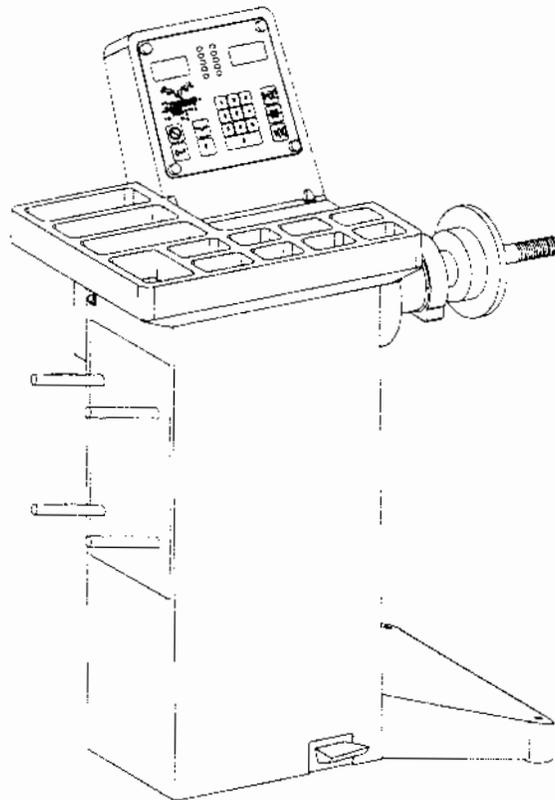




# Operators Manual

## Model 3.2 Computerized Wheel Balancer



FORM 5170-2



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## IMPORTANT SAFETY INSTRUCTIONS

When using this equipment, basic safety precautions should always be followed, including the following:

1. **Read & understand operators manual before operating balancer**
2. **Do not operate equipment with a damaged power cord or if the equipment has been damaged until it has been examined by a qualified service technician.**
3. **If an extension cord is used, use a cord with a current rating equal to or more than that of the machine. Cords rated for less current than the equipment may overheat. Arrange the cord so that it will not be tripped over or pulled.**
4. **Always unplug equipment from electrical outlet when not in use. Never use the cord to pull the plug from the outlet. Grasp plug and pull to disconnect.**
5. **To reduce the risk of fire, do not operate equipment in the vicinity of open containers of flammable liquids (gasoline).**
6. **Keep hair, loose fitting clothing, fingers and all parts of the body away from moving parts.**
7. **Adequate ventilation should be provided when working on operating internal combustion engines.**
8. **To reduce the risk of electric shock, do not use on wet surfaces or expose to rain.**
9. **Do not hammer on or hit any part of the control panel or display.**
10. **Do not allow unauthorized personnel to operate the equipment.**
11. **Use only as described in this manual. Use only manufacturer's recommended attachments.**
12. **Always securely tighten the wing nut before spinning the shaft.**
13. **ALWAYS WEAR SAFETY GLASSES. Everyday eyeglasses only have impact resistant lenses, they are NOT safety glasses.**

## SAVE THESE INSTRUCTIONS

## MODEL 3.2 Wheel Balancer

### General Specifications

- Accuracy: To 0.10 oz. (2.8gm)
- Digital Readout: Ounces or Grams
- Hand Spin Operation (no motor or belt)
- 8 Balancing Modes
  - \* Static or 2-Plane Balancing
  - \* 6 Aluminum Modes
- 12 Revolutions for measurement
- Single spin balancing
- 115v or battery operated
- Microprocessor controller
- Operator self-calibration
- Portable operation possible
- Membrane type touch-pad keyboard
- Self-diagnostic capabilities
- Digital display round-off to .25 oz. (5gm) or nonround-off to .05 oz. (1gm)
- Shaft size 1 9/16" diameter (40mm)
- 12 Weight pockets
- Weight angle resolution: 0.9 deg.
- Low friction roller bearing balancing shaft

Rim Width: 3"-19" (76-483mm)  
 Rim Diameter: 8" - 24" (203-610mm)  
 Tire Diameter: 44" (1016mm)

