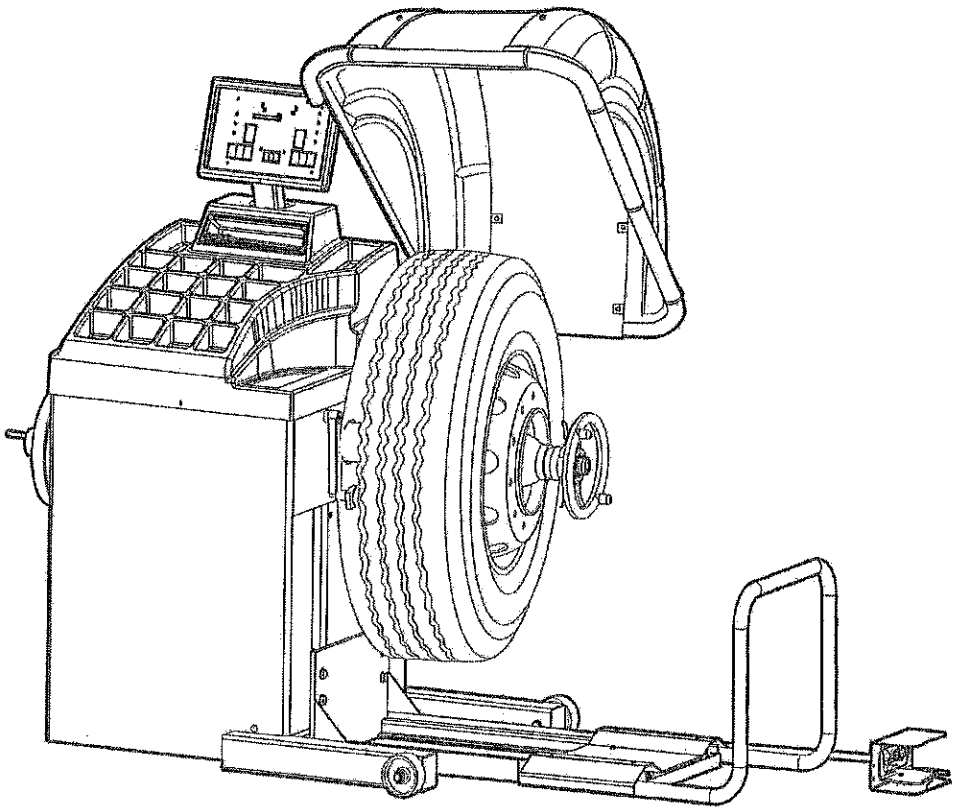
CEMB

GARAGING MACHINES

EN **User's manual**



C212

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CEMB

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Δήλωση Συμμόρφωσης CE

La Ditta
The Company
Die Firma
La Maison
La Compañia
A Empresa

CEMB
BALANCING MACHINES
Costruzioni Elettro Meccaniche ing. Buzzi & C. S.p.a.
Via Risorgimento, 9
23826 MANDELLO DEL LARIO - (Lecco) ITALY

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Δηλώνει με την παρούσα τη συμβατότητα του Προϊόντος

Equilibratrice	**Balanceerapparaat**
Balancer	**Balanseringsmaskin**
Auswuchtmaschine	**Hjulbalanceringsmaskine**
Equilibreuse	**Balanseringsmaskin**
Balanceadora	**Tasapainotuskone**
Máquina de equilibrar	**Ζυγοσταθμιστής**

Tipo
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C212

Nr. di serie
Serial Number
Fabriknummer, usw
Numero de série
Numero de fabricacion
Número de série

B

Serienummer
Serienr
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Numero Distinta Base
Manufacturing List Number
Erstellungsliste nummer
Numéro de liste de construction
Numero lista de base
Número da Lista de Base

Pr 693

Nummer basislijst
Produktionslistans nr.
Produktionslistens nr.
Produksjonslistens nr.
Valmistuluettelon nro.
Αριθμός Καταλόγου Παραγωγής

alle norme sottostanti / with applicable regulations below / mit folgenden einschlägigen Bestimmungen / selon les normes ci-dessous / con directivas subaplicables / com as normas indicadas em baixo / met de onderstaande normen / överensstämmer med följande föreskrifter / stemmer overens med følgende forskrifter on yhdenmukainen seuraavissa laeissa olevien ehtojen kanssa / στους παρακάτω κανονισμούς

D.P.R. Nr. 459, allegato 1 del 24 Luglio 1996

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EN 12100-1:2005	X	EN 12100-2:2005	X	EN 294:1993	X	EN 349:1993	X
EN 418:1992	X	EN 457 :1993	X	EN 60204-1:2006	X	EN 60439-1:1990	X
EN 61000-6-3/A11:2005	X	EN 61000-6-1/IS1:2006	X	EN 61000-6-4-:2002	X	EN 61000-6-2:2006	X

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14/07/2009	**CEMB Spa** *Il Presidente* *Ing. Carlo Buzzi*

M06PRG01

CONTENTS

1 - GENERAL

► 1.1 - GENERAL SAFETY REGULATIONS

- The machine should only be used by authorized and suitably trained personnel.
- Do not use the machine for purposes other than those specified in this manual.
- The machine should not be modified in any way except for those modifications explicitly carried out by specialised personnel.
- Never remove the safety dehyvices. Any work on the machine should only be carried out by specialised personnel.
- Carefully clean the coupling surfaces before performing any operation.
- Avoid using strong jets of compressed air for cleaning.
- Use alcohol to clean the plastic panel or shelves (AVOID LIQUIDS CONTAINING SOLVENTS).
- Before starting the wheel balancing cycle, make sure that the wheel is securely locked on the adapter.
- The machine operator should avoid wearing clothes with flapping edges. Make sure that unauthorized personnel do not approach the machine during the work cycle.
- Avoid placing objects inside the cabinet as they could impair the correct operation of the machine.

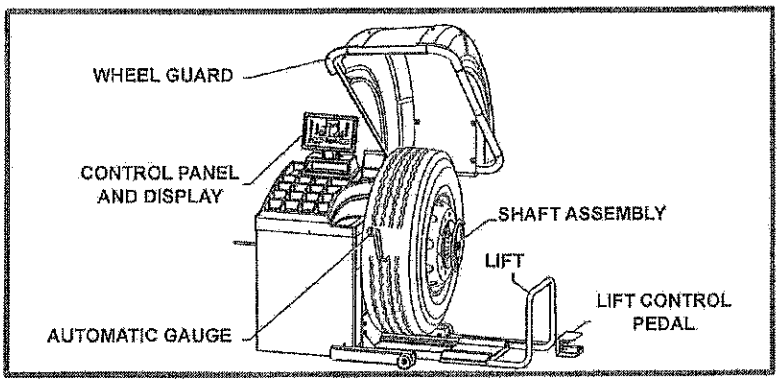
► 1.1.1 - STANDARD SAFETY DEVICES

- Low rotation speed.
- STOP push button for stopping the wheel under emergency conditions.
- The safety guard (option) of high impact plastic is with shape and size designed to prevent risk of counterweights from flying out in any direction except towards the floor.
- A microswitch prevents starting the machine if the guard is not lowered and stops the wheel whenever the guard is raised.
- Protection system on LIFT control.

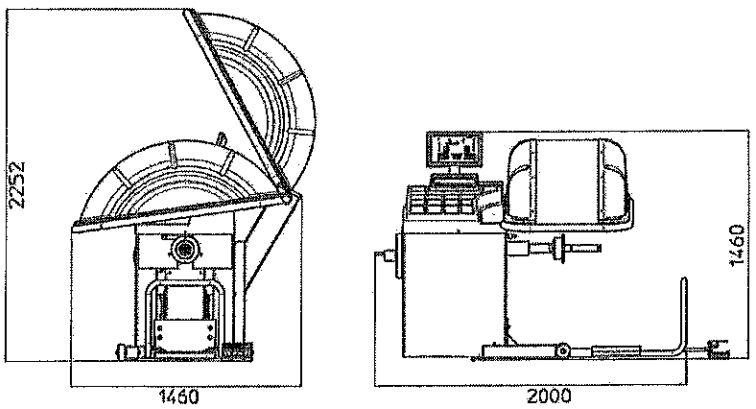
► 1.2 - FIELD OF APPLICATION

The machine is designed for balancing wheels of cars and motor vehicles weighing up to 250 kg. It can be operated in the temperature range of 0° to + 45°C.

► 1.3 - MAIN PARTS



► 1.4 - OVERALL DIMENSIONS



▶ 1.5 - TECHNICAL DATA

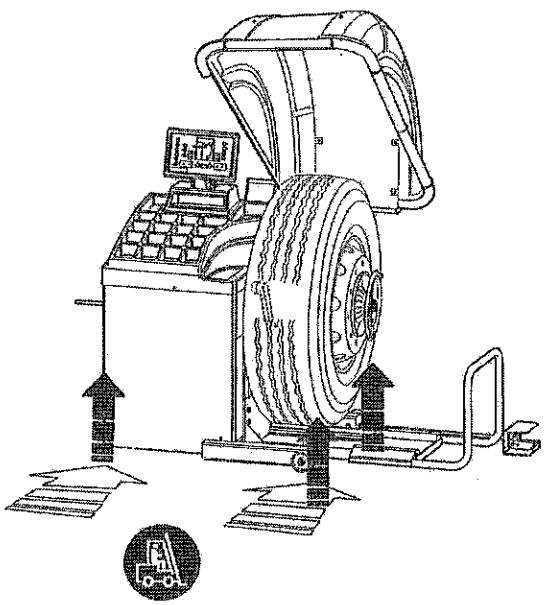
Single-phase power supply	115 / 230 V 50/60 Hz
Protection class	IP 54
Max.power consumption	1,1 Kw
Balancing speed	100 r.p.m. for cars - 70 r.p.m. for trucks
Cycle time for average wheel	7÷20 seconds
Balancing accuracy	1 gram for cars / 10 grams for trucks
Position resolution	± 1.4 °
Average noise	< 70dB (A)
Rim-machine distance	0 - 335 mm (400 mm max. presettable)
Rim width setting range	1.5" ÷ 20" or 40 ÷ 510 mm
Diameter setting range	10" ÷ 30" or 265 ÷ 765 mm
Max. wheel weight	250 kg.
Max. wheel diameter	1300 mm
Max. wheel width	495 mm (super single)
Min/max. compressed air pressure	8 ÷ 10 Kg/cm²
	approx. 0.8 to 1 Mpa;
	approx. 8 to 10 BAR;
	approx. 115 to 145 PSI.
Air consumption per cycle	15 l. (at 8 Kg./cm²)

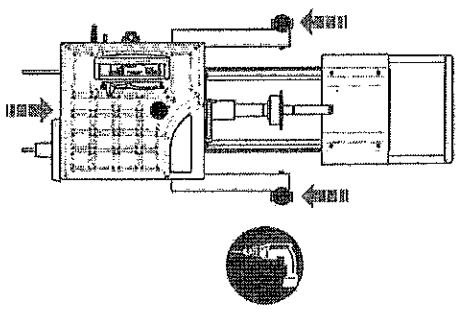
2 - HANDLING AND LIFTING

TO LIFT THE MACHINE, LEVER ONLY ON THE BASE WHERE THE 3 SUPPORT POINTS ARE LOCATED.
NEVER, UNDER ANY CIRCUSTANCE, APPLY FORCE TO OTHER POINTS SUCH AS THE SPINDLE, HEAD, OR ACCESSORY SHELF.

- Check that the balancing machine touches the floor at the three support points.
- It functions properly without having to fasten it to the floor with wheels weighing up to 160 kg; for heavier wheels, fasten it at the points indicated.

Options: *Front wheel translation KIT*
Ground securing plate KIT





3 - START - UP

► 3.1 - ELECTRICAL CONNECTION

THE ELECTRICAL CONNECTION MUST BE MADE BY SPECIALIZED PERSONNEL. CONNECTION TO THE SINGLE PHASE MAINS MUST BE MADE BETWEEN PHASE AND NEUTRAL, AND NEVER, UNDERANY CIRCUMSTANCES, BETWEEN PHASE AND EARTH (GROUND). EFFICIENT EARTHING (GROUNDING) IS ESSENTIAL FOR CORRECT MACHINE OPERATION. THE MANUFACTURER DECLINES ALL RESPONSIBILITY AND WARRANTY IN THE EVENT OF INCORRECT CONNECTION.

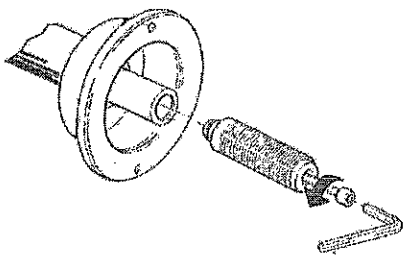
Before connecting the machine to the mains through relative cable, check that the mains voltage matches the one shown on the nameplate at the back of the balancing machine. Rating of the electrical connection should be on the basis of the machine electrical power consumption (see nameplate).

- The machine mains supply cable should be fi tted with a plug conforming to current regulations.
- It is recommended to provide the machine with its own electrical connection through a slow acting safety switch rated at 4 A (230 V) or 10 A (115 V).
- When connection is made directly to the main control panel without using any plug, it is advisable to padlock the main switch of the balancing machine in order to limit its use to authorized personnel only.

► 3.2 - PNEUMATIC CONNECTION

The machine must be connected to the compressed air supply and must not be used if the pressure is below 5 kg/cm2 (5 bar; 72 PSI; 0.5 MPa). The maximum input pressure is limited to 10 kg/cm2 (~10 Bar; ~145 PSI; ~1 MPa). The spinning and braking device is calibrated at the factory and cannot be modified.

► 3.3 - ADAPTER MOUNTING



► The wheel balancer is supplied complete with cone type adapter for fastening wheels with central bore. The threaded terminal is fitted according to the dra wing; it can be removed to fit optional adapters. It can be removed to fit optional adapters.

► 3.4 - WHEEL MOUNTING

The wheels should be fastened with one of the numerous adapters manufactured by the manufacturer (see enclosed brochures). Incorrect centering inevitably causes unbalance.

► 3.5 - WHEEL GUARD ASSEMBLY AND ADJUSTMENT (option)

1. Fasten the components to the base as illustrated in the specific exploded drawing
2. The positions of these guards can be adjusted using the special screws accessed from inside the main support
3. With the guard closed check that the microswitch prod has slipped into place on the ring; to this end, adjust the angular position of the control ring if necessary.

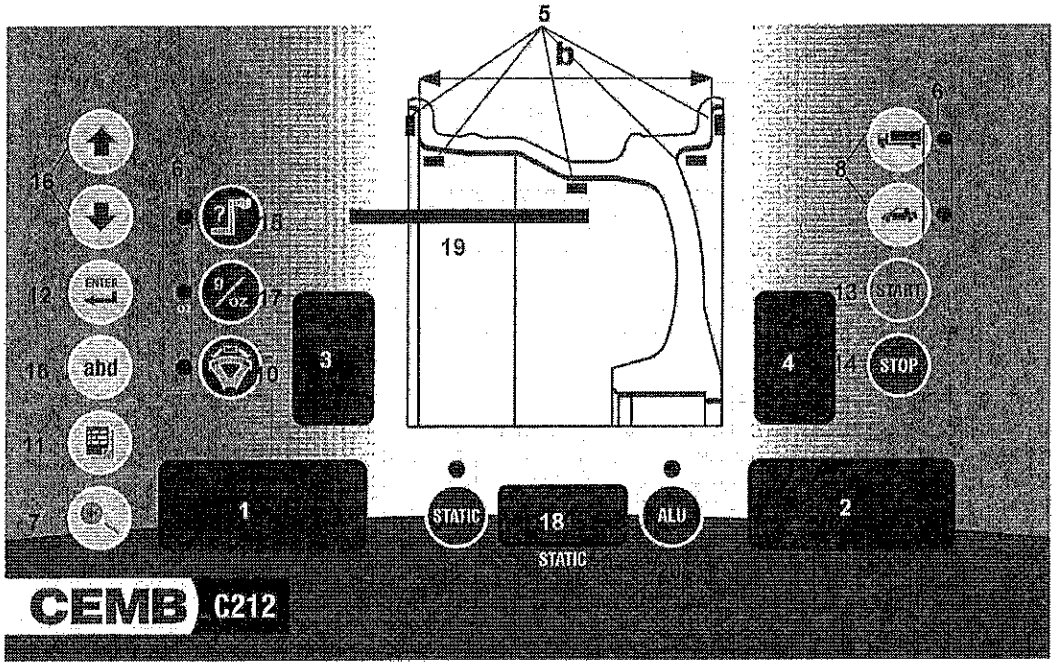
► 3.6 - LIFT

The function of the lift is to make it easier to mount the wheel on the balancer spindle with the minimum manual effort. The pneumatic circuit of the machine has been designed to give the lift considerable flexibility of movement in any position along its travel. The lift is driven with the control pedal.

