

## DEVICE SET FOR WORKSTATION DS3/WS200









### "PNEUMATICS – MANUAL/PNEUMATIC OPERATION (ACCORDING TO BIBB, EXERCISE 1-11)" COMPLETE, IN L-BOXX



**Material number R961009687**

Material short text GERAETE-SET TS-PS 201-1X-K

The device set "Pneumatics – Manual/pneumatic operation (according to BIBB, exercise 1-11)" can be used to achieve the learning targets and learning content of basic and advanced training in technical professions in terms of the BIBB\* on the basics of pneumatics based on real industrial products. The device set is tailored to the exercise book "Pneumatics – Manual/pneumatic operation (according to BIBB)" which deals with BIBB exercises 1-11. The exercises with the listed components can be carried out at workstation DS3 and at workstation WS200. The device set is delivered in three stackable plastic cases.

Item	Component	Mat.-no.	Quantity	Image
1	Maintenance unit, 0.5 ... 10 bar	<b>R901445603</b>	1	
2	Distributor, 6 ports	<b>1827003411</b>	1	
3	Single-acting cylinder, d = 25 mm, H = 50 mm	<b>1827003371</b>	1	
4	Double-acting cylinder, d = 25 mm, H = 100 mm	<b>1827003372</b>	2	
5	Manometer, 0 ... 10 bar	<b>1827003406</b>	2	
6	3/2 directional control valve M5, push button	<b>1827003392</b>	3	
7	3/2 directional control valve G1/8, with push button, open when de-energized	<b>R961009683</b>	1	
8	5/2 directional control valve G1/8, with spring return, pneumatically operated	<b>R901385290</b>	1	

\* Exercises and matching device sets based on the recommendations according to BIBB from 2010

Item	Component	Mat.-no.	Quantity	Image
9	3/2 directional control valve M5, sensing roller	<b>1827003399</b>	2	
10	3/2 directional control valve G1/8, with spring return	<b>1827003374</b>	1	
11	5/2 directional control valve G1/8, impulse, pneumatically operated	<b>R901385291</b>	3	
12	5/3 directional control valve G1/8, with all parts blocked, pneumatically operated	<b>R901385292</b>	1	
13	3/2 directional control valve M5, adjustable, 2 ... 8 bar	<b>1827003388</b>	1	
14	2/2 directional control valve, with time delay, 2 ... 30 s	<b>R961008278</b>	1	
15	Shuttle valve G1/8, OR	<b>1827003382</b>	1	
16	Twin-pressure valve M5, AND	<b>1827003383</b>	2	
17	Throttle/non-return valve G1/8	<b>1827003379</b>	2	
18	Quick exhaust valve G1/4	<b>1827003381</b>	1	
19	Load simulator d = 25 mm, h = 100 mm, m = 3.4 kg	<b>R961003214</b>	1	
20	Proximity switch, pneumatic, with holder	<b>1827003224</b>	2	
21	Vacuum gripper d = 28.8 mm, holding force = 34 N	<b>R961008951</b>	1	
22	Non-return valve, pilot-operated	<b>R961008838</b>	2	

# Pneumatics – Manual/pneumatic operation (according to BIBB, exercise 1-11)\*

The contents and targets of this learning topic correspond to the specifications of the Federal Institute for Vocational Education and Training (BIBB)\* and offer practice-related training in the different training levels of pneumatics. With successful completion of the practical exercises, you acquire knowledge of control technology as well as the design language for sequence control "GRAFCET".

## Exercise books

The exercise books are tailored to the device sets. 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

- ▶ 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 should:

- ▶ Understand laws of physics applicable in pneumatics, such as pressure difference and compressibility
- ▶ Get to know and observe legal regulations and safety provisions
- ▶ Get to know and apply the most important symbols of pneumatics
- ▶ Understand the functions of basic pneumatic circuits
- ▶ Identify the behavior of pneumatic components in different operating situations
- ▶ Determine characteristic values

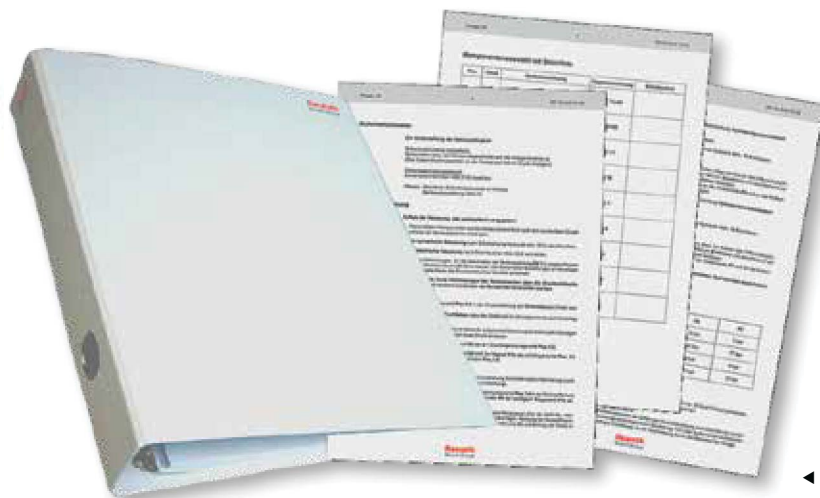
## The following exercises are included

No.	Exercise
01A	Direct control of single-acting cylinders, extending
01B	Direct control of single-acting cylinders, retracting
01C	Indirect control of single-acting cylinders
02A	Direct control of double-acting cylinders
02B	Indirect control of double-acting cylinders
03A	Velocity regulation of double-acting cylinders
03B	Control of double-acting cylinders with impulse valve
04A	Path-dependent control of double-acting cylinders
04B	Logic control with twin-pressure valves
05	Logic control with shuttle and twin-pressure valves
06	Time-dependent control of double-acting cylinders
07	Pressure-dependent control of double-acting cylinders
08	Sequence control with integrated vacuum gripper
09	Sequence control of two double-acting cylinders
10	Sequence control with signal overlapping
11A	Stop control of double-acting cylinders with all parts blocked
11B	Stop control by pilot-operated non-return valves

\* Exercises and matching device sets based on the recommendations according to BIBB from 2010

## EXERCISE BOOKS

### "PNEUMATICS – MANUAL/PNEUMATIC OPERATION (ACCORDING TO BIBB, EXERCISE 1-11)\*\*"



◀ Exercise book example

	Language	Material number	Material short text
Exercises with solutions (trainer´s manual)	DE	<b>R901407752</b>	UEBUNGSBUCH TW-PN-LH-2/X 201DE
Exercises with solutions (trainer´s manual)	EN	<b>R901408011</b>	EXERCISE BOOK TW-PN-LH-2/X 201EN
Exercises with solutions (trainer´s manual)	ES	<b>R901408012</b>	LIBRO DE EJERCICIOS TW-PN-LH-2/X 201ES
Exercises with solutions (trainer´s manual)	FR	<b>R901421882</b>	LIVRE D'EXERCICE TW-PN-LH-2/X 201FR
Exercises (trainee´s manual)	DE	<b>R901407756</b>	UEBUNGSBUCH TW-PN-SH-2/X 201DE
Exercises (trainee´s manual)	EN	<b>R901408013</b>	EXERCISE BOOK TW-PN-SH-2/X 201EN
Exercises (trainee´s manual)	ES	<b>R901408014</b>	LIBRO DE EJERCICIOS TW-PN-SH-2/X 201ES
Exercises (trainee´s manual)	FR	<b>R901421883</b>	LIVRE D'EXERCICE TW-PN-SH-2/X 201FR