

CORCH



EXACT 70

Code 4-106772A_uk of 06/08

English

Technical service manual

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Italiano

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Español

Graphic editing and layout

Ufficio Pubblicazioni Tecniche

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INTRODUCTION

The purpose of this manual is to furnish instructions for the installation and maintenance of the EXACT 70 wheel aligner.

This manual is for use in addition to the User and Service Manual supplied with the equipment, and does not cover the same topics.

TECHNICAL DATA

Refer to the User and Service Manual for the complete technical data of the aligner. Special attention must be paid to the working ambient conditions in relation to the wheel aligner's configuration. Note that the temperature range of 5°C - 35°C is the maximum the components are able to tolerate and outside the range 10°C - 30°C they may not perform to the expected standards.

WHEEL ALIGNER COMPOSITION

The wheel aligner consists of a central unit and four measuring sensors to apply to the wheels of the vehicle.

The central unit consists of a cabinet containing the monitor, the keyboard, the printer, the personal computer and the radio interface (for radio versions only). The personal computer contains the electronics necessary for the wheel aligner to operate.

The four measuring sensors are fitted with microcontroller boards for full control of the angle measuring sensors (infrared CCD goniometers) and the electronic inclinometers for measuring the camber and levelling the sensor.

INSTALLATION

Install the wheel aligner following the instructions in the operator's manual. The electrical connections between the various devices are shown in the electric system diagram (Fig.52).

CENTRAL UNIT

The central unit is the same for all versions of the wheel aligner. The customisation for the radio versions is supplied in the radio head accessories kit.

Figures 1-2-3 show some details for correct laying of the wiring of the components which, for reasons of transport, are supplied in their original packaging (such as the printer, the PC, the keyboard and the monitor).

Take particular care when laying the wiring of the printer (A, Fig.3); since it leads into a drawer, these wires will be required to move. Always check that all the earth wires provided to protect the user have been connected, especially the connections to the drawer (A, Fig.2) and the rear panel (A, Fig.1).

The cables of the keyboard (B, Fig.3), remote control receiver (C, Fig.3) and printer (A, Fig.3), reach the PC by passing through the cavity bent into the side of the cabinet (D, Fig.3).

Connect the personal computer as described in the User and Service Manual.

The wheel aligner power supply cable must be connected to the connector provided (B, Fig.1). Check the mains power supply data on the mains cable dataplate with care before connecting the equipment. Reference should be made to the national regulations when constructing the electrical system; the wheel aligner's technical data are provided in the User and Service Manual.

SMART CARDS

The aligner cannot be operated unless a hardware protection key has been inserted. The main protection board configured for the basic version is supplied with the machine. Additional functions can be added to the wheel aligner by installing the upgrade kits (see the User and Service Manual).

Insert the smart card supplied with the wheel aligner in the slot "B" of the smart card reader with the gilded contacts facing upward (Fig.7).

For the wheel aligner to operate, the main card must always be present and fitted into slot "B"; in case of malfunction, make sure that the reader is wired correctly as described in the "Personal Computer" section.

Upgrade cards will be inserted in slot "A".

WHEEL ALIGNER SOFTWARE

The wheel aligner is supplied with the software already installed. The CD supplied carries a copy of the software.

The program is installed in the C:\Program Files\Alignment\... folder

The first time the equipment is switched on, you may be prompted to type the number of the release of the databank on the CD-ROM supplied with the wheel aligner. In this case, copy the databank release number (screen-printed on the wheel aligner CD-ROM) into the data input screen which appears on the display. Follow the instructions on the screen.

After installing the EXACT 70 wheel aligner switch the equipment on and locate the initial screen.

Press the \hat{U} + F12 (caps shift + F12) keys; the software release will appear in the top left-hand corner of the screen, underneath the CORGHI logo.

Compare this release with that stated on the installation CD-ROM supplied with the aligner. If the CD-ROM release is more recent than the release installed, upgrade the aligner software.

Upgrading the wheel aligner software

- Exit to the operating system using the  and  icons.
- Insert the CD-ROM in the drive and wait for the upgrade installation program to start up automatically.
- Select the language required and proceed with the upgrade mode
- Once the software is installed the PC reboots automatically.

RADIO HEADS

The radio heads kit consists of 4 sensors, the rechargeable NiMH batteries to power the heads, and the radio set for the central unit.

The way a battery is charged for the first time affects its performance for the rest of its life. For the best performance, consult the first charge instructions provided in the "Battery Pack" section. In case of a radio communications malfunction, the ordinary head cables can be used to connect the heads to the central unit. In this case, the central unit radio set will have to be disconnected.

CENTRAL UNIT RADIO SET

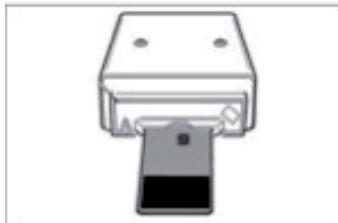
This is supplied with the radio head kit. Fix the set to the central unit as shown in figure 4; then use a head cable to connect it to one of the head connectors (C, Fig.1).

In case of transmission problems, change the position in which the radio set is installed on the central unit (Fig.5), or the transmission channel, see "Utility Programs". If it is not possible to find a set-up which allows trouble-free operation, the radio set can be mounted on the wall or ceiling (if the distance from the central unit increases, the optional 16-metre head cables can be used).

CENTRAL UNIT

Desktop PC code 5-101416

- The PC (code 5-101416) contains a two-port PCI-USB board. One of the two ports available is shut off by a silver label; connect the USB box to the other port.



At the first installation of the wheel alignment program, the driver of the USB box is correctly installed and working.

If the USB box code 263132 should have to be connected to another port, the driver may need to be re-installed.

To re-install the driver, proceed as follows:

Click with the right-hand key of the mouse on **My Computer**

Select **Properties**

Choose the **Hardware** tag and then **Device Manager**

Choose the **Jungo** icon, click twice on **UsbAlig** and select **Update Driver**.

Follow the automatic update procedure, or instruct the system to perform the search for the driver in the **C:\WINDOWS\SYSTEM32\DRIVER** or **C:\i386** folders; update the driver and reboot the PC.

The update is complete.

- The PC (code 5-101416) has a DVD drive to allow the original configuration of the Windows XP Embedded operating system to be restored (see note).
- The PC (code 5-101416) is of commercial type (the only special feature is the HD power supply connector, provided on the outside). However, it is still a well-tried and tested product.

BIOS CONFIGURATION OF

SK INTEL D101GGC

The configuration described below refers to the BIOS 03.04 release
 The items which change compared to the default configuration (Load Optimal Default) are listed below.

MENU	SUBMENU	ITEM	Parameter
Advanced	Peripheral configuration	On board Lan	Disable
		Audio	Disable
		Mode	Standard
	Chipset configuration	Pci Latency Timer	32
	Usb configuration	Legacy Usb Support	Enable
		Hdd Smart Capability	Enable
	Floppy Configuration	On board FDC Controller	Disable
		Drive A	None
	Video configuration	On board Video memory Size	32 Mb
		Primary display adapter	On board
Power		Power on after power fail	Stay off
Boot		Usb boot	Disable
		First boot device	Hard disk
		Second boot device	CdRom
		Third boot device	Disable
		DisableFourth boot device	Disable

BIOS CONFIGURATION OF

SK INTEL D865GSA

The configuration described below refers to the BIOS SA86510A.86A.1027.EB release
 The items which change compared to the default configuration (Load Optimal Default) are listed below.

MENU	SUBMENU	ITEM	Parameter
Advanced	Boot configuration	Plug & Play o/s	Yes
	Peripheral configuration	Serial Port A	Enable
		Parallel Port	Enable
		Audio	Disable
		On Board Lan	Disable
	Floppy configuration	Diskette controller	Disable
	Video configuration	AGP aperture size	32 Mb
		Frame buffer size	1 Mb
	Usb configuration	USB 2.0 legacy support	Hi Speed
	Chipset configuration	ISA enable bit	Disable
Boot		Usb Boot	Disable
		Boot device priority	Hard Disk
		Second boot device	CdRom

WHEEL ALIGNER SOFTWARE

The wheel aligner is supplied with the operating system and software already installed. The CD-ROM supplied carries a copy of the wheel aligner software. The DVD-ROM supplied carries a Ghost image of the operating system only, customised for the motherboard.

The computer is pre-configured to perform the login automatically, so that the user is not required to identify himself whenever he powers up the wheel aligner computer. The following parameters have been set:

User name: Administrator
Password: administrator [in lowercase letters].

During installation or upgrade of the wheel aligner software, the computer is restarted once or more. When the computer is restarted, you will be prompted to enter the password: type **administrator**

The standard user has also been entered to maintain compatibility with a number of vehicle manufacturers:

standard user:

User name: User

Password: user

NOTE: the wheel aligner must be set for access by means of the Administrator user name.

When the machine is switched on, the release of the software installed will appear on the screen.

Compare this release with that stated on the installation CD-ROM supplied with the aligner.

If the CD-ROM release is more recent than the release installed, upgrade the aligner software.

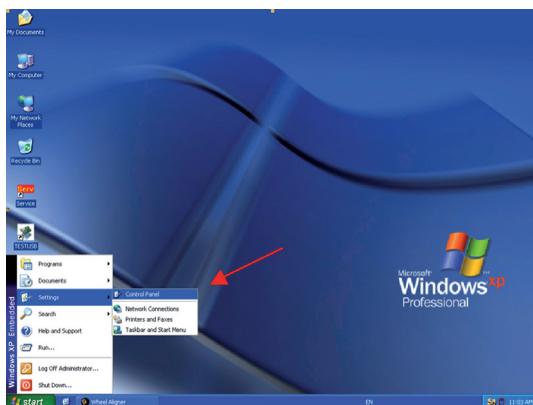
The first time the equipment is switched on, you may be prompted to type the number of the release of the databank on the CD-ROM supplied with the wheel aligner. In this case, copy the databank release number (screen-printed on the wheel aligner CD-ROM) into the data input screen which appears on the display. Follow the instructions on the screen.

NOTE: To restore the original operating system configuration, use the GHOST-DVD supplied.

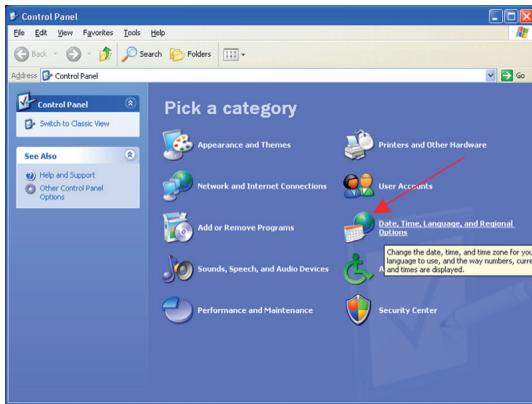
WARNING: Before using the GHOST-DVD, check that the screen printing on the DVD carries the same model as the motherboard to be reset.

WARNING: using the GHOST-DVD causes loss of all the data relating to the jobs done and the set-ups of the peripherals installed (e.g. the printer).

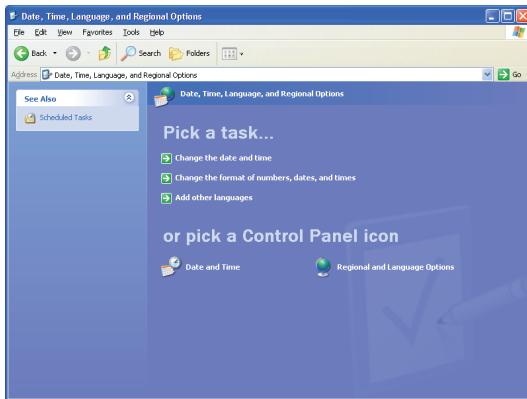
Instructions for changing the language settings



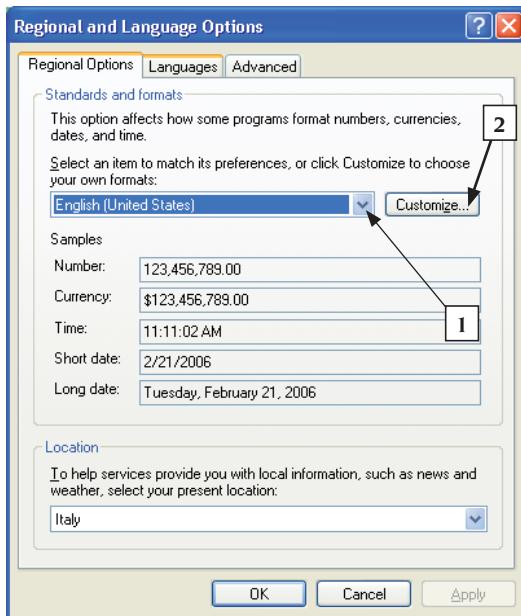
I) Open the Control Panel



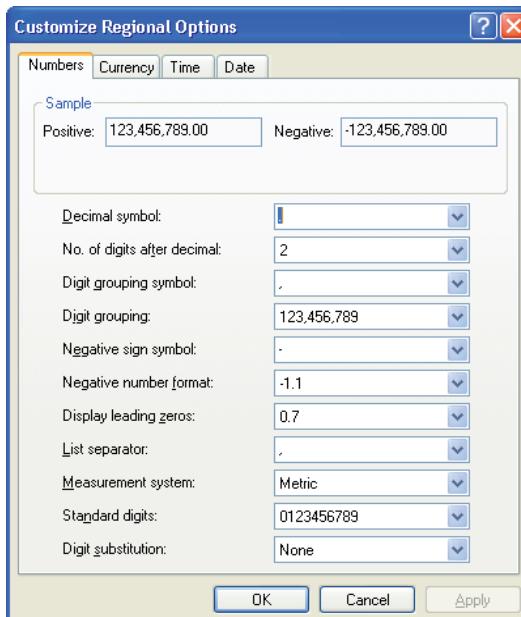
2) Open “Date, Time, Language and Regional Options”



