

# EI SERIES

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Balancing Machine

# EI-30

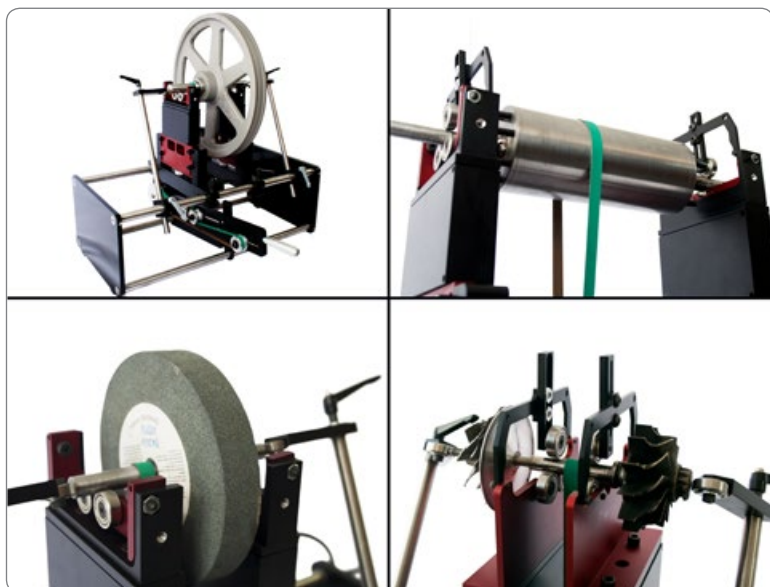


**EI-30 is a horizontal balancing machine** delivering the highest precision ideal for low weight and high speed rotors. The low inertia reduces the resistance to the vibration and increases the sensitivity and precision of the balancing process.

## Characteristics

### Characteristics Technical Specs

- Balancing in 1 and 2 planes without trial weights
- Variable speed with inverter
- Easy to use and easy to adjust
- Adjustable pulleys
- Adjustable height for each support
- Manual adjustment for the transmission system
- Bearing supports minimize mechanical looseness
- Balancing speed 60 to 15,000 RPM
- Slices cantilever
- Optical RPM sensor
- Isolates Mechanic parts to avoid corrosion



## Technical Specs

Max symmetric load	30 kg (66 lb) / 0.1 kg (0.22 lb)
Dimensions (L x An x Al)	609 x 304 x 431 mm (24 x 12 x 17in)
Weight	30 kg (66 lb)
Maximum rotor diameter	533 mm (21 in)
Maximum weight per base	15 kg (33 lb)
Maximum radial displacement	6.35 mm (0.250 in)
Maximum shaft diameter	50 mm (2 in)
Shorter distance between supports	31 mm (1.25 in) / 12 mm (0.5 in)
*Using the support for short rotors	
Longest distance between supports	500 mm (19.75 in)
Aceleccrometer sensitivity	100 mV/g
Power transmission	Flat band
Lubrication	Type-I (manual)
Precision	±0.01 mm/s
Speed Driver	Input: 127/230 VAC~ 50/60Hz Output: 0 - 90/180 VDC
Motor characteristics	124 W (1/6 hp) 90 VDC / 1.8 A 1,800 RPM

The EI-300 balancing machine is ideal for all types of rotating parts up to 300 kg, like rollers, electric motor rotors, crankshafts, fans, mills and more. The soft bearing suspensions are manufactured using the highest quality lowest friction components.



## Characteristics

- Balancing in 1 and 2 planes without trial weights
- Variable speed with inverter
- Adjustable pulleys
- 3 liberty axis per pedestal
- Easy adjustment of the transmission system and support distance
- Soft bearing suspension to minimize mechanical looseness.
- Axials supports
- Sealed Sensors to avoid corrosion
- Slices cantilever
- Easy calibration

