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DEVICE SET HYDRAULIX 301 FOR HYDRAULIX 300 WORKSTATION "CONTINUOUS CONTROL VALVE TECHNOLOGY – PROPORTIONAL HYDRAULICS, COMPLETE"

Material number	**R961009460**
Material short text	GERAETE-SET TS-HS 301-2X

This device set is used to impart practical examples from the electro-hydraulic control technology by means of exercises. Only components corresponding to the industrial standard and especially prepared for use in the training area are used. The device set matches the exercise book "Continuous control valve technology (proportional valve technology)". The exercises with the listed components can be carried out at the Hydraulix 300 workstation.

Pos.	Component	Mat.-no.	Quantity	Image
1	Differential cylinder CD70F25/16-400 with protective housing	**R961003495**	1	
2	4/3 directional control valve 4WE6E6X	**R961002549**	1	
3	4/3 proportional directional control valve 4WREE6E08-2X with int. elec. and load sim.	**R961003533**	1	
4	Pressure relief valve DBDH6G1X	**R961002520**	1	
5	Prop. pressure relief valve DBEE6-2X/50	**R961003924**	1	
6	Throttle/non-return valve DRV06-1-1X/V	**R961002495**	1	

Pos.	Component	Mat.-no.	Quantity	Image
7	Non-return valve S6A05-1X	**R901462818**	1	
8	Manometer 0-100 bar with measuring hose	**R961002715**	3	
9	Hose line 630 mm	**R961002474**	4	
10	Hose line 1000 mm with 90° fitting and Minimess port	**R961004330**	3	

The recommended accessories are listed at Rexroth Store in the category Academy/Systems/Hydraulics device sets.

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Continuous control valve technology – Proportional hydraulics

The contents and targets of this learning topic are the familiarization with the use of a proportional directional control valve and a proportional pressure control valve and the related command value generators. With successful completion of the practical exercises, knowledge of function and effect of the most important components and basic circuits of continuous control valve technology is acquired. This ensures practice-related training in continuous control valve technology.

Exercise books

The exercise books are tailored to the device sets. These device sets build on the contents and knowledge from the "On/off hydraulics – Manual and electrical operation (according to BIBB)" learning topic. The described exercises and tasks provide basic information and methods. The setup is structured in a uniform manner and provides the step-by-step description for completion of the individual exercises.

Two versions – Teaching and learning document

- Exercises with solutions: more far-reaching trainer information and contents such as measured values, calculation results, etc.
- Exercises: independent completion of calculations and measured value tables, etc.

Learning content

With the help of logically structured, practice-related exercises, the trainee shall learn the following:

- understand physical laws of proportional control valves such as pressure difference, opening cross-section and flow,
- get to know and apply the legal regulations and safety provisions,
- apply the most important symbols of proportional hydraulics, read circuit diagrams,
- get to know and understand the meaning and mode of operation of command value presetting, ramp function and signal sequences,
- practice the setting, commissioning and optimization of an electro-hydraulic system,
- determine characteristic values and derive characteristic curves from them.

The following exercises are included

No.	Exercise
1	Moving cylinders with external potentiometer as command value presetting
2	Moving cylinders with SWMA1 command value module as command value presetting
3	Setting the SWMA1 command value module with 4 command values
4	Setting the SWMA1 command value module with 4 command values and ramp
5	Setting the braking distance according to the proximity switch signal
6	Pressure ratios at the continuous control valve and influence on velocity and braking distance
7	Setting a motion sequence with 4 quadrants
8	Setting a sequence with 2 proximity switches
9	Setting an automatic sequence with 3 proximity switches
10	Setting the system pressure by means of an external potentiometer
11	Moving a cylinder with two different pressures
12	Automatic sequence with continuous pressure control valve

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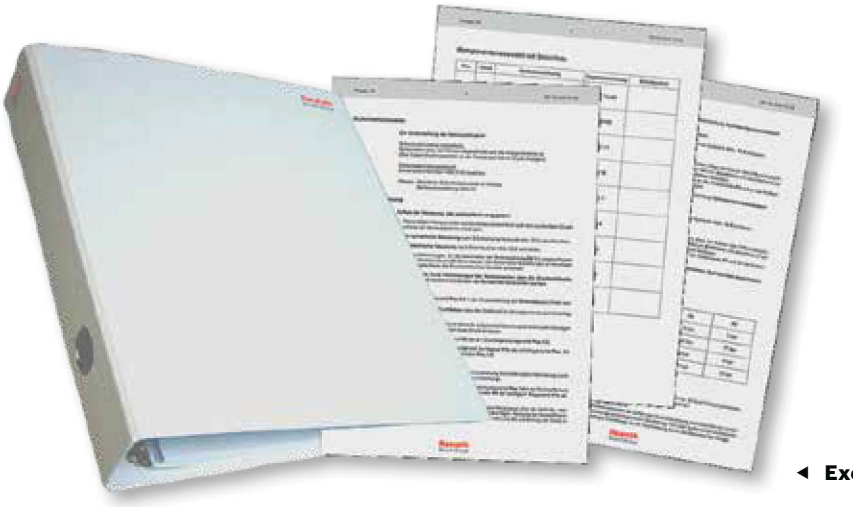
EXERCISE BOOKS
"CONTINUOUS CONTROL VALVE TECHNOLOGY (PROPORTIONAL VALVE TECHNOLOGY)"



◄ **Exercise book example**

	Language	Material number	Material short text
Exercises with solutions (trainer's manual)	DE	**R901441851**	UEBUNGSBUCH TW-HY-LH-3/X 301DE
Exercises with solutions (trainer's manual)	EN	**R901441853**	EXERCISE BOOK TW-HY-LH-3/X 301EN
Exercises with solutions (trainer's manual)	ES	**R901441855**	LIBRO DE EJERCICIOS TW-HY-LH-3/X 301ES
Exercises (trainee's manual)	DE	**R901441852**	UEBUNGSBUCH TW-HY-SH-3/X 301DE
Exercises (trainee's manual)	EN	**R901441854**	EXERCISE BOOK TW-HY-SH-3/X 301EN
Exercises (trainee's manual)	ES	**R901441856**	LIBRO DE EJERCICIOS TW-HY-SH-3/X 301ES

Continuous control valve technology – Accessories

For the exercises in the continuous control valve technology, you need measuring equipment for the flow and pressure measurement as well as a multimeter.

We recommend:

Pos.	Component	Mat.-no.	Quantity	Image
1	Basic measuring instrument set	**R961009563**	1	
and	Measuring glass 2.5 l for Hydraulix 300 workstation (integral part of the Hydraulix 300 workstation)	**R961002564**	1	
2	Gear wheel flow rate sensor	**R961002508**	1	
and	Measuring cable for ISDS	**R900733207**	1	
and	Measuring instrument set 3020	**R913038909**	1	
3	Multimeter VC175	**R913038027**	1	
4	Pressure release sleeve	**R961002927**	1