

# 6600

**MICROPROCESSOR WHEEL  
BALANCER FOR CAR, LIGHT  
TRUCK AND MOTORCYCLE  
WHEELS**

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**OPERATOR'S MANUAL  
SPARE PARTS EXPLODED DRAWINGS**

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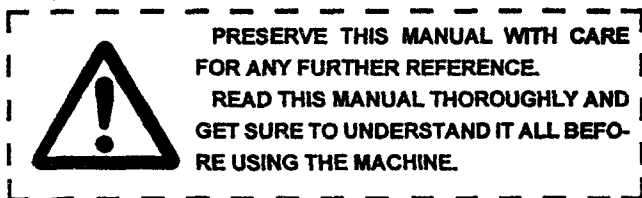
## 1.0 INTRODUCTION

Congratulations on purchasing the ACCU 6600 microprocessor wheel balancer.

This wheel balancer is designed for ease of operation, accuracy, reliability and speed.

With a minimum of maintenance and care your wheel balancer will provide many years of trouble-free operation.

Instructions on use, maintenance and operational requirements of the machine are covered in this manual.



### 1.1 USE LIMITATIONS

*The wheel balancer model ACCU 6600 is intended to be used as a device to balance car, light commercial vehicle and motorcycle wheels with the following specifications:*

**Maximum wheel diameter: mm 950 (37<sup>1</sup>/<sub>4</sub>)**

**Maximum wheel width: mm 375 (14<sup>3</sup>/<sub>4</sub>).**

**Maximum wheel weight: kg 65 (143lbs)**

*This device shall be used in compliance to the destination for which it is specifically designed.*

*Any other use shall be considered as improper thus not reasonable.*

*The manufacturer shall not be considered liable for possible damages caused by improper, wrong or non reasonable use.*

### 1.2 MAINS

This manual is a part of the product.

Read carefully the warnings and instructions of this manual since they provide important information concerning the safety and maintenance.

## 1.3 GENERAL SAFETY INSTRUCTIONS

The use of this device is allowed only to personnel duly trained by an authorized ACCU dealer.

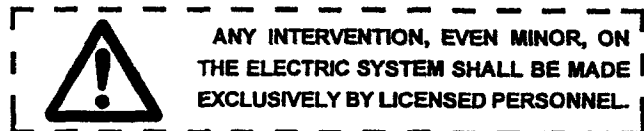
Any manomission or modification of this device or of its parts or components not previously authorized by the manufacturer waive the manufacturer from any damage consequent or related to the above mentioned manomissions.

Removing or manomitting safety devices or warning labels of the machine is an offense to the european safety regulations.

The use of this device is allowed only in locations with no explosion or fire hazard.

It is required the use of original accessories. This device is designed to receive original spare parts and accessories only.

The installation shall be carried out only by qualified personnel and within the respect of the instructions provided for in this manual.



Check for possible dangerous conditions during the operation of the machine. In such a case stop immediately the machine.

In case a defective functioning condition is detected, stop using the machine and call the authorized ACCU distributor for assistance.

### 1.4 NOMENCLATURE

Before installing and using the wheel balancer it is suggested that you become familiar with the nomenclature of the machine's components.

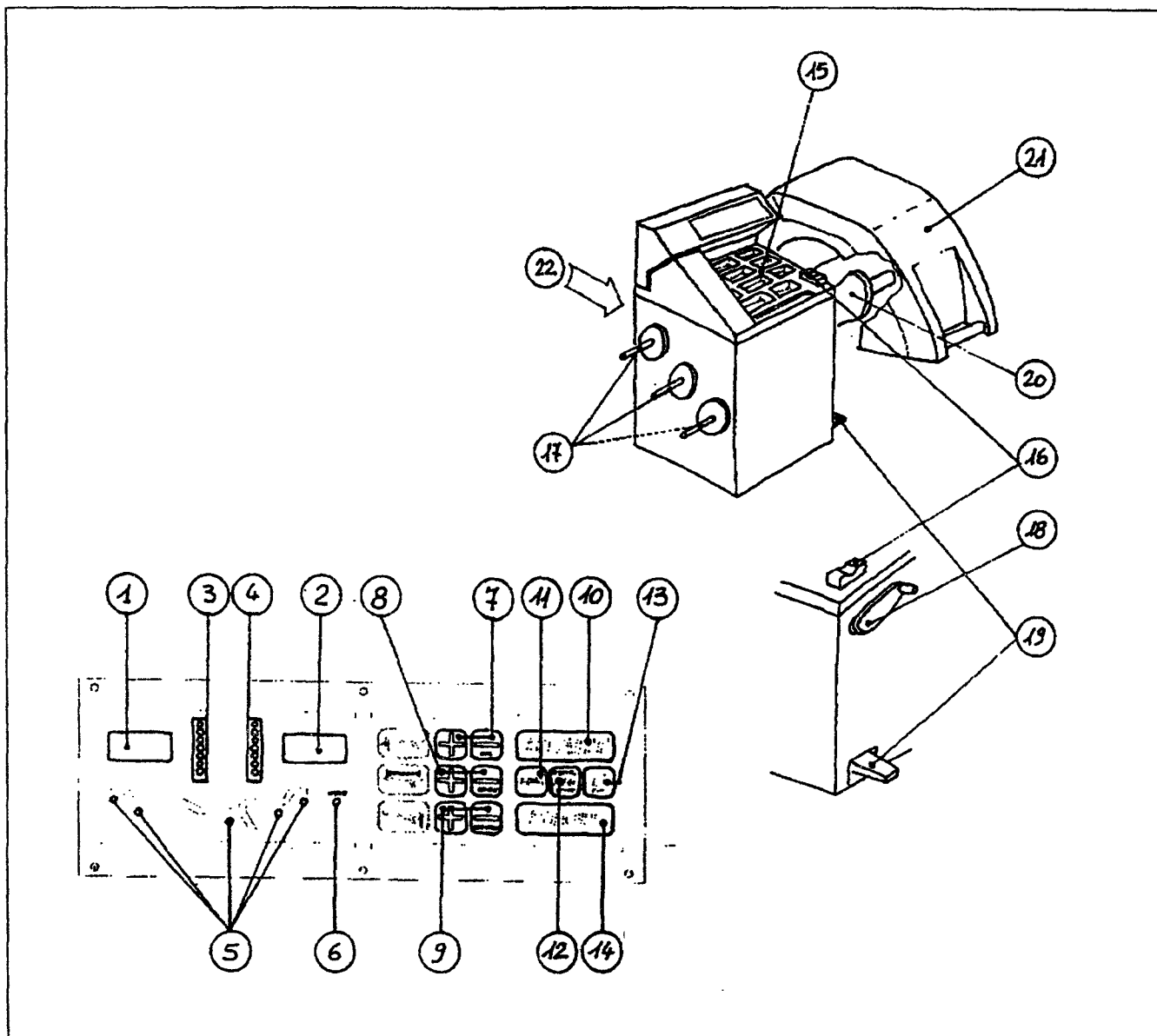


Fig.1

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>1. Display for inner plane imbalance</li> <li>2. Display for outer plane imbalance</li> <li>3. Display for position of inner plane imbalance</li> <li>4. Display for position of outer plane imbalance</li> <li>5. Display for wheel weight location</li> <li>6. Display for motorcycle dynamic program</li> <li>7. Rim offset buttons</li> <li>8. Rim width buttons</li> <li>9. Rim diameter buttons</li> <li>10. START button</li> <li>11. 'FINE' balancing button</li> </ul> | <ul style="list-style-type: none"> <li>12. Balancing programs button</li> <li>13. Multi-function/OPTimizing button</li> <li>14. STOP button</li> <li>15. Wheel weight tray</li> <li>16. Anvil</li> <li>17. Accessories location</li> <li>18. Rim offset/diameter gauge</li> <li>19. Foot brake</li> <li>20. Shaft</li> <li>21. Wheel guard</li> <li>22. Main switch</li> </ul> |
|--|--|

## 1.5 SPECIFICATIONS

Microprocessor wheel balancer for car, light commercial vehicle and motorcycle wheels

Weight with standard accessories ..... kg 135 (300lbs)

Electric specifications:

230VAC, 1ph, 50-60Hz, 7.5 Amp.

115VAC, 1ph, 60Hz, 15 Amp.

Motor power (1ph) ..... kW 0.37 (0.5 HP)

Rim diameter range ..... 10"-24" (250-610mm)

Rim width range ..... 1.5"-20" (40-500 mm)

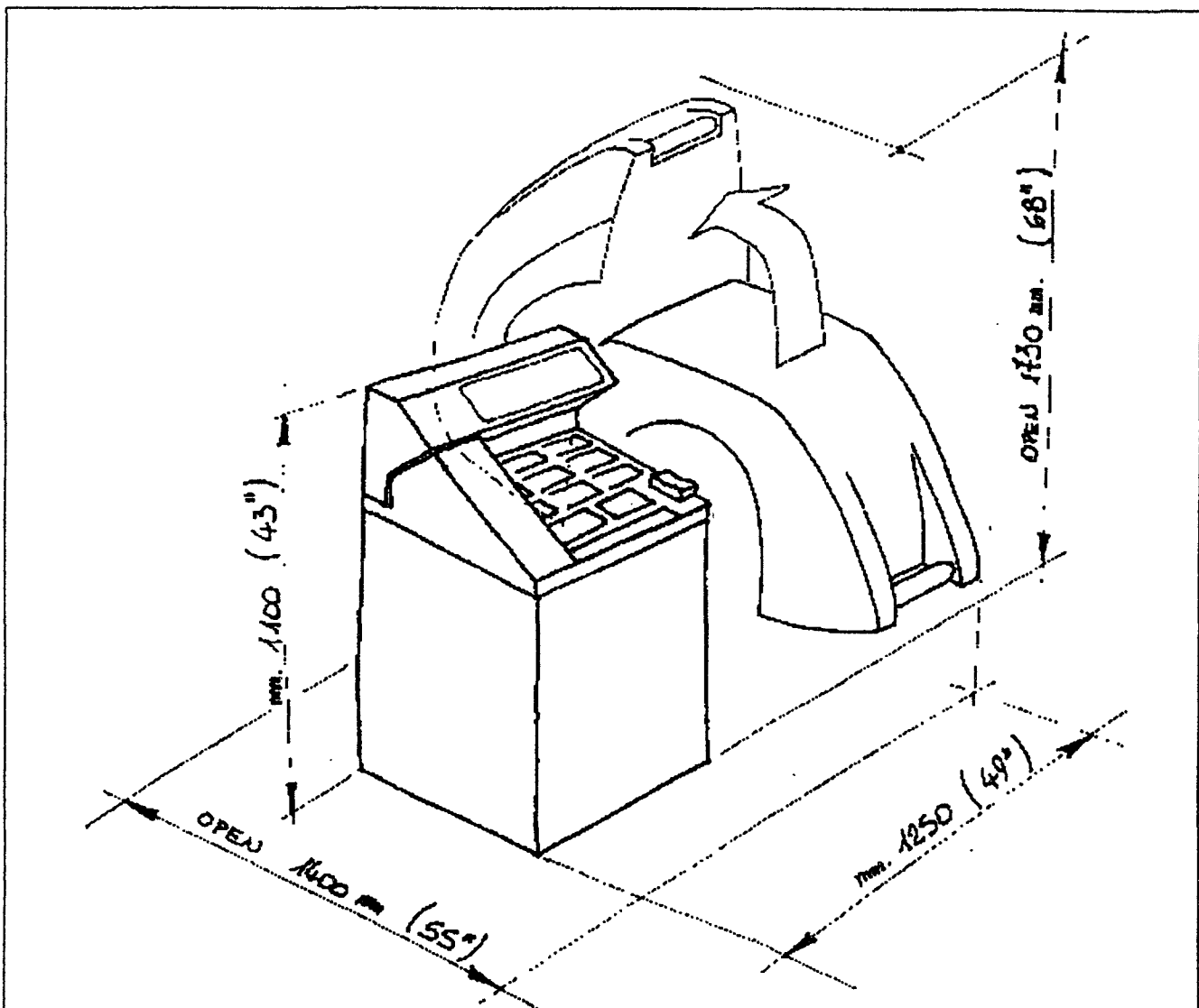
Max. tyre diameter ..... mm 950 (37"1/2)

Max. tyre width ..... mm 375 (14"3/4)

Max. wheel weight ..... kg 65 (143 lbs)

Acoustic pressure ..... < 70 dBA

## 1.6 DIMENSIONS OF THE MACHINE



**1.7 STANDARD ACCESSORIES**

**#4007580 Wheel calliper (Fig.3).**  
Allows to measure the rim width.

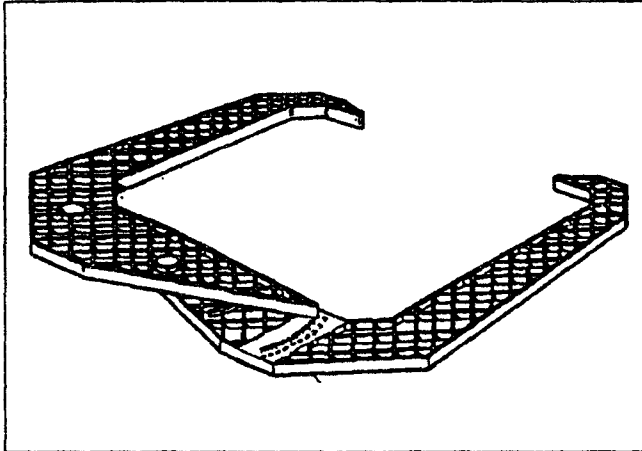


Fig.3

**#4016927 Conic adaptor with quick nut (Fig.4).**  
Allows to center all wheels with a center hole of diameter 40 to 137 mm. (1.57" to 5.39") by mean of 4 cones:

- #1 from 40 to 62 mm (1.57" to 2.44")
  - #2 from 51 to 81 mm (2.00" to 3.18")
  - #3 from 67 to 98 mm (2.63" to 3.85")
  - #4 from 94,5 to 137 mm (3.72" to 5.39")
- Description on use is described in @ 5.4

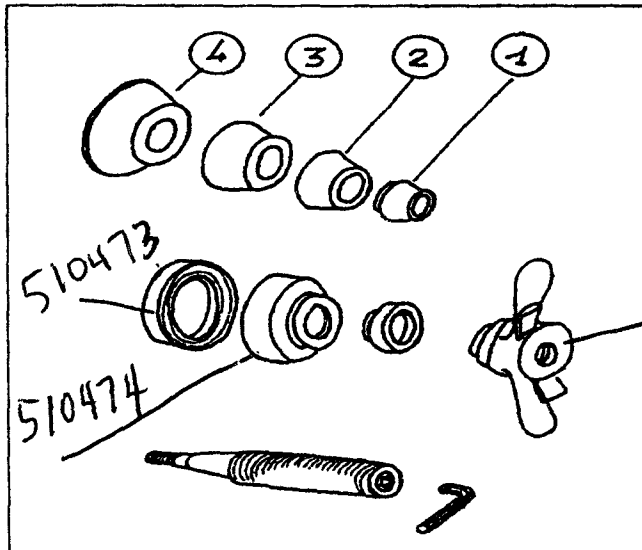


Fig.4

**#0006452 Weight pliers (Fig.5).**  
Necessary to fit and remove the wheel weights from the rim edge.

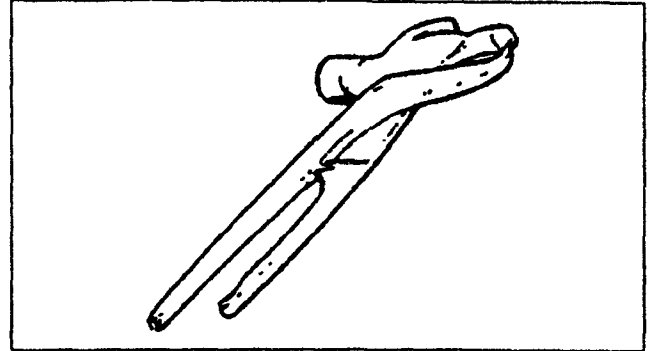


Fig.5

**#4016996 Wheel guard (Fig.6).**  
Protects the operator from abrasions or projections of wheel weights and debris.

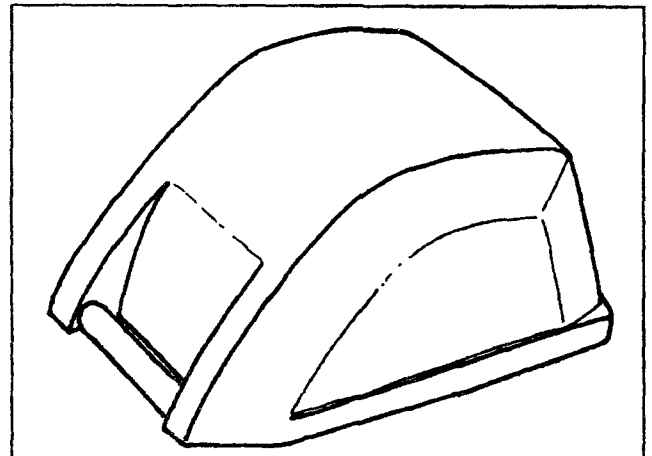


Fig.6

### 1.8 ACCESSORIES ON REQUEST

**#4017456 UF345 adapter** (Universal flange for centerless wheels Fig.7).

Allows to center 3,4,5,6 studs wheels without a center hole.

