coats®

Wheel Balancer Model
PROBALANCE™ E900

DESIGNED AND BUILT IN THE USA

See ★Balancing Your First Tire on page 12.

Safety Instructions
Set Up Instructions
Operation Instructions
Maintenance Instructions

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.

coats

1601 J. P. Hennessy Drive, La Vergne, TN USA 37086 615/641-7533 800/688-6359 www.coatscompany.com
The Coats Company LLC, Manufacturer of Automotive Service Equipment and Tools.

Manual Part No.: 85613511 00
Revision: 11/25

Table of Contents

IMPORTANT SAFETY INSTRUCTIONS

READ ALL INSTRUCTIONS

1. Read and understand this manual before operating. Abuse and misuse will shorten the functional life. Use equipment only as described in this manual.
2. Eye and face protection requirements:

   "Protective eye and face equipment is required to be used where there is a reasonable probability of injury that can be prevented by the use of such equipment." O.S.H.A. 1910.133(a) Protective goggles, safety glasses, or a face shield must be provided by the owner and worn by the operator of the equipment. Care should be taken to see that all eye and face safety precautions are followed by the operator. ALWAYS WEAR SAFETY GLASSES. Everyday glasses only have impact resistant lenses, they are not safety glasses.
3. Keep guards and safety features in place and in working order. Do not modify the unit or remove protective covers or housings. Do not disable hood safety interlock system, or in any way shortcut safety controls and operations.
4. Be sure that wheels are mounted properly, the hub nut engages the arbor for not less than four (4) turns, and the hub nut is firmly tightened before spinning the wheel.
5. Be sure the balancer is properly connected to the power supply and electrically grounded.
6. Do not operate equipment with a damaged cord or if the equipment has been dropped or damaged – until it has been examined and repaired by a qualified technician.
7. Do not let cord hang over edge of table, bench, or counter or come in contact with hot manifolds or moving fan blades.
8. If an extension cord is necessary, a cord with a current rating equal to or more than that of the equipment should be used. Cords rated for less current than the equipment may overheat. Care should be taken to arrange the cord so that it will not be tripped over or pulled.
9. Wear proper clothing. Safety toe, non-slip footwear and protective hair covering to contain hair is recommended. Do not wear jewelry, loose clothing, or neckties when operating the balancer.
10. Keep work area clean and well lighted. Cluttered and/or dark areas increase the risk of accidents.
12. Avoid dangerous environments. Do not use power tools or electrical equipment in damp or wet locations, or expose them to rain.
13. Avoid unintentional starting. Be sure the balancer is turned OFF and power disconnected before servicing.
14. Use only manufacturer's recommended attachments and accessories. Improper accessories may result in personal injury or property damage.
15. Repair or replace any part that is damaged or worn and that may cause unsafe balancer operation. Do not operate damaged equipment until it has been examined and serviced by an authorized service technician only. This unit contains no user serviceable parts.
16. Never overload or stand on the weight tray or any part of the balancer.
17. Do not use the balancer as a mounting surface for performing tire maintenance or repairs.
18. Do not operate machine while distracted. Do not use mobile or handheld devices while operating.

19. Do not allow untrained persons to operate machinery.
20. To reduce the risk of fire, do not operate equipment in the vicinity of open containers or flammable liquids (gasoline).
21. Adequate ventilation should be provided when working on or operating internal combustion engines.
22. Keep hair, loose clothing, fingers, and all parts of body away from moving parts. Never reach inside hood area while hood is down and wheel is rotating.
23. The laser unit is not to be opened or modified by the customer, nor is it allowed to attempt to shortcut or defeat safety interlocks (where applicable). Never operate the laser if defective.
24. Do not point laser or allow laser light to be directed or reflected toward other people or reflective objects. Potential eye or skin exposure to laser radiation exists if these instruction are not followed.

SAVE THESE INSTRUCTIONS

Important Safety Instructions

Owner's Responsibility

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.

Operator Protective Equipment

Personal protective equipment helps make tire servicing safer. However, equipment does not take the place of safe operating practices. Always wear durable work clothing during tire service activity. Loose fitting clothing should be avoided. Tight fitting leather gloves are recommended to protect operator's hands when handling worn tires and wheels. Sturdy leather work shoes with steel toes and oil resistant soles should be used by tire service personnel to help prevent injury in typical shop activities. Eye protection is essential during tire service activity. Safety glasses with side shields, goggles, or face shields are acceptable. Back belts provide support during lifting activities and are also helpful in providing operator protection. Consideration should also be given to the use of hearing protection if tire service activity is performed in an enclosed area, or if noise levels are high.

Definitions of Hazard Levels

Identify the hazard levels used in this manual with the following definitions and signal words:

DANGER

Watch for this symbol:

It Means: Immediate hazards, which will result in severe personal injury or death.

WARNING

Watch for this symbol:

It Means: Hazards or unsafe practices, which could result in severe personal injury or death.

CAUTION

Watch for this symbol:

It Means: Hazards or unsafe practices, which may result in minor personal injury or product or property damage.

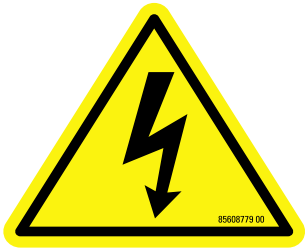
Watch for this symbol! It means BE ALERT! Your safety, or the safety of others, is involved!

Safety Notices and Decals

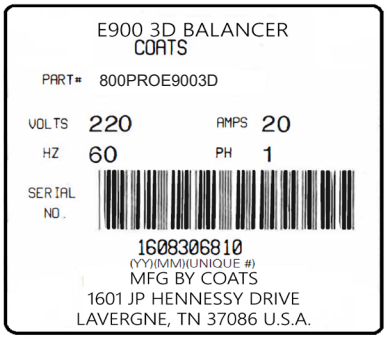
WARNING

Failure to follow danger, warning, and caution instructions may lead to serious personal injury or death to operator or bystander or damage to property. Do not operate this machine until you read and understand all the dangers, warnings and cautions in this manual. For additional copies of either, or further information, contact:

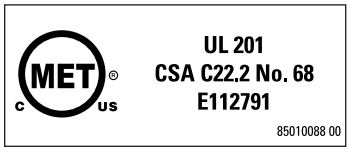
THE COATS COMPANY LLC
1601 JP Hennessy Drive
LaVergne, TN 37086
(615) 641-7533 or (800) 688-6359
www.coatscompany.com



Electric Shock Label



Sample Manufacturing I.D. Label



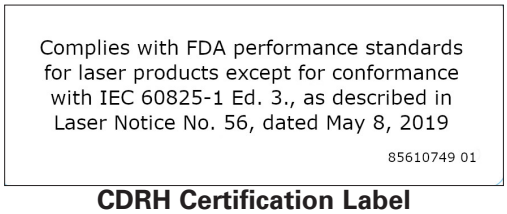
MET Lab Compliance Label

Laser Warnings

Laser Hazard Label

All lasers on the balancer are Class 2 lasers, between 635nm and 675nm. Although laser output is low, avoid looking directly into the laser beam. Close your eyes or immediately turn away if the laser beam hits your eye

Explanatory Label.



CDRH Certification Label

CAUTION

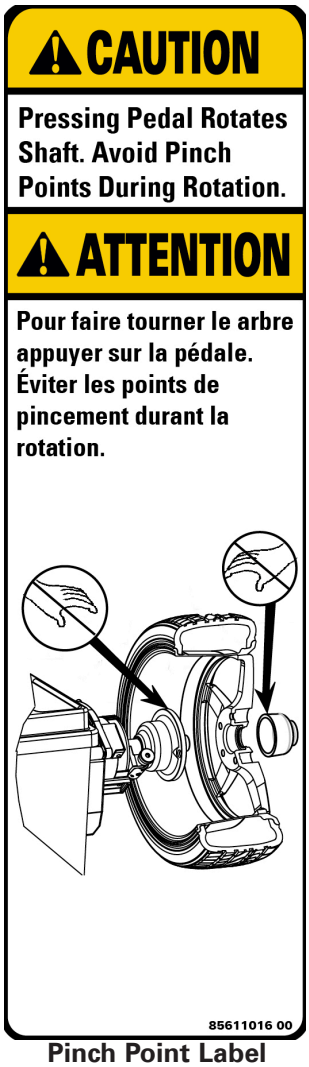
Use of controls, adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

In case of failure, the entire laser unit must be replaced.

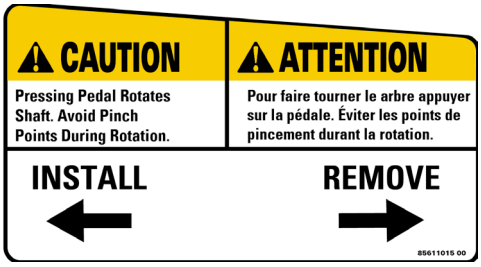
Standard Safety Devices

- STOP key for stopping the wheel under emergency conditions and for stopping flow of power to motor in all modes.
- A hood guard of high impact plastic that is designed to prevent the counterweights or any debris trapped in the tire tread from flying out in any direction except towards the floor.
- A hood switch interlock system that prevents the machine from starting if the guard is not lowered and stops the wheel whenever the guard is raised.

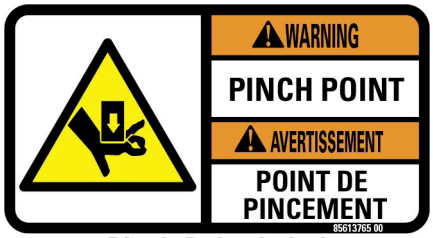
Warning Label



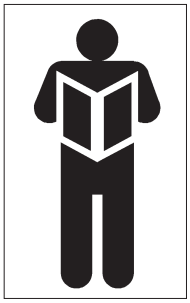
Pinch Point Label



Pedal Operations Label



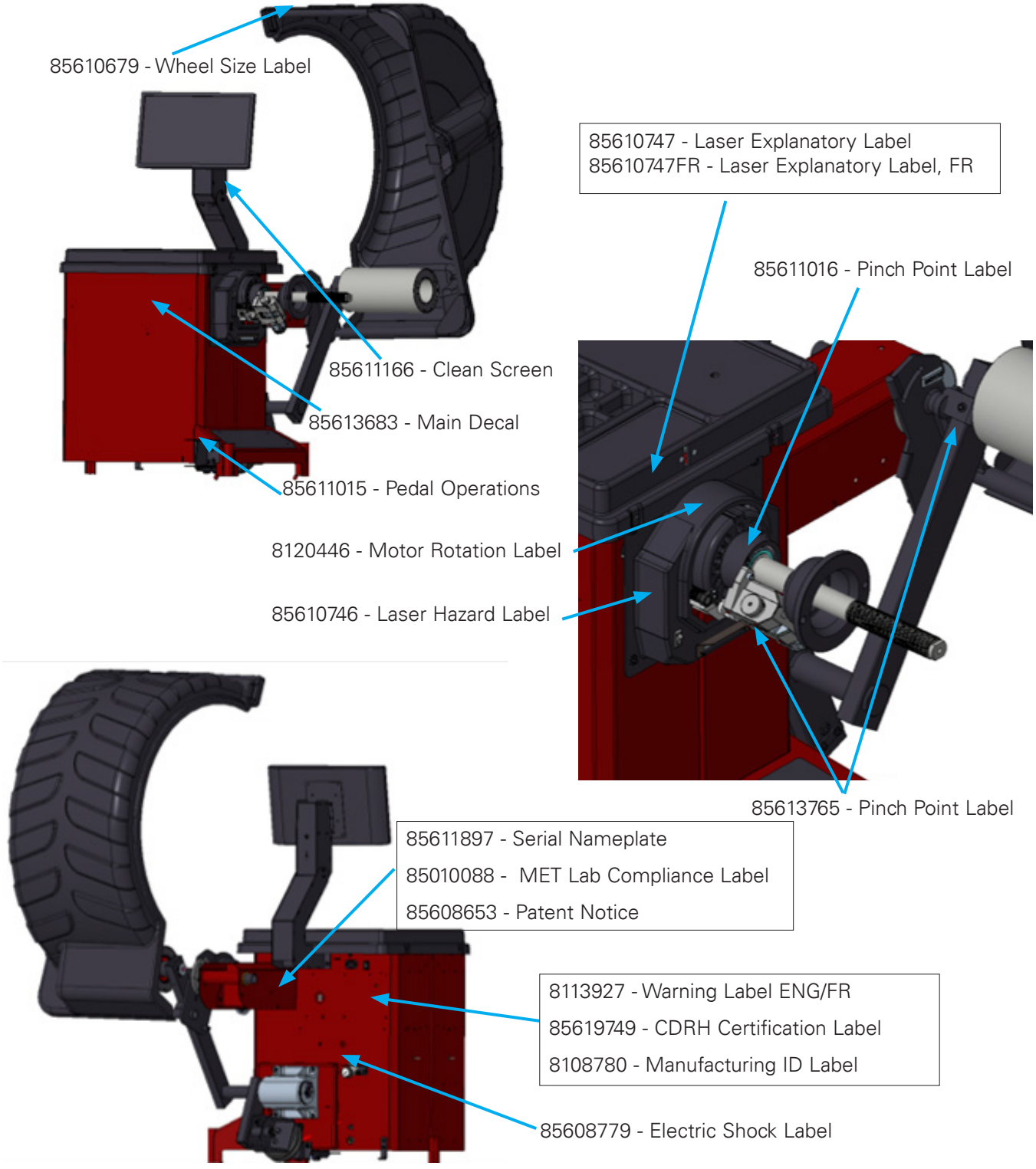
Pinch Point Label



NOTICE

Read entire manual before assembling, installing, operating, or servicing this equipment.

Label Locations



Turning Power ON/OFF Power Switch

The ON/OFF switch location (Figure 1) is on the back of the balancer; below the weight tray.

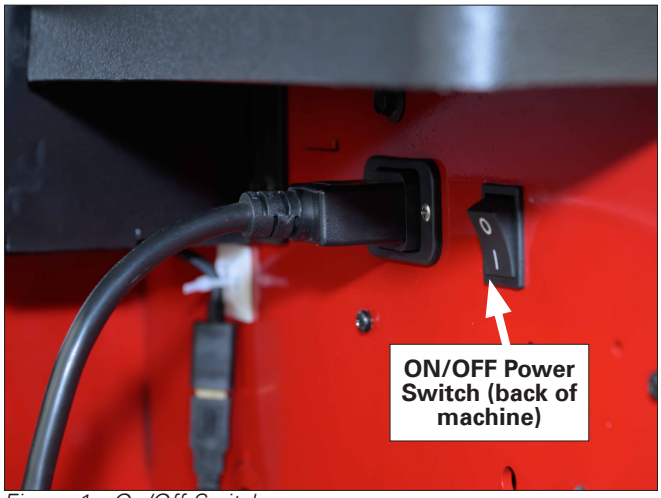


Figure 1 - On/Off Switch

Laser Identification

Refer to laser safety page for full warning labels.

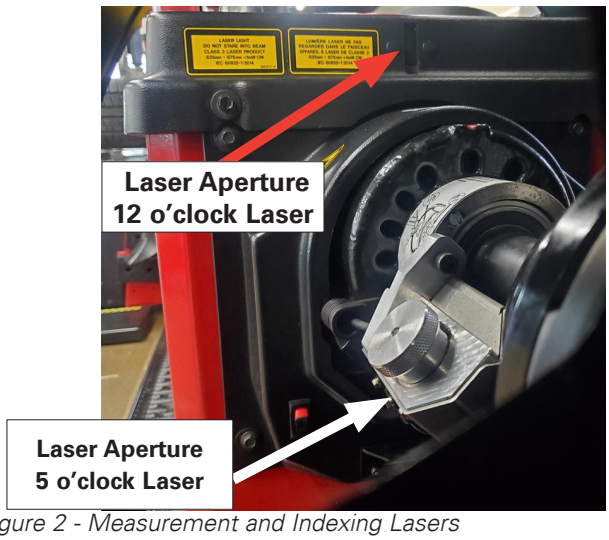


Figure 2 - Measurement and Indexing Lasers

5 O'clock (Dot) Measurement Laser

Pulsed 2kHz, 99% duty cycle/CW equivalent

Wavelength 670nm

Class 2 <1mW Classification Class 2 <1mW

12 O'clock Laser

Line, Continuous Wave

Wavelength 650nm

Classification Class 1 <0.5mW

Divergence<2mRad x 75°

Specifications

Wheel Diameter Range
8 - 30 inches (203 - 762 mm)

Wheel Width Range
2 - 20 inches (51 - 508 mm)

Maximum Outside Tire Diameter
Up to 44 inches (1118 mm)

Maximum Tire/Wheel Weight
160 pounds (73 Kg)

Mounting Shaft Diameter
40 mm

Resolution (Round Off Mode)
0.25 ounce (7 grams), position 1.40 degrees

Resolution (Fine Mode)
0.01 ounce (.3 grams), position 1.40 degrees

Balancing Display Increments
0.25 or 0.01 ounces (7 or .3 grams)

Electrical Requirements
220V, 60 Hz, 20A, 1 ph.
NEMA L6-20R

220V, 60 Hz, 20A, 3 ph.
NEMA L15-20R

(use grounding type plug)

Air Compressor Requirements
110-175 psi, 5 cfm minimum

Footprint
Width: 61 inches (1542 mm)

Depth: 56 inches (1431 mm)

Height: 77 inches (1944 mm)

Shipping Weight
650 pounds (295 Kg) (without accessories)

Set Up Instructions

Receiving

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 carrier 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.

