

New
Launch!

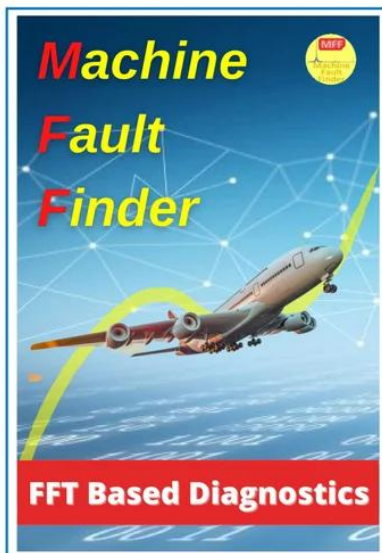
VIBRATION DATA COLLECTOR

New
Launch!



iAdept Marketing

701TXV



**True 2/4 Channel Vibration
Analyzer with options for Laser Alignment and
Bearing Testing by SPM**

Features – Technical Specifications

- Display: TFT¼. VGA 320x240 with a built-in backlight, sunlight-readable **3.5" standard size, 5" Touch screen optional display size.**

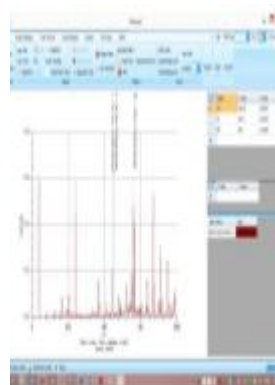
Measured parameters:

- Acceleration, velocity, displacement & dynamic signal including current. (overall / FFT & TWF)
- Real-time measurement and display of Time waveform, FFT spectrums, enveloping, and overall amplitude on a single sensor
- Simultaneously 4 channel spectrum display. can use tri-axial sensor.
- Condition monitoring and fault detection of induction motors.
- Synchronous analysis.
- Detection: RMS, peak, peak to peak, and true peak
- Severity assessment using ISO 10816
- Tachometer measurement range – 10...200,000 rpm and Accuracy – ±0.1% and ±1rpm
- Frequency range independently selectable F min and F max, minimum from 0.5 Hz and maximum up to 50 kHz, with suitable anti-aliasing filters.
- Window: Hanning, rectangular
- Trigger: External, Internal, Free Run.

- Selectable Measurement units– English/ Metric.
- Ruggedized to withstand humidity, temperature, and impact on dropping of equipment.
- Cursor: Single, harmonic, peak, band cursor, and mark cursor
- Laser Alignment functions with transducers (optional)
- AD conversion – 24 bits | Dynamic range: 106dB
- Number of channels: 2 or 4 analog channels and one additional channel for the tachometer probe
- Memory: 8 GB standard
- PC Communication interface: USB
- Operating Temperature: 0°C to 50°C
- IP 65 & CE certification
- Impact-resistant ABS enclosure with TPE protector
- Carry case with foam insert.
- Dimensions: 215 x 100 x 40mm. & Weight: 0.4 kg.
- Rechargeable built-in battery: Li-Ion, up to 8 hrs continuous operation and include battery charger module
- Resolution: 100 – 1,24,000 lines
- Software, manuals on board
- All channels are individually configurable for different parameters.

ISO 10816 SEVERITY FAULT FREQUENCIES BUMP TEST

Machine	Class I small machines	Class II medium machines	Class III large rigid foundation	Class IV large soft foundation
in/s	mm/s			
0.01	0.28			
0.02	0.45			
0.03	0.71			
0.04	1.12			
0.07	1.80			
0.11	2.80			
0.18	4.50			
0.28	7.10			
0.44	11.2			
0.70	18.0			
0.71	28.0			
1.10	45.0			



CH 1:	ICP, mv/g
Units	M/s ²
Sensor	#1 ICP Def S/N 123456 100.0 mv/g
Freq. Unit	Hz
HPF	10
LPF	1000
FFT	1600
Window	Hanning
Trigger	Internal
AVG	OFF
#	32

