
EEWB333A HANDSPIN MOTORCYCLE WHEEL BALANCER

For: MOTORCYCLE WHEELS

Operating Instructions

Form: ZEEWB333A



Snap-on®



SAFETY INFORMATION

**For your safety, read this manual thoroughly
before operating the Model EEWB333A Motorcycle Balancer**

The Model EEWB333A Wheel Balancer is intended for use by properly trained automotive technicians. The safety messages presented in this section and throughout the manual are reminders to the operator to exercise extreme caution when servicing tires with these products.

There are many variations in procedures, techniques, tools, and parts for balancing tires, as well as the skill of the individual doing the work. Because of the vast number of wheel and tire applications and potential uses of the product, the manufacturer cannot possibly anticipate or provide advice or safety messages to cover every situation. It is the automotive technician's responsibility to be knowledgeable of the wheels and tires being serviced. It is essential to use proper service methods in an appropriate and acceptable manner that does not endanger your safety, the safety of others in the work area or the equipment or vehicle being serviced.

It is assumed that, prior to using the Model EEWB333A Wheel Balancer, the operator has a thorough understanding of the wheels and tires being serviced. In addition, it is assumed he has a thorough knowledge of the operation and safety features of the rack, lift, or floor jack being utilized, and has the proper hand and power tools necessary to service the vehicle in a safe manner.

Before using the Model EEWB333A Wheel Balancer, always refer to and follow the safety messages and service procedures provided by the manufacturers of the equipment being used and the vehicle being serviced.



IMPORTANT !! SAVE THESE INSTRUCTIONS -- DO NOT DISCARD !!

IMPORTANT SAFETY INSTRUCTIONS

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

1. Read all instructions.
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 authorized service technician.
3. If an extension cord is used, a cord with a current rating equal to or more than that of the machine 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.
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 with weight pliers.
10. Do not allow unauthorized personnel to operate the equipment.
11. Do not disable the hood safety interlock system or bypass the intended operation.
12. Use only as described in this manual. Use only manufacturer's recommended attachments.
13. Always securely tighten the wing nut before spinning the shaft.
14. ALWAYS WEAR SAFETY GLASSES. Everyday eyeglasses only have impact resistant lenses, they are NOT safety glasses.
15. Balancer is for indoor use only.

SAVE THESE INSTRUCTIONS

1.0 INTRODUCTION

Congratulations on purchasing the **EEWB333A** handspin wheel balancer. This wheel balancer is designed for ease of operation, accuracy, reliability and speed. With a minimum of maintenance and care your wheel balancer will provide many years of trouble-free operation.

Instructions on use, maintenance and operational requirements of the machine are covered in this manual.

**STORE THIS MANUAL IN A SAFE PLACE FOR FUTURE REFERENCE.
READ THIS MANUAL THOROUGHLY BEFORE USING THE MACHINE.**

1.1 SAFETY NOTICE

This manual is a part of the balancer product.

Read carefully all warnings and instructions of this manual since they provide important information concerning safety and maintenance.

1.2 BALANCER APPLICATION

*The Snap-on wheel balancer model **EEWB330A** is intended to be used as equipment to balance car, and light truck wheels within the following range:*

<i>Maximum wheel diameter</i>	<i>:</i>	<i>42" (1067mm)</i>
<i>Maximum wheel width</i>	<i>:</i>	<i>20" (508mm)</i>
<i>Maximum wheel weight</i>	<i>:</i>	<i>70 lbs (32 kg)</i>

This equipment is to be only used in the application for which it is specifically designed. Any other use shall be considered as improper and abusive.

The manufacturer shall not be considered liable for possible damages caused by improper, wrong, or abusive use of this equipment.

1.3 EEWB333A SPECIFICATIONS

ACCURACY

Weight Imbalance Accuracy 10 oz / 2 grams

Weight Placement Resolution .7 degrees

Weight Imbalance Resolution:

Roundoff Mode 25 oz / 5 grams

Non-Roundoff Mode 05 oz / 1 gram

Rim Width Capacity 1"-20" / 25 mm - 508 mm

Rim Diameter Capacity 6"-30"/152 -762mm

Balancing Cycle Time. 15 seconds or less

Shaft Speed at calculation 119 RPM

Electrical 115 1ph, 60Hz, 2A

Required Work Area 60"w x 48"d 1524 x 1219 mm

Shipping Weight,unit/pallet/carton 230lbs/77kg

Shipping Dimensions 48"h 40"w 28"d

Machine Dimensions 40"h 38"w 21"d

Actual Weight with Accessories 174lbs / 79 kg

Operating Temperature Range 32-122F / 0-50C

1.4 FEATURES

- Weight placement accuracy is $\pm .7^\circ$
- Weight imbalance accuracy to 2 grams.
- Self test check with every power up cycle.
- Fast operator calibration.
- Pre-programmed Error Codes indicate procedural errors or safety concerns.

SPEED and DURABILITY

- Automatic distance entry. Simply touch the SAPE arm to the wheel, the distance parameter is automatically entered.
- Quick cycle time.
- Automatic recalculation if weight positions are changed. No need for re-spinning the wheel.
- Weight pocket storage tray.
- Easy-to-Read Data display.
- Easy weight tray access.

SOFTWARE VERSATILITY

- Both dual weight Dynamic and single weight Static capability.
- Built-in spin counter for monitoring balancer productivity.
- Service code access to all Balancer electronic functions for fast, easy diagnosis.
- Operator selectable roundoff mode.
- Ounce / Gram toggle from front panel
- Multiple operator feature allows several operators to recall wheel parameters.