Electrical Requirements

See serial tag for the appropriate power requirements of your machine.

Always have a qualified electrician install the proper receptacles in accordance with state and local codes.

Plug types for 1 phase and 3 phase balancer are listed in "Specifications" on page 4.

Machine Set Up

⚠ CAUTION

Do not use the display, faceplate, hood, diagnostic roller arm, or mounting shaft to lift the balancer. Use help to remove the balancer from the pallet. The unit is heavy and the weight is not evenly distributed. Dropping the unit may cause personal injury or equipment damage.

⚠ CAUTION

Do not attempt to install and set up the unit yourself. Contact COATS as noted below.

A factory trained COATS Service Technician must perform the install, set up, and initial test procedures on your wheel balancer. Accurate and reliable operation of your unit depends on proper installation. Please contact COATS directly at 1-800-688-6359 for the Certified Service Partner nearest you.

Display Mount Setup & Anti-tip Bar

The locking lever on the display allows the user to position the display front or right; and then lock in place. Positioning the display makes it easier to view and touch, while operating the wheel balancer.

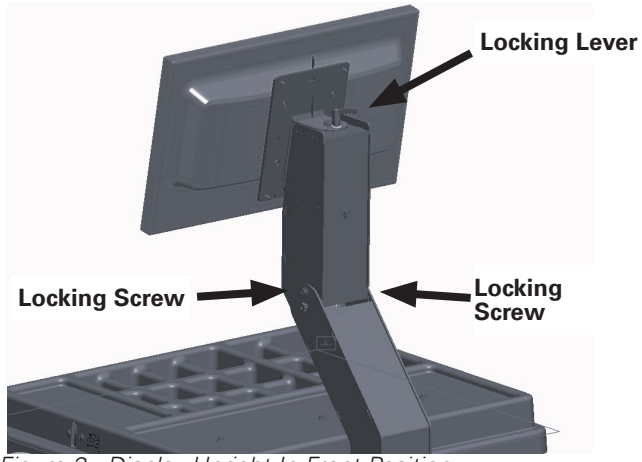


Figure 3 - Display Upright In Front Position

The anti-tip bracket should be positioned such that the flat pad of the bracket is down towards the ground. This bracket can help keep the balancer upright in case of accidental tipping of the machine towards the rear.

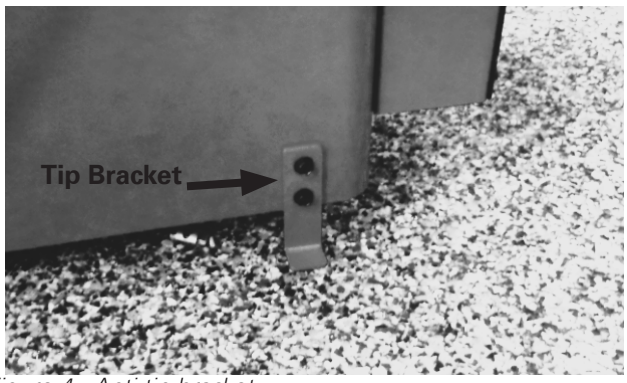


Figure 4 - Anti-tip bracket

Features

- Direct Drive System
- Simple, Interactive User Interface - Touchscreen
- Clip and Adhesive Weight Placement
- Static, Dynamic, And Pro Mode
- Automatic Data Entry for Offset, Diameter & Width - Manual Entry Backup on All Parameters
- Automatic Start When Hood Is Lowered
- Hood Safety Interlock System
- Stop, Lock, Index Auto Wheel Positioning
- Behind the Spoke Weight Placement
- ProBalance Technology™
- ProMatch™ Technology with Runout Diagnostics
- Laser Guided Operation™ System
- Multi-Function Laser Module
- 12 O'clock Inboard Laser Line
- LED Barrel Lighting
- Pedal-Assisted Wheel Mounting
- Spin Count Monitor

Floor and Space Requirements

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**.

Take **special care** when lifting balancer from the pallet to avoid damaging **Pedal-Assist** Wheel Mounting and diagnostic roller arm assemblies.

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 provide working room for mounting and removing wheels. Make sure the area has adequate lighting.

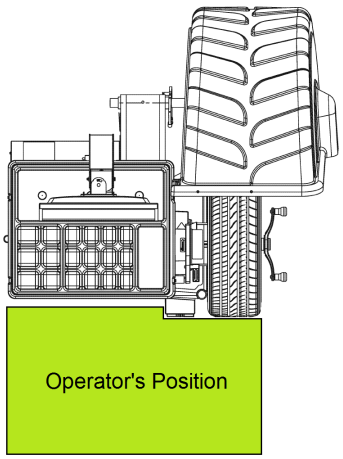


Figure 5 - Primary Operator Position

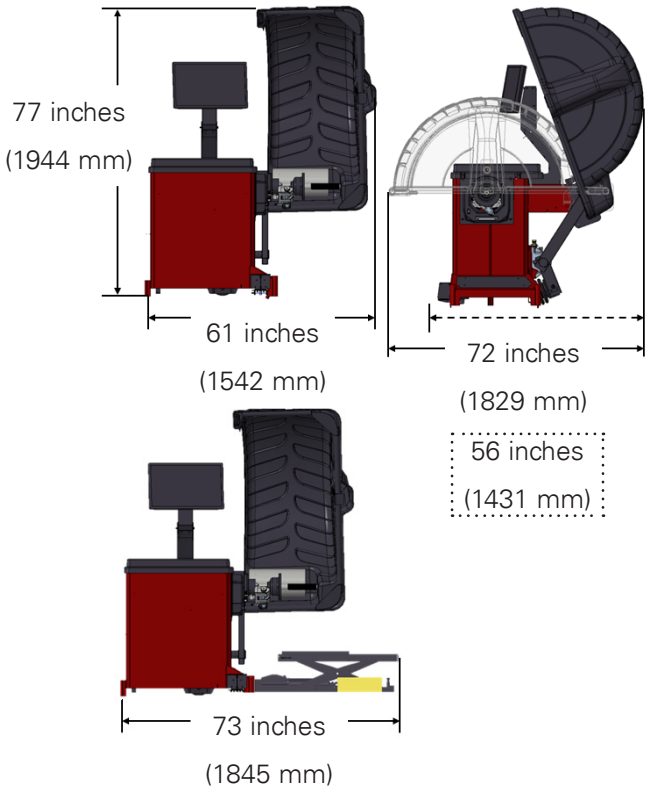


Figure 6 - Minimum Space Requirements

Connect to Power

Your factory trained COATS® Service Technician should do the final check to verify the power installation before connecting the balancer to a power supply. Failure due to improper power connection may void the manufacturer's warranty.

Before placing unit into operation, your COATS service technician shall calibrate the new balancer following the calibration procedure outlined in the product service manual.

Principle Operating Parts

Know Your Unit

Compare this illustration with the unit before placing it into service. Maximum performance and safety will be obtained only when all persons using the unit are fully trained in its parts and operation. Each user should learn the function and location, of all controls.

Prevent accidents and injuries by ensuring the unit is properly installed, operated and maintained.

A - Touchscreen Monitor

B - Weight Tray

C - Shadow Board (Accessory Storage Location, Not Shown)

D - Outer Diagnostic Runout Roller

E - Measurement Laser

F - 12 o'clock Laser (Under Weight Tray)

G - Hood (Wheel Guard)

H - Foot Pedals

I - Hood Sonar (Width Sensor)

J - Faceplate

K - 40 mm Shaft

L - ON/OFF Switch

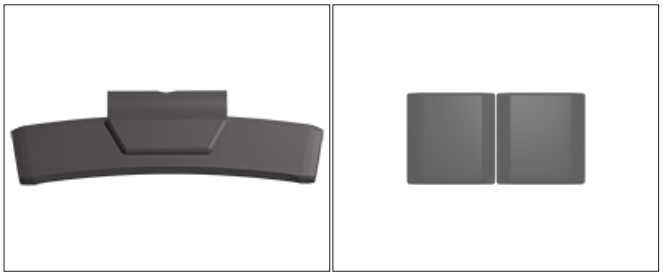
M - Power Cord & Plug (Back Of Machine)

N - Air Regulator

O - Serial Number & Manufacturer Information

P - Anti-tip foot

Note: Throughout this manual, wheel weights are referred to as Clip-on or Adhesive Weight. Figure 7 shows an example of each weight.



Clip-on Weight **Adhesive Weight**

Figure 7- Corrective Weight Examples

Standard Accessories

Part Number	Description
8500920401	Mounting Shaft
85608850	Weight Tray Stud (3 included)
85609499	6 Double Sided Collets
8309011	Wheel Width Calipers
85607780	Premium Wheel Weight Hammer
85607503	Hub Nut (Or 85607503)
8112106	Small Pressure Cup & Rubber Lip
85608312	No Mar Ring
8112107	Spring
8113390	Weight Scraper
85610715	Shadow Board

Optional Accessories

Part Number	Description
8302010400	40mm MED Truck Kit
8113277C	Light Truck Cone Kit
8300000400	Light Truck Kit
8200000400	Lug Centering Pin Plates Set of (3)

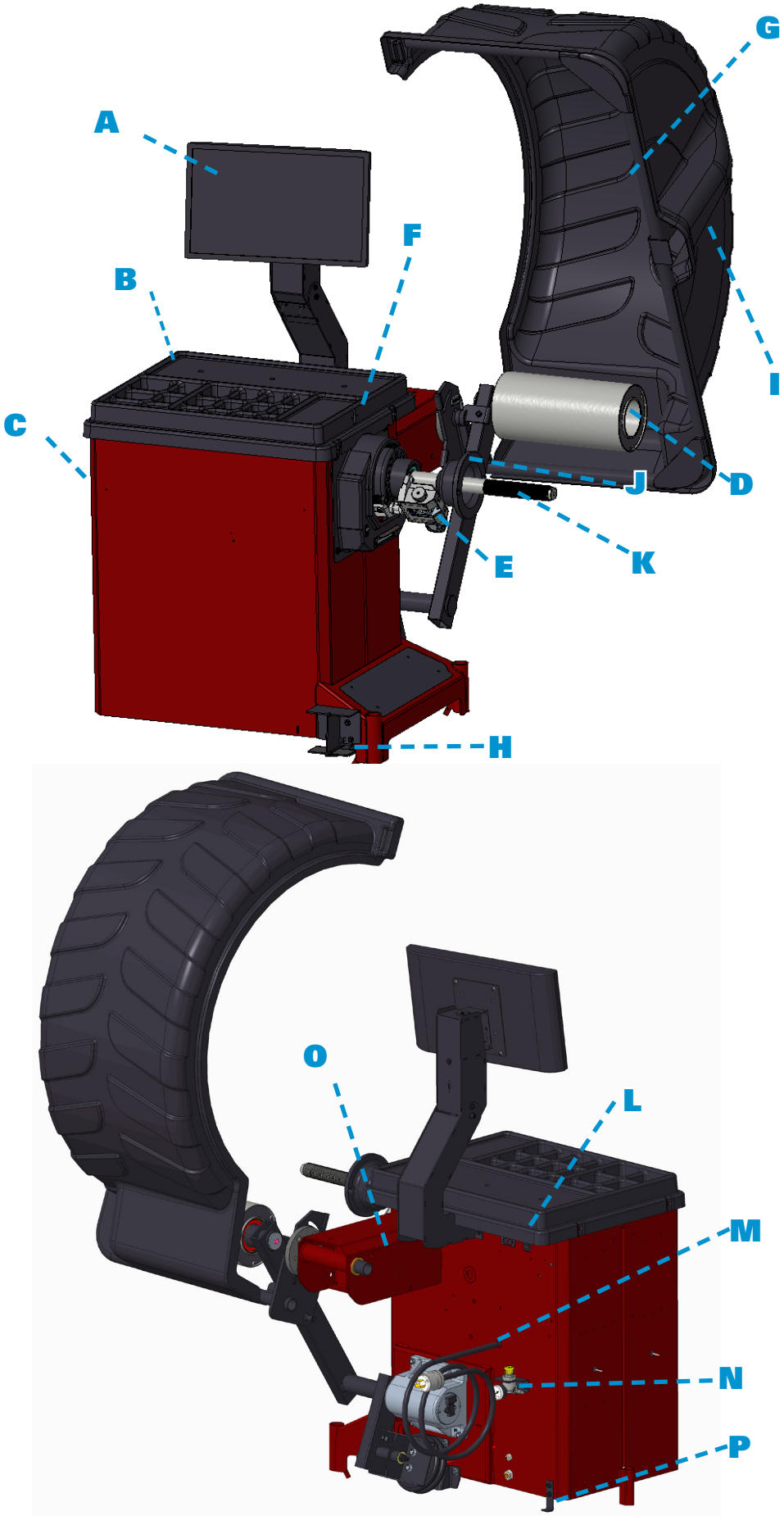


Figure 8 - Primary Operating Parts

Mounting Wheel On Balancer Shaft

⚠ CAUTION

Avoid back injury, seek assistance when lifting heavy tire/rim assemblies onto the balancer shaft.

⚠ CAUTION

Failure to tighten the hub nut properly may result in the wheel dismounting, causing personal injury and property damage.

Select the most appropriate mounting method for the wheel you are balancing. Using the proper method ensures secure mounting and safe balancer operation, and prevents damage to the wheel.

On most wheels, the inner side of the wheel hub usually has the most uniform surface for wheel balancing. Always center the wheel by the most uniform shaped side of the hub to achieve the most accurate balance.

Regardless of mounting type, on standard units, always make sure that the wheel is forced firmly against the shaft and faceplate, and that the hub nut engages the threaded shaft for at least four complete turns. To assist in centering the wheel properly, rotate the wheel and the shaft while tightening the hub nut.

Note: A "loose hub nut" error may occur if the hub nut is not firmly clamping against the wheel assembly and the face plate. Balancer will attempt to spin, causing the hub nut to loosen against the tire assembly and the spin cycle will come to a stop. Lift the hood again and retighten the hub nut if this occurs.

Mounting a Wheel Using Wheel Lift

1. Actuate the LIFT PEDAL to lower; making sure the WHEEL CARRIER/TRAY is completely lowered before loading.

2. Use foot to slide the WHEEL TRAY to align with the WHEEL RAMP.

3. Roll the wheel assembly to load it onto the WHEEL TRAY.

4. Actuate the LIFT PEDAL to raise the wheel assembly; centering it with the balancer stub shaft.

5. Hold the wheel assembly upright while sliding the WHEEL TRAY left until the wheel assembly is on the balancer stub shaft, ready to be mounted on the balancer.

⚠ **Note:** Do not force the wheel against the balancer shaft with the lift. Damage to the balancer motor can occur or this can force the lift and balancer to separate or risk tipping the balancer backwards.

6. Secure the wheel to the balancer using suitable mounting adapters.

7. Actuate the PEDAL to fully lower the WHEEL TRAY/CARRIER,ensuring the WHEEL TRAY clears the balancer chassis during movement.

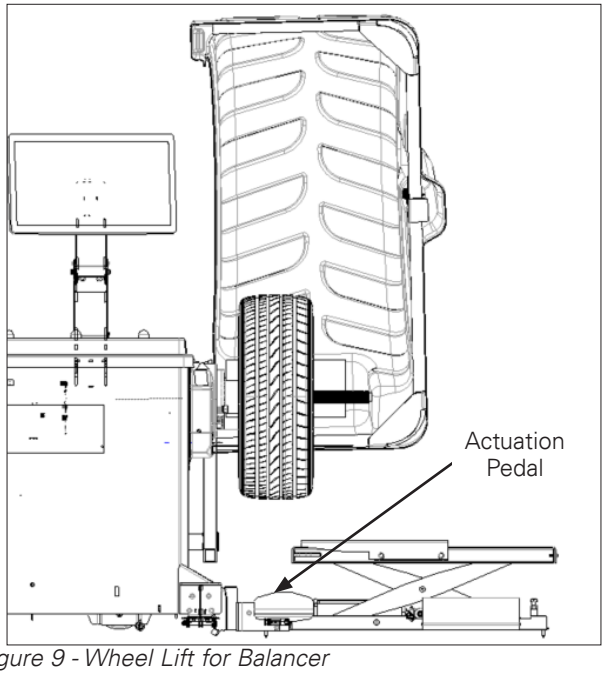


Figure 9 - Wheel Lift for Balancer

Stud Centered Wheels Vs. Hub Centered Wheels

Wheel assemblies have two common mounting methods to mount on a vehicle. Wheel assemblies that are mounted on the vehicle's wheel hub with the bore of the wheel centered on the hub should be mounted on the balancer using a standard cone / collet mounting method. Wheel assemblies that are mounted with the lug nuts centered on the hub should use a centering kit / pin plates to mount them on the balancer shaft.

