

BALATRON 221/212 USER'S MANUAL



Fig. 1 Balatron 221



Fig. 2 Balatron 212

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.Prior of the installation of the unit described in this manual, user should read this manual carefully to be instructed properly on installation, use and maintenance of the unit.

.Failing to read this manual and operate accordingly may cause damage to the user or the unit.

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.FASP 2000 srl shall not be responsible for inconvenience, breakdown, accidents due to unauthorized modifications of the unit, use of non-original or unauthorized accessories (see Accessories listing in this manual for a list of original accessories available for this model).

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SYMBOLS AND CONVENTIONS

To speed the retrieval of main information and make easy to understand the instructions, this manual uses the following typing conventions:

<NAME OF THE PUSH BUTTON> Used to indicate name of push-buttons on the control panel.

DISPLAY Used to indicate text or number visible on the displays on the control panel.



ADVICES

Contain useful advices or solutions, evidenced with respect to the rest of the text.



NOTE

Notes contain important information, evidenced to the rest of the text.



WARNING

Warning messages appears corresponding to procedures that, if not properly observed, may lead to loose of data or cause damage to the unit.



CAUTION

Caution messages appears corresponding to procedures that, if not properly observed, may cause injuries to the user.

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1 PRESENTATION

1.0 Intended Use

This unit is designed to measure and correct static and dynamic unbalance of vehicle wheel, the dimension and weight of which are within the working range of the machine (see "Technical Data" appendix for reference)

This unit is meant for a professional use. Operator shall be properly trained before use. Training Course is not included in the price of the unit and must be purchased separately.

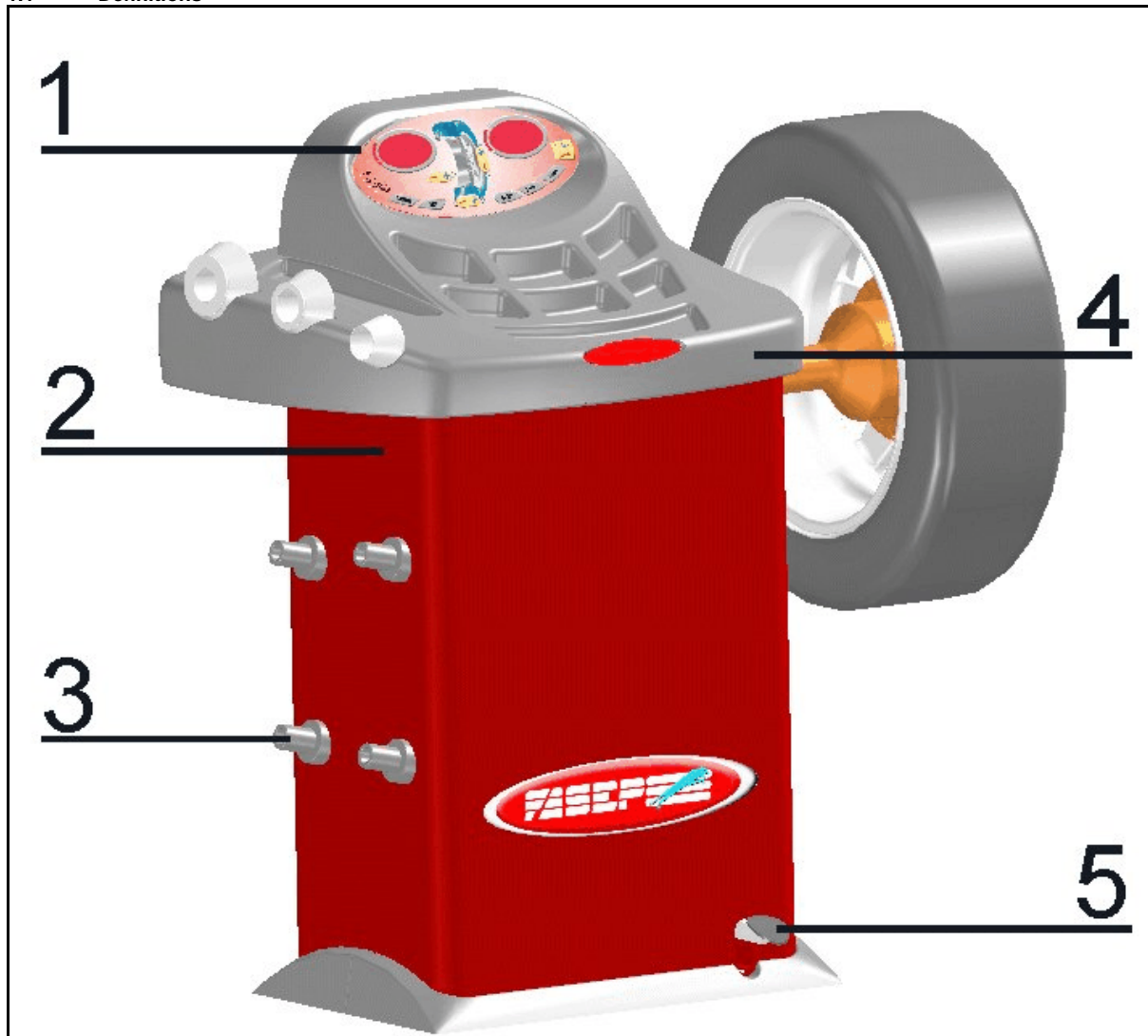
This unit is designed for indoor use only (see "Environmental Data" appendix for reference).