DURING LIFT MOVEMENT, KEEP AWAY FROM ITS RANGE OF ACTION.

4 - CONTROLS AND COMPONENTS

► 4.1 - CONTROL PANEL AND DISPLAY



1-2	Digital readouts, AMOUNT OF UNBALANCE, inside/outside
3-4	Digital readouts, POSITION OF UNBALANCE, inside/outside
5	Indicators, correction mode selected
6	Indicators, selection made
7	Push button, unbalance reading < 5 g (25 oz)
8	Push button, car/truck selection
9	Push button, selection STATIC unbalance
10	Push button, SPLIT (unbalance spread)
11	Push button, FUNCTIONS MENU
12	Push button, menu selection confirmation
13	Push button, cycle start
14	Push button, emergency/home
15	Push button, position repeater
16	Manual dimension setting buttons
17	Push button to select grams/ounces as unit of measure for the unbalance
18	Digital display of the static unbalance value
19	Distance gauge position indication
20	Push button to select possible corrections

- *ONLY USE THE FINGERS TO PRESS THE PUSH BUTTONS.*
- *NEVER USE THE COUNTERWEIGHT PINCERS OR OTHER POINTED OBJECTS.*

► 4.2 - AUTOMATIC DISTANCE AND DIAMETER GAUGE

Allows measuring the distance from the machine and the diameter at the point of application of the counterweight. The same gauge allows proper positioning of the counterweights inside using the specific function.

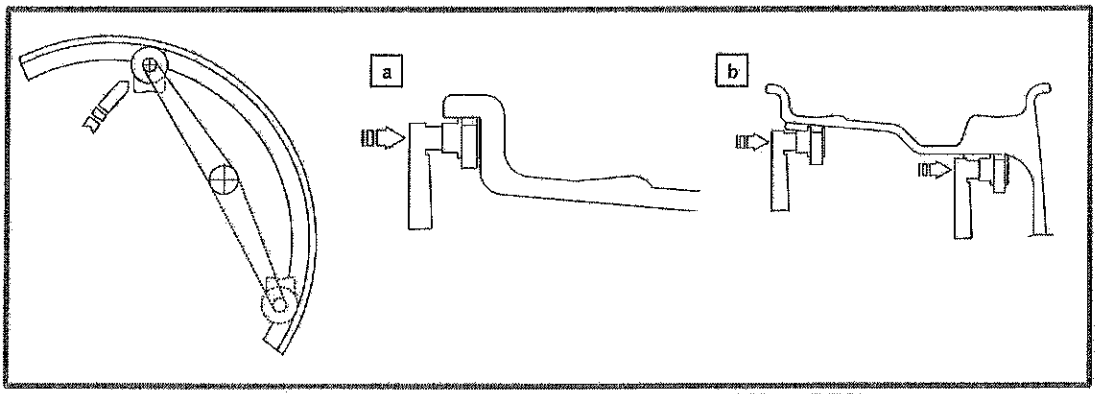
5 - USE OF THE WHEEL BALANCER

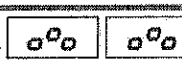
▶ 5.1 - DATA SETTING

Press the button  ; LED on  → balancing machine set in car mode

Press the button  ; LED on  → balancing machine set in truck mode

The balancing data is set by means of an "intelligent" automatic gauge; confirmation of the measurement and the position appear on the display. The round part of the gauge must rest on the rim where the weight will be positioned.

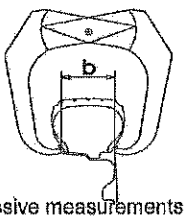


While the gauge is moving the following appears  ;

when the measurement has been stored  .

a) standard weights: When only one measurement is made, the machine interprets the presence of a rim with clip-on weight correction

The width value (b) must be set with the buttons  . The correct measurement is that which can be measured with the compass gauge provided.



b) adhesive weights: Make two successive measurements on two correction planes inside the rim.

The balancing machine automatically interprets that the correction will be made with adhesive weights and the following appears:

For a different combination of the type or position of the weights on the rim, use the button  .

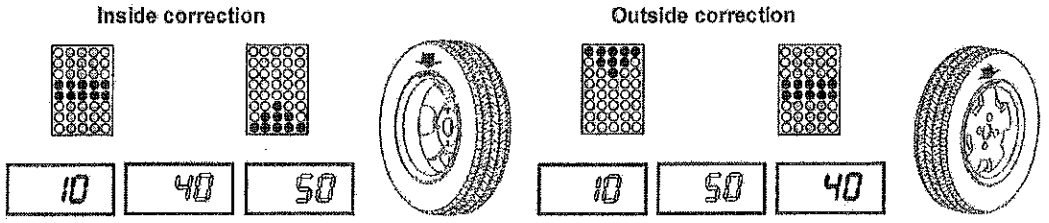
▶ 5.2 - RESULT OF MEASUREMENT

▶ Unbalance display pitch:
Car = 1/5 g (.1/0.25 Oz) Truck = 10/50 g (.25/1 Oz)

When  is pressed, the unbalance is displayed with pitch:

Car = 1 g Truck = 10 g
.1 Oz .25 Oz

▶ Unbalance display threshold
Car = 5 g (.4 Oz) Truck = 50 g (2 Oz)



After performing a balancing spin, the amounts of unbalance are shown on the digital readouts.
Digital readouts with LED lit up indicate the correct angular wheel position to mount the counterweights (12 o'clock position).
If the unbalance is less than the threshold selected, 0 is displayed instead of the unbalance; with  it is possible to read the values below the threshold chosen.

▶ 5.2.1 - STATIC UNBALANCE

It is selected by pressing STATIC and is shown on the central display. The position is indicated on the displays 3 and 4.

The value can always be displayed (see *SETUP*); in this case, to see the position press STATIC.

▶ 5.2.2 - MODIFYING SET DIMENSIONS

If the wheel dimensions have been entered incorrectly, the parameters can be modified without repeating the balancing spin by pressing :

abd access parameter modification →

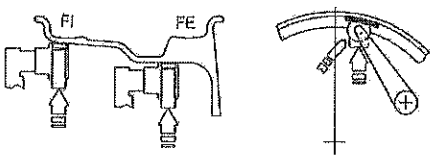
(select ↓ ↑ to modify: (a) distance, (b) width, (d) diameter

→ STOP to obtain the new measurement

or:

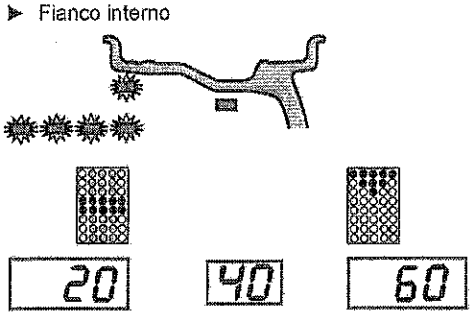
pull out the gauge to repeat the measurement → STOP to obtain the new measurement.

▶ 5.2.3 - EXACT POSITIONING OF THE ADHESIVE WEIGHT BY MEANS OF THE GAUGE WITH CLIPS

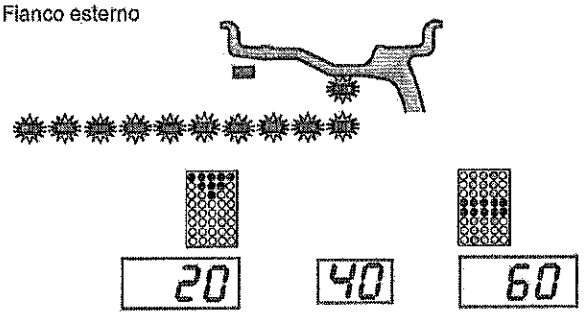


- Press ?
- Fit the correction weight in the specific gauge seat with the adhesive part facing upwards
- Bring the wheel into correct angular position for the plane to be corrected
- Lock the wheel in the correction position, by pressing the STOP button.
- Pull out the gauge: the approach of the weights to the correction positions is indicated by the LEDs number 19
- When the weight application distance has been reached a beep is sounded (can be deactivated).
- Turn the gauge until the correction weight adheres to the rim using the weight pusher.

► Fianco interno

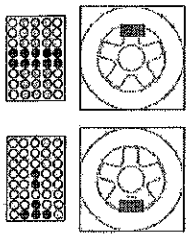


Fianco esterno



To cancel this function, press  button again.

► **5.2.4 - OPPOSITE POSITION**

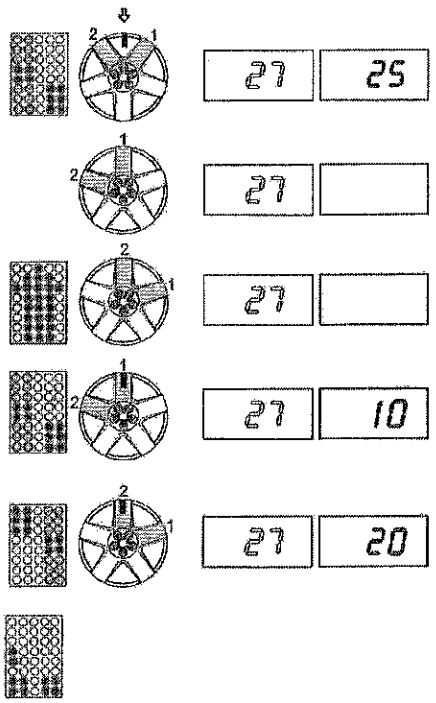


► In the normal balancing condition the weight is applied at 12 o'clock and shown on the display.

► The balancing machine can also indicate the correction position on the bottom vertical line (see SETUP to select the O.P. function).This is very useful for cor rection of light alloy rims with adhesive weights where the rim is normally clea ned; the counterweight is pressed onto the rim surface in a visible area

► **5.2.5 - SPLIT FUNCTION (HIDDEN ADHESIVE WEIGHTS)**

The SPLIT function is used to position the adhesive weights behind the wheel spokes so that they are not visible. This function should be used in ALU mode where the adhesive weight is applied on the outside. Input the wheel dimensions and do a spin.



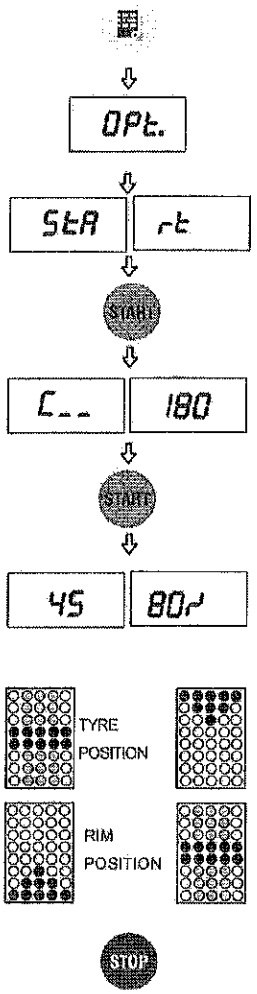
- Turn the wheel to the outside unbalance correction position as indicated by the machine
- Position one spoke at 12 o'clock (e.g. 1) and press 
- Following the rotation direction indicated on the display, position spoke 2 at 12 o'clock and press 
- Position the wheel as indicated by the LEDs. The unbalance is indicated on the right-hand display
- Repeat the operation for the other spoke
- When the OPPOSITE POSITION function is enabled (see relative paragraph) the correction position at 6 o'clock is also indicated, so that the operator can easily insert the correction weight by pressing it downward.

To return to normal unbalance display, press any button.

NOTE: The distance between the spokes must be at least 18° and at most 120° (if not, the errors 24, 25 or 26 appear).Spokes with irregular or inconstant angles can be compensated.

▶ 5.2.6 - UNBALANCE OPTIMIZATION

- This function serves to reduce the amount of weight to be added in order to balance the wheel
- It is suitable for static unbalance exceeding 30 g.
- It improves the residual eccentricity of the tyre.



This operation is required if no unbalance has been measured previously; otherwise go to the next step

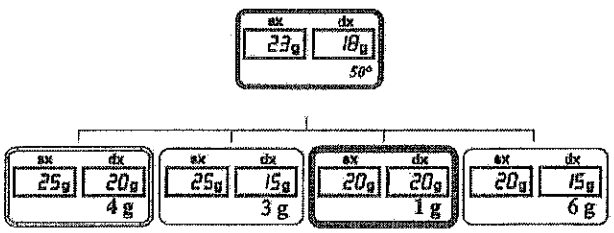
- Mark with chalk a reference point on the adapter and rim
- With the aid of a tyre changer, turn the rim on the tyre by 180°
- Refit the wheel with the reference mark coinciding between rim and adapter

- RH display: percentage reduction
- LH display: actual static unbalance which can be reduced by matching

- Mark the two positions of the rim and tyre, and turn the rim on the tyre until the positions correspond in order to obtain the optimization results shown on the display.

CANCEL OPTIMISATION IN ANY PHASE.

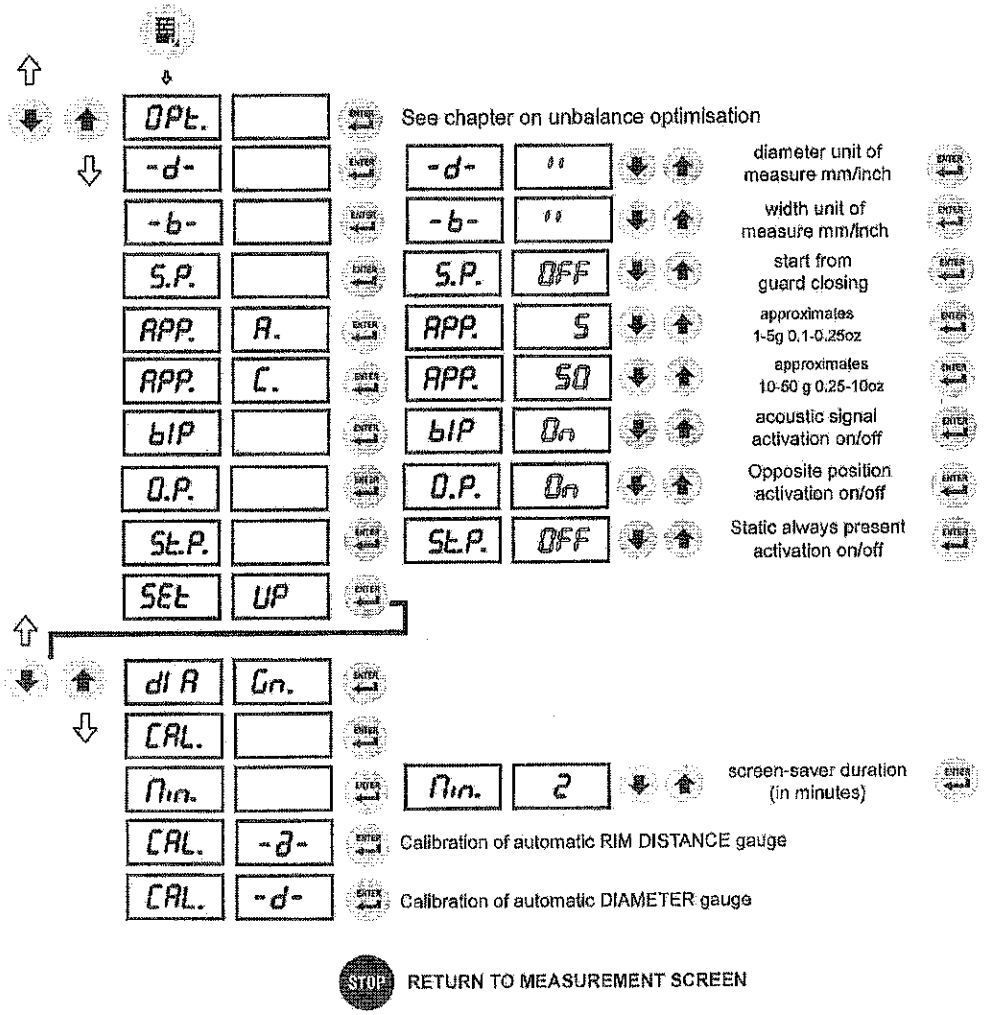
▶ 5.2.7 - AUTOMATIC MINIMIZATION OF STATIC UNBALANCE



This program is designed to improve the quality of balancing without any mental effort or loss of time by the operator. In fact by using the normal commercially available weights, with pitch of 5 in every 5 g, and by applying the two counterweights which a conventional wheel balancer rounds to the nearest value, there could be a residual static unbalance of up to 4 g. The damage of such approximation is emphasized by the fact that static unbalance is cause of most of disturbances on the vehicle. This new function, resident in the machine, automatically indicates the optimum entity of the weights to be applied by approximating them in an "intelligent" way according to their position in order to minimize residual static unbalance.

