coats®

RC450 / RC550 Wheel Balancers

User Operation, Installation, and Maintenance Manual

READ these instructions before placing unit in service. KEEP these and other materials delivered with the unit in a binder near the machine for ease of reference by supervisors and operators.

Use and maintenance manual

General Index

1.	**INTRODUCTION**	**4**
1.1.	GENERAL NOTES	4
1.2.	SYMBOLS	4
1.3.	OWNER'S RESPONSIBILIY	4
1.4.	PERSONAL PROTECTION DEVICES (PPD)	5
1.5.	GENERAL WARNINGS	6
1.6.	EMERGENCIES	7
1.7.	AIRBORNE NOISE EMISSION	7
1.8.	OPERATOR WORKING POSITION	7
2.	**UNPACKING AND POSITIONING**	**8**
2.1.	INSTALLATION INSTRUCTIONS	10
3.	**SAFETY LABELS**	**11**
4.	**MACHINE DESCRIPTION**	**15**
4.1.	TECHNICAL SPECIFICATIONS	15
4.2.	COMPONENTS	15
5.	**STARTING**	**17**
6.	**CORRECTION PLANE IDENTIFICATION**	**19**
7.	**CONTROL PANEL**	**20**
8.	**USE OF THE WHEEL BALANCER**	**21**
8.1.	STANDARD BALANCING (CLIP-ON COUNTERWEIGHTS)	21
	8.1.1. Wheel dimensions setting	*21*
	8.1.2. Result of the measurement and weight application	*23*
8.2.	BALANCING WITH ADHESIVE WEIGHTS	24
	8.2.1. wheel dimensions setting	*24*
	8.2.2. Result of the measurement and weight application	*25*
8.3.	BALANCING WITH A MIX OF ADHESIVE AND CLIP-ON WEIGHTS (STATIC BALANCING)	26
8.4.	STATIC IMBALANCE	28
8.5.	HIDE THE ADHESIVE WEIGHTS (BEHIND SPOKE)	28
8.6.	AUTOMATIC MINIMIZATION OF STATIC IMBALANCE	28
9.	**SETUP**	**29**
9.1.	MENU ACCESS DIAGRAM	29
9.2.	SELF-DIAGNOSTICS	30
9.3.	BALANCING MACHINE CALIBRATION	30
9.4.	WHEEL LOCKING	31
9.5.	AUTOMATIC GAUGES CALIBRATION	32
	9.5.1. Distance gauge calibration	*32*
	9.5.2. Diameter gauge calibration	*33*
	9.5.3. Width sonar calibration	*34*
9.6.	ADHESIVE WEIGHT WIDTH	34

10. DIAGNOSTICS **35**

10.1. INCONSISTENT IMBALANCE READINGS 35
10.2. ALARM SIGNAL 35

11. MAINTENANCE **37**

11.1. GENERAL 37
11.1.1. Introductory notes *37*
11.1.2. Safety rules *37*
11.1.3. Replacing fuses *38*
11.1.4. Cleaning the screen *38*

12. SPARE PARTS **38**

12.1. IDENTIFICATION AND ORDERING METHOD 38

1. Introduction

1.1. GENERAL NOTES

WARNING

BEFORE PERFORMING ANY OPERATION ON THE MACHINE, CAREFULLY READ THROUGH THE ENTIRE MANUAL, PAYING PARTICULAR ATTENTION TO THIS CHAPTER.

The machine has been constructed for the application stated in the user manual taking into account normal and reasonably foreseeable use. It is not permitted for any reason whatsoever to use the machine for purposes different from those for which it was designed nor to use it in ways different from those described in this manual.
The various operations must be performed according to the criterion and the chronology described in this manual.

1.2. SYMBOLS

Throughout this manual dangerous operations are highlighted with graphic symbols to draw the reader's attention.
The following graphic symbols are used:

WARNING

THIS WARNING INDICATES POSSIBLE OCCURRENCE OF AN EVENT THAT MAY LEAD TO SERIOUS INJURY OR EXTENSIVE DAMAGE TO THE MACHINE IF ADEQUATE PRECAUTIONARY COUNTERMEASURES ARE NOT TAKEN.

INFORMATION

THIS WARNING INDICATES IMPORTANT INFORMATION WHICH MUST BE CAREFULLY READ.

1.3. OWNER'S RESPONSIBILIY

To maintain machine and user safety, the responsibility of the owner is to read and follow these instructions:
• Follow all installation instructions.
• Make sure installation conforms to all applicable Local, State, and Federal Codes, Rules, and Regulations; such as State and Federal OSHA Regulations and Electrical Codes.
• Carefully check the unit for correct initial function.
• Read and follow the safety instructions. Keep them readily available for machine operators.
• Make certain all operators are properly trained, know how to safely and correctly operate the unit, and are properly supervised.
• Allow unit operation only with all parts in place and operating safely.
• Carefully inspect the unit on a regular basis and perform all maintenance as required.
• Service and maintain the unit only with authorized or approved replacement parts.
• Keep all instructions permanently with the unit and all decals/labels/notices on the unit clean and visible.
• Do not override safety features.Finally, the operator must read through this manual.

1.4. PERSONAL PROTECTION DEVICES (PPD)

WARNING

DURING MACHINE INSTALLATION AND USE IT IS STRICTLY PROHIBITED TO OPERATE WITHOUT THE PROTECTION DEVICES DESCRIBED IN THIS PARAGRAPH.

The persons that are to operate on and/or work in proximity of the machine may not wear clothes with wide sleeves, laces, belts, bracelets or anything else that may pose a potential risk. Long hair must be tied up to prevent any risk.

Protection devices to wear

The following protection devices must be worn.

Insulated safety shoes with rubber sole and reinforced tip
Use: always
(EN345) (ANSI Z41.1-1991) (OSHA,1910.136)

Safety Glasses
Use: always
(EN166 1F) (ANSI Z87.1) (OSHA,1910.133)

Protective gloves
Use: always
(EN388) (ANSI/ISEA 105-2005) (OSHA,1910.138)

Working clothes
Use: always
(EN510) (OSHA,1910.132)

1.5. GENERAL WARNINGS

WARNING

THE MACHINE GENERATES, USES AND MAY IRRADIATE ENERGY AND RADIO FREQUENCY. IF NOT INSTALLED AND USED IN ACCORDANCE WITH THE INSTRUCTIONS IN THIS MANUAL, IT MAY CAUSE INTERFERENCE WITH RADIO COMMUNICATIONS.

- The machine must be installed, maintained and used according to the instructions given in this manual and according to the procedures given from case to case.
- The employer must train the operators for safe installation, use and maintenance of the machine.
- Only Coats Service Technician and specifically trained persons are to be allowed access to the machine for any extraordinary maintenance operation.
- Before operating on the electrical parts of the machine cut the power.
- For the duration of maintenance, **"Work in progress"** signs must be posted in the department in such a way that they are visible from all the access areas.
- Always operate with due caution and wear the personal protection devices (PPD).
- The machine (and any accessory devices) must always be connected to earth to discharge short-circuit currents and electrostatic voltages. The mains voltage must correspond to the value shown on the machine identification plate. It is inadvisable to use cable extensions/socket adaptors. When the machine is not used, disconnect it from the mains by pulling the plug from the socket.
- Before carrying out any operation stop the machine.
- In the event of fire, do not use water but only powder or carbon dioxide fire extinguishers.
- It is strictly prohibited to deposit combustible material in the vicinity of the machine.
- Do not deactivate the safety devices or ignore warnings and alarms, be they communicated by the software or by warning labels fixed on the installation. Should the plates, adhesive labels, decals or any other warning sign on the machine deteriorate they must be replaced.
- It is not permitted for any reason whatsoever to modify, tamper with or alter the machine structure, the devices fitted, the operating sequence, etc. without prior consultation with the manufacturer.
- All the routine and extraordinary maintenance operations must be recorded in the logbook noting down the date, time, type of operation, name of the operator and any other useful information.
- In the event of faults or malfunctioning, contact your local distributor or the manufacturer. All the repair operations must be performed by qualified technicians.
- It is strictly prohibited to clean the internal and external electrical parts of the wheel balancer with water.
- Exclusively use alcohol to clean the machine. Do not use any other chemical product. Do not under any circumstances blast with compressed air.
- Do not leave the machine exposed to the rain or the elements. The ambient storage and operating conditions must meet the requirements set out in the chapter INSTALLATION.
- In the event of failure, deformation or malfunctioning of the safety devices, immediately replace them; "Makeshift" repairs are strictly prohibited. Use only original spare parts for which the machine has been designed and constructed.
- The machine and the workplace must be kept perfectly clean.
- When the maintenance operations have been completed, before restoring the power supply, carefully check that you have not forgotten tools and/or other materials in the machine operating area. In any event, also during operation, no object may be placed on the protection shield.

1.6. EMERGENCIES

First aid

For any first aid follow the corporate regulations and conventional procedures.

Fire-fighting measures

Do not use water to extinguish fires, but only powder or carbon dioxide extinguishers. Preferably use extinguishers filled with a special powder for metal fires.

1.7. AIRBORNE NOISE EMISSION

The machine noise, measured with the machine empty, is constantly contained at levels below 70 dB(A).

During operation the machine noise is subordinate to the background noise in the workplace, the presence of other machines and other factors that cannot be assessed by the manufacturer in advance.

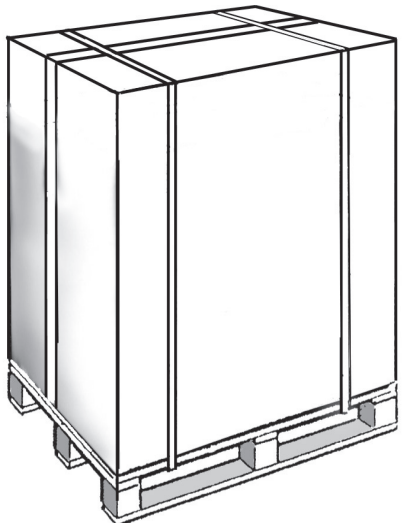
The user therefore needs to make a phonometric measurement of the noise emitted by the machine during normal operation, and provide for personal protection devices (headsets) if the noise emission exceeds the threshold laid down in the regulations in force in the country where the machine is used.

1.8. OPERATOR WORKING POSITION

During balancing the operator must stand in front of the control console and avoid standing in front of the wheel during the balancing cycle.

