

**EXTENSION DEVICE SET HYDRAULIX 409 FOR HYDRAULIX 300
WORKSTATION FROM "MOBILE HYDRAULICS – THROTTLE CONTROL"
TO "MOBILE HYDRAULICS – LOAD-SENSING CONTROL"**

Material number R961009471

Material short text GERAETE-SET TS-HS 409-1X

Pos.	Component	Mat.-no.	Quantity	Image
1	Mobile hydraulics Load-sensing 2M4-12	R961005969	1	
2	Throttle valve DV06-1-1X/V	R961002539	1	
3	Hose line 1000 mm with 90° fitting	R961004331	2	

Mobile hydraulics – Load-sensing control

The target of this learning topic is the familiarization with the use of a mobile control block with load-sensing control. With successful completion of the practical exercises, knowledge of function and effect of the most important components and basic circuits of mobile hydraulics is acquired. This ensures practice-related training in mobile hydraulics.

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 operation (BIBB, A-H)" and "Mobile hydraulics – Throttle control" learning topics. 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 hydraulics such as pressure difference, opening cross-section and flow,
- ▶ get to know and use specific graphical symbols,
- ▶ understand the function of the load-sensing control,
- ▶ get to know components such as 4/3 directional control valve, load holding valve, primary and secondary valve, pressure compensator, hydraulic pilot control,
- ▶ understand the connection between control and velocity,
- ▶ get to know the function of the load-sensing control in parallel operation,
- ▶ work out the function and application of the hydraulic pilot control,
- ▶ determine characteristic values and derive characteristic curves from them, if required.

The following exercises are included

No.	Exercise
1	Primary pressure limitation
2	Actuator flow
3	Load pressure compensation
4	Pressure losses in p line
5	Hydraulic pilot control
6	External force
7	Outlet pressure limitation
8	LS pressure limitation
9	Parallel operation with sufficient delivery volume
10	Parallel operation with too little delivery volume
11	Load change

EXERCISE BOOKS
 "MOBILE HYDRAULICS – LOAD-SENSING CONTROL 2M4-12"



◀ Exercise book example

	Language	Material number	Material short text
Exercises with solutions (trainer's manual)	DE	R961004565	UEBUNGSBUCH TW-HY-LH-1/X 304DE
Exercises with solutions (trainer's manual)	EN	R961005147	EXERCISE BOOK TW-HY-LH-1/X 304EN
Exercises with solutions (trainer's manual)	ES	R901206091	LIBRO DE EJERCICIOS TW-HY-LH-1/X 304ES
Exercises (trainee's manual)	DE	R961004564	UEBUNGSBUCH TW-HY-SH-1/X 304DE
Exercises (trainee's manual)	EN	R961005146	EXERCISE BOOK TW-HY-SH-1/X 304EN
Exercises (trainee's manual)	ES	R901206157	LIBRO DE EJERCICIOS TW-HY-SH-1/X 304ES