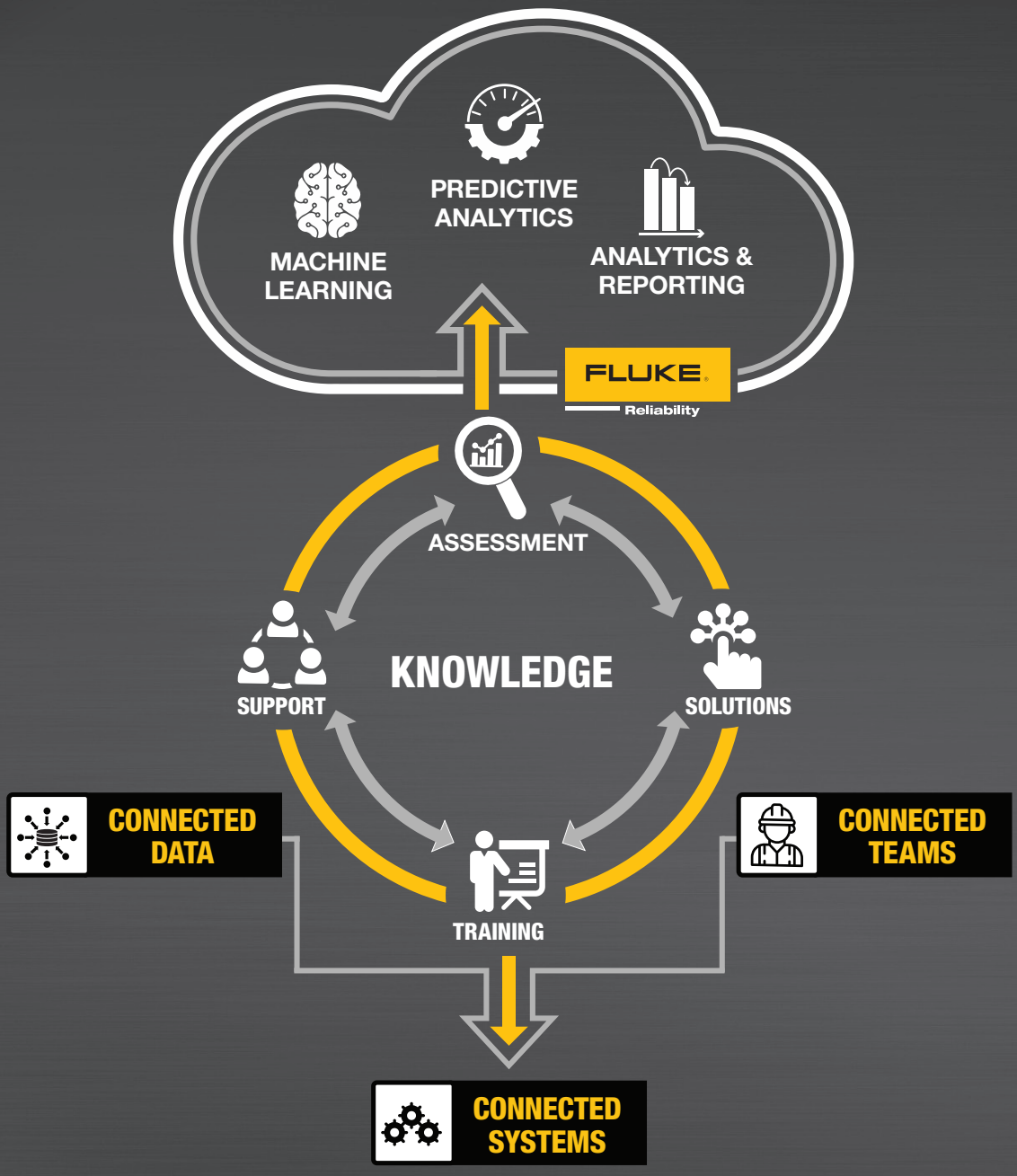
FLUKE®
Reliability

SEMINAR SCHEDULE 2024

PRUFTECHNIK Academy

PRÜFTECHNIK



MOBIUS INSTITUTE
BOARD of CERTIFICATION

PRUFTECHNIK Academy
Our seminar schedule for 2024

Dear customers,

For over 20 years now, the Pruftechnik Academy has been offering managers and employees in production, plant maintenance, reliability, development, quality and service both its own product seminars, application seminars, and application-oriented seminars, as well as certified seminars from the Mobius Institute. We have trained and educated more than 7,000 seminar participants, particularly in the areas of machine alignment and vibration analysis. Roughly 1,500 seminar partici- pants have even become certified ISO CAT vibration analysts in accordance with DIN ISO 18436-2 after successfully passing the examination.

Our seminar instructors have years of practical experience in condition and reliability-oriented plant maintenance. We attach great importance to an extensive practical component in all seminars. This allows you to learn directly from experts who are able to provide detailed answers to your questions.
Training content is continuously updated and the training programs themselves undergo further refinement on a regular basis.

The big benefit of the Pruftechnik Academy:

- You will learn from experts with years of practical experience
- We offer training dates at different locations
- Fluke Deutschland is an approved training partner of the Mobius Institute

Don't wait too long to contact us as our seminars courses are generally quick to sell out.
We look forward to welcoming you to one of our seminars.