A wheel can be balanced to a low imbalance threshold even if it is mounted off-center. It is critical that the operator mount the wheel as centered as possible for the machine to take accurate imbalance and run-out measurements. The most common recommended mounted methods are listed here. For special types of wheel assemblies, check out the Coats accessory catalog for additional adapters and kits to help in centering and mounting.

Standard Back Cone/Collet Mounting

Most original equipment and steel wheels can be mounted properly using this method. The wheel is centered on low taper a cone/collet from the inner side of the hub.

1. Place the cone spring onto the balancer shaft with the large end towards the faceplate.
2. Select one side of a cone/collet that best fits the center hole in the wheel. Slide the cone/collet onto the shaft with the selected side facing outwards away from the cone spring.
3. Lift wheel onto the shaft and center it on the cone/collet.
4. Attach pressure cup to hub nut. Install the hub nut assembly onto the shaft and tighten it securely against the wheel. The wheel must be forced firmly against the faceplate. The hub nut must engage the threads for at least four full turns.

Note: Optionally use foot pedal threading feature to quickly thread the hub nut onto the balancer shaft. Final torque of hub nut must be done by hand after using pedal to snug the assembly.

Note: Use a nylon spacer (protective ring) to protect custom wheel finishes.

Note: If the hub nut will not tighten completely, use the standard front cone mounting method (Figure 11).

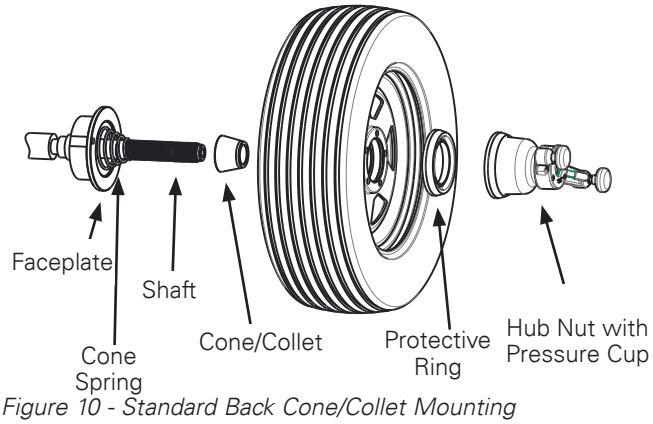


Figure 10 - Standard Back Cone/Collet Mounting

Optional Front Cone/Collet Mounting

A wheel should be centered by the outer side of the hub only when the inner surface will not provide an accurate surface to center on, and the front will.

1. Select the cone/collet that best fits the center hole in the wheel.
2. Lift the wheel onto the balancer shaft and slide it back against the faceplate.
3. Slide the cone/collet onto the shaft and into the center hole of the wheel. You will need to lift the tire to seat the cone in the center hole.
4. Install the hub nut (without pressure cup) onto the shaft. Tighten it securely against the cone/collet. The hub nut must engage the threads for at least four full turns.

Note: If the hub nut will not tighten completely because of a lack of threads, use an additional cone/collet as a spacer between the mounting cone/collet and the hub nut. The wheel must be forced firmly against the faceplate.

Note: Do not front cone chrome or clad wheels.

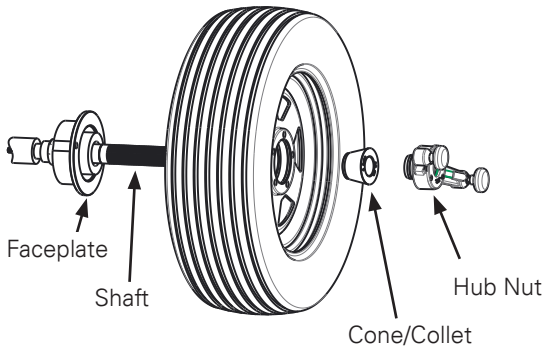


Figure 11- Front Cone/Collet Mounting

Alternate Mounting

If the wheel has a protruding outer hub which will not permit the use of the pressure cup, or the cup will not permit the hub nut to engage at least four turns of the shaft, this alternate method should be used.

1. Place the cone spring onto the balancer shaft with the large end towards the faceplate.
2. Select the cone/collet that best fits the center hole in the wheel. Slide the cone/collet onto the shaft with the large end towards the faceplate.
3. Lift wheel onto the shaft and center it on the cone/collet.
4. Use the small nylon spacer (no-mar ring) or a centering cone/collet to press against the outer wheel hub.
5. Install the hub nut (without the pressure cup) onto the shaft. Tighten securely.

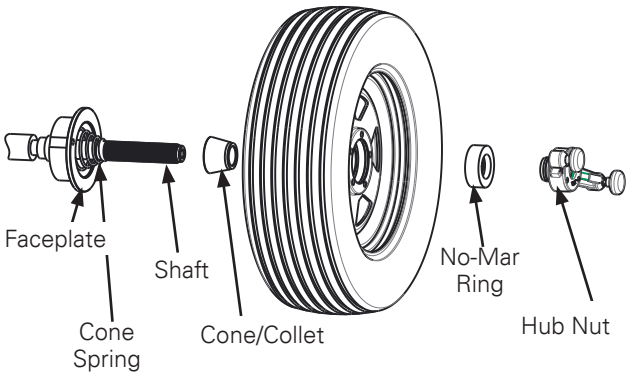


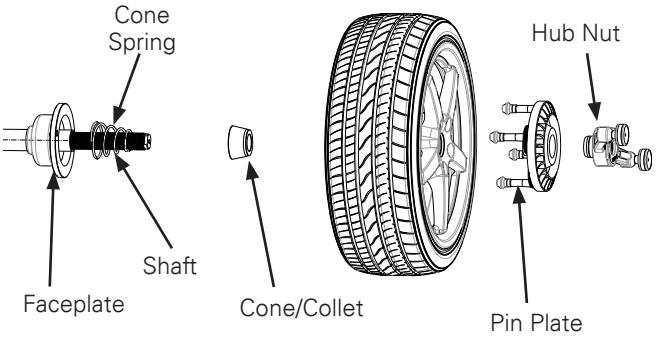
Figure 12 - Alternate Mounting

Optional Centering Kit Mounting

It is recommended to use this method for lug centered wheels. Many aftermarket wheels use a lug centered method for mounting the wheel on the car. Select a pin plate that matches the lug pattern of the wheel. (If applicable) Select a pin extension that best fits the lug hole on the wheel assembly.

When mounting with pin plate centering kits, use a back cone whenever possible to help center the wheel, and bear the weight of the wheel for the pins. The pins, can deflect with the weight of the wheel. If you pin a wheel that requires the back cone spacer, you should space the back cone out with another cone (double cone). This puts the correct tension on the back cone spring.

1. Using the adjustable pin plate, position the pin plate probes firmly into consecutive wheel lug holes
2. Remove the the pin plate.
3. Select cone that best fits center hole in the wheel. Slide back cone spring and cone onto the balancer shaft.
4. Lift wheel onto shaft and center it on the cone.
5. Next, align the adjustable pin plate's fingers with the wheel lug holes.
6. Install the hub nut (without pressure cup) onto the shaft. Tighten it securely against the pin plate. The hub nut must engage the threads for at least four full turns..



Note: If using a hub nut with handles, you may need to remove the handles before balancing the wheel assembly as the handles may impact the hood bar.

Balancing Your First Tire

1. Turn the machine OFF, wait a few seconds, then turn it back ON (resets machine).The machine defaults to using standard clip-on wheel weight locations (Clip 1 & Clip 2) and wheel dimensions.
2. Mount a tire/wheel on the balancer that will use standard clip-on wheel weights. Use the most appropriate mounting method.
3. Always remove any weights already attached to the wheel prior to balancing.
4. Enter A & D wheel dimensions using measuring laser.

   For measurement when in clip weight (C1) or tape weight (T1) mode— rotate laser knob until laser appears on the tape weight flange location (Figure 13), hold laser knob still and tap the blinking on-screen button to capture the dimension (Figure 14). The A dimension and D dimension will populate on screen.

T1 Weight Location — viewed on a cut-away rim for clarification. Point laser to a position inset about half the width of an adhesive weight distance from the drop-off flange of the rim.

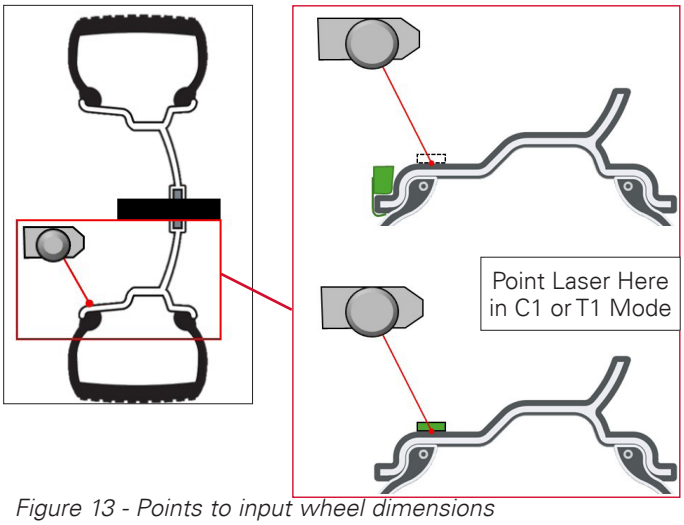


Figure 13 - Points to input wheel dimensions

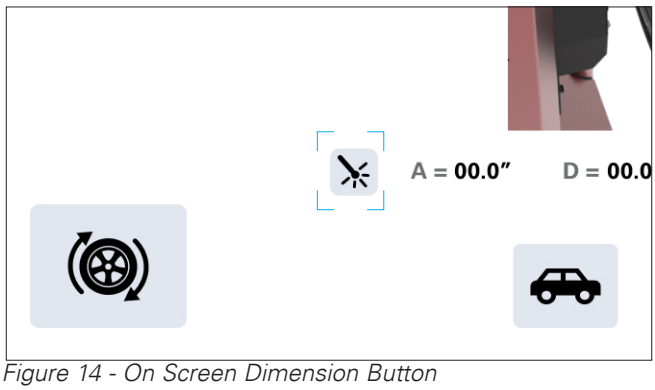


Figure 14 - On Screen Dimension Button

5. Enter wheel width dimension

   For Automatic Measurement — Lower hood.

   For Manual Entry — Use plastic calipers to measure wheel width (Figure 15). When using calipers, measure the width from the infoard clip flange to the outboard clip flange. Press W location on screen to move curser. Use keypad to enter Width value (between 2.0 and 20.0 inches).

Figure 15 - Manual measurement of wheel width.

6. Lower hood; wheel spins and unbalances are measured and displayed.
   The corrective weight amount appears in the weight display window for inboard and outboard weight locations.

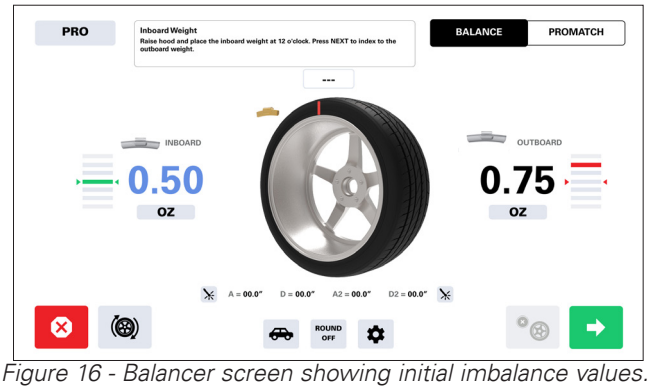


Figure 16 - Balancer screen showing initial imbalance values.

7. Raise hood after tire stops rotating.
   Wait for wheel to stop before raising the hood.
8. Automatic wheel positioning will hold tire at inboard correction spot. The inboard top dead center laser light highlights for clip (or C1) mode.
   For Automatic Wheel Positioning — Wheel stops at corrective weight position.
   For Manual Wheel Positioning — Press STOP and rotate wheel until the inboard center bar highlights.
9. Attach inboard corrective weight.
   Attach specified weight amount at top-dead-center on inside flange of wheel (clip 1). An illustration on screen shows this process and the correct placement location.

Note: If tape, or adhesive weight is desired, see page 21 - page 22.

10. Position wheel at outboard corrective weight position.
Hit "NEXT" button on screen to position wheel to outboard corrective weight position. The outboard center bar highlights on screen and an illustration shows the correct placement location

11. Attach outboard corrective weight.
Attach specified weight amount at top-dead-center on outside flange of wheel (clip 2).

12. Lower the hood to re-spin the tire/wheel and check balance.
The inboard and outboard weight readings should now be 0.00 in round-off setting.

Note: Throughout this manual tire dimensions are referred to as A, W, and D, see Figure 17.

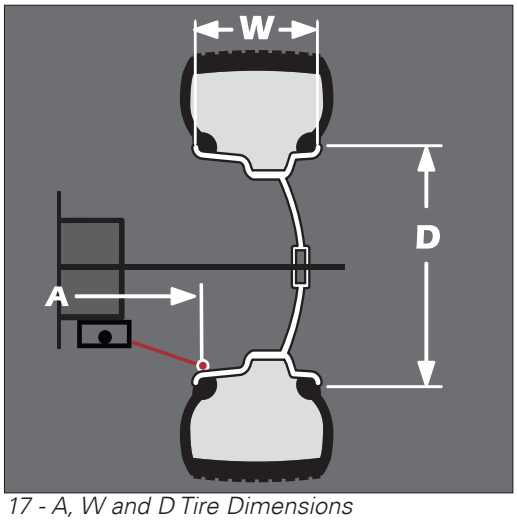


Figure 17 - A, W and D Tire Dimensions

Touchscreen

To enter a function, use your finger to press the appropriate function icon.

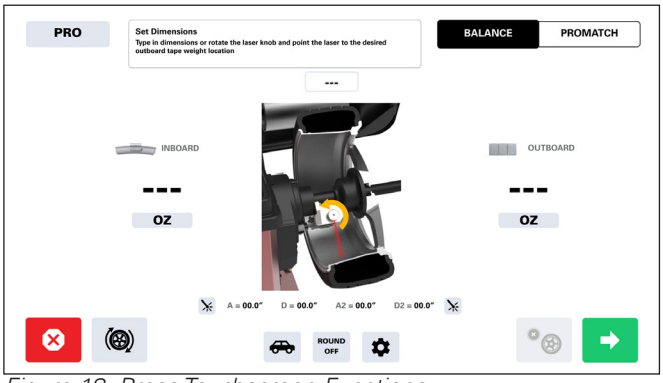


Figure 18- Press Touchscreen Functions

Only press the touchscreen with your fingers. Never use the weight hammer or other pointed objects to press on the screen.

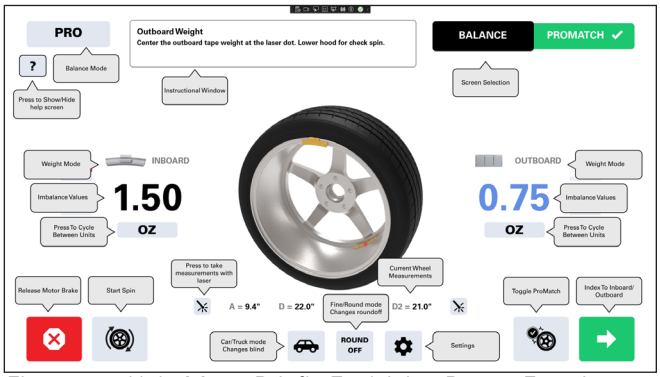


Figure 19 - Help Menu Briefly Explaining Button Function

For a quick description of display screen functions, the user can press the question mark button in the top left of the screen. For a longer description, see page 14.

