

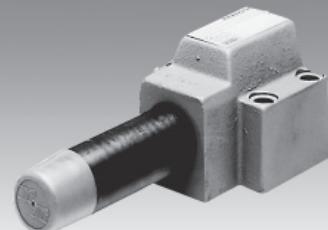
# Pressure sequence valve, direct operated

**RA 26099/02.03**  
Replaces: 06.98

1/6

## Models DZ 10 DP

Nominal size 10  
Series 4X  
Maximum operating pressure 210 bar (3050 PSI)  
Maximum flow 80 L/min (21 GPM)



## Table of contents

Contents	Page
Features	1
Ordering details	2
Standard types	2
Symbols	2
Functional description, cross-section	3
Technical data	4
Characteristic curves	4
Unit dimensions	5

## Features

- For subplate mounting
- Mounts on standard ISO 5781-06, NFPA/ANSI P 06 interface
- Four pressure stages
- Four adjustment elements:
  - Rotary knob
  - Set screw with hexagon and protective cap
  - Lockable rotary knob with scale
  - Rotary knob with scale
- With pressure gauge connection
- Check valve, optional

## Ordering details

DZ 10 DP		-4X /				*	Further details in clear text	
Direct operated pressure sequence valve NS 10								
<b>Adjustment element</b>								
Rotary knob	= 1						NBR seals	
Set screw with hexagon and protective cap	= 2						FKM seals	
Lockable rotary knob with scale <sup>1)</sup>	= 3						(other seals on request)	
Rotary knob with scale	= 7						<b>Attention!</b>	
Series 40 to 49 (40 to 49: unchanged installation and connection dimensions)	= 4X						The compatibility of the seals and pressure fluid has to be taken into account!	
Max. sequence pressure 25 bar (365 PSI)	= 25						With check valve	
Max. sequence pressure 75 bar (1090 PSI)	= 75						Without check valve	
Max. sequence pressure 150 bar (2175 PSI)	= 150						No code = Internal pilot oil supply, internal leakage oil drain	
Max. sequence pressure 210 bar (3050 PSI)	= 210						X = External pilot oil supply, internal leakage oil drain	
							Y = Internal pilot oil supply, external leakage oil drain	
							XY = External pilot oil supply, external leakage oil drain	

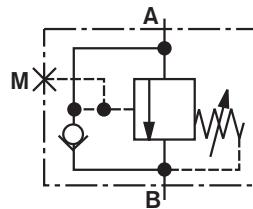
<sup>1)</sup> H-key with Material No. R900008158 is included within the scope of supply.

## Standard types

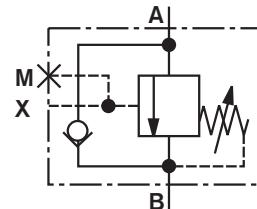
Type	Material number
DZ 10 DP2-4X/25Y	R900503449
DZ 10 DP2-4X/25YM	R900512374
DZ 10 DP2-4X/75Y	R900503202
DZ 10 DP2-4X/75YM	R900500987
DZ 10 DP2-4X/150Y	R900503242
DZ 10 DP2-4X/150YM	R900505068
DZ 10 DP2-4X/210Y	R900599686
DZ 10 DP2-4X/210YM	R900517588

## Symbols

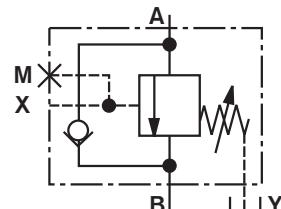
Version "-"



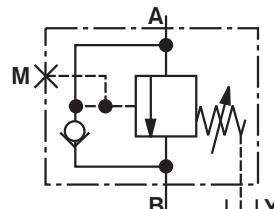
Version "X"



Version "XY"



Version "Y"



## Functional description, cross-section

The valve type DZ 10 DP is a direct operated pressure sequence valve.

It is used for the pressure dependent connection of a second system.

The setting of the sequence pressure is via the adjustment element (1).

The compression spring (2) holds the control spool (3) in its initial position, the valve is closed. The pressure in port A is applied to the piston area of the control spool (3) via the control line (4) at the opposite side to the spring (2).

When the pressure reaches the set value of the spring (2), then the control spool (3) moves and the connection from A to B is opened. The system connected to port B is connected without a pressure decrease occurring in port A.

The control signal originates internally via the control line (4) from port A or externally via port X.

