

⚠ WARNING

PLEASE READ THE ENTIRE CONTENTS OF THIS MANUAL PRIOR TO INSTALLATION AND OPERATION. BY PROCEEDING YOU AGREE THAT YOU FULLY UNDERSTAND AND COMPREHEND THE FULL CONTENTS OF THIS MANUAL. FORWARD THIS MANUAL TO ALL OPERATORS. FAILURE TO OPERATE THIS EQUIPMENT AS DIRECTED MAY CAUSE INJURY OR DEATH.

REV D 08-22-2016

P/N 5900233

INSTALLATION AND OPERATION MANUAL

**MODEL:
DST-2420 WHEEL BALANCER**

FOR BALANCING
AUTOMOBILE,
MOTORCYCLE
& LIGHT TRUCK
TIRES / WHEELS



READ FIRST



Do not operate this machine until you read and understand all the dangers, warnings and cautions in this manual.

Keep this operation manual near the machine at all times. Make sure that ALL USERS read this manual.

SHIPPING DAMAGE CLAIMS

When this equipment is shipped, title passes to the purchaser upon receipt from the carrier. Consequently, claims for the material damaged in shipment must be made by the purchaser against the transportation company at the time shipment is received.

BE SAFE

Your new balancer was designed and built with safety in mind. However, your overall safety can be increased by proper training and thoughtful operation on the part of the operator. DO NOT operate or repair this equipment without reading this manual and the important safety instructions shown inside.



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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.

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OPERATOR PROTECTIVE EQUIPMENT

Personal protective equipment helps make tire and wheel service safer. However, equipment does not take the place of safe operating practices. Always wear durable work clothing during tire service activity. Shop aprons or shop coats may also be worn, however 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 and wheel service activity is performed in an enclosed area, or if noise levels are high.



THIS SYMBOL POINTS OUT IMPORTANT SAFETY INSTRUCTIONS WHICH IF NOT FOLLOWED COULD ENDANGER THE PERSONAL SAFETY AND/OR PROPERTY OF YOURSELF AND OTHERS AND CAN CAUSE PERSONAL INJURY OR DEATH. READ AND FOLLOW ALL INSTRUCTIONS IN THIS MANUAL BEFORE ATTEMPTING TO OPERATE THIS MACHINE.

DEFINITIONS OF HAZARD LEVELS

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



Watch for this symbol. It means: Immediate hazards which will result in severe personal injury or death.



Watch for this symbol. It means: Hazards or unsafe practices which could result in severe personal injury or death.



Watch for this symbol. It means: Hazards or unsafe practices which may result in minor personal injury or product or property damage.

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.

WARRANTY

Ranger® Wheel Service Equipment is warranted for one year on all operating components to be free of defects in material and workmanship. Ranger Products® shall repair or replace at their option for the warranty period those parts returned to the factory freight prepaid which prove upon inspection to be defective. Ranger Products® will pay labor costs for the first 12 months only on parts returned as previously described. These warranties do not extend to defects caused by ordinary wear, abuse, misuse, shipping damage, improper installation or lack of required maintenance. This warranty is exclusive and in lieu of all other warranties expressed or implied. In no event shall BendPak Inc. / Ranger Products be liable for special, consequential or incidental damages for the breach or delay in performance of the warranty. BendPak Inc. / Ranger Products reserves the right to make design changes or add improvements to its product line without incurring any obligation to make such changes on product sold previously. Warranty adjustments within the above stated policies are based on the model and serial number of the equipment. This data must be furnished with all warranty claims.

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 on the unit clean and visible.



IMPORTANT SAFETY INSTRUCTIONS

READ BEFORE OPERATING UNIT

- Protective goggles, safety glasses, or a face shield must be worn by the operator. Care should be taken to see that all eye and face safety precautions are followed by the operator. **ALWAYS WEAR SAFETY GLASSES.**
- Keep guards and safety features in place and in working order.
- Wear proper protective clothing. Safety toe, non-slip footwear and protective hair covering to contain hair is recommended. Do not wear loose clothing, or jewelry when operating the balancer.
- 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.
- Do not disable hood cover operation, or in any way shortcut safety controls and operations.
- Be sure that all wheels are mounted properly, the hub nut engages the arbor for not less than four turns, and the hub nut is firmly tightened before spinning the wheel.
- Read and understand this manual before operating.
- Be sure the balancer is properly connected to the power supply and electrically grounded.
- Do not operate damaged equipment or if the power cord is cut or worn.
- Keep work area clean and well lighted. Cluttered and/or dark areas invite accidents.
- Avoid dangerous environments. Do not use power tools or electrical equipment in damp or wet locations, or expose them to rain and moisture.
- Avoid unintentional starting. Be sure the balancer is turned off before servicing.
- Disconnect the balancer before servicing.
- Use only manufacturer's recommended accessories. Improper accessories may result in personal injury or property damage.
- 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 by a qualified service technician.
- Never overload or stand on the balancer.
- Do not allow untrained persons to operate machinery.
- To reduce the risk of fire, do not operate equipment in the vicinity of open containers or flammable liquids.
- Adequate ventilation should be provided when working on operating internal combustion engines.
- Keep hair, loose clothing, fingers, and all parts of body away from moving parts.
- Use equipment only as described in this manual.
- Use only manufacturer's recommended attachments.



DAMAGE CAUSED BY STRIKING OR HITTING THE QUICK-NUT WITH HAMMER, TIRE IRON OR HEAVY OBJECT IS NOT COVERED UNDER WARRANTY.

KEEP ALL INSTRUCTIONS PERMANENTLY WITH UNIT AND ALL SAFETY DECALS CLEAN AND VISIBLE

IMPORTANT

THE SELECTOR SWITCH ON THIS EQUIPMENT IS SET FOR 220 VAC.

For use with 220 VAC, attach appropriate plug head for your outlet.

For use with 110 VAC, change Selector Switch to 110 VAC (located at the back of the machine), then attach appropriate plug head for your outlet.

It is recommended to operate the Balancer on 220 Volts for optimum performance.

BEFORE YOU BEGIN

Receiving

The shipment should be thoroughly inspected as soon as it is received. The signed bill of lading is acknowledgement, by the carrier, of receipt in good condition of the shipment. If any of the goods called for on the 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. **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.

Unpacking and Setup

Handling of the machine must be performed only with an appropriate lifting device such as a forklift or pallet jack.

Only personnel who are experienced and qualified on material handling procedures should handle any transportation or moving of machine.

1. Remove the carton from the pallet.
2. Remove the shipping bolts making sure to keep hands clear of all pinch points.
3. Remove straps and plastic wrap holding the hood other components in shipping position.

NOTE:

The Accessory Box is packaged inside the Balancer. When lifting the Balancer off the pallet, remove the Accessory Box from the inside of the Balancer.



- Do not use the, face-plate, hood or threaded 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 from the pallet may cause personal injury or equipment damage.

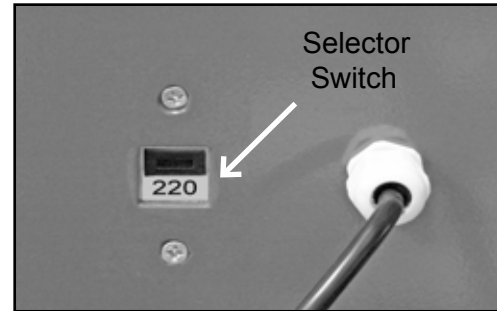
Electrical Requirements

NOTE:

It is recommended to operate the Balancer on 220Volts for optimum performance.

STANDARD WIRING IS 220 VOLTS. YOUR MACHINE HAS A DUAL VOLTAGE MOTOR and can be run on either 110 or 220 volts. Your balancer features a dual voltage,

(110/220volt) dual (50 or 60 HZ.) power system. Simply position the switch located at the back of the machine to the desired voltage setting before installing the required plug if necessary.

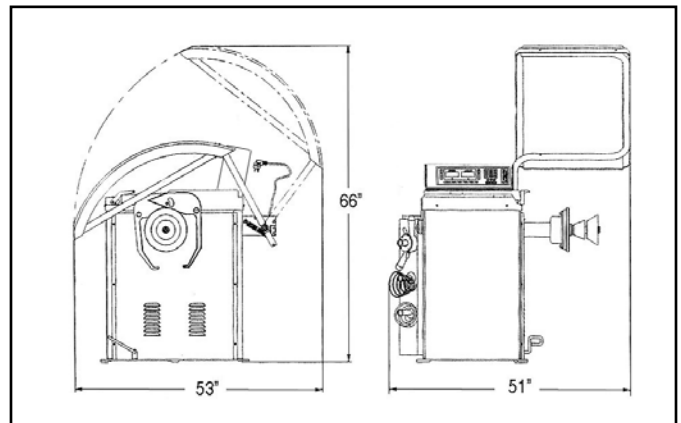


Consult a licensed electrician for electrical hook-up according to local electrical codes. Operation with no ground can damage electronics and will create a shock hazard for the operator or bystanders. Damage caused by improper electrical installation may void warranty. Most electrical codes require "hard-wiring" when machine is bolted to the floor. Consult a licensed electrician regarding specific codes.

Floor and Space Requirements

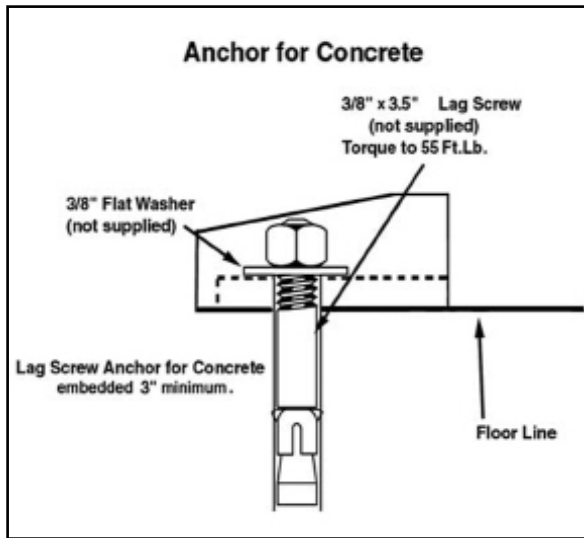
The balancer **MUST** be located on a flat floor of solid construction, preferably concrete. The balancer **MUST** sit solidly on the floor. If the balancer is not level, or is placed on an unstable floor, the balancer will not function properly and will produce inaccurate balance readings. The balancer **MUST** be bolted down. It will NOT function properly if operated on the pallet.

- Select a location for the balancer that provides a level, solid floor, and adequate clearance around and above the balancer.
- Make sure the location selected has enough room above and behind the unit so the hood can be raised completely.
- The location must also provide working room for mounting and removing wheels.