For further information and to register, contact us via ptme@pruftechnik.com

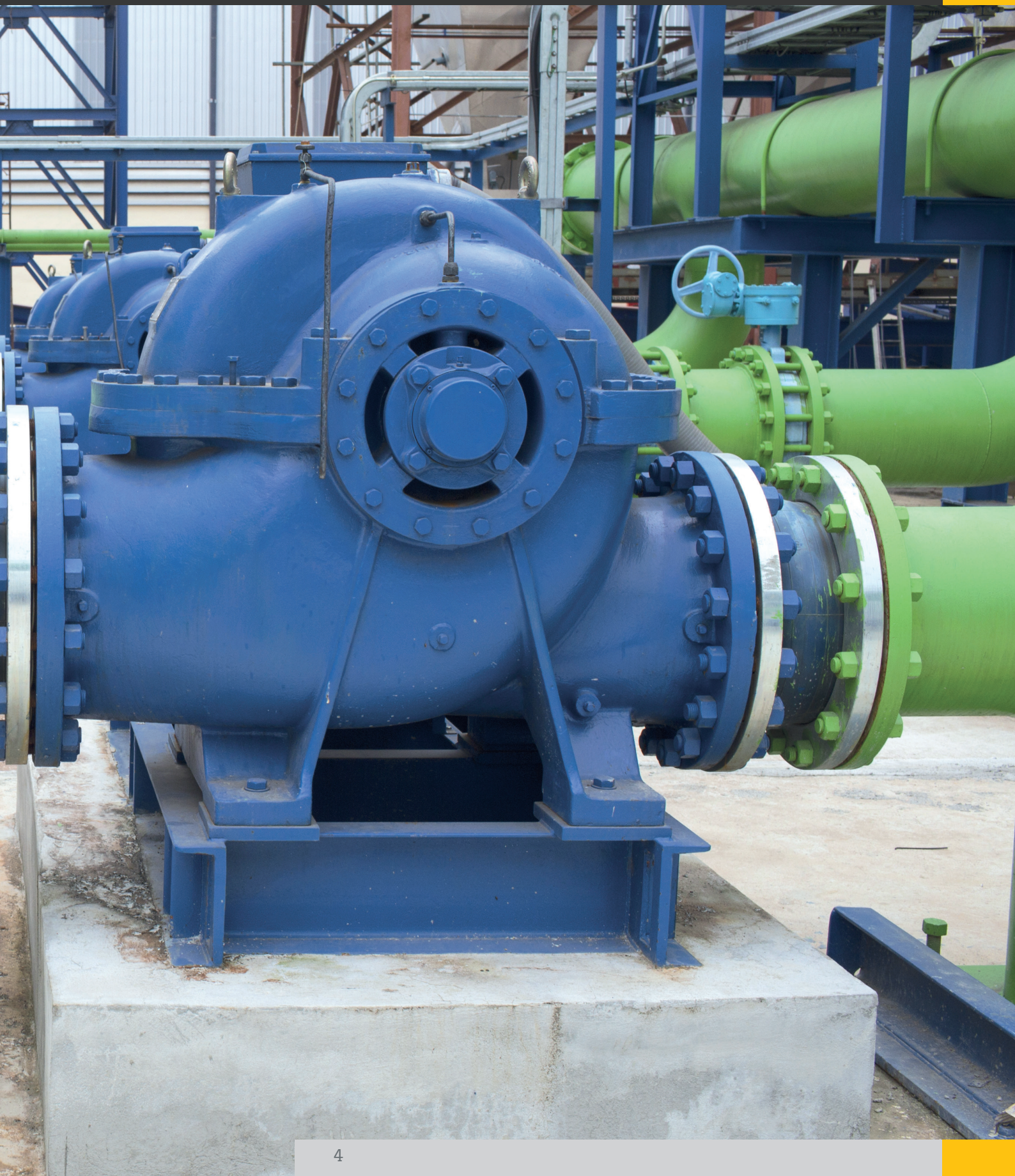
Seminar Overview **2024**
All seminars at a glance

ISO-certified seminars

Vibration and application seminars

Machine alignment seminars

ISO-certified seminars



Officially accredited seminars

For the last 15 years we have been the German training partner of the Australian Mobius Institute, the world's leading provider of certified training for vibration analysts and for reliability practitioners. Our Fluke Deutschland trainer team will train you nationally and internationally, in both German and English. The multi-level certified seminars comply with globally recognized standards (e.g. ISO 18436-2 for vibration analysts). They have uniform seminar content and examination requirements. The subject content is conveyed in a comprehensible way with many interactive simulation exercises, among other activities. Examinations can be taken in German or in English. Participants will receive detailed seminar documentation in book format. Most of these documents are in German.

Personalized certificate with ID number

Upon successful attainment of the certification, you will receive a personalized certificate featuring your

- photo and name
- 6-digit certificate number (e.g. M-1234-02)
- Personalized certification logo identifying the certification level

The certificate with ID number can be downloaded and used via the Training Management System (TMS) after successful completion of the first certified seminar. The corresponding MIBOC database can be accessed via the website www.Mobiusinstitutems.com. You require your ID and password for this. Your name and qualification will however also be listed on a country-specific basis by the Mobius Institute at www.Mobiusinstitute.com, if you have consented to this.

Vibration technician
ISO CAT I M-1234-01

Vibration analyst
ISO CAT II M-2345-02

Vibration specialist
ISO CAT III M-3456-03

Vibration master
ISO CAT IV M-4567-04

SPECIALIST TOPIC	CATEGORY			
	I	II	III	IV
1. Fundamentals of vibration technology	6	3	1	4
2. Data collection	6	4	2	2
3. Signal processing	2	4	4	8
4. Condition monitoring (CM)	2	4	3	1
5. Fault analysis	4	5	6	6
6. Corrective Measures	2	4	6	16
7. Plant knowledge	6	4	4	-
8. Acceptance testing	2	2	2	-
9. Plant testing and diagnosis	-	2	4	4
10. Relevant standards	-	2	2	2
11. Reports and documentation	-	2	2	4
12. Fault classification	-	2	2	3
13. Rotor and bearing dynamics	-	-	-	14
Total training hours	30	38	38	64

Prior to the ISO-certified seminars, you will be given access to the "Learning Zone of the Mobius Institute". Subject training for the topics listed in the table will be provided during the vibration analyst training in accordance with DIN ISO 18436- 2:2015.

REMARK: The hours for each topic are approximate to ensure that training providers and evaluators can assess the importance of each topic. There could be some overlap between the topics in the seminars.