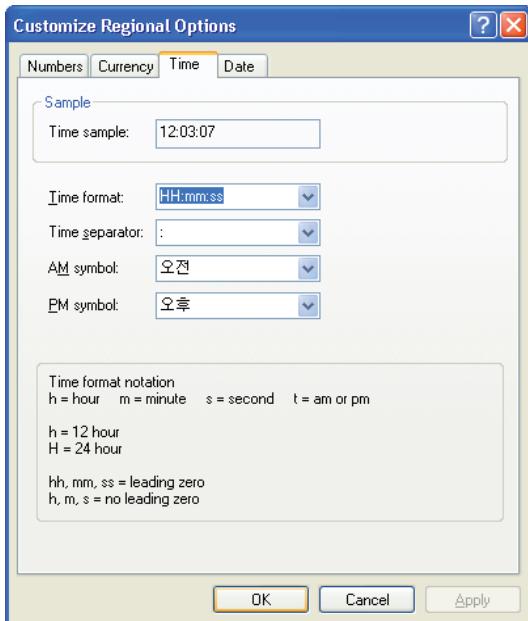
3) Select “Regional and Language Options”



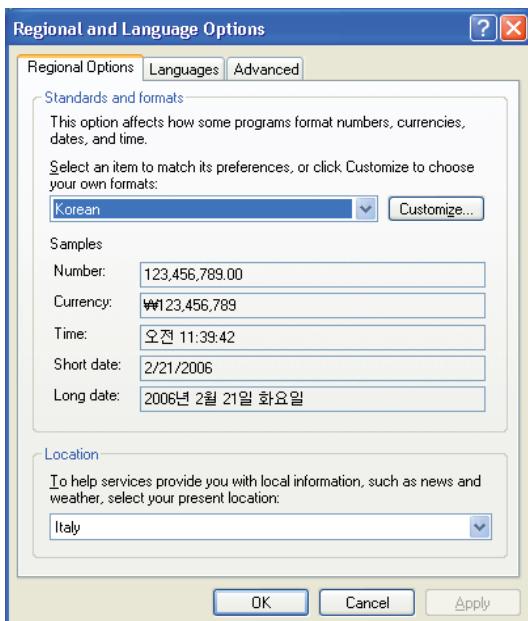
- 4) Select the language required from the pull-down menu and click on "Customize".



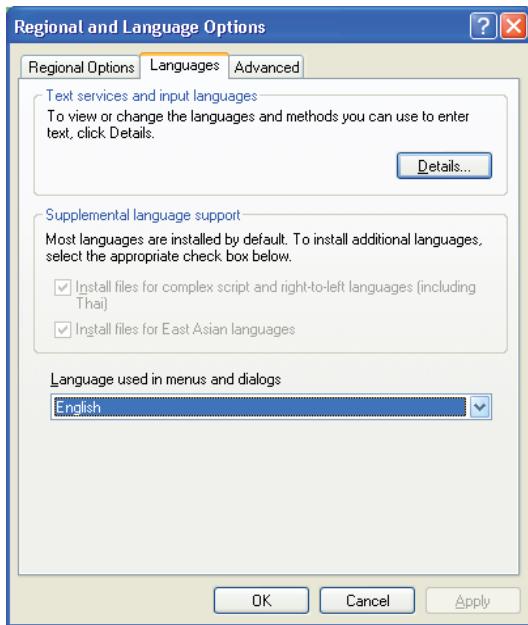
- 5) Select the "Time" menu



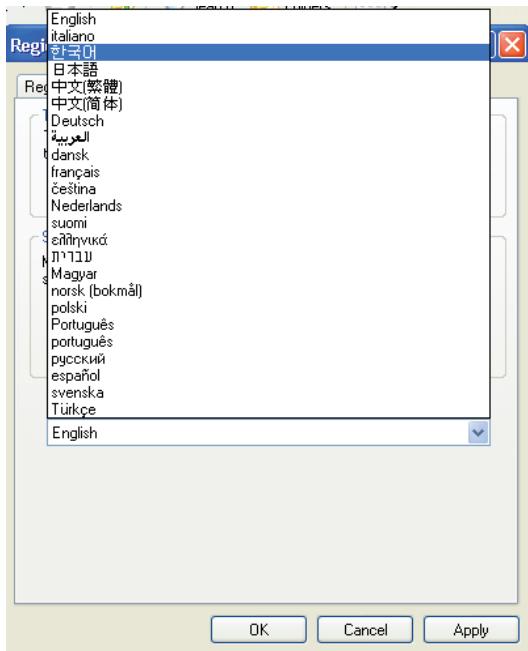
6) Select the “HH:mm:ss” format and confirm by clicking on “OK”



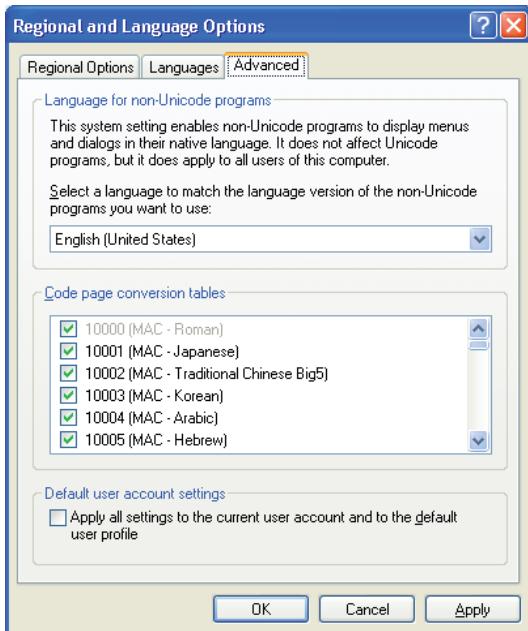
7) Select “Languages”



8) Select the language required from the pull-down menu (see below for order in which languages appear).



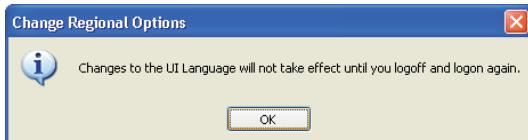
Then select the “Advanced” menu and select the language required from the pull-down menu.



Confirm the selections by clicking on OK.



9) Click "YES" in the next window:



10) Click on "OK", restart the PC and continue with the usual testing operations.

Settings for a correct graphic print

When a printer is installed, the graphic print emitted by the alignment program may not be correctly laid out.

This problem depends on the type of print resolution (print quality) set:

To resolve the problem, intervene on the file "Printer.ini", found in the path:
c:\program files\alignment

To correctly set the print resolution information in the file "Printer.ini", proceed as follows:

a) From the aligner logo page, press the keys "Shift" + "F4" (in this moment, if the file "Printer.ini" does not exist, it is created; if it exists, the lines specified below are added to it)

The printer emits a print with a line showing the name of the printer, preceded by the string "Printer" (between square brackets, e.g. [Printer.HP Deskjet 920c]), and then a line with a numerical description.

The numerical description depends on the setting of the print quality of the printer:

Example:

Fast Draft

Draft

Fast Normal

Normal

Etc.

The format of the numerical description depends on the type of printer installed and could be (for example):

_300=300

or

_3=-3

or

_3=-3

b) Exit the alignment program.

c) Open the file "Printer.ini", found in the path "C:\program files\Alignment"

In the file "Printer.ini", there could also be the names of other printer models, with their respective settings.

d) Identify the line corresponding to the one just printed
(generally the last line, at the end of the file).

e) Set the line with a numerical description, on the basis of the following cases:

- Case with value expressed as resolution (e.g. _300=300)

It is not necessary to modify the setting

- Case with value expressed as indicative of the resolution (e.g. _3=-3 or _-3=-3)

In this case, there are two possibilities:

1. if it is available, you can read the print resolution value on the page where the print quality is set, i.e. check on the above-mentioned screen if the number of "dpi" referring to the current setting is shown. Example: if we have installed an HP Deskjet 5652 printer, and we have set the print quality as "Fast Normal" on the screen, we can read "600dpi" next to the choice made. Consequently, if the following inscription is shown in the file "Printer.ini":

[Printer.HP Deskjet 5600 Series]

_3=-3

we must modify and save the numerical description as follows:

[Printer.HP Deskjet 5600 Series]

-3=600

We have removed the underlining symbol (the first character) and kept the rest unaltered; we have replaced the characters after "=" with the resolution value read.

2. if the print resolution value is not available on the page where the print quality is set, you must proceed with attempts, using the following logical reasoning.

Example: if we have installed an HP Deskjet 3745 printer, and we have set the print quality as "Fast Normal", if the following inscription is shown in the file "Printer.ini":

[Printer.HP Deskjet 3740 Series]

_3=-3

we must modify and save the numerical description as follows:

[Printer.HP Deskjet 3740 Series]

-3=300

Print a graphic test page. If the graphic image is:

- correct

the setting made for the test is correct and we can leave that setting

[Printer.HP Deskjet 3740 Series]

-3=300

- smaller (half)

the setting made for the test is not correct and we must modify and save the setting as follows

[Printer.HP Deskjet 3740 Series]

-3=600

- bigger (double)

the setting made for the test is not correct and we must modify and save the setting as follows

[Printer.HP Deskjet 3740 Series]

-3=150

In any case, we have removed the underlining symbol (the first character), leaving the rest unaltered, and we have replaced the number after “=” with the chosen resolution value.

Note: the setting of the file “printer.ini” is made by repeating the entire procedure explained above (starting from point a) and following the procedure again up to this point). For every possible configuration item for the print quality (modifying the print quality each time, under printer properties), a number of lines corresponding to the number of possible settings verified will be added to the file. As an example, here is the complete final section relating to the HP Deskjet 5652 printer.

[Printer.HP Deskjet 5600 Series]

-1=300

-2=600

-3=600

-4=600

WARNING:

with the settings at the limit (“Maximum dpi”), the printer becomes very slow and the cartridges are consumed quickly. In addition, some printers give resolution identification codes that are identical. It is highly important not to give repeated indications in the file “printer.ini”

Example:

for the HP Deskjet 5652 printer, we have the following condition:

[Printer.HP Deskjet 5600 Series]

_1=-1	(Fast Draft)	300 dpi
_2=-2	(Draft)	600 dpi
_3=-3	(Fast Normal)	600 dpi
_4=-4	(Normal)	600 dpi
_4=-4	(Maximum dpi)	1200 dpi

In this case there are two lines with an index of “_4=”

It is important not to repeat two lines with the same index so, in view of what has just been said, we recommend that you insert, in the file “Printer.ini”, the indices of the print quality which can presumably be used to print the aligner reports

NB: if more than one sheet is printed, with the subsequent sheets showing only a part of the text and not a cut part of the graphics, check first of all that the dimensions of the paper used correspond to the paper dimensions set in the printer.

Setting the customer LOGO for paper printouts

To customise the print on paper (adding the customer's logo), it is necessary to enable it in the aligner set-up and modify the following files:

imgprbarra3.bmp

imgprbarra4.bmp

These files are installed in the path:

c:\program files\alignment\graphics\image.

The logo size must be 1100x354 pixel.

Mouse

The operating system settings allow the numerical keypad keys to be used in mouse emulation mode (“Use MouseKeys” is selected in “Settings” ¶ “Control Panel” ¶ “Accessibility Options” ¶ “Mouse” and Top Speed “High” and Acceleration “Fast” in “Settings”). Otherwise, obtain a PS2/USB mouse and connect it to the connector provided in the rear of the PC. Then enable use of the mouse in the wheel-aligner Assistant Set-up section.

Remote control receiver

The remote control receiver (A, Fig.9) boards is accessible for replacement or maintenance from underneath the top once the drawer of the wheel aligner central unit cabinet has been removed.

The board is connected to the USB box by means of a flat cable.

CENTRAL UNIT RADIO SET (for radio versions only)

The radio set consists of the transceiver module (A, Fig. 10) with the relative antenna.

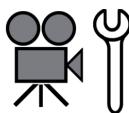
The transceiver module is fixed to a board which provides the interface with the central unit (B, Fig.10). The connection with the central unit is made with a normal head connection cable (supplied), connected to the appropriate connector (C, Fig.10). The wiring is illustrated in the electric system diagram (Fig.52).

ENABLING EXTRA WHEEL ALIGNER FUNCTIONS

Extra wheel aligner functions are enabled by upgrading its main protection card, marked with the symbol . The upgrade is obtained by means of the "upgrade card", received when the relative accessory kit is ordered. The upgrade cards carry specific identification symbols:



Card which enables the aligner for use of still diagram adjustment help functions (this might not be necessary if this function is supplied as standard).



Card which enables the aligner for use of animated adjustment help functions (this might not be necessary if this function is supplied as standard).

SPECIALITY PRODUCTS

Card which enables the aligner for use of adjustment help by means of EZ-SHIMS.

RÖMESS electronic

Card which enables the aligner for use of the RH-METER device for chassis height measurement.

ASA *asanetwork*

Card which enables the aligner for use within the Asanetwork (this might not be necessary if this function is supplied as standard).



Card which enables the aligner to use the truck and trailer procedures and the truck databank.



MULTILINK

Card which enables the procedure for aligning cars with MULTILINK suspensions.



Card which enables the procedure for aligning cars made by the AUDI / VOLKSWAGEN automotive group (for VAS dealers only).



Card which enables the procedure for aligning MERCEDES cars (for MERCEDES dealers only).



Card which enables the procedure for aligning BMW cars (for BMW dealers only)



RENAULT

Card which enables the procedure for aligning RENAULT cars (for RENAULT dealers only).



Card which enables the procedure for aligning cars fitted with RADAR.

To upgrade the main card, which must be inserted in slot "B" in the card reader (Fig.7), insert the upgrade card in the slot "A" and run the relative procedure using the



The upgrade card cannot be reused.