1.5 STANDARD ACCESSORIES

EAK0221J13A Adapter Kit - Figure 1

Ref	Part Number	Qty	Description
1	1412	1	Spring Conical, MC
2	EAK0221J15A	1	Adapter Kit - M/C (see below)
3	3607-01	1	Spring - Conical
4	3609-01	1	Spacer - M/C Shaft
5	7607	1	Spin/Hand Crank Handle
6	EAM0006G16A	1	Bolt - Crank Handle (not shown)
7	8430-02	1	Caliper Accessory - M/C
8	EAA0255J43A	1	Flange Accessory
9	EAM0005D62A	1	Gauge Extension

EAK0221J15A Adapter Kit - Figure 2

10	1387	2	Cone - M/C
11	1388	1	Nut Ring - M/C
12	1389-01	2	Disc - Pressure
13	1389-02	1	Disc - Pressure
14	EAM0003J33A	1	Shaft Accessory - 14mm
15	1401	1	Spring - Adapter M/C

Additional Accessories - Figure 3

16	7-14201A	1	AC Power Adapter
17	EAM0006G01A	4	Pin - Accessory



Figure 1

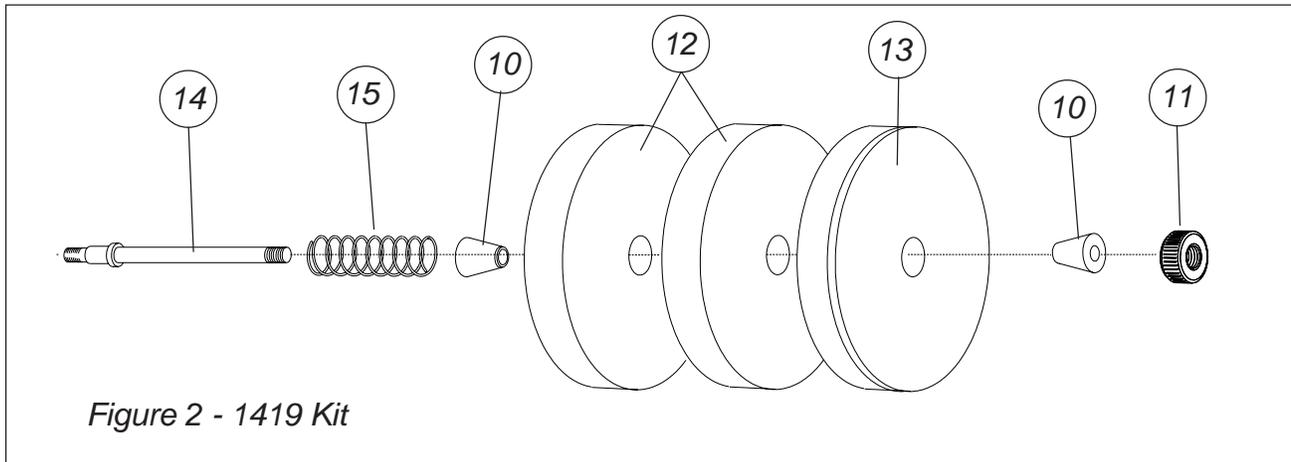


Figure 2 - 1419 Kit

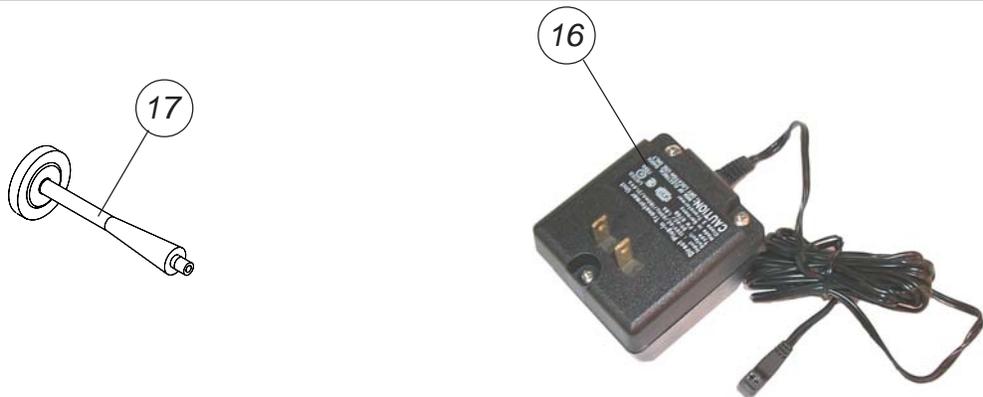


Figure 3

1.7 DIMENSIONS OF THE MACHINE



Figure 4 -Actual Foot print Dimensions.

1.8 REQUIRED INSTALLATION AREA

Make sure that from the operating position the user can see all of the machine and the surrounding area.

The operator should prevent non authorized persons and/or objects from entering the area which may create potential hazards.

The machine should be installed on a stable level floor .Do not install the machine on a uneven floor.

If the balancer is to be installed on a raised floor, the floor must have a capacity of at least 110lbs per sqft.(5000N/m² -500kg/m²).

It is not required to secure the machine to the floor.

Install the machine in a dry, covered area.

The installation of the machine requires a working area of at least 62" x 50" (1574 x 1270 mm) (Figure5).

NOTE: Do not install the balancer below grade level or in a pit.



Figure 5 - Reommened Work Area

1.9 INSTALLATION INSTRUCTIONS

CAUTION! CAREFULLY REMOVE THE BALANCER FROM THE PALLET.

