



Brüel & Kjær Vibro



Condition Monitoring Seminars

- Vibration analyst
- Machinery diagnostics
- Product and Asset Management

Customized courses for all expectations and levels of expertise



Certified partner for Vibration Analyst trainings Cat I-III



About Brüel & Kjær Vibro Training

Our instructors and service engineers are ISO 18436-2 certified, to provide world-class trainings for system and diagnostic techniques. Workshops are designed for maximum online 'live' interaction with rotor kit.

For more information on our training proposal tailored to your needs, please give us a call or write to:

+49 6151 428 1124
training@bkvibro.com

or
+49 6151 428 1424
service@bkvibro.com

or
+1 775 552 3110
setpoint@bkvibro.com

We are a certified partner of the Mobius Institute® to offer ISO 18436-2 vibration analysis trainings and certification, Category I to III.

An effective condition monitoring strategy can significantly reduce the life cycle costs of your production machinery, but this requires an investment in monitoring technology and expertise. Brüel & Kjær Vibro provides a complete monitoring solution that includes all of this. As specialists can be difficult and expensive to find, training plays an important role in this solution.

We provide training for all levels and purposes in machine monitoring, from novice to expert. Our aim is to build up the competence of each participant, so they can confidently and successfully perform their expected monitoring tasks.

We offer three categories of training; Vibration Analyst Certification, Monitoring & Diagnostics, and System Operation & Maintenance.

Vibration Analyst

We are an accredited partner of the Mobius Institute® to deliver vibration analyst training and certification as per ISO 18432-2, from basic level (Cat. I), intermediate (Cat. II), to advanced (Cat IV). If you are interested in a course and certification, please contact us and **ask for our specific brochure**.

Machinery Diagnostics

On top or complementary to the above, competence may be tailored to the solution applied on site to get the best from it. Machine uptime is achieved by early fault detection and diagnosis, which in return are based on monitoring principles, physics, vibration, balancing, rotor-dynamics and thermos-dynamics analysis. We offer various courses and duration in these areas, customized to the application and customer's requirements, which allows you to take full benefits from your investment and asset management.

System Operation & Maintenance

To optimally utilize a system, increase its reliability and maximize the value from it, we provide training in all aspects of installation, configuration, operation, and maintenance. From sensors, wiring, monitoring hardware, protection and alarming, data acquisition software, external connections, user interface, optimization, back-ups, upgrades and administration.



Our Training Portfolio

Ref.	Title and description	Duration of course	Max. no. of participants	Prerequisites to the training
Machine Monitoring & Diagnostics Courses				
ISO 18436-2 Vibration analyst course and certification <i>(ask for our specific brochure)</i>				
Cat I	Basic: starting place for new vibration analyst	4,5 days	-	None
Cat II	Intermediate: personnel with 12 months vibration analysis experience	4,5 days	-	None or Cat I
Cat III	Advanced: personnel with 2 years' experience and Cat II certification	4,5 days	-	Cat II
Condition Monitoring				
GV1	Basic safety and condition monitoring <ul style="list-style-type: none"> Techniques and tools, off-line & on-line monitoring systems Fundamentals of machine behaviour Best practise for taking measurements 	1 day	8	None
GV2	General vibration measurement <ul style="list-style-type: none"> Why use vibration measurements? Definition, set up and execution of measurements for safety and fault detection Basic diagnosis; causes, effects and indicators for typical machine malfunctions 	2 days	8	GV1 Or Cat I
GV3	Advanced vibration monitoring and diagnosis <ul style="list-style-type: none"> Definition and setup of measurements, fault detection Complex machinery faults, interpretation of spectra Root cause analysis and service recommendations 	3 days	8	GV2 Or Cat II
Turbomachinery and large fluid bearing machines				
RV1	Basic rotor dynamics <ul style="list-style-type: none"> Definitions and theory Modification of machines for mitigating problems Rotor diagnostics by vibration analysis 	2 days	8	GV2 Or Cat II
RV2	Machinery Diagnosis (Advanced) <ul style="list-style-type: none"> Fluid film bearings and turbomachinery analysis techniques, fundamental rotor response, stiffness, instabilities... Interpretation of waveform, phase, orbit, polar and bode, vector, shaft centerline and spectrum (also full). Root cause analysis and recommendations exercise. 	3 days	8	GV3 RV1 Or Cat III
RV3	Advanced Balancing Seminar <ul style="list-style-type: none"> Rigid and flexible rotor best practice, vector review, balance response and recognizing resonance. Mode shape, rotor non-linearity, thermal vector, field consideration, with balancing workshop. 	3 days	8	GV3 / RV2 Or Cat III
RV4	Basic thermos-dynamics and performance monitoring <ul style="list-style-type: none"> Maximizing machine's profitability, environmental compliance & efficiency, reporting, control theory, performance models, combined cycle thermodynamics. Payback on managing performance, evaluating gas & steam turbines condition, centrifugal compressors using thermodynamic calculations & plots, PV plots interpretation 	2 days	4	Sound mathematical understanding
System Operation and Maintenance Courses				
Vibration Sensors (Displacement, Velocity, Acceleration) and Transmitters				
SE1	<ul style="list-style-type: none"> Sensor selection and location, principles and use, applications, commissioning, trouble-shooting 	1 day	8	None