Depending on the use of the valve the leakage oil drain is externally via port Y or internally via B.

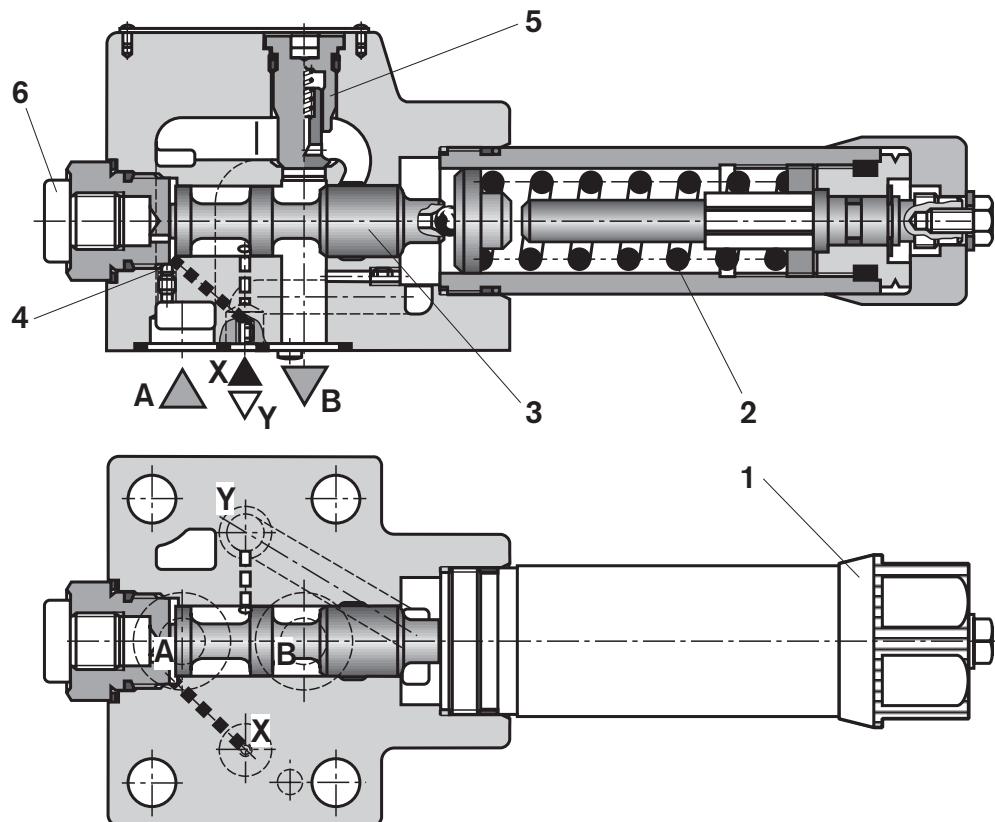
## Attention!

With **internal** leakage oil drain the **set** opening pressure **increases** by the pressure present in port "B".

For the free return flow of the pressure fluid from port B to port A a check valve (5) may be optionally be installed.

A pressure gauge port (6) enables the monitoring of the sequence pressure set at the valve.

## Type DZ 10 DP1-4X/...XY...



## Technical data (for applications outside these parameters, please consult us!)

### General

Installation	Optional	
Ambient temperature range	°C (°F)	-30 to +80 (-22 to 176) (NBR seals)
		-20 to +80 (-4 to 176) (FKM seals)
Weight	kg (lbs)	Approx. 1.2 (2.6)

### Hydraulic

Maximum operating pressure	Ports P, A, X	bar (PSI)	Up to 210 (3100)
	Port Y	bar (PSI)	Up to 160 (2300)
Maximum sequence pressure (adjustable)	Port B	bar (PSI)	Up to 25; up to 75; up to 150; up to 210 (360; 1100; 2100; 3100)
Maximum flow		L/min (GPM)	Up to 80 (21)
Pressure fluid			Mineral oil (HL, HLP) to DIN 51 524 <sup>1)</sup> ; Fast bio-degradable pressure fluids to VDMA 24 568 (also see RE 90 221); HETG (rape seed oil) <sup>1)</sup> ; HEPG (polyglycols) <sup>2)</sup> ; HEES (synthetic ester) <sup>2)</sup> ; other pressure fluids on request
Pressure fluid temperature range		°C (°F)	-30 to +80 (-22 to 176) (with NBR seals)
		°C (°F)	-20 to +80 (-4 to 176) (with FKM seals)
Viscosity range		mm <sup>2</sup> /s (SUS)	10 to 800 (60 to 3710)
Cleanliness class to ISO codes			Maximum permissible degree of contamination of the pressure fluid is to ISO 4406 (C class 20/18/15 <sup>3)</sup> )