## Technical Specs

Max symmetric load	300 kg (660 lb) / 1 kg (2.20 lb)
Dimensions (L x An x Al)	2000 x 950 x 900 mm (79 x 37.5 x 35.5 in)
weight	200 kg (440 lb)
Maximum rotor diameter	1600 mm (63 in)
Maximum weight per base	150 kg (330 lb)
Maximum radial displacement	12 mm (0.5 in)
Maximum shaft diameter	101 mm (4 in)
Distance between supports <small>min/max</small>	100 mm (4 in) / 1778 mm (70 in)
Transmission	V Band Type A
Lubrication	Type-I (manual)
Precision	±0.01 mm/s
Acelerometer sensitivity	100 mV/g
ISO 2953 Reducción de desbalanceo por sec.	97%
Residual Unbalance	1 gmm / 100 kg rotor
Motor characteristics	2.28 kW (3 hp) 220/440 V, 3 phases, 4 poles
Speed shifter	Included, 2.28 kW AC (3 hp)



Slices Cantilever



Extern Sensor



90° Sensor (Opc)



# EI-1000



**The EI- 1000 balancing machine** is perfect for all kind of rotating assets up to 1000 kg, like rollers, motor rotors, crankshafts, mills and many more. The soft bearing suspensions are manufactured utilizing the highest quality antifriction components.

## Characteristics

- Balancing in 1 and 2 planes without trial weights
- Variable speed with inverter
- Adjustable pulleys
- 3 liberty axis per pedestal
- Easy ajust of the transmission system and support distance
- Soft bearing suspension to minimize friction
- Axials supports
- Sealed sensors to avoid corrosion
- Auto-aligned slices
- Easy calibration

## Technical Specs

Max symmetric load	1000 kg (2200 lb) / 3 kg (6.6 lb)
Dimensions (L x An x Al)	2000 x 950 x 1100 mm (79 x 37.5 x 43.25 in)
Weight	200 kg (440 lb)
Maximum rotor diameter	1800 mm (71 in)
Maximum weight per base	500 kg (1100 lb)
Maximum radial displacement	12 mm (0.5 in)
Maximum shaft diameter	101 mm (4 in)
Min / Max distance between supports	100 mm (4 in) / 1778 mm (70 in)
Transmission	Flat B
Lubrication	Type-I (manual)
Precision	±0.01 mm/s
Accelerometer sensitivity	100 mV/g
ISO 2953 unbalance reduction per sec.	97%
Residual Unbalance	2 gmm / 100 kg rotor
Motor Characteristics	3.73 kW (5 hp) 220/440 V, 3 phases, 4 poles
Speed shifter	Included, 3.73 kW AC (5 hp)



# EI-2000

**The EI- 2000 balancing machine** is built for industry and rotors to 2000 kg , just like machine rolls, motors rotors, large crankshafts, mills and more. The soft bearing suspensions of the EI-300 are made of ultralightweight anti-friction components.



## Characteristics

- Balancing in 1 and 2 planes without trial weights
- Variable speed with inverter
- Adjustable pulleys
- 3 liberty axis per pedestal
- Easy ajust of the transmission system and support distance
- Soft bearing suspension to minimize friction.
- Axial Supports
- Sealed sensors to avoid corrosion
- Auto-aligned slices
- Easy calibration

## Technical Specs

Max symmetric load	2000 kg (4400 lb) / 5 kg (11 lb)
Dimensions (L x An x Al)	2000 x 1320 x 1295 mm (79 x 52 x 51 in)
Weight	200 kg (440 lb)
Maximum rotor diameter	2000 mm (79 in)
Maximum weight per base	1000 kg (2200 lb)
Maximum radial displacement	12 mm (0.5 in)
Maximum shaft diameter	228 mm (9 in)
Min / Max distance between supports	152 mm (6 in) / 1778 mm (70 in)
Transmission	Flat Belt
Lubrication	Type-I (manual)
Precision	±0.01 mm/s
Accelerometer Sensitivity	100 mV/g
ISO 2953 Reducción de desbalanceo por sec.	97%
Residual unbalance	2 gmm / 100 kg rotor
Motor caracteristics	3.73 kW (5 hp) 220/440 V, 3 fases, 4 polos
Speed inverter	Included, 3.73 kW AC (5 hp)