2. Unpacking and positioning

2.1 RECEIVING SHIPMENT



The shipment should be thoroughly inspected as soon as it is received. The signed bill of lading is acknowledgement, for the carrier, of receipt in good condition of the shipment covered by our invoice.
If any of the goods called for on this bill of lading are shorted or damaged, do not accept them until the car-rier makes a notation of the shorted or damaged goods on the freight bill. Do this for your own protection.
NOTIFY THE CARRIER AT ONCE if any hidden loss or damage is discovered after receipt and request him to make an inspection. If the carrier will not do so, prepare an affidavit to the effect that you have so notified the carrier (on a certain date) and that he has failed to comply with your request.
IT IS DIFFICULT TO COLLECT FOR LOSS OR DAMAGE
AFTER YOU HAVE GIVEN THE CARRIER A CLEAR RECEIPT.
File your claim with the carrier promptly. Support your claim with copies of the bill of lading, freight bill, invoice, and photographs, if possible.
Although COATS responsibility ceases upon delivery of the shipment to the carrier, we will gladly assist in tracing lost shipments. Our willingness to assist in every possible manner does not make COATS responsible for collection of claims, or replacement of lost or damaged materials.

2.1.1 Checking the machine and equipment supplied

The main body of the machine, the relative accessories and the equipment supplied (as agreed with the manufacturer) must be in perfect condition.
The supply is carefully checked before shipment, nevertheless it is advisable to check upon receipt that it is complete and in order.

Check that:

- the shipping data (addressee, number of packages, order number, etc.) correspond to the accompanying documentation;
- the technical-legal documentation provided with the machine includes the instruction manual for the type of machine to be installed.

In the event of defects and/or missing material immediately notify the manufacturer and follow their instructions before proceeding with installation and startup.

2.2 UNPACKING

To remove the packaging refer to the “arrow” shown on the outside box.

Operate as follows to unpack the machine:

1. cut the plastic safety straps;
2. open the top of the cardboard box;
3. remove the top protection;
4. remove any protective corner pieces;
5. remove the cardboard box pulling it upward;
6. inspect the machine to check for any damage. Immediately inform the carrier and the supplier in the event of apparent damage.

Keep the packaging materials for possible future shipment of the machine.

2.3 PACKING LIST

All the materials included in the supply are listed on the packing list. The contents may vary from machine to machine depending on the sales agreements, the optional parts supplied, etc.

Generally, the supply includes:

- the machine
- the toolbox
- the instruction manual

2.4 STORAGE

When the machine:
- is not immediately installed;
- is uninstalled and stored pending moving to another place

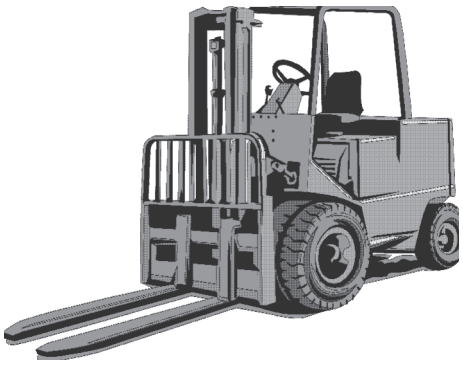
position it in a covered place protected against direct contact with atmospheric agents and dust.
The permitted ambient values in the storage area are as follows:

- *Temperature: +5 to +40°C (41 - 104°F)*
- *Relative humidity: 30÷80 %.*

If taking the machine out of service after a period of use and after performing the necessary maintenance operations, it can be stored for a period of **not more than two years,** provided that it is stored in a closed dust-free environment without aggressive agents and with the following characteristics:

- Ambient conditions as described above
- Positioned in such a way that it is protected against deformation, crushing, breakage, etc.
- Not subjected to knocks, vibrations, overhanging loads, etc.

2.5 HANDLING



The term “handling” means unloading the machine from the means of transport and positioning it in the place where it will be used. Upon receipt the customer needs to unload the machine using his own means and store it in a dry and protected place pending installation.

The machine is to be handled while still fastened on the wooden pallet (see next paragraph) by suitably trained persons wearing personal protection devices described.
Before lifting the machine with a lift truck or transpallet, make sure that the forks are properly positioned and protrude from the opposite side by at least 2ft.

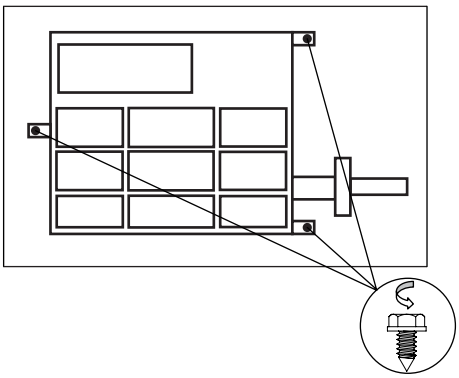
WARNING

HANDLE THE MACHINE WITH EXTREME CARE, LIFTING IT THE MINIMUM NECESSARY AND AVOIDING DANGEROUS OSCILLATION AND UNBALANCING. BEFORE MOVING THE MACHINE, IT MUST BE TIED TO THE LIFT TRUCK TO PREVENT IT FROM SHIFTING AND TURNING OVER.

2.1. INSTALLATION INSTRUCTIONS

A factory trained COATS® Service Technician must perform the install, setup, and initial test procedures on your wheel balancer. Do not attempt to install and setup the unit yourself. Accurate and reliable operation of your unit depends on proper installation. Please con-tact COATS® directly at 1-800-688-9240 for the Certified Service Partner nearest you.

The machine is secured to a base pallet.
Prepare an adequate area with level flooring and mark it off before lifting the machine and positioning it on the ground.



To remove the machine from the pallet operate as follows:

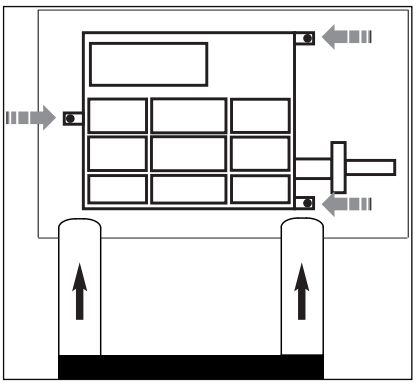
- Remove the screws that lock the machine to the pallet (figure on the side)

WARNING

MANUAL HANDLING AND LIFTING OF THE MACHINE MUST BE CARRIED OUT WITH THE AID OF A LIFT TRUCK. PRY ON THE BASE NEAR THE 3 SUPPORT POINTS AS SHOWN IN THE FIGURE BELOW. OTHER POINTS, SUCH AS THE HEAD OR THE ACCESSORY TRAY, MUST NOT BE FORCED UNDER ANY CIRCUMSTANCES.

2.6 POSITIONING

2.6.1 Warnings for positioning



The machine must be positioned respecting the following conditions:

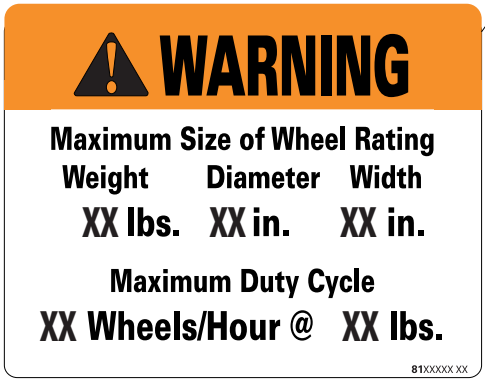
- the humidity and the temperature must be within the prescribed limits (see paragraph 4.2);
- the fire-fighting measures must be respected;
- allow for sufficient space at the front, side and rear of the machine for service or periodic maintenance and at the same time to assure
  adequate air circulation. It is advisable to leave a space of about 3ft around the machine;
- the place where the machine is installed must be free of corrosive/explosive powders or gas;
- the place of installation must be vibration-free;
- the lighting must be such that the various machine functions can clearly be seen;
- lift the machine and position it correctly in its final position (figure on the side);
- the machine must stand on a flat rigid surface and possibly away from any joint in the floor;
- the machine functions properly without having to fasten it to the floor with wheels weighing up to 99 lbs; for heavier wheels, fasten it at the pointed indicated (figure on the side)

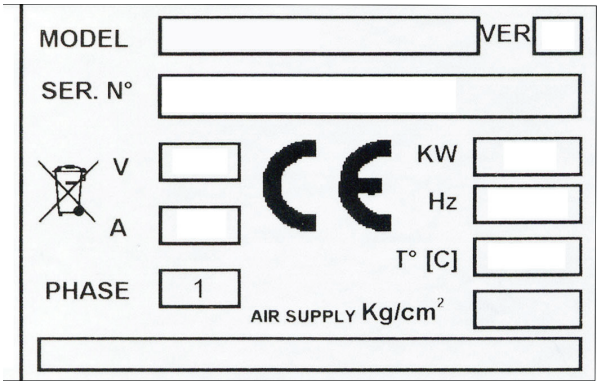
3. Safety Labels

WARNING

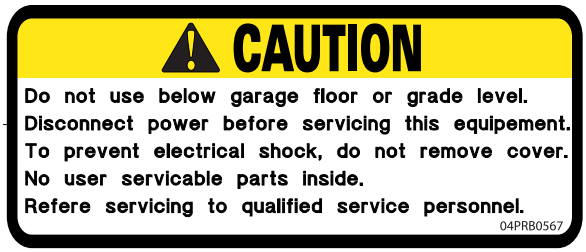
PAY ATTENTION TO WHAT IS SPECIFIED ON THE STICKERS BELOW (RESERVED FOR THE MARKET USA)

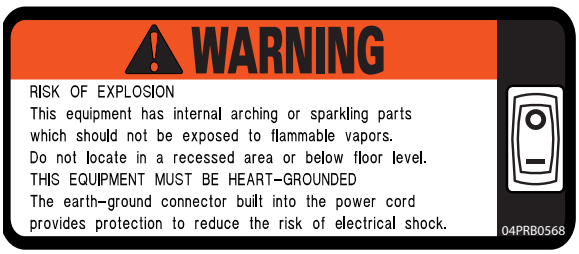
WARNING






CAUTION
Connect only to 115 V, 60 HZ,
7 A, 1 PHASE power supply.
8113666 01


CAUTION
Do not use below garage floor or grade level.
Disconnect power before servicing this equipement.
To prevent electrical shock, do not remove cover.
No user servicable parts inside.
Refere servicing to qualified service personnel.
04PRB0567


WARNING
RISK OF EXPLOSION
This equipment has internal arching or sparkling parts
which should not be exposed to flammable vapors.
Do not locate in a recessed area or below floor level.
THIS EQUIPMENT MUST BE HEART-GROUNDED
The earth-ground connector built into the power cord
provides protection to reduce the risk of electrical shock.
04PRB0568

THE INSTRUCTIONS IN THIS CHAPTER ADDRESS THE OPERATOR WHO MUST OPERATE WEARING THE PERSONAL PROTECTION DEVICES INDICATED IN THE PPD SECTION.