The icons display the system configuration: aligner software release, databank release, and the data of the main card and any upgrade card present can also be read.

HEADS

WARNING:

The aligner EXACT 70 is set to function with the RADIO (TLD) heads.

To use the CABLE (TL2) heads, it is necessary to make the following setting:

Switch on the aligner.

From the page of the logo, go to assistants set-up by pressing (in sequence) the following cons:



Set: Heads • Type of sensors • CCD TL2 Cables

Save the settings and exit from set-up.

The EXACT 70 sensor heads are fitted with CCD angle sensors, inclinometers and electronic levels.

The electrical connections between the various devices are shown in the electric system diagram (Fig.52).

When connecting the heads to the central unit by cable, use the side connectors (C, Fig.11); either connector may be used.

The middle connector (D, Fig.11) is used to connect the electronic turntables.

CPU head board CABLE (Fig.12)

The head CPU board is a microcontroller board which acquires, processes and transmits to the central unit the angles read by means of the goniometer and inclinometers.

The heads are assigned to the vehicle's wheels by means of switches 1 and 2 of CPU board DIP_SWITCH SW3.

HEAD	Head no.	SW1	SW2
LH front head	1	OFF	OFF
RH front head	2	ON	OFF
RH rear head	3	OFF	ON
LH rear head	4	ON	ON

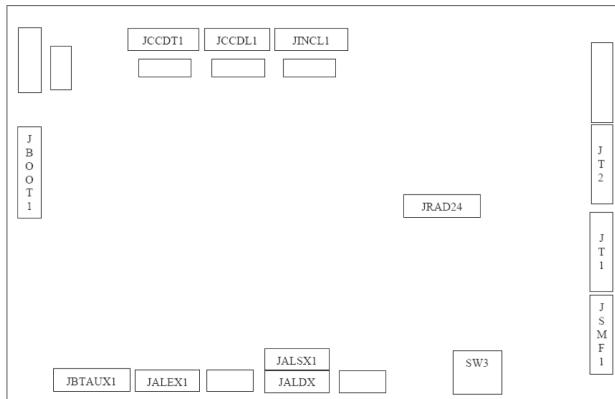
Leave switches SW3 and SW4 in the OFF position.

The head program can be updated using a service program installed on the central unit, without having to open the head itself. For head programming, refer to the section "Utility Programs".

CPU head board RADIO

The measuring sensors CPU board is a micro-controller board that acquires, elaborates and transmits to the central unit the angles read by means of the goniometers and the inclinometers.

The measuring sensors are assigned to the wheels of the vehicle via switches 1 and 2 of the DIP_SWITCH SW3 of the CPU board.



CONNECTOR	DESCRIPTION
JCCDT1	Transversal CCD telecamera (left - right)
JCCDL1	Longitudinal CCD telecamera (front - back)
JINCL1	Two-axis inclinometer (channel Y=camber, channel X=level)
JSMF1	Semaphores positioned in the transversal cap (indicating the adjustment of the angles in relation to the databank value)
JT1	Measuring sensor keypad
JT2	Measuring sensor keypad
JRAD24	Radio board
SW3	Configuration of measuring sensor position (see table)
JALSX1 JALSX2	Cable for measuring sensor connectors (power supply and data)
JBATAUX1	Battery
JBOOT1	BOOT switch: if NORMAL (switch up), standard work mode and firmware download. If BOOT (switch down), emergency firmware download
JALEX1	Battery charging rods

Configuration of measuring sensor position by means of SW3:

SW3	1	2	3	4
Front left	OFF	OFF	OFF	OFF
Front right	ON	OFF	OFF	OFF
Rear left	ON	ON	OFF	OFF
Rear right	OFF	ON	OFF	OFF

It is possible to update the measuring sensor program (FIRMWARE) by means of a service program, without the need to open the measuring sensor itself. For measuring sensor programming, see "Utility Programs".

RADIO BOARD (for radio versions only)

The transceiver module is fixed to the head CPU board (A, Fig.13) by means of a special connector.

BATTERY PACK (for radio versions only)

Battery charging is managed directly from the head board. The charging bars in the housing on the cabinet or in the connectors of the emergency cables receive exclusively 12V cc, taken from the feeder of the PC.

When servicing, pay particular attention to the polarity of the charging rods and bars of the charging housing.

In particular, the charging rods of the heads (Figures 53 - 54), are polarised in different ways, depending on the head. The table below refers to figures 53 and 54, to identify the correct polarisation of the charging rods.

Head	Positive rod	Negative rod
Front left/rear right	A Figure 54	B Figure 54
Front right/rear left	A Figure 53	B Figure 53

With regard to the charging housing, the polarisation is stamped on the plastic cover of the housing.

It is possible to charge the batteries in two ways:

1. Connecting the measuring sensors to the central unit, using the emergency cables.
2. Repositioning the heads in their housing and checking there is a good connection between the charging rods in the head arm and the charging bars in the housing of the measuring sensors.

In both cases, the charging procedure begins. The following table shows the possible indications visualised by the head during the charging process.

- Yellow LED switched on: charging in progress.
- Red LED switched on: charging problems.
- Both LEDs switched off and head working: battery charged.
- Both LEDs switched off and head not working: battery faulty or absent.

RUN-DOWN PROCESS

For good working and lengthy duration, the NiMH type batteries, used in the measuring sensors of the wheel aligner, need to be periodically run down.

In the run-down process, the four batteries are completely run down at a constant current and then charged again.

You are advised to carry out the run-down procedure every 15/30 days, depending on the charging cycle (the more frequent the charging, the more often the run-down procedure should be carried out). The run-down is made by leaving the heads switched on, on the head test page, until they are run-down.

Note:

- the batteries are NiMh, 3000 mA/h, 7.2V. New batteries, fully charged, guarantee 8 hours of continuous working.
- inside the batteries there is a thermal guard that intervenes when the temperature exceeds 70°C. The guard protects the batteries from breaking as a result of overheating. During the charge process, one or more batteries may reach an internal temperature of 70°C; in this case, the protection intervenes, opening the circuit. Charging is interrupted and starts again intermittently when the battery cools down. Remove the

head from the housing or disconnect the emergency cable, and leave the battery to cool down, then restart the charge. When the battery has the guard open, the measuring sensor does not switch on; wait a few minutes for the battery to cool down.

SWAPPING THE HEAD POSITIONS

The heads are assigned to the vehicle's wheels by means of switches 1 and 2 of CPU board DIP_SWITCH SW1, see "CPU Board" section. This setting can be changed without opening the heads.

This procedure is useful when the front left-hand head has to be swapped with the rear right-hand one, or vice-versa, or the front right-hand head with the rear left-hand one, or vice-versa.

This may be necessary when the front and rear heads have to be swapped during servicing to check that they are operating correctly. If a front sensor fails, it can be replaced with the rear one and work can continue with two heads, adjusting the front axle only.

To swap a head's position allocation, set the aligner on the HEAD TEST screen and:
Switch off the head with the ON/OFF button.

Keeping the SERVICE and ROC keys depressed, switch the head back on; only the green LED of the spirit level is on.

Press the ROC key; all the spirit level LEDs are on.

Press the SERVICE key.

Press the SERVICE key again and the head will start to work with its new position setting.
The change in address is permanent until the default address allocation procedure is run (the default address is the one set using the switches on the head board).

Switch off the head with the ON/OFF button.

Keeping the SERVICE and ROC keys depressed, switch the head back on; only the green LED of the spirit level is on.

Press the SERVICE key.

Press the SERVICE key again and the head will start to work with its original position setting.

WARNING

After heads have been swapped, the 0 calibration procedure has to be repeated. If calibration is not performed, the data obtained might not be correct.

CALIBRATION

The calibrator, available as an optional accessory, is able to calibrate all four heads simultaneously.

Users may perform zero calibration and full scale calibration (with the appropriate accessories) and run a calibration check.

Before a calibration or calibration check, a number of preliminary operations are required:

- fit the calibrator feet and level it
- fit the heads on the calibrator, following the arrows on the heads and the monitor (the arrows indicate the vehicle's assumed travel direction)
- connect all four heads and switch them on
- level the calibrator using the screws in the feet
- level the heads using the spirit level supplied with the calibrator.

Call up the calibration procedure (Fig.15) from the main menu by selecting the  and



icons.

The following values are displayed for each head:

- A) transverse goniometer;
- B) X axis inclinometer (spirit level);
- C) Y axis inclinometer (camber measurement);
- D) longitudinal goniometer;

The numbers displayed are the data read by each individual transducer, on a green or red background depending on whether or not they are inside the tolerance range.

The data displayed refer to the transducers' mechanical values, data unaffected by compensation and calibration.

If one or more transducers are on a red background, try switching the head off and back on.

If the new values shown are still on a red background, calibration cannot be performed. The relative icons are deactivated but the transducer affected must be replaced or mechanically repaired.

Calibration check



To access select the icon.

The values show the variation from the last 0 calibration carried out.

The goniometers are within the tolerance level (green) if they are within the field $0^\circ \pm 0.10^\circ$.

The inclinometers are within the tolerance level if they are within the field $0^\circ \pm 0.20^\circ$. If there are values outside the tolerance level, you are advised to carry out a 0 calibration.

Zero calibration



To access select the icon.

This program step calibrates only the head transducer zero values.

This procedure must be performed whenever there are doubts about the aligner's measurements, or if several cars are found to have crooked steering wheels after adjustment.

Make sure that the calibrator and heads are perfectly levelled before starting the procedure.



The danger sign warns that if you continue with the calibration the previous values will be



overwritten. Select the icon to continue or the icon to abort.



The sensor values displayed on the screen are on a green or red background depending on



whether or not they are inside the tolerance range. The icon only becomes active, allowing the user to continue with the procedure, if the values are stable and within the tolerance range. Select it to save the calibration values, or press the ESC key to abort the procedure. The end of the operation and saving of the new calibration values are shown by



figure .

Full scale calibration

This procedure calculates the coefficients which the central unit will apply to the readings of the individual transducers. This transforms the signals picked up into angles which allow for the physical parameters of the system.

This procedure must be carried out when the wheel aligner is installed and whenever the inside of the head is accessed or a sensor is replaced.



Accessing the procedure using the icon starts the procedure, which consists of a number of stages relating to the different system configurations.



The icon is only active when the values are stable and within the tolerance range. The values of the individual heads involved in the active calibration stage are displayed alongside each sensor. The colour of the fields depends on whether the associated value is being stabilised, inside the tolerance range or outside the tolerance range.

Longitudinal goniometer full scale calibration (Fig.16).

Fit the mirrors as shown, then press "CONTINUE".



Selecting the icon saves the front toe values. At the end of this operation appears; it will stay on the screen for a few seconds before the system automatically moves on.

The mechanical values of the three angles formed by the mirrors on the longitudinal goniometers are displayed. The sensors have the following tolerance values:

for the 0° the tolerance is $\pm 1^\circ$, for $\pm 5^\circ$ the tolerance is $\pm 1^\circ$.

Transverse goniometer full scale calibration (Fig.17).

Fit the mirrors as shown, then press "CONTINUE".



Selecting the icon saves the calibration values. At the end of this operation appears; it will stay on the screen for a few seconds before the system automatically moves on.

The mechanical values of the three angles formed by the mirrors on the transverse goniometers are displayed. The sensors have the following tolerance values:

for the 0° the tolerance is $\pm 1^\circ$, for $\pm 5^\circ$ the tolerance is $\pm 1^\circ$.

Inclinometer zero calibration (Fig.18).

Level calibrator and heads, then press "CONTINUE".



Selecting the icon saves the front toe values. At the end of this operation appears; it will stay on the screen for a few seconds before the system automatically moves on.

The mechanical values of the X and Y inclinometers are displayed. The sensors are within the tolerance range with values of $0^\circ \pm 3^\circ$.

X axis inclinometer full scale calibration - 1st Stage (Fig.19).

Fit two thick shims as shown, then press "CONTINUE".



Selecting the icon saves the calibration values. At the end of this operation appears; it will stay on the screen for a few seconds before the system automatically moves on.

The difference between the current mechanical values of the X and Y inclinometers and the relative 0 calibration values are shown. The X sensors are within the tolerance range with

variations of $5^\circ \pm 1^\circ$ in relation to zero. In this stage the system also checks the perpendicularity of the Y axis inclinometers, variations of $\pm 0.10^\circ$ in relation to zero.

X axis inclinometer full scale calibration – 2nd Stage (Fig.20).

Fit one thick shim as shown, then press "CONTINUE".



Selecting the icon saves the calibration values. At the end of this operation appears; it will stay on the screen for a few seconds before the system automatically moves on.



The difference between the current mechanical values of the X and Y inclinometers and the relative 0 calibration values are shown. The X sensors are within the tolerance range with variations of $5^\circ \pm 1^\circ$ in relation to zero. In this stage the system also checks the perpendicularity of the Y axis inclinometers, variations of $\pm 0.10^\circ$ in relation to zero.

Y axis inclinometer full scale calibration - 1st Stage (Fig.21).

Place the medium and thin shims as shown, then press "CONTINUE".



Selecting the icon saves the calibration values. At the end of this operation appears; it will stay on the screen for a few seconds before the system automatically moves on.



The difference between the current mechanical values of the X and Y inclinometers and the relative 0 calibration values are shown. The Y sensors are within the tolerance range with variations of $5^\circ \pm 1^\circ$ in relation to zero. In this stage the system also checks the perpendicularity of the X axis inclinometers, variations of $\pm 0.10^\circ$ in relation to zero.

Y axis inclinometer full scale calibration – 2nd Stage (Fig.22).

Place the medium and thin shims as shown, then press "CONTINUE".



Selecting the icon saves the calibration values. At the end of this operation appears; it will stay on the screen for a few seconds before the system automatically moves on.