ISO certification increases your potential for orders

If you or your staff have obtained certification from an independent third party inspection body, such as MIBOC and the corresponding ID number, this gives you a decisive advantage in contract acquisition and negotiations.

ISO certification is mandatory in certain sectors

With this internationally recognized certification, you show that you are able to evaluate a machine or system condition by means of vibration analysis and diagnose any faults. Certification is mandatory in sectors such as vibration measurement at offshore facilities as well as in certain regions, e.g. in the Arab region. For those new to certification, we recommend ISO CAT I for vibration technicians.

Who should get certified?

Target audience for the training includes employees from the following sectors: Plant manufacturers (startup and after sales service), plant operators (technicians, users, reliability engineers), service providers and experts, acceptance authorities, and insurers. *

*) These statements refer equally to both men and women. In this context, however, we only use the masculine form for the sake of improving readability

ISO CAT I vibration seminar

Category I – Vibration technician
Certified vibration seminar (ISO 18436-2)

Duration

3.5 days
+ 0.5 day final exam

Start/End

Day 1: 9:00 AM – 5:00 PM
Day 2: 8:00 AM – 4:00 PM
Day 3: 8:00 AM – 4:00 PM
Day 4: 8:00 AM – 4:00 PM,
Afternoon final exam

Number of participants

Maximum 15

Contents

As per DIN ISO 18436-2. With many interactive animations for better understanding and conveyance of practical knowledge for your vibration condition and vibration evaluations.

Target audience

The ISO CAT I seminar is intended for practitioners and technicians involved in measurement data acquisition for mobile measurements and/or for telemonitoring. *

Prerequisites

Proof of 6 months' experience in the field of vibration metrology. It is also possible to participate in the course and the exam without the relevant experience.

Qualification

Certified vibration analyst Category I in accordance with ISO standard 18436- 2
(subject to successful completion of the exam).

Note

The final examination consists of 60 questions (multiple choice), which must be answered within 120 minutes. The exam is deemed to have been passed, if at least 70% of the questions have been answered correctly.

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ISO CAT II vibration seminar

Category II – Vibration analyst
Certified vibration seminar (ISO 18436-2)

Contents
As per DIN ISO 18436-2. With many interactive animations for better understanding and conveyance of practical knowledge for your vibration condition and vibration evaluations.

Target audience
This seminar is intended for technicians, engineers and experts, whose responsibilities include measurement data evaluation and diagnosis. *

Prerequisites
Proof of 18 months' experience in the field of vibration metrology. It is also possible to participate in the course and the exam without the relevant experience.

Qualification
Certified vibration analyst Category II in accordance with ISO standard 18436- 2 (subject to successful completion of the exam).

Note
The final exam consists of 100 questions (multiple choice) to be answered within 180 minutes. The exam is deemed to have been passed, if at least 70% of the questions have been answered correctly. Knowledge of English is advantageous.

Duration
4 days
+ 0.5 day final exam

Start/End
Day 1: 9:00 AM – 5:00 PM
Day 2: 8:00 AM – 4:00 PM
Day 3: 8:00 AM – 4:00 PM
Day 4: 8:00 AM – 4:00 PM
Day 5: 8:00 AM – 12:00 PM
Final exam

Number of participants
Maximum 15

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MOBIUS INSTITUTE
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ISO CAT III vibration seminar

Category III – Vibration specialist
Certified vibration seminar (ISO 18436-2)

Duration

4 days
+ 0.5 day final exam

Start/End

Day 1: 9:00 AM - 5:00 PM
Day 2: 8:00 AM - 4:00 PM
Day 3: 8:00 AM - 4:00 PM
Day 4: 8:00 AM - 4:00 PM
Day 5: 8:00 AM - 01:00 PM
Final exam

Number of participants

Maximum 15

Contents

As per DIN ISO 18436-2. With many interactive animations for better understanding and conveyance of practical knowledge for your vibration condition and vibration evaluations.

Target audience

This seminar is intended for technicians, engineers, and diagnosis experts with a very good understanding of vibration diagnosis. *

Prerequisites

Proof of 36 months' experience in the field of vibration metrology and Category 2 certification or 60 months' experience in the field of vibration metrology. It is also possible to participate in the course and the exam without the relevant experience.

Qualification

Certified vibration specialist Category III in accordance with DIN ISO standard 18436- 2 (subject to successful completion of the exam).

Note

The final exam consists of 100 questions (multiple choice) to be answered within 240 minutes. The exam is deemed to have been passed, if at least 70% of the questions have been answered correctly. Knowledge of English is advantageous.

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ISO CAT IV vibration seminar

Category IV – Vibration master
Certified vibration seminar (ISO 18436-2)

Contents
- As per DIN ISO 18436-2 and special consideration of vibrations on turbomachinery
- 42 hours online learning (in English), 4 days classroom training (in German), and a written final exam (German or English) on day 5

Target audience
This seminar is intended for engineers, technicians and diagnosis experts with a very good understanding of vibration diagnosis, vibration analysis and system analysis. *

Prerequisites
Proof of 5 years' experience in the field of vibration analysis and an accredited Category 3 certification.
The preparatory course (online learning) is to be completed (active participation) before the classroom seminar in order to comply with the minimum training time stipulated in the ISO.
The training materials are in English.
You can choose whether you write the exam in German or in English; you must make your choice no later then 4 weeks before the date of the exam.

Qualification
Certified vibration master Category IV in accordance with DIN ISO 18436-2 (subject to successful completion of the exam).

Note
The final exam consists of 100 questions (multiple choice) to be answered within 300 minutes. The exam is deemed to have been passed, if at least 70% of the questions have been answered correctly. A good knowledge of English is required.