3.1 CLEANING

Before starting the machine, clean off any dust or foreign matter that may have accumulated during transport. Use alcohol to clean the plastic parts.

WARNING

DO NOT USE LIQUIDS CONTAINING SOLVENTS OR BLASTS OF COMPRESSED AIR TO CLEAN THE WHEEL BALANCER.

3.2 AMBIENT CHARACTERISTICS

The operating environment must have the following characteristics:
- *Temperature:* **+ 5 to + 40°C (41 - 104°F)**
- *Maximum relative humidity*: **80%**

The machine may not be used in open places and/or exposed to atmospheric agents or in environments with corrosive and/or abrasive vapors, fumes or dust with the risk of fire or explosion, and in any case where the use of explosion-proof components is prescribed. In addition, for machines equipped with SONAR (LA-EMS-LR), air currents or forced ventilation in the direction of the device may cause malfunctions or incorrect readings.

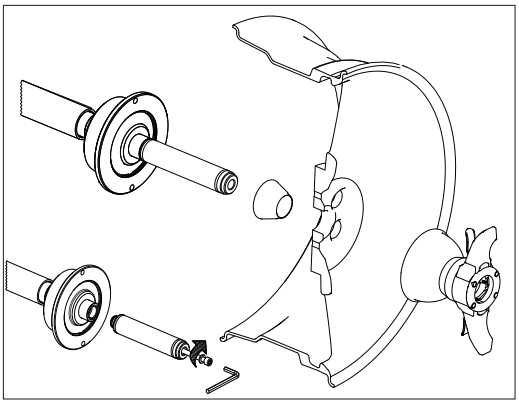
WARNING

SHOULD AT THE TIME OF INSTALLATION THE AMBIENT CONDITIONS BE DIFFERENT FROM THOSE PRESCRIBED, OR IF THEY HAVE CHANGED OVER TIME, DO NOT USE THE MACHINE BUT IMMEDIATELY CONTACT THE MANUFACTURER FOR THE RELATIVE INSPECTION.

3.3 END PIECES INSTALLATION/REMOVAL

BEFORE FITTING THE END PIECE TO THE WHEEL BALANCER, THOROUGHLY CLEAN THE MACHINE SHAFT AND THE ADAPTER HOLE. ANY TRACES OF DIRT OR INCORRECT LOCKING MAY AFFECT BALANCING ACCURACY.

The wheel balancer is supplied complete with adapter and cones for fastening wheels with a central hole. The threaded end must be fitted during machine installation using the Allen wrench provided applying the correct tightening torque (20-25Nm). If it is a machine with pneumatic locking, follow the procedure indicated in the next pages. In both cases, it can be removed for fitting any optional adapters.



WARNING

USING NON-ORIGINAL ACCESSORIES MIGHT COMPROMISE THE MEASURING QUALITY.
CONTACT THE MANUFACTURER FOR THE SUPPLY OF SPECIAL ADAPTERS OR SPARE PARTS OF ANY KIND.

3.4 ELECTRICAL CONNECTION

3.4.1 SAFETY RULES

Before performing any operation, read and apply the following:

- Make sure that the main electric cabinet to which the machine is connected is connected to the earth circuit and is adequately protected as required by the regulations in force in the country where the machine is installed.The socket to which the machine is connected must have a slow acting safety switch calibrated to 8A (115V).
- Check that the mains voltage and frequency correspond to the values indicated on the machine identification plate.
- The socket to which the machine is connected must be dimensioned to support the power absorbed up to a maximum of 1.1 kW.

3.4.2 CONNECTION

The machine is supplied with a single-phase cable to which a plug conform to the regulations must be connected. If an extension needs to be used, bear in mind that the wire cross-section may not be less than 2.5 mm^2. Make sure that the extension is arranged so that it does not constitute a risk or obstruction.

WARNING

THE CONNECTION TO THE SINGLE-PHASE MAINS MUST ALWAYS BE MADE BETWEEN PHASE AND NEUTRAL AND NEVER BETWEEN PHASE AND EARTH!
IT IS STRICTLY PROHIBITED TO TURN ON THE MACHINE IF IT IS NOT PROPERLY CONNECTED TO EARTH ACCORDING TO THE TECHNICAL SPECIFICATIONS SET OUT IN THE REGULATIONS IN FORCE. IN ANY EVENT, THE ELECTRICAL CONNECTIONS MUST BE CARRIED OUT EXCLUSIVELY BY A COATS SERVICE TECHNICIAN.

4. Machine description

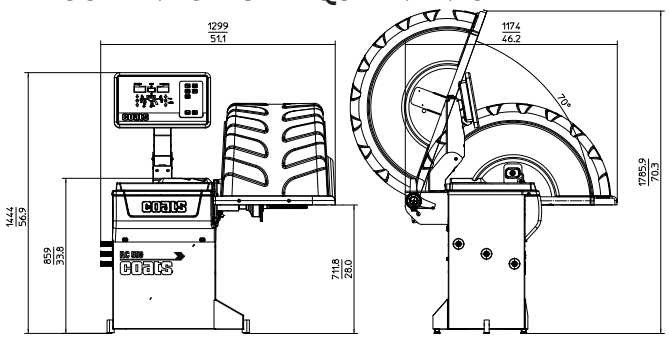
It is used to balance the wheels of cars, vans, 4-WD, motorcycles and scooters. The wheels must weigh less than 99 lbs. and, when fitted on the balancing machine, must not interfere with any fixed part of the machine, excluding the shaft and support adaptor. The machine is supplied with equipment enabling the vast majority of car wheels available on the market to be fitted. Other wheels with special dimensions, geometry and centring require special adaptors supplied on request. The machine can operate only on flat non resilient floor.
Do not mount anything other than motorbike, car or truck tires on the wheel balancer.
The balancer must be located on a flat floor of solid construction, preferably concrete. The balancer must sit solidly on its three feet. If the balancer is not level, does not sit solidly on its three feet, or is placed on an unstable floor, the balancer will not function properly and may produce inaccurate balance readings. Do not operate the balancer while it is on the pallet. Select a location for the balancer that provides a level, solid floor, and adequate clearance around and above the balancer. Make sure the location selected has enough room above and behind the unit so the hood can be raised completely. The location must also pro-vide working room for mounting and removing wheels. Make sure the area has adequate lighting.

4.1. TECHNICAL SPECIFICATIONS

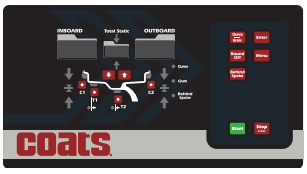
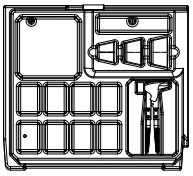
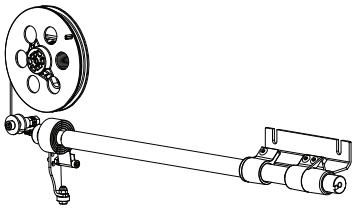
The following data refers to the balancer in its standard configuration.

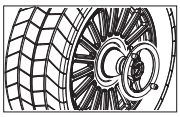
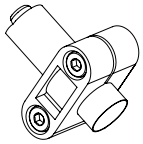
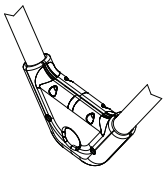
Single-phase power supply	115 / 230 V 50/60 Hz
Protection class	IP 54
Max. absorbed power	650 watts
Balancing speed	100 RPM
Cycle time for wheel	4.7 s (5 3/4”x14”) 33 lbs
Measurement uncertainty	± .02
Average noise	< 70 dB (A)
Rim width setting range	1.5” - 20” or 40 - 510 mm
Diameter setting range	10” - 30” or 265 - 765 mm
Maximum wheel weight	< 99 lbs
Machine weight	265 lbs

FLOOR AND SPACE REQUIREMENTS



4.2. COMPONENTS

TOUCH CONTROL PANEL		✔
WEIGHT-TOOL HOLDER		✔
DIAMETER + OFFSET GAUGE		✔

GAUGE INDEX		✔
HUB NUT		✔
WEIGHT POSITIONING LASER + RIM INTERIOR LIGHT		✔
WIDTH SONAR		✔

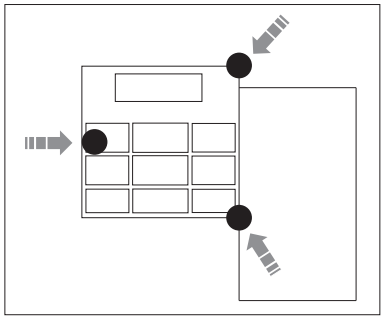
5. Starting

BEFORE SWITCHING ON THE MACHINE, MAKE SURE THAT ALL THE CONNECTIONS DESCRIBED IN THE INSTALLATION SECTION HAVE BEEN MADE CORRECTLY. THE FOLLOWING OPERATIONS INVOLVE A POTENTIAL RISK FOR THE OPERATOR, GIVEN THE PRESENCE OF VOLTAGE ON THE EQUIPMENT. THE PERSONAL PROTECTIVE EQUIPMENT DESCRIBED IN THE MANUAL MUST BE WORN AND WORK MUST BE DONE WITH DUE CARE AND ATTENTION. OPERATIONS MAY ONLY BE PERFORMED BY A COATS SERVICE TECHNICIAN.

Before powering the machine, carry out the following checks:

1. Check that the balancing machine touches the floor at the three support points.

2. Make sure that all the parts of the balancer are correctly connected and fixed.



3. Make sure that the parameters (voltage and frequency) of the mains power supply are compatible with those indicated on the rating plate of the balancer.
4. Make sure the power cable is correctly connected.
5. Make sure the machine shaft and flange hole are clean.