Ref.	Title and description	Duration of course	Max. no. of participants	Prerequisites to the training
System Operation and Maintenance Courses				
Compact Monitors - VIBROCONTROL 8x0, 9x0, 1000, 1100, 1500, 6000-CM, 18x0				
CM1	<ul style="list-style-type: none"> • Functionality, installation, operation, setup and service • Commissioning, measurement chain loop test 	1 day	8	None
Off-Line Portable Handheld Measurement and Diagnosis (VP-80 or VT-80)				
HD1	VIBROPORT or VIBROTEST 80: Basic operation	1 day	8	None
HD2	Balancing with VIBROPORT or VIBROTEST 80	1 day	8	GV1 or Cat I
HD3	Data collection (ReO) with VP-80 or VT-80 <ul style="list-style-type: none"> • Configuration of route, displaying alarms and data • Displaying various plot types for machine condition analysis 	2 days	6	GV2 Or Cat II
HD4	Advanced analysis (ReX or ReO) with VP-80 or VT-80	1 day	6	GV3 Or Cat III
VDAU-6000 or DDAU3				
VD1	Operation and setup <ul style="list-style-type: none"> • Diagnostic Workstation and Event-Master, System configuration, database import/export 	2 days	4	GV1 Or Cat I
VD2	Advanced analysis <ul style="list-style-type: none"> • Advanced post-processing diagnosis techniques, (FFT, envelope, cepstrum, rotor dynamics, transients...). 	2 days	4	GV3 Or Cat III
Machine Protection System (MPS) - VC-6000 or VC-8000				
VC1	<ul style="list-style-type: none"> • Rack and modules functionality, installation and commissioning, servicing, wiring (Front-end, Modbus, DCS, IPS etc.), settings and configuration with software 	1 day	8	None
Condition Monitoring System (CMS) - Compass 6000 or SETPOINT				
CP1	Compass user <ul style="list-style-type: none"> • System overview, navigation in Monitoring Workstation, retrieve and display various plots; acknowledge alarms and events in the logbook. 	1 day	8	GV1 Or Cat I
CP2	Compass advanced user and setup <ul style="list-style-type: none"> • Basic and advanced setup of the Compass user-interface, operation of software in setup mode 	2 days	8	GV2 Or Cat II Or CP1
CP3	Compass system administration <ul style="list-style-type: none"> • Maintenance and server management, LAN, Modbus, OPC, CMM, NTP Time synch, system upgrades and troubleshooting; optimum performance and data reduction 	3 days	8	CP2
PM4	Compass basic Performance Monitoring <ul style="list-style-type: none"> • Performance Monitoring Theory, key indicators and implementation in COMPASS, how to navigate through the system, interpret the calculations and perform the analysis 	3 days	8	RV4 + CP1
PM7	Compass Performance Monitoring hands-on <ul style="list-style-type: none"> • Data acquisition, calculation logics, analysis displays and plots, gain understanding and confidence in making modifications and add-ons through hands-on exercises 	3 days	4	RV4, CP1 + CP6
SP8	Setpoint CMS user <ul style="list-style-type: none"> • System fundamentals, user-interface and navigation, basic machinery diagnostic, retrieve and display data in various plot formats. 	1 day	8	GV1 Or Cat I

Training Details and Conditions



Course locations

Darmstadt (Germany), Naerum (Denmark) or Minden (USA), alternatively at local representative's premises, or at the customer's site.

Enrolment

Courses are arranged upon request and agreement on scope, fixed dates and price.

Please contact training@bkvibro.com no later than 6 weeks prior to the agreed course date.

Please indicate number and name of course (i.e. CP1 Compass User).

Price

Will be quoted based on the standard description above.

Changes in scope must be agreed prior to planning the course.

Prices include (standard)

Course documentation, refreshments and lunch.

Not included (standard)

Travel, transportation to/from hotel, accommodation, breakfast and dinner, sightseeing, entertainment, etc.

Payment

Payment in advance upon receipt of invoice.

Cancellation

For cancellations, the following terms apply:

- Up to 6 weeks prior to the course – free of charge
- 4 weeks prior to the course – 25% of course fee will be charged.
- 2 weeks prior to the course – 50% of course fee will be charged.
- Cancellation later than 2 weeks prior to the course - 100% of course fee will be charged.

Brüel & Kjær Vibro reserves the cancellation right due to insufficient enrolment.

Hotel

Reservations at the participant's cost can be arranged upon request.

In addition to the above, our Standard Terms and Conditions as specified on <https://www.bkvibro.com/en/terms-and-conditions.html> apply.

**Brüel & Kjær Vibro has a service
and support network around the globe**



www.bkvibro.com

Contact

Training Centre

- Inquiries regarding training
- Phone: +49 6151 428 1124
E-Mail: training@bkvibro.com

Services

- Inquiries for adding value to your business, on-site or remote diagnostics, consultancy, settings, monitoring strategy, commissioning, maintenance, balancing
- Phone: +49 6151 428 1424
E-Mail: service@bkvibro.com

Hot-Line

- Inquiries for technical questions concerning your equipment
- Phone: +49 6151 428 1400
E-Mail: support@bkvibro.com

Repairs and Calibration

- Inquiries regarding repairs, calibrations, rental equipment
- Phone: +49 6151 428-1327/-1328
E-Mail: repaircenter@bkvibro.com

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