

# Sequence valves

Nominal diameter 5, pmax. 500 bar

700-1

Issue: 10/2022

## Description:

Sequence valves are applied as directly controlled sequence valve in hydraulic workholding systems. The compact design of the sequence valves enables space-saving installation directly into the fixture.

Inlet pressure and outlet pressure are always identical at sequence valves. This is what makes this valve type ideal for use in sequence controls.

Single-acting cylinders only require one feed line from the pressure generator for operation (eg. see data sheet 430-1).

The design allows valve combinations which can be flanged with the help of a joint P-connection and standard components to a block.

## Valve combinations:

Combinations of sequence valves are assembled from an inlet valve (P) and a maximum of four flange-mounted series valves. These are supplied with pressure oil through holes. Sealing between the valve housings is provided by O-rings. In order to ensure proper functioning with sequence controls, there should be a certain minimum pressure difference from valve to valve.

This should be set higher for the different versions:

25 bar for the → ZSV-160... version

35 bar for the → ZSV-315... version

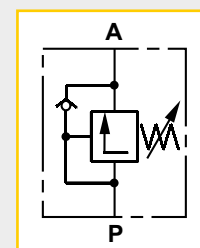
50 bar for the → ZSV-500... version

## Pressure medium:

Hydraulic oil according to DIN 51524  
TL1 to 3; ISO VG 10 to 68 according  
to DIN 51519



Webcode: 070001



## Advantages:

- Space-saving installation options
- Quick assembly via flange
- Ideal for pressure sequence control
- Operation with one feed line possible
- Valve combinations possible

## Accessories (optional):

Description: Order No.:

### Threaded rods:

M5 x 072 (for 2 valves)	7005-024
M5 x 102 (for 2 valves)	7005-025
M5 x 132 (for 2 valves)	7005-026
M5 x 162 (for 2 valves)	7005-027

### Sealings:

O-Ring 8 x 1,5	6011-002
O-Ring 10 x 1,5	6010-031
U-Seal 7,3 x 10,2	6006-003

### Screws:

Cylinder head screw	
M6 x 12, DIN 912	7006-022

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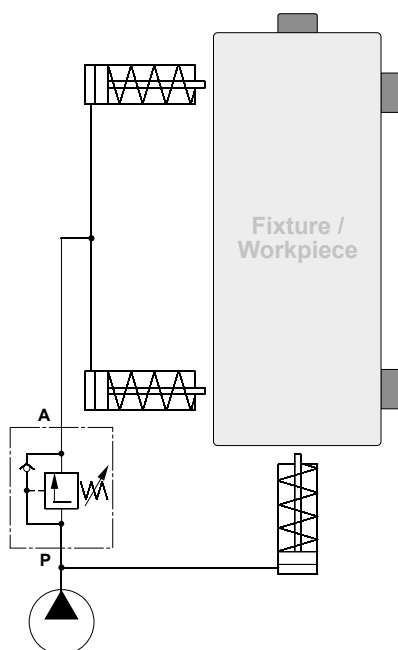
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Technology that connects



## Application example:

The drawing symbolizes a workholding fixture the way it can be used in production. Once the pressure is applied the single-acting cylinder [1] is protracted.