Description on use is provided in @ 5.4

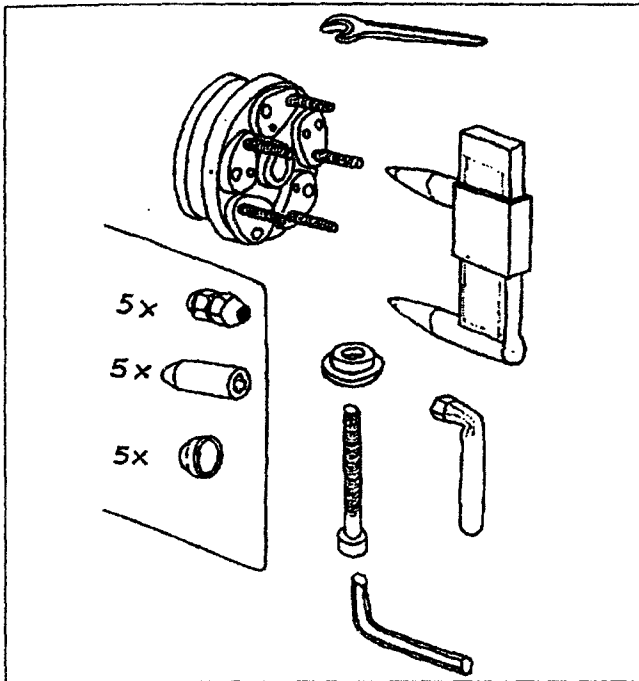
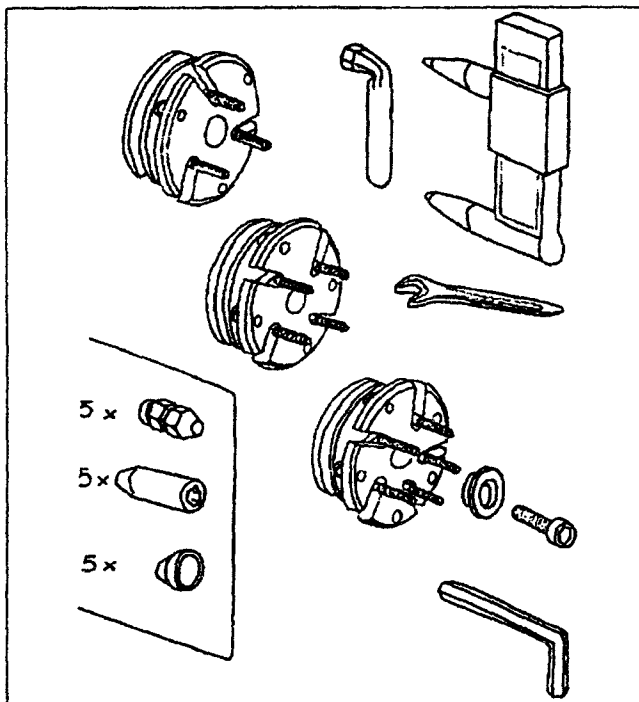


Fig.7

**#4017767 UF3-UF4-UF5 Adapter** (Fig.8).

Set of 3 flanges to center 3,4,5,6 stud wheels without a center hole. Description on use is provided in @ 5.4.



**#4017551 Center hubs** (Fig.9).

Set of special hubs to be used in combination with the UF345 or UF3-UF4-UF5 adapters for a more accurate centering of some special wheels.

Description on use is provided in @ 5.5.

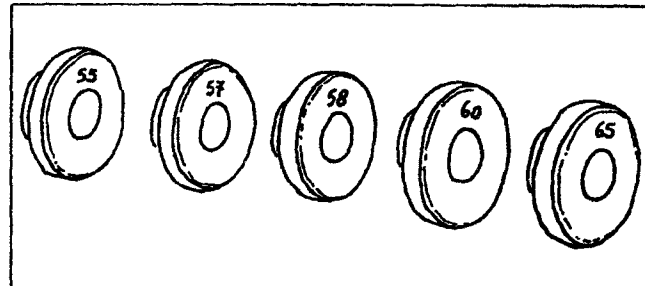


Fig.9

**#4017547 Kit for light truck wheels** (Fig.10).

Allows to center light truck wheels with a center hole of diameter 120 to 170 mm (4.72" to 6.69"). Description on use is provided in @ 5.3.

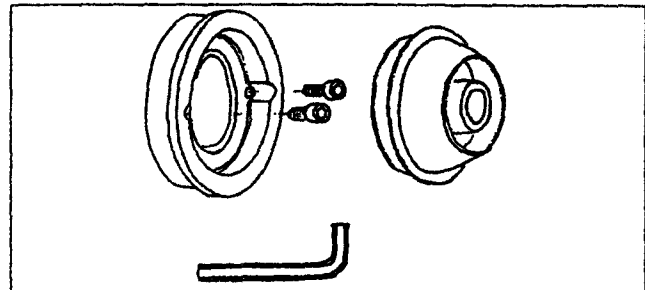


Fig.10

**#0018394 GCH3 Hub** (Fig.11).

Allows to center certain german car rims which require a very accurate centering.

The diameters are 57,3 - 67,3 - 73,3 mm (2.25"-2.64"-2.88")

To be used in place of a cone (see @ 5.1)

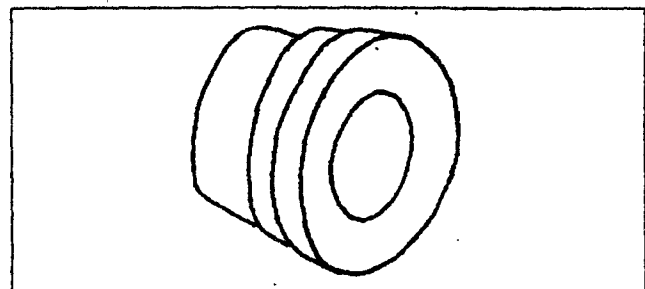


Fig.11

**#4017549 DX 345 adapter (Fig. 12).**

Allows to center on stud holes and center hole wheels with untrue center hole. Centering is made with a back cone and with the DX 345 adapter from the outside in place of the plastic drum.

Description on use is provided in @ 5.2

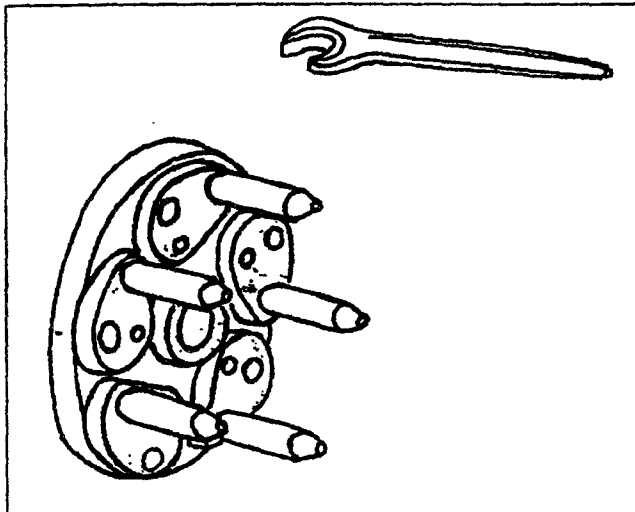
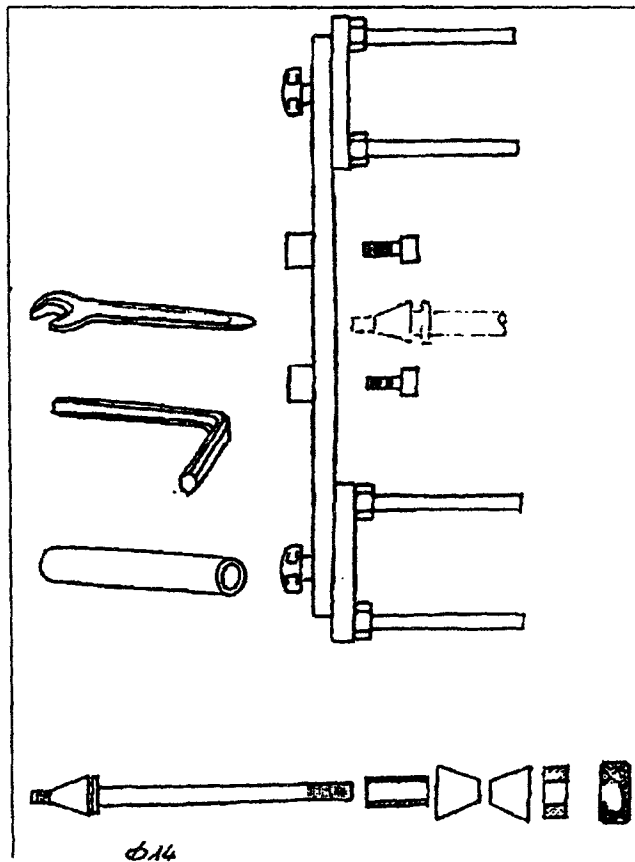


Fig.12

**#4017548 Motorcycle adapter (Fig. 13).**

Allows to center all motorcycle wheel with a center hole diameter of 14-16mm (0.55"-0.62"). Description on use is provided in @ 5.5



**#4018395 MS10 kit (Fig. 14).**

Special shaft kit to be used in combination with the motorcycle adapter #4017548 to center wheels with hole diameter of 10-12 mm (0.39"-0.47").

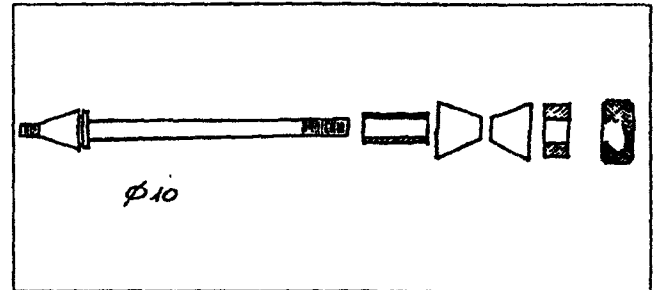


Fig.14

**#4018396 MS18 kit (Fig. 15).**

Special shaft kit to be used in combination with the motorcycle adapter #4017548 to center wheels with hole diameter of 18-20 mm (0.70"-0.78").

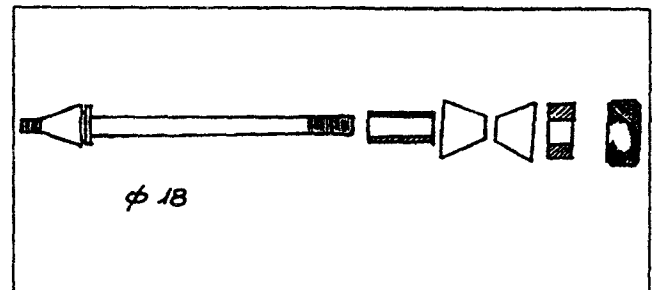


Fig.15

**#4018398 BMW Motorcycle adapter (Fig. 16).**

Special flange studied for BMW motorcycles rear wheels on R80 1981 series and all K series.

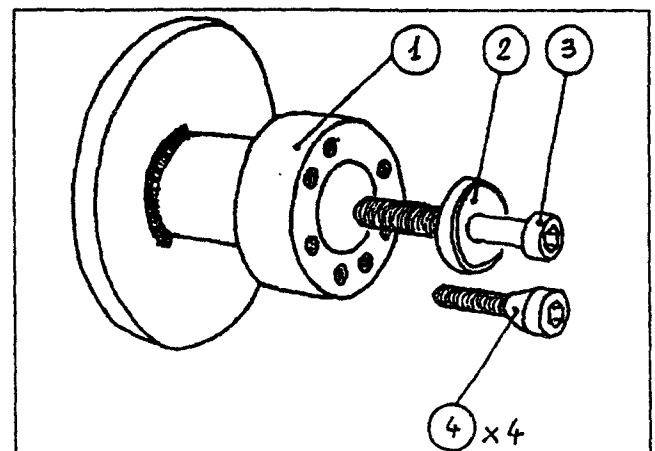


Fig.16

NOTE:  
OTHER SPECIAL ACCESSORIES ARE AVAILABLE.  
INSTRUCTIONS ARE CONTAINED WITH THE ACCESSORIES.

CONSULT THE AUTHORIZED ACCU DISTRIBUTOR FOR EFFECTIVE INFORMATION

## 1.9 GENERAL PRECAUTIONS

- A. DURING THE USE AND MAINTENANCE OF THE MACHINE IT IS MANDATORY TO COMPLY WITH ALL LAWS AND REGULATIONS FOR ACCIDENT PREVENTION.**
- B. THE ELECTRIC POWER SOURCE MUST HAVE A GROUND CABLE AND THE GROUND CABLE OF THE MACHINE (YELLOW WITH GREEN) MUST BE CONNECTED TO THE GROUND CABLE OF THE POWER SOURCE.**
- C. BEFORE ANY MAINTENANCE OR REPAIRS ARE ACCOMPLISHED THE MACHINE MUST BE DISCONNECTED FROM THE ELECTRIC SUPPLY.**
- D. NEVER WEAR TIES, CHAINS OR OTHER LOOSE ARTICLES WHEN USING, MAINTAINING OR REPAIRING THE MACHINE. LONG HAIR IS ALSO DANGEROUS AND SHOULD BE KEPT UNDER A HAT. THE USER MUST WEAR PROPER SAFETY ATTIRE IE; GLOVES, SAFETY SHOES AND GLASSES.**

### 1.9.1 SAFETY DEVICES

This machine is provided of a wheel guard to protect the operator from hazards due to loose wheels, abrasion and projection of wheel weights and debris. The machine cannot be activated if the wheel guard is not lowered.

The machine will stop in case the wheel guard is lifted.

There is a STOP button on the control panel.

The machine is equipped with a foot brake as an additional mean to stop the shaft.

## 2.0 CARRIAGE INSTRUCTIONS

The machine is crated in a carton box of appropriate strength.

The box is mounted in a steady way on a pallet.

The carriage of the machine in its packing must be made with an appropriate lifting device (fork lift) (Fig. 17).

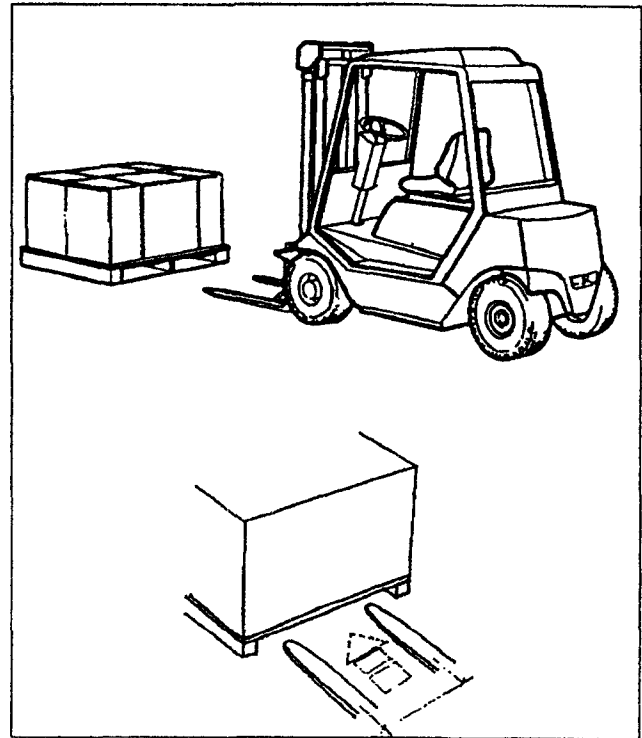


Fig.17

## 2.1 UNCRATING INSTRUCTIONS

Uncrate the machine paying attention when cutting the plastic hoops or during any other operation which may determine an hazard.

After removing the carton check for any visible damage to the machine and its components.

In case of doubts call qualified personnel for assistance.

The materials of the packing (plastic bags, polystyrene, nails, screws, wood etc.) shall not be left behind and shall not be left at children reach since may be possible hazard causes.

Place the above mentioned materials into a trash container and dispose following the running local regulations.



**ALWAYS WEAR GLOVES WHEN UNCRATING THE MACHINE TO PREVENT SCRATCHES OR ABRASIONS DUE TO THE CONTACT WITH PACKING MATERIALS.**

## 2.2 INSTALLATION AREA

Install the machine in a covered and dry place, possibly closed.

The installation of the machine requires a free space of at least cm 215x270 (7'1"x9') (Fig.18).

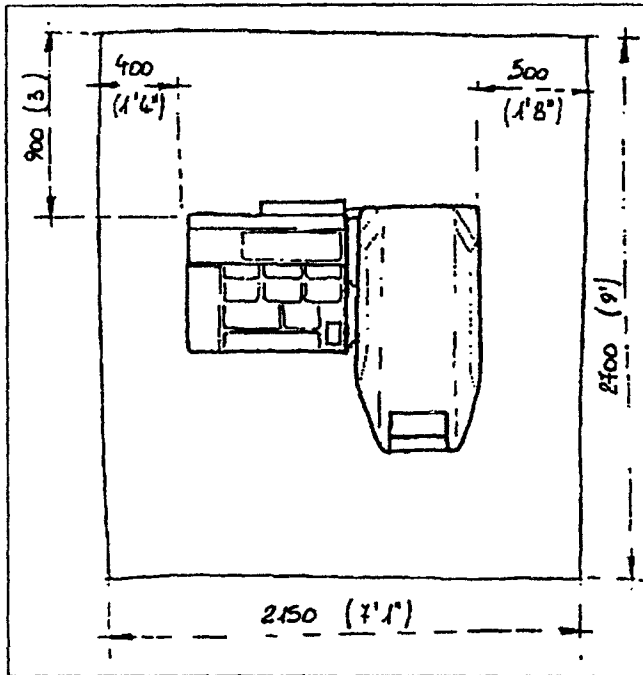


Fig.18

Make sure that from the operating position the user can see all of the machine and the surrounding area.

