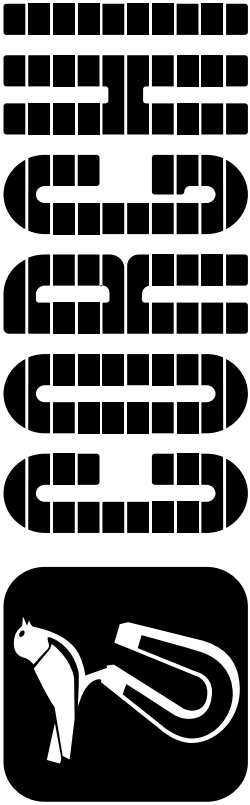


ALLINEAMENTO CAMION
TRUCK WHELL ALIGNMENT
ALIGNEMENT CAMION
LKV-ACHSVERMESSUNG
ALINEACIÓN CAMIONES

Versione 1.0 del 04/98

Italiano Manuale d'uso

English Operator's manual

Français Manuel d'utilisation

Deutsch Betriebsanleitung

Español Manual de uso

INTRODUCTION

This manual sets out to provide the owner and operator with effective, safe instructions for alignment procedures on heavy vehicles, and on the use and maintenance of the truck wheel alignment accessories.
For wheel aligner use and maintenance instructions, refer to the manual supplied with the machine itself.
Follow all the instructions carefully and your aligner will assist you in your work and give lasting and efficient service in keeping with Corghi traditions.
The following paragraphs define the levels of danger regarding the machine, associated with the warning captions found in this manual.

DANGER
Refers to immediate danger 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 using the equipment. Keep this manual and all illustrative material supplied with the machine in a folder near the aligner where it is readily accessible for consultation by the machine operator.
The technical documents are an integral part of the machine, therefore if the machine is re-sold all of the documents must remain with the machine.
The manual is only valid for the machine model and serial number indicated on the nameplate applied to the machine itself.

WARNING

Adhere to the contents of this manual. Corghi declines all liability in the case of actions not specifically described and authorized in this manual.

NOTE
Some of the illustrations in this manual have been taken from photographs of prototypes; the standard production model may differ slightly in certain respects.
These instructions are for the attention of persons with basic mechanical skills. We have therefore condensed the descriptions of each operation by omitting detailed instructions regarding, for example, how to loosen or tighten the fixing devices on the machine. Do not attempt to perform operations unless properly qualified and with suitable experience. In case of need, please contact our nearest authorized Service Center for assistance.

TRANSPORT, STORAGE AND HANDLING

Transport conditions

The equipment must be transported in its original packaging and kept in the position indicated on the packaging itself.
- Packaging dimensions: 1480 x 600 x 300 mm
- Weight of machine with packaging: 30 Kg

Ambient conditions for storage

- Relative humidity: 20% ÷ 80%
- Temperature range: -10° ÷ +60°.

WARNING

Do not stack other goods on top of the packing or damage may result.
Never store floppy disks and the hardware key of the truck kit close to heat sources or magnetic material, or in places exposed to direct sunlight.

Handling

The equipment can be moved around by hand.

ATTENTION

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

INSTALLATION

WARNING

Take the utmost care when unpacking, assembling, lifting and setting up the machine as described in this heading.
Failure to follow these recommendations may cause damage to the equipment and put the operator in danger.

GB

Assembling truck alignment accessories

- Unpack the equipment, placing the packing crate in the position shown on the outside.
- Screw the magnet holders to the four chassis connection bars (two long and two short) (Fig.1).
- Fit the head holder bars, by fixing the two arms to the connecting blocks (Fig. 2).

ATTENTION

Always keep the head holder bars in protected positions where they will not be knocked or bent; deformed bars cause adjustment errors.

Installing truck alignment software

WARNING

For the truck software to operate correctly, the data bank update for the current year must already have been installed.

- Switch off the aligner's personal computer.
- Insert the floppy disk in the drive.
- Switch on the personal computer; the truck alignment program will install itself automatically.
- Switch the aligner personal computer off again and remove the floppy disk from the drive.
- Insert the new hardware key supplied with the update kit.
- The truck alignment program is now installed.

Installation clearances

ATTENTION

Take care to keep the truck accessories well away from personal computers and other equipment which may be affected by the magnets (permanent damage might be caused).

Ambient conditions in the place of operation

- Relative humidity from 20% to 80%
- Temperature range from 0°C to 40°C

WARNING

The machine must not be operated in a potentially explosive atmosphere.

SAFETY REGULATIONS

WARNING

Failure to observe these instructions and the relative danger warnings can cause serious injury to the operator and others.
Never use the equipment until you have read and understand all the danger/caution warnings in this manual.

For correct operation, this equipment requires a qualified, authorised operator. A qualified operator is considered to be a person who has read and understood the manufacturer's instructions, is suitably trained, and is conversant with safety and adjustment procedures to be adhered to during operations. Operators are expressly forbidden from using the machine under the influence of alcohol or drugs capable of affecting physical and mental capacity.
The operator must:

- Read and understand all instructions on how to use the machine.
- Get to know the capabilities and characteristics of this equipment.
- Keep unauthorized persons well clear of the area of operation.
- Make sure that the machine has been installed in compliance with established legislation and standards.
- Make sure that all machine operators are suitably trained, that they are capable of using the machine correctly and that they are adequately supervised during their work.
- Do not touch power lines or other electrical equipment until the power has been disconnected.
- Read this manual carefully and learn how to use the machine correctly and safely.
- Always keep this user manual in a place where it can be readily consulted when working with the machine and consult it whenever you are in need of confirmation or explanations.

WARNING

Do not remove or deface the safety Danger, Warning or Instruction decals. Replace any missing or illegible Danger, Warning or Instruction decal. Replacements for missing or damaged decals can be obtained from your nearest Corghi dealer.

- When using and carrying out maintenance on the machine observe the unified industrial accident prevention regulations for high voltage industrial equipment.
- Any unauthorized alterations made to the machine automatically release the manufacturer from any liability in the case of damage or accidents in relation with such alterations. Specifically, tampering with or removing the machine's safety devices is a breach of the regulations for industrial accident prevention.

GB

WARNING

When operating or servicing Corghi equipment do not wear ties, loose fitting clothes, necklaces or wristwatches and any other articles that could become entrapped by moving parts. Tie back long hair or cover with a scarf or a cap.

GENERAL SPECIFICATIONS

Truck alignment accessories

- Accessories for aligning vehicles in relation to the axis of symmetry of the chassis. This type of alignment is able to eliminate the crooked position typical of vehicles with thrust angle not equal to zero
- Magnetic connection with articulated head which allows the equipment to be installed in restricted spaces and inconvenient conditions
- Connection for semitrailer fifth wheel pivot and trailer drawbar eye
- Extending fixing arm adaptable to different chassis heights
- Graduated bar for positioning the heads symmetrically in relation to the chassis

Truck alignment software

- Program for the guided alignment, with and without accessories for alignment in relation to the chassis, of trucks with two and three axles, trucks with two steering axles, trailers with steering front axle (drawbar type) and semitrailers with two or three axles
- Truck data bank
- Extreme freedom of operation with unrestricted possibility of switching from one angle to the next
- Three different compensation types: ROC, ROC 0, ROC 4WD
- Repeat of compensation on single wheel (ROC x 1)
- Automatic measurement of steering turns directly on wheel sensors - no need for electronic turntables
- Data displayed in sexagesimal or centesimal degrees and millimetres
- Graphic comparison between measured data and data bank values

TECHNICAL DATA

- Measurement ranges:

toe ..... ± 24°
front camber (front and rear in version 4S) ..... ± 10°
caster ..... ± 30°
king pin ..... ± 30°
front set back (front and rear in version 4S) ..... ± 22°
thrust angle ..... ± 22°
steering angle ..... ±24°

- Accessory dimensions:

chassis connection bar ..... 650 x 120 x 100 or 430 x 120 x 100 mm
head holder bar ..... 2860 x 50 x 30 mm
connection for trailers ..... 600 x 420 x 230 mm

- Weight:

chassis connection bar ..... 2 kg
head holder bar ..... 4 kg
connection for trailers ..... 105 kg

- Ambient conditions for storing the machine:
relative humidity ..... 20% ÷ 80%
temperature range ..... -10° ÷ +60°
- Ambient conditions in the place of operation:
relative humidity ..... 20% ÷ 80%
temperature range ..... 0° ÷ 40°
- **Noise level in work conditions**: ..... <70 db(A)

MACHINE OUTFIT

code 900454152 addendum manual for truck alignment

OPTIONAL ACCESSORIES

code 803230950	truck turntable
code 803232815	truck adapter
code 803238571	set of four 21" wheel extensions
code 803251734	1-16m sensor connection cable for trucks (CCD heads)
code 803241593	17.5"-25" wheel clamp with mobile pin
code 803444640	truck data manual
code 803253946	truck alignment accessories kit (for those who have the truck alignment software only).
code 803254295	CCD head software update kit
code 803254296	radio CCD head software update kit

MAIN OPERATIONAL UNITS

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, operated correctly and serviced regularly.