Remove the hardware that secures the machine to the pallet and slide the balancer on to the floor where it is to be installed.

THE UNIT IS HEAVY AND THE WEIGHT IS NOT EVENLY DISTRIBUTED. DROPPING THE UNIT MAY CAUSE PERSONAL INJURY OR EQUIPMENT DAMAGE.

2.0 BALANCER INSTALLATION

Mounting the Shaft Adapter.

IMPORTANT! CHECK THAT THE SURFACES ARE PERFECTLY CLEAN AND NOT DAMAGED. AN INCORRECT MOUNTING MAY RESULT IN SIGNIFICANT IMBALANCE.

A. Mount the threaded shaft onto the arbor of the balancer. Tighten firmly.

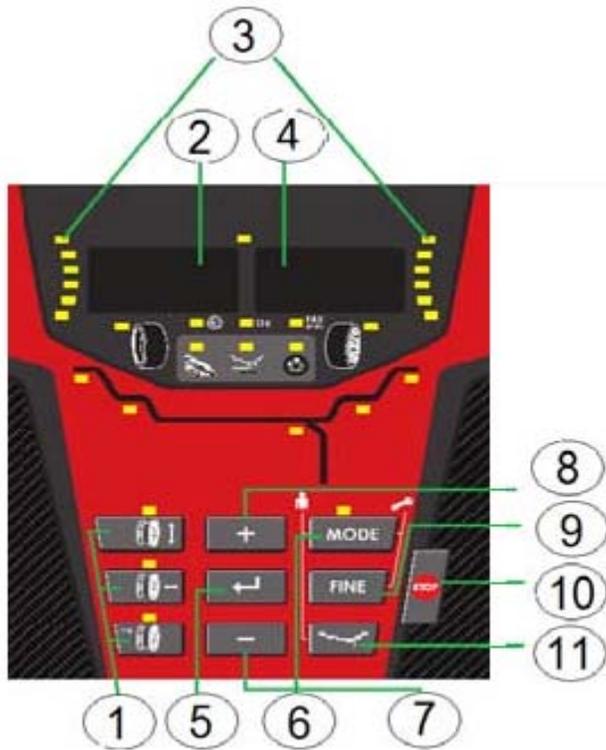


Figure 9

Before using the wheel balancer it is suggested that you become familiar with the terminology and features of the machine's components. Refer to Figures 9 and 10 for identification and location.

1. Parameters-

Rim Offset -Key is used to enter the rim offset position using numbers from the distance gauge.

Rim Width -Press this key to enter the rim width. Use the rim width calipers for measurement.

Rim Diameter-Enter the rim diameter .Read the size stated on the tire sidewall.

2. Inside Weight Amount and Function Display

Window-Shows inside or left weight amount and various operation messages.

3. Position Indicator LEDs -Displays the location for wheel weight placement.

4. Outside Weight Amount and Function Display Window Shows outside or right weight amount and various operation messages.

5. Enter Key –Stores the data.

6. Mode key – Allows the operator to enter the special functions mode. Mode indicators are shown in the grey box below the weight amount display.

7. Minus Key –Reduces the displayed number. Press the enter key to store.

8. Plus Key –Increases the displayed number. Press the enter key to store.

9. Fine mode –Displays the weight amounts in 1 gram increments or ounces in tenths of an ounce.

10. STOP Key –Interrupts the balance cycle .Stops the wheel.

11. ALU-S and Spoke Mode -Activates the ALU-S or Spoke Mode. Each time this button is pressed programming toggles between the two.

2.3 FLANGE ADAPTER INSTALLATION

Mount the flange adapter plate onto the shaft back plate using supplied nuts and washers. Do not over tighten. Refer to Figure 7.

2.4 ARBOR INSTALLATION

IMPORTANT!
CHECK THAT THE SURFACES ARE PERFECTLY CLEAN AND NOT DAMAGED. AN INCORRECT MOUNTING MAY RESULT IN SIGNIFICANT IMBALANCE.

Mount the threaded shaft onto the arbor of the balancer. Tighten firmly, but do not exceed 70 inch lbs. See Figure 7.

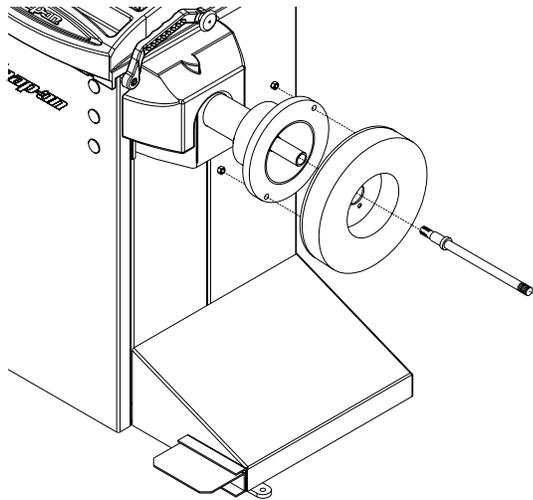


Figure 7

2.5 DISTANCE GAUGE EXTENSION

Mount the Distance gauge extension to the Distance Gauge arm. See Item 9 on page six for photo of the gauge arm extension.

2.5 ELECTRIC INSTALLATION

ANY ELECTRICAL WIRING MUST BE PERFORMED BY LICENSED PERSONNEL.

ALL SERVICE MUST BE PERFORMED BY AN AUTHORIZED SERVICE TECHNICIAN.

Check on the plate of the machine that the electrical specifications of the power source are the same as the machine. The machine uses 115VAC, 50-60Hz, 1Ph, 2.0 Ampere. Plug the AC power adapter into the receptacle on the rear of the machine. See Figure 8

NOTE:

Any electrical outlet installation must be verified by a licensed electrician before connecting the balancer.

