

# Model 246

## Portable Balancing Instrument



### FOR IN-SITU BALANCING & FOR USE WITH ALL TYPES OF BALANCING MACHINES

#### DESCRIPTION:

The Model 246 is a portable, easy to use Balancing Instrument with automatic speed tracking of vibration amplitude and angle. It can be used to balance all types of rotors 'In Situ' and on Soft or Hard Bearing balancing machines. The 246 can be used to replace outdated instruments and improve the performance of older balancing machines. Anyone can use the 246 to balance rotors with minimal training. Once the instrument is calibrated, the operator simply needs to spin the rotor and read the unbalance corrections on the LCD display screen. The small size and light weight of the model 246 make it very easy to hand carry to the job site. The built-in printer provides hard copy reports of the before and after balancing results.

#### GENERAL SPECIFICATIONS:

- Balancing Speed Range: 60 to 80,000 RPM
- Amount Readout: Auto-Ranges between 0.001 to 5 000 micrometers p-p (0.0001 to 199 mils p-p) or 0.0001 to 228 mm/sec pk (0.0001 to 9 in/sec pk)
- Digital Angle Readout: 0-359 degrees
- Filter: Dual, narrow band shaft-synchronous digital tracking filters, with averaging
- Number of Balance Planes: 1 or 2
- Calibration Methods: Trial Weights or Permanent (Hard Bearing machines only)
- Display: Dual Channel, backlit supertwist alphanumeric LCD with 2 lines x 40 characters per line
- Numeric keypad with 6 Function keys for data entry



- Unbalance Readout: g mm, g in, oz in, grams or ounces
  - Vibration Readout: micrometers, mils, millimeters/second or inches/second
  - Display of Dynamic (Left/Right) Unbalance or Static/Couple Unbalance
  - Display of correction angles for adding or removing rotor balance weights
  - Unbalance Display in Digital Format
  - Non-Volatile Rotor Memory storage for up to 50 different rotors internally
  - Automatic 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
  - Customized Headings on Balance Reports (with external computer)
  - Built in thermal printer: 80 mm (3.15 inch) wide continuous paper
  - Serial RS232 interface to send balance data to an external computer
  - CE certification: According to EU directives 89/336EEC (EMC) and 73/23EEC (Product Safety)
  - Electromagnetic Std: EN61000-6.2:2001 EN61000-6.3:2001
  - Product Safety Std: EN61010-1:2001
  - Available Accessories: Vibration sensors, photocell speed sensor, cables, etc.
  - Briefcase configuration:
    - 415 x 300 x 125 mm (LengthxWidthxHeight)
    - Weight: 6 kg (13 lb) (no accessories)
    - Power Supply: 120/240VAC, 50/60Hz
    - Temperature: Operating 0 to +50° C
  - Switch Selectable Language Options: English, German, French, Italian and Spanish
  - Angle encoder input for the display of the unbalance position (requires 1024 ppr external encoder, not included)
- #### OPTIONAL FEATURES:
- Printer: Full size printer
  - External DC battery pack



<b>STANDARD CONFIGURATIONS:</b>		
<b>246 Package</b>	<b>Brief Description</b>	<b>Detailed Description</b>
E00312	Basic Instrument only	Model 246 for applications where all accessories (vibration sensors, speed sensor, mounting brackets, cables, etc.) are already available. This package includes the 246 instrument, three power cables (US, UK and European), an operation manual, two rolls of printer paper and a PC communications disk.
E00310	Instrument and Accessories for IRD Belt Drive Balancing Machines (B5-B200)	Model 246 for new or existing IRD Soft Bearing, Belt Drive Balancing Machines, B5 – B200. Accessories, in addition to those included in the E00312 Package, include two 546DP (direct prod) sensors, photocell, photocell reflective tape, photocell mounting arm assembly and all cables.
E00311	Field Balancing Package #1 (544 velocity sensor)	Model 246 with two 544 seismic high output, self generating vibration sensors for Field Balancing. Accessories, in addition to those included in the E00312 Package, include photocell, photocell reflective tape, magnetic flexible arm holder for photocell, magnetic holders for the 544s, all cables and accessory case.
E00317	Field Balancing Package #2 (9100VO Piezo-Velocity sensor)	Model 246 with two small 9100VOH02 (32mm dia x 66mm lg) piezo-velocity seismic high output vibration sensors for Field Balancing. Accessories, in addition to those included in the E00312 Package, include photocell, reflective tape, magnetic flexible arm holder for photocell, magnetic holders for the 9100s, power unit for 9100, all cables and accessory case. An optional AC line adapter is available for the power unit.
E00318	Instrument and Accessories for IRD End Drive Balancing Machines (B500-B140)	Model 246 for new or existing IRD Soft Bearing, End Drive Balancing Machines, B500 – B140. Accessories, in addition to those included in the E00312 Package, include two 546DP (direct prod) sensors, 15.2m/50' vibration cables and printer. Note –IRD End Drive Machines already include a speed sensor and cable.