\*Using a Soft Bearing suspension system



# EI-4500

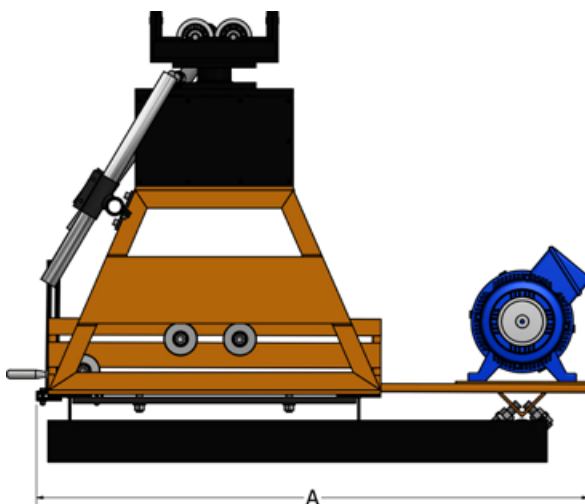


The **EI-4500 balancing machine** responds perfectly to the needs of industrial customers that balance mid-weight rotors. With the “trial weights” mode or influence coefficients you can balance fans, rollers, electric rotors and more.

## Characteristics

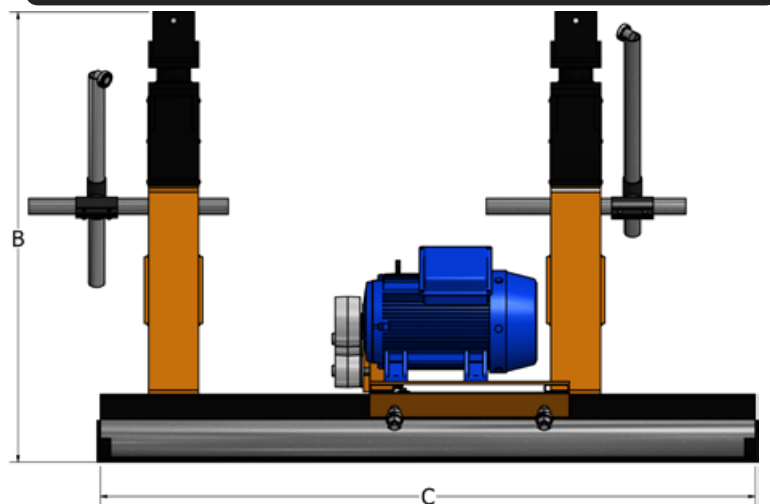
- Slices with 2 positions
- Elevation screw
- Axial supports
- Flat belt transmission
- 3 liberty axis per pedestal
- 3 flat pulleys for transmission ajust
- Flat drive pulley
- Electric motor
- 2 acelerometers
- 2 channel interface
- Optical sensor with magnetic base

A	1 700 mm / 67.00"
B	1 220 mm / 48.00"
C	2 000 mm / 78.74"



## Technical Specs

Max symmetric load	4 500 kg (10 000 lb) / 10 kg (22 lb)
Dimensions (L x An x Al)	2 000 x 1 700 x 1 220 mm (78.74 x 67 x 48 in)
Weight	Per base: 78 kg (573.20 lb) Complete: 600 kg (1 322.78 lb)
Maximum rotor diameter	1 700 mm (66.929 in)
Maximum radial displacement	25.4 mm (1 in)
Maximum shaft diameter	279.4 mm (11 in)
Min / Max distance between supports	254 - 1778 mm (10 - 70 in)
Maximum shaft diameter	177 mm (7 in) / 1,700 mm (67 in)
Diameter's difference in pivots	50.8 mm (2 in)
Length of the bench	2 000 mm (78.75 in)
Lock system	Yes (manual operation)
Vibration sensors	2 accelerometers (with 2 pins connectors)
Accelerometer sensitivity	100 mV/g
ISO 2953 Unbalance reduction per sequence Desequilibrio de Reducción por Secuencia	97%
Transmission	Flat Belt with manual tension
Lubrication	Tipo I (Manual)
Residual Unbalance	2 gmm / 100 kg rotor
Motor characteristics	7.5 hp (5.6 kW) 220/440 VAC 4 poles