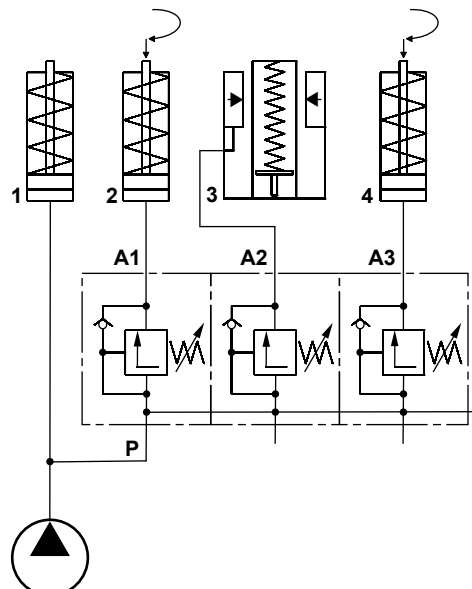
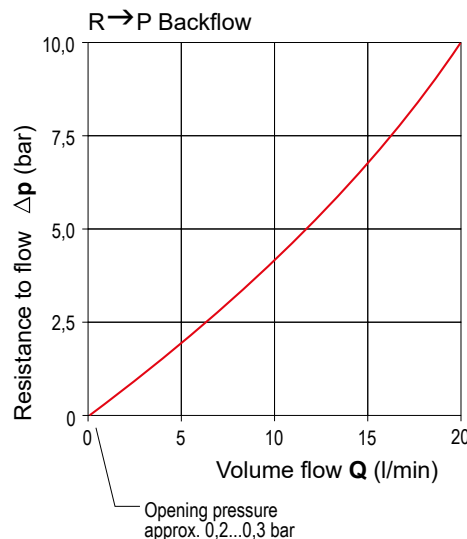
Once the opening pressure is acquired the inlet valve [A1] opens and activates the swing clamp [2].

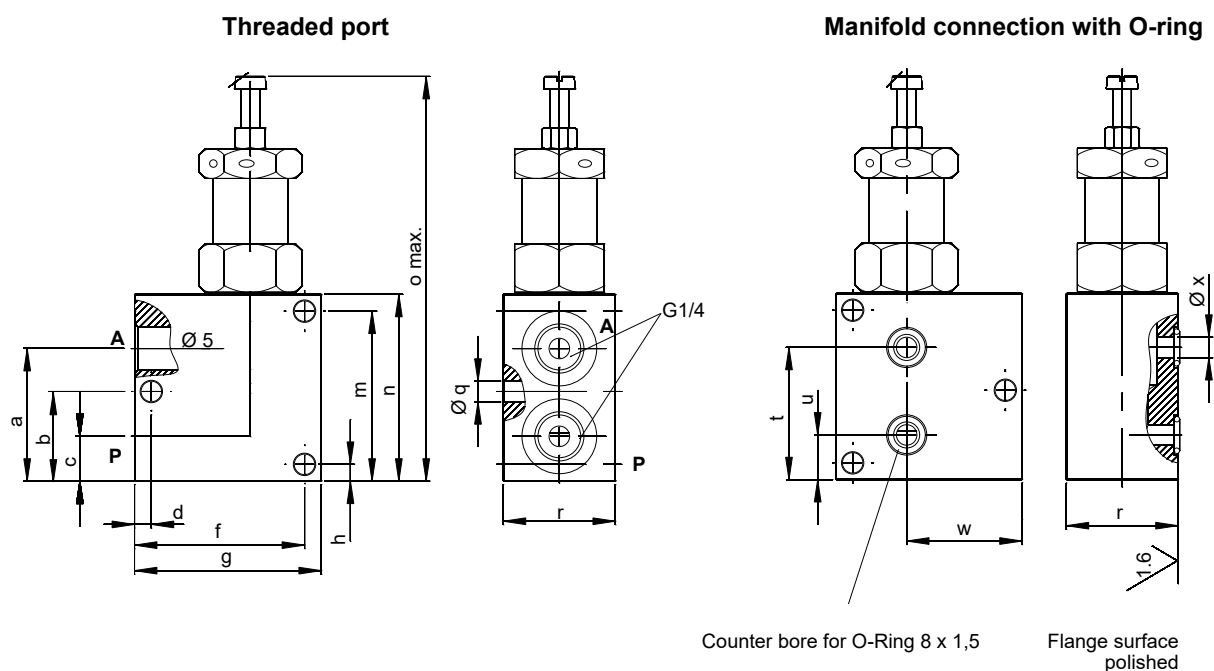
The support element [A2] clamps the support piston once the opening pressure in the sequence valve [A2] is acquired.

Sequence valve [A3] activates the swing clamp [4] to complete the clamping process.

When releasing the device, the hydraulic oil flows back to the pressure generator through the integrated non-return valves.

