Form 3584T, 02-96
Supersedes Form 3584T, 06-95

OPERATION INSTRUCTIONS

DSP9000-9500 Wheel Balancer

OWNER INFORMATION

Model Number ____________________

Serial Number ____________________

Date Installed ____________________

Software Version Number ____________________

Service and Parts Representative ____________________

Phone Number ____________________

Sales Representative ____________________

Phone Number ____________________

Operation	**Trained**	**Declined**
Safety and Maintenance	☐	☐
Equipment Components	☐	☐
Basic Operation	☐	☐
Static vs. Dynamic Balancing	☐	☐
Calibration and Quick Calibration Check	☐	☐
Split Weight Feature	☐	☐
ALU Procedures	☐	☐
Optimizing Procedures	☐	☐
Patch Balance Procedures	☐	☐

Individuals and Date Trained

Contents

1. Safety and Maintenance Information

About This Manual

Reading this manual will provide information needed to operate the DSP9000 and 9500 wheel balancers.

Action Items

Each action item in this manual is in "**BOLD**" type so you can easily see what you need to do next. Between the bold type items are explanations and illustrations to assist you to complete the procedure.

References

This manual assumes you are already familiar with the basics of tire balancing. When reading the instructions in this manual, the "Action Items" provide the basic information needed to operate the balancer. The *"italic"* references are used to refer to other parts of this manual for more detailed information specifically referred to by name. For example*: Refer to "How to Mount the Wheel on the Spindle Shaft," page 45.* These references should be read as needed for additional information to the instructions being presented.

For Your Safety

Read and follow all caution and warning labels affixed to your equipment and tools. Misusing this equipment can cause personal injury and shorten the life of the machine.

To prevent accidents and/or damage to the balancer, use only Hunter recommended accessories.

Never stand on the balancer, it could tip suddenly due to the three-point floor support.

Wear safety glasses, and non-slip safety footwear when operating the balancer. Do not wear jewelry, loose clothing, neckties, or gloves.

Do not place any tools, weights, or other objects on the safety hood while operating the balancer.

Electrical

The DSP9000 and 9500 wheel balancers are manufactured to operate at a specific voltage and amperage rating.

Make sure that the appropriate electrical supply circuit is of the same voltage and amperage ratings as marked on the balancer.

WARNING:	**DO NOT ALTER THE ELECTRICAL PLUG. Plugging electrical plug into an unsuitable supply circuit will damage equipment.**

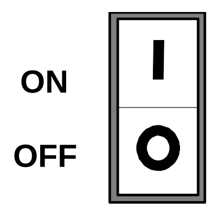
Make sure that the electrical supply circuit and the appropriate receptacle are installed with proper grounding.

To prevent the possibility of electrical shock injury or damage to the equipment when servicing the balancer, POWER MUST BE DISCONNECTED BY PULLING THE PLUG.

WARNING:	**The ON/OFF switch does NOT disconnect power to the motor relay. The ON/OFF switch controls operation of the computer electronics, the display electronics, and the motor cooling fan only.**

After servicing, be sure the balancer ON/OFF switch is in the “O” (off) position before plugging the power cord into the electrical power service.

The ON/OFF switch is located on the back of the balancer cabinet. To turn the balancer “ON,” press the (“I”) side of the ON/OFF switch.



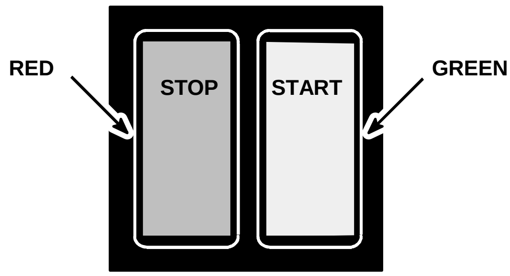
When the ON/OFF switch is turned “ON,” the display panel segments will begin lighting individually from left to right presenting a merchandising display. This also indicates that power is on, the unit has self-checked, and that all displays are functioning. Pressing any key on the keypad or moving the spindle shaft will exit the merchandising display and advance the balancer to the default settings: STANDARD procedure / DYNAMIC mode with the “Blind” and “Rounding” enabled. *Refer to “Blind and Rounding Settings,” page 58.*

Spinning/Stopping

Keep the safety hood and its safety interlock system in good working order.

Be sure the wheel is mounted properly and that the wing nut is firmly tightened before spinning the wheel.

The safety hood must be closed before pressing the green START switch, on the left front corner of the weight tray, to spin the wheel.



Hood Autostart will cause the balancer shaft to spin automatically when safety hood is closed. For the next autostart, the safety hood has to be lifted to the full up position and then closed.

Raise safety hood only after safety beep occurs indicating wheel has slowed down enough to open hood. If safety hood is raised to full up position before the safety beep a warning alarm will sound.

The display will show the imbalance correction amount and location, and the wheel will stop.

The red STOP switch can be used for emergency stops.

Cleaning the Unit

When cleaning the unit, use window cleaning solution to wipe off the display console and cabinet. Do not spray window cleaning solution directly onto control panel. **Do not hose down the unit.** This could damage the electrical system.

Spindle Maintenance

Keep the spindle shaft assembly and wing nut threads clean and lubricated. Clean the spindle threads by running the edge of a rag between the threads while turning the spindle by hand. Lubricate the spindle with a coating of light lubricant such as WD-40.

Do not lubricate the spindle hub mounting surface. This could cause slipping between the wheel and the hub plate. Keep the hub mounting surface clean and dry.

Mounting Cone Maintenance

Keep the mounting cones clean and lubricated. Lubricate with a coating of light lubricant such as WD-40.

Do not use cones in any way that is not described in this operation manual. This could cause damage to the mounting cone and not allow for proper mounting of the

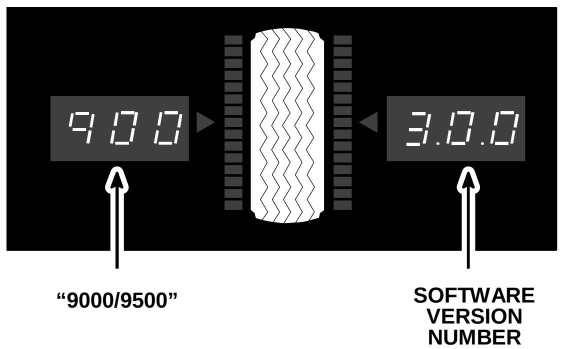
wheel.
Refer to “How to Mount the Wheel on the Spindle Shaft,” page 45.

Before Calling for Service (Identifying Software Version)

If a problem arises, have your Software Version Number and the balancer Serial Number at hand **before calling for service**. This will prevent the need for a second phone call.

The Serial Number is located on the Serial Plate Label on the back of the balancer cabinet.

To access the Software Version Number, press and hold the ENTER key while turning the machine on. The number will be displayed as shown below.

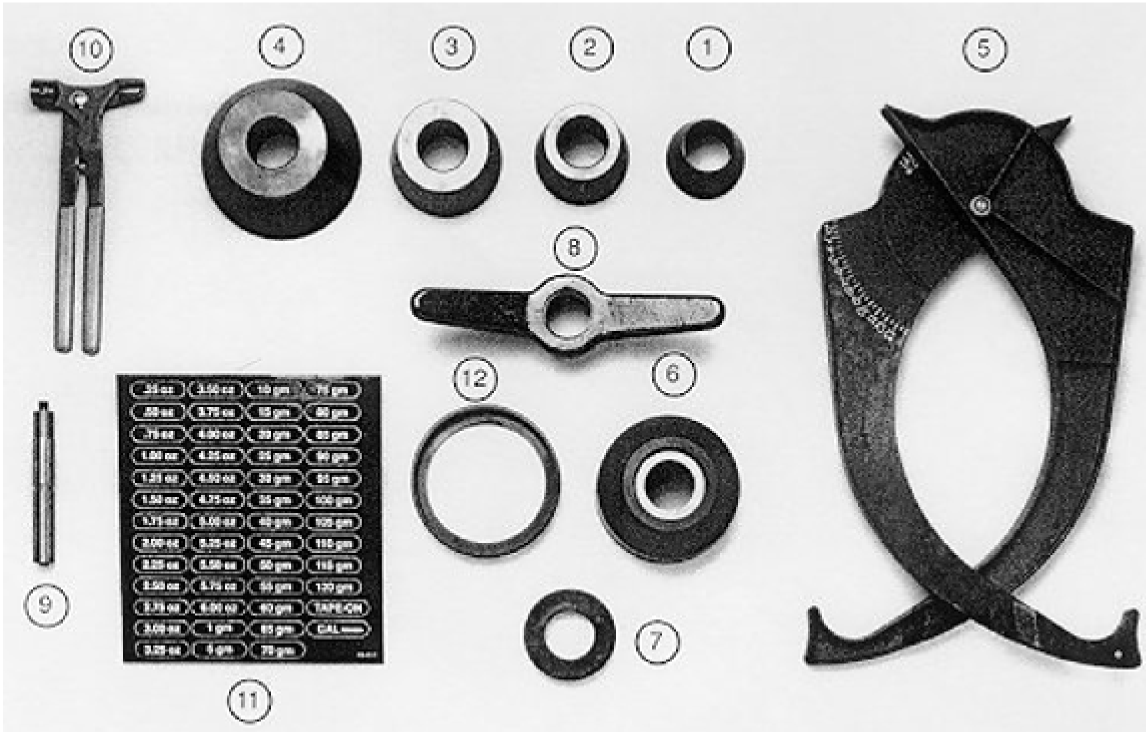


This manual provides operating instructions for the DSP9000 and 9500 wheel balancer with software revision 3.0.0 and higher.

2. Getting Started

Equipment Components

Standard Accessories

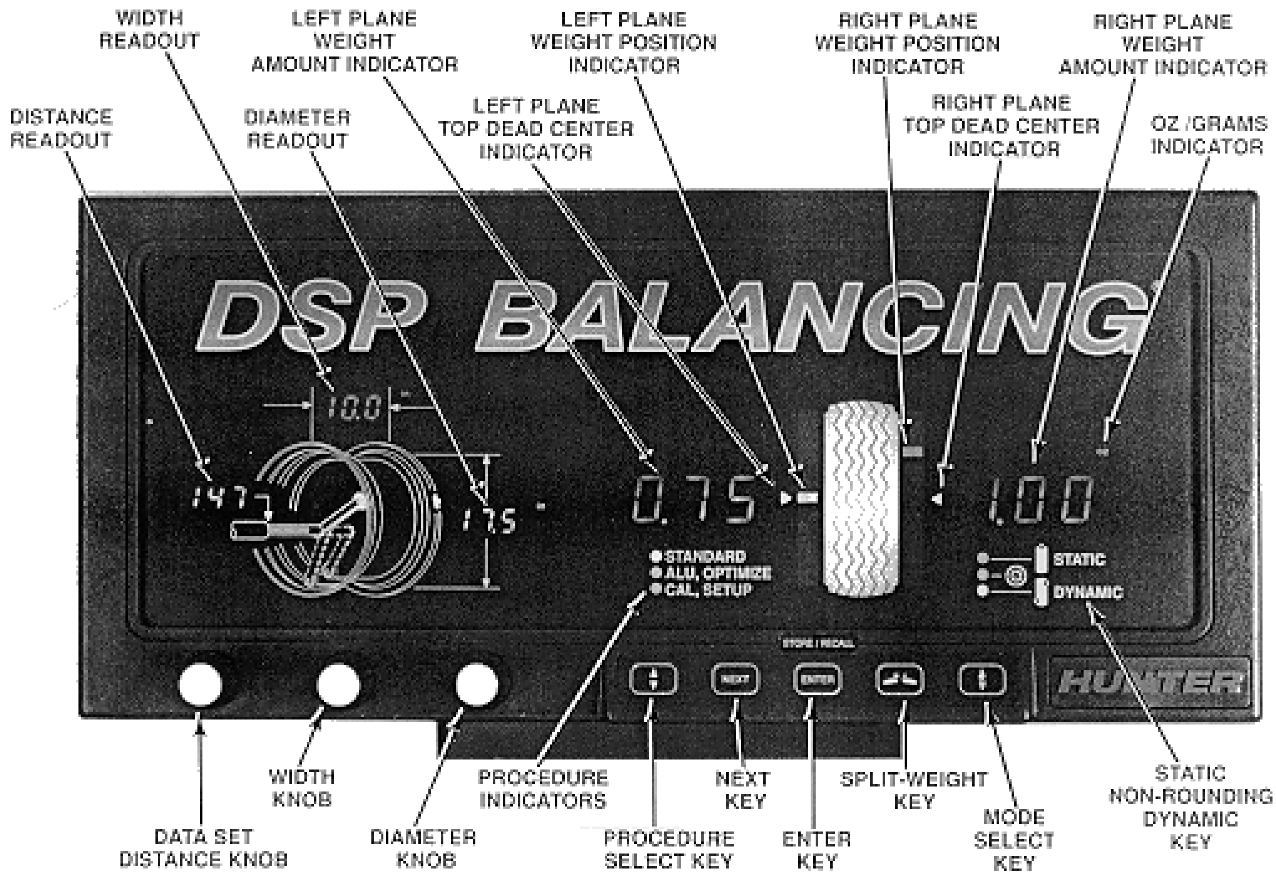


1. Centering Cone (1 11/16-2 9/16), 192-36-2
2. Centering Cone (2 7/16-3 1/16), 192-37-2
3. Centering Cone (2 15/16-3 5/8), 192-38-2
4. Centering Cone (3 7/16-5 3/16), 192-39-2
5. Rim Width/Internal Diameter Caliper, 221-563-1
6. Small Plastic Cup, 4-1/2” O.D., 175-217-1*
7. Plastic Washer, 46-320-2
8. Wing Nut, 76-255*
9. Calibration Weight, 65-45-2
10. Weight Hammer/Pliers, 221-540-2
11. Weight Tray Decals, 128-421-2
12. Scratch Guard Sleeve, 4 1/2” (for 175-159-1), 106-82-2

Refer to Form 3203T for optional acessories.

* On 9500, these parts are replaced with Pro-Grip-2 Quick Nut w/Cup Kit, 20-117-2.

Control Panel



Using Control Keypad

Press the left key to select a STANDARD; ALU, OPTIMIZE; or CAL/SET-UP menu.

Press the right key to select a STATIC, NON- ROUNDING, or DYNAMIC balancing mode. When using this key, STATIC or DYNAMIC can be selected to include the middle display LED. When the middle display LED is on, the blind and rounding are disabled, the actual amounts of imbalance for the selected balancing procedure will be displayed. *Refer to “Blind and Rounding Settings,” page 58.*

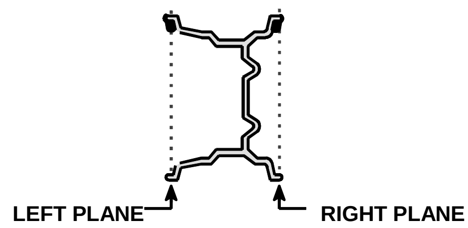
Press the NEXT key to change planes (green “weight” will indicate current plane selected) or scroll through menus, or to select wheel to store/ recall.

Press the ENTER key to enter information and to begin a procedure that has been selected.

Press the key when the “Split Weight” function is needed. *Refer to “Split Weight Feature,” page 55.*

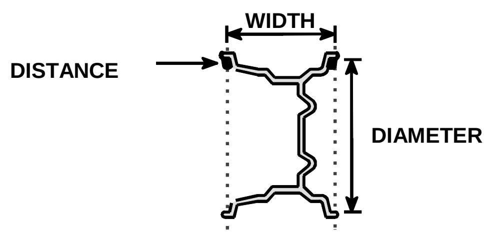
Identifying the Planes

The balancer must know the location of the two weight circle planes for placement of correction weights on the wheel assembly.

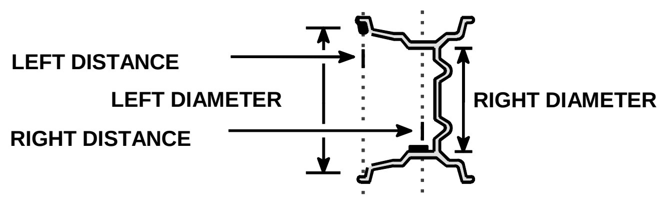


Each plane is described by a distance from the balancer and a diameter.