Anchoring the Balancer

The balancer must be bolted to the floor using concrete anchors through the holes in the base.



Standard Accessories

- Graduated Cone Assortment (hardened, 4-piece)
- Wheel Weight Pliers
- Rim Width / Diameter Caliper
- Quick-Release Hub-Nut
- Spacer Cup With No-Mar Ring
- Mounting Spring
- Calibration Weight
- Hex Head wrenches
- Spacer Ring

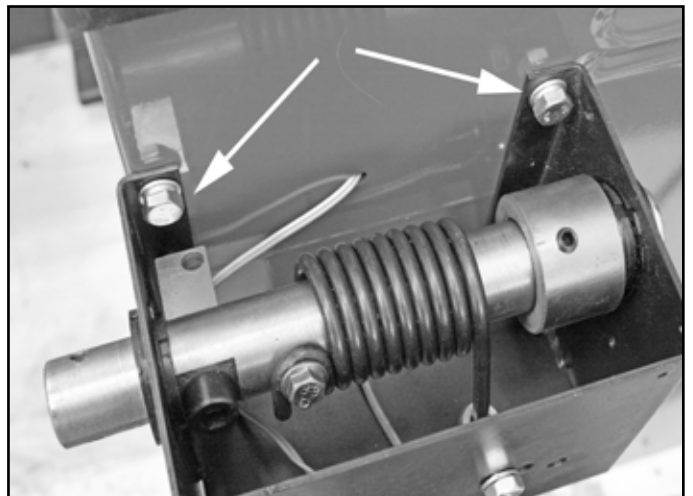


Technical Data / Features / Specifications

- Voltage 110/220V 50/60HZ
- Noise 70 decibels
- Working Temperature 0°C / 32°F to 50°C / 82°F
- Power Consumption .1875kw @110V /.75kw @ 220V
- Drive System Belt Drive
- Cycle time 6-9 seconds (average)
- Balancing Modes Dynamic / Static / Four Alloy
- Top Positioning Weight Locator Standard
- Inside & Outside Measuring Standard
- Millimeter / Inches Selection Standard
- Self Calibration Function Standard
- Wheel Distance Setting. Manual
- Ounce / Gram Selection. Standard
- Auto Start When Hood is Lowered Standard
- Brake Type Automatic. Electronic
- Manual Brake Capability. Standard
- Max. Tire Diameter. 47" / 1194 mm
- Max. Tire Weight 145 pounds (65 Kg)
- Max. Rim Diameter. 10" - 24" / 254 mm - 610 mm
- Wheel Width Capacity. 1.5" - 18" / 38 mm - 457 mm
- Balancing Increments 0.25 oz or 0.01 ounce
- Average Balancing Speed. 180 RPM
- Accuracy. +/- .04oz / 1 gram
- Shipping Weight 398 pounds (181 Kg)

INSTALLATION AND SET UP MOUNTING THE HOOD ASSEMBLY

1. Locate the Hood Assembly and open the accessory box and remove the Hood Mounting Bracket and hardware.
2. Use help and carefully assemble the Hood as described below.
3. Remove the Hood Bracket Mounting Cover and attach the Hood Mounting Bracket to the rear of the balancer cabinet using the 4 bolts and washers.

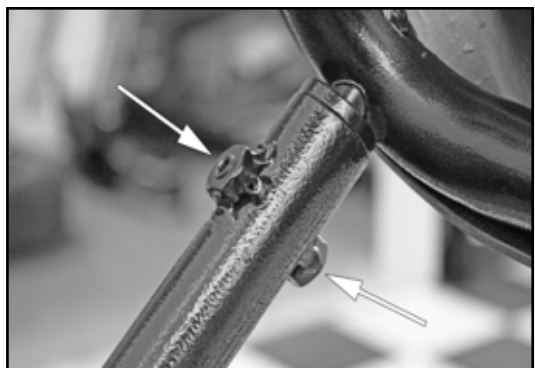


4. Slide the Hood Arm over the Hood Axle, align the holes in the Axle with the Allen bolts then secure in place using the two Allen set screws.

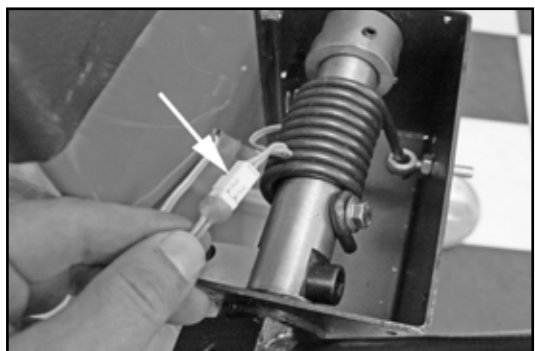


5. Raise the hood and hold it up. Use help to hold the hood while attaching the hood to the Hood Arm.

6. Slide the Hood Pin into the hole on the end of the hood arm and align the holes with the Allen bolts and secure in place using the two Allen set screws.



7. Connect the hood switch wires as shown.



8. Tuck the wire into the Hood Switch Box and install Hood Switch Box Cover and tighten Allen bolts

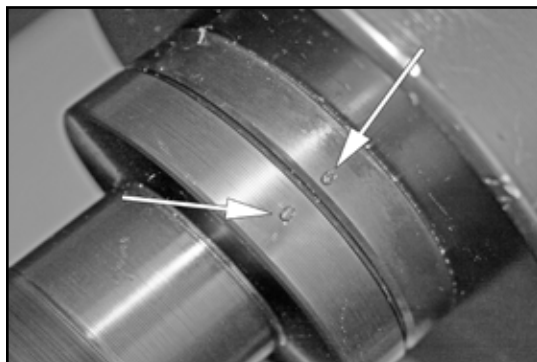


INSTALLING THE THREADED MAIN SHAFT

1. Locate the Face Plate / Threaded Main Shaft and mounting bolt in the accessory box and install as shown.



2. Locate and align the mating marks on the Face Plate and Shaft Assembly.



3. Be sure to tighten the bolt firmly. Step on the manual brake to hold the shaft while tightening the bolt.

INITIAL START-UP

1. Turn the balancer ON/OFF switch to ON.

2. The LED Display will show USA 511.

3. Press **START** button. The threaded main shaft should spin **CLOCKWISE** when viewed straight on. If the faceplate spins counterclockwise, turn the balancer off and consult the factory.

4. Now lower the Hood to check the activation of the **AUTO-HOOD START**. The Main shaft should spin when the hood is lowered.

5. To enable/ disable **AUTO HOOD START** feature press

and hold the **STOP** Button



and the **R** button.



BALANCER OVERVIEW

This machine is a two-plane, microprocessor-based computer balancer. Any imbalance in a wheel, either static or dynamic, is detected into two correction planes (the inner and outer) where corrective weights can be applied. Pressing the **F** button selects either **DYNAMIC**, **STATIC**, or **ALLOY** modes which changes the location of these planes.

Determining the Planes

When the distance gauge is pulled out and held against the wheel flange, the distance measurement shown on the pull out slide refers to the **DISTANCE OFFSET MEASUREMENT**. This measurement tells the computer the location of the **INNER** plane of the wheel for Dynamic and/or Alloy balancing.

By using the **WHEEL CALIPERS**, the wheel width or the **WIDTH MEASUREMENT** tells the computer the location of the **OUTER** plane of the wheel for Dynamic and/or Alloy balancing.

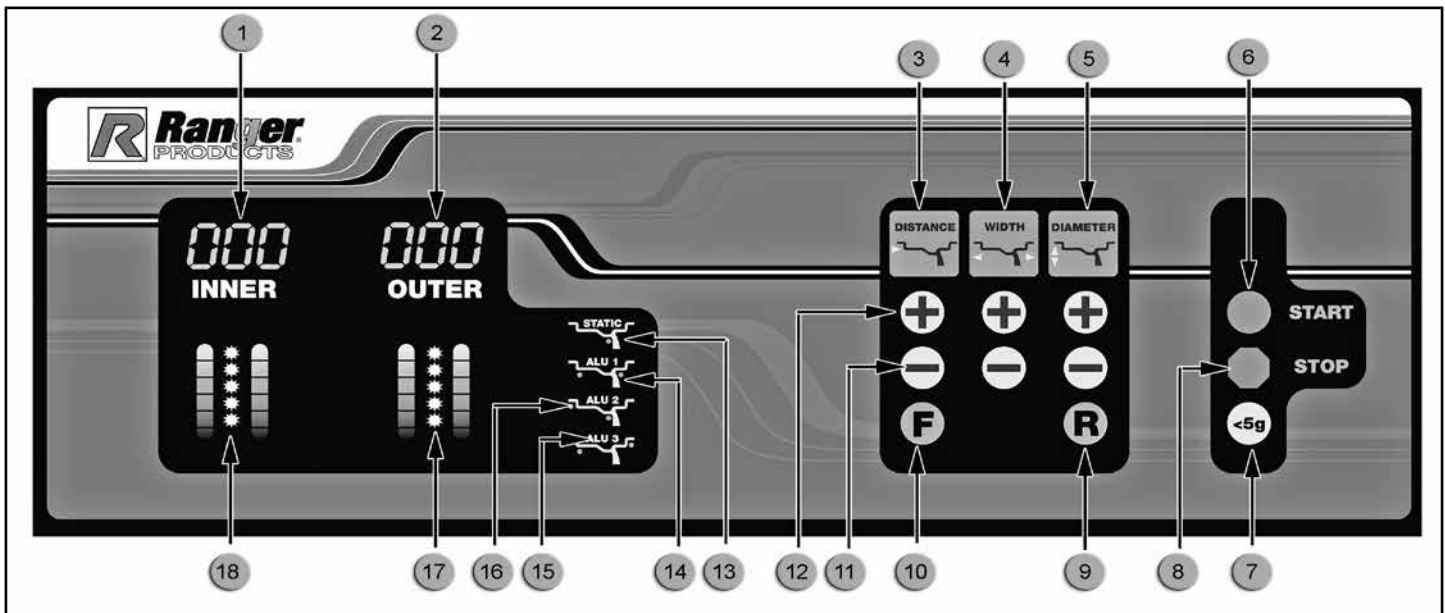
The wheel diameter will be referred as the **DIAMETER MEASUREMENT**. This is the diameter of the wheel at the weight location. You can determine the diameter of the wheel / tire on the tire sidewall to determine the wheel diameter. Or you can use the calipers. This tells the computer how far from the center of the hub the weights will be applied.



Balancing a Wheel

When a wheel is spun, the balancer detects any imbalance present. The computer calculates the weight needed to correct the imbalance and the location for weight application. The weight required to correct the imbalance is displayed on the control panel, and the weight positioning lights assist the operator in positioning the weight application location at top-dead-center. Weight displays and positioning lights are provided for both inner and outer planes of the wheel.

