAD	DESCRIPTION
		Returns to the “vehicle data entry” phase of Figure 63
		It is used to alternate the display between the tabular print and the Graphic print of Figure 64
		Sends the print report to the printer

A report on the test performed is printed which includes the customer's data, the vehicle data before and after adjustment, the technical data of the vehicle provided by the manufacturer and any notes to be expressed to the customer.

Legend of the print example shown in Figure 65

1 - Manufacturer's logo
2 - Space reserved for customising of the workshop data
3 - Date and time of the test
4 - Identification data of the vehicle being tested and of the owner
5 - Factory data of the vehicle being tested
6 - Diagnosis data of the vehicle being tested
7 - Data of the vehicle being tested after adjustment
8 - Front axle data table
9 - Rear axle data table
10 - Space reserved for notes that can be entered manually

Example - Table Print Out

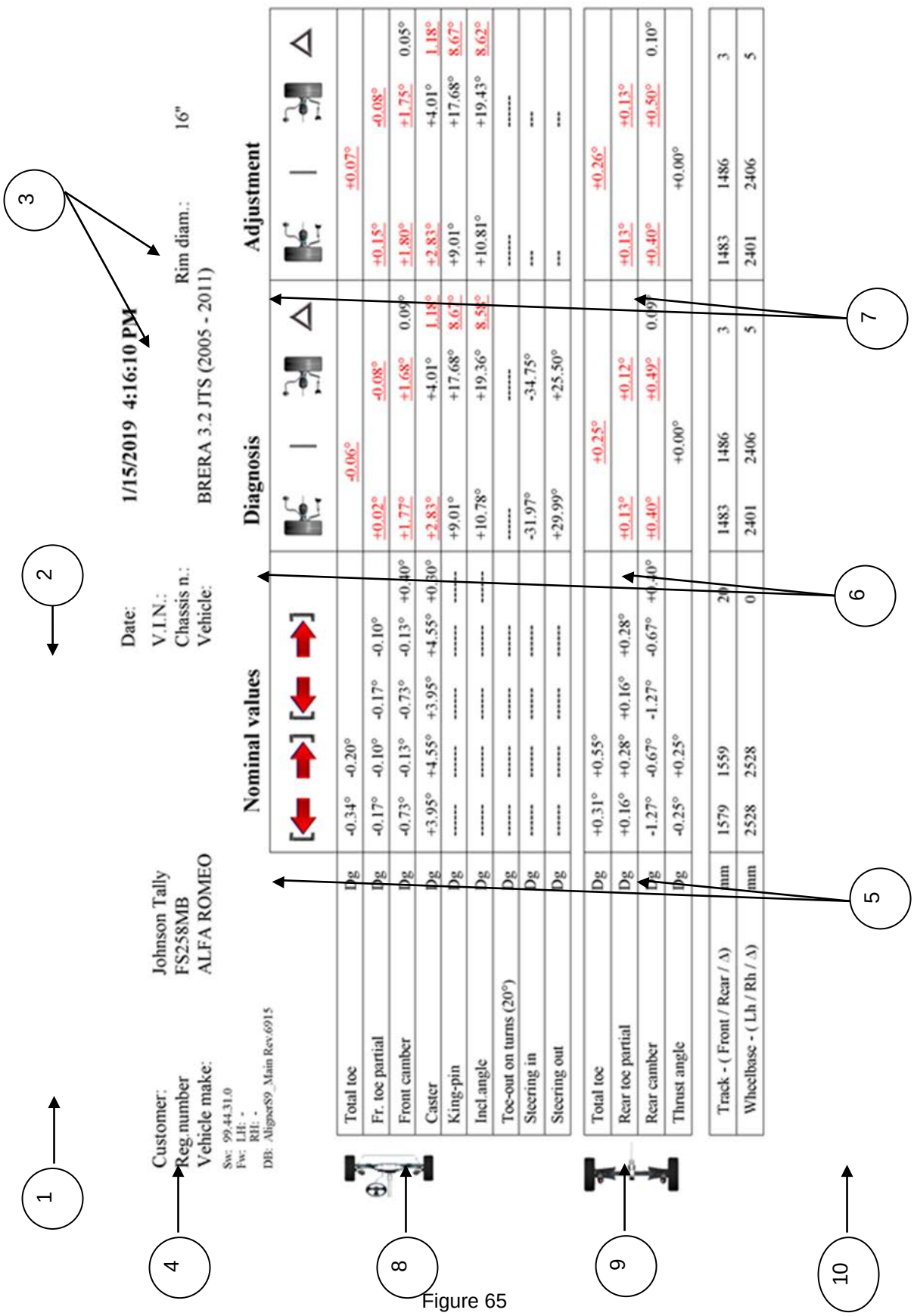
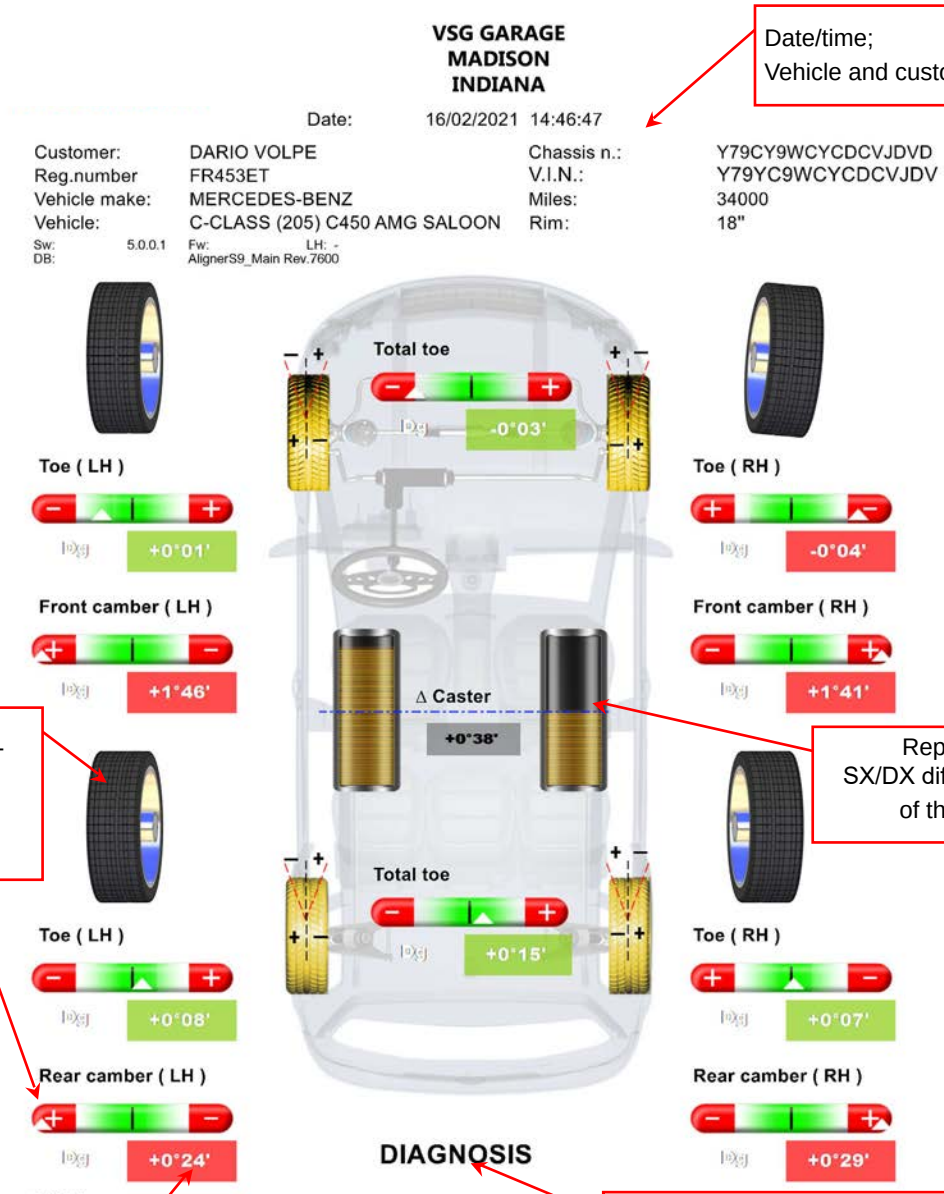


