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Dear Customer,

Preventive maintenance for machines and systems enables production outages to be avoided, on the other hand, and production disruptions to be eliminated immediately and efficiently, on the other. This necessitates qualified, competent personnel.

Our technical training imparts the knowledge, skills and abilities that are specially required in connection with vacuum components and systems.

We offer an introductory course for newcomers to the field who do not possess any prior knowledge. This introductory course imparts the theoretical and practical fundamentals of vacuum technology. Participation in professional seminars on the subjects of vacuum generation, leak detection, vacuum measurement and mass spectrometry offer an efficient opportunity for familiarization with the subject matter and for regularly refreshing special knowledge. In these courses, small groups of your employees will utilize practical exercises to gain the technical knowledge and professional skills and abilities that are necessary for operating and maintaining vacuum components and systems.

In addition to standard seminars, we also offer customer-specific seminars that are custom-tailored to your vacuum technology hardware and software configuration. Depending upon your wishes, the training can be conducted at our Training Center in 35614 Asslar, Germany, or in any location you may wish.

Utilize the opportunities that are offered by technical training to enhance the dependability of your vacuum equipment and production systems.

Your contact:

Marco Antonacci
T +49 6441 802-1267
F +49 6441 802-1202
Marco.Antonacci@pfeiffer-vacuum.de
Fundamentals of Vacuum Technology

Target audience: Technical personnel, operating and maintenance personnel
Prior knowledge: Not required
Learning objective: The course offers newcomers an opportunity to enter the world of vacuum
Course content: • Physical fundamentals of vacuum technology  
  - What is vacuum?  
  - Designations, units  
  - Vacuum ranges, flow types  
  - Adsorption, desorption  
  • Vacuum pumps  
  - Function, design and operation  
  • Vacuum pumping stations  
  • Vacuum systems  
  • Vacuum measurement  
  - Total pressure measurement equipment  
  - Partial pressure measurement equipment / Mass spectrometers  
  • Leak detection  
  - Leak detection methods  
  - Helium leak detection  
  - Calculation examples  
  • Vacuum-suitable components  
  - Detachable and non-detachable connections  
  - Flange systems and seals and Valves  
  - Materials  

Vacuum experiments and hands-on sample components, equipment and cutaway models are used to reinforce the content of the course.

Registration deadline: 2 weeks prior to the beginning of the course
Trainer: Marco Antonacci
Duration: 3 days
Beginning – Ending: 9:00 AM – 4:00 PM
Number of Participants: 5 - 12
Course fee: € 1,470.00
Language: German, English
Course dates: 19. – 21.03.2019 (German)  
14. – 16.05.2019 (English)  
20. – 22.08.2019 (German)  
26. – 28.11.2019 (German)

This course can also be conducted on your premises. The date, duration and content will be matched to customer needs. The fee for this course amounts to € 1,950.00 per day for up to the indicated maximum number of participants, plus travel and lodging expenses for the trainer (only outside of Germany), plus expenses for preparation and follow-up activities of the course. We will be pleased to submit a detailed offer upon your request.
Rotary Vane Pumps

Target audience: Operating and maintenance personnel
Prior knowledge: Fundamental knowledge of vacuum technology
Learning objective: The participants will be able to perform required maintenance and repair work. They will be able to localize and rectify any malfunctions that may occur.
Course content:
• Structure and function
• Application examples
• Installation, start-up, operation
• Pump models
• Maintenance and cleaning work
• Functional inspection
• Defect identification and rectification
• Exchange and spare parts
• Pfeiffer Vacuum service support

The content of the course will predominantly be imparted through practical work on a variety of rotary vane pumps (Duo 1.3 – 65).

Participants are requested to bring safety shoes with them for the practical portion of the training.