<sup>1)</sup> Suitable for NBR and FKM seals

<sup>2)</sup> Only suitable for FKM seals

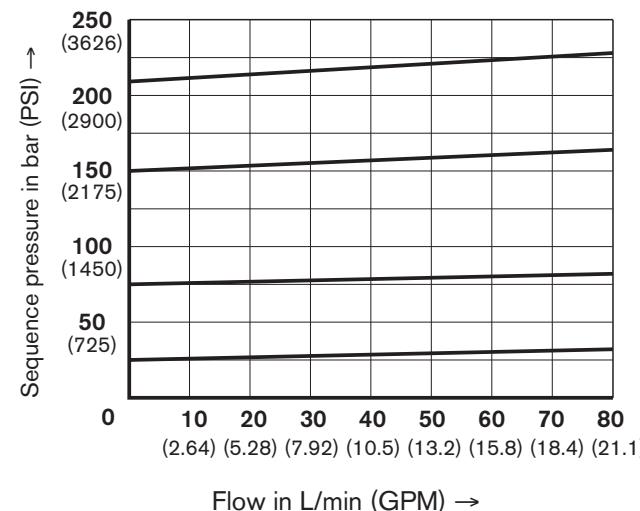
<sup>3)</sup> The cleanliness class stated for the components must be adhered to in hydraulic systems.

Effective filtration prevents faults from occurring and at the same time increases the component service life.

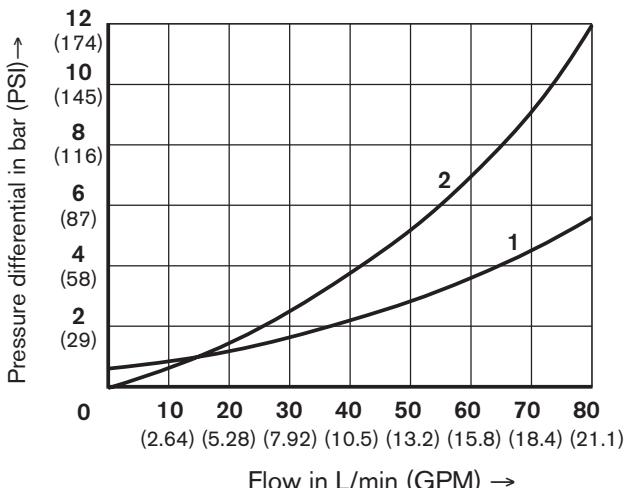
For the selection of filters see catalog sheets RE 50 070, RE 50 076 and RE 50 081.

### Characteristic curves – measured with HLP46, $\vartheta_{\text{oil}} = 40 \text{ }^{\circ}\text{C} \pm 5 \text{ }^{\circ}\text{C}$ ( $104 \text{ }^{\circ}\text{F} \pm 41 \text{ }^{\circ}\text{F}$ )