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Duration
4 days
+ 0.5 day final exam

Start/End
Day 1: 9:00 AM – 5:00 PM
Day 2: 8:00 AM – 4:00 PM
Day 3: 8:00 AM – 4:00 PM
Day 4: 8:00 AM – 4:00 PM
Day 5: 8:00 AM – 1:00 PM
Final exam

Number of participants
Maximum 12

For further information and to register, contact us via ptme@pruftechnik.com

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asset reliability practitioners
Seminar ARP CAT I

Training and certification for plant operators (ARP CAT I PWA course of the Mobius Institute in German and with examination in German)

Duration

2.5 days

Start/End

Day 1: 9:00 AM – 5:00 PM
Day 2: 8:00 AM – 4:00 PM
Day 3: 8:00 AM – 12:00 PM
Final exam

Number of participants

Maximum 10

Contents

- Why and when are improvements in assets necessary?
- Purpose and benefit of reliability considerations in order to optimize the availability and reliability for the organization and for plants
- How do faults occur and how can causes be systematically identified? (Analysis of existing maintenance processes, identifying and implementing potential for improvement, recognizing the most common causes of plant downtime)
- What can be done to prevent faults reoccurring? (Damage cause elimination, proactive maintenance measures, fundamentals of "asset strategies", work and resource planning, spare parts management, fundamentals of condition monitoring and maintenance strategies (condition-based, proactive, etc.)
- Many practical examples and many hands-on activities

Target audience

Managers and technicians responsible for – or involved in – reliability, maintenance, condition diagnosis, and/or plant operation. But also employees in design, procurement, spare parts management, labor management, operations and production who are tasked with ensuring availability and reliability of assets. *

Prerequisites

At least 12 months' experience operating technical plants.

Qualification

Certified "Asset Reliability Practitioner".
(subject to successful completion of the exam).

Note

The final exam consists of 60 questions to be answered within 120 minutes. The exam is deemed to have been passed, if at least 70% of the questions have been answered correctly.

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MOBIUS INSTITUTE
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Asset reliability practitioners
Seminar ARP CAT II

Training and certification for reliability engineers
(ARP CAT II course of the Mobius Institute with examination in German)

Contents
The ARP CAT II seminar covers the entire process of reliability and performance improvement in industrial plants. Participants will receive comprehensive training in order to implement such programs, promote them, and achieve continuous improvement of assets through the use of professional planning and inspection methods, condition monitoring, systematic fault analysis, and plant evaluations. The seminar will also impart knowledge of which measures and activities to prioritize, what potential bottlenecks are, and how to successfully implement reliability and performance improvement initiatives in the participant's own organization.

Target audience
Reliability technicians and reliability engineers or technicians and engineers who are looking to develop in this new sector. *

Prerequisites
At least 24 months' practical experience of operating machinery and plants, knowledge of English is required because English documents are used.

Qualification
Certified Asset Reliability Engineer ARP CAT II (subject to successful completion of the exam).

Note
The final exam consists of 100 questions to be answered within 180 minutes. The exam is deemed to have been passed, if at least 70% of the questions have been answered correctly.
The training materials are in English.

Duration
4 days
+ 0.5 day final exam

Start/End
Day 1: 9:00 AM – 5:00 PM
Day 2: 8:00 AM – 4:00 PM
Day 3: 8:00 AM – 4:00 PM
Day 4: 8:00 AM – 4:00 PM
Day 5: 8:00 AM – 12:00 PM
Final exam

Number of participants
Maximum 10

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For further information and to register, contact us via ptme@pruftechnik.com

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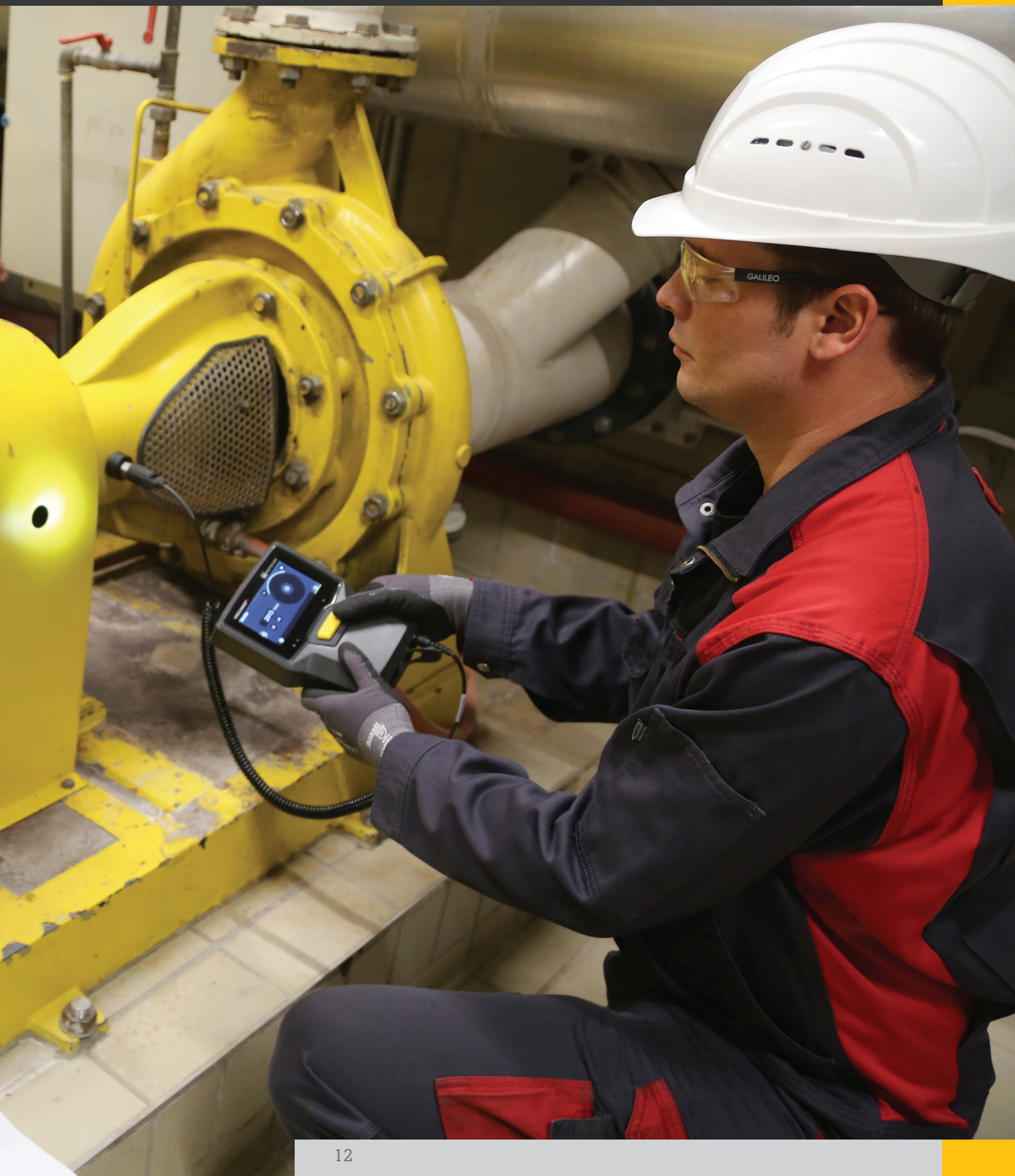
Vibration and application seminars