CONTROL PANEL AND DISPLAY



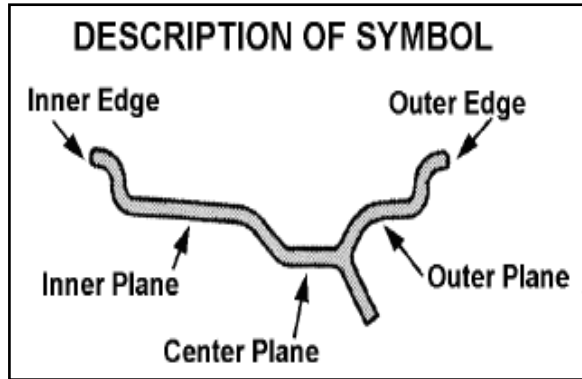
Control Panel Legend

- 1 - Weight reading or information display window. INNER
- 2 - Weight reading or information display window. OUTER
- 3 - Wheel OFFSET setting keys.
- 4 - Rim WIDTH setting keys.
- 5 - Rim DIAMETER setting keys.
- 6 - START button for activating spin cycle.
- 7 - CUT button (<5g.) for identifying remaining weight.
- 8 - STOP Button for stopping spin cycle.
- 9 - Toggle display. Required Weights / Wheel Data

- 10 - Selector key for DYNAMIC, STATIC and ALLOY settings.
- 11 - Adjustment key for Offset, Width, Diameter. Decrease.
- 12 - Adjustment key for Offset, Width, Diameter. Increase.
- 13 - STATIC mode indicator
- 14 - ALU 1 mode indicator.
- 15 - ALU 3 mode indicator.
- 16 - ALU 2 mode indicator.
- 17 - OUTER weight position indicator LED.
- 18 - INNER weight position indicator LED.

SELECTING WEIGHT POSITIONS FOR DIFFERENT WHEEL TYPES

Prior to balancing, a specific **FUNCTION** must be chosen for each particular wheel. The function settings automatically compensate weight location requirements for a particular wheel type. These settings can be selected by depressing the **F** button.



DYNAMIC (No Symbol Illuminated)

For balancing standard steel or alloy wheels using clip-on weights attached to inner and outer wheel edges.

Static

This function is used if weights can only be mounted on a single plane of the wheel.



ALU1

This function is used if stick-on weights are to be mounted to both inner plane and outer planes of the wheel.



ALU2

This function is used if stick-on /clip on weights are to be mounted to the inner edges and stick on weights are to be mounted on the center planes of the wheel.



ALU3

This function is used if stick-on weights are to be mounted to the inner plane of the wheel and clip-on or stick weights are to be mounted to the outer edge of the wheel.



GRAM / OUNCE SELECTION

This machine is capable of registering **GRAM** or **OUNCE** readings. To select either **GRAM** or **OUNCE** settings, follow the procedures below.

1. First press the “**STOP**” button.



Then press the Distance  “+” and “-” Button at the same time.

The weight readings will change in the **INNER** and **OUTER** windows to register the applicable setting.

NOTE:

When set to Ounces or Inches the displayed values contains a decimal point.

MM / INCH SELECTION “L” SETTING / WHEEL WIDTH

To select either **MM** or **INCH** measurement reading for the “**L**” **WHEEL WIDTH** setting, follow the procedures below.

1. First press the “**STOP**” button.



Then press the **WIDTH**  “+” and “-” Button at the same time. The weight readings will change in the **INNER** and **OUTER** windows to register the applicable setting.

NOTE:


When set to Ounces or Inches the displayed values contains a decimal point.

MM / INCH SELECTION “dia” SETTING / WHEEL DIAMETER

To select either **MM** or **INCH** measurement reading for the “**dia**” **WHEEL DIAMETER** setting, follow the procedures below.

1. First press the “**STOP**” button.



Then press the **DIAMETER**  “+” and “-” Button at the same time. The weight readings will change in the **INNER** and **OUTER** windows to register the applicable setting.

NOTE:

When set to Ounces or Inches the displayed values contains a decimal point.

MOUNTING WHEELS

Select the most appropriate mounting method for the wheel you are balancing. Using the proper method ensures secure mounting, accurate displays and safe balancer operation. It also 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 uniformly shaped side of the hub to achieve the most accurate balance.

Regardless of mounting type, always make sure that the wheel is forced firmly against the arbor faceplate and that the Quick-Nut engages the threaded arbor for at least four complete turns. To assist in centering the wheel properly, rotate the wheel on the arbor while tightening the Quick-Nut.

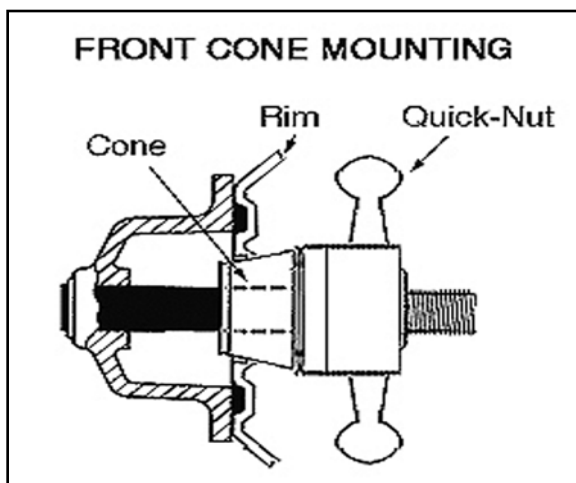


DAMAGE CAUSED BY STRIKING OR HITTING THE QUICK-NUT WITH A HAMMER, TIRE IRON OR HEAVY OBJECT IS NOT COVERED UNDER WARRANTY!

Front Cone Mounting

Front Cone Mounting is the most accurate method

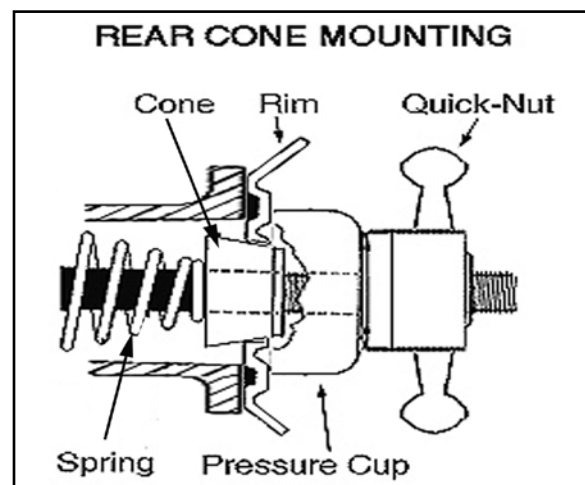
1. Select the cone that best fits the center hole in the wheel.
2. Lift the wheel onto the arbor and slide it back against the arbor faceplate.
3. Slide the cone onto the arbor and into the center of the wheel. Then lift the tire to seat the cone in the center hole.
4. Spin the Quick-Nut (without the pressure cup) onto the arbor. Tighten it securely against the cone.



Rear Cone Mounting

The wheel is centered on a cone from the inner side of the hub.

1. Place the cone spring on the arbor with the large end towards the balancer.
2. Select the cone that best fits the center hole in the wheel. Slide the cone onto the arbor with the large end towards the spring.
3. Lift the wheel onto the arbor and center it on the cone.
4. Attach the pressure cup to the Quick-Nut and spin the assembly onto the arbor. Tighten securely.



Dual Cone Mounting

Some aftermarket or OEM performance wheels have a center hole that is deep enough to allow the use of two cones to mount it to the threaded shaft. The factory recommends that dual cone mounting is used in this situation. The cones must not contact each other and a correct cone combination is critical to correctly mount a tire using this method. (Extra centering cones are available through Ranger Products)

1. Slide the Spring onto the Arbor.
2. Select the cone combination that best fits both sides of the center hole in the wheel. (Note: You may need two cones that are identical in size)
3. Place the rear cone on the arbor and against the Spring.

- Lift the wheel onto the arbor and slide it back against the rear cone.
- Place the front cone on the arbor and slide it into the center hole of the wheel.
- Spin the quick nut (without the pressure cup) onto the arbor. Tighten securely.

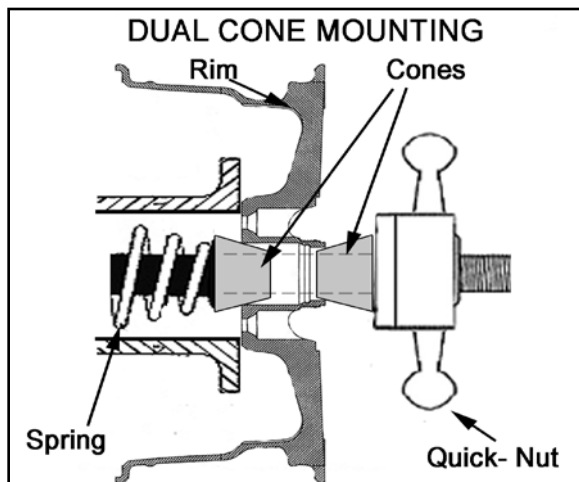
Never exceed weight capacity of balancer.
Never hammer or strike the Quick-Nut to tighten.



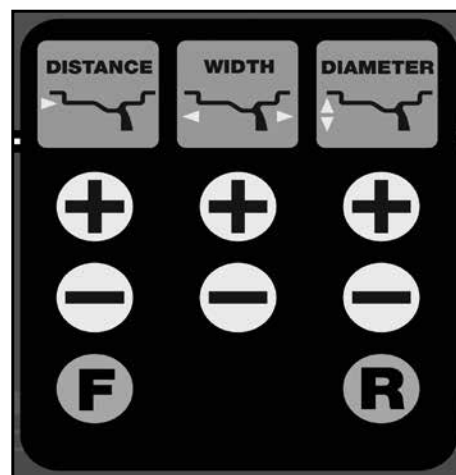
Do not attempt to balance wheels that are larger than the machine was designed for.

Inputting Wheel Data

Prior to balancing any wheel, specific data relating to that particular wheel must be entered into the computer. If the data displayed on the screen does not match that of the wheel you are attempting to balance, then the wheel will not be accurately balanced. The three data requirements are; **“-A-” Offset**, **“-L-” Width** and **“-d-” Diameter**.



WHEEL DATA KEY BOARD



BALANCING INSTRUCTIONS

- First determine which mounting method you will use for the wheel.
- Select a centering / mounting cone that best fits the center hole of the wheel.
- After installing the necessary mounting hardware, lift the wheel onto the threaded shaft and slide it back against the arbor hub. It will be necessary to lift the wheel slightly when positioning the cone in the center of the wheel hole.