The operator shall forbid, in such an area, the presence of non authorized persons and of objects which may create possible hazards.

The machine shall be installed on a horizontal floor preferably even. Do not install the machine on a sinking or irregular floor.

In case the machine is installed on a raised floor, the floor must have a capacity of at least 5000 N/m<sup>2</sup> (500 kg/m<sup>2</sup> or 110 lbsxsqft).

It is not required to secure the machine to the floor.

## 3.0 INSTALLATION INSTRUCTIONS

To install the machine proceed as follows:

- A. Install the accessories supports (Fig.19). Tighten them firmly.

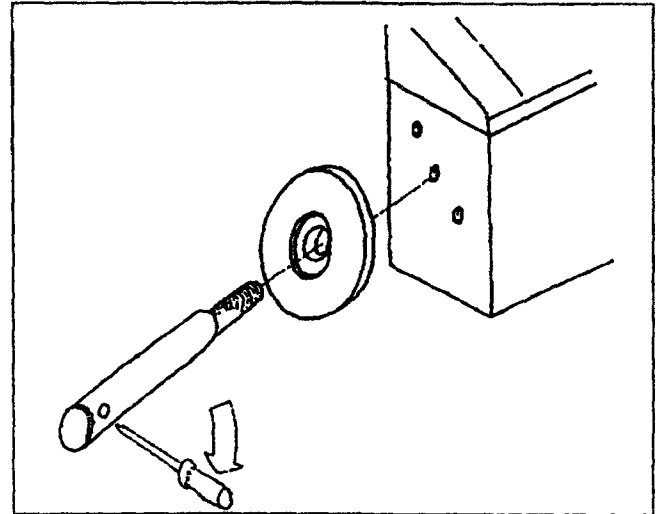


Fig.19

- B. Remove the screws that secure the machine to the pallet and slide it onto the floor where it is to be installed. Hold the machine on the wheel guard support base and on the accessories supports (Fig.20)

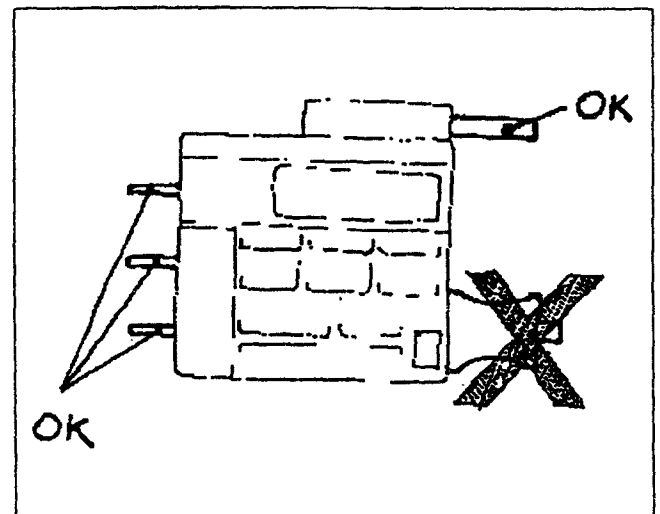
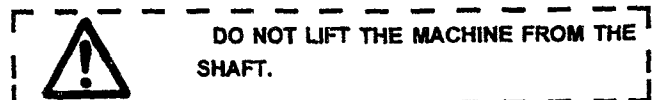


Fig.20



DO NOT LIFT THE MACHINE FROM THE SHAFT.

### C. Install the wheel guard (Fig.21)

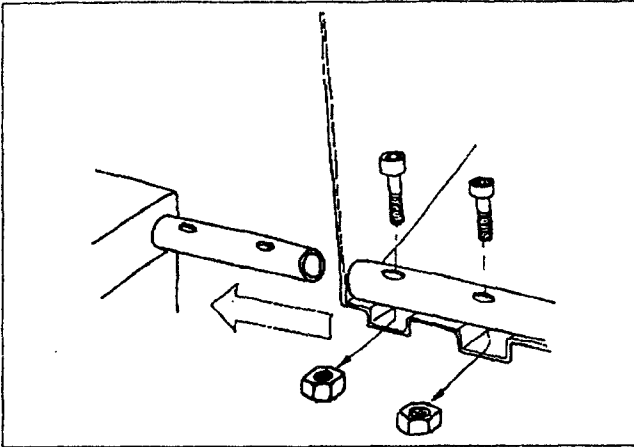
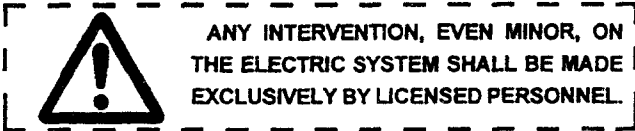


Fig.21

### D. Place the cones and other accessories onto the supports provided.

## 3.1 ELECTRIC INSTALLATION



Check on the plate of the machine that the electrical specifications of the power source are the same as the machine.

The machine uses 0.5 kW .

Electrical specifications are clearly marked on a label at the end of the electric cord.

Connect the electric cord of the machine with an approved plug.

The ground cable (green and yellow) must be properly connected.

Before connecting the machine to the power source check that the power supply has an efficient grounding system.

Check that the power supply has an automatic circuit breaker with a differential circuit set at 30 mA.

The electric motor operates in a wide voltage range (plus 10% - minus 7%) and frequency range (50 or 60 cycles) and has a class of insulation suitable for hot and moist climates.

## 4.0 CONTROLS

The function of all the controls is very easily understood while you use the machine.

Remember that in case of any problem or emergency the STOP button will stop all functions of the machine.

## 5.0 MOUNTING THE WHEEL

Before starting any balancing procedure it is very important that the wheel is mounted on the machine with the proper adaptors.

A non correct centering of the wheel may occur in considerable imbalance.

There are many types of wheels and ACCU supplies adaptors of good quality and durability for the large majority.

However if you meet special wheels which may require a specific adaptor, call your authorized ACCU distributor.

The rims may be divided into these major groups:

- A. Car rims with a true center hole.
- B. Car rims without a center hole.
- C. Car rims with an untrue center hole.
- D. Light truck rims.
- E. Motorcycle rims.

## 5.1 CENTERING WHEELS WITH A TRUE CENTER HOLE

This is the most common type of car rims, either in steel or light alloy.

These rims can be correctly centered on the middle hole with a steel cone included in the standard accessories.

- A. Mount the threaded shaft onto the main shaft of the balancer.

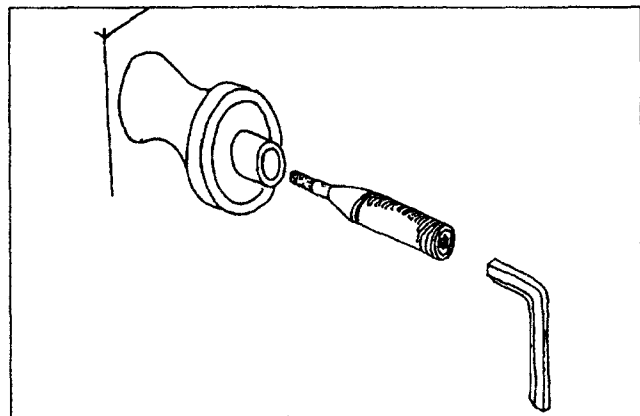


Fig.22

**IMPORTANT!**

**CHECK THAT THE SURFACES TO BE MATCHED ARE PERFECTLY CLEAN AND NOT DAMAGED. AN INCORRECT MOUNTING MAY RESULT IN RELEVANT IMBALANCE.**

B. Choose the cone that better fits to the size of the center hole of the wheel.

**NOTE:**

SOME GERMAN CAR MANUFACTURER REQUIRE THAT THE WHEELS OF THEIR MODELS ARE CENTERED WITH A HUB, INSTEAD OF A CONE.

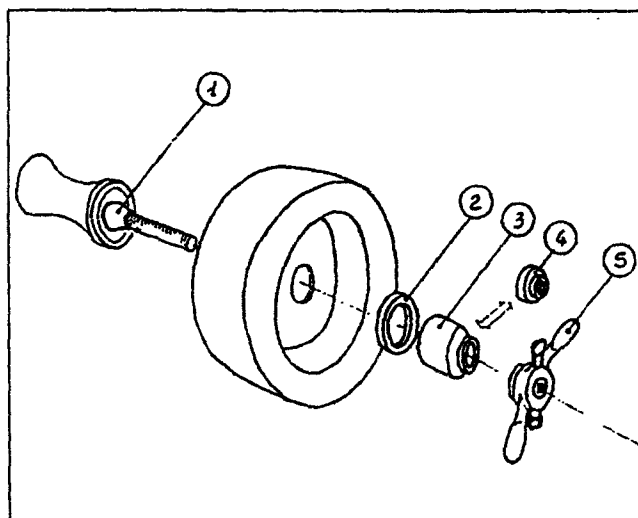
IN SUCH A CASE USE THE HUB GCH3 #0018394 (ON REQUEST) WHICH FITS TO WHEELS WITH A CENTER HOLE OF DIAMETER 57,3 - 67,3 - 73,3MM (2.25" - 2.64" - 2.88").

C. Slide the cone (#1 Fig.23) onto the shaft of the balancer and mount the wheel. A spring is enclosed in the body of the shaft to maintain a sufficient pressure on the cone to center the wheel properly. Secure the wheel with the quick nut (#5 Fig.23) and attached plastic drum (#3 Fig.23).

If the rim is made of a light alloy, attach the rubber protector (#2 Fig.23) to the plastic drum.

In certain types of rims it is required to use the plastic ring (#4 Fig.23).

The plastic drum or plastic ring can be attached to



the quick nut by a light hand pressure.

Fig.23

D. To operate the quick nut pull the lock-unlock lever (Fig.24).

Depress the foot brake to hold steady the machine shaft and slide the quick nut on the threaded shaft. When in contact with the rim, release the lock-unlock lever and tighten firmly.

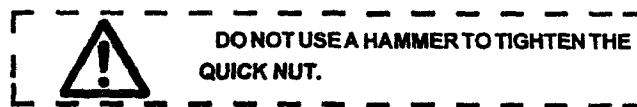
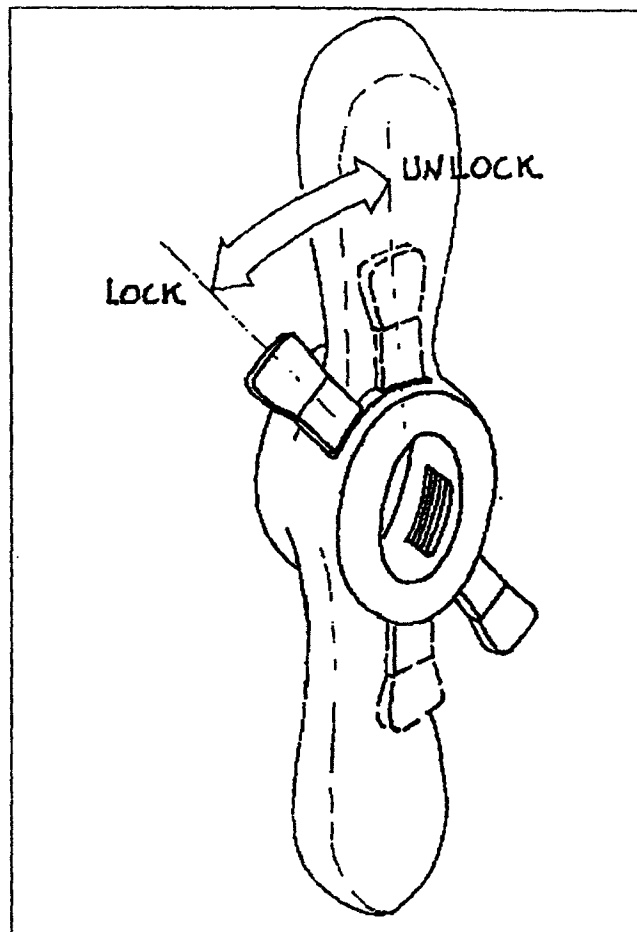
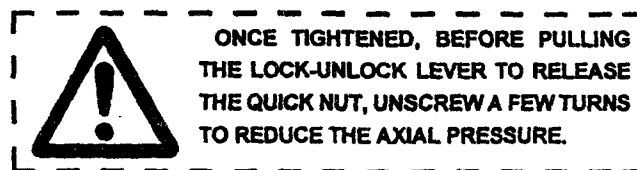


Fig.24



E. If the hole of the rim runs true on the outside of the rim, the rim can be mounted with a cone from the outside.

This method is used on most lighth truck or 4-wheel drive steel rims (Fig.25).

In this case do not use the plastic drum. If needed use an additional cone as a spacer.

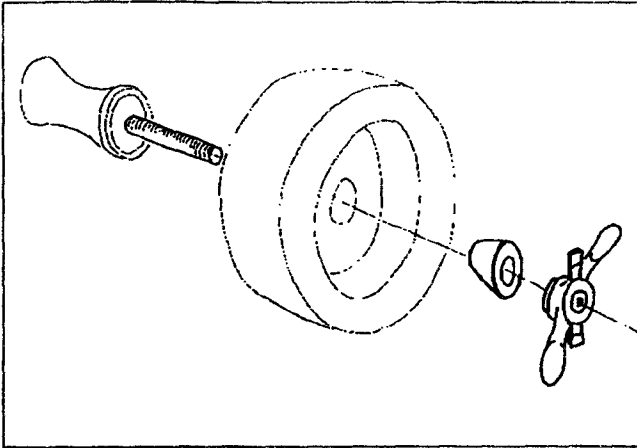


Fig.25

F. Check that the wheel runs correctly by turning the wheel by hand.

#### IMPORTANT!

TO MINIMIZE MOUNTING ERRORS IT IS SUGGESTED THAT THE WHEEL IS MOUNTED ON THE BALANCER AND ON THE VEHICLE WITH THE VALVE STEM IN THE SAME POSITION (I.E. 12 O'CLOCK).

## 5.2 CENTERING WHEELS WITH AN UNTRUE CENTER HOLE

Some car manufacturers center the wheels on the studs although the wheels are provided with a center hole (especially the Japanese manufacturers).

Centering the wheel with a cone in the center hole might in this case bring to considerable errors.

The wheel can be mounted as a wheel without a center hole as described in @ 5.4 but a quicker way is to center the wheel with a back cone and with the DX 345 adapter

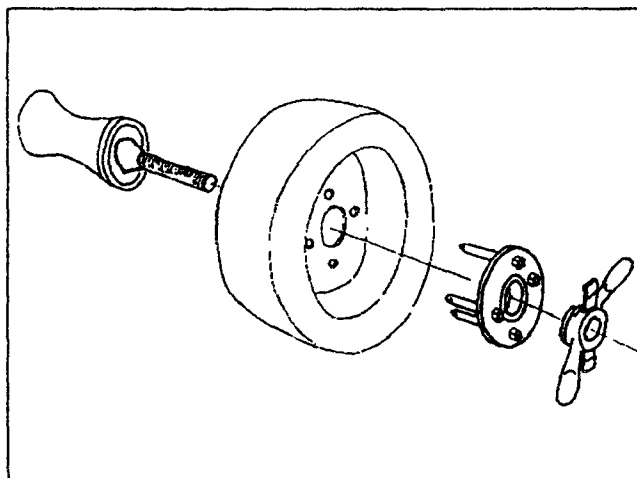


Fig.26

To convert the DX345 adapter from 5 studs to 4 studs (or 3 studs) proceed as follows:

- A. Slide the adaptor onto the threaded shaft of the balancer. This is suggested only for an easier operation.
- B. Remove all of the nuts (#1 Fig.27) on the back of the flange except the zinc plated self-locking nut (#2

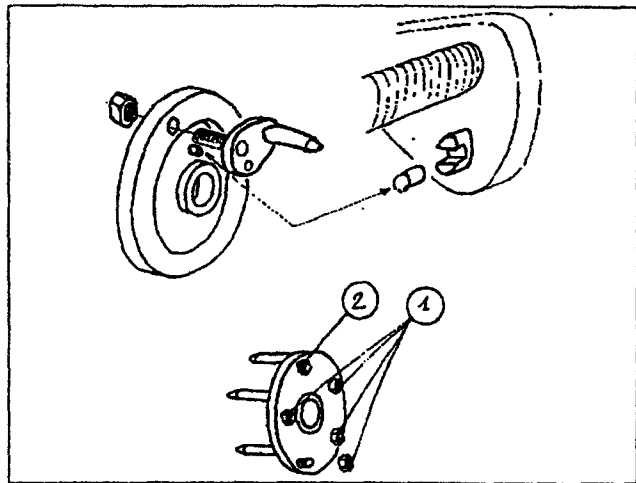


Fig.27).

