



Balance Systems

**PCM**

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## BEST BALANCE 2000

BENCH TYPE VERTICAL AXIS BALANCING MACHINE FOR TOOLS AND TOOLHOLDERS WITH ONE CORRECTION PLAN.

### The Needs

To perform high speed milling ensuring:

- Longer tool life
- Spindle bearings integrity
- Better surface quality on machined parts

the initial tools unbalance should be compatible with the required working rpm.

Unbalance verification and when necessary correction, in order to reduce the unbalance within tolerance, is obtained by mean of a tool balancing machine.



### The Solution

To easily verify and effectively correct the unbalance of the tool/toolholder assembly by affecting one plane only, Balance Systems has designed the Tool Balancing Machine Best Balance 2000.

Best Balance indicates the correction, necessary to minimise the negative effects of the unbalance on the spindle bearings, in particular on the one closer to the operating tool, considering both the static and the dynamic unbalance components.

The result is a unique machine for shop floor use featuring:

- Excellent price/quality ratio.
- Immediate installation
- User friendly access
- Precision



## Characteristics

The Best Balance 2000 tool balancing machine, in its basic configuration, is a comprehensive system ready to balance virtually any type of balanceable tools/tool holders once the correct adapter has been mounted. The machine can be immediately installed on an available optional sturdy table. The customer can also acquire the table from an external source provided it has equivalent characteristics.

Tools suppliers specifications for balanceable tool holders and the common drill type mode make the tool balancing process extremely fast and simple: select among the 5 available languages then just follow the screen instruction to execute step by step driven verification and balancing cycles.

During tool balancing, after the selection of the ISO balancing class, the required tool rpm, and the balancing mode, the procedure inform the operator by displaying unbalance amount and position, both digitally and graphically. At the end of the correction cycle the Best Balance 2000 will advise if the required tool operating rpm has been reached.

During the verifying cycle, upon the tool unbalance detected status, the Best Balance 2000 displays the allowed speeds for ISO classes from G1 to G16 according to the ISO 1940 standard.

The operator easily sets up the working parameters, such as:

- Tool holder mechanical characteristics
- Required balancing class
- Tool working rpm
- Unbalance correction mode

To speed up operations, it is possible to memorise up to 30 tables of tools parameters in the machine control.

Characteristics	Value
Power supply	Switchable from 115 to 575 VAC
Frequency	50-60 Hz
Power requirement	0,3 KW
Vibration measurement unit	gmm
Balancing planes	1
Balancing classes (ISO 1940)	G1, G2.5, G6.3, G16
Repeatability	< 0,5 gmm with 180 degrees rotation, table and adapter supplied by Balance Systems S.p.A.
Max tools dimensions to be balanced	Ø 190 mm                      height 325 mm
Max tool plus tool holder mass	10 Kg
Max component unbalance	300 gmm
Balancing modes	2 Masses displacement, eccentric rings, setscrews, 2 masses addition, drilling
Working area	Illuminated working zone
Shank retention	Yes for HSK
Spindle brake	Manual
Operator's protection	Interlocked LEXAN shield
Balanceable Adapters:	
- ISO 30, 40, 50	optional
Balanceable Adapters with locking system :	
- HSK E32, E40, E50, E63, A63, A80, A100	optional
Operating relative humidity	98%
Protection level	IP 50
Graphic display	LCD 100 x 80 mm    320 x 240 pixels
Keyboard	Industrial soft touch
Printer management (RS-232)	Optional (40 rows Epson ESC/POS compatible)
Selectable languages	Italian, English, German, French, Spanish
Max. Dimensions (WxHxD)	805x768x382 mm
Total weight	70 Kg
Bench table (WxHxD)	Optional    600x900x600 mm

Specifications may be subject to changes without notice. - © 2001 by Balance Systems - Printed in Italy - M0080E

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**Balance Systems**

## Flexible

How can I balance all my tool holders?



Correcting Modes

- 2 Masses Displacement
- Eccentric Rings Rotation
- Setscrews
- 2 Masses Adding
- Drilling

Tool Shank Adapters

HSK with Locking System:  
E32-E40-E50-E63-A63-A80-A100

ISO:  
30-40-50

## Informative

What is the maximum rpm I can run my tool?



Verify Function  
ISO grade:  
G1-G2.5-G6.3-G16

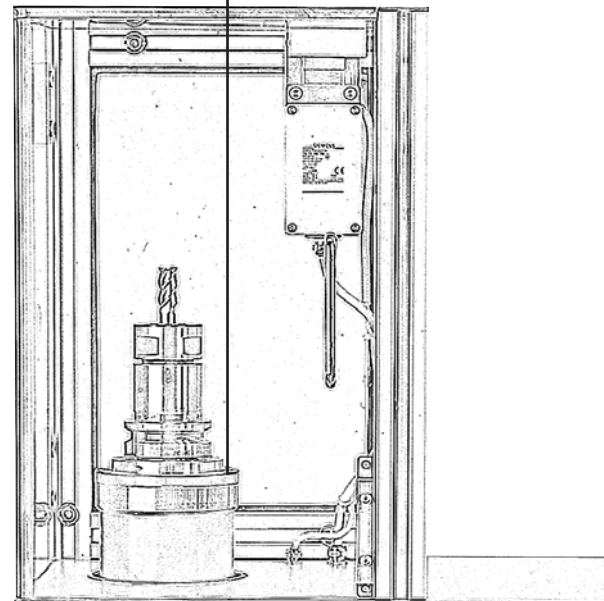


## Collaborative

How do I get the target operating conditions?  
- Balancing ISO Grade  
- Rotation speed



Balancing Function  
ISO grade:  
G1-G2.5-G6.3-G16



## Concrete

How do I keep record of my balancing achievement?



