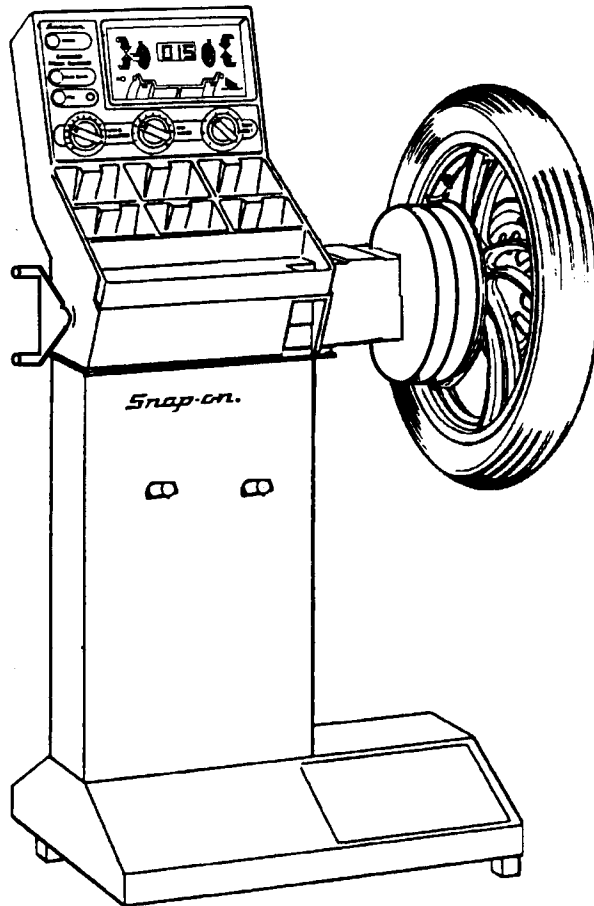


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# User's Manual

## WBM250



### *Motorcycle Wheel Balancer*

***Snap-on***®



## Safety Cautions and Warnings

Before operating the balancer for the first time, review the following safety precautions.

1. Wheel balancers can cause flying particles. **Wear safety goggles while using wheel balancers.** Flying particles can cause eye injury.
  2. Make sure the power switch on the left rear of the balancer is OFF before plugging or unplugging the balancer.
  3. The standard power converter supplied with the WBM250 balancer operates from a 115 vac, 50/60 Hz power source and converts the line voltage to 8.5 vac. The balancer may also operate directly from 12 vdc. Other converters are available.
  4. The balancer automatically returns to the *Normal* balancing mode if power is interrupted.
  5. Make sure the balancer is sitting on all three feet on a clean, level floor with no debris under the base.
  6. Remove all stones, old weights, heavy dirt, and other debris from the wheel before balancing.
  8. Do not attempt to balance a cracked, badly bent, or otherwise severely damaged wheel.
  9. Make sure that the wheel is centered and tightened securely on the balancer shaft before spinning.
  10. Make sure that all wheel weights are properly applied and secured.
- 

The information and specifications in this manual are based on the latest information available at the time of publication. The balancer manufacturer and the vehicle manufacturers reserve the right to make equipment changes at any time without notice.

**First Edition: January 1994**  
(revised March 1994)

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# WBM250 User's Manual

## Contents

	Page
<b>Installation and Setup</b> .....	<b>2</b>
<b>Introduction</b> .....	<b>3</b>
Features .....	3
Description .....	3
Accessories .....	4
<b>Balancer Controls and Indicators</b> .....	<b>5</b>
<b>Balancing Operation</b> .....	<b>6</b>
Operating summary .....	6
Balancing errors .....	7
<b>Motorcycle Rims and Weights</b> .....	<b>8</b>
Types of Wheel Weight .....	8
Static balancing .....	8
Aftermarket Wheels For Harley-Davidson Motorcycles .....	8
<b>Automatic Calibration</b> .....	<b>9</b>
Calibration procedure .....	9
Calibration error .....	9
<b>Wheel Mounting Methods</b> .....	<b>10</b>
Mounting errors .....	10
Rotational errors .....	10
<b>Tire and Wheel Matching (Weight Compensation)</b> .....	<b>11</b>
<b>Specifications</b> .....	<b>12</b>
<b>WBM250 Parts List</b> .....	<b>12</b>
<b>Service and Repairs</b> .....	<b>14</b>
Preventive maintenance .....	14
Printed Circuit Board and Display Panel Removal .....	14
Control Housing Removal .....	15
Measuring Head and Sensor Panel Removal .....	15
Brake Adjustment .....	16

For service or parts assistance, call: 1-(800) 362-4604

# INSTALLATION and SETUP

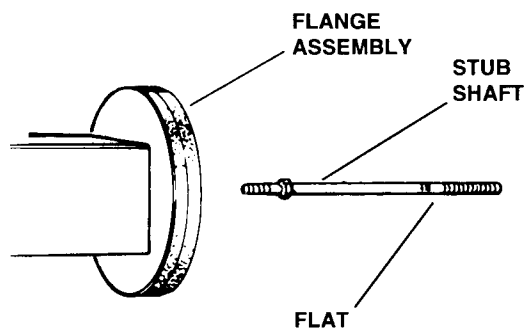
1. Unpack the balancer and all accessories.
2. Check the contents list below and confirm that all standard accessories are present

Qty	Item
1	Balancer Assembly
1	Stub Shaft
1	Ring Nut
2	Cones
1	Cone Spring
1	Caliper
1	Handle with Bolt

3. Place the balancer on a firm solid floor.
4. Proceed with stub shaft and handle installation.

## Stub Shaft Installation

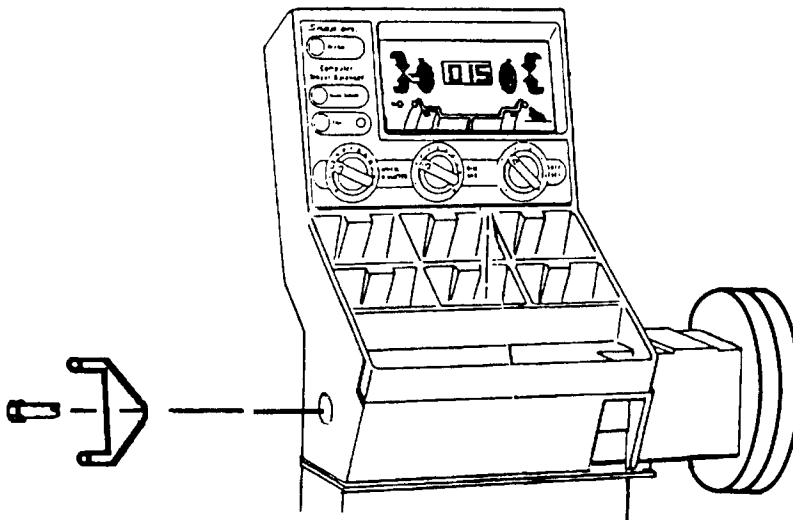
Install the stub shaft through the hole in the center of the flange assembly.