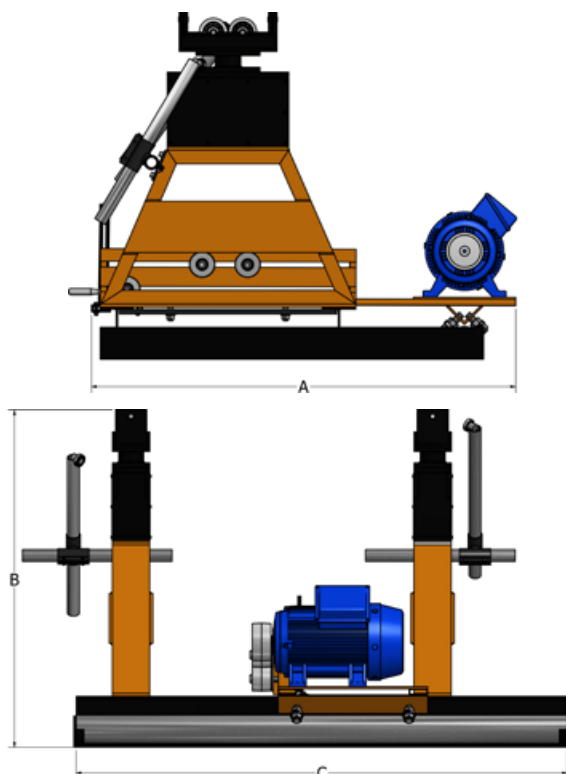


The **EI-6000 balancing machine** is built to be rugged, repeatable, and reliable. With the “trial weights” mode or influence coefficients you can balance fans, rollers, electric rotors and more.



## Characteristics

- Slices with 2 positions
- Elevation screw
- Axial supports
- Flat belt transmission
- 3 flat pulleys for transmission ajust
- Flat drive pulley
- Electric motor
- 2 acelerometers
- 2 channel interface
- Optical sensor with magnetic base



## Technical Specs

Max symmetric load	6 000 kg (13 228 lb) / 15 kg (33 lb)
Dimensions (L x An x Al)	2 000 x 1 686.3 x 1 371.6 mm (78.74 x 66.4 x 54 in)
Weight	Per base: 125 kg (263 lb) Complete: 1 280 kg (2 825 lb)
Maximum rotor diameter	2 000 mm (78.74 in)
Maximum radial displacement	25.4 mm (1 in)
Maximum shaft diameter	320.7 mm (12.625 in)
Min / Max distance between supports	355.6 - 1 943.1 mm (14 - 76.5 in)
Shorter distance between supports	482.6 - 2 500 mm (19 - 98.42 in)
*Using the support for short rotors	
Diameter's difference in pivots	76.2 mm (3 in)
Length of the bench	2 000 mm (78.74 in)
Lock system	Yes (mechanic operation)
Vibration sensors	2 acelerometers (with 2 pins connector)
Accelerometer sensitivity	100 mV/g
ISO 2953 Unbalance reduction per sequence	97%
Transmission	Flat belt with tension manual
Lubrication	Type I (Manual)
Residual Unbalance	2 gmm / 100 kg rotor
Motor characteristics	Included, 10 hp (7.45 kW) 220/440 VAC 4 polos

A	1 686.3 mm / 66.40"
B	1 371.6 mm / 54.00"
C	2 000 mm / 78.74"

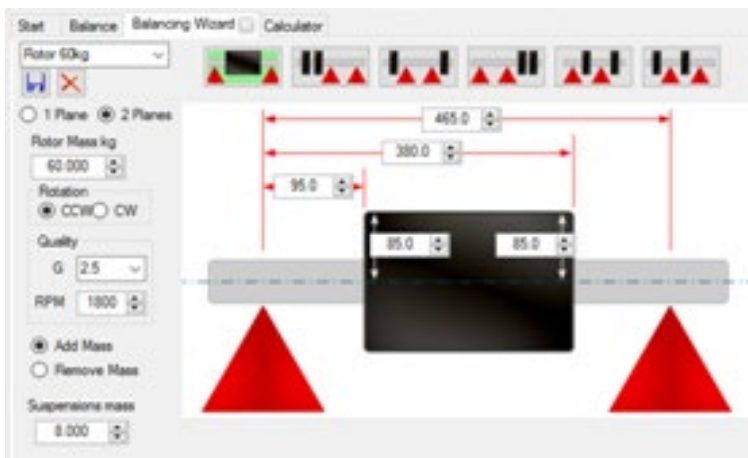


Powerful...  
Precise..  
Performance.  
The dynamic  
**balancing system**



**DigivibeMX M10** is the most powerful and precise solutions for dynamic balancing available on the market today. It is built with an intuitive interface and designed for both novice and for the most demanding users.