$\Delta p$ -Q Nominal lines (guide values)  
Oil viscosity during measurements  
approx. 60 mm<sup>2</sup>/s





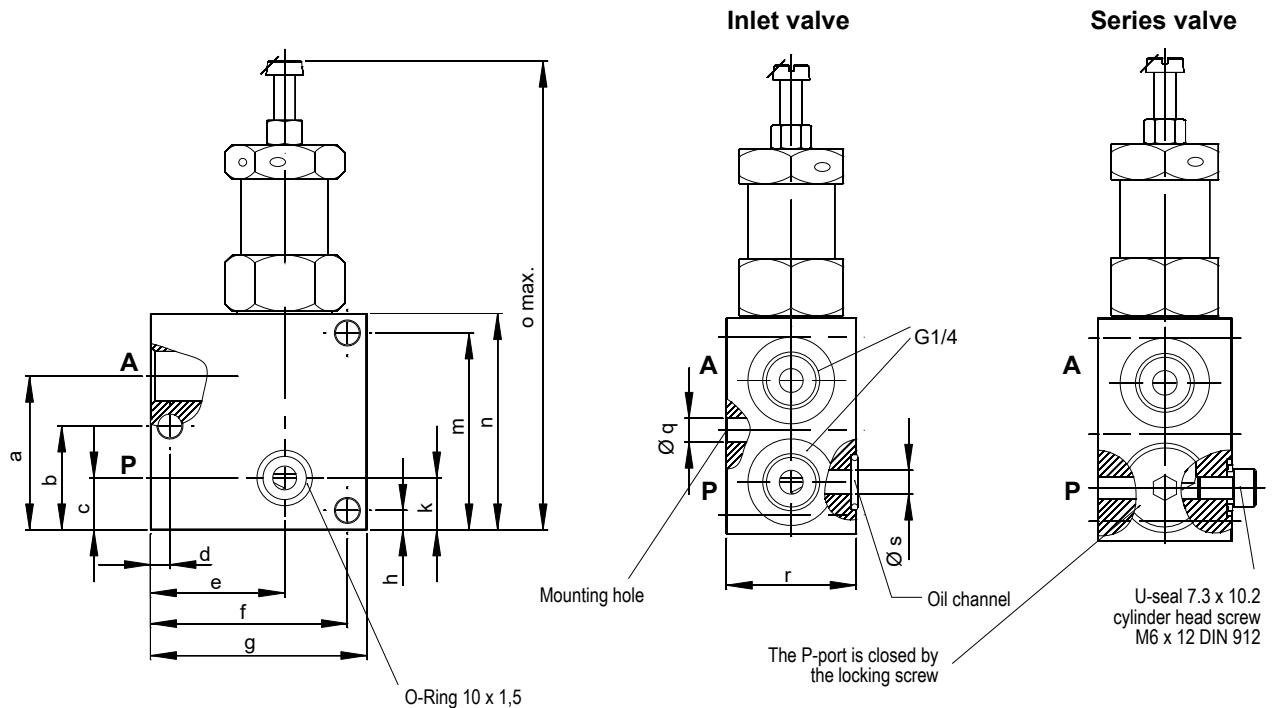
## Technical data:

## Directly controlled sequence valves with threaded connection

max. Operating pressure	[bar]	500	500	500	500
max. Volume flow	[l/min]	30	30	30	30
<b>Adjusting range</b>	[bar]	<b>15-80</b>	<b>30-160</b>	<b>60-315</b>	<b>100-500</b>
Pressure change per revolution	[bar]	10	19	55	100
a	[mm]	35,5	35,5	35,5	35,5
b	[mm]	24	24	24	24
c	[mm]	12	12	12	12
d	[mm]	4,5	4,5	4,5	4,5
f	[mm]	45,5	45,5	45,5	45,5
g	[mm]	50	50	50	50
h	[mm]	4,5	4,5	4,5	4,5
m	[mm]	45,5	45,5	45,5	45,5
n	[mm]	50	50	50	50
o	[mm]	110	110	110	110
q Ø	[mm]	5,5	5,5	5,5	5,5
r	[mm]	30	30	30	30
Weight approx.	[kg]	0,63	0,63	0,63	0,63
<b>Order number</b>		<b>ZSV-080-5-001</b>	<b>ZSV-160-5-001</b>	<b>ZSV-315-5-001</b>	<b>ZSV-500-5-001</b>

