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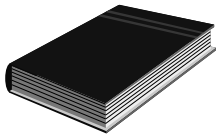
The following elements are contained in this learning guide:



SOURCEREFERENCES

Demonstration by a competent person, e.g. a Training Officer.

FESTO – Basic Level Textbook

OBJECTIVE

You will be learning towards the outcome “Construct a circuit with sequenced actuators”.

Whilst learning towards the outcome you will be required to achieve the following:

- Construct a circuit with the relevant valves.
- Adjust the relief valves to open at the prescribed pressure.
- Adjust the sequence valves so that:
  - ✓ when the 4/2-way directional control valve is actuated one piston will move out to its end position before the other piston starts to move, and
  - ✓ when the 4/2-way directional control valve is reset to its neutral position by the spring, one piston will return to its end position before the other piston starts to return.

On completion of this module, the learner must be able to:

- Construct the circuit onto the trainer according to the schematic diagram.
- Adjust the pressure relief to open at 2 500 kPa within the limits of ±100 kPa.
- When the control valve is operated, the piston of one cylinder extends fully before the piston of the second cylinder begins to move.
- When the control valve is reset to neutral, one piston must return to its original position before the second piston starts to return.
- Indicate the flow when:
  - ✓ The first piston moves out.
  - ✓ The second piston moves out.
  - ✓ The first piston returns.
  - ✓ The second piston returns.

During this process you must adhere to certain specified requirements as listed in the Module.

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You will be assessed, when you are confident that you may achieve the outcomes as listed, to determine your competence as measured against the required criteria. This assessment will be in line with accepted best practices regarding assessment.

- A theoretical and practical assessment will be set during the module and must be completed without using reference.
- The learner will be required to answer all the questions without any reference.
- There must not be any damage to any equipment.

HAZARD IDENTIFICATION AND CONTROL (HIAC) FORM

HYD - 10

CONSTRUCT A CIRCUIT WITH SEQUENCED ACTUATORS

STEPS IN OPERATION/ PROCESS	POTENTIAL ACCIDENT/ INCIDENT	CONTROLS (BY RESPONSIBLE PERSON)
1. Construct a hydraulic circuit.	x Improper or careless handling of hydraulic components and pipes can lead to damage of equipment.	x Always handle components and pipes correctly, and with great care. x

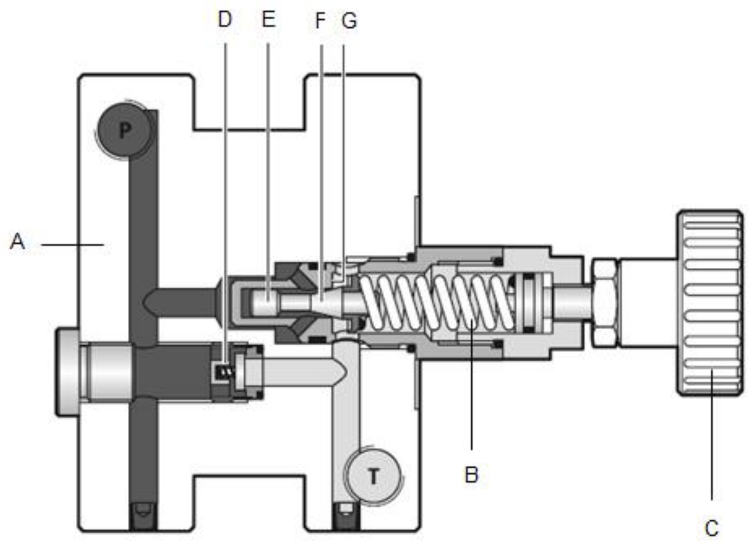


FIG 2.

ITEM / TASK : Operations.

A. The valve restricts the pressure at port P to the set value compared with the pressure at T.
B. If the differential pressure times the cross sectional area of the sealing cone exceeds the spring force, the sealing cone lifts out the seat and allows oil through to port T.
C. The valve closes again once the pressure in port P drops.
D. The cushioning piston acts like a shock absorber to increase stability during the control response.
E. The spring pretension can be adjusted at the set screw.
F. Oil flows through the non-return valve if the pressure at port T is greater than at port P.
G. The symbol for a pressure sequence valve is shown in Fig 3.

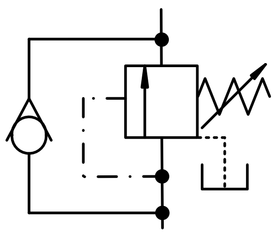


FIG 3.