GB

Truck alignment accessories kit (fig. 3)

A) Trailer connection
B) Chassis connection bars
C) Magnetic connections
D) Head holder bar
E) Operator's manual

Truck alignment software kit (fig. 4)

A) Program floppy disk
B) Hardware protection key
C) Operator's manual

Operational video page (fig.5)

F) Caption (e.g. FRONT AXLE MEASUREMENT): shows the current procedure.
G) Vehicle measurement values.
H) Data bank values.
I) Graphic comparisons between vehicle values and data bank values.
L) Sensor level indicator.
M) Diagrams showing the angle being measured.
N) HELP (e.g. Save data and then press CONTINUE): provides information on how to perform the procedure you have called.
O) Commands area (CONTINUE, FRONT, REAR, CASTER, WHEELS RAISED and OPTIONS): contains all the commands available in the current program stage; the highlighted command is the one that will be activated by pressing ENTER.

In operational video pages the commands area will appear when any key is pressed.

PREPARING VEHICLES FOR WHEEL ALIGNMENT

In order to perform wheel alignment correctly, all parts of the vehicle must be in compliance with the manufacturer's specifications; it is especially important to check the tyre pressure and eliminate play in bearings and ball joints.
Position the vehicle over an inspection pit or on a lift that is correctly equipped for alignment operations. Make sure that the turntables and slip plates are locked.
If the truck accessories (code 803253946) are used, fit them in response to the prompts given by the alignment sequence, as shown in the "Fitting truck accessories" section.
When requested by the alignment sequence, fit the wheel clamps/heads assembly on the wheels and fix the jaws to the rim using one of the two knobs. Do not over-tighten the clamps as this may cause them to bend.
For steel rims or those with projecting edge, the clamps should be fixed from the inside (fig. 6); for alloy rims, fix them from the outside (fig. 7), for rims with plastic covers, connect from the inside with the pins turned round (fig. 8).
If necessary, tap the wheel clamps gently to fit the clamp nose between the rim and the tyre bead; in this case, the clamp should be fitted separately from the head.
After installing the four clamp/sensor assemblies, connect the cables between the rear and front heads, and between the front heads and the central unit.
N.B. The machine is supplied with two sets of cables of different lengths; the position in which the cables are connected is not important.

STANDARD WORKING SEQUENCES

Procedure for truck with 3 axles

2 - With chassis alignment kit

a) Start
b) List of mechanical components
c) Data bank
d) Entering of wheel diameter
e) Alignment of the two chassis bars (heads on the bars)
f) Compensation of the 3rd axle (heads on front bar and third axle)
g) Measurement of the third axle
h) Compensation of the 2nd axle (heads on front bar and second axle)
i) Measurement of the second axle
j) Compensation of the 1st axle (head on first and second axles)
k) Measurement of the caster
l) Measurement of the first axle
m) 2nd caster measurement
n) 2nd measurement on the first axle
o) Print

7 - Without chassis alignment kit

a) Start
b) List of mechanical components
c) Data bank
d) Entering of wheel diameter
e) Compensation of the 3rd axle (heads on front bar and third axle)
f) Measurement of the third axle
g) Compensation of the 2nd axle (heads on front bar and second axle)
h) Measurement of the second axle
i) Measurement of the caster
j) Measurement of the first axle
k) 2nd caster measurement
l) 2nd measurement on the first axle
m) Print

GB

Procedure for truck with 2 steering axles, vehicles with 4 axles

3 - With chassis alignment kit

a) Start
b) List of mechanical components
c) Data bank
d) Entering of wheel diameter
e) Alignment of the two chassis bars (heads on the bars)
f) Compensation of the fourth axle (heads on front bar and fourth axle)
g) Measurement of the fourth axle
h) Compensation of the third axle (heads on first and third axles)
i) Measurement of the third axle
j) Compensation of the first axle (heads on first and third axles)
k) Measurement of the first axle caster.

l) Measurement of the first axle
m) 2nd caster measurement on the first axle
n) 2nd measurement on the first axle
o) Compensation of the 2nd axle (heads on second and third axle)
p) Measurement of the second axle caster
q) Measure 2nd axle
r) 2nd caster measurement on the second axle
s) 2nd measurement on the second axle
t) Compensation of the steering axles (heads on first and second axles)
u) Alignment of the steering axles
v) Print

8 - Without chassis alignment kit

a) Start
b) List of mechanical components
c) Data bank
d) Entering of wheel diameter
e) Compensation of the fourth axle (heads on front bar and fourth axle)
f) Measurement of the fourth axle
g) Compensation of the third axle (heads on first and third axles)
h) Measurement of the third axle
i) Measurement of the first axle caster.
j) Measurement of the first axle
k) 2nd caster measurement on the first axle
l) 2nd measurement on the first axle
m) Compensation of the 2nd axle (heads on second and third axle)
n) Measurement of the second axle caster
o) Measure 2nd axle
p) 2nd caster measurement on the second axle
q) 2nd measurement on the second axle
r) Compensation of the steering axles (heads on first and second axles)
s) Alignment of the steering axles
t) Print

Procedure for semitrailers - TIR

4 - With chassis alignment kit

a) Start
b) List of mechanical components
c) Entering of wheel diameter
d) Alignment of the bars (heads on the bars)
e) Compensation of the first axle
f) Measurement of the first axle (heads on front bar and first axle)
g) Compensation of the second axle
h) Measurement of the second axle (heads on front bar and second axle)
i) Compensation of the third axle (heads on front bar and third axle)
j) Measurement of the third axle
k) Print

9 - Without chassis alignment kit

a) Start
b) List of mechanical components
c) Entering of wheel diameter
d) Compensation of the first axle (heads on front bar and first axle)
e) Measurement of the first axle
f) Compensation of the second axle (heads on front bar and second axle)
g) Measurement of the second axle
h) Compensation of the third axle (heads on front bar and third axle)
i) Measurement of the third axle
j) Print

Procedure for trailers with drawbar

5 - With chassis alignment kit

a) Start
b) List of mechanical components
c) Entering of wheel diameter
d) Alignment of the bars on the drawbar (heads on bars)
e) Compensation of the first axle (heads on front bar and first axle)
f) Measurement of the first axle
g) Alignment of the bars (heads on bars)
h) Compensation of the second axle (heads on front bar and second axle)
i) Measurement of the second axle
j) Compensation of the third axle (heads on front bar and third axle)
k) Measurement of the third axle
l) Print

10 - Without chassis alignment kit

a) Start
b) List of mechanical components
c) Entering of wheel diameter
d) Compensation of the first axle (heads on front bar and first axle)
e) Measurement of the first axle
f) Compensation of the rear axles (heads on second and third axles)
g) Measurement of the third axle
h) Measurement of the second axle
i) Print

GB

Procedure for truck with two axles

6 - With chassis alignment kit

a) Start
b) List of mechanical components
c) Data bank
d) Entering of wheel diameter
e) Alignment of the bars (heads on bars)
f) Compensation of the rear axle (heads on front bar and rear axle)

g) Measurement of the rear axle
h) Compensation of the front axle (heads on first and second axles)
i) Measurement of the caster
w) Measurement of the front axle
j) 2nd measurement on the front axle
k) Print

11 - Without chassis alignment kit

a) Start
b) List of mechanical components
c) Data bank
d) Entering of wheel diameter
e) Compensation (heads on first and second axles)
f) Measurement of the caster
g) Measurement of the rear axle
h) Measurement of the front axle
i) 2nd measurement of the caster
j) 2nd measurement on the front axle
k) Print

DESCRIPTION OF THE WORKING VIDEO PAGES

For a detailed description of use of the wheel aligner, refer to the operator's manual supplied with the aligner itself.
The following is a brief description of the video pages for the alignment procedure for a truck with two steering axles and a detailed description of the video pages strictly related to truck alignment.
The (*) symbol indicates that the video page will only appear if the function has been selected in the SET-UP.