<b>E00312 Package (246 Basic Inst.) includes</b>	
E71301	Model 246 Balancing Instrument
E70057	Operation manual for 246 Balancing Instrument-English
E71270	Printer paper,(80mm wd x 25m/82ft lg per roll), Qty. 2 rolls
E72658	PC communications software floppy disk(3-1/2")
E19643	AC Power Supply Cable with US plug, 120VAC, 3 m
E41874	AC Power Supply Cable with UK plug
E41554	AC Power Supply Cable with European plug
<b>E00310 Package (Bal. Machine) includes</b>	
E00312	246 Balancing Instrument Package
E11194	546DP Vibration sensor with mag. Tip & mtg. bracket, Qty. 2
E21000	Speed sensor, reflective tape trigger, 25-610 mm range
E21200	Reflective tape for use with speed sensor, 47.5m/150'
E04690	Cable for 544/546DP vibration sensor,7.6m/25', Qty. 2
E10179	Cable for P/N E21000 photoelectric speed sensor, 7.6m/25'
E26720	Universal holder for mounting speed sensor on machine
<b>E00311 Package (Field Balance #1) includes</b>	
E00312	246 Balancing Instrument Package
E04526	544 Velocity Vibration sensor for field balancing, Qty. 2
E04332	Magnetic holder for use with 544 vibration sensor, Qty. 2
E21000	Speed sensor, reflective tape trigger, 25-610 mm range
E21200	Reflective tape for use with speed sensor, 47.5m/150'
E04690	Cable for 544/546DP vibration sensor,7.6m/25', Qty. 2
E10179	Cable for P/N E21000 photoelectric speed sensor, 7.6m/25'
E26383	Magnetic base flex arm holder for speed sensor
E45350	Accessory bag for holding sensors and cables, backpack style

<b>E00317 Package (Field Balance #2) includes</b>	
E00312	246 Balancing Instrument Package
E44445	Compact vibration sensor 9100VO-H02, 32mm dia., Qty. 2
E41529	Magnetic holder for 9100VO sensor,38mm/1.5" dia., Qty. 2
E44339	Power unit for 9100VO sensor (with 9V batteries)
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'
E37385	Cable for 9100VO sensor to power unit, 7.6m/25', Qty. 2
E44341	Cable for power unit to balancing instrument, .9m/3', Qty. 2
E10179	Cable for P/N E21000 photoelectric speed sensor, 7.6m/25'
E26383	Magnetic base flex arm holder for speed sensor
E45350	Accessory bag for holding sensors and cables, backpack style
<b>E00318 Package (End Drive Machine) includes</b>	
E00312	246 Balancing Instrument Package
E11194	546DP Vibration sensor with mag. Tip & mtg. bracket, Qty. 2
E04691	Cable for 544/546DP vibration sensor,15.2m/50', Qty. 2
E47164	External Printer, 9 Pin Dot Matrix, continuous paper, 120VAC 50/60Hz
E47163	Cut sheet paper feeder for printer P/N E47164
<b>E44818 Small Sensor Kit (included in E00317)</b>	
E44445	Compact vibration sensor 9100VO-H02, 32mm dia., Qty. 2
E41529	Magnetic holder for 9100VO sensor,38mm/1.5" dia., Qty. 2
E44339	Power unit for 9100VO sensor (with 9V batteries)
E37385	Cable for 9100VO sensor to power unit, 7.6m/25', Qty. 2
E44341	Cable for power unit to balancing instrument, .9m/3', Qty. 2