Hardware

- IEPE/ICP or charge type accelerometers with known sensitivity switchable, proximity sensor, Optical RPM transducer.
- CPU Processor 400MHz.
- Ruggedized aluminum enclosure with TPE protector.
- Dimensions: 210 x 170 x 50mm.
- Accelerometers, cable, mounting magnet (Triaxial & uniaxial), Laser/Optical Tachometer probe, cable, and magnetic stand
- Pen drive with software, manuals
- Instrument memory– 8/16 GB



Severity: ISO 10816

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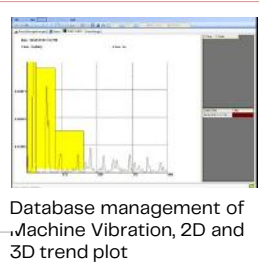
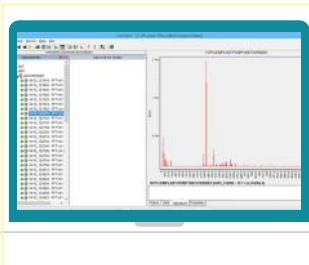
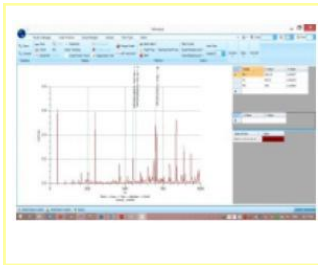
Software features

- Simultaneous display of trend and spectrum.
- Basic statistical alarm management
- Large in-built library of bearings of all manufacturers.
- Dashboard showing a bird's eye view status, via data in the backend.
- Backup storage of data
- Equipment Hierarchy configuration
- Post-collection and FFT range measurement
- Machine History viewer, asset history management, copy and paste of similar machines
- Database management, trending, report generation, and Bearing analysis
- Standard analysis software for data download/upload from instrument to PC with lifetime validity.
- Alarms based on values (overall limit/change limit) for overall as well as unlimited spectral data.
- Multi-window plotting with different frequency range for analysis

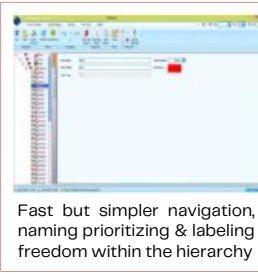
Optional

Functions in advance software VibAnalyst™

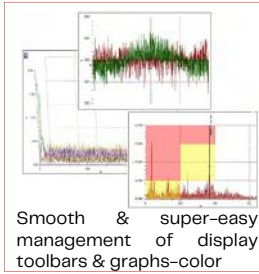
- Band Alarm
- Reports
- Setup configuration
- Auto diagnostic



Database management of Machine Vibration, 2D and 3D trend plot



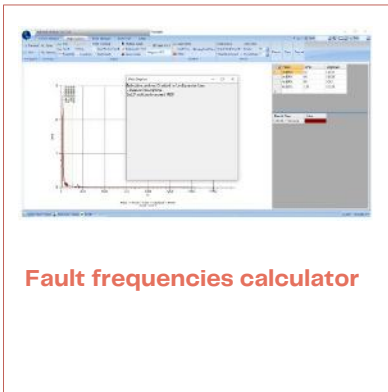
Fast but simpler navigation, naming prioritizing & labeling freedom within the hierarchy



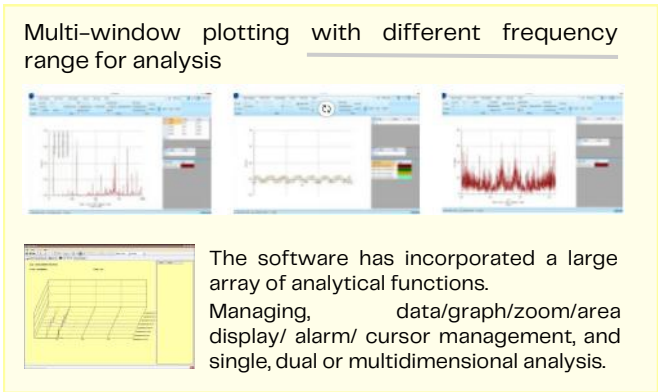
Smooth & super-easy management of display toolbars & graphs-color



Advanced plotting & Analysis tools



Fault frequencies calculator



Multi-window plotting with different frequency range for analysis



The software has incorporated a large array of analytical functions. Managing, data/graph/zoom/area display/ alarm/ cursor management, and single, dual or multidimensional analysis.

