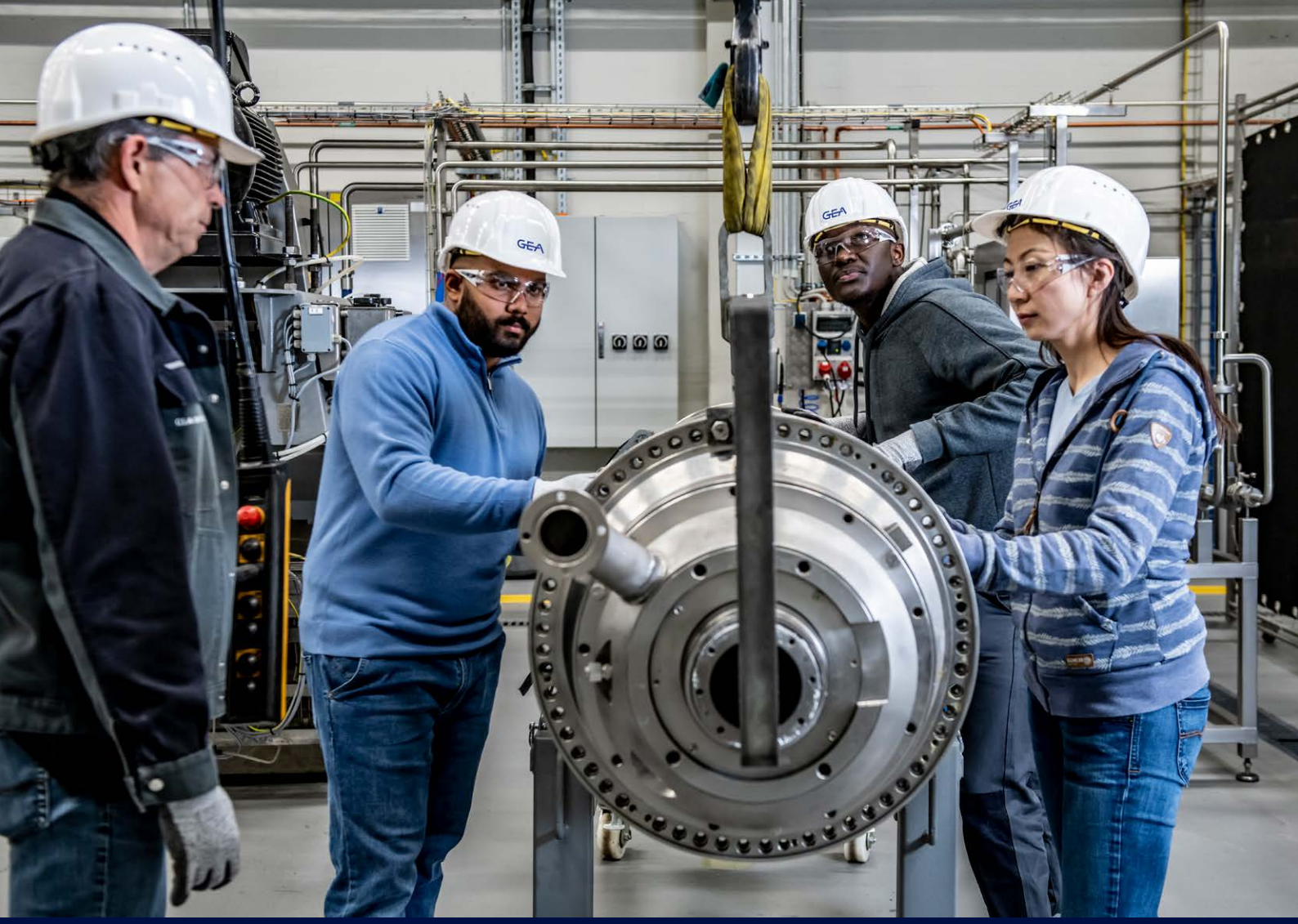


GEA TRAINING
CENTRIFUGES & SEPARATION EQUIPMENT

Operating staff and Skilled Worker for
Decanter Centrifuges and Centrifugal Separators

GEA Engineering for a better world. | Academy

GEA.com



Welcome to the GEA Academy in Oelde

For our classroom training courses, we offer you an optimal learning and working atmosphere with spacious premises – equipped with the latest training and media equipment for the efficient transfer of specialist knowledge and practical skills.