CAUTION

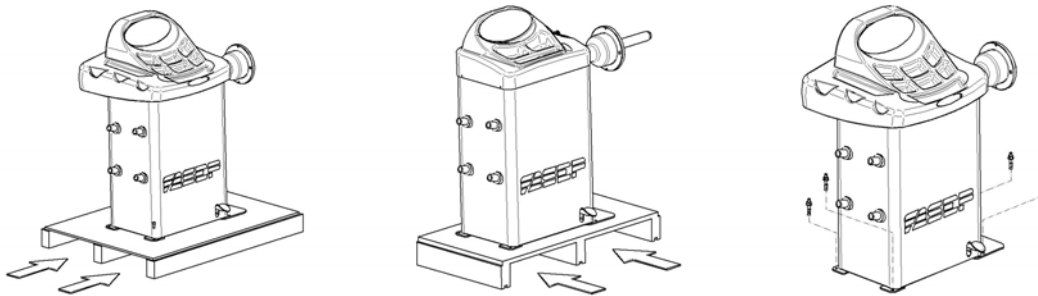
This unit is designed to spin vehicle wheels only, within the range of dimensions and weight approved (see "Technical Data" appendix for reference). Special adaptors suit this purpose. Do not attempt to use the machine to spin anything else. Unproper locking may cause the part being spun to be ejected, causing damage to the unit itself, the operator or anything in the in the neighborhood.

1.1 Definitions



1. 3D console
2. Nameplate label
3. Flange holders
4. Weights and tolls compartments
5. Foot-pedal brake

2 INSTALLATION



2.1 Moving the unit



WARNING *When the unit has to be moved: never lift balancer by motor shaft or by neighborhood of it.*

2.2 Assembling the unit

For ease of transportation, the wheel balancer might be disassembled into units. If necessary, assembling instruction are provided within each package.

2.3 Installation

The wheel balancer must be installed on a firm and level ground.



NOTE *The machine must be secured to the floor. Using four holes in the base and anchor bolts provided.*

2.4 Electrical Hookup



CAUTION *Failure to follow these instructions can results in damage to unit or create an electrical hazard and will void warranty.*

2.4.1 Electrical hookup is to be provided by a qualified electrician.

2.4.2 A fusible wall-mounted switchbox is required at the installation site. This switch should provide on-off control and overload protection for your wheel balancer only. The switchbox should be fused with time-delay fuse(s) in accordance with the power rating specified on your wheel balancer.

2.4.3 Electrical connection of the machine should be by plug connectors.

2.4.4 The balancer must be effectively connected to ground. The electric cord is regularly provided with a ground terminal.

2.4.5 Make sure that Power Rate Specifications for your wheel balancer (refer to nameplate on the wheel balancer) comply with those provided by the external power source.



CAUTION *After electrical hookup has been performed unit is ready to operate. Always observe pertinent safety precautions when operating the unit (see Appendix tables for an overview of relevant Safety requirement).*

