MK-220

Vibration Diagnoser MAINTE PRO

MK-220

ISO9001
JQA0950

Maintenance support tool with 【Full automatic Diagnosis】 function

MAINTE PRO

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Specifications of MK-220 hardware

● Vibration measuring part

Input signal	Vibration pickup signal 1channel		
Measurement mode Measuring frequency range Measuring range	Measuring mode	Measuring frequency range	Measuring range
	Acceleration (TH,OA)	5 to 20kHz	500 m/s²$_{0-P}$*1 (1m/s²≒0.1G)
	Acceleration (OA)	1k to 20kHz	
	Acceleration (PEAK)	1k to 20kHz	
	Acceleration (ENV)	1k to 20kHz	
	Velocity	5 to 1kHz	500 mm/s$_{0-P}$*1
	Displacement	5 to 1kHz	5000 μm_{P-P}
Frequency filter	Measuring mode	HPF	LPF
	Acceleration (TH,OA)	5, 10, 15, 20, 100, 200, 500, 1k, 2k, 5k, 10k,15k, 20kHz	1k, 2k, 5k, 10k, 15k, 20kHz
	Acceleration (OA)		
	Acceleration (PEAK)		
	Acceleration (ENV)		
	Velocity	5, 10, 15, 20, 100, 200, 500, 1kHz	100, 200, 250, 500, 1k, 2kHz
	Displacement		100, 200, 250, 500, 1kHz
Dynamic range	88dB and over		
Analyzing frequency range	10, 20, 50, 100, 200, 500, 1k, 2k, 5k, 10k, 20kHz (F.S.)		
Window function	Rectangular, Hamming, Hanning, Flat top		
Resolution	1/100, 1/200, 1/400, 1/800, 1/1600, 1/3200, 1/6400, 1/12800 of analyzing frequency range		

*Indication in G or cm/s available

● Specifications of installed software

Measurement	Full automatic diagnosis, Simple diagnosis, Precision diagnosis, Vibration level measurement, Vibration analysis measurement, Designated route measurement, Unmanned measurement
Display	Vibration level, Relative value,/Absolute value judgment result, Trend graph, Absolute value judgment graph, Vibration time waveform, Frequency spectrum, Vibration measurement master, Bearing register

● General specifications

Display	TFT color LCD with backlight
External memory	1GB SD card
Main power supply	Lithium ion rechargeable battery
Continuous working time	2 hours or more with 1 battery, 5 hours or more with 2 batteries
Recharging time	Within 15 hours *3 hours with genuine fast charger
Protection structure of main unit	Water/dust proofness IP67
Operating temperature	0 to 50℃ (With maximum moisture amount at 85RH in 40℃ circumstance, No condensation)
Storage temperature	-10 to 60℃ (With maximum moisture amount at 85RH in 40℃ circumstance, No condensation)
Dimensions	85 (W) × 30 (D) × 155 (H) (mm)
Mass	Approx. 380g (with 2 rechargeable batteries)

Specifications MK-220 data management software

● Number of management data

Facility management	Maximum of 10,000 records
Vibration level data	Maximum of 10,000,000 records
Vibration waveform data	Maximum of 30,000 records
Vibration waveform initial data	Maximum of 10,000 records × 5 modes
MEMO data	Maximum of 10,000,000 records

● Data transferring

USB	USB cable
Memory card	SD card (1GB)

● Data display/output

Vibration data	Relative management graph, Relative comparison graph, Vibration time axial waveform, Vibration frequency analysis result
	Vibration frequency analysis result 3 dimensions display, Simple/Precise diagnosis report
	Diagnosis report/Vibration DC data Excel® output
MEMO data	Relative management graph, Relative comparison graph
Checking information	Checking schedule management
Data registration management	ID code, Machine specifications, Diagnosis condition, Measurement route, schedule, Machine maintenance record, Bearing resister

● System requirements

PC	IBM PC/AT compatibles, CPU, RAM: OS recommended specification or above, with USB port or SD card reader/writer
OS	Windows® 7 Windows® 8.1 Windows® 10
Printer	Printers which support Windows®
Network	Applicable to Client-Server archtecture

Standard configuration

Vibration diagnoser MK-220-E			MK-220 Data management software MK-9805-E	
Main unit	MK-220-E	1	Software CD	1
Vibration pickup	PU-626E-C1-ND	1		
Magnet brock	MK-9002	1		
Rechargeable lithium ion battery	MK-9502	1		
1GB SD card	NSD6-001GH	1		
USB cable	KU-SLAMB510BK	1	MK-220 Data Management Application User's Manual	1
Carrying case	MK-9701A	1		
Instruction manual		1		

Options

Vibration pickup	PU-616E-C1-ND
Vibration pickup	PU-601R-D
Rechargeable lithium ion battery	MK-9502
Fast charger	MK-9503
AC adapter with USB outlet	SMI10-5-V-I38
1GB SD card	NSD6-001GH
MK-220 client software	MK-9805-E
Carrying case	MK-9701A
12 channel switching box	MK-8310C
Connecting cable for switching box	CJ-01-9

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EC-MK-220-01

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MK-220 analyze causes of vibration occurred at rotating machines and supports maintenance work by automatic diagnosis function!

