

# MAGNETI MARELLI

## 3D wheel alignment system

### User's manual

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## INTRODUCTION

The purpose of this manual is to furnish the owner and operator of this equipment with a set of practical and safe instructions for the use and maintenance of the wheel aligner.

Follow all the instructions carefully and your equipment will assist you in your work and give lasting, efficient service in keeping with our traditions.

The following points define the levels of danger regarding the equipment, associated with the warning captions found in this manual.

### **DANGER**

Refers to immediate dangers with the risk of serious injury or death.

### **WARNING**

Dangers or unsafe procedures that can cause serious injury or death.

### **ATTENTION**

Dangers or unsafe procedures that can cause minor injuries or damage to property.

Read these instructions carefully before powering up the equipment. Conserve this manual and all illustrative material supplied with the equipment in a folder near the equipment where it is readily accessible for consultation by the operators. The technical documentation supplied is considered an integral part of the equipment; in the event of sale all relative documentation must remain with the system.

The manual is only to be considered valid for the equipment of the model and with the serial number indicate don' the nameplate applied to it.

### **WARNING**

Ad here to the contents of this manual: the operator is to be held responsible for any operation not specifically described in this manual.

### **NOTE**

Some of the illustrations in this manual have been taken from photographs of prototypes: standard production systems may differ in some details. These instructions are intended for people with a fair level of mechanical knowledge. We have therefore not considered it necessary to describe every single operation, such as the procedure for loosening or tightening fixing devices, etc.

Never carry out operations which exceed your level of operating skill, or of which you do not have experience. If assistance is required, contact an authorised service centre.

### **WARNING**

The aligner is a measuring tool, as a result the prompts for the adjustments to be made on the vehicle (animations or fixed help messages) are purely indicative only. The operator must always have read and understood the instructions or guidelines provided by the manufacturer before carrying out any work on the vehicle, and carry out said adjustments in compliance with these instructions.

The manufacturer declines all responsibility for the actual implementation and consequences of the aforementioned adjustments

### **General Characteristics**

- Angle reading with infrared CMOS cameras.
- 0.01 degree data display.
- Databank on Hard disk.
- User databank and jobs archive.
- LCD colour monitor.
- Colour INJKET or B/W LASER printer.
- Professional alphanumeric keypad.
- Exceptional operating freedom, the user can switch between adjustments at will.
- Steering measurement in automatic or directly from targets.
- Maximum steering angle without turntables.
- Data displayed in degrees, grades, millimetres and inches.
- Graphic comparison between the data read and the databank values.
- Help driving to the lift mode
- Easy to use just two keys ENTER and ESC
- Equipment Calibration - once calibration before delivery, workable immediately after installation, no need for periodic calibration

## TECHNICAL DATA

- Measuring ranges:

toe  $\pm 20^\circ$

camber  $\pm 10^\circ$

caster  $\pm 30^\circ$

king pin  $\pm 30^\circ$

setback  $\pm 22^\circ$

thrust angle  $\pm$

$22^\circ$  steering

angle  $\pm 35^\circ$

- Power supply: central unit 230 Vac (50-60 Hz) single-phase central unit consumption 0.4 kW

- Ambient conditions for storing the equipment:

relative humidity 20% - 80%

temperature range  $-10^\circ$  -  $+60^\circ\text{C}$ .

- Ambient conditions in the place of operation: relative humidity 20% - 80% temperature range (CRT monitor and LASER printer)  $0^\circ\text{C}$  -  $40^\circ\text{C}$  temperature range (LCD monitor and INKJET printer)  $5^\circ\text{C}$  -  $40^\circ\text{C}$  - Noise level when operating:  $\leq 70$  db(A)

## TRANSPORT, STORAGE AND HANDLING

Equipment transport conditions

The aligner must be shipped in its original packing and stowed in the position indicated on the outside.

Ambient conditions for storage of the equipment

Relative humidity 20% - 80% Temperature range  $-10^\circ$  -  $+60^\circ\text{C}$ .

### WARNING

Do not stack other items on top of the packing or damage may result.

Handling

To move the packing, insert the tines of a fork-lift truck into the slots on the base (pallet). Remove the three fixing brackets.

To move the equipment, use the wheels of the aligner; to lift it, insert the tines of a fork-lift truck under the lower base of the cabinet, keeping them close to the wheels of the aligner (Fig. 2). Take care not to break the door.

### **CAUTION**

**Keep the original packaging materials so that the machine can be safely shipped at a later date if necessary.**

**The warranties on the monitor, personal computer and printer are no longer valid if the original packaging is missing.**

### **ELECTRICAL HOOK-UP**

The manufacturer pre-sets the aligner to operate with a power supply of 230V AC. To change this setting, refer to the "installation" section.

### **WARNING**

Any connections to the workshop electrical board are the customer's responsibility, and must be made by staff qualified in accordance with the relevant legal requirements.

- The electric hook-up must be suitably rated in relation to:
  - The machine input power, specified on the machine data plate.
  - The distance between the equipment and the electric hook-up point, so that voltage drops under full load do not exceed 4% (10% during start-up) below the rated voltage specified on the dataplate.
- The user must:
  - Fit a power plug in compliance with the current regulations on the power supply lead.
  - Connect the equipment to its own electrical connection having a specific automatic differential circuit-breaker, with sensitivity 30 mA.
  - Fit protection fuses to protect the power supply line, rated in accordance with the instructions provided in the general wiring diagram in this manual.
  - Provide the workshop's electrical system with a grounding circuit in good working order.

## **PREPARING THE VEHICLE FOR THE ALIGNMENT OPERATION**

For the wheel alignment operation to be carried out correctly, all parts of the vehicle must conform to the constructor's specifications; in particular, it is important to check the tyre pressure and eliminate any backlashes in the bearings and ball joints.

Place the vehicle over the pit or on the lift equipped for the alignment operations, taking care to ensure that the turntables and oscillating foot boards are locked in position.

Fit the self-centring clamp/target assembly on the wheels and lock the clamp jaws onto the wheel rim using one handle. Mount the "small" targets on the front wheels and the "big" targets on the rear wheels.

### **CAUTION**

Do not over-tighten the clamp as this may cause it to bend.

The equipment is intended for professional use only.

### **WARNING**

Only one operator may work on the equipment at a time.

### **WARNING**

Failure to comply with the instructions and danger warnings may cause serious injury to operators and to others in the vicinity. Before starting up the equipment, always ensure you have read and understood all the danger/warning signs in this manual.

Only qualified, authorized operators are capable of using this equipment correctly. In order to be classified as skilled, operators must be capable of understanding the written instructions provided by the producer, and be trained and familiar with the safety rules and labour regulations. Operators must not use the equipment under the influence of alcohol or drugs which may affect their capacity. In all cases, it is essential to:

- Be able to read and understand all the information in this manual.

- Have thorough knowledge of the capabilities and features of this machine.
- Keep unauthorised persons well clear of the area of operations.
- Make sure that the equipment has been installed in compliance with all the relevant legislation and standards.

- Make sure that all system operators are suitably trained, that they are capable of using the equipment correctly and safely and that they are adequately supervised during their work.
- Do not touch power lines or electrical equipment without first making sure that the power supply has been disconnected.
- Read this manual carefully and learn how to use the machine correctly and safely.
- Always keep this operator's manual in a place where it can be readily consulted and to consult it whenever appropriate.

### **WARNING**

Do not remove or deface the Attention, Warning or Instruction decals. Replace any missing or illegible decals. Missing or damaged decals can be obtained at your nearest dealer.

- When using and carrying out maintenance on the equipment, observe the standardised industrial accident prevention regulations.
- Unauthorised alterations or changes to the equipment relieve the constructor of all liability for any consequent damage or accidents. In particular, tampering with or removing safety devices constitutes a breach of Safety at Work Regulations.

### **WARNING**

During work and maintenance operations, always tie up long hair and do not wear loose or floppy clothing, ties, necklaces, wristwatches or any other items that may get caught up in the moving parts.

### **WARNING**

Infrared Radiation!

Avoid prolonged close-up exposure. Do not observe directly with optical instruments.