Vibration seminar Level 1

Introduction to the fundamentals of vibration measurement

Contents

- Measurement of characteristic overall vibration values and trend evaluation
- Physical and mechanical fundamentals of vibration excitation (rotor and natural vibrations, structure-borne sound)
- Vibration metrology (sensors, vibration measurement devices, software)
- Measurement and interpretation of overall machine readings, rolling bearing and gearbox vibrations (standards, measurement locations, sensor coupling, characteristic values, measurement settings, limit values, operating influences, trend)
- Typical failure modes and their mapping in machine vibration behavior
- Practical examples and practical demonstrations
- A look at vibration diagnosis

Target audience

Engineers, technicians, foremen and skilled workers from the field of plant monitoring and condition-based plant maintenance. *

Duration

2 days

Start/End

Day 1: 9:00 AM – 5:00 PM
Day 2: 8:00 AM – 4:00 PM

Number of participants

Maximum 10

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For further information and to register, contact us via ptme@pruftechnik.com

Vibration seminar Level 2

Measurement, diagnosis, and interpretation of vibrational spectra and vibration signals

Duration

3 days

Start/End

Day 1: 9:00 AM – 5:00 PM
Day 2: 8:00 AM – 5:00 PM
Day 3: 8:00 AM – 2:00 PM

Number of participants

Maximum 10

Contents

- Measurement of vibration signals and interpretation of such signals
- Types of excitation of vibrations, influencing factors
- Basic terms associated with vibration diagnosis (time signal, amplitude spectrum, envelope spectrum, fundamental frequencies, harmonics, side bands)
- Metrological prerequisites (portable FFT analyzers, online monitoring systems, measurement settings)
- Practical vibration diagnosis (unbalance vibrations, component resonances, faulty shaft alignment, electrical faults, gear mesh faults, belt vibrations, roller bearing damage, hydraulic vibration excitations, problems with journal bearings)
- Practical examples and practical demonstrations

Target audience

Engineers, technicians, foremen and skilled workers from the field of plant monitoring and condition-based plant maintenance. *

Prerequisites

Basic knowledge of vibration measurement or attendance at vibration seminar Level 1.

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For further information and to register, contact us via ptme@pruftechnik.com

Vibration seminar Level 3

System, resonance, and vibration analyses (with examples and practical exercises, e.g. using VibXpert and Modal Hammer)

Contents

- Detection and recognition of resonances

  Diagnostic methods: Bump tests, transfer function with impulse hammer,

  coast-down measurements (coast-down analysis)
- Determination of bending forms and simple structural vibrations

  Diagnostic methods: Cross-channel measurements, phase measurements with reference signal
- Detection and recognition of beats

  Diagnostic methods: High resolution FFT, time signal measurement, recording phase trend,

  Recording phase polar diagram
- Analysis of cyclic and highly dynamic processes with triggered measurements

  Diagnostic methods: Time signal measurement with external reference trigger, time-synchronous averaging, recording function, order spectrum
- Measurement value recording on journal bearing machines

  Diagnostic methods: Orbit
- Acceptance measurements/quality assurance

  Working with machine templates, documentation/archiving, acceptance of variable speed machines

Target audience

Users from manufacturing, service and plant maintenance with tasks in the field of vibration measurement. *

Prerequisites

Basic knowledge of vibration diagnosis or attendance at vibration seminar Level 2.

For further information and to register, contact us via ptme@pruftechnik.com

Duration

2 days

Start/End

Day 1: 9:00 AM – 5:00 PM
Day 2: 8:00 AM – 4:00 PM

Number of participants

Maximum 10

Machine diagnostics – Practical applications and case studies

Overview of current diagnostic and analysis methods and numerous case studies from the Fluke Deutschland Service Center

Duration

2 days

Start/End

Day 1: 9:00 AM – 5:00 PM
Day 2: 8:00 AM – 4:00 PM

Number of participants

Maximum 10

Contents

- Principles of dimensioning drive technology
- Operating history and potential causes of damage
- Practical explanation of plant maintenance and servicing strategies
- Condition monitoring methods when machine is at a standstill: From the wear pattern inspection to crack testing
- Machinery CM methods when machine is in operation: From noise measurement to load distribution measurement
- Calculation of component-specific vibrations
- Practical applications and case studies: Additional vibrations caused by prime movers and control systems; secondary vibrations caused by machines and processes; secondary vibrations from toothing, roller and journal bearings; natural and resonant vibrations
- State of the art and future developments in the field of condition monitoring

Target audience

Users from the service and plant maintenance environment who wish to use condition monitoring systems themselves and achieve accurate condition diagnoses. *

Prerequisites

Proof of 6 months' experience in the field of vibration metrology.