Figure 65

Example - Graphic Print Out



Date/time;
Vehicle and customer data

Graphical represen-tation of the wheel based on tolerance values

Representation
SX/DX difference graphics
of the incidence

Tolerance bar

Value indicated in red / green depending on the tolerance

Indication of diagnostic and adjustment measurements displayed in red / green
depending on the tolerances

Figure 66

8.16. Saving of tests performed with TEq-Link

At the end of the test it is possible to save the report with the results and all the data relating to the vehicle, through the function TEq-Link.

It is necessary to install the "TEq-Link Web Manager" software on a Personal Computer connected to the workshop computer network (see the TEq-Link function configuration manual cod. M0215) and to connect the PC of the equipment to the same data structure.

⚠ **Attention!**: It is necessary in advance to ask the manufacturer to enable the functionality, communicating the number of your series number (see chap. 10 on p. 52)and to configure the PC of the equipment with the references of the PC where the "TEq-Link Web Manager" software is installed (see para. 8.16.1 on p. 47).

After completing the test, in the customer data entry phase (see Figure 63 on p. 45), it is possible to store the test results using the key .

When the tests carried out are stored, their results are immediately accessible from any PC or mobile device in the network.

8.16.1. TEq-Link functionality configuration

Before being able to save the test with the TEq-Link functionality, it is necessary to insert the references of the PC where the “TEq-Link Web Manager” software is installed.

Access from the configuration menu (see para. 7 on p. 17) in the TEq-Link application /connection configuration option, then enter the IP address of the PC where the "TEq-Link Web Manager" software is installed. For details see the TEq-Link functionality configuration manual (cod. M0215 in paragraph 3.2).

At this point, from any PC or mobile device on the same network, simply by entering the I.P. or the name of the PC with the “TEqLink Web Manager” SW, to access the main page for managing the saved tests; see example in Figure 67.

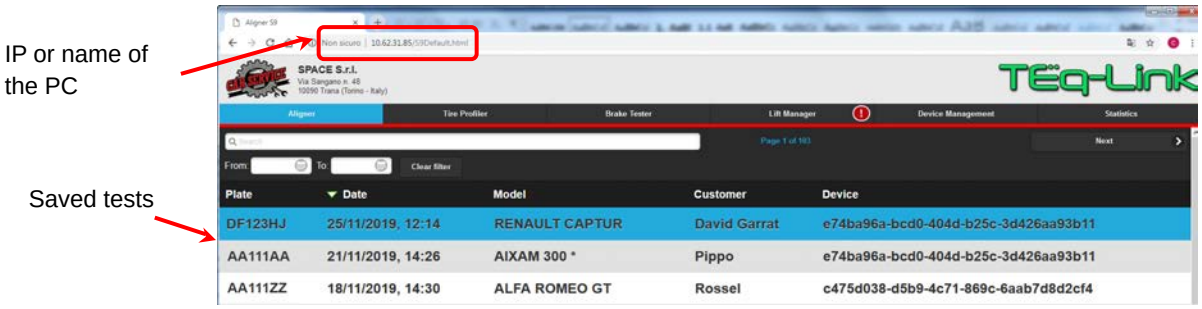


Figure 67

9. DATABASE CUSTOMISATION

It is possible to customise the vehicle database by creating customised groups and vehicles.

9.1. Insertion of a new group

To be able to create customised groups and to store them in the database, it is first necessary to go to the groups configuration page (see para. 7.1 on p. 18).

At this point, press the “Ins” key  on the keypad.