Fig.27

#### NOTE:

THE ZINC PLATED SELF-LOCKING NUT HOLDS THE REFERENCE STUD, THAT IS NEVER TO BE REMOVED.

- C. Remove all the studs, except the reference stud. Reassemble the studs on the flange by introducing the threaded pins into the holes marked with the number of the desired configuration (3,4 or 5). Ensure that the guide groove is engaged in the matching pin (Fig. 27). Look at the numbers stam-

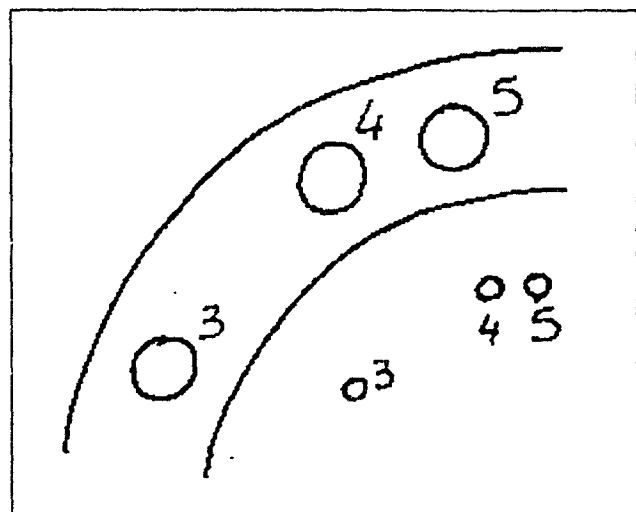
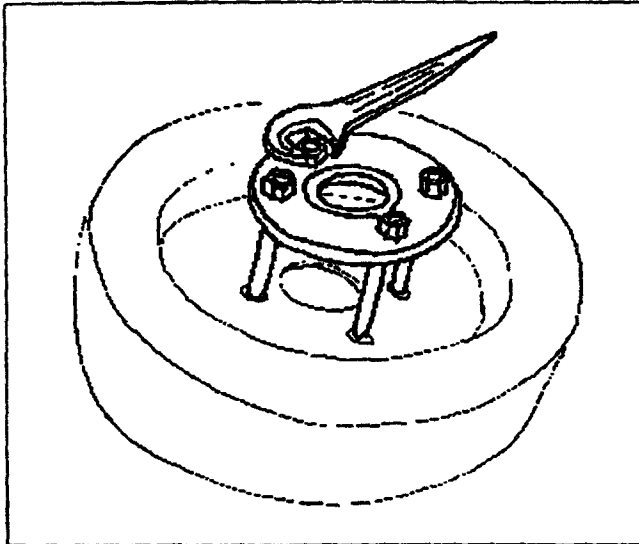


Fig.28

D. Fit the nuts onto the threaded pins to hold the studs in place. Do not tighten the nuts.

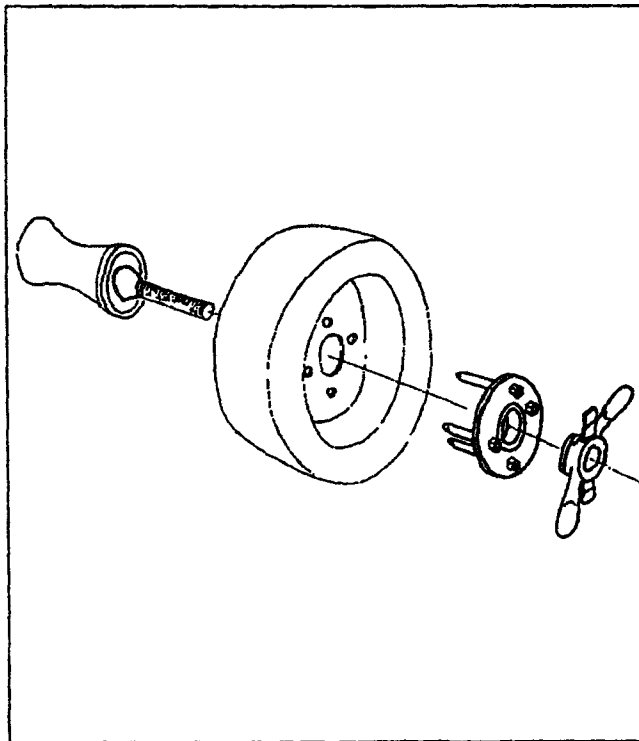
E. Expand and retract the studs to check that all of them are synchronized.



F. Adjust the studs at the right diameter (Fig.29).

Fig.29

G. Tighten the nuts with finger pressure only.



H. Utilize the flange as shown in Fig.30.

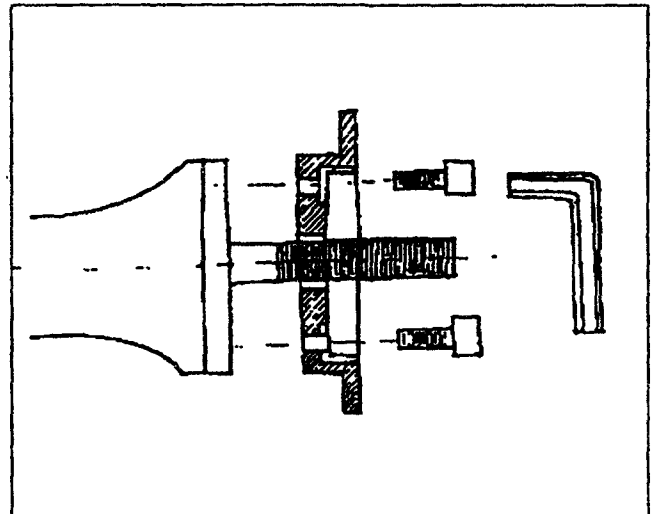
Fig.30

**NOTE:**  
THIS CENTERING METHOD IMPROVES ACCURACY ALSO ON WHEELS WITH A TRUE CENTER HOLE AND CAN BE USED VIRTUALLY ON ANY MAKE OF WHEEL WITH A CENTER HOLE.

### 5.3 CENTERING LIGHT-TRUCK WHEELS.

Light truck wheels are centered as normal car wheels. However when the diameter of the center hole exceeds 127 mm. (5") it is necessary to use the Kit for light truck wheels (on request #4017574). This kit covers the range 120-170 mm. (4.72" - 6.69").

A. Mount the spacer disc on the balancer shaft



(Fig.31).

Fig.31

B. Center the wheel with the dual cone from the outside (Fig.32).

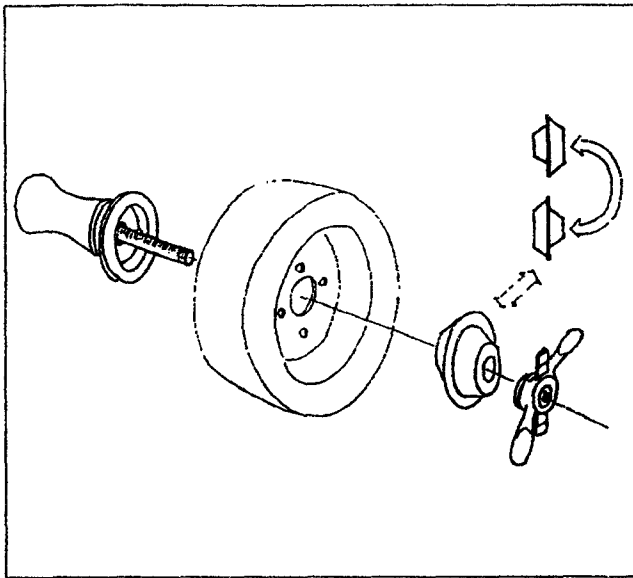


Fig.32

- B. Remove all of the nuts (#1 Fig.34) on the back of the flange except the zinc plated self-locking nut (#2 Fig.34).

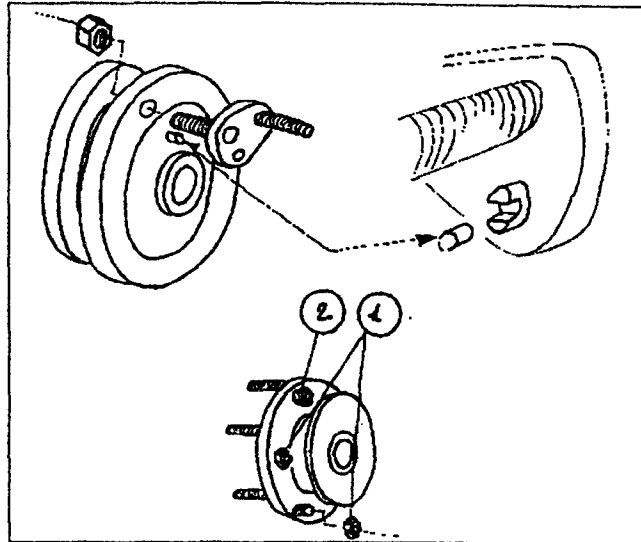


Fig.34

### 5.4 CENTERING WHEELS WITHOUT A CENTER HOLE

In this case the wheel shall be mounted on the studs with the UF345 adapter #4017546 (on request).

The UF345 adapter can be easily preset to mount wheels with 3,4,5 and 6 studs or multiples, in the following way:

- A. Dismount the threaded shaft and mount the UF345 adapter (Fig.33). Tighten the screw firmly.

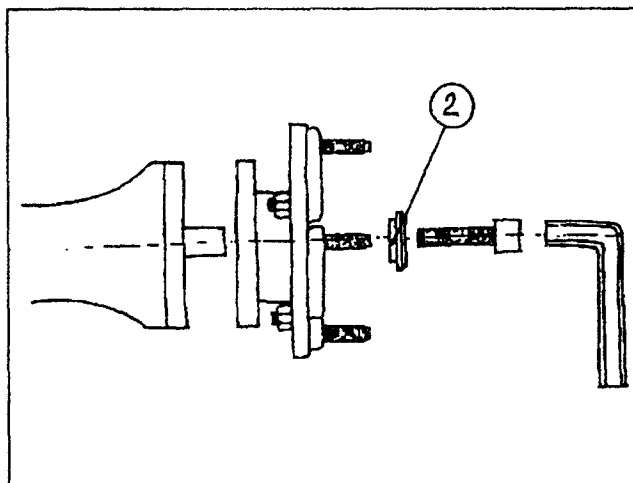


Fig.33

NOTE:  
THE ZINC PLATED SELF-LOCKING NUT HOLDS THE REFERENCE STUD, THAT IS NEVER TO BE REMOVED!

- C. Remove all the studs, except the reference stud. Reassemble the studs on the flange by introducing the threaded pins into the holes marked with the number of the desired configuration (3,4 or 5). Ensure that the guide groove is engaged in the matching pin (Fig. 34). Look at the numbers stamped on the flange to match hole and pin (Fig.35).

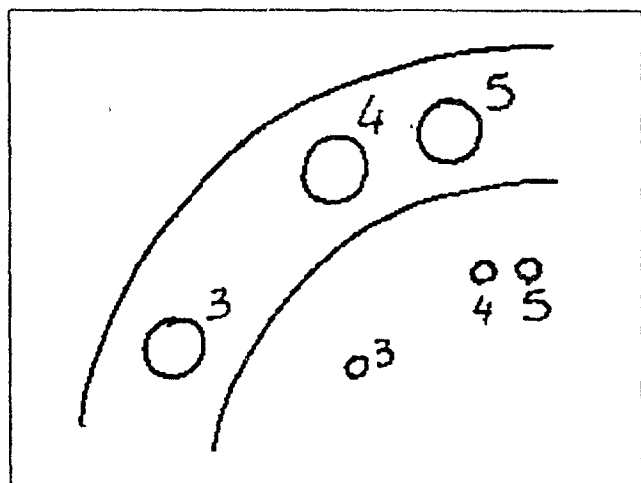


Fig.35

**IMPORTANT!**  
**CHECK THAT THE SURFACES TO BE MATCHED ARE PERFECTLY CLEAN AND NOT DAMAGED. AN INCORRECT MOUNTING MAY RESULT IN RELEVANT IMBALANCE.**

- D. Fit the nuts onto the threaded pins to hold the studs in place. Do not tighten the nuts.

- E. Expand and retract the studs to check that all of

F. Adjust the studs at the right diameter (Fig.36).

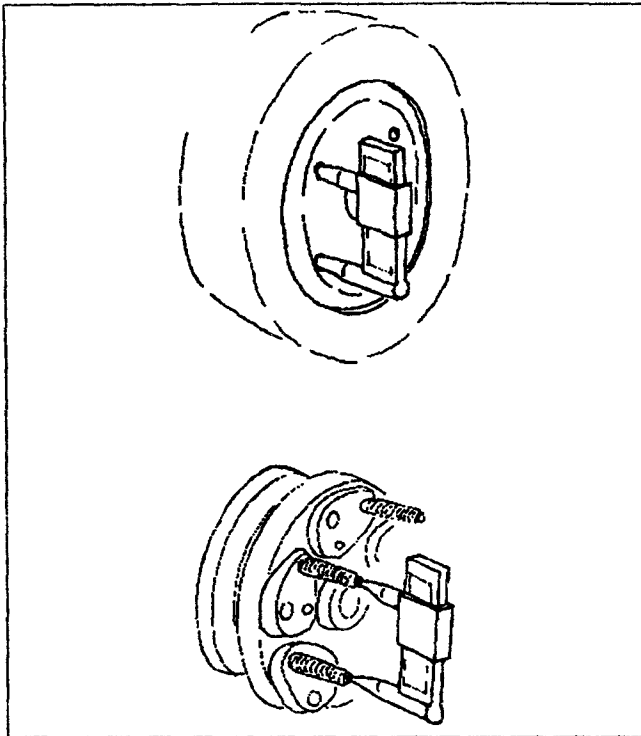


Fig.36

G. Tighten the nuts with finger pressure only.

H. Choose the type of nut that better fits to the shape of the rim stud holes.

Mount the wheel on the adapter and tighten the nuts in cross with even torque.

**NOTE:**

ON REQUEST ACCU SUPPLIES 3 SEPARATE FLANGES FOR 3 HOLES, 4 HOLES AND 5 HOLES RIMS (UF3-UF4-UF5 ADAPTER #4017767).

IN THIS CASE JUST MOUNT ON THE SHAFT OF THE MACHINE THE RIGHT FLANGE. NO ADJUSTMENT IS REQUIRED, EXCEPT FOR THE DIAMETER OF THE STUDS CIRCLE.

**5.5 CENTERING SPECIAL WHEELS WITH NO CENTER HOLE**

Some wheels (french,german,italian made) have no center hole or an untrue center hole and require a special centering hub to be used in conjunction with the UF345 or UF3-UF4-UF5 adapters.

A kit of 5 different hubs is available on request (#4017551) and includes the following diameters:

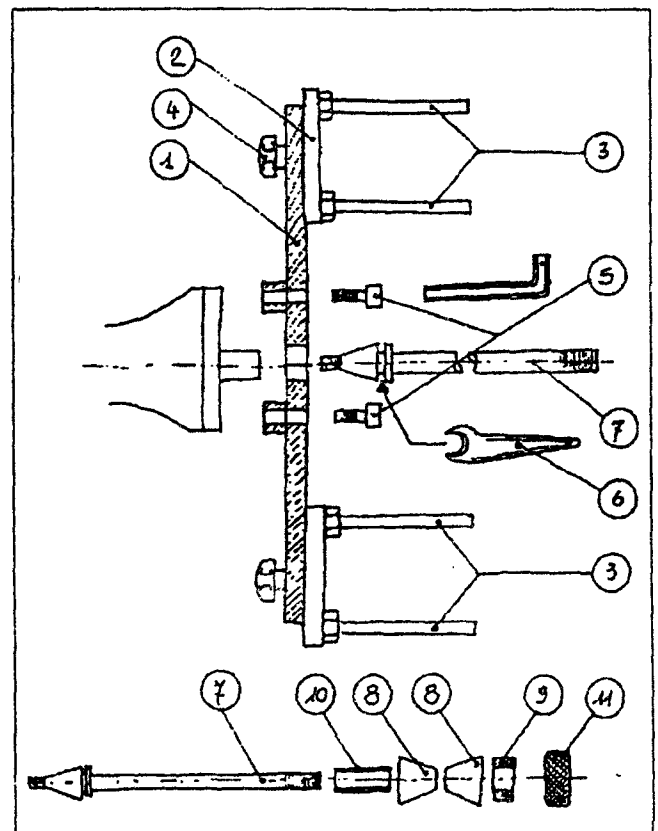
- mm 55 (2.16")** for Citroen AX
- mm 57 (2.24")** for BMW, Volkswagen, Audi, Chrysler, SEAT
- mm 58 (2.28")** for Renault, Citroen CX
- mm 60 (2.36")** for Renault
- mm 65 (2.55")** for Peugeot, Citroen XM/BX/ZX

In this case mount the hub on the UF345 in place of the ring (#2 Fig.33). The hubs are marked for easier recognition.

**5.6 CENTERING MOTORCYCLE WHEELS**

A. Remove the threaded shaft from the balancer.

B. Mount the Motorcycle adapter #4017548 (on request) (Fig.38).



C. Mount the shaft (#7 Fig.38) tightening it firmly by using the tool provided (#6 Fig.38).

**NOTE:**

THE ADAPTER #4017548 INCLUDES A SHAFT SUITABLE FOR RIMS WITH A HOLE OF 14-16 MM. (0.55"-0.62").