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Operational balancing

Field balancing in one and two planes

Contents

- Fundamentals of balancing
- Static, moment and dynamic unbalance
- Rotor types and imbalance correction
- Balancing in one and two planes
- 1-plane balancing with optimization of the second plane
- Free balancing without correction calculations
- Assessment standards for the balancing condition
- Report creation and data storage
- VIBXPERT II device operation during balancing
- Practical balancing examples
  - One/two-plane balancing
  - Fixed and free correction
  - Determination of balancing grade, acceptance criteria

Target audience

Engineers, technicians, foremen and skilled workers from plant maintenance, manufacturing, service, repair, and construction. *

Duration

1.5 days

Start/End

Day 1: 9:00 AM – 5:00 PM
Day 2: 8:00 AM – 12:00 PM

Number of participants

Maximum 10

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Rolling bearing diagnosis

Condition assessment and damage diagnosis on roller bearings

Duration

2 days

Start/End

Day 1: 9:00 AM – 5:00 PM
Day 2: 8:00 AM – 4:00 PM

Number of participants

Maximum 8

Contents

- Fundamentals of roller bearing diagnosis
- Vibration excitation in roller bearings
- Types and causes of damage on roller bearings
- Typical damage patterns
- Characteristic overall vibration values for roller bearing assessment
- Roller bearing diagnosis with the envelope spectrum
- Damage patterns of outer ring, inner ring damage
- Rolling element damage, cage damage
- Detection of incorrect assembly, lubrication problems
- Ways of prolonging the service life
- Authentic practical cases, practical diagnostic exercises

Target audience

Engineers, technicians, foremen and skilled workers from the field of condition-based plant maintenance. *

Prerequisites

Basic knowledge of vibration metrology and machine diagnostics or attendance at a Level 1 or Level 2 fundamentals seminar.

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For further information and to register, contact us via ptme@pruftechnik.com

Gearbox diagnosis

Condition assessment and damage diagnosis on gearboxes

Contents

- Various gearbox types and properties
- Vibration excitation on machine elements
- Detection of incorrect assembly, lubrication problems, cooling problems
- Types and causes of damage on gear wheels and roller bearings
- Ways of prolonging the service life
- Measurement of machine and envelope spectra
- Practical exercises on a gearbox with joint analysis
- Damage patterns of typical machine damage using case studies

Target audience

Engineers, technicians, foremen and skilled workers from the field of plant monitoring and condition-based plant maintenance. *

Prerequisites

Basic knowledge of vibration metrology and machine diagnostics or attendance at a Level 1 or Level 2 fundamentals seminar.

Duration

2 days

Start/End

Day 1: 9:00 AM – 5:00 PM
Day 2: 8:00 AM – 4:00 PM

Number of participants

Maximum 8

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For further information and to register, contact us via ptme@pruftechnik.com

VIBXPERT® & OMNITREND® Center

Configuration and operation of the Omnitrend Center and VibXpert II software

Duration

3 days

Start/End

Day 1: 9:00 AM – 5:00 PM
Day 2: 8:00 AM – 4:00 PM
Day 3: 8:00 AM – 4:00 PM

Number of participants

Maximum 10

Contents

- Operation of 2 channel FFT data collector VibXpert II
  - Hardware and operating elements
  - Working with routes
  - Multimode measurements
  - Working with machine templates
- Operation of the Omnitrend Center CM software
  - Software design and basic operating knowledge
  - Configuration:
    Creation of machine structures / configuration of measurement locations and measuring tasks / activation of and setting of limit values for overall readings / creation of frequency markers
  - Communication:
    Creation of routes / loading routes in the VibXpert / restoration of measured routes
  - Analysis:
    Measurement data report / operation of analysis tools / creation of multiview Displays
  - Additional functions:
    Generation of trend bands in analyses / storing multimode data in Omnitrend Center / generation of your own setups / creation and use of machine templates / working with VibCode sensors / working with Triax sensors

Target audience

Routers assigned to machine monitoring / vibration measurement. Experts, technicians and engineers who create or use their own routes and machine templates. *

Prerequisites

Basic knowledge of vibration metrology or attendance at a Level 1 or Level 2 vibration fundamentals seminar.

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For further information and to register, contact us via ptme@pruftechnik.com

VIBSCANNER® 2 & OMNITREND® Center

Configuration and operation of the Omnitrend Center and VibScanner 2 software

Contents

- Operation of VibScanner 2 data collector
  - Hardware and operating elements
  - Working with routes
- Operation of the Omnitrend Center CM software with practical exercises
  - Software design and basic operating knowledge
  - Configuration:
    Creation of machine structures / configuration of measurement locations and measuring tasks /
    Activation and setting of limit values for overall readings / creation of frequency markers
  - Communication:
    Creation of routes / loading routes in the VibScanner 2 / restoration of measured routes
  - Analysis:
    Measurement data report / operation of analysis tools / creation of multi view displays
  - Additional functions:
    Generation of trend bands in analyses / generation of your own setups / working with VibCode sensors / working with Triax sensors

Target audience

Focus on routers assigned to machine monitoring / vibration measurement. Experts, technicians, and engineers who create or use their own routes. *

Prerequisites

Basic knowledge of vibration metrology or attendance at a Level 1 or Level 2 vibration fundamentals seminar.