3 USE THE CONTROL PANEL

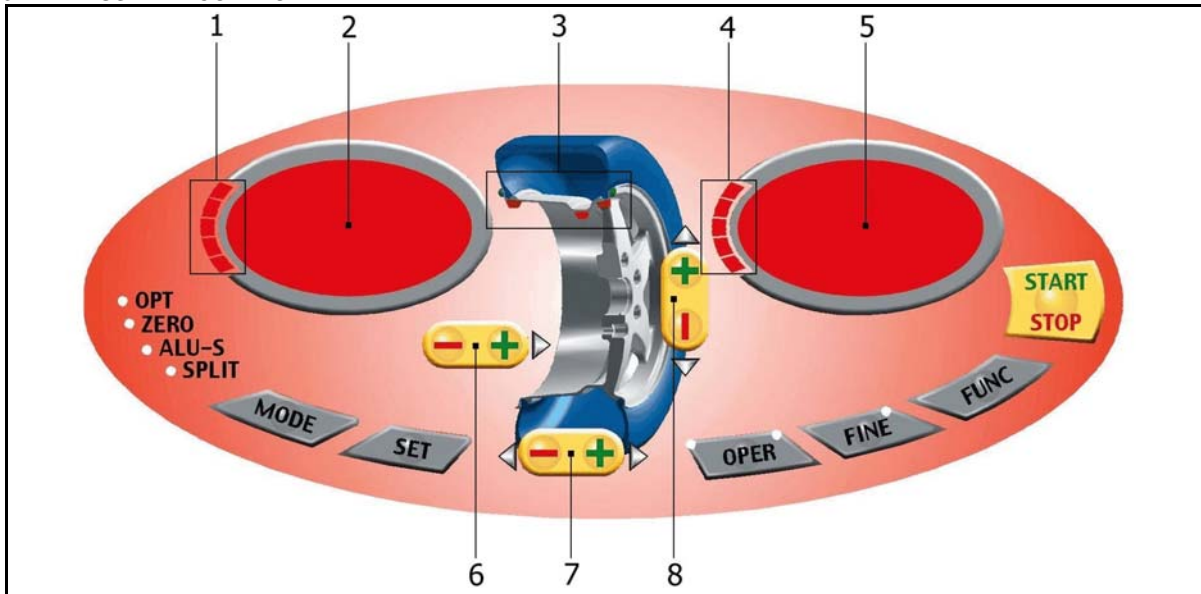


Fig. 7: Panel Balatron 2000

3.1 Meaning of keys at the keyboard

These instructions apply to Normal Operating Mode. Other function maybe activated by these keys in other operating modes (see Special Functions).

- <MODE>: To select balancing type: Dynamic-Static-Alu.
- <SET>: Confirm selection
- <OPER>: To select Operator 1 or Operator 2.
- <FINE>: To select reading scale.
- <FUNC>: To select specific functions
- <START-STOP>: Starts-stops wheel spinning.
- 6 <DISTANCE -/+>: Set internal side measure.
- 7 <WIDTH -/+>: Set width measure.
- 8 <DIAMETER -/+> Set diameter measure.

3.2 Meaning of Led Indicators

- 1-4: indicate location of weight required.
- 2-5: indicate amount of weight required.
- 3: indicate the application point of weights.

4 CALIBRATION

4.1 How to calibrate the Wheel Balancer



NOTE *the following symptoms indicate need for calibration:*
a) *check calibration program fails.*
b) *constant low or high weight readings.*
c) *indicated point of unbalance constantly wrong*
d) *more than 2 spins required to balance wheels repeatedly*

SOF 2.00

SET

CAL

SET

C0

START

C0 RUN

C1

START

C1 RUN

C2

START

C2 RUN

CAL

Switch on the wheel balancer.
Press **<SET>** when **SOF X.XX**
(software version) is displayed.

Spin the empty shaft (Fig. 9).

Place a wheel on the flange (Fig. 10).

Put the calibration weight (Fig. 11).

End of calibration.

Press **<MODE/ESC>** to return to normal
balancing mode.

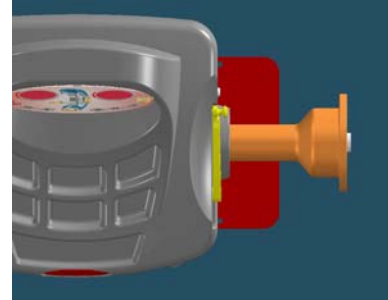


FIG. 9

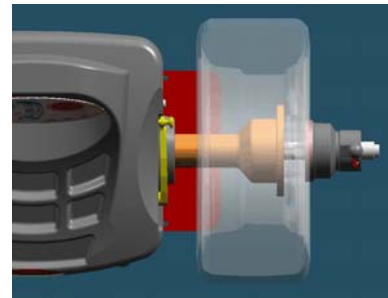


FIG. 10

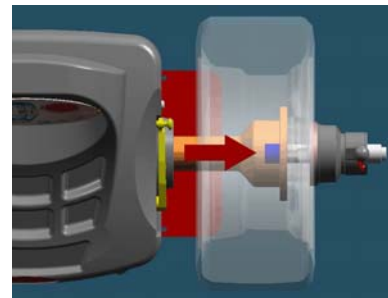
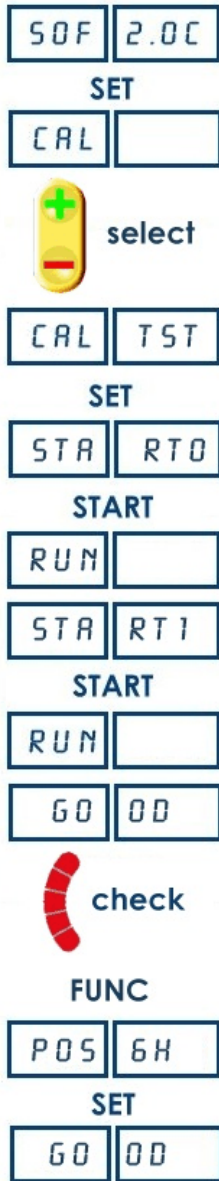


FIG. 11

4.2 How to check the calibration of Wheel Balancer



Press <+/-> to select CAL TEST

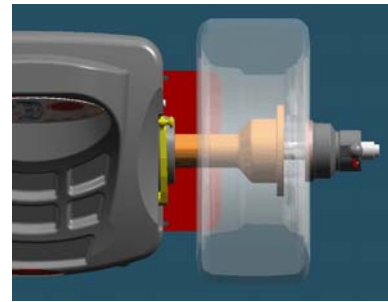


FIG. 13

Place a wheel on the flange (Fig. 13).

