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# GEA Service Pharma Training

Training program catalog 2019 v1.0

# Training program in Halle, Belgium



## Operator Training

Covering all important theoretical and practical aspects of tablet press operation, the Operator Training is a high-impact learning experience focused on getting the most and the best out of GEA MODUL™ and GEA PERFORMA™ rotary tablet presses. During the practical sessions, all participants will be given the opportunity to fine-tune their newly acquired skills, so they can confidently implement them in their day-to-day operations.

Duration: three days

Cost: € 1,800 per participant (see next page)

Dates: 12–14 March 2019, 1–3 October 2019

## Technical Training

The Technical Training focuses on the various maintenance procedures and practices required to keep GEA MODUL™ and GEA PERFORMA™ tablet presses up and running. Combining both theoretical aspects of machine maintenance and practical applications, the sessions will primarily be interactive and hands-on, enabling participants to leave the training with skills and know-how that they can immediately use in their workplace.

Duration: two days

Cost: € 1,200 per participant (see next page)

Dates: 26–27 March 2019, 22–23 October 2019

## Tableting Process Technology Training

The Tableting Process Technology Training is dedicated to the innovative features and superior process control of GEA tablet presses. Following a detailed explanation and demonstration of our unique approach to tablet compression, participants will be able to practice tableting by themselves, and experience first-hand how our tableting expertise not only optimizes the manufacturing process, but also maximizes output and quality when compared to conventional compression methodology.

Duration: three days

Cost: € 1,800 per participant (see next page)

Dates: 5–7 February 2019, 21–23 May 2019,  
10–12 September 2019, 5–7 November 2019

## Multi-Control-5 Training

GEA has designed a new control system for tablet presses: the Multi-Control-5. Participants will learn about a wide range of innovative functions and features and how these can be used in relation to the tablet press and production methods. GEA MODUL™ and GEA PERFORMA™ tablet compression methods and modes will be reviewed in detail during this training. Topics such as production setup, maintenance functions, recipe management, troubleshooting and data analysis will be covered.

Duration: two days

Cost: € 1,200 per participant (see next page)

Dates: upon request

## Custom Training

In addition to our regular training courses, we also offer customized courses. These courses can be tailored to your specific needs in order to help you to accomplish the goals you have set out to achieve. Consulting with you to establish your precise objectives, we will develop a training course that optimally matches your company's strategic plan to enhance skills, increase productivity and guarantee product quality.

# Registration and information

## Registration policy

The number of participants per course is limited to 8–10. Places are assigned on a first-come, first-served basis, so we recommend that you register as soon as possible for the course of your choice.

## Training

Registration at our reception desk takes place between 08:30 and 08:45. All trainings start at 09:00 and end at 16:30. Lunch is included in the training (sandwiches or cold salads). Please inform us if you require special meals. Coffee, tea and various beverages are available and included.

## Accommodation

Travel and accommodation are not included, but we are happy to help with your travel arrangements and bookings. We can advise and help you on where to stay at a local hotel, which is only 10 minutes' walk away from our training center. We can make a taxi reservation to bring you from Brussels airport to the hotel. Our training center is only 15 minutes' walk away from the train station (Halle).

## Participation fee

All courses are invoiced at € 600 per participant per day. The fee includes all course material, as well as lunches and refreshments each day.

## Substitutions and cancellations

If you are unable to attend, substitutions are permitted any time up to the first day of the training you have registered for. For cancellations received more than 14 days before the start of the training, a full refund is given. Cancellations shorter than 14 days will be invoiced at participant(s) price.

## REGISTRATION

Please contact your local representative for registration or information.

For GEA internal training  
GEA Participants: Please contact the GEA Learning Center by email.

## VENUE

GEA Tableting Technology Center  
Bergensesteenweg 186, 1500 Halle,  
Belgium



# GEA MODUL™ and GEA PERFORMA™ Operator Training

## Target Group

The three-day training and workshop is targeted at production operators, production shift leaders, production supervisors and process engineers.

## Training objectives

Upon completion of the training, participants will

- have a first-hand knowledge of the compression cycle and the various compression modes.
- be familiar with the features and operation of GEA MODUL™ and GEA PERFORMA™ tablet presses, including ECM and turret functionalities.
- be able to start up and manage production on a GEA MODUL™ or GEA PERFORMA™ tablet press.
- be able to perform ECM or turret exchange.