**DigivibeMX M10** includes:

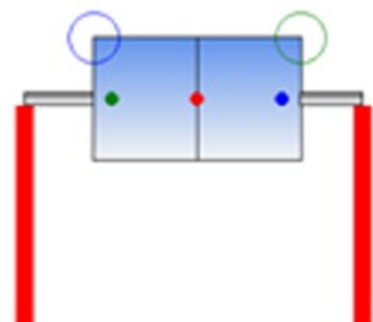


- › Balancing without trial weights
- › Calculator with 12 functions
- › Balancing Wizard & In-Situ
- › Balancing without phase
- › Automatic Balancing Reports
- › Multi-lingual software

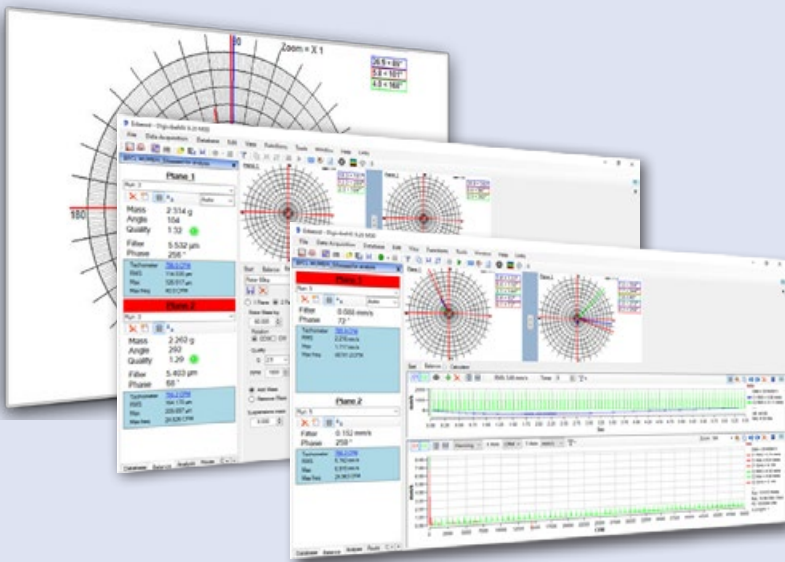
## Excellent **precision**

With this system you can obtain superior balancing quality

- › Quality grad: G 0.4 @ 30 000 rpm
- › Residual Unbalance: 1g mm/100 Kg
- › Speed: 0.01 mm/s (ISO 10816)







Functions and  
tools  
**easy to use**

## Balancing Tools

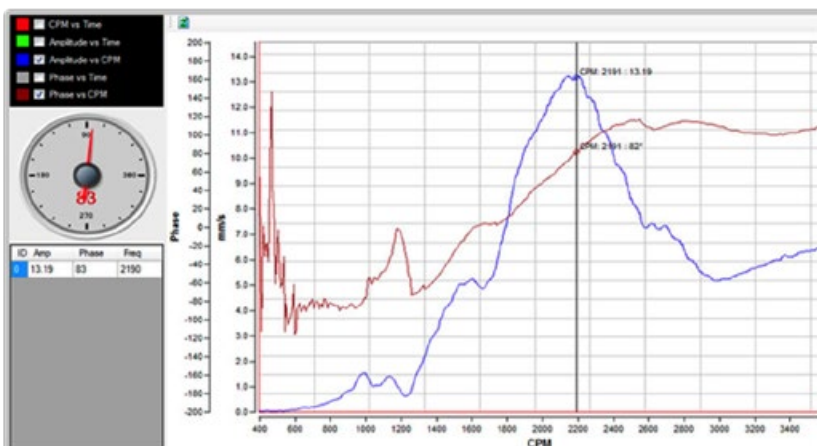
2 Polar Graphs Balancing calculator with 12 functions:

- Add or remove weight
- Separate and combine weights
- Trial Weights
- Balancing in series ( without trial weights)
- Drill depth
- Plate size
- Residual Unbalance
- Quality grade
- Balancing vs report