#### p-q<sub>V</sub>-characteristic curves



#### $\Delta p$ -q<sub>V</sub>-characteristic curves

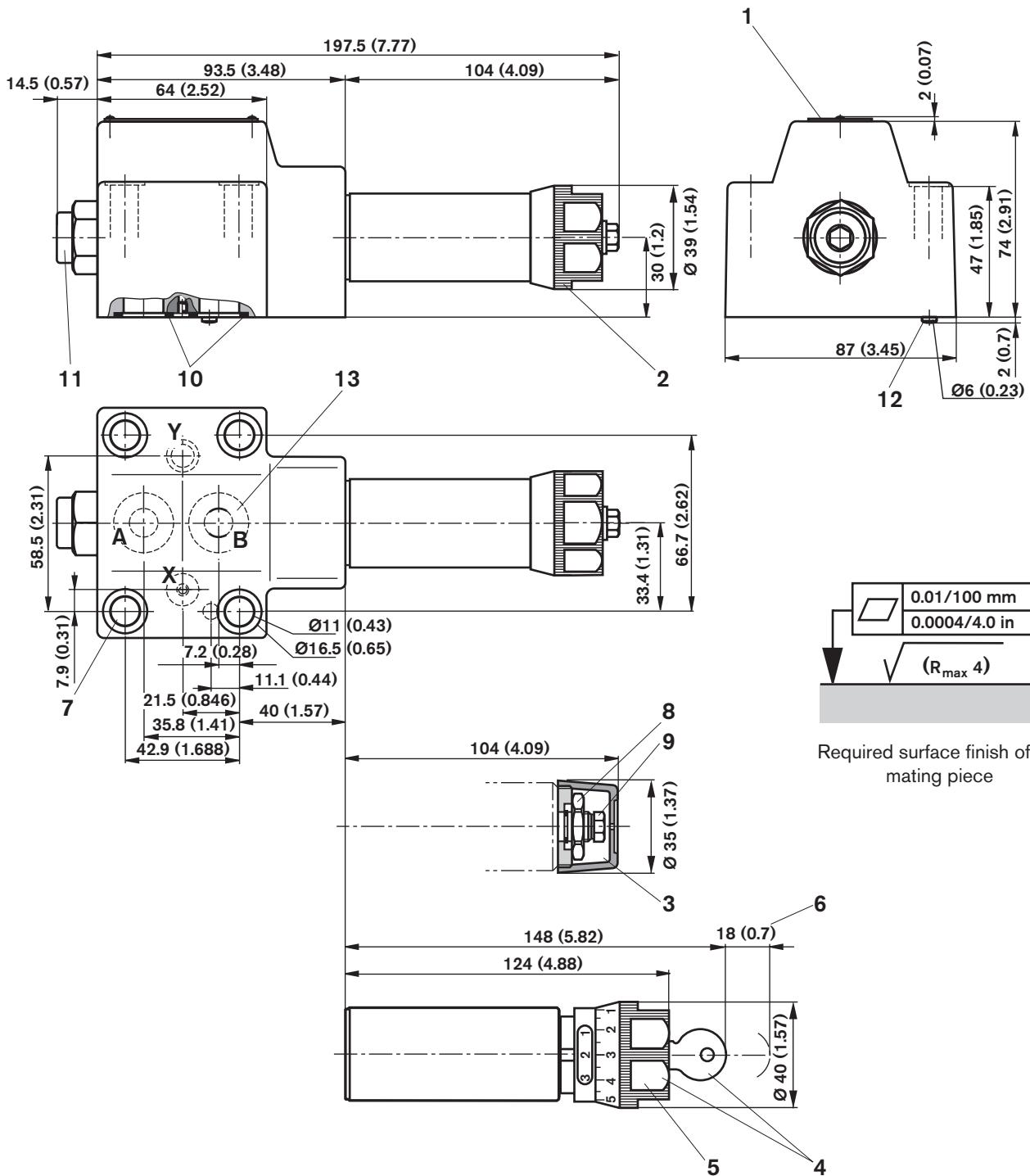


The characteristic curves are valid for the output pressure = zero over the entire flow range!

1  $\Delta p$ -q<sub>V</sub>-characteristic curve via check valve, flow from B to A

2  $\Delta p$ -q<sub>V</sub>-characteristic curve, flow from A to B

## Unit dimensions – dimensions in millimeters (inches)



- 1 Name plate
- 2 Adjustment element "1"
- 3 Adjustment element "2"
- 4 Adjustment element "3"
- 5 Adjustment element "7"
- 6 Space required to remove the key
- 7 Valve fixing holes
- 8 Locknut 24A/F

- 9 Hexagon 10A/F
- 10 Identical seal rings for ports A and B  
Identical seal rings for ports X and Y
- 11 Pressure gauge connection G 1/4;  
12 deep; internal hexagon 6A/F
- 12 Locating pin
- 13 Porting pattern to DIN 24 340, form  
D, ISO 5781 and CETOP-RP 121 H

**Subplates:**

- G 460/01, G 3/8
- G460/12 (SAE-6; 9/16-16)
- G 461/01, G 1/2
- G461/12 (SAE-8; 3/4-16)
- to catalogue sheet RE 45 062 and
- Valve fixing screws**
- M10 x 60 DIN 912 - 10.9  
(3/8-16 UNC x 2-1/4")
- Tightening torque  $M_A = 75 \text{ Nm}$   
(51 lb-ft)
- Must be ordered separately.

## Notes

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