## PERSONAL COMPUTER

Turn on the aligner using the main switch.

Wait a few seconds to allow the monitor to switch on and the computer to load the program. The personal computer, and thus the entire wheel aligner, can only be switched off using the command provided in the wheel alignment program.

### **IMPORTANT**

Switching off the personal computer without using the command provided may damage the software installation.

### **IMPORTANT**

When the wheel aligner is switched off using the software command, the PC, the monitor and the printer switch to standby status. To switch off these devices completely, use either the relative on and off buttons, or the PC feeder switch (switch marked C turned to 0), or cut off the wheel aligner power supply at the mains.

Keep the original MS-WINDOWS and aligner software CD-ROMs for future system updates.

### **IMPORTANT**

The software on the DVD-ROM is the property of Nexion S.p.A. and can be used only with the personal computer supplied with the equipment.

## STANDARD WORKING SEQUENCE

Alignment procedure for 2-axle vehicles (cars).

- 1) [Aligner switch-on.](#)
- 2) [Start work.](#)
- 3) [Data bank selection](#)
- 4) [ROC](#)
- 5) [Angle measurement with steering locked to 10° or 20° and maximum if you need.](#)
- 6) [Data summary.](#)
- 7) [Rear axle measurement.](#)
- 8) [Front axle measurement.](#)
- 9) [Print out of data measured.](#)



## Switching on the aligner IMPORTANT

Turn on the device using the main switch. Wait a few seconds to allow the monitor to switch on and the computer to load the program. In this stage, the central unit runs a functional selfdiagnostics test and loads the operating system; if everything is in order, the "Main menu" screen will appear.

## WHAT A WHEEL ALIGNER IS

An aligner or wheel aligner is defined as an instrument for measuring characteristic alignment angles of a vehicle (see the "Characteristic angles" section).

A wheel aligner consists of a central unit and four measuring sensors for application to the wheels of the vehicle.

## CHARACTERISTIC ANGLES

1) **ROC** (Run Out Compensation). Off-centre and plane error compensation.

ROC renders the angle measurements independent of geometrical errors in the rim and/or wheel mounting.

This procedure should be performed on all wheels.

2) **Toe**.

Angle formed by the equatorial plane of the wheel and the axis of symmetry or thrust axis of the vehicle The axis of symmetry of the vehicle is the imaginary line which divides the vehicle in half lengthways, while the thrust axis is the travel direction established by the rear axle.

The units of measurement of toe are the degree and the millimetre.

3) **Camber or Inclination**.

The angle formed by the equatorial plane of the wheel and the vertical plane camber is positive when the top of the wheel tilts outward. The unit of measurement for camber values is degrees. 4) **Caster**.

The angle formed between the vertical and the projection of the steering axis onto the longitudinal plane of the vehicle. Caster is measured with the wheels turned through 10° or 20°. The unit of measurement is the degree.

5) **King pin angle.**

The angle formed between the vertical and the projection of the steering axis onto the transverse plane of the vehicle.

King pin angle is measured by locking the steering to 10° or 20°.

The unit of measurement is the degree.

6) **Steering angle difference.**

The difference between the values of the steering angles of the front wheels; by convention it is measured when the wheel on the inside of the bend is locked to 20° (Fig. 15).

The unit of measurement is the degree.

7) **Misalignment of wheels on the same axle or Set-Back.**

The measurement of the difference in position of one wheel in relation to the other, referred to the perpendicular of the vehicle's longitudinal axis (Fig. 16).

There are both front set-back and rear set-back; the latter is not to be confused with the thrust angle. The unit of measurement is the degree.

8) **Thrust angle.**

The angle formed between the axis of symmetry of the vehicle and the travel direction of the rear axle

The unit of measurement is the degree.

9) **Maximum steering angle.**

The maximum angle reached by the wheels at the end of the caster swing. The unit of measurement is the degree.

## **MOST COMMONLY ENCOUNTERED VEHICLE ALIGNMENT FAULTS**

Vehicle tends to wander to the left or the right. Cause: tyre side slip.

Invert the position of the wheels on the same axle: If the vehicle now tends to wander to the other side, take one of the wheels whose position you have already inverted and turn the tyre on the rim. If the wander direction does not change perform the same operation on the wheels of the other axle.

If this double inversion procedure fails to solve the problem, check that camber values on the same axle are identical, make the same comparison for caster values.

Steering wheel not aligned with vehicle path Possible causes:

- Mechanical backlash.
- Compensation has been skipped or performed incorrectly.
- Wheel alignment performed using the two-target procedure.
- Wheel alignment performed with the steering wheel off centre.
- Front wheels adjusted with respect to the axis of symmetry.

Disparity between steering locks.

The steering box range must be centred by counting the number of steering wheel revolutions from full lock to full lock.

Position the steering wheel in the centre of its range, clamp the steering wheel and perform the normal procedure for adjustment of the front half toe values.

Position the steering wheels correctly, disassembling it from the steering column if needs be. Steering wheel is excessively stiff with vehicle stopped.

Possible causes:

- Excessive caster.
- Incorrect king pin angle.
- Excessive camber.

Steering wheel return is too low or too forceful when driving.

Incorrect caster value - adjust.

Tyre wear.

- Tyres with irregular wear on both side walls: incorrect pressure - under-inflated.
- Tyre with irregular wear in the centre of the tread: incorrect pressure - over-inflated.
- Tyre wear with stepped wear profile: shock absorber not working properly.
- Tyres on the same axle with irregular wear on a single side wall: toe out of tolerance.
- Only one tyre on the same axle with an irregularly worn side wall: camber out of tolerance.

Vehicles with just one register.

Adjust the total toe to the value specified by the manufacturer.

Set the two front half-toes so that they are equal. Remove the steering wheel from the steering column and move it to the correct position; if the steering wheel has adjustment slots, use them.

Adjusting vehicle with power steering.

Before making the adjustments start the engine, turn the steering wheel to the limit position in both directions, set the steering-wheel correctly and lock it in place.

During the adjustment operations it does not matter whether the engine is left running or stopped, except for cars where adjustment with the engine on is specified.

Vehicles with hydro-pneumatic or intelligent suspension systems.

Adjust the vehicle with the engine running and the suspensions at the normal height for use.

Vehicles with fixed rear axle.

The rear axle should still be measured to identify any excessive anomalies, after which adjust the front-half-toes in relation to the thrust axis; this eliminates the crookedsteering-wheel problem.

## GLOSSARY

Characteristic Angles

This term refers to all the angles that can be normally measured on a wheel aligner (total front/rear toe, left/right and front/rear half toe values, left/right and front/rear camber, left/right caster, left/right king-pin angle, and steering angle difference at 20°).

Equatorial plane

Ideal vertical plane that divides the wheel into two equal parts. Rotating platform

Base equipped with a disk on which the steered wheels of a vehicle rest; it is used to reduce friction between the wheel and the ground, in order to favour the settling of the suspensions and cancel the measuring errors during the steering.

It is highly important to keep the area between the disk and the base clean at all times.

Oscillating footboard

The function is similar to that of the rotating platform, but it is used for the non-steered wheels only.

Infrared rays (IR)

Electromagnetic waves that are invisible to the naked eye. Target

Measurement instruments that are applied to the vehicle wheels to measure characteristic angles.

Clamp

Adapter between the wheel and the measuring target.

## **MAIN WORKING ELEMENTS OF THE MACHINE**

### **WARNING**

Get to know your machine. The best way to prevent accidents and obtain top performance from the machine is to ensure that all operators know how the machine works.

Learn the function and location of all commands. Carefully check that all the commands on the machine are working properly.

To avoid accidents and injury, the machine must be installed properly, correctly operated and regularly serviced.

Central

The ENTER key permit to go at the next step.

The ESC key returns the programme to the previous step.

By leave the mouse over the button is possible to get the information about the relative function

## First Page



This button permit to start with the alignment procedure



This button permit to manage databank



This button permit to manage the alignment and to access to service area



This button permit to take a look at the target disk



This button permit to open the webcam view to help driving a car on the lift



This button open the guide of wheel alignment program



This button switch off the computer immediately

**If you would like to change the logo, just modify the logo.bmp on D:\N3D\ folder and save it!**

## Databank Selection

[illegible]

In that page you can select the car from databank.