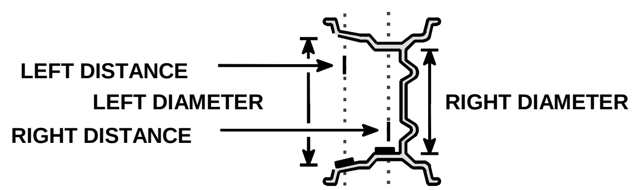
In STANDARD, left and right planes are inputted as follows:



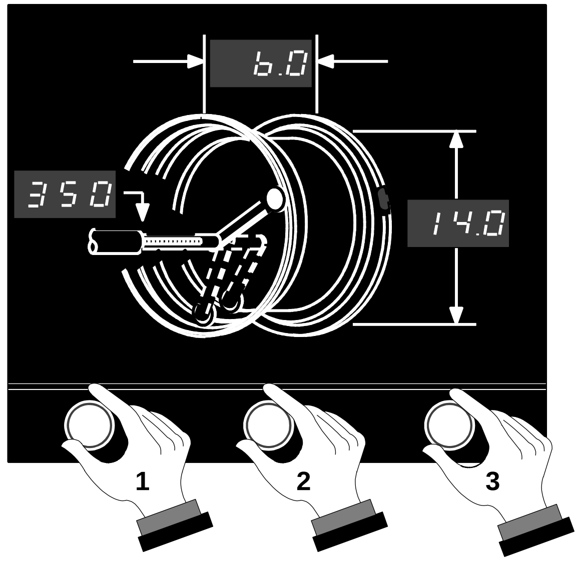
In ALU-1, left and right planes are inputted as follows:



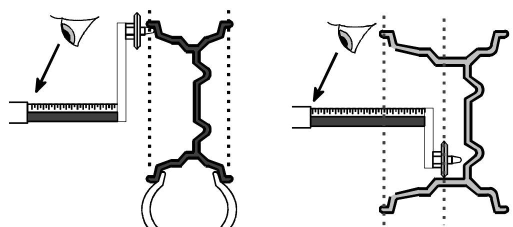
In ALU-2, left and right planes are inputted as follows:



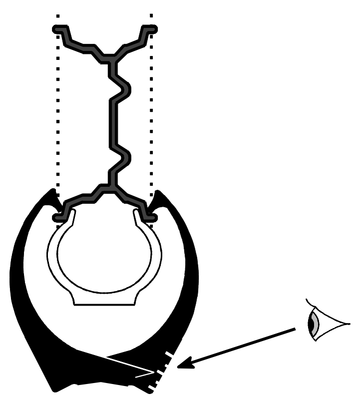
Manually Setting Wheel Dimensions



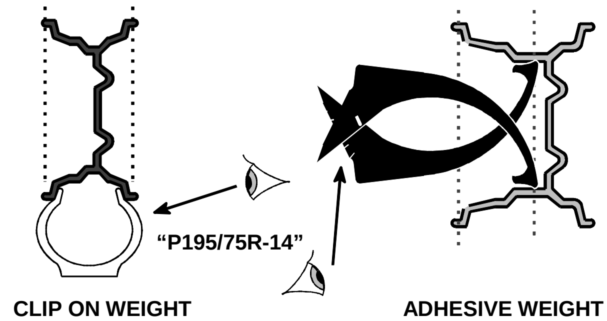
The distance knob (**1**) is used to input the distance from the balancer to a weight plane.



The width knob (**2**) is used to input the distance from the left weight plane to the right weight plane.



The diameter knob (**3**) is used to input the weight circle diameter of a weight plane.

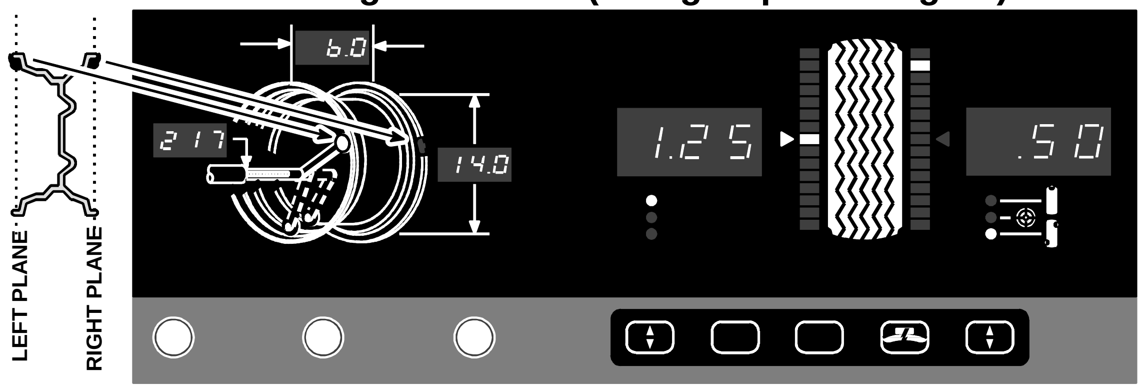


The inner auto dataset arm can be used to automatically measure distance and diameter. *Refer to "How to Measure the Wheel with Optional Inner and Outer Auto Dataset Arm," page 50*.

The outer auto dataset arm can be used to automatically measure rim width. *Refer to "How to Measure the Wheel with Optional Inner and Outer Auto Dataset Arm," page 50*.

3. Balancing Procedures

STANDARD Balancing Procedure (Using Clip-on Weights)

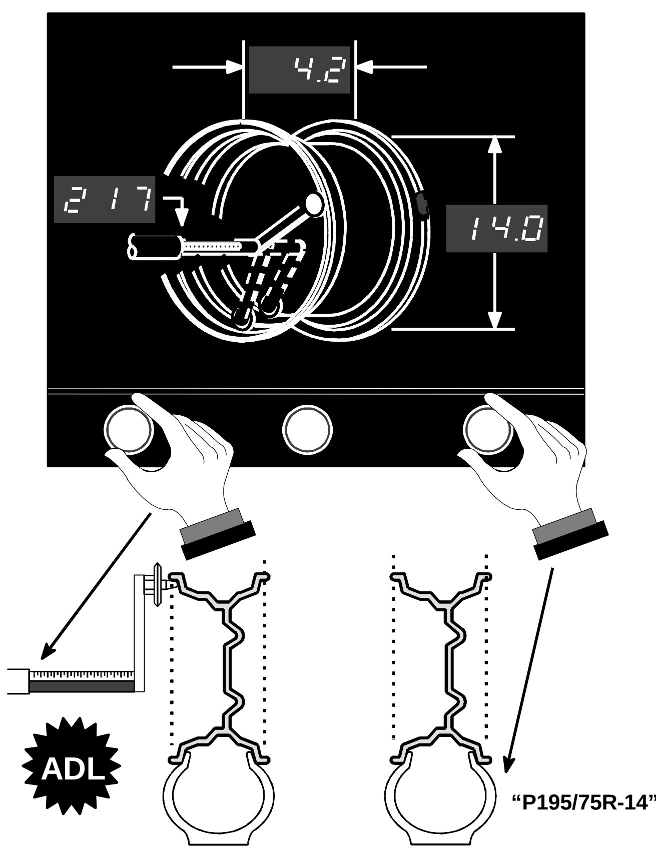


Mount wheel.

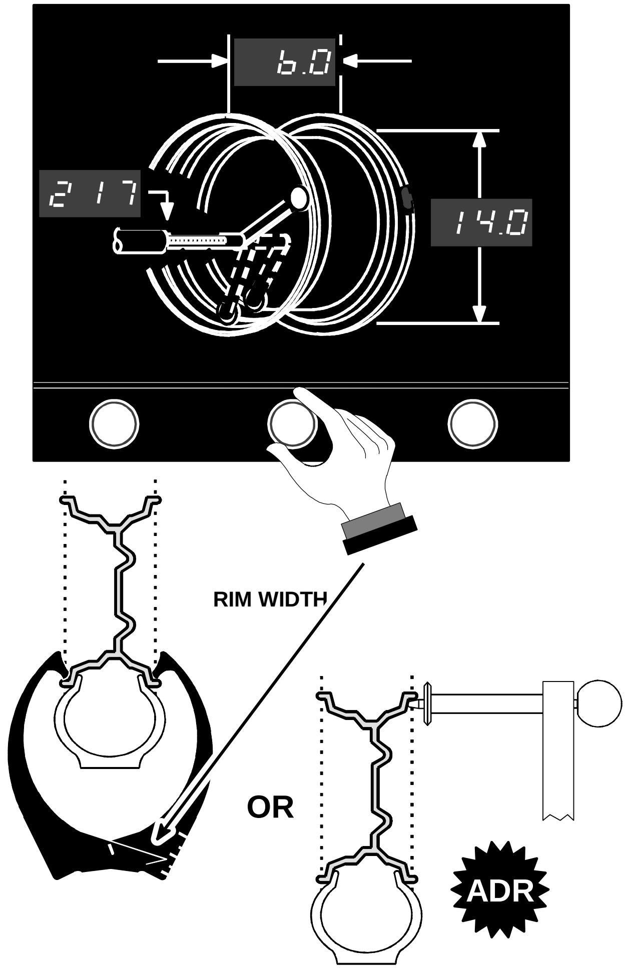
Press left key to select STANDARD.

Press right key to select DYNAMIC.

Measure and enter the distance to the wheel inner rim lip and rim diameter as shown below:

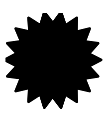


Measure and enter the rim width as shown below:

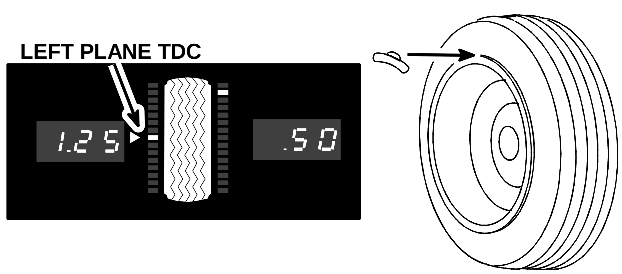


Close safety hood and spin wheel.

After wheel stops, raise safety hood.

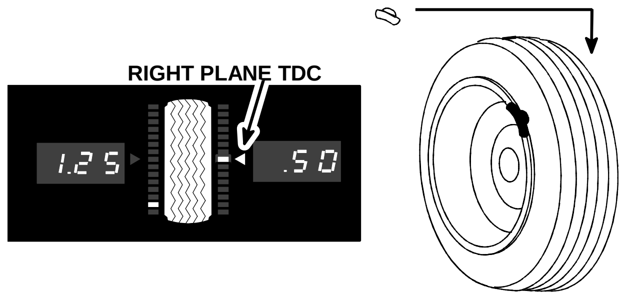
 indicates “auto dataset left” (ADL) or “auto dataset right” (ADR) can be used to automatically input the measurement(s). *Refer to “How to Measure the Wheel with Optional Inner and Outer Auto Dataset Arm,” page 50*.

Find TDC for left plane and attach weight.



If necessary, use  **key to split weight.**

Find TDC for right plane and attach weight.



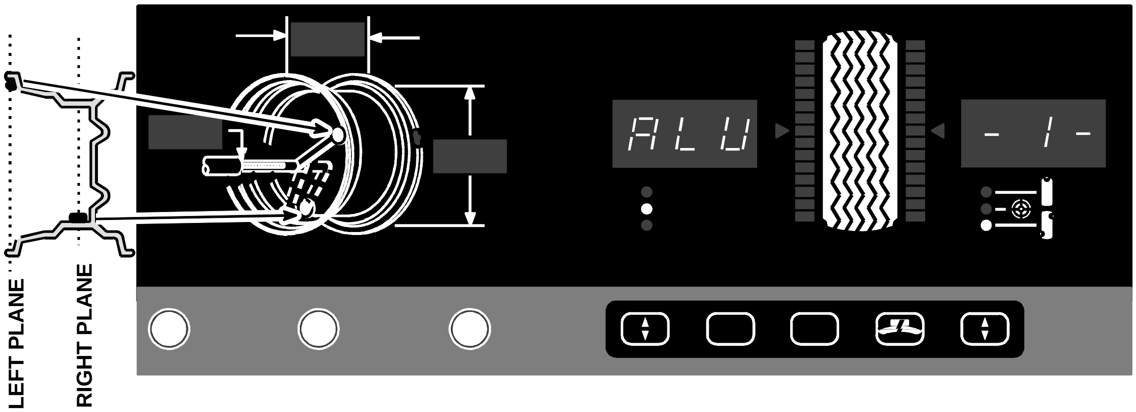
If necessary, use  **key to split weight.**

Verify balance condition by spinning again. Display should show “zero.”

STANDARD balancing procedure is complete.

NOTE:	Weight digits blink if the force signals are larger than the measurement range of the balancer. If this occurs, check for wheel being not properly centered on spindle shaft. If wheel **is** centered, apply the displayed weights. The blinking weights indicate that a second spin and additional weight(s) may be required to get zero imbalance. *Refer to “Correcting Large Imbalances,” page 57.*

ALU-1 (Combination Of Clip-on & Adhesive Weights)



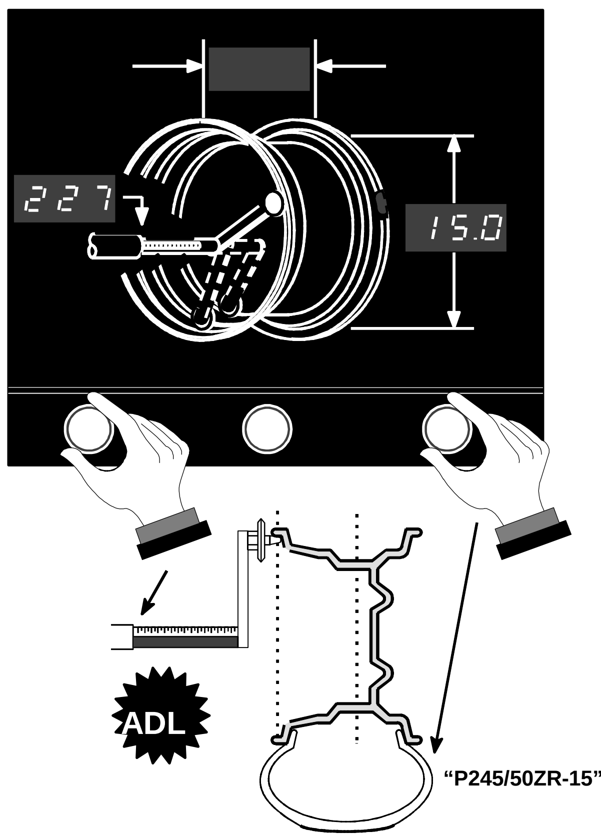
Mount wheel.

Press right [▲▼] key to select DYNAMIC.

Press left [▲▼] key to select "ALU, OPTIMIZE" (ALU-1 is displayed).

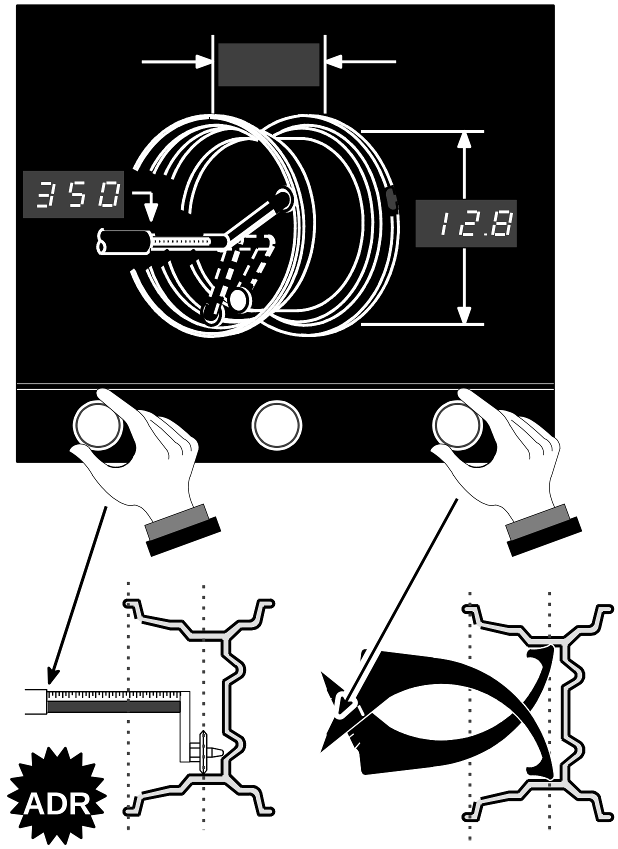
Press [ENTER] key to begin ALU-1 procedure.