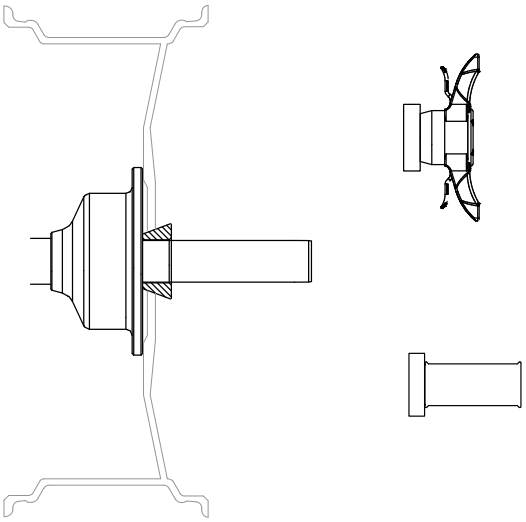
ANY TRACES OF DIRT MAY AFFECT BALANCING ACCURACY. PRESS BUTTONS WITH YOUR FINGERS. NEVER USE THE COUNTEWEIGHT GRIPPERS OR OTHER POINTED OBJECTS.

6. To turn on the wheel balancer press the switch on the side or back of the machine.

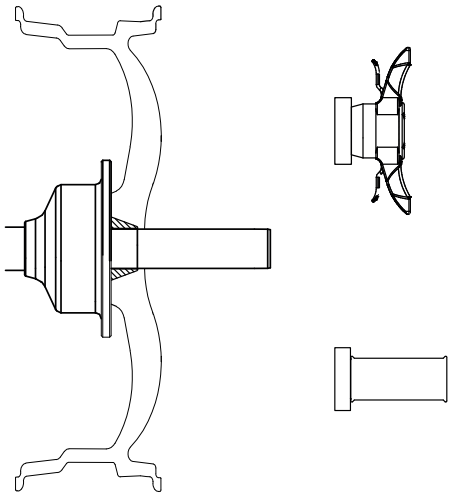
7. Position the wheel on the terminal with the inner part facing the balancer.

8. Firmly attach the wheel to the balancer shaft using the hub nut. In the pneumatic version, use the specific collar provided.

STEEL RIMS



ADHESIVE WEIGHT RIMS



9. At this point, you can read the tire measurements and perform balancing.

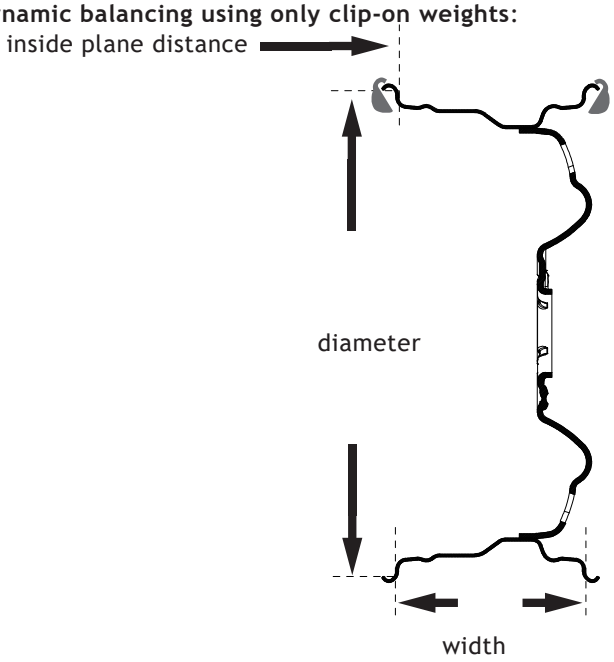
10. To perform the spin, lower the wheel guard, if hood start is disabled, press the START button.

11. The wheel is automatically locked when reaching the correct angular position for weight application on the inside and outside, turning it slowly by hand. To unlock the wheel, turn it hard to move it from the correct correction position. If the imbalance is within tolerance, the wheel is locked automatically.

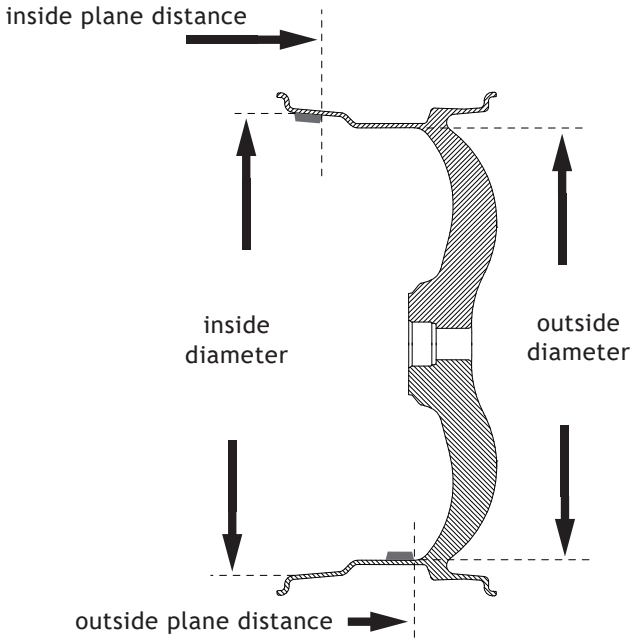
IT IS PROHIBITED TO TOUCH ANY PART OF THE MACHINE DURING THE BALANCING CYCLE.

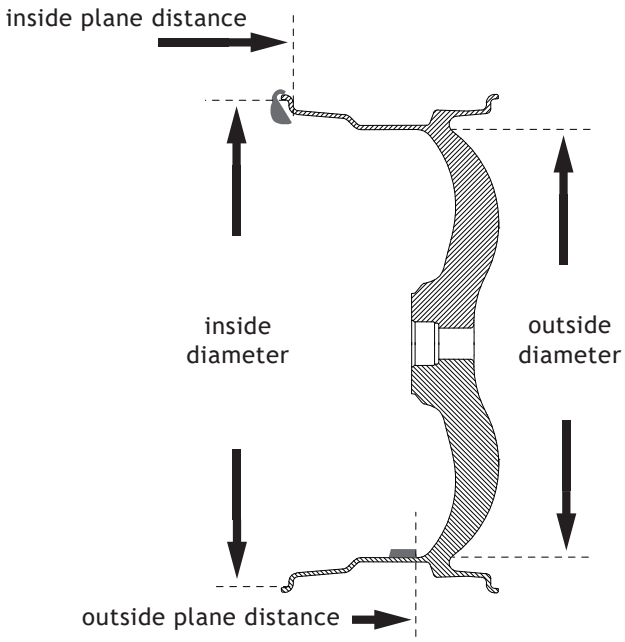
6. Correction plane identification

- **Standard dynamic balancing using only clip-on weights:**

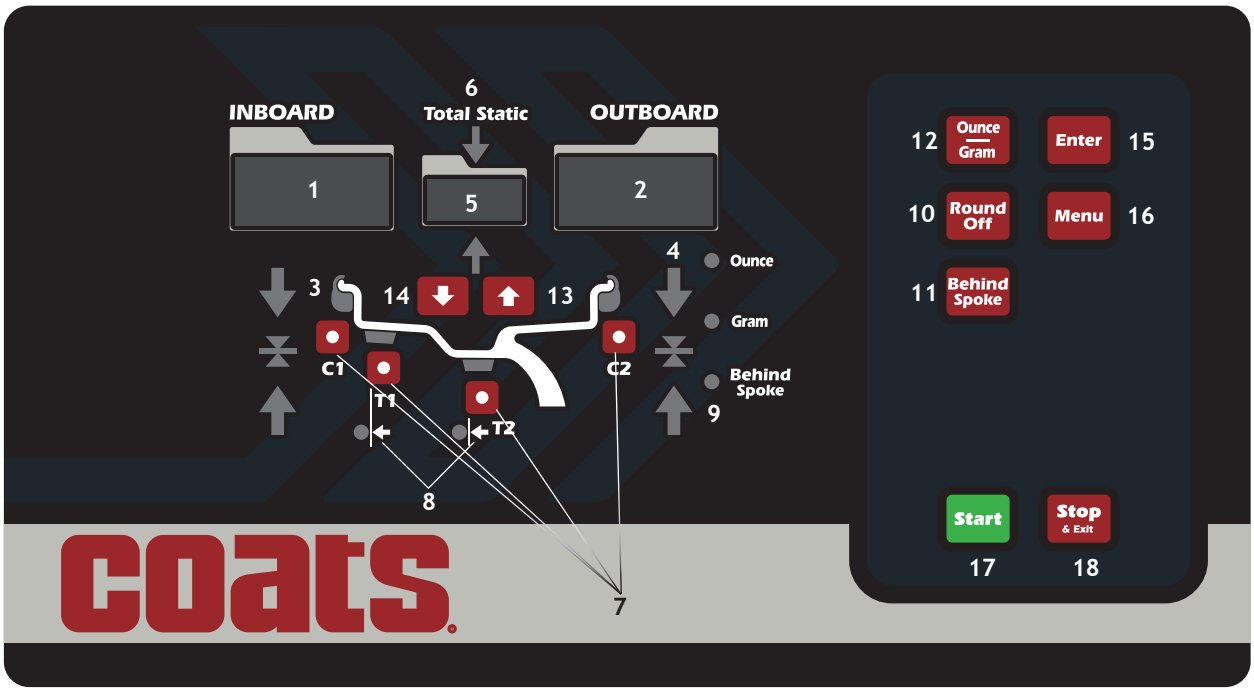


- **Standard dynamic balancing using adhesive weights or a mix of adhesive and clip-on weights:**





7. Control panel



1-2-5	Digital readouts, AMOUNT OF Imbalance, inside/outside/static
3-4-6	Digital readouts, POSITION OF Imbalance, inside/outside/static
7	Push button, selection of correction mode
8	Wheel indicators in position of adhesive weight application
9	Indicators, selection made
10	Push button, imbalance reading below the threshold
11	Push button, SPLIT (hidden weight)
12	Push button, g/oz measuring unit selection
13-14	Manual dimension setting buttons
15	Push button, menu selection confirmation
16	Push button, FUNCTIONS MENU
17	Push button, cycle start
18	Push button, emergency/home

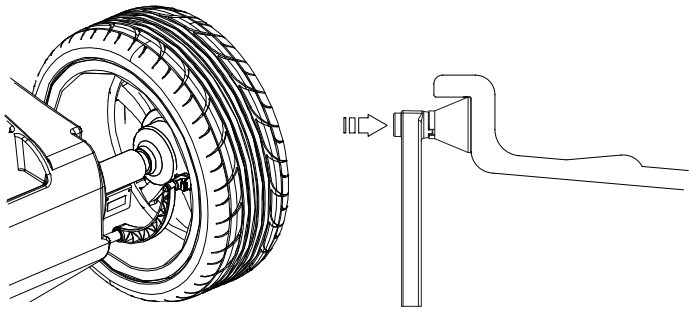
PRESS THE BUTTONS WITH YOUR FINGERS. NEVER USE THE WHEEL WEIGHT HAMMER OR OTHER POINTED OBJECTS!
IF THE ACOUSTIC SIGNAL IS ENABLED, PRESSING OF ANY PUSH BUTTON IS ACCOMPANIED BY A “BEEP”.