Footprint: 36" x 48" (914 x 1219mm)  
 Shipping weight: 235 lbs. (107kg)  
 Shipping Vol.: 20.5 cu. ft. (.5m<sup>3</sup>)

#### Standard Equipment: MODEL 3.2

- (1) Rim Width Caliper (61123)
- (1) Calibration Weight (110940)
- 110691 Haweka Adapter Kit consisting of:
  - (1) Basic Centering Device (110558)
  - (1) Wing Nut (110690)
  - (1) Clamping Hood (110595)
  - (1) Pressure Ring (110596)
  - (1) Spring (110597)
  - (1) Centering Cone, 1.65-3.15" dia. (110559)
  - (1) Centering Cone, 2.91-4.41" dia. (110560)
  - (1) Centering Cone, 3.74-4.90" dia. (110561)
  - (1) Allen Wrench (110573)
  - (1) Rubber Protector Ring (110410)

#### OPTIONS

- Universal Lug Adapter (110615)
- Haweka Truck Cone Kit (110612)
  - includes: (1) 4.8-6.69" diameter cone
  - (1) Spacer Adapter
- Centerless Wheel Adapter (110570)
- Motorcycle Wheel Adapter (110609)
- Economy Motorcycle Adapter (110608)

Note: John Bean Co. reserves the right to incorporate changes in designs or materials, affecting product improvements, without obligation of incorporating same on equipment of prior manufacture.

## Installation Instructions

The balancer should be located where it is convenient to the tire changing operation. Place balancer skid close to the desired position. Allow ample space for wheel mounting and to raise and lower the hood guard without obstruction. See footprint drawing to the right.

### Unpacking the Balancer

Cut banding straps. Use caution to avoid sharp edges of banding. Lift cardboard box upward over balancer top. Cut banding from the hood guard (optional, if equipped) and the accessory package. Set these aside for now. Remove the skid mounting bolts from the balancer base. Lift the balancer from the skid and place gently onto the floor.

**CAUTION!! DO NOT LIFT BALANCER BY THE SHAFT! This may cause damage.**

### Site Preparation:

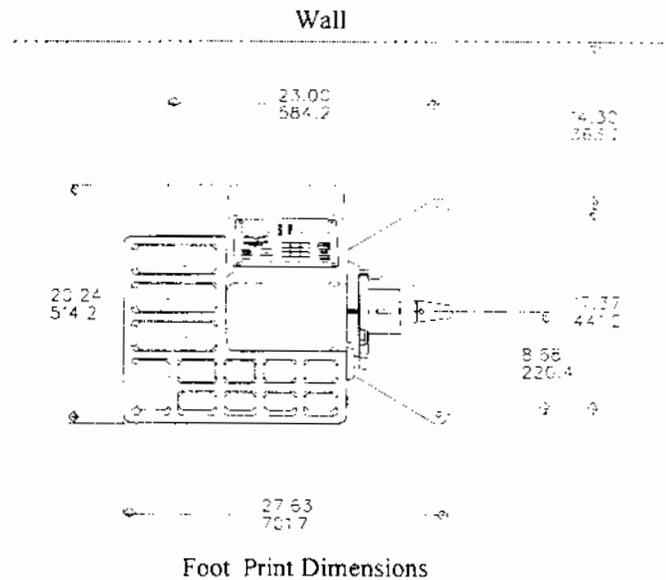
Make certain the floor area to be used is flat to within one halfinch beneath the balancer. Make certain this area is free from vibrations created by other heavy equipment, compressors, generators, etc. A concrete floor is strongly recommended.

### Anchoring the Balancer to the Floor:

The balancer may be anchored to the floor to provide stability.

Mark position of anchor holes by placing balancer in the desired location or by using the dimensions shown in *Figure 1*. Drill three holes at least three inches deep and place anchor bolts in holes.

Move balancer into position taking care not to lift by shaft. Place over the anchors and tighten shaft end first. Tighten remaining bolts to 60 in-lbs.



*Figure 1*

### Power Requirements:

The balancer operates on 115 volts AC, 50/60 cycle, through an AC/DC power adapter. The current draw is less than 2 amps.