Measure and enter the dimensions of left plane weight location as shown below:



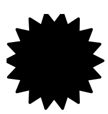
Press [NEXT] key to change display to show right plane weight dimensions.

Measure and enter the dimensions of right plane weight location as shown below:

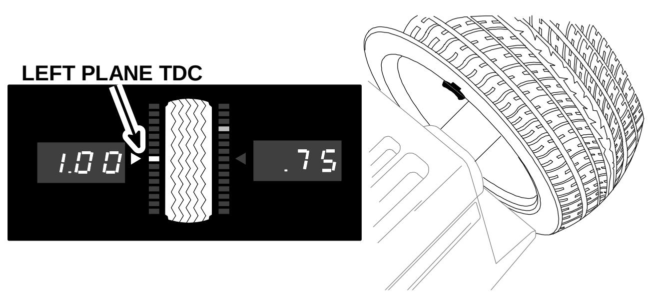


Close safety hood and spin wheel.

After wheel stops, raise safety hood.

 indicates “auto dataset left” (ADL) or “auto dataset right” (ADR) can be used to automatically input the measurements. *Refer to “How to Measure the Wheel with Optional Inner and Outer Auto Dataset Arm,” page 50.*

Find TDC for left plane and attach clip-on weight.



If necessary, use  key to split weight.

The 360 degree weight angle display can be used to place the adhesive weight at Bottom Dead Center (BDC) for easier and more accurate placement than the conventional TDC method. If TDC placement is desired, rotate the wheel to TDC and attach weight.

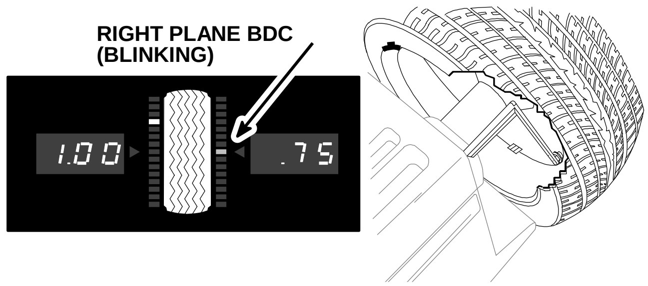
Find BDC for right plane as shown below.

The dataset arm may be used as a reference device for locating previously inputted placement position of adhesive weight. **If equipped with an inner *auto* dataset arm, trigger the dataset arm twice within 1 1/2 seconds to cancel the trigger to prevent taking new readings.**

Press NEXT key to change display to show right plane distance.

Pull dataset arm out until the scale reading and the display right plane distance reading are the same.

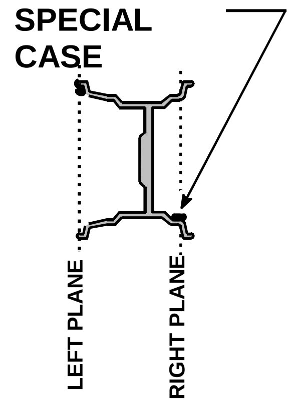
Attach adhesive weight at BDC in-line with the dataset arm disc edge.



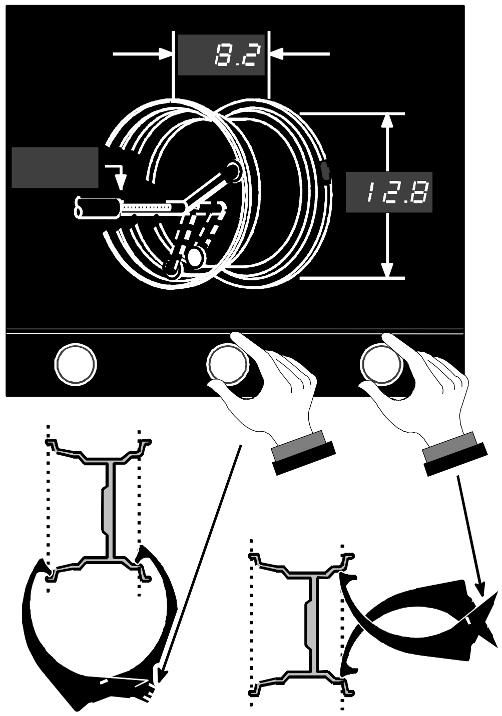
If necessary, use key to split weight.

Verify balance condition by spinning again. Display should show “zero.”

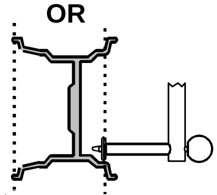
ALU-1 balancing procedure is complete.



WHEN RIGHT WEIGHT IS TO BE PLACED AS ILLUSTRATED, INPUT RIGHT PLANE DIMENSIONS AS FOLLOWS:



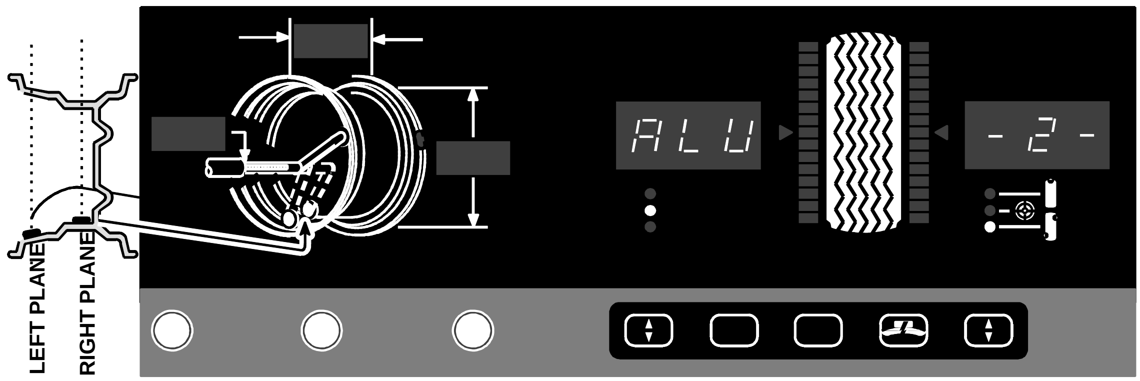
OR



ADR

OUTER AUTO DATASET ARM AUTOMATICALLY INPUTS DISTANCE TO OUTER WEIGHT (CALIPER MEASUREMENT NOT REQUIRED).

ALU-2 (Adhesive Weights Only)



Mount wheel.

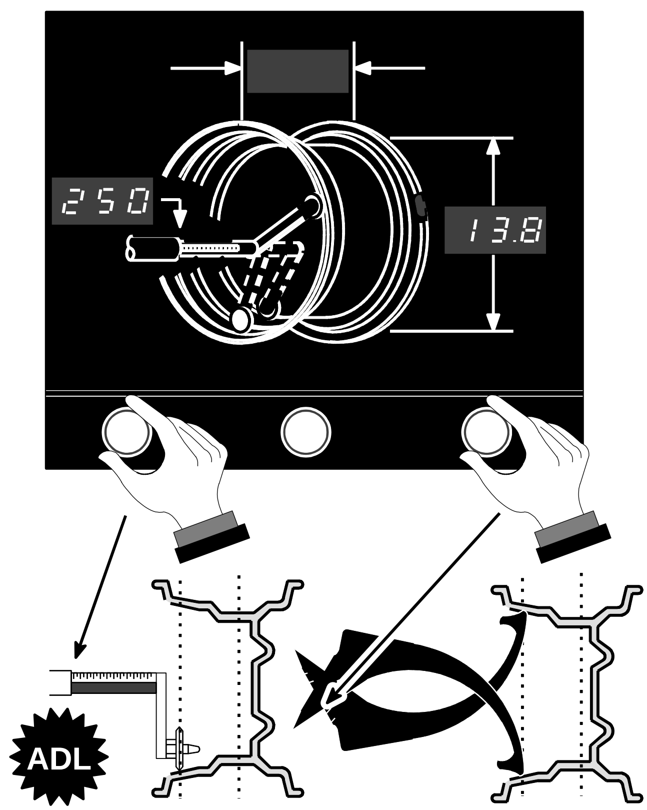
Press right key to select DYNAMIC.

Press left key to select "ALU, OPTIMIZE" (ALU-1 is displayed).

Press NEXT key to display ALU-2.

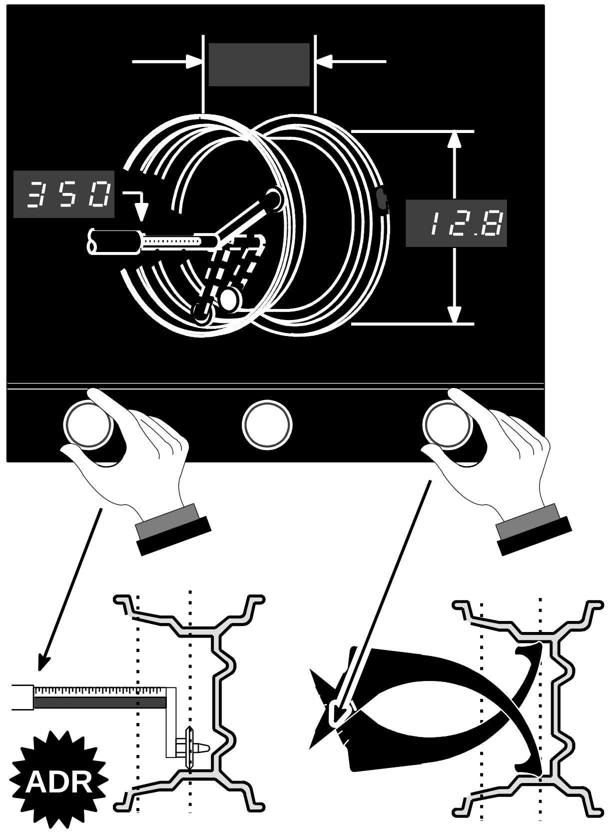
Press ENTER key to begin ALU-2 procedure.

Measure and enter the dimensions of left plane weight location as shown below:



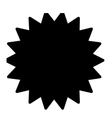
Press NEXT key to change display to show right plane weight dimensions.

Measure and enter the dimensions of right plane weight location as shown below:



Close safety hood and spin wheel.

After wheel stops, raise safety hood.

 indicates “auto dataset left” (ADL) or “auto dataset right” (ADR) can be used to automatically input the measurements. *Refer to “How to Measure the Wheel with Optional Inner and Outer Auto Dataset Arm,” page 50*.

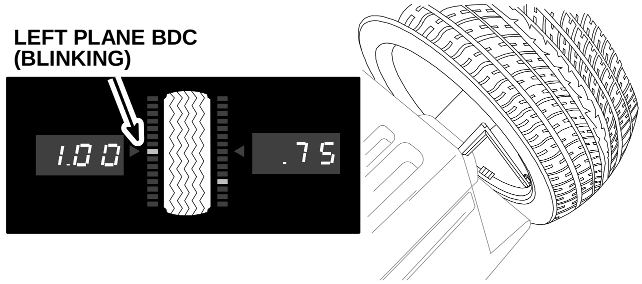
The 360 degree weight angle display can be used to place adhesive weights at Bottom Dead Center (BDC) for easier and more accurate placement than the conventional TDC method. If TDC placement is desired, rotate the wheel to TDC and attach weight.

Find BDC for left plane as shown below.

The dataset arm may be used as a reference device for locating previously inputted placement positions of adhesive weights. **If equipped with an inner auto dataset arm, trigger the dataset arm twice within 1 1/2 seconds to cancel the trigger to prevent taking new readings.**

Pull dataset arm out until the scale reading and the display left plane distance reading are the same.

Attach adhesive weight at BDC in-line with the dataset arm disc edge. Leave the arm in the down position for the following steps.



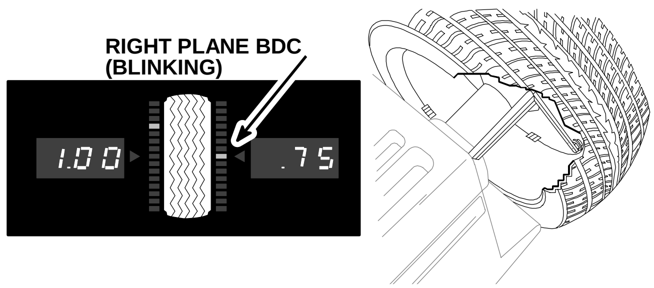
If necessary, use key to split weight.

Press NEXT key to change display to show right plane distance.

Find BDC for right plane as shown below.

Pull dataset arm out until the scale reading and the display right plane reading are the same.

Attach adhesive weight at BDC in-line with the dataset arm disc edge.

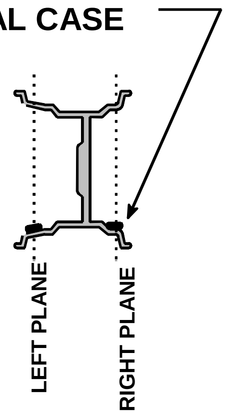


If necessary, use key to split weight.

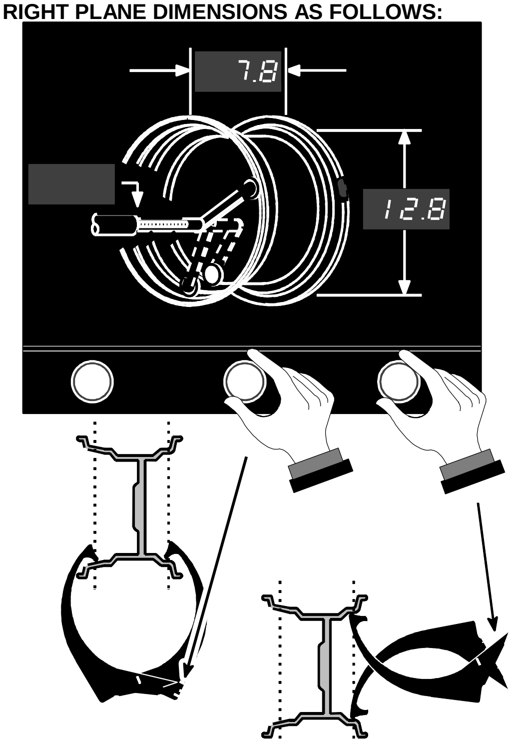
Verify balance condition by spinning again. Display should show “zero.”

ALU-2 balancing procedure is complete.

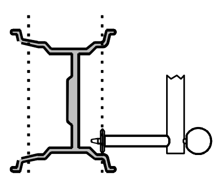
SPECIAL CASE



WHEN RIGHT WEIGHT IS TO BE PLACED AS ILLUSTRATED, INPUT RIGHT PLANE DIMENSIONS AS FOLLOWS:



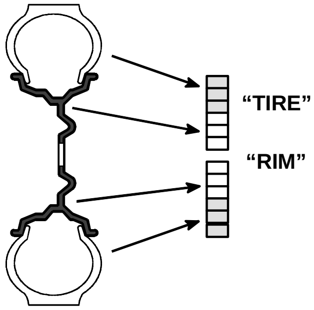
OR

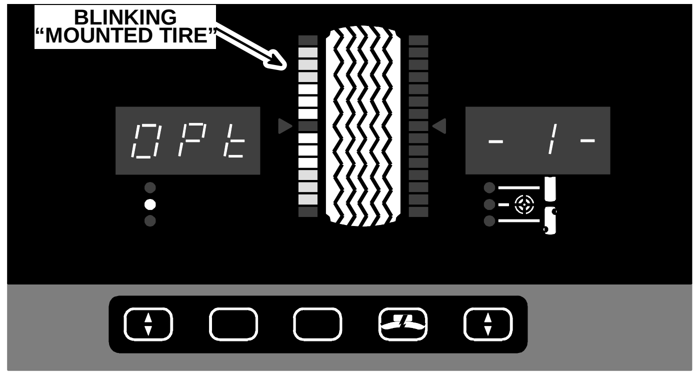


ADR

OUTER AUTO DATASET ARM AUTOMATICALLY INPUTS DISTANCE TO OUTER WEIGHT (CALIPER MEASUREMENT NOT REQUIRED).