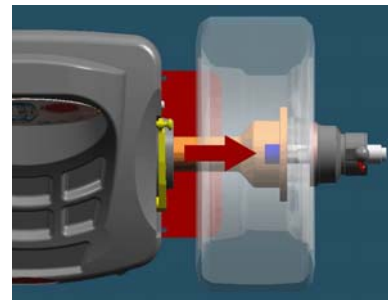


FIG. 14

Put the calibration weight (Fig. 14).

Press <FINE> to see actual values. 160-0 (± 3) is correct result.

When all LED (left side) are lit, calibration weight must be at exactly 6 o'clock.
If no, press <FUNC> to calibrate position.

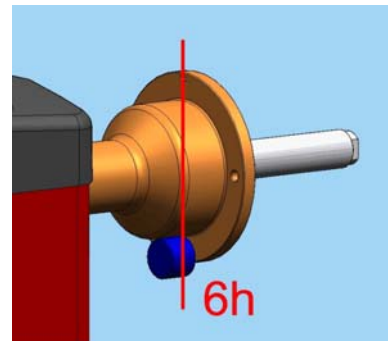


FIG. 15

Turn the wheel until the calibration weight is located at 6 o'clock.

Press <SET> to calibrate.

Press <MODE/ESC> to return to normal balancing mode.

5 MEASUREMENT AND CORRECTION OF UNBALANCE

5.1 Placing the wheel rim on the wheel balancer

5.1.1 Select the cone or flange suitable for the wheel to be balanced. Specific mounting instructions are delivered with each flange.



NOTE *The operation of centering and tightening of the wheel on the flanges is of basic importance for correct balancing. Good results depend on proper performance of these procedures. Clean accurately all cones, shaft and adapter surface before placing the wheel on the wheel balancer.*



CAUTION *Always make sure flanges are correctly locked on the motor shaft and wheel is correctly locked on the flange being used.*

5.2 How to compensate unbalance of flanges using AFC function (optional for B212)



NOTE *This operation allows to put compensate unbalance of flange and other accessories.*

5.2.1 Lock the required flange on the shaft without the wheel.

HOW TO TURN ON AFC FUNCTION



The AFC led blinking.

The AFC led is on.

HOW TO TURN OFF AFC FUNCTION



Remove the flange.

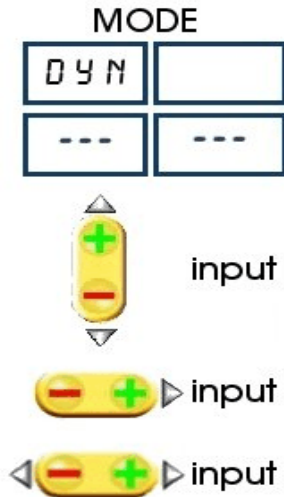
The AFC led switch off.

5.3 Input of Rim Dimensions



NOTE *DOUBLE OPERATOR option (optional for B212): this wheel balancer can be used by 2 operators in the same time. Everyone can memorizes the dimensions of the wheel to balance with <OPER> button. The machine memorizes the operating procedure too.*

5.3.1 DYNAMIC MODE



Press **MODE** to select the operating mode.

Select the wheel diameter.

Select the distance of the wheel.(Fig. 19, Fig.20)

Select the wheel width.

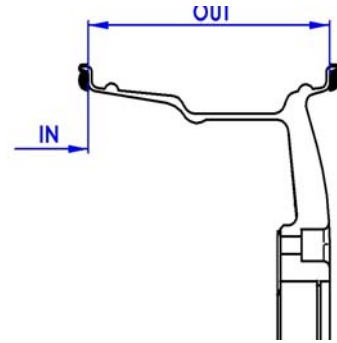


FIG. 19: DYNAMIC

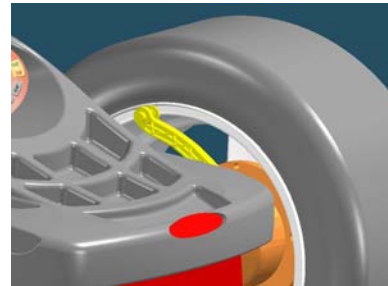
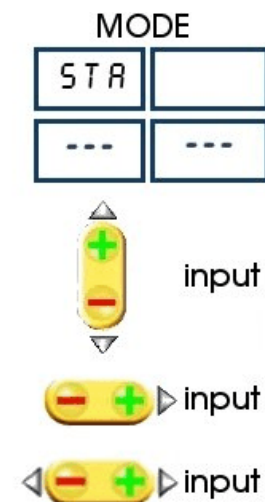


FIG. 20: Rod positioning for distance measurement.

5.3.2 STATIC MODE



Press **MODE** to select the operating mode.

Select the diameter.

Select the distance.

Select the width.

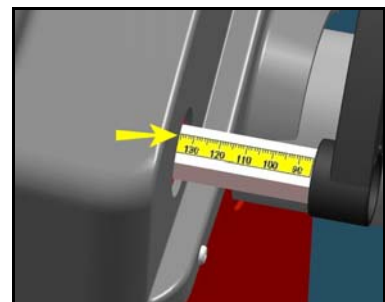
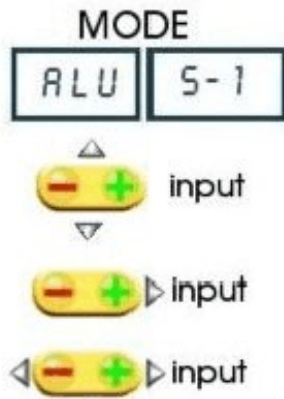


FIG. 22: Reading distance gauge.