Balancer Touchscreen Layout and Options

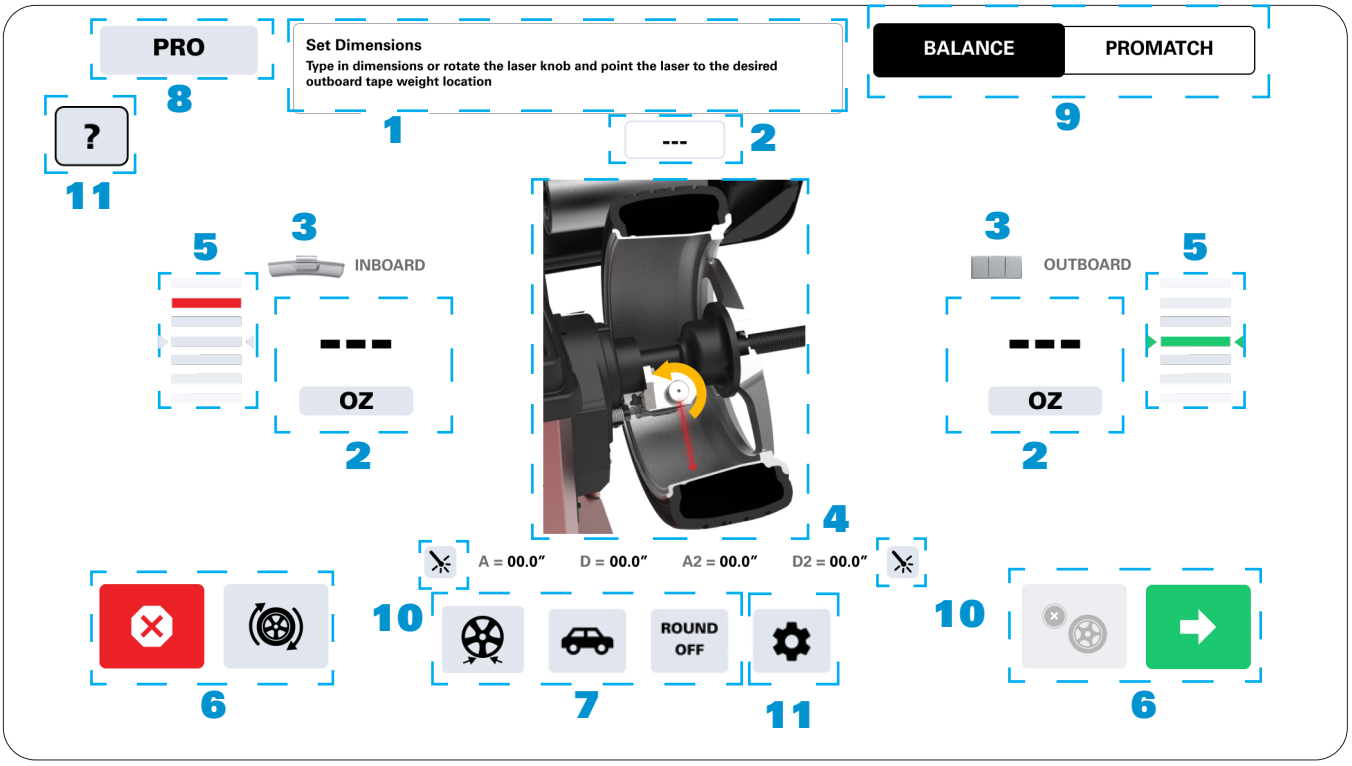


Figure 20 - Default Touchscreen Model Feature Reference

Touchscreen Function and Review

1 Information / Instruction Windows

Displays instructions, functions and error messages for the operator. Instructions are illustrated in the animation below this window. Instructions and graphic will guide the user through weight placement.

2 Weight Display Windows

Two weight display windows, one inboard and one outboard, are positioned by the weight position bars. After a wheel measurement cycle, the balancer calculates the corrective weight amount and indicates it in the appropriate display window. All weight readings are shown in ounces or grams.

The ProBalance Technology™ window indicates the value of any excessive residual unbalance. See ProBalance Technology™ on page 20 for further details.

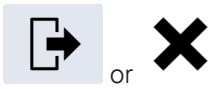
START PROBALANCE	ProBalance Technology™ Operation	**Note:** Touching "START PROBALANCE" will index the wheel. See page 20.
OZ G	Ounces or Grams	Toggle this button to automatically change calculation of corrective weight back and forth from ounces to grams or to show both.

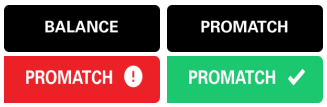
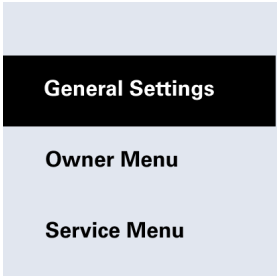
3 Weight Placement Location Icons & Cross-section Diagram

	Weight Placement Location and Type	Select to go to the weight placement location Screen, see "Weight Placement Options" on page 19.
or	Clip 1 or T1 Tape	The activated inboard weight location on the wheel cross-section diagram.
or	T2 Tape or Clip 2	The activated outboard weight location on the wheel cross-section diagram.

4 Wheel Cross-section Graphic and Indicators

On the main screen, a wheel cross-section graphic illustrates the wheel balancer operational status. Cross-section graphic will update to guide the next step in the operation.

5 Weight Position Bars		
	Wheel Position Bars	These scrolling bars indicate the inboard and outboard wheel position for corrective weight placement. After a measurement cycle, the wheel stops and the center weight position bar turns green and the corrective weight text will turn blue, indicating the wheel is indexed to the correct weight placement position. **Note:** the wheel will index to the 5 o'clock or 12 o'clock placement positions based on which weight placement positions the user selected. (see page 19 - page 21).
6 Action Icons		
	STOP & EXIT	Deactivates a function or error. Also use to release the wheel so that it can be manually positioned.
	SPIN	Lower hood and press this icon to begin a wheel measurement cycle. Use this button if Hood Start is not enabled.
	NEXT	Press this icon to access additional functions or instructions, such as moving to the next weight location.
	Runout ON / OFF	Toggle to select either Runout ON or Runout OFF. When ON, wheel runout is measured after hood drop before the balance cycle. When OFF, only balance cycle will run.
 or	Exit Menu / Screen	Press this icon to exit a settings screen and return back to the main screen or back to the previous menu.
7 Balance Option Icons And Dimensional Input		
	Behind Spoke	Select Behind Spoke mode to activate. Only available in T2 weight placement mode. See Behind Spoke on page 21 for further details.
	Passenger Car or Truck	The weight increment option that is activated. Toggle to select either 0.25-ounce Passenger Car or 0.50-ounce Truck (Lt Truck, heavy wheels). ProMatch™Technology threshold changes to a higher value for Truck mode.
	Round Off or Fine	Toggle to select either a 0.25-ounce round-off (default) or 0.01-ounce (fine) weight increment option.
8 Balance Mode Icons		
	ProBalance, Dynamic, Static or Dynamic/Static	Toggle through these balance modes to select DYNAMIC, PRO, STATIC or DYN/STAT. See page 19 for balance modes. When PRO is selected, the ProBalance Technology™ icon indicates any excessive residual unbalance. (see page 19 - page 21).

9 Operation Screen Icons		
	Operation Screen Selection	Toggle between BALANCE and PROMATCH to change operation screens. PROMATCH indicator turns RED to indicate an excessive runout value, and turns GREEN to indicate an acceptable runout value.
10 Dimensional Input		
	Dimension Input Button	Select this icon to input the offset and diameter measurements of the wheel. Left button inputs C1 and T1 dimensions. Right button inputs T2 dimensions (if in T2 mode). For manual input, tap the value boxes and type in known dimensions. A blinking icon indicates invalid or out of range measurement **Note:** For best practice input inboard dimension first.
11 Settings Screen Selections		
	Help Menu	Tapping this icon will populate a brief description of each primary function onto the main balancer screen.
	General Settings Menu	Select this icon to access and set additional balancer functions. • Perform Machine Calibration • Lock the screen for cleaning • Adjust the volume level. See page 28 for further explanation.
	General Settings	Access this screen to get the following options: • Volume • Screen lock / unlock • Language settings (English, French, and Spanish available) • Calibration Routine
	Owner Menu	Access the following actions: • Adjust and Set ProBalance Thresholds • Toggle Hood Start Settings • Enable/Disable Sonar • Pedal Set-Up and foot pedal options
	Service Menu	Your COATS® Service Technician may access this for information to help diagnose service concerns. A password is required.

Setting Wheel Dimensions (DIM)

Before a wheel can be balanced, wheel dimensions must be entered into the balancer computer.

Definition of Dimensions (DIM)

A = Offset
The distance measured from the balancer to inner plane of the rim (inner weight location).

W = Width
The width of the wheel at the rim flanges, measured with the calipers as shown in Figure 21.

Note: Only use calipers provided by the wheel balancer manufacturer because others may be different.

D = Diameter
The diameter of the wheel as indicated on the tire.

Note: A thick flange, on some aluminum wheels, can affect the measured diameter. For example, a 16-inch rim can have a measured diameter of 15.5-inches.

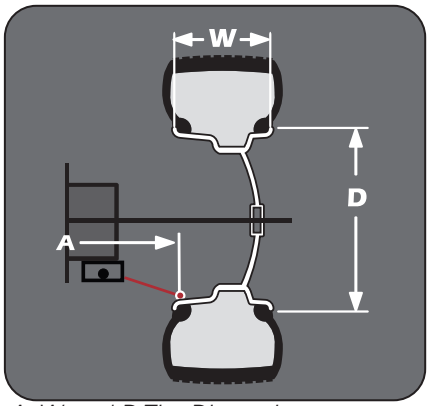


Figure 21 - A, W, and D Tire Dimensions

A2 = Offset
The distance measured from the balancer to outer plane of the rim (outer weight location). Used only for adhesive weight location.

D2 = Diameter
The diameter as measured at the A2 weight location. Used only for adhesive weight location.

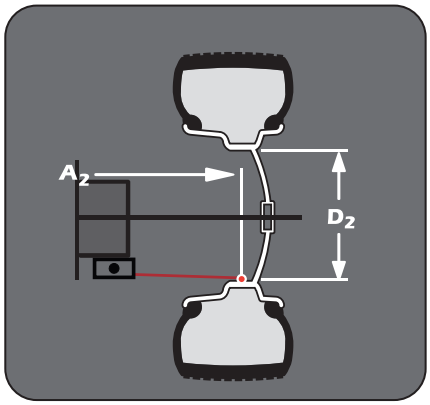


Figure 22 - A2 and D2 Tire Dimensions

Basic Wheel Data Entry

1. Select an inboard weight location (Clip 1, or T1 Tape) and an outboard weight location (T2 Tape, or Clip 2).

2. Position measurement laser dot at Center of T1 weight location using the control knob; tap the left button button on screen to enter A & D automatically. (see Figure 25)

If the T2 Tape location is selected, then move the measurement laser dot to the inner area of the wheel; up against the rim at the outboard weight placement location; tap the right button on screen to enter A2 & D2 automatically. A blinking icon indicates an invalid or out of range measurement.

3. For Automatic Measurement — Lower balancer hood to enter the W measurement automatically using the hood sonar (width sensor) and spin wheel.

For Manual Entry — Use plastic calipers to measure wheel width. Tap the box on screen to place curser in W dimension box and type in the width value from the calipers (between 2.0 and 20.0 inches)

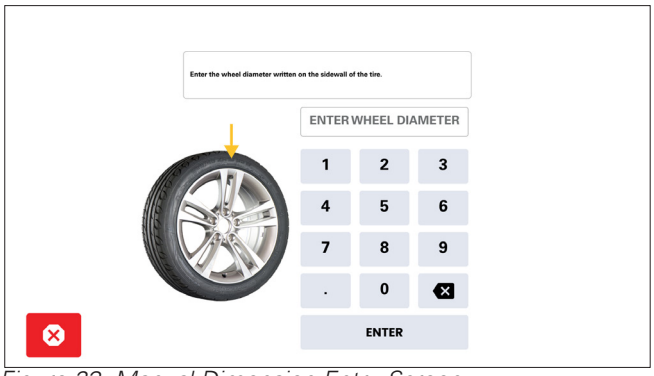


Figure 23- Manual Dimension Entry Screen

Entering Wheel Dimensions With the Measurement Laser

All lasers on the balancer are Class 2 lasers. Although laser output is low, avoid looking directly into the laser beam. Close your eyes or immediately turn away if the laser beam hits your eye.

The measurement laser is used for automatic capture of the offset and diameter dimensions of a wheel assembly. It also is used to aid in indicating where the user selected to place adhesive weights.

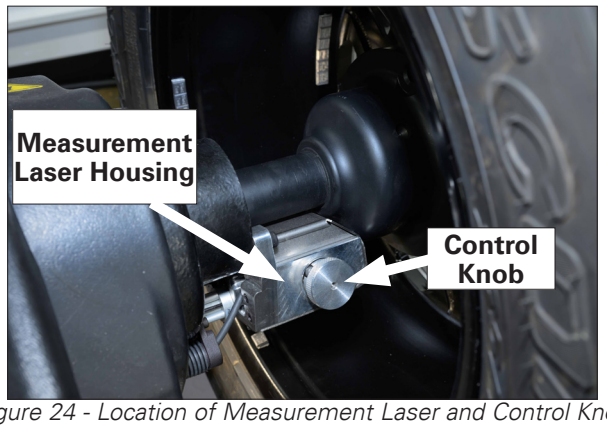


Figure 24 - Location of Measurement Laser and Control Knob

Use the measurement laser (Figure 24) to automatically measure the wheel offset and the wheel diameter.

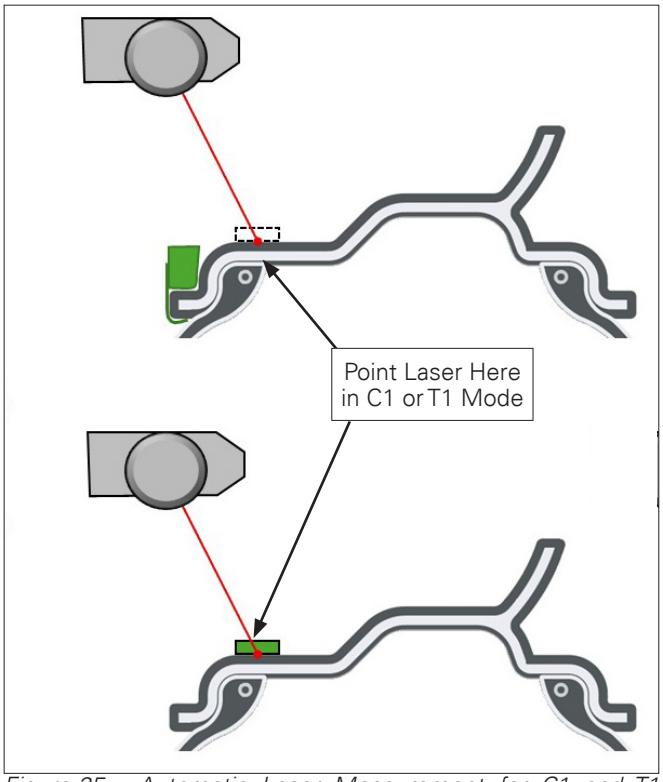


Figure 25 - Automatic Laser Measurement for C1 and T1 Weight Location

For measurement when in clip weight (C1) or tape weight (T1) mode— rotate laser knob until tape weight flange location is reached (Figure 25), Point laser

to a position inset about half the width of an adhesive weight's distance from the drop-off flange of the wheel, hold laser knob still and tap the left on-screen button to capture the dimension. The A dimension and D dimension will populate on screen.

If the T2 Tape (adhesive weight) location is selected, use the measurement laser to input A2 & D2 measurements automatically. (Figure 26) Point the measurement laser at the center of your desired T2 location, hold at this position and tap the right measurement button on screen to capture the dimension.

Important: The A2 measurement must be at least 2 inches greater than the A1 measurement.