By insert the Plate No and the other field you can recall your job in the future,  
if you don't insert the data you can not recall.

More information about databank [here](#)

To go to the next step press ENTER.

If you don't would like to choose a car from databank just press enter with no selection.





Next Step or Skip



Back to the previous page



Back to the beginning

After you see the databank value page



Manufacturer: Rover\_\_\_ Model: Rover 400 Series


### Databank Values

Manufacturer:	Rover___	Model:	Rover 400 Series
Chassis:	-	Year:	1995 — 1999
Load:	-	Fuel tank:	-
Engine:	D16Y3	Capacity:	1.6L AT
Body:	-		

	MIN:	MAX:
Front Axle		
Camber:	-0°43'	0°45'
Half Toe In:	-0°13'	0°15'
King-pin angle:	9°43'	11°41'
Caster:	0°40'	2°38'
Rear Axle		
Camber:	0°7'	1°35'
Half Toe In:	0°9'	0°37'





Enter      ESC      F10

### Databank Explanation

Key to Databank abbreviations

/ Separates different models

4WD - 4x4 Four Wheel Drive  
4WS Four wheel steering  
ALU Lightweight alloy wheels  
DR Door  
CAB Enclosed light commercial vehicle  
CABR. Convertible  
ESTATE - SW Estate Version (Station Wagon)  
HD Heavy Duty or all-terrain  
s Special or Sport  
PAS Power Assisted Steering  
LHD Left Hand Drive  
RHD Right hand drive  
FWD Front Wheel Drive  
RWD Rear Wheel Drive  
AS Pneumatic suspension system  
HS Hydraulic suspension  
system SLS Self-levelling  
suspension system  
RS Rigid suspension system  
T Turbo  
TD Turbo diesel  
TDI Turbo Diesel Direct Injection  
R - RT Radial Tyre  
XP Conventional Type Tyre  
IFS Independent front suspensions  
IRS Independent rear suspensions  
SPS Sports suspensions  
LWB Long wheel base  
MWB Medium wheel base  
SWB Short wheel base

MM/AA+ After the indicated date

(month/ year)

MM/AA- Before the indicated date

(month/year)

8565050+ From this chassis number

8565050- Up to this chassis number

AT Automatic Transmission

TA Twin axle

TS Single axle

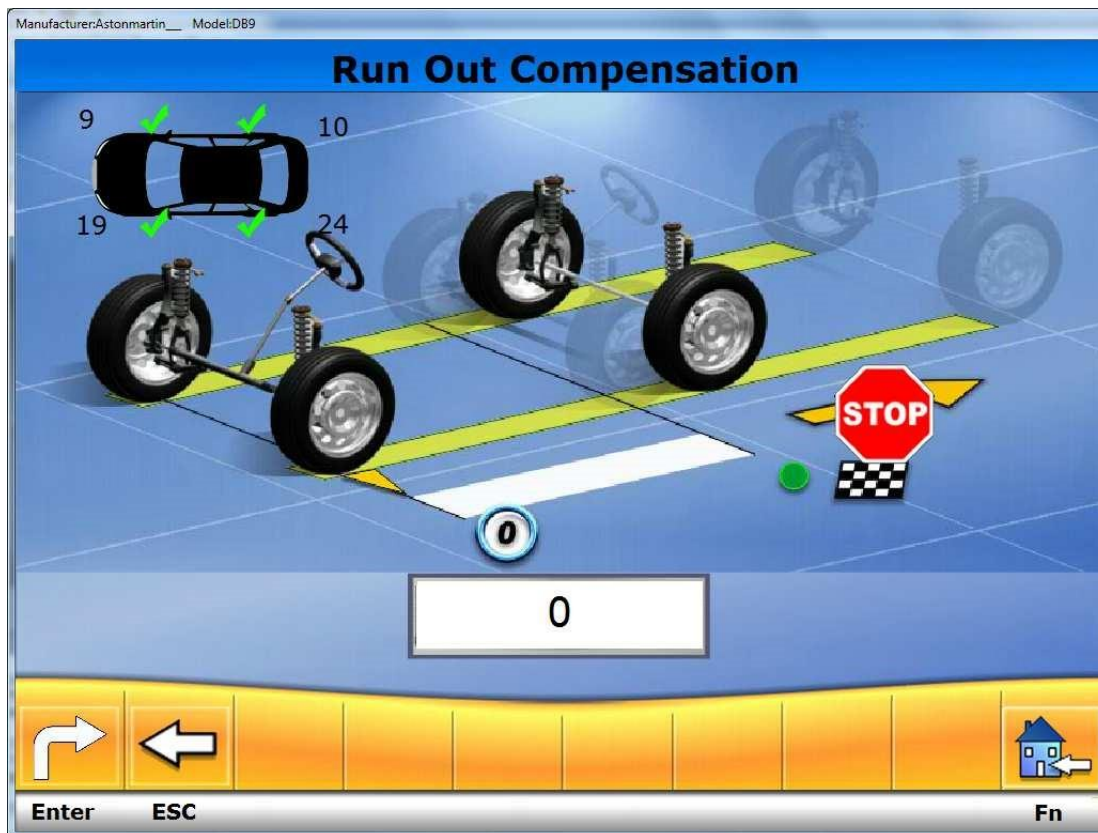
LOA Loaded

PLO Partially loaded

UNL Unladen

AB Anti-roll bar

## ROC page



In this page you perform the ROC procedure.

**You can not skip ROC at the first measurement on a vehicle and please lock the steering during ROC.**

The procedure is very simple just push back and forward the car until you see stop on the screen.

The red or green traffic light indicate if the target is linked or not. **Green: LINKED**

**RED: not linked. You can take a look at target by press F11.**

The numbers near the traffic light indicate if the target is good or not. High value target no good low value target in a good condition.

After ROC the alignment program go automatically at the next step.

You can skip ROC if you would like to measure again the car ( target and clamp must to be in the same condition like before ).