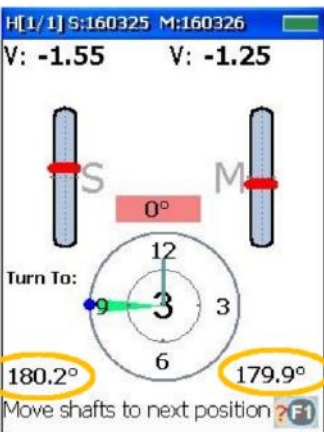
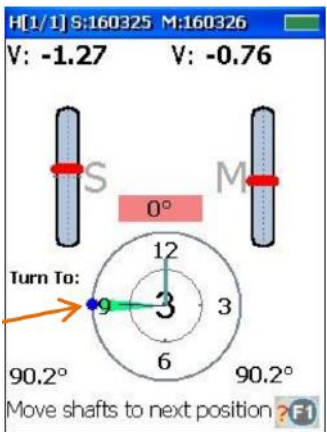
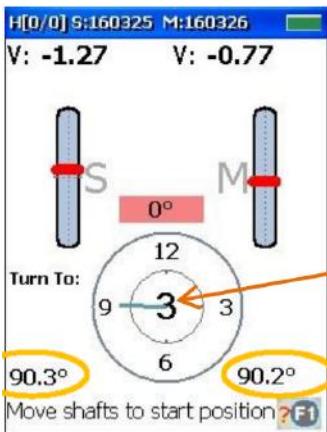
Laser shaft alignment features (individually optable)

- Horizontal machine alignment
- Vertical machine alignment
- Machines with spacer shaft

Firmware Elements

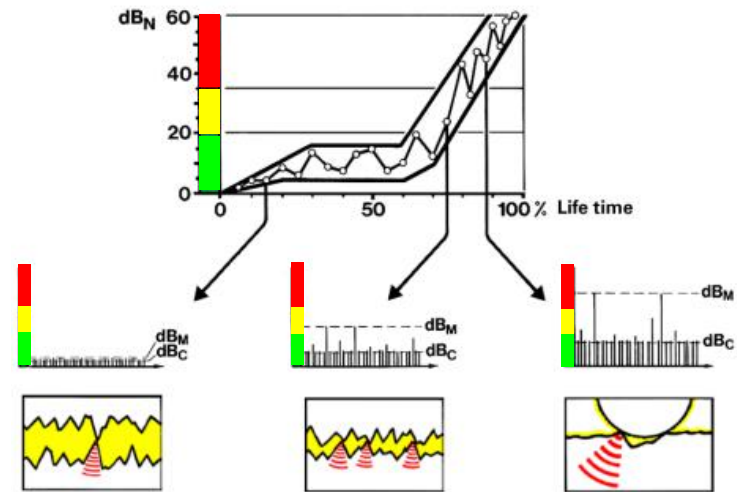
- Flatness
- Straightness

- Plumb Line
- Bore Center Line
- Squareness
- Parallelism*



The principle of Shock Pulse Analysis is based on:

1. The dBi value indicating the condition of a new, properly installed, and lubricated bearing. As defects in the bearing develop, the amplitude of shock pulses increases. Value exceeding the dBi characterizes the damage and is used to assess the condition of the bearing:
2. The carpet value dBc characterizes the state of lubrication. For example, when measuring the impact acceleration amplitude of a well-lubricated and properly mounted bearing, the dBm value will be slightly greater than dBc.



