

Model 290 Balancing Instrument



FOR USE WITH SOFT & HARD BEARING BALANCING MACHINES

DESCRIPTION:

The Model 290 is an easy to use, computer based Balancing Instrument with unmatched performance in balancing all types of rotors on Soft and/or Hard bearing balancing machines. In addition, the 290 can be used to replace outdated instruments and improve the performance of older machines. Anyone can use the Model 290 to balance rotors with only very basic training. Once the instrument is calibrated, the operator simply needs to enter the rotor dimensions, spin the rotor and read the unbalance corrections on the graphic display. The 290 electronics provides a wide range of balancing speeds, high measurement accuracy and unique signal filtering. Low speed precision balancing is a major feature of the Model 290.

GENERAL SPECIFICATIONS:

- Balancing Speed Range: 30 to 6,000 RPM
- Amount Readout : Auto Ranges between 0.01 to 5,000 micrometers p-p (0.001 to 199 mils p-p)
- Filter : Dual, narrow band shaft synchronous, digital tracking filters, with averaging
- Number of Balance Planes : 1 or 2
- Calibration Methods : Trial Weights, Auto Calibration or Permanent (Hard Bearing machines only)
- Display : High resolution (480 x 640 Pixels) flat Color LCD Video Display (260 mm diagonal)



- Help Keys for On Line Instrument Information. Application help for various balance topics.
 - Touch activated LCD screen for user input (numeric keypad and ASCII keyboard on demand)
 - Unbalance Readout : g mm, g in, oz in, grams or ounces
 - Vibration Readout : micrometers or mils (on soft bearing machines)
 - Unbalance Tolerance determination for ISO, API, MIL-SPEC or User specifications.
 - Colored indication for "In Tolerance" and "Out of Tolerance" Balance Conditions.
 - Display of Dynamic (Left / Right) Unbalance or Static / Couple Unbalance.
 - Display correction angles for independently adding or removing rotor balance weights.
 - Unbalance Display in Digital Format or combined Polar / Digital Format.
 - Rotor Memory storage for up to 500 different rotors internally; unlimited on external disks
 - Vector Splitting of unbalance corrections
 - Vector Addition of unbalance corrections for combining weights
 - Electronic Compensation for tooling errors caused by cardan shafts or adapters
 - Electronic Compensation for keys and keyways
 - Semi Automatic or Manual Balance mode cycles. (Spin / Measure)
 - Customized Balance Reports on optional external printer
 - Free standing configuration:
 - 520x400x345 mm (LengthxWidthxHeight)
 - Net Weight: 20 kg (44lb) (no accessories)
 - Power Supply: 115/230VAC
 - Language Selection: English, French and Spanish
 - Angle encoder input for the display of the unbalance position (requires 1024 ppr external encoder, not included)
- ### OPTIONAL FEATURES:
- Angle encoder (fitted to balancing machine) for the display of the angular position of the rotor
 - Printer : Full size, Hewlett Packard Desk Jet
 - Printer Cable



STANDARD CONFIGURATIONS:		
290 Package	Brief Description	Detailed Description
E44000	Basic Instrument only	Model 290 for applications where all accessories (vibration sensors, photocells, mounting brackets and cables) are already available. This package includes the 290 instrument, power cable, operation manual, software installation disk and vinyl dust cover.
E00577	Instrument and Accessories for Soft Bearing Balancing Machines (B5-B200)	Model 290 for new or existing Soft Bearing Balancing Machines. Accessories, in addition to those included in the E44000 Package, include: two Model 546DP sensors, photocell, photocell reflective tape, photocell mounting assembly and all cables.
E00579	Instrument and Accessories for Soft Bearing Roll Balancing Machines (B200R-B1500R)	Model 290 for new or existing Soft Bearing Balancing Machines/Pedestals. Accessories, in addition to those included in the E44000 Package, include: photocell, photocell reflective tape, photocell mounting assembly with tubes/brackets and all cables.
E00610	Instrument and Accessories for Large Capacity Balancing Pedestals (BP2000-BP5000)	
E45309	Instrument, Accessories and Printer for Large Capacity End Drive Machines (B500-B140)	Model 290 for new or existing Soft Bearing End Drive Balancing Machines. Accessories, in addition to those included in the E44000 Package, include: two Model 546DP sensors, printer and all cables.
E00599	Instrument and Accessories for Hard Bearing Machine Upgrade	Model 290 for new or existing Hard Bearing Balancing Machines. Accessories, in addition to those included in the E44000 Package, include: photocell, photocell reflective tape, photocell mounting assembly and cable. Two sets of sensor cables are also included in the package (Details of existing sensors are required).