Next Step or Skip

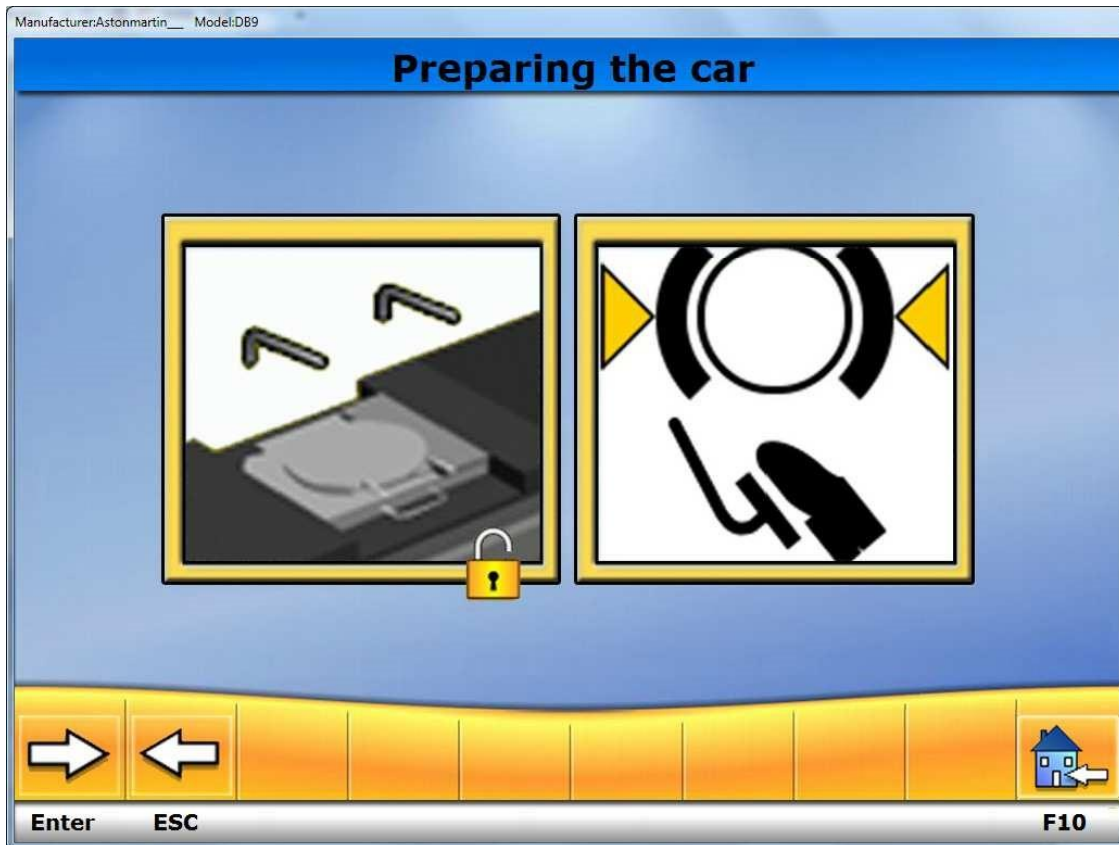


Back to the previous page



Back to the beginning

After ROC Page the aligner remember you to unlock turntables and steering



Next Step or Skip

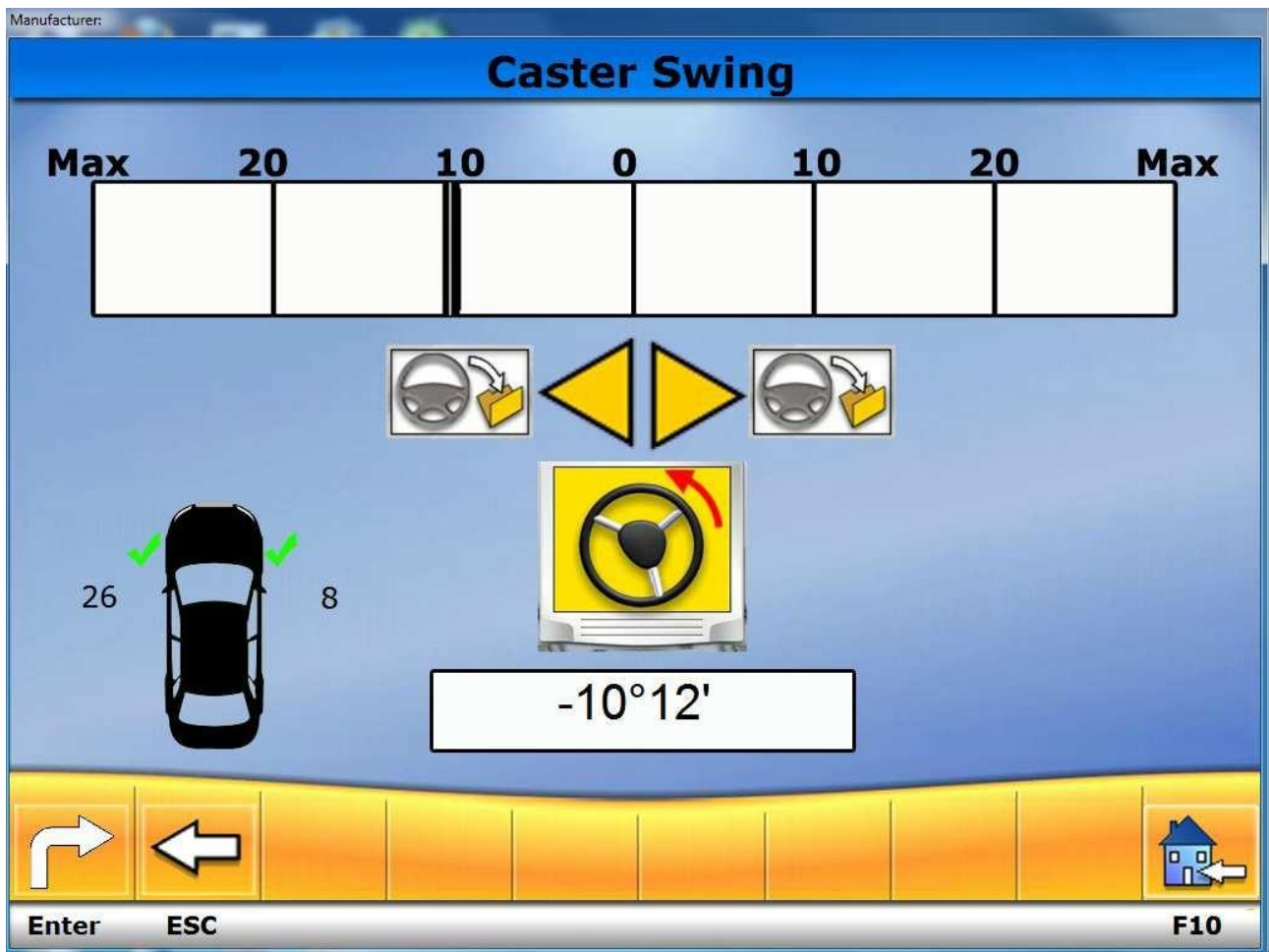


Back to the previous  
page



Back to the beginning

## Steering Page:



In this page you perform the Caster Swing procedure.

You can do it at:

**10° - Only Caster and King Pin are Misured**

**20° - If you continue after saved 10° to 20° you have even the toe difference at 20°**

**Max - If you don't stop to 20° and you continue to the maximum the sw save the maximum steering angle.**

**You can continue at the next step after you had see the folder with the steering icon, this icon mean SAVED**

The numbers near the car indicate if the target is good or not. High value target no good low value target in a good condition.

After caster swing the alignment program go automatically at the next step.  
You can also skip the caster swing



Next Step or Skip

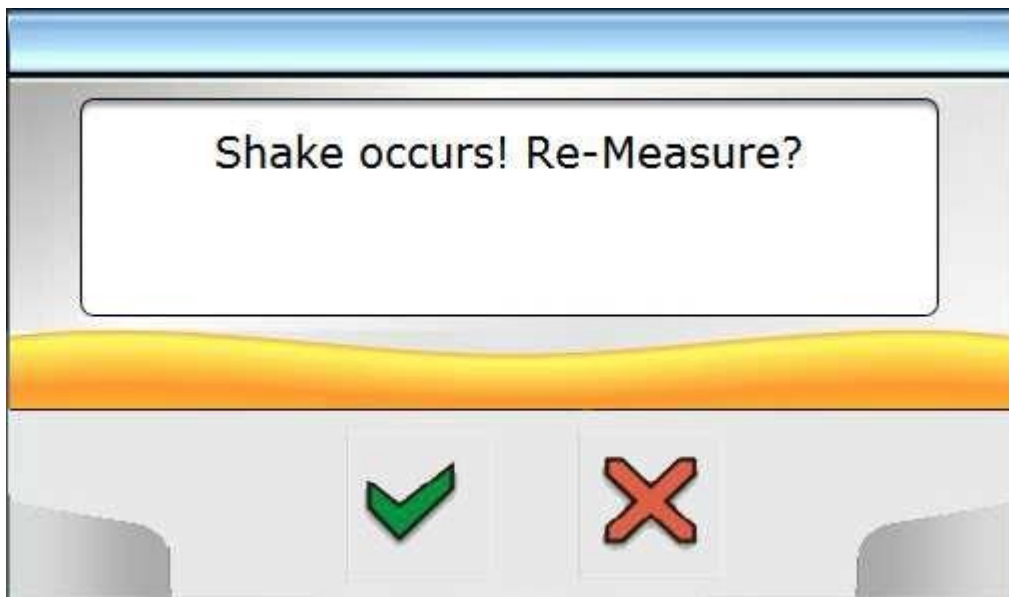


Back to the previous page



Back to the beginning

In case of measure problem ex. not stable value you can receive this message:

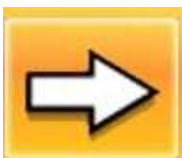


**Shake Occurs Re-Measure?** If you press yes you repeat the procedure.

If not you can continue, but the value could be not correct.