While holding the flange assembly stationary, position a 7/16-inch wrench on the flat on the stub shaft and tighten the shaft to 50—70 inch/lbs.

## Handle Installation

Insert the handle bolt through the hole in the handle. Position the handle in the proper mounting position on the left side of the balancer and rotate the flange assembly counterclockwise until the handle bolt tightens and the handle is secure.



# INTRODUCTION

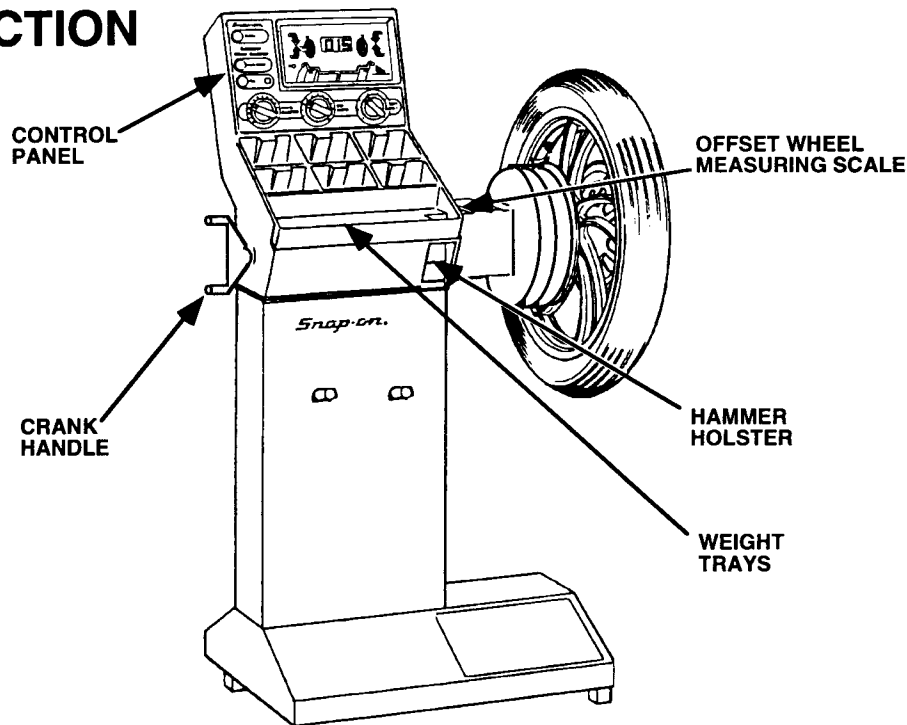


Figure 1. The WBM250 is a hand-spun precision wheel balancer.

The Snap-on WBM250 computerized motorcycle wheel balancer combines state-of-the-art electronic accuracy with ease of use and simplicity of design. The WBM250 is a static and dynamic wheel balancer. Your Snap-on balancer will give you years of reliable operation and wheel balancing profits. Take a few minutes to study this manual before operating your Snap-on balancer for the first time.

## FEATURES

The Snap-on WBM250 represents today's most advanced concepts in wheel balancing with these high-precision features:

- **Safe, accurate, low-speed operation** — Balance wheels to 0.10-ounce (2-gram) accuracy at an operating speed of only 90 rpm.
- **Fast and simple** — With a single spin cycle of only 7 seconds and a large display that shows the exact weight requirement and location, the Snap-on balancer promote productivity and profits.
- **Electronic simplicity** — All major components can be replaced in the field, and the automatic self-calibration program allows the balancer to calibrate itself with little or no downtime.
- **Automatic recalculation** — Automatic weight recalculation for all balancing modes; no need to re-spin a wheel for new balance readings.

## DESCRIPTION

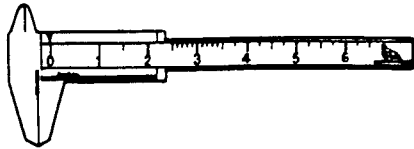
The WBM250 is a hand-spun motorcycle wheel balancer. All measurement entries and results are displayed on an easy-to-read control panel with bright, light-emitting diode (LED) indicators. This, plus the other following features, allows any operator to balance wheels and tires in the shortest possible time with the highest accuracy.

- **Control Panel** — The panel and the LED indicators display the rim dimensions and operating mode selected by the operator, as well as the results of the balancing operation.
- **Crank Handle** — Permanently fixed handle to quickly and easily spin wheel to 90 rpm.
- **Weight Trays and Hammer Holster** — Trays for holding assorted weights and a weight hammer holster are located at operator working level.
- **Offset (Wheel Distance) Measuring Scale** — Only required for dynamic balancing, this quickly and accurately measures the wheel position on the balancer. Conveniently located in a fixed position at right side of housing.

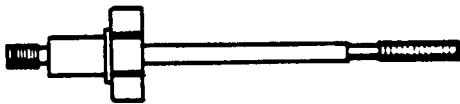
## ACCESSORIES

Your Snap-on balancer is equipped with the standard accessories listed below. Several optional accessories also are available.

### Standard



Motorcycle Wheel Caliper (WBM8430-02)



14mm x 10.5-inch spindle assembly (WBM1400-01)



14mm Ring Nut  
(WBM1388)



Cone (2 ea)  
(WBM1387)



Conical Spring  
(WBM1412)

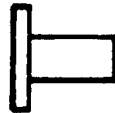
### Optional



14mm x 12-inch spindle assembly (WBM1400-02)



12mm spindle kit (WBM1515)  
Includes: 1 spindle assembly (WBM1482),  
1 ring nut (WBM1480)



Wheel Mounting Bushings:  
15mm, 2 ea (WBM1486-01)  
17mm, 2 ea (WBM1486-02)  
19mm, 2 ea (WBM1486-03)  
20mm, 2 ea (WBM1486-04)



Honda Cone Set  
(2 each)  
(WBM2483)

*For special applications, contact your local Snap-on Dealer, or call 1-800-362-4604*