NOTE:

[illegible]

DO THE SELF TEST AND PRACTICE ON THE NEXT PAGES BEFORE ATTEMPTING THE ASSESSMENT.

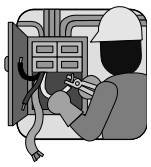
SELFTEST1

1. What is the function of a sequence valve?

Refer to your notes to check your answers.

Ask your Training Officer to check your work and if it is correct, to sign below.

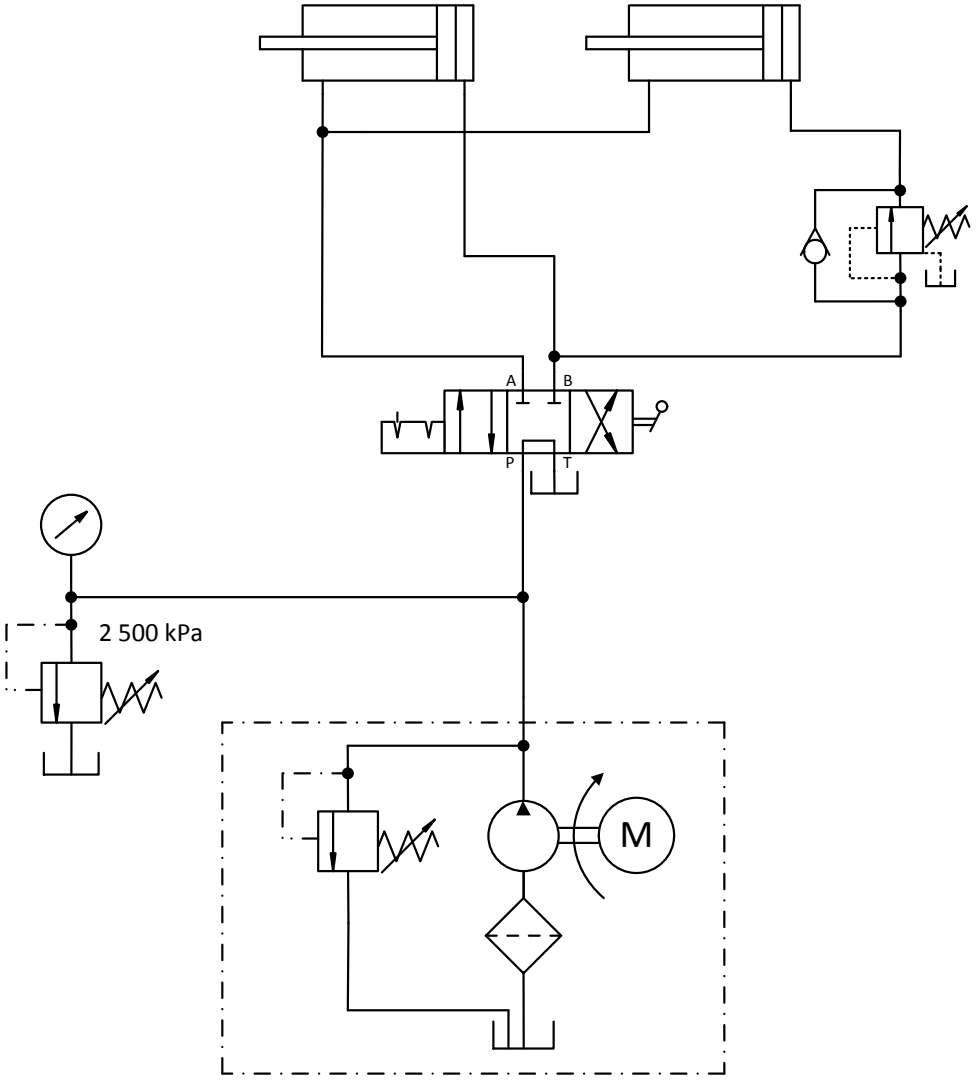
LEARNER	TRAINING OFFICER
DATE :	DATE :
SIGNATURE :	SIGNATURE :



PRACTICE

1. Practice drawing the symbol for a sequence valve.

2. Identify the pressure sequence valve from the training panel / equipment.
3. Construct the circuit on the training panel and adjust the sequence and relief valves to open at the prescribed pressures.



Ask your Training Officer to check your work and if it is correct, to sign below.

LEARNER	TRAINING OFFICER
DATE :	DATE :
SIGNATURE :	SIGNATURE :

REMEMBER ALWAYS WORK SAFE