When the caster swing is done the sw remind you to lock the steering.





Next Step or Skip

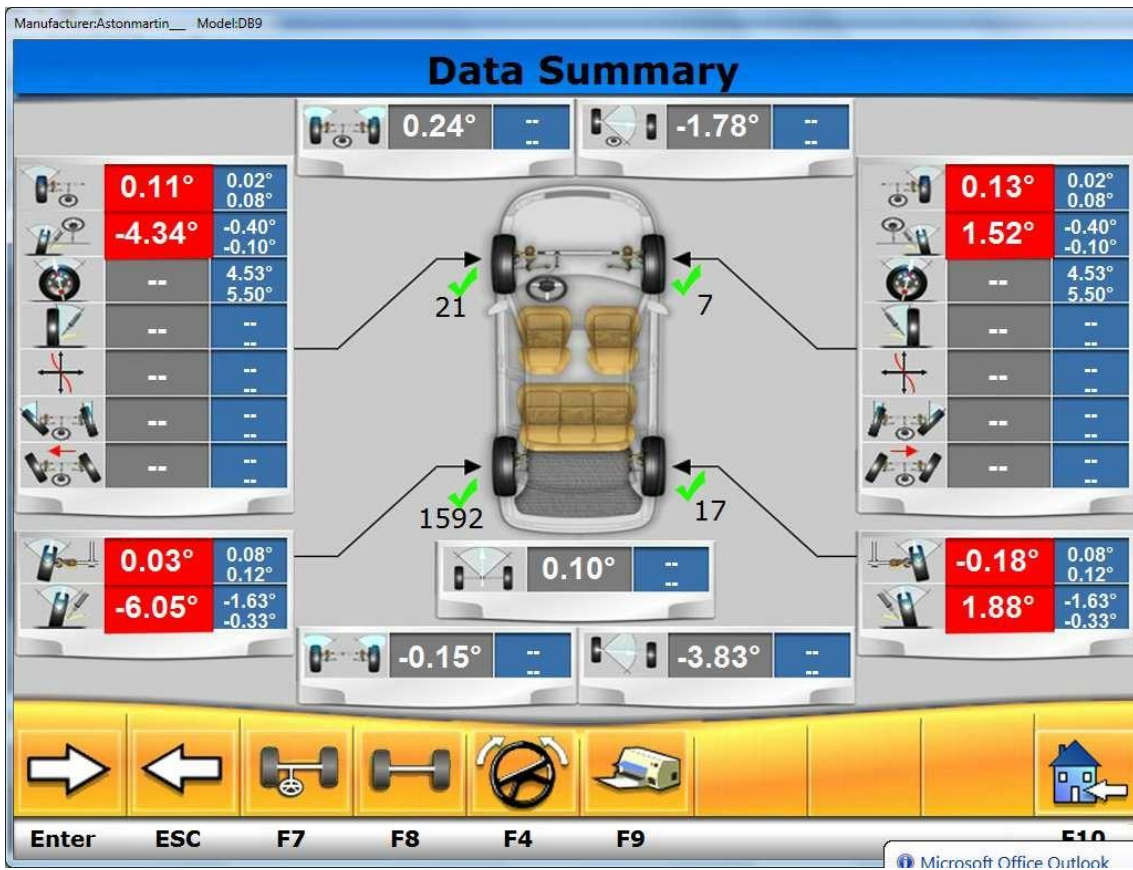


Back to the previous page

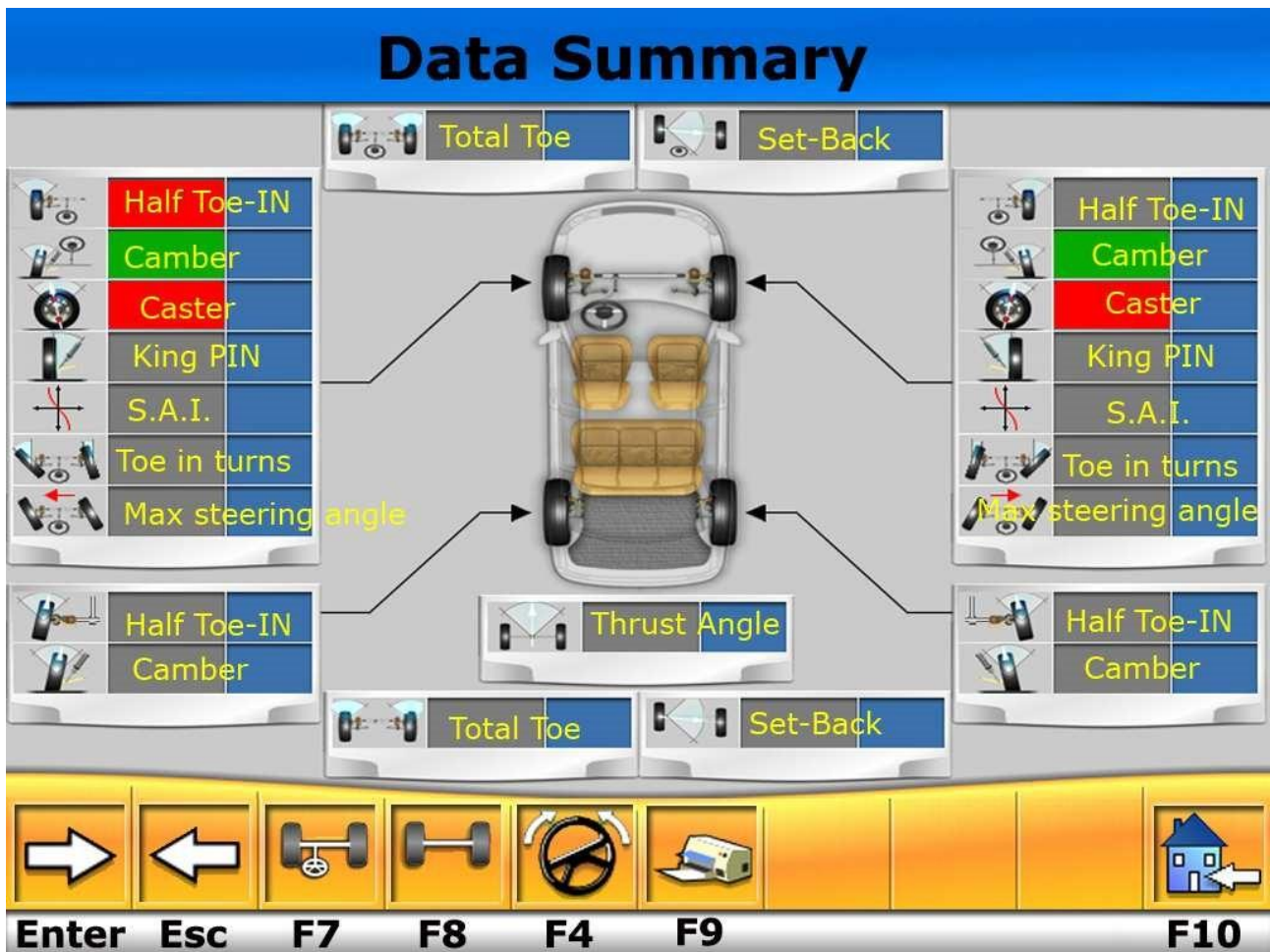


Back to the beginning

## Data Summary



This page contain all the angles measured on the vehicle.



Next Step or Skip



Back to the previous page



Show the rear axle page



Show the front axle page



Print data



Repeat Caster Swing



Chassis button to enter on chassis  
information page.



Back to the beginning

## Chassis Information Page:



In this page live value of chassis are showed on screen.



Next Step or Skip



Back to the previous page



Back to the beginning



Rear Axle ajustement page



In this page is showed the aligner data with more bigger numbers to help you.