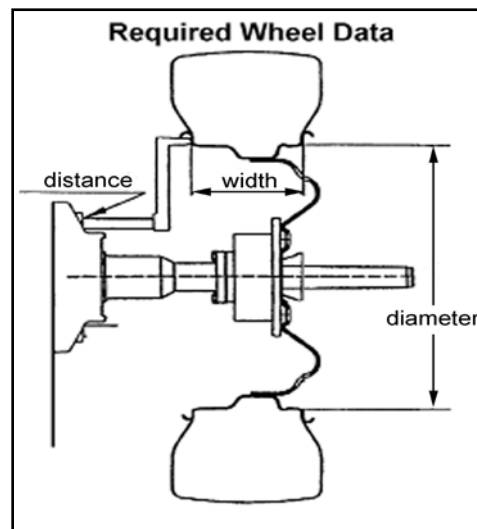


DAMAGE CAUSED BY STRIKING OR HITTING THE QUICK-NUT WITH HAMMER, TIRE IRON OR HEAVY OBJECT IS NOT COVERED UNDER WARRANTY

- While holding the wheel and hardware in position, thread the Quick-Nut over the arbor and secure tightly. Never hammer or hit the Quick-Nut to tighten.




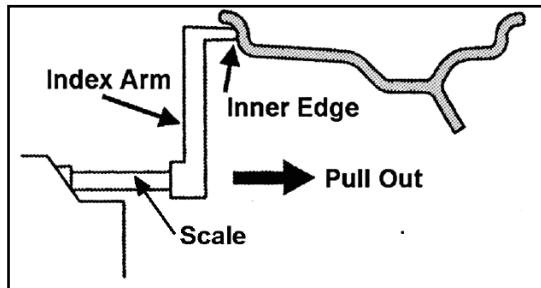
Always make sure that the Quick-Nut engages the arbor threads by at least four (4) full turns. It helps to spin the wheel while at the same time tightening the Quick-Nut.




dis - Wheel Offset

This is the distance between the side of the balancer and the inner edge of the wheel. To enter Wheel Offset data refer to the instructions below.

1. Turn the machine on.
2. Press the + or - button below Distance .
3. **-A-** will be displayed in the **INNER** window.
4. Pull the index arm out from the side of the machine until the tip touches the inner edge of the wheel.

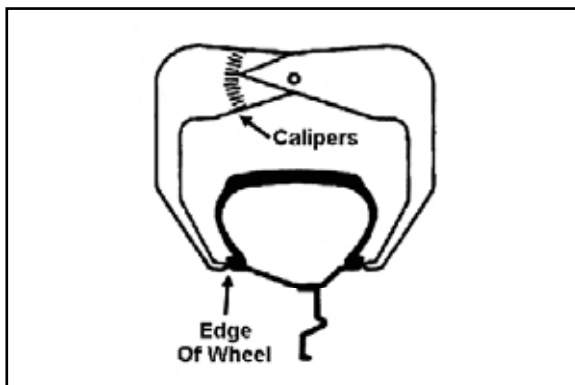


5. Read the offset measurement as displayed on the scale directly on top of the index arm. Press the corresponding + - buttons below  to enter the correct data.


L - Wheel Width

This is the width of the wheel at the inner edges. This distance is measured with the calipers. To enter Wheel Width data refer to the instructions below.

1. Position the calipers over the wheel and touch the tips against the wheel edges.



2. Read the measurement for Wheel Width shown on the calipers. (Use the proper scale for Width).

3. Press the + or - button below .

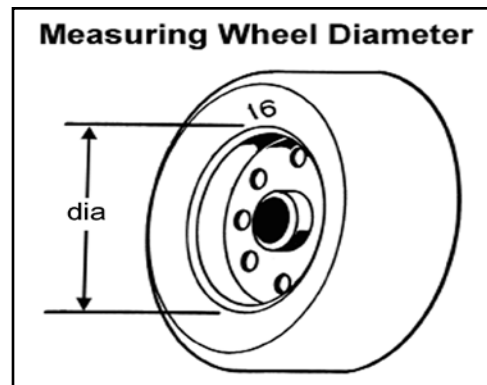
4. **-L-** will be displayed in the **INNER** window.

5. Press the corresponding + - buttons to enter the correct data. **IMPORTANT NOTE:** The standard setting for this operation is shown in **INCHES**. If metric is desired, new calipers with metric readings will have to replace the calipers that accompanied the unit. (See page 9 for changing "L" reading to **MM** or **INCH** setting.)

"dia" - Wheel Diameter

This is the diameter of the wheel at the rim flanges. This measurement can be read on the tire sidewall, or measured. To enter Wheel Diameter data, refer to the instructions below.

1. Read the diameter of the wheel as shown on the tire sidewall. Or use the Calipers to measure the wheel diameter. (Use the proper scale for Wheel Diameter).



2. Press the + or - button adjacent to .

3. **-d-** will be displayed in the **INNER** window.

4. Press the corresponding + - buttons to enter the correct data. (See page 9 for changing "d" reading to **MM** or **INCH** setting.)

Spin Mode / DYNAMIC, AL1, AL2, AL3, AL4

1. Once the correct wheel data and **FUNCTION** have been programmed, lower the hood to begin the spin mode.

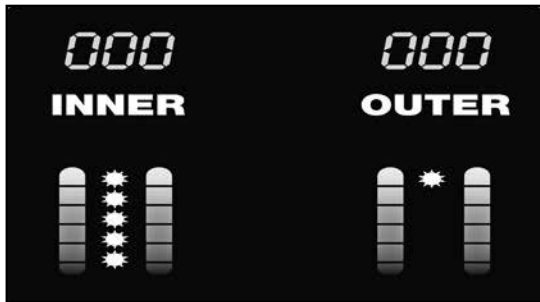


Before initiating the spin sequence, make sure that the Quick-Nut is secure and engaged on the arbor threads by at least four (4) full turns. Never hammer or hit the Quick-Nut to tighten.

⚠ CAUTION

DAMAGE CAUSED BY STRIKING OR HITTING THE QUICK-NUT WITH HAMMER, TIRE IRON OR HEAVY OBJECT IS NOT COVERED UNDER WARRANTY.

2. After the hood is lowered, or the **START** button is depressed, the wheel will spin for approximately six seconds then stop automatically.
3. After the wheel stops, weight readings for each side of the wheel (**INNER** and **OUTER**) will appear in the center display screen.
4. Turn the wheel by hand until the weight position indicator lights on the side marked **INNER** are **FULLY ILLUMINATED**. This indicates the position specified by the balancer for the inner weight position.



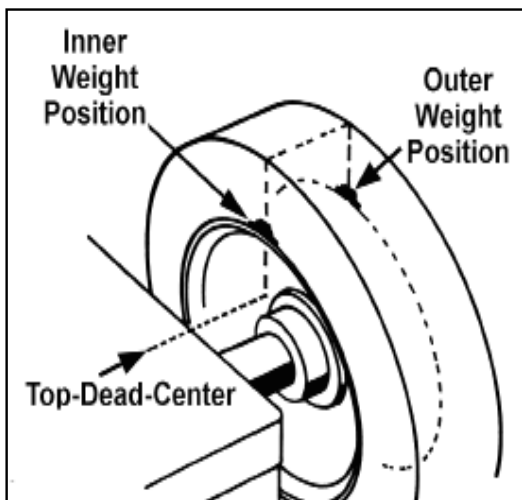
5. Attach the specified weight for the appropriate **PLANE** position at top-dead-center.

NOTE:

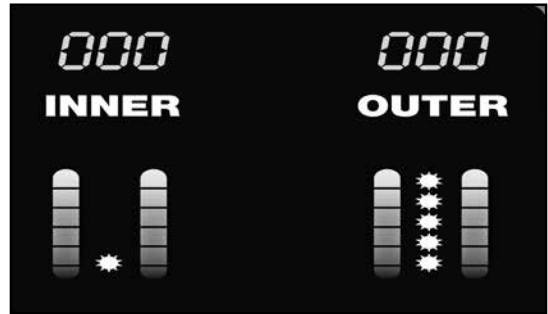
To hold the wheel in position when installing weights, press down on the **TIRE STOP PEDAL** located on the right side of the machine.

NOTE:

All weight positions are located at **TOP-DEAD-CENTER**. The more accurate you are in selecting the exact weight and position, the more accurate the wheel will be balanced.



6. After the **INNER** weight is properly installed, turn the wheel by hand until the weight position indicator lights on the side marked **OUTER** are fully illuminated. This indicates the position specified by the balancer for the **OUTER** weight position.



7. Attach the specified weight for the appropriate **PLANE** position at top-dead-center.

NOTE:

If you are experiencing balancing problems perform the Weight Location Verification Test found on page 16 of this manual. If the balancer fails this test perform the calibration procedures located on the same page.

NOTE:

It is recommended that the Weight Location Verification Test be performed on a monthly basis.

Spin Mode / STATIC

This function is used if weights can only be mounted on a single plane of the wheel.

1. Once the correct wheel data has been programmed, lower the hood to begin the spin mode.
2. After the hood is lowered, or the **START** button is depressed, the wheel will spin for approximately six seconds then stop automatically.
3. After the wheel stops, a weight reading will appear in both center display screens. **The weight reading will appear the same in both screens.**
4. Turn the wheel by hand until the weight position indicator lights on the side marked **INNER** are fully illuminated. The **OUTER** indicator lights will not illuminate.
5. This indicates the position specified by the balancer for the desired weight location on the chosen **PLANE**.
6. Attach the specified weight on the **PLANE** of the wheel at top-dead-center.

Rechecking the Balance

After installing the weights in the proper positions, lower the hood or press **START** to begin the spin mode. The weight display windows should display **0 -- 0** to indicate a perfect balance.

If the balancer indicates that an additional weight is required in the same position as the first weight, then the first weight installed was not heavy enough. Install a new weight or add additional weight to the same area. Re-spin the wheel and check again.

If the balancer indicates that an additional weight is required opposite the position as the first weight, then the first weight installed was too heavy. Correct the first weight and re-spin the wheel.

If the balancer indicates that an additional weight is required in a different position than the first weight, then the first weight was installed in the wrong position. Correct the first weight and re-spin the wheel and check again.

IDENTIFYING REMAINING WEIGHT

Your balancer is set to read **0 -- 0** if the wheel is balanced within 5 grams on either side. If you wish to see what remainder is left on each side (less than 5 grams) press the **CUT** button.



After pressing the **CUT** button, residual weight readings will appear in the display windows.

STOP BUTTON

The **STOP** button **is** an emergency stop button. It will immediately shut down the shaft and wheel rotation. For emergency situations that require immediate shutdown of rotation, it is recommended that you use the **STOP** button and the **TIRE STOP PEDAL** located on the right-front side of the unit.