Not only customers benefit from our expertise – also our GEA locations, sales and service partners.

600

m²

training area for hands-on trainings on fully operational machines and components

350

m²

seminar and event rooms for theoretical trainings with the latest media equipment and state-of-the-art training materials

SUSTAINABLE SUCCESS THROUGH KNOWLEDGE.

As an international technology group, GEA has unique know-how from 130 years of product and process experience for separators, decanters, homogenizers, valves and pumps.

Our goal
With experienced specialist trainers, we optimize the skills and knowledge of your employees and enable them to optimally exploit the potential of GEA machines and components. For maximum plant availability and machine uptime with a clear plus in efficiency and product quality.

Our concept
Well-founded theoretical knowledge combined with technical training directly on the machine – these "hands-on trainings" are the most efficient method for the efficient transfer of specialist knowledge and practical skills that can be implemented safely and sustainably in daily operations.

The knowledge transfer takes place either in classroom training at the GEA Academy in Oelde or directly at your site – with tailored content for operating staff, skilled worker and other technical personnel. Accompanying online tutorials and webinars round off the offer.

User oriented trainings
In small training groups, the participants learn everything about function, operation, fault diagnosis as well as simple assembly work, routine maintenance work and inspections of GEA machines and components – with state-of-the-art teaching materials and training equipment. The guarantor for the development of your plant potential. Another plus: Each training course is adapted to your existing machines. Current and future technological developments and market trends are also taken into account.

Five good reasons for GEA Academy trainings
- **Target group oriented and task related trainings** for operating staff, skilled worker and other technical personnel or as combination
- **High increase in knowledge and competence:** top-trained employees for sustainable success
- **Individual, practice-oriented trainings:** theoretical knowledge combined with hands-on training
- **Flexible training formats:** In-house on site, at the GEA Academy in Oelde or online
- **Learning from the best:** GEA know-how at first hand from experienced expert trainers

COURSE OUTLINE AND AGENDA

Machines and systems work reliably when they are operated and maintained correctly.

This training will provide you with the skills to perform routine maintenance safely and efficiently. You will not only learn how the centrifuge works and its design features, but also details about its operation. Practical exercises also ensure that you can set up the machine correctly – the basis for trouble-free operation of the centrifuge and uninterrupted production.

Detailed information about available trainings can be found here:

GEA.com/academy

Course title

Operating staff and Skilled Worker for Decanters and Separators DEC+SEP/01 – EN

The main modules of this course are outlined in this document. Should you require additional or alternative modules, we will endeavor to amend the agenda to your requirements. The course is designed to be conducted on dates that are suitable to you.

Duration: 3 days
The duration of a training day is usually 8 hours (08:00 am until 05:00 pm)

Target audience
Technical staff who operate and/or maintain the centrifuges.

Registration
Please contact your local GEA representative for registration and get a offer for your training. We ask you to provide us with the serial number of your GEA centrifuges and components so that the trainer can prepare the course in the best possible way.