Registration deadline: 2 weeks prior to the beginning of the course
Trainer: Jürgen Metzger
Duration: 1 day
Beginning – Ending: 9:00 AM - 4:00 PM
Number of Participants: 3 - 8
Course fee: € 490.00
Language: German, English
Course dates:
12.03.2019 (German)
06.06.2019 (English)
22.10.2019 (German)
19.11.2019 (English)

This course can also be conducted on your premises. The date, duration and content will be matched to customer needs. The fee for this course amounts to € 1,950.00 per day for up to the indicated maximum number of participants, plus travel and lodging expenses for the trainer (only outside of Germany), plus expenses for preparation and follow-up activities of the course. We will be pleased to submit a detailed offer upon your request.
Roots Pumps

Target audience: Operating and maintenance personnel

Prior knowledge: Fundamental knowledge of vacuum technology

Learning objective: The participants will be able to perform required maintenance and repair work. They will be able to localize and rectify any malfunctions that may occur.

Course content:
- Structure and function
- Application examples
- Installation, start-up, operation
- Pump models
- Maintenance and cleaning work
- Functional inspection
- Defect identification and rectification
- Exchange and spare parts
- Pfeiffer Vacuum service support
- Optional OktaLine™ ATEX-Training:
  - Basics about ATEX guidelines
  - Operation of OktaLine™ ATEX pumps

The content of the course will predominantly be imparted through practical work on a variety of roots pumps (Okta 250 – 6000).

Participants are requested to bring safety shoes with them for the practical portion of the training.

Registration deadline: 2 weeks prior to the beginning of the course

Trainer: Peter Huber

Duration: 2 days

Beginning – Ending: 9:00 AM - 4:00 PM

Number of Participants: 3 - 6

Course fee: € 980.00 (1.120,- € incl. OktaLine™ ATEX-Training)

Language: German, English

Course dates:
13. – 14.03.2019 (German)
04. – 05.06.2019 (English)
23. – 24.10.2019 (German)
20. – 21.11.2019 (English)

This course can also be conducted on your premises. The date, duration and content will be matched to customer needs. The fee for this course amounts to € 1,950.00 per day for up to the indicated maximum number of participants, plus travel and lodging expenses for the trainer (only outside of Germany), plus expenses for preparation and follow-up activities of the course. We will be pleased to submit a detailed offer upon your request.
Diaphragm Pumps

Target audience: Operating and maintenance personnel

Prior knowledge: Fundamental knowledge of vacuum technology

Learning objective: Documents and special tools will enable participants to perform maintenance work and to localize and rectify any malfunctions that may occur.

Course content:
• Structure and function
• Application examples
• Installation, start-up, operation
• Accessories
• Maintenance and cleaning work
• Functional inspection
• Defect identification and rectification
• Exchange and spare parts
• Pfeiffer Vacuum service support

The content of the course will predominantly be imparted through practical work on a variety of diaphragm pumps (MVP xxx).

Participants are requested to bring safety shoes with them for the practical portion of the training.

Registration deadline: 2 weeks prior to the beginning of the course

Trainer: TBD

Duration: 1/2 day

Beginning – Ending: 9:00 AM - 1:00 PM

Number of Participants: 3 - 6

Course fee: € 330.00

Language: German, English

Course date: upon request

This course can also be conducted on your premises. The date, duration and content will be matched to customer needs. The fee for this course amounts to € 1,950.00 per day for up to the indicated maximum number of participants, plus travel and lodging expenses for the trainer (only outside of Germany), plus expenses for preparation and follow-up activities of the course. We will be pleased to submit a detailed offer upon your request.
## Turbopumps

**Target audience:** Operating and maintenance personnel  
**Prior knowledge:** Fundamental knowledge of vacuum technology  
**Learning objective:** Documents will enable participants to operate the equipment, perform maintenance work and to localize and rectify any malfunctions that may occur.  
**Course content:**  
- Structure and function of turbo pumps  
- Pump models and accessories  
- Installation, start-up, operation  
- Importance of parameters and how to set them  
- RS 232/485, Pfeiffer protocol, software  
- Identification and rectification of malfunctions  
- Operating fluid changes **without bearing change** (exception HiPace)  
- Exchange and spare parts  
- Pfeiffer Vacuum service support  

The content of the course will be imparted on various turbopumps (HiPace series), controllers and turbo pumping stations (HiCube series).  

