

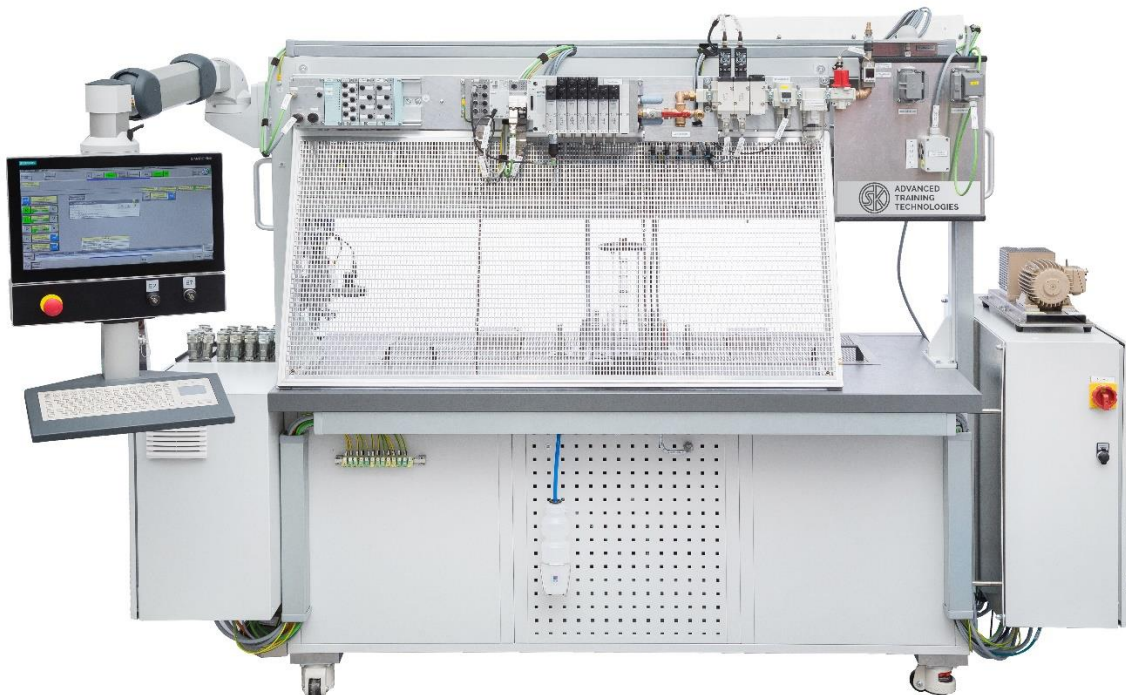
Technical data sheet

HydroDidact training systems

HydroDidact training systems can simulate virtually any hydraulic application or problem, providing a new form of vivid and comfortable training in hydraulic, mobile hydraulics and control technology. The spectrum ranges from basic theory to expert training, such as the theory of closed-loop control or the frequency-controlled drive. The systems have a modular design and can therefore be individually tailored to the real-life situation.

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HydroDidact Basic

Application:

Explanation of the physical processes and the measurement technology in the hydraulic area.
Practical exercises and a simplified clear view to show the basic functions in hydraulic systems.
Working with circuit symbols, circuit diagrams and building the necessary hydraulic circuits.
Treatment of all important topics for hydraulic training.

Exercise topics for basic training:

Filling, Principle of displacement, Shut off, Venting, Volume flow, Pressure measurement, Static pressure, Suction problems, Displacement problems, Transmission of movement and strength, Transfer of work and performance, Energy storage, Typical resistances, Native resistors, Working resistances, Efficiencies, Translation of movement and strength, pump, Pressure build-up, Pressure limitation, Direction control, Moving loads, Resistance control, Speed control, Displacement control, Hydraulic accumulator

Technical details:

- H / W / D 1840/1350/750 mm
- Pressure (max) 5 bar
- Hydraulic fluid colored water
- Volume flow approx. 10 l / min
- Cylinder 40 x 16 x 300 mm
- Cylinder 60 x 20 x 300 mm



HydroDidact Standard

Application:

Attachment for group lessons in theory and practical teamwork

Training objective:

- Representation of the functions of individual components of the hydraulic circuits.
- Representation of the functions of individual components of the hydraulic circuits.
- Build hydraulic circuits and connect with electrical and electronic components of the control technology.
- Capture system-internal processes and troubleshooting with standard measuring instruments.
- Acceptance of knowledge tests.