6 - SET UP

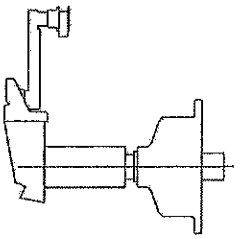
► 6.1 - MENU



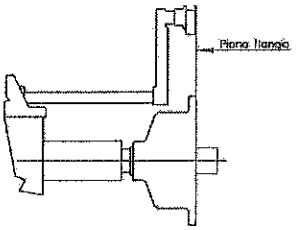
6.2 - AUTOMATIC GAUGES CALIBRATION

► 6.2.1 - RIM DISTANCE GAUGE

- Leave the distance gauge in rest position and press ENTER



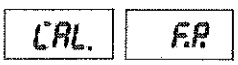
- Pull out the gauge up to the adapter flange and press ENTER



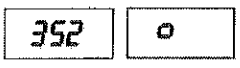
- **CORRECT CALIBRATION**
  Return the gauge to rest position.
  The wheel balancer is ready for operation.

N.B.: In the event of errors or faulty operation, the writing "r.P.": appears on the display : shift the gauge to the rest position and repeat the calibration operation exactly as described above. If the error persists, contact the Technical Service Department. In the event of incorrect input in the rim distance gauge calibration function, press STOP to cancel it.

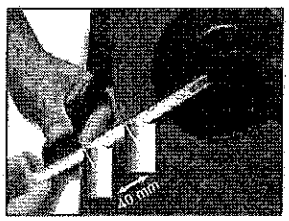
► 6.2.2 - DIAMETER GAUGE



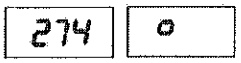
- Place the round part of the gauge terminal on the flange as shown in the figure and press ENTER



- The number 352 ± 3° appears on the left display .



- Turn the gauge downward position the round part of the gauge terminal at 40 mm (radial distance) from the flange as indicated in the figure; alternatively use one of the cones provided as shown in the images



- The number 274 ± 3° should appear on the left display. The calibration is already correct.
- If not, press the ENTER button holding the gauge still at 40 mm: the number 274 appears on the left display.
- Return the gauge to rest position.

► 6.3 - BALANCING MACHINE CALIBRATION

To calibrate the machine, operate as follows:

- Fit a medium-sized wheel with steel rim on the shaft. Example: 6" x 15" (± 1") best with less then 20 g unbalance
- Take the exact measurements of the wheel mounted as described in ***DATA SETTING***.

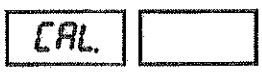
PRESETTING OF INCORRECT DIMENSIONS WOULD MEAN THAT THE MACHINE IS NOT CORRECTLY CALIBRATED, THEREFORE ALL SUBSEQUENT MEASUREMENTS WILL BE INCORRECT UNTIL A NEW SELF-CALIBRATION IS PERFORMED WITH THE CORRECT DIMENSIONS!

- Perform a manual spin under normal conditions

- Add a sample weight on the outside in any angular position.
  Sample weight: 60 g. (2.00 .oz) for car
  300 g. (10.0 .oz) for truck

- Shift the sample weight from the outside to the inside keeping the same angular position.

- Turn the wheel until the sample weight is in the 12 o'clock position

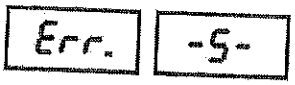


- **END OF CALIBRATION**

- **CANCELS CALIBRATION IN ANY PHASE.**

7 - ERRORS

During machine operation, various causes of faulty operation could occur. If detected by the microprocessor, they appear on the display as follows:



ERRORS	CAUSES	CONTROLS
Black	The wheel balancer does not turn on.	1. Check proper connection to the mains. 2. Check and if necessary replace the fuses on the power board. 3. Replace the computer board.
Err. 1	No rotation signal.	1. Check belt tautness. 2. Check functioning of the phase encoder and, in particular, the reset signal. 3. Replace the phase encoder. 4. Replace the computer board.
Err. 2	Too low speed during measurement. During the unbalance measurement revolutions, the wheel speed has fallen to below 42 rpm.	1. Check that a vehicle wheel has been mounted on the wheel balancer. 2. Check belt tautness. 3. Check functioning of the phase encoder and, in particular, the reset signal. 4. Replace the computer board.
Err. 3	Too high unbalance.	1. Check the wheel dimension setting. 2. Check the sensor connections. 3. Run the machine calibration function. 4. Mount a wheel with a more or less known unbalance (less than 100 grams) and check the machine response. 5. Replace the computer board.
Err. 4	Rotation in opposite direction. After pressing [START], the wheel starts turning in the opposite direction (anticlockwise).	1. Verify the connection of the UP/DOWN - RESET signals on the phase encoder. 2. Check the bearing/spring of the phase generator
Err. 5	Guard open The [START] pushbutton was pressed without first closing the guard.	1. Reset the error. 2. Close the guard. 3. Verify the function of the protection switch. 4. Press the [START] button.
Err. 7 / Err. 8 / Err. 9	NOVRAM parameter read error	1. Repeat machine calibration 2. Shut down the machine. 3. Wait for at least ~ 1 min. 4. Restart the machine and check proper functioning. 5. Replace the computer board.
Err. 11	Too high speed error. The average spinning speed is more than 240 rpm.	1. Check if there is any damage or dirt on the encoder disc. 2. Check functioning of the phase encoder and, in particular, the reset signal. 3. Replace the computer board.
Err.14/ Err.15/ Err.16/ Err.17/ Err. 18/ Err. 19	Unbalance measurement error.	1. Check functioning of the phase encoder. 2. Check the sensor connections. 3. Check the machine earthing connection. 4. Mount a wheel with a more or less known unbalance (less than 100 grams) and check the machine response. 5. Replace the computer board.
Err.20	Wheel at standstill. The wheel is at a standstill for more than one second after START.	1. Check functioning of the phase generator. 2. Check the connections on the power board. 3. Replace the computer board.
Err.21	Motor on for more than 15 seconds.	1. Check functioning of the phase encoder. 2. Check the connections on the power board. 3. Replace the computer board.
Err.22	Maximum number of spins possible for the unbalance measurement has been exceeded.	1. Check that a vehicle wheel has been mounted on the wheel balancer. 2. Check belt tautness. 3. Check functioning of the phase encoder and, in particular, the reset signal. 4. Replace the computer board.
Err. 24	Distance between the spokes smaller than 18 degrees.	1. The minimum distance between the spokes where to split the unbalance must be more than 18 degrees 2. Repeat the SPLIT function increasing the distance between the spokes.

Err. 25	Distance between the spokes greater than 120 degree	1. The minimum distance between the spokes where to split the unbalance must be less than 120 degrees 2. Repeat the SPLIT function increasing the distance between the spokes.
Err. 26	First spoke too far from the unbalance	1. The maximum distance between the unbalance position and the spoke must be less than 120 degrees. 2. Repeat the split function increasing the distance between the spoke and the unbalance.

► 7.1 - INCONSISTENT UNBALANCE READINGS

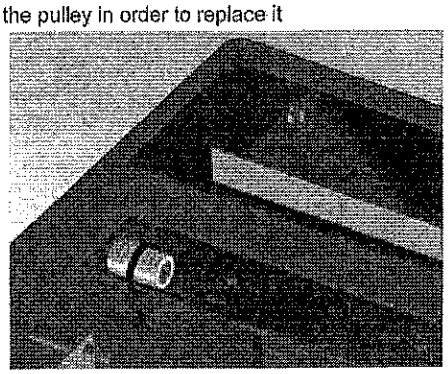
Sometimes after balancing a wheel and removing it from the balancing machine, it is found that, mounting it on the machine again, the wheel is not balanced.
This does not depend on incorrect indication of the machine, but only on faulty mounting of the wheel on the adapter, i.e. in the two mountings the wheel has assumed a different position with respect to the balancing machine shaft centre line. If the wheel has been mounted on the adapter with screws, it could be possible that the screws have not been correctly tightened, i.e. crosswise one by one, or else (as often occurs) holes have been drilled on the wheel with too wide tolerances. Small errors, up to 10 grams (0.4 oz) are to be considered normal in wheels locked by a cone; the error is normally greater for wheels fastened with screws.
If, after balancing, the wheel is found to be still out-of-balance when refitted on the vehicle, this could be due to unbalance of the car brake drum or very often due to the holes for the screws on the rim and drum sometimes drilled with too wide tolerances.
In such case a readjustment could be advisable using the balancing machine with the wheel mounted on the car.

8 - ROUTINE MAINTENANCE (see exploded drawings) (for non specialized personnel only

Always disconnect the machine from the mains before carrying out any operation.

► 8.1 - TO REPLACE THE DRIVING PULLEY

The drive pulley is guaranteed by the manufacturer for approximately 20000 runs.
A spare pulley is found inside the base (see photograph).
If necessary, to replace the pulley, proceed as follows:
- Remove the head and the weight holder shelf, taking care not to damage the electric wires
- Remove the retaining screw on the pulley in order to replace it



► 8.2 - TO REPLACE THE BRAKE PAD

Back-off the two screws fastening the worn brake pad to the motor mounting brake. Securely fix the new brake pad by tightening the screws.

► 8.3 - TO REPLACE THE FUSES

Remove the weight holder shelf to gain access to the power supply board where the fuses are located. If fuses require replacement, use ones of the same current rating. If the fault persists, contact Technical Service.

► 8.4 - MAINTENANCE OF THE PNEUMATIC CIRCUIT

It is important to periodically clean the compressed air filter.

N.B.: DRAIN FREQUENTLY ANY CONDENSATE BUILT UP IN THE FILTER BOWL VIA RELATIVE VALVE.
NONE OF THE OTHER MACHINE PARTS REQUIRE MAINTENANCE.

CONTENT

1 - TO CHANGE SUPPLY VOLTAGE

The machine can run on 115 V - 50/60 Hz or 230 V - 50/60Hz.
To change the supply voltage, proceed as follows:

1. Replace the motor
2. Replace the entire power board
3. Replace the solenoid valves

2 - INITIALIZATION OF BOARD

If a board has never been calibrated, proceed as follows:

- switch on the machine keeping  pressed .
- the wording ***"Init ?"*** appears.
- press  to confirm.

N.B. Such operation causes the loss of any calibration or presetting carried out previously.

- Calibrate the machine again according to requirements.

3 - TO ENABLE THE GAUGES

If a board malfunctions or is replaced, the presence of the gauges must be selected as follows:

[MENU]	The word [Opt.] appears
[▼]	The word [Setup] appears
[ENTER]	The word [dIAgn.] appears
[MENU]+[STOP]+[MENU]	press in sequence and within 5 seconds from when has been pressed [MENU] The words [Lan] [ci] appear
[▼]	The word [Cad] appears - diameter and distance gauge
[ENTER]	The words [Cad] [On] appear; always select ON using buttons [▼] [▲]
[ENTER]	Confirm
[STOP]	cancels enabling in any phase.

4 - SELF-DIAGNOSTICS

Should the machine malfunction, check the SELF-DIAGNOSTIC program before physically operating on the machine.

[MENU]	Press until [Setup] appears
[ENTER]	The word [dIAgn.] appears; all the LEDs and the displays should light up simultaneously
[ENTER] Checking encoder	The words [Pos.] [7] appear; On the right-hand display the current position of the wheel is indicated with a number from 0 to 255. Turning the wheel in the direction of rotation, the number displayed should increase. Turning the wheel in the opposite direction of rotation the number displayed should decrease. With one full turn of the wheel the number 0 should appear only once.
[ENTER]	The words [Inc] [359] appear → Control parameter after calibration
[ENTER]	The words [r.1] [204] appear → Control parameter for technical service
[ENTER]	The words [r.2] [200] appear → Control parameter for technical service
[ENTER] Checking sensor dist.	The words [diS] [100] appear → Displays the DISTANCE sensor value when moving the gauge
[ENTER] Checking sensor diam.	The words [dIA] [200] appear → Displays the DIAMETER sensor value when moving the gauge
[ENTER]	The words [dIA] [Gn.] appear → End of self-diagnostics
[STOP]	Cancel self-diagnostics in any phase

5 - DISTANCE SENSOR ADJUSTMENT

This is necessary if there are irregularities in the value read during the SELF-DIAGNOSTIC measurements.

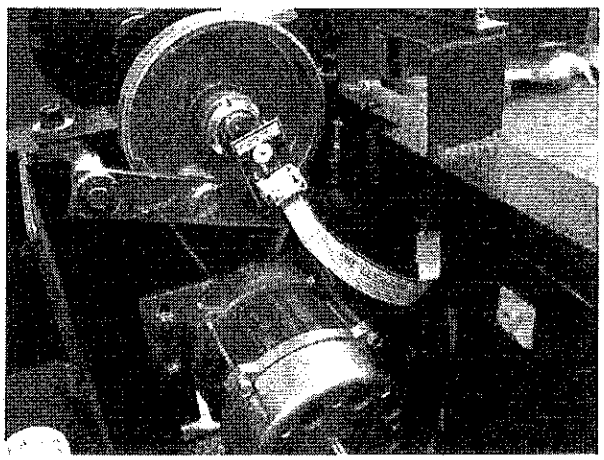
- Remove the weight shelf and refit the tip on the gauge rod.
- Back-off the screws fastening the pulley on the potentiometer shaft.
- Select on the FUNCTIONS MENU CONTROL OF THE FUNCTIONS MENU → SET UP → SELF-DIAGNOSTICS
- Scroll until the wording **[diS.]** appears on the left display while a number appears on the right display, which varies when the distance gauge is moved and represents a reference for calibrating the potentiometer.
- With the gauge fully retracted, turn the potentiometer shaft keeping the pulley still until a number between 0 and 5 is read.
- Retighten the screws to secure the pulley on the shaft.
- Carry out the DISTANCE GAUGE SET UP

6 - DIAMETER SENSOR ADJUSTMENT

This is necessary if there are irregularities in the value read during the SELF-DIAGNOSTIC measurements

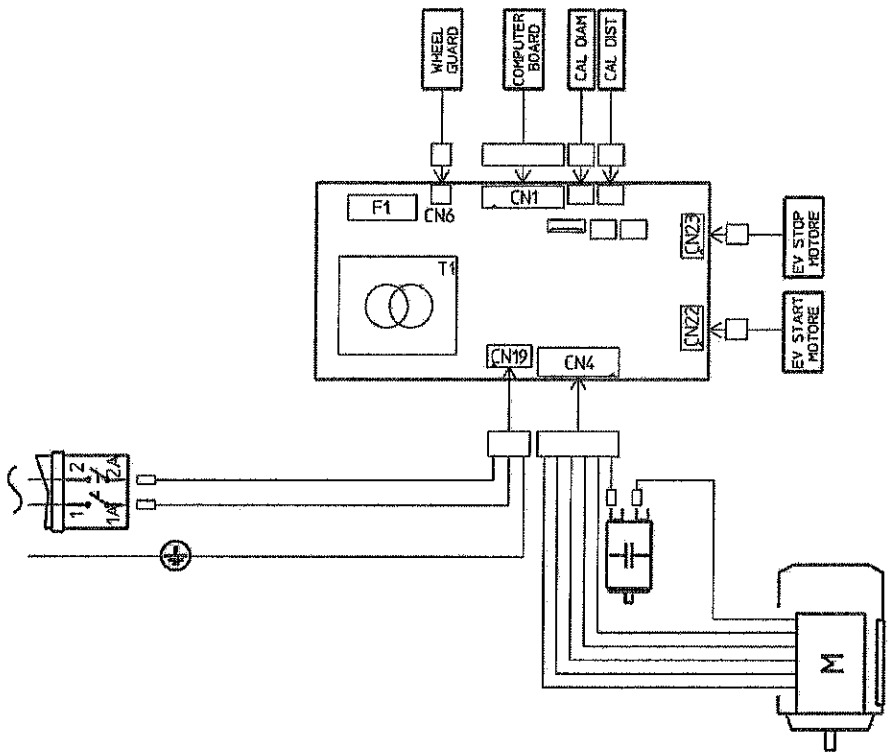
- After DISTANCE SENSOR ADJUSTMENT press ENTER
- The wording **[dIA]** appears on the left display, a number appears on the right display, which varies when the gauge is turned and represents a reference for calibrating the potentiometer.
- Pull out the gauge so that its end touches the edge of the adapter flange
- Turn the potentiometer shaft supporting the pulley until reading a number between 0 and 5
- Fit the weight tray;check that a number between 10 and 50 appears with the gauge in rest position. If not, adjust the value without the weight tray
- Tighten the screws to secure the pulley to the shaft
- Carry out the DIAMETER GAUGE SET UP
- After the adjustments, calibrate the automatic gauges (☞ ***Instructions for use***).