Battery power is provided by 6 x 1.5 volt D-size alkaline cells.

**Note:** Insure that the receptacle is properly grounded.

**Calibration:** A balancer will not operate at its optimum until it has been calibrated. This procedure is detailed on *page 10*.

## Touch Panel Functions

**Weight Amount Windows.** Indicates the weight imbalance amount of the left and right planes of the tire and wheel.

**Position Window.** Indicates the left and right plane weight location. A center reading of green indicates the weight be placed at top dead center of the wheel.

**Aluminum Mode button.** Changes weight placement mode for specialty wheels and hidden weight balancing.

**Stop (Red) button.** Push anytime to interrupt automatic cycle. Wheel will stop spinning.

**Spin (Green) button.** Used to initiate spin cycle and function codes.

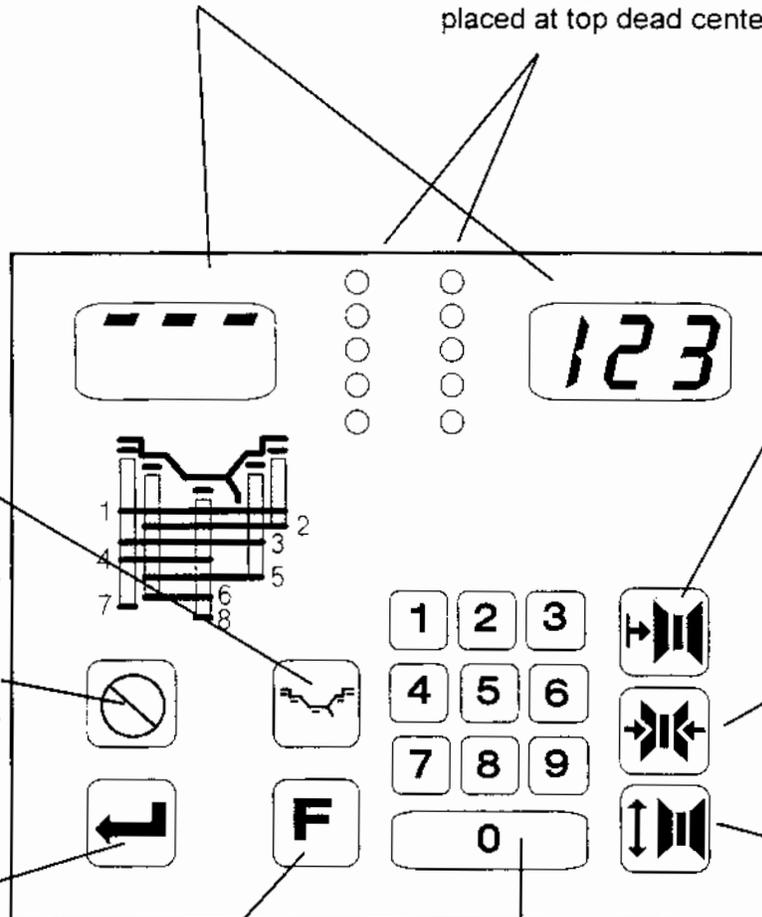
**"F" button.** Allows the entry of function codes. Function codes are used for customizing, calibrating, and diagnosing the balancer.

**Numbered Keyboard.** Used to enter wheel parameters, and function codes.

**Wheel Distance button.** Push this button to display or enter the wheel's distance from the balancer measured by the distance gauge. Enter the number using the numbered keyboard.

**Wheel Width button.** Push button to display or enter the wheel width, followed by a keyboard entry of the tire's rim measured width.