The difference between the current mechanical values of the X and Y inclinometers and the relative 0 calibration values are shown. The Y sensors are within the tolerance range with variations of $5^\circ \pm 1^\circ$ in relation to zero. In this stage the system also checks the perpendicularity of the X axis inclinometers, variations of $\pm 0.15^\circ$ in relation to zero.

End of full scale calibration procedure (Fig.23).

Level calibrator and heads, then press "CONTINUE".

WARNING!

If the mechanical values read in this step are different from those read at the beginning of the procedure (owing to the movement of the measuring sensors/calibrator), the data will appear in orange, and the calibration will not be completed and must be repeated.



Selecting the icon saves the calibration values. At the end of this operation appears; it will stay on the screen for a few seconds before the system automatically moves on.

The calibrated values of the X and Y inclinometers and goniometers are displayed. The sensors are within the tolerance range with values of $0^\circ \pm 0.05^\circ$.

UTILITY PROGRAMS

The alignment program gives access to a series of utility tools for servicing and setting up



the aligner, icon, as well as a number of service programs, icon.

Sensor TEST (Fig.24)



To access the TEST procedure, press the icon in the main menu, then .

The sensor TEST can also be accessed from the STEERING ANGLE, FRONT AXLE and REAR AXLE screens by pressing the \hat{U} + F1 keys.

Screen allowing display of the condition of the wheel aligner's sensors. The following data are displayed for each head:

- a) transverse goniometer;
- b) longitudinal goniometer;
- c) X axis inclinometer (spirit level);
- d) Y axis inclinometer (camber measurement);
- e) transverse goniometer gain;
- f) longitudinal goniometer gain.

Identification configuration of measuring sensor set.

In the aligner, there is the possibility to work with different types (configurations) of measuring sensors.

To write the CIM correctly, the head must be complete with command panel (connected to the head card via the flat cable). If the flat cable is damaged, it is impossible to write the CIM.

To do this, it is necessary to indicate to the aligner which type of measuring sensor is being used.

To indicate the type of measuring sensor used, write the CIM (Set Identification Configuration).

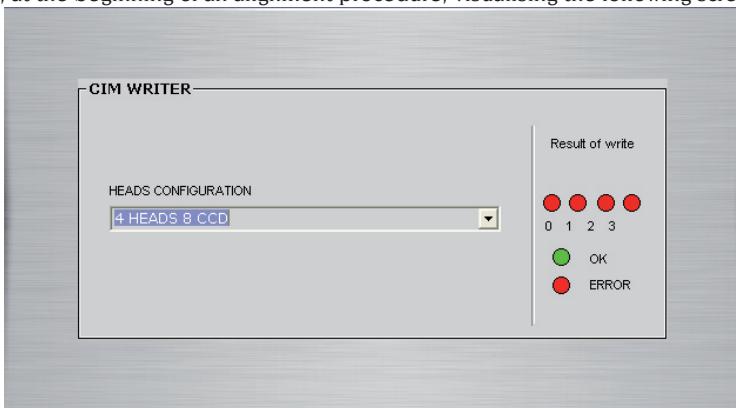
The configuration of the CIM is made in the factory during the measuring sensor production phase.

In the following cases, it could be necessary to repeat the configuration:

1.replacement of a CPU board in at least one measuring sensor

2.updating of the firmware of the CPU boards in the measuring sensors.

The configuration of the CIM is requested (when necessary) automatically by the aligner software, at the beginning of an alignment procedure, visualising the following screen:



To configurate the CIM, proceed as follows:

- a) In the field "MEASURING SENSORS CONFIGURATION" /"HEADS CONFIGURATION", select the configuration "4 SENSORS 8 CCD" /"4 HEADS 8 CCD" (as shown in the figure)
NOTE: once carried out, the writing of the CIM cannot be repeated. Pay special attention not to make any mistakes when choosing the configuration.
The item selected must correspond to the effective configuration of the measuring sensors.



- b) Press the key

The red circles beneath the inscription "CIM writing result" turn green.

If the writing is not carried out (the circles remain red), proceed as follows:



Press the key to go back to the previous screen.

1. Pick up the alignment procedure again.

The screen shown above will be displayed once again.

2. In the field "MEASURING SENSORS CONFIGURATION" / "HEADS CONFIGURATION", select the configuration "4 SENSORS 8 CCD" / "4 HEADS 8 CCD"

NOTE: once carried out, the writing of the CIM cannot be repeated. Pay special attention not to make any mistakes when choosing the configuration. The item selected must correspond to the effective configuration of the measuring sensors.



3. Press the key .

All the red circles beneath the inscription "CIM writing result" turn green (as in the figure below).



The program then returns automatically to the logo screen.

The CIM configuration is completed. The configuration request screen will no longer be displayed, except in the special cases mentioned above. The aligner can now be used as normal.

If the writing is not carried out (the circles remain red), proceed as follows:

- check the measuring sensors are all switched on
- connect the measuring sensors via the cable, and switch them on (to avoid one or more being accidentally switched off).
- repeat the procedure from the beginning, checking the previous points carefully.

If everything is working but the program does not complete the writing of the CIM on all the measuring sensors, contact the technical assistance service.

SERVICE PROGRAM

Utility programs for wheel aligner service and/or set-up.

To run the program, which is currently separate from the wheel aligner software itself,



exit the wheel aligner program and go to the operating system using the icon, typing the password "**system**".

NOTE: *the customer may modify the default password, which is "system".*

Click twice on the "Alig_Service" icon on the Desktop.

The Service program will open.

When the program is accessed, there are 5 buttons in the left-hand column:

- SERVICE
- SOFTWARE (in Italian). Firmware (in English)
- RADIO
- SET-UP
- ABOUT

Pressing the "SERVICE" button accesses the diagnostics procedure, which lists all the values of the angles measured for each measuring sensor.

Pressing the "SOFTWARE/FIRMWARE" button accesses the procedure for programming/upgrading the measuring sensor firmware.

Pressing the "RADIO" button starts the radio unit programming utility (also included in the wheel alignment program).

Pressing the "SET-UP" button allows the user to set the language settings (using the arrow keys), the serial port settings and the serial port data transmission speed (the working speed must be set at 19200).

Click the "ABOUT" button to display information about the program (software release number, date and time).

Service (Fig.25)

Connect the four measuring sensors by cable.

Pressing the "START" button starts the measuring sensor test procedure, which shows the following values for each head:

	Shows the value read by the electronic turntable encoder
	Shows the value read by the transverse goniometer
	Shows the value read by the electronic level
	Shows the value read by the electronic level (camber)
	Shows the value read by the wheel encoder.
AUX	

	Shows the value read by the electronic turntable encoder
	Shows the value read by the longitudinal goniometer

The controls section provides 6 buttons with the following functions:

<u>Auto</u>	Sets standard emission for the infrared LEDs of the goniometers
<u>Truck</u>	Sets high emission for the infrared LEDs of the goniometers
<u>EncP=0</u>	Resets the turntable encoder
<u>Off</u>	Switches off the measuring sensors
<u>VerSw</u>	Shows the firmware release currently installed on the measuring sensors

MEASURING SENSOR FIRMWARE UPGRADE PROCEDURE

DISCONNECT THE CENTRAL UNIT RADIO UNIT BEFORE MAKING THE UPGRADE!

Proceed as described below:

1. Connect the four measuring sensors by cable.
2. Select the SOFTWARE option in the Service program; the window shown in Fig.26 will appear.

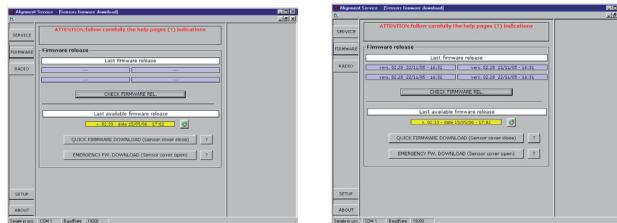


Fig.26

Fig.27

3. Check the current release of the software on the measuring sensors by clicking on "CHECK SOFTWARE RELEASE".
4. The current releases will appear in the blue fields, as shown in figure 27.
5. If the measuring sensor firmware releases are different from that shown on the yellow line (firmware upgrade release available) and have a lower number, press the "QUICK FIRMWARE DOWNLOAD (recommended)" button.
6. The upgrade will start, as shown in figure 28.
7. Wait for completion of the procedure, shown by the message in figure 29.
8. The procedure has now been completed correctly.

Press ENTER and exit the Service program.

In case of firmware programming problems, run the "cold" programming procedure (e.g. if it is not possible to upgrade the firmware).

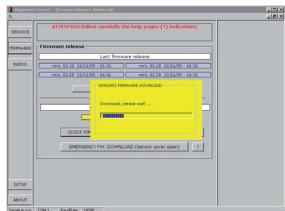


Fig.28

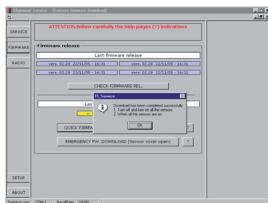


Fig.29

"COLD" MEASURING SENSOR PROGRAMMING

- Remove the measuring sensor covers by undoing the fixing screws on the back.
- Remove the measuring sensor batteries.
- Move the JBOOT switch on each measuring sensor board to the BOOT (down) position.
- Connect the cables to the open measuring sensors and to the PC. The connection absolutely must be made in the correct order (e.g. connect the front left measuring sensor to the rear left, the rear left to the rear right and the rear right to the front right, then connect the front right or front left to the central unit).
The last measuring sensor in the chain may be unable to switch on because of the system's total power absorption. In this case, disconnect the cable from the central unit, fit the batteries back into all the measuring sensors (without switching the measuring sensors on) and connect the cable to the central unit.
- Press the COMPLETE FLASH PRG key.
- Perform the procedure described above from step 6.
- On completion, if the procedure has been concluded successfully, switch off the measuring sensors, disconnect the batteries and the central unit connection cable and return the JBOOT switches to NORMAL (up) position.
- Close the measuring sensors.
- The procedure is complete and the new *firmware* has been correctly installed on the measuring sensors.

RADIO

CENTRAL UNIT RADIO BOARD

The central unit communicates with the four measuring sensors by radio by means of the 2.4 GHz radio board in the box, which is connected to the central unit by cable.

The radio box is installed on the rear of the central unit cabinet.

RADIO UNIT INSTALLATION INSTRUCTIONS

To assure the most efficient radio communications between the measuring sensors and the central unit, proceed as follows.

Central Unit Radio Box:

Installation

Place the radio unit so that it is as "visible" as possible (i.e. with the smallest number of metal obstacles between the two) to the measuring sensors and well away from metal objects which may screen the electromagnetic waves.

Note: if further communication problems are encountered after the radio unit has been positioned correctly, fix the radio to a wall of the workshop, taking care to position it:

- high up
- well away from metal objects
- “visible” to the measuring sensors

MEASURING SENSOR RADIO BOARDS

To change the radio boards fitted inside the measuring sensors, proceed as follows:

- Open the measuring sensor by undoing the screws on the back.
- Remove the front panel and disconnect the flat cable and the yellow-green wire.
- The radio board (A, Fig.13) is fitted above the head CPU board.
- Remove the radio/interface board by undoing the fixing screw.
- Fit the new radio board.
- Connect the control panel to the flat cable and yellow-green wire.
- Close the measuring sensor.

Controlling the 2.4 GHz radio unit

1. Click on “Radio” (Figure 30)

The screen shown in figure 31 will display.

The lower section (Figure 31 ref.B) handles the 2.4GHz radio units and has two functions:
The upper function (Figure 31 ref.1) controls the PC radio (central unit) and measuring sensor radio channel (heads).

The lower function (Figure 31 ref.2) is used to program the PC radio (central unit) firmware.

Central unit radio

Firmware programming (hot)

1. Disconnect any heads connected to the central unit.
2. Connect the PC radio (central unit) to the central unit.
3. Click on “OK” or the central unit radio box icon (Figure 31 ref.2)
The screen shown in figure 32 will display.
4. Check the current release of the software on the PC radio (central unit) by clicking on “CHECK FIRMWARE REL.”.
5. The current release will display in the blue field, as shown in figure 33.
6. Click on “QUICK FIRMWARE DOWNLOAD PC-RADIO (Box cover close)”.
7. The upgrade will start, as shown in figure 34.
8. Wait for the message shown in figure 36 to display.
9. Click on “OK”.

Programming is complete.

If there are problems with programming the firmware (the message shown in figure 35 displays), repeat the programming procedure. If the problem persists, run “cold” programming.

Central unit radio

Firmware programming (cold)

1. Disconnect any heads connected to the central unit.
2. Connect the PC radio (central unit) to the central unit.
3. Click on "OK" or the central unit radio box icon (2, Figure 31)
4. The screen shown in figure 32 will display.
5. Check the current release of the software on the PC radio (central unit) by clicking on "CHECK FIRMWARE REL.".
6. The current release will display in the blue field, as shown in figure 33.
7. Disconnect the PC radio (central unit) from the central unit.
8. Open the PC radio box by undoing the four screws securing its cover.
9. Find the two jumpers marked "JBSL1" (Figure 49 and Figure 50).
10. Set jumper "PRG CTS0" to ON and leave jumper "PRG RXD" on OFF as shown in figure 51.
11. Connect the PC radio box (central unit) to the central unit.
12. Click on "EMERGENCY FW, DOWNLOAD PC-RAD (Box cover open)"
13. The upgrade will start, as shown in figure 34.
14. Wait for the message shown in figure 36 to display.
15. Click on "OK".
16. Programming is complete.
17. Disconnect the PC radio (central unit) from the central unit.
18. Set jumper "PRG CTS0" back to OFF and leave jumper "PRG RXD" on OFF as shown in figure 50.
19. Close the PC radio box and tighten down the four screws.