**Registration deadline:** 2 weeks prior to the beginning of the course  
**Trainer:** Marco Antonacci  
**Duration:** 2 days  
**Beginning – Ending:** 9:00 AM - 4:00 PM  
**Number of Participants:** 3 - 8  
**Course fee:** € 980.00  
**Language:** German, English  
**Course date:**  
- 03. – 04.04.2019 (German)  
- 04. – 05.06.2019 (English)  
- 28. – 29.08.2019 (German)  
- 04. – 05.12.2019 (German)  

This course can also be conducted on your premises. The date, duration and content will be matched to customer needs. The fee for this course amounts to € 1,950.00 per day for up to the indicated maximum number of participants, plus travel and lodging expenses for the trainer (only outside of Germany), plus expenses for preparation and follow-up activities of the course. We will be pleased to submit a detailed offer upon your request.
Maintenance on HiPace® Turbopumps

Target audience: Operating and maintenance personnel

Prior knowledge: Fundamental knowledge of vacuum technology and turbo pumps

Learning objective: Documents will enable participants to operate the pumps of the HiPace series and the equipment, perform maintenance work and to localize and rectify any malfunctions that may occur.

Course content:  
• HiPace pump types and accessory  
• Installation, start-up, operation  
• Importance of parameters and how to set them  
• RS 232/485, Pfeiffer protocol, software  
• Identification and rectification of malfunctions  
• Operating fluid changes and bearing change  
• Exchange and spare parts  
• Pfeiffer Vacuum service support

The content of the course will be imparted on various turbopumps, controllers and turbo pumping stations of the HiPace series.

Registration deadline: 2 weeks prior to the beginning of the course

Trainer: Marco Antonacci

Duration: 1 day

Beginning – Ending: 9:00 AM - 3:00 PM

Number of Participants: 3 - 6

Course fee: € 490.00 (for a simultaneous order of a required maintenance tool kit)

Language: German, English

Course date: upon request

This course can also be conducted on your premises. The date, duration and content will be matched to customer needs. The fee for this course amounts to € 1,950.00 per day (for a simultaneous order of a required maintenance tool kit) for up to the indicated maximum number of participants, plus travel and lodging expenses for the trainer (only outside of Germany), plus expenses for preparation and follow-up activities of the course. We will be pleased to submit a detailed offer upon your request.
Working with Total Pressure Measurement Equipment

Target audience: Technical personnel, operating and maintenance personnel

Prior knowledge: Fundamental knowledge of vacuum technology

Learning objective: The participants will obtain fundamental knowledge about the function, application, operation and maintenance of total pressure measurement equipment.

Course content:
- Physical principles of vacuum measurement
- Signal generation
- Measurement units
- Direct and indirect pressure measurement
- Mechanical vacuum gauges
- Capacitive vacuum gauges
- Piezo-resistive vacuum gauges
- Thermal conductivity vacuum gauges
- Hot-cathode vacuum gauges
- Cold-cathode vacuum gauges
- Analog and digital signal transmission
- Calibration
- Measurement drift/error
- Resolution
- Reproducibility
- Response time and measurement range
- Measurement tolerance

Registration deadline: 2 weeks prior to the beginning of the course

Trainer: Frank Pfeifer

Duration: 1 day

Beginning – Ending: 9:00 AM - 4:00 PM

Number of Participants: 3 - 8

Course fee: € 490.00

Language: German, English

Course date:
- 02.04.2019 (German)
- 06.06.2019 (English)
- 27.08.2019 (German)
- 03.12.2019 (German)

This course can also be conducted on your premises. The date, duration and content will be matched to customer needs. The fee for this course amounts to € 1,950.00 per day for up to the indicated maximum number of participants, plus travel and lodging expenses for the trainer (only outside of Germany), plus expenses for preparation and follow-up activities of the course. We will be pleased to submit a detailed offer upon your request.
Leak Testing in Serial Production

Target audience: Users, operating and maintenance personnel

Prior knowledge: Fundamental knowledge of vacuum technology

Learning objective: The participants will learn the fundamentals of different methods of quantitative leak testing and its practical application. They can basically understand or create testing specifications for mass-produced components and perform appropriate test methods practically. They are incapable of performing further steps to localize leaks on mass-produced components.