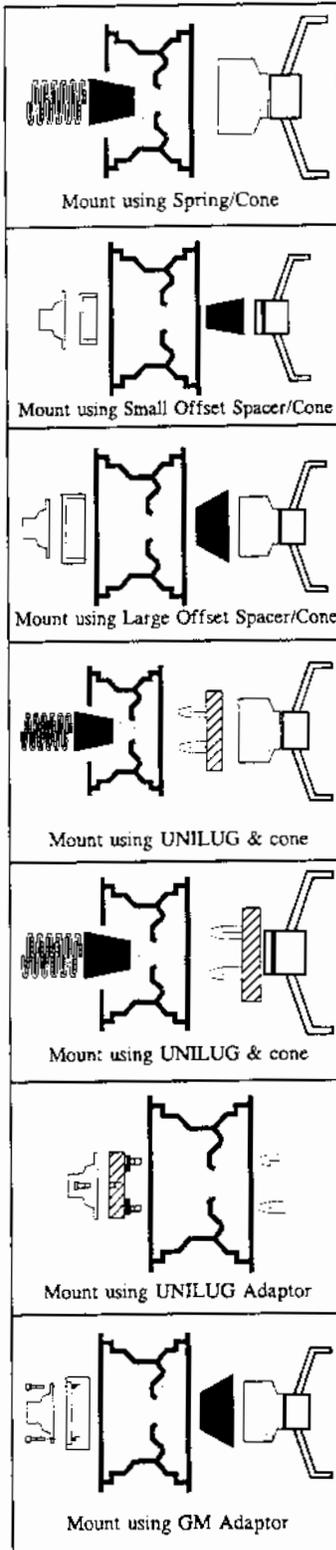
**Wheel Diameter button.** Push to display or enter the wheel diameter as read from the side wall of the tire. Use the numbered keyboard to enter the wheel diameter parameter.



**Note:** If the **STOP** button is pressed, followed by a wheel cover (optional) raise & lower, the displays will show a series of scanning dashes. This shows the balancer is still in use but that there is no reading to be displayed. Normal display will return upon a completed spin cycle.

## Model 3.2 BALANCER OPERATING INSTRUCTIONS

### MOUNT TIRE/WHEEL ON BALANCER



Make sure tire is inflated to normal air pressure and clean out any foreign matter from tread. Remove any mud, gravel or other foreign matter that may be accumulated inside of the rim.

Select the proper method of mounting and locate the necessary spring, cone, spacer, retainer cup, wing nut, etc. to accommodate the chosen method of mount. You may need a special adaptor such as a universal lug adaptor or one of several available flange kits.

Place tire/wheel assembly on balancer shaft as illustrated, depending on the wheel type. The goal of proper mounting is to try to mount the tire/wheel assembly onto the balancer as close as possible to the way the assembly was mounted on the car. If the wheel is centered off the center hub of the vehicle use the proper size cone. If the wheel is centered off the lug bolts it will be necessary to use a universal lug adaptors or a flange plate to mount the wheel on the balancer.

### CENTER HOLE MOUNTING

Although some wheels are stamped so that the outside contains the most true center hole, most wheels are better suited for rear cone mounting. Place the spring and cone on the shaft followed by the wheel. Finish the mounting with the pressure cup and the wing nut.

If the wheel design prohibits back cone mounting, place tire/wheel assembly up against the backing plate or offset spacer (outside facing out), followed by the cone and wing nut. Note the different combinations of spring, cone, and offset spacer in illustrations along left column.