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Duration

3 days

Start/End

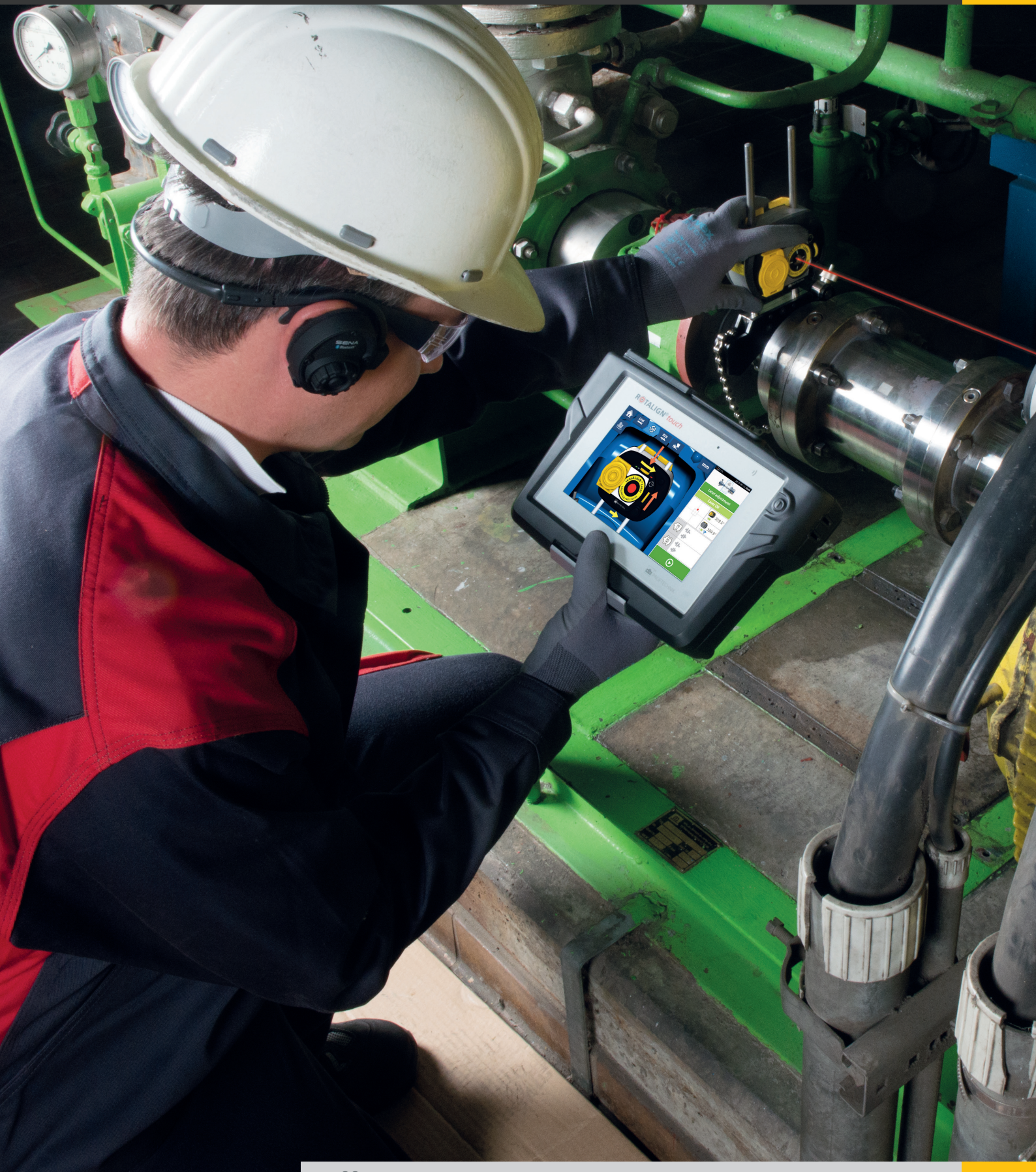
Day 1: 9:00 AM – 5:00 PM
Day 2: 8:00 AM – 4:00 PM
Day 3: 8:00 AM – 4:00 PM

Number of participants

Maximum 10

For further information and to register, contact us via ptme@pruftechnik.com

Machine alignment seminars



Alignment seminar Level 1

Introduction to the fundamentals of alignment in relation to housings, structures, machines and machine trains with practical applications based on the GEO Center software

Contents

- FMEA (failure mode and effect analysis) in order to select the best method
- Geometric fundamentals: influencing factors, measuring equipment, limits
- Tolerance specifications in standards and guidelines
- Conducting measurements: evaluation/assessment/application limits
- Application: Straightness measurements for machines and structures
- Application: Flatness measurements for machines and plants
- Application: Simple bore measurements and bore alignment
- Application: Precision measurement of angle, water level and verticality
- Application: Operational shaft alignment depending on coupling types

Target audience

Technicians, foremen and specialist workers from the field of plant maintenance and operation. *

Duration

2 days

Start/End

Day 1: 9:00 AM – 5:00 PM
Day 2: 8:00 AM – 4:00 PM

Number of participants

Maximum 8

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For further information and to register, contact us via ptme@pruftechnik.com

Alignment seminar Level 2

Precision alignment – Measurement, interpretation and improvement illustrated by way of many examples with practical CentrAlign and Alignment Center applications

Duration

2 days

Start/End

Day 1: 9:00 AM – 5:00 PM
Day 2: 8:00 AM – 4:00 PM

Number of participants

Maximum 8

Contents

- Shaft alignment and alignment targets
- Precision alignment of bores and bearing channels
- Vertical alignment of shafts and bores
- Establishing precise straightness over long distances (measurement with control sensor)
- Vertical alignment of machines and machine trains
- Precision measurement and correction of machine crack lines
- Determining alignment targets and procedure for motion monitoring with live trend
- Checking flatness with lasers

Target audience

Engineers, technicians, foremen, service technicians, and those seeking to increase reliability.*

Prerequisites

Basic knowledge or attendance at alignment seminar Level 1.