The following screen will appear:

Figure 68

Enter the name of the new profile (in the example in Figura 68 “ITALIA” is indicated) and confirm by pressing F4.

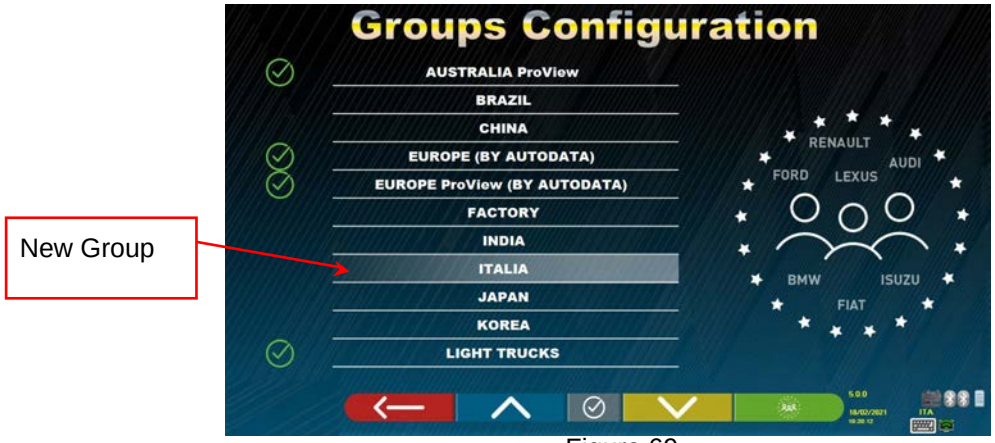
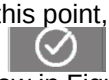


Figure 69

At this point, press F4 to enter the new group “ITALIA” and make the brands visible by pressing F5  as indicated see para. 7.1 on p. 18. Then make the profile visible by pressing F5 again, as indicated below in Figure 70.

Press F1  to exit.

Selecting the group with the F5 key
“All makes”, a profile is displayed in which all the vehicles of all the makes present in the database are displayed.

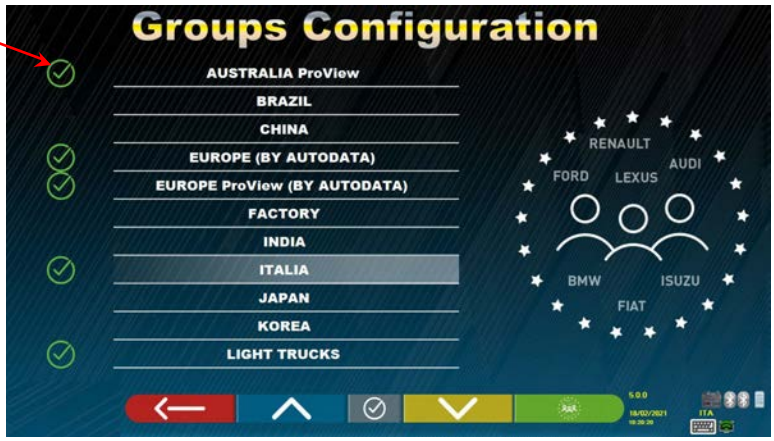
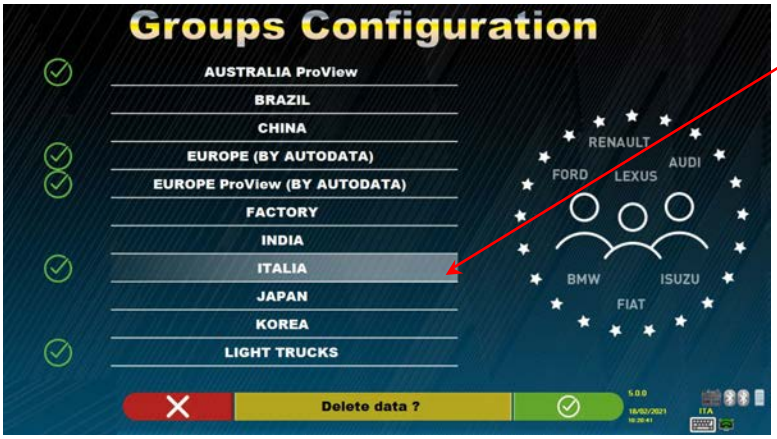


Figure 70

9.2. Deletion of a new group

It is necessary to view the group configuration (see para. 7.1 on p. 18), select the customised group to be deleted, then press the “delete” key: Canc : and confirm with F4.