OPT-1 Optimizing Tire & Rim Imbalances (Wheel with the Tire Mounted Procedure)





OPTimizing positions the rim with respect to the tire, minimizing the amount of correction weight required.

Use OPT-1 when the tire is already mounted on the rim.

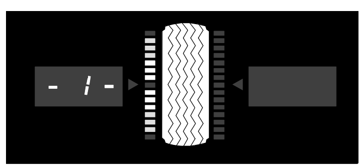
Mount wheel on spindle shaft with valve stem aligned with red dot on the end of spindle shaft.

Press left key to select STANDARD and enter wheel dimensions.

Press left key to select “ALU, OPTIMIZE” (ALU-1 is displayed).

Press NEXT key until OPT-1 is displayed.

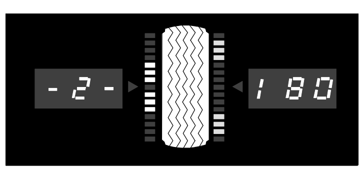
Press ENTER key to begin OPT-1 procedure.



PROMPT FOR:
“SPIN WITH TIRE MOUNTED TO RIM”

Close safety hood and spin wheel.

After wheel stops, raise safety hood.



PROMPT FOR:
“SPIN WITH TIRE ROTATED 180 DEGREES ON RIM”

Remove wheel assembly from balancer, deflate tire and break the tire beads from the rim, then rotate tire 180 degrees on the rim.

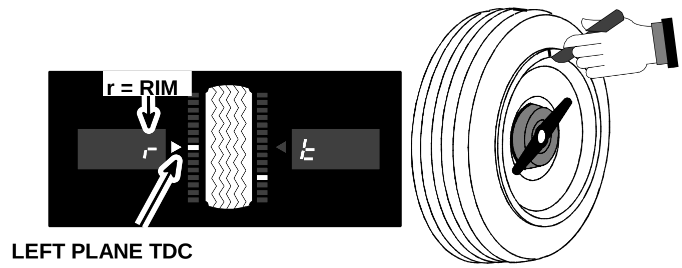
Inflate tire to recommended pressure and remount the tire and wheel assembly on the balancer with valve stem aligned with red dot on the end of the spindle shaft.

Close safety hood and spin wheel.

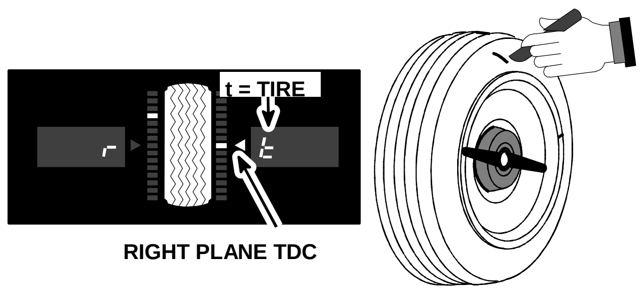
After wheel stops, raise safety hood.

The required location of the rim mark appears on the left plane weight indicator, and the required location of the tire mark appears on the right plane weight indicator. Rim and tire imbalance will flash alternately with rim (r) and tire (t). Use the imbalances to determine if the rim or tire is defective. If imbalance is 0.25 oz. or less for rim or tire, there will be no benefit in proceeding.

Rotate rim to TDC and mark as shown below:



Rotate tire to TDC and mark as shown below:



Remove wheel from balancer.

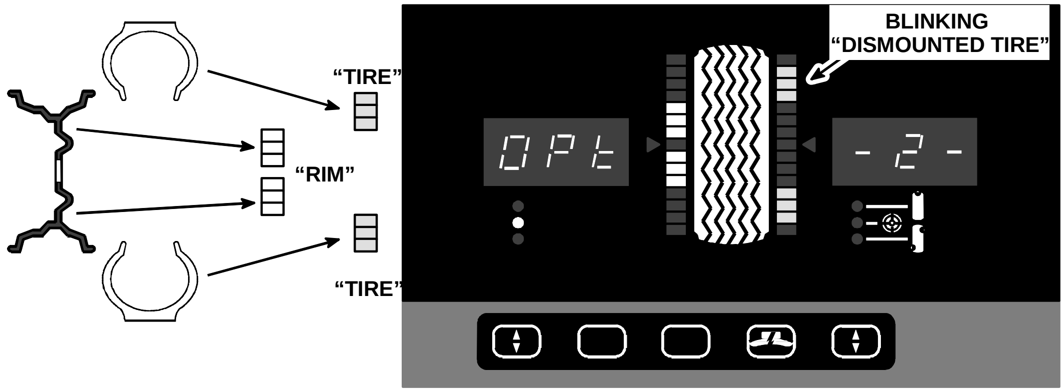
Deflate tire, break the tire beads from the rim, and rotate tire on the rim to lineup the two marks.

Inflate tire to the recommended pressure.

OPT-1 balancing procedure is complete.

Balance the wheel. *Refer to the desired balance procedure.*

OPT-2 Optimizing Tire & Rim Imbalances (Tire Not Mounted Procedure)



OPTimizing positions the rim with respect to the tire, minimizing the amount of correction weight required.

Use OPT-2 when tire has NOT been mounted on rim.

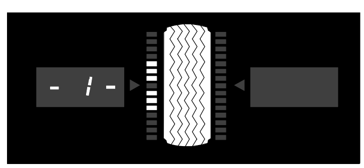
Mount rim on spindle shaft with the air valve stem aligned with the red dot on the end of spindle shaft.

Press left key to select STANDARD and enter wheel dimensions.

Press left key to select "ALU, OPTIMIZE" (ALU-1 is displayed).

Press NEXT key until OPT-2 is displayed.

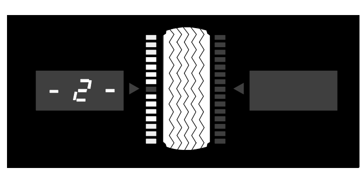
Press ENTER key begin OPT-2 procedure.



PROMPT FOR:
"SPIN BARE RIM"

Close safety hood and spin rim.

After rim stops, raise safety hood.



PROMPT FOR:
"SPIN WITH TIRE MOUNTED TO RIM"

Remove rim from balancer, mount tire onto rim, and inflate tire to recommended pressure.

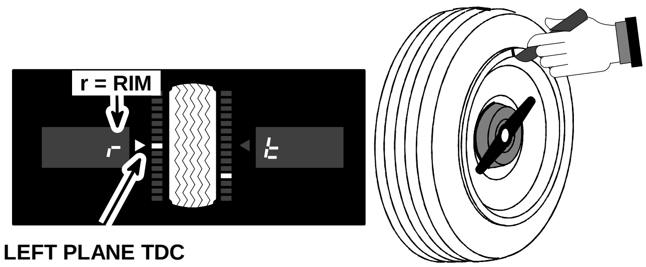
Remount wheel assembly on the balancer with valve stem aligned with red dot on the end of the spindle shaft.

Close safety hood and spin wheel.

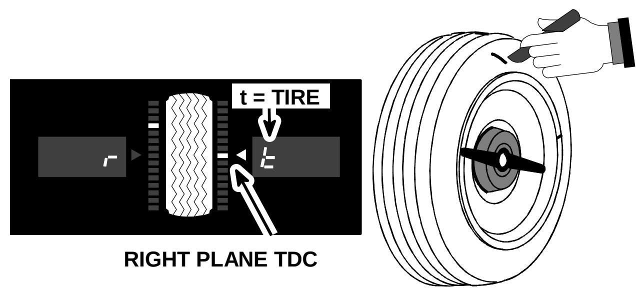
After wheel stops, raise safety hood.

The required location of the rim mark appears on the left plane weight indicator, and the required location of the tire mark appears on the right plane weight indicator. Rim and tire imbalance will flash alternately with rim (r) and tire (t). Use the imbalances to determine if the rim or tire is defective. If imbalance is 0.25 oz. or less for rim or tire there will be no benefit in proceeding.

Rotate rim to TDC and mark as shown below:



Rotate tire to TDC and mark as shown below:



Remove wheel from balancer.

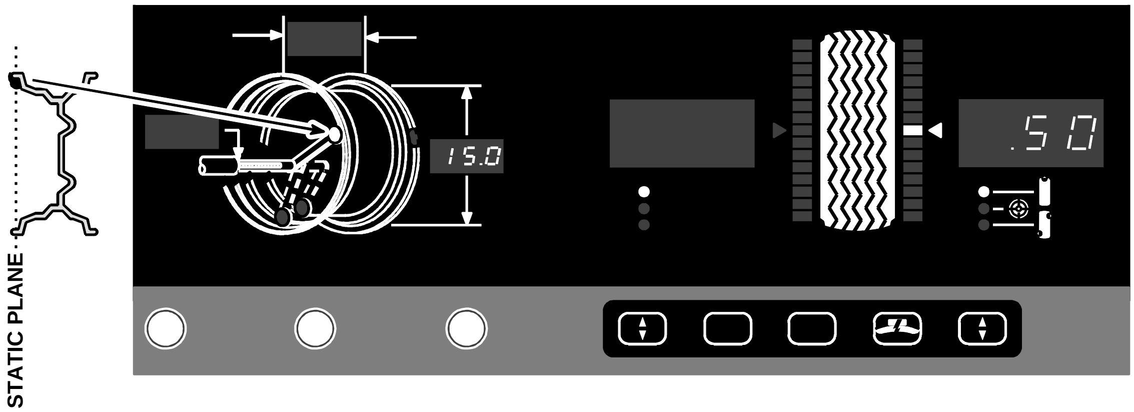
Deflate tire, break the tire beads from the rim, and rotate tire on the rim to lineup the two marks.

Inflate tire to the recommended pressure.

OPT-2 balancing procedure is complete.

Balance the wheel. *Refer to the desired balance procedure.*

STATIC / STANDARD Balancing Procedure (Clip-on Weight)



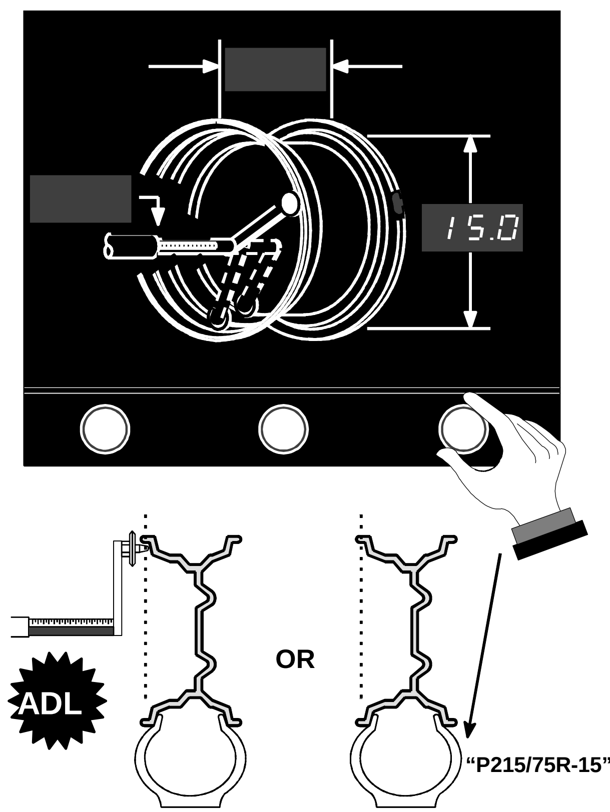
Use STATIC / STANDARD balancing procedure for “static” (single-plane) balancing using a clip-on weight.

Mount wheel.

Press left [key] key to select STANDARD.

Press right [key] key to select STATIC.

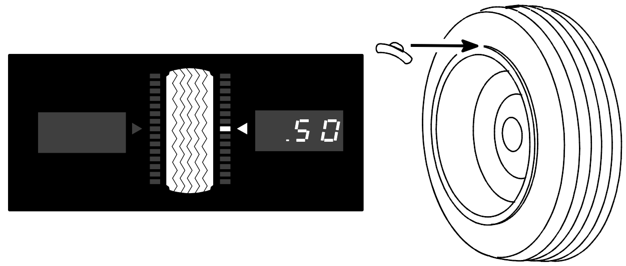
Measure and enter the rim diameter of static plane weight location as shown below:



Close safety hood and spin wheel.

After wheel stops, raise safety hood.

Find TDC for static plane and attach clip-on weight on either rim lip.

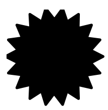


NOTE:	It is recommended that the weight be distributed equally between the left and right rim lips to provide minimum residual dynamic imbalance. For example: In the illustration above, place a 0.25 oz. weight amount on each rim lip at the TDC position.

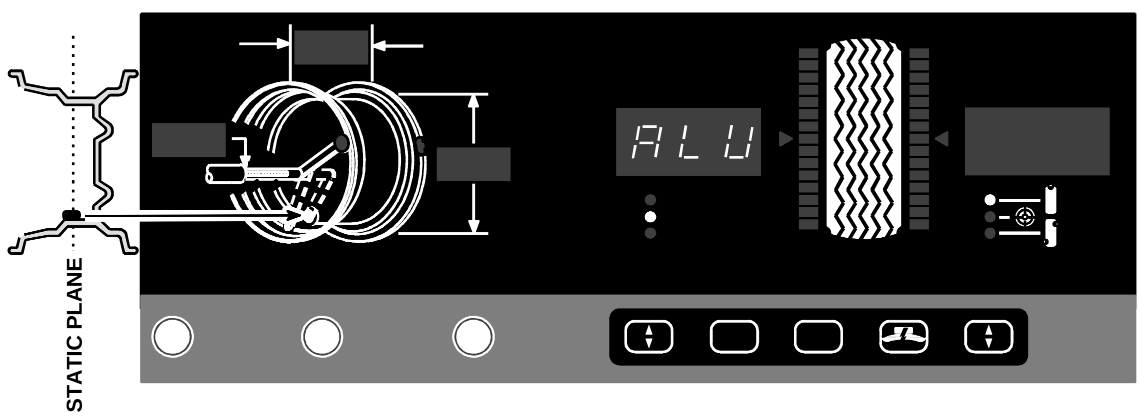
If necessary, use the key to split weight.

Verify balance condition by spinning again. Display should show “zero.”

The STATIC / STANDARD balancing procedure is complete.


indicates “auto dataset left” (ADL) or “auto dataset right” (ADR) can be used to automatically input the measurements. *Refer to “How to Measure the Wheel with Optional Inner and Outer Auto Dataset Arm,” page 50*.

STATIC / ALU Balancing Procedure (Adhesive Weight)



Use STATIC / ALU procedure for “static” (single-plane) balancing using an adhesive weight. Because “static” balancing depends on the placement of only one (1) weight, in this procedure only “ALU” is shown as a choice on the display. (ALU -1- and ALU -2- are inhibited when the STATIC mode is enabled).

