



Forward this manual to all operators.
Failure to operate this equipment as
directed may cause injury.

INSTALLATION AND OPERATION MANUAL

WHEEL
BALANCER

MODEL
R500



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 Ranger wheel 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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MODEL R500 COMPUTER WHEEL BALANCER

This instruction manual has been prepared especially for you.

Your new wheel balancer is the result of over 25 years of continuous research, testing and development and is the most technically advanced wheel balancer on the market today.

The manner in which you care for and maintain your balancer will have a direct effect on its overall performance and longevity.

READ THIS ENTIRE MANUAL BEFORE OPERATION BEGINS.

RECORD HERE THE FOLLOWING INFORMATION
WHICH IS LOCATED
ON THE SERIAL NUMBER DATA PLATE.

Serial No. _____

Model No. _____

Manufacturing date _____

WARRANTY

Your new wheel balancer is warranted for one year on equipment structure; one year on all operating components and tooling/accessories, to the original purchaser, to be free of defects in material and workmanship. The manufacturer shall repair or replace at their option for this period those parts returned to the factory freight prepaid which prove upon inspection to be defective. The manufacturer will pay labor costs for the first 12 months only on parts returned as previously described. This warranty does not extend to defects caused by ordinary wear, abuse, misuse, shipping damage, or lack of required maintenance. This warranty is exclusive and in lieu of all other warranties expressed or implied. In no event shall the manufacturer be liable for special, consequential or incidental damages for the breach or delay in performance of the warranty. The manufacturer 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.

Be sure to fill out the warranty registration card before operating this machine. The warranty registration card must be returned within 30 days of purchase or the warranty may be voided.

UPON DELIVERY

1. Carefully remove the crating and packing materials.
2. Inspect the machine for any signs of concealed shipment damage or shortages. Remember to report any shipping damage to the carrier and make a notation on the delivery receipt.
3. Check the voltage, phase and proper amperage requirements for the equipment. Wiring should be performed by a certified electrician only.

IMPORTANT SAFETY INSTRUCTIONS

Read these safety instructions entirely!

Read and understand all safety warning procedures before operating machine.

1. Be sure to **READ ALL WARNING LABELS** and instruction manual prior to operation of this machine. Failure to comply with proper safety instructions may lead to injury of operator and/or bystanders.
2. Improper use of this machine may cause damage to machine or cause personal harm or injury.
3. **KEEP HANDS CLEAR** of all pinch points. Check machine for damaged parts prior to operation. **DO NOT USE MACHINE** if any part(s) are broken or damaged.
4. **DO NOT DISABLE** or modify the safety hood cover or mounting hardware.
5. Operators should inspect all tires/wheels for possible defects prior to balancing. **DO NOT ATTEMPT TO BALANCE DEFECTIVE TIRES/WHEELS.**
6. Never exceed weight capacity of balancer. Do not attempt to balance wheels that are larger than the machine was designed for.
7. This machine is not intended to be a restraining device for exploding tires, tubes, or rims. All operators should take proper precautions to implement safety and to avoid personal injury or harm.
8. Keep all liquids away from balancer and controls.
9. **KEEP HANDS AND BODY CLEAR** at all times and as far back as possible during inflation. An exploding tire, rim or other wheel component can cause death to operator and/or bystander. **REMAIN CLEAR AT ALL TIMES.**
10. Be sure to mount wheels properly before balancing. Make sure that the hub nut is firmly secured by at least four full turns on the arbor before initiating the spinning cycle.
11. Never use adapters or tools other than those that have been specifically designed for this machine.
12. Never use compressed air or water hose to clean any part of your balancer. Sensitive electronic components were not intended to be exposed to water.
13. Consider work area environment. Do not expose equipment to rain. Never operate machine in or around water or damp environments. Keep area well lighted.
14. Only trained operators should operate this machine. All non-trained personnel should be kept away from work area. Never let non-trained personnel come in contact with, or operate machine.
15. **DRESS PROPERLY.** Never wear loose gloves, clothing or jewelry. They can be caught in moving parts. Non-skid steel-toe footwear is recommended when operating this machine. Wear protective hair covering to contain long hair. Approved back-support braces are recommended when handling heavy tires.
16. **ALWAYS WEAR SAFETY GOGGLES** when operating this machine.
17. Guard against electric shock. This machine must be grounded while in use to protect the operator from electric shock.
18. Always unplug machine before servicing. Never yank cord to disconnect it from the receptacle. Never operate machine in or around water or damp environments.
19. Warning! Risk of explosion. This equipment has internal arcing or sparking parts which should not be exposed to flammable vapors. This machine should not be located in a recessed area or below floor level.