Day 1

- Welcome
- Fundamentals of mechanical separation technology
- Design variants of common decanter
- Fundamentals of centrifuge performance
- Fundamentals of safety precautions and damage prevention
- Dismantling and assembling of a bowl and scroll

Day 2

- Fundamentals of decanter performance
- Introduction to preventive maintenance of decanter
- Introduction to troubleshooting of decanter
- Introduction to the operation of the GEA IO user interface
- Starting and stopping a decanter
- Operation of a decanter
- Design variants of common separators
- Guided tour through the factory

Day 3

- Fundamentals of separator performance
- Introduction to preventive maintenance of separators
- Introduction to troubleshooting of separators
- Dismantling and assembling of a separator bowl
- Starting and stopping a separator
- Operation of a separator
- Review and summary

Prerequisite qualifications
Only reliable persons with a sufficient level of technical understanding, knowledge and skills may be assigned to work on centrifuges. Participants should have completed relevant mechanical or electrotechnical vocational training and have already gained work experience.

Requirements at your premises
Should the training be conducted at your premises on your equipment, we kindly request you to provide a quiet and clean environment during the practical exercises. The equipment must be clean, stopped and cold. Practical exercises during running production are not admissible. We kindly ask you to provide a fully equipped classroom (LCD projector, flipchart, audio-visual equipment) for the classroom sessions.

Venue
The training can be completed at your site or at the GEA Academy in Oelde. Please indicate where you would like to hold the training.

Class size
The recommended max. class size is six trainees.

Course language
The standard course language is English. If you would like the training materials in another language, translation costs may apply. If the assistance of a translator is required during the training, the additional costs will not be covered by GEA.



Course fee
Please contact your local GEA representative for a quote. The training fee covers the cost of the training, soft copies of the training materials and an individual certificate. The costs for the preparation of specific training materials as well as travel costs and expenses of our trainer on site will be charged without surcharge, if any.

If the course takes place at the GEA Academy in Oelde, lunch in our canteen as well as refreshments during the breaks are included in the price. Unless otherwise specified by GEA, the fee is per course, excluding VAT.

Cancellation policy
At least 30 days prior to the scheduled date of the course, cancellation is free of charge; a 50% fee is applied if cancellation occurs 29–15 days prior to the start date, and the full course fee will be charged if less than 15 days' notice is given. We will gladly accept substitute participants at no additional costs.

Accommodation
Unless otherwise agreed, the course fees do not include the cost of travel to and from the event or accommodation at the venue. We kindly ask you to book a hotel near the venue yourself. If the venue is the GEA Academy in Oelde, you will receive a welcome letter from us in good time with all the important information about the course schedule.



LESSON CONTENT DAY 1



Welcome

- Presentation of the training objectives
- General training rules
- GEA company presentation

Classroom

Design variants of common decanter

- Introduction to type code
- Fields of application
- Basic design
- Generations
- Inner diameter of bowl
- Design of bowl
- Design of housing
- Drainage of liquids
- Bowl drive type
- Scroll drive type

Classroom / Technical Center

Fundamentals of mechanical separation technology

- Sedimentation and its influencing factors
- g-force
- Clarification and separation
- Basic Function of a separator and decanter
- Typical selection criteria of centrifuges

Classroom

Fundamentals of centrifuge performance

- Sample taking procedures
- Spin test and moisture analysis
- Suspension related factors
- Calculation of separation efficiency
- Use of flocculants and additives