Course content:

Fundamentals
• Terms and definitions in the field of leak detection technology
• How do detectors and devices work?
• Physical fundamentals
• Methods of leak testing
  a) at overpressure (Micro flow)
  b) at atmospheric pressure (sniffing, accumulation method)
  c) under vacuum (helium spraying, integral and partial vacuum method)
• Exemplary calculations of leakage rates as a function of flow through the leak, operating- and test-medium, pressure, temperature
• How do I create a practical specification?
• Practical application of helium leak detection tasks in different areas (coating systems, large-scale research, heat exchanger)
• Use of different test gases in leak detection

Applications:
• Presentation of selected test methods according to DIN EN 1779
• Practical exercises of common testing methods
• Influence of environmental parameters: Materials, temperature, humidity, conductance, outgassing, ...
• Localization of leaks on mass-produced components
• Application examples of test methods learned
• Testing of components of the seminar participants (by prior arrangement)

Registration deadline: 2 weeks prior to the beginning of the course
Trainer: Dr. Rudolf Konwitschny
Duration: 3 days
Beginning – Ending: 9:00 AM - 5:00 PM
Number of Participants: 3 - 8
Course fee: 1,680,- €
Language: German, English

Course dates:
25. – 27.06.2019 (German)
09. – 11.07.2019 (English)
05. – 07.11.2019 (German)

This course can also be conducted on your premises. The date, duration and content will be matched to customer needs. The fee for this course amounts to € 1,950.00 per day for up to the indicated maximum number of participants, plus travel and lodging expenses for the trainer (only outside of Germany), plus expenses for preparation and follow-up activities of the course. We will be pleased to submit a detailed offer upon your request.
### Leak Detection on Vacuum Systems

**Target audience:** Users, operating and maintenance personnel  
**Prior knowledge:** Fundamental knowledge of vacuum technology  
**Learning objective:** The participants will learn the fundamentals of helium leak detection and its practical application. They can systematically check vacuum systems or vacuum units for leaks and acquire the theoretical and practical skills for the operation of systems in serial testing.

**Course content:**

**Fundamentals**
- Terms and definitions in the field of leak detection technology
- Why helium as tracer gas?
- How do detectors and devices work?
- Methods of helium leak detection
  - a) at atmospheric pressure (sniffing, accumulation method)
  - b) under vacuum (helium spraying, integral and partial vacuum method)

Additionally in 3-day course:
- Exemplary calculations of leakage rates as a function of flow through the leak, operating- and test-medium, pressure, temperature
- Practical application of helium leak detection tasks in different areas (coating systems, large-scale research, heat exchanger)
- Use of different test gases in leak detection

**Applications**
- Presentation of selected test methods according to DIN EN 1779
- Practical exercises of common testing methods
- Influence of environmental parameters: Materials, temperature, humidity, conductance, outgassing, ...
- Application examples of test methods learned
- Real time graphs of signals of a leak detector and its interpretation
- Testing of components of the seminar participants (by prior arrangement)

**Registration deadline:** 2 weeks prior to the beginning of the course
**Trainer:** Dr. Rudolf Konwitschny
**Duration:** 2 days
**Beginning – Ending:** 9:00 AM - 5:00 PM
**Number of Participants:** 3 - 8
**Course fee:** 1.120,- €  
**Language:** German, English