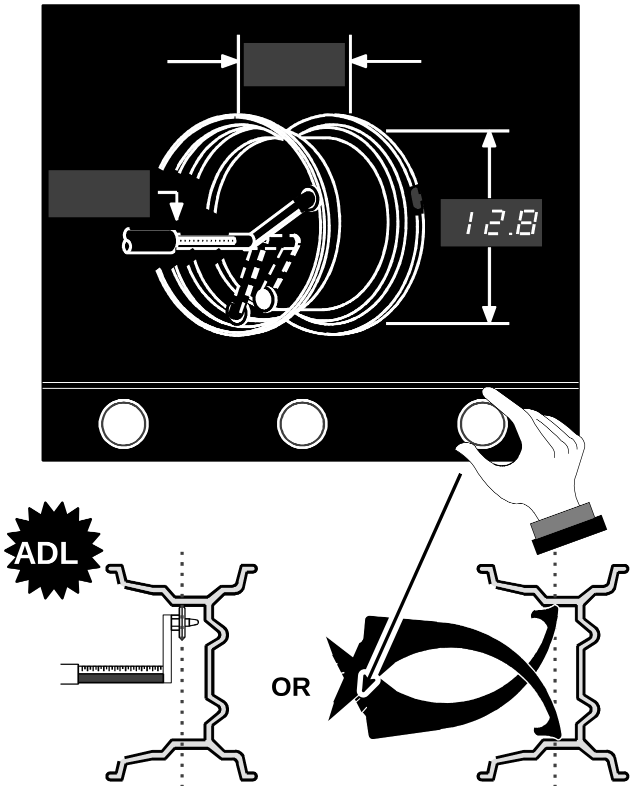
Mount wheel.

Press right key to select STATIC.

Press left key to select “ALU, OPTIMIZE” (ALU is displayed).

Press ENTER key to begin ALU procedure.

Measure and enter the internal diameter near the center of rim as shown below:



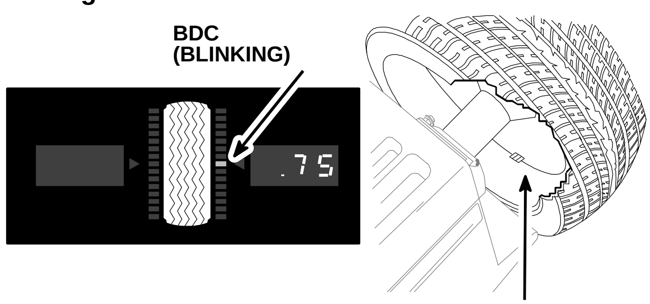
Close safety hood and spin wheel.

After wheel stops, raise safety hood.

The 360 degree weight angle display can be used to place the adhesive weight at Bottom Dead Center (BDC) for easier and more accurate placement than the conventional TDC method. If TDC placement is desired, rotate the wheel to TDC and attach weight.

Find BDC for static plane as shown below.

Attach adhesive weight at BDC in-line with the dataset arm disc edge.



NOTE:	It is recommended that the weight be attached near the center of the rim to provide minimum residual dynamic imbalance.

If necessary, use the key to split weight.

Verify balance condition by spinning again. Display should show “zero.”

The STATIC / ALU balancing procedure is complete.

PATCH BALANCE™ Procedures

Use PATCH BALANCE procedure when weighted balance patches are to be cemented to the inside of the tire. Weight balance patches are recommended for oversize light truck tires that require excessive weight on the rim.

Before performing Patch Balance procedure, perform STANDARD Dynamic rim entry and spin steps to determine which patch balancing procedure should be used:

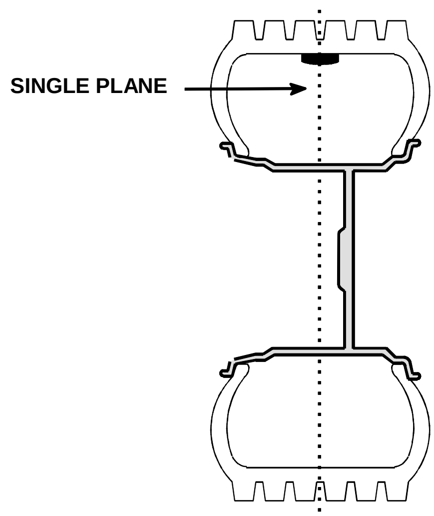
Find TDC for the left plane.

If the right plane weight position indicator is lit solid and not blinking, perform a STATIC PATCH BALANCE.

If the right plane weight position indicator is blinking, perform a DYNAMIC PATCH BALANCE.

STATIC PATCH BALANCE™ (Single Weighted Balance Patch)

A weighted balance patch will be placed in the center of the tread area inside of the tire as shown below:



Mount wheel.

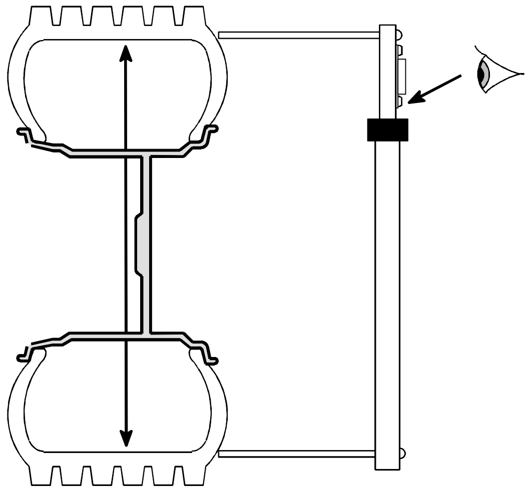
Press left key to select STANDARD and enter wheel dimensions.

Press right key to select STATIC.

Press left key to select "ALU, OPTIMIZE" (ALU is displayed).

Press ENTER key to begin procedure.

Measure inside tire diameter using a tape measure or tool, 221-527-1, just below tread depth as shown below:



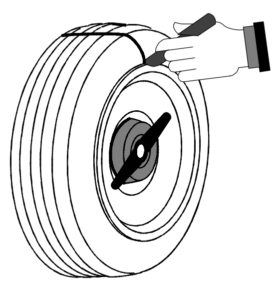
Enter inside tire diameter using the diameter knob.

Close safety hood and spin wheel.

After wheel stops, raise safety hood.

If necessary, use  key to split weight.

Rotate wheel to TDC and mark tire and rim for weighted patch(es) at location as shown below:



Remove wheel from balancer and dismount tire from rim.

Install weighted balance patch centered on inside of tire at mark as instructed by manufacturer's instructions.

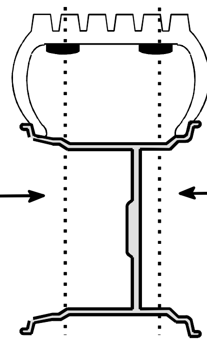
Mount tire onto rim and align marks.

Verify balance condition by spinning again.

NOTE:	Weight digits blink if the force signals are larger than the measurement range of the balancer. If this occurs, check for wheel being not properly centered on spindle shaft. If wheel **is** centered, apply the displayed weights. The blinking weights indicate that a second spin and additional weight(s) may be required to get zero imbalance. *Refer to "Correcting Large Imbalances," page 57.*

DYNAMIC PATCH BALANCE™ (Two Weighted Balance Patches)

Weighted balance patches will be placed on the inside of the tire at the edge of the tread area beside the sidewall as shown below:



NOTE:	Weighted balance patches should be installed only in tread area. Do not install weighted balance patches near sidewall or shoulder of tire.

Mount wheel.

Press right [⇕] key to select DYNAMIC.

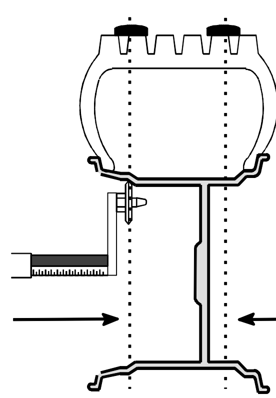
Press left [⇕] key to select "ALU, OPTIMIZE" (ALU-1 is displayed).

Press [NEXT] key to display ALU-2.

Press [ENTER] key to begin procedure.

Measure and enter the left plane weight distance as follows:

> **Set two of widest weighted balance patches available on the tread directly above where the left and right weighted patches will be installed on inside of the tire.**
>
> **Mark on the tread the center of the patches for future placement reference.**
>
> **Place dataset arm pointer disc against rim directly below center of left weighted balance patch and enter distance dimension using distance knob.**

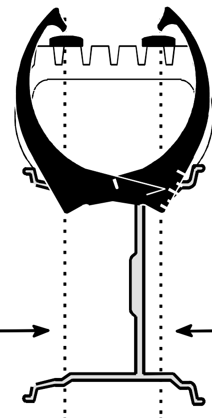


Measure inside tire diameter using a tape measure or tool 221-527-1 just below tread depth and enter reading as inside tire diameter for the left plane using the diameter knob. *Refer to page 30 for illustration.*

Press NEXT key to select right plane weight.

Measure and enter the right plane weight distance as follows:

> **Measure the distance from the center of the left weighted balance patch to the right weighted balance patch using the rim width calipers and enter distance dimension using width knob.**



Enter inside tire diameter of the right plane (same measurement as left plane) using the diameter knob.

Remove weighted balance patches that have been set on the tread.

Close safety hood and spin wheel.

After wheel stops, raise safety hood.

If necessary, use key to split weight(s).

Find TDC for left plane weighted balance patch(es) and mark tire for patch placement.

Find TDC for right plane weighted balance patch(es) and mark tire and rim for patch placement and reassembling.

Remove wheel from balancer and dismount tire from rim.

Install left weighted balance patch(es) at mark(s) as instructed by manufacturer's instructions.

Install right weighted balance patch(s) at mark(s) as instructed by manufacturer's instructions.

Mount tire onto rim and align marks.

Verify balance condition by spinning again.

Balance the wheel. *Refer to the desired balance procedure.*

NOTE:	Weight digits blink if the force signals are larger than the measurement range of the balancer. If this occurs, check for wheel being not properly centered on spindle shaft. If wheel **is** centered, apply the displayed weights. The blinking weights indicate that a second spin and additional weight(s) may be required to get zero imbalance. *Refer to "Correcting Large Imbalances," page 57.*

ALU Shortcut Procedure (“Best Guess”)

NOTE:	ALU shortcut is based upon standard shape alloy rims. Due to varying rim shapes, the “direct input method” of the ALU-1 and ALU-2 procedures is more accurate.

Mount wheel.

Press left key to select STANDARD.

Enter rim dimensions (width, distance, diameter).

Press left key to select “ALU, OPTIMIZE” (ALU-1 is displayed).

Press ENTER key or NEXT and ENTER keys to begin ALU-1 or ALU-2 procedure.

Distance and diameter settings are automatically inputted based on the STANDARD rim dimensions.

Close safety hood and spin wheel.

After wheel stops, raise safety hood.

Find TDC for left plane and attach clip-on or adhesive weight.

If necessary, use key to split weight.

Find TDC for right plane and attach adhesive weight.

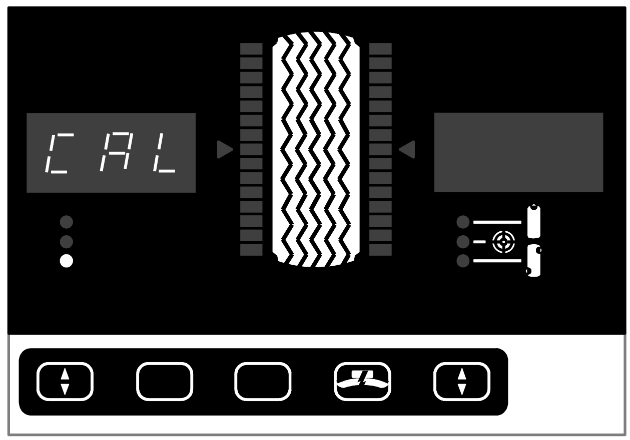
If necessary, use key to split weight.

Verify balance condition by spinning again. Display should show “zero.”

ALU shortcut balancing procedure is complete.

4. Cal / Setup Procedures

Calibration Procedure



Press left key, to advance to CAL/SETUP.

Press ENTER key while “CAL” is displayed, to begin calibration procedure.

Calibration sequence may be interrupted by pressing the left key to exit to STANDARD mode, without losing previous calibration information.

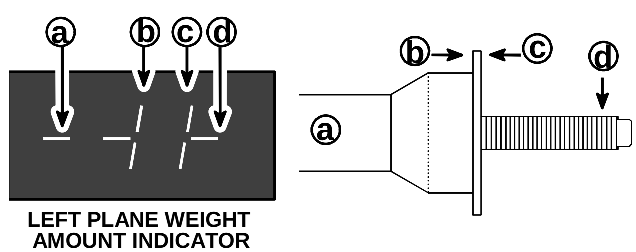
When calibration procedure starts, the left plane weight amount indicator will show horizontal and vertical lines indicating the following:

a. Spindle shaft.

b. innermost (left) surface of hub face plate.

c. Outermost (right) surface of hub faceplate.

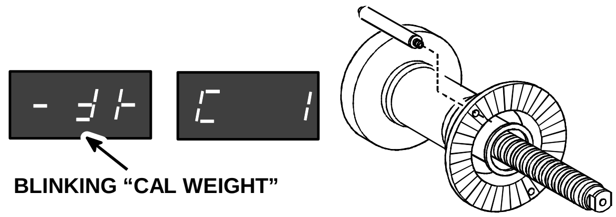
d. Threaded end of spindle shaft



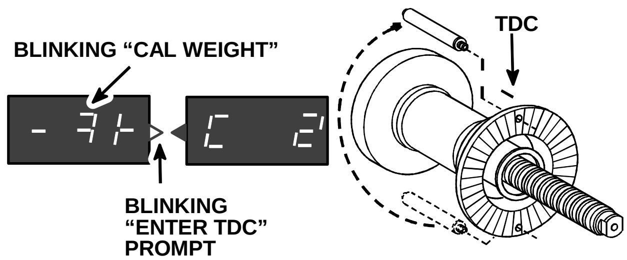
Calibration is a four step procedure, three steps require a spin (1, 3, 4).

NOTE:	Spindle shaft may be in any position when all calibration spins are started (steps 1, 3, 4).

Install calibration weight into either hole of left side of hub faceplate. Lower safety hood and spin.

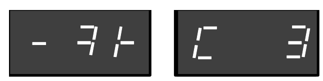


After spindle stops, lift safety hood, move cal weight 180 degrees to the opposite hole on same (left) side of hub face plate, align calibration weight at TDC, and press ENTER key to input reading.

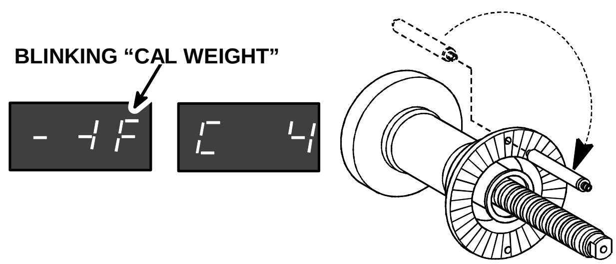


Balancer will beep once and the TDC prompt will turn off to indicate that the TDC reading has been entered.

Lower safety hood, and spin.



After spindle stops, raise safety hood, move cal weight to right side of hub face plate using the same hole, lower safety hood, and spin.



Display screen will read “CAL rdy” indicating the balancer is now calibrated and ready for use. Display will return to the STANDARD balancing procedure automatically.

NOTE:	If desired, while the calibration weight is installed in the outermost surface (right side) of the hub faceplate, the “Quick Calibration Check Procedure” may be performed. *Refer to “Quick Calibration Check Procedure,” page 37.*

If the “Quick Calibration Check Procedure” is not being performed at this time, open the safety hood and remove the calibration weight.

Calibration Error

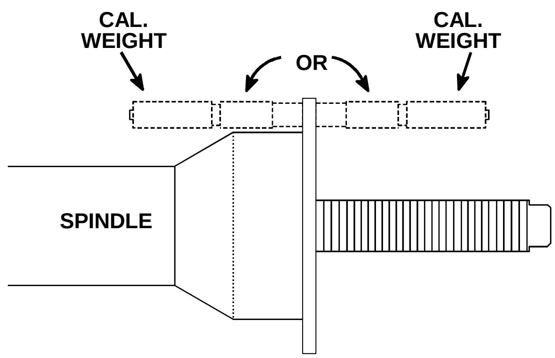
The balancer checks for the proper calibration weight positioning for the three calibration spins. If the procedure was not performed properly, the balancer will beep and display “CAL Err.” If the “CAL Err” display shows when the procedure is performed correctly, there is a problem with the electronics (call for service).