Start; video page with logo, from which the user can move on to select the alignment modes.
List of mechanical components (*); list with check-up on the mechanical parts.
Data bank; (*) recalls the values relating to the truck data bank
Enter wheel diameter; (*) whether working in inches or millimetres, this page allows the user to enter the wheel diameter.
Alignment of the two chassis bars; used to position the bars at right angles to the chassis. The front heads are on the front bar and the rear heads on the rear bar.
Fourth axle compensation; ROC of the rear heads mounted on the wheels of the fourth axle; front heads on the bar fitted on the front of the chassis.
Fourth axle measurement; measurement of axle half-toe, camber and total toe, thrust angle, set back and axle symmetry error.
Third axle compensation; ROC of the rear heads mounted on the wheels of the third axle; front heads on the bar fitted on the front of the chassis.

Third axle measurement; measurement of axle half-toe, camber and total toe, thrust angle, set back and axle symmetry error.
First axle compensation; ROC of the front heads mounted on the wheels of the first axle; the rear heads are on the third axle.
First axle caster measurement; (*) with wheels turned for measurement of caster, king pin and steering difference.
First axle measurement: measurement of half-toe, camber, set back and caster.
2nd first axle caster measurement; (*) same procedure as "First axle caster measurement"
2nd first axle measurement: same procedure as "First axle measurement".
2nd axle compensation: ROC of front heads mounted on the second axle; the rear heads are on the third axle.
Second axle caster measurement; (*) with wheels turned for measurement of caster, king pin and steering difference.
Second axle measurement: measurement of half-toe, camber, set back and caster.
2nd second axle caster measurement; (*) same procedure as "Second axle caster measurement"
2nd second axle measurement: same procedure as "Second axle measurement".
Steering axle compensation: ROC of front heads mounted on the first axle and rear heads mounted on the second axle.
Steering axle alignment; Phase for alignment between the two steering axles, using the coupling bar.
Print: printout of the measurement, pre-setting and data bank data.

(1) Switching on the aligner

In this phase, the central unit carries out a self-diagnostic functional test. If everything responds correctly, the system switches to the video page with the CORGHI logo, the START video page.

The START command begins the alignment sequence.
The ALIGNMENT MODES command moves to the video page for selecting the alignment mode.
The MANAGEMENT command recalls the management video page.

(2) Alignment modes

GB

The ALIGNMENT MODES video page offers a choice of the different alignment procedures:
1) car procedure
2) three-axle truck procedure
3) procedure for truck with two steering axles
4) semitrailer procedure (TIR)
5) procedure for trailers with drawbar
6) two-axle truck procedure
When the car mode is selected, the system switches directly to the START video page.
When one of the other modes is selected, the system asks whether the user wishes to carry out alignment in relation to the chassis.

ATTENTION

Alignment in relation to the chassis requires use of the TRUCK ALIGNMENT ACCESSORIES KIT code 803253496 and, for narrow track vehicles, the presence of software of release 07.0 or later on CCD heads, and release 04.0 or later on the radio CCD heads.
The software update kit for the CCD heads is code 803254295; the equivalent for the radio CCD heads is code 803254296

The NO command selects the conventional alignment mode and switches to the START video page.

The YES command selects alignment with bars and switches to the START video page

ATTENTION

When using the trailer and semitrailer alignment procedure without chassis alignment bars, the front bars are still necessary, fixed to the drawbar eye or the fifth wheel. Use of the TRUCK ALIGNMENT ACCESSORIES KIT code 803253496 is therefore necessary.

The mode selected remains in the memory until the next alignment mode is selected or the aligner is switched off. At switch-on, the car alignment mode is set by default.
If truck alignment is selected, an icon appears in the top left-hand corner of the screen showing a truck for the mode without bars or a truck with bar in the mode with bars.

(3) Starting work

From the logo video page, select the START command and press ENTER.

(4) Data bank

The video displays a list, in alphabetical order, of the makes in the main data bank (fig. 16).
When car mode is selected, only cars and vehicles up to 3500 kg are shown.
When one of the truck or trailer alignment modes is selected, only industrial vehicles are shown.
The main data bank contains the data supplied by the manufacturers.

(5) Entering the diameter

This procedure allows operation with toe values in millimetres.
To obtain the toe values in millimetres, move the cursor onto the wheel diameter value and press Enter (fig. 17). The table contains the commonest diameter values; if the desired diameter is not found, choose the value closest to it.
To measure the toe data in degrees, leave the cursor on DEGREES.

The ESC key shifts the cursor to the command zone, where:
The 1/60 command shows the angles in sexagesimal degrees.
The 1/100 command shows the angles in centesimal degrees.
The SELECT command moves the cursor to the diameters table.

The selection of the unit of measurement used for angles (1/60 and 1/100) is permanent and persists after the machine has been switched off.

(6) Fitting the truck accessories

Correct installation of the truck accessories on the vehicle chassis is fundamental for correct alignment.
The truck alignment software prompts the user to fit the accessories, when a mode which uses them is selected, and also gives guidance on where to place them.
One two and three-axle trucks and those with two steering axles, the accessories must be fitted in front of the front axle and behind the rear axle, using the connection arms with magnetic head.
On trailers with drawbar, initially the front accessory must be fixed to the drawbar pivot using the connection provided, and the rear accessory behind the first axle on the mobile structure of the drawbar, using the connection arms. Subsequently, the front accessory is fixed behind the first axle, this time on the fixed structure of the trailer, and the rear one behind the last axle, using the connection arms.
On semitrailers, the front accessory is fixed to the fifth wheel using the special connection, and the rear accessory to the last axle using the connecting arms.

Before installing the connecting arms on the chassis, adjust their height using the telescopic tubular elements (A Fig. 9), which can be adjusted by removing the fixing screws (B Fig. 9), so that the guide for the head holder bar (C Fig. 9) is high enough above the ground to allow the heads to be fitted.

Clean the part of the chassis on which the magnetic heads are to be fixed and remove any ferrous materials from the magnets.
Fit the chassis connection bars in two points which are symmetrical across the longitudinal axis of the chassis. Fig. 10 shows the various options for use of the articulated magnetic head.
Fit the head holder bar and use the graduated bar to position it symmetrically in relation to the chassis (Fig. 11).

WARNING

It is extremely important to fit the head holder bar symmetrically in relation to the chassis.

GB

Fix the head holder bar using the spring tie-rods (Fig. 12) and install the heads (the front heads on the front bar, the rear heads on the rear bar).

To install the head holder bar on the pivot of a trailer (Fig. 13) or on the fifth wheel of a semitrailer (Fig. 14) use the connection for trailers as shown in the diagrams. The head holder bar must be fixed using the holes provided on the trailer connection (Fig. 15).