7 - PHASE GENERATOR REPLACEMENT



- Release the anti-rotation spring
- Disconnect the flat cable connector
- Remove the phase generator by unscrewing the hexagonal screw clockwise (opposite to standard)
- Replace the phase generator screwing it in anticlockwise
- Attach the connector restoring the original wiring and leave the flat cable with a wide curve to prevent any tension on it
- Properly refit the spring.

8 - POWER REPLACEMENT



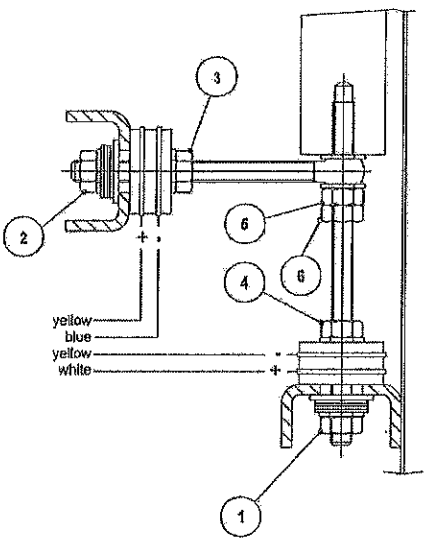
9 - PIEZO SENSOR ASSEMBLY

FOR CORRECT OPERATION, INSULATION OF THE PIEZO CRYSTALS SHOULD BE GREATER THAN 200 MOHM (TYPICAL 2000 MOHM)

Problems of excessive compensation and out-of-phase sometimes depend on a fault in the piezo measurers.
To replace them, proceed as follows:

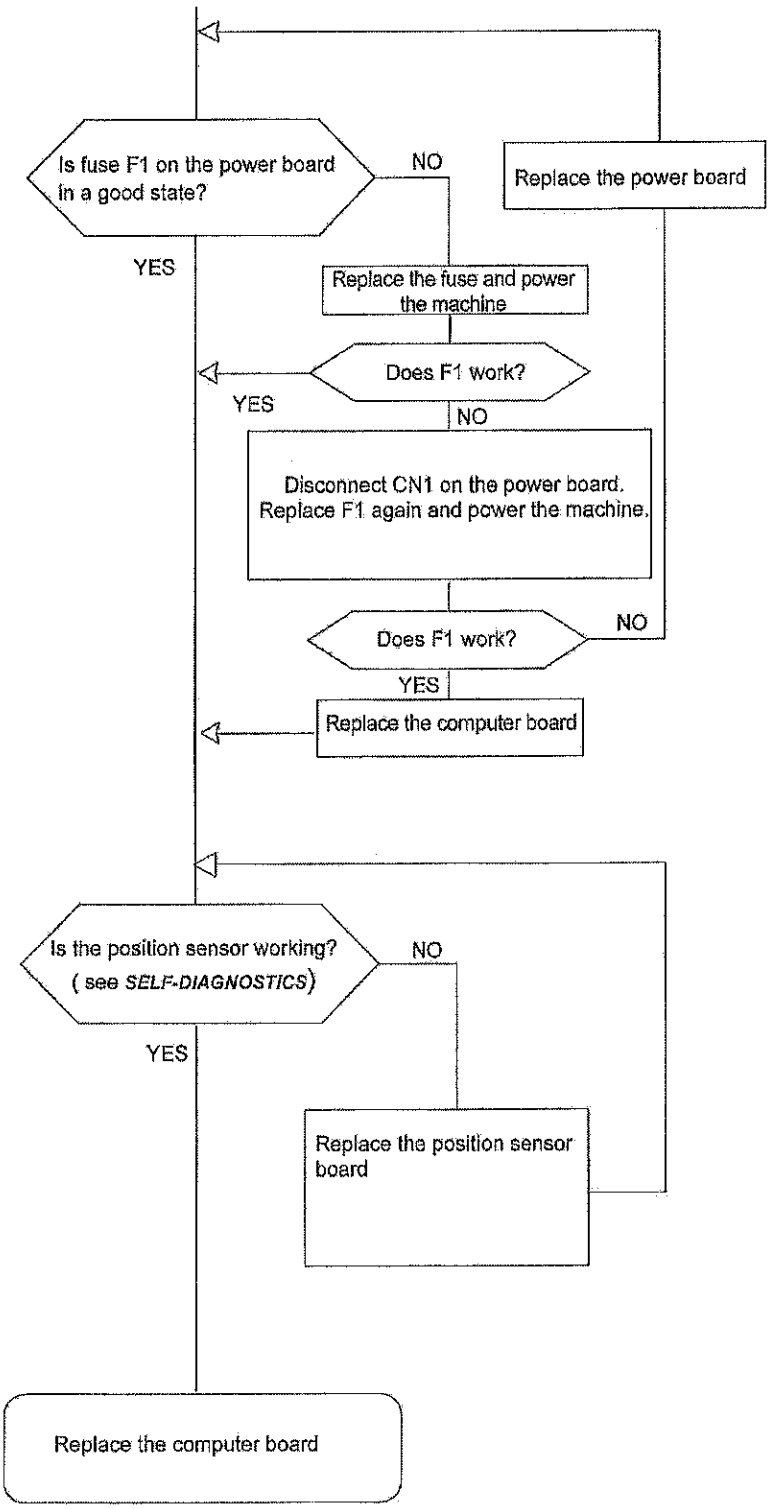
1. Remove the weight shelf.
2. Remove nuts 1 and 2 with relative cup springs and washers.
3. Back-off screws 3, 4, 6 and 5 then disassemble the various parts.
4. Reassemble the various parts without tightening the nuts being careful to follow the correct sequence.

Mount the piezo units in accordance with the position of the coloured wires shown in the drawing.



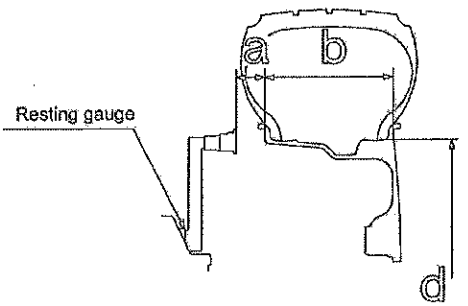
5. Keeping the spindle perfectly aligned, tighten the nuts 5 and 6 with a spanner, and nuts 3 and 4 by hand (by half a turn with the spanner if necessary).
6. Refit the washers, cup springs and nuts 1 and 2. Tighten the nuts fully in order to fully regain the elasticity of the cup springs, then loosen them by half a turn. This will automati cally ensure correct preloading on the piezo (a torque wrench can be used set to 40 N.m).
7. Again carry out the calibration.

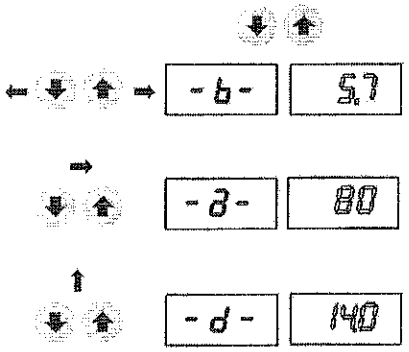
10 - TROUBLE SHOOTING LOGIC SEQUENCE



11 - MANUAL DIMENSION PRESETTING (Use only in particular cases or for test)

► 11.1 - STEEL WHEEL RIMS (use for setting dimensions in *AUTOCALIBRATION*)





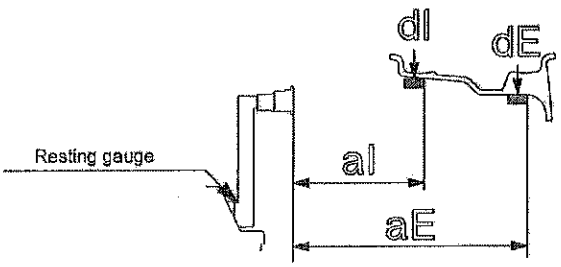
Press one of the two buttons to access manual setting:

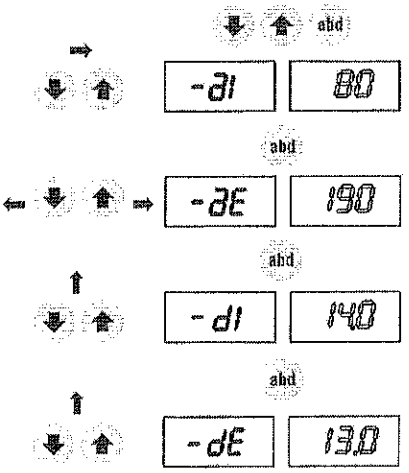
- Set the nominal width, normally indicated on the rim, or measure the width "b" using the caliper gauge supplied. Press abd for more than 2 seconds

- Set the distance "a" between the inside of the wheel and the machine Press abd

- Set the nominal diameter "d" indicated on the tyre. Press abd

► 11.2 - ALUS RIMS

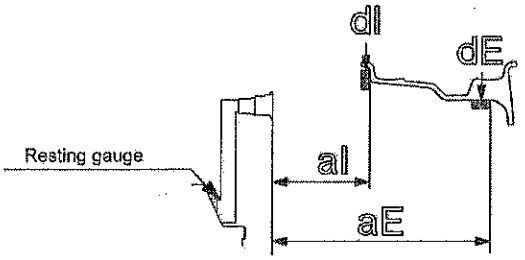


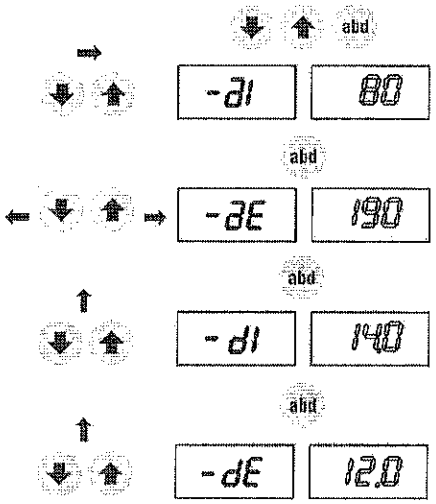


Press one of the two buttons for more than 2 seconds

Note: not setting dE as it is automatic, dE = dI - 1".

► 11.2.1 - ALUS VARIANT WITH INSIDE CLAMP WEIGHT





Press one of the two buttons for more than 2 seconds

Note: not setting dE as it is automatic, dE = dI - 2".

12 - FUNCTIONING AND ACCURACY TEST

If faults or inaccuracies are encountered which are not readily identified, it may be useful to perform the function and precision check.

PRELIMINARY CONTROLS

- Carefully clean the flange and cones
- Spring cover sliding
- Shaft terminal locking

ENCODER COUNT TEST

Press:

[MENU]	
[▼]	The word [Setup] appears
[ENTER]	The word [dlAgn.] appears
[ENTER]	Confirm

After a brief LED and display test, the wheel position appears on the right-hand display, which must vary in the range 0÷255 in a full turn.

CHECKING MACHINE OSCILLATION

After running autocalibration, press [STOP] to return to the standard measuring frame.
Without locking the wheel, measure the machine oscillation as follows:

[MENU]	
[▼]	The word [Setup] appears
[ENTER]	The word [dlAgn.] appears
[MENU]+[STOP]+[MENU]	Press in sequence in maximum 5 sec.
	The words [Lan] [ci] appear
[ENTER]	Confirm.
	The letters [t.L.] [10] appear
[START]	Run a cycle of 10 spins with automatic calculation and display of the maximum oscillation (max. permitted +/- 2 g), i.e. 4 grams on the indicator
[ENTER]	The following appears [Ini] [~70] (truck)
[ENTER]	The following appears [End] [~60] (truck)
[ENTER]	End of test.
[STOP]	Return to the standard measuring frame.

If you wish to run more than 10 automatic spins, when [t.L.] [10] appears press the buttons [▲]/[▼] to select the desired number in the range 5%999.

CHECKING MACHINE CALIBRATION

With the wheel perfectly balanced, apply 60 g first on the outside and then on the inside.
The wheel balancer must measure:

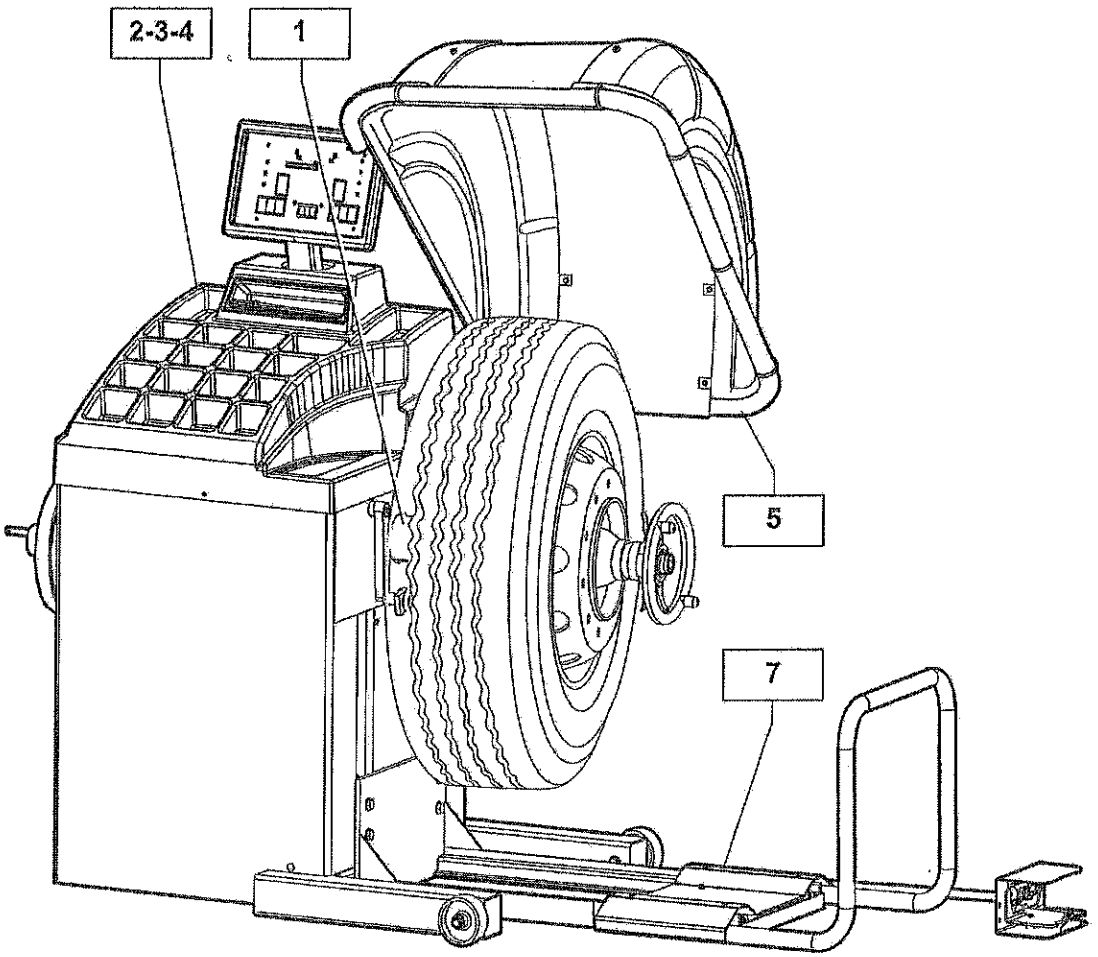
FI=0	FE=60	Weight F.E. = position = 6 o'clock
FI=60	FE=0	Weight F.I. = position = 6 o'clock

Permitted tolerance on 60 g.= 5%.
Tolerance on residue = max.5 g.