➤ Automatic balancing reports:

- Runs values separates in tables
- Balancing evolution in RMS and filtered values
- FFT spectra
- Signal based on time in waterfall format
- Polar graphics with vibration phase
- Final spectrum

**DigivibeMX M10** includes advanced features like:



- **Bode diagram**
- **Frequency response**
- **Soft Bearing Suspension Mode**

# DigivibeMX includes:

## 2-Channel interface



- 4-pin connectors (1-A, 1-B, 2) for 24V accelerometers
- 5-pin connector (Op) for Optical Sensor
- Selector button (Ch 1 / Ch 2)
- Cable with USB connector (15cm)
- Weight 230g
- Dimensions (mm): 60(d) x 90(w) x 30(h)

## Accelerometer



- Dinamyc Impact Shock: 50g peak (max shock 5000g)
- Freq. response (+/- 3dB): 0.32 - 13000 Hz
- Freq. response (+/- 5%): 2 - 10000 Hz
- Sensitivity: 100 mV/g +/- 10%
- Transverse sensitivity: < 5%
- Power supply: 18-30 V / 3-8 mA
- Short-circuit protection
- Operation temp.: -10 - 50 °C
- Protection grade: IP 67, III
- Impact resistance: IEC 60028-27
- Standard 2-Pin MIL connector
- Magnetic Base
- Weight 50g
- Stainless steel body

## Laser Optical Sensor



- Analogic output / Range: 1 - 5000 Hz
- Power and current supply: 5V , 20 - 30 mA.
- Voltage drop: <0.4 V
- Short circuit, Reverse Voltage and Over-Voltage (15V for 1min) protection
- Operation distance: up to 15 m
- Operating temp: -10 - 50 °C
- Storing temp: -40 - 85 °C
- Protection grade: IP 67, III
- Impact Resistance: IEC 60028-27
- Weight 60 g
- Nylamid body

## Cables



## Calibrator



## Soft Case & Magnetic Base



\*Only M10 y M30

## Installation CD & User Manual

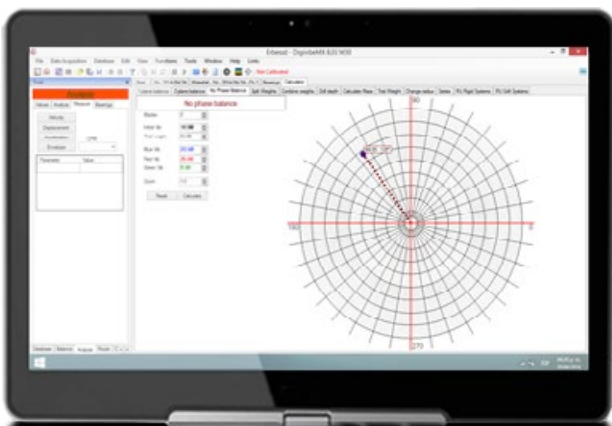


# Software highlights

- Displacement: 0.5 um to 30 mm (0.02 to 1200 mils)
- Velocity: 0.002 to 3000 mm/s (0.0001 to 120 in/s)
- Acceleration: 0.0001 to 100 G's PP
- Lines of resolution: > 1 000 000
- FFT windows: Rectangular, Hanning, Hamming, Flaptop, Blackman, CosSum, Bartlett, Kaiser
- Measures: Peak, Peak to Peak, RMS

# System requirements

## Hardware & Software Requirements:



- Processor 1.6 GHz Minimum
- 1 GB RAM Minimum
- Windows 7 or newer (supports Windows 8.1 & Windows 10\*)
- SVGA Monitor or better
- “Touch” mode for touch screen
- 300 MB free disk space
- 1 USB 2.0 port

\*No available on Windows Mobile or Windows RT.

# Accessories

The EI Series balancing machines have a wide range of optional accessories and supplies to improve performance and reliability.



## Negative Load Support (Optional)

EI-30



EI-300, EI-1000, EI-2000, EI-4500, EI-6000



Accessory required to secure rotors with high vibration levels like crankshafts.

## Axial Supports (Included)



The axial supports limit axial displacement.

## Pulleys Set (Included)



## Transmission Belt (Included)







**Service & Support Engineer**

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