Check that the outlet has an automatic ground fault circuit breaker with a differential circuit set at 30 mA.

NOTE:

This machine performs a self-test routine on start-up. There will be a delay of several seconds before the display is activated.

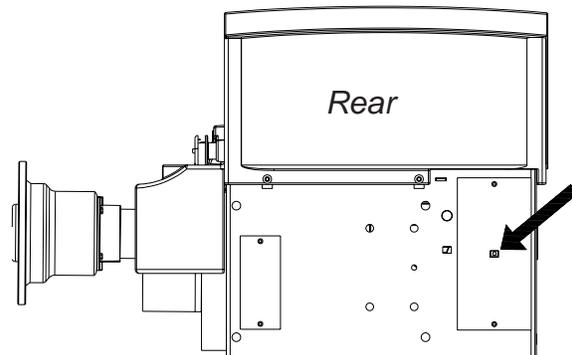


Figure 8

4.0 OPERATION OF THE BALANCER

WARNING: For operator safety please read and follow the precautions outlined on pages 1 and 2 of this manual.

NOTE: Read all instructions before proceeding with operation of the balancer.

All balancer functions are input into the main computer through the large easy to read touch panel. Although each wheel tire assembly differ in some ways all balancing jobs require basically the same procedure. The order of events to take place are:

1. Inspection of the wheel/tire assembly
2. Selection of proper cones or mount
3. Mounting wheel onto shaft or adapter
4. Entry of wheel parameters
5. Spinning the wheel
6. Applying the recommended weight
7. Check spin if desired
8. Dismounting the wheel

The following operation instructions will follow the basic outline above.

4.1 CHECK LIST - INSPECTION

Observe Before Balancing Wheel

1. Check for proper air pressure. If not correct, inflate to correct pressure.
2. Check for any foreign material inside tire. If present, remove before balancing tire.

WATER IS FOREIGN MATERIAL!

1. Remove old weights — old weights may be improper value or in wrong location.
2. Be sure tire and wheel are free of excessive dirt, rust and large stones.
3. Be sure that the right size tire has been mounted on the wheel.

4.2 WHEEL MOUNTING

4.2.1 Standard MC Wheels

A. Mount the wheel on the balancer as follows.

WARNING:

Before performing balancing procedures, inspect the wheel and tire for proper size match. Inspect tire carcass for imperfections, signs of damage, tire plugs, cracks or any other imperfection that could create a hazard in a high performance application.

WARNING:

Always wear proper safety glasses when using a tire balancer. Remove any loose weights before proceeding. Spinning wheel assemblies could cause loose weights to dislodge and strike the operator. Do not allow bystanders near the machine when in operation.

Slide a compression spring and centering cone onto the spindle.

Select additional pressure discs if required, and slide them over the spindle, cone and compression spring. When using the laminated pressure disc, always face the laminated side toward the wheel. e Figure 11. Place the Motorcycle wheel over the spindle, with the brake rotor or closed side of drum facing the pressure disc.

4. Slide the other cone onto the spindle.
5. Make sure the wheel is centered on both cones. Moderately tighten the ring nut with only enough pressure to prevent the wheel from slipping when the brake is applied. To avoid excessive wear on the pressure disc, do not overtighten the ring nut.

NOTE: When powered on, the machine defaults to the motorcycle wheel balancing (MCWB) mode. In the event the mode has been changed, enter P20 to activate the MCWB mode. If P4 adapter calibration has not been performed first, the machine will not enter the MCWB mode and display “do P4” to remind the operator to perform P4 first.

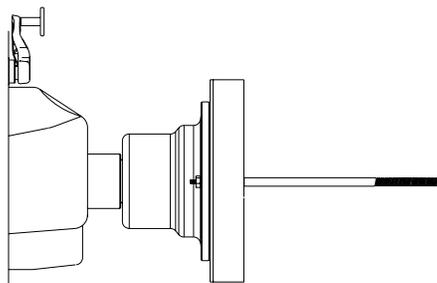


Figure 12

6. To perform a “P4” compensation, first mount the Flange assembly to the shaft as shown in Figure 12. Enter “P4” and press Enter. Then spin the shaft until a tone is heard. A second tone will sound as the shaft brakes to a stop. The adapter is now compensated. See Figure 12.
7. Use SAPE to enter the distance value. Or enter the values manually using the distance gauge scale and by rotating the shaft to enter the desired value. **NOTE:** The display value matches the value read on the gauge rod, however, the actual value entered adds 100 mm to the calculation. See Figure 13.

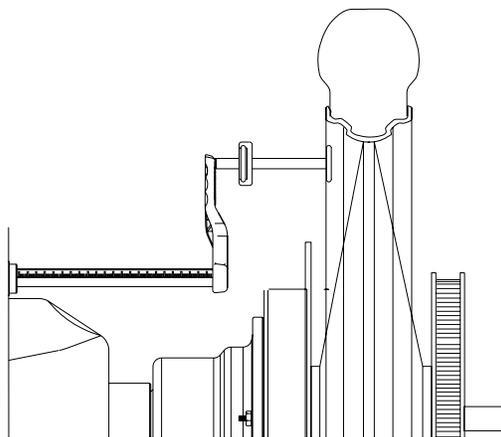


Figure 13

8. Use left and right knobs to enter the width and diameter values.
9. Spin shaft and wheel assembly with the left crank handle up to speed until the tone alert sounds.