After Balance Vibration Problems

If vehicle 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 out of balance the cause may be:

1. A weight has come off the wheel. Remove the other weights from the wheel and rebalance.

2. Tire slippage on the wheel. Remove and remount the tire using proper tire lubricant and inflate to 40 PSI. Do not over-inflate. Rebalance the wheel and reduce air pressure to recommended PSI.

3. Stones or other foreign objects caught in the tire tread.

Remove the objects and repair tire as necessary. Check and rebalance if needed. If the balancer still indicates the wheels are balanced to within 5 grams on both inner and outer displays, the problem is not in the balance of the wheels. Check the following possible sources of vibration:

1. Tire pressure. Bring all tires up to the recommended PSI.

2. Radial or lateral runout in the tire or wheel. Replace the damaged part.

3. Foreign material inside the tire. Remove the tire from the wheel, remove the material, and remount. Remove wheel weights and rebalance the wheel.

4. Imbalanced wheel covers or trim rings. Remove the wheel covers or trim rings and test drive, balance the wheel with the wheel cover or trim ring attached to the wheel.

5. Incorrectly mounted wheel. Remount correctly.

6. Damaged wheel bolt holes. Replace wheel.

7. Worn universal joints. Replace as required.

8. Drive shaft imbalanced or damaged. Balance, repair, or replace.

9. Imbalanced brake rotor(s) or drum(s).

10. Suspension out of alignment. Align the vehicle and replace any damaged or worn parts.

TROUBLE SHOOTING GUIDE

Perform the following checks if you are experiencing balancing problems.

PROPER INSTALLATION / ASSEMBLY

Confirm that the balancer is bolted down. Confirm the location and alignment of the mating marks on the Face Plate and Shaft Assembly. (See Page 7.)

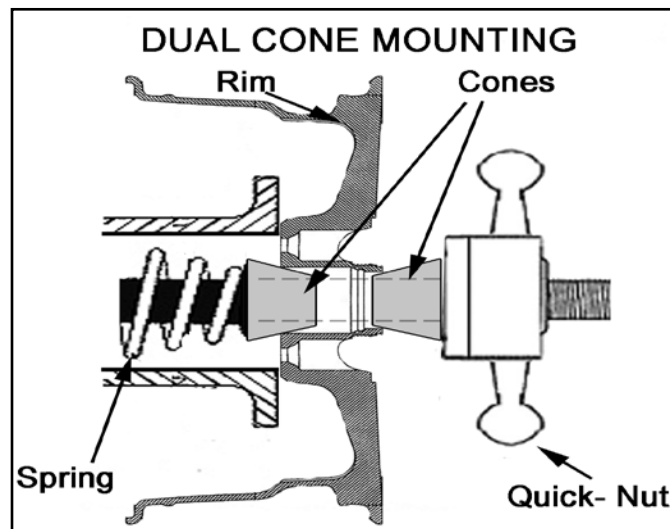
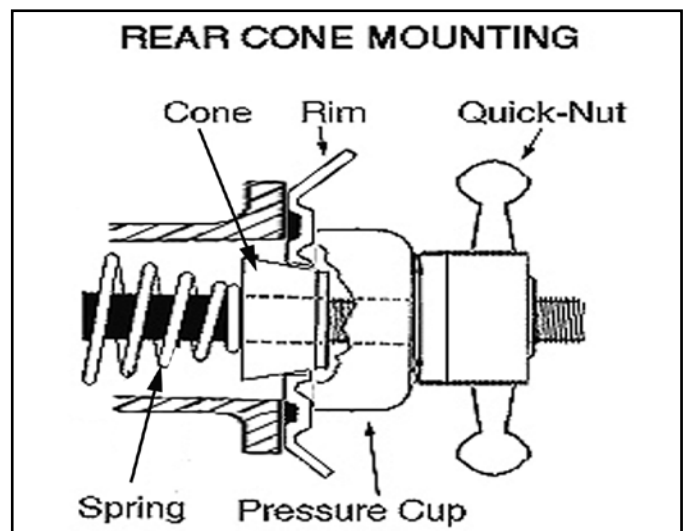
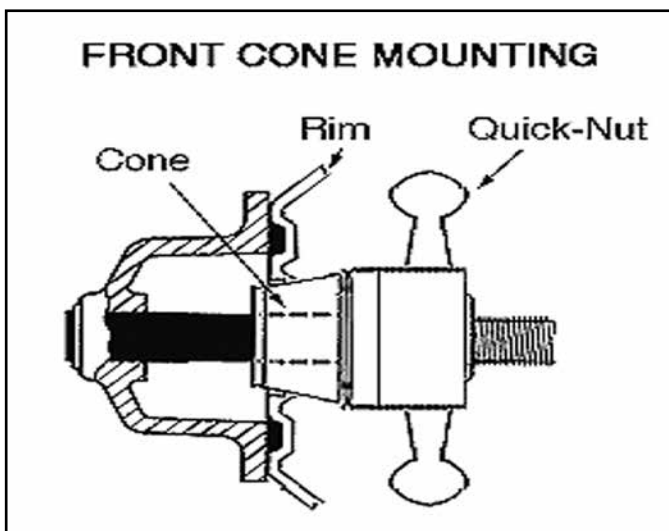
CALIBRATION

It is recommended that the Weight Location Verification Test be performed on a monthly basis following the procedure found on the following page.

The calibration should be performed with a **14" or 15" steel wheel with a tire.**

NOTE: It is good practice to keep a known good tire and 14" or 15" rim combination to use as a calibration /reference tire to assist in any trouble shooting.

Ensure that the calibration weight used is a 100 gram or 3.5 oz weight and that is mounted correctly during the calibration procedure.



PROPER MOUNTING

The recommended method for mounting of a tire and wheel for calibration and balancing is the Front Cone Mounting. (Using the cone to secure against the flange) for the most security and stability.

(Rear Cone Mounting uses the Pressure Cup assembly.) (Extra centering cones are available though Ranger Products.)

If any of the above conditions were found, the condition must be remedied and the balancer must be re-calibrated.

WEIGHT LOCATION VERIFICATION TEST

NOTE:

Before performing the Weight Location Verification Test, make sure the balancer is bolted down and/or rigid to the floor and that the shaft and centering cones are clean and undamaged. Even the slightest dirt or damage can cause inaccurate readings. **PAY CLOSE ATTENTION** to the following procedure. If not followed correctly, the balancer will not perform accurately.

This balancer should be checked every 30 days.

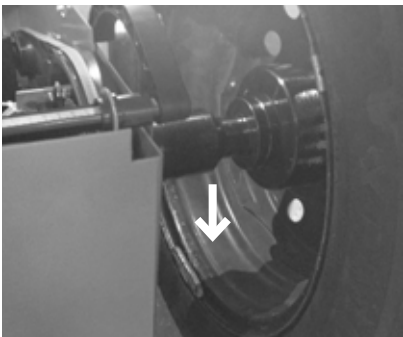
NOTE:

A standard 14" steel wheel and tire balanced to within 5 grams on either inner or outer with minimal wear or damage to the tire or wheel is required for this procedure.

1. Balance an average size tire and wheel to "00"—"00"
2. With the correct parameters DIST, DIA, and WIDTH programmed into the balancer add a 100 gram wheel weight to the outer edge of the wheel.
3. Press the Start button (close Hood). Wheel will spin and stop.
4. The balancer should call for 100 grams on the Outer indicator and "00" on the Inner indicator.
5. Rotate the wheel until all the LEDs on the Outer indicator are lit.
6. The 100 gram wheel weight should be at 6 o'clock position, Bottom Dead Center. (This shows balancer is working correctly.)



7. Remove the 100 gram wheel weight from the outer edge of the wheel.
8. Install the 100 gram wheel weight at 6 o'clock position on the inner edge of the wheel. Rotate the wheel until all the LEDs on the Inner indicator are lit.



9. Press the Start button. Wheel will spin and stop.
10. The balancer should call for 100 grams or 3.50 oz on the inner indicator and "00" on the outer indicator.
11. Rotate the wheel until all the LEDs are lit on the inner indicator are lit.

The 100 gram wheel weight should be at 6 o'clock Bottom Dead Center. If the location is not as Bottom Dead Center, 6 o'clock, please contact the Ranger Products Customer Service Department:

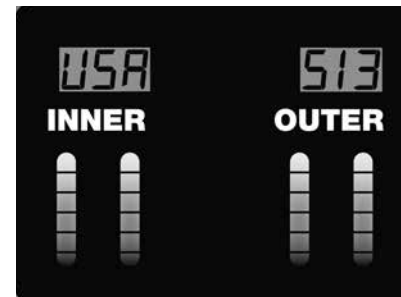
1-800-253-2363

SELF-CALIBRATION PROCEDURE

NOTE:

Before starting the self-calibration procedure, remove all spacer rings and springs from the mounting hub. Also, remove any quick nut cups to ensure a secure position. Calibrating with a front cone mounting method is recommended.

1. Use a balanced "00" steel rim or rim and tire to achieve a good calibration.
2. Turn on the power. The electronic display will show **USA 513**.



3. Select a centering front mounting cone that best fits the center hole of the wheel.

NOTE:

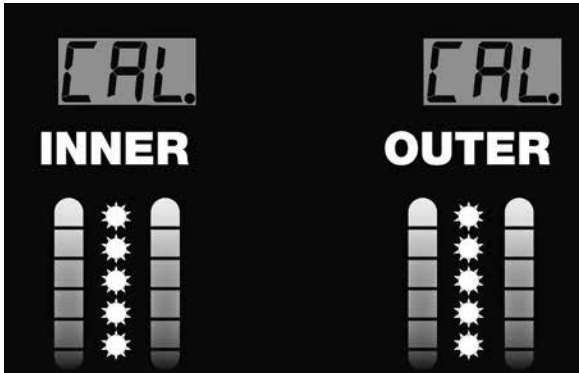
A standard 14"/ 16" steel rim with or without a tire with minimal wear/damage is recommended for this procedure.

4. Lift the wheel onto the arbor and slide it back against the arbor hub.
5. Slide the cone over the arbor and into the center hole of the wheel. It will be necessary to lift the wheel slightly.
6. While holding the wheel and cone in position, thread the Quick-Nut over the arbor and secure tightly.
7. Enter the correct wheel data. (Refer to page 11.)