# BALANCER CONTROLS AND INDICATORS

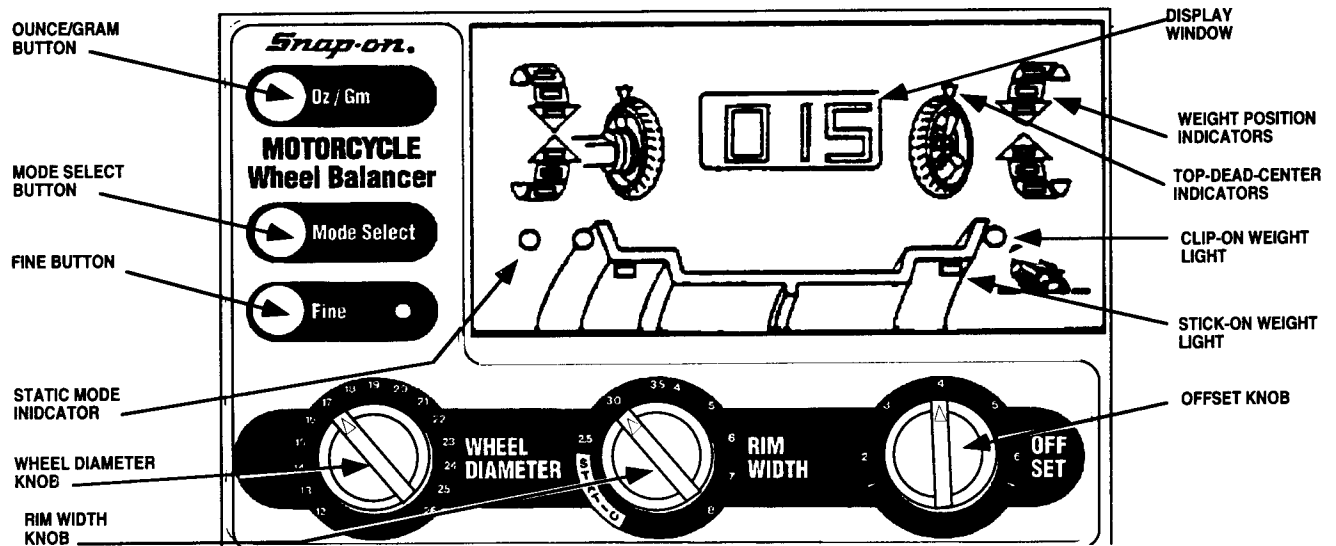


FIGURE 2. Balancer controls and indicators.

- Ounce/Gram Button —**  
 The Ounce/Gram button alternately changes displayed readings from ounces to grams. The power up defaults to the last setting.
- Mode Select Button —**  
 The mode select button toggles between the two weight types: outer clip-on and outer stick-on.
- Static Light —**  
 Red LED lights when in static mode.
- Clip-on weight Light —**  
 Two green LED's light when in dynamic mode, one lights when in static mode.
- Stick-on weight Light —**  
 Two yellow LED's light when in dynamic mode, one lights when in static mode.
- Fine Button —**  
 Fine can be used with any mode selection. When Fine is selected, the Fine mode indicator lights and all displayed measurements are accurate within 0.10 ounce (2 grams).
- WHEEL DIAMETER Knob —**  
 Turn the WHEEL DIAMETER knob to set rim diameter. Read the selection in the display window. Suitable for diameters from 12 to 26 inches.
- RIM WIDTH Knob —**  
 Turn the RIMWIDTH knob to set rim width. Read the selection in the display window. Suitable for widths from 2.5 to 8 inches.
- OFFSET Knob —**  
 Turn the OFFSET knob to set rim offset, or distance. Read the selection in the display window. Suitable for offset from 2 to 6.5 inches.
- Display Window —**  
 The LED's in the display window indicate the diameter selection as it is entered into the balancer. After the balance spin, the display window indicates the weight (in grams or ounces as selected) to be attached at top dead center on the rim.
- Weight Position Indicators —**  
 These arrows light sequentially as the correct position for weight placement is approached.
- Top-Dead-Center Indicators —**  
 The Top-Dead-Center indicator for the inner or outer rim flange lights when all six arrow lamps are on for the inner or outer weight placement.

To enter calibration, press and hold the Fine and Mode buttons for 2 to 3 seconds. Refer to the Automatic Calibration section for more details.

# BALANCING OPERATION

Operation of your Snap-on balancer is based on LED indicators on the control panel three soft-touch buttons and three control knobs that allow you to enter all information needed for precision balancing. The display indicates dimensions as they are entered.

## Operating Summary

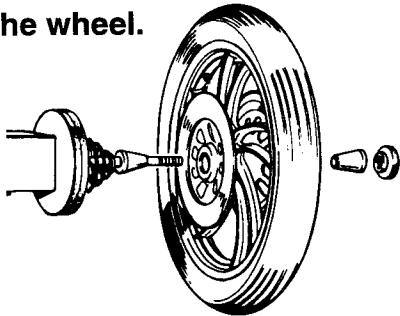
The following summary covers the nine main steps for fast, accurate wheel balancing with your Snap-on balancer. Later sections of this manual contain detailed information on all balancing modes and wheel mounting methods for your Snap-on balancer.

### WARNING

- Wheel balancers can cause flying particles. **Wear safety goggles while using wheel balancers.** Flying particles can cause eye injury.

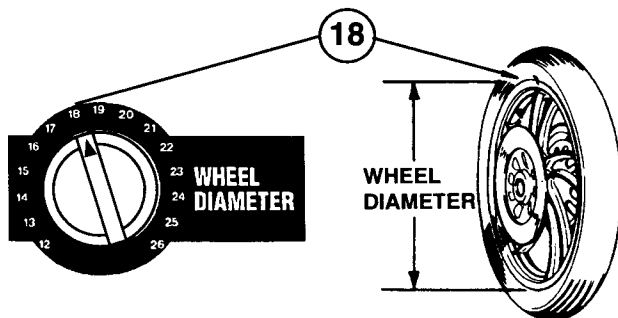
1. Make sure the power switch is ON.

2. Mount the wheel.



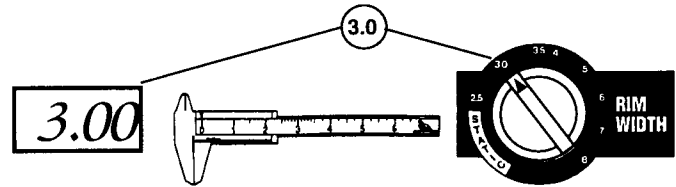
- Place the conical spring on the shaft as shown.
- Slide a cone on the shaft against the spring.
- Mount the wheel on the shaft with the brake drum or disc towards the flange.
- Slide a second cone onto the shaft, attach the ring nut and tighten moderately. The ring nut only needs to be tight enough to keep the wheel from spinning after the brake is applied.

3. Set the WHEEL DIAMETER knob to the diameter shown on the sidewall.



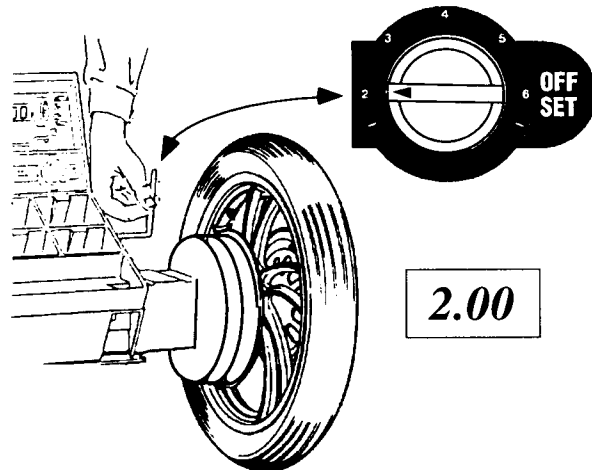
The display will show the selected diameter.