Central unit radio

Radio channel read/write

Read

1. Disconnect any heads connected to the central unit by cable.
2. Connect the PC radio (central unit) to the central unit.
3. Click on "OK" or the radio board icon (Figure 31 ref.1)
The screen shown in figure 37 displays. The screen has two sections: "VERIFY REGISTERS" and "CONFIGURE REGISTERS"
4. Click on "Check" in "VERIFY REGISTERS".
The system reads the status of the radio board, which displays the radio board version and its operational status (figure 38).
5. Select "channel".
The screen shown in figure 39 displays. The screen has two sections: "VERIFY REGISTERS" and "CONFIGURE REGISTERS".
6. Click on "Check" in "VERIFY REGISTERS".
The system reads the current "Channel set", configured "Channel" and "Country code" setting (Figure 40).

If there are read problems (the radio is not connected to the central unit), the message in figure 46 displays. Restore the connection and click on "Yes", or click on "No" to suspend the read operation.

Central unit radio

Radio channel read/write

Write (Configuration)

After reading the registers, as explained above (see "Read"), you can write (Configure) the radio module.

1. Select the "Channel set" to use (in the "VERIFY REGISTERS" section).
Five channel sets are available: 0, 1, 2, 3, 4.
2. Select the desired "Channel" from those available in the channel set selected in the previous step.
3. Click on "Set" in "CONFIGURE REGISTERS".
The system will write the selected "Channel set" and "Channel".
4. Wait for the write confirmation message to display (Figure 45)
5. Click on "OK".
6. Read the radio configuration to check that the procedure has terminated successfully.

If there are write problems (the radio is not connected to the central unit), the message in figure 46 displays. Restore the connection and click on "Yes", or click on "No" to suspend the write operation.

Central unit radio

Radio channel read/write

Standard programming (standard configuration)

This procedure is used to restore the radio module's factory settings.

After reading the registers, as explained above (see "Read"), you can write (Configure) the radio module.

1. Click on "STANDARD PROGRAMMING", located between the two sections ("VERIFY REGISTERS" and "CONFIGURE REGISTERS")
2. Wait for the write confirmation message to display (Figure 45)
3. Click on "OK".
4. Read the radio configuration to check that the procedure has terminated successfully.
The "Channel set" and "Channel" should both be set to zero.
If there are write problems (the radio is not connected to the central unit), the message in figure 46 displays. Restore the connection and click on "Yes", or click on "No" to suspend the write operation.

Sensor radio

Radio channel read/write

Read

1. Disconnect the PC radio (central unit) from the central unit.
2. Connect all measuring sensors (heads) to the central unit.
3. Click on "OK" or the radio board icon (Figure 31 ref.1)
The screen shown in figure 37 will display.
4. Select "Radio Sensor":
The screen shown in figure 41 displays. The screen has two sections: "VERIFY REGISTERS" and "CONFIGURE REGISTERS"
5. Click on "Check" in "CONFIGURE REGISTERS"
The operational status of all radio boards will be read: for each measuring sensor (heads), its radio board "Version" and "Mode" (figure 42) will display.
6. Select "Channel".
The screen shown in figure 43 displays. The screen has two sections: "VERIFY REGISTERS" and "CONFIGURE REGISTERS".
7. Click on "Check" in "VERIFY REGISTERS".
The system will read the current "Channel set", configured "Channel" and "Country code" setting (figure 44).

If there are read problems (the measuring sensors (heads) are not connected to the central unit), no message displays and the read does not execute. Restore the connection and try again.

Sensor radio

Radio channel read/write

Write (Configuration)

After reading the registers, as explained above (see "Read"), you can write (Configure) the radio modules.

1. Select the "Channel set" to use (in the "VERIFY REGISTERS" section).
Five channel sets are available: 0, 1, 2, 3, 4 (use the same one you used to configure the PC radio unit (central unit)).
2. Select the desired "Channel" from those available in the channel set selected in the previous step.
3. Click on "Set" in "CONFIGURE REGISTERS".
The system will write the selected "Channel set" and "Channel".
4. Wait for the write confirmation message to display (Figure 45)
5. Click on "OK".
6. Read the radio configuration to check that the procedure has terminated successfully.

If there are write problems (the measuring sensors (heads) are not connected to the central unit), no message displays and the write does not execute. Restore the connection and try again.

If the message shown in figure 48 displays repeatedly during the write operation, quit "Alig_service", reboot the PC and repeat the procedure.

Sensor radio

Radio channel read/write

Standard programming (standard configuration)

This procedure is used to restore the radio modules' factory settings.

After reading the registers, as explained above (see "Read"), you can write (Configure) the radio module.

1. Click on "STANDARD PROGRAMMING", located between the two sections ("VERIFY REGISTERS" and "CONFIGURE REGISTERS")
2. Wait for the write confirmation message to display (Figure 45)
3. Click on "OK".

4. Read the radio configuration to check that the procedure has terminated successfully. The "Channel set" and "Channel" should both be set to zero.

If there are write problems (the measuring sensors (heads) are not connected to the central unit), no message displays and the write does not execute. Restore the connection and try again.

If the message shown in figure 48 displays repeatedly during the write operation, quit "Alig_service", reboot the PC and repeat the procedure.

If you are trying to program an incomplete set of sensors (for example, 3 measuring sensors only), the program will warn you with the message shown in figure 47. Click on "No", restore all measuring sensor connections and repeat the procedure. If you wish to program the connected measuring sensors (heads) only, click on "Yes".



Figure 30

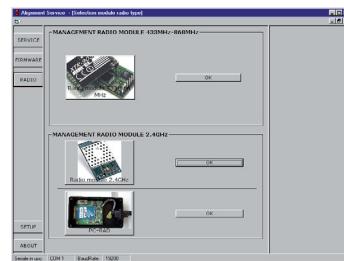


Figure 31

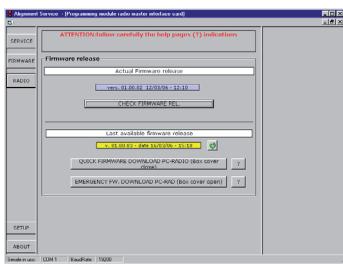


Figure 32

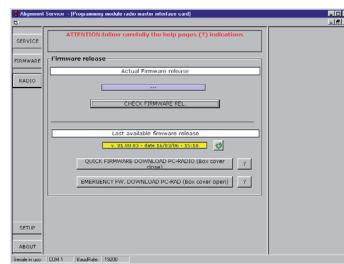


Figure 33

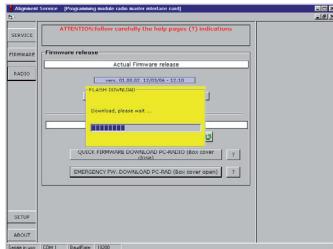


Figure 34

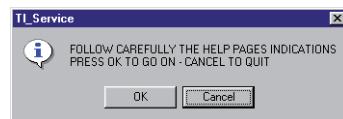


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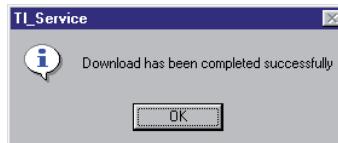


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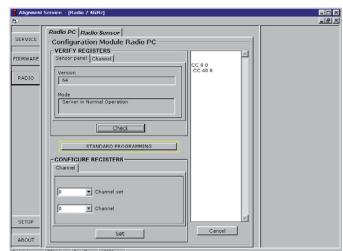


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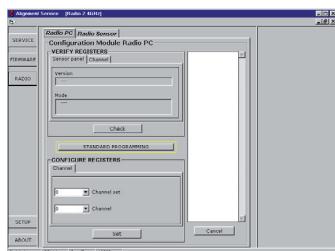


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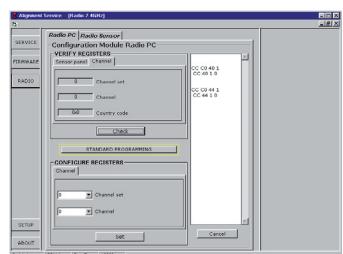


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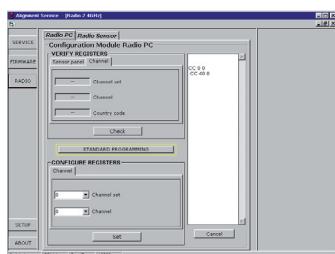


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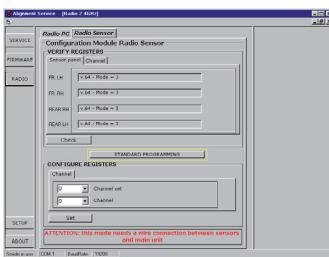


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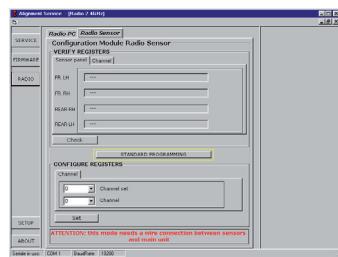


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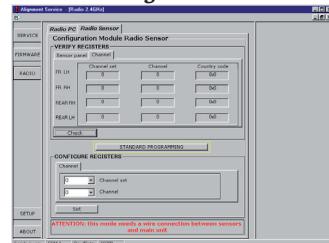


Figure 43



Figure 44

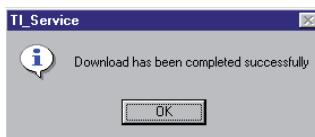


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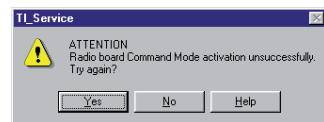


Figure 46



Figure 47

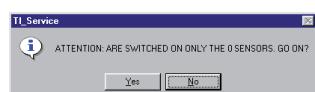


Figure 48



Figure 49

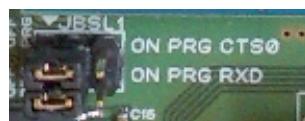


Figure 50



Figure 51

INSTALLING THE DATABANK UPGRADE

The databank upgrade simultaneously also upgrades the wheel aligner software.

- To perform the upgrade, the "Databank upgrade kit" must be obtained.
The kit contains a CD-ROM with the installation software, a "smart card" and the instruction leaflet.
- From the wheel aligner software, exit to the operating system.
- Insert the databank upgrade smart card provided in the kit into slot "A" of the external smart card reader. The gilded contacts must be facing upward (See fig. 6).
- Leave the wheel aligner Sim Card supplied with the equipment in the internal connector.
- Insert the CD-ROM in the drive and wait for the software installation program to start up automatically.
- Select the preferred language and follow the instructions.
- When the PC is rebooted, the aligner software will automatically launch. The databank upgrade procedure may take a few minutes; the system imports all preceding jobs and the client databank, with a series of messages on the screen indicating progress (Note 1).
- When file synchronisation is complete, the message window disappears and the program is ready for use.
- Remove the CD-ROM from the drive and the upgrade "smart card" from slot "A" (Note 2).

Updating the databank online

It is possible to update the databank online by following these instructions.

First note the number of the Sim Card (5 figures) and the name of the aligner:

- *go to the assistance menu of the aligner and select the item Smartcard management*
- *or from the main page (LOGO), pressing CAP+F12.*

In order to update the aligner databank, you need the DATABANKCARD and a computer connected to the Internet.

Activate the receipt of the cookies in the browser that will be used to download the updates.

REGISTRATION

- A. Open the browser (Internet Explorer, Mozilla Firefox) and go to the page:
www.corghi.com/infoauto
- B. Select the language and continue with the registration, clicking on the registration link.
- C. On the registration page, fill in all the fields marked with the symbol "*" (the others are optional).
- D. At the end of the registration, continue with the login using the username and password chosen.

LOGIN AND DOWNLOAD OF VEHICLE CARDS

- A. Open the browser (Internet Explorer, Mozilla Firefox, etc.) and go to the page:
www.corghi.com/infoauto
- B. Insert the username and password.
- C. The page for selecting the reference market will open. Select the market.
- D. At this point, the vehicle/truck selection page opens. Select the make and model of the vehicle you want, and proceed. 1 credit will be subtracted from the card.
- E. The vehicle card will open, and here it is possible to set the diameter of the rim and read the data regarding the characteristic angles of the chosen vehicle. At the bottom of the page there are two links to download the file.
- F. **Downloading XML file:** the vehicle card is converted in a file that will be imported into the aligner.
Click on the link and save the file on a removable support. **Save the file downloaded onto the aligner PC in the folder ROOT " C:\ " or " D:\ ".**
- G. **Downloading PDF file:** The PDF file of the vehicle card is opened. It is necessary to have a PDF file reader. This file can be saved and printed. The reference data will then be entered into the aligner databank "by hand".

INSTALLING THE SOFTWARE UPGRADE

The software upgrade procedure upgrades the wheel aligner software and the structures of the files in the client and previous jobs databanks.

- To perform the upgrade, the wheel aligner software installation CD-ROM in the "Software upgrade kit" must be obtained. The CD-ROM supplied in the "Databank upgrade kit" (Note 2) or a CD-ROM supplied with the aligners may also be used.
- Check that the software release on the CD-ROM is more recent than the one on the aligner.
- From the wheel aligner software, exit to the operating system.
- Insert the CD-ROM in the drive and wait for the software installation program to start up automatically.
- Select the preferred language and follow the instructions.
- When the PC is rebooted, the aligner software will automatically launch. The databank upgrade procedure may take a few minutes; the system imports all preceding jobs and the client databank, with a series of messages on the screen indicating progress (Note 1).
- When file synchronisation is complete, the message window disappears and the program is ready for use.
- Remove the CD-ROM from the drive.

WARNING

Passwords and set-up settings

The installation procedure does not modify the passwords or the set-up settings made previously.

The new set-up options or additional passwords, not included in the previous release, will be set at the default values.