TO COVER OTHER CENTER HOLE DIAMETERS THE FOLLOWING KITS ARE AVAILABLE:

#4018395 MS10 KIT FOR HOLES 10-12 MM.(0.39"-0.47").

#4018396 MS18 KIT FOR HOLES 18-20 MM (0.70"-0.78").

D. Mount the wheel as shown in Fig.39. Utilize spacers (#9,#10 Fig.38) as required.

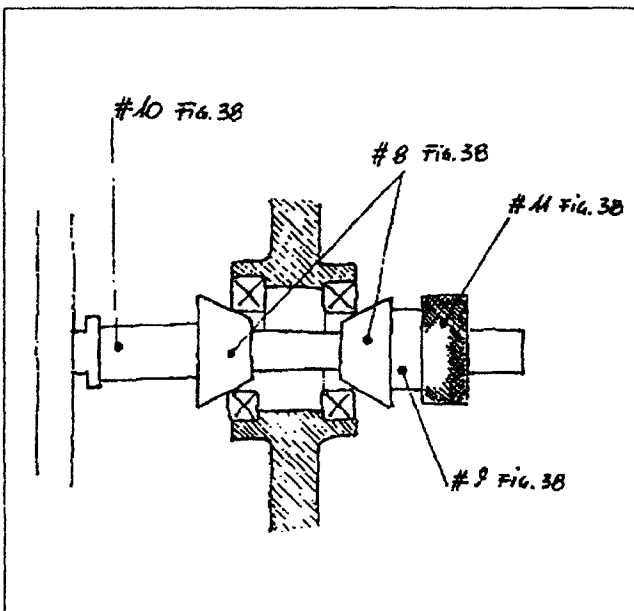


Fig.39

E. Adjust the driving pins (#3 Fig.38) so that they will not allow the wheel to shift with respect to the shaft.

**NOTE:**

FOR SOME SPECIAL BMW MOTORCYCLES REAR WHEELS (R80 1981 SERIES AND ALL K SERIES) A SPECIAL FLANGE IS NEEDED AND IS AVAILABLE ON REQUEST (#4018398) (FIG.40).

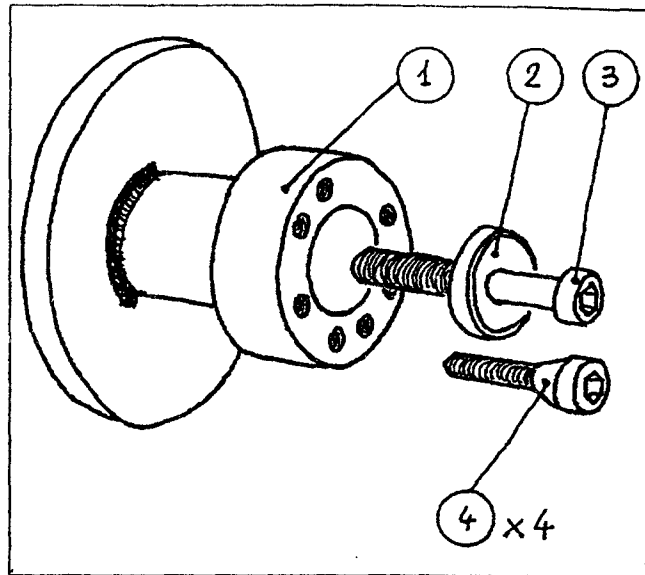


Fig.40

## 6.0 BALANCING PROCEDURE

Once the wheel is properly mounted onto the balancer, turn the machine on.

The machine shows all the displays lit on for two seconds, as a check. After that, the imbalance displays show '0' '0'.

Remove all wheel weights from the rim to include tape weights.

### 6.1 DATA INPUT

- A.** Measure the rim offset and diameter with the gauge as shown in Fig.41.  
 Hold the gauge steady until the displays blink the value of the rim diameter (left) and rim offset (right).  
 Bring the gauge at rest position to enter the values automatically.

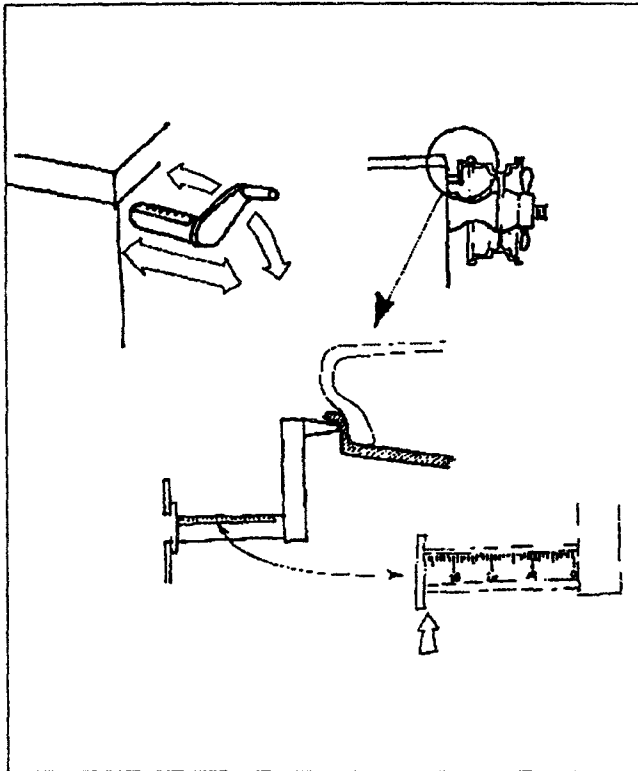
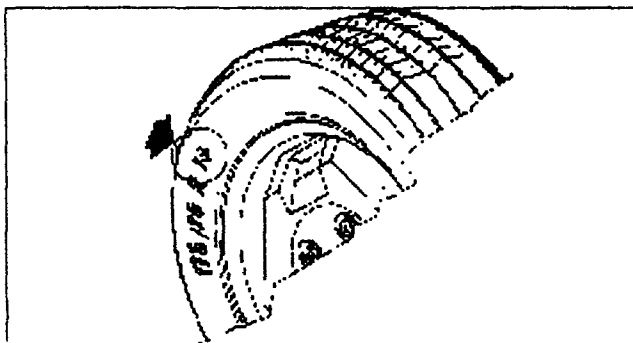


Fig.41

- B.** The rim offset and diameter can also be manually input by using the appropriate push buttons (#1 -#2 and #5 -#6 Fig.45).  
 In this case read the rim diameter, always marked on the sidewall of the tyre (Fig.42).  
 In case of a motorcycle wheel, if the diameter where the wheel weights will be fitted is considerably lower than the nominal diameter of the rim, the value manually introduced in the computer shall be consequently reduced.



- C.** For dynamic balancing of motorcycle wheels, the offset gauge may not have enough stroke.  
 In this case select the motorcycle dynamic program (see @ 6.2.H) and attach the extension (provided with the motorcycle adapter) on the edge of the offset gauge (Fig.43). The program automatically adds the extension length to the measured value.

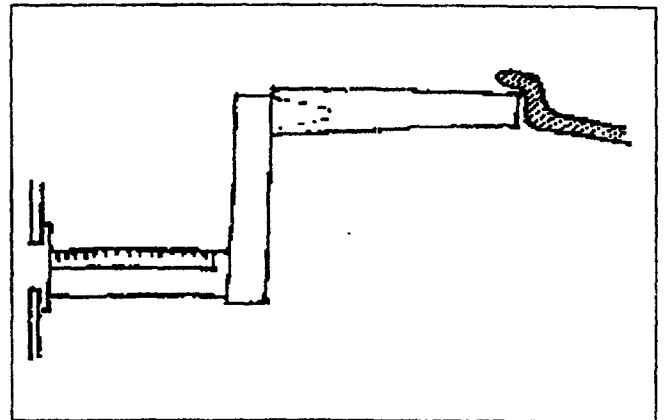


Fig.43

- D.** Measure the rim width with the wheel gauge supplied standard (Fig.44).

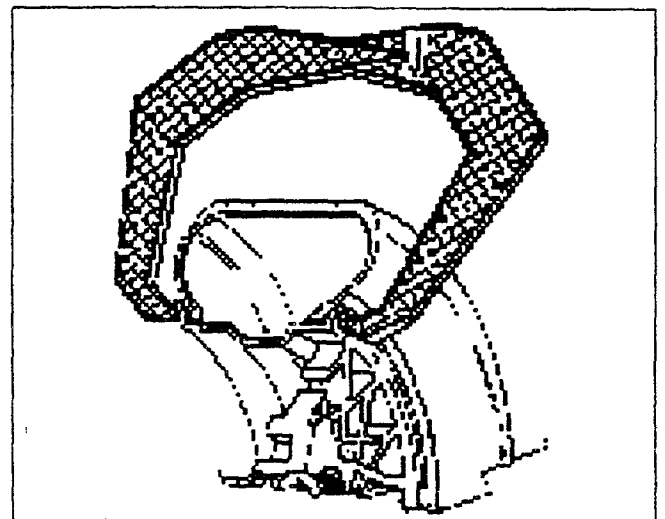


Fig.44

- E.** Input rim width in the balancer with the appropriate buttons (#3 and #4 Fig.45).  
 The rim width is often marked on the rim and this value can be introduced directly in the program.  
 Values displayed are in inches but can be easily converted in millimeters (see @7.3).

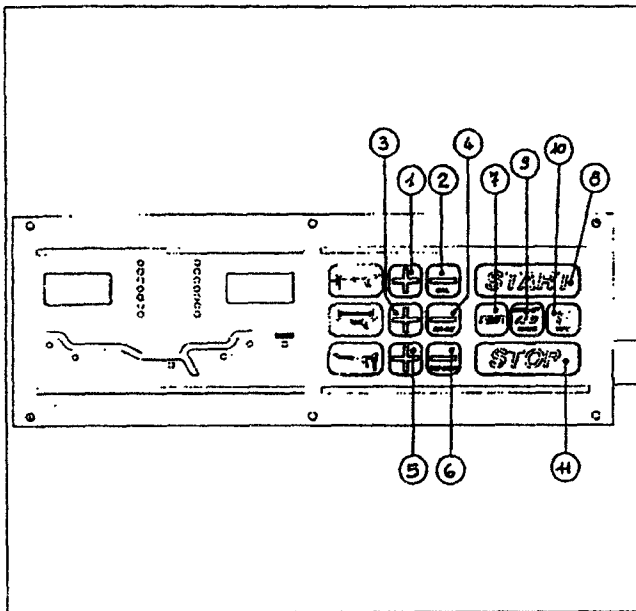


Fig.45

F. To enter all data with an increased resolution press the button 'FINE' first (#7 Fig.45). Press the button again to restore the standard accuracy.

## 6.2 BALANCING PROGRAMS. ALU FUNCTIONS.

Before spinning the wheel (although it could be made afterwards) choose the adequate balancing program.

To select the different balancing programs press the button 'ALU' (#9 Fig.45). The balancing programs available are :

- A. **Dynamic** (two planes), suggested for all steel rims. In this case the wheel weights must be clipped onto the rim edges. This function is selected as a default and the leds corresponding to the wheel weight location are lit on (Fig.46).



Fig.46

- B. **ALU1**. The wheel weights position is as indicated in Fig.47. In this case use tape weights.



Fig.47

- C. **ALU2**. The wheel weights position is as indicated in Fig.48. In this case use one tape weight on the inside and a clip-on weight on the outer edge.



Fig.48

- D. **ALU3**. The wheel weights position is as indicated in Fig.49. In this case use one tape weight on the outside and a clip-on weight on the inner edge.



Fig.49

**E. ALU4.** The wheel weights position is as indicated in Fig.50.  
In this case use hidden tape weights.



Fig.50

**F. ALU5.** The wheel weights position is as indicated in Fig.51.  
In this case use one tape weight on the inside and a clip-on weight on the inner edge.



Fig.51

**G. ALU6.** The wheel weights position is as indicated in Fig.52.  
In this case use one hidden tape weight on the inside and a clip-on weight on the outer edge.



Fig.52

**H. Moto dynamic.** In this case the value of the offset gauge is automatically increased of the value of the extension fitted on the gauge (Fig.53).



Fig.53

**J. Static (one plane).** Suggested for narrow motorcycle or car rims (3" or less). To enter the Static program press the ALU button and hold it for 3 sec (Fig.54).  
Do the same operation to return to the previous active balancing program.



Fig.54

### 6.3 ALU-SPECIAL PROGRAM

The programs for ALU wheels are always an approximation and their accuracy depends on the shape of the rim.

Especially when using the hidden weights method (ALU4) relevant differences may be noticed from rim to rim.

In such a case, it is convenient to activate the ALU SPECIAL program that defines the exact positions of the balancing planes and diameters and allows to get a successful balancing at the first spin.

To activate the program:

- A. Move the offset/diameter gauge to the position where the inner wheel weight will be fitted (measure A Fig.55).  
Hold the gauge steady until the values of diameter and offset will blink ('—' and '—' on displays #1 & #2 Fig.56).

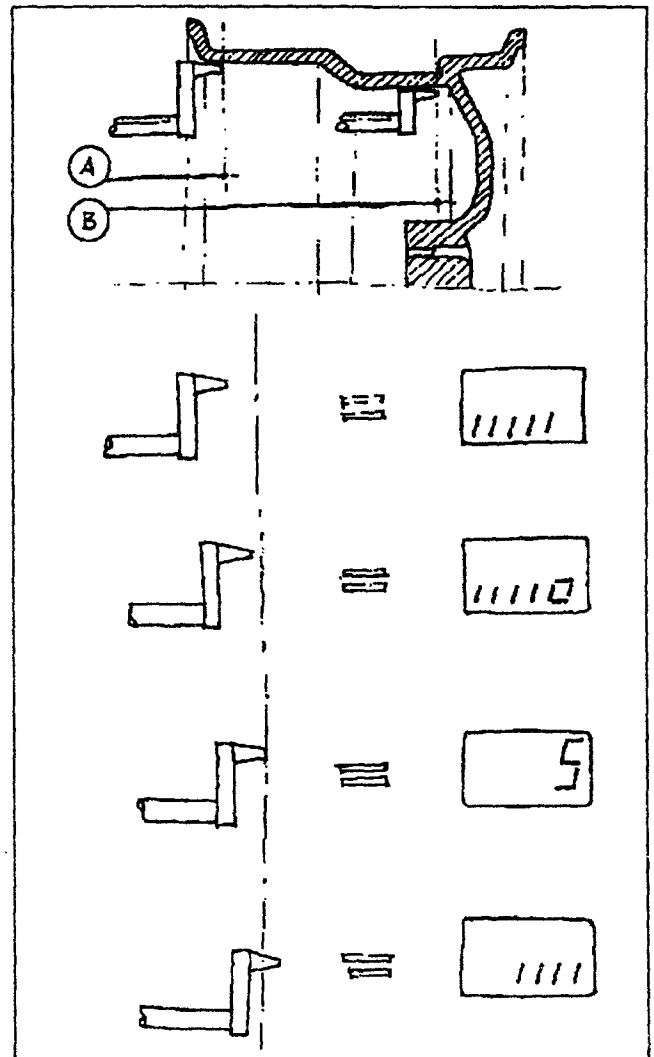


Fig.55

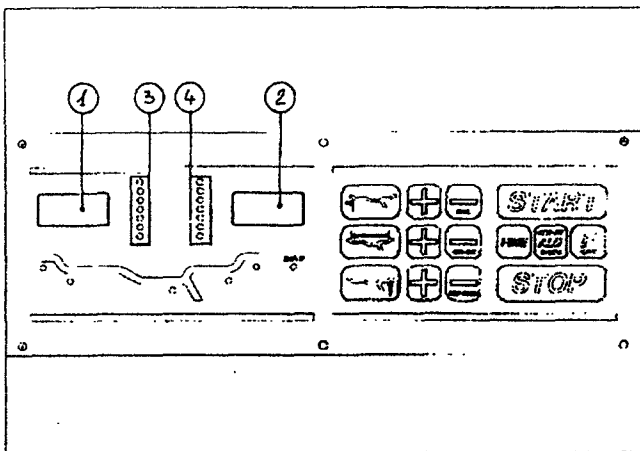


Fig.56

B. Now extract further the offset/diameter gauge to point to the position of the second correction plane (measure B Fig.55).  
Hold the gauge steady until the values of diameter and offset will blink again.

C. Move the gauge to the rest position to enter all values.

The input of the rim width in this case is not necessary.

D. On the displays is shown for a short period the message:

'ALU' 'S-' and the leds of the wheel weight location goes off.

The program is active now.

**NOTE:**

TO ACTIVATE 'ALU' 'S-' PROGRAM THE DIFFERENCE BETWEEN MEASURE A AND MEASURE B FIG.55 HAS TO BE AT LEAST 51 MM. (2").

E. Do the operations described in @6.4 A and B

F. The EXACT location where to put the weight can be determined by extracting the gauge and pointing the rim.

The correct position where to tape the weight is reached for each plane, when the corresponding display shows the imbalance amount. Instructions are given on the displays while approaching the exact position, as shown in Fig.55.

G. To exit the program press the ALU button. The program will automatically switch to "dynamic".

## 6.4 CORRECTION OF THE IMBALANCE

A. The machine as a default is set in the autostart mode: it will automatically spin the wheel as soon as the wheel guard is lowered.