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.

STEP ONE

(Set-Up)

1. Remove the bolts holding the balancer to the pallet. With a forklift or hoist carefully lift the balancer off of the pallet.
2. Select a location for the balancer that is level and will allow the machine to sit squarely on the floor. Be sure that the ground is stable and vibration free. Allow enough walk around space to provide clearance and access to control panel, accessory pegs, weight tray, hood and spindle assembly.
3. Anchor the balancer to the floor using the concrete anchors through the holes provided.

STOP!

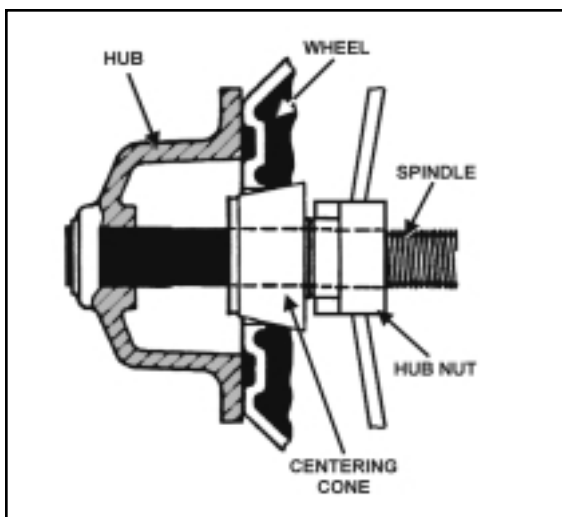
Before any attempt is made to operate this machine it is important that you have read and fully understand all operating instructions described in this manual.

STEP TWO

(Mounting The Wheel)

On most wheels the inner edge of the hub is the most uniform and should be the side that the wheel is centered on. Always center the wheel on the surface that is most uniform to achieve the most accurate balancing.

1. Select a centering / mounting cone that best fits the center hole of the wheel.
2. Lift the wheel onto the arbor and slide it back against the arbor hub.
3. Slide the cone over the arbor and into the center hole of the wheel. It will be necessary to lift the tire slightly.

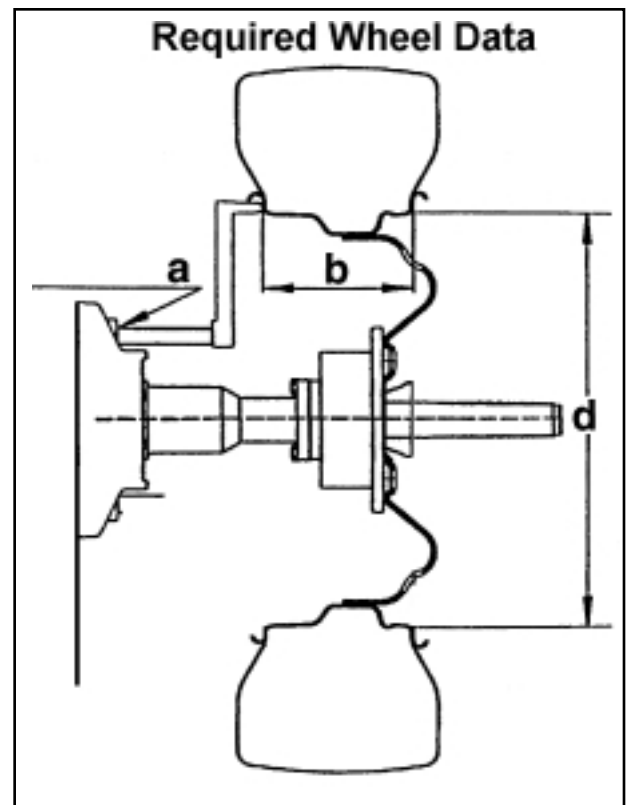


4. While holding the wheel and cone in position, thread the hub nut over the arbor and secure tightly. Always make sure that the hub nut engages the arbor threads by at least four (4) full turns. It helps to spin the wheel while at the same time tightening the hub nut. Never exceed weight capacity of balancer. Do not attempt to balance wheels that are larger than the machine was designed for.