(7) Aligning the head holder bars

The video page provides guidance for setting the head holder bar at right angles to the axis of symmetry of the vehicle's chassis.
If the heads are not connected it is only possible to access the steps of the program which follow in DEMO (demonstration) mode.
The numerical fields and graphic bars show the alignment values.

To assist the operator when positioning the head holder bars, the alignment video page shows how the angle with the axis of the chassis varies as the bars are moved (A Fig. 18).
Before the next step of the program can be accessed, the bar alignment values must be within the required tolerance values, 0° +/- 0.20° for the rear bar and 0° +/- 0.10° for the front bar; when this condition is met, the graphic bars are green in colour (B Fig. 18).
Although this is not necessary to continue with the program, optimum alignment results will be obtained if the heads and the head holder bars are levelled. When the heads are horizontal, the squares beside the heads in the video page (C Fig. 18) turn green. When the head holder bars are horizontal, the dot above the front bar and below the rear bar on the video page (D Fig. 18) is green in colour.

The head holder bars can be set at right angles to the chassis axis as follows:
a) by varying the point at which the fixing bar is connected to the chassis, with the aid of the magnetic head release lever;
b) by turning the trailer connection and then fixing it with the adjuster screws once the correct position is obtained.

The CONTINUE command moves on to the next video page.
The FINISHED command recalls the START video page.
The DEMO command moves on to the next video page in DEMO mode. This only works if all the heads are either connected or disconnected.

The ESC command recalls the ENTERING THE DIAMETER video page (if activated in the set-up).

N.B. Anyone wishing to use the truck accessories without using the truck alignment program can access head holder bar alignment as follows:
a) Position the truck accessory as described in chapter 6
b) Fit the front heads on the rear bar and the rear heads on the front bar (the opposite of the normal procedure)
c) from the set-up, select the measuring mode with the rear axle referred to the axis of symmetry and the front axle referred to the thrust axis (the EXACT 26 aligner uses this type of reference);
d) locate a data summary video page or the rear axle video page and adjust the front bar until the difference between the right-hand rear half-toe and left-hand rear half-toe is within the range 0° +/- 0.10° (0° ; +/- 0° 6')
e) locate a data summary video page or the front axle video page and adjust the rear bar until the difference between the right-hand front half-toe and left-hand front half-toe is within the range 0° +/- 0.10° (0° ; +/- 0° 6')

ATTENTION

The front bars, fixed to the drawbar eye or the fifth wheel, are still needed in the trailer and semitrailer alignment modes without chassis alignment bars. Their alignment is not guided by the program and must be carried out by hand.

(8) Compensation

This procedure is used to annul all geometrical errors on the wheel (run-out and plane error), and clamp fitting errors. The compensation procedure is identical to that for cars, and the operator should refer to the manual supplied with the wheel aligner.
For heads on bars and those mounted on wheels for which compensation has already been performed, there is no need to repeat the operation.

(9) Measuring non steering axles

The axle parameters are measured with display on two video pages. The values measured are the left and right cambers, left and right half-toes, total toe, thrust angle, set back and axle symmetry error (the last only if the truck accessories are being used).
The numerical fields show the values calculated relating to the diagram appearing alongside, which are compared with the data bank values, if any. If the value is inside the tolerance range the graphic bar is green; it is red if the value is outside the range or neutral if no data bank values are available.
The menu is concealed and appears when any key is pressed.

The CONTINUE command moves on to the video page for compensation of the next axle.
The xxxx AXLE command switches between the video pages of the 1st and 2nd set of values, depending on the current page.
OPTIONS Displays the OPTIONS menu.

N.B. Anyone wishing to use the truck accessories without the truck alignment program and obtain the values of the thrust angle and the half-toes in relation to the axis of symmetry of the chassis must proceed as follows:

a) after aligning the bars as described in chapter 7;
b) place the left-hand front head on the right-hand rear wheel;
c) place the right-hand front head on the left-hand rear wheel;
d) leave the rear heads on the front bar;
e) perform the usual compensation procedure on the front heads, fitted on the rear wheels;
f) perform the compensation procedure on the rear heads, fitted on the bar, without turning them through 180°;
g) locate the front axle video page;
h) the left-hand rear half-toe, in relation to the axis of symmetry of the chassis, will be shown in the right-hand front half-toe field, with the sign reversed;
i) the right-hand rear half-toe, in relation to the axis of symmetry of the chassis, will be shown in the left-hand front half-toe field, with the sign reversed;
j) The thrust angle is equal to the right-hand front half-toe less the left-hand front half-toe.

GB

(10) Measuring the steering angles at 10° and 20°

Place the front heads on the steering axle and the rear heads on the driving axle.
The procedure is identical to that for cars; the operator should refer to the manual supplied with the wheel aligner.

(11) Measuring steering axles

The axle parameters are measured with display on two video pages. The values measured are the left and right cambers, left and right half-toes, total toe, left and right casters and set back.
The menu is concealed and appears when any key is pressed.
The numerical fields show the values calculated relating to the diagram appearing alongside, which are compared with the data bank values, if any. If the value is inside the tolerance range the graphic bar is green; it is red if the value is outside the range or neutral if no data bank values are available.

The CONTINUE command moves on to the video page for re-measurement of the steering angles.
The xxxx AXLE command switches between the video pages of the 1st and 2nd set of values, depending on the current page.
The OPTIONS command displays the OPTIONS menu.

(12) Re-measuring steering angles

The return to the measurement of the steering axle angles is used to check whether errors have been generated during adjustment of the caster.
The procedure is exactly the same as in the first measurement of the caster, king pin and steering angle difference values.

(13) Re-measuring of front axle

The return to the measurement of the front axle is used for any small corrections to the adjustments already made.
The CONTINUE command now moves on to the data summary and the printout of the values measured.

(14) Printout of the measured data

The printout informs the customer about the operations carried out and serves as a reminder of the situation when subsequent checks are made on the vehicle.
The procedure is identical to that for cars; the operator should refer to the manual supplied with the aligner.
The form and contents of the printed report vary depending on the wheel alignment mode selected.

OPTIONS AND CALIBRATION

The machine management and calibration functions are identical to those for cars; the operator should refer to the manual supplied with the aligner.

IMPROPER USES

The aligner and truck alignment accessories must not be used for any purposes except the measurement of the characteristic wheel alignment angles of a vehicle (see description in the Characteristic Angles section of the manual supplied with the aligner).

WARNING

Use of the aligner for any function for which it was not originally intended relieves the manufacturer of any responsibility for any damage or accidents deriving from such use.

MAINTENANCE

WARNING

Corghi 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 machine except in the case of service interventions.

ATTENTION

Keep the working area clean.
Do not clean the machine with compressed air or jets of water.
When cleaning the area take steps to avoid raising dust as far as possible.

- Store the sensors carefully in a dry place when not in use, to avoid loss of calibration with consequent measurement inaccuracy.
- Calibrate the sensors at least once every 6 months.
- Keep the windows on the sensors clean (use soft cloth). Never remove the windows and avoid scratching them
- Keep the sensor attachment bars on the clamps clean.
- Keep the turntables and the slip plates on which the vehicle alignment is performed perfectly clean and do not oil or grease them.
- Always keep the head holder bars in protected positions where they will not be knocked or bent; deformed bars cause adjustment errors.
- Take care to keep the truck accessories well away from personal computers and other equipment which may be affected by the magnets (permanent damage might be caused).

DEMOLITION

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.

RECOMMENDED FIRE-EXTINGUISHING DEVICES

When choosing the most suitable fire extinguisher consult the following table:

Dry materials

Water	**YES**
Foam	**YES**
Powder	*YES**
CO_2	*YES**

YES Use only if more appropriate extinguishers are not on hand and when the fire is small.*

Inflammable liquids

Water	NO
Foam	**YES**
Powder	**YES**
CO_2	**YES**

Electrical fires

Water	NO
Foam	NO
Powder	**YES**
CO_2	**YES**

WARNING

The indications in this table are of a general nature. They are designed as a guideline for the user. The applications of each type of extinguisher will be illustrated fully by the respective manufacturers on request.

