

Displacement-step diagram

Introduction:



The displacement-step diagram is used for motion sequences. It represents the operating sequence of the actuators. The displacement is recorded in relation to the sequence step. If a control system incorporates a number of actuators, they are shown in the same way and are drawn one below the other. Their interrelation can be seen by comparing the steps.

Tasks:

- a) Read the introduction carefully and highlight the English expressions given in the table below. Work on your own.

English
displacement-step diagram
motion sequences
operating sequence
displacement
sequence step
interrelation

German
Bewegungsabläufe
Weg
Schrittfolge
Arbeitsfolge
wechselseitige Beziehung
Weg-Schritt-Diagramm

- b) Match the English to the German expression in the table above. Work on your own and do it without the aid of a dictionary.

- c) Work in pairs and translate the introduction into German.

Goal: You understand every detail of the text.



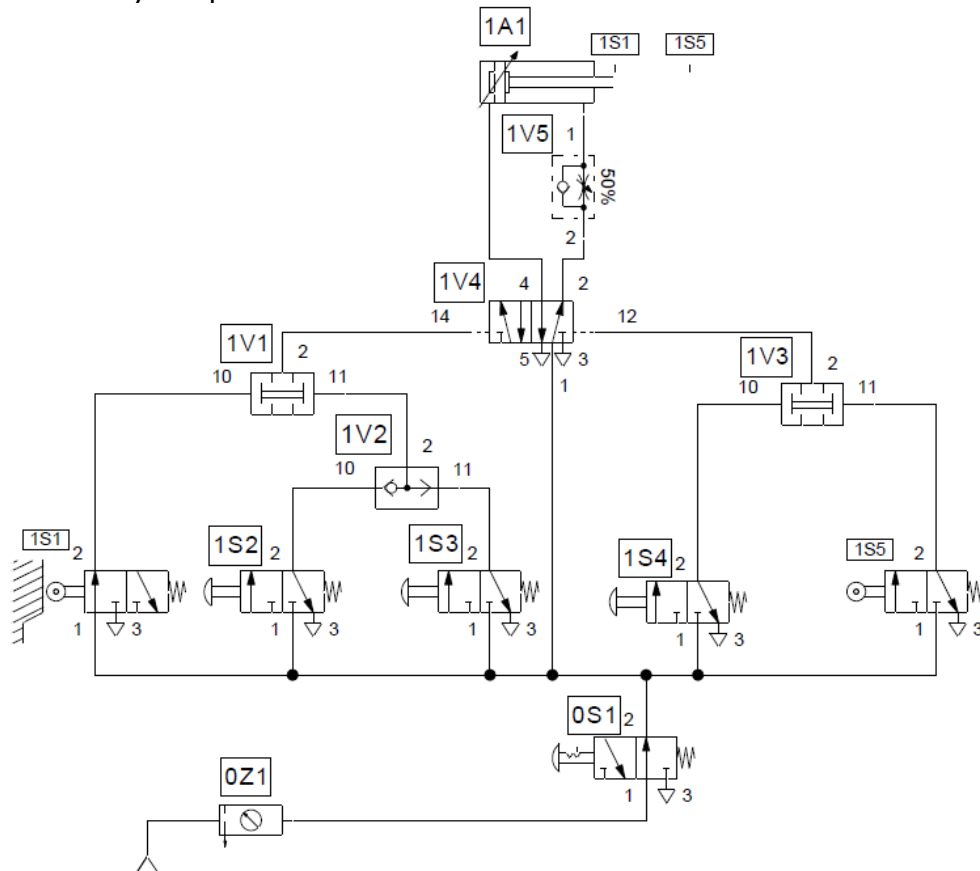
Optional homework

Create your own vocab cards and learn the new vocabulary.



Circuit diagram

- d) Have a look at the circuit diagram given below. Explain the function of the circuit to your partner.



- e) Complete the table below using the device designations in the circuit diagram.

device designation	component
	3/2-way valve with pushbutton actuator
	shuttle valve
	one-way flow control valve
	double-acting cylinder
	3/2-way roller lever valve
	start-up valve
	5/2-way double pilot valve, pneumatically actuated, both sides
	dual-pressure valve
	air service unit

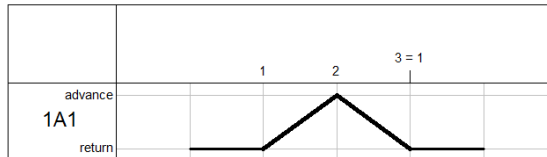
Bauelement
5/2-Wegeventil, beidseitig druckluftbetätigt
Drosselrückschlagventil
Zweidruckventil
doppeltwirkender Zylinder
3/2-Wegeventil, Betätigung durch Druckknopf
Wechselventil
3/2-Wege Rollenhebelventil
Wartungseinheit
Einschaltventil

- f) Match the English to the German expression in the table above. Work in pairs and do it without the aid of a dictionary.