4. Measure the wheel width with a caliper.



Adjust the RIM WIDTH knob to the correct setting, as shown on the display.

5. Set the rim offset, as follows:

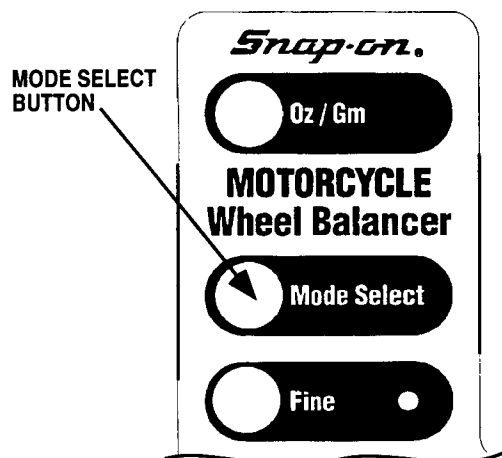


The display will show the selected offset.

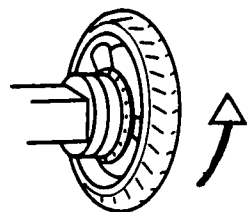
- Pull the rim offset gauge arm out and position the tip against the rim flange surface (regardless of where the inner weight will be placed).
- Read the rim distance value off the gauge arm at the point where it enters into the housing.
- Set the RIM DISTANCE knob to the rim distance value.



## 6. Select the balancing mode.



## 7. Spin the wheel.



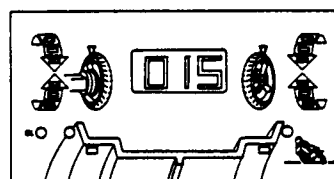
Spin the wheel by hand using the crank handle. Turn the crank handle counterclockwise until the balancer beeps and the display goes blank. Immediately release the handle and allow the wheel to spin freely until the measuring cycle is complete and the spinning stops.

Normal balance speed is approximately 90 rpm. If spun too fast, the buzzer will sound continuously until the wheel slows to proper measurement speed. The balancer will function normally even when a wheel is spun too fast. However, balancer cycle time will increase.

If the wheel is handspun in the wrong direction (clockwise), EEE will appear on the display and the brake will not function. Turning the wheel counterclockwise will remove EEE from the display and allow the balancer to function properly.

Do not interfere with the machine during the measuring cycle or wrong readings can occur.

## 8. Attach the weight:



- Starting with either side of the wheel, rotate the wheel in the direction of the lit arrow until both arrows light indicating the correct position. The top-dead-center light and the correct weight will be displayed.
- Securely apply the indicated weight at the top-dead-center location.
- Repeat 8a and 8b for the other side of the wheel. Make sure that the weights will clear the motorcycle disc brake caliper.

Refer to Motorcycle Rims and Weights later in this book for more information.

## 9. Do a check spin.

Repeat the spin cycle. Zero weight readings should appear for both sides of the rim.

**OPTIONAL: Fine balance to 0.10-ounce (2 gram) accuracy** — Standard balancing in all modes indicates weight in 0.25-ounce increments to a final accuracy of 0.25-ounce (5 gram). Press the Fine button at the left side of the control panel for final balancing to 0.10-ounce (2 gram) accuracy.

***It is not necessary to spin the wheel again.*** The balancer calculates the fine balancing requirements from the previous measurements, and the display will show weight requirements to a final accuracy of 0.10-ounce (2-grams).

## Balancing Errors

If you handspin the wheel in the wrong direction — *clockwise* — during balancing, the EEE message appears on the display as explained in step 7 above. Although not common, other errors may occur during a balancing cycle. For example, the measurement cycle may be aborted by stopping the wheel too soon.

When a balancing error occurs, the EEE message appears on the display. You can clear any error by spinning the wheel up to balancing speed.

# MOTORCYCLE RIMS AND WEIGHTS

The Snap-on WBM250 motorcycle wheel balancer features two different weight modes, one for clip-on weights, and one for stick-on weights. In addition, the WBM250 does static balancing, as well as dynamic balancing.

## Types of Wheel Weight

There are four types of wheel weight combinations available:

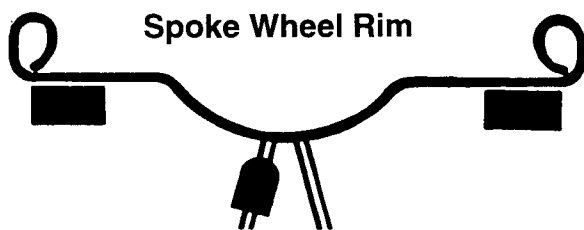
1. Clip-on weights for the outer wheel rim. This method is suitable for static and dynamic balancing.
2. Clip-on weights for the center spine of the wheel rim. This method is can be used for static balancing only.
3. Spoke wheel weights which are applied to the spoke at the rim intersection. This method can be used for static balancing only.
4. Stick-on weights are applied to rims that have adequate flat space parallel to the tire tread. This method can be used for static and dynamic wheel balancing.

Never apply stick-on weights to the outside edge of the rim. The weights can fly off and cause injury or damage.

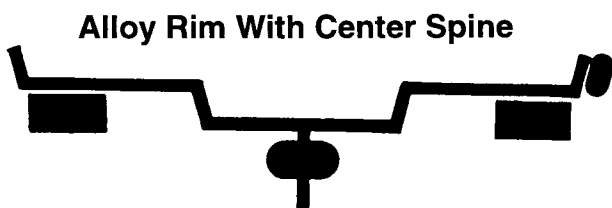
Make sure the rim area where the weight is applied is free of dirt, grease, and loose paint. To install a stick-on weight, remove the protective cover from the weight and firmly apply in place.

When large balance weights are used for static balancing, split the balance weight and apply equal weight top-dead-center on both sides of the rim.

## Rim Types



Weight can be applied to the spoke, or stick-on weights can be applied to the flats.



Clip-on weights can be applied to the center spine or the outside rim; stick-on weights to flats.

## Alloy Rim



Clip-on weights can be applied to the outside rim. Stick-on weights can be applied to side flats or center flats. If stick-on weights are used on the center flat, the balancer should be operated in the static mode.

## Static Balancing

For static balancing, the rim width and offset dimensions do not need to be entered into the balancer. Simply enter the wheel diameter and press the Mode Select button to select the static balancing mode. After the spin cycle, the inner weight LED's and TDC indicator will light to show the required weight amount and location. The weight can be placed on the inner or outer rim flange or toward the center of the rim. The amount of weight also can be divided equally between the inner and outer rim flanges.

If you enter the rim width, offset, and diameter and spin the wheel in the *Normal* balancing mode, you can select the static mode after the spin cycle; and the balancer will recalculate the amount and location of the weight for static balancing.