GLOSSARY

Axle symmetry error
Angular measurement of the axle's longitudinal symmetry error in relation to the axis of symmetry of the chassis; in other words, this parameter measures the difference in the distances between the wheels of the axle and the axis of symmetry of the chassis. This value is made available for non steering axles during alignment measurements using the truck accessories.

Calibrating fixture
Instrument on which the sensors are mounted for calibration purposes; this is a high precision instrument and must be conserved very carefully.
Calibration serves to offset possible movements of the transducers caused by knocks or temperature variations.

CCD (Charge Couple Device)
This type of sensor, which is commonly used in television cameras, features excellent sensitivity to light.

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

Equatorial plane
Hypothetical vertical plane that divides the wheels into two equal parts.

Head
Synonym of sensor.

Inclinometers
Inclinometers are electronic devices that Measurement of their angle of inclination with respect to the vertical; they are used to measure camber values.

Infrared (IR) beam
Beam of electromagnetic energy, invisible to the naked eye.

Longitudinal goniometer
CCD sensor that measures angles using an infrared beam parallel to the axis of symmetry of the vehicle; the longitudinal goniometers measure angles between the front and the rear of the vehicle.

Transverse goniometer
CCD sensor that measures angles using an infrared beam at right angles to the axis of symmetry of the vehicle; the transverse goniometers measure angles between the rh side and the lh side of the vehicle.

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

Slip plate
Similar function to the turntables but in this case used for the fixed wheels.

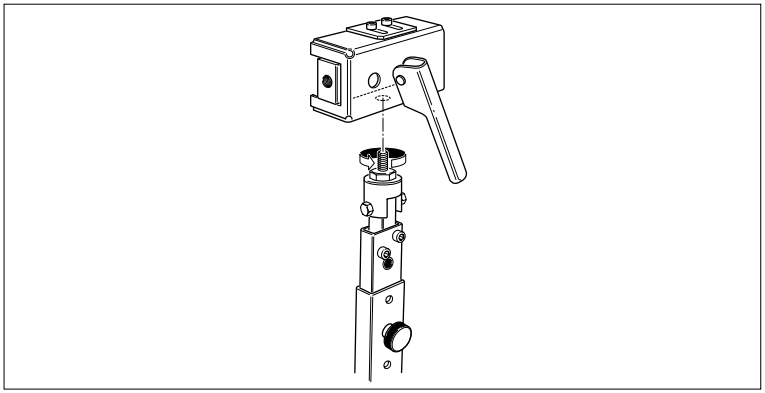
Steering axle alignment
Measurement of the error in parallelism between the steering axles of a vehicle with two steering axles. This setting is corrected using the steering axle coupling bar.

Transducers
Electronic component that converts a physical parameter into another type of parameter, e.g. angle transducers convert angles into proportional electronic signals.

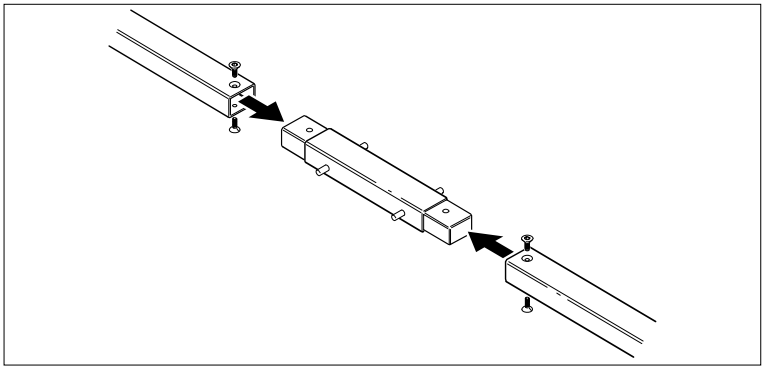
Turntable
This is a plinth mounting a disk on which the steer wheels of the vehicle are positioned. Turntables reduce friction between the tyre and the ground to facilitate settling in of the suspension and to cancel measurement errors during steering turns. The area between the disk and its supporting plinth must be kept scrupulously clean.

Wheel clamp
Mechanical system used to attach the measurement sensor to the vehicle wheel.