As defects in the bearing develop, the amplitude of shock pulses increases. Value exceeding the dBi characterizes the damage and is used to assess the condition of the bearing:

	• 0..20 - good condition
	• 20..35 – satisfactory condition
	• >35.. - Poor condition, risk of failure

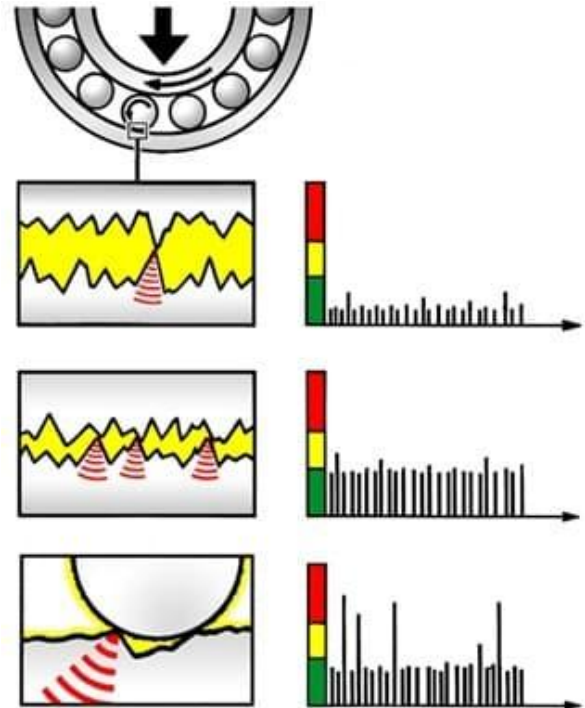
OPERATING PRINCIPLES

Distinguishes and measures two characteristic values of the shock pulse amplitude – the carpet value - dBc, and the maximum - dBm values.

Amplitude of the impact acceleration representing maximum values - dBm, relates to bearing damage, and the value of dBc depends on the state of lubrication which increases with lack of lubrication. Graphical representation in time helps to monitor the health and to predict the condition of bearing. Measurement results can be stored in the device memory.

Features

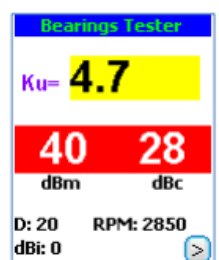
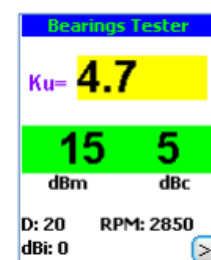
- Fast, easy, and reliable diagnosis of bearing condition.
- Easy-to-understand condition evaluation in :
- **green-yellow-red scales**
- Precision analysis of oil film condition in the interface between the outer and inner races
- Spectrum Analysis to verify the source of high shock pulse



KURTOSIS ADVANTAGE

The generation of defects leads to a change in the shape of the probability density curve $p(x)$ and, accordingly, to a change in the numerical value of the kurtosis coefficient E . The more developed the defect, the sharper the density curve. Following threshold values of the kurtosis coefficient were established:

- $Ku < 3$ – corresponds to the good condition of the bearing;
- $Ku > 3$ – the bearing can be operated until the next replacement;
- $Ku > 5$ – the bearing is not allowed to be used.



Overview

Machine Fault Finder is a diagnostic tool to find the faults of a machine using FFT analysis. This tool is not specific to the model of vibration analyzer/data collector rather it uses the FFT spectrum data for diagnosis. This application contains Bearing Database for most commonly used 30000 bearings. Concept of this tool is to provide users the current defect situation in the machine or train as well as in individual equipment in that machine train.

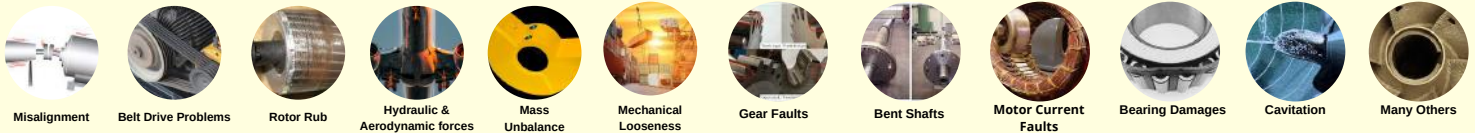
Features

- One of the simplest tools to operate.
- Equipment-specific diagnosis such as motor, fan, pump, belt, bearing, etc.
- Multiple result window options for multiple possibilities.
- Option of manual data filtering for more accurate results.
- Single click operation for default values.
- Option to insert data manually or from various file formats including CSV format.