Next Step or Skip



Back to the previous page



Show the front axle page



Repeat Caster Swing



Adjust the car suspension  
with the vehicle raised up



Print data



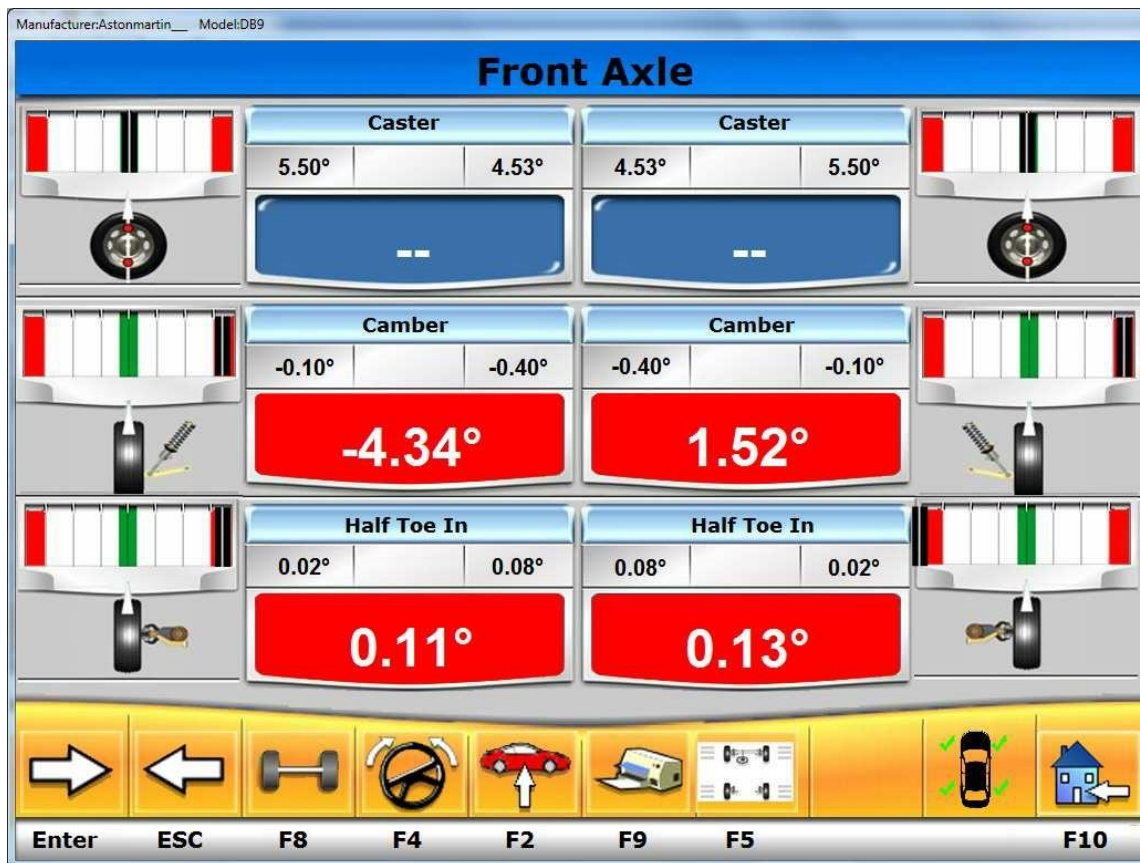
Back to the data summary page



Back to the beginning

The traffic lights at the bottom right of the page shown if the target are linked,  
if one or more are not linked by the cameras one or more of that are red.

## Front Axle Adjustment page



In this page is showed the aligner data with more bigger numbers to help you.



Next Step or Skip



Back to the previous page



Show the front axle page



Repeat Caster Swing





Adjust the car suspension with the vehicle raised up



Print data



Back to the data summary page



Back to the beginning

The traffic lights at the bottom right of the page shown if the target are linked, if one or more are not linked by the cameras one or more of that are red.

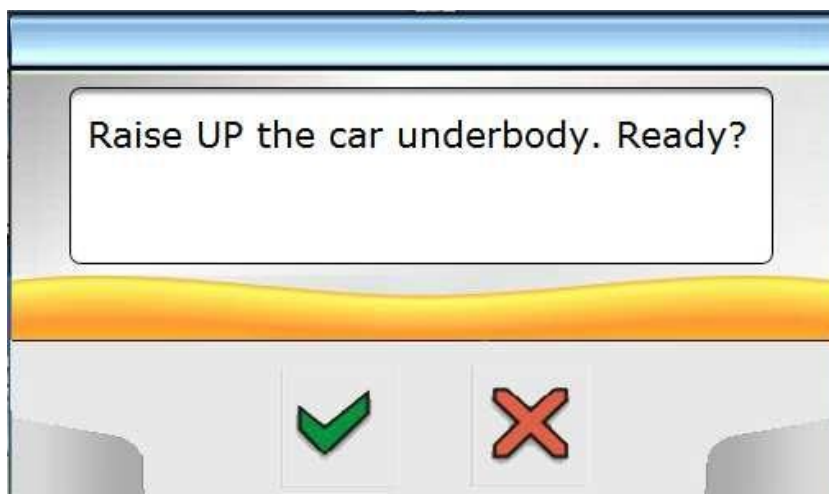
## Jack & Hold

In case you need to adjust a suspension with the vehicle raised there's a special procedure to do:

In the front or rear axle page press the button:



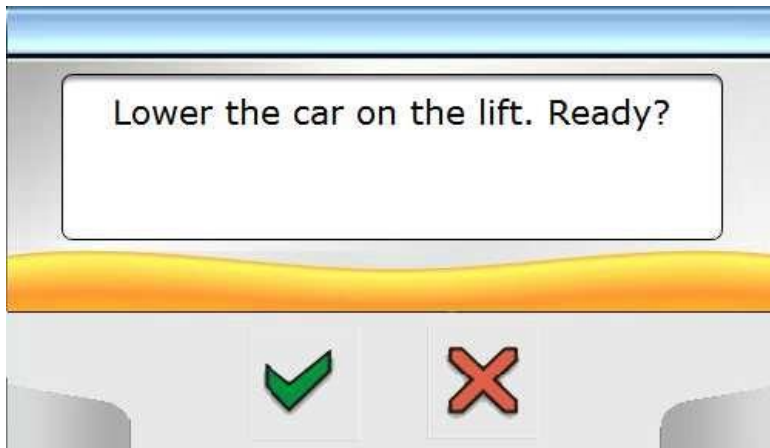
when you see on the screen:



Raise up the car on the underbody lift and then press OK.

When the adjustment is done **before lower the car on the lift** press again:





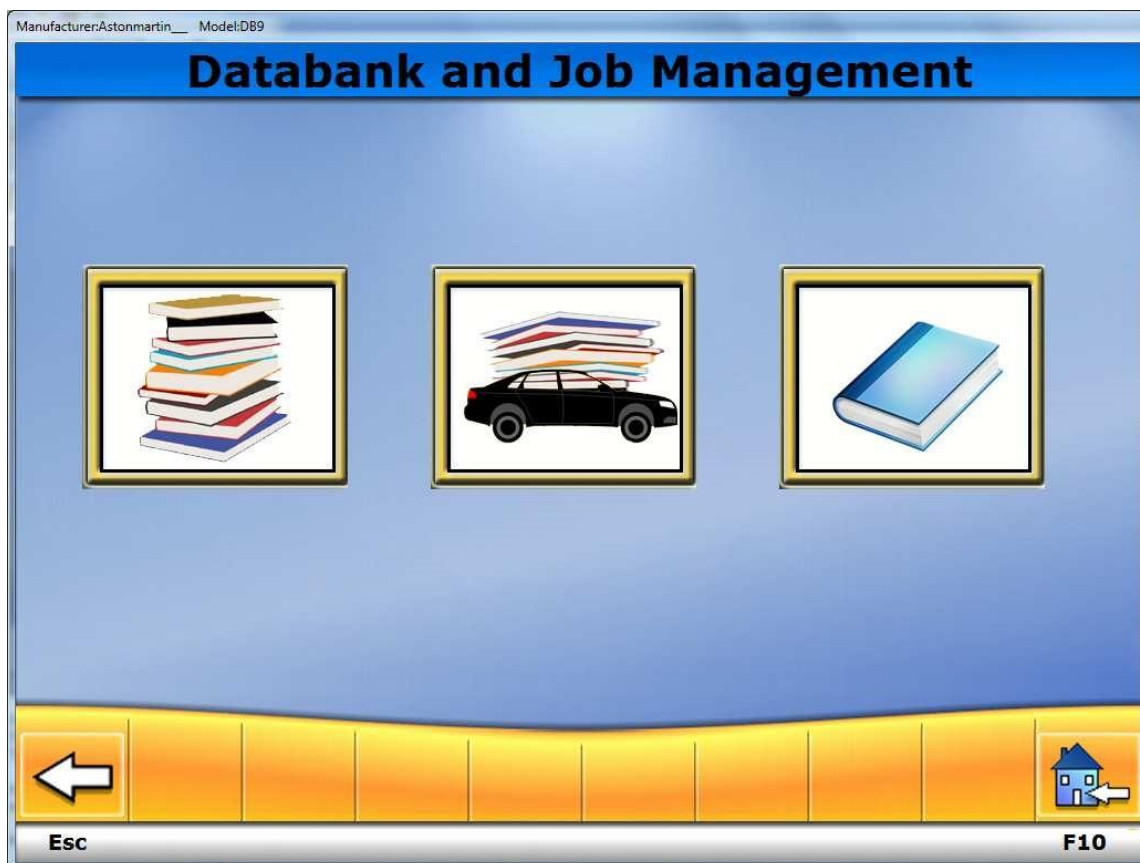
And then press Ok when the car is ready again over the platform