NOTE:	In the event of calibration error, power failure, or manual exit to STANDARD during the calibration procedure, the last successful calibration is not lost.

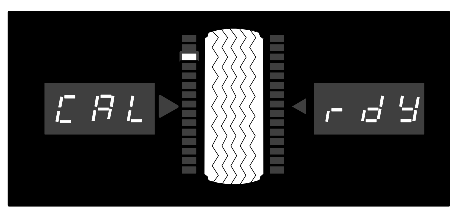
Quick Calibration Check Procedure

Turn the balancer on/off switch “OFF” (O) and then “ON” (I) again.

Install the cal weight on the either side of the hub faceplate using either hole.



Close the safety hood and spin.

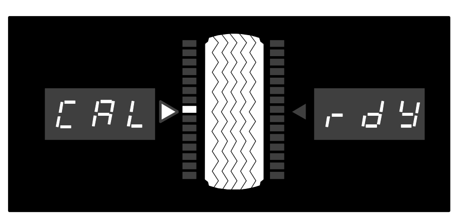


The display screen will read “CAL rdy” indicating the balancer is calibrated and ready to use.

NOTE:	If “CAL out” is displayed, the balancer needs to be recalibrated. *Refer to “Calibration Procedure,” page 35.*

TDC may be checked at this time. Whichever side the cal weight was installed a plane weight position indicator will be displayed.

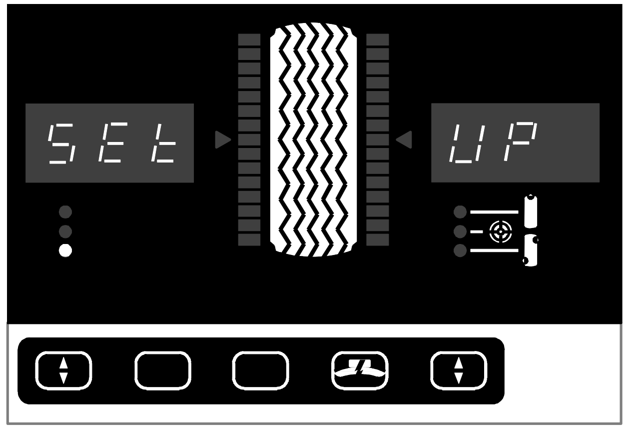
Find TDC.



Cal weight should be 180 degrees from TDC. If cal weight is in position other than 180 degrees from TDC, perform calibration procedure.

The “Quick Calibration Check Procedure” is complete.

Setup Procedure (Display Screen Programmable Settings)



Press left [⬍] key to select CAL/SETUP.

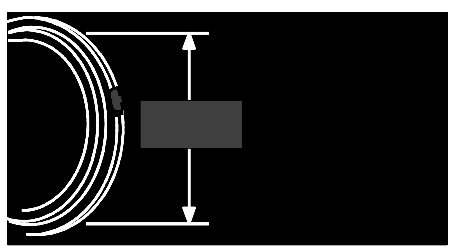
Press [NEXT] key to display “SEt UP” (set-up).

Press [ENTER] key begin “SEt UP” procedure.

Each programmable item in SETUP blinks on the display. To change the selection press [NEXT] key, and to advance to the next programmable item press [ENTER] key. SETUP can be exited at any time by pressing the left [⬍] key (all current settings will be saved). SETUP programmables are presented on the display as follows.

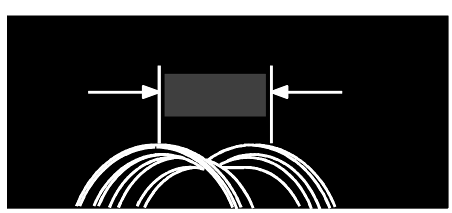
gm
oz

Units of correction weights.



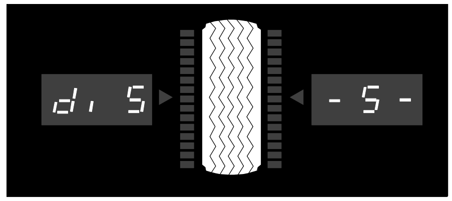
mm
in

Units of diameter.



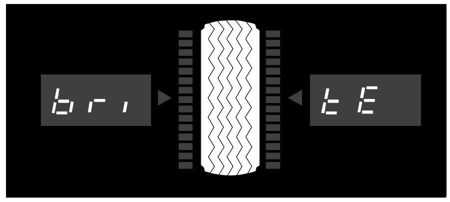
mm
in

Units of width.



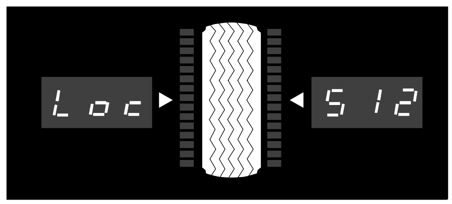
-1- MINUTE
-5- MINUTES
10 MINUTES
oFF DISABLED

Merchandising LED display will return after a period of non-use. The period is determined by this setting.



bri tE
bri tE

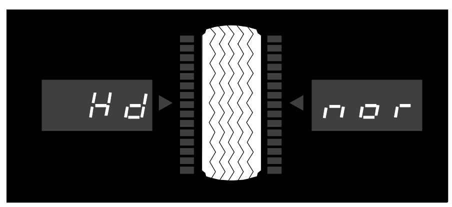
Brightness of LED display.



Loc 256

Loc 512

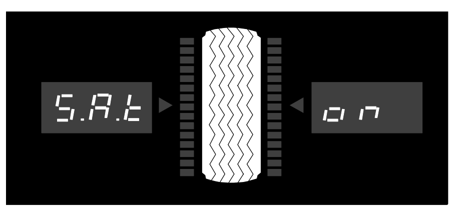
Weight angle resolution location. Recommended setting is Loc 512.
Refer to “Using the 1-in-512 Setting for Wheel Position Resolution,” page 60.



“Hd nor” (hood normal operation)

“Hd dn” (hood down autostart)

Hood Autostart setting.



on (enabled)
oFF (disabled)

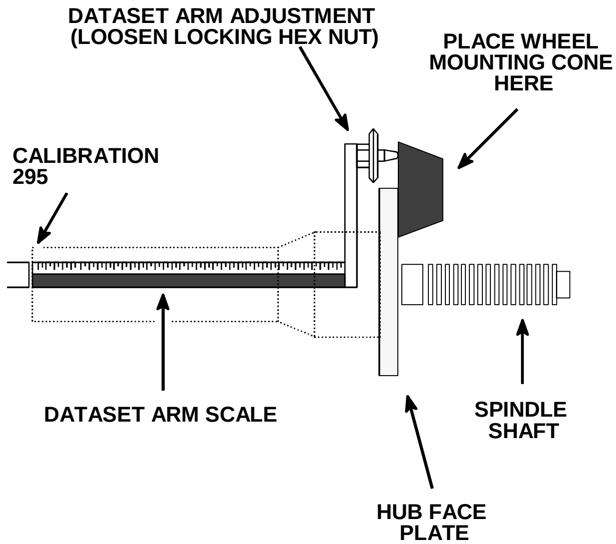
Stop at top setting.

Display will now return to the first setting of ounce or grams.

EXAMPLE:	To change the brightness setting; press the ENTER key until the “bri tE” setting is displayed. Change the brightness by pressing the NEXT key, and exit the SETUP procedure by pressing the left ⬍ key.

Calibrating the Manual Dataset Arm

Hold a wheel mounting cone flush against the outermost surface of the hub faceplate as shown in the illustration below.



Pull manual dataset arm outward until pointer is touching the wheel cone. The reading on the dataset arm scale should be 295 as shown in the illustration above.

If the dataset arm pointer needs adjusting, loosen the locking hex nut at the back of the pointer disk and adjust the pointer in or out until the dataset arm scale reads 295.

Retighten locking hex nut that holds the pointer.

The manual dataset arm calibration procedure is complete.

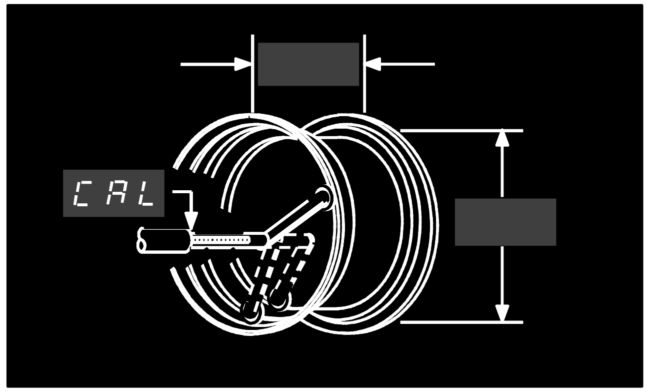
Calibrating the Inner and Outer Auto Dataset Arm(s)

Perform “Calibrating the Manual Dataset Arm” before calibrating inner auto dataset arm. *Refer to “Calibrating the Manual Dataset Arm,” page 40.*

Press left key to select CAL/SETUP. CAL is displayed indicating balancer calibration procedure.

Press NEXT key until “CAL dataset” is selected. “CAL” is displayed at the graphic inner dataset arm on the display. will be displayed at the right plane weight amount indicator if the outer auto dataset arm is installed.

NOTE:	If the auto inner dataset arm is not installed in the balancer, the “CAL” displayed at the graphic inner dataset arm will not appear as a choice when in the CAL/SETUP menu level.



Press ENTER key to begin calibration dataset arm(s) procedure.

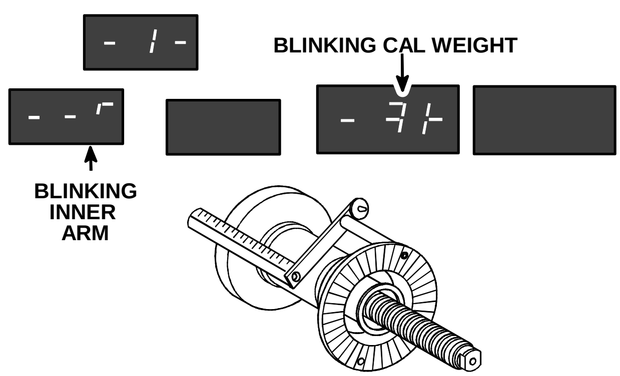
Calibration of inner auto dataset arm is a four-step procedure. Calibration of outer auto dataset arm is an additional two-steps. Move dataset arm to locations illustrated in the corresponding diagrams. After the reading is steady, a beep will signal to continue to next step.

NOTE:	During the calibration procedure, if balancer will not beep and advance to next dataset calibration step, pressing ENTER key will force the reading and advance to next calibration step.

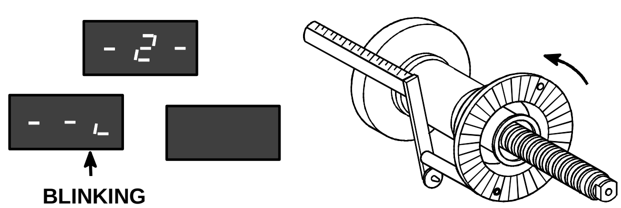
The blinking  screen refers to the inner dataset arm position being used in the calibration procedure.

The blinking  screen refers to the outer dataset arm position being used in the calibration procedure.

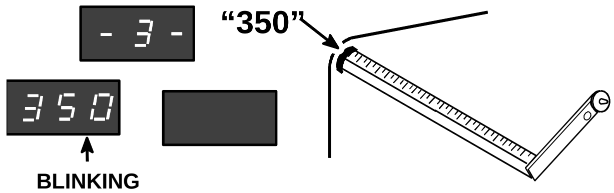
Screw calibration weight into left side of spindle using either hole, swing the inner dataset arm UP, and place cal weight tip into the hole of the dataset arm.



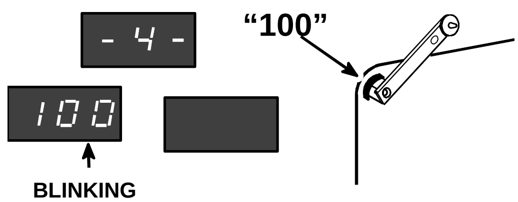
Swing the dataset arm and cal weight DOWN and place cal weight tip into the hole of the dataset arm.



Pull the dataset arm all the way out and then push dataset arm in to the scale reading of 350.

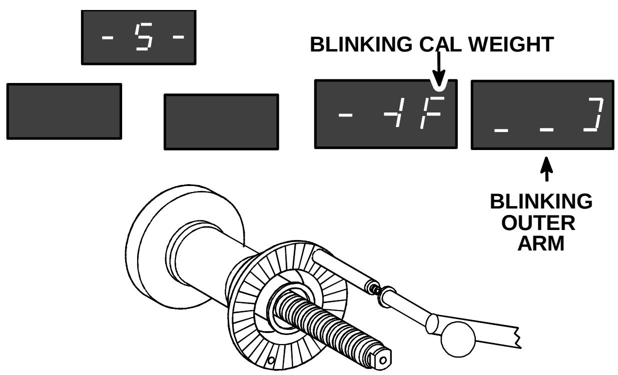


Push the dataset arm in to the scale reading of 100.

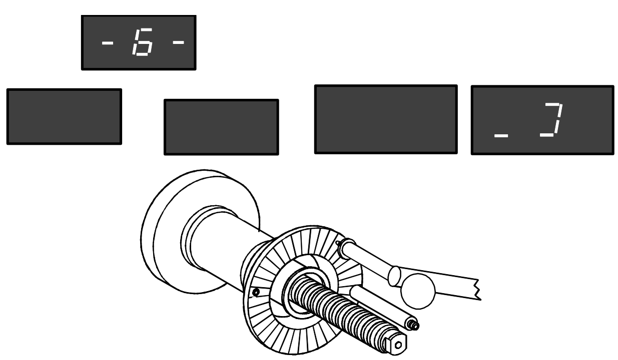


The following calibration steps will be required only if the outer auto dataset arm is installed:

Screw calibration weight into right side of spindle using either hole and place the outer dataset arm pointer tip against the end cal weight tip.



Push the outer dataset arm IN and place against the hub surface (do not place into groove).



After reading is steady, a beep will signal cal end and the balancer will default to STANDARD mode ("rdy" is displayed at the graphic dataset arm on the display).

Auto Dataset Calibration Error

If calibration fails because of a hardware problem or the steps were not performed correctly, “err” will blink on the graphic dataset arm display, and a long beep will occur. The auto dataset arm will become inoperative until it is successfully calibrated. This keeps a defective auto dataset arm from causing erratic triggers and changing the inputs to incorrect values. The auto dataset arm can be used in a manual fashion (using the knobs for data entry) until repaired. If one of the auto dataset arms fails calibration, the other auto dataset arm will still function.

5. How To:

Mount the Wheel on the Spindle Shaft

Accurate balancing depends on accurately centering the wheel! Identify mounting method of wheel on vehicle (hub centric or stud centered) and choose the proper adapter to recreate the same mounting on the balancer. *Refer to Form 3647T for mounting recommendations.*

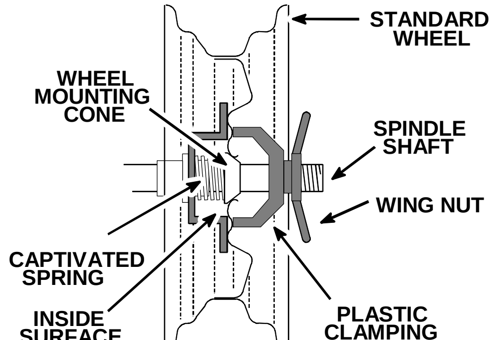
Remove any existing wheel weights, rocks, and debris from the tire tread, and clean the center hole of the rim.

Choose the proper wheel mounting cone by placing it in the center hole of the wheel to be balanced.