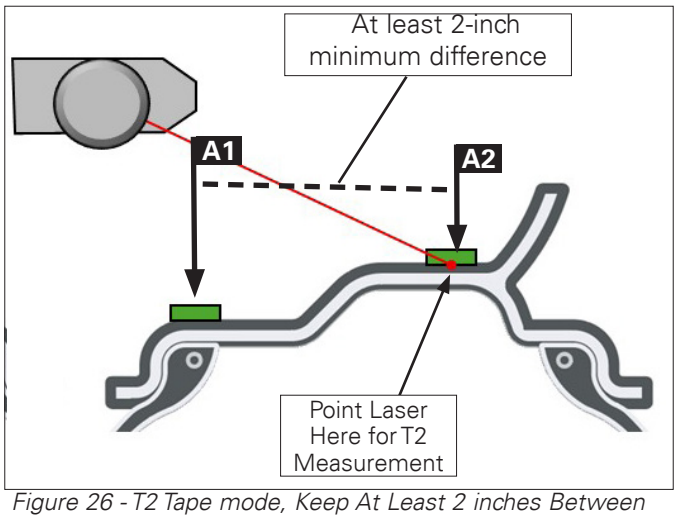


Figure 26 - T2 Tape mode, Keep At Least 2 inches Between A1 and A2 Measurement

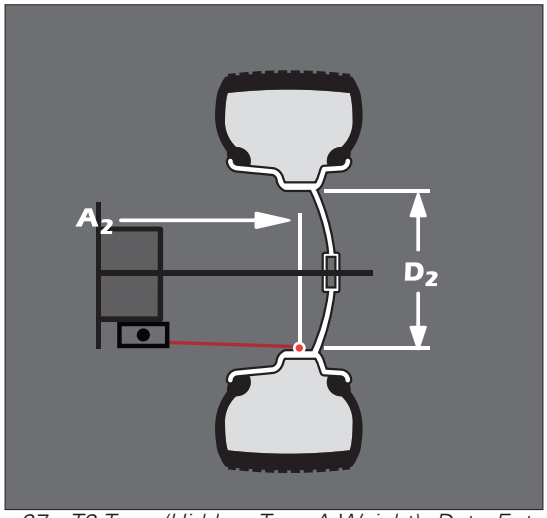


Figure 27 - T2 Tape (Hidden, Tape-A-Weight), Data Entry Diagram

Note: Choose a weight position as far inward (in the rim) as wheel allows (Figure 27 & Figure 28). If weight can't be placed outside of wheel center, then Dynamic Balancing can't be calculated.

Note: The T2 tape weight position is the only mode that requires the A2 & D2 dimension measurements (Figure 27).

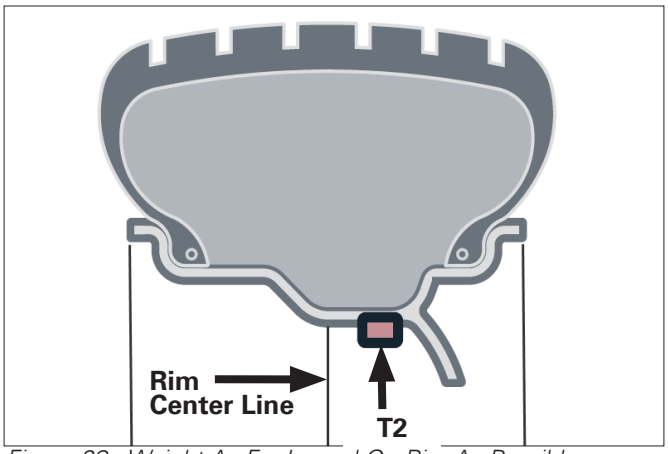


Figure 28 - Weight As Far Inward On Rim As Possible

Entering Wheel Dimensions Manually

Information entered into the balancer software for W and for D can be changed anytime during a balancing procedure by entering the measurements manually. The balancer will recalculate weights and positions based on the new measurements.

Wheel Diameter - D

1. Tap the input box for D (wheel diameter) to place curser in box.

2. Inspect mounted tire sidewall to determine the exact diameter that is printed on the tire.

3. Using the keypad, enter the D measurement value to match the tire sidewall size (between 8.0 and 30.0 inches).

Note: Auto entry is the preferred method for entering A2 and D2.

Wheel Width - W

1. Tap the box on screen to place curser in W dimension box.

2. Use the plastic calipers provided with the wheel balancer to measure the wheel width. (see Figure 29) Measure the width at the rim flange.

Figure 29 - Caliper Placement On Wheel

3. Type in the width value from the calipers (between 2.0 and 20.0 inches). **Note:** (Include the decimal.)

Weight Placement Options

A variety of wheel configurations can be balanced using this wheel balancer. Read through this section, it will help in determining which balancing mode and options are best suited for certain wheel assemblies.

When the machine is first turned ON, the balancer defaults to a 2-plane dynamic mode using standard clip-on wheel weight locations (Clip 1 and Clip 2) and wheel dimensions. Before setting wheel dimensions and spinning the wheel, set alternate weight placement locations as follows (see also Figure 30 and Figure 32):

Clip 1 (default) - select this location, dynamic or static mode, to place a standard clip weight on the inboard rim flange at 12 o'clock (top dead center).

T1 Tape - select this location, dynamic mode, to place an adhesive weight on the inboard side of the wheel. This is the horizontal plane at the outer edge of the rim. Corrective weight is placed at 5 o'clock position where the user indicated the adhesive weight flange to be. (See Figure 31 and description for 12 o'clock placement option.)

T2 Tape - select this location, dynamic or static mode to place the adhesive (hidden) weight on the outboard side of the wheel. This is the horizontal plane at the inner area of the rim. Weight placement is at the 5 o'clock location. Laser will recall where the user selected to place the weight and direct placement (see page 22)

Clip 2 (default) - select this location, dynamic mode, to place a standard clip weight on the outboard rim flange at 12 o'clock (top dead center).

Weight Locations

1. Press either weight indicator key on the main balance screen to enter an alternate weight placement location on the wheel. The selected weight location on the wheel cross-section diagram illuminates.

2. Press X to return to the main screen.

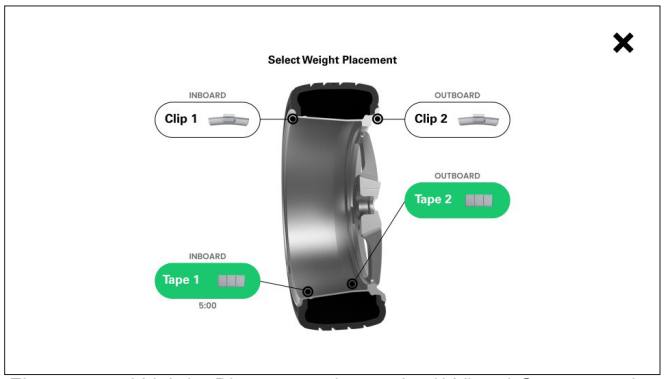


Figure 30 - Weight Placement Icons And Wheel Cross-section Diagram

Note: Standard weight placement for T1 adhesive weights is at the 5 o'clock indicated position. The laser will guide the user to place the weight where the user indicated the T1 flange to be.

(If applicable) If an operator wishes to place T1 weights at the 12 o'clock position, the settings in the owner's menu can be switched to allow placement at this location instead.

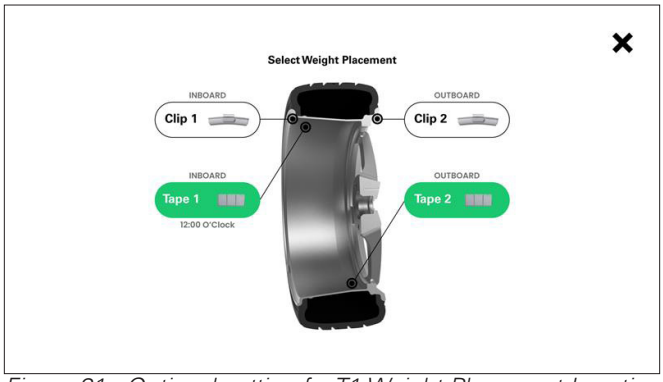


Figure 31 - Optional setting for T1 Weight Placement Location

Remember: As with any balancing procedure, first remove any weights attached to the wheel, inspect the tire and wheel, and select the most appropriate balancer mounting method before beginning.

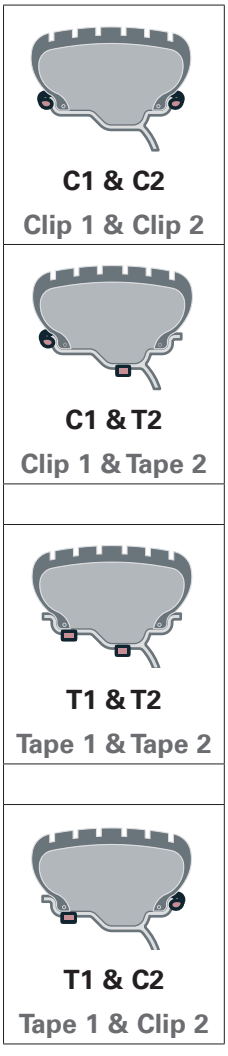
Dynamic Balancing

Choose a dynamic balance to balance a wheel using two planes for correction. Select the weight option that best fits the available weight locations on the rim.

Clip-on Weights - The standard default; used for most passenger tire/wheel assemblies using the most common location for corrective weights. Clip-on weights are placed on the inner (inboard) and outer (outboard) rim flanges.

ALUS (Aluminum Wheels) - To balance aluminium wheels you usually use a self-adhesive weight location that is positioned differently from the clip-on weight position(s) used in standard balancing. Be sure to use the appropriate wheel data entry method since the balancer calculates unbalance values based on the wheel dimension measurements (DIM) entered for the tire/wheel assembly.

Figure 32- Dynamic Balance Weight Locations



Static Balancing

Choose a static balance to balance a wheel using one plane for correction. In Clip mode,place the single corrective clip weight at top-dead-center (12 o'clock) on either flange, or split on either sides. In Tape mode, place the single adhesive weight at the 5 o'clock location as close to the center of the rim.

Note: When in static mode, you only need to input the DIAMETER wheel measurement.

Important: In **Static Mode**, Input the diameter where the user intends to place corrective weight using the measurement laser.

The static imbalance is displayed in a character box above the wheel graphic. If the user touches the value on the screen, the balancer will automatically position the wheel and illuminate one of the alignment lasers to indicate the weight placement position.

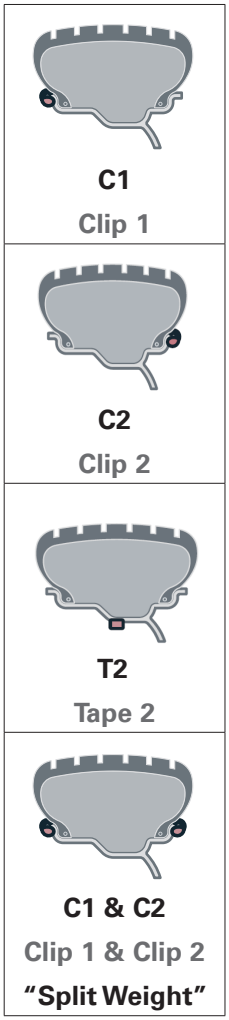


Figure 33 - Static Balance Weight locations

ProBalance Technology™

Any excessive residual unbalance is detected when using ProBalance Technology mode, see Balance Mode Icons on page 14.

Note: ProBalance Technology™ is only available when the balancer is set in car mode and round off mode.

If excessive residual unbalance is detected based on the residual unbalance threshold, a secondary balance correction is recommended as shown below.

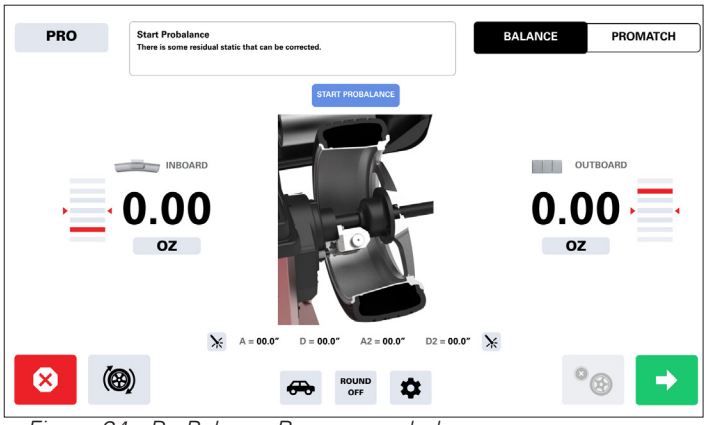


Figure 34 - ProBalance Recommended

1. To begin the process, touch the **START PROBALANCE** button and on-screen prompts will direct the user through the residual imbalance correction.

Figure 35 - Start ProBalance Button

2. The balancer stops and automatically positions the wheel at the correction location. Now attach the specified corrective weight amount (Figure 36) at the 5 o'clock position in the center of the rim channel (as displayed in graphic on screen

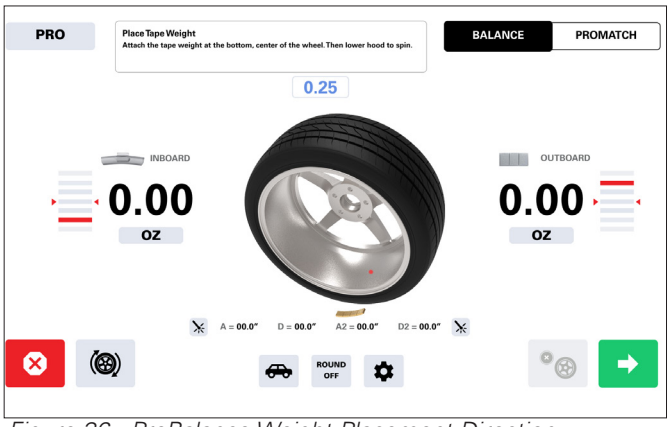


Figure 36 - ProBalance Weight Placement Direction

Figure 37 - ProBalance Corrective Weight Amount

3. Respin tire/wheel to check balance. If the weight amount and placement are correct, a check will appear.

Corrective Weight Placement

After the wheel spins and unbalances are measured and displayed, the corrective weight amount appears on the weight display windows for inboard and outboard weight locations. Bars appear on either side of the wheel cross-section graphic to aid in positioning the wheel for corrective weight at the application point. A green bar lets the user know which corrective plane the motor shaft is positioned to.

If not using the balancer stop and lock feature, rotate wheel until the center weight position bar turns green, indicating the correct weight placement position is reached. Hold the wheel at this location and apply corrective weight at 12 o'clock (Clip weight) or 5 o'clock (Adhesive weight) position. If the unbalance is less than the chosen threshold value, 0.00 appears instead of an unbalance value to indicate that, on that particular side, the wheel is in tolerance.

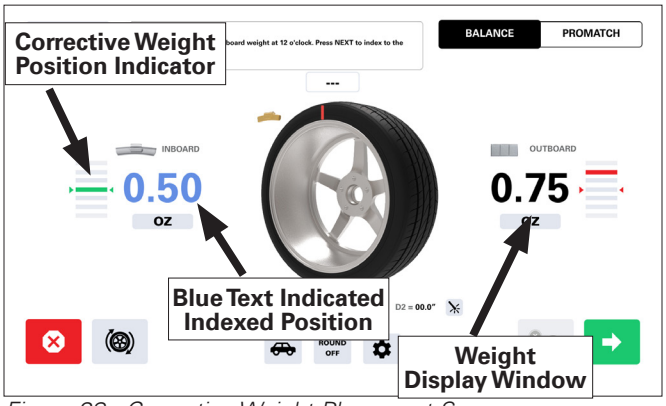


Figure 38 - Corrective Weight Placement Screen

12 O'clock Line Laser

When wheel is indexed to the Clip 1 inboard corrective weight location, then the 12 o'clock laser activates. Use the 12 o'clock laser line to aid in corrective weight placement by centering the weight to the laser line as shown in Figure 39.

Note: A user can change the default T1 adhesive weight placement to the 12 o'clock position by toggling the setting in the owner's menu. When set for 12 o'clock, adhesive T1 weights should be placed at top-dead-center on the tape flange and where indicated by the line laser.

Figure 39 - Centering Corrective Weight At Laser Line Location

Split Weight Behind Spoke Mode

"Splitting" the T2 Tape corrective weight amount is used to hide the adhesive weight behind two rim spokes. This mode is only available when T2 adhesive weights are being used. First index to the T2 weight placement position then tap the SPOKE icon shown here to enter the behind the spoke split weight sequence.

1. Rotate the top pf the wheel towards the user until the laser dot is at the first spoke. Hold the wheel here and tap the green, SPOKE 1 icon on screen.

2. Now, rotate the wheel away from the user and towards the back of the balancer until the laser dot is pointed behind a second spoke. Hold the wheel here and tap the green, SPOKE 2 icon on screen.

3. The balancer will guide the user through weight placement actions on screen. The weight is now split between 2 locations.

Figure 40 - Spoke 1 and Spoke 2 Locations on Either Side of Original Outboard Weight Location

4. Attach the spoke 2 outboard corrective weight at the laser dot behind spoke 2.

5. Press NEXT to rotate wheel to spoke 1 location.

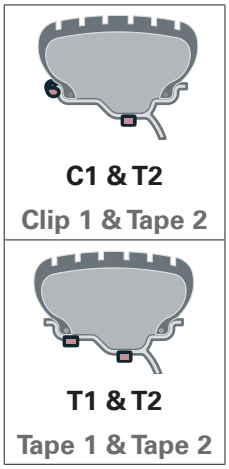
6. Attach the spoke 1 outboard corrective weight at laser dot behind spoke 1; then press NEXT.