### LUG HOLE MOUNTING using optional accessories

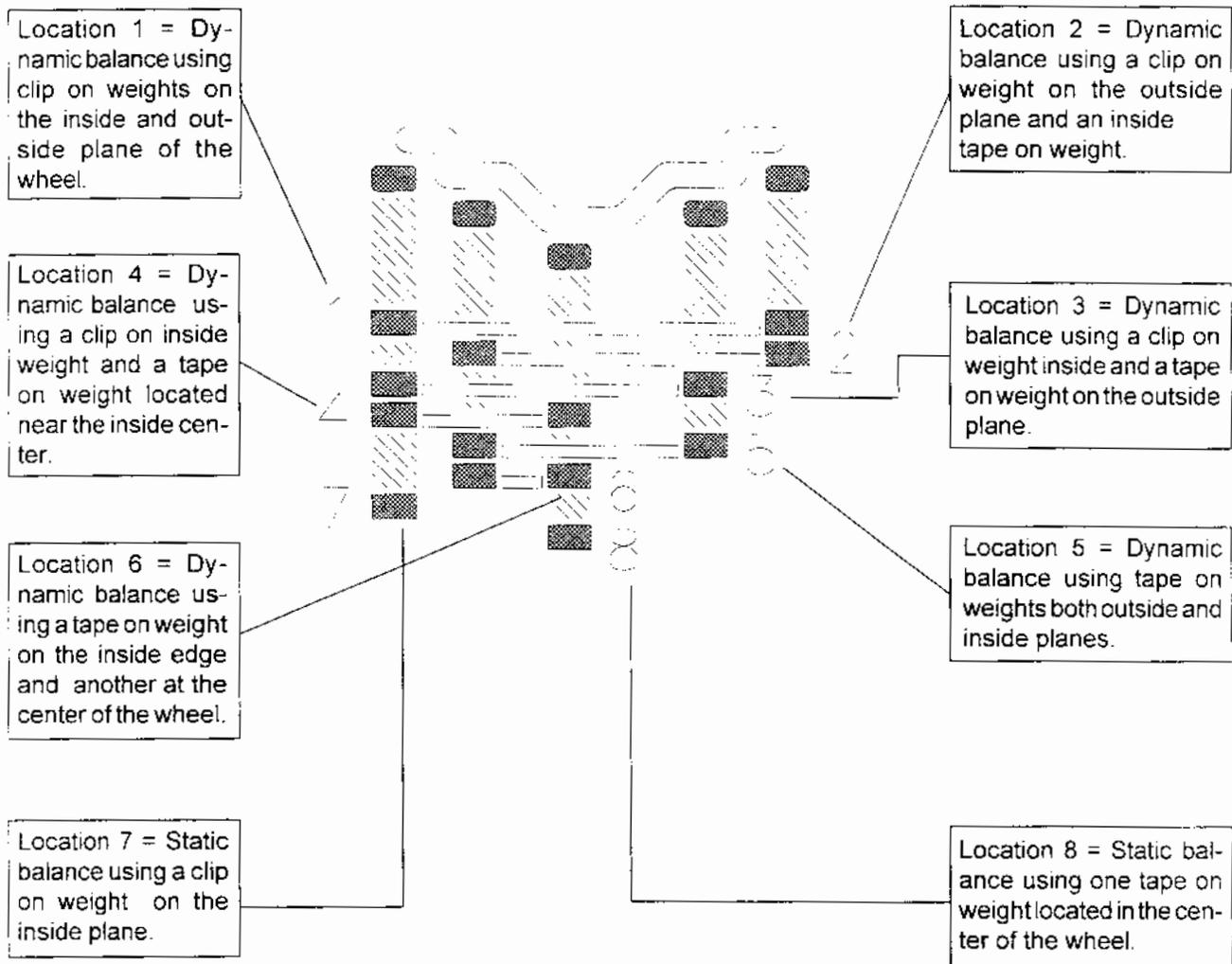
The choice of holding device for lug-hole mounting is between a universal lug adaptor and one of several flange plates (optional).

The universal lug (UNILUG) adaptor bolts directly to the backing plate and accepts wheel lug patterns from 3-hole up to 10-hole. The wheels then bolt to the adaptor just as they did on the vehicle, using the lug nuts supplied with the adaptor.

Flange plates are fitted with tapered studs that fit into the lug holes and center support the wheel from the outside. The inside of the wheel may be supported by the backing plate (with spring and cone), an offset spacer, or GM adaptor (also with spring and cone), depending on the wheel design. All flange plates have an extended center to fit the shaft. They are held in place with the wing nut (supplied with balancer).

## Selecting Balancing Modes

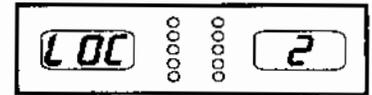
Choose from 8 balancing modes by simply pressing balancing mode button. "LOC" and a number will be displayed. Press numbers 1 - 8 for the mode that best suits the balancing need.