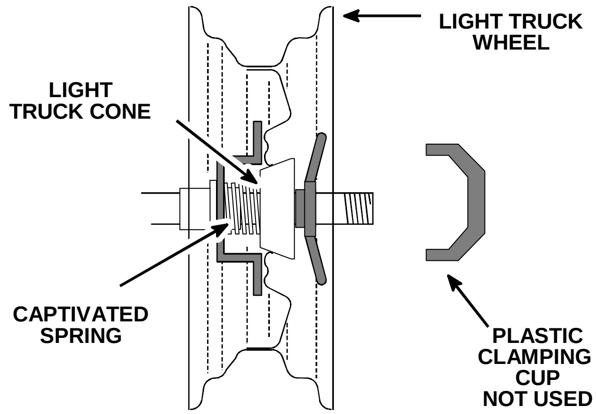
With the safety hood open, place the wheel mounting cone on the spindle shaft against the captivated spring. Position the wheel with the inside surface facing the balancer centered on the cone.

Install the plastic clamping cup and wing nut on the spindle shaft against the wheel and secure the entire assembly by firmly tightening the wing nut.

Slowly roll the wheel while tightening the wing nut. This enables accurate wheel centering, since the wheel is allowed to roll up the taper of the cone as opposed to forcing it to slide up the cone.



Wheels with center holes over 3 9/16 inch diameter require the light truck cone. The light truck cone can be installed from the outside of the wheel as shown below. (When using the light truck cone, the plastic clamping cup is not used.) See illustration below.

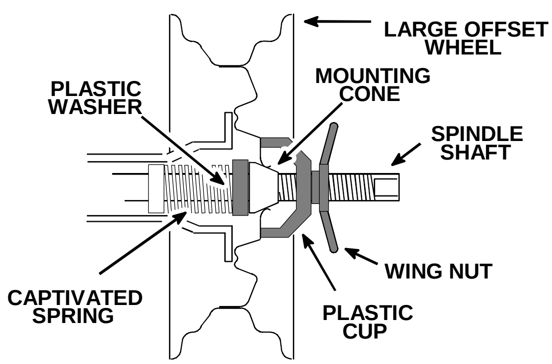


Use the Plastic Wheel Mounting Washer

The plastic wheel mounting washer, 46-320-2, is used to prevent scratches on wheels where the standard plastic cup and scratch guard cannot be used.

The plastic wheel mounting washer can also be used when mounting a wheel with a large offset that is between cone sizes.

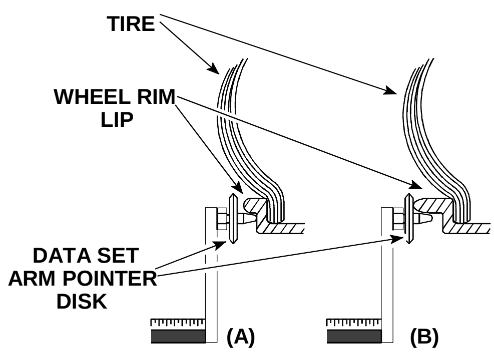
For example: One cone size is too small because the captivated spring is not pressing the cone against the inner wheel opening, but the next larger cone size is too big and will not fit the opening. Use the smaller cone size with the plastic wheel mounting washer to “extend” the captivated spring to hold the mounting cone against the wheel opening with greater pressure. See illustration below.



Measure the Wheel at the Inner Rim Lip with the Dataset Arm Pointer

Measure the distance to the wheel inner rim lip by pulling the sliding dataset arm pointer outward until it is touching the wheel inner rim lip. Read the dataset arm scale, and set the dataset arm knob to the reference number on the scale.

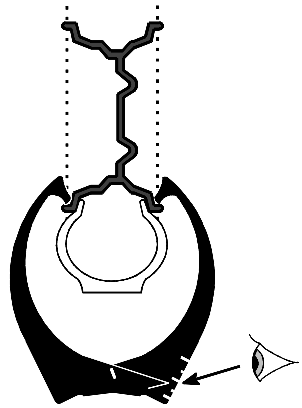
Most of the time the dataset arm pointer will contact the rim lip as shown in illustration (**A**) below. In some cases, the rim lip may be so wide that the pointer **disk** touches the rim as shown in illustration (**B**) below. In either case, the balancer will compensate for this and provide accurate weight locations.



Measure Wheel Width with the Rim Width Calipers

The rim width calipers are used to measure the distance between the wheel rim lips (tire bead seats).

Apply the rim width calipers as shown below.

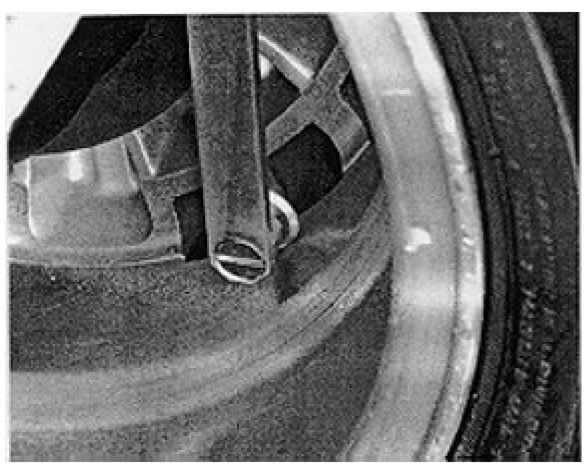


Read the scale imprinted on the rim width calipers and set the rim width knob to the rim width reference number on the scale.

Measure the Inside Wheel Surface with the Dataset Arm Pointer Disk Edge (For Adhesive Weights)

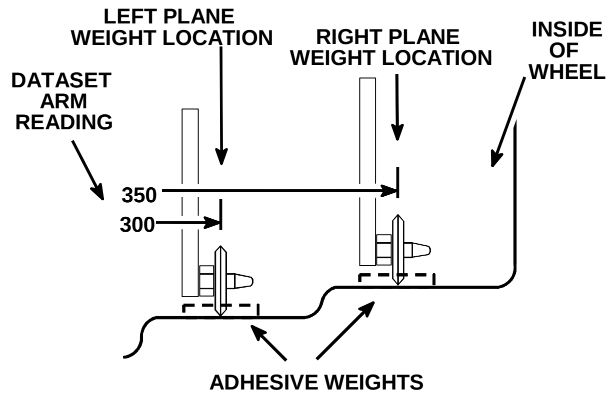
Place edge of manual dataset arm disk against the inside surface of the wheel at the location where the center of the adhesive weight is to be placed. Set dataset arm distance knob to the reference number on the dataset arm scale.

NOTE:	The dataset arm has a two-sided scale so that the arm may be used in the more natural down position as shown in the photo below.



When using ALU programs, the more displacement between the two weights, the better the dynamic balance. The balancer prevents the operator from locating the two wheel weights too close together to provide a good dynamic balance.

For example: The illustration below shows the installation of two adhesive weights in the ALU-2 procedure. The weight locations are at the minimum allowed distance.

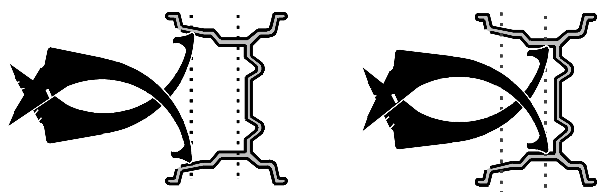


If the weight locations are moved any closer together using the dataset distance knob or auto dataset arm, the distance digits will blink and the weight amount display will change to - - - - - - . Move either weight location away from the other weight location to resolve this situation before proceeding.

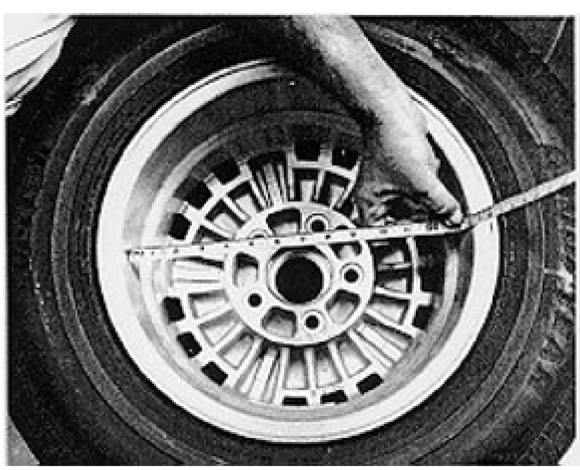
Measure the Inside Wheel Diameters (For Adhesive Weights)

If other wheels have been removed from the vehicle, it will be easier to measure inside rim diameters on an unmounted wheel. Use rim width calipers or a tape measure to make the measurements for both the plane right and left plane adhesive weight location internal wheel diameters as shown below.

Measure the rim inside diameters at the same location where the wheel weight is to be placed and set the rim diameter knob to the measurement:



OR



Measure the Wheel with Optional Inner and Outer Auto Dataset Arm(s)

Standard:

Lift or pull the inner dataset arm away from the weight tray to trigger a new left plane reading.
A beep will occur and the green LED left rim lip “weight” will blink to prompt for the input of the left plane weight. When the arm is steady, a confirmation beep occurs, the inner distance and rim diameter readouts are updated, and the prompt stops blinking.

Lift or push the outer dataset arm toward the weight tray to trigger a new right plane reading.
A beep will occur and the green LED right rim lip “weight” will blink to prompt for the input of the right plane weight. When the arm is steady, a confirmation beep occurs, the rim width readout updates and the prompt stops blinking.

Both dataset arms may be used simultaneously.

If the balancer determines that the weight planes are too close together, the weight digits will be turned off and the distance and the width digits will start blinking. Re-enter the planes to correct this condition.

If the dataset arm is returned to the storage position before a reading is steady, the trigger is canceled and the prompt stops blinking.

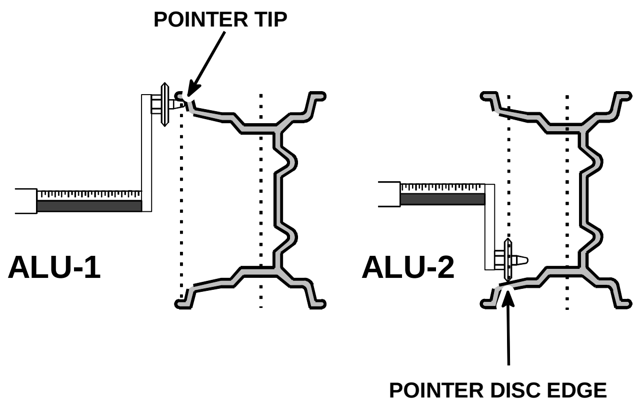
After taking a reading, the dataset arm must be returned to the storage position to trigger a new reading.

If STATIC mode is in effect, distance readouts will not be updated. Distance readouts are not used in STATIC mode.

NOTE:	The rim diameter inputted by the inner auto dataset arm might be slightly different from the known nominal rim (tire bead seating) diameter. The auto dataset arm measures the actual weight circle instead for the rim lip configuration of the wheel. A more accurate wheel balance will result if the reading is not manually (knob) adjusted to the nominal rim diameter.

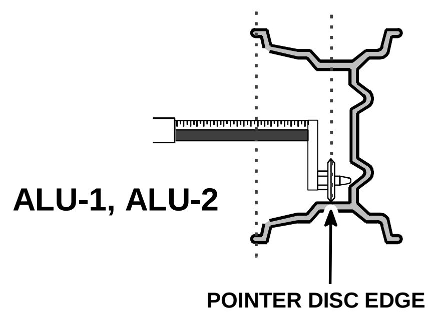
ALU-1, ALU-2 (Inputting Distance and Diameter for both planes):

Trigger the inner dataset arm (left plane green LED “weight” will blink as a prompt) and place the pointer tip or pointer disc edge at the desired left plane weight location. The reading will be taken and the display will update the left plane weight position.



Right plane green LED will now blink as a prompt for the right plane weight to be inputted.

Before returning the inner dataset arm to the storage position, place the disc edge at the desired right plane weight location. The weight position will be taken and the display will automatically change to show the right weight LED and the new right plane weight dimensions.



A confirmation beep occurs, the readouts change to the newly acquired values and the prompt stops flashing.

Once the second weight is inputted, the arm is disabled until returned to the storage position.

Using Inner Auto Dataset Arm as a Reference Device

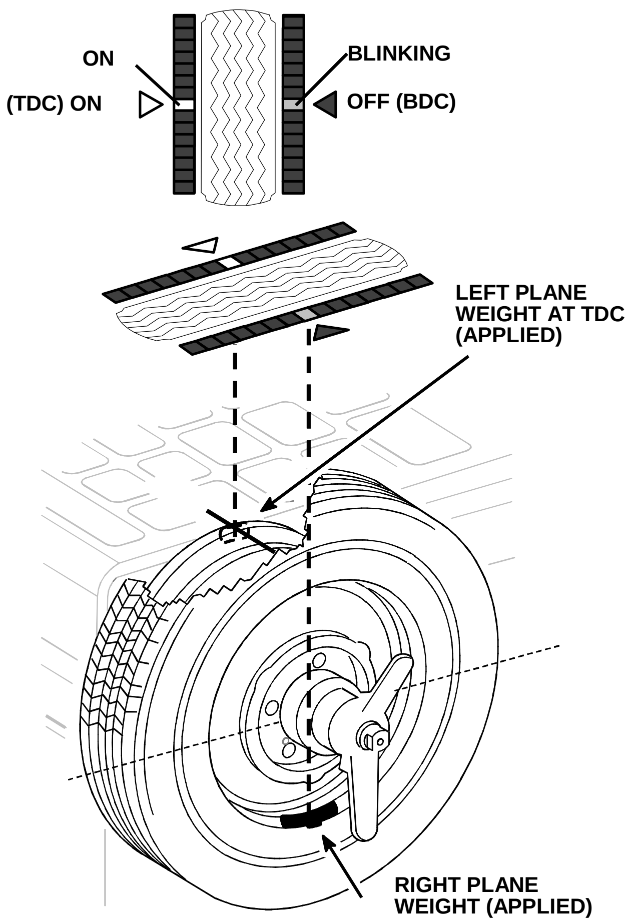
The auto dataset arm may be used as a reference device for locating previously inputted placement positions of adhesive weights. Triggering the dataset arm twice within 1 1/2 seconds will cancel the trigger to allow for manual use of the arm.

Locate the Wheel Weights at the TDC ("Top Dead Center") Position

Find TDC by turning the wheel until the Green Arrow and the Center LED on the weight indicator are both "ON" (see the left plane weight indicator in the illustration below). In this position, a balance weight has to be attached at top dead center.

To apply wheel balancing weights at TDC (12 o'clock position), align the weights with the notch molded into the top of the black plastic weight tray. The notch is used to accurately locate the TDC position.

When the weight indicator LED bar is blinking and the Green Arrow is "OFF," it indicates that the weight location is more than 90 degrees from TDC (on the hidden side of the wheel). The illustration below shows the wheel positioned at TDC for placement of the left plane weight, while the right plane weight position is 180 degrees from TDC (Bottom Dead Center - BDC).

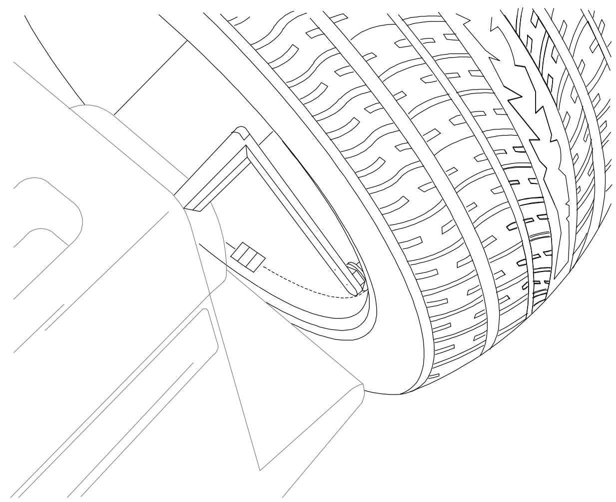


Locate the Adhesive Wheel Weights Using the Dataset Arm Pointer Disk Edge

Find BDC (6 o’clock position) by turning the wheel until the Green Arrow of the TDC indicator is “OFF” and the Center LED is blinking on the weight indicator (see the right plane indicator in the previous illustration). In this position, an adhesive weight has to be attached at BDC.