**Course date:** 12. – 13.03.2019 (German)  
27. – 28.08.2019 (English)  
08. – 09.10.2019 (German)

This course can also be conducted on your premises. The date, duration and content will be matched to customer needs. The fee for this course amounts to € 1,950.00 per day for up to the indicated maximum number of participants, plus travel and lodging expenses for the trainer (only outside of Germany), plus expenses for preparation and follow-up activities of the course. We will be pleased to submit a detailed offer upon your request.
Working with Quadrupole Mass Spectrometers (Software PV MassSpec)

Target audience: Users, maintenance personnel, service technicians

Prior knowledge: Fundamental knowledge of vacuum technology, basic knowledge of Windows

Learning objective: The participant will gain a basic knowledge of the function, the use and operation of quadrupole mass spectrometers.

Course content:

First day:
• Fundamentals and theory of the quadrupole mass spectrometry - first part
• Applications and equipment selection
• Getting to know the software, installation and commissioning

Second and third day:
• Theory of the quadrupole mass spectrometry - part two
• Parameter settings/practical exercises, operation, measuring method
• Examples and introduction to the methods of interpretation of spectra of gas

The course contents are predominantly taught by working with a PrismaPro (QMG 250) in conjunction with a turbo pumping station and the PV MassSpec software.

Participants are advised to bring a notebook with a LAN connection for the practical exercises. Administrator rights to set up programs are mandatory.

Registration deadline: 2 weeks prior to the beginning of the course

Trainer: Rolf Brandt / Johannes Meiwald / Armando Ventura

Duration: 3 days

Beginning – Ending: 9:00 AM - 5:00 PM

Number of Participants: 3 - 6

Course fee: € 1,680.00

Language: German, English

Course date:
26. – 28.02.2019 (German)
02. – 04.04.2019 (English)
02. – 04.07.2019 (German)
05. – 07.11.2019 (German)
26. – 28.11.2019 (English)

This course can also be conducted on your premises. The date, duration and content will be matched to customer needs. The fee for this course amounts to € 1,950.00 per day for up to the indicated maximum number of participants, plus travel and lodging expenses for the trainer (only outside of Germany), plus expenses for preparation and follow-up activities of the course. We will be pleased to submit a detailed offer upon your request.
Working with Quadrupole Mass Spectrometers (Software Quadera)

Target audience: Users, maintenance personnel, service technicians

Prior knowledge: Fundamental knowledge of vacuum technology, basic knowledge of Windows

Learning objective: The participant will gain a basic knowledge of the function, the use and operation of quadrupole mass spectrometers.

Course content:

**First day:**
- Fundamentals and theory of the quadrupole mass spectrometry - first part
- Applications and equipment selection
- Getting to know the software, installation and commissioning

**Second and third day:**
- Theory of the quadrupole mass spectrometry - part two
- Parameter settings/practical exercises, operation, measuring method
- Examples and introduction to the methods of interpretation of spectra of gas

The course contents are predominantly taught by working with a PrismaPlus (QMG 220) in conjunction with a turbo pumping station or a GSD 320 and the Quadera software.

Participants are advised to bring a notebook with a LAN connection for the practical exercises. Administrator rights to set up programs are mandatory.

Registration deadline: 2 weeks prior to the beginning of the course

Trainer: Rolf Brandt / Johannes Meiwald / Armando Ventura

Duration: 3 days

Beginning – Ending: 9:00 AM - 5:00 PM

Number of Participants: 3 - 6

Course fee: € 1,680.00

Language: German, English

Course date: upon request

This course can also be conducted on your premises. The date, duration and content will be matched to customer needs. The fee for this course amounts to € 1,950.00 per day for up to the indicated maximum number of participants, plus travel and lodging expenses for the trainer (only outside of Germany), plus expenses for preparation and follow-up activities of the course. We will be pleased to submit a detailed offer upon your request.
Target audience: Users, maintenance personnel, service technicians

Prior knowledge: Fundamental knowledge of vacuum technology, basic knowledge of Windows, basic knowledge working with the Quadera software and the measuring methods

Learning objective: Basic knowledge of vacuum technology, basic knowledge of Windows, basic knowledge working with the Quadera software and the measuring methods.