7. Attach any remaining weight to the inboard weight placement position.

8. Drop the hood and Press SPIN to check tire/wheel balance.

Placing Adhesive Weights at T1 and T2 Location

If the operator selects the T2 or 5:00 T1 adhesive weight location, it activates the Laser Guided Operation™ feature. This weight location is used when placing adhesive weight at the inner area of the wheel and is the required weight location selection for the Behind Spoke mode (see page 21).



After balance cycle, when indexing to the adhesive weight location, the measurement laser will point to the location where the operator indicated corrective weights should be placed. Use the laser dot as an indicator for weight placement as shown in Figure 41 and place adhesive weights centered on the red dot.

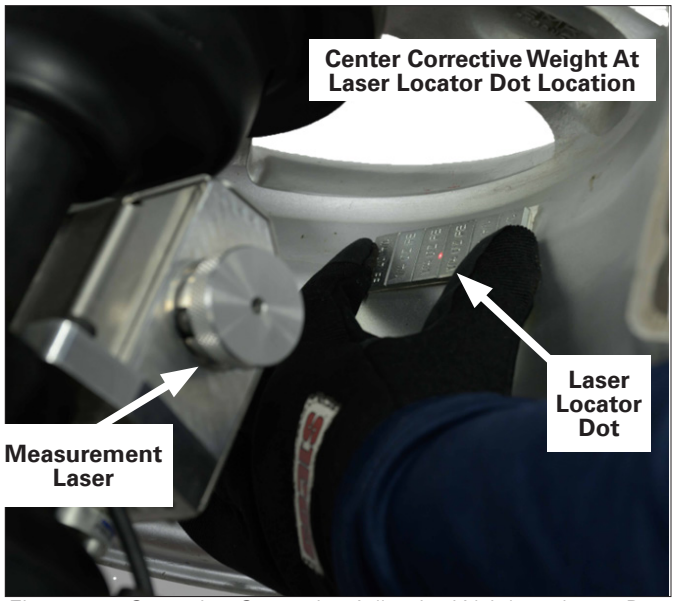


Figure 41 - Centering Corrective Adhesive Weight at Laser Dot Location.

Note: This Laser Product is designated as Class 2 during all procedures of operation.

ProMatch™ Technology Actions

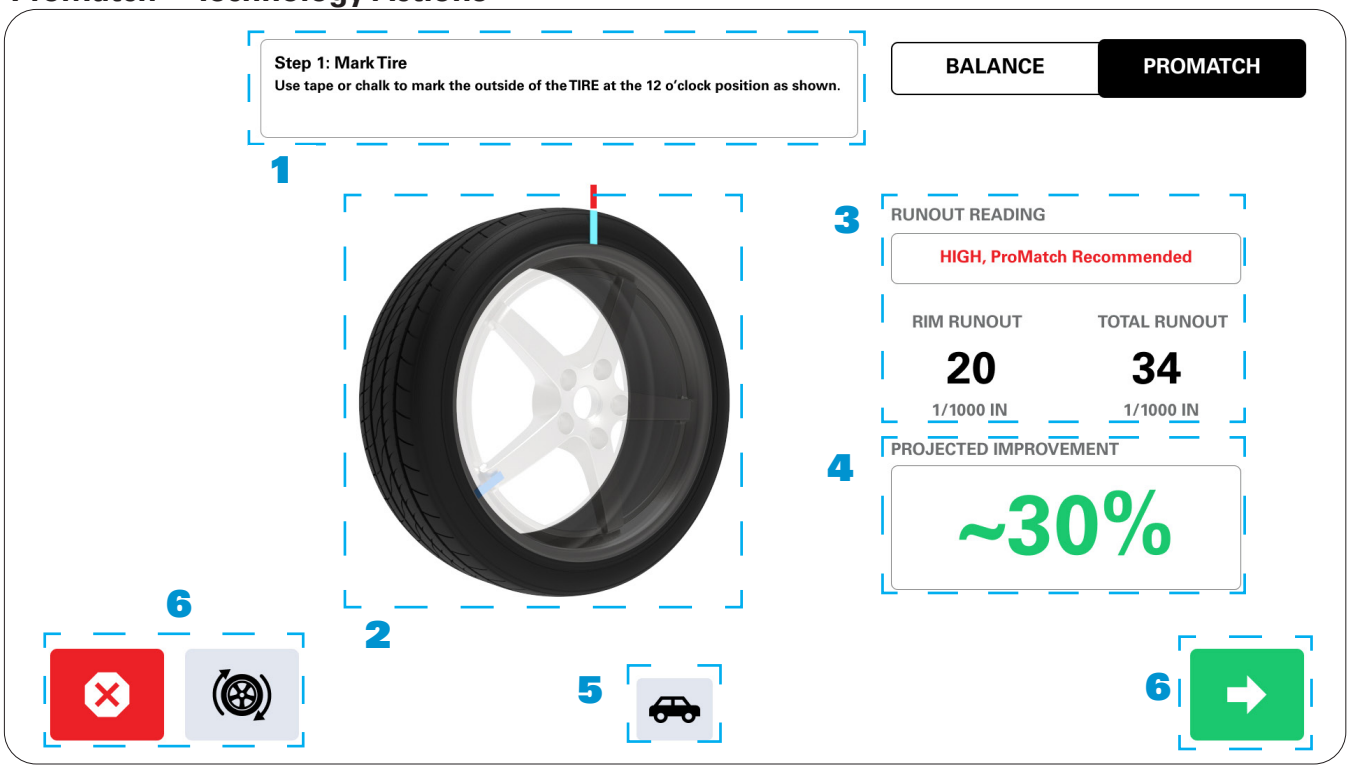


Figure 42 - PROMATCH Screen Function Review

1 Information / Instruction Windows	
Displays instructions, functions, and error messages for the operator. Instructions are illustrated in the animation below this window.	
2 Wheel Animation Graphic	
Displays a simplified demonstration of operator actions to guide the user through marking the tire and rim for match mounting.	
3 Runout Reading ProMatch™ Technology	
Displays a recommendation based on the values captured whether a match mount operation is recommended. The displays will be one of three results after a reading: "*Passed!*" - When a wheel assembly is under the set threshold. "*Runout cannot be corrected with ProMatch*" - When a wheel assembly's high and low spots are oriented in a position where the opportunity for improving total runout via match mounting is low. "HIGH, ProMatch Recommended" - When the wheel assembly's high and low spots are far enough apart where the liklihood of improving the total runout via match mounting is high.	
RIM RUNOUT TOTAL RUNOUT -- -- 1/1000 IN 1/1000 IN	These displays show the rim runout and combined wheel assembly runout values in thousandths of an inch.
4 Projected Improvement	
Displays the approximate projected improvement in the total runout of the wheel assembly as a percentage.	
5 Sensitivity Modes	
	Changes ProMatch™ Technology threshold to a higher value in truck mode.
6 Action Icons	
See page 15	

ProMatch™ Technology Measurement

This machine is equipped with technology to measure the geometric radial runout of a wheel assembly. When the feature is active, a measurement is taken on the inside of the rim assembly and on the outside of the tire.

The large diagnostic roller is parallel to the balancing shaft and takes dynamic measurements of the tire while the wheel is spinning by contacting the surface of the wheel assembly.

Note: It is important that the wheel is properly inflated to manufacturer's specifications before taking a measurement. Improper inflation of the tire may result in an inaccurate measurement being taken.

The rim runout is read through a distance laser that precisely measures the inside of the rim. The actual rim runout related to a wheel assembly should be measured at the internal bead seat locations; however a measurement taken on the visible outer section of the rim near the bead seat is closely related to the runout at the internal bead seat location (Figure 43).

The rim runout is measured at the T1 weight location.

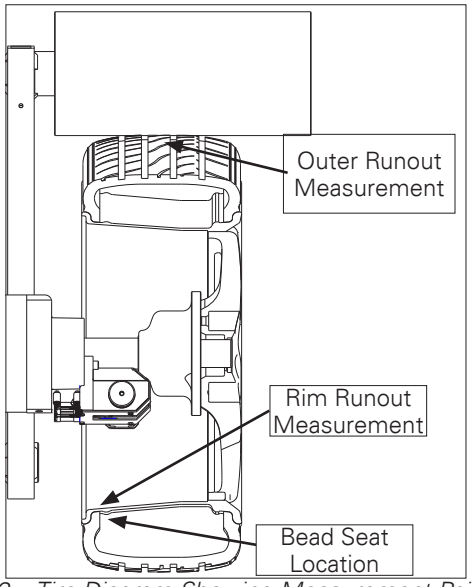


Figure 43 - Tire Diagram Showing Measurement Points

The ProMatch™ process is a recommended tire and wheel alignment guided by software to minimize the total radial runout of a wheel assembly (Figure 44). An example of this is taking a tire high spot and aligning it to a rim's low spot as shown in Figure 44.

The "high spot" can be caused by a number of tire deformities including sidewall characteristics, flat-spotting, a bulge point, or a number of manufacturing inconsistencies. A rim low spot similarly can be caused by manufacturing defects, or damage the rim received in use.

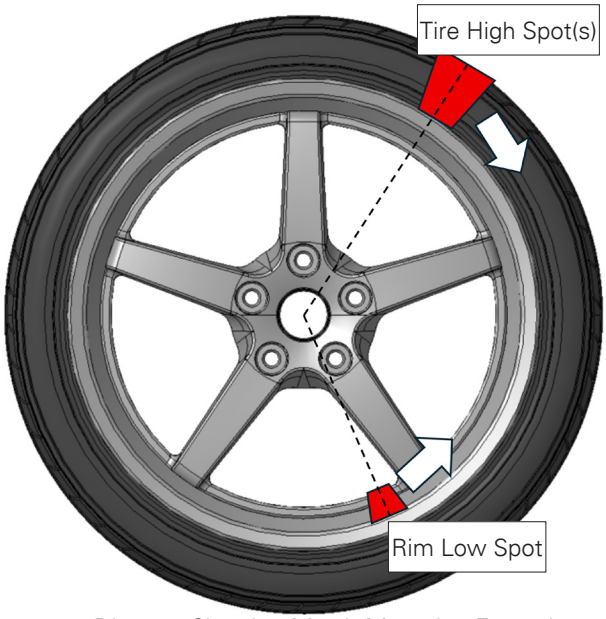


Figure 44 - Diagram Showing Match Mounting Example

Runout measurement is an optional feature in a balance cycle. In some cases, performing a successful match mounting procedure will minimize any remaining vibration a driver would experience that is not corrected through a simple tire balance.

If the operator desires to attempt to minimize the wheel assembly runout by aligning the rim and tire based on the measurements taken, this should be done using a tire changer before applying any counterbalance weights. Perform a checkspin using ProMatch™ Technology after match mount operation to check that the operation was successful.

Note: Runout measurement is not a method for seeking warranty on tires or rims. This equipment does not replicate or replace uniformity quality checks performed by tire manufacturers.

Runout Measurement Procedure

Runout is activated or deactivated on the balancer by tapping the icon shown here on the main balance screen. When the icon is active, runout becomes part of the machine's routine when the hood is lowered or the START button is pushed.

It is important that the tire bead is correctly seated on the rim and that the wheel assembly is mechanically mounted correctly on the shaft. Incorrect bead seat or bad mounting procedure or hardware can impact the measurement.

1. If needed, remove adhesive weights and any residue or debris from inside the barrel of the wheel assembly.

   Do not use a grinder or sanding disk on the wheel assembly especially near sensitive components of the balancer. It is recommended to use an adhesive eraser wheel to clean residue

from the tape flanges. If a cleaner is being used on the wheel, spray the cleaner onto the rag and then wipe the tire. Do not spray near the laser assembly.

2. Mount wheel assembly to balancer shaft.

Note: Inflate tire to recommended manufacturer specifications before measurement. Follow correct mounting steps detailed in the mounting section.

3. Follow dimension capturing steps from balancing instructions

Note: Inner runout measurement is captured inside the rim at the indicated T1 location.

3. Lower protective hood or press SPIN button on screen.

Note: Ensure runout icon is active.

4. Wait for machine to complete it's spinning cycles.

Note: Runout measurement is captured first in the machine's routine followed by a balance measurement. To take a runout measurement on its own, the operator can enter the PROMATCH screen and initiate runout on this screen by pressing SPIN button or dropping the protective hood.

3. View the results and determine actions.

The display will show the following screen if ProMatch ™ technology detects excessive radial run-out and it recommends the user to perform a match mount operation (Figure 45).

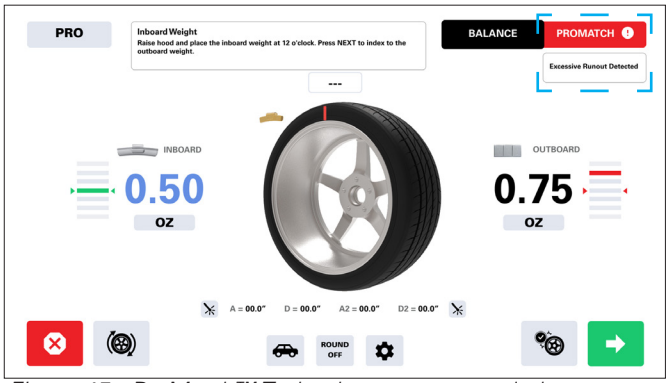


Figure 45 - ProMatch™ Technology recommended screen

If the radial runout is acceptable, or the improvement possibility is low, the values can still be found on the PROMATCH screen, however the button will not highlight red. Touch the PROMATCH button in the top right to access the functions and actions.

The following screens will display if there is no recommended action for the wheel assembly.

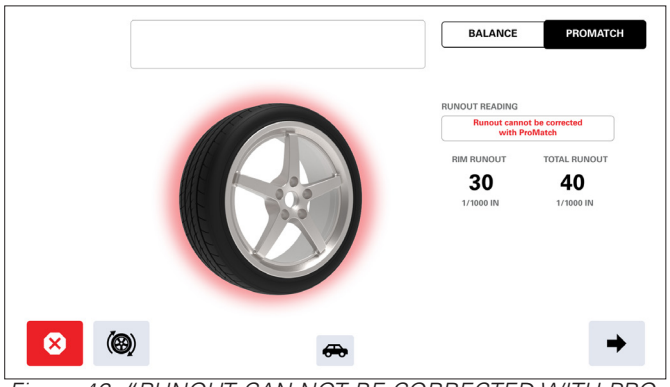


Figure 46 -"RUNOUT CAN NOT BE CORRECTED WITH PRO-MATCH"

Or

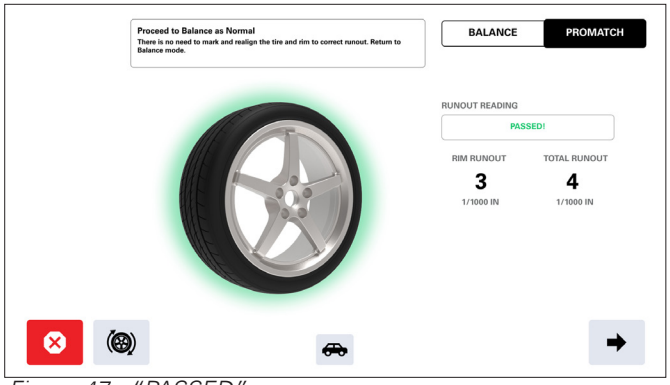


Figure 47 - "PASSED"

Note: Match mount can still be attempted on a wheel assembly even if no action is recommended. The PRO-MATCH screen will guide the user through marking the rim and tire.

ProMatch™ Technology may not recommend the user perform an action on the wheel assembly when the runout is high if the improvement conditions are low.

High runout values do not always mean correctable conditions. A tire may have multiple out-of-round conditions or the high spot and low spot are too close to eachother to permit much improvement.

The following screen will display if ProMatch™ Technology detects a condition where improvement is likely.

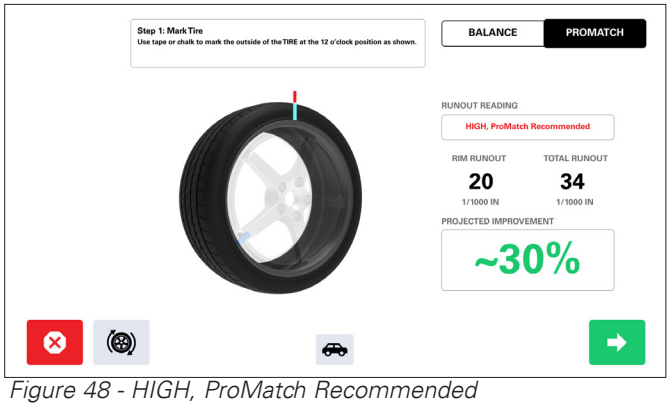


Figure 48 - HIGH, ProMatch Recommended

If the user wants to proceed with match mounting the tire, the balancer's ProMatch™ Technology will guide the user through marking the rim and the tire.