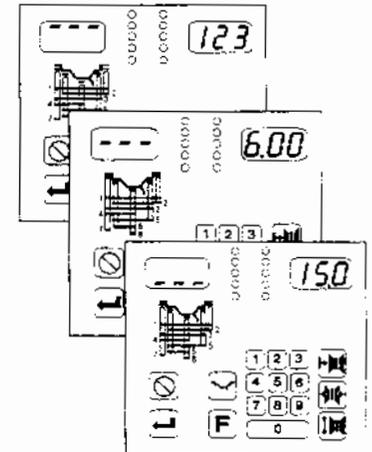
\* For best results use the suggested wheel weight type (Clip-on or Tape-on) and placement location. When using the Aluminum modes some wheels may require additional spins to resolve all imbalance.

## BALANCING THE TIRE/WHEEL ASSEMBLY

1. Determine the weight location method best suited for the tire/wheel assembly and enter the Location number. NOTE: This can be changed at anytime after weight amounts are displayed. If a change in weight location is made, the display will automatically update weight amounts.



2. Pull distance gauge out to meet the wheel lip at the point where weight would be mounted. Read the gauge and press the DISTANCE button. Use the numbered keypad to enter the number shown.



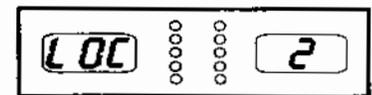
3. Measure width of the wheel with the width calipers. Press the WIDTH button, and enter the number(s) using the numbered keypad.

4. Read wheel diameter printed on the tire side wall. Press the DIAMETER button and enter numbers using the keypad.

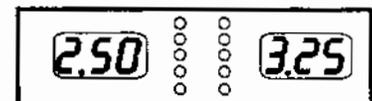
5. Press the green SPIN button on the keypad. The LED display shows "SPN", prompting the operator to begin the spin cycle.

6. Using the wing nut handles, hand spin the balancer wheel assembly up to speed. When the necessary shaft speed is obtained the computer will beep momentarily and display three dashes in the display window. Release the hand spin action and allow the wheel to coast as the balancer calculates imbalance and corrective weight locations.

7. The balancer will display "LOC" in the left display and the "selected balancing mode" in the right display as the computer makes its calculations.



8. When the weight amounts appear on the LED display the calculations are completed. Bring the wheel assembly to a stop using the foot operated brake.



9. Rotate wheel by hand until the inner row of LED's settles in the middle position indicated by a green LED. Attach weight called for at top dead center on the inside plane of the rim. Repeat wheel rotation for outer row of LED's until the middle green LED is illuminated and attach required weight at top dead center on the outer rim plane.

10. Hand spin the wheel again to perform a check spin. The wheel should have zero imbalance remaining. If necessary, add additional weights to balance to zero.

## CALIBRATION

The JBC Model 3.2 Balancer should be calibrated with scheduled frequency and after any service work is performed. It is recommended the balancer be calibrated at least weekly. Climates with wide temperature swings or humidity changes can be a source of inaccurate readings. In these cases we recommend calibrating daily to maximize system accuracy.

1) Place a tire/wheel assembly on the balancer shaft, using proper adapters. This is necessary to provide shaft momentum during spin. It should be pre-balanced to within 1.0 ounce in each plane.

**The wheel parameters: distance, width and diameter must be entered into the balancer before starting calibration.**

2) Press F1 and ENTER (the Green Key with the arrow).

3) The display will read "CAL SLU". Attach the calibration weight in the threaded hole from the inside edge. *Figure 1*

4) Press ENTER, "SLU BDC" will be displayed.

**IMPORTANT!!** - Rotate the wheel one full revolution and then rotate until the calibration slug to the 6 o'clock position (bottom dead center). Hold this position with the foot operated brake and press ENTER. SPN will be displayed.

5) Using the hand crank spin the wheel assembly fast enough so the display changes to DASHES ( --- --- ). The balancer will sound a "beep" then display "CAL ---" while it is taking readings.

6) When the display changes to "SLU OFF", stop the wheel assembly with the foot brake, and **remove** the calibration weight and re-spin the wheel. *Figure 2.*

The balancer displays "CAL ---" while it is taking readings.

7) When calibration is complete the computer will display "EC" while writing to the memory, calibration is verified by the computer and the display will then read "CAL PAS".