Course content: **First day:**
- Short repetition of the theoretical basics of mass spectrometry
- Theory of absolute value measuring with the mass spectrometer
- Partial pressure and concentration measurement (MCD)
- Gas specific calibration (GSC), underground, test gas
- Practical exercises on GSC and MCD

**Second day:**
- Quadrupole mass spectrometer maintenance
- Disassembly and reassembly of the quadrupole mass spectrometer
- Replacing the filament
- Cleaning

The course contents are predominantly taught by working with a PrismaPro (QMG 250) in conjunction with a turbo pumping station and the PV MassSpec software.

Participants are advised to bring a notebook with a LAN connection for the practical exercises. Administrator rights to set up programs are mandatory. If necessary, the exercises can be done on your quadrupole mass spectrometer. Please contact us regarding that.

Registration deadline: 2 weeks prior to the beginning of the course

Trainer: Rolf Brandt / Johannes Meiwald / Armando Ventura

Duration: 2 days

Beginning – Ending: 9:00 AM - 5:00 PM

Number of Participants: 3 - 6

Course fee: € 1,120.00

Language: German, English

Course date:
- 27. – 28.03.2019 (German)
- 08. – 09.05.2019 (English)
- 20. – 21.11.2018 (German)

This course can also be conducted on your premises. The date, duration and content will be matched to customer needs. The fee for this course amounts to € 1,950.00 per day for up to the indicated maximum number of participants, plus travel and lodging expenses for the trainer (only outside of Germany), plus expenses for preparation and follow-up activities of the course. We will be pleased to submit a detailed offer upon your request.
Working with Quadrupole Mass Spectrometers (Software Quadera) – Calibration, Maintenance

Target audience: Users, maintenance personnel, service technicians

Prior knowledge: Fundamental knowledge of vacuum technology, basic knowledge of Windows, basic knowledge working with the Quadera software and the measuring methods

Learning objective: Basic knowledge of vacuum technology, basic knowledge of Windows, basic knowledge working with the Quadera software and the measuring methods.

Course content:

First day:
• Short repetition of the theoretical basics of mass spectrometry
• Theory of absolute value measuring with the mass spectrometer
• Partial pressure and concentration measurement (MCD)
• Gas specific calibration (GSC), underground, test gas
• Practical exercises on GSC and MCD

Second day:
• Quadrupole mass spectrometer maintenance
• Disassembly and reassembly of the quadrupole mass spectrometer
• Replacing the filament
• Cleaning

The course contents are predominantly taught by working with a PrismaPlus (QMG 220) in conjunction with a turbo pumping station or a GSD 320 and the Quadera software.

Participants are advised to bring a notebook with a LAN connection for the practical exercises. Administrator rights to set up programs are mandatory. If necessary, the exercises can be done on your quadrupole mass spectrometer. Please contact us regarding that.

Registration deadline: 2 weeks prior to the beginning of the course

Trainer: Rolf Brandt / Johannes Meiwald / Armando Ventura

Duration: 2 days

Beginning – Ending: 9:00 AM - 5:00 PM

Number of Participants: 3 - 6

Course fee: € 1,120.00

Language: German, English

Course date: upon request

This course can also be conducted on your premises. The date, duration and content will be matched to customer needs. The fee for this course amounts to € 1,950.00 per day for up to the indicated maximum number of participants, plus travel and lodging expenses for the trainer (only outside of Germany), plus expenses for preparation and follow-up activities of the course. We will be pleased to submit a detailed offer upon your request.
General Information

Address:

Pfeiffer Vacuum GmbH
Technical Training
Berliner Strasse 43
35614 Asslar
Germany
T +49 6441 802-1267
F +49 6441 802-1202

Seminar registration

Please register in writing by no later than two weeks prior to the beginning of the course. Indicate your full address with telephone number, as well as the name and date of the seminar. Please try to register as soon as possible. We accept registrations in the order in which they are received.