## Aftermarket Wheels For Harley-Davidson Motorcycles

These Harley-Davidson models have solid wheels:

- Fat-boy (front and rear)
- Custom Softail (rear only)
- F/X Low Rider (rear only)

Wheels for these motorcycles are available in the following sizes:

- 16" x 3.0", 3.5", or 4.0" (rear only)
- 18" x 2.125" or 2.5" (front only)
- 21" x 2.125" (front only)

Rim width for these wheels should be entered as 3.00 inches during dynamic, normal balancing.

These wheels are also available from the following aftermarket manufacturers:

- Rev Tech
- Accel
- Centerline
- Performance Machine

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# AUTOMATIC CALIBRATION

The Snap-on WBM250 motorcycle wheel balancer is calibrated by computer before shipment and should not require recalibration in normal service. If the electronics assembly or the back panel assembly is replaced, however, the balancer should be recalibrated. Additionally, if balancing results appear to be irregular, the balancer may require recalibration. The WBM250 contains a program for automatic self-calibration, which can be performed in about the same time that it takes to balance a single wheel.

## Calibration Procedure

Follow this procedure to calibrate your balancer:

### 1. Fine balance a wheel

Fine balance a wheel as explained in the *Balancing Operation* section. Use a wheel of the kind and size normally balanced on the balancer.

To fine balance a wheel after standard balancing to 0.10-ounce accuracy, press the Fine button on the control panel. Then attach additional weight as indicated for fine balancing to 0.10-ounce accuracy.

### 2. Attach a 3-ounce (100-gram) weight.

Rotate the wheel until both outer position arrows and the top-dead-center indicator light. Attach a 3-ounce weight (or 100-gram, depending on the selected measurement units) to the outer wheel rim at TDC.

### 3. Enter the calibration program.

With 000 displayed, press and *hold* the Fine button. While *holding* the Fine button, press the Mode Select button for 3 to 4 seconds. When the balancer enters the calibration program, the display will show a flashing CCC.

### 4. Spin the wheel at least four times.

Spin the wheel using the normal balancing cycle.

Turn the hub handle *counterclockwise* until the beeper sounds. Release the handle and let the wheel spin freely until the cycle is complete (approximately 7 seconds). The brake engages automatically.

If you spin the wheel too fast, the buzzer will sound continuously until the wheel slows to measuring speed. The calibration program operates normally and accurately, but calibration time will be increased.

After the wheel stops and the flashing CCC message reappears, spin the wheel again. Calibration usually requires four consecutive, accurate spins.

After the final accurate spin, the calibration weight (3.00 oz) will appear on the display. Calibration is now complete.

### 5. Remove the calibration weight.

After successful calibration, the balancer stores the new calibration values in memory. Remove the calibration weight from the wheel and proceed with normal operation of your balancer.

If calibration is stopped before completion, the original (previous) calibration values are retained.

## Calibration Error

If an error occurs during any of the spin cycles, the EEE error message appears on the display. The calibration program is aborted, and the balancer retains the previous calibration values.

The EEE error message may result from using an incorrect calibration weight. Accidentally bumping the balancer during calibration also could cause an error message. To correct a calibration error, remove the calibration weight and spin the wheel to remove the EEE's. Then, verify that the wheel is still balanced and repeat the calibration procedure.

If calibration fails, try the calibration program again from the beginning. Changing the wheel and the 3-ounce calibration weight may correct a calibration failure. If the balancer repeatedly fails the calibration program, contact your Snap-on dealer for assistance.

**For calibration assistance, call: 1-(800) 362-4604**

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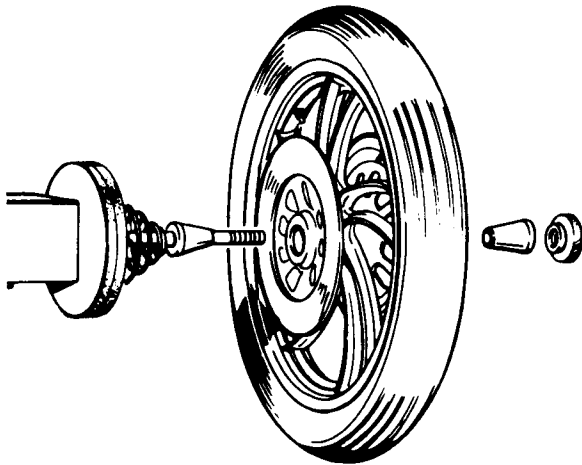
## WHEEL MOUNTING

Careful mounting is essential because the wheel is balanced according to how it is mounted on the balancer. If the wheel is not well centered, it cannot be balanced accurately.

To limit rotational errors, use shaft bushings whenever possible. Correct cones and bushings must be used. The accessories supplied with your Snap-on balancer allow the following wheel mounting methods.

### Mounting Errors

*The wheel must be centered* before balancing. A wheel should be mounted and tightened carefully to ensure proper centering and mating against the flange assembly.



The wheel must be tightened securely to prevent it from slipping in relation to the flange. If the wheel slips on the balancer, accurate weight measurement and location are impossible.

### Rotational Errors

When a wheel is mounted on the balancer, it is fixed in a particular position in relation to the balancer shaft. If the wheel is rotated 180° from the initial position and retightened, a different balance reading may result. Such differences are called *rotational errors*.

When checking balance with the wheel in one position and then rotating it 180° and respinning it, the difference between the two readings could be as much as 0.50 ounce (15 grams) for cone-mounted wheels.

The actual balance error is one-half of the displayed amount because the reading is the sum of the error and the weight required to counterbalance the error.

To do a rotational test, first fine-balance the wheel. Then loosen the wheel on the shaft, rotate it 180°, and retighten the handle. Spin the wheel in the normal balance mode to check for rotational errors.

---

## TIRE AND WHEEL MATCHING (Weight Compensation)

Wheel balancing can sometimes be improved by wheel and tire matching, or adjusting the tire position on the wheel to compensate for light and heavy spots in the wheel and tire. This may be beneficial if the wheel, or the tire-and-wheel assembly, has visibly noticeable radial runout when spun through a balancing cycle on the balancer. Tire and wheel matching also may aid the balancing operation by reducing the required weight if weight exceeds 4 ounces. If neither of these two conditions exists, tire and wheel matching probably will not significantly improve balancing.

The WBM250 balancer can be used to aid tire and wheel matching in either of the two ways explained below. Weight measurements should be taken in the *STATIC* balance mode. This can be done either by entering just the wheel diameter and spinning the wheel in the static balance mode, or by entering all wheel dimensions and spinning the wheel in a normal balance cycle. Then select the static mode and let the balancer recalculate the static weight measurement.

For either method, begin by removing all old weights and any dirt or debris from the wheel and tire.