If the display reads "shf imb" meaning shaft is unbalanced, or If the display reads "CAL ERR" it is likely that the calibration procedure was not followed correctly. If re-calibration is still unsuccessful contact your JBC Service Representative for service or technical assistance.

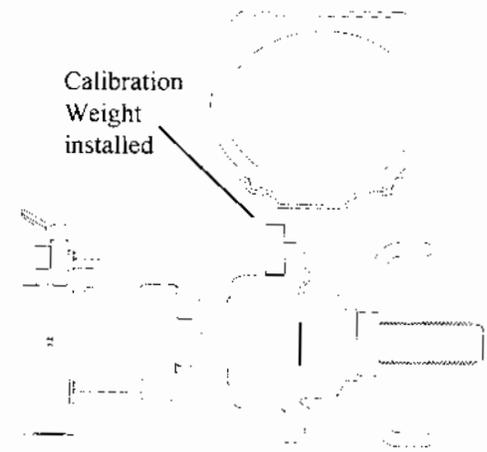


Figure 1

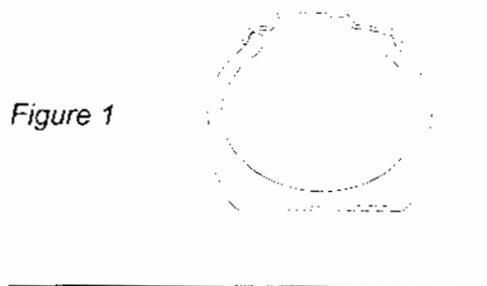
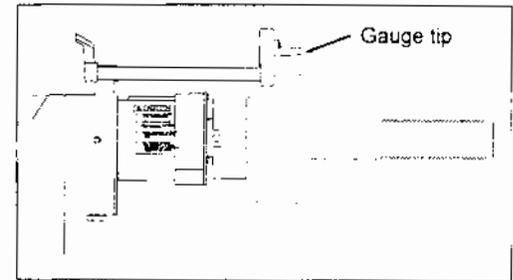


Figure 2

## DISTANCE GAUGE CALIBRATION

- 1) Remove tire/wheel assembly from the shaft if installed.
- 2) Press **F12** and **ENTER**
- 3) Display will read **CAL DIS**.
- 4) Press **ENTER** again, and the display will have **3 DASHES** in the left window and a number in the right display.



- 5) Position the distance gauge so the tip of it is against the back of the bell face. Read the distance gauge number and enter the number on the keyboard. The unit automatically exits this routine as last digit is entered.

## F-Codes

F-codes are used to enable additional balancer functions and to access operator setup options and self-diagnostic routines. All are begun by pressing F followed by the desired number.

- F0 - Recalculates weight values for new wheel parameters
- F1 - Initiates shaft calibration procedure
- F2 - Switch to round-off readings - all weight values shown in 0.25 oz. increments (5 grams)
- F3 - Switch to nonround-off readings - all weight values shown in 0.05 oz. increments (1gram)
- F4 - Switch to display in ounces
- F5 - Switch to display in grams
- F7 - Switch between metric & Standard wheel diameter entry
- F8 - Switch between FINE MODE ON & FINE MODE OFF (should be OFF in most operations)
- F12 - Calibrate Distance gauge
- F15 - Display current threshold value (default < 6.50 = 0) grams mode only
- F16 - Return threshold to default setting
- F30 - Run DISPLAY TEST
- F31 - Run KEYBOARD TEST

## Maintenance and Care

Always maintain the work area in a clean and clear manner. Clutter has the tendency to attract undue dirt and dust. A clean and clear work area is safer. Periodically clean the display surfaces by wiping with a soft rag and appropriate cleaner. Never use a petroleum based cleaner or one which leaves an oily residue. Do not use brake cleaner!

Maintain the weight tray and cone storage area in a clean, clear manner. Occasionally clear out old and discarded weights and accumulated dirt/debris. Dispose of lead weights in a proper manner. Do not spray water on or at this machine.

Do not use non-John Bean recommended mounting adapters - tolerances may not be to designed standards. Examine cones for nicks and grooves and excessive play on shaft.

Wipe the shaft threads and faceplate occasionally with a bristle brush followed by an oily rag.



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