## Agenda for day one of training

- Compression cycle and how to make a tablet
- Compression modes
- Practical overview of the machine
- Overview of the control system

## Agenda for day two of training

- Practice and trial runs with tablet press
- How to setup a recipe, batch and parameters
- ECM preparation and assembly
- ECM procedure
- Tablet press setup
- Working with peripherals (option)

## Agenda for day three of training

- Practice and trial runs with tablet press
- IPC (in-process control) checks
- Tablet weight, thickness and hardness control
- Performance of the tablet press
- ECM disassembly and cleaning
- Summary, Q&A, evaluation and feedback

A detailed program overview is available on request.

# Technical Training



## Target Group

The two-day training and workshop is targeted at maintenance engineers, maintenance supervisors and process engineers, as well as any other maintenance staff wishing to develop their expertise in this field.

## Training objectives

Upon completion of the training, participants will

- be able to optimally maintain their GEA MODUL™ and GEA PERFORMA™ tablet presses and to keep the ECM or turret up and running.
- understand the basic component functionality of a GEA MODUL™ or GEA PERFORMA™ press, including the ECM/turret.
- be able to perform maintenance, calibration and signal synchronization.

## Agenda for day one of training

- Brief review of the compression cycle
- Overview of the basic compression modes
- Theoretical overview on signal synchronization
- Practical mechanical overview of the machine
- Instructions on cams, scrapers, rollers etc.
- Identification of electrical components
- Practice and trial runs with tablet press

## Agenda for day two of training

- Instruction about tooling and lubrication
- Practical calibration and adjustment training on sensors such as LVDTs, encoders and loadcells
- Critical checkpoints
- Tablet press setup and fault finding
- Practice and trial runs with tablet press
- Summary, Q&A, evaluation and feedback

A detailed program overview is available on request.

# GEA Tableting Process Technology Training

## Target Group

The three-day training and workshop is targeted at operators, supervisors, production managers, quality assurance staff, process engineers and trainers.

## Training objectives

Upon completion of the training, participants will

- understand pharmaceutical compression technology on the GEA MODUL™ and GEA PERFORMA™ tablet press ranges.
- be able to set up the tablet press and ensure compliance with the highest-quality pharmaceutical standards during production.
- have gained hands-on experience of the tableting process and be able to improve process performance.
- have in-depth knowledge of tablet compression terminology.
- know how to optimize a product and enhance operational performance.

## Agenda for day one of training

- Granulation methods and compaction
- Various stages of compression
- Particle blend stress and behavior
- Compression cycle and how to make a tablet
- Detailed analysis of the tableting process
- Overview of the 6 compression modes

## Agenda for day two of training

- Machine process identification
- ECM installation
- Practice and trial runs with tablet press and various compression modes
- GEA tableting technology and innovation review, tablet press range, Wash-Off-Line (WOL), high containment applications, MUPS production systems and further innovations

## Agenda for day three of training

- Practice continuation with trial runs in various compression modes
- Tablet defects and solutions, weight variability, capping/sticking, black spots and segregation
- Summary, Q&A, evaluation and feedback

A detailed program overview is available on request.



# Multi-Control-5 Training



## Target Group

The two-day training and workshop is for GEA tablet press operators who use the Multi-Control-5 (MC5) control system. This includes basic- and high-level operators, also maintenance engineers, production supervisors, process engineers, quality and validation staff and other employees wishing to gain expert knowledge in this field.

## Training objectives

Upon completion of the training, participants will

- have comprehensive and detailed knowledge of GEA's MC5 control system.
- understand the various GEA tablet compression modes and cycles.
- be able to operate a GEA tablet press from a control system perspective.
- be able to analyze and troubleshoot a GEA tablet press using MC5's built-in tools.
- be able to use the built-in recipe, batch, report, user and configuration menus.

## Agenda for day one of training

- Brief review of the compression cycle
- Overview of the basic compression modes
- Introduction and MC5 specifications
- Software and hardware concept
- Menu overview and features
- Batch versus recipe concept
- User management and access configuration
- Operation manual and help system

## Agenda for day two of training

- Recipe, tooling & turret management
- ECM/turret procedures
- Maintenance functions
- Process screen, compression modes and GOTO auto
- Trending and reports management
- Audit trails and electronic signatures
- Summary, Q&A, evaluation and feedback
- Optional items and customer extras upon machine configuration

A detailed program overview is available on request.

# Training program in Wommelgem, Belgium



## Continuous Pharmaceutical Processing Training

Understanding R&D Continuous Processing – This training will allow R&D scientists and technicians to gain knowledge on the way development of a continuous wet granulation process can be set up.