Press **MODE** to select the operating mode. (Fig. 23, Fig. 24).

Select the wheel diameter.

Insert the internal measure (IN 1) (Fig. 20, Fig.22).

Insert the external measure (IN 2) (Fig.28, Fig.22)

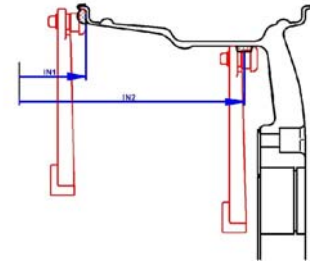


Fig. 23 ALU S-1

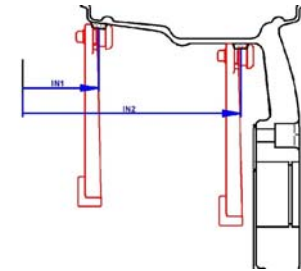


Fig. 23: ALU S-2

5.3.4 ALU S-1 MODE / ALU S-2 MODE (Automatic input - optional)



Press **MODE** to select the operating mode (Fig. 23, Fig.24)

Press **<DISTANCE -/+>** to start measurement.

Insert the internal measure (Fig. 27).
 Wait for the BEEP.

Insert the external measure (Fig. 28).
 Wait for the BEEP.

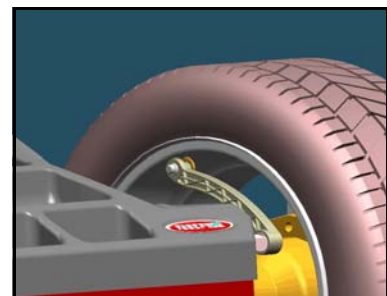


Fig. 27

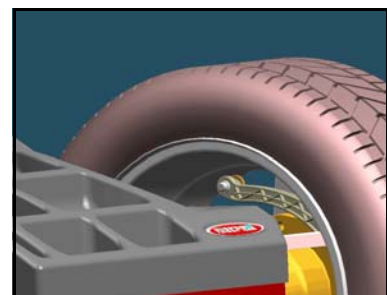


Fig. 28

5.4 Detecting and correcting unbalance

5.4.1 After setting wheel dimensions, press **<START>** or close the safety cover (optional) to spin the wheel and start the measurement run.



CAUTION Wheel start automatically when safety cover is closed.

5.4.2 At the end of the spin the wheel will brake automatically and the display will show the weight position and weight requirement to correct the wheel's unbalance.

5.4.3 If unbalance shown is 0, press **<FINE>** to show residual unbalance.

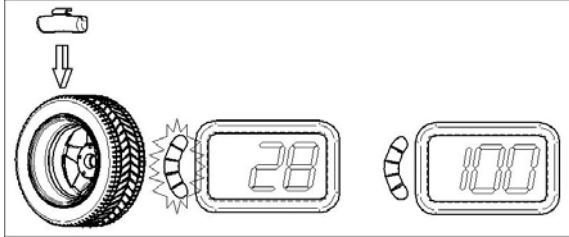


FIG. 29: inside weight indication

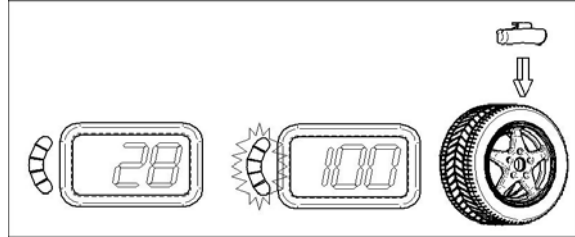


FIG. 30: outside weight indication



NOTE OPT light blinking after the measurement indicates that static unbalance is exceeding more than 20grs. Optimization procedure is suggested.

5.5 How to apply the weight using ALU-SE indicator



Place the weight (Fig. 32).

Turn the wheel to the position (Fig. 29, Fig. 30).

Move the rod until ≡≡≡ appears on the display (picture on the left).

Apply the weight (Fig. 33).

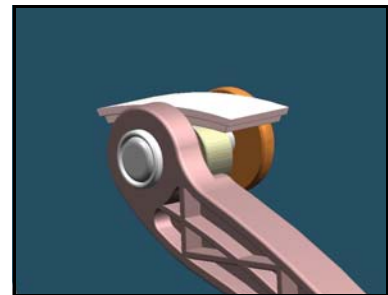


FIG. 32

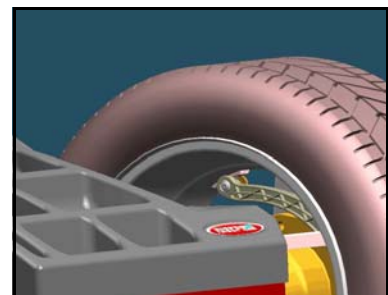


FIG. 33

6 HOW TO OPTIMIZE UNBALANCE OF THE WHEEL

- 6.1 Measure the unbalance of the rim only. Once the measurement of rim unbalance is calculated, press **<FUNC>** to enter optimization function.

