

# Professional wheel balancing machine



**TFT**

Flat screen

**VDD**

Virtual Direct Drive  
(CEMB patent)

**IC<sup>®</sup>**

Intelligent Correction  
(CEMB patent)

**SONAR**

Automatic width measure  
(CEMB patent)

Wheel lock and caliper (gauge) lock  
Eccentricity Measurement with Sonar (optional)  
Pneumatic lock of wheel (optional)



**CEMB**  
BALANCING MACHINES

**C87**

# C87

For car, 4-WD, light commercial vehicle and motorcycle wheels.

High definition 15" TFT flat screen (1024x768 pixel), back-lighted.  
High definition graphical processor.

Space saver wheel guard reduces overall machine layout space.

New measuring system with very short cycle time.

New electric stationary brake. It eases wheel dismounting and locking. It automatically blocks the wheel in the unbalance correction position (for both planes), thus avoiding any error in weight placing.

Automatic locking of the gauge in correspondence with the pre-selected correction planes, to ease the positioning of weights on the inner planes.

A balancing accuracy of 0,5 grams.

Automatic input of rim diameter and rim/machine distance by simply pulling out the gauge, without pressing any button.

Automatic width measures by SONAR.

Possibility to personalize display, language, machine functions (automatic start, threshold values etc.).

Clock on video.

Daily and total spin counter.

Optimization program to compensate the tire unbalance with the rim unbalance.

Multiple operators program, to memorize the dimensions of four different vehicles at the same time.

Possibility of writing names of operators on the screen.



## Optional: printer

Possibility to personalize the balancing certificate with:

- balancer details
- vehicle details
- indication of the balanced wheel
- residual unbalance
- radial eccentricity value (optional)

# C87

# VDD

## Plus

Incredible cycle time.

Innovative technology VDD (Virtual Direct Drive - CEMB patent) to obtain reliable unbalance measures in a short time, nearly half the cycle time respect to other balancers in this range.

Automatic wheel width measure using the Sonar system (CEMB patent), with no operator manual intervention.

Automatic lock of position repeater gauge in pre-selected planes for counterweights inside the wheel.

Measurement system (EMS) of wheel radial eccentricity with Sonar (option) during balancing cycles (CEMB patent).  
It enables to get a perfect quality control with no time loss.

Automatic lock of wheel with a stationary brake in the unbalance correction position.

Measurement of rim radial eccentricity, to detect deformities and allow matching between rim and tire.

## Accessories to hand capacity



Cone pegs and adaptor tray placed in ergonomic position to facilitate mounting sequence by operator.

### Sonar standard

Sonar LA: automatic width measures.



### Sonar in option

Sonar EMS: no contact automatic radial eccentricity measure



Sonar LR: no contact lateral eccentricity measure



## Tolerance referred to external planes (RPR function - Rear Planes Residual)

When you correct an unbalance, according to wheel/car manufacturers, the balancing tolerance is always referred to the external planes of the rim.

Inside the rim (ALU-S) the residual unbalance detected after correction is generally relative to correction planes which are NOT referred to be balancing tolerance. With this new program, applicable thanks to the use of SONAR, the residual calculated at external planes is displayed. This enables to avoid balancing errors or any unnecessary correction operation



## For spoked alloy rims: **SPLIT program**

Automatic lock of wheel and caliper in the correction position.



Counterweights are to be put inside the rim in a hidden position, behind spokes. SPLIT (vectorial component balancing) recalculates the unbalance in order to correct it behind the two closest spokes.



## Option: **WBL80**

The pneumatic lift reduces the operator time and fatigue and guarantees an accurate centering of tire. More information on the flyer.



# IC<sup>®</sup>



From the industrial field experience CEMB

## IC - Intelligent Correction<sup>®</sup>

From an extensive experience over 50 years in the automotive industrial sector, and particularly, in the automated production lines for mounting and balancing OEM wheels, we are now able to supply this innovative high-tech software on our garage wheel balancers.

Both car manufactures and international norms indicate that vibration generated by wheels depends on their mass and unbalance mode: static or dynamic couple. There fore the balancing tolerance cannot be considered as a fixed value suitable for any wheel but must be carefully calculated for each wheel, the IC - Intelligent Correction<sup>®</sup> derives from these considerations.