### Method One

1. Mount the wheel by itself — without a tire — on the balancer.
2. Spin the wheel for a balance cycle.
3. Note the static weight location indicated by the balancer. This is the light spot of the wheel. Place a chalk mark on the rim at this location.
4. Mount the tire on the wheel and repeat the balance cycle.
5. Again note the static weight location indicated by the balancer. This is the light spot of the wheel and tire combination. Place a chalk mark on the tire at this location.
6. If the light spot of the wheel and the light spot of the wheel-and-tire combination are at the same, or close to the same location, loosen the tire on the rim and rotate it 180 degrees so that the two light spots are opposite each other.
7. Reinstall the wheel and tire on the balancer and proceed with normal dynamic balancing.

If the light spot of the wheel and the light spot of the wheel-and-tire combination are *not* at or close to the same location, balance will not be improved significantly by repositioning the tire on the wheel.

### Method Two

1. Mount the wheel and tire on the balancer and spin the wheel and tire for a balance cycle.
2. If the amount of static imbalance *exceeds 3 ounces* (for any diameter wheel), place chalk marks on the wheel and on the tire at the weight location indicated by the balancer.
3. Remove the wheel and tire from the balancer and loosen the tire on the rim. Rotate it 180 degrees so that the two light spots are opposite each other.
4. Reinstall the wheel and tire on the balancer and proceed with normal dynamic balancing.

If the static imbalance of the wheel-and-tire combination does *not exceed 3 ounces*, balance will not be improved significantly by repositioning the tire on the wheel.

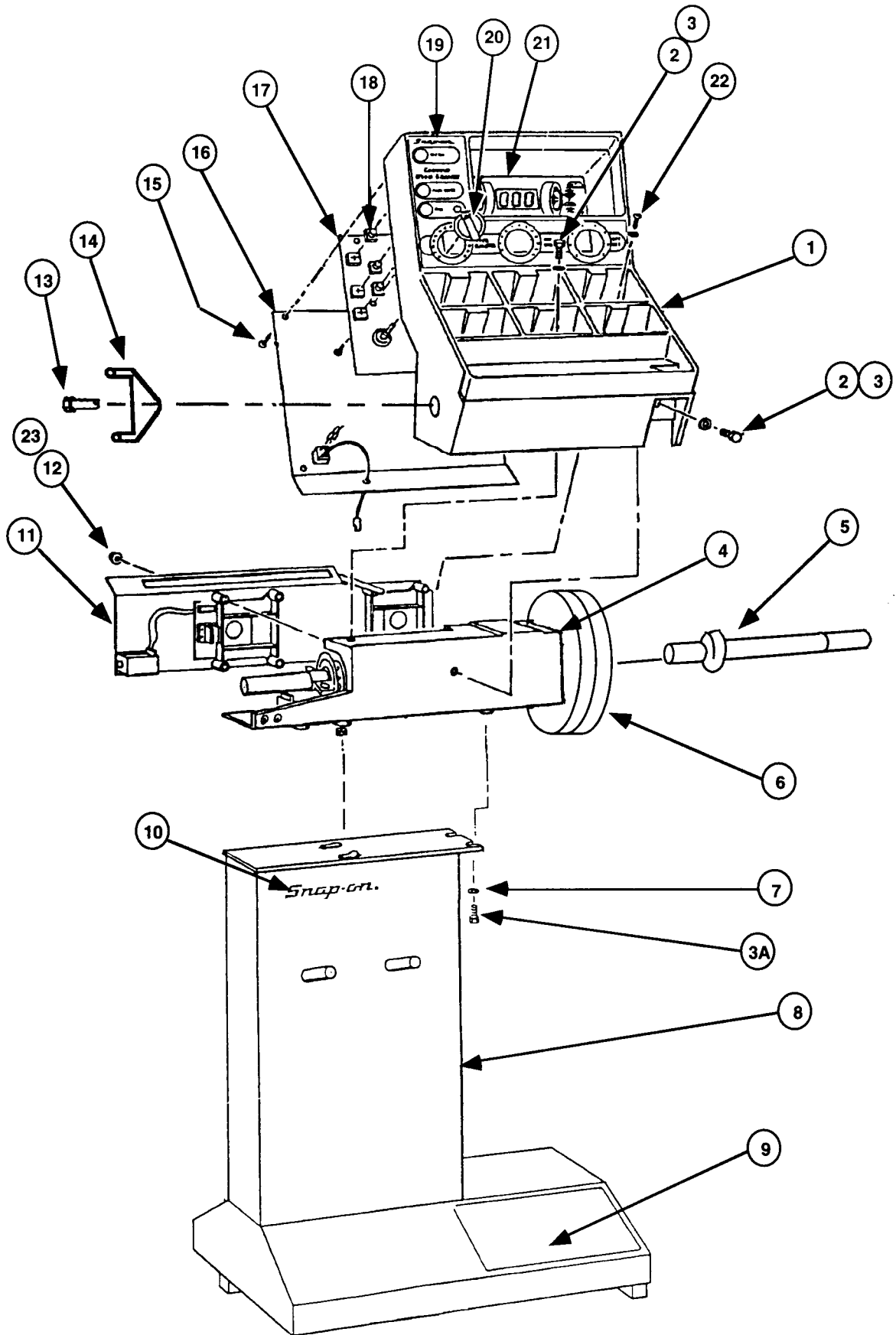
## SPECIFICATIONS

- Dynamic and static balance, twin-plane balance.
- Single spin cycle: approximately 7 seconds.
- Weight displayed in grams or ounces.
- Weight displayed in 0.25-ounce (5-gram) increments for standard balancing in all modes.
- Fine balancing to 0.10 ounce (2 grams) in all modes.
- Automatic weight recalculation with changes in dimensions or mode selection.
- Automatic calibration program.
- Operation from 110/120 volts, 50/60 Hz., or 12 vdc. (Other options are available.)

## WBM250 PARTS LIST (See Assembly Drawing On Next Page)

Item	Part Number	Description	Qty.
1	WBM7553-66	Control Housing	1
2	WB0205-0031	Washer, 5/16" x 7/8"	2
3	WB0102-3118-12	Hexhead Capscrew, 5/16-18 x 3/4"	2
3A	WB0103-3118-12	Sockethead Screw, 5/16-18 x 3/4"	4
4	WBM7675-66	Measuring Head Assembly	1
5	WBM1400-01	Shaft	1
6	WBM1411	Flange Assembly	1
7	WB0205-0032	Washer, 5/16" x 1/2"	4
8	WBM7577-51	Base Weldment	1
9	WBM2905-01	Base Mat	1
10	KN300R	Snap-On Logo Nameplate	1
11	WBM7673-53	Sensor Panel Assembly	1
12	WB0201-0010	Flatwasher, No. 10	9
13	WBM7609	Bolt, Handle	1
14	WBM7607	Handle	1
15	WB0901-0818-08	Screw, 8-18 x 1/2"	7
16	WB2677	Back Cover	1
17	WBM5056-0007-66	PC Board Assembly	1
18	WB8073	Switch Extender	3
19	WBM7699-04	Front Panel	1
20	WB1591-02	Control Knob	3
21	WBM8041-54	Display Window	1
22	WB0907-1214-10	Screw, 12-14 x 5/8"	2
23	WB0302-1032	Hexnut, ESNA 10-32	9
NS	WB1595-01	Weight Tray Label Set, Ounces	1
NS	WB1595-02	Weight Tray Label Set, Grams	1 (optional)
NS	WB6605-0001-01	AC/DC Power Converter	1