NOTES

Note 1

Messages which appear on the video during the databank update procedure:

- Databank file upgrade, step ...1.9 = copy all existing databanks (main databank, customer databank, preceding jobs databank,...) into ...\\backupDB
- Databank file upgrade, step ...2.9 = upgrading main databank (with the new databank if the smart card is enabled, otherwise upgrades structure only)
- Databank file upgrade, step ...3.9 = upgrading demo mode databank
- Databank file upgrade, step ...4.9 = upgrading customer databank
- Databank file upgrade, step ...5.9 = upgrading system files
- Databank file upgrade, step ...6.9 = upgrading jobs databank
- Databank file upgrade, step ...7.9 = upgrading calibrations databank
- Databank file upgrade, step ...8.9 = upgrading various files
- Databank file upgrade, step ...9.9 = upgrading various files
- Copying databank files ...1.2 = upgrading animation files
- Copying databank files ...2.2 = upgrading chassis height files

In the event of first installation there will be the following three steps:

- Copying databank files ...1.3 = copying databank files
- Copying databank files ...2.3 = copying animation files
- Copying databank files ...3.3 = copying chassis height files

Note 2

The upgrade "smart card" can only be used once.

Its purpose is to update the password for access to the new databank saved on the aligner "smart card" (the one supplied with the equipment).

If the aligner "smart card" is already enabled for use of the new databank release, the upgrade "smart card" is not annulled and can be used for a further upgrade.

The smart card is still usable if its serial number is "0", see "Enabling additional wheel aligner functions" section of the operator's manual.

The CD-ROM can still be used for software upgrades; it is the same CD-ROM as supplied in the "Software upgrade kit".

PROBLEM-SOLVING

The installation program does not run, "wheel alignment software running" error

Exit the installation procedure and run and then shut down the wheel aligner software again.

If the problem persists, delete the following file in manual mode:

C:\PROGRAM FILES\ALIGNMENT\EXIST.INI

Interruption of installation during updating of the files

If the installation crashes during the file update, the initial situation has to be restored before any further operations can be carried out.

Any second installation attempt performed without first restoring the original files causes the loss of the job records saved.

- From the wheel aligner software, exit to the operating system.
- To restore the original files, copy all the files contained in the folder:
C:\PROGRAM FILES\ALIGNMENT\BACKUPDB*.*
Into:
C:\PROGRAM FILES\ALIGNMENT\BANK
- Place the new files, which are files with structure updated to the latest release without which the aligner software might not work, in the installation folder.

Copy all the files from the folder:

C:\PROGRAM FILES\ALIGNMENT\NEWBANK\Yxxxx*.*

Into:

C:\PROGRAM FILES\ALIGNMENT\DOWNLOAD\BANK\



ATTENTION

Folder:

C:\PROGRAM FILES\ALIGNMENT\NEWBANK\

contains several subdirectories called Yxxxx, where xxxx corresponds to a year (e.g. 2000 or 2001).

To activate this procedure, the files contained in the folder of the current year must be copied.

- Restart the aligner program. The installation procedure will recover the data from the old files and transfer them to the new files.

First installation or using an existing installation with a smart card updated to a different databank.

When installing the aligner software on a PC for the first time (this may occur when the operating system has been reinstalled or a replacement PC has been purchased) you may find that the smart card is enabled to read a databank of a different release from the one contained on the installation CD-ROM.

The same may occur when a customer's aligner's PC is replaced with one belonging to the after-sales service.



WARNING

It is important to use the customer's smart card on the new PC, since it enables access to all the additional functions purchased with the aligner.

To allow the aligner to operate, proceed as follows.

- From the logo screen, access the page which summarises the smart card features.
- Read the year of the databank which the smart card is enabled to access, "Year" field.
- From the wheel aligner software, exit to the operating system.
- Place the databank of the year for which the smart card is enabled in the appropriate folder.

Copy file DBStd.mdb from folder:

C:\PROGRAM FILES\ALIGNMENT\NEWBANK\Yxxxx\

Into:

C:\PROGRAM FILES\ALIGNMENT\BANK\



ATTENTION

Folder:

C:\PROGRAM FILES\ALIGNMENT\NEWBANK\

contains several subdirectories called Yxxxx, where xxxx corresponds to a year (e.g. 2000 or 2001).

Copy the file from the folder the year of which is the same as the year read in the "Year" field of the smart card.

- To update the structure of the databank of a previous year to the latest release, copy all the files from the folder C:
C:\PROGRAM FILES\ALIGNMENT\NEWBANK\Yxxxx*.*

Into:

C:\PROGRAM FILES\ALIGNMENT\DOWNLOAD\BANK\



ATTENTION

Folder:

C:\PROGRAM FILES\ALIGNMENT\NEWBANK

contains several subdirectories called Yxxxx, where xxxx corresponds to a year (e.g. 2000 or 2001). Copy the files contained in the folder of the most recent year.

- Restart the aligner program. The installation procedure will recover the data from the old files and transfer them to the new files.

Copying original files

The HD contains an original copy of all the databank and management files used by the aligner.

This means that if a file is damaged, it can be restored using the relative copy.

To understand which file is affected, use the system error message, which provides the name of a file at the end.

For the file containing the record of the jobs done (WORK.MDB) this means losing the data.

If the damaged file is the main databank (DBSTD.MDB) refer to the "First installation or using an existing installation with a smart card updated to a different databank" section.

The kit CD-ROM software release is older than the release installed.

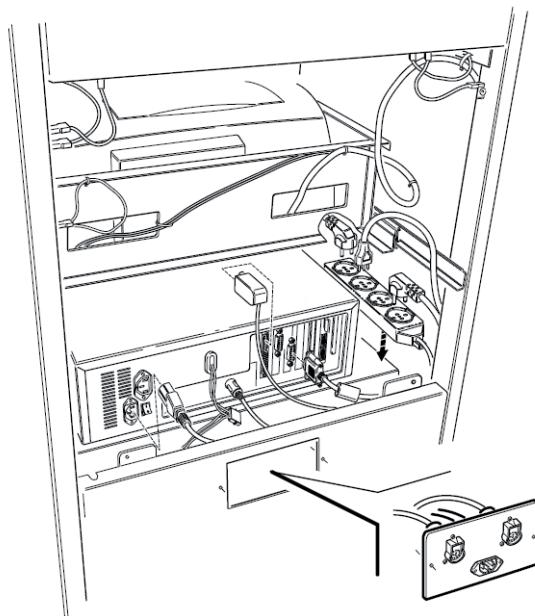
Upgrade the databank using the most recent installation CD-ROM and the smart card supplied with the databank upgrade kit.

GENERAL ELECTRICAL WIRING DIAGRAM (FIG.52)

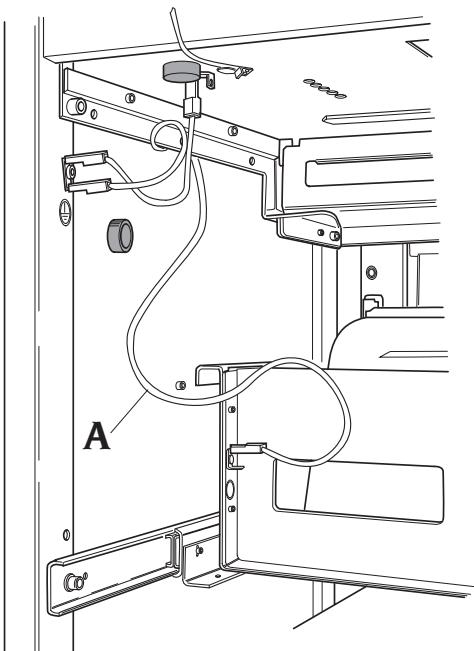
AP1	Personal Computer
AP2	Remote control board
AP3	Keyboard
AP4	Printer
AP5	Monitor
AP9	Radio RX/TX board
AP10	Motherboard (CPU)
AP13	Interface board
AP14	Sensor control panel
AP16	Mouse
AP17	PC interface board
B1	Speaker
BP1	Angle transducer
BP2	Inclinometer
FU..	Fuse
GB1	Battery
HL1	LED light
QS1	Main switch
XB1	Head connector
XB2	Connector
XS1	Power supply socket
XS2	Multiple socket
Z1	Mains filter

Notes

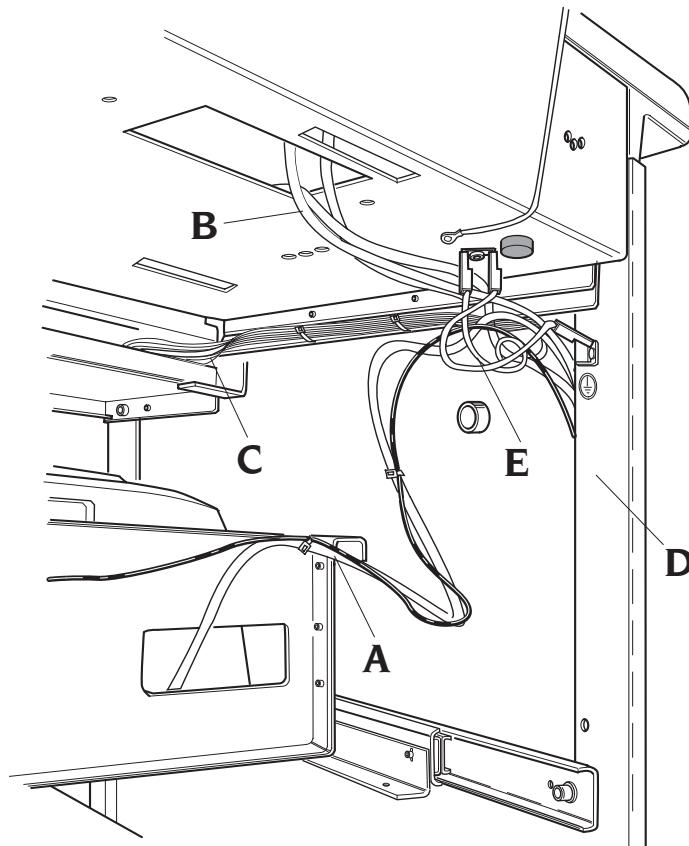
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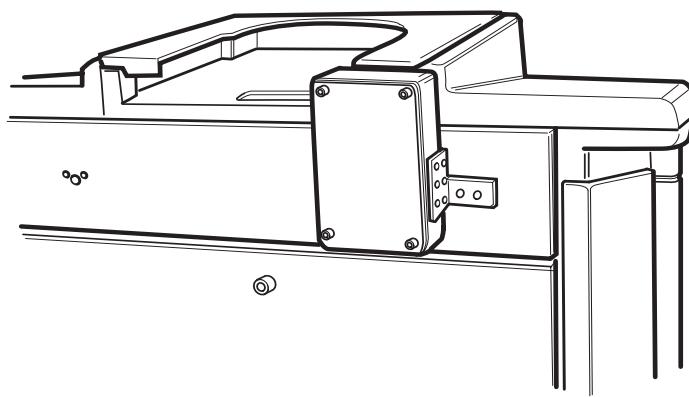
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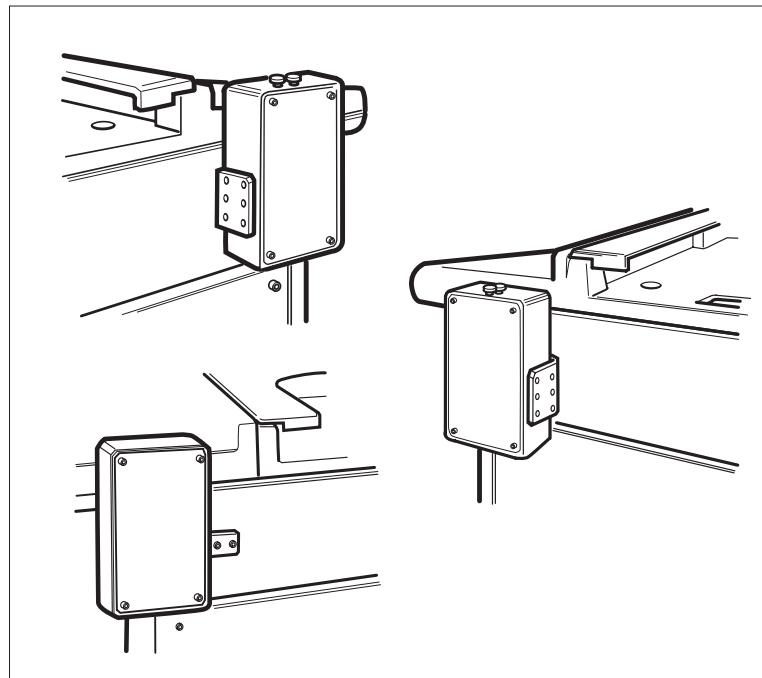
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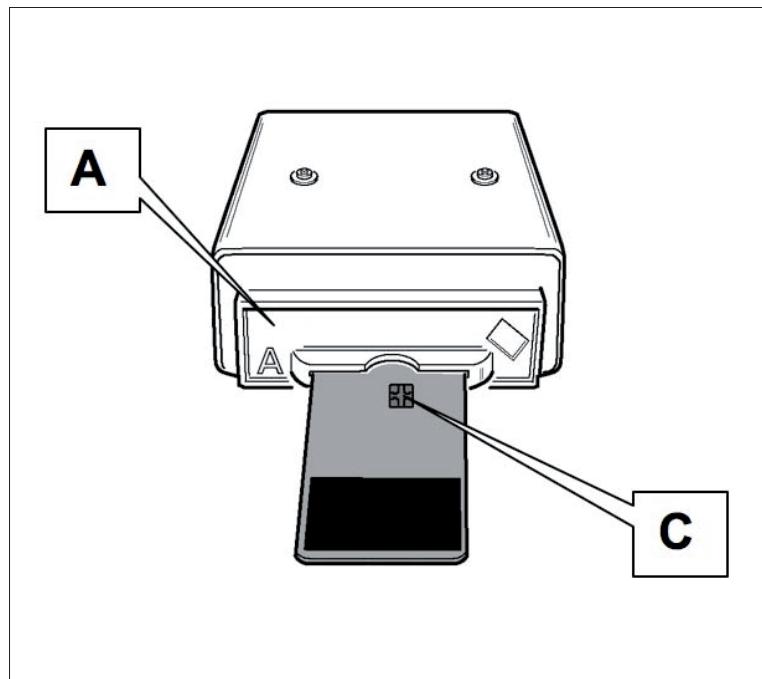
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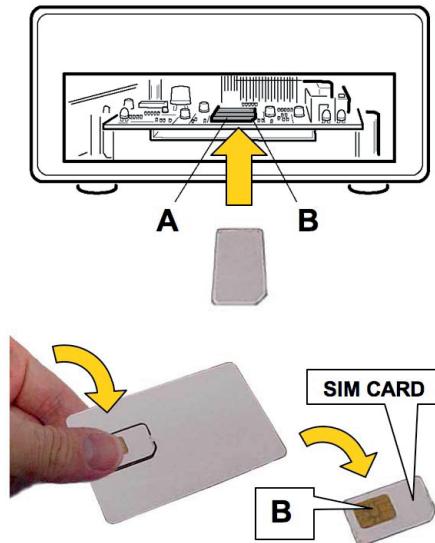
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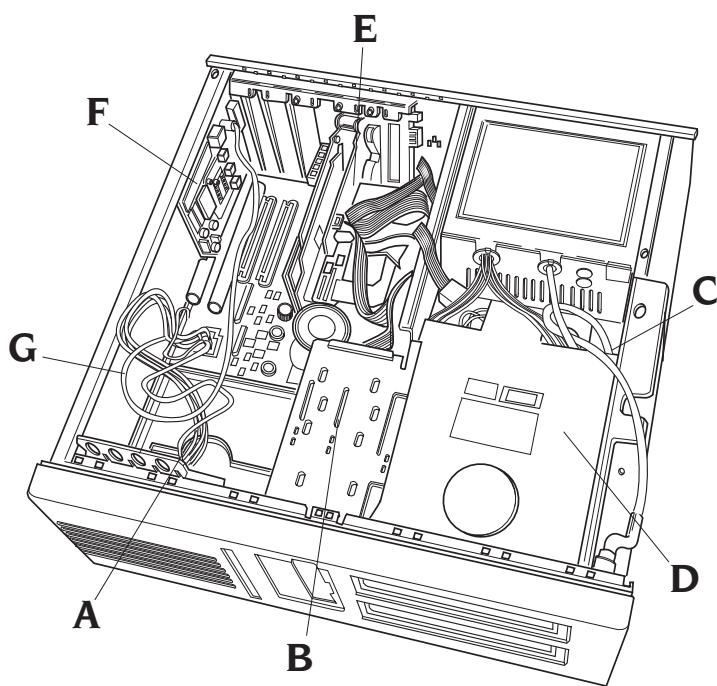
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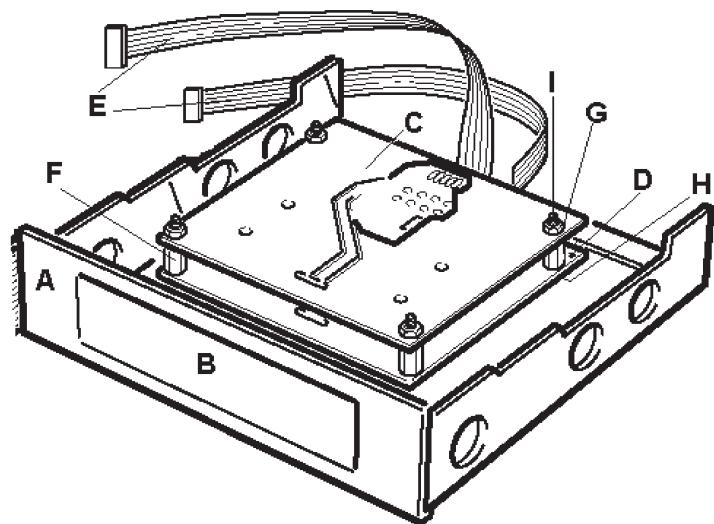
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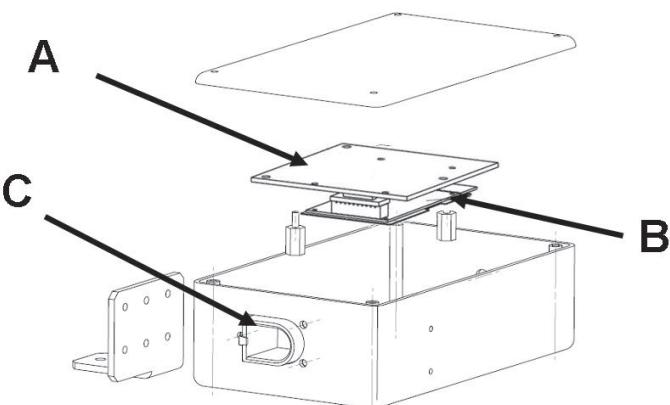
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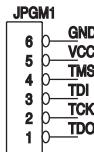
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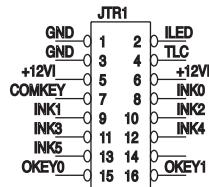