Duration: two days

Cost: €750 per participant (see next page)

Dates: 26–27 February 2019, 12–13 June 2019,  
22–23 October 2019

## Custom Training

In addition to our regular training course, we also offer customized courses. These courses can be tailored to your specific needs in order to help you to accomplish the goals you have set out to achieve. Consulting with you to establish your precise objectives, we will develop a training course that optimally matches your company's strategic plan to enhance skills, increase productivity and guarantee product quality.

## Training focus

During our Continuous Pharmaceutical Processing Training, we will focus on optimizing particle size distribution using different screw elements, melt granulation with a twin screw granulator and conducting a Design of Experiment (DoE) test with a minimal amount of product.

We will also investigate process transfer from the laboratory scale ConsiGma™ 1 to the production-size ConsiGma™ 25 as a case study.

## Training method

The method consists out of a theoretical part of the training given in a dedicated training class room and a practicum done in the GEA Pharma Solids Center (GPSC) on the ConsiGma™ 1 and ConsiGma™ CTL-25.

The interactive method used in the training allows both the trainer and participants to emphasize training topics.

# Registration and information

## Registration policy

The number of participants per course is limited to 6–8. Places are assigned on a first-come, first-served basis, so we recommend that you register as soon as possible for the course of your choice.

## Training

Registration at our reception desk takes place between 08:30 and 08:45. All trainings start at 09:00 and end at 16:30 the first day, and from 09:00 to 13:30 the second day. Lunch is included in the training (sandwiches or cold salads). Please inform us if you require special meals. Coffee, tea and various beverages are available and included.

## Accommodation

Travel and accommodation are not included, but we are happy to help with your travel arrangements and bookings. We can advise and help you on where to stay at a local hotel.

## Participation fee

This 1.5 days course is invoiced at €750 per participant. The fee includes all course material, as well as lunches and refreshments each day.

## Substitutions and cancellations

If you are unable to attend, substitutions are permitted any time up to the first day of the training you have registered for. For cancellations received more than 14 days before the start of the training, a full refund is given. Cancellations shorter than 14 days will be invoiced at participant(s) price.

## REGISTRATION

Please contact your local representative for registration or information.

For GEA internal training  
GEA Participants: Please contact the GEA Learning Center by email.

## VENUE

GEA Pharma Solids Center  
Keerbaan 70, 2160 Wommelgem  
Belgium



# Understanding R&D Continuous Processing

## Target Group

The target groups we focus on are R&D scientists and managers, production supervisors, quality assurance staff, process engineers and trainers of pharmaceutical companies interested or already invested in continuous processing.

Also, GEA sales and service personnel involved in the sales/service of pharmaceutical continuous processing lines can benefit from this workshop.

## Training objectives

Upon completion of the training, participants will

- benefit from a thorough understanding of pharmaceutical continuous processing technology.
- be able to set up a DoE for continuous granulation.
- have developed a much better awareness of continuous manufacturing terminology.
- have gained hands-on continuous granulation and drying experience.
- recognize how to improve operational performance and optimize a product.

## Training approach

The trainings are designed to be fully interactive, and each participant will have the opportunity to ask questions and share real-life experiences. All presentations and demonstrations will be given by our experienced process specialists.

## Agenda for day one of training

- Introduction to continuous granulation
- Explanation of DoE principles & how to apply to continuous granulation
- Granulation of a placebo formulation showing:
  - Optimization of particle size distribution by modifying screw configuration
- Starting DoE experiments
- LHP PAT moisture measurement
- Continuation of DoE practical work
- Scale-up demonstration from ConsiGma™ 1 to production equipment (ConsiGma™ 25 continuous tableting line) including LHP PAT moisture measurement

## Agenda for day two of training

- Melt granulation on a continuous granulator (theory & case studies)
- Demonstration of melt granulation
- PAT in continuous
- Wrap-up
- Lunch

A detailed program overview is available on request.

# Continuous Pharmaceutical Processing Training





## We live our values.

Excellence • Passion • Integrity • Responsibility • GEA-versity

GEA is a global technology company with multi-billion euro sales operations in more than 50 countries. Founded in 1881 the company is one of the largest providers of innovative equipment and process technology. GEA is listed in the STOXX® Europe 600 Index. In addition, the company is included in selected MSCI Global Sustainability Indexes.

### GEA Service

GEA Process Engineering nv  
Bergensesteenweg 186  
1500 Halle, Belgium

GEA Process Engineering nv  
Keerbaan 70  
2160 Wommelgem, Belgium

[gea.com/contact](http://gea.com/contact)  
[gea.com/training](http://gea.com/training)