Highlights:

Control and visualization of all measured and setpoint values on tablet, smartphone and PC

Technical details:

- Container size: approx. 40 liters
- Pump capacity: double pump (2x ca. 5,9 l/min)
- Operating pressure: 120 bar
- Drive power: 3 KW
- Frequency: 50 Hz
- Magnetic voltage: 24V



HydroDidact Advanced

Application:

HydroDidact is a learning board to perform specific exercises in the areas of hydraulics and control engineering.

Training objective:

In addition to providing basics and systematic troubleshooting (compare training objectives HydroDidact Standard), the system is particularly suitable for the fault analysis in the field of hydraulic control technology.

Highlights:

- Frequency controlled servomotor with double internal gear pump (0-2500 RPM)
- OBE Control valve with position sensor.
- Cylinder position sensor
- Isolating transformer for connection to 400VAC networks with FI fuse
- Integrated pressure control via synchronous motor
- Position control via control valve or the synchronous drive
- Full control via smart devices through web interface

Technical details:

- Container size: approx. 40 liters
- Pump capacity: double pump (2x ca. 5,9 l/min)
- Operating pressure: 120 bar
- Drive power: 3 KW
- Frequency: 50 Hz
- Magnetic voltage: 24V

Documentation:

- Operating Instructions
- General Operation & Maintenance Manual
- Hydraulic and electric scheme



HydroDidact Mobile

Application:

For group lessons in the theory field and team work in the field of practice.

Add-on module for the extension of the Hydrodidact Standard for training of mobile hydraulics (Load-Sensing; traction drive; Open-Center)

Highlights:

- Mobile hydraulics for agricultural machinery, construction machinery and municipal vehicles
- Simulation of a diesel engine
- Simulation of all known mobile hydraulic drive concepts such as Open Center and throttle control
- Pressure-regulated, power-regulated and load-sensing pump drives
- Load-sensing control block with 2 sections (optionally with LUDV control block), with secondary pressure limitation and LS pressure limitation
- Hand lever operation and electrical control with joystick and touch display
- Volumetric flow measurement technology

Components:

Synchronously operated hydraulic pumps, pressure control, Power regulation, hydraulic cylinder, Position control, Force control, Air operated hydraulic pumps, PLC / PLC, Pneumatic valve terminals, Asynchronous electric motors, Frequency converter, bus system

Technical details:

- Asynchronous motor speed- controlled (4kW)
 - Axial piston pump with pressure control; power control; Load- Sensing regulation
 - Load-Sensing control block with two sections (With manual operation and CAN BUS control)
- Joysticks and display
- Hydraulic motor with load simulation



CAN-BUS Trainer

Application:

The Hydrodidact Mobile can be controlled using the CAN-BUS trainer. This allows a complete mobile hydraulic system to be simulated. The CAN-BUS trainer includes various fault simulations. The participant should learn the interaction of electrical control and hydraulic/mechanical actuators and understand the interdependencies. In addition, the participant is instructed in the possibilities of systematic fault analysis with the help of the analysis options of the CAN-BUS control unit and simple measurement technology.



Maintenance training laboratory

Application:

The laboratory is used to conduct basic and advanced courses in the fields of electrics, pneumatics, hydraulics, PLC and fault analysis. Each control station is equipped with a PLC from Siemens. Each test car is equipped with a hydraulic unit and an upper part with cylinders and hydraulic control technology.

Target Group:

Maintenance and plant operators, as well as service employees in the fields of electrics, pneumatics, hydraulics, PLC and fault analysis.

Highlights:

The use of synchronously operated hydraulic pumps enables practical training for almost all areas, as this technology is increasingly used in new systems.

The combination of different drive concepts enables trainings for plant planners to better understand the possible energy savings and the complexity of the machines.

Different regulations enable training for all departments.

The networking of the training stands in a bus system enables practical training and forms the basis for the topic of Industry 4.0.

Components:

Synchronously operated hydraulic pumps, pressure control, Power regulation, hydraulic cylinder, Position control, Force control, Air operated hydraulic pumps, PLC / PLC, Pneumatic valve terminals, Asynchronous electric motors, Frequency converter, bus system