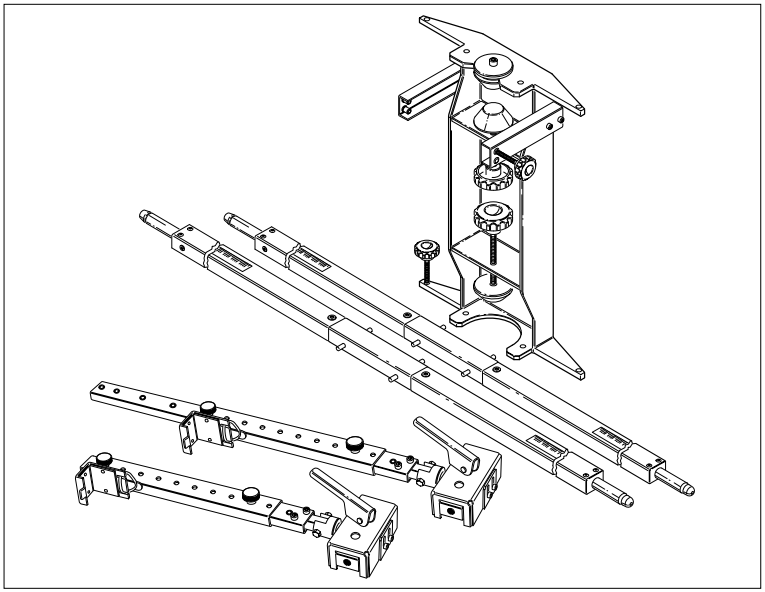
1



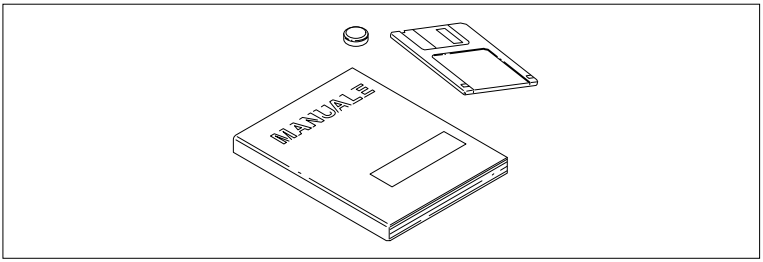
2



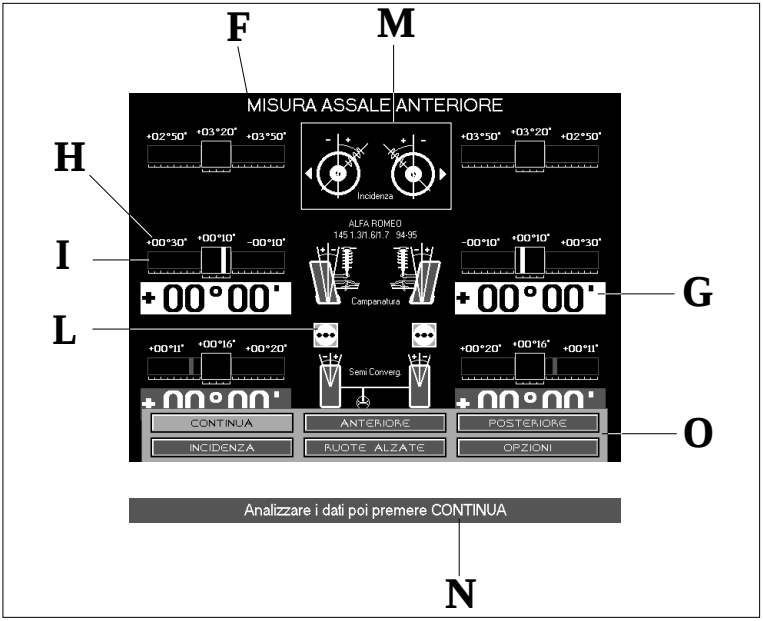
3



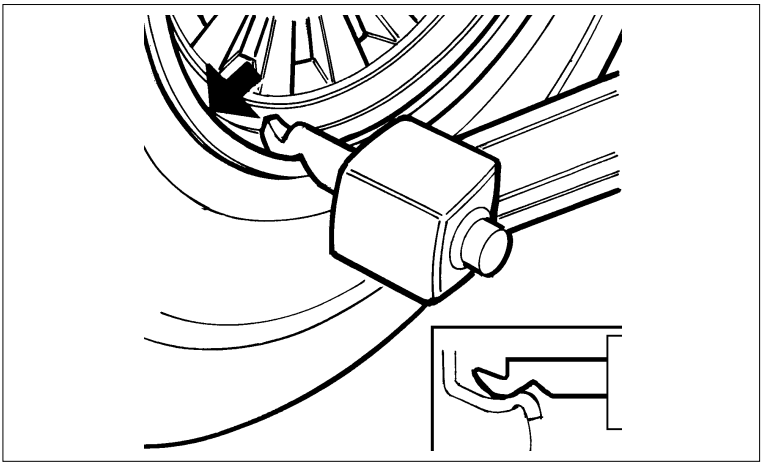
ALLINEAMENTO CAMION


MANUALE

4

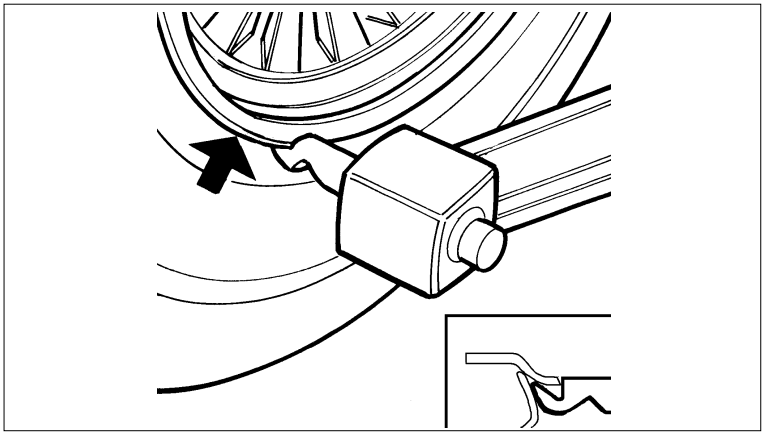

F
M
H
I
L
G
O
N
MISURA ASSALE ANTERIORE
+02°50' +03°20' +03°50'
+03°50' +03°20' +02°50'
Incidenza
ALFA ROMEO
145 1.3i/1.6i/1.7 94-95
+00°30' +00°10' -00°10'
-00°10' +00°10' +00°30'
+ 00°00'
Campanatura
+ 00°00'
+00°11' +00°16' +00°20'
+00°20' +00°16' +00°11'
Semi Converg.
CONTINUA
ANTERIORE
POSTERIORE
INCIDENZA
RUOTE ALZATE
OPZIONI
Analizzare i dati poi premere CONTINUA