### **PrintOut**

Just take a look at the print preview and if it's all ok, just press on the printer icon and and printout is ready.

If you would like to change the top logo just replace the log.jpeg with other picture with the same dimension.

## Databank page



The first button manage the job records

The second manage the databank

The third button shown the user manual

In the job records page you can see all the jobs done until now and you can recall to print it again or to do again that job.

In the databank management you can add new cars model edit it or delete it.

## Job Record Page:

Manufacturer:Bentley\_\_\_ Model:Mulsanne Plate NO.:1111

### Job Management

Search:

Plate NO. 1111

Plate NO.	Customer ...	Tel	Manufacturer	Model	VIN
1111			Bentley___	Mulsanne	

Historical Data:

NO.	Kilomet...	Date	Operator	Front Half To...	Front Half To...	Front Camber.
3	0	06/14/2013 12:52:39		0°4'	0°8'	-0°28'

F2 Esc F3 F4 F9 F10

In this page you can manage all your job:

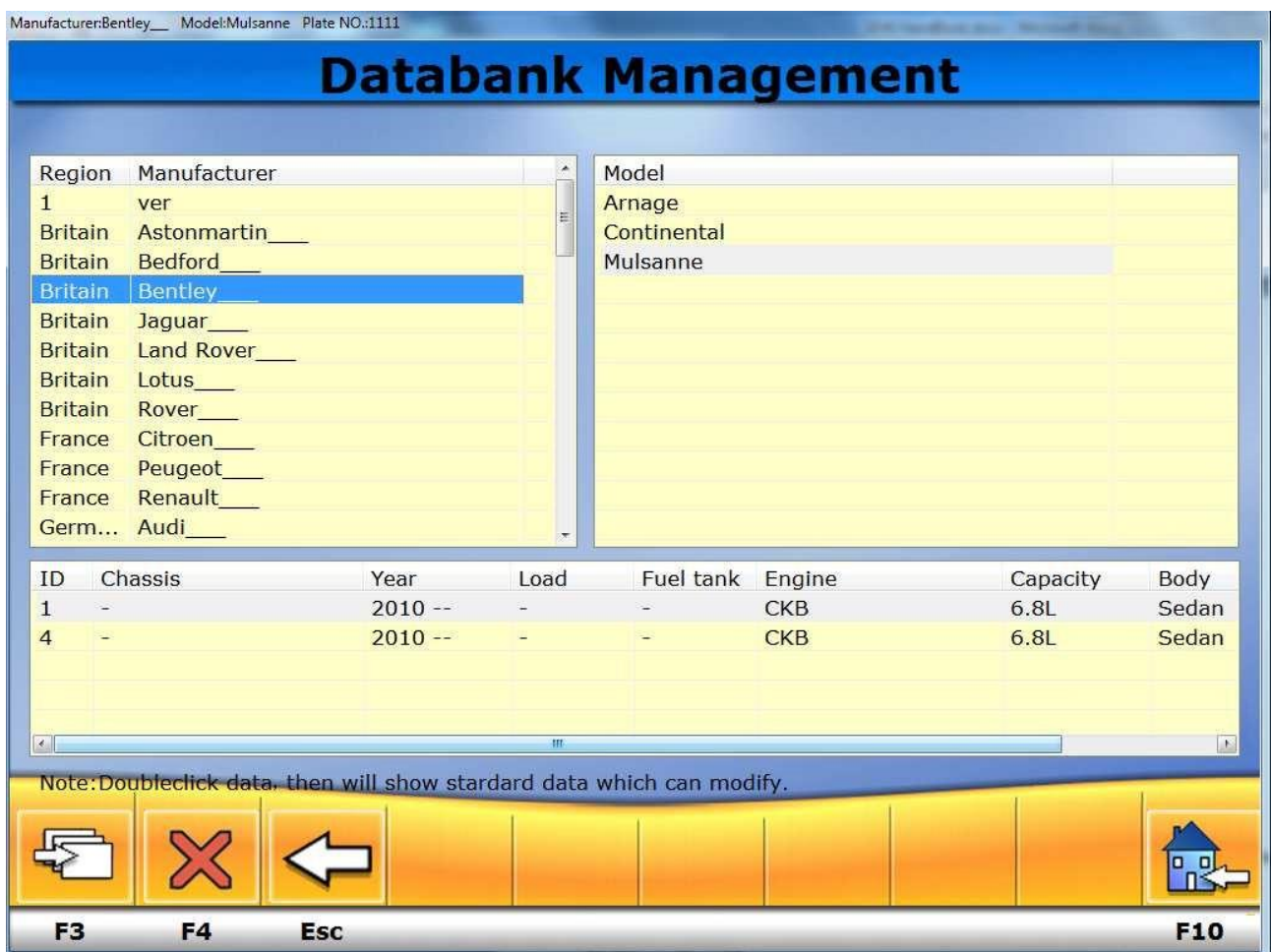
Find your previous job by plate or customer name

Print the data of that job or by press F3 you can align again that car without select again the databank.

## Databank management:



To enter on databank management the sw ask for a password, in the beginning there's no password, you can set-up a password on the setting page.