8. Press and hold down the “R” and then “START” buttons until the Weight Indicator lights stop flashing.



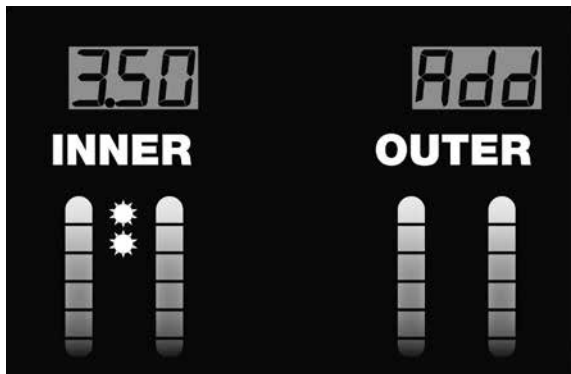
The screen will then display “CAL CAL”.



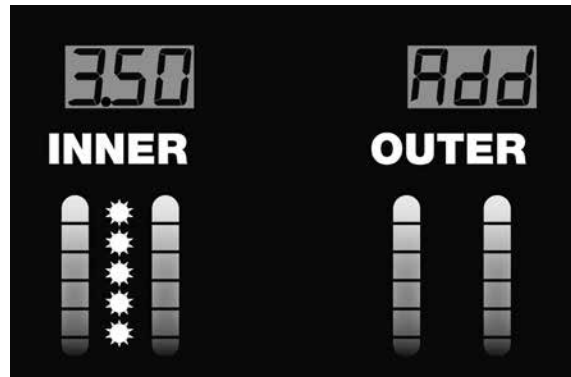
9. Close hood and/or press **START** to begin the calibration.



10. The wheel will spin for approximately 6 seconds then it will stop. A few lights from the **INNER** plane will illuminate. “Add 3.50” will be displayed if OZ is selected or “Add 100” if Grams is selected.



Rotate wheel until all lights from the **INNER** plane illuminate.



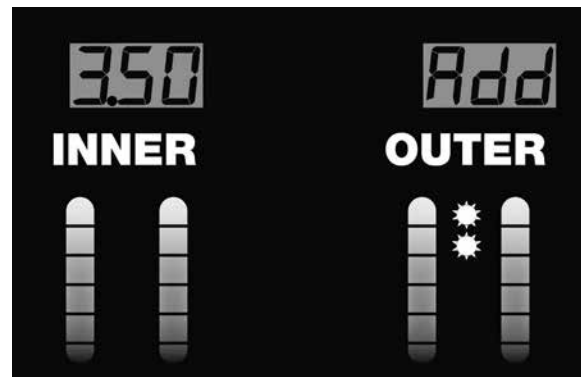
Stop and press brake.



11. Place one 100 gram weight or 3.5 oz. (included with balancer) on the **INNER** plane at exactly 12 o'clock position.

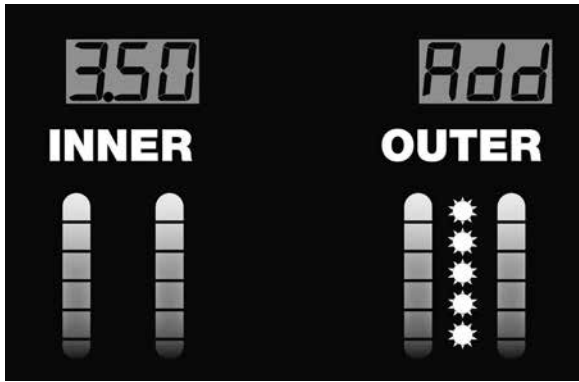


Press Start and spin will follow. Wheel will stop rotating and display will show “Add 3.50” or “Add 100” in the Outer plane.



12. Rotate wheel and remove inner weight from Inner plane 3.5 oz. or 100 g.

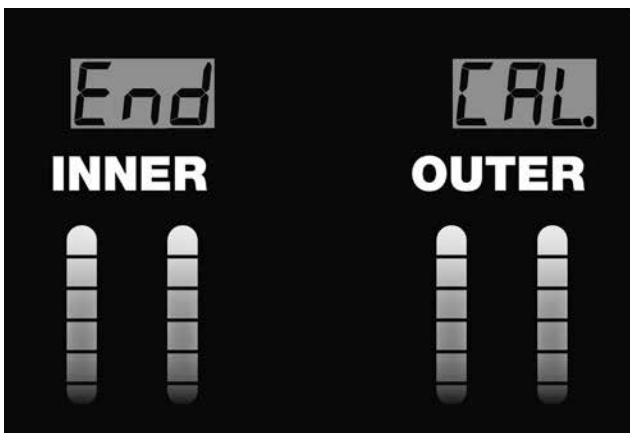
13. Rotate wheel until all lights illuminate and show "Add 3.50" or "Add 100" in the OUTER plane. Press on brake.



14. Place weight on exactly 12 o'clock position on the OUTER plane.



15. Close hood and press **START**. The wheel will spin for approximately 6 seconds then stop, and "END Cal" will be displayed. Calibration has been completed.



NOTE:

To verify calibration leave weight on OUTER plane and perform Weight Location Verification Test, (Refer to Page 16) starting with Step 3.

NOTE:

It is a good idea to keep the known good "calibration tire" set up to perform the procedure.

PROCEDURES FOR CHANGING DISPLAY BOARD



DO NOT PERFORM ANY MAINTENANCE OR INSTALLATION OF ANY COMPONENTS WITHOUT FIRST ENSURING THAT ELECTRICAL POWER HAS BEEN DISCONNECTED AT THE SOURCE OR PANEL AND CANNOT BE RE-ENERGIZED UNTIL ALL MAINTENANCE AND/OR INSTALLATION PROCEDURES ARE COMPLETED.

1. The Weight tray must be removed to replace the Computer Display Board.

NOTE:

Complete instructions for replacing the Computer/Power Board are included with the Power Board Service Kit available from Ranger Products.

2. Remove all weights and tools from the top of the weight tray.

FOR TECHNICAL SUPPORT:

1-800-253-2363 EXT. 196

TO ORDER PARTS:

1-800-253-2363 EXT. 191

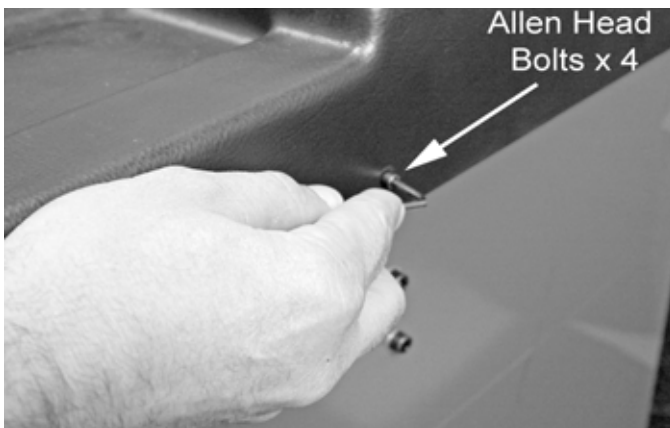


BENDPAK / RANGER 1-805-933-9970

3. Using an Allen Wrench, remove the Distance Arm from the Distance Arm Assembly. The Distance Arm Shaft will retract into the Balancer Cabinet.



4. Remove the Allen Head Screws (x 6) holding the Weight Tray to the Machine Base.



NOTE:

The Weight Tray has a wiring harness connecting the connections to the Computer/ Display boards so the tray cannot be completely removed from the balancer.

5. Carefully lift the weight tray off the Machine Base sliding the tray in the direction of the hood/ Shaft. Carefully support the Weight Tray.



NOTE:

IT IS RECOMMENDED THAT THE WEIGHT LOCATION VERIFICATION TEST BE PERFORMED ON A MONTHLY BASIS. (Please refer to page 16.) IF THE LED-COMPUTER BOARD HAS BEEN REPLACED PERFORM BOTH THE SELF- CALIBRATION AND WEIGHT LOCATION VERIFICATION PROCEDURES.

NOTE:

THE DST-2420 IS A PRECISE INSTRUMENT CAPABLE OF REGISTERING THE SLIGHTEST ROTATIONAL IMBALANCE. WHEN PLACING WEIGHTS ON WHEELS, (INCLUDING CALIBRATION WEIGHT), APPLY EXACTLY PERPENDICULAR TO THE SHAFT AT THE 12 O'CLOCK POSITION. INCORRECT PLACEMENT WILL RESULT IN ADDITIONAL WEIGHT CALL-OUTS AND/OR AN IMPROPERLY CALIBRATED MACHINE.

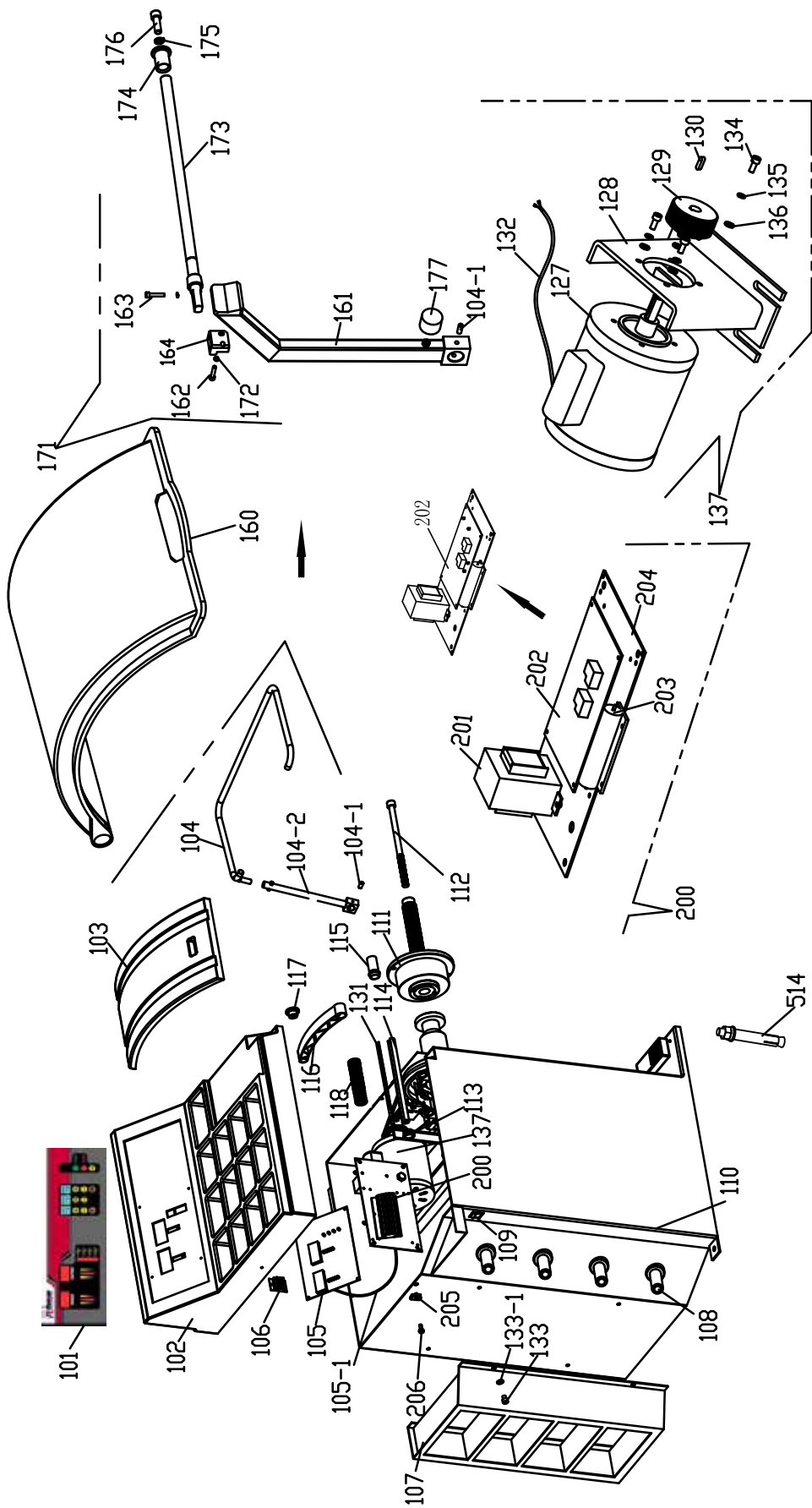
KEEP ALL INSTRUCTIONS PERMANENTLY WITH UNIT AND ALL SAFETY DECALS CLEAN AND VISIBLE.