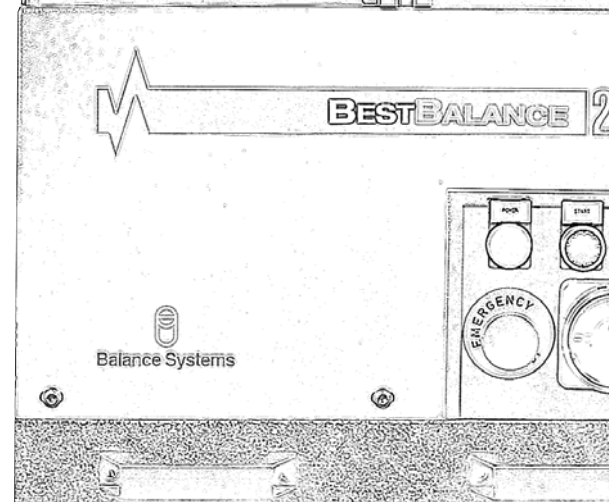
Print Manager Option

## Immediate

How has the machine to be installed?



Bench Type Installation  
(Sturdy bench table available as option)



# BALANCE 2000



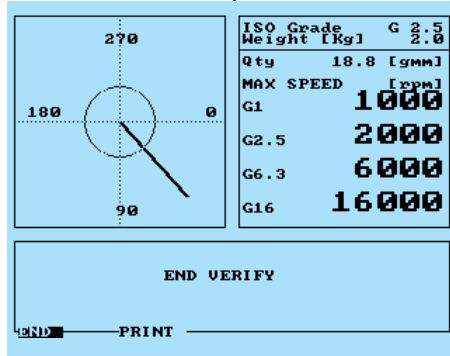
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Work parameters
CORRECTION MODE          DISPLACE
ANGLE MOVEMENT OF WEIGHTS  50
WEIGHT ANGULAR WIDTH      38
ROTOR WEIGHT [Kg]         2.000
CORRECTION DIMENSION [mm] 57
BALANCE QUALITY GRADE ISO1940 G2.5
MAXIMUM SPEED (x1000) [rpm] 15
DIRECTION OF GRADUATION   CW
PRINT OUT LANGUAGE        ENG

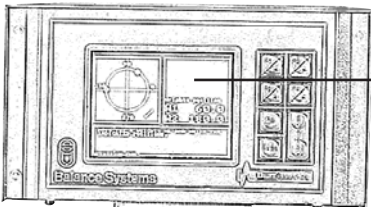
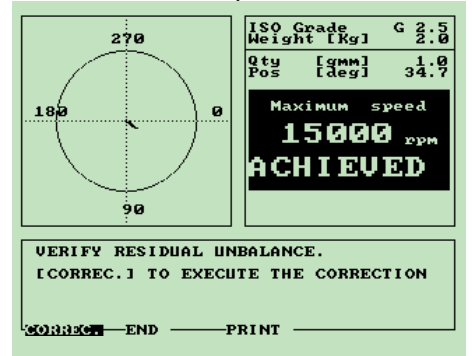
System parameters
TABLE MANAGEMENT          OFF
LANGUAGE                  ENG
STORING UNBALANCE MODE   AUT
CALIBRATION gmm
OPTIONS
EXIT

Introduce ->
ADD DISPLACE RINGS SCREWS ...
    
```

Verify procedure result



Balancing procedure result

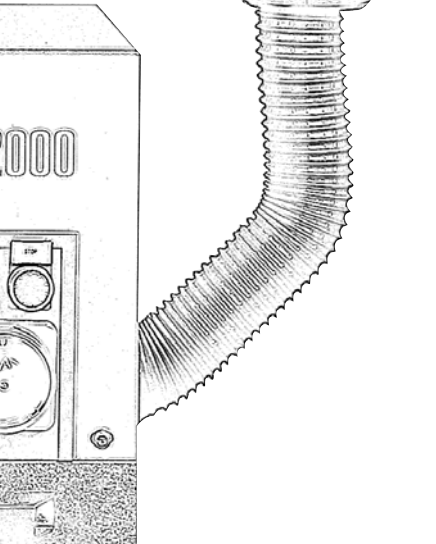


```

*****
* BEST BALANCE 2000 Ver. 2.3
*
* O.E.M. ....
*
* Measured unbalance
* Quantity 18.8 [gmm]
* Position 47.6 [deg]
*
* MAXIMUM SPEED ISO1940
* GRADE G1 1000
* GRADE G2.5 2000
* GRADE G6.3 6000
* GRADE G16 16000
*
* Weight 2.0 [Kg]
* Type .....
* P/N .....
* S/N .....
*
* NOTE: .....
*
* Operator .....
* Date .....
*****
    
```

```

*****
* BEST BALANCE 2000 Ver. 2.3
*
* O.E.M. ....
*
* Initial unbalance
* Quantity 18.8 [gmm]
* Position 47.6 [deg]
*
* Residual unbalance
* Quantity 0.9 [gmm]
* Position 50.1 [deg]
*
* Position weights
* Weight 1 241.3 [deg]
* Weight 2 18.1 [deg]
*
* ISO Grade G 2.5
* Maximum speed 15000 [rpm]
* ACHIEVED
*
* Weight 2.0 [Kg]
* Type .....
* P/N .....
* S/N .....
*
* Operator .....
* Date .....
*****
    
```



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