CHECKING THE ADAPTER

When the wheel is perfectly balanced, tip over by 180° and measure the unbalanced values.
For this test, it is advisable to use a new wheel of good quality. The error due to tilting should be less than 6 g. (3 g actual); replace the centring cones if necessary.

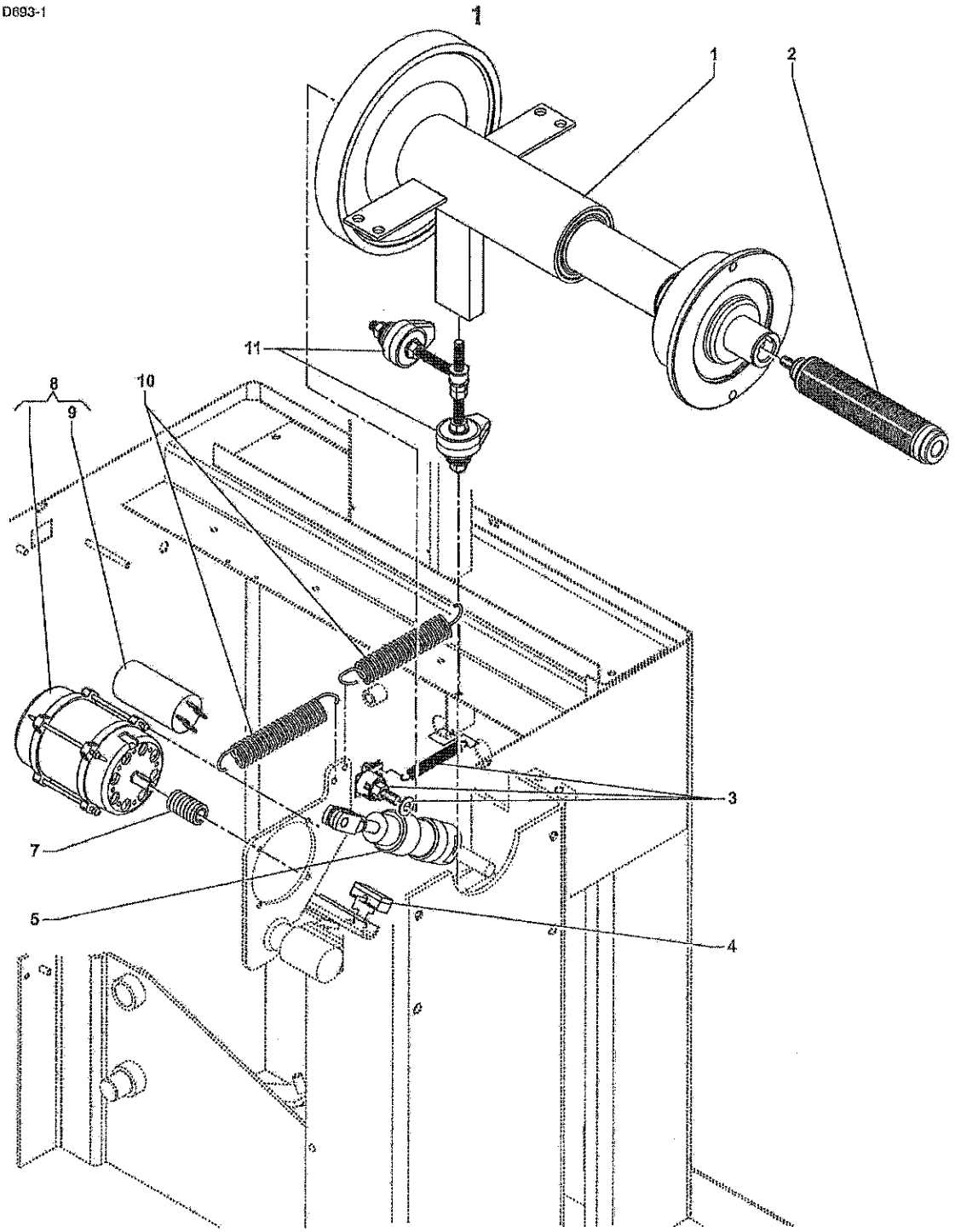
C212 (B)



D0693-1	0693-1	1	MANDRINO+MOTORE+DATORE DI FASE+ TRASDUTTORI PIEZO	SHAFT ASSEMBLY+MOTOR+POSITION PICK-UP+ PIEZO TRANSDUCER
D0693-2-3-4	0693-2-3-4	2-3-4	BASAMENTO+CALIBRO DISTANZA+POTENZA	CASING+DISTANCE GAUGE+POWER UNIT
D0696-5	0696-5	5	PROTEZIONE RUOTA	WHEEL GUARD
D0693-7	0693-7	7	LIFT	LIFT

D0693-1	0693-1	1	DORN+MOTOR+PHASENGEBER+ PIEZOGEBER	BROCHE+MOTEUR+DONNEUR DE PHASE+TRANSDUCTERS PIEZO	MANDRIL+MOTOR+CAPTADOR DE FASE+TRANSDUCTORES PIEZOELECTRICOS
D0693-2-3-4	0693-2-3-4	2-3-4	SOCKEL+ABSTAND MESSLEHRE+ NETZEINHEIT	BASE+CALIBRE DISTANCE+ PUISSANCE	BASE+CALIBRE DISTANCIA + POTENCIA
D0696-5	0696-5	5	RADSCHUTZVERKLEIDUNG	PROTECTION ROUE	PROTECCION RUEDA
D0693-7	0693-7	7	LIFT	LIFT	LIFT

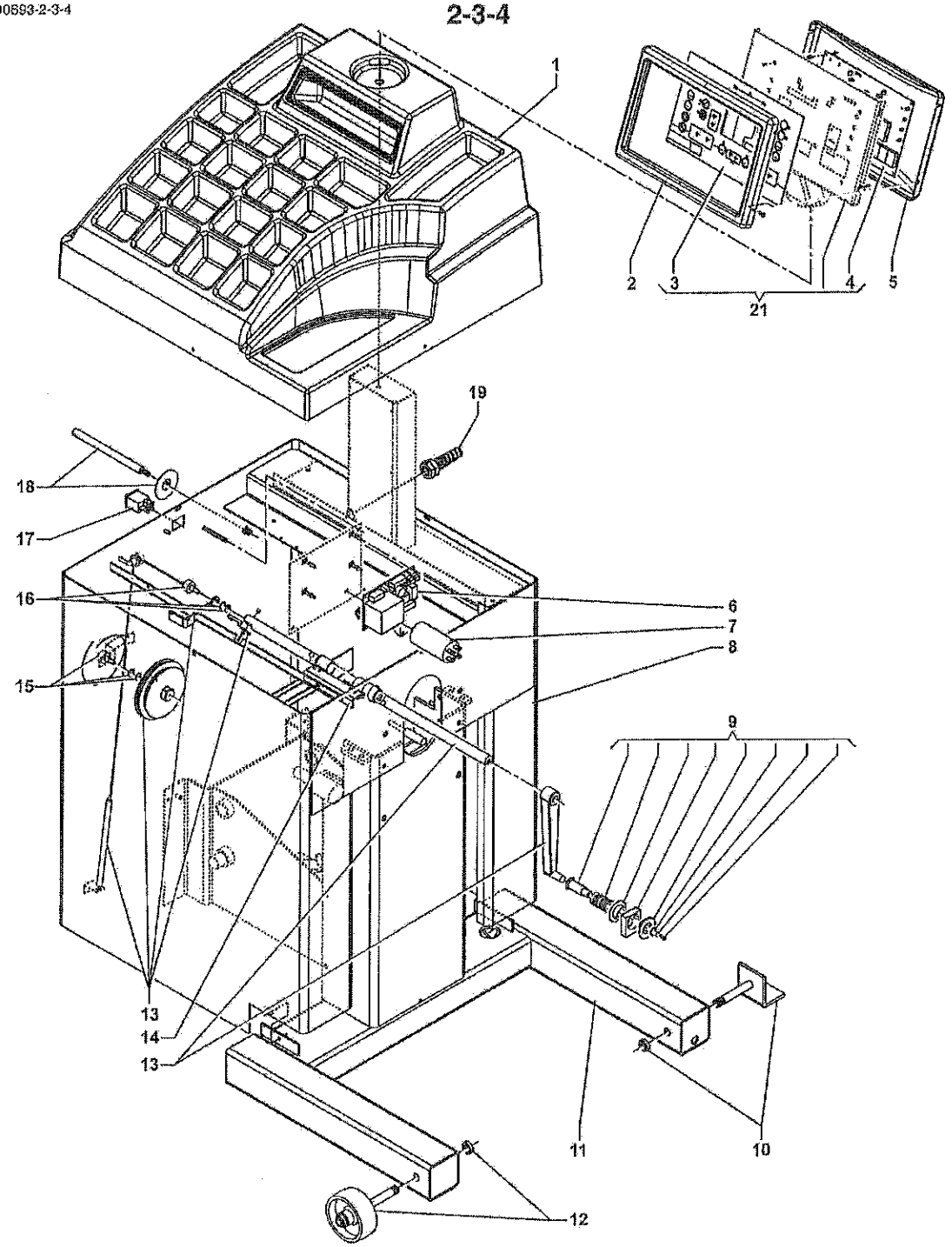
D693-1



N.	CODE	DESCRIPTION	N.	CODE	DESCRIPTION	N.	CODE	DESCRIPTION
1	4RFM86822	COMPLETE SHAFT	10	182185730	SPRING			
2	42FM62433	THREADED END	11	4RFM86828	PIEZO ASSEMBLY			
3	4RSD86802	COMPL. POSITION PICK-UP						
4	42FB37113	COMPLETE BRAKE PAD						
5	161035030	PNEUMATIC CYLINDER						
7	07FG33406	DRIVING PULLEY						
8	5RFG86832	CAPACITOR+MOTOR 230V						
8	5RFG86833	CAPACITOR+MOTOR 115V						
9	568001058	CAPACITOR 230V						
9	568003558	CAPACITOR 115V						