8. Use of the wheel balancer

8.1. STANDARD BALANCING (CLIP-ON COUNTERWEIGHTS)

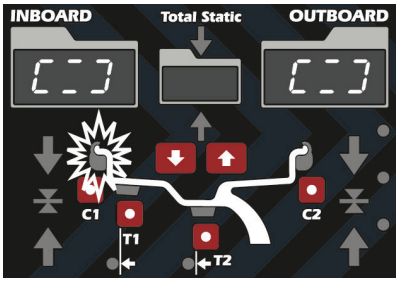
8.1.1. Wheel dimensions setting

Using the special grip, move the end of gauge against the rim as shown in the figure:



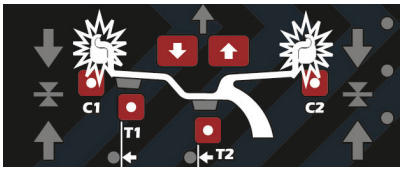
Hold the gauge in position for at least 2 seconds.
If the acoustic signal is enabled (☛ ***MENU - ACOUSTIC SIGNAL***), the acquisition of the dimensions is accompanied by a “beep”.

Measurement stored:

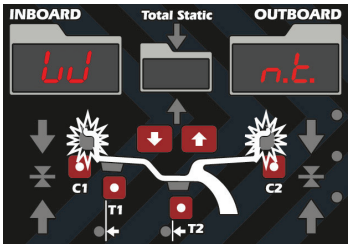


Set the offset and diameter gauge to the rest position.

The balancing machine automatically interprets the presence of a rim with clip-on weight correction:



At the end of the automatic measurement of the offset and diameter the following appears:



FOR AUTOMATIC WIDTH MEASUREMENT, RC550 ONLY.

Slowly lower the guard to automatically measure the wheel width with sonar and perform a measurement spin.

For large wheels (e.g. off-road vehicles, light trucks or wheels protruding far out from the rim) press the FINE button to switch from:

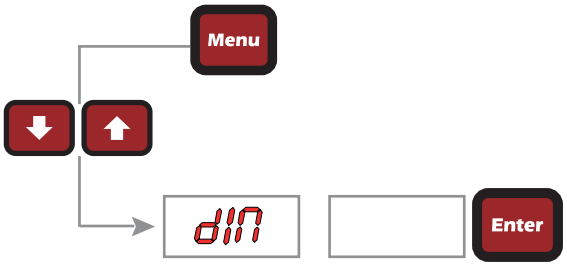
N.T. = NORMAL TIRE

L.T. = LIGHT TRUCK

PRESSING THE Stop & Exit BUTTON, THE AUTOMATIC WIDTH MEASUREMENT FUNCTION IS INTERRUPTED.

MANUALLY SET THE CORRECT WHEEL WIDTH TO PREVENT THAT THE IMBALANCE VALUES ARE ERRONEOUSLY REFERRED TO THE PREVIOUS AUTOMATICALLY ACQUIRED WIDTH VALUE.

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



1. Press:
2. Set the value of the dimensions in sequence:

   W=width
   d=diameter
   A=distance

   using the buttons ↓ ↑.

3. Press the button Enter to confirm the setting and go to the next dimension.

Press the button Stop & Exit at any time to interrupt dimension setting and return to the main screen.

For RC450 or with sonar disabled on RC550

Enabling the AWA function, after the end of the automatic distance and diameter measurement, the wheel balancer suggests the most likely width value for the dimensions just acquired. If necessary, change the width value by pressing the ↓ ↑ buttons, otherwise proceed with normal balancing.

SONAR AUTO WIDTH MEASUREMENT DOES NOT WORK WITH ANY SPACERS AND ADAPTERS MOUNTED ON THE FLANGE.

If the sonar width function is disabled, the width value (W) must be set with the ↓ ↑ buttons.

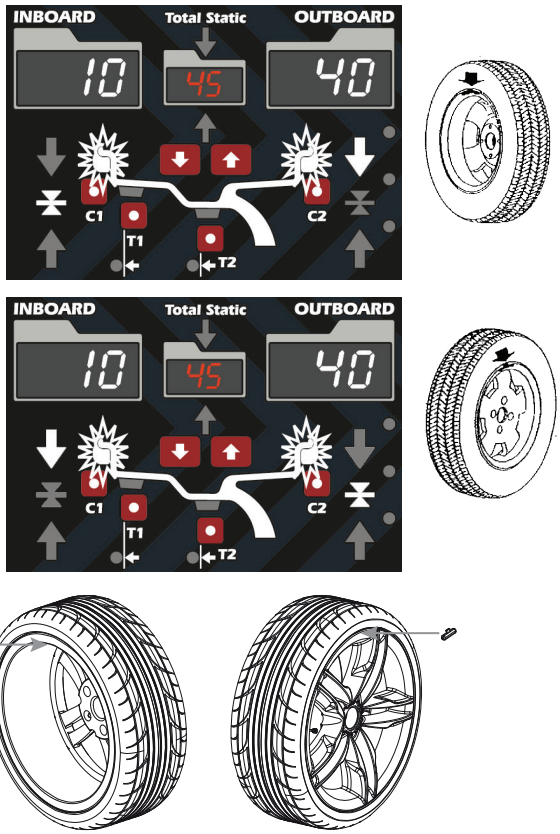
The correct measurement is what can be measured with the provided caliper gauge.

8.1.2. Result of the measurement and weight application

If the imbalance is out of tolerance:

1. At the end of the spin, the wheel automatically comes near to the inner side (on the outer side if the inner side is already within tolerance). In case of both sides (or static) within tolerance, no indexing is carried out. The spindle is automatically locked in correction indexed position (if the wheel index is not disabled and for rotation speeds less than 20 rpm).
   If the acoustic signal is enabled (☛ ***MENU - ACOUSTIC SIGNAL***), a beep will sound when the correction position has been reached.

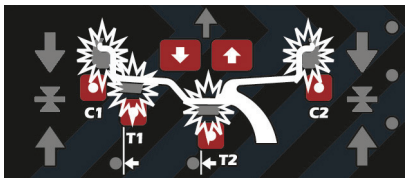
2. The symbol  is shown on the display 3/4 on the side corresponding to the active correction plane. If a flashing arrow appears, move slightly by hand the wheel to complete positioning on the correction plane.



3. Manually apply the number of weights shown on the display on the rim at 12 o'clock using clip-on weights:

4. Press 

, with guard open, to index on the other side and correct the imbalance according to the indications shown on the display.
   Alternatively, for automatic wheel indexing, press and hold the button corresponding to the required position (LED on):



IF THE OUT-OF-BALANCE IS LESS THAN THE CHOSEN THRESHOLD VALUE, "0" APPEARS INSTEAD OF THE OUT-OF-BALANCE VALUE TO INDICATE, ON THAT PARTICULAR SIDE, THAT THE WHEEL IS IN TOLERANCE.

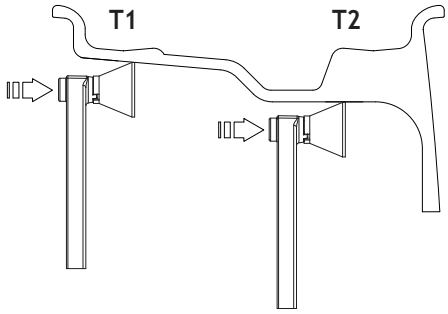
PRESS Round Off *TO DISPLAY THE RESIDUAL VALUE BELOW THE CHOSEN THRESHOLD.*

5. After applying the weights, spin the wheel to check the correction made checking that both planes are within tolerance.

8.2. BALANCING WITH ADHESIVE WEIGHTS

8.2.1. Wheel dimensions setting

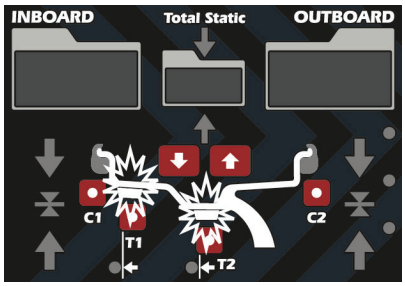
Using the dedicated grip, move the gauge tip up against the inside of the rim and make two consecutive measurements starting from the inside (T1) as shown in the figure. The two preselected positions coincide with the point where the counterweight is to be applied.



If the acoustic signal is enabled (*MENU - ACOUSTIC SIGNAL*), the acquisition of the dimensions is accompanied by a "beep".

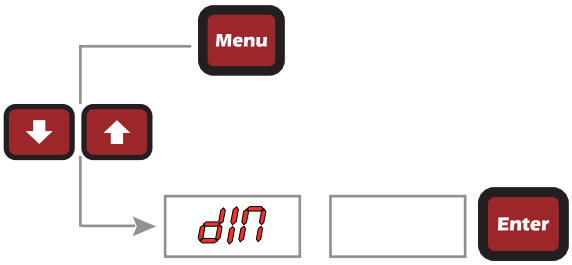
Bring the gauge in the rest position.

The balancing machine automatically interprets the presence of a rim with adhesive weight correction:



Slowly lower the guard and perform a spin.If the wheel dimensions have been entered incorrectly, the parameters can be modified without repeating the balancing spin:

1. Press:



2. Set the value of the dimensions in sequence:
   dt1=inside weight diameter
   dt2E=outside weight diameter
   At1=inside weight distance
   At2=outside weight distance
   W=width

   using the buttons  .