5

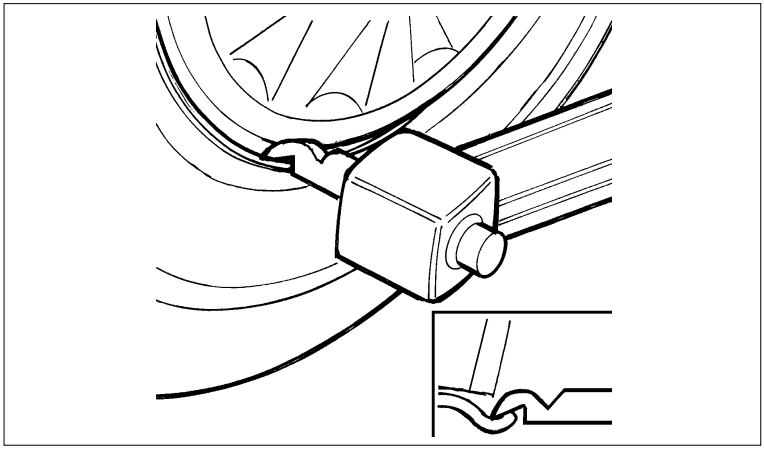


6

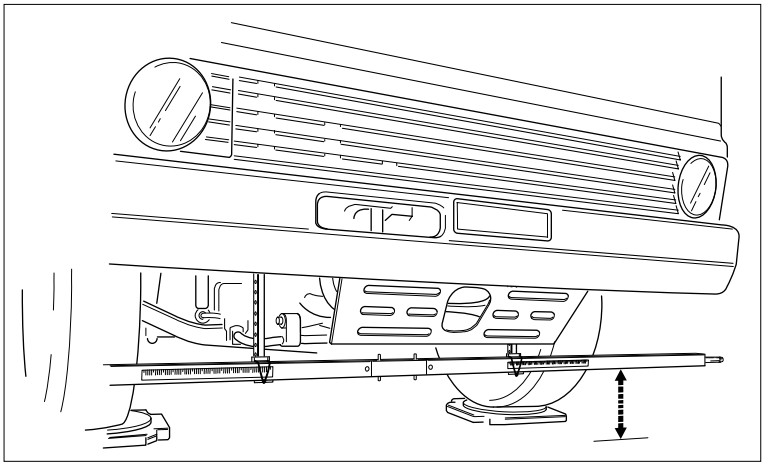
7

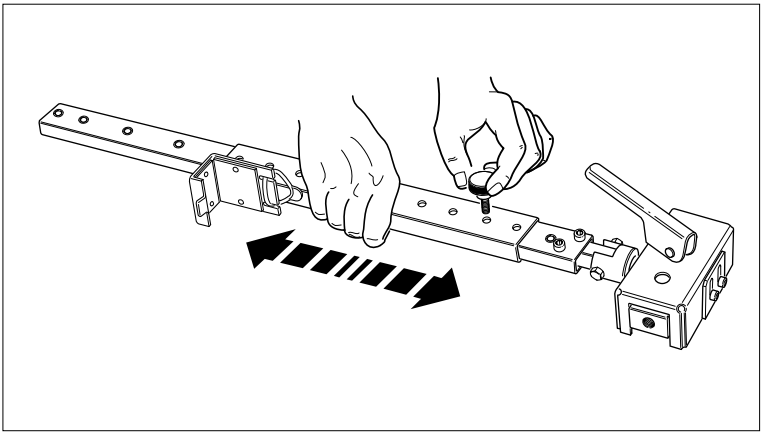


8

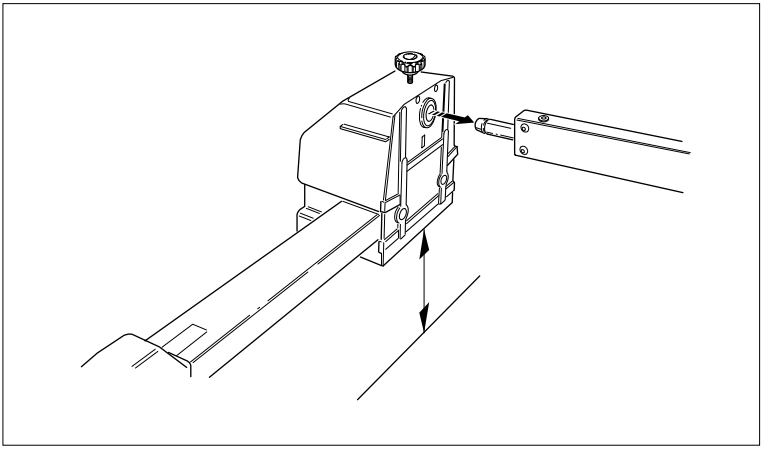


9a

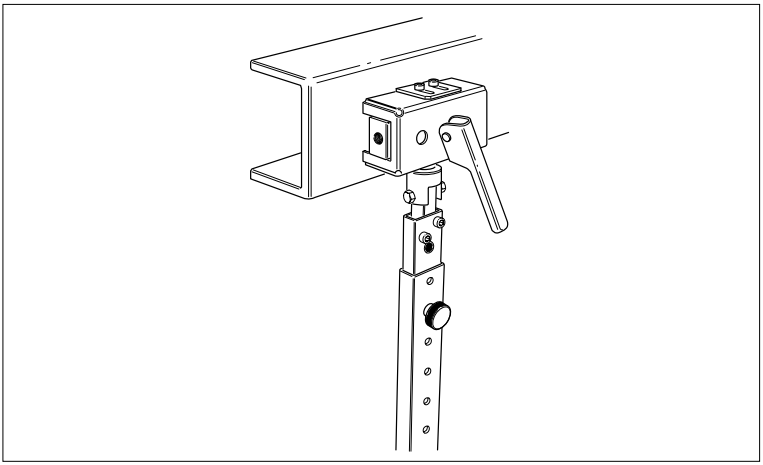




9b

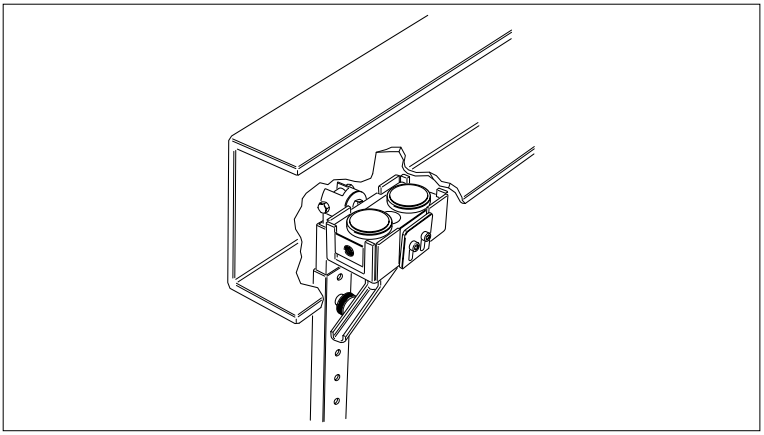


9c

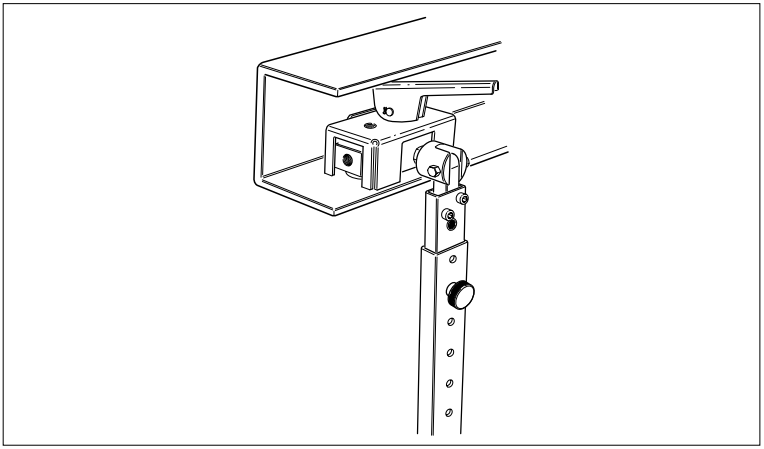


10a

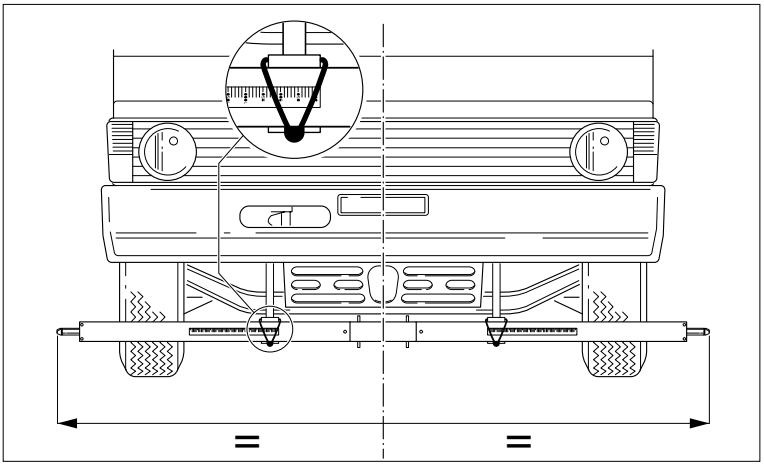
10b



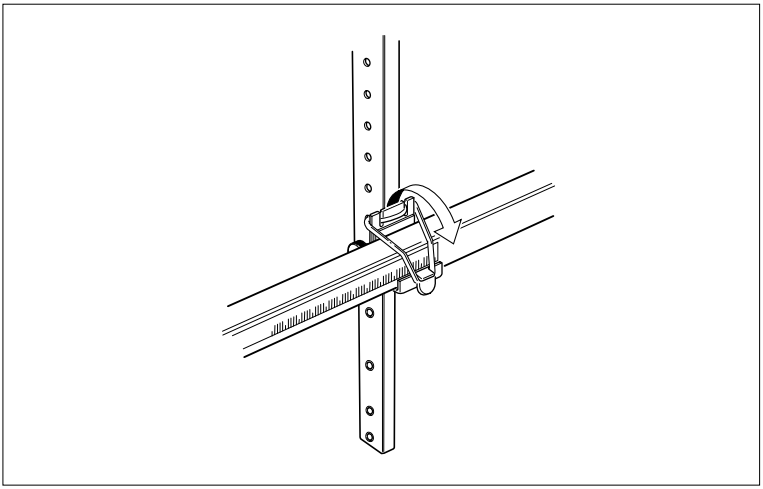
10c



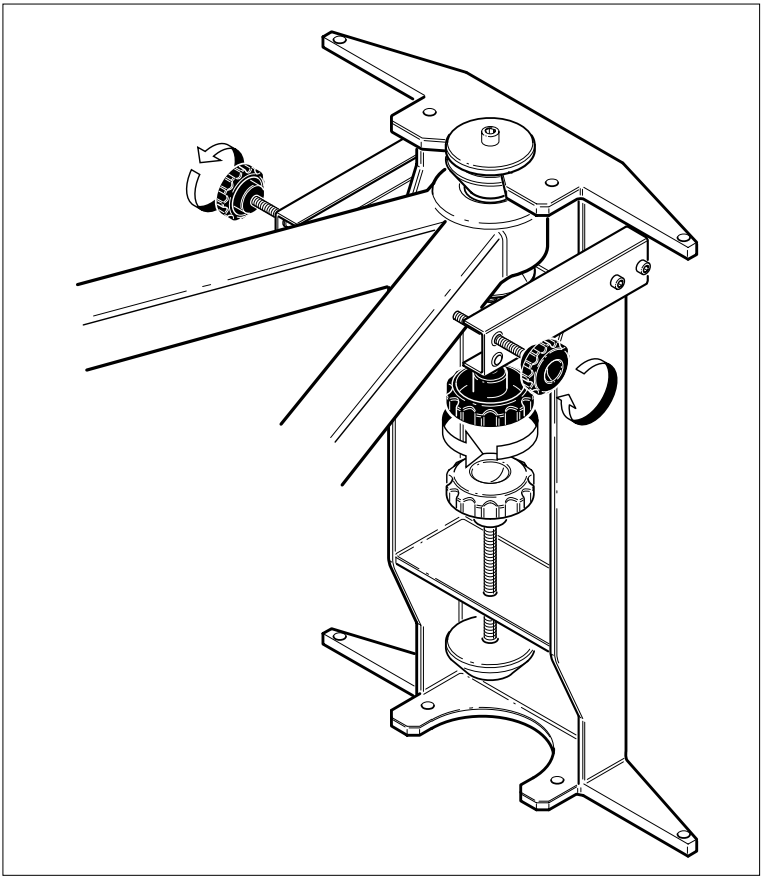
11



ALLINEAMENTO CAMION

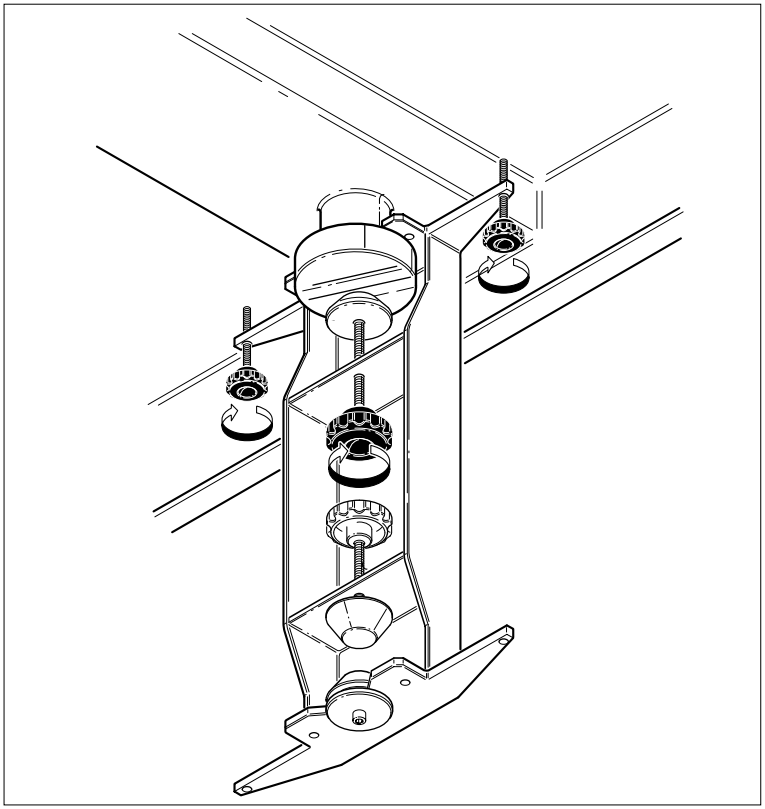


12

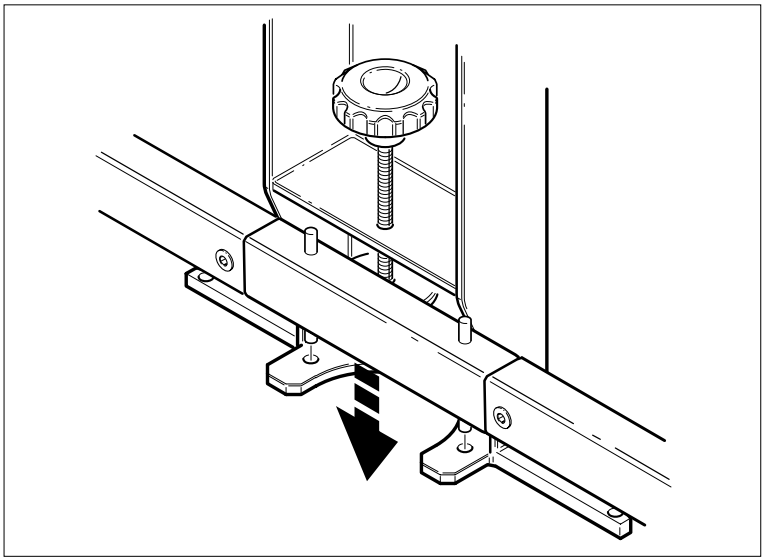


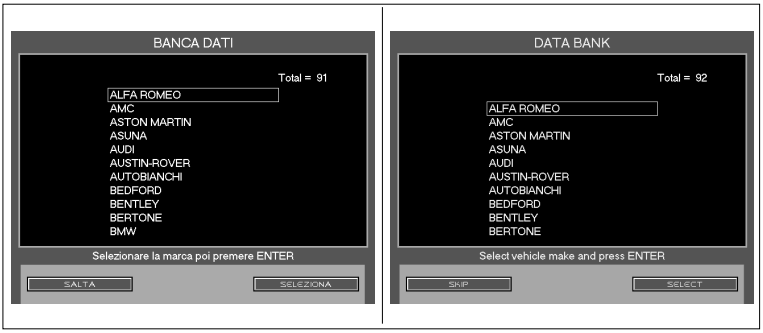
13

14

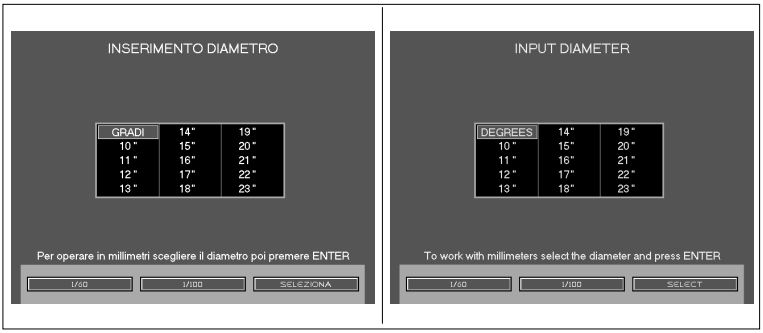


15

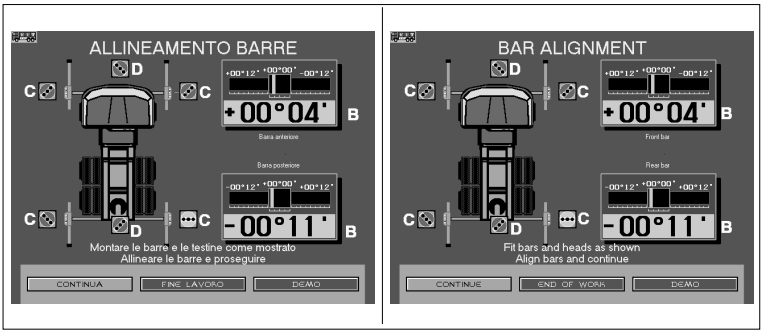



BANCA DATI
Total = 91
ALFA ROMEO
AMC
ASTON MARTIN
ASUNA
AUDI
AUSTIN-ROVER
AUTOBIANCHI
BEDFORD
BENTLEY
BERTONE
BMW
Selezionare la marca poi premere ENTER
SALTA
SELEZIONA
DATA BANK
Total = 92
ALFA ROMEO
AMC