## Directly controlled sequence valves for manifold connection with O-ring

max. Operating pressure	[bar]	500	500	500	500
max. Volume flow	[l/min]	30	30	30	30
<b>Adjusting range</b>	[bar]	<b>15-80</b>	<b>30-160</b>	<b>60-315</b>	<b>100-500</b>
Pressure change per revolution	[bar]	10	19	55	100
b	[mm]	24	24	24	24
d	[mm]	4,5	4,5	4,5	4,5
f	[mm]	45,5	45,5	45,5	45,5
g	[mm]	50	50	50	50
h	[mm]	4,5	4,5	4,5	4,5
m	[mm]	45,5	45,5	45,5	45,5
n	[mm]	50	50	50	50
o	[mm]	110	110	110	110
q Ø	[mm]	5,5	5,5	5,5	5,5
r	[mm]	30	30	30	30
t	[mm]	35,5	35,5	35,5	35,5
u	[mm]	12	12	12	12
w	[mm]	31	31	31	31
x Ø	[mm]	5	5	5	5
Weight approx.	[kg]	0,63	0,63	0,63	0,63
<b>Order number</b>		<b>ZSV-080-5-002</b>	<b>ZSV-160-5-002</b>	<b>ZSV-315-5-002</b>	<b>ZSV-500-5-002</b>



## Technical data:

Locking screws, hexagon nuts and sealing rings are included in the scope of supply.

Inlet valves with threaded connection				
max. Operating pressure	[bar]	500	500	500
max. Volume flow	[l/min]	30	30	30
<b>Adjusting range</b>	<b>[bar]</b>	<b>15-80</b>	<b>30-160</b>	<b>60-315</b>
Pressure change per revolution	[bar]	10	19	55
a	[mm]	35,5	35,5	35,5
b	[mm]	24	24	24
c	[mm]	12	12	12
d	[mm]	4,5	4,5	4,5
e	[mm]	31	31	31
f	[mm]	45,5	45,5	45,5
g	[mm]	50	50	50
h	[mm]	4,5	4,5	4,5
k	[mm]	12	12	12
m	[mm]	45,5	45,5	45,5
n	[mm]	50	50	50
o max.	[mm]	110	110	110
q Ø	[mm]	5,5	5,5	5,5
r	[mm]	30	30	30
s Ø	[mm]	5	5	5
Weight approx.	[kg]	0,63	0,63	0,63
<b>Order number</b>		<b>ZSV-080-5-003</b>	<b>ZSV-160-5-003</b>	<b>ZSV-315-5-003</b>

Series valves with threaded connection				
max. Operating pressure	[bar]	500	500	500
max. Volume flow	[l/min]	30	30	30
<b>Adjusting range</b>	<b>[bar]</b>	<b>15-80</b>	<b>30-160</b>	<b>60-315</b>
Pressure change per revolution	[bar]	10	19	55
a	[mm]	35,5	35,5	35,5
b	[mm]	24	24	24
c	[mm]	12	12	12
d	[mm]	4,5	4,5	4,5
e	[mm]	31	31	31
f	[mm]	45,5	45,5	45,5
g	[mm]	50	50	50
h	[mm]	4,5	4,5	4,5
k	[mm]	12	12	12
m	[mm]	45,5	45,5	45,5
n	[mm]	50	50	50
o max.	[mm]	110	110	110
q Ø	[mm]	5,5	5,5	5,5
r	[mm]	30	30	30
s Ø	[mm]	5	5	5
Weight approx.	[kg]	0,63	0,63	0,63
<b>Order number</b>		<b>ZSV-080-5-004</b>	<b>ZSV-160-5-004</b>	<b>ZSV-315-5-004</b>