	E44000 Package (290 Basic Inst.) includes
E45106	Software Installation disk
E36218	Vinyl dust cover
E43490	Operation manual for 290 Balancing Instrument-English
E19643	AC Power Supply Cable with US plug, 120VAC, 3 m
	E00577 Package (B5-B200 Balancing Machine) includes
E44000	290 Basic Instrument Package
E21000	Speed sensor, reflective tape trigger, 25-610 mm range
E21200	Reflective tape for use with speed sensor, 47.5m/150'
E26720	Universal holder for mounting speed sensor on machine
E10179	Cable for P/N E21000 photoelectric speed sensor, 7.6m/25'
E11194	546DP Vibration sensor with mag. tip & mtg. bracket, Qty. 2
E04690	Cable for 544/546DP vibration sensor, 7.6m/25', Qty. 2
	E00579 Package (B200R-B1500R Roll Balancing Machine) includes
E44000	290 Basic Instrument Package
E21000	Speed sensor, reflective tape trigger, 25-610 mm range
E21200	Reflective tape for use with speed sensor, 47.5m/150'
E26720	Universal holder for mounting speed sensor on machine
E10179	Cable for P/N E21000 photoelectric speed sensor, 7.6m/25'

E11194	546DP Vibration sensor with mag. tip & mtg. bracket, Qty. 2
E04915	Cable for 544/546DP vibration sensor, 1.2m/4', Qty. 2
E05202	Cable for 544/546DP vibration sensor, 22.9m/75', Qty. 2
E34752	Cable for use with angular location sensor, 1.8m/6'
E36234	End-Thrust Tube 812mm/32" for mounting speed sensor holder, P/N E26720
E36239	Flange bracket for mounting P/N E36234 tube
-	Miscellaneous mounting hardware
	E00610 Package (BP2000-BP5000 Balancing Pedestals) includes
E44000	290 Basic Instrument Package
E21000	Speed sensor, reflective tape trigger, 25-610 mm range
E21200	Reflective tape for use with speed sensor, 47.5m/150'
E26720	Universal holder for mounting speed sensor on machine
E10179	Cable for P/N E21000 photoelectric speed sensor, 7.6m/25'
E11194	546DP Vibration sensor with mag. tip & mtg. bracket, Qty. 2
E05202	Cable for 544/546DP vibration sensor, 22.9m/75', Qty. 2
E36234	End-Thrust Tube 812mm/32" for mounting speed sensor holder, P/N E26720
E36239	Flange bracket for mounting P/N E36234 tube
-	Miscellaneous mounting hardware