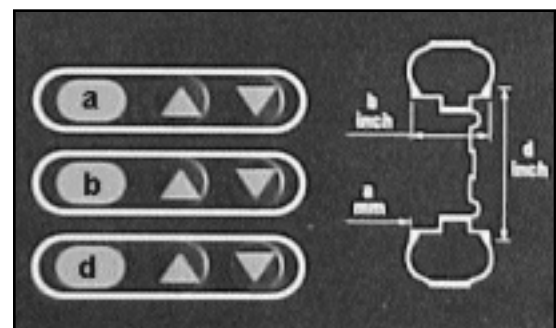
STEP THREE

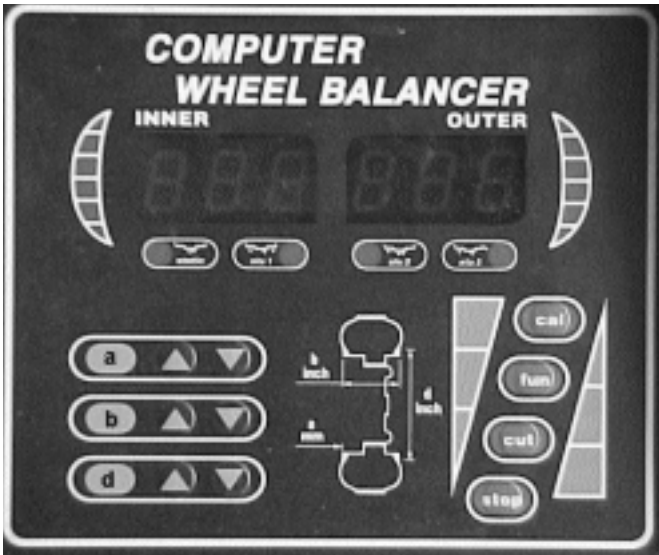
(Inputting Wheel Data)

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, B-Width and C-Diameter. (See Fig. 4)



WHEEL DATA KEY BOARD






A - Wheel Offset

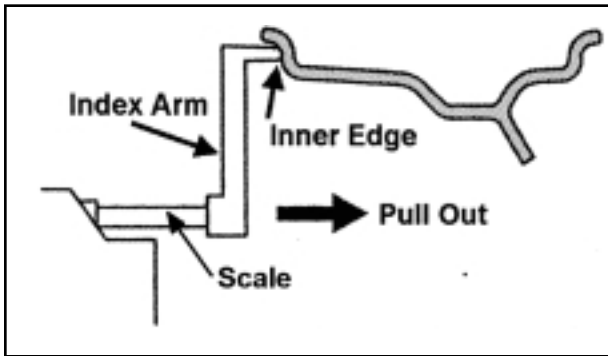
This is the distance between the side of the balancer and the inner edge of the wheel. To enter Wheel Offset data refer to the instructions below.

1. Turn the machine on.

2. Press the \bar{p} button adjacent to 

3. \bar{a} \bar{a} will be displayed.

4. Pull the index arm out from the side of the machine until the tip touches the inner edge of the wheel.

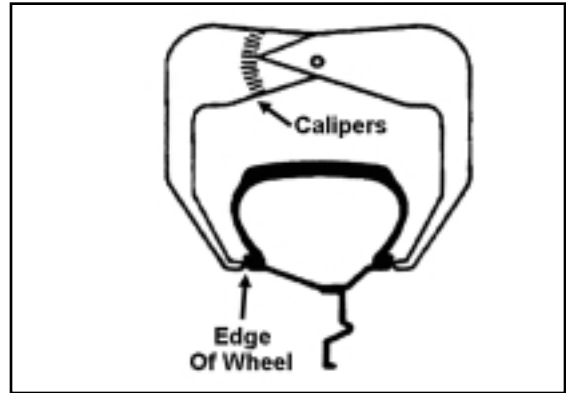


5. Read the offset measurement as displayed on the scale directly on top of the index arm. Press the corresponding \bar{p} \bar{q} buttons to enter the correct data.

