Easy Balancer

Complete balancing instrument with:

- ❑ **Built in program in several languages**
- ❑ **All measurements with 2 transducers simultaneously**
- ❑ **Frequency Analysis with transfer to PC**
- ❑ **Coast Down**
- ❑ **Vibshape for machine animation**
- ❑ **Total Level**
- ❑ **Bearing Condition**
- ❑ **Output to printer and computer**

Balancing and Vibshape

Balancing

♦ Large speed range
Balancing can be made between 30 to 192.000 rpm corresponding to the frequency range 0,5 to 3.200 Hz.

♦ Two transducer simultaneously
Easy Balancer measures with two transducers simultaneously which makes dynamic balancing very simple.

♦ Starts and saves automatically
Easy Balancer both starts and finishes the measurements with trial- and balancing weights automatically.
A measurement starts automatically when the selected balancing RPM has been obtained and finishes automatically when the measurements are stabile.

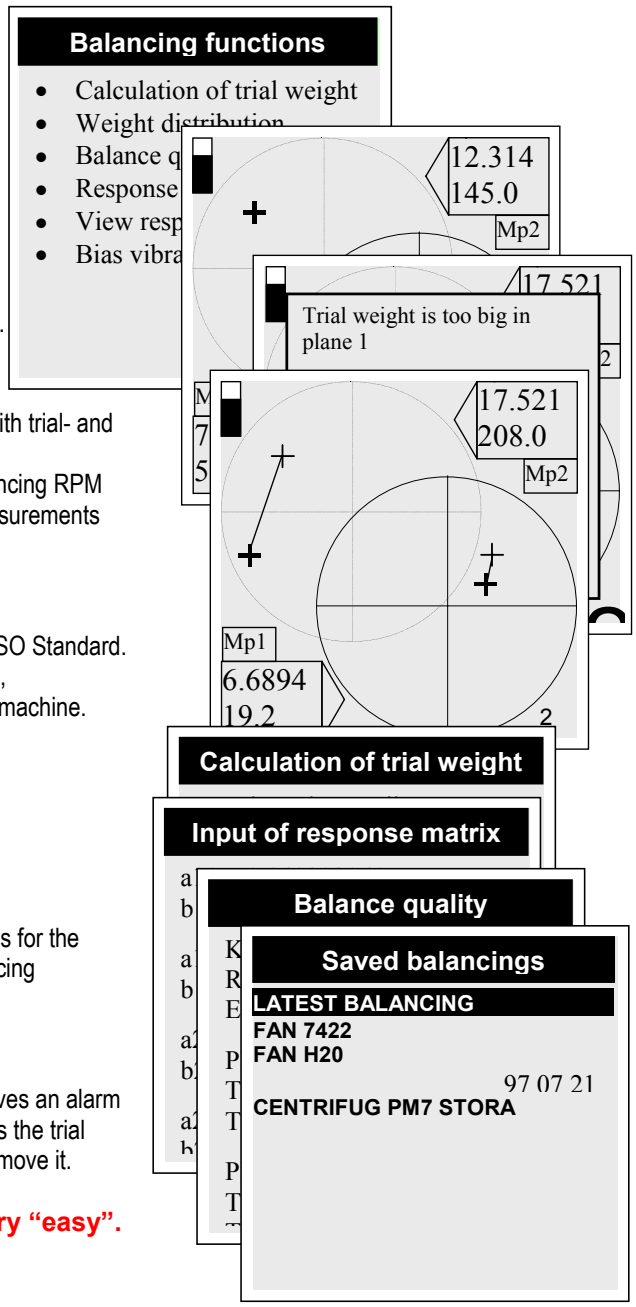
♦ Balancing according to ISO-Standards
Easy Balancer compares the balancing result according to ISO Standard. This makes it possible to balance any machine, even on site, according to ISO Standard without the need for a balancing machine.

♦ Weight distribution to fixed positions
Easy Balancer can distribute the balancing weight to fixed positions e.g. to bolts in a coupling or blades in a fan.

♦ Weight calculations to new radius
With Easy Balancer you can at any time choose a new radius for the balancing weight and the instrument calculates a new balancing weight to the chosen radius.

♦ Alarm at the most common faults
Easy Balancer controls the progress of the balancing and gives an alarm if the operator makes a common fault like for example leaves the trial weight in the machine when he has told the instrument to remove it.

With Easy Balancer balancing has become very “easy”.



Vibshape

Easy Balancer is creating a list of several measurements where the level, phase and speed are stored.