For service or parts assistance, call: 1-(800) 362-4604



*The WBM250 precision motorcycle wheel balancer (exploded view).*

# SERVICE AND REPAIRS

Your Snap-on balancer is completely field serviceable. The balancer also can be serviced at your Snap-on service center. If your balancer appears to malfunction (for example, brake does not work, cycle time is too long, modes do not light), reset the computer by turning the power switch OFF and ON. Replacement parts and service assistance are available from your Snap-on dealer. For factory assistance, call: 1-(800) 362-4604.

## Preventive Maintenance

1. Clean mounting adapters, mounting surface, and balancer spindle regularly. Accumulations of grease, oil, and dirt create an out-of-balance condition and cause premature wear.
2. Remove wheel weights and debris from under the balancer. Remove tires, tools, and any parts leaning against the balancer. Make sure the balancer rests only on the three foot pads.
3. Clean the control panel with window cleaner. *Do not* use solvents.

## Printed Circuit Board and Display Panel Removal

Remove and replace the PC board and display panel, figures 3 and 4, as follows:

1. Disconnect ac power from the balancer.
2. Remove the four Phillips screws from the control housing back cover and remove the cover.
3. Disconnect the two cable connectors from the back of the PC board.

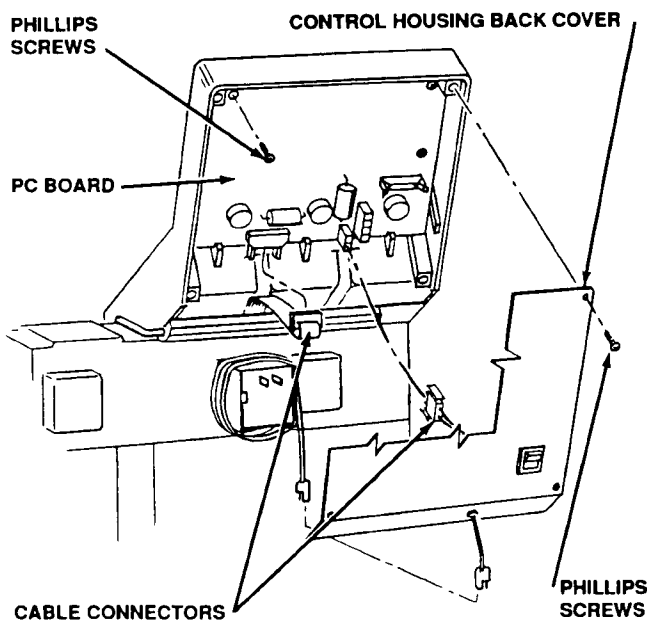


Figure 3. Removing the printed circuit board and display panel (rear view).

4. Pull off the three control knobs from the front panel.

**CAUTION:** Do not loosen the two small nuts on the lower left of the PC board. They secure a transistor and heat sink to the board.

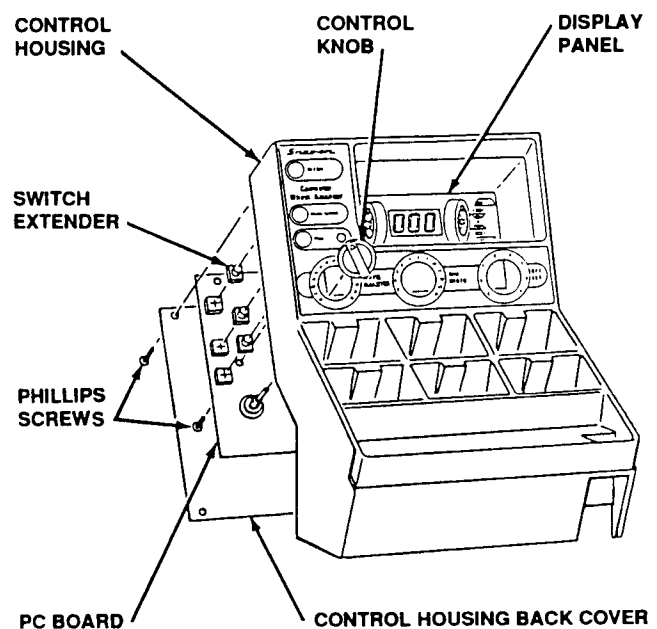


Figure 4. Removing the printed circuit board and display panel (front view).

5. Remove the three Phillips screws from the back of the PC board and remove the PC board and display panel assembly from the housing.
6. Remove the switch extenders from the three pushbuttons on the PC board and install them on the new board.
7. Install the replacement PC board and display assembly, secure with three Phillips screws.
8. Reconnect the two cable connectors to the back of the PC board and reinstall the back cover.
9. Reconnect ac power.



## Control Housing Removal

Remove the control housing, figure 5, as outlined below. Be sure to remove all weights and other material from the trays before removing them from the balancer.

1. Remove the PC board and display panel assemblies as described previously. If you are removing the control housing for access to the measuring head and sensor assembly, leave the control knobs and the PC board and display attached to the control housing.
2. Remove the bolt securing the crank handle to the balancer and remove the crank handle.
3. Use a 1/2-inch socket to remove the two hexhead screws and washers. One screw is located on the lower face of the control housing, the other is located in a weight tray pocket.

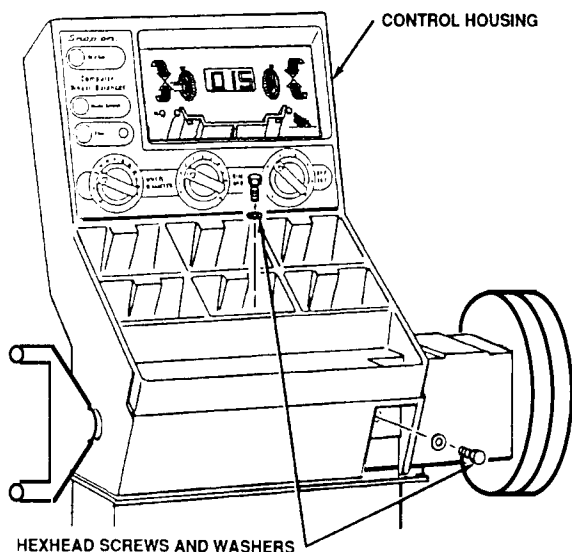


Figure 5. Removing the control housing.