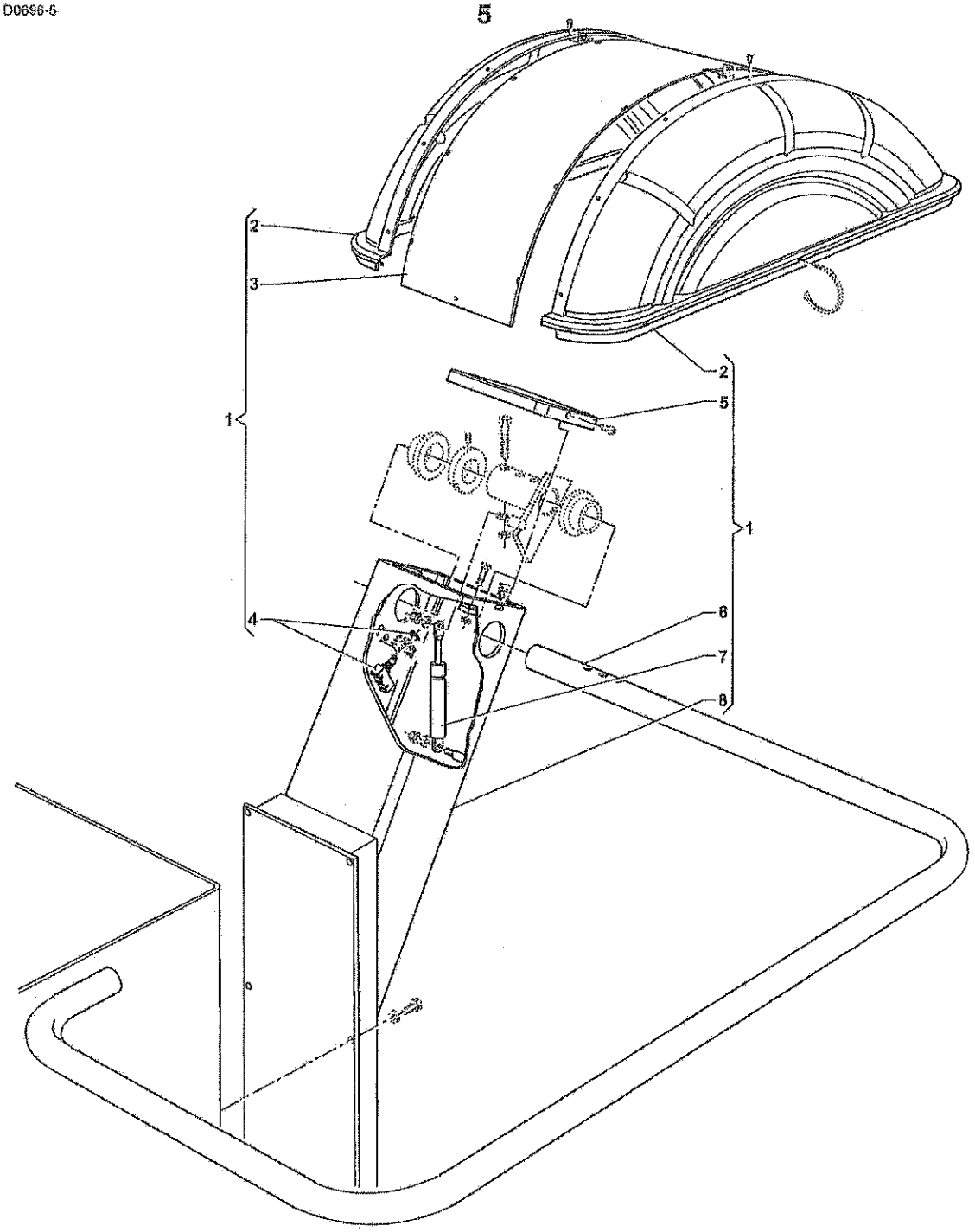
0693-1

2-3-4

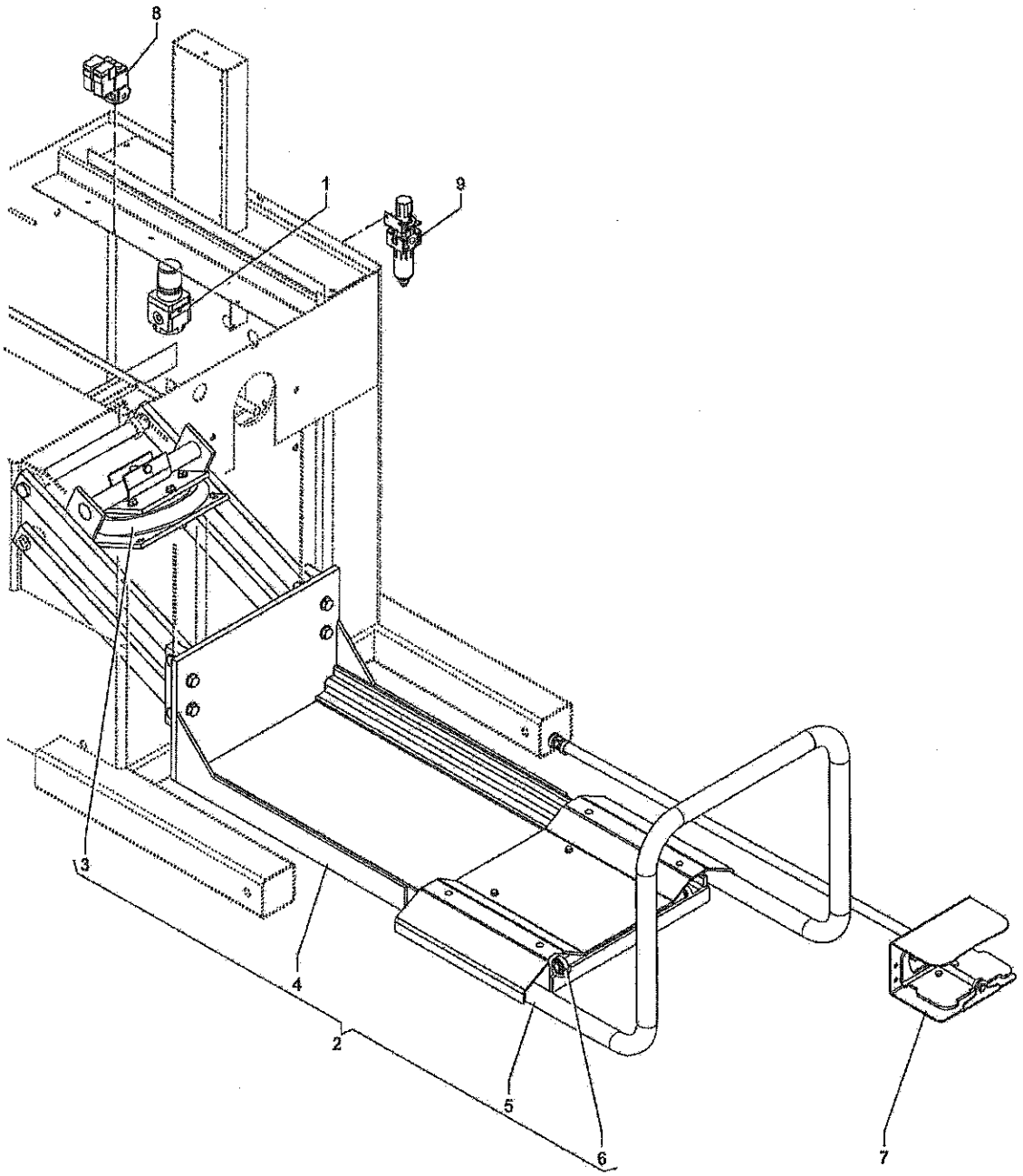


N.	CODE	DESCRIPTION	N.	CODE	DESCRIPTION	N.	CODE	DESCRIPTION
1	14FB81341	COVER WITH WEIGHT TRAY	9	46FC76792	FIXED RETAINER	19	526003246	CABLE CIRCLIP
2	14FB80487	FRAME	10	46FB46703	FIXING KIT	21	86PR86283	COMPLETE PANEL
3	05PR81025	CONTROL PANEL	11	42FB81344	BASE			
4	67D71370B	COMPUTER BOARD	12	46FB74884	WHEEL KIT			
5	14FB80488	HEADSTOCK	13	46FC84027	COMPL. DISTANCE GAUGE			
6	67M80813A	POWER SUPPLY BOARD 230V	14	46FC80526	GAUGE BRACKET			
6	67M80813B	POWER SUPPLY BOARD 115V	15	86SB78574	DIST. GAUGE+POTENTIOM.			
7	568001058	CAPACITOR 230V	16	86SB67291	DIAM. GAUGE+POTENTIOM.			
7	568003558	CAPACITOR 115V	17	511242101	PLATFORM SWITCH			
8	42FB84036	BASE PLATE	18	46FB84028	TRUCK PIN KIT			

5

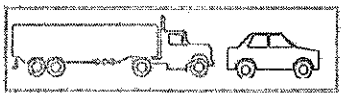
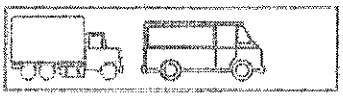
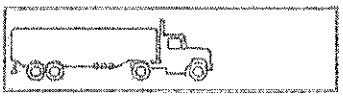


N.	CODE	DESCRIPTION	N.	CODE	DESCRIPTION	N.	CODE	DESCRIPTION
1	46FW84146	COMPL. WHEEL GUARD						
2	14FW31322	SIDE COVER						
3	14FW38518	UPPER BAND						
4	86SB86750	CABLE WITH MICROSWITCH						
5	14FW33850	UPPER COVER						
6	42FW38517	TUBE CHASSIS						
7	18FW31346	AIR SPRING						
8	42FW33446	SUPPORT						



N.	CODE	DESCRIPTION	N.	CODE	DESCRIPTION	N.	CODE	DESCRIPTION
1	164000014	MICRO REGULATOR						
2	46FL84143	COMPLETE LIFT						
3	161900110	CYLINDER TORPLESS						
4	42FL84144	WHEEL LIFT						
5	42FL70056	TROLLEY FOR LIFT						
6	020620102	BEARING						
7	46FB74829	PEDAL ASSEMBLY						
8	16SP33941	ELECTROVALVE 230V						
8	16SP33942	ELECTROVALVE 115V						
9	164000006	FILTER						

Truck wheel balancer equipment Ø 40

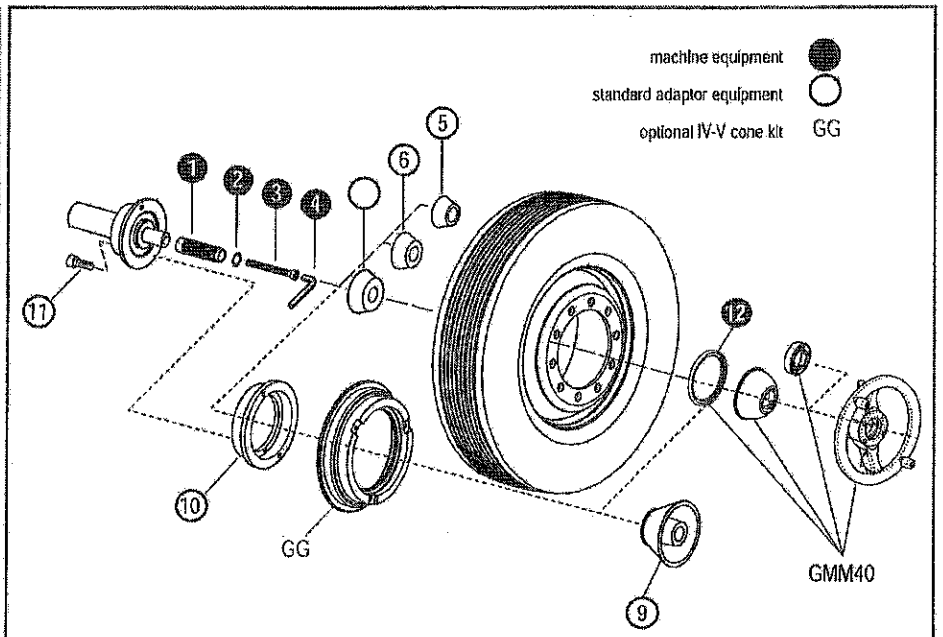
	Cone adaptor	UC215 HW (C)
	IV - V CONE Centring Kit	OPTIONS for UC215 HW (C)
	SR215/2 Centring Kit	OPTIONS for UC215 HW (C)
	SR3 adaptor	OPTIONS for UC215 HW (C)
	TRILEX / DAYTON Kit	OPTIONS for UC215 HW (C)
	Quick locking ring kit 40 x 4 with GP ring nut G40 steel wing nut	OPTIONS for UC215 HW (C)
	Universal quick adaptor	UH20/2
	Universal adaptors for driving wheels	RM20/15

Ø 40

Ø 40 — UC215 HW (C) cone adaptor

UC215HW (C)
with ring nut
GMM40

41FF59368



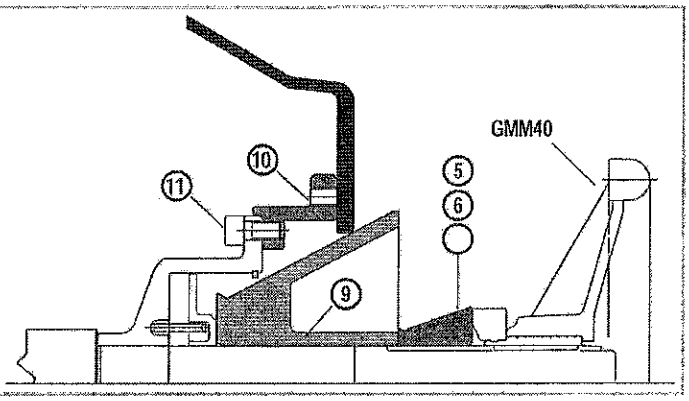
GENERAL FEATURES:

- For wheel balancers with cone adptor body incorporated in the machine shaft, complete with preloaded spring.
- With cones and shaft in hardened steel
- For locking motor vehicle/pickup truck wheels with central hole
- For wheel balancers with guard the ring nut GMM40 can be used without the handwheel

ITEM	CODE	DESCRIPTION	DATA
1	42FM62433	threaded end-piece	L = 205
2	325047011	knurled washer	Ø 10
3	312120137	screw	TCEI M10x160 UNI 5931
4	114008002	allen wrench	8 mm
5	40FF88351	A1 cone	Range Ø 45 ÷ 69
6	40FF43715	A2 cone	Range Ø 60 ÷ 81
7	40FF43716	A3 cone	Range Ø 79 ÷110
9	40FF52417	VL/2 cone	Ø 97÷170 (Ø 97÷180 with GG)
10	40FF43745	G40 spacer disc	
11	312120119	screw	TCEI M10x20 UNI5931
12	40FF79260	polyurethane ring	
GG	940010105	GG ring - in optional IV-V cone kit	

MOUNTINGS

STANDARD PICKUP TRUCKS

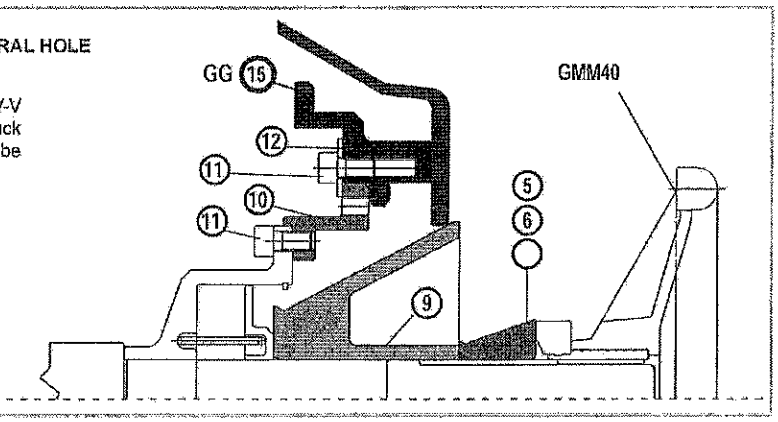


OPTION FOR WHEELS WITH CENTRAL HOLE
170÷180 Ø.

Mounting the GG ring (in optional IV-V CONE KIT) on the disc (10), pickup truck wheels up to 180 Ø central hole can be locked.

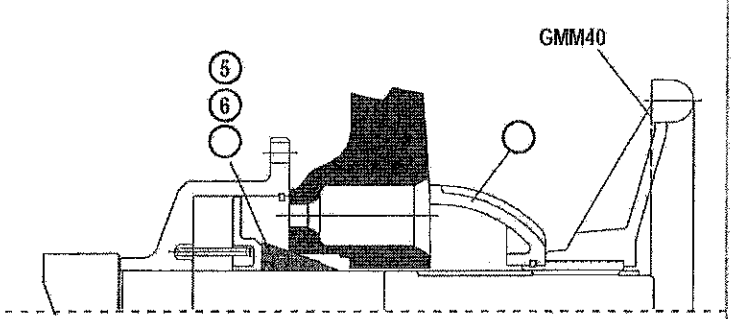
Models:

Pick Up - FORD
F250 super cab XLT
F250 crew cab XLT
F350 crew cab LARIAT
F350 crew cab DUALIE
F450
MERCEDES
Sprinter New series



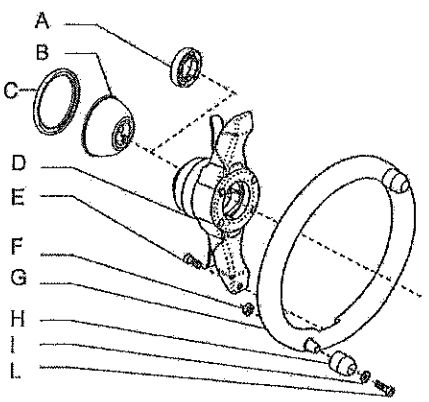
AUTO
It is recommended to use the adaptor with centering from the inside.

- In sequence mount the suitable cone with the taper to the outside, the wheel, the collar and the ring nut.



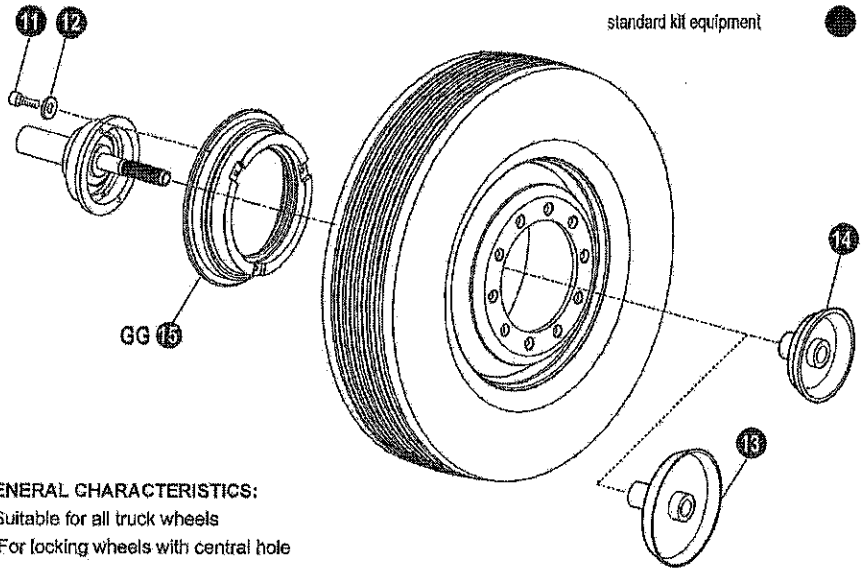
GMM40
41FF59322

A	40FF61334
B	40FF51315
C	40FF79260
D	41FF83146
E	312120067
F	321232006
G	218295313
H	217296353
I	325035006
L	312120073



Ø 40 OPTIONS - UC215 HW (C) cone adaptor

IV-V CONE
Centering
Kit
41FF43821



GENERAL CHARACTERISTICS:
- Suitable for all truck wheels
- For locking wheels with central hole

ITEM	CODE	DESCRIPTION	DATA
11	312120119	screw	TCEI M10x20 UNI 5931
12	326035011	flat washer	Ø 11/30/2,5 UNI 6593
13	40FF43747	V cone	Ø 281
14	40FF43748	IV cone	Ø 202/221
15	940010105	GG ring	

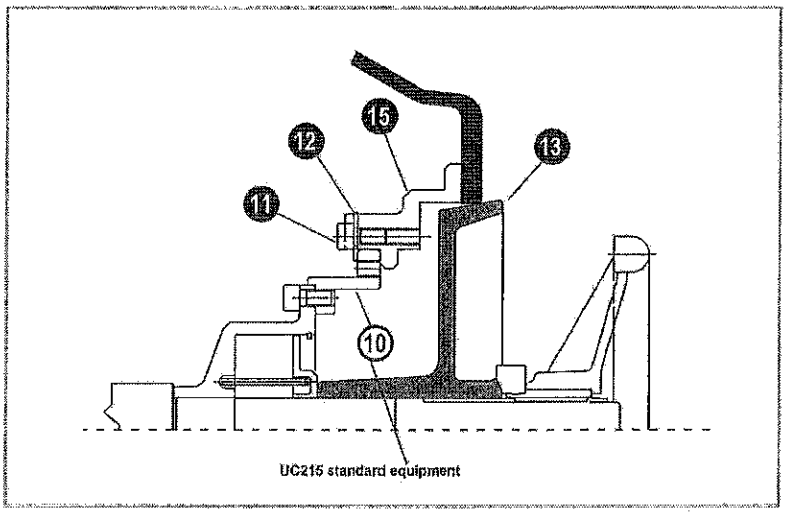
OPTION				
14a	40FF60653	special cone IV 8,5"	Ø 202/214/215,9	