Easy Balancer can also measure a multiple of the speed and two transducers can be used simultaneously.

Easy Balancer can store thousands of measurements in different lists.

The Vibshape function is used for example when we want to animate (create a moving picture of) the machine or when we want to measure several measuring points, for example a large steam turbine with many bearings.

Vibshape

Multiple A: 2 Multiple B: 7

Mp	Vib	Angle	Speed
001	um		Hz
001	437.28	142.9	49.5
001	98.342	311.6	148.5
002	374.48	218.1	49.5
003	mm/s		RPM
003	12.578	78.7	5940
003	4.8235	192.2	20790
004	mm/s		Hz
004	7.4312	4.7	24.5
005			

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Frequency analysis, coast down and overall values

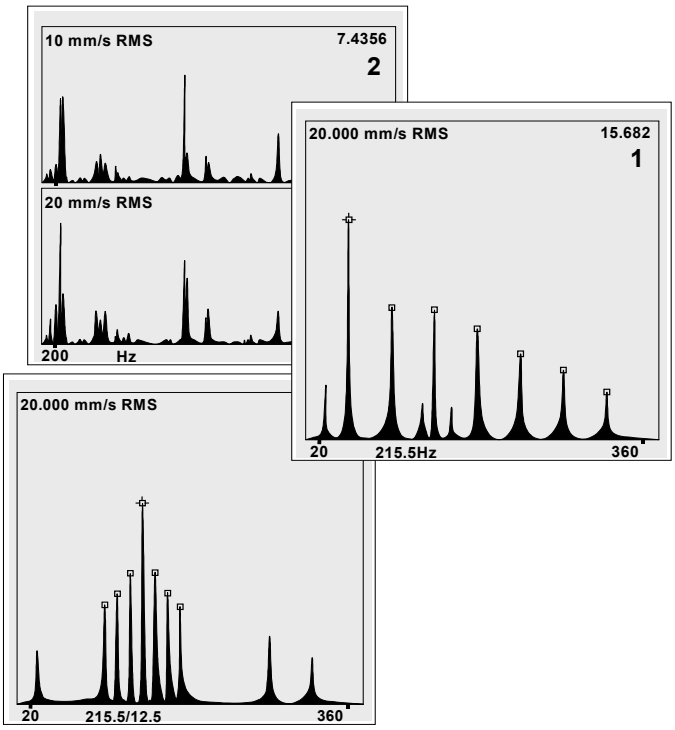
Frequency analysis

Easy Balancer makes a frequency analysis with two transducers simultaneously between the frequency range 2 to 3.200Hz and with a resolution of 1Hz that corresponds to 3.200 lines.

When analysing with only one transducer the resolution is 0,5Hz that corresponds to 6.400 lines.

As a help when analysing a spectra Easy Balancer has simple, harmonic and side band cursors.

You can easily zoom in the frequency range with the numeric keys 1 to 6.
With key 6 the spectra is displayed with full resolution.



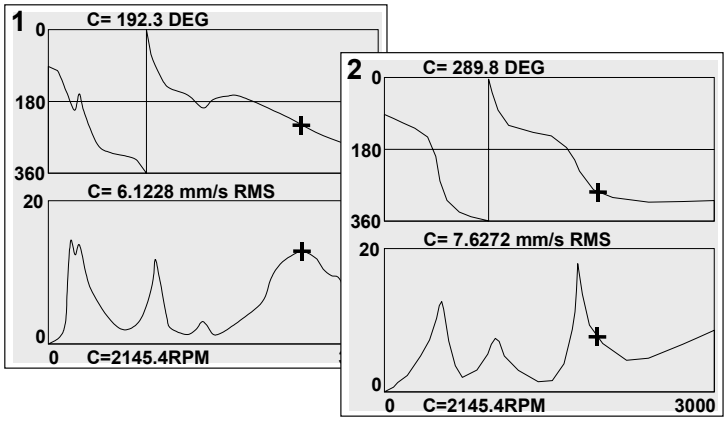
Coast down

With Easy Balancer you can easily make a Coast-down to investigate the resonance properties in a machine.

You speed up the machine to maximum RPM, start the measurement and turn off the machine.

Easy Balancer automatically distributes the RPM range in 167 parts and measures the level and phase at every division of the RPM.

