FIT FOR THE FUTURE!
INDIVIDUAL TRAINING 2020

MOBILE HYDRAULICS &
MOBILE ELECTRONICS
In addition to the standard trainings of our training program, which can be carried out at your place as well, we are offering individual trainings to qualify your crew members.

We, of the Bosch Rexroth company rely on a module concept, which helps you to concentrate on focus topics, to connect mobile hydraulics and electronics in the training as well, and to prepare your team for the challenges of the future.

Together we work on your success and design a tailored training program for your special needs. You can profit from our Know-How gained over the years and from qualified trainers, which are highly interested in a very specific advanced training for your team.

### TOPICS

The modules are divided into four different topics, that offer a variety of possibilities in the compilation of your individual training.

- **Basics**
- **Products**
- **Systems**
- **Tools**

In the following we present you the modules of our four focus topics in the area of Mobile Hydraulics and Mobile Electronics.
TOPICS AND FOCUS MODULES OF OUR INDIVIDUAL TRAINING

BASICS

To introduce to your personal individual training we highly recommend some technical basics, which prepare your crew for the content constructively and refresh basic knowledge. We value content-wise variety, which is the basis for motivation and agility in the training as well.

MOBILE HYDRAULICS

101  Hydraulic fundamentals
     Function and construction of a hydraulic system

102  Accessories, hose, reservoir, cooler, filter
     Hydraulic accessories and correct handling

103  Initial commissioning
     Safe handling while hydraulic commissioning

MOBILE ELECTRONICS

401  CAN fundamentals
     Introduction to the serial bus system CAN

402  CAN protocol SAE-J1939
     Basics of the CAN protocol SAE-J1939-71

403  CAN protocol CANopen
     Basics of the CAN protocol CANopen
The range of products of Bosch Rexroth Mobile Hydraulics reaches out far beyond pumps, motors and control blocks. Discover the variety of variants and modules, which are the basis for your competitiveness on the future market.

MOBILE HYDRAULICS

201 Fluids
Hydraulic fluids, characteristics and standardization

220 M-series
Control blocks

- MO/RCS Open-centre control block, size 16–25
- M8/RCS Open-centre control block, size 32
- M9/RCS Open-centre control block, size 30, 35
- M7/RS LUDV-control block, size 20 – 25
- M6/RS LUDV-control block, size 15 – 22
- M4 Load-Sensing-control block, size 12, 15, 22

203 SBX4
Load-Sensing control blocks, structure and function

204 LT
Hydraulic power brakes
The A-series reflects the product line of the axial-piston units. Among them there are pumps and motors for the open and closed circuit, as well as ones for single and multi-circuit systems.

## MOBILE HYDRAULICS

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BE PREPARED FOR THE FUTURE.

PRODUCTS

In addition to that Bosch Rexroth is an absolutely strong partner in Mobile Electronics and supports you and your team with promising solutions to be used in the area of Mobile Hydraulics. Our trainings help you to exhaust every single possibility for success and to profit from our many years of expertise.

MOBILE ELECTRONICS

601  Rexroth Controller
Requirements and functions of mobile control units

602  Rexroth Sensors
Structure and function of the Rexroth family of sensors

603  Rexroth IoT (COS)
Connected Off-Highway Solution (COS)
SMART. INDIVIDUAL. GOAL ORIENTED.

To use and implement our products even more efficient, there has to be a detailed understanding of the hydraulic basics and of the processes in the machine`s working process as well as it`s components. Lay the necessary foundations in your team now.

**SYSTEMS**

- **301 OK OC**
  Mobile hydraulics „Open Circuit“

- **302 OK LUDV**
  Open hydraulic circuit with LUDV

- **303 OK LS**
  Open hydraulic circuit with Load Sensing

- **304 GK travel drive**
  Closed hydraulic circuit for travel drive

- **305 GK winch**
  Closed hydraulic circuit on example „winch“

- **306 GK slew drive**
  Closed hydraulic circuit for slew drive

- **307 Applications, e.g. wheel loaders, excavators, etc.**
  Practical module: Mobile hydraulics applications
At least to be able to connect mobile hydraulics with electronics, different tools are required, which support the control of Rexroth components as well as guarantee an optimum utilization and efficiency.

**TOOLS**

- **501** BODAS-service V3.62
  Introduction to the control and application of the diagnosis tool for the Bosch Rexroth controller of BR2x and 3x

- **502** CANalyzer fundamentals
  Using CANalyzer as an analysis tool for ECU networks and distributed systems

- **503** BODAS Service V3.6
  Diagnosis of BODAS control units (BR2x/3x)

- **504** BODAS Service V4
  Diagnosis of BODAS control units (BR40)

- **505** BODAS Studio
  Authoring tool for generation of application specific diagnostic procedures

- **506** BODAS-DI-4 Basics
  Introduction to DI4 programming

- **507** Get ready for BR40
  Prerequisites for programming RC series 40
Now design your own training by choosing some of the modules mentioned above. We guarantee a balanced proportion between theory and practice inside every single module.

Do you have additional questions about the system or the preparation for your training? Please do not hesitate to contact us. We will support you at choosing the perfectly fitting training modules and even at time management.

Please find some more information on our website www.boschrexroth.de/training

or contact us directly at training.elchingen@boschrexroth.de
On the following pages you will find some examples for compiling an individual training tailored to your certain needs.

The mentioned examples focus on different situations in your daily business life, where you as an entrepreneur can rely on the support of Bosch Rexroth.

1. You would like to implement a new Rexroth product, but you do not have gained any experience with that?

In this case you could compile the topics for your training like this:

- **Module 101** Hydraulic fundamentals
- **Module 215** Pumps and motors: A11VO

Therefore you would concentrate on the possibilities of the product and it's technical data, as well as on the variable program at all.
You own several machines from different OEM’s and would like to make your team fit for maintenance?

In this case you could compile the topics for your training like this:

- **Module 101**: Hydraulic fundamentals
- **Module 307**: Applications, e.g. wheeled loader, excavator, etc.
- **Module 203**: SBX4
- **Module 205**: Pumps and motors: A-series

**Module 303**: Control concept: OK LS
**Module 304**: Control concept: GK travel drive
**Module 305**: Control concept: GK winch

- **Module 401**: CAN fundamentals
- **Module 402**: CAN protocol SAE-J1939
- **Module 502**: CANalyzer fundamentals

- **Module 103**: Initial commissioning

The focus of this training lies in troubleshooting, understanding the system and the possibilities of measuring. Simple maintenance work as well as the right initial commissioning after the change of the components will round off the content of your training.
You bought a new machine (e.g. wheeled loader) and would like to get your team trained on this certain machine?

In this case you could compile the topics for your training like this:

**Module 101**  Hydraulic fundamentals  
**Module 307**  Application: Wheeled loader travel drive and implement hydraulics  
**Module 225**  Mobile control block: M6  
**Module 208**  A4VG  
**Module 210**  A6VM  
**Module 214**  A10VO  
**Module 304**  Control concept GK travel drive  
**Module 302**  Control concept OK LUDV

Therefore the training is going to be built up directly on the level of the material number. That means, your training focusses on the components, which were really implemented in your machines, and this fact makes us able to coordinate the training also on special solutions. (exclusively for OEM’s!)

If you are interested and like to discuss the preparation of a training plan for your crew with a team of trainers, please do not hesitate to contact us at training.elchingen@boschrexroth.de
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