NOTE: Disregard any pressure disc runout that may occur. The pressure discs are made of lightweight material and will not affect balancing accuracy.

10. Allow the wheel to spin freely until a second tone is heard. After calculations, the automatic brake will stop the wheel. **NOTE:** Do not lean on the balancer while the wheel is spinning, doing so can cause inaccurate readings.

NOTE: Do not use the foot operated shaft lock as a brake, it is intended to be used only to prevent shaft rotation while placing corrective weights.

11. After the wheel stops, slowly rotate the wheel by hand until center position LED lights. Hold the wheel in this position using the foot brake.

12. Note the displayed imbalance, and place this amount of weight at top dead center.

4.3 MODE SELECTIONS

NOTE: While most “Aluminum” modes are used primarily for automotive applications some can be utilized on wide or “Fat” wheels used on today’s custom motorcycles.

Static unbalance

With purely static imbalance the center of gravity and thus the principal axis of inertia of the wheel is not on the axis of rotation. Due to the unbalanced mass the wheel has a heavy and light side related to the axis of rotation. Static imbalance is compensated for by fitting counterbalance weights to the light side of the wheel, either in the center or on the sides of the rim.

Dynamic unbalance

With purely dynamic imbalance the center of gravity of the wheel is on the axis of rotation, but the principal axis of inertia is inclined relative to the axis of rotation. The unbalanced masses are diagonally opposed to each other and of equal size. To compensate for dynamic imbalance each side of the wheel is considered separately and the imbalances are compensated for separately on each side of the wheel.

Dynamic imbalance is not significant for narrow motor-cycle wheels up to a nominal width or weight separation of 3 inches or less. For these wheels static balancing is sufficient. The majority of MC balancing takes place in the default static mode which is displayed as "STA". Bullet, clip or stick-on weights will be placed on the center of the rim.

If required, select an optional weight placement mode by pressing the *Mode* button until the appropriate placement mode is displayed.

4.4 SELECTING OPERATOR PREFERENCES

4.4.1 FINE BALANCING MODE

This balancer measures with the maximum precision available all the time, 1g / 0.05 oz, however values below 5g / 0.25 oz are shown as zero while in the normal operating mode. Values exceeding 5g / 0.25 oz are rounded to the amount of the nearest commercial wheel weight.

Press the **NORMAL/FINE** button to toggle the display resolution between 5g / 0.25 oz and 1g / 0.05 oz.

When the machine is first turned on it is preset to display the imbalance in ounces.

Press the **OUNCE/GRAM** button to toggle the display between weight in ounces and grams

edge (where a clip weight would be applied) and hold steady for about a second. The beeper will sound and the distance values will be entered automatically. Return the arm to its fully in and down position on the balancer. Do not allow the measurement arm to "dangle" down in front of the balancer.

Manual Distance Entry - In the event of automatic gauge failure, the distance value can be input manually. Move the distance gauge arm to touch the inner edge of the wheel where weights are to be placed and observe the reading on the scale of the distance gauge. Press manual wheel distance button



while entering the value in the display window.

NOTE: For precision balancing of performance wheels, an "ALU-S" Mode is available for precision determination of wheel parameters. This feature allows exacting placement of corrective weights as well.

4.5.2. Measure rim width using rim width calipers. Measure wheel where corrective clip-on weight would be applied. Enter the measured width value in the display.

4.5.3. Rim Diameter - Read the rim diameter marked on the sidewall of the tire. Enter the measured rim diameter value in the display.

4.6 CORRECTION OF THE IMBALANCE

NOTE: Before spinning the wheel make sure proper eye protection is worn by all personnel in the vicinity of the balancer.

A. Use left hand crank handle to spin the wheel up to speed. A tone will sound when sufficient speed is attained. When the balancing cycle is completed the wheel will stop automatically and the imbalance values will appear on the LED's.

NOTE: Do not use the foot operated shaft lock as a brake, it is intended to be used only to prevent shaft rotation while placing corrective weights.

B. Read the imbalance value on the outer display. Values are displayed in ounces but can be displayed in grams if required and are automatically rounded to the nearest commercial wheel weight.

Turn the wheel until the displays of the outer plane imbalance position indicator are illuminated green. Apply the wheel weight at twelve o'clock position. Use the foot operated shaft lock to prevent shaft rotation while placing weights.

C. Correct the imbalance on the inner plane in the same manner.

4.7 VERIFICATION OF THE RESULTS

Spin the wheel again and check that the readout is "0.00" "0.00" If a residual imbalance is displayed:

A. Check the rim parameters, if entered value is incorrect, correct as needed. Imbalance values will be re-computed after re-spinning wheel.

B. Check if the balancing mode selected is the most appropriate. If not, choose the right mode and respin.

C. The wheel weight could have been placed at a wrong position. To check this, position the wheel at the correction position for the outer plane. If the wheel weight previously attached is in sector 'L' or 'R' (Figure 14), move the wheel weight up about 1" (2.54cm).

If the wheel weight is in sector 'D' cut a piece of the wheel weight of an approximate value corresponding to the value shown on the right display, or replace the wheel weight with a lighter one.

If the wheel weight is in sector 'U' add a weight of value indicated by the display or replace the wheel weight with a heavier one. Repeat the same operation for the inner plane.

NOTE: If this situation is repeated, your machine may be out of calibration and a calibration operation might be required as instructed on page 14.