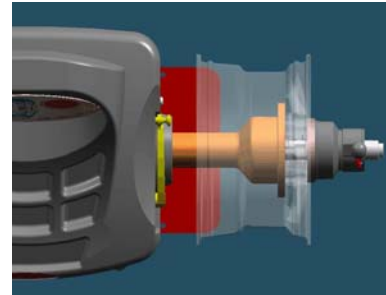


FIG. 35: First spin, rim only

Mount the tyre on the rim. After mounting the tyre, the wheel must be put on the shaft in the same position as before.

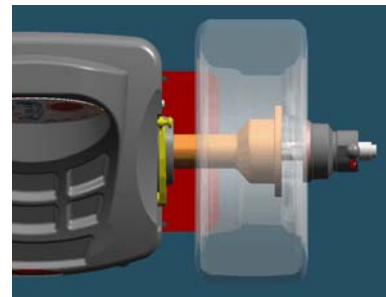


FIG. 36: second spin, complete wheel

Left display (20 in example) indicates present static unbalance. Right display (55% in example) indicates possible reduction of weight in %.

Turn the wheel until SIGN 1 is displayed.

Mark the rim (12 o'clock).

Turn the wheel until SIGN 2 is displayed.

Mark the tyre (12 o'clock).

Put the two marks together to optimize unbalance.

- 6.2 After pressing **<SET>**, the program return to the measurement of unbalance mode, where an indication of the residual unbalance values will be given.

7 HOW TO USE SPLIT WEIGHT FUNCTION

7.1 Measure the unbalance of the wheel. Once the measurement of unbalance is calculated, press **<FUNC>** to enter split function.



Turn the wheel until POS 1 is displayed.

Mark the tyre when the first spoke selected is at 12 o'clock.

Turn the wheel until POS 2 is displayed.

Mark the tyre when the second spoke selected is at 12 o'clock.

7.2 The weight in grams for external side is displayed only when the wheel is in a correct position (12 o'clock).

8 SPECIAL FUNCTIONS MENU

8.1 Enter in the special functions menu

Switch on the wheel balancer. Press **<SET>** before SOF X.XX will disappear.

CAL	Calibration of wheel balancer
CAL tSt	Control of the calibration of electronic sensors
CAL r od	Calibration of electronic input sensors
SEn Sor	Diagnostic of sensors
StA tiS	Statistic about the use of machine
USr Set	User setup
tEc Set	Technical Setup
Ser nuM	Serial number
Act Cod	Inserting Activation Codes

8.2 Diagnostic program of sensors

Switch on the wheel balancer. Press **<SET>** before SOF X.XX will disappear. Select **Sen Sor** and press **<SET>**.

r PM	Balancing speed
PS1	PS1 voltage
PS2	PS2 voltage
tO	Encoder is in the zero position
PoS	Angle of position sensor(from 0 to 255)
dis	Value of distance sensor
dIA	Value of diameter sensor
OUT	Value of width sensor
Cou	Safety cover is open or closed
PED	Air pedal (only PL version)
AIR	Pressure guage (only PL version)

8.3 Statistic program

Switch on the wheel balancer. Press **<SET>** before SOF X.XX will disappear. Select **Sta tis** and press **<SET>**.

tOt	Total number of spin
SUC	Percent of runs with a good result
c11 Os	Percent of wheels with diameter <11"
from 11 to 17	Percent of wheels with the indicated diameter
]17 Os	Percent of wheels with diameter >17"
CAL	Number of calibrations
pne	Number of PL test (only PL version)

8.4 User Setup

Switch on the wheel balancer. Press **<SET>** before SOF X.XX will disappear. Select **USa SET** and press **<SET>**.

ScA LE	Set 1 or 5 grams step (0.05/0.25 ounces).
Cut offF	Set minimum weight to be displayed.
Uni Out	Unit of measure for the width (0=inch, 1=millimeters).
Uni Umb	Unit of measure for the weight (0= grams, 1=once).
Fin AL	Display of final (0 = normal, 1 = blink, 2= Go OD).
biP	Enable/Disable beep in position.
EME StP	Motor brakes in case of emergency stop (On or OFF) (OFF: motor power is cut).
Cou Er	OFF = safety cover is not installed; On = the motor starts only if the safety cover is closed; Aut = closing of safety cover the motor starts automatically.
r od in	Enable/Disable distance input system.
r od out	Enable/Disable width input system.
STE P	Increase distance/width measure.
PNE U	Enable/Disable PL system.
SCR EEN	Screen saver selection from 1 to 5 (0 = disable).
VOI CE	Enable/Disable voice system.
Snr	Sensibility to external vibration.
Tim er	Input system speed.
Fas t	Enable/Disable fast cycle.
APS	Enable/Disable automatic position system.
ADM IN	Enable/Disable Admin mode.
OPT	Set minimum tire matching level.
r ES Et	Load Factory Setup.