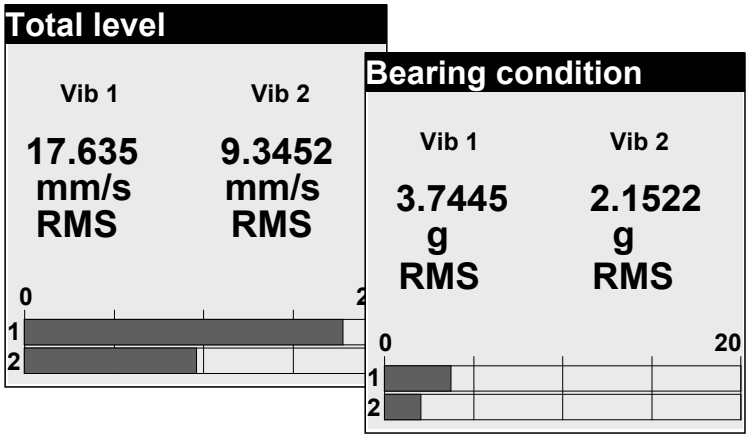
Easy Balancer measures coast-down with two transducers simultaneously.



Total level and Bearing condition

Easy Balancer can measure total level and bearing condition like a voltmeter.
The level is displayed both as a numeric value and as a bar scale.

This makes it easy to investigate how the machines is vibrating in different directions and in different measuring points and also how the machine reacts when a bearing is lubricated or when the tension in a transmission-belt is changed.



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Technical Specification

♦ Transducer:

Easy Balancer is prepared for the most common types of transducers like Accelerometers, Velocity Transducers and Proximity Probes. Both the transducer inputs can supply 4mA to accelerometers with built in constant current amplifiers and also supply 24VDC/25mA to inductive proximity probes. The unlinearity of velocity transducers are compensated in the software.
Easy Balancer can be pre-programmed for up to 10 different types of transducers. You choose a unit and enter the sensitivity of the transducer in mV/unit. The maximum input without external resistors is 5.0V. Each channel can be programmed independently.

A separate input for RPM transducers has can supply 24V/25mA to optical or inductive RPM transducers. The input accepts both PNP and NPN transducers and also Namur transducer for 8.8V. This input can also be used together with magnetic RPM transducers. In this case the instrument supplies a current of 2.4mA through the transducer coil.
With special self-adjusting electronics Easy Balancer accepts all RPM pulses between 0.5 and 24Volt, even negative, as long as one pulse per turn is dominating the RPM signal.

♦ Display units:

Each channel can independently be programmed to show vibrations in the 10 most common vibration units and with rms, peak or peak-peak. Frequency can be shown in rpm or Hz.

♦ Balancing:

Digital tracking filter which is controlled by RPM pulse. A vibration noise which has the same level as the unbalance, influences the measurement less than 1%. With averaging which normally is used in balancing, this influence decreases even more. Balancing can be made between the frequency range 0,5 to 3.200Hz which corresponds to the RPM range 30 to 192.000.

♦ Frequency analysis:

Easy Balancer makes a frequency analysis between the frequency range 2 to 3.200Hz. When measuring with 2 transducers simultaneously the resolution is 1Hz or 3.200 lines. When measuring with one transducer the resolution is 0,5Hz or 6.400 lines.

♦ Coast down:

Digital tracking filter which is controlled by RPM pulse. A vibration noise which has the same level as the unbalance, influence the measurement less than 3% at 1000Hz. The run-out can be made between the frequency range 0,5 to 3.200Hz which corresponds the RPM range 30 to 192.000. The resolution is always 1/167 part of the selected maximum RPM.

♦ Total level:

Total level is measured between 10 to 3.200Hz.
The accuracy at the calibration frequency 200Hz is better than 3%.

♦ Bearing Condition:

The bearing condition value is an average of acceleration between 3.200 to 20.000Hz and is always displayed in the unit ”g”.

♦ Storage capacity:

1.7Mb or 65 high resolution spectra. Instead of every spectra 7 Balancings or 4 Coast Downs can be stored.

♦ Dimensions in mm:

Instrument dimensions 175 x 185 x 45 mm, weight 1.2 kg including alkaline batteries.

♦ A complete instrument set contains:

1 pc Instrument incl. batteries
1 pc Optical RPM transducer
1 pc Reflective tape 1m
1 pc Magnet support for the optical RPM transducer
1 pc Extension cable 5m for the optical RPM transducer
2 pc Vibration Transducers with magnet support
2 pc Extension cable 5m for vibration transducers
1 pc Manual
1 pc Battery eliminator
1 pc Extension tip and 1 communication cable for PC
1 pc Storing case in ABS plastic with space for documents, long cables or printer

VMI AB reserves the right to make changes in this technical specification.

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