3. Press the button  to confirm the setting and go to the next dimension.

Press the button  at any time to interrupt dimension setting and return to the main screen.

8.2.2. Result of the measurement and weight application

If the imbalance is out of tolerance:

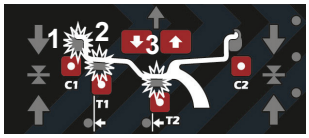
1. At the end of the spin, the wheel automatically indexes to the inner side (on the outer side if the inner side is already within tolerance). In case of dynamic (or static) within tolerance, no indexing is carried out. The spindle is automatically locked in correction position (if not disabled the wheel lock and for rotation speeds less than 20 rpm).
   If the acoustic signal is enabled (☛ ***MENU - ACOUSTIC SIGNAL***), a beep will sound when the correction position has been reached.

2. The symbol  is shown on the display 3/4 on the side corresponding to the active correction plane.

   If a flashing arrow appears, move the wheel slightly by hand to complete positioning on the correction plane.

3. The laser projects an indication inside the rim to guide weight placement, on the rim.
4. Manually apply the amount of weight shown on the display, in the position indicated by the laser line:

5. Press Start, with guard open, to index to the other side and correct the imbalance according to the indications shown on the display.
   Alternatively, for automatic wheel indexing, press and hold the button corresponding to the required position (LED on):



If the out-of-balance is less than the chosen threshold value, "0" appears instead of the out-of-balance value to indicate, on that particular side, that the wheel is in tolerance.

Press Round Off *to display the residual value below the chosen threshold.*

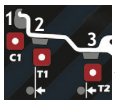
6. After applying the weights, spin the wheel to check the correction made checking that both planes are within tolerance.

8.3. BALANCING WITH A MIX OF ADHESIVE AND CLIP-ON WEIGHTS (STATIC BALANCING)

After dimension acquisition in standard balancing mode, press the buttons 

, to select one of the following correction modes.

WEIGHT APPLICATION POSITION		
Correction type	**Inside**	**Outside**
	Clip-on weight at 12 o'clock	Clip-on weight at 12 o'clock
	Adhesive weight at the point indicated by the internal laser	Clip-on weight at 12 o'clock
STATIC 	Adhesive weight at the point indicated by the internal laser	

After dimension acquisition in adhesive weight mode, press the buttons 

, to select one of the following correction modes. The adhesive weight application offset and diameter are measured by means of the automatic gauge, except for the static imbalance where the dimensions acquired are modified following some fixed parameters.

WEIGHT APPLICATION POSITION

Correction type	Inside	Outside
	Adhesive weight at the point indicated by the internal laser	Adhesive weight at the point indicated by the internal laser
	Clip-on weight at 12 o'clock	Adhesive weight at the point indicated by the internal laser
STATIC 	Adhesive weight at the point indicated by the internal laser	

If the Laser is disabled, all the weight application positions are at 12 o'clock.

8.4. STATIC IMBALANCE

Press the button [3] 

to show the static imbalance on display 5 (central) and the relative correction position on display 6 (when both arrows are on, it means that the imbalance is in position).
The correction weight application diameter cannot be set, but is deduced from the dimensions acquired in standard or adhesive weight mode through interpolation algorithms and the use of fixed parameters. Tolerance control is the same as for standard balancing, only that it refers to a single correction plane.

8.5. HIDE THE ADHESIVE WEIGHTS (BEHIND SPOKE)

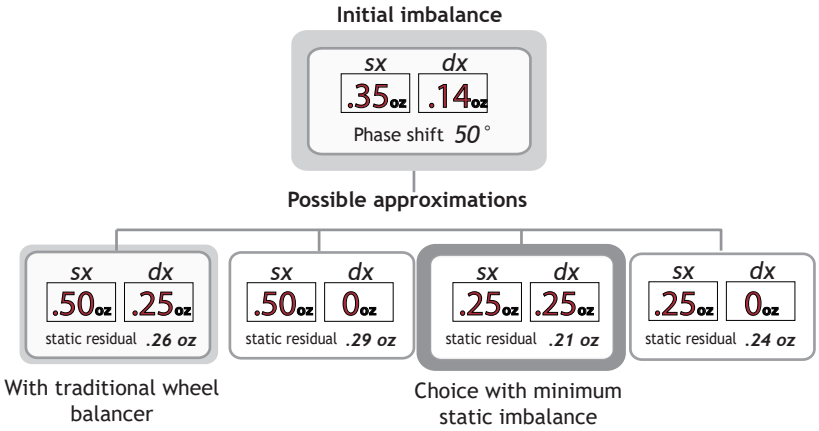
Behind spoke is only possible in the event of static imbalance or adhesive weight at T2 and is used to hide any adhesive weights correcting imbalance behind the rim spokes.

1. Perform an imbalance measurement spin.
2. Index the wheel to the static or the T2 adhesive weight correction position  .
3. Press Behind Spoke and hold down until the laser points to the spoke where you want to hide the weight.
4. Release the Behind Spoke button.
5. Turn the wheel in the imbalance rotation direction indicated on the display until the second spoke is in the position indicated by the laser and press the Behind Spoke button.
6. Press Start, with hood open, to index to the other side and correct the imbalance according to the indications shown on the display.

Alternatively, for automatic wheel indexing, press and hold the pushbutton corresponding to the required position (LED 5 on).

To return to the normal imbalance indication press Behind Spoke.

8.6. AUTOMATIC MINIMIZATION OF STATIC IMBALANCE



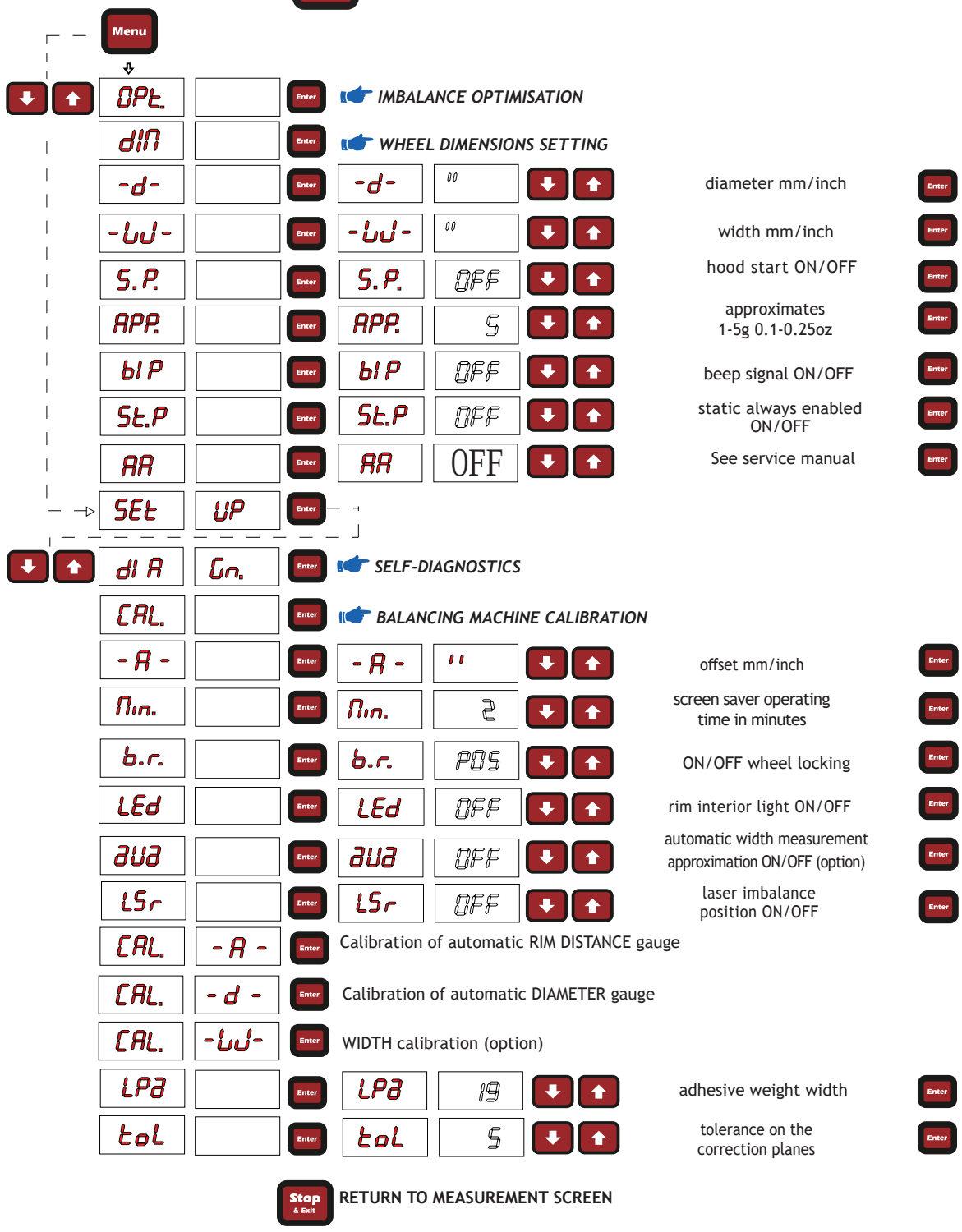
This program is a standard algorithm designed to provide a basic minimization of residual imbalance without mental effort or loss of time by the operator. When using commercially available weights with increments of 0.25 oz, a conventional wheel balancer rounds to the nearest incremental value. This can leave residual static imbalance of up to 0.29 oz. The impact of such approximation is emphasized by the fact that static imbalance is the most easily felt disturbance in a car coming from a wheel assembly. This function in the machine automatically calculates and indicates the optimum weights to be applied so that their placement will minimize residual static imbalance.