Customised group displayed

Figure 71

Attention: If a customised group is deleted, it will no longer be possible to recover it, unless in possession of a backup copy of the database.

9.3. Insertion of a new vehicle

ATTENTION:

In order to create customised vehicles and to store them in the database, it is necessary to start from a "dummy" vehicle (without values) or from an unofficial vehicle (from historical sources, which are highlighted by an a sterisk next to the name). The official data is protected by copyright, it is not possible to use it to create a new vehicle.

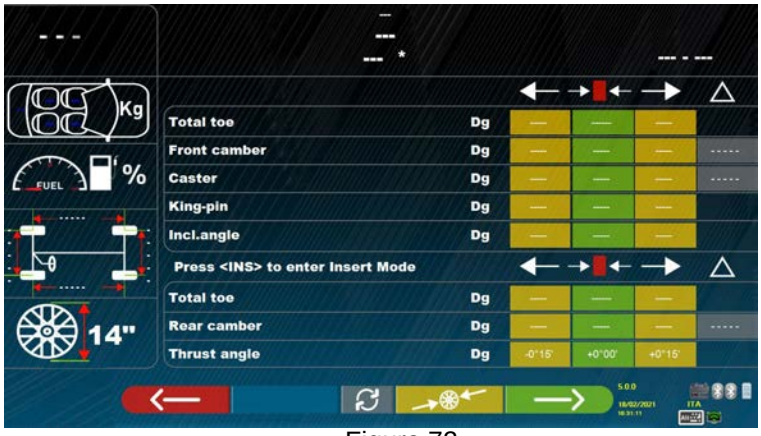


Figure 72

At this point it is necessary to press the "Ins" key on the keypad: 

The following screen will appear:

Figure 73

As can be seen in Figure 73 in the highlighted point, the make of the selected vehicle appears highlighted with the red background. It is possible to enter or confirm the name of the vehicle make to be created. Next, select and enter:

- Vehicle model and sub-model name
- Production start and end date
- Rim diameter
- Front and rear track
- Left and right pitch

	They move the selection to the next data.
	They move the selection to the previous data.
	Deletes the entyreselected element
	Deletes the last character of the selected element

Use the following keys:

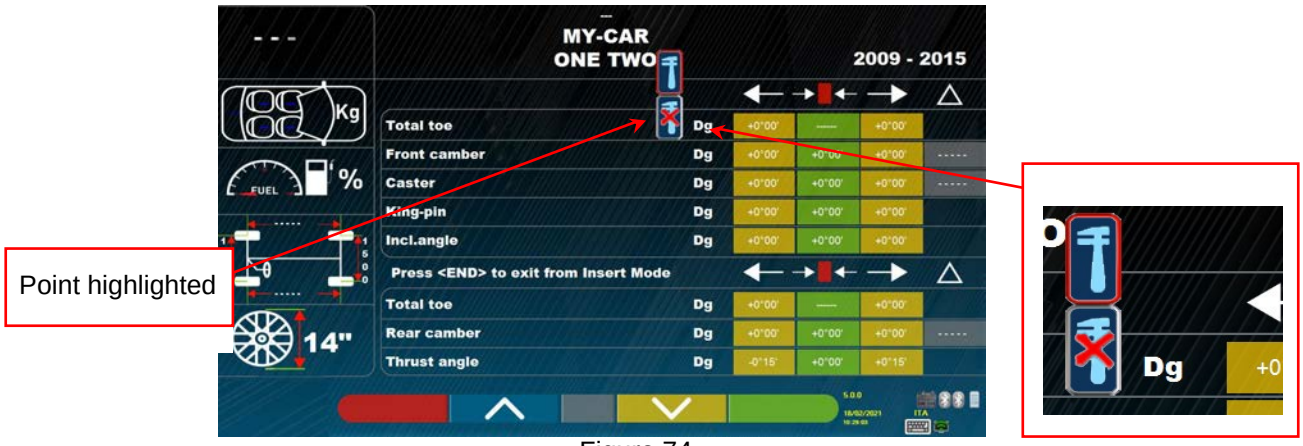


Figure 74

After entering the above data, the screen will look like this:
As can be seen in the enlargement on the right of Figure 74, it is necessary to specify whether the angle is adjustable or not. Use the keys ↓ / ↑ to set the selection to “adjustable” or “non-adjustable” . It is now necessary to enter the vehicle tolerance values of the Toe and Camber angles; for the front axle it is also possible to enter: Caster, KPI and steering data.

Attention: To separate integer values from decimals, try using the "full stop” or "comma" .

At the end of entering the values, press the key End , the following screen appears:

Figure 75

confirm with creation of the customised vehicle.
If viewing the vehicle database, it can now be seen that the newly created customised vehicle is also present, it is there separately from the other brands, always in alphabetical order, written in italics.

9.4. Deletion of a customised vehicle

It is necessary to view the vehicle database page and to select the customised vehicle to be deleted, then to press the Delete key: Canc

Attention: If a customised vehicle is deleted, it will no longer be possible to recover it, unless in possession of a backup copy of the database.

10. DATABASE DOWNLOAD AND UPDATE

3D devices are all equipped with a PC which with the WIFI CONNECTION (Wireless and wired)
The license and code are already entered into the PC in the factory and set the aligner with dummy version for database.

Each device is provided with its own license and code which cannot be replaced with one from another device.
In case of removal or replacement of the afore-mentioned license, the program displays an error message , and it will not be possible to continue.

To download the files required for installation: (the token ,config and the database) it is necessary to
Get the aligner with internet connection which will automatically download and upgrade .
or
Downlaod it from databank website and insert by USB disk.
Once the aligner finish this process ,the warranty date is activited.

Figure 76: By selecting Database Management to download /update page.

Figure 77: Download /update page.,by pressing  ,start to the process.

Figure 78: After the process, the aligner ready to measuremts.

Figure 79: Databank website(https://databank.ravaglioli.com/)

*Enter the series number and download the files to USB disk in a AS9 fold.

*Insert the USB disk into the PC,start from figure 64,by pressing  to start the process.

Detail information please refer the manual M0251.

11. ERRORS DURING MEASURING

11.1. Camera connection error

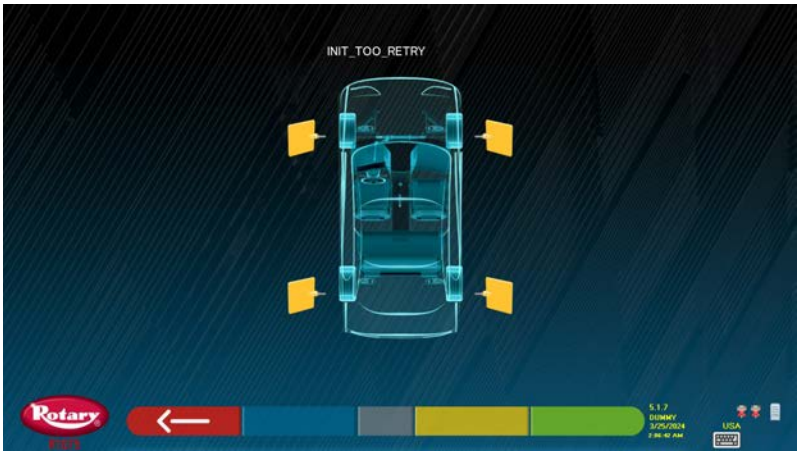


Figure 80

Possible reasons for this error:
*the camera power switch on rear panel (figure 2) not been activated.
*the connection wires on the beam to column have not been connected, refer figure 14 on page14.