The software IC - Intelligent Correction<sup>®</sup>, contrary to similar programs used so far, after having evaluated the necessary tolerances (divided between static and dynamic) researches the most convenient correction method to balance the wheel within the correct tolerance. The software, through complex elaboration, automatically calculated the unbalance values and positions in order to bring the wheel into tolerance minimizing time and material.

**Specifically, the analysis is executed in three levels.  
The result suggested is always the most convenient.**

- 1) It verifies possibility to use one single counterweight on one single balancing plane (**SINGLE PLANE**).
- 2) It verifies possibility to use one single adhesive counterweight in a particular position on inner side of wheel (**BEST AXIAL**).
- 3) It calculates the position and minimum weight value of the weights necessary to balance the wheel within tolerance (**MASS REDUCTION**).

**The software IC-Intelligent Correction<sup>®</sup> enables:**

- To minimize number. of counterweights to apply.
- To minimize quantity. of weight applicable.
- To minimize operator work.
- To maximize money saving. of balancing operations.
- To maximize money return.





# CEMB

BALANCING MACHINES

## C87 SE

**with pneumatic locking  
(CEMB patent)**

CEMB's long experience in developing and manufacturing pneumatic locking machines since 1978, guarantees unbeatable features of the new device fitted on the C87 SE.

Reduced mounting efforts and maximum operator's safety. The wheel locks onto the machine shaft by a pedal placed in a functional and easy position.

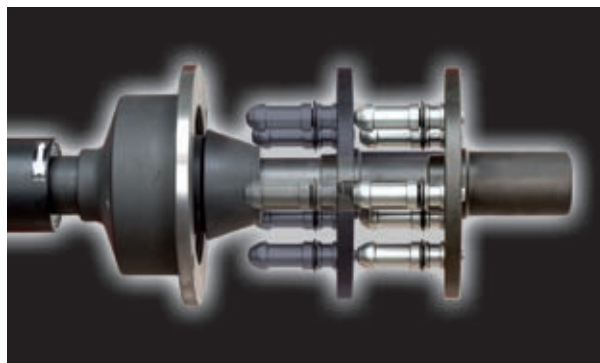
Considerable time saving: the standard device, with 60 mm thrust, drastically reduces the manual work in mounting the wheel.

Extreme simplicity of use: every kind of wheel with central hole can be locked by just one sleeve without using threaded nuts, wrenches or unnecessary devices external to the machine.

Improved accuracy in centering the wheel: thanks to the strong locking force of the device.

Possibility to easily mount wheels without center hole, using UH20/2 adaptor.

Various options available for pneumatic locking (stud adaptors, large cones and sleeves, etc.).





## Programs



Automatic width measures with sonar (CEMB patent).



RPR function (Rear Planes Residual). It allows the simultaneous visualization of unbalance values: at the set correction planes, at the real correction planes (clip-on weight on rim edges) and in static mode.



SPLIT program to divide counterweights between spokes of alloy rims.



ALU-S function with "intelligent" gauge (automatic input of 2 diameters of rim/machine 2 distances) for correction of the wheel from inside.



Eccentricity measuring system (1st Harmonic and Peak to Peak) with Sonar (option). It is automatically activated during balancing cycle allowing operators to get the information about wheel eccentricity without any time loss. Alarm alert if eccentricity is out of tolerance. Specifies procedure recommend to reduce the eccentricity.



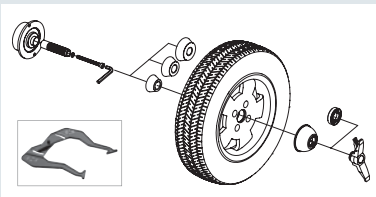
Axial position of counterweight displayed and indication of hidden positions for placing both adhesive weights.