APPENDIX

A: Technical Data

Absorbed power	60W								
Speed Balancing	98RPM								
Measuring time	4-15 seconds								
Precision	±1grs (±1/28 ounce)								
Wheel dimensions	<table border="0"> <tr> <td>Rim Diameter</td> <td>from 8" (200mm) to 26" (650mm)</td> </tr> <tr> <td>Wheel Diameter (m ax, with cover)</td> <td>34" (850mm)</td> </tr> <tr> <td>Rim Width (max, with cover)</td> <td>16" (410mm)</td> </tr> <tr> <td>Wheel Weight (max)</td> <td>70Kg (155Lbs)</td> </tr> </table>	Rim Diameter	from 8" (200mm) to 26" (650mm)	Wheel Diameter (m ax, with cover)	34" (850mm)	Rim Width (max, with cover)	16" (410mm)	Wheel Weight (max)	70Kg (155Lbs)
Rim Diameter	from 8" (200mm) to 26" (650mm)								
Wheel Diameter (m ax, with cover)	34" (850mm)								
Rim Width (max, with cover)	16" (410mm)								
Wheel Weight (max)	70Kg (155Lbs)								

Wheel balancer dimensions

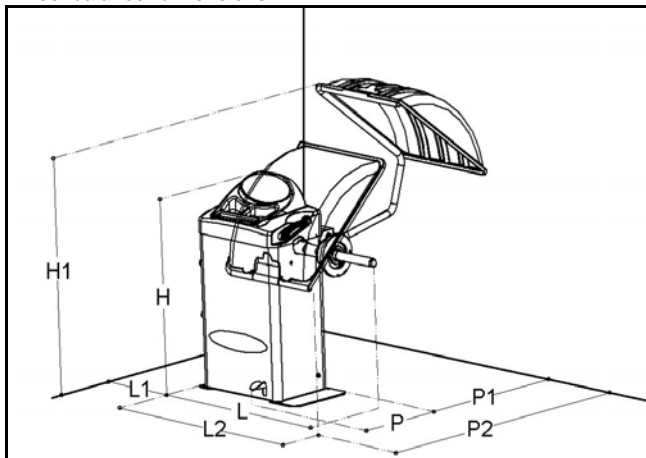


FIG. 38: Balatron 212/221 measures

	B221	B212
L (mm)	1100	1030
L1 (mm)	500	500
L2 (mm)	1150	1080
P (mm)	510	430
P1 (mm)	550	550
P2 (mm)	1250	1250
H (mm)	990	940
H1 (mm)	1400	1400
Peso (kg)	72	70

B: Environmental Data, Safety Features and Requirements

Environmental Data

[Operating conditions]

This unit is designed for indoor use only.

Temperature: 0 to 45°C

Relative Humidity: 5 to 80% a 40°

[Storage conditions]

Package is designed for indoor storage only.

Temperature: -25° to 70°C

Relative humidity: 5 at 95% to 40°C

Safety Features

1. The Balance Weights Holder may be removed for servicing. It is secured to the machine body through screws so that only voluntarily it may be removed. Removal of this protection is therefore restricted to Authorized Service Engineers.
2. The Control Panel may be removed for servicing. It is secured to the machine body through screws so that only voluntarily it may be removed. Removal of this protection is therefore restricted to Authorized Service Engineers.



WARNING

FASEP 2000 srl shall not be responsible for any inconvenience, breakdown, accidents caused directly or indirectly by unauthorized service. Service to any parts by unauthorized engineers will void warranty and will any right of the owner of the unit.



NOTE

As this unit runs at a speed below 100rpm, a safety cover is not required. However a safety cover is recommended when balancing wheels with diameter bigger then 20".



CAUTION

The safety cover is anyway required when using the motorcycle adapter.