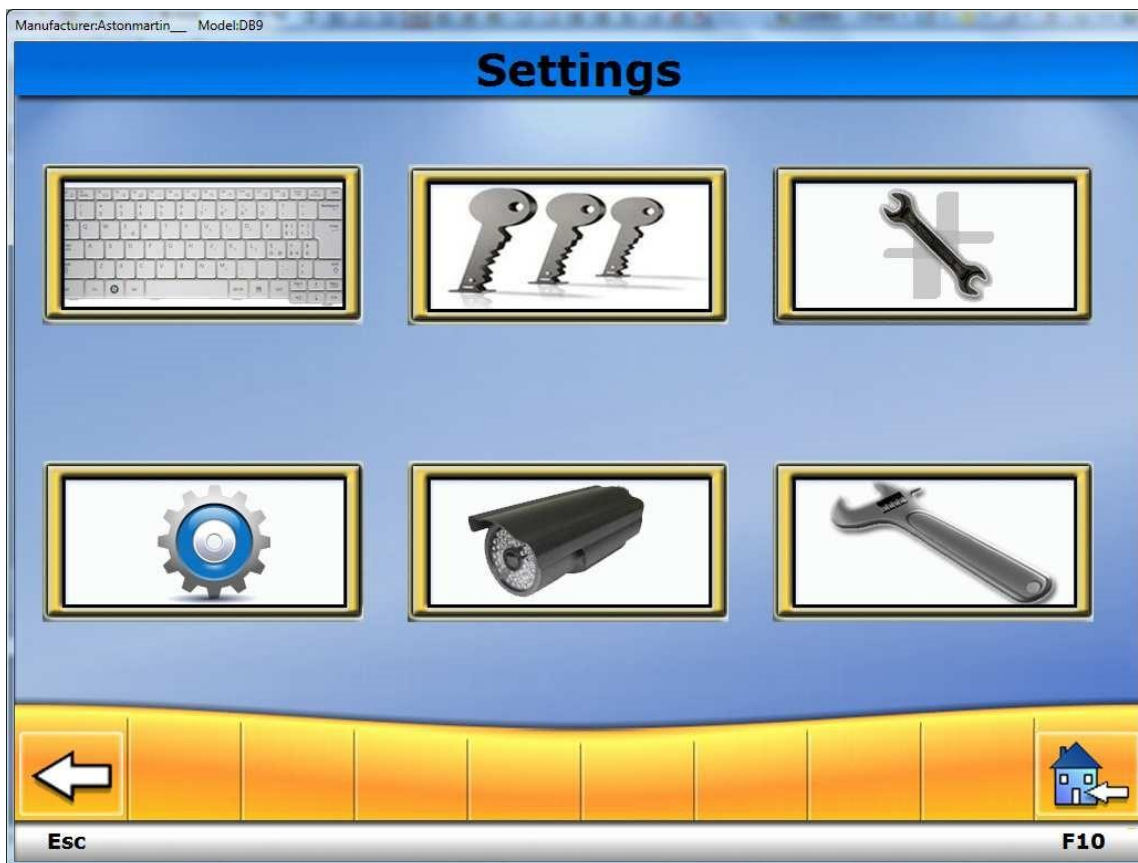
F3 Button is used to insert a new car.

F4 Button is used to delete a car

ESC Button is used to come back to the previous page.

**To insert a new manufacturer refer to service manual pag.35**

## Settings Page



by this button you enter in a page where  
you can  
insert the garage data.



By this button you enter in page to activate the sw. Please give the id number to the service manager and he will give to you all the information about the license.



By this button you can see the maintenance procedure for this alignment.



By this button you can enter in the setting page



This button shown the aligner camera images





By this button you can enter in the calibration

page.

### **Equipment Maintenance**

1. Keep the surface of target disk clean. Use soft dry cloth to wipe it and avoid surface scratch.
2. The target disk should be tightened in installation to avoid falling or broken.
3. The relative fixed position between the target disk and pylon is prohibited to be altered.



### **Computer Maintenance**

1. Under the computer working condition, please don't press the power or reset switch, otherwise, it will damage both the soft ware and hardware system.

2. All the settings are programmed according to the computer's features and function of the hardware, please not modify any thing in the BIOS system in case it influences the computer's normal work.

3. Using the computer for VCD, CD, and games is strictly prohibited; for fear that the system is out of work for the improper software installation, or the virus attack. If system expansion is needed, please contact us in time.

4. When the power is on, do not pull out equipments whether in series connection or in parallel connection, the key board, and other I/O equipments.

5. Please keep the computer clean in case the static electrical charges damage the hardware.

### **Turntables and sliding plates Maintenance**

The Maintenance refers to clean and fix it regularly.

The method is as follows: Turn the plate upside down and disassemble the fixed bolt. Respectively disassemble the hands, the well-formed rack and the lower plate. Clean the upper and lower plates, plastic fixing frame and the ball bearings. Assemble all the parts orderly and fix the bolt tightly. Be sure to tight the bolt. Before driving the vehicle onto the set flat, do remember to bolt the turning plate lock in. When the front wheels leave the turning plate, push the vehicle off the flat slowly in order to protect the upper plate from any damage. Please also control the rear sliding plates, they must to be free to move specially if you adjust the rear axle.

**NEXION declines all liability for claims deriving from the use of non-original spares or accessories.**

### **WARNING**

**Before making any adjustments or performing maintenance, disconnect the electrical supply from the machine and make sure that all moving parts are suitably immobilised.**

**Do not remove or modify any parts of this equipment except in the case of service interventions. CAUTION**

Keep the working area clean.

Do not clean the machine with compressed air or jets of water.

When cleaning, take care to avoid creating and raising dust as far as possible. Never use solvents to clean the aligner or targets.

- Store the targets carefully in a dry place, to avoid loss of calibration with consequent measurement inaccuracy.
- Keep the turntables and the oscillating footboards on which the vehicle alignment is performed perfectly clean and do not oil or grease them.

## SCRAPPING

If the machine is to be scrapped, remove all electrical, electronic, and plastic components and dispose of them separately, as provided for by local legislation

## Troubleshooting

<b>Problem</b>	<b>Cause</b>	<b>Possible solution</b>
The computer doesn't switch on	No power	Check power cord and the fuse
The screen doesn't show the images	No connection	Check VGA Cable
The screen doesn't switch on	No power	Check power cord
The camera can not see the target	Target are not in camera view	Check by F11 if the target are see by camera
The numbers near the traffic light are high	The target are damaged or dirty	Try to clean it, if the problem persist change it.

The steering are not straight	Roc procedure not done or incorrectly	Please perform again runout compensation procedure with the steering locked
The angles values are not good	Calibration problem	Perform system calibration
One target is broken	Drop on the floor	Change the target and clamp No calibration needed just insert the target and clamp parameters on d:\N3D folder
During caster swing the camera lost connection with target	Bad Exposition	Please enable auto exposition function and set the default value for gain exposition and gamma correction. (max Gain; 10ms exp; min Gamma)
During Run-Out the sw hangs	Bad target disk status	Check values of corner if more than 100 replace target disk or try to clean it

## **Sw explanation:**

**What is the meaning of the numbers present in the ROC page and in data summary page?**

**The meaning is: If the number is under 40 the target plane is ok otherwise the target plane is not ok and is necessary to change it.**

### **FIREFIGHTING EQUIPMENT TO BE USED**

When choosing the most suitable fire-extinguisher refer to the table below.

Dry materials

Water YES

Foam YES

Powder YES\*

CO2 YES\*

YES\* Use only if more appropriate extinguishers are not on hand or when the fire is small. Flammable liquids

Water NO

Foam YES

Powder YES

CO2 YES

Electrical equipment

Water NO

Foam NO

Powder YES

CO2 YES

**WARNING**

The information in this table is of a general nature and is intended to provide users with general guidance. Contact the manufacturer for details of the applications of each type of extinguisher.

## ENVIRONMENTAL INFORMATION

The disposal procedure described below must only apply to machines with the symbol of the waste bin with a bar across it on their data plates.

This product may contain substances which may cause damage to the environment and human health if not disposed of properly.

We are therefore providing you with the information below in order to prevent these substances from being released into the environment, and to improve the use of natural resources.

Electrical and electronic equipment must not be disposed of with ordinary municipal waste; it must be disposed of separately by authorised facilities.

The symbol of the waste bin with a bar across it, which appears on the product and on this page, reminds users that the product must be disposed of properly at the end of its working life.

This prevents the inappropriate disposal of the substances which this product contains, or the improper use of some of them, from having hazardous consequences for the environment and human health. It also helps to ensure the recovery, recycling and reuse of many of the materials these products contain.

To allow this, the producers and distributors of electrical and electronic equipment organise special systems for the collection and disposal of such equipment.

At the end of the product's working life, contact your dealer for information about disposal procedures.

When you purchase this product, your dealer will also inform you that you may return another worn-out appliance to him free of charge, provided it is of the same type and has provided the same functions as the product just purchased. Anyone disposing of the product otherwise than as described above will be liable to prosecution under the legislation of the country where the product is scrapped.

We also urge you to adopt other environment-friendly practices: recycle the internal and external packaging which comes with the product and dispose of spent batteries (if the product has them) properly.

With your help, we can reduce the amount of natural resources used to produce electrical and electronic equipment, minimise the use of landfills to dispose of old products, and improve quality of life by preventing the discharge of potentially hazardous substances into the environment.

#### About Us:

**Thanks for buying a Nexion product**

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**The information in this manual is subject to variation without notice.**

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