Installation

- Simple Installation - USB flash drive or via internet.
- Shortcut is created on the desktop with name Machine Fault Finder.
- Standard licensing process based on string generation & secured by code from us.

Faults that can be detected using the tool are:



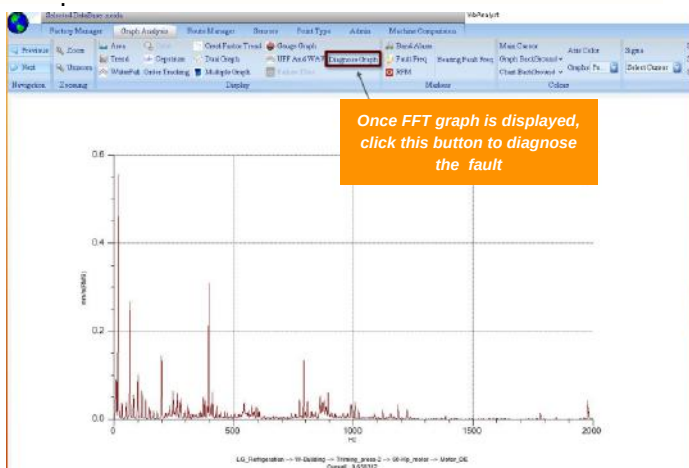
Operation

- Manual data entry for X, and Y values from FFT plus RPM.
- Automated data collection: Either directly from the Hardware devices or from the data file placed locally on the computer system. For some existing data collectors, this process is already in place. Others are in process. Alternatively, select data stored locally on the computer system. The type of files for this arrangement could be UNV/UFF, CSV, or FD2.
- Automated data collection from the instruments directly.



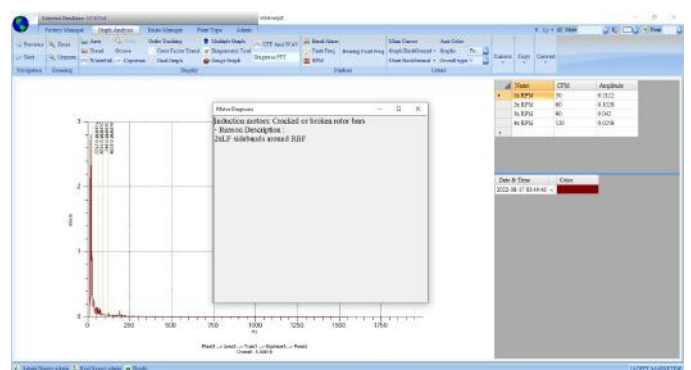
Basic Diagnosis

- This option provides users with the basic diagnosis based on the peaks irrespective of the machine type and settings.
- User can get an overview about the prominent faults



Advanced Diagnosis

- This option provides diagnosis for specific equipment in machine train.
- This is a unique facility for finding out faults in individual equipment of machine train. The suspected or targeted equipment can be identified from menu and on a click of a button all defects pertaining to the concerned equipment are displayed.

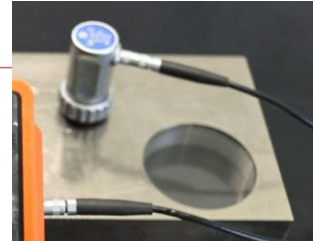


Hardware

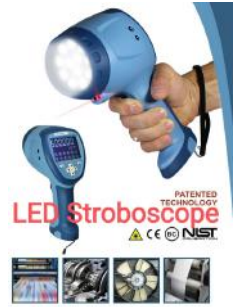
- Types of measurement: temperature, and process parameters.
- Temperature measurement range: -70°C to 380°C
- Cross-channel analysis facilities include cross-phase, cross-spectrum, and cross-channel waveform.
- Various fault & root cause identification: Including bearing, misalignment unbalance & looseness.
- Natural frequency estimation
- Automated Diagnostic Software
- Orbit Analysis
- Coherence