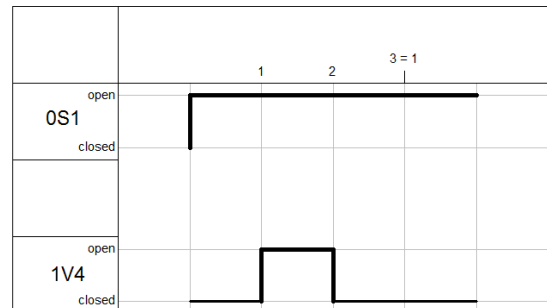
Function diagram

The function diagram is a combination of the **displacement-step diagram** and the **control diagram** [=Steuerdiagramm].

displacement-step diagram:

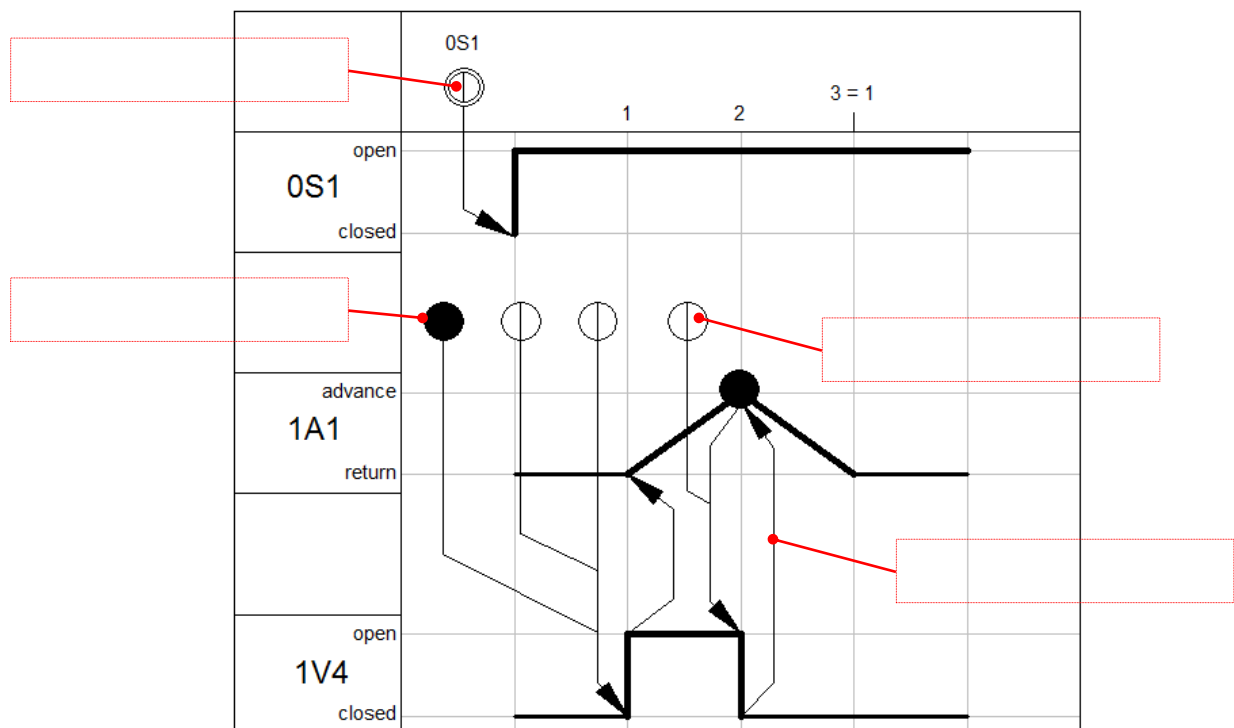


control diagram:



In the **control diagram**, the switching status of the control elements is represented in relation to the steps.

- g) Complete the function diagram in accordance to the circuit diagram with the **designations of the input elements** and the **logic conditions** between the input elements. Use a pencil!



- h) Label the function diagram using the following expressions:

- **signal line**
- **limit switch** (input element, mechanically actuated)
- **ON/Start** (input element, manually operated)
- **ON/OFF** (input element, manually operated)