Features

Full automatic diagnosis
Even a beginner can operate by support of full automatic diagnosis function.

Dual operation system
Both touch panel operation and sheet key operation are also acceptable.

2 way indication
Easy graph readings by vertical / horizontal automatic switching indication

Automatic detection of rotation speed
Usable for machines of variable rotating speed

High resolution FFT
Resolution of 0.00078Hz (min.) enabled high level diagnosis of defect causes.

Trigger measurement
Best for measurement of natural frequencies etc.

Wide variations of frequency filters
Minimizing of frequency change at upgrading from other models

Fast measurement
Short measurement time by simultaneous measurements in all modes, supported by 24 bit AD converter

Downsized and lightened
Portable in your jacket pocket

Water/Dust proofness of IP67
Workable in rainy or dusty conditions

Unmanned monitoring
1 channel continuous measurement is available

Bearing register function
Bearing coefficient (coefficient based on the rolling frequencies) or bearing information (ball diameter, number of balls etc.) can be resistered.
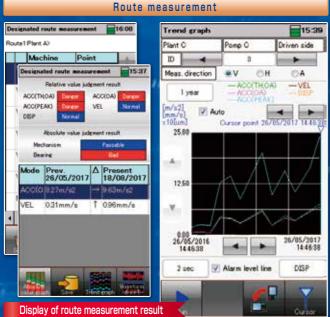
Multifunctional data management software
Strong support functions for Alarm level setting, Scheduling, Report making, etc.

Advanced analysis functions
Advanced analysis of abnormality causes such as harmonic, side band, order etc. are available
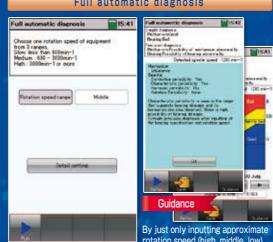
※ ●:Functions of MK-220 hardware, ●:Functions of MK-220 data management software

Measurement function

Vibration level measurement
Realtime color indication of all modes vibration values

Route measurement
Display of route measurement result
Easy data acquisition based on your preset measurement route order. Multiple measurement route orders can be stored.

Unmanned measurement
Measuring condition setting
MK-220 can automatically and periodically acquire data, and also can be used for 1channel continuous monitoring.
* with USB AC adapter (option)

Vibration analysis measurement
Realtime analysis f vibration waveform on high resolution of 12800 lines maximum. Firm data acquisition by trigger measurement, window functions, etc.

Diagnosis function

Full automatic diagnosis
Guidance
By just only inputting approximate rotation speed (high, middle, low), MK-220 automatically performs simple diagnosis and precision diagnosis. At detection of abnormality possibility, MK-220 automatically indicates a guidance of recommendable action.

Simple diagnosis
Judgement on absolute value by criteria based on ISO standard and our original standard.

Precision diagnosis
Bearing register
Automatic diagnosis by special logic suitable for the facility part.
· Bearing diagnosis · Gear diagnosis
· Mechanism diagnosis · Pump, Fan/Blower diagnosis · Motor diagnosis

Precision diagnosis function

■Bearing diagnosis
Inner ring damage, Outer ring damage, Rolling elements damage, Retainer damage

■Gear diagnosis
Chipped teeth, Axial center deviation, Teeth wear, Tooth profile form error, Local defect
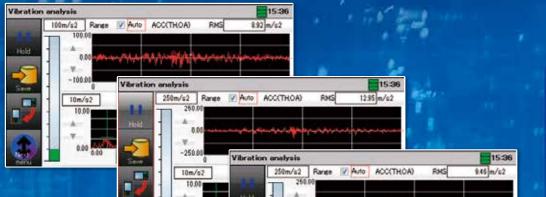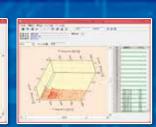
■Mechanism diagnosis
Unbalance, Misalignment, Shaft bending, Insufficient frame stiffness, Looseness, Wear of shaft, Inappropriate installation

■Pump, Fan/Blower diagnosis
Pressure pulsation, Equable wear, Uneven wear, Local defect of the impeller

■Motor diagnosis
High Frequency Vibration, Unbalanced power supply

Data transmission
SD card or USB cable

Deterioration prediction graph   Trend management graph   FFT 3 dimensions graph

Larger image can be displayed

FFT graph

Corporate network

Diagnosis report