Classroom / Technical Center

Fundamentals of safety precautions and damage prevention

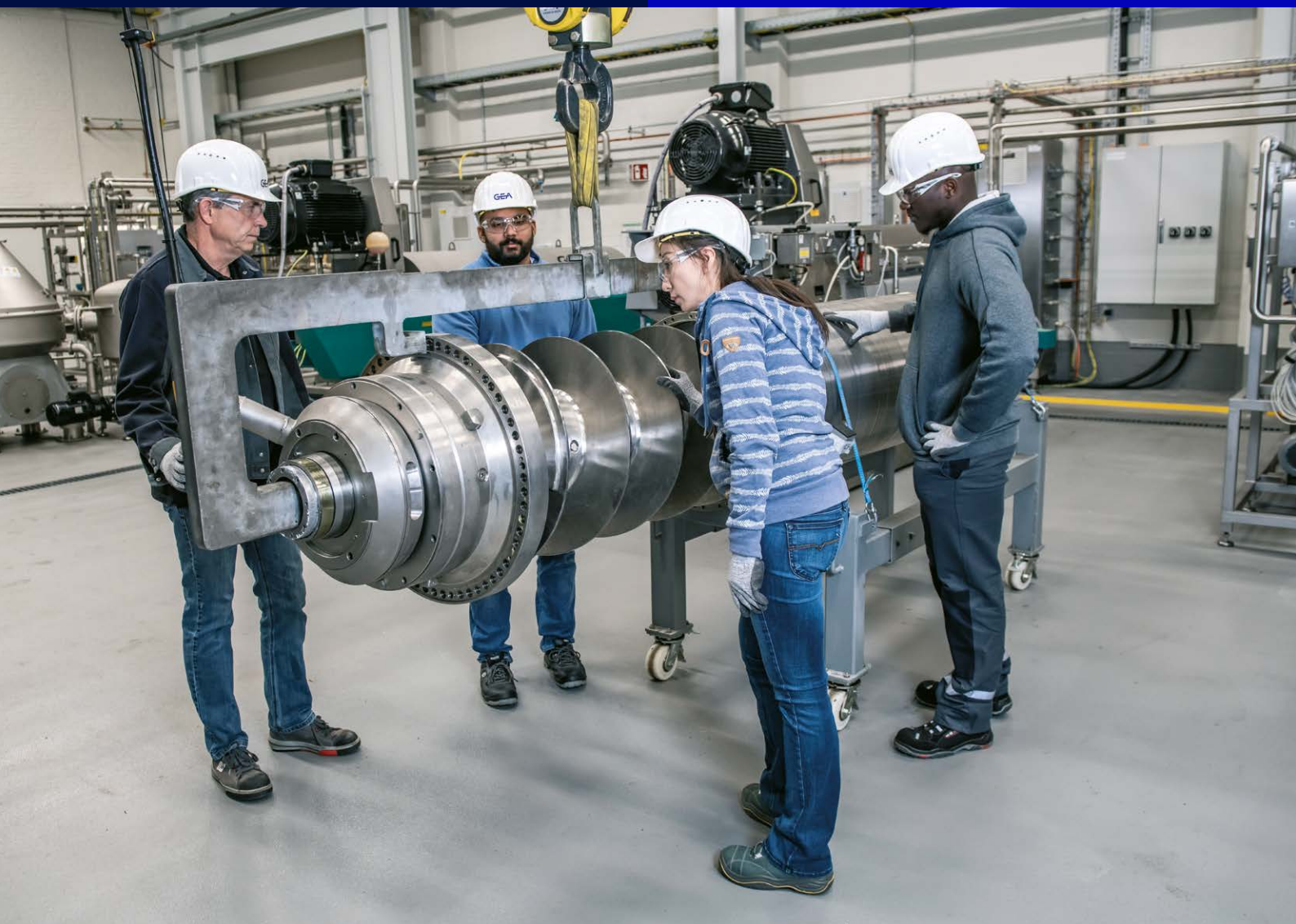
- Basic precautions
- Equipment safety

Classroom

Dismantling and assembling of a bowl and scroll

- Preparing the workplace and utilities
- Good practice
- Dismantling bowl and scroll
- Correct use of special tools
- Visual inspection of bowl and scroll
- Fitting bowl and scroll
- Alignment of the clutch

Technical Center





LESSON CONTENT DAY 2

Fundamentals of decanter performance

- Equivalent clarification area / g-Volume
- Hydrostatic balance
- Separation line and drying zone adjustment
  - Regulation ring diameter / Pond depth
  - Varipond®
- Bowl and differential speed
- Torque control
- Distributor

Classroom

Introduction to preventive maintenance of decanter

- Maintenance schedule
- Parts subject to regular wear-and-tear
- Lubrication and lubrication chart
- Spare parts ordering and store keeping
- Reviewing supporting documents