NO Communication

OK communication

Figure 81

Possible reasons for this error:
Data transmission error from either one or both cameras.

*Return to last step by pressing F1.  ,Then re-enter.

*If data transmission errors are still experienced, switch off the PC see para. 6.2 on page 16, turn off the main power switch and restart the aligner again.

12.Troubleshooting

Listed below are some possible problems of the wheel alignment equipment.
Rotary disclaims any liability for damage caused to persons, animals and property due to the intervention of unauthorised personnel and to the use of non-original spare parts.
Before carrying out any work on the system, it is necessary to disconnect the power supply.
If in doubt, do not interpret, contact the Rotary technical assistance in advance in order to receive information to be able to perform operations in conditions of maximum safety.

PROBLEM	CAUSE	SOLUTION
No operation	- No voltage in the network. - Protection fuses interrupted.	- Check the mains voltage . - Check the protection fuses .
The monitor does not work		- Check the connection of the power cable. - Check the connection of the video signal cable between the PC and the monitor.
The PC does not turn on	- No power supply.	- Check the ON/OFF switch of the PC. - Check the power cable connection.
The printer does not work (see also printer operating manual)	- No power supply. - No signal .	- Check the ON/OFF switch. - Check the connection of the power cable. - Check connection of the printer signal cable with the PC.
The camera does not work	-No power supply. -Camera broken.	- Check the ON/OFF switch of the rear panel. - Check connection of camera signal cable with PC. - Check connection of camera signal cable with column HUB board. - Replace the camera ,RCP process.
Measurments data too big	-Sunlight or a strong light source shines directly on the target. -Clamp and target dismouted and lost the angle . -The distance from camera to front target not correct . -Camera lost position.	-Test again without sunlight . -TID process ,dtail see installation manual. -Adjust the distance.see figure 11. RCP process ,dtail see installation manual.
The view of target lost		-Restart the PC and camera(turn off the swicth of camera on the rear panel,after PC start ,restart again) -Ensure the targets are in correct position.
Operating system corruption	-Abnormal shutdown of PC.	-Reboot the PC systerm by USB .

13. MAINTENANCE

ATTENTION! Before carrying out any maintenance work it is necessary to disconnect the machine from the network by turning off the main power supply. To clean plastic panels or shelves, use alcohol (IN ANY CASE, AVOID LIQUIDS CONTAINING SOLVENTS). The DISPLAY must be cleaned with a dry cloth; if it is particularly dirty, clean it with a damp cloth and then dry. Do not spray alcohol directly onto the control panel and avoid cleaning with strong jets of compressed air. Keep the methacrylate filters of the optical unit clean using a slightly damp cloth, do not use solvents; Cleaning, cartridge replacement and other printer maintenance operations are described in the manual supplied with the printer. Always refer to the latter before carrying