D. If an *ALU* function was selected ensure that the wheel weights have been placed in accordance to the program chosen.

E. Check that the quick nut is tight and that the wheel is not slipping against the backing collar.

F. Check that the wheel and adaptors are clean.

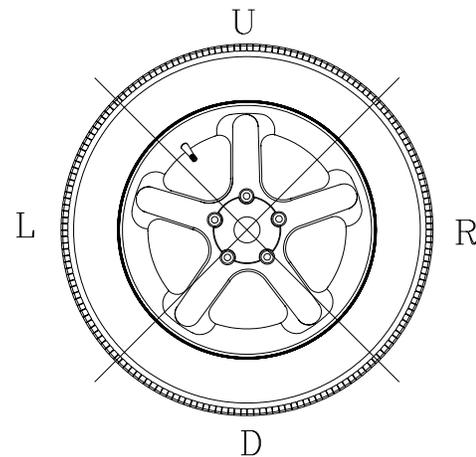


Figure 14

4.8 VIBRATION PROBLEMS

If vibration is still present after balancing, check the following possible sources of vibration:

1. Stones caught in the tire tread.
2. Tire slippage on the wheel.
3. Incorrectly mounted wheel.
4. Imbalanced wheel covers.
5. Excessive radial or lateral runout in the tire or wheel.
6. Damaged wheel bolt holes.
7. Worn universal joints.
8. Imbalanced brake rotors or drums.
9. Worn or damaged balancer accessories.

6.0 Maintenance

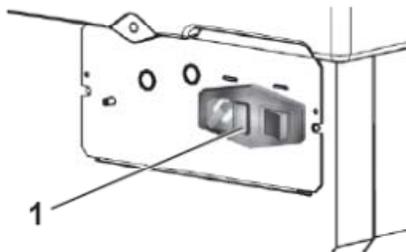
This unit is designed to operate for a long time. If the operator shuts down correctly (5.4.4) at the end of each shift, no further maintenance is required. This unit must not be opened by the operator, except in accordance with explicit instructions.

6.1 Storage

When the unit will be stored for a several weeks or longer, prepare the unit correctly: Shut down the unit properly (5.4.4). Remove the stub shaft from the flange. Apply a light, non-corrosive oil onto all threads and cones. Wrap oiled items in paper to keep the parts dust free. When the unit will be put into use again, clean all oiled parts.

6.2 Changing the main fuse

Refer to Figure 6-1. Switch off the unit. Unplug the power cord from the power outlet. Remove the power cord from the mains cable inlet. Pull out the fuse holder (1). Replace the fuse by an identical rated one. Bring unit back to its original state.



6-1

7.0 Trouble shooting

If a problem arises with the wheel balancer, proceed in the following order to solve the problem:

1. Rethink the last steps taken. Did you work according to the manual? Did the unit work as described and expected?
2. Check the unit according to the points listed in this chapter.
3. Call your Tech Support at 800-225-5876.

The set up of this chapter is:

Problem1.

Possible cause

#1Possible solution(s)

2. Possible cause

#2Possible solution(s)

When switched on, nothing lights up.

1. Power switch in OFF position.

When switched on, nothing lights up.

1. Power switch in OFF position. Set power switch in ON position.
2. No power cable connected. Connect power cable to power outlet.
3. No mains power. Check power supply, power system fuses.
4. Unit fuse(s) blown. Replace unit fuse(s) (6.2). If the fuse(s) has (have) recently been replaced, call service to check the unit.

When switched on, a beep is heard for 1 second.

1. Configuration error.
2. Call Tech Support

Display appears to freeze or lock up.

1. The unit may be in a program, waiting for a specific action.
2. Finish the program currently in use. Switch off the unit. Wait for 20 seconds, switch on the unit.
3. Proceed.2. Power to the balancer may have been interrupted. Switch off the unit. Wait for 20 seconds, switch on the unit.
4. Proceed. If this happens frequently, have your power system checked. If that is okay, call technical service team.

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	<p>5. Gauge arm inputs differ from wheel dimensions stated on rim or tire.</p> <ol style="list-style-type: none">1. Did you position the gauge arm correctly? Refer to Chapter 5.6.1.2. Check the offset input of the gauge arm by entering manually.2. Refer to the scale on the gauge. If not identical, proceed with step 4.3.3. Check the diameter of the spot on the rim where the diameter has been measured. If not identical, proceed with step 4.4.4. Calibration is required. Have the gauge arm calibrated. <p>Balancing results are unreliable.</p> <ol style="list-style-type: none">1. The balancer may not be installed properly. Make sure the unit rests on its 3 feet only. Make sure the floor is not relaying shocks or vibrations, for example from trucks passing close to the unit.2. The wheel may be mounted incorrectly. Check the hub, cones and adapters for play. Use appropriate spacers to eliminate play. Perform measuring unit calibration.3. The electronics are faulty.3. Call service team. <p>A mode or indicator is continuously shown on the screen.</p> <ol style="list-style-type: none">1. A power dip may have occurred. Switch off the unit. Wait for 20 seconds, switch on the unit.2. Call service team
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7.1 System messages

The wheel balancer can show messages to the operator. These may be error related (E-codes) or warnings (H-codes). The codes will be described in the following chapters. Whenever a code appears: Make a note of it; Look up the code in the list. If the code is not described, call Tech Support; perform the steps described. In special cases, or if the need arises, some operating modes or states can be changed by entering the appropriate codes (C Codes).

7.1.1 C Codes

Selecting and changing a code. Example for code C0 (Fig. 7-1). Press and hold down together the "MODE"(7) and "FINE"(8) keys for 7 seconds. The C codes selection condition appears (Fig. 7-2). Press one of the "+"(4) or "-"(6) keys until the readout shows the desired code number (e.g.:C0). Press the ENTER key (5) to acquire the selection. The right number readout shows the current state, e.g.: "0" which in this case means switched off. If the desired state is already on the readout: Press the STOP key (10, Fig. 7-1) once to return to C codes selection (Fig. 7-2), and a second time to definitively exit and return to the operating mode.