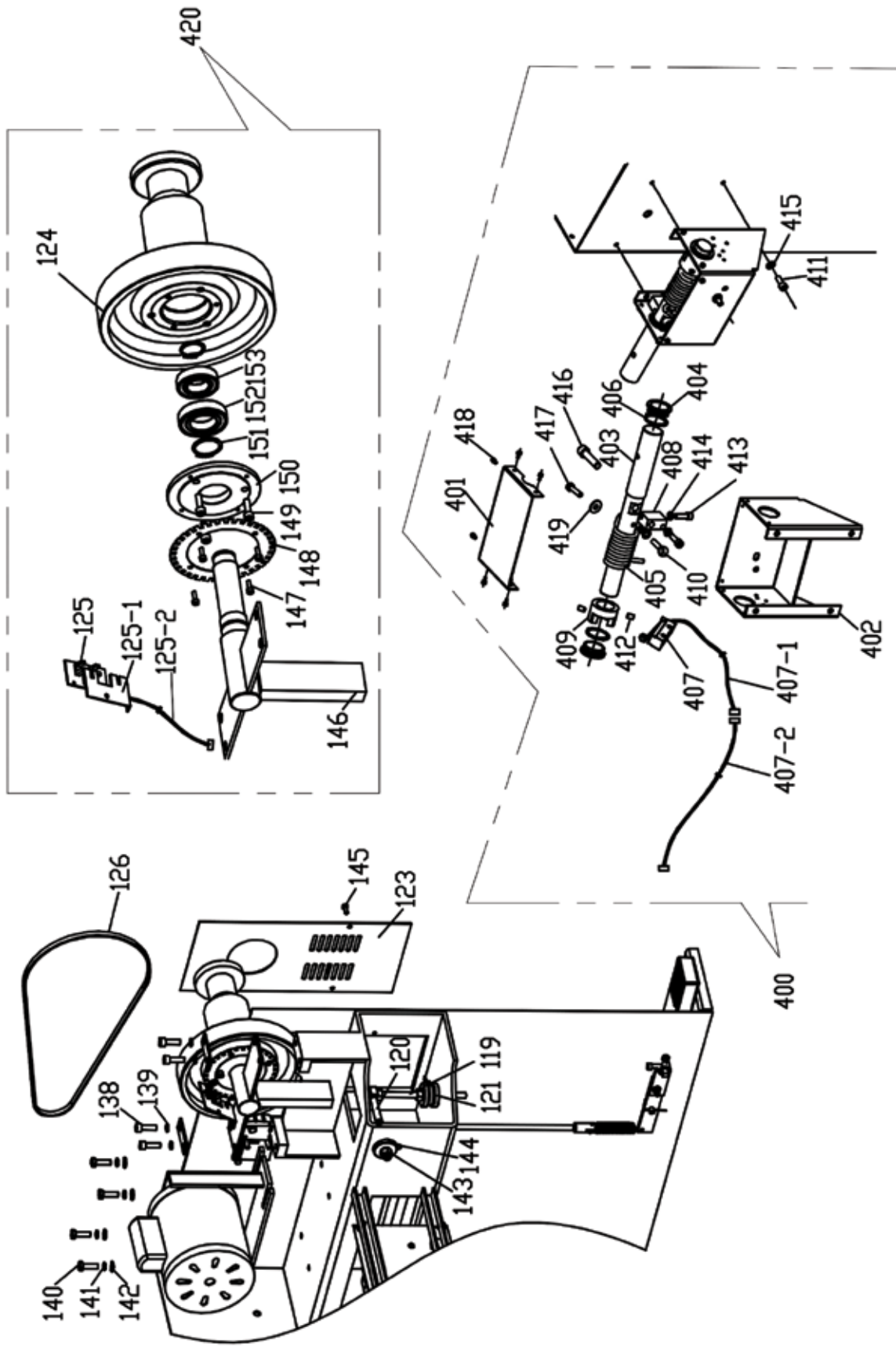
DO NOT OPERATE THIS MACHINE UNTIL YOU READ AND UNDERSTAND ALL THE DANGERS, WARNINGS AND CAUTIONS IN THIS MANUAL.

For additional copies
or further information, contact:

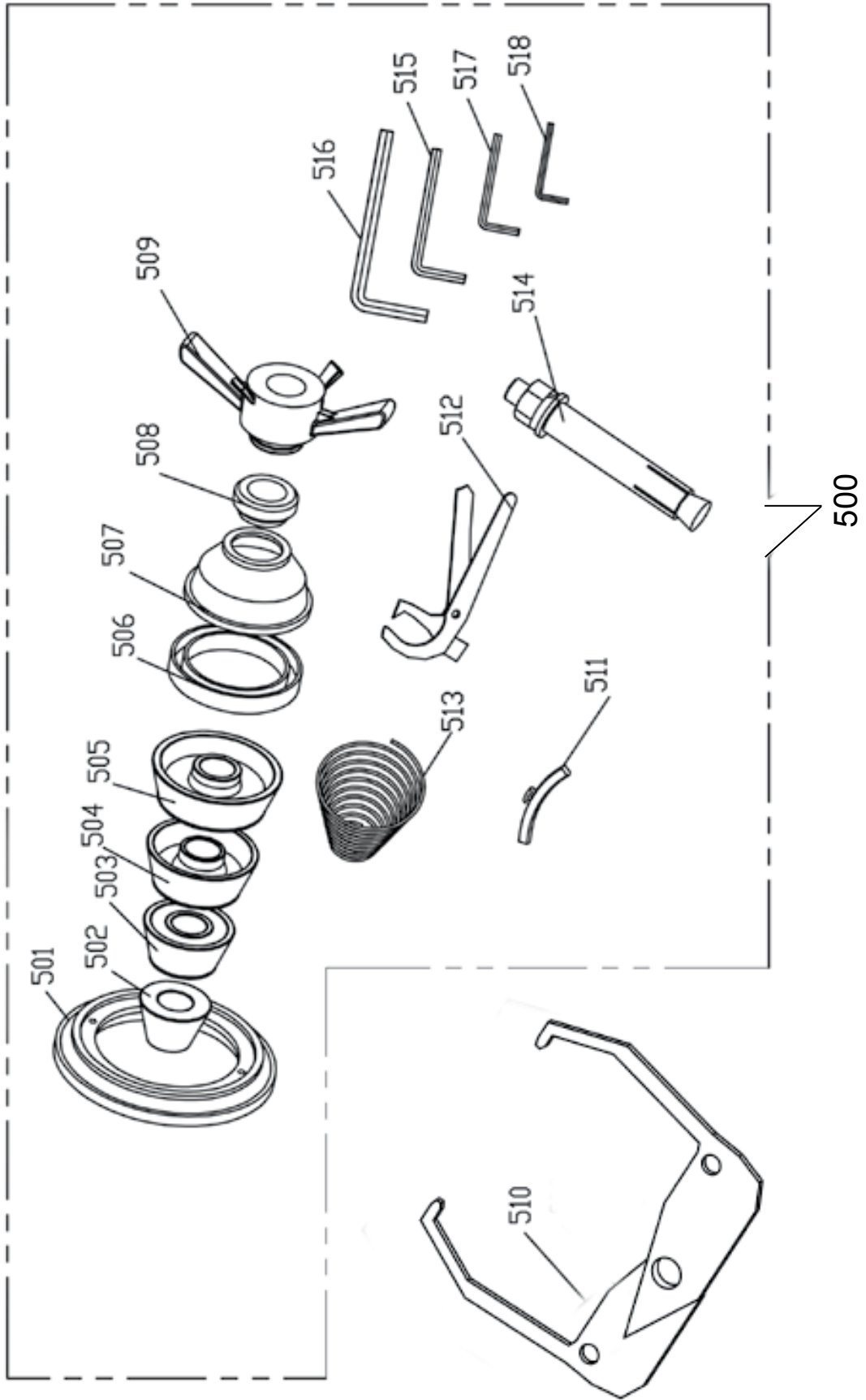
BendPak Inc. / Ranger Products
1645 Lemonwood Dr.
Santa Paula, CA. 93060
1-805-933-9970
www.rangerproducts.com