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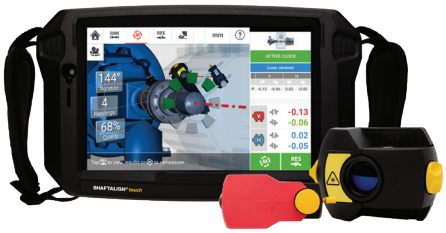
For further information and to register, contact us via ptme@pruftechnik.com

Alignment with sensALIGN S3
Alignment systems

For all customers with alignment devices Shaftalign Touch, Fluke 830 and OptAlign smart



Contents

- Fundamentals of shaft alignment
  - Alignment – why?
  - Alignment – what is it?
- Prerequisites and preparations for optimal machine alignment
- The sensALIGN S3 measuring principle
  - Technical description of sensor, reflector (prism)
  - Configuration of the operating elements
- Practical exercises
  - Assembly of the measuring equipment
  - Selection of the measuring modes
  - Assessment of the reproducibility and quality of the measurements
  - Evaluation of results according to standard tolerances or according to user-defined tolerances
  - Tilting foot examination and rectification
  - Alignment of the machine with shims and “Move” function
  - Measurement file backup and generation of PDF reports
- Theory-based exercises
  - Thermal growth of machinery
  - Specifications for coupling values
  - Alignment of machines installed vertically
  - Alignment of machines equipped with plain bearings
  - Using the X/Y function
- Working with the ARC 4.0 and ALIGNMENT CENTER PC software
  - Creation of reports and templates
  - Management of measurement files

Target audience

Engineers, technicians, foremen and skilled workers from the field of plant monitoring and condition-based plant maintenance, who are responsible for arranging alignment work or are tasked with such work themselves. *

Duration

1.5 days

Start/End

Day 1: 9:00 AM – 5:00 PM
Day 2: 8:00 AM – 12:00 PM

Number of participants

Maximum 8

For further information and to register, contact us via ptme@pruftechnik.com

*) These statements refer equally to both men and women. In this context, however, we only use the masculine form for the sake of improving readability

Alignment with sensALIGN S5 alignment systems

For all customers with alignment devices RotAlign Ultra, OptAlign Touch, OptAlign smart RS, RotAlign Touch Ex

Duration

2 days

Start/End

Day 1: 9:00 AM – 5:00 PM
Day 2: 8:00 AM – 4:00 PM

Number of participants

Maximum 8

Contents

- Fundamentals of shaft alignment
  - Alignment – why?
  - Alignment – what is it?
- Prerequisites and preparations for optimal machine alignment
- The sensAlign measuring principles
  - Technical description, laser, sensor, computer
  - Configuration of the RotAlign and OptAlign computer
- Practical exercises

  Laser/sensor assembly / measurements in continuous measuring mode / reproducibility of measurements and evaluation in the measurement table / results evaluation according to Pruftechnik or user-defined tolerances / saving a measurement and creating a report as a PDF file / soft foot inspection / aligning the machine with the "move function"
- Practical exercises/special cases

  Alignment of vertical machines / alignment of machines equipped with plain bearings / alignment of machine trains / alignment of cardan shafts / alignment of uncoupled machines / alignment of machines with defaults/thermal growth
- Editing and managing alignment results using the Alignment Reliability Center 4.0 or Alignment Center PC software

Target audience

Engineers, technicians, foremen and skilled workers from the field of plant monitoring and condition-based plant maintenance, who are responsible for arranging alignment work or are tasked with such work themselves. *

*) These statements refer equally to both men and women. In this context, however, we only use the masculine form for the sake of improving readability

For further information and to register, contact us via ptme@pruftechnik.com

Alignment with sensALIGN S7 alignment systems

For all customers with alignment devices RotAlign Ultra “iS” and RotAlign Touch

Contents

- Fundamentals of shaft alignment
  - Alignment – why?
  - Alignment – what is it?
- Prerequisites and preparations for optimal machine alignment
- The sensAlign measuring principles
  - Technical description, laser, sensor, computer
  - Configuration of the RotAlign computer
- Practical exercises

  Laser/sensor assembly / measurements in continuous measuring mode / reproducibility of measurements and evaluation in the measurement table / results evaluation according to Pruftechnik or user-defined tolerances / saving a measurement and creating a report as a PDF file / soft foot inspection / aligning the machine with the “move function”
- Theory-based exercises/special cases

  Alignment of vertical machines / alignment of machines equipped with plain bearings / alignment of machine trains / alignment of cardan shafts / alignment of uncoupled machines / alignment of machines with defaults/thermal growth / live trend – displacement measurement (RotAlign Ultra iS and RotAlign touch users)
- Creating and sending work orders to a mobile device via the cloud (only ROTALIGN Touch users)
- Editing and managing alignment results using the Alignment Reliability Center 4.0 or Alignment Center PC software

Target audience

Engineers, technicians, foremen and skilled workers from the field of plant monitoring and condition-based plant maintenance, who are responsible for arranging alignment work or are tasked with such work themselves.*

*) These statements refer equally to both men and women. In this context, however, we only use the masculine form for the sake of improving readability

Duration

2 days

Start/End

Day 1: 9:00 AM - 5:00 PM
Day 2: 8:00 AM - 4:00 PM

Number of participants

Maximum 8

For further information and to register, contact us via ptme@pruftechnik.com

Conditions of participation

Confirmation of registration
The number of training participants is limited. Please register in good time for this reason. Fluke Deutschland GmbH will confirm every registration in writing.

Conditions of cancellation
Up to 28 days prior to seminar start date: No charge.
From 27 days prior to seminar start date: 100% of the seminar fee.
Notice of substitute participants can of course be given in good time.
Cancellations must be made in writing.

Right to make changes
Fluke Deutschland GmbH reserves the right to make changes to the seminar dates, seminar locations and seminar instructors. If, for reasons outside the control of Fluke Deutschland GmbH, a face-to-face event is not possible, the organizer reserves the right to run this event as a remote seminar.

Cancellation by the organizer
If a seminar has to be canceled by Fluke Deutschland GmbH for organizational or illness-related reasons, no claims can be made in excess of the training fee paid.

Payments
Invoicing will take place after the seminar. Payment is requested within 30 days net.

Responsibility
The participant is responsible for the choice of seminar. The respective seminar is carefully prepared and run according to the current state of the art. Fluke Deutschland GmbH assumes no liability for any advice given or for the utilization of any knowledge acquired. Training materials and programs provided may not be copied or passed on to third parties.

Certificate
The participant will receive a certificate of attendance once the seminar has concluded. The participant accepts these conditions of participation by signing the confirmation of participation.

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