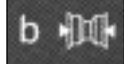
B - Wheel Width

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 shown on the calipers.

3. Press the \bar{p} button adjacent to 

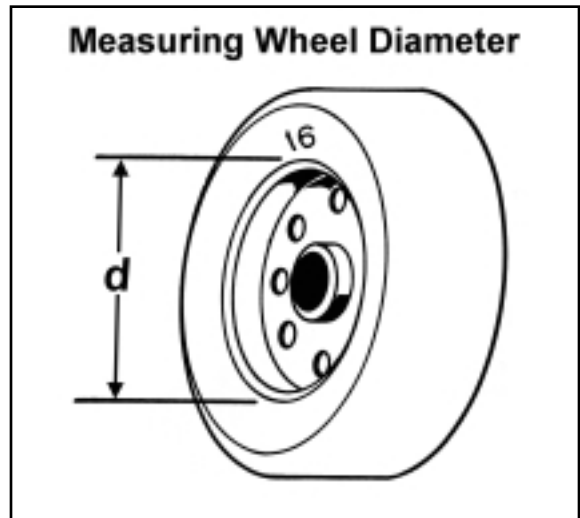
4. \bar{b} \bar{b} will be displayed.


5. Press the corresponding \bar{p} \bar{q} buttons to enter the correct data. **IMPORTANT NOTE:** 10 mm should be displayed as 100 / 5-1/2 mm should be displayed as 55.

d - Wheel Diameter

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

1. Read the diameter of the wheel as shown on the tire sidewall.



2. Press the \bar{p} button adjacent to 

3. \bar{d} \bar{d} will be displayed.

4. Press the corresponding \bar{p} \bar{q} buttons to enter the correct data.

STEP FOUR

(Calibration Procedure)

The CAL button is used for self-calibration. Since this balancer is a precision machine it is required that you perform periodic calibrations to assure its accuracy.



NOTE:

Before performing the calibration procedure, make sure 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. The balancer should be self-calibrated every 30 days.

1. Turn on the power.
2. Select a centering / mounting cone that best fits the center hole of the wheel. **NOTE:** A standard clean 14" steel wheel is recommended for this procedure.
3. Using a standard 14" steel wheel with a standard serviceable tire, lift the wheel onto the arbor and slide it back against the arbor hub.
4. Slide the cone over the arbor and into the center hole of the wheel. It will be necessary to lift the tire slightly.
5. While holding the wheel and cone in position, thread the hub nut over the arbor and secure tightly.
6. Enter the correct wheel data.
7. Press the CAL button. CAL -- 0 will be displayed.
8. Press the CAL button again. The unit will spin for approximately 6 seconds.
9. Place one 100 gram weight, (included with shipment) adjacent the valve stem on the OUTSIDE of wheel.
10. Press the CAL button again. The unit will spin again for approximately 6 seconds. When the wheel stops END CAL will be displayed.
12. After END -- CAL is displayed you **MUST** press and hold down the CAL button for **THREE-SECONDS** to store the setting. The self-calibration is now complete. If you fail to do this, the calibration settings will not be stored and saved.
13. Remove the calibration weights from the wheel.

IMPORTANT NOTE:

After END -- CAL is displayed you **MUST** press the CAL button to store the setting. The self-calibration is now complete. If you fail to do this, the calibration settings will not be stored and saved.

STEP FIVE

Prior to balancing, a specific function must be chosen for each particular wheel. The function settings can be selected by depressing the FUN button.



(Selecting Function)

DYNAMIC
No Light
Present

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



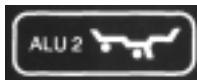
STATIC

This function is used if stick-on weights are to be mounted to the center plane (hidden) and not to either inner or outer edges of the wheel.