**DO NOT LIFT THE WHEEL GUARD UNTIL THE DISPLAYS SHOW A READ-OUT.**

**IF FOR ANY REASON THE DISPLAY DO NOT COME UP WITH A READ-OUT OR INDICATE AN ERROR CONDITION THE AUTOMATIC BRAKING SYSTEM FOR THE WHEEL MAY BE DEFECTIVE. ENSURE THAT THE WHEEL IS NOT TURNING PRIOR TO LIFT THE WHEEL GUARD.**

**IN CASE OF DOUBT, TURN THE MACHINE OFF AND BRAKE THE SHAFT WITH THE FOOT BRAKE PRIOR TO LIFTING THE WHEEL GUARD.**

When the balancing cycle is completed (about 7 sec. for an average wheel) the wheel will stop automatically and the imbalance values will appear on the LEDs.

The wheel will stop in a position close to the correction position for the inner plane.

B. Read the imbalance amount on the inner display (#1 Fig.56).

Values are displayed in grams but can be displayed in ounces (see @ 7.1) and are automatically rounded to the nearest commercial wheel weight.

Turn the wheel until the displays of the inner plane imbalance position indicator (#3 Fig.56) are all lit on and blink.

Stop the wheel with the foot brake and put the wheel weight on the inner plane at 12 o'clock.

If the program selected is an ALU function, put the wheel weight in accordance to the function chosen.

C. Correct the imbalance on the outer plane in the same way (reading the datas on display #2 Fig.56 and leds #4 Fig.56).

If the balancing program selected is 'Static', the correction is made on one plane only.

### 6.5 VERIFICATION OF THE RESULTS

Spin the wheel again and check that the readout is '0 0'.

If a residual imbalance is displayed:

- A. Check the data input. If some value is incorrect, amend as needed and press the 'F' button. Imbalance values will be automatically recomputed.
- B. Check if the balancing program selected is the most appropriate. If not choose the right program and imbalance values will be automatically recomputed.
- C. The wheel weight could have been placed at a wrong angle. To check this, position the wheel at the correction position for the outer plane. If the wheel weight previously attached is in sector 'L' or 'R' of Fig.57, move the wheel weight up about 2 cm (1"). If the wheel weight is in sector 'D' cut a piece of the wheel weight of an approximate value corresponding to the value shown on the right display, or replace the wheel weight with a lighter one. If the wheel weight is in sector 'U' add a weight of value indicated by the display or replace the wheel weight with a heavier one. Repeat the same operation for the inner plane.

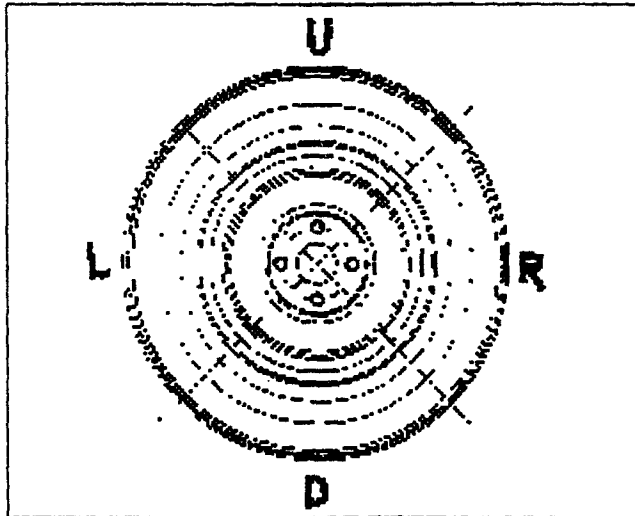


Fig.57

If this situation is repeated, your machine could be out of calibration and a self-calibration operation might be required (@ 7.10).

- D. If an ALU function was selected ensure that the wheel weights have been placed in accordance to the program choosen.
- E. Check that the quick nut is well tightened.

### 7.0 OTHER FUNCTIONS

The microprocessor used on the ACCU 6600 allows for many functions, as for example:

- \* OUNCE/GRAMS CONVERSION (see @7.1)
- \* FINE BALANCING MODE (see @7.2)
- \* RIM WIDTH IN MILLIMETERS (see @7.3)
- \* RIM DIAMETER IN MILLIMETERS (see @7.4)
- \* RIM OFFSET IN INCHES (see @7.5)
- \* OFFSET GAUGE CALIBRATION (see @7.6)
- \* DIAMETER GAUGE CALIBRATION (see @7.7)
- \* TYRE MATCHING PROGRAM (see @7.8)
- \* SELF-DIAGNOSTIC PROGRAM (see @7.9)
- \* SELF CALIBRATION (see @7.10)

### 7.1 OUNCE/GRAMS CONVERSION

When the machine is first turned on it is preset to display the imbalance in grams.

If the display in ounces is desired, push and hold for 3 sec. the conversion button (#4 Fig.58).

Repeat the procedure for converting back in grams.

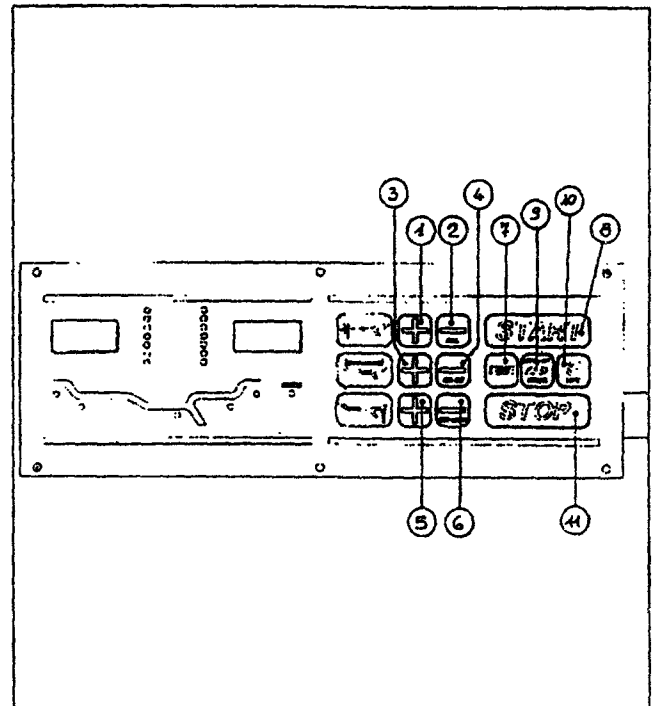


Fig.58

**NOTE:**

IF A OUNCES DEFAULT READING IS REQUESTED, ASK YOUR DEALER AND THE MACHINE WILL BE DELIVERED OR CONVERTED TO THIS STANDARD. OF COURSE THE CONVERSION WILL WORK REVERSE THAN DESCRIBED ABOVE

It is possible to realize if the machine is preset in grams or ounces by observing the displays.

If after turning on the machine the displays show '0 0' the machine is preset in grams.

If after turning on the machine displays show '0.00 0.00' the machine is preset in ounces.

## 7.2 FINE BALANCING MODE

This balancer always measures with the maximum precision available (1gr or 0.1 oz), however values below 5 gr (0.25 oz) are shown as zero.

Values exceeding 5gr (0.25 oz) are rounded to the amount of the nearest commercial wheel weight.

Press and hold the button 'FINE' (#7 Fig.58) to display the residual imbalance below 5 gr (0.25 oz) or in any case the value of imbalance with 1 gr pitch (0.1 oz).

## 7.3 RIM WIDTH IN MILLIMETERS

The rim width is normally displayed in inches, however if the value in millimeters is desired, first push any of the width input buttons (#3 or #4 Fig. 58) then push and hold for 3 sec. the mm/inch conversion button (#6 Fig.58).

Repeat the above operation to convert back in inches.

## 7.4 RIM DIAMETER IN MILLIMETERS

The rim diameter is normally displayed in inches, however if the value in millimeters is desired, first push any of the diameter input buttons (#5 or 6 Fig.58) then push and hold for 3 sec. the mm/inch conversion button (#11 Fig.58).

Repeat the above operation to convert back in inches.

## 7.5 RIM OFFSET IN INCHES

The rim offset is normally displayed in millimeters, however if the value in inches is desired, first push any of the offset input buttons (#1 or 2 Fig.58) then push and hold for 3 sec. the mm/inch conversion button (#6 Fig.58).

Repeat the above operation to convert back in millimeters.

## 7.6 OFFSET GAUGE CALIBRATION

All balancers are carefully calibrated by the manufacturer and do not require a new calibration except after many years of service or in case of replacement of any electronic component.

To recalibrate the Offset gauge proceed as follows:

- A. Switch the machine off
  - B. Press the CAL button (#2 Fig.58) AND hold it for 5 seconds while turning the machine on. Two numbers are displayed and after a while  
→ Displays show [dIS] [ 97] (97 is blinking)
  - C. Push F button (#10 Fig.58)  
→ Displays show [CAL] [ - ]
  - D. IMMEDIATELY push CAL button  
→ Displays show [CAL] [ o 1 ]
  - E. Push "Offset +" button (#1 Fig.58)  
→ Displays show [xxx] [ 1 ]
- NOTE:  
XXX IS A NUMBER LINKED TO THE POTENTIOMETER. SEE BELOW F.
- F. Move the gauge in and out: the left display (#1 Fig.59) shows increasing/decreasing numbers to check that the gauge is working correctly.

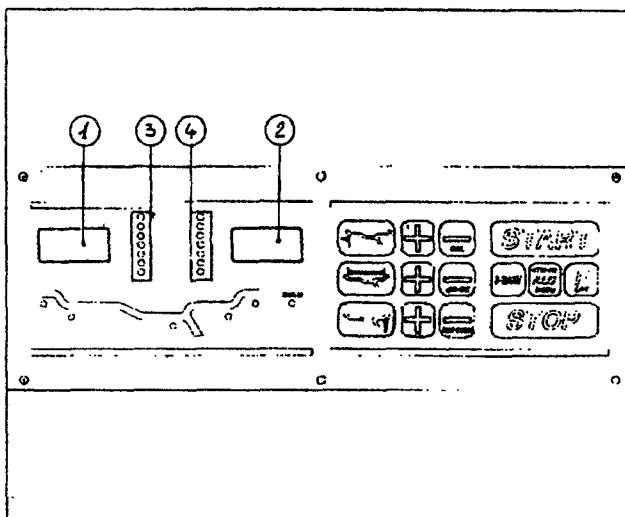


Fig.59

- G. Set the offset gauge to the rest position, then move it about 5 mm. (1/5") and press the F button (#10 Fig.58)  
→ Displays show [xxx] [ 2 ]
- H. Set the offset gauge to read '0' on the gauge meter

press the F button (#10 Fig.58)  
 -> Displays show [xxx] [ 3]

I. Set the gauge to read '16' (which is 160 mm. or 16 cm.) on the gauge meter. While holding the gauge in position, press the F button (#10 Fig.58)  
 -> Displays show [diS] [End]

L. Reset the machine by switching it off and then on.

The calibration is completed.

### 7.7 DIAMETER GAUGE CALIBRATION

All balancers are carefully calibrated by the manufacturer and do not require a new calibration except after many years of service or in case of replacement of any electronic component.

To recaribrate the Diameter gauge proceed as follows:

A. Switch off the machine

B. Press the CAL button (#2 Fig.58) AND hold it for 5 seconds while turning the machine on. Two numbers are displayed and after a while  
 -> Displays show [diS] [ 97] (97 is blinking)

C. Push F button (#10 Fig.58)  
 -> Displays show [CAL] [ - ]

D. IMMEDIATELY push CAL button  
 -> Displays show [CAL] [o 1]

E. Push "Diameter +" button (#5 Fig.58)  
 -> Displays show [xxx] [ 1]

NOTE:  
 XXX IS A NUMBER LINKED TO THE POTENTIOMETER. SEE BELOW F

F. Rotate the gauge: the left display (#1 Fig.59) shows increasing/decreasing numbers to prove that the gauge is working correctly.

G. Move the gauge in contact with the outer diameter of the shaft (Fig.60). While holding the gauge in position press TWICE the F button (#10 Fig.58)  
 -> Displays show [xxx] [ 2] and immediately after [xxx] [ 3]

H. Mount a 14" rim diameter wheel on the balancer.

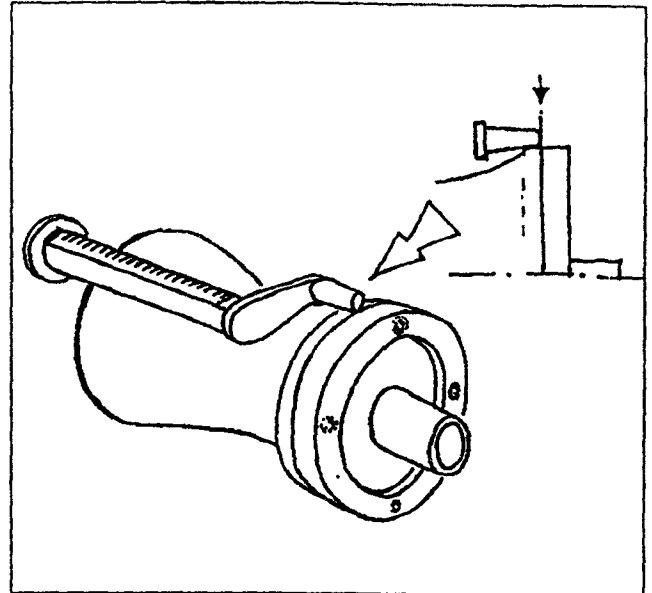


Fig.60

I. Move the gauge to measure rim diameter (Fig.61) and holding the gauge in position, press the F button (#10 Fig.58)  
 -> Displays show [dIA] [End]

L. Reset the machine by switching it off and then on.

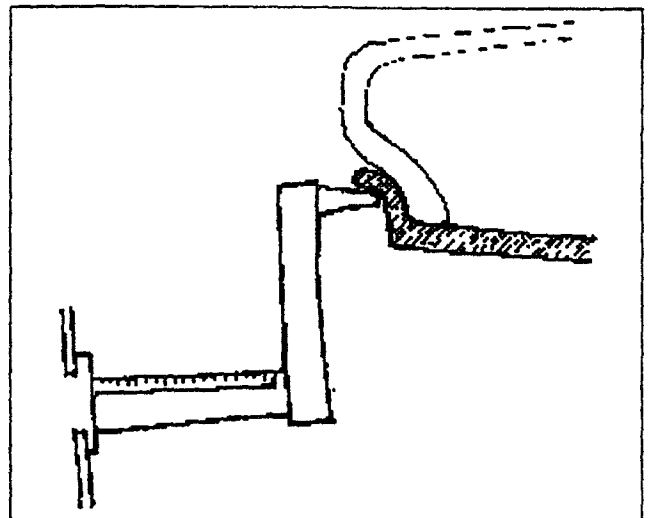


Fig.61

The calibration is completed.

## 7.8 TYRE MATCHING PROGRAM

The microprocessor installed on the S 1040 contains a program to reduce amount of weight needed to balance a wheel.

This program is not specifically intended for optimizing the shape of the wheel, but it happens to be so in many cases.

The procedure is very convenient when balancing sport car rims or when costumers do have complaints. Proceed as follows:

### PROG.1 Dynamic Tyre matching (reversing and rotating the tyre onto the rim)

- A. Input wheel datas as described in @6.1
- B. Spin the wheel
- C. Push and hold F button (#10 Fig.58) for 3 seconds  
-> Displays show [OPT] and a blinking [0-] [-0]

#### NOTE:

IF THE UNBALANCE IS LOWER THAN 25 GRAMS (0.9 OZ.) THE DISPLAYS SHOW: -> [OPT] [ NO].

- Push F button again to force tyre matching.
- or
- Keep F button for 3 seconds to exit tyre matching.

- D. Mark the tyre on the valve position (Fig.62), which is usually on the outer part of the wheel.

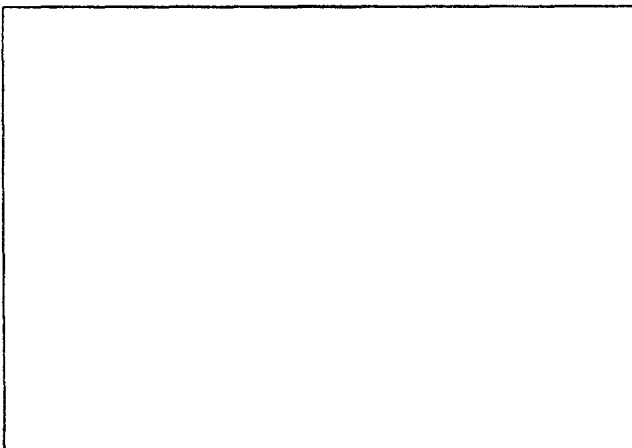


Fig.62

- E. Position the wheel with the valve at 12 o'clock and press ALU button (#9 Fig.58)  
-> Displays show [OPT] and a blinking [1-] [-1]
- F. Keep the valve at 12:00 , take the wheel apart and dismount the tyre. Mount the rim only on the balancer with the valve at 12:00. Spin the rim.  
-> Displays show [OPT] and a blinking [2-] [-2]

- G. Position the rim with the valve at 12:00 and push ALU button (#9 Fig.58)  
-> Displays show [OPT] and a blinking [3-] [-3]  
-> Displays show [OPT] [End]

- H. Position the rim as indicated on the angular position display (#3 and #4 Fig. 64)

- I. Mark the rim on the inner or outer plane at 12:00 according to the request ( Fig.63) Note that in this program either displays could indicate the position.