General Safety Requirement

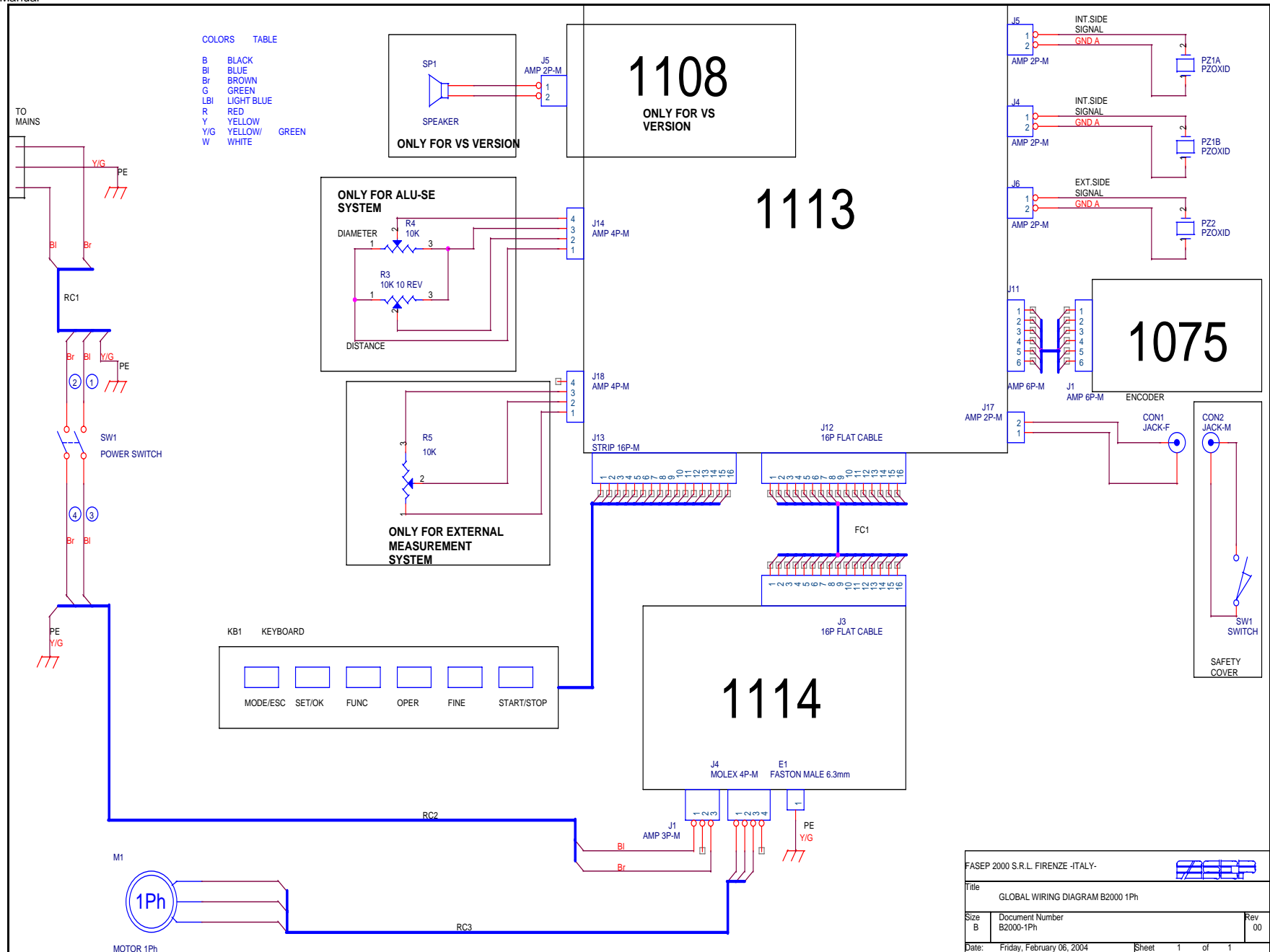
[before using/servicing this unit]

1. Read this instruction manual before operating or servicing the wheel balancer.
2. Make sure electrical power source conforms to requirements shown on nameplate (see also model identification chart for reference).
3. Make sure the unit has a stable position and it's bolted to the ground.
[when using the unit]
4. Protect power leading to the unit from damage.
5. When work area is being washed, make sure unit is adequately protected.
6. Remove all stones and mud lodged in tire treads before balancing the wheel.
7. Do not touch spinning wheel.
8. Make sure counterweights are securely attached before checking residual unbalance.
[when servicing the unit]
9. Make sure power sources are disconnected before service on the unit is performed.
10. Service to PCB, electrical and mechanical parts should be done only by an Authorized FASEP 2000 Service Center.

C: Errors and Malfunctions recognized by the Computer

Errors may apply to some model only.

- | | |
|--|--|
| ERR 1: Shaft does not rotate | ERR 16: Calibration memory error |
| ERR 2: Rotation Direction is wrong | ERR 17: Rod in uncorrected position |
| ERR 3: Rotation speed is not ready | ERR 18: Excessive weight detected |
| ERR 4: Rotation speed is wrong (too low or too high) | ERR 19: Reserved |
| ERR 5: Position Sensor or Position Disk failure | ERR 20: Excessive Deceleration |
| ERR 6: Safety Safety cover is open | ERR 21: Error in inputting data |
| ERR 7: Measuring cycle was interrupted | ERR 22: Brake error |
| ERR 8: Calibration weight was not inserted. | ERR 23: Reserved |
| ERR 9: Activation code not correct | ERR 24: Insufficient air pressure (PL version) |
| ERR 10: Overflow in calculations | ERR 25: Reserved |
| ERR 11: Serial number is wrong | ERR 26: Piezo sensor error |
| ERR 12: Serial number not inserted | ERR 27: Wheel is not securely tightened on the shaft |
| ERR 13: Reserved | ERR 28: Laser error |
| ERR 14: Uncorrected password | ERR 29: Reserved |
| ERR 15: E ² prom error | |



FASEP 2000 S.R.L. FIRENZE -ITALY-		
Title GLOBAL WIRING DIAGRAM B2000 1Ph		
Size B	Document Number B2000-1Ph	Rev 00
Date: Friday, February 06, 2004	Sheet 1 of 1	