Classroom

Introduction to troubleshooting of decanter

- Potential faults on a decanter
- Fault recognition and elimination

Classroom / Technical Center

Introduction to the operation of the GEA IO user interface

- Menu navigation
- Timer lists, changing timer
- Reading alarm buffer

Classroom / Technical Center

Starting and stopping a decanter

- System walk down
- Lockout/Tagout procedures
- Test run after maintenance

Classroom / Technical Center

Operation of a decanter

- Decanter main components and their function
- Identifying feed and discharges of a decanter
- Routine inspections
- Adjusting machine operating parameters

Technical Center



Design variants of common separators

- Introduction to type code
- Field of application
- Basic design
- Series/generations
- Performance figure
- Construction characteristics of the bowl
- Draining of liquids or solids
- Design characteristics of frame, drive, hood, solids catcher and drive type
- Additional features
- Typical areas of application

Classroom / Technical Center

Guided tour through the factory

- Tour through the production facility of GEA Westfalia Separator Group GmbH, Oelde

Production

LESSON CONTENT DAY 3

Fundamentals of separator performance

- Equivalent clarification area
- Separation line and adjustment
- Discharge pressure
- Ejection volume and intervals
- Automatic bowl control
- Nozzle diameter

Classroom



Introduction to preventive maintenance of separators

- Maintenance schedule
- Parts subject to regular wear-and-tear
- Lubrication and lubrication chart
- Spare parts ordering and store keeping
- Reviewing supporting documents

Classroom

Introduction to troubleshooting of separators

- Potential faults on a separator
- Fault recognition and elimination

Classroom / Technical Center

Dismantling and assembling of a separator bowl

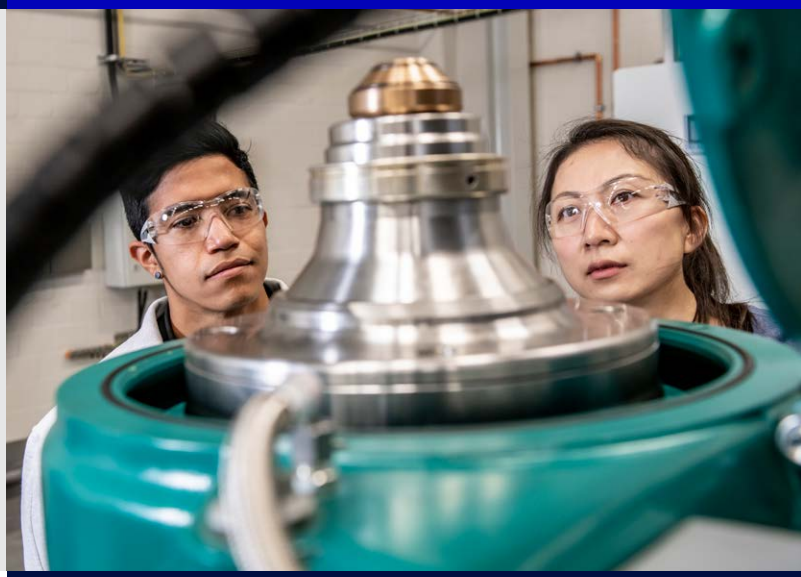
- Preparing the workplace and utilities
- Good practice
- Lifting the bowl off the frame
- Dismantling the bowl
- Correct use of special tools
- Visual inspection of bowl parts
- Assembling the bowl and fitting into separator

Technical Center

Starting and stopping a separator

- System walk down
- Lockout/Tagout procedures
- Test run after maintenance

Technical Center



Operation of a separator

- Separator main components and their function
- Identifying feed and discharges of a separator
- Routine inspections
- Adjusting machine operating parameters

Technical Center

Review and summary

- Final discussion
- Evaluation and feedback
- Final test
- Hand-over of certificates
- End of training and farewell

Classroom

Learn more
on our website

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