- L. Mount the tyre on the rim, matching the two marks made in step D and step I

- M. Push F button (#10 fig. 58) to exit program.

- N. Balance the wheel

#### NOTE:

THIS PROGRAM CANNOT BE USED FOR THOSE TYRES WHICH PROVIDE FOR A ROTATION MARK FOR SAFETY REASONS.

### PROG.2 Static Tyre matching (rotating the tyre onto the rim)

- A. Input wheel datas as described in @6.1
- B. Spin the wheel
- C. Push and hold F button (#10 Fig.58) for 3 seconds  
-> Displays show [OPT] and a blinking [0-] [-0]

#### NOTE:

IF THE UNBALANCE IS LOWER THAN 25 GRAMS (0.9 OZ.) THE DISPLAYS SHOW: -> [OPT] [ NO].

- Push F button again to force tyre matching
- or
- Keep F button for 3 seconds to exit tyre matching

- D. Push F button again  
-> displays show [OPT] [0-0]

- E. Mark the tyre on the valve position (Fig.63), which is usually on the outer part of the wheel.

- F. Position the wheel with the valve at 12 o'clock and press ALU button (#9 Fig.58)  
-> Displays show [OPT] [1-1]

- G. Keep the valve at 12:00 , take the wheel apart and dismount the tyre. Mount the rim only on the balancer with the valve at 12:00. Spin the rim.  
-> Displays show [OPT] [2-2]

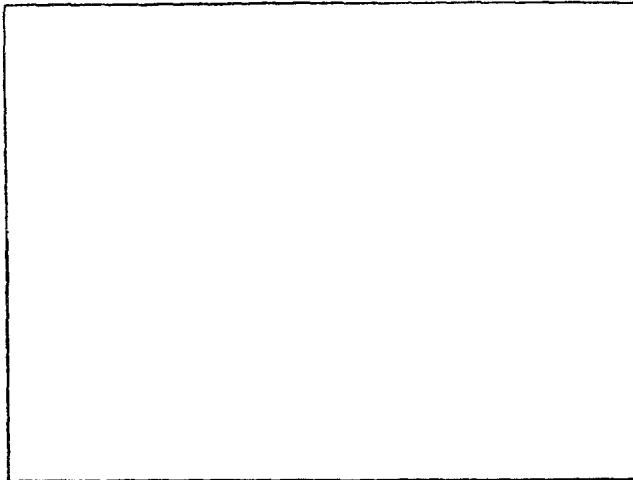


Fig.63

- H. Position the rim with the valve at 12:00 and push ALU button (#9 Fig.58)
  - > Displays show [OPT] [3-3]
  - > Displays show [OPT] [End]
- I. Position the rim as indicate on the angular position display (#4 Fig. 64).

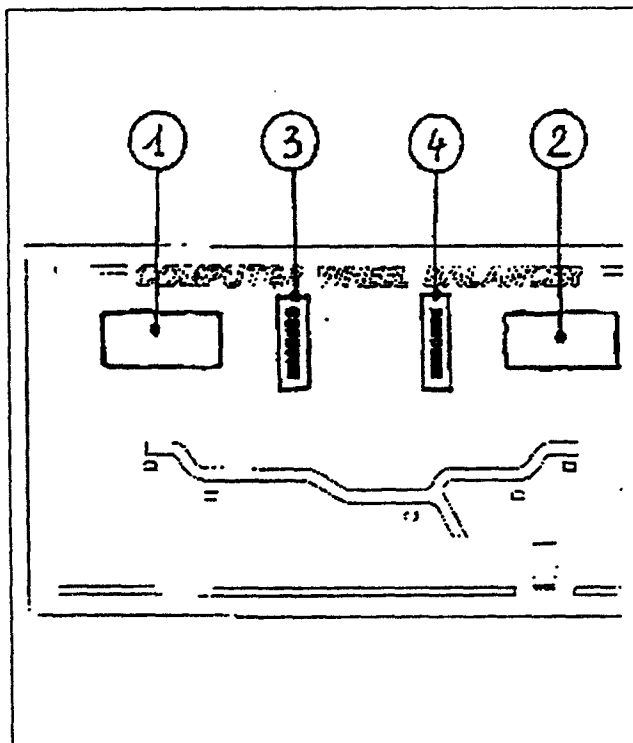


Fig.64

- L. Mark the rim on the outer plane at 12:00.
- M. Mount the tyre on the rim, matching the two marks made in step D and step I
- N. Push F button (#10 fig. 58) to exit program

## 7.9 SELF-DIAGNOSTIC PROGRAM

During the working cycle of the wheel balancer the microprocessor can evidence some errors which are shown as follows:

- Err 1 : balancing cycle interrupted with the STOP button.
- Err 2 : balancing cycle interrupted with the foot brake.
- Err 3 : balancing cycle interrupted by lifting the wheel guard.
- Err 4 : the wheel did not reach the balancing speed. or the wheel coasts too rapidly.
- Err 5 : wheel guard open.
- Err 6 : No spin before Tyre matching program

## 7.10 SELF CALIBRATION

ALL BALANCERS ARE CAREFULLY CALIBRATED BY THE MANUFACTURER AND DO NOT REQUIRE A NEW CALIBRATION, EXCEPT AFTER MANY YEARS OF SERVICE OR IN CASE OF REPLACEMENT OF ANY ELECTRONIC COMPONENT.

DO NOT RECALIBRATE THE MACHINE AT THE TIME OF INSTALLATION, UNLESS A DEFECTIVE CONDITION HAS BEEN PROVEN.

To recalibrate the machine proceed as follows:

- A. Switch the machine off
- B. Press the CAL button (#2 Fig.58) AND hold it for 5 seconds while turning the machine on. Two numbers are displayed and after a while
  - > Displays show [dIS] [ 97] (97 is blinking)
- C. Mount a wheel with a steel rim of 13-15" diameter, even unbalanced
- D. Input data wheels as explained in @6.1, starting from the Offset.

**NOTE:**  
IN THIS PHASE THE AUTOMATIC DATA INPUT BY MEAN OF THE GAUGE IS NOT ACTIVE.

**IMPORTANT!**  
IF THE WHEEL DATA ENTERED ARE NOT CORRECT A WRONG CALIBRATION WILL BE MADE

**AND ALL SUBSEQUENT BALANCING READOUTS WILL BE WRONG.**

- E. When all datas are correct, push the F button (#10 fig.58)  
 → Displays show first [CAL] [ - ]  
 → Then show [CAL] [USr]  
 → Finally [CAL] [U 1]

F. Fit a 100 gr. weight (3.5 oz.) on the outer edge

G. Spin the wheel

**NOTE:**

IF LOWERING THE WHEELGUARD THE WHEEL DOES NOT START, THIS IS NORMAL. JUST PUSH START BUTTON WITH THE WHEELGUARD LOWE-RED.

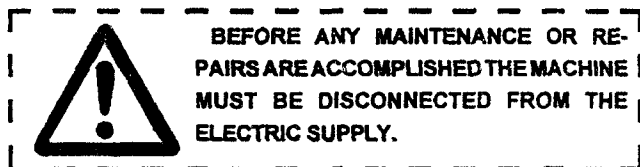
→ DISPLAYS SHOW [CAL] [U 2]

H. Remove the 100 gr. weight

- I. Spin the wheel  
 → Displays show [CAL] End] for a while  
 → Displays show two numbers.

L. Reset the machine by switching it off and then on.

The machine is ready to work.



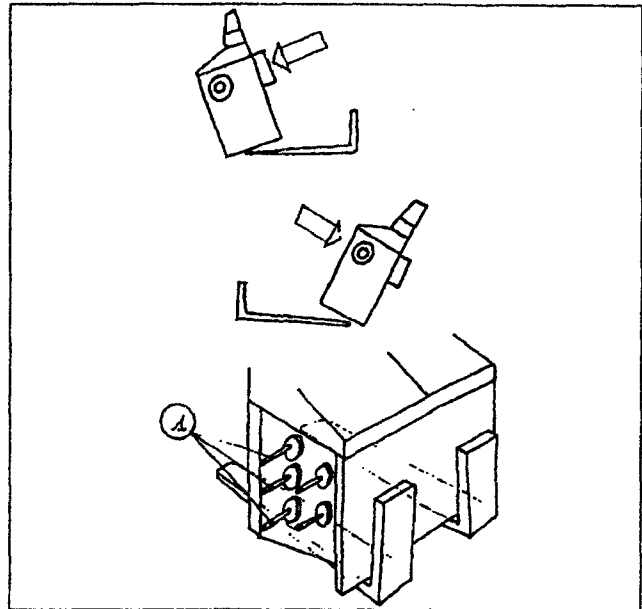
## 8.0 MAINTENANCE

This balancer does not require any special maintenance, but the following cautions are required:

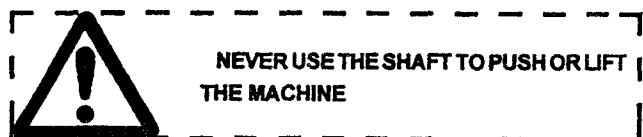
- A. Periodically wash all plastic parts with a glass cleaner.  
 Wipe with a dry cloth.
- B. Clean regularly with a non-flammable liquid detergent all adaptors. Lubricate with a thin layer of oil.

## 9.0 MOVING THE MACHINE

In case the machine is to be moved from a working place to another, proceed as follows:



Disconnect the machine from the electric supply.



Remove from top all objects that may fall during the displacement and create hazard.

Do not use metal ropes to lift the machine.

Slide the machine on the forks of a forklift.

Hold the machine as depicted in Fig. 65 and 20.

Fig.65

## **10.0 PUTTING THE MACHINE OUT OF SERVICE**

In case the machine is not to be used for a long period of time (6 months or more) it is necessary to disconnect all power sources ,protect all parts that may be damaged.

When putting the machine back in operation, check first the condition of all previously protected parts, and check for correct functioning of all devices before using the machine again.

## **11.0 SCRAPPING THE MACHINE**

Once it is decided to no longer use this machine it is required to make it inoperating by cutting the electric cord.

Consider the machine as a special waste, dismantle the machine is omogeneous parts (metal,plastic, oils etc) and dispose following the local running regulations.

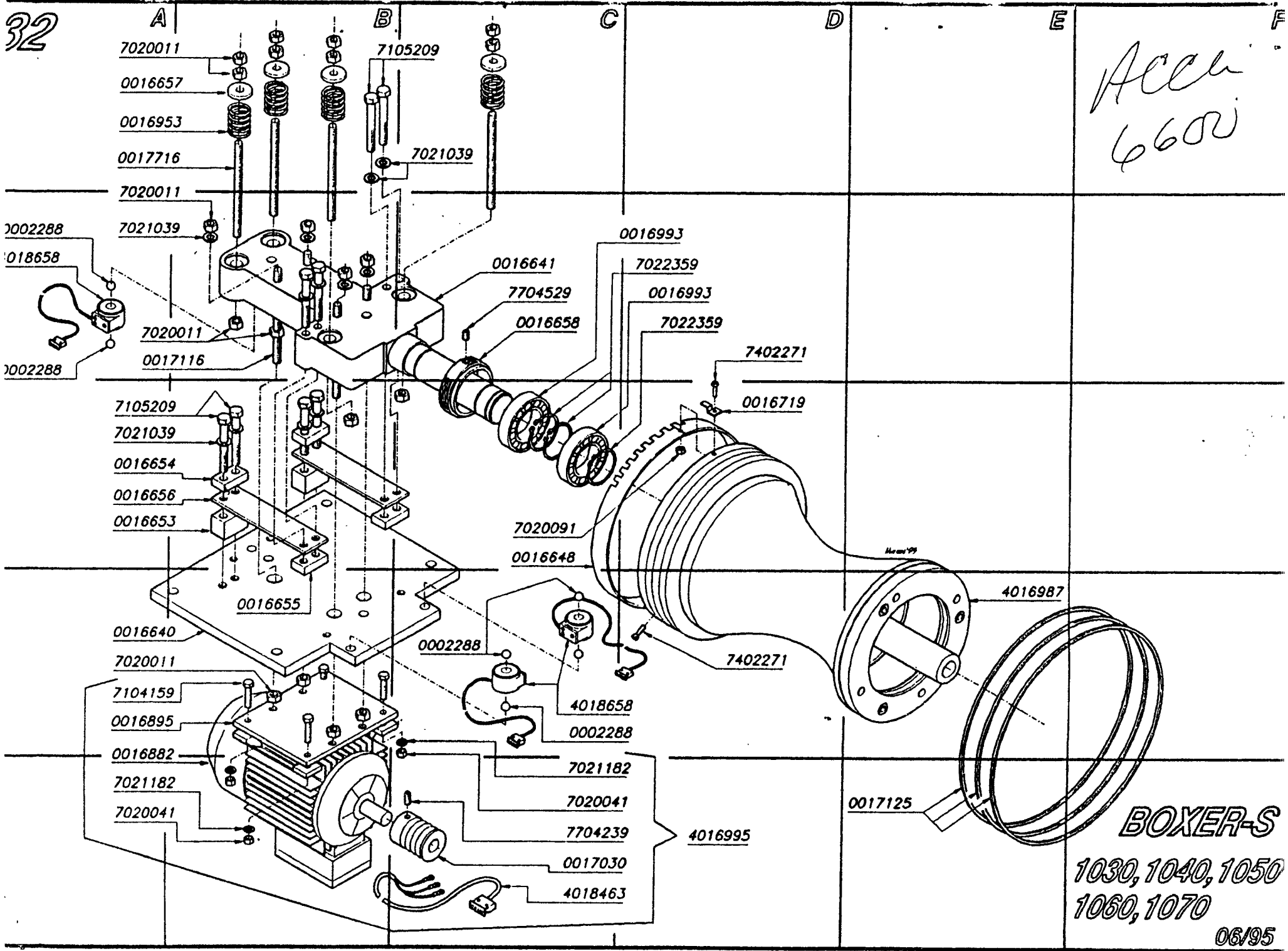
## 12.0 TROUBLE SHOOTING

TROUBLE	CAUSE	REPAIR
When turning the machine on, the displays do not show up.	<ul style="list-style-type: none"> <li>- No electric power.</li> <li>- Defect in the electric/electronic system.</li> </ul>	<ul style="list-style-type: none"> <li>- Check the input voltage</li> <li>- Call the authorized ACCU service center for assistance.</li> </ul>
The machine gives random read-outs	<ul style="list-style-type: none"> <li>- Machine instable on the floor</li> <li>- Water into the tyre</li> <li>- Loose adaptor</li> <li>- Defective electronic board</li> </ul>	<ul style="list-style-type: none"> <li>- Check the machine is stable</li> <li>- Remove water from tyre</li> <li>- Tighten the adaptor firmly</li> <li>- Call teh ACCU service center for assistance</li> </ul>
The machine does not stop after the balancing cycle	<ul style="list-style-type: none"> <li>- Defective electronic component</li> </ul>	<ul style="list-style-type: none"> <li>- Stop immediately using the machine and call the authorized ACCU service center for assistance.</li> </ul>