If the desired state is not that shown by the readout, but needs selecting, proceed as follows: Press one of the "+" or "-" keys until the right readout shows the desired condition (e.g.: "0"). Now two options are possible:

Option 1

Press the ENTER key to acquire the selection. Press the STOP key to return to the operating mode. The operating mode change is complete and is saved until a new setting is entered. When the machine is switched off the settings are not deleted, and at each subsequent start up they appear as previously set up until changed again.

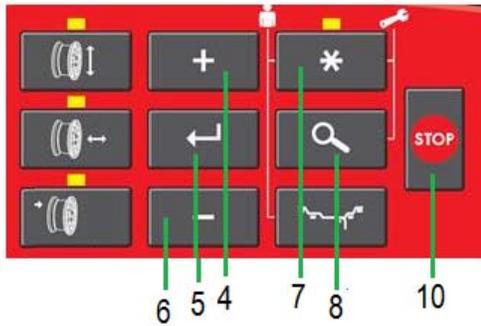


Figure 7.1



Figure 7.2

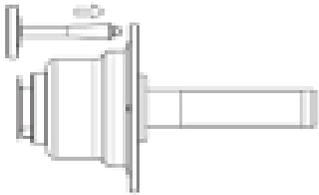
	<p>Option 2 Cancel selection of code C just set and return directly to the operating mode: Press the STOP key twice consecutively.</p> <p>Note: Code C4, Compensation of the clamping means, cannot be transferred to the permanent memory.</p> <p>Below are the change codes available and the relative selections possible.</p> <p>Code C0 Setting operating modes preset by the factory: Select</p> <p>Code C0 Select one of the following options:0* = No action 1 = Set the default values (state 1 appears briefly). Note: The selection is permanently acquired.</p> <p>Code C4 Compensation of residual unbalance, if any, in the clamping means. High precision measurement. Every time the clamping means are substituted, compensation must be deleted or carried out again with the new means fitted. Resetting the operating state to 0 cancels the clamping means compensation. The compensation is also cancelled following:- balancer calibration or recalibration, - unbalance optimization, - balancer switch off.</p> <p>Select Code C4. Select one of the following options: 0 = Carry out compensation 1 = Compensation completed 0 = Switch off compensation again after the measuring run.</p> <p>Note: The present operating mode cannot be transferred to the permanent memory.</p> <p>* = Factory adjusted mode</p>
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	<p>Code C7 Volume of audible signal Scale of volume 0 to 100 (low – high), Normally set to 50* Example: Adjusting the volume to 60. Select Code C7. Set the desired value. Press ENTER Note: The selection is permanently acquired.</p> <p>Code C8 Selecting the limit (threshold) value for suppression of minor unbalance readings in grams, or ounces. The unit of measurement (grams or oz) depends on the setting.</p> <p>5.4.3).Grams: Range 3.50 to 20.0 grams. Factory-adjusted to 5.0* grams. Select another limit, e. g.: 5.50 grams. Select Code C8. Set the value 5.50. Press ENTER.</p> <p>Ounces: Range 0.12 to 0.71 oz Factory-adjusted to 0.18* oz. Select another limit, e. g.: 0.50 oz Select Code C8. Set the value 0.50. Press ENTER Note: The selection is permanently acquired.</p> <p>* = Factory adjusted mode</p>
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	<p>Code C11</p> <p>Main shaft stop position. The positioning brake stops the main shaft close to the correction position by initiating pulsing braking. The positioning brake is activated after switch on and after a measuring run has been carried out and found an unbalance greater than the limit value.</p> <p>Select Code C11. Select one of the following options: 0 = No positioning brake after measuring run. 1* = Positioning brake after measuring run for left plane. = Position brake after measuring run for right plane. Note: The selection is permanently acquired.</p> <p>Code C11</p> <p>Main shaft stop position. The positioning brake stops the main shaft close to the correction position by initiating pulsing braking. The positioning brake is activated after switch on and after a measuring run has been carried out and found an unbalance greater than the limit value. Select Code C11. Select one of the following options: 0 = No positioning brake after measuring run. 1* = Positioning brake after measuring run for left plane. = Position brake after measuring run for right plane.</p> <p>Note: The selection is permanently acquired.</p>
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	<p>Code C12</p> <p>Measuring runs counter. Example: 222,123 measuring runs completed: Select Code C12. Select one of the following options: 1 = Total number of measuring runs completed2 = Total number of measuring runs where balancing was successfully completed, indicated by OK3 = Total number of optimizations or minimizations4 = Total number of measuring runs in Service mode5 = Total number measuring runs since last calibration.</p> <p>Every measuring run completed is saved. Maximum count is 999,999 measuring runs. Once this number is reached, the counter is reset to zero. The information is primarily useful for statistical purposes, for example, to monitor the endurance of faulty parts, or monthly (yearly) use of the machine, etc. The measuring runs performed while the machine is switched on are transferred to the permanent memory and added when it is switched off.</p> <p>Note: The total counter (option 1) cannot be deleted.</p> <p>* = Factory adjusted mode</p>
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6-2



6-3

Code C14

Balancer recalibration by the user. If several measuring runs are necessary to balance a wheel because balance weight size and position have to be readjusted repeatedly, this is often due to insufficient measurement accuracy.

