

# DIAMECH 2000

Vibration Diagnostic and Balancing Machines



## PORTABLE VIBRATION ANALYZERS, VIBRATION METERS AND BALANCING INSTRUMENTS

- Vibration Measurement
- Vibration Analysis
- Condition Monitoring
- Field Balancing
- Bearing Detection



# QUARTZ, TOPAZ

## Vibration Analyzers

Data collection, vibration analysis, alignment and balancing in a single unit.

QUARTZ and TOPAZ alone as the fastest and most powerful vibration data collectors. The physical attributes of this units make it ideal for field work in a wide variety of industrial applications.

The analyzers can accurately measure signals on critical low speed equipment 0,3 Hz. On the other end of the spectrum, the QUARTZ can measure signals up to 40 KHz.

QUARTZ and TOPAZ with software DIAMANTE-2 can be used as a data collector in a system of technical condition monitoring.

Use the vibration analyzer QUARTZ complete with an extension unit for 8 channels provides an opportunity of production of synchronous time or frequency characteristics of aggregate acceleration and rundown as well as cascades of spectra simultaneously for 8 channels, and with use of 4 or 16-channel multiplexers quantity of measuring channels can be increased up to 16.

In the vibration analyzers QUARTZ and TOPAZ such special functions as an envelope spectrum, excess and peak-factor are realized for diagnostics of bearings condition.

For analysis of transient events, the QUARTZ is able to collect a series of 'snapshots' of machine vibration during start-up, coast-down or process changes. These spectra can then be viewed individually or in a Cascade plot.



### Features:

- Full Spectrum of Measurement
- Field balancing
- Bearing fault analysis
- Frequency range: 0,3 Hz to 40 KHz
- Spectrum, waveform, overall (RMC), envelope spectrum, 1/3 octave spectrum, bump test, amplitude and phase, peak-factor, excess, time signal dump





## AGATE-M

### Vibration Analyzer, Balanser

AGATE-M is a compact 2 channel vibration analyzer and ideal tool for 2 plane balancing.

AGATE-M provides you with a range of functions for measurement and analysis, which you will not only find useful for field balancing, but which will also be beneficial for machine commissioning, service and maintenance.

AGATE-M makes field balancing of rotors easy - even for less experienced staff. Operators are prompted through the steps necessary to measure and eliminate rotor unbalance in a user friendly environment. An optimisation program enables unbalance vibrations to be recorded at up to four sensor positions and be reduced to a minimum by balancing in one or two planes.

AGATE-M supplied with AGATE-REPORT software, which considerably simplifies a process of processing downloading and storage of balancing results.

#### Features:

- Field balancing of rotor in one and two planes
- 2 channel FFT spectral analyzer
- Spectrum, waveform, overall (RMC), envelope spectrum, 1/3 octave spectrum, amplitude and phase, peak-factor
- Oscilloscope function for visualization of vibration - time signature



## YANTAR-M

### Vibration Meter

### Bearing Detection

Compact and simple to operate, this economical vibration meter is an ideal tool for obtaining spot measurements of machinery vibration.

YANTAR-M can measure vibration levels in acceleration, velocity or displacement. The users can select to display the vibration results in their preferable units.

YANTAR-M is a portable instrument for fast and easy measurement of bearing condition in preventive maintenance. The user simply attaches the magnetic mount accelerometer to the machine, presses a button and reads the display. YANTAR-M measures the condition of ball and roller bearings, also can be used to determine lubrication condition.

YANTAR-M also has an electronic stethoscope function for detecting machine sound irregularities.

# OPAL

## Vibration Meter

New compact, battery operated vibration meter complete with a hand-held accelerometer probe for the monitoring of virtually all rotating machinery such as fans, centrifuges, motors, pumps and conveyors.

This low cost unit, has digital readouts in overall vibration.

OPAL is easy to use and is ideal as an entry level instrument. With its one button controls, it requires no complicated training in its use, and can be effectively used by any maintenance facilities personnel.

Its frequency range covers 10 Hz to 1 kHz and accuracy is 5%

The complete kit includes the meter, a hand-held probe with spike, interconnecting cable.