Confirmation

Although we will confirm receipt of your application without delay, we do reserve the right to make final approval. Should the minimum number of participants not be reached, we will inform you around two weeks prior to the beginning of the seminar that it will not be conducted and offer you a substitute date.

Prices

The prices for seminar offerings at our Training Center in 35614 Asslar, Germany, are € 490.00 per person and day. This includes: (Digital) course documents, lunch and beverages during breaks.

The price for a special course at our Training Center in 35614 Asslar, Germany, is € 2,190.00 per day for the maximum number of participants indicated in the respective course description, including (digital) course documents, lunch and beverages during breaks.

The price for a special course on site amounts to € 1,950.00 per day for up to the indicated maximum number of participants, plus travel and lodging expenses for the trainer (only outside of Germany), plus expenses for preparation and follow-up activities of the course. We will be pleased to submit a detailed offer upon your request.

All prices are exclusive of value added tax.
General Information

Lodging
The participant will bear the costs of travel and lodging. Upon request, we can make hotel reservations for you. The hotels are located in the downtown area of 35578 Wetzlar, Germany, around 6 km from Pfeiffer Vacuum, and cost between € 56.00 and € 80.00 per night, including breakfast.

Cancellation of Registration
Please notify us immediately in writing if you do not wish to attend a seminar so that we can make use of the vacancy. There will be no charge if cancellation is made up to three weeks prior to the beginning of the seminar. If cancellation is made within three weeks prior to the beginning of the seminar, 30 % of the seminar price will be charged.

Certificate of Completion
Each participant will receive a certificate upon successful completion of the seminar.

Waiver of Liability
We have professionally developed the information contained in the seminars and in the course documents to best of our knowledge and belief. However we assume no liability for any mistakes contained in verbal or written statements at the seminars or in the course documents. This shall also apply with respect to any direct or consequential damages arising therefrom.
Registration Form
F +49 6441 802-1202

Pfeiffer Vacuum GmbH, Technical Training, Berliner Strasse 43, 35614 Asslar/Germany
T +49 6441 802-1267 or e-mail: Marco.Antonacci@pfeiffer-vacuum.de

□ Fundamentals of Vacuum Technology
□ Rotary Vane Pumps
□ Roots Pumps
□ Diaphragm Pumps
□ Turbopumps
□ Maintenance on HiPace® Turbopumps
□ Working with Total Pressure Measurement Equipment
□ Helium Leak Detection in Theory and Practice
□ Working with Quadrupole Mass Spectrometers (Software Quadera)
□ Working with Quadrupole Mass Spectrometers (Software PV MassSpec)
□ Working with Quadrupole Mass Spectrometers (Software Quadera) – Calibration, Maintenance
□ Working with Quadrupole Mass Spectrometers (Software PV MassSpec) – Calibration, Maintenance

Desired Date: ________________________________

Company: ____________________________________________

Name, First Name: ______________________________________

Street / P.O. Box: _______________________________________

Zip Code / Town: _______________________________________

Position: _____________________________________________

Phone: __________________ Fax: _______________________

e-mail: _____________________________________________

Hotel reservation: □ Yes □ No Arrival / Departure: ________________

Smoker: □ Yes □ No

Date, Signature: _______________________________________

We are working with the following vacuum equipment: ________________________________

Comment: ____________________________________________
How to reach Pfeiffer Vacuum
How to reach Pfeiffer Vacuum
VACUUM SOLUTIONS FROM A SINGLE SOURCE
Pfeiffer Vacuum stands for innovative and custom vacuum solutions worldwide, technological perfection, competent advice and reliable service.

COMPLETE RANGE OF PRODUCTS
From a single component to complex systems:
We are the only supplier of vacuum technology that provides a complete product portfolio.

COMPETENCE IN THEORY AND PRACTICE
Benefit from our know-how and our portfolio of training opportunities!
We support you with your plant layout and provide first-class on-site service worldwide.