

vb1000b™



DUAL-PLANE IMBALANCE CORRECTION PACKAGE

Calculate ISO1940 balance	
1	Rotor Weight 100 kg
2	Rotor Diameter 100 mm
3	Rotor Speed 50.0 Hz
4	ISO Balance G1.00
Maximum residual 6 g	
6	Select mass units
7	Select diameter units
8	Select speed units
9	Residual weight units
ENTER Continue	

Suggest Trial Weight	
1	Rotor Weight 100 lb
2	Rotor Diameter 10.00 in
3	Rotor Speed 600 RPM
Suggested Weight 3.13 oz	
6	Select mass units
7	Select diameter units
8	Select speed units
9	Suggested weight units
ENTER Continue	

A compact, rugged, dynamic balancing instrument capable of solving any dual-plane balancing problem with ease. Lightweight and extremely portable, the **vb1000b** is easily carried on site to any problematic machine.

Imbalance causes high levels of mechanical stress and vibration that are transferred directly to the bearings resulting in a proportional reduction in normal bearing life.

With a few basic parameters the **vb1000b** calculates acceptable imbalance levels to ensure machinery operates within international ISO 1940 guidelines.

Other calculations available:

- Trial weight – automatically suggested mass value for increased accuracy and efficiency
- Split weights – allows a correction weight normally specified at a particular angle to be split and applied at alternative angles
- Combine weights – calculates combined mass values for a specified correction angle
- Change radius – calculates the change required for the correction mass at a given radius

Setup

The **vb1000b** setup is minimal, quick and easy. Only a few calibration runs are required, with or without removing your trial weight.

Memory

The **vb1000b** stores your previous balance run data. No need to waste valuable time performing calibration runs on repetitive or routine balance jobs.

Balance

Imbalance is computed quickly and the display indicates the angular position for weight correction.

Reporting

Balancing reports, including customer and machine details, can be transferred to your favorite reporting application using Commtest's "Report Grabber" utility.

SPECIFICATIONS	MODEL vb1000b	REMARKS
Accelerometer Input		
Number of channels	2	
Type	2-wire, low impedance piezoelectric	Commonly termed 'ICP® type'
Sensitivity	100 mV/g nominal	Calibration adjustable 8.5 mV/g to 2300 mV/g
Connector	BNC	Safety feature: break-free inline connector
Input impedance	> 100 kΩ	
Voltage swing	16 V peak-peak	AC coupled input, allows for ± 8 V sensor output swing (± 80 g)
Sensor excitation current	0 mA or 2.2 mA (configurable)	2.2 mA required for ICP® type accelerometer
Sensor excitation voltage	24 V maximum	At sensor terminals with sensor attached
Tachometer		
Sensor	Laser sensor with reflective tape included in kit	
Laser sensor range	10 cm to 2 m nominal	Sensor triggers when the tape reflects its beam
Sensor supply	7.2 V nominal 6.0 V to 9.5 V instrument battery	Dependent on size of reflective tape
Input type	Optically isolated, accepts TTL pulse	Available to power sensor. Protected by 0.1 A PTC
Pulse rating	2.5 V (4 mA) min, 10 V (27 mA) max, off-state < 0.8 V	Triggers on negative edge
Speed range	30 RPM to 65 000 RPM (0.5 Hz to 1.08 kHz)	
Parameter Indication		
Displays	Acceleration, velocity, displacement, demodulation	User selectable
Maximum levels	± 80 g (800 m/s ²), ± 4 in/sec (100 mm/s), ± 400 mil (10 mm)	0-peak. Approximate, dependent on individual calibration
Minimum levels	0.01 g (0.1 m/s ²), 0.0004 in/s (0.01 mm/s), 0.01 mil (0.2 μm)	0-peak. Approximate, dependent on machine RPM
Units	g or m/s ² , in/s or mm/s, mil or mm or μm	0-peak, peak-peak or rms
Accuracy	± 1% (0.1 dB)	Measured at 100 Hz, 23 ± 5 °C
Frequency response	± 0.1 dB from 10 Hz to 15 kHz; ± 0.5 dB from 3 Hz to 20 kHz	From value measured at 100 Hz
Balancing		
Planes	1, 2	
Speed range	30 RPM to 60 000 RPM	
Measurement type	Acceleration, velocity, displacement	
Weight modes	Angle 0° to 360°, fixed position	e.g. attach weights on fan blades
	2 equal weights, 3 equal weights	e.g. for balancing specialized grinders
Remove trial weights	Yes, No	
Filter bandwidths	15 CPM, 150 CPM	
Spectrum Display		
Fmax possible ranges	0 to (100, 125, 150, 200, 300, 400, 500, 600, 800, 1000, 1200) Hz	Or equivalent CPM values
Fmin possible range	0 to Fmax	vb instrument zeroes all spectral lines below Fmin
Spectrum parameters	800 lines, Hanning window	
Spectrum averaging	4 X linear, 50% overlaps	
Frequency scale	Hz, CPM	Linear scale. Can zoom in to display individual spectral lines
Amplitude scale	Acceleration, velocity or displacement	Linear or log scales
Cursors	Overall rms value, cursor-position value	Digital readout on chart
	Standard cursor	Vary x position to display x and y values
	Dual cursors	Lock standard cursor as reference and display difference
	Harmonic cursor	Up to 32 whole-number multiples of standard-cursor frequency
Channel selection	Channel 1 or channel 2	Single channel recordings
Logging Features		
Output formats	Text format via serial comms	Can be pasted into spreadsheet programs. Includes machine name, date and time, run, plane, amplitude unit and phase
Data storage	200 balance jobs	User-specified machine, point, and axis names (16 characters) entered from
Data storage format	200 named machines	vb keypad
Display		
Resolution	Graphic LCD	
Viewing area	240 x 128 pixels	
Backlight	4.3" x 2.3" (110 x 60) mm	
	Electro-luminescent	Download firmware service packs via the Internet
PROFLASH	Allows vb firmware to be upgraded via built-in serial port	15 kV ESD protected. Cable with DB9 connector
Communications		
Baud rate	RS232 57 600 bits per second	
Battery		
Type	Custom Nickel-Cadmium pack	
Voltage	7.2 V nominal	
Capacity	1500 mAh nominal	
Operating time [typical]	12 hours with backlight off, 7 hours with backlight on	Depends on mode and setup
Charger and Conditioner		
Charge rate	Integral charger – automatic and manual control	Power transformer with 13.5 V ± 1.5 V DC, 1 A output included in kit
Discharge rate	0.7 A nominal 0.5 A nominal	2.5 hours for complete charge nominal Combats NiCad battery memory effect
Mechanical		
Size	9.7" W x 6.1" L x 3.0" H (247 x 154 x 75) mm	Including protective boot
Weight	4.4 lb (2 kg)	Including protective boot and strap
Environmental		
Temperature/Humidity	32 °F to 122 °F (0 to 50) °C	Non-condensing
Operating	80% RH 32 °F to 86 °F 70% RH 86 °F to 122 °F	Non-condensing
Storage	14 °F to 140 °F (-10 to 60) °C 95% RH	
EMC	EN55022, CISPR22 EN55024, CISPR24	Radiated and conducted emissions RF field, ESD and fast transient immunity