Err. -1-	1. Balancer Shaft Does Not Rotate.	<ol style="list-style-type: none"> 1. Check the electrical connection. 2. Replace the Power board. 3. Replace the Electrical Motor.
Err. -2-	<ol style="list-style-type: none"> 1. A wheel is not installed on the balancer. 2. A wheel is installed on the balancer but there is no tire. 3. The quick nut is not tight and/or the wheel is not correctly installed on the balancer. 4. The Electrical Motor belt tension is not correct. 	<ol style="list-style-type: none"> 1. Install a wheel on the balancer. 2. Install a tire on the wheel. 3. Remove the tire from the balancer and re-mount it correctly. 4. Adjust the belt tension for the Electrical Motor.
Err. -3-	1. The wheel/tire combination has to large of an unbalance.	<ol style="list-style-type: none"> 1. Reposition the Tire on the Wheel to reduce the unbalance. 2. Use a different Tire and/or Wheel. 3. Redo the calibration procedure.
Err. -4-	<ol style="list-style-type: none"> 1. The wheel is rotating counter clockwise. 2. The wheel is rotating clockwise and the Encoder Board is malfunctioning. 	<ol style="list-style-type: none"> 1. Check the electrical connections for the Electrical Motor. 2. Adjust and/or Replace the Encoder Board.
Err. -5-	1. The protective Hood is Open.	1. Close the protective Hood.
Err. -6-	NA	NA
Err. -7-	1. The Computer/Display board memory was cleared.	<ol style="list-style-type: none"> 1. Check that the parameter setting match the sticker located inside the balancer and redo the factory calibration.
Err. -8-	<ol style="list-style-type: none"> 1. 100g weight was not attached during the calibration procedure. 2. The piezo sensor(s) wires are disconnected or it is malfunctioning. 3. Computer/Display board malfunction. 	<ol style="list-style-type: none"> 1. Do the calibration procedure and attach the 100g weight during the correct step. 2. Check the electrical connections for the piezo sensor(s). 3. Replace the Computer/Display board. 4. Contact Ranger Products.
Failed Calibration Check	<ol style="list-style-type: none"> 1. The wheel used for calibration was too large. 2. The wheel used for calibration had too large of an unbalance. 3. The wheel data was not entered correctly. 4. The SFA (Location) parameter setting is not correct. 	<ol style="list-style-type: none"> 1. Use a balanced 14-15 inch wheel and redo the calibration procedure. 2. Check the wheel information is entered correctly for the tire you are using for calibration. 3. Contact Ranger Products for instruction to modify the SFA (Location) parameter.
No Display	<ol style="list-style-type: none"> 1. The balancer is turned off. 2. The balancer has no power going to it. 3. The Computer/Display board is defective 	<ol style="list-style-type: none"> 1. Check that the balancer is turned on. 2. Check that the your balancer is connected to a live electrical source. 3. Replace the Computer/Display board.
No Weight Information Displayed	<ol style="list-style-type: none"> 1. The piezo sensor(s) wires are disconnected or it is malfunctioning. 2. The Computer/Display board has lost the parameter settings. 	<ol style="list-style-type: none"> 1. Check the electrical connections for the piezo sensor(s). 2. Check that the parameter setting match the sticker located inside the balancer edit them if necessary.





DST-2420 HOOD MOUNTING ASSEMBLY



Drawing No.	DESCRIPTION	Drawing No.	DESCRIPTION
101	DISPLAY BOARD PANEL	312	BRAKE PEDAL
102	WEIGHT TRAY	313	Brake Pedal Shaft
103	HOOD	314	Pivot Screw M12 x 1.75
104	HOOD MOUNTING BRACKET	315	BRAKE PEDAL BUSHING
105	COMPUTER BOARD	316	Lower Brake Return Spring
106	CONVERT SWITCH	317	BRAKE BRACKET
107	SIDE CHASSIS	318	Lock Nut M6
108	CONE HANGER	319	SHCS M6x12
109	ON/OFF SWITCH	320	HHB M6X25
110	CHASSIS BODY	321	Nut M12
111	THREAD SHAFT/ SPINDLE	322	PIN 4X16
112	SHCS M14X260MM	323	COTTER PIN
113	DISTANCE ARM, SMALL SLEEVE	324	SHCSM6X16
114	DISTANCE ARM ROD	325	NUT M6
115	DISTANCE ARM LARGE SLEEVE	326	NUT M20
117	ALUMINUM BLOCK	400	HOOD MOUNTING ASSEMBLY
120	PIEZO HORIZONTAL SHAFT	401	HOOD MOUNTING ASSY. LOWER PLATE
121	VERTICAL PIEZO SENSOR	402	EXTERNAL SUPPORT COLUMN
122	CROSS RECESSED SCREW M4X12	406	EXTERNAL GAUGE LARGE GEAR
123	O RING 4.2 X 3.5 n	407	CRHSCREW M4X6
124	FIXED SLEEVE	408	CRSCREW M5X10
125	HSSC WITH FLAT POINT	409	BALANCING WEIGHT
126	DISPLAY BOARD BRACKET PLUG	410	SHCS M8X16
127	WASHER; 6MM FLAT	411	EXTERNAL BRACKET SHAFT
128	WASHER; 6MM SPLICK LOCK	434	SHCS M6X30
129	SCHS M6X16	435	EXTERNAL BRACKET SHAFT
130	WASHER 3MM FLAT	501	SPACER RING
131	WASHER 3MM SPLICK LOCK	502	44.5-74.5mm CONE(38mm) - Accessory box
144	Piezo Sensor Pad	502	44.5-74.5mm CONE(36mm) - Accessory box
145	Self Taping Screw M4. 8x16	503	69-94mm CONE(38mm) - Accessory box
150	Bearing Cover	503	69-94mm CONE(36mm) - Accessory box
153	Bearing , 6005	504	90-115mm CONE(38mm) - Accessory box
160	Hood	504	90-115mm CONE(36mm) - Accessory box
161	Cover Bracket Compound	505	110-134mm CONE(38mm) - Accessory box
177	Stents Buffer Device	505	110-134mm CONE(36mm) - Accessory box
204	Electrical Mounting Plate	506	QUICK NUT CUP COVER
205	CRBHS M6x20	507	QUICK NUT CUP
206	Reed Nut M6	508	QUICK NUT COVER
301	Brake Pad	509	QUICK NUT - 38MM
302	Brake Pad Spacer	510	WHEEL WIDTH CALIPER
303	Brake Pad Bracket	511	CALIBRATION WEIGHT
304	Upper Brake Return Spring	512	WEIGHT PLIERS
305	Brake Fix Mounting Plate	513	MOUNTING SPRING - 38MM
306	Brake Movable Mounting Plate	515	ALLEN WRENCH - 12MM
307	Brake Rod Connector	516	ALLEN WRENCH - 6MM
308	Brake Rod	518	ALLEN WRENCH - 3MM
309	Large Brake Link	500	ACCESSORY BOX



IMPORTANT NOTICE ABOUT LEAD WHEEL WEIGHTS

New legislation now makes it illegal to sell, manufacture or install lead wheel weights in many states. Violators can be faced with substantial penalties of up to \$2,500 per day, per violation. Wheel weights made entirely of lead or zinc that end up on the roadway have high potential impacts to human health and the environment compared to steel wheel weights. Steel wheel weights are the preferred alternative due to their comparatively low toxicity and fewer environmental impacts from manufacturing. Lower environmental and human health impacts coupled with the high opportunity for steel wheel weights to be made from recycled material make steel wheel weights the best overall alternative.

Ranger offers a complete line of environmentally conscious steel weights for almost any application. Whether you're wheel balancing needs are focused on passenger cars or trucks, Ranger has the right wheel weight for your needs, in stock and ready for immediate delivery.

ENTER QTY. NEEDED FOR EACH ITEM. FAX ORDER TO 1-805-933-9160 OR CALL ORDER IN TO 1-800-253-2363 or 1-805-933-9970

BILL TO:		SHIP TO: (No P.O. Boxes)	
Name:	PO #	Name:	PO #
Company Name:		Company Name:	
Address:		Address:	
City:		City:	
State:	Zip:	State:	Zip:
Phone:		Phone:	
Email:		Email:	

Method of Payment: Credit Card Check Other _____ Preferred Shipment Method: Rush 1-3 Days Standard 5-10 Days
Fax order form to 1-805-933-9160 or call order in to 1-800-253-2363 or 1-805-933-9970. Email order form to sales@bendpak.com

STEEL ADHESIVE WHEEL WEIGHTS (SELF-DISPENSING CARTON)						
SKU	DESCRIPTION	SALE PRICE EA.	BULK PRICE EA. (MIN. 10)	ORDER QTY.	TOTAL \$	
5150220	Adhesive Steel Wheel Weights / Silver / ROLL (700 pcs. - 0.25 oz. - 1/2" Wide -11 lbs.)					
5150225	Adhesive Steel Wheel Weights / Black / ROLL (700 pcs. - 0.25 oz. - 1/2" Wide - 11 lbs.)					
5150230	Adhesive Steel Wheel Weights / Combo / ROLLS (1400 pcs. - 0.25 oz. - 1/2" Wide - 22 lbs.)					

CLIP-ON STEEL WHEEL WEIGHTS (STANDARD STEEL WHEELS)						
SKU	DESCRIPTION	SALE PRICE EA.	BULK PRICE EA. (MIN. 10)	ORDER QTY.	TOTAL \$	
5150250	Clip-on Steel Wheel Weights Coated / Steel Wheels / 0.25 oz. ea. / Qty. 25 / Pfc / 1.21 lbs. / Box					
5150255	Clip-on Steel Wheel Weights Coated / Steel Wheels / .50 oz. ea. / Qty. 25 / Pfc / 1.61 lbs. / Box					
5150260	Clip-on Steel Wheel Weights Coated / Steel Wheels / .75 oz. ea. / Qty. 25 / Pfc / 2.01 lbs. / Box					
5150265	Clip-on Steel Wheel Weights Coated / Steel Wheels / 1 oz. ea. / Qty. 25 / Pfc / 1.61 lbs. / Box					
5150270	Clip-on Steel Wheel Weights Coated / Steel Wheels / 1.25 oz. ea. / Qty. 25 / Pfc / 2.01 lbs. / Box					
5150275	Clip-on Steel Wheel Weights Coated / Steel Wheels / 1.5 oz. ea. / Qty. 25 / Pfc / 2.41 lbs. / Box					
5150280	Clip-on Steel Wheel Weights Coated / Steel Wheels / 1.75 oz. ea. / Qty. 25 / Pfc / 2.82 lbs. / Box					
5150285	Clip-on Steel Wheel Weights Coated / Steel Wheels / 2 oz. ea. / Qty. 25 / Pfc / 3.22 lbs. / Box					
5150290	Clip-on Steel Wheel Weights Coated / Steel Wheels / 2.25 oz. ea. / Qty. 25 / Pfc / 3.62 lbs. / Box					
5150295	Clip-on Steel Wheel Weights Coated / Steel Wheels 2.5 oz. ea. / Qty. 25 / Pfc / 4.02 lbs. / Box					
5150305	Clip-on Steel Wheel Weights Coated / Steel Wheels 2.75 oz. ea. / Qty. 25 / Pfc / 4.43 lbs. / Box					
5150310	Clip-on Steel Wheel Weights Coated / Steel Wheels 3 oz. ea. / Qty. 25 / Pfc / 4.83 lbs. / Box					

GRAND TOTAL

NOTICE: After we are in receipt of your order, one of our courteous sale team members will call you to confirm your order and confirm payment method. Please make sure to write legibly and include your full name, email and phone number so that we may best assist you. Your order will be shipped 5-10 business days after we have received your order (this includes a completed order form and full payment). Shipping charges will be detailed on your final receipt.



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FOR TECHNICAL SUPPORT
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TO ORDER PARTS
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