Mark the tire with a visible yet non-permanent method such as a wax crayon or a piece of chalk. Mark at the 12 o'clock or top-dead-center. For most wheel assemblies, it is recommended to mark the outboard side of the tire and the rim. If the assembly is a reverse drop center style, the marks should be placed on the inboard side.

Once the rim and tire are marked, take the wheel assembly off the balancer and mount on a tire changer.

Clock the tire position relative to the rim so the match mounting marks on both are aligned as closely as possible. Aligning the two marks on the rim and tire will create the minimum runout conditions for that wheel assembly.

After clocking the tire to the marked rim position, remount the wheel assembly onto the balancer and proceed to imbalance correction.

See the table on the following page for conditions that could affect or alter runout measurement when using ProMatch™ technology.

Conditions that Affect Runout Measurement	Recommendations
Improper wheel mounting to the wheel balancer.	Verify that the adaptors are appropriate for the specific wheel design and dimensions. Confirm that all accessories are not worn, damaged, and are in proper working order. Verify that the wheel assembly is secured properly to the balancer. Check if wheel assembly is lug centric or hub centric on the vehicle.
Tire air pressure incorrect.	Verify the tire pressure in the assembly is in compliance with the vehicle manufacturer's specifications. Recommendations are typically found on a sticker inside the driver's side doorjamb, often referred to as the "B-pillar" on newer vehicles. Alternatively, the information can also be located in the vehicle's owner's manual.
Tire bead not properly seated to the rim.	Before proceeding with tire balancing and ProMatch™ recommended procedures, it is essential to verify that the tire beads are properly seated on the rim. Carefully inspect both sides of the tire to confirm that the beads are evenly and securely seated around the entire circumference of the rim. If the beads are not fully seated, correct the issue before moving forward with any additional service steps.
Temporary Flat spotting.	Temporary flat spotting in tires occurs when a vehicle is parked for an extended period, causing the tire's rubber to compress and flatten at the point of contact with the ground. This can result in a mistaken detection for out of round conditions. It is recommended for the tires in question to be warmed up by performing a test drive. Once the vehicle has been driven for a while, the flat spots will typically disappear as the tires warm up and regain their shape.

Conditions that Affect Runout Measurement	Recommendations
Wheel weights left on rim surface.	Remove all adhesive weights and tape residue from the rim surface prior to measuring the runout of the wheel assembly and rim. Adhesive weights or debris can affect the measurements.
Foreign material in the tire and wheel assembly.	Before performing a tire runout measurement, ensure that the tire and tread area are clean and free of any debris, stones, or road material. This helps ensure accurate measurements and prevents interference during the measurement procedure.
Insufficient Lube Used in Tire Mounting.	Properly lube the tire bead and rim areas such as the bead seat, retaining humps, and drop center, to achieve correct seating of the tire bead to the rim.

Settings Screens and Options

When the settings icon is pressed to access the **General Settings Menu** the following screen will display.

Figure 49 - General Settings Menu

This screen allows the user to adjust the audio volume, lock the touch screen for cleaning, change the language setting and begin a calibration process

Balance Calibration

Note: The balancer must be calibrated successfully before placing unit into operational service at customer's location.

To begin balancer calibration from the **General Settings Menu,** press the **Start** button. The following screen will pop up to take the operator through a guided calibration process.

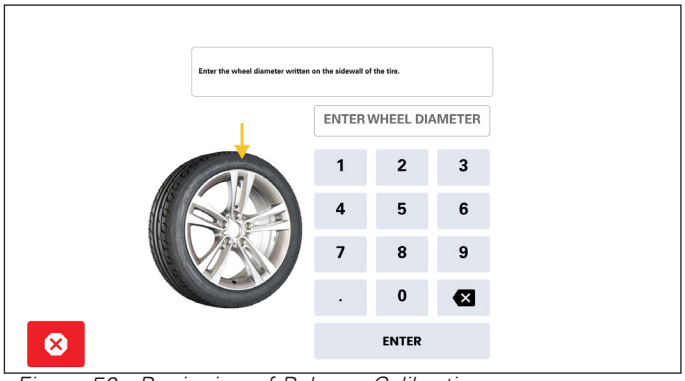


Figure 50 - Beginning of Balance Calibration

Before proceeding, mount a 16" rim diameter wheel assembly onto the balancer shaft. The wheel assembly should be first balanced following a typical balance cylce to below a dynamic inboard and outboard weight threshold of 0.03 ounces.

On the screen shown above, input "16.0" on the on screen keyboard as confirmation that the correct wheel assembly is mounted. Press **Enter** to proceed to the next step.

Figure 51 - Lower Hood and Press Spin

Follow the on screen instructions in the information box at the top of the screen to proceed through balance calibration.

Figure 52- Raise Hood After Spin

The above screen will appear after each step to indicate the user should raise the hood once the wheel has stopped spinning and perform the next action.

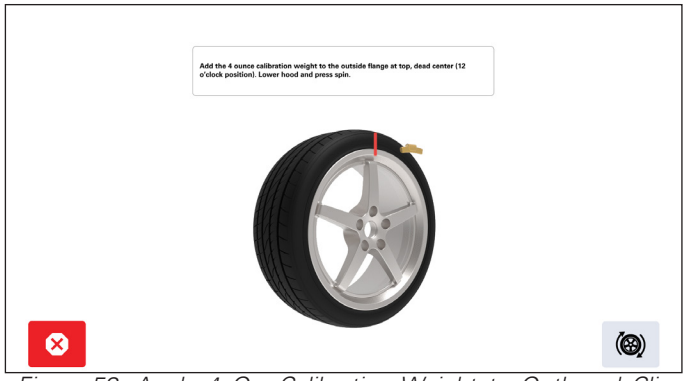


Figure 53- Apply 4 Oz. Calibration Weight to Outboard Clip Flange

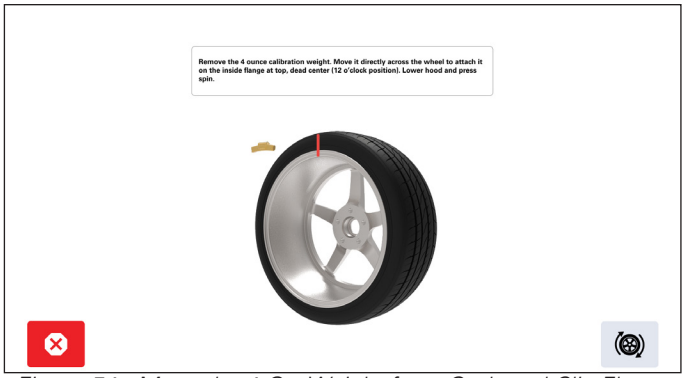


Figure 54 - Move the 4 Oz. Weight from Outboard Clip Flange to Inboard Flange

Note: Ensure placement of 4 oz. weight is as close to the same angular position on the inboard flange as the outboard clip flange.

Figure 55 – Align Laser Dot With the Center of the Cal Weight

Spin the wheel to align the laser dot with the center of the calibration weight. Hold the wheel here and then press the green, NEXT, arrow.

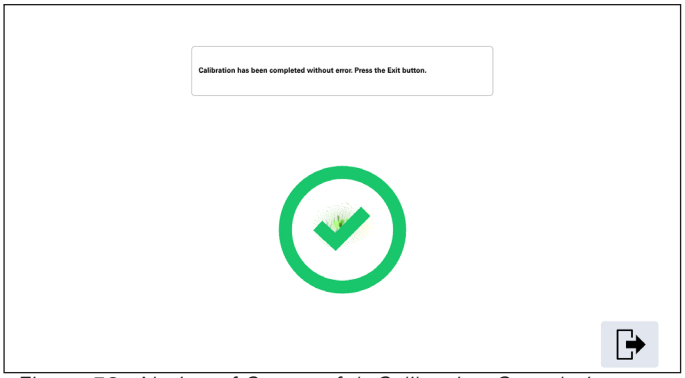


Figure 56 - Notice of Successful Calibration Completion

If calibration is successful, a green check animation will appear with the message: "Calibration has been completed without error. Press the Exit button."

If calibration is unsuccessful, follow see the below table of failures and recommended actions:

Error	Description
Weight Placement Error	Exceeded 5 degree range between placement of calibration weight from outside flange to inside flange.
"This calibration will be stored with errors, recalibration is required. Press the Exit button."	Residual Imbalance too high. OR Calibration wheel is more than 0.25-ounce but less than 1-ounce unbalance. Calibration is stored, but with warning.
"This calibration will be discarded due to errors, recalibration is required. Press the Exit button"	Calibration wheel is more than 1-ounce unbalance. Calibration is rejected.

Owner Settings Menu

The owner settings menu can also be accessed through the settings icon on the main screen. The screen will prompt you to enter a password. Type in **1601** on the keypad; then press the **ENTER** button to proceed to the menu shown below...

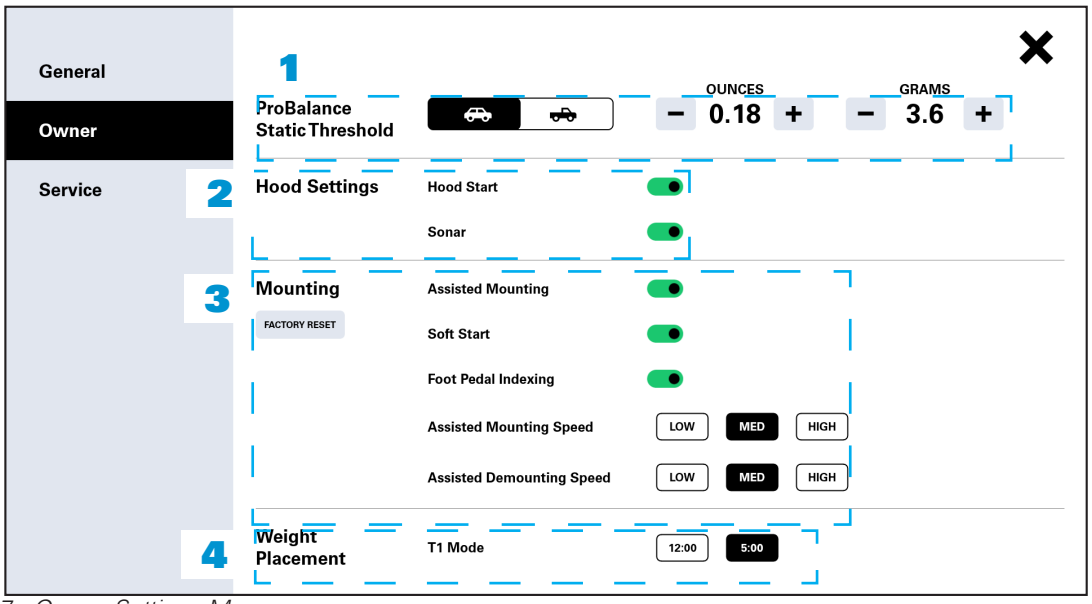


Figure 57 - Owner Settings Menu

1 Probalance	
Probalance Static Threshold	Allows the Owner to set the Static Threshold for Ounces and Grams (in ProBalance mode) individually. This will determine when the wheel balancing is acceptable and within limits.
2 Hood Settings	
Hood Start	Turn hood start ON / OFF. When turned ON, the balancer motor will begin spinning automatically if the hood is lowered. When turned OFF, the user must press the SPIN button to start the balancer motor once the hood is lowered.
Sonar	Turn sonar reading ON / OFF. If sonar is turned OFF, manual width entry is required.
3 Mounting	
Assisted Mounting	Turn assisted mounting ON / OFF. Toggle this setting to determine whether the foot pedal is active for assisted threading in mounting and dismounting the tire from the balancer faceplate.
Assisted Mounting Speed	Set assisted mounting speed to LOW / MED / HIGH.
Assisted Demounting Speed	Set assisted demounting speed to LOW / MED / HIGH.
Soft Start	Turn soft start ON / OFF. Toggle this setting to determine whether foot pedal balancer shaft threading / unthreading will accelerate slowly or quickly when either foot pedal is depressed.
Foot Pedal Indexing	Toggles the Foot Pedal Indexing feature ON/OFF
Factory Reset	Resets the mounting settings to factory defaults

4 Customization	
Weight Placment T1 Mode	Select whether the user wishes to place inboard T1 adhesive weights at the 5:00 dot laser position or the 12:00 line laser position.
ProMatch Start Delay & Disarm Time	Toggle this feature to turn on a timer which will automatically turn the runout measurement feature off after a waiting period following a measurement cycle.

Service Menu

The service menu can also be accessed through the settings icon on the main screen. The screen will prompt you to enter a password. This menu is only accessible to certified Coats service technicians.

Network Setup

If applicable, the network setup can be accessed through the settings icon on the main screen. This screen allows the user to control connection to a local wifi server. Server connection information is shown as well as access to software updates and machine information.

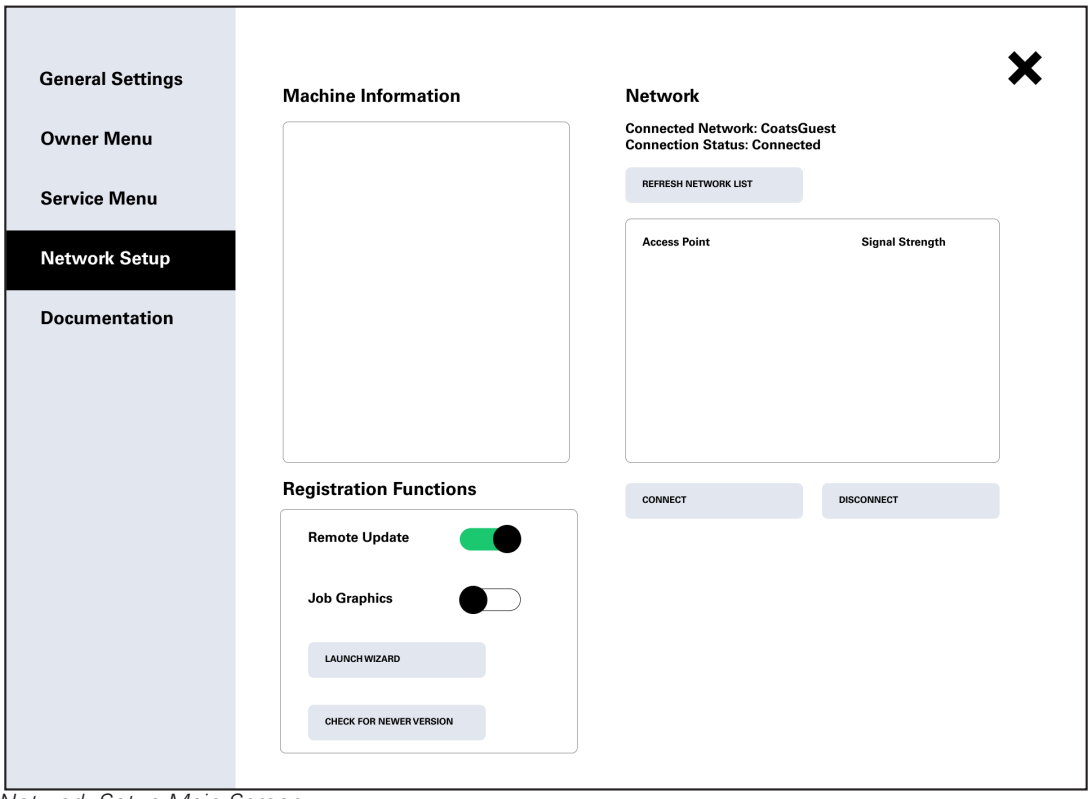


Figure 58 - Network Setup Main Screen

Extra Feature Descriptions

The following descriptions are for proper use and understanding of balancer features that are not previously described in the earlier operation sections.

Capturing Wheel Width Using the Hood Sonar

When prompted by the balancer instructions, use the hood sonar (width sensor, Figure 59) to enter wheel width measurement automatically. Lower balancer hood to enter the measurement. **Note:** new sonar measurement is taken after a new laser measurement.