**THIS PART IS FOR EXCLUSIVE USE OF  
QUALIFIED PERSONNEL FOR MAINTENANCE  
AND SERVICE PURPOSES.**

32



333

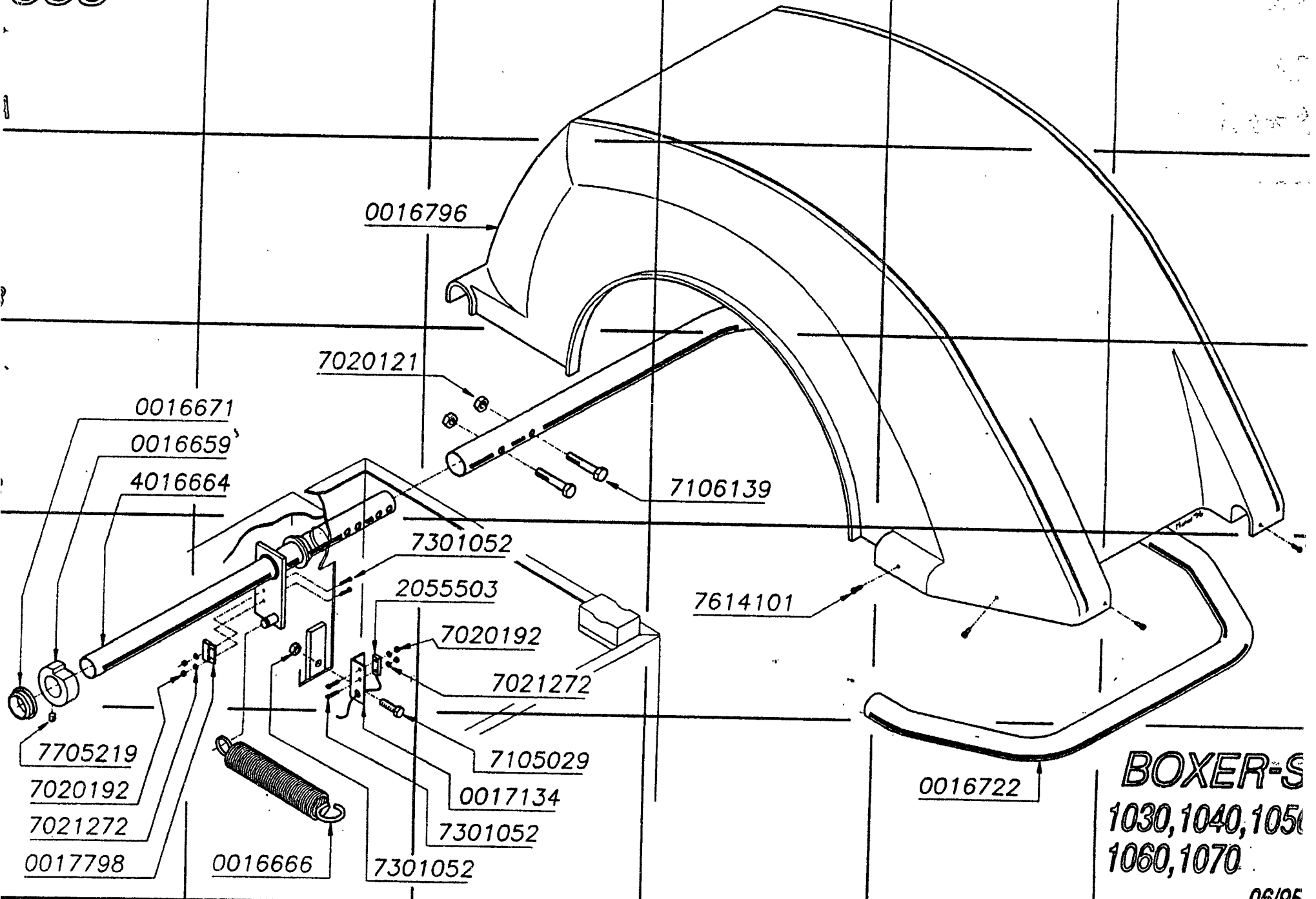
7

2

3

4

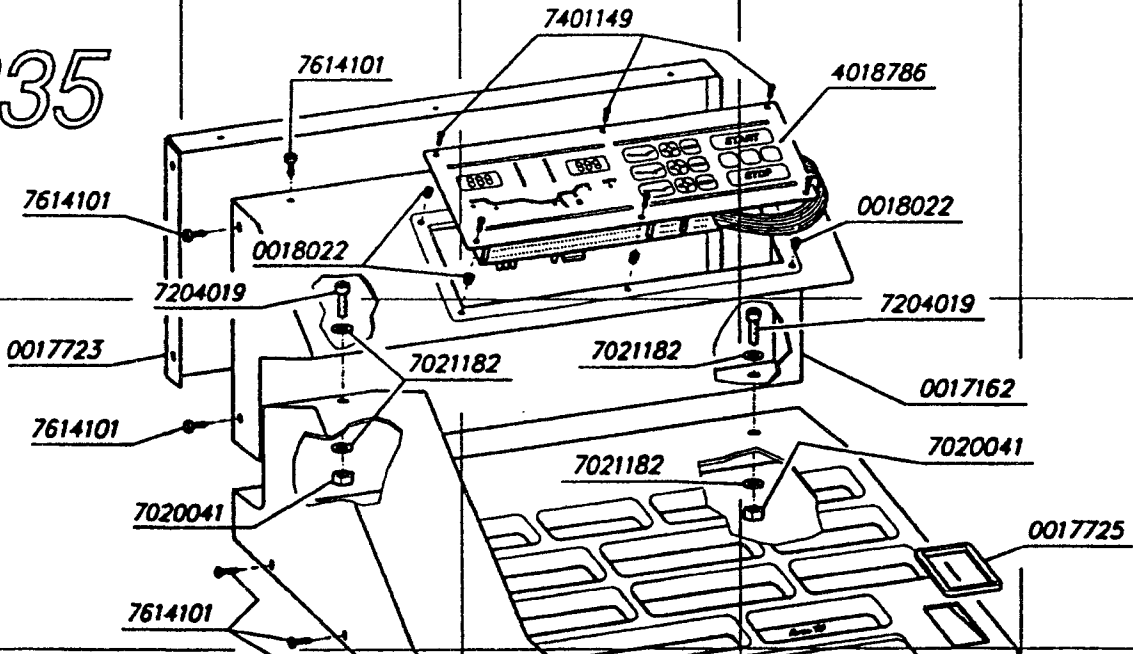
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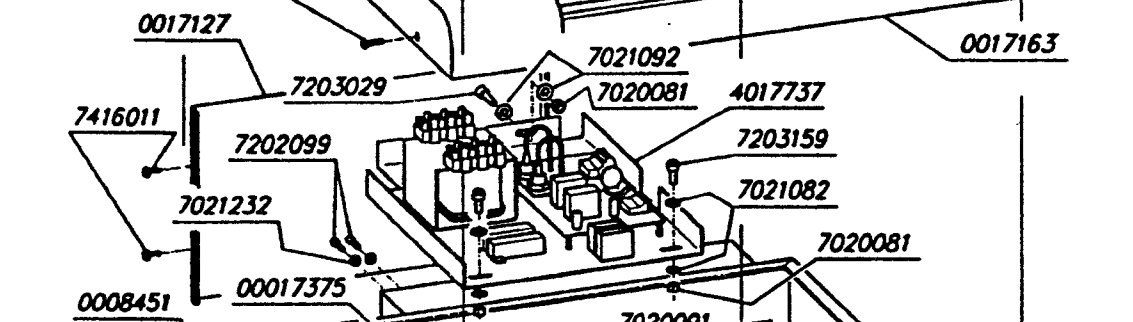
**BOXER-S**  
 1030, 1040, 1050  
 1060, 1070

335

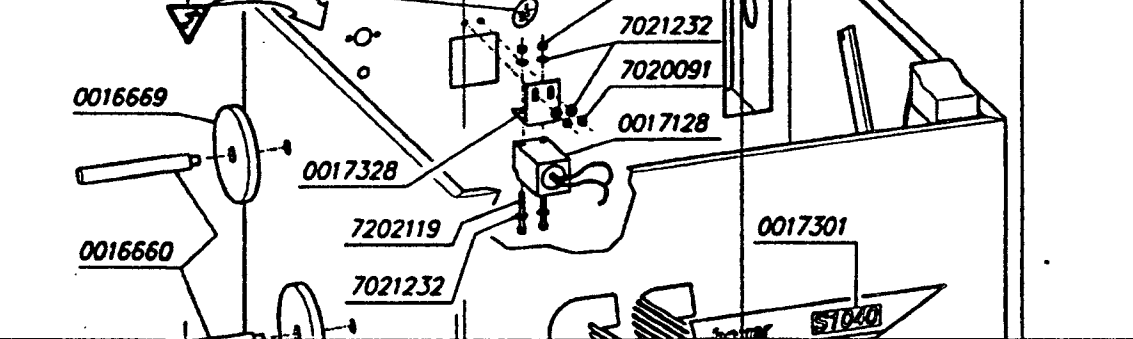
A



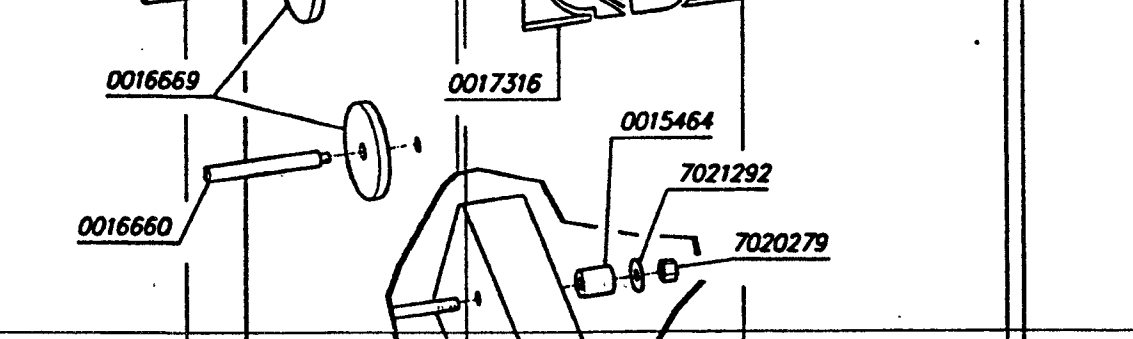
B



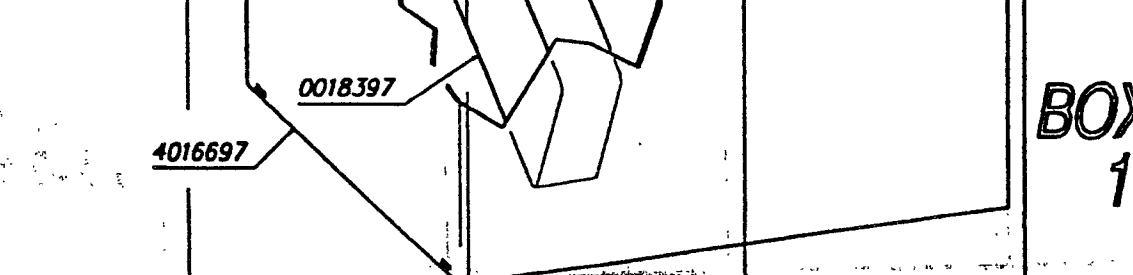
C



D



E



BOXER-S  
1040

375

A

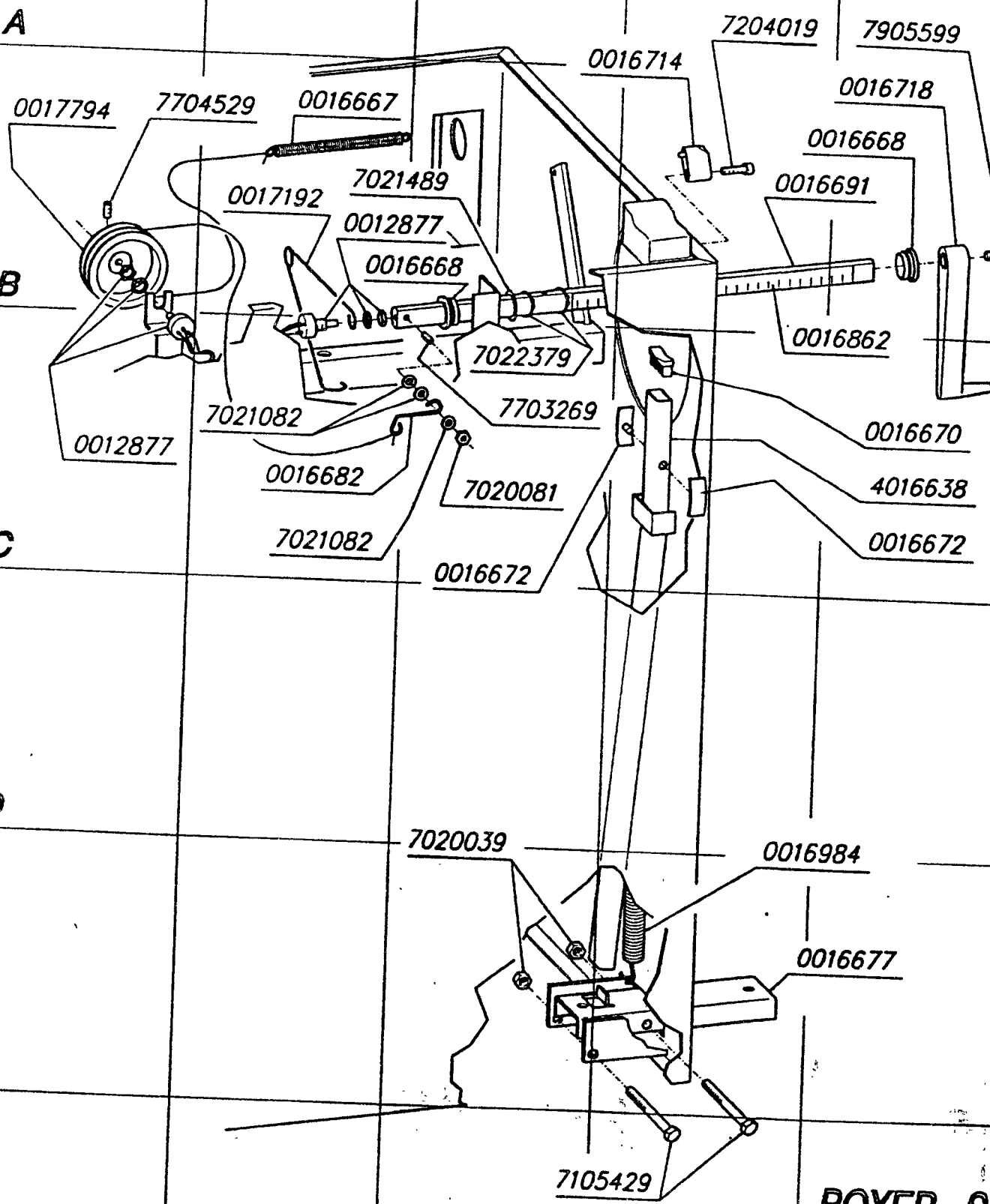
B

C

D

E

F



**BOXER - S**  
1040-1050  
1060-1070

10/95

409

1

2

3

4

5

A

B

C

D

E

0015852

0008748

0017081

7302211

7021232

0017126

Mar 96

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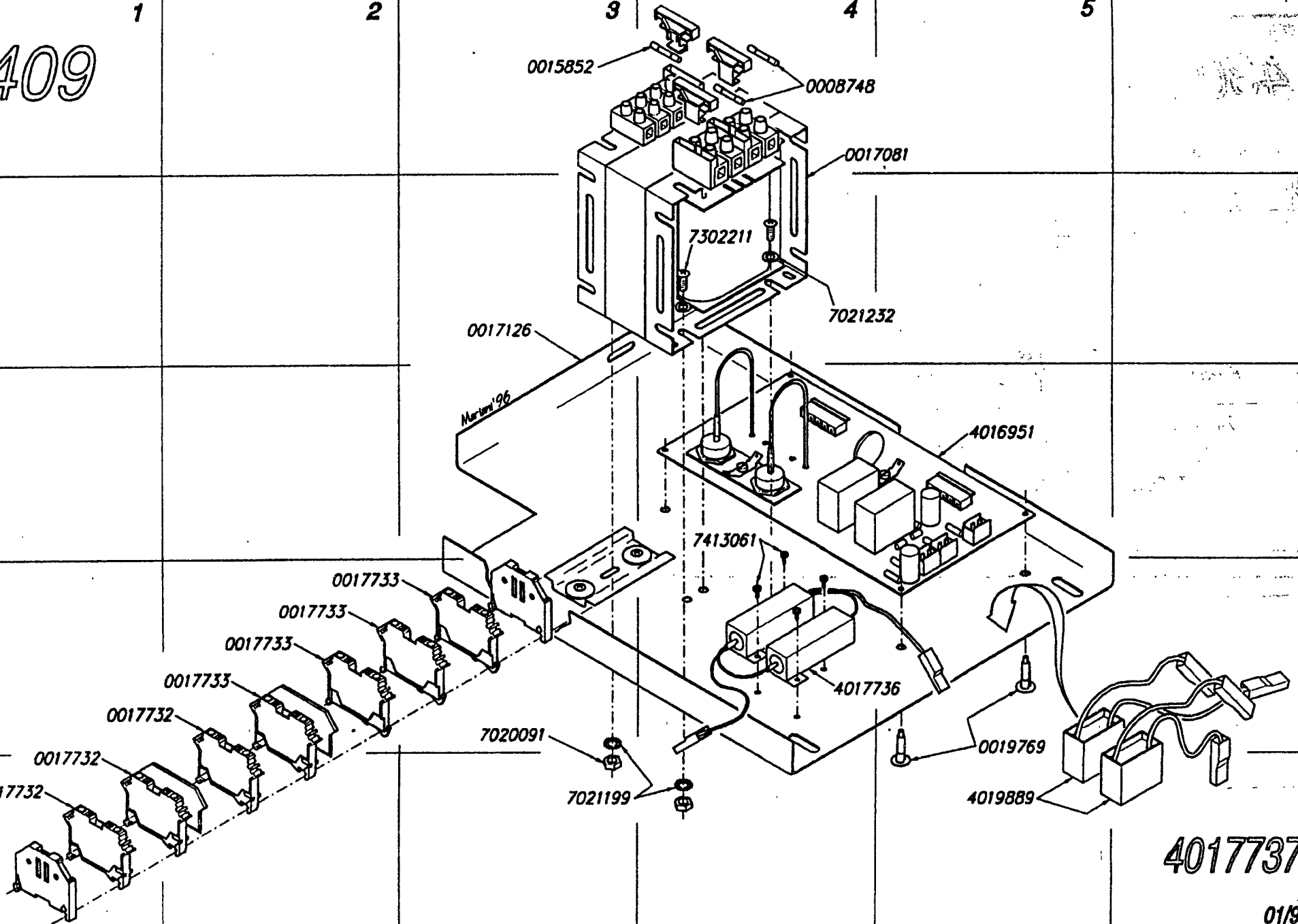
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0019769

4019889

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01/96



430

1

2

3

4

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A

B

C

EPROM

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7020192

7021460

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0018611

7021460

7020192

7020192

4016635

4017057

Marumi '96

4016581

4018786