ASTON MARTIN
ASUNA
AUDI
AUSTIN-ROVER
AUTOBIANCHI
BEDFORD
BENTLEY
BERTONE
Select vehicle make and press ENTER
SKIP
SELECT

16


INSERIMENTO DIAMETRO
GRADI 14" 19"
10" 15" 20"
11" 16" 21"
12" 17" 22"
13" 18" 23"
Per operare in millimetri scegliere il diametro poi premere ENTER
1/60
1/100
SELEZIONA
INPUT DIAMETER
DEGREES 14" 19"
10" 15" 20"
11" 16" 21"
12" 17" 22"
13" 18" 23"
To work with millimeters select the diameter and press ENTER
1/60
1/100
SELECT

17


ALLINEAMENTO BARRE
D
C
C
+00°04'
B
Barra anteriore
Barra posteriore
C
C
D
-00°11'
B
Montare le barre e le testine come mostrato
Allineare le barre e proseguire
CONTINUA
FINE LAVORO
DEMO
BAR ALIGNMENT
D
C
C
+00°04'
B
Front bar
Rear bar
C
C
D
-00°11'
B
Fit bars and heads as shown
Align bars and continue
CONTINUE
END OF WORK
DEMO

18

UPT - Cod.454152 - 04/98 - 200.

CORGHI S.p.A. - Strada Statale 468 n.9
42015 CORREGGIO - R.E. - ITALY
Tel. +39 522 639.111 - Fax +39 522 639.150