Balance a wheel, setting the type as NORMAL, with less than 5 grams per plane. Check in "fine" mode. Go into code C14.

"CAL 1" appears and the machine beeps. Perform the wheel measuring run. At the end the display shows

"CAL 2". Screw on the User Calibration Weight, as shown in Figure 6-2. Perform the wheel measuring run. At the end the display appears as shown in Figure 7-3 to indicate that calibration was performed correctly.

Note: Any error (by the operator) closes the program. Error codes are listed in Section 7.1.2.

* = Factory adjusted mode

	<p>Code C21 This code provides information about the program version and the balancer model name. Go into code C21. Information about the software version appears. Press the “-” key to view the Kernel version. The information is visible for as long as the key is pressed. Press the “+” key or the “FINE” key to view the balancer model.</p> <p>Note: The information is visible for as long as the key is pressed.</p> <p>Code C28 Displays the error codes saved by the balancer, (a maximum of 10) and clears the error memory. The last 10 different error codes are saved in the error memory so that they can be called up and consulted by the wheel balancer operator for remote diagnosis of malfunctions. The most recent error code is saved in memory location 1. Previous error codes are gradually shifted down the memory list.</p> <p>Go into code C28. CONSULTING THE ERROR COUNTERS Press and release the “+” or “-” key to scroll through the list of errors.</p> <p>Note: When the key is pressed the number of the error in the list is shown, whilst when the key is released the corresponding code appears.</p> <p>Press the STAR key to make the error number appear again (on the left) and the total number of times that error was repeated since the last time the memory was cleared (on the right).</p> <p>ZEROING THE ERROR COUNTERS Press ENTER. Make the selection. 0* = Do not clear the error memory 1 = Clear the error memory Press ENTER.</p> <p>* = Factory adjusted mode r the error memory</p>
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	<p>7.1.2 E-codes</p> <p>When the E-code is displayed, a low beep is generated. Whenever a code appears: Note it down look up the code in the list. If the code is not described, call service. Perform the steps described. The setup of this chapter is:</p> <p>Code Description: Step(s) to be performed. Some error messages are displayed for approx. 3 seconds on the display of the right side. To clear the error code immediately press the STOP key.</p> <p>E 9 (7.1.3)</p> <p>E10 Gauge arm removed from idle position during wheel spin. Bring gauge arm to the idle position (fully in and down). Re-spin the wheel without touching the gauge arm. If the error appears again, have the gauge arm calibrated (by the service department). Display clears after several seconds.</p> <p>E11 During ignition the gauge arm is not in the idle position. Move the gauge arm back carefully to the idle position. The error should disappear within a few seconds. If the error appears again, contact the service department.</p> <p>Note: By pressing STOP you can continue to use the machine but all the wheel data must be inserted manually (5.6.3).</p> <p>E 14 (7.1.3)</p> <p>E 21 (7.1.3)</p>
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	<p>E22 Speed low The rotation speed of the wheel has not reached the minimum limit needed to enable balancing. Check that the brake (pedal) or wheel is not accidentally blocked. Check that something is not braking or obstructing the wheel. Check the power supply. Fit the wheel correctly. Contact the service department.</p> <p>E 23 (7.1.3)</p> <p>E24 Velocity fluctuations If the speed of the wheel to keep to required speed the needs to be fixed.</p> <ul style="list-style-type: none">• Check that the wheel is not obstructed or impeded by something.• Check the power supply.• Fit the wheel properly.• Call for service. <p>E25 Reverse error. The shaft is rotating at a certain speed but in the wrong direction. Apply the brake. Contact the service department. The display clears when rotation stops.</p> <p>E26 No acceleration. No shaft acceleration has been registered. Contact the service department.</p> <p>E27 Slipping registered. The wheel slips on the shaft. Fit the wheel correctly.</p> <p>E28 Speed limit reached. Contact the service department.</p> <p>E50 Manufacturer's calibration incomplete Contact the service department.</p>
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	<p>E51 Calibration failed. Switch unit off, wait for 20 seconds. Switch unit on. Retry calibration, or: Contact the service department.</p> <p>E52 The calibration weight is on the opposite side to the calibration carried out by the manufacturer. Fit the User Calibration Weight correctly on the left side of the flange. Repeat Calibration. Contact the service department.</p> <p>E82 Fault during self-test at start-up. Switch unit off, wait for 20 seconds. Switch unit on.</p> <p>E92 During the second attempt the gauge arm for distance and rim diameter was still not in the home position. The gauge arm is rendered inoperative. Wait 5 seconds, or press the STOP key to continue.</p>
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7.1.4 H Codes – Warning

H0

Wheel silent running cannot be improved with balancing optimization.

H1

Further optimization is not recommended but is possible.

H2

Weight minimization is recommended, further optimization does not bring improvements.

H80

Recalibration was not set up. As a result, it cannot be performed by the operator. Press the STOP key to clear the message.

Call the service team for machine calibration.

H82

The self-test was disturbed (e.g.: by turning the wheel).The message is displayed for 3 seconds, then the measurement is repeated (max. 10 times) or aborted by pressing the STOP key.

H90

Wheel acceleration was too slow, or braking was too weak after a measuring run. If the main shaft does not reach the required speed, check that the brake is not activated or the weight of the wheel is too great.

In this case: Release the brake. Make sure that the shaft with the wheel clamped on it can rotate freely. Turn the wheel by hand, then run the START.

If the error cannot be eliminated, call the service team.

H91

Speed variations during measuring run. The brake may be ON. Release the brake.

Make sure that the shaft with the wheel clamped on it can rotate freely.

Repeat the run.

NOTES:

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