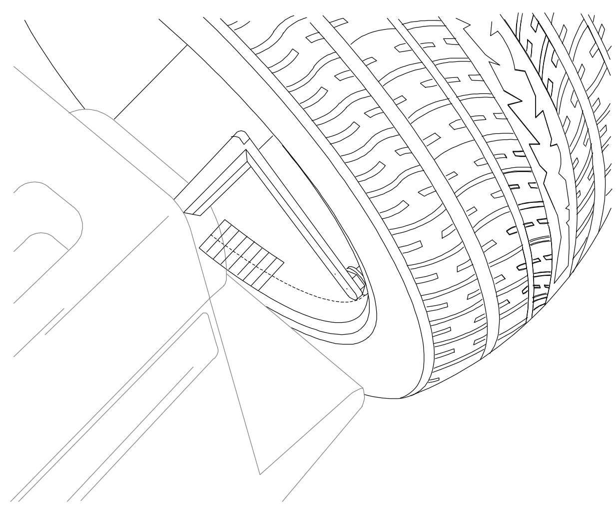
Inside of Wheel (Single Row Of Adhesive Weights)

When placing a single row of adhesive weights, place them so they are centered in relation to the pointer disk edge as illustrated below.



Inside of Wheel (Double Row Of Adhesive Weights)

When placing a double row of weights, place them so they are centered in relation to the pointer disk edge as shown below. Two rows are recommended when the required weight is more than 3 ounces. Make each strip of weights as close as possible to one-half (1/2) the required amount of weight.

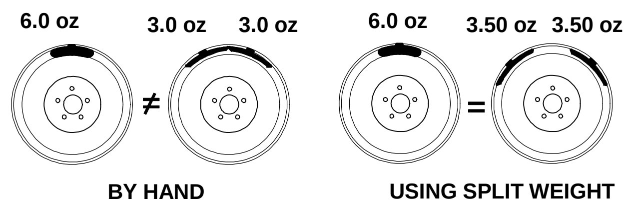


6. Operation Information

Split Weight Feature

Pressing key will change the required imbalance correction weight amount into two smaller size weights. The angle is adjusted by the balancer to produce the non-rounded correction called for by the single weight before the split. This provides exact imbalance correction without weight trimming. The non-rounded imbalance is split regardless of whether blind (bli) and rounding (rnd) are enabled. For this reason, Split Weight is more accurate than applying a single weight with the blind and rounding enabled.

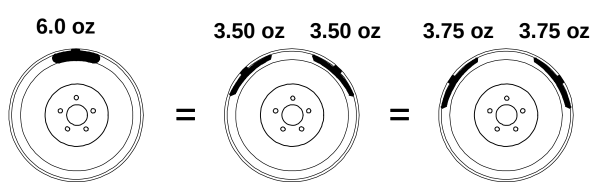
Split Weight is especially useful when the imbalance amount is large or unavailable, such as 6.0 ounces. Split weight eliminates the error caused by placing two 3.0 ounce weights side-by-side, which would leave a substantial residual imbalance:



Use the key when the weight location interferes with a hubcap or trim ring, when one weight is too large, to avoid weight trimming, or to substitute for a weight size that is out of stock.

Split weight operation

Each time the key is pressed, the two weights are increased to the next largest weight size and are placed (fanned-out) further down the rim. The display shows the amount and placement angle for both weights at the same time. After all Split Weight choices have been displayed, pressing the key returns the display to the original single weight amount and angle.

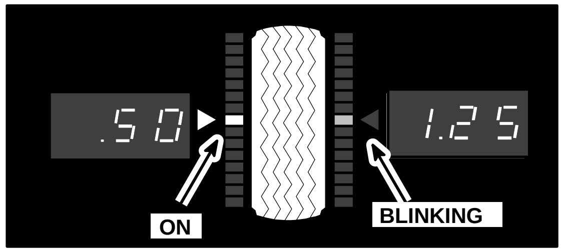


The key splits one plane at a time (inner or outer). To split the opposite plane, press NEXT key, then press key. Green “weight” LEDs on the display indicate the currently selected plane.

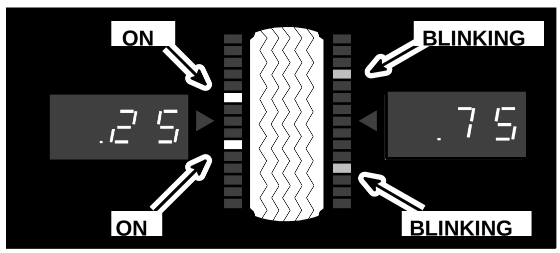
NOTE:	Display will automatically return to the single weight amounts if knob dimensions are changed, if left or right key is used, or if the wheel is spun.

Example:

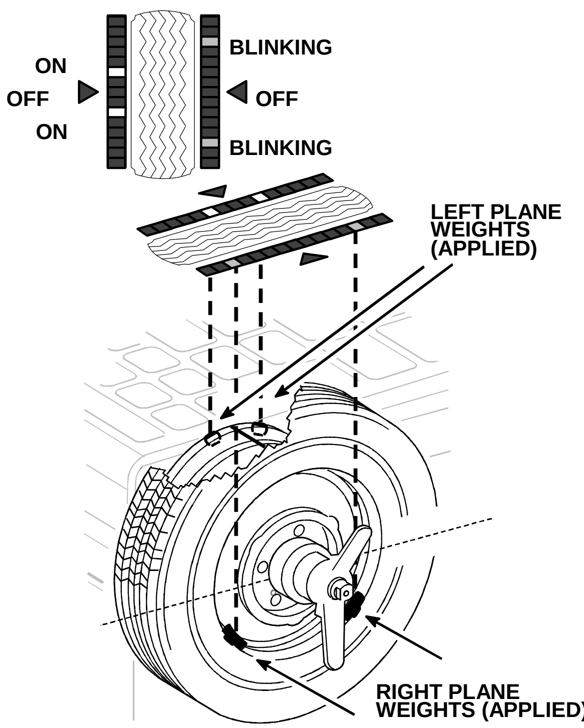
Before Splitting Weight (2 weights)



After Splitting Weight (Both Planes) 4 weights



In the example above, each of the 4 weight locations shown requires a weight to be applied. The illustration below shows the actual locations of the applied weights.

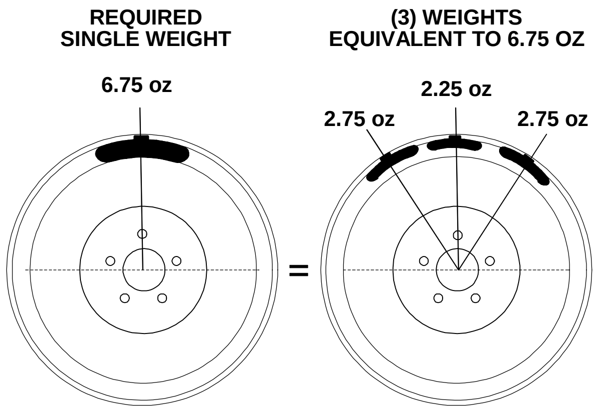


Position the wheel at top dead center for each weight location, and apply the required weight. *Refer to "Locating Wheel Weights at the Top Dead Center Position," page 52.*

Correcting Large Imbalances

Split Weight can also be used to apply three (3) weights when needed. For example, a large wheel may require 6.75 ounces. Not only is this size unlikely to be in the weight tray, but splitting 6.75 ounces would likewise result in large weights. In this case, apply one-third (1/3) of the called for weight (in this case 2.25 ounces) at the 6.75 ounce weight location and spin again. The display will now call for a 4.5 ounce weight to be placed on top of the 2.25 ounce weight. Press the Split Weight key (to fan out the two weights) until they clear the previously applied 2.25 ounce weight. Then place the two indicated ounce weights on either side of the 2.25 ounce weight (as illustrated below) using the TDC display indicators.

Splitting 1 Large Weight Into 3 Smaller Weights



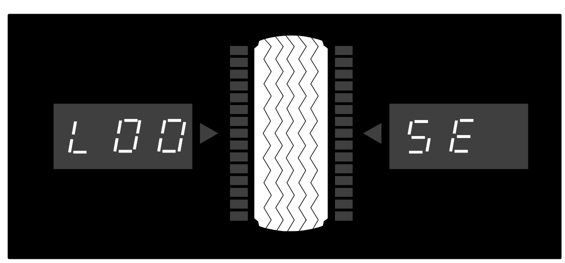
Spindle-Lok™ Feature

If the balancer is equipped with the Spindle-Lok™, depressing the foot pedal will lock the spindle. Locking the spindle will stabilize the wheel for attaching weights at precise locations, and for tightening and loosening of the wing nut. Do not use the Spindle-Lok™ as a brake to stop a spinning wheel.

⚠ **CAUTION:**	Using the Spindle-Lok™ to stop a spinning wheel may result in personnel injury or damage to the balancer.

Loose Hub Detect Feature

If the wheel slips on the spindle shaft during the spin, the balancer automatically brakes the shaft to a stop and displays “LOO SE” on the weight amount indicators.



If the “LOO SE” hub error occurs:

Lift the safety hood.

Retighten the wing nut.

Spin the wheel again.

If the wing nut feels like it is already tight, the shaft braking to a stop caused the wing nut to retighten. Make sure that the wing nut is fully tightened and then re-spin the wheel.

If the wheel gradually becomes loose on the spindle shaft, allowing a smooth acceleration during the spin, the loose hub detect feature may not be able to detect it until the spin down occurs. In this case, the display will show “LOO SE” upon spin down.

To override the loose hub detect feature:

Decrease the wheel diameter knob setting to the minimum value allowed while in the STANDARD procedure, then continue to turn the wheel diameter knob counterclockwise until the wheel diameter digits change to zero. It will take approximately one full turn of the knob while the “ratcheting” sound is occurring (at minimum value) for this to occur.

When the balancer is first turned on, the diameter digits will default to zero (the loose hub detect feature is overridden).

Hood Close Autostart Feature

The balancer can be set to automatically spin the wheel when the safety hood is closed. After a spin, the hood must be lifted completely before the balancer will autostart again.

For safety, the balancer will not autostart in CALIBRATION, SETUP, or if no balancing procedure is selected.

Hood Close Autostart feature can be enabled or disabled in the SETUP procedure.

Blind and Rounding Settings

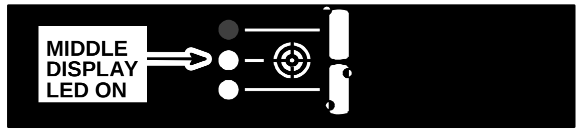
The balancer can display either actual or blinded (bli) and rounded (rnd) amounts of imbalance.

“Blind” is a tolerance or amount of imbalance required before an imbalance amount is displayed. “Rounded” allows the balancer to display weight imbalance to the closest increment. The blinded (bli) and rounded (rnd) values can be changed by the service representative.

Blind Settings		**Rounding Settings**	
oz	gm	oz	gm
0.00	0.0	0.01	0.5
0.15	4.0	0.05	1.0
*0.29	8.0	*0.25	5.0
0.58	16.0		

* Factory settings

When using the right key, STATIC or DYNAMIC can be selected to include the middle display LED (as shown below). When the middle display LED is on, the blind and rounding are disabled. The actual amounts of imbalance, for the selected mode, will be displayed. (The blind and rounding are disabled.)



For example: Pressing the right key from DYNAMIC LED lit to the DYNAMIC plus the middle position LED lit, will display the actual imbalance amounts on the inner plane and outer plane weight amount indicators.

Automatic Weight Recalculation and Dimension Preservation

When dialing a rotary encoder knob, each click of the knob (changing a dimension) causes the weights to be recalculated. The benefit is that without re-spinning, you have the unique ability to relocate the desired weight locations and see the resulting weights and placement angles updated in real-time.

When attempting to dial in a value not allowed or exceeding a limit, the rotary encoder knob will make a “ratcheting” sound. For example: Trying to dial in a wheel width under 1.5 inches, will cause a “ratcheting” sound.

When entering STANDARD, ALU 1, or ALU 2, the last dialed in dimensions for that procedure are recalled and displayed. The weight amounts and angles for these dimensions are also recalculated and displayed. The benefit is that without re-spinning the wheel, you have the unique ability to switch between balancing procedures to determine the best combination of weight types for the tire and wheel assembly.

NOTE:	The exception to this rule is when changing a dimension in STANDARD and then entering an ALU mode. The last ALU dimensions used are replaced by new dimensions based on the new STANDARD dimensions. *Refer to “ALU Shortcut Procedure,” page 33.*

Any change between STATIC and DYNAMIC, or Enabling/Disabling the “blind” and “rounding” also preserves dimension information and recalculates the weights.

Any change to weight units or dimension units will automatically be applied as you exit the SETUP procedure.

Calibration can be performed without losing the dialed in dimensions of the balancing procedures. The weights from any spin before calibration are blanked out until the next spin.

Using the 1-in-512 Setting (±0.35 degrees) For Wheel Position Resolution

The balancer can position the wheel at 1-of-512 angular positions for weight placement. The benefit of this is better weight placement accuracy. It DOES NOT mean that there is a “narrow window” of placement for the balancer to operate correctly.

For example: A 1-in-128 (1.4 degree) weight placement translates to ± 3/8 inch travel in the lip of a 15 inch wheel in which the TDC (top dead center) indicator will remain lit. Assume that the operators ability to place a weight is also within ± 3/8 inch from TDC. If the required weight location on the wheel is positioned clockwise 3/8 inch away from TDC (TDC indicator still lit) and the weight is misplaced counter-clockwise 3/8 inch from TDC, then that weight is really misplaced 3/4 inch from the correct location. With the 512 resolution on the DSP-9000 and 9500 the wheel position variable is virtually eliminated. The worst you can do is place the weight 3/8 inch from the correct location.

When the 1-in-512 setting is being used, the TDC indicator is more sensitive to keep lit when positioning the wheel (compared to other systems). For this reason we have provided the ability to change the resolution to 1-in-256 positions in SETUP.

Using Millimeters

When using millimeters (mm) for diameter, the balancer displays inputs of actual weight circle (the center-to-center distance of two weights installed on the rim 180 degrees apart). DO NOT convert a nominal inch rim diameter to millimeters because the nominal value refers to the tire bead seating dimension diameter and not the weight circle. If the tire/wheel is metric design, add 17 mm to the metric diameter because the metric diameter, like inch designs, refers to the tire bead seating diameter.

When using millimeters for the rim width, the balancer displays the center-to-center distance between the innermost and the outermost installed weights. DO NOT convert a nominal inch rim width (caliper reading) to millimeters because the nominal value refers to the tire bead seating width. Measure the weight center distance in millimeters or use the Hunter caliper reading with the balancer set to inches.

Stop at Top

The balancer can be programmed in SETUP to automatically stop the wheel near TDC for the left plane weight at the end of the spin cycle. If the left plane weight is zero, the wheel will be stopped at the right plane weight. This will save time in positioning the wheel for applying weight.

Storing and Recalling Wheels

The balancer can store and recall SETUP information, balance procedure, and wheel dimensions for up to four specific wheels. Storing and recalling can also be used to allow up to four technicians to use the wheel balancer at the same time.

Storing a wheel into memory:

Enter SETUP information (oz/gm, diameter in/mm, and width in/mm), balance procedure, and wheel dimensions for a specific wheel.

Press ENTER key. -0- appears indicating that the store/recall mode is activated, but no wheel has been selected.

Press NEXT key until wheel 1, 2, 3, or 4 is selected.

Press and hold ENTER key for a minimum of two seconds to store wheel.

A confirmation beep will confirm that the wheel has been stored into memory and wheel index turns into weights for the recalled wheel.

Recalling a wheel from memory:

Press ENTER key. -0- appears indicating that the store/recall mode is activated, but no wheel has been selected.

Press NEXT key until stored wheel 1, 2, 3, or 4 is selected.

Press ENTER key briefly (less than two seconds) to recall stored wheel dimensions and SETUP information.