<b>Other Options, Accessories and Supplies</b>	
E71270	Printer paper, atv. 1 roll ,180mm wd x 25m/82ft lg per roll)
E35770	Printer paper, qty. 5 rolls,(80mm wd x 25m/82ft lg per roll)
E41626	AC Power Supply Cable with Australian plug
E27100	246 External Battery pack (12 volt,13AH) with 120VAC charger & cable
E48372	Universal Battery charger for E27100 pack, 120/240VAC, 50/60Hz, auto-switching
E26391	Cigarette lighter adapter (12 volt DC) with 3m/10' cable, powers 246 through automotive 12V DC acc'y outlet
E70057	Operation manual for 246 Balancing Instrument-English
E70072	Operation manual for 246 Balancing Instrument-French
E70074	Operation manual for 246 Balancing Instrument-Spanish
E02785	546DP Vibration sensor only – no magnetic tip or mtg bracket
E11194	546DP Vib. sensor with mag. tip, mtg. bracket and hardware
E10170	Magnetic tip for use with 546DP vibration sensor
E04526	544 Velocity Vibration sensor for field balancing
E04332	Magnetic holder for use with 544 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, 23m/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'
E44339NIC	Power unit for 9100V0 sensor (with rechargeable 9V NICAD batteries). Includes E44340 line adapter/charger.
E44340	Line adapter, 90-240VAC, for 9100V0 sensor power unit, E44339. (Included with E44339NIC)
E48665-010	Cable for 9100V0 sensor to power unit, 3m/10'
E37388	Extension cable, BNC/BNC M/F for E37385 or E48665-010 cables, 7.6m/25'
E21000	Photoelectric speed sensor, 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'

<b>Other Options, Accessories and Supplies (cont)</b>	
E47240	Laser speed sensor, 5Vdc, reflective tape trigger,100-2000mm
E47244	Cable for laser sensor to 236,246,290, 5m/16.4'
E47246	Cable for laser sensor to 236,246,290, 10m/32.8'
E39581	Strobe light kit for 120VAC. Includes charger and carrying case.
E39582	Strobe light kit for 240VAC. Includes charger and carrying case.
E48583	Replacement charger for 240VAC Strobe light kit, E39582
E39066	Connector adapter, BNC to 4-pin reference input for 236/246/290 (Required for strobe kit)
E47164	External Printer, 9 Pin Dot Matrix, continuous paper, 120VAC 50/60Hz
E47164-230	External Printer, 9 Pin Dot Matrix, continuous paper, 230VAC 50Hz
E43497	Printer cable, 1.8m/6'
E47163	Cut sheet paper feeder for printer P/N E47164
E19061	Magnetic base angle indicator, attaches to rotor to help locate unbalance angle.
E47165	Scale, 120 gram capacity, portable, battery operated.
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)

[www.irdbalancing.com](http://www.irdbalancing.com) email: [sales@irdbalancing.com](mailto:sales@irdbalancing.com)

### IRD Balancing Offices (IRD LLC)

USA: Global Headquarters and Factory- IRD LLC, 4740 Allmond Ave, Louisville, KY 40209 USA

Tel: (1) 502 366 0916 or (1) 888 473 2251 (US Toll Free) Fax: (1) 502 238 1001

Europe/UK: IRD UK Ltd, International House, Aviation Park, Flint Road, Saltney Ferry, Chester CH4 0GZ, UK

Tel: +44 (0) 1244 538 170 Fax: +44 (0) 1244 528 900

Mexico: IRD Balancing-Mexico S. de R. L. de C.V., Miguel G. Kramer #29, Col. Atlantida, Mexico D.F., MX 04370

Tel: +52 55 5689 8325 Fax: + 52 55 5689 8160

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