Conn.
PROGRAMMAZIONE
PLD



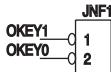
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Conn.
RICEVIT. TELECOMANDO
E TASTIERA ESTERNA



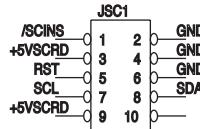
AMP LATCH
8X2P 90G
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Conn.
FILETTA ON-OFF PC



AMP MODU-II
2P DRITTO
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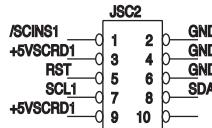
Conn.
SMART CARD



AMP LATCH
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P.2.54

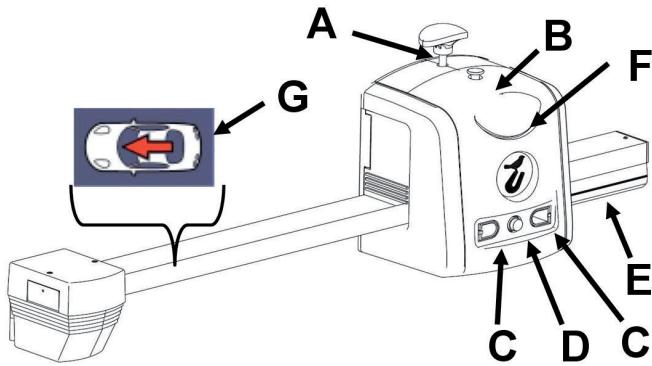
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SMART CARD

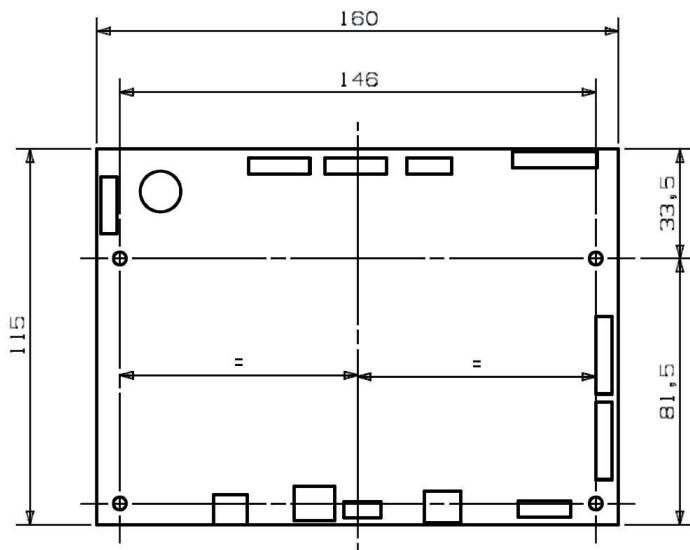


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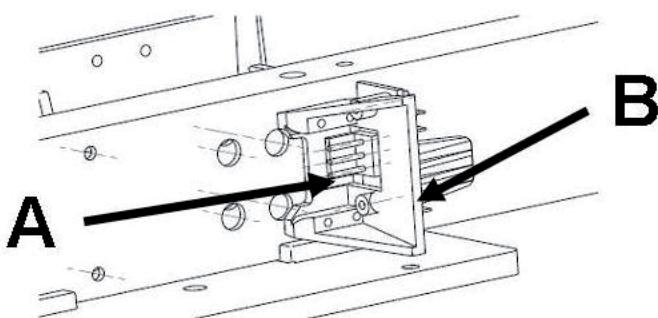
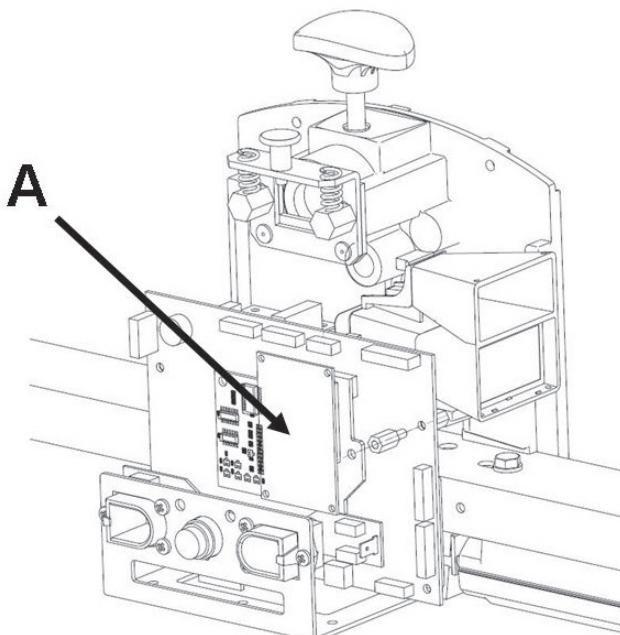
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13