9. Setup

9.1. MENU ACCESS DIAGRAM

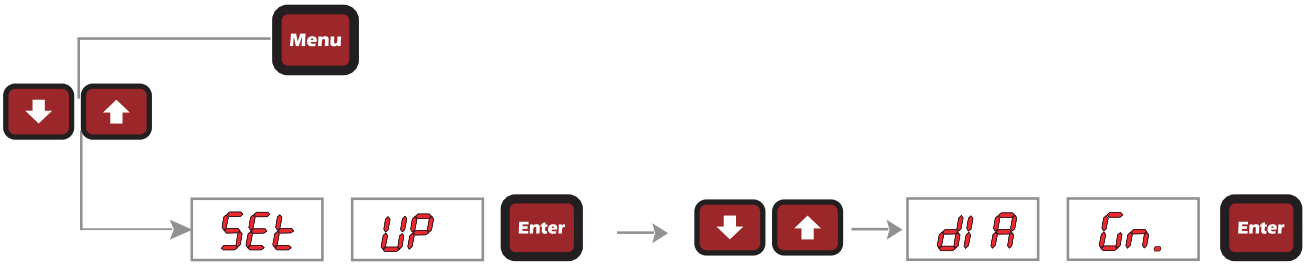
This is used to personalize some balancer functions and to perform calibrations.

To access this section, press the **Menu** button.



9.2. SELF-DIAGNOSTICS

The machine can perform self-diagnostics to check the LED's on the control panel and make sure the encoder reads correctly.
To perform this operation, view the SETUP menu.



In the self-diagnostics sequence, all the LED's on the panel light up for a few seconds in order to check operation. When the LED's go out, the machine automatically moves on to the encoder reading phase. When the wheel is turned manually (forwards and backwards), the display shows its exact position. The value lies between 0 (zero) and 255. ***(Contact a Coats Service Technician)***.

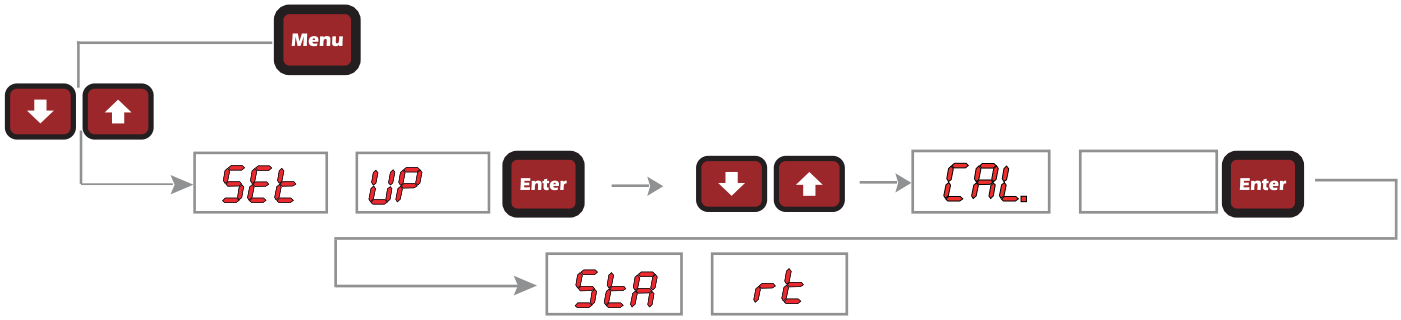
9.3. BALANCING MACHINE CALIBRATION

To perform a proper calibration of the balancing machine, it is necessary to use a medium-sized wheel with steel rim (e.g., 6" x 15" ±1"), complete with a correctly inflated tire. It is recommended to carefully follow these steps:

- Mount a wheel on the machine that meets the above specifications, preferably already balanced or with minimal residual imbalance.
- Proceed with setting the rim dimensions. Specifically, it is essential to manually enter the correct width value by referring to the measurement stamped on the rim itself and adding ¼".

Incorrect rim dimension settings result in inaccurate machine calibration, leading to improper balancing of subsequent wheels. In such case, it will be necessary to re-calibrate the machine with the correct values.

1. Display the CALIBRATION function from the SETUP menu



Close the hood and press the Start button to perform a spin.

2. Add a standard weight of 2.00 oz (60 g) to the outer side, in any position.

Close the hood and press the Start button to perform a spin.

3. Shift the standard weight from the outside to the inside keeping the same position.

Close the hood and press the Start button to perform a spin.

4. Turn the wheel until the standard weight is at the top (12 o'clock) and press Enter.

5. Turn the wheel until the centre-line of the sample weight is aligned with the laser beam and press Enter.

Pressing the button Stop & Exit will set a default value.

CALIBRATION COMPLETE

To cancel calibration at any time, press Stop & Exit.

9.4. WHEEL LOCKING

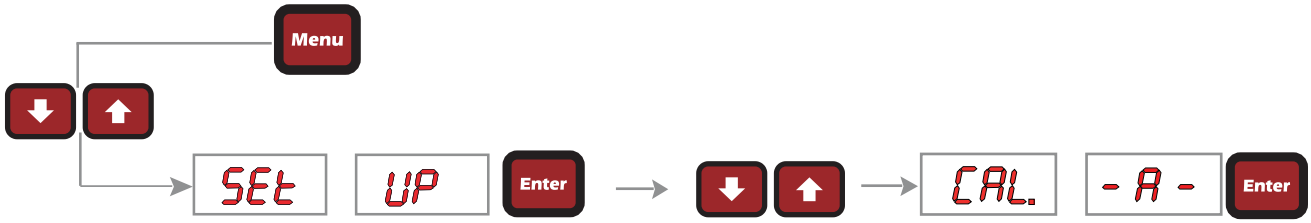
OFF: disables the wheel lock and the indexing to the correction plane function.
ON: enables the wheel lock in the correction position
POS: enables the wheel lock and the imbalance indexing to the correction plane function.
The 3/4 flashing LEDs indicate the fastest direction of rotation to index the wheel to the correction plane position.

At the end of the measurement spin, press the Start button with open guard to activate the approach function; alternatively, keep pressed the weight button corresponding to the desired position (LED 5 on).

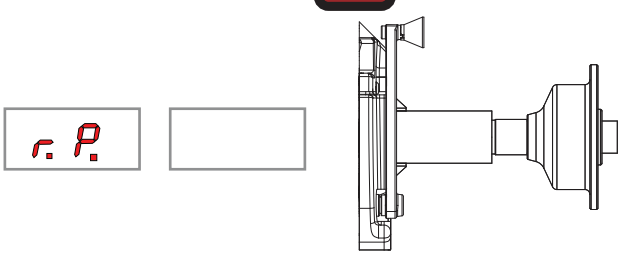
9.5. AUTOMATIC GAUGES CALIBRATION

9.5.1. Distance gauge calibration

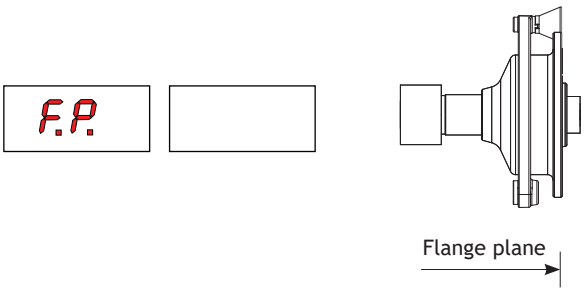
1. Display the distance gauge CALIBRATION function from the SETUP menu



2. Leave the distance gauge in rest position and press Enter



3. Move the distance gauge feeler pin in line with the adapter surface and press Enter



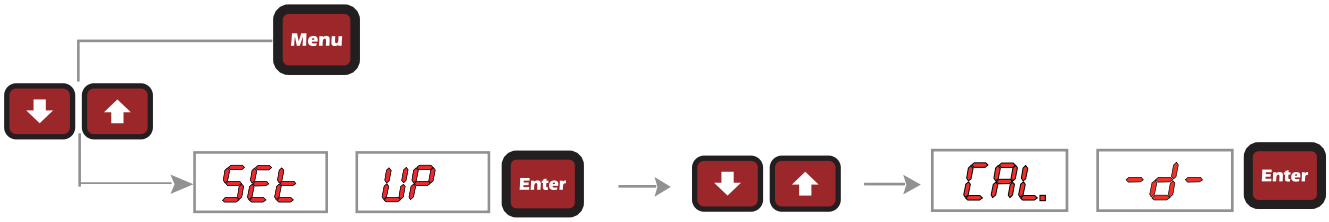
CALIBRATION COMPLETE

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

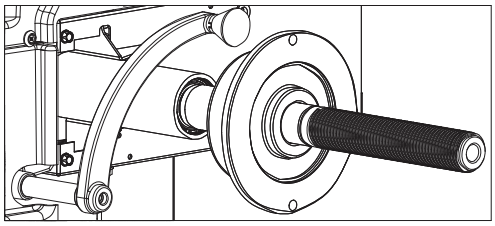
In the event of errors or faulty operation, the writing "R.P.": appears on the display : shift the gauge to the rest position and repeat the calibration operation exactly as described above. If the error persists, contact the coats Service Department. In the event of incorrect input in the rim distance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

9.5.2. Diameter gauge calibration

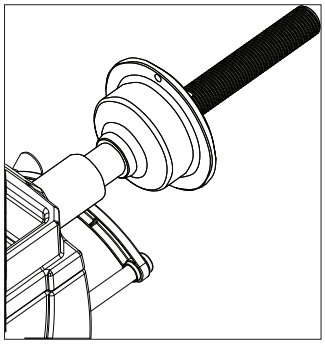
1. Display the diameter gauge CALIBRATION function from the SETUP menu



2. Place the gauge rod on the spindle shell as shown in the figure and press Enter

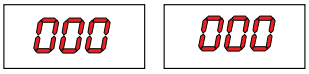


3. Turn the gauge downward positioning the gauge rod in contact with the spindle sleeve as shown in the figure and press Enter



CALIBRATION COMPLETE

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

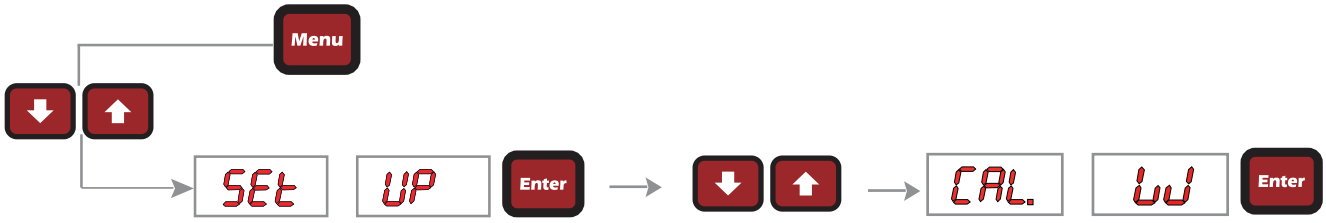


In case of errors or malfunctions, the indication of the same step [P.1] or [P2], always reappears on the display. Move the gauge back into rest position and repeat the calibration operation as described above; if the error persists, contact COATS Service.