OPTIONS - UC215 HW (C) cone adaptor

Ø 40

MOUNTINGS

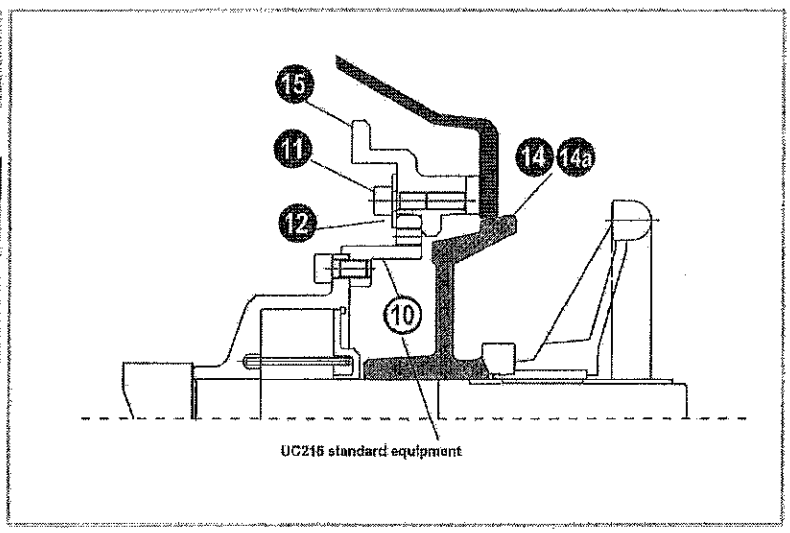
Ø 281
(central hole)



Ø 221 (202)
(central hole)

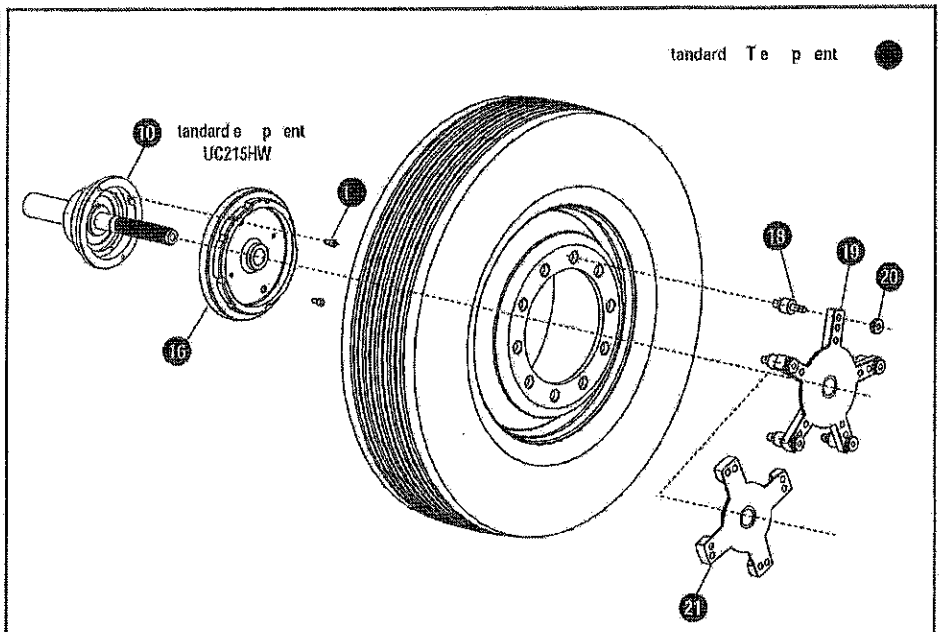
with option 14a

Ø 202
Ø 214
Ø 215,9
(central hole)



Ø 40 T NS - UC215 HW (C) cone adaptor

SR215 2
center n
t
41FF6 8 9



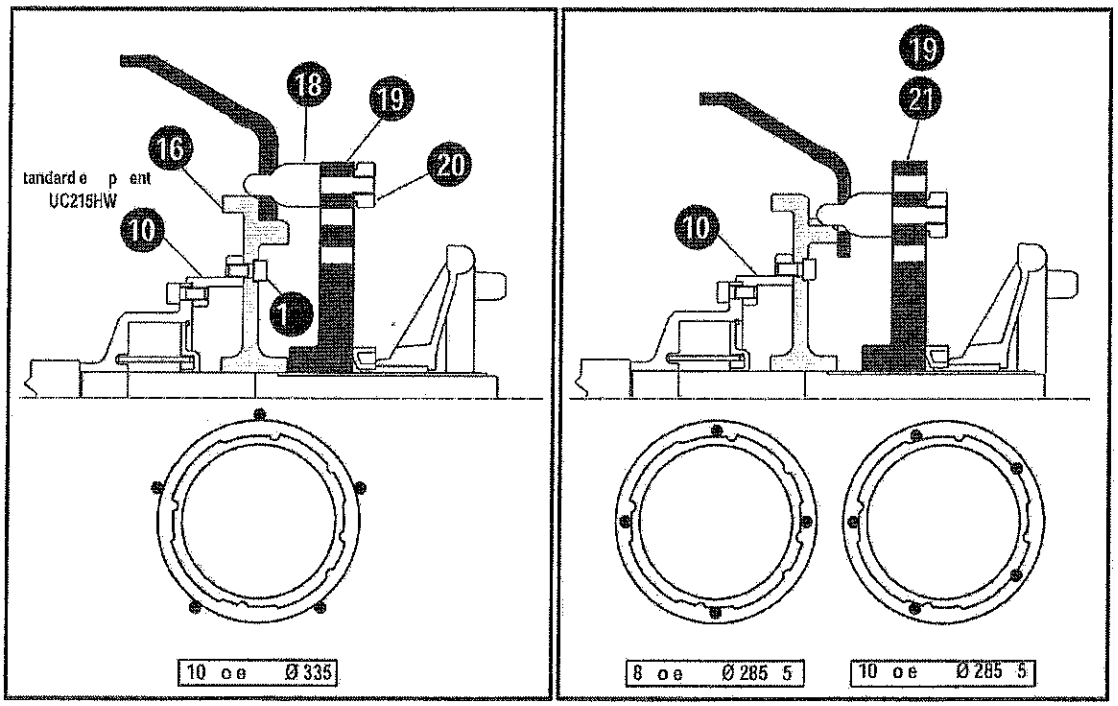
GENERAL FEATURES:
- S ta e ora tr c ee t ee centr n on
- er ect or oc n ee t orm or de or ed centra o e
- Acc rate centr n a red t e t d ot (18) ent e p ntot e corre pond n o e ont er andre tont e eat nt e centr n flan e(16) T e t d ot t e n erted nt e p der (19) or(21) nt ere e ant o e T tent e p der t t ern n t pro ded

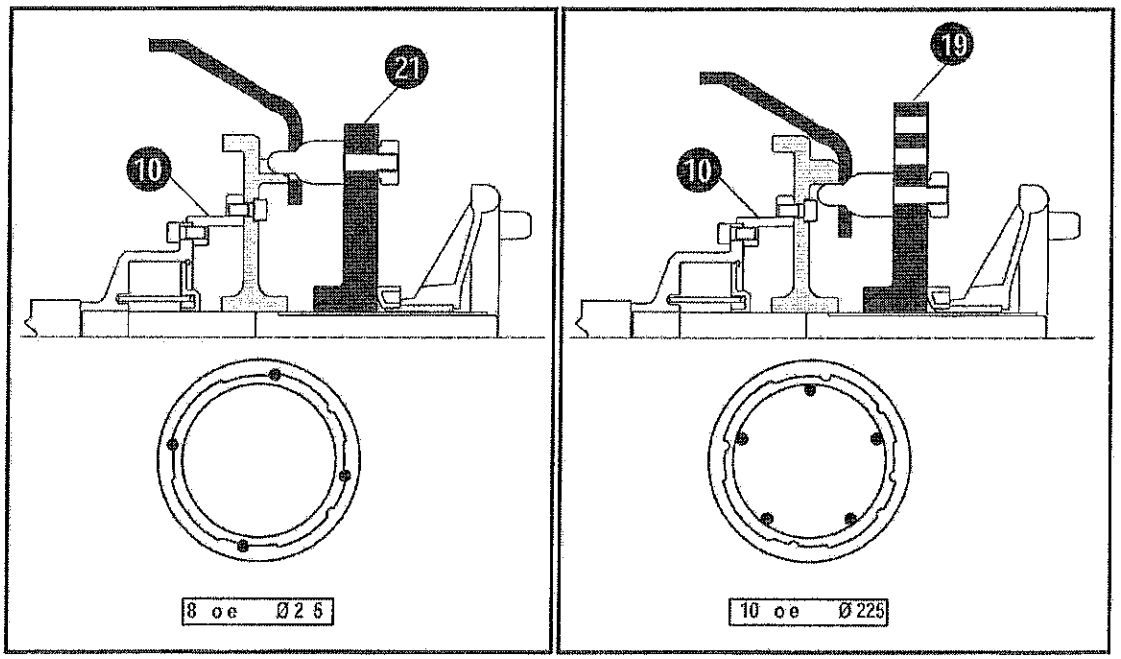
ITEM	CODE	DESCRIPTION	DATA
16	40FF67880	centring ange	
17	312120119	screw	TCEI M10x20 UNI5931 (2 pieces)
18	40FF67883	stud bolt	(5 pieces)
19	40FF67881	5-armed spider	10 holes on Ø 226 10 holes on Ø 285,75 10 holes on Ø 335
20	40FF67916	lockring	(5 pieces)
21	40FF67882	4-armed spider	8 holes on Ø 276 8 holes on Ø 285,75

T NS - UC215 HW (C) cone adaptor

Ø 40

MOUNTINGS SR215/2





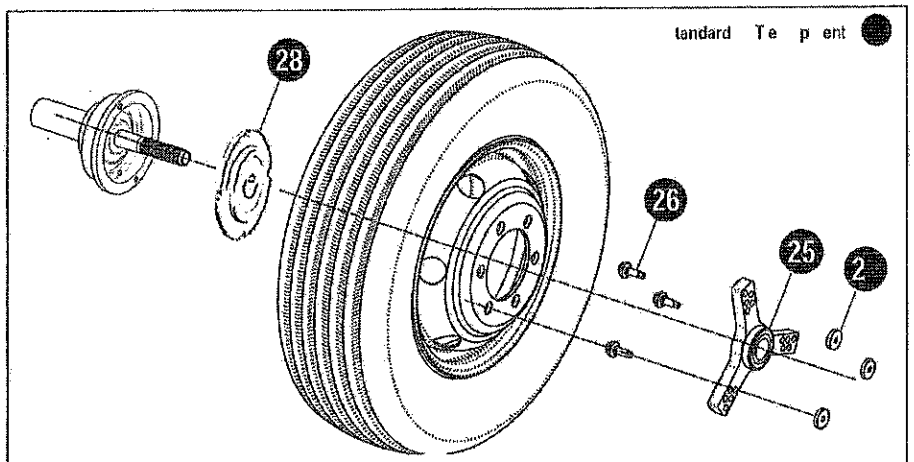
N TE: T e flan e (16) can a o e fi ed d rect to t e ea a ancor c c t o t nterpo n t ed c (10)

Ø 40 T NS - UC215 HW (C) cone adaptor

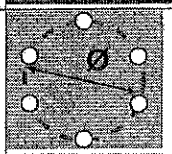
SR3

A A T R

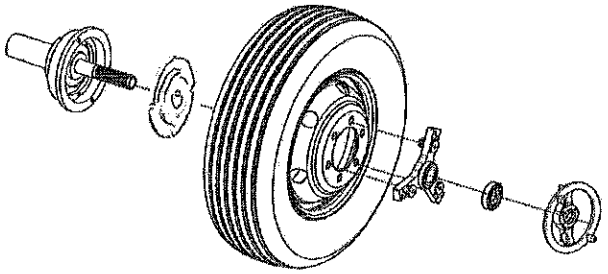
41FF66114



MAIN FEATURES:
- S ta e or an and tr c eo L 6 fl n o e
- er ect or oc n eo t a orn or de or ed centra o e
- n ert e t d o t (26) n t e ro e ant o e n t e p der Loc t t e n t (2)
- T ten t e p der t t e tandard de ce pro ded t t e eo a ancer

ITEM	CODE	DESCRIPTION	DATA
25	40FF66115	3-arm spider	 **Main car models** 6 holes over 170 Ø - FIAT DAILY - MITSUBISHI CANTER T35 - OPEL BEDFORD - FORD TRANSIT FT 130-190 100L 6 holes over 184,15 Ø - TOYOTA Dyna 150 6 holes over 205 Ø - MERCEDES LLKW serie 400, 500, 600, 700, T1/T2 - VOLKSWAGEN LLKW LT 35-55 / L80 6 holes over 222,25 Ø - MITSUBISHI CANTER T75 6 holes over 245 Ø - Light trucks in general
26	40FF66117	Stud	(3 pieces)
27	40FF66116	Nut	(3 pieces)
28	40FF66118	Centering disk	(Ø 161 mm)

FITTING

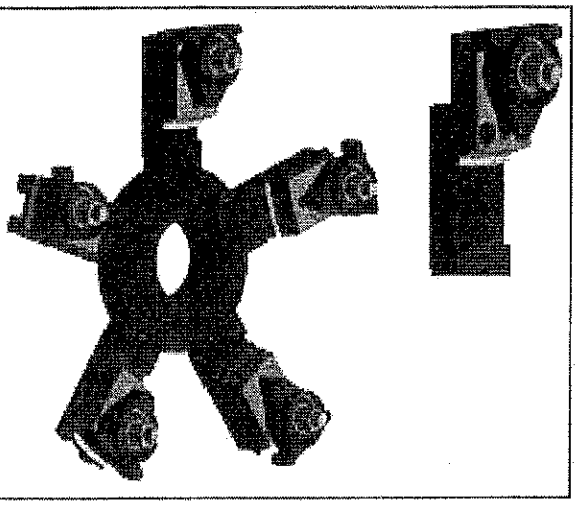


T NS - UC215 HW (C) cone adaptor  Ø 40

Ø 40 T NS - UC215 HW (C) cone adaptor

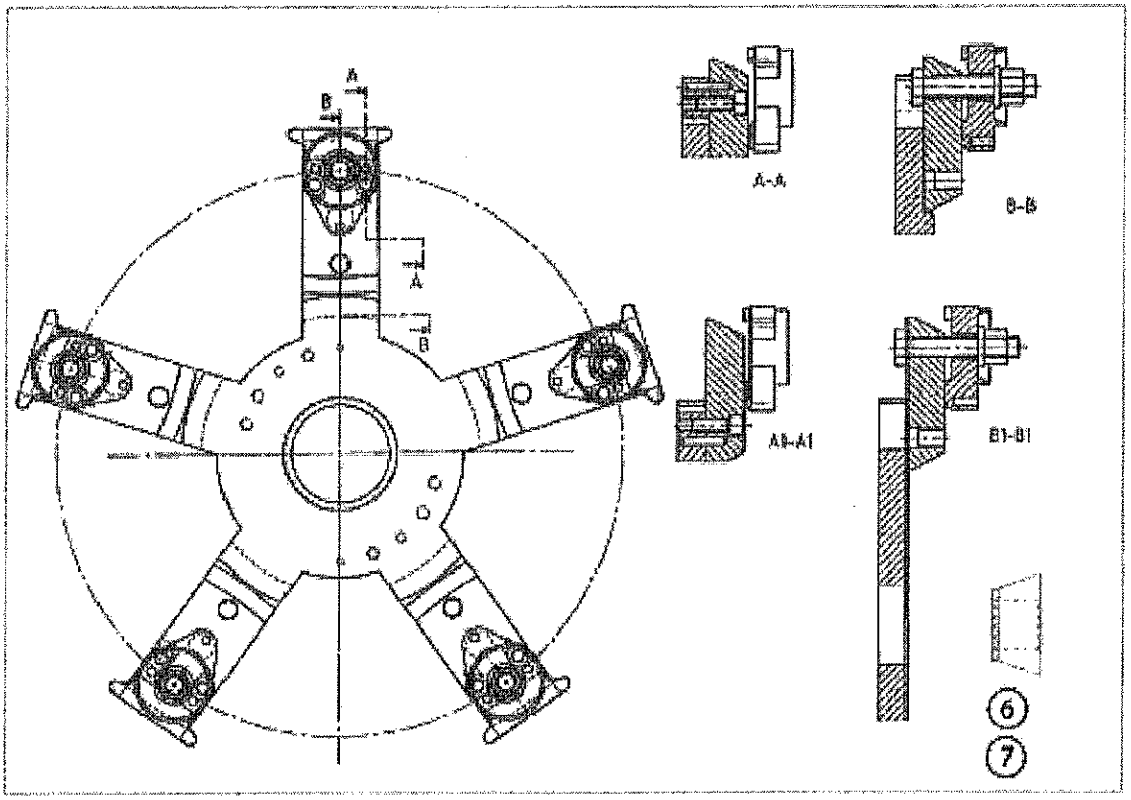
t A T N
20 24
(USA)
94FF3 124

t TR LE
20 22 5
(EUR E)
94FF3 122



GENERAL FEATURES:
- suitable for one-piece rims
- the adaptor is centred and locked on the spindle using a cone or in W standard equipment
- the rim is centred on the conical sectors and fi ed with the brackets provided