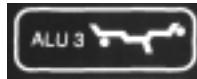
ALU1

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



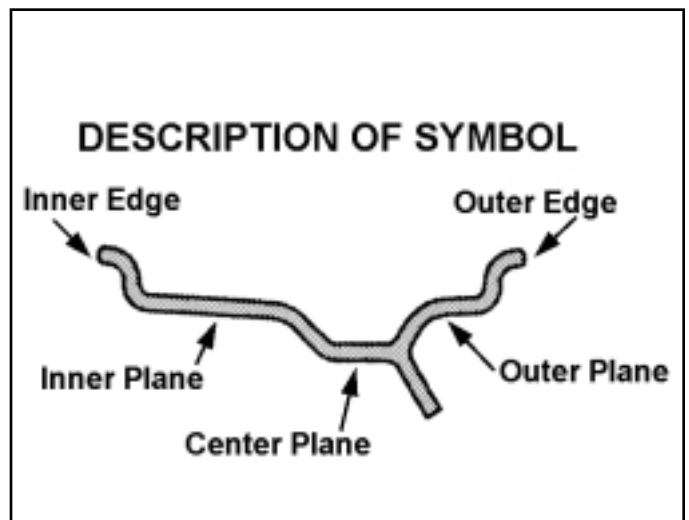
ALU2

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



ALU3

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



STEP SIX

(Spin Mode / **DYNAMIC**, ALU1, ALU3)

1. Once the correct wheel data and function have been programmed, press the start button. Upon reaching the correct speed it will display weight readings for each side of the wheel both **INNER** and **OUTER**. At this time you can stop the wheel.

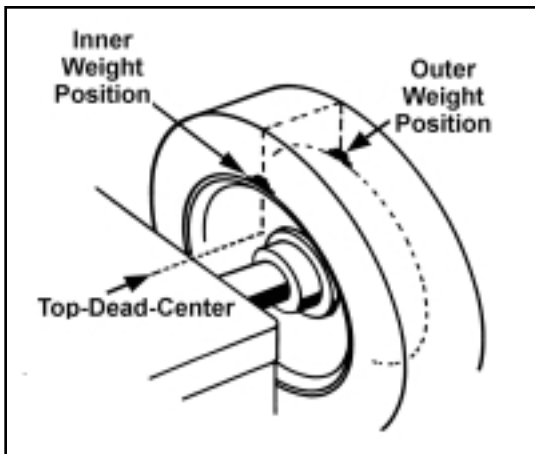


2. Turn the wheel by hand until the weight position indicator lights on the side marked **INNER** are fully illuminated. This indicates the position specified by the balancer for the inner weight position.

3. Attach the specified weight for the **INNER** position at top-dead-center. **NOTE:** To hold the wheel in position when installing weights, press down on the **FOOT BRAKE** pedal.

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.



4. 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.

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

STEP SEVEN

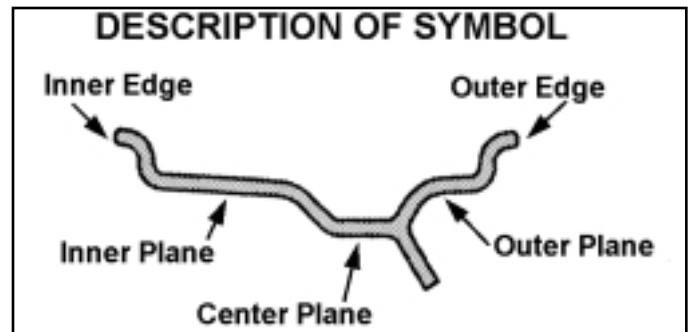
(Spin Mode / **STATIC**)

STATIC balancing is not an accurate method of balancing and should be used only when the customer request no visible weights on the outer edges or plane of the wheel.

1. Once the correct wheel data and function have been programmed, press the start button. Upon reaching the correct speed it will display weight readings for each side of the wheel both **INNER** and **OUTER**. At this time you can stop the wheel.

2. 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 **CENTER PLANE** weight position. For this operation, disregard the **OUTER** weight readings.

3. Attach the specified weight near the **CENTER PLANE** of the wheel at top-dead-center.



STEP EIGHT

(Spin Mode / **ALU2**)

1. Once the correct wheel data and function have been programmed, press the start button. Upon reaching the correct speed it will display weight readings for each side of the wheel both **INNER** and **OUTER**. At this time you can stop the wheel.

2. 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.

3. Attach the specified weight for the **INNER** position at top-dead-center.

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 **CENTER PLANE** weight position.

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