## ► Technical data

Standard power supply	115-230 V single phase 50/60 Hz
Max absorbed power	1.1 kW
Spindle shaft	Ø 40 mm
Balancing speed	< 180 rpm
Balancing accuracy	± 0,5 g
Cycle time for average wheel (16 Kg)	4,9 seconds
Diameter setting range	10" ÷ 30" or 265 ÷ 765 mm
Rim width setting range	1,5" ÷ 20" or 40 ÷ 510 mm
Total wheel diameter within guard	1067 mm (42")
Total wheel width within guard	500 mm (42")
Max. wheel weight	75 Kg
Gross weight C87 (with cone adapter, pliers and wheel guard)	166 Kg
Gross weight C87 SE (with pneum. cone ad., pliers and wh. guard)	179 Kg
Packing dimensions	145x105x175 h cm

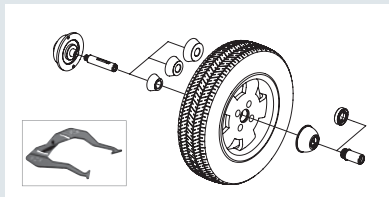
## ► Accessories (Ø 40 mm shaft)

standard



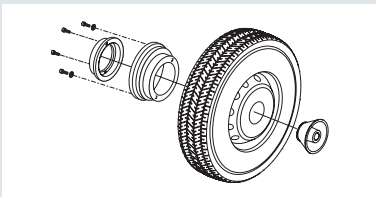
- **UC20/2 cone adapter** with GP quick locking for wheels with central hole Ø from 43 to 110 mm.

for SE2 pneumatic locking

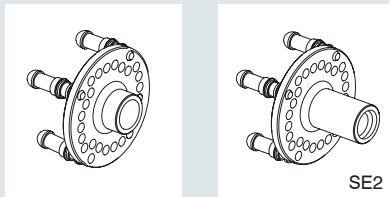


- **UC20-SE2 cone adapter** for wheels with central hole Ø from 43 to 110 mm.

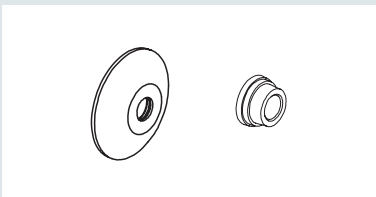
## options to be used with the cone adapter (Ø 40 mm shaft)



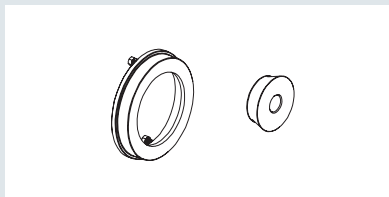
- **VL/2 cone kit** necessary to lock light truck wheels with central hole Ø from 97 to 180 mm.



- Adapters with centering studs:**  
 - SR standard  
 - SR-SE2 for pneumatic locking.

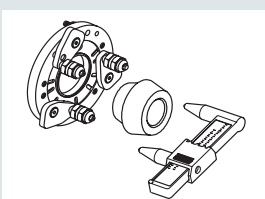


- **RL hollow sleeve** Ø 206 mm, for alloy rims.  
 ► **MT stepped cone** for German car rims (Ø 56,5 - 57 - 66,5 - 72,5 mm)

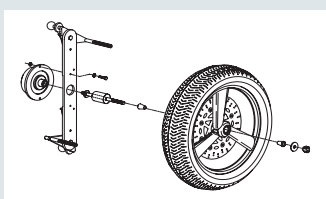


- WD spacer** for car wheels with deep off-set and for off-road wheels  
**J cone** for off-road vehicle with hole Ø 101 to 119 mm.

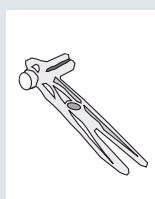
## other options (Ø 40 mm shaft)



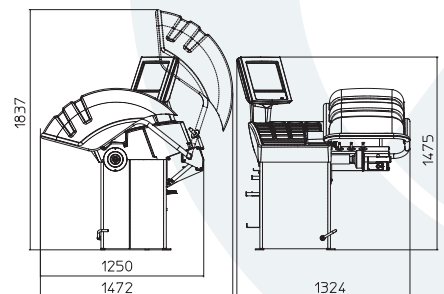
- **UH20/2** for wheels with 3-4-5 holes, with/without central hole on a Ø from 95 to 210 mm. The additional cone (CEMB patent), in the majority of cases, allows to center the wheel from inside on the central hub seat, thus improving balancing accuracy respect to the traditional adapters on the market.



- RMC20 MOT/2** universal adapter for standard and flanged or side hung motorcycle wheels (BMW - Aprilia - Honda - Ducati - etc.) and scooter wheels.



- Pincer-hammer** for counterweights.



Some of our customers:



# CEMB

BALANCING MACHINES



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