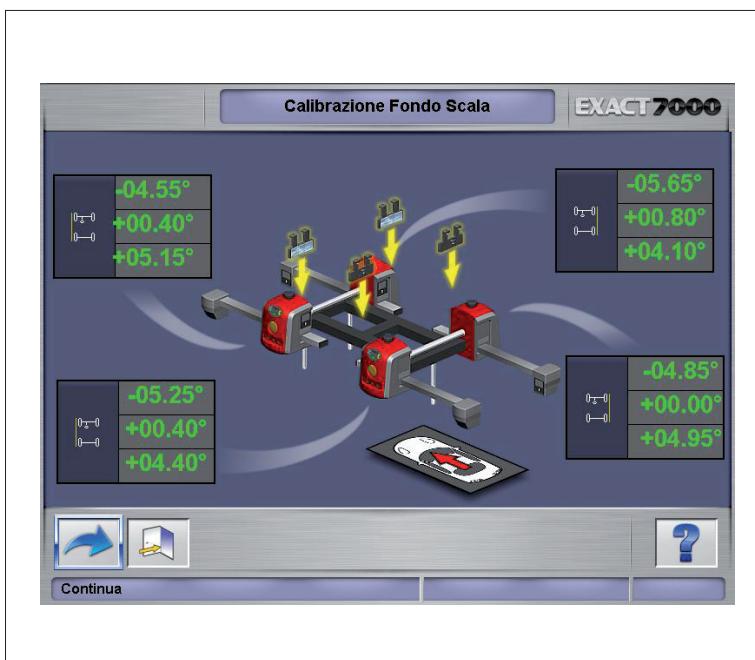


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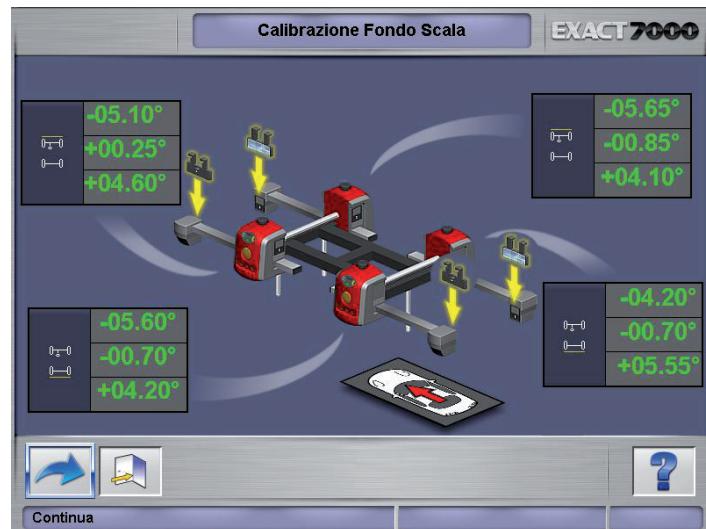
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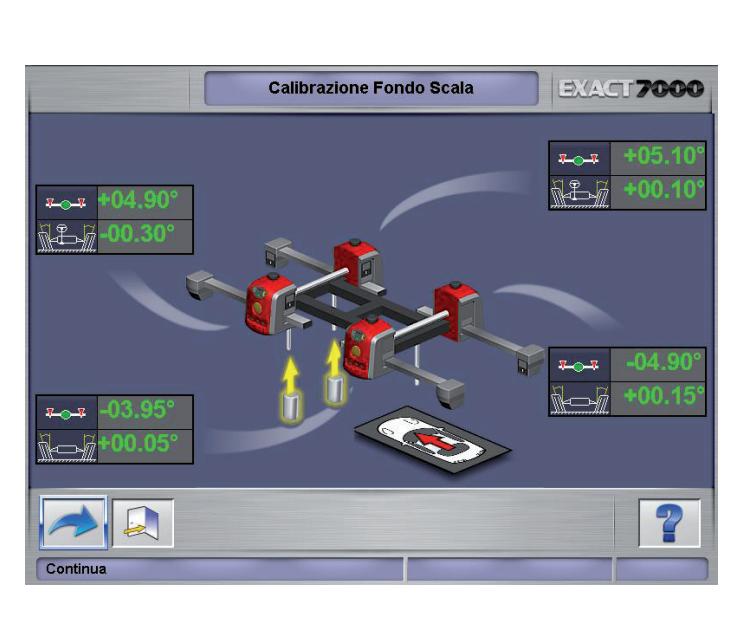
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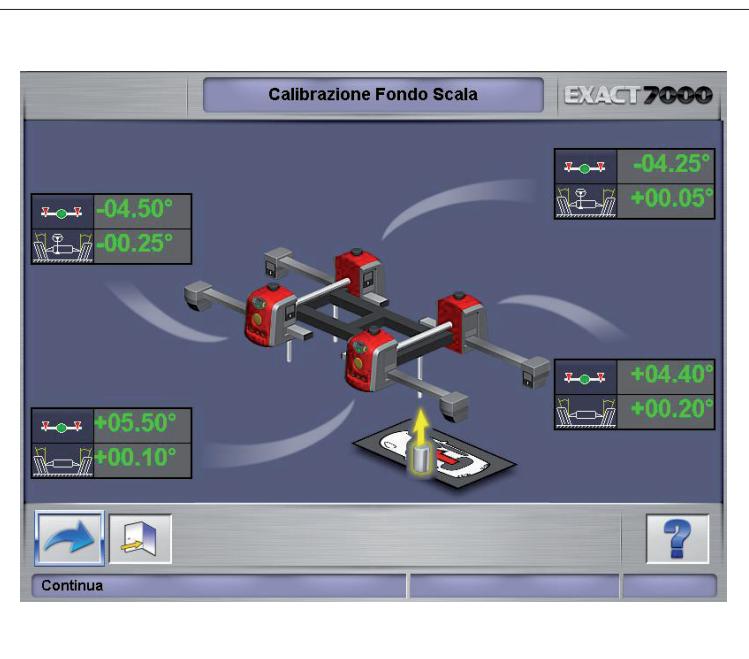
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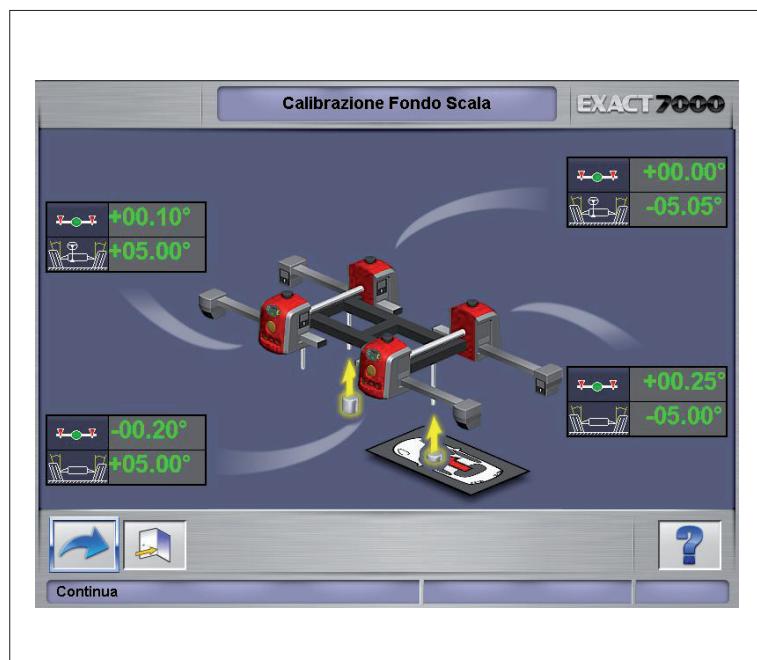


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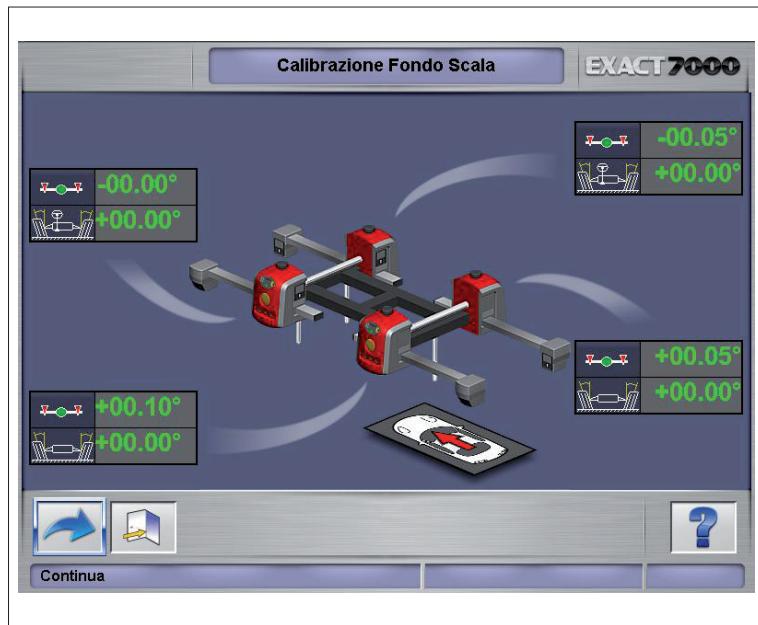


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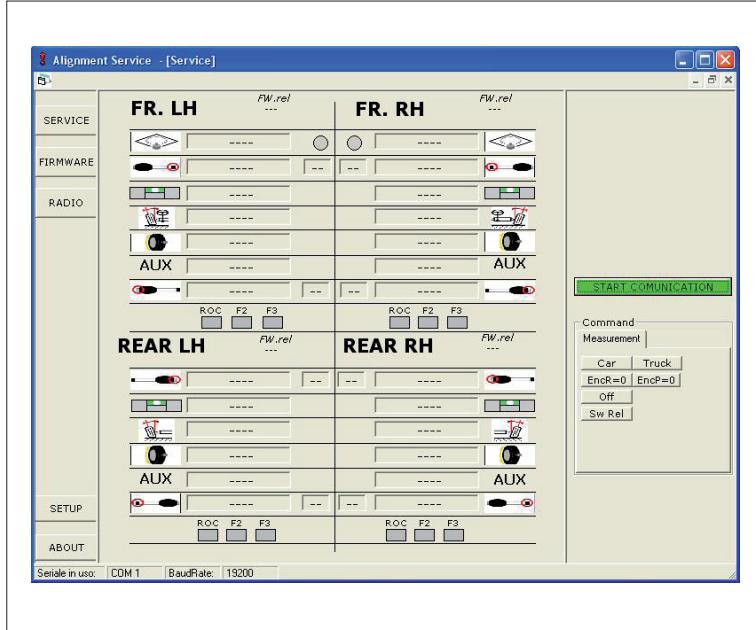
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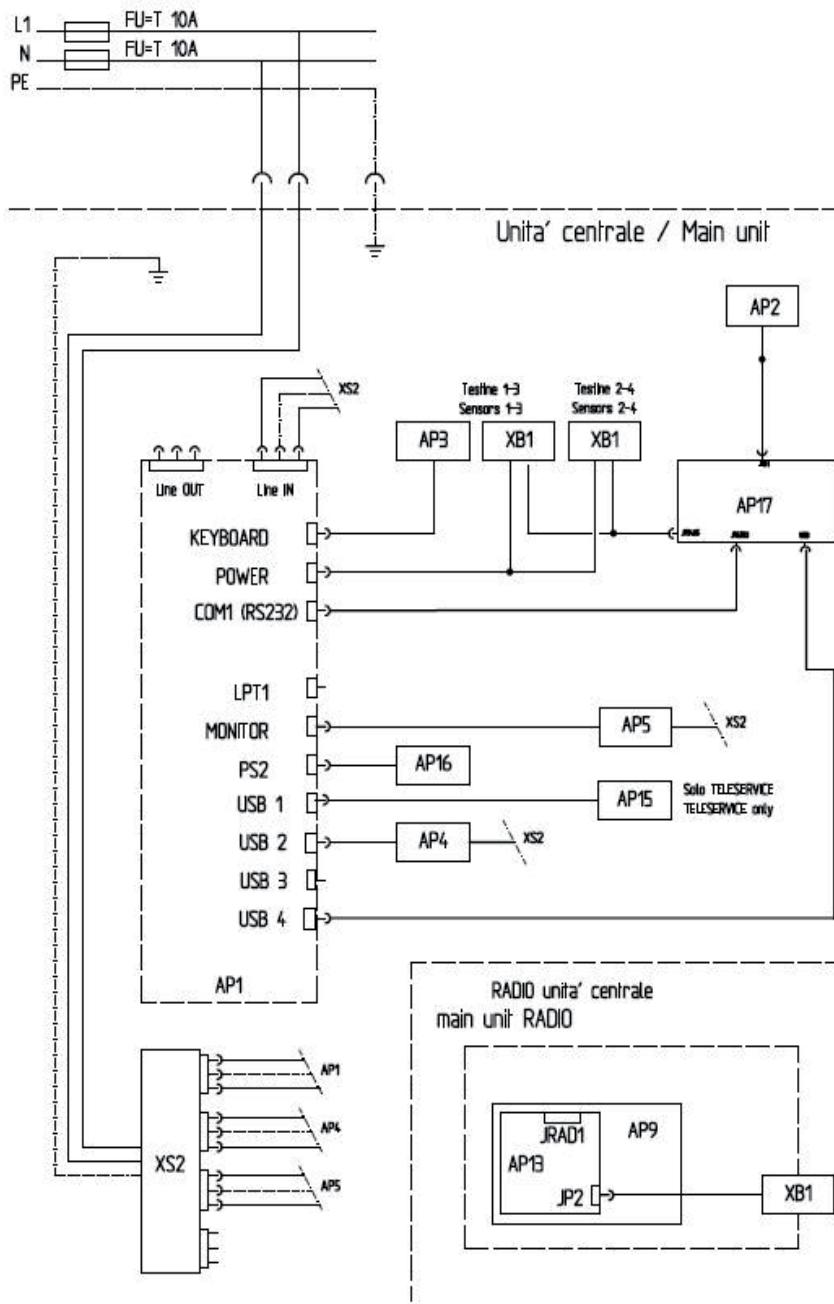


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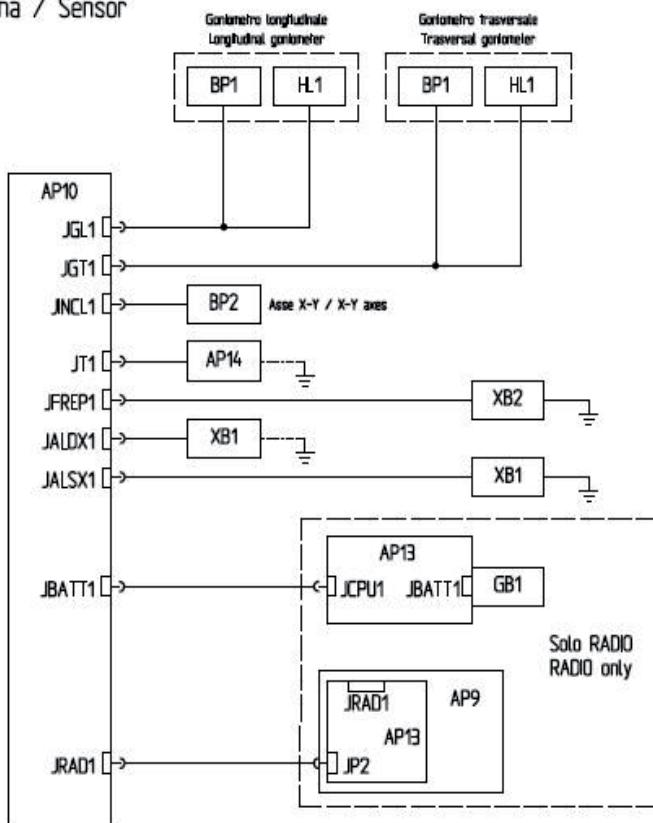




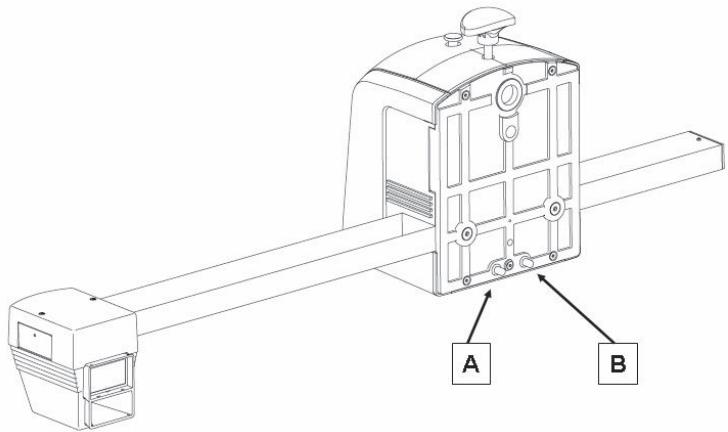
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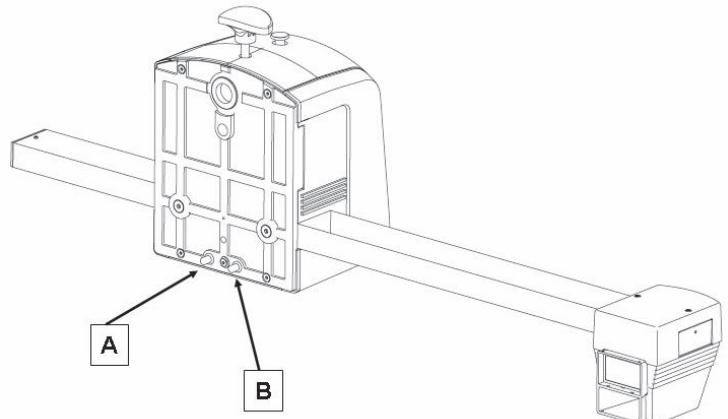
Testina / Sensor



53



54



Note

Note

Note



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