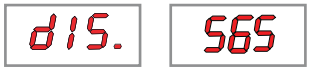
If erroneously accessing the diameter gauge calibration function, press **Stop & Exit** *to cancel it.*

9.5.3. Width sonar calibration

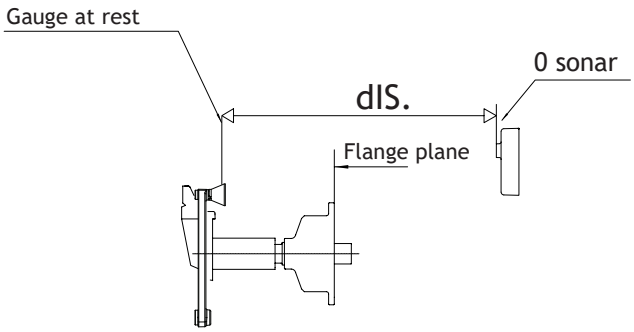
1. Display the width sonar CALIBRATION function from the SETUP menu



2. Set with the distance in mm between the Sonar sensor (0 sonar) and the distance gauge feeler pin (at rest)



dIS. = Distance: Gauge at rest → "0" sonar



Check the calibration by making a measurement on a wheel with a steel rim of known width. Should the measurement be incorrect, correct the calibration value proportional to the error.

In the event of incorrect input in the width gauge calibration function, press **Stop & Exit** to cancel it.

9.6. ADHESIVE WEIGHT WIDTH

Indicates the average width of the adhesive weights on the market.
Change ONLY if the width of the adhesive weights used for imbalance correction differ +/- 1/8" with respect to that shown on the screen (default=3/4").

10. Diagnostics

10.1. INCONSISTENT IMBALANCE READINGS

In some cases, when a wheel that has just been balanced is repositioned on the balancer, the machine can detect an imbalance.

This is not a machine problem but is due to faulty mounting of the wheel on the flange. In other words, when mounting the wheel after initial balancing, it has taken another position with respect to the balancer shaft axis.

If the wheel has been mounted on the flange with screws, the screws may not have been tightened correctly (criss-cross sequence) or the tolerances of the holes drilled in the wheel may be too large. Small errors, up to 10 grams (0.4 oz), are to be considered normal in wheels locked with the collet/cone: The error is normally greater for wheels locked with screws or pinplates.

10.2. ALARM SIGNAL

The machine has a self-diagnostics cycle which identifies the most frequent malfunctions during the normal work cycle. These malfunctions are processed by the system and shown on the display.

THE INFORMATION IN THE POSSIBLE REMEDY COLUMN REQUIRES WORK TO BE PERFORMED BY COATS TECHNICIANS OR OTHER AUTHORISED PEOPLE WHO MUST ALWAYS WORK USING THE PERSONAL PROTECTIVE EQUIPMENT INDICATED IN THE INSTALLATION SECTION (4-14. IN SOME CASES, THIS WORK CAN BE PERFORMED BY A NORMAL OPERATOR.

ERROR	PROBLEM	POSSIBLE SOLUTIONS
Black	The wheel balancer does not switch on	▪ Verify correct connection to the mains ▪ Verify and eventually replace the fuses on the power card ▪ Verify monitor function ▪ Replace the computer board
Err. 1	No rotation signal	▪ Check in self-diagnostics that the encoder functions properly ▪ Replace the phase pick-up board ▪ Replace the computer board
Err. 2	Speed too low during detection During the imbalance measurement revolutions, the wheel speed has fallen to below 42 rpm	▪ Make sure that a vehicle wheel is mounted on the wheel balancer ▪ Use the self-diagnostics function to check the encoder ▪ Disconnect the piezo connectors from the board and do a spin (if no error is detected, replace the piezo sensors) ▪ Replace the CPU board
Err. 3	Imbalance too high	▪ Verify wheel dimension settings ▪ Check detection unit connections ▪ Perform machine calibration ▪ Mount a wheel with more or less known imbalance (less than 3 oz) and verify the response of the machine ▪ Replace the computer board
Err. 4	Rotation in opposite direction After pressing [START], the wheel starts turning in the opposite direction (anticlockwise)	▪ Check in self-diagnostics that the encoder functions properly ▪ Check the bearing/spring of the phase generator
Err. 5	Hood open	▪ Reset the error ▪ Close the hood ▪ Verify the function of the protection Switch
Err. 7/ Err. 8/	NOVRAM parameter read error	▪ Switch off the machine and wait for at least ~ 1 min.; re-start the machine and check it works properly ▪ Repeat machine calibration ▪ Replace the computer board
Err. 11	Speed too high error During imbalance measurement rotation, wheel speed is more than 270 rpm	▪ Check in self-diagnostics that the encoder functions properly ▪ Replace the computer board

Err. 12/13	Imbalance measurement error	▪ Check the correct fixing of the machine to the floor ▪ Check the correct mounting of the wheel on the balancer ▪ Check in self-diagnostics that the encoder functions properly ▪ Repeat the imbalance measurement spin
Err.14 / Err.15 / Err.16 / Err.17 / Err.18 / Err.19	Imbalance measurement error	▪ Check in self-diagnostics that the encoder functions properly ▪ Check detection unit connections ▪ Verify machine earth/ground connection ▪ Mount a wheel with more or less known imbalance (less than 3 oz) and verify the response of the machine ▪ Replace the computer board
Err. 21	Motor on for more than 15 seconds	▪ Use the self-diagnostics function to check the encoder ▪ Check the connections on the power board ▪ Replace the computer board
Err. 23	indexing position waiting timeout	▪ Use the self-diagnostics function to check the encoder ▪ Check the bearing/spring of the encoder ▪ Replace the computer board
Err. 24	Distance between the spokes less than 18 degrees	▪ The minimum distance between the spokes where the imbalance is to be split must be greater than 18 degrees ▪ Repeat the SPLIT function increasing the distance between the spokes
Err. 25	Distance between the spokes greater than 120 degrees	▪ The maximum distance between the spokes where the imbalance is to be split must be less than 120 degrees ▪ Repeat the split function increasing the distance between the spokes
Err. 26	First spoke too far from the imbalance	▪ The maximum distance between the imbalance position and the spoke must be less than 120 degrees ▪ Repeat the split function increasing the distance between the-spokes and the imbalance
Imbalance incorrect with back centring cones	Mount the wheel in vertical position and push the sleeve up against the wheel. If necessary, repeat locking/unlocking/ locking and perform the procedure again	▪ Mount the wheel in vertical position and push the sleeve up against the wheel. If necessary, repeat locking/unlocking/locking and perform the procedure again.

11. Maintenance

11.1. GENERAL

BEFORE PERFORMING ANY MAINTENANCE OPERATIONS, MAKE SURE THE MACHINE HAS BEEN DISCONNECTED FROM THE MAINS POWER SUPPLY. ALWAYS USE THE PERSONAL PROTECTIVE EQUIPMENT INDICATED IN THE BEGINNING OF MANUAL.

11.1.1. Introductory notes

This machine has been designed so as not to require routine maintenance, apart from accurate periodic cleaning.
It is important to keep the machine perfectly clean in order to prevent dust or impurities from compromising the operation of the balancer.

THE PEOPLE RESPONSIBLE FOR CLEANING THE AREA WHERE THE MACHINE IS INSTALLED MUST WEAR PERSONAL PROTECTIVE EQUIPMENT IN ORDER TO WORK IN SAFETY AND ACCORDING TO THE CURRENT OCCUPATIONAL HEATH AND SAFETY REGULATIONS.

As extraordinary maintenance must be performed by service staff or, in any case, by specifically authorised and trained people, is not dealt with in this manual.

11.1.2. Safety rules

Performing specialist activities on the equipment, particularly if the guards need to be dismounted, exposes people to serious danger due to the presence of potentially live parts.

The rules shown below must be scrupulously followed.

People must always use the Personal Protective Equipment indicated in the beginning of the manual. During activities, unauthorized people may not access the equipment and WORK IN PROGRESS signs will be erected in the department in such a way that they are visible from every place of access.

Specialist staff must be authorized and especially trained concerning the dangers that may arise during operation and the correct methods for avoiding them.
They must always work with great care and pay full attention.

If, exceptionally, the staff removes the guards to carry out a particular specialist technical maintenance, inspection or repair job, they are required to put them back after work.

After work, staff must make sure that foreign objects, in particular mechanical pieces, tools or devices used during the operative procedure that could cause damage or malfunctions are not left inside the balancer.

For safety, before starting work, maintenance, inspection and repair staff must disconnect all power sources and take all the necessary preventive safety measures.

As well as operating frequencies, the operations described below indicate the qualifications that staff must possess in order to perform the operation.

11.1.3. Replacing fuses

Some protection fuses are located on the power board (see wiring diagrams) accessible by dismantling the weight tray). If fuses require replacement, use ones with an identical current intensity.

11.1.4. Cleaning the screen

Use a soft cloth and NON-ABRASIVE commercial glass/plastic cleaning spray or ethanol or natural detergents.

DO NOT USE:

- Organic solvents type nitro thinner
- Turpentine
- Gasoline
- Trichloroethylene
- Acetone

THE INSTRUCTIONS IN THIS CHAPTER ARE INDICATIVE. REFER TO THE REGULATIONS IN FORCE IN THE COUNTRY WHERE THE EQUIPMENT IS USED.

12. Spare parts

12.1. IDENTIFICATION AND ORDERING METHOD

The various parts can be identified using the exploded drawings, the electrical drawings and diagrams in the machine technical file which is archived by the Manufacturer to which a request can be made.

For off-the-shelf parts, the technical manuals or the supplier's original documents can be provided if the Manufacturer deems this to be useful.

If not supplied, this documentation is available from the manufacturer.
In this case, contact the Technical Service to identify the required piece.

If the required pieces are not in any position or they cannot be identified, contact the Technical Service, specifying the type of machine, its serial number and year of construction.

This information is indicated on the machine identification plate.