### SPECIFICATION

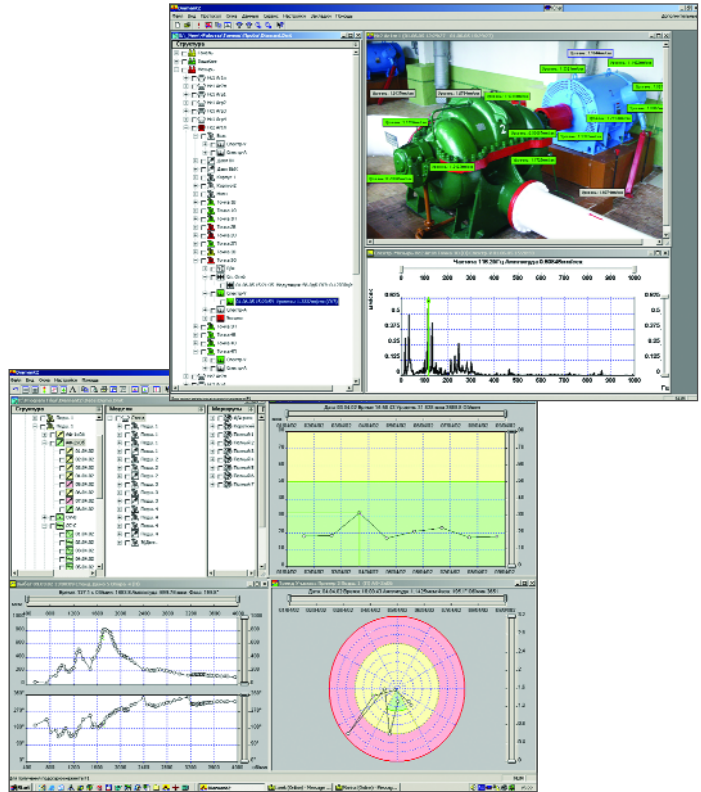
	QUARTS	TOPAZ	AGATE-M	YANTAR-M	OPAL
Frequency Range	0,3 Hz — 40 KHz	0,3 Hz — 40 KHz	2 Hz — 10 KHz	5 Hz — 10 KHz	10 Hz — 1 KHz
Measurement channels	1	1	2 (synchronized)	1	1
Multiplexers connection (sequential control)	4, 16, 64 channels	4, 16, 64 channels			
Multiplexers connection (synchronous control)	8 channels				
<b>Analyz Specification</b>					
Overall vibration	•	•	•	•	•
Vibration velocity	•	•	•	•	•
Vibration acceleration	•	•	•	•	
Vibration displacement	•	•	•	•	
Waveform	•	•	•		
Time signal dump	•	•			
Spectrum	•	•	•		
Power spectrum	•	•	•		
Envelop spectrum	•	•	•		
1/3 octave spectrum	•	•	•		
Bump test	•	•			
Characteristics of acceleration / rundown	•	•	•		
Amplitude / Phase	•	•	•		
Peak-factor	•	•	•		
Excess	•	•			
<b>Features</b>					
Bearing Condition Express-Measurement			•	•	
Data Collector	•	•	•		
Field Balancing	Multi-plane	Multi-plane	2 balancing planes		
<b>Operational Parameters</b>					
Operation temperature range	-20 to +60 °C	-10 to +60 °C	-10 to +60 °C	-10 to +60 °C	-10 to +60 °C
Typical battery operation period	8 h	8 h	6 h	6 h	6 h
Accuracy	5 %	5 %	5 %	5 %	5 %
Protection class	IP 54	IP 54	IP 54	IP 54	IP 54
Weight	2100 g	1800 g	870 g	325 g	330 g

# DIAMANTE-2

## Software

For vibration survey data storage, collation and analysis as well as for automation of measurements (a collector mode) and report recording specialists of the firm developed software DIAMANTE-2 that can be used together with vibration analyzers TOPAZ and QUARTZ and significantly simplify solution of equipment vibration diagnostics problems.

Use of eight types of measurements (points of manual input, measurements of a total level, peak-factor, excess, amplitude/phase, spectra, forms of signals and 1/3 octave spectra), flexible system for setting of types of determination ranges (standard, frequency/time, harmonic/synchronous, a HF-range for a total level and an envelope), any task range boundary setting (up to 40 kHz), spectra resolution from 100 up to 1,600 lines, real spectral range extension (ZOOM) up to 1/10, record for correlation with data of rotation frequencies of unit rotors and up to 12 main operating parameters, use of sensors of any type having a voltage output provide for high self-descriptiveness of system data, depth and reliability of equipment condition analysis and diagnosing of its defects with accuracy up to an assembly.



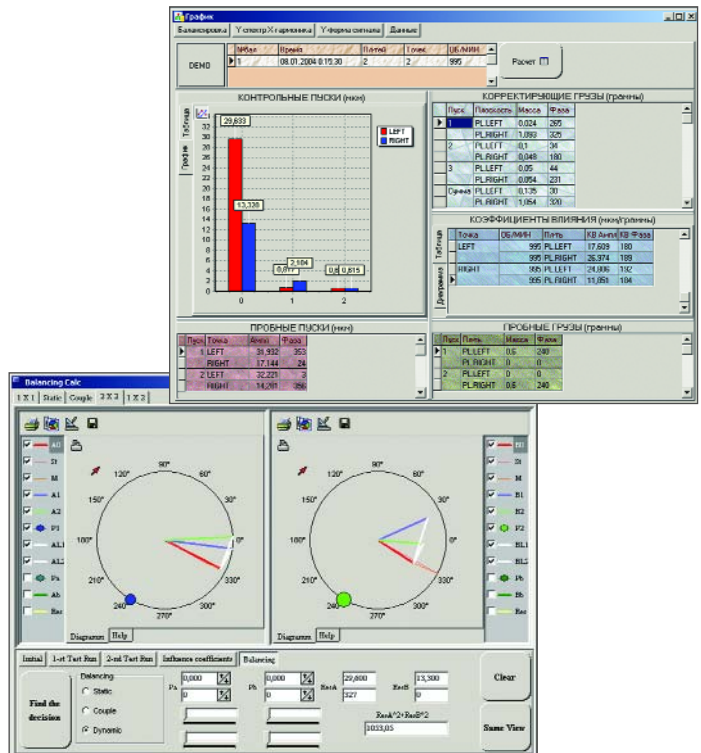
# AGATE-REPORT

## Software

All balancing results can be recorded in the AGATE-M along with a description of the machine, sensor position, date and time.

Measurement data can also be downloaded to a PC for filing and further analysis using AGATE-REPORT software supplied with the balancer. The AGATE-REPORT software offers a user friendly environment to store and manage unbalance data. Users can create expert balancing reports with

Bode and Nyquist plots and cascade/waterfall charts. Measurement results can also then be imported to other programs in the Windows Office suite such as Word or Excel for further processing.



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