## Measuring Head and Sensor Panel Removal

Remove and replace the measuring head and sensor panel assemblies, figure 6, as follows:

1. Disconnect ac power from the balancer.
2. Remove the control housing as described previously.
3. Use a 1/2-inch open-end wrench, or a 1/4-inch Allen wrench (as required), to *loosen* the two capscrews and washers below the outboard end of the measuring head. The capscrews fit into keyhole slots on the balancer base. Loosen them a few turns; do not remove them.

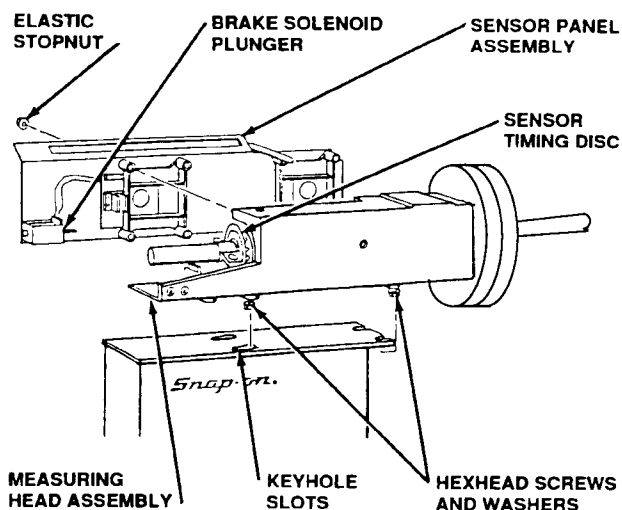


Figure 6. Removing the WBM250 measuring head and sensor panel assemblies (front view).

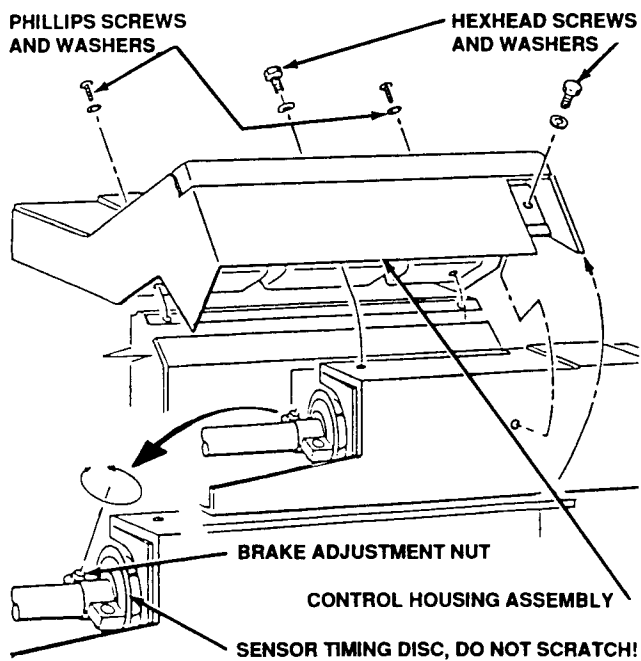
4. Use a 1/2-inch open-end wrench, or a 1/4-inch Allen wrench (as required), to *loosen* the two capscrews below the inboard end of the measuring head. These are located inside the cutout at the rear of the balancer. The capscrews fit into keyhole slots on the balancer base. Loosen them a few turns; do not remove them.
5. Slide the measuring head and sensor panel assembly outboard (toward the spindle) to free the screws from the keyhole slots. Then lift the assembly off the balancer base.

**CAUTION:** Do not scratch the sensor timing disc or get it dirty. Doing so can cause the balancer to malfunction.

6. Use a 3/8-inch wrench to remove the 9 elastic stopnuts (ESNA) from the studs that secure the sensor panel assembly to the measuring head. Then remove the sensor panel assembly.
7. If the measuring head is to be replaced, hold the spindle flange securely and use a 7/16-inch wrench to remove the stub shaft bolt and stub shaft from the spindle. Install the stub shaft on the new measuring head.
8. When reassembling the measuring head and sensor panel assembly, observe the following precautions:
  - a. Move the brake solenoid plunger so it clears the brake.
  - b. Make sure that the sensor timing disc is centered in the sensor slot.
9. Reinstall the assembly on the balancer base.
10. Reinstall the control housing, and reconnect ac power.

## Brake Adjustment

The automatic brake is adjusted and calibrated at the factory and normally does not need readjustment. In general, the brake is adjusted so that a wheel stops in 1-1/2 to 2 turns. If brake application seems incorrect, either too slow or too fast, adjust the brake as follows, figure 7:



**Figure 7. Adjusting the brake.**

1. Disconnect ac power from the balancer.
2. Remove all weights and other material from the control housing.

3. Remove the control housing as described in the section *Control Housing Removal*.
4. Carefully tilt the weight tray and control housing assembly backwards until the brake band is exposed.
5. Support the weight tray and control housing assembly during brake adjustment. Do not let it balance unsupported on the rear of the balancer frame.

**CAUTION:** Do not scratch the sensor timing disc or get it dirty. Doing so can cause the balancer to malfunction.

**NOTE:** One of the two clamping bolt assemblies on the brake band has a steel spacer washer in the brake band opening. The other has a rubber spacer bushing in the brake band opening

6. Locate the brake band clamping bolt with the rubber spacer and use a 1/2-inch wrench to tighten or loosen the nut as required for the desired brake application. Usually one-quarter turn of the clamp nut is enough for proper adjustment.
7. Reposition the control housing assembly on the balancer and reinstall the mounting screws.

### **WHEEL BALANCER FULL WARRANTY**

SNAP-ON INCORPORATED WARRANTS THAT ITS TOOLS ARE FREE FROM DEFECTS IN WORKMANSHIP AND MATERIALS. Snap-on will repair or replace its tools which fail to give satisfactory service due to defective workmanship or materials. Repair or replacement shall be at the election and expense of Snap-on Incorporated. Products must be returned to Snap-on or a Snap-on dealer for warranty service, unless such return is unreasonable.

The warranty for wheel balancers is granted to the original purchaser, and is for two (2) years from the date of the original purchase.

Snap-on does NOT provide any warranty for abnormal use that includes misuse, accident, modification, unreasonable use, neglect, lack of maintenance, use in production-related service, or use after the tool is significantly worn.

SNAP-ON SHALL NOT BE LIABLE FOR ANY INCIDENTAL, SPECIAL OR CONSEQUENTIAL COSTS OR DAMAGES INCURRED BY THE ORIGINAL PURCHASER OR OTHERS (including, without limitation, lost profits, revenues, anticipated sales, business opportunities, goodwill, or interruption of business and any other injury or damage). Some states do not allow the exclusion or limitations of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty is your exclusive remedy and is in place of all other rights and remedies. You may have other rights which vary from state to state or country.

**Snap-on Incorporated**

**Kenosha, WI 53141-1410**

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