MOUNTINGS



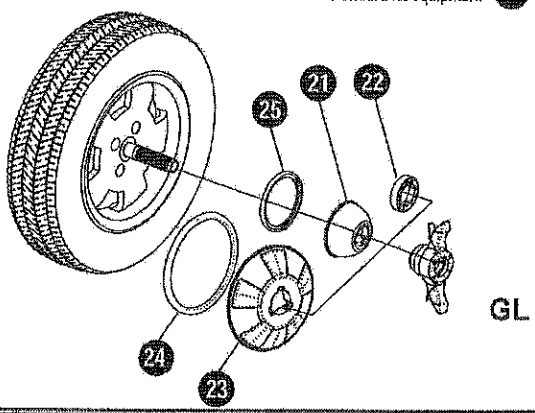
T NS - UC215 HW (C) cone adaptor — Ø 40

U C
L C NG R NG
T 40 4
t GL
r n n t

41FF83154

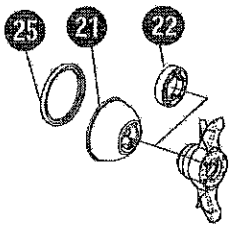
standard kit equipment ●

GENERAL FEATURES:
- For locking motor vehicle wheels
- se the standard cone equipment as recommended in the - W cone flange brochure

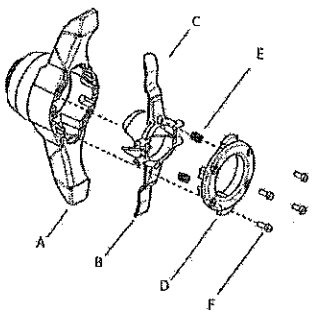


ITEM	CODE	DESCRIPTION	DATA
21	40FF51315	collar	Ø 130 outside
22	40FF61334	pressure ring	Ø 80 outside
23	40FF79256	RL collar for light alloy wheels	Ø 208 outside
24	40FF79258	Polyurethane ring for RL collar	
25	40FF79260	Polyurethane ring for collar	
	41FF79259	Complete collar	
	41FF79255	Complete RL collar	

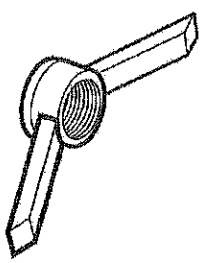
GL **41FF83146**
quick
locking ring



ITEM	CODE
A	40FF79990
B	40FF79984
C	40FF79989
D	40FF79991
E	18FW80018
F	314932039



G40 **40FF43726**
steel
wing nut

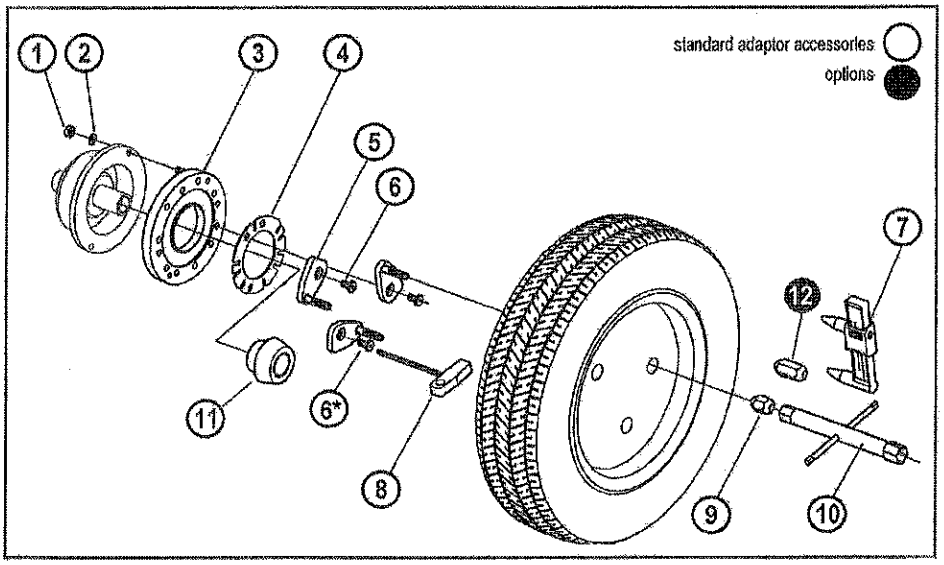


Ø 40 Universal quick adaptor UH20/2

UH20/2

complete adaptor for wheel balancers with manual or pneumatic locking

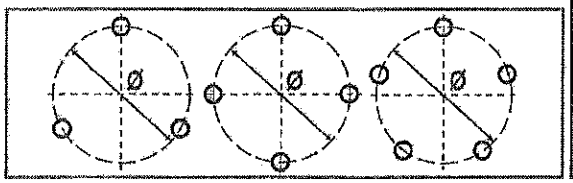
41FF42048

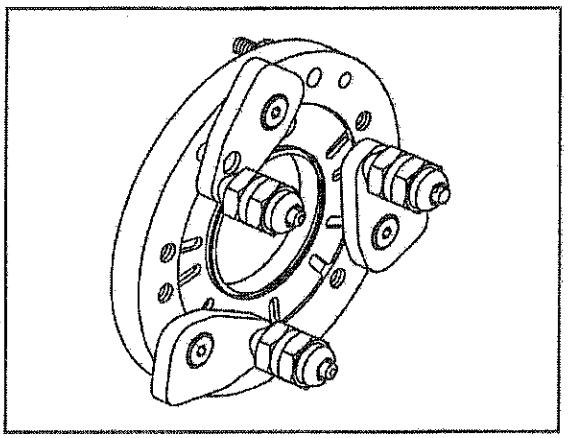


GENERAL FEATURING :

- for wheels with or without central hole.
- The additional cone 11 **(CEMB patent)**, in most cases, allows to center the wheel on the central hole, thus improving balancing accuracy.

Fit for any motor-vehicle wheels with 3, 4 or 5 holes on Ø 95 up to 210 mm.

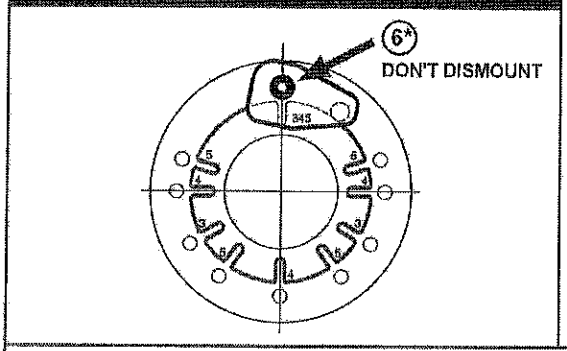




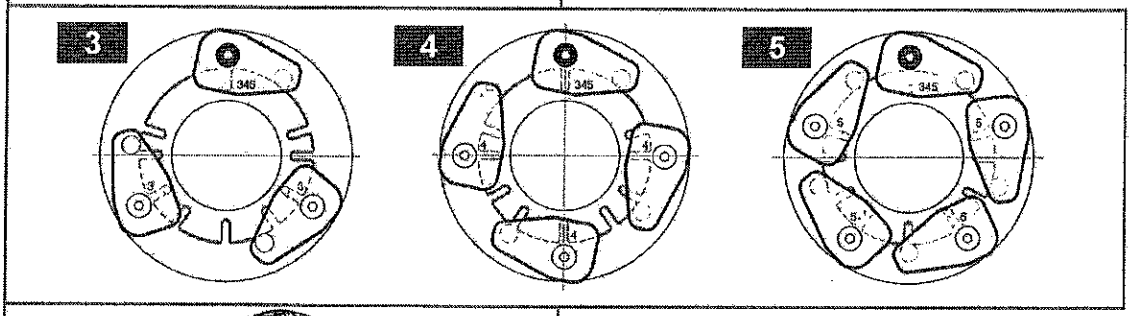
ITEM	CODE	Q.ty	DESCRIPTION	DATA
1	321232008	2	nut	M8 UNI 5588
2	325035008	2	flat washer	Ø 8,4 x 17
3	40FF33438	1	adaptor body	
4	40FF33439	1	guide disc	
5	40FF33440	5	complete stud bracket	
6	40FF33441	4	gauged screw	burnished
6*	40FF33443	1	gauged screw	tropicalized
7	940052253	1	gauge	
8	115006002	1	t-wrench	hexagon 6
9	40FF33442	5	special nut	conic 60° / spherical radius 10
10	112019220	1	socket spanner	hexagon 19/22
11	40FF42165	1	pre-centering cone	Ø 52 ÷ 72,5
12	41FF38501	1	kit of 5 special long nuts	conic 60° / spherical radius 8 (for Peugeot 406)

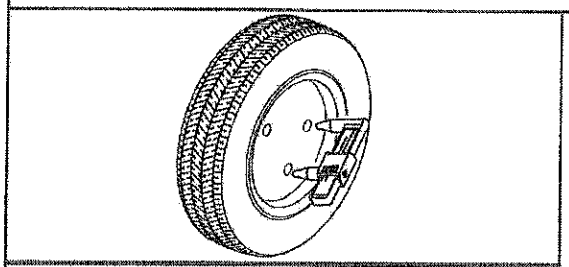
FITTING

BASIC SETTING FOR PATTERN MODIFICATION

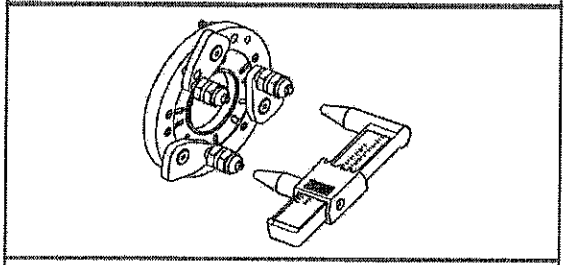


1) Change the adaptor pattern (3;4;5) according to any requirements.
N.B. :
do not lock studs (5) leaving screws (6) and (6*) loosen, to enable the operation at point 3).

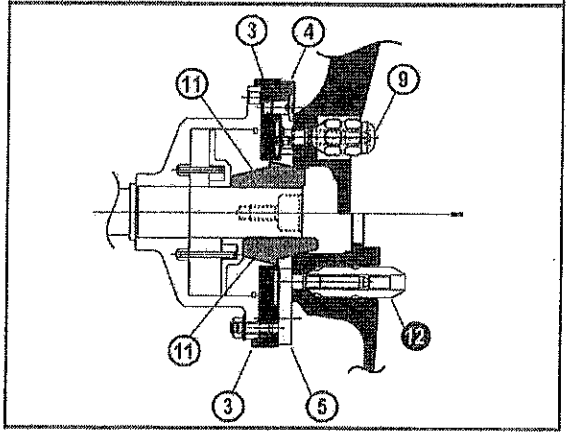




2) Measure the distance between two of wheel holes with the gauge (7).



3) Line the axles of two studs to the gauge prod.



4) Lock the screws(6) and(6*).

5) Fit the wheel.
N.B.:
The use of cone (11) generally improves the wheel centering accuracy.

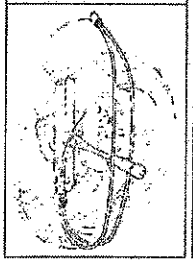
6) Lock the nuts by hand (9).

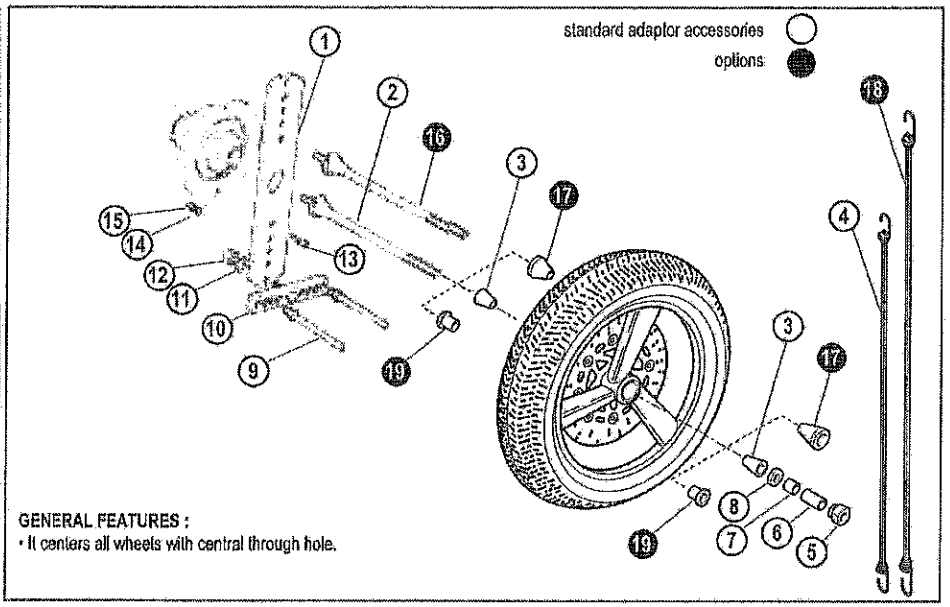
7) Lock the nuts with the socket spanner (10), not too tigh.

Ø 40 — Adaptor for motorcycle wheels RM20/15

RM 20/15
Ø 15
41FF49115

Fitting with elastic





GENERAL FEATURES :
• It centers all wheels with central through hole.

ITEM	CODE	Q.ty	DESCRIPTION		
1	40FF49312	1	adaptor body		
2	940013571	1	shaft	Ø 15 L=251	
3	40FF29927	2	cone C1	Ø 15-25	
4	940013796	1	elastic	Ø 6 L=580	
5	40FF29950	1	lockring	Ø 15	
6	40FF29932	1	spacer	Ø 15 L=40	
7	40FF29931	1	spacer	Ø 15 L=20	
8	325035014	1	washer	Ø 15 x 28	
9	40FF49313	4	movable pin		
10	424115606	2	plate		
11	325035013	2	washer	Ø 13 x 24 UNI 6592	
12	321232012	2	nut	M12 UNI 5588	
13	315231064	2	screw	TS M6x25 UNI 6109	
14	325035006	2	washer	Ø 6,4x12,5 UNI 6592	
15	321232006	2	nut	M6 UNI 5588	

ITEM	CODE	Q.ty	DESCRIPTION		
16	40FF46721	1	shaft	Ø 15 L=270	(only for 42" wheel guard) Harley Davidson
17	424116877	2	cone	Ø 15-35	
18	42FF46162	1	elastic (17")	Ø 6 L=680	
19	41FF51299	1	COMPLETE KIT OF CENTERING BUSHES		
	40FF31651	2	B1 L=30	Ø 28	Yamaha
	40FF38838	2	B2 L=30	Ø 25	Kawasaki
	40FF38837	2	B3 L=30	Ø 22	Yamaha, Honda, Aprilia, Gilera, Kawasaki, Suzuki
	40FF38836	2	B4 L=30	Ø 20	Yamaha, Honda, Aprilia, BMW, Triumph, Kawasaki, Suzuki, Laverda, Moto Guzzi, KTM
	40FF38835	2	B5 L=25	Ø 17	Yamaha, Suzuki, KTM
	40FF38834	2	B6 L=20	Ø 16	Moto Guzzi
	40FF38833	2	B7 L=20	Ø 15	Yamaha, Honda, Aprilia, Gilera, Kawasaki, Suzuki
	40FF49378	2	B8 L=25	Ø 19,05	Harley Davidson