14. STORAGE AND SCRAPPING

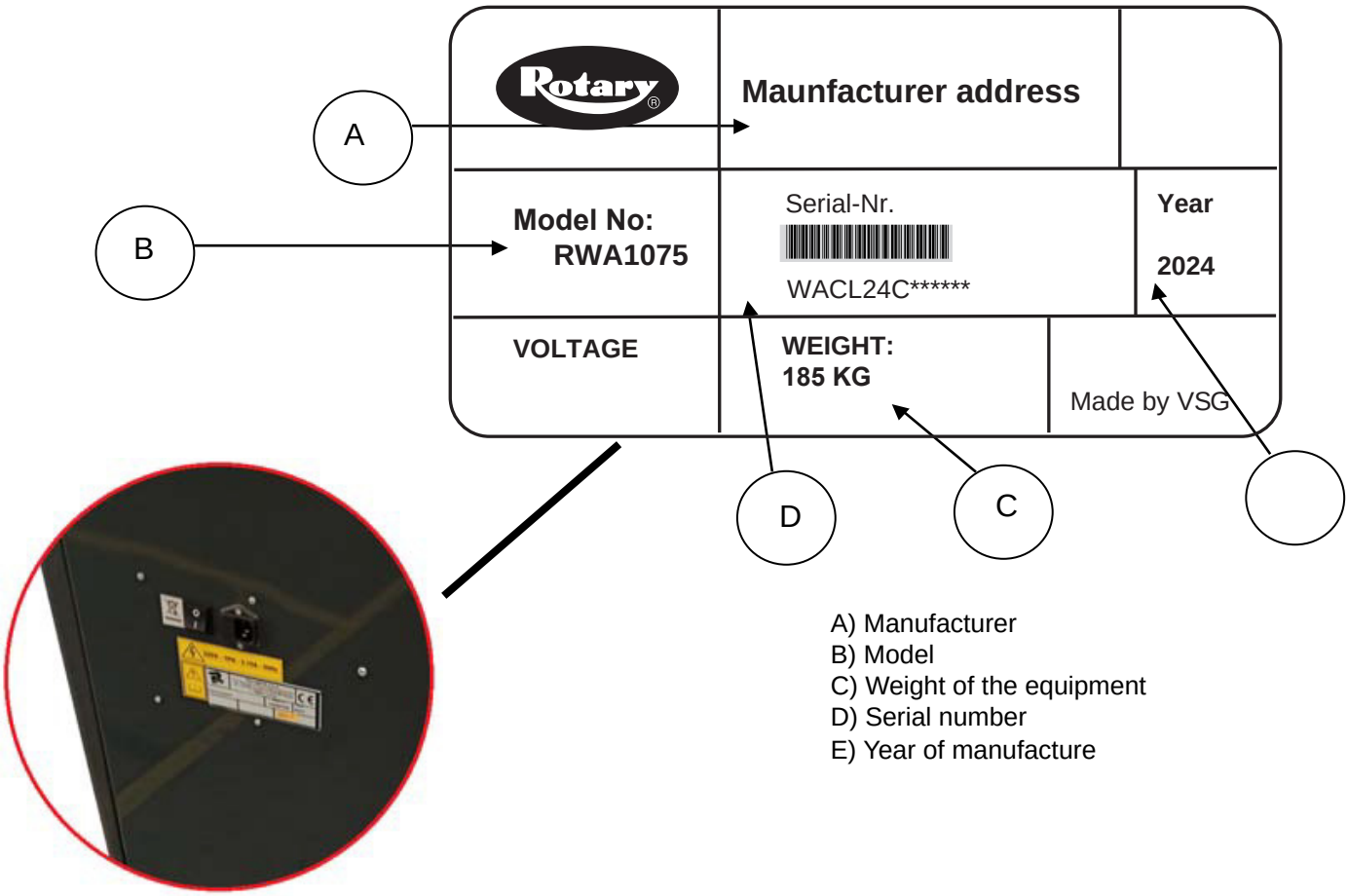
Storage - In the event of long-term storage, it is necessary to disconnect the power sources and to provide protection for the display which could be damaged due to excessive dust deposits. Grease the parts that could be damaged in case of drying.

Scrapping - Should you decide to no longer use this device, it must be made inoperative by eliminating the connection cables and the sensitive parts that may become a source of danger. Consider the machine as special waste and dismantle it by dividing it into homogeneous parts. Dispose of the parts according to the local laws in force.

Properly dispose of items in accordance with all local and national procedures/codes

The main structure of the enclosure bears the recycling symbol; it is made of linear medium density natural polyethylene, a material that can be recycled.

15. MACHINE IDENTIFICATION DATA



A) Manufacturer
B) Model
C) Weight of the equipment
D) Serial number
E) Year of manufacture

ATTENTION:It is absolutely forbidden to tamper with, engrave, alter in any way or even remove the machine identification plate; do not cover this plate with temporary panels, etc. as it must always be clearly visible. Always keep this plate clean from grease or dirt in general.

WARNING: In the event that for accidental reasons the identification plate is damaged (detached from the machine, damaged or even partially illegible) immediately notify the manufacturer of this fact.

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