	E45309 Package (B500-B140 End Drive Balancing Machine) includes
E44000	290 Basic Instrument Package
E11194	546DP Vibration sensor with mag. tip & mtg. bracket, Qty. 2
E04691	Cable for 544/546DP vibration sensor, 7.6m/50', Qty. 2
E43494	DeskJet printer, 120VAC
E43497	Parallel printer cable, 1.8m/6'
	E00599 Package (For Hard Bearing Balancing Machine Upgrade) includes
E44000	290 Basic Instrument Package
E21000	Speed sensor, reflective tape trigger, 25-610 mm range
E21200	Reflective tape for use with speed sensor, 47.5m/150'
E10179	Cable for P/N E21000 photoelectric speed sensor, 7.6m/25'
E26383	Magnetic flex arm holder for speed sensor
E31506	Cable for use with hard bearing machine sensors with 6 pin Epic connectors, 7.6m/25', Qty. 2
E37668	Cable for use with self powered force or vibration sensors, flying leads, 7.6m/25', Qty 2
	Options, Accessories, and Supplies
E41874	AC Power Supply Cable with UK plug
E41554	AC Power Supply Cable with European plug
E41626	AC Power Supply Cable with Australian plug
E02785	546DP Vibration sensor only
E11194	546DP Vibration sensor with magnetic tip, mounting bracket and hardware
E10170	Magnetic tip for use with 546DP vibration sensor
E04915	Cable for use with 544/546DP vibration sensor, 1.2m/4'
E04521	Cable for use with 544/546DP vibration sensor, 3.7m/12'
E04690	Cable for use with 544/546DP vibration sensor, 7.6m/25'
E04691	Cable for use with 544/546DP vibration sensor, 15m/50'
E05202	Cable for use with 544/546DP vibration sensor, 22.9m/75'
E04692	Cable for use with 544/546DP vibration sensor, 30m/100'
E23700	Cable for use with 544/546DP vibration sensor whip indicator, has 90 deg connector at sensor, 22.9m/75'
E37668	Cable for use with self powered force or vibration sensors, flying leads, 7.6m/25'
E31506	Cable for use with hard bearing machine sensors with 6 pin Epic connectors, 7.6m/25'
E21000	Photoelectric speed sensor, standard, reflective tape trigger, 25-610 mm range

E21200	Reflective tape for use with speed sensor, 47.5m/150'
E11689	Cable for P/N E21000 photoelectric speed sensor, 1.5m/5'
E10179	Cable for P/N E21000 photoelectric speed sensor, 7.6m/25'
E25863	Cable for P/N E21000 photoelectric speed sensor, 15.2m/50'
E43494	DeskJet printer, 120VAC
E43497	Parallel printer cable, 1.8m/6'
E34752	Cable for use with angular location sensor, 1.8m/6'
E34599	Angular location sensor assembly with 7.6m/25' cable. Note motor shaft mounting kit not included. Please call with motor shaft diameter for proper mtg. kit.
E42002	Switch Box for connecting vibration sensors and speed sensor between Two Balancing Machines and one 290. Uses sensors and cables from balancing machines.
E00584-60H	B5/B5F 60 Hz Automatic Calibration System
E00584-50H	B5/B5F 50 Hz Automatic Calibration System
E00585-60H	B10/B10F/B10U 60 Hz Automatic Calibration System
E00585-50H	B10/B10F/B10U 50 Hz Automatic Calibration System
E00586-60H	B50 60 Hz Automatic Calibration System
E00586-50H	B50 50 Hz Automatic Calibration System
E00587-60H	B20/B50F/B50U 60 Hz Automatic Calibration System
E00587-50H	B20/B50F/B50U 50 Hz Automatic Calibration System
E00588-60H	B100/B150/B150F/B150U 60 Hz Automatic Calibration Sys
E00588-50H	B100/B150/B150F/B150U 50 Hz Automatic Calibration Sys
E00589-60H	B200/B200F/B200U/B200R 60 Hz Automatic Calibration Sys
E00589-50H	B200/B200F/B200U/B200R 50 Hz Automatic Calibration Sys
E26720	Universal mounting arm for speed sensor
E26383	Magnetic flex arm holder for speed sensor
E33678	Printer paper for older 290s with internal printer (not E44000), qty. 5 rolls
E35517	Rotor Memory disk, 720Kb for 290s manufactured before 1998 (not E44000). Note: E44000 instruments can use standard 1.4 Mb, DOS formatted disks.
E19061	Magnetic base angle indicator, attaches to rotor to help locate unbalance angle.
E11820	Balancing wax, sold by the pound
E32147	Epoxy balancing weight compound, 2 lb package
E04753	Balancing weights, steel, set of 16, C-shaped with set screw
E11946	Balancing clips for squirrel cage fans, steel, (7 sizes of 100 ea)

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Specifications are subject to change without prior notice.

Publication No: BAL-303-EN-3(Revised 17 Apr 2006)

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Part Number E51207