Display Options

- **Touch Screen - 7" inch - 800x480 (resolution)**



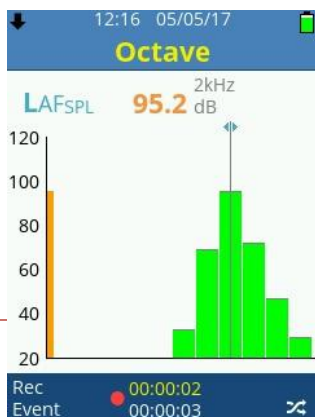
Ultrasound measurement facility by using acoustic sensors



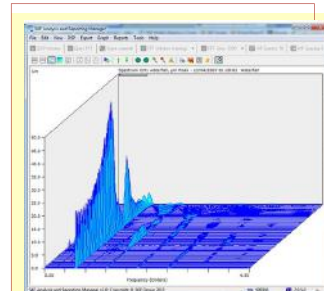
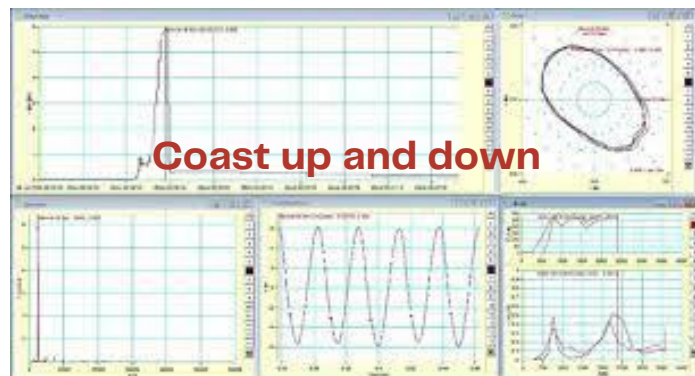
Headphone

Software

- Machine Fault Finder software
- Advanced statistical alarm management, different report format.
- Fault details of peaks, severity, reference spectra repair requirement.
- Cascadeplotting: FFT spectrum waterfall during machine start-up and coast down with plot display, storage, and download facilities, both in the instrument and software.
- Alarms on Fault Frequencies
- Options for MCSA of current spectra



1/1 octave and 1/3 octave analysis



Periodical overall data trend and band parameter trend, FFT spectral trend in a waterfall manner, with the projection of failure lead time prediction (in software).

Velocity (mm/s, rms)	Machine type			
	Class I	Class II	Class III	Class IV
0.18 to 0.28	A	B	C	D
0.28 to 0.45				
0.45 to 0.71				
0.71 to 1.12				
1.12 to 1.8	B	C	D	E
1.8 to 2.8				
2.8 to 4.5	C	D	E	F
4.5 to 7.1				
7.1 to 11.2	D	E	F	G
11.2 to 18				
18 to 28	E	F	G	H

A Good
B Allowable
C Tolerable
D Not permissible

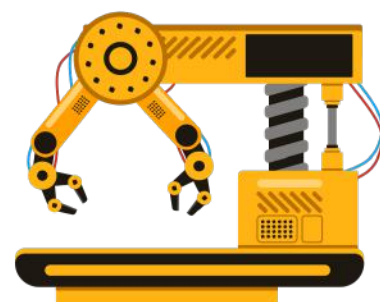
Alarms based on values (overall limit, % change limit) for overall as well as unlimited narrow-band spectral data



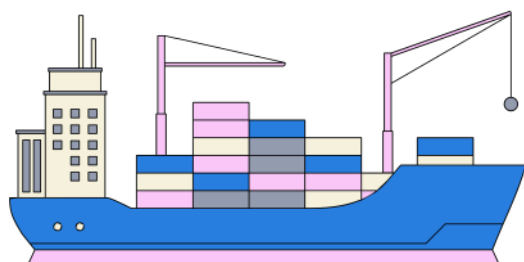
Oil & Gas



Chemical



Processing Industries



Shipping & Vessels



Power Generation



Engineering Services



Pharmaceutical



Desalination Plants



Pulp & Paper

And more...

***Specification and images are subject to change*