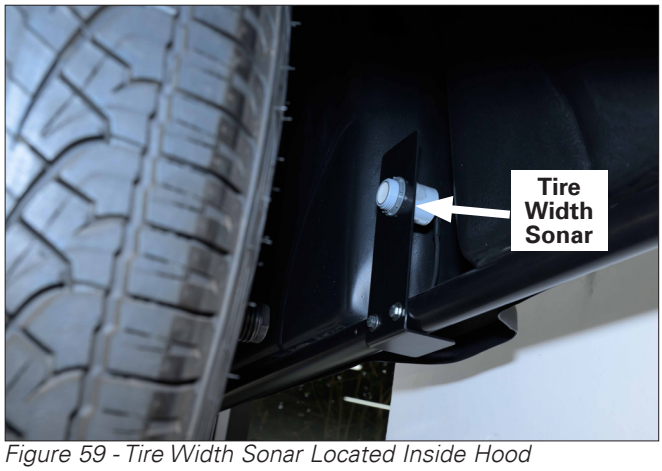


Figure 59 - Tire Width Sonar Located Inside Hood

Note: Refer to page 12 to measure the W dimension manually using the plastic calipers.

Hood (Wheel Guard)

⚠ CAUTION

Never raise the wheel guard before the wheel has come to a stop. Keep hair, loose clothing, fingers and all parts of body away from moving parts. Never reach inside inner hood space when hood is down.

If, due to a fault in the machine, the wheel keeps spinning permanently, switch the machine OFF at the master switch or by unplugging the plug from the power supply. Wait until the wheel stops before opening the wheel guard.

⚠ CAUTION

Keep hands and items free of the laser shutter. Possible pinch point.

⚠ CAUTION

During indexing of wheel assembly, do not put hands on wheel or inside the wheel assembly while tire is moving to position.

Auto Wheel Positioning

⚠ CAUTION

Keep hair, loose clothing, fingers and all parts of body away from moving parts.

The balancer's auto positioning feature stops the wheel automatically at the corrective weight location. The wheel is spun and unbalances are measured and displayed. The inboard center bar highlights as the balancer stops the wheel at the inboard corrective weight location. For C1 and C2, the corrective weight placement is at top-dead center. For adhesive weights, the placement will be at 5:00 or 12:00 depending on user selection (see Figure 30). (If an inboard corrective weight is not required, then the wheel will stop at the outboard corrective weight location.)

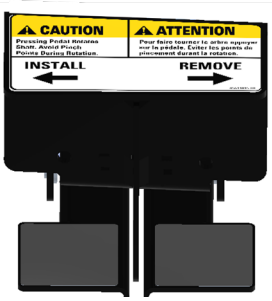
Pressing NEXT moves the wheel automatically to the next corrective weight location. The text on screen will turn BLUE to indicate whether you are indexed to the inboard or the outboard weight location.

The outboard center bar highlights as the wheel automatically moves and stops at the outboard corrective weight location (top-dead-center).

Pressing STOP & EXIT releases the wheel so that it can be manually positioned.

After several minutes of inactivity, the auto positioning feature will turn itself OFF. When this happens, the wheel will rotate freely again. Press NEXT to make the feature activate and position the tire again to the weight placement locations.

Foot Pedal-Assisted Operations



Footpedal Auto-Index Positioning

During wheel balancing (except Static mode) and during ProMatch™ wheel runout positioning you can tap either foot pedal to advance the balancer to the next weight location. This feature takes the place of touching the Next button on the touchscreen.

⚠ CAUTION

To avoid contact with moving parts, you must move to the operator's position shown in Figure 60 prior to activating the pedal in either direction.

Wheel Mounting & Wheel Positioning

⚠ CAUTION

Avoid back injury, seek assistance when lifting heavy wheel assemblies onto the balancer shaft.

Failure to tighten the hub nut properly may result in the wheel dismounting, causing personal injury and property damage.

⚠ CAUTION

To avoid contact with moving parts you must move to the operator's position as shown here prior to activating the Pedal Assisted Wheel mounting switches in either direction.

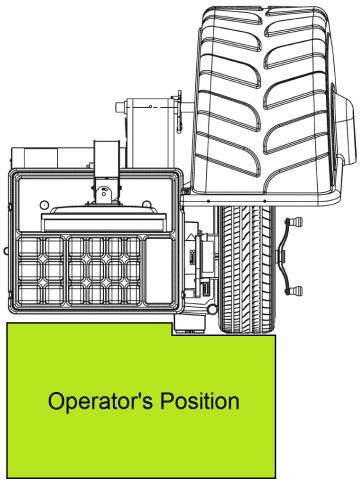


Figure 60 - Operator Position During Wheel Mounting and Dismounting.

Standard Mounting With Foot Pedal

Most original equipment and steel wheels can be mounted properly using this method. The wheel is centered on a collet from the inner side of the hub.

1. Place the cone spring onto the balancer shaft with the large end towards the faceplate.

2. Select the collet that best fits the center hole in the wheel. Slide the collet onto the shaft and push against the cone spring.

3. Lift wheel onto the shaft and center it on the collet.

4. Thread the hub nut on 2 turns until the rear of the hub nut is flush with the end of the shaft.

5. With the left hand, support the wheel assembly to keep it centered on the collet. Lift up to remove the weight of the wheel from the collet and shaft so that proper operation may occur.

6. With the right hand, hold the hub nut with a firm grip

7. With the left foot, press the left pedal while maintaining a firm grip on the hub nut and wheel assembly. The wheel assembly must remain stationary with no rotation.

⚠ The rotation of the shaft may be stopped at any time by removing foot from the pedal.

8. The function will automatically stop rotation once the torque limit or time out limit has been reached.

9. Complete installation by applying final torque manually to the hub nut.

⚠ The pedal-assisted mounting feature is not designed to apply sufficient mounting torque for balancing. The operator must manually finish applying torque to the hub nut to prevent loose hub nut errors.

Figure 61 - Mounting Wheel Assembly Using Foot Pedal Threading

Pedal-Assisted Wheel Removal

1. To dismount tire, remove excess torque from the hub nut by manually loosening half of a turn.

⚠ The pedal-assisted mounting feature is not designed to apply sufficient torque for removing the hub nut from a locked state. The operator must start the process of loosening the hub nut a minimum of ½ turn.

2. With the left hand, support the wheel assembly to keep it centered on the collet. Lift up to remove the weight of the wheel from the collet and shaft so that proper operation may occur.

3. With the right hand, hold the hub nut with a firm grip.

4. With the left foot, press the right pedal while maintaining a firm grip on the hub nut and wheel assembly. The wheel assembly must remain stationary with no rotation.

5. Guide the hub nut off the end of the shaft, and remove.

6. Remove the wheel as normal.

LED Bar & Switch Operation

An LED Bar is installed in the bottom of the Motor Shroud where shown below. The LED Bar operates when the Over-Ride Switch is in the **ON** position and the Hood is **UP**. This LED Bar illuminates the wheel inside plane to aid in weight placement. When the Hood is lowered, the LED Bar will turn OFF.

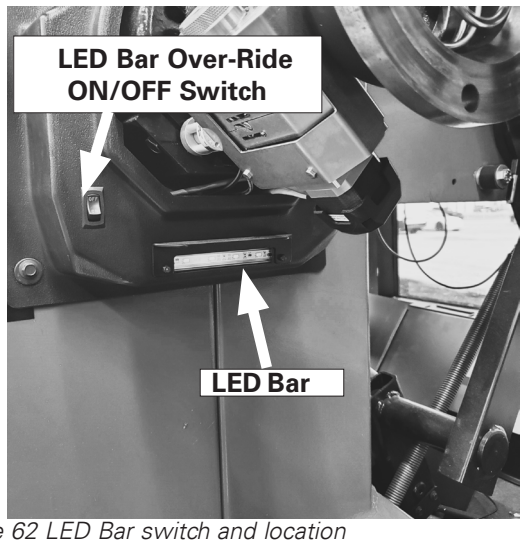


Figure 62 LED Bar switch and location

Pressure Regulator and Hood Spring

Pressure regulator is designed to regulate shop air to between 50 and 60 PSI. Regulator is factory set, verify appropriate pressure at installation.

Do not manually adjust regulator or attempt to bypass. Bypassing the regulator will cause damage to the machine. Only certified Coats Service technicians should adjust pressure setting.

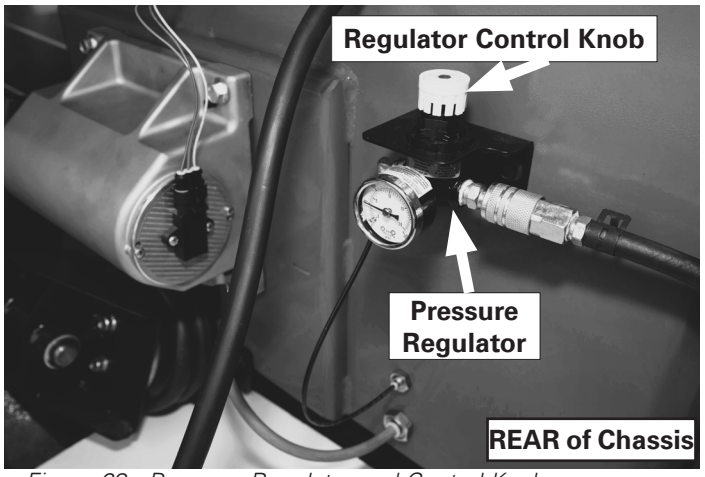


Figure 63 - Pressure Regulator and Control Knob

NOTE: Ensure that the Hood Spring is attached in the Lower Chassis slot.

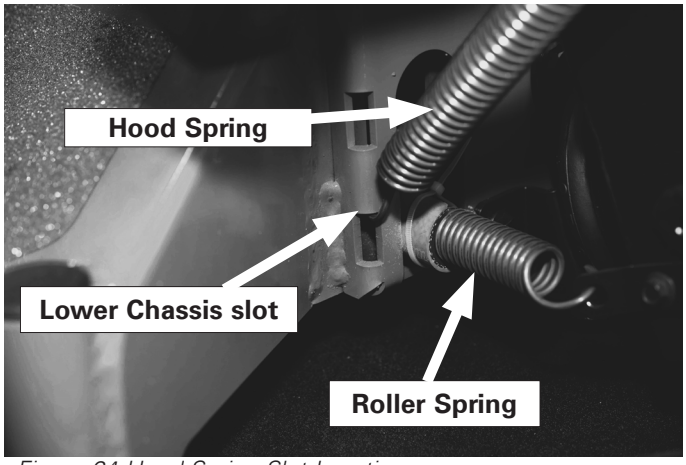


Figure 64 Hood Spring Slot Location

Weight Tray

Weight pockets are laid out so that wheel weights are easily accessible. Use the weight tray studs for handy storage of wheel mounting adapters.

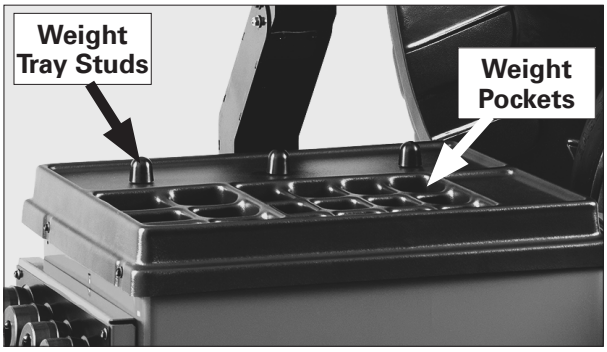


Figure 65 - Balancer Weight Tray

Maintenance Instructions

WARNING

Use caution, this is an electrical device. Exposing the balancer to water, either by hose or bucket, or by exposure to rain or snow, may cause risk of shock or electrocution to operator or bystanders. Place, store, and operate the balancer only in a dry, sheltered location.

CAUTION

Do not hose down with water or bucket wash the balancer. Extensive damage to the balancer will result. Sensitive electronic components, wiring harnesses, and other devices housed in the balancer are not intended to be exposed to water.

The balancer requires only minor maintenance to keep the unit operating properly.

1. Cleaning the Touch Screen Display

NOTE:
- MAKE SURE THE DISPLAY IS TURNED OFF.
- NEVER SPRAY OR POUR ANY LIQUID DIRECTLY ONTO THE SCREEN OR CASE.

To clean the screen:

- Wipe the screen with a clean, soft, lint-free cloth. This removes dust and other particles.

- If the screen is still not clean, apply a small amount of non-ammonia, non-alcohol based glass cleaner onto a clean, soft, lint-free cloth, and wipe the screen.

To clean the case:

- Use a soft, dry cloth.

- If the case is still not clean, apply a small amount of non-ammonia, non-alcohol based, mild non-abrasive detergent onto a clean, soft, lint-free cloth, then wipe the surface.

Disclaimer

- The manufacturer of this display does not recommend the use of any ammonia or alcohol-based cleaners on the LCD display screen or case. Some chemical cleaners have been reported to damage the screen and/or case of the LCD display.

- The manufacturer of this display will not be liable for damage resulting from use of any ammonia or alcohol-based cleaners.

- Touch screen performance may be reduced with the use of thick gloves.

- **ONLY** use fingers to make contact with the screen.

2. Keep the adapters, cones, faceplate, threaded shaft, pressure cup, and hub nut clean. Grease and dirt buildup will cause inaccurate balancing and premature wear. Clean these items at least once a day with a vaporizing solvent.

3. Clean weight tray and any accessory studs, pegs, or storage shelves with a mild detergent. Weights stored in a dirty tray may pick up grease and dirt which may keep them from securely attaching to the wheel.

4. Keep the area around and under the balancer clear. Remove any tools or other items that are leaning against the balancer. Remove any items that may cause the balancer to not sit level. Be particularly cautious of new or used wheel weights on the floor, as they may cause personal injury due to falls.

5. Use only COATS® accessories. Accessories from other manufacturers may not fit or function properly, and may damage the balancer.

6. To keep the balancer lasers in compliance, do not maintenance them. Lasers are not user serviceable. Only Coats certified service technicians may adjust or perform maintenance on laser components or assemblies.

7. Clean outside surface of aluminum diagnostic roller with a rag - using water, a mild detergent, or a non-etching cleaner - if debris starts to build up on the contact surface.

Diagnostic Procedures
After Balance Vibration Problems

If vibration is still present after balancing the wheels and driving the vehicle on smooth pavement, remove the wheels and recheck the balance. If a wheel is unbalanced the cause maybe:

- Wheel was not mounted/centered correctly on the balancer.
- A weight has come off the wheel (possibly the wrong clip style). Remove the other weights from the wheel and rebalance.
- Foreign material inside the tire. Remove the tire from the wheel, remove the foreign material, and remount. Remove wheel weights and rebalance the wheel.
- Stones or other foreign objects caught in the tire tread or rim. Remove the objects. Check and rebalance if needed.

If the balancer still indicates the wheels are balanced to within 0.05 ounces (1.42 grams) on both inner and outer displays, the problem is not in the balance of the wheels. Check the following possible sources of vibration:

- Tire pressure. Bring all tires up to the recommended PSI.
- Radial or lateral runout in the tire or wheel. Attempt correction using ProMatch™ Technology or replace damaged rim or tire.
- Unbalance in wheel covers or trim rings. Remove the wheel covers or trim rings and test drive. If the vibration is gone, remove the shaft and use an appropriate adapter to mount the wheel to the balancer. Balance the wheel with the wheel cover or trim ring attached to the wheel.
- Incorrectly mounted tire and wheel. Remount correctly.
- Damaged rim bolt holes. Replace rim.
- Worn universal joints. Replace as required.
- Drive shaft unbalance or damaged. Balance, repair, or replace.
- Unbalance in brake rotor(s) or drum(s).
- Suspension out of alignment. Align the vehicle and replace any damaged or worn parts.

Troubleshooting

A COATS® Service Technician may ask for information to help diagnose service concerns (please contact COATS directly at 1-800-688-9240 for the Certified Service Partner nearest you). Conveying this information to your service technician prior to servicing can help to expedite service to your equipment. Although much of the diagnostic information aids your COATS Service Technician, several remedies for balancer misfunctions are available to the operator.

Error Messages - An error message, shown in the display windows, may appear indicating a problem with the balancer.

Note: Always, exit error message and repeat the procedure to see if the error is eliminated.

Inverter Error - An inverter error occurs when one of several fault conditions is detected by the inverter; such as, low line voltage, motor over temperature, motor overload or motor drive over temperature. The balancer will not respond to inputs until the fault condition is corrected. The balancer will clear this error as soon as possible and indicate that with the following message: Inverter Fault Cleared. Press Any Icon (key).

Overload Protection - The balancer's motor is overload protected per UL requirements. After 4 to 5 minutes the machine automatically resets itself; activating the fan motor. If this happens, notify your Certified Service Partner immediately.

Important: Allow the fan to cool the motor for at least 30 minutes before using the balancer so the overload protection is not tripped again.

Notice: No service is allowed on the measuring dot laser or 12 o'clock line laser by the customer.

Notice: This unit is to be serviced or repaired only by factory authorized technicians.