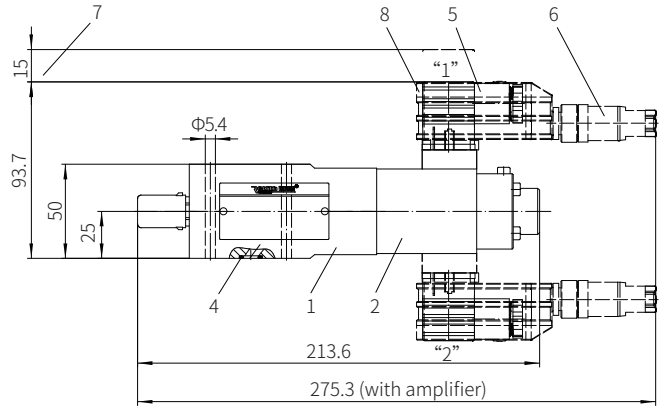
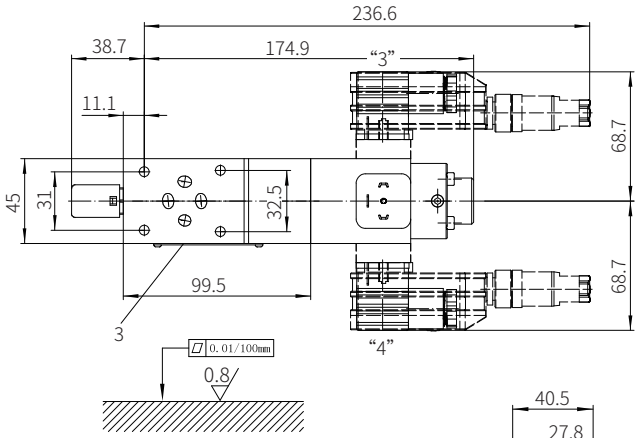
Component size

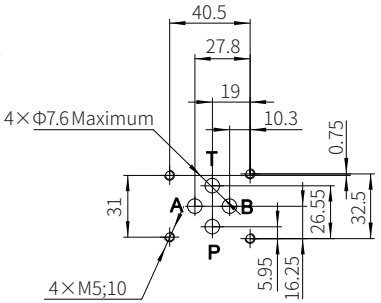
Size unit: mm

Model ZDBE, ZDBEE





Required surface finishing of mating components



1 Valve body
2 Proportional solenoid
3 Name plate
4 Sealing rings for A, B, P, T
5 Socket for ZDBE
6 Connector for ZDBEE
7 Space required to remove the plug
8 Plug integrated amplifier (OBE)

Valve fixing screw
M5x50-10.9 grade GB/T70.1-2000
Tightening torque M_A=7.8Nm

Note: "1" to "4" is position for cable sockets or integrated amplifiers

3-Way Proportional Pressure Reducing Valve

Model: 3DREP(E)6...2XJ

- Size 6
- Maximum working pressure 100 bar
- Maximum working flow 15 L/min

Contents

Features

- Direct operated proportional valves for the control of the pressure and direction of a flow
- Operation by proportional solenoid with central thread and detachable coil
- For subplate mounting
- Spring centred control spool
- Model 3DREPE with integrated amplifier
- Model 3DREP with external amplifier
- Manual emergency operation, optional

Function description, sectional drawing

The 3DREP6 type 3-way pressure reducing valve is direct operated by proportional solenoid. It used to convert an electrical input signal into a proportional pressure output signal.The proportional solenoids are controllable wet pin DC solenoids with central thread and detachable coil. The solenoids are controlled by external amplifier (model 3DREP) or integrated amplifier (model 3DREPE).

The valves consist of:

- Valve body with mounting surface (1)
- Control spool (2) with pressure measuring spool (3)
- Solenoid with central thread (5) (6)
- Optional integrated amplifier (7)

Function:

- When the solenoid is de-energized, the control spool (2) is held in its neutral position by the compression spring.
- After one of solenoid is energized, the control spool(2) is directly actuated.

E.g. energization of solenoid "a" (6)

→ the pressure measuring spool (3) and the control spool (2) is pushed to the right in proportion to the electrical input signal.

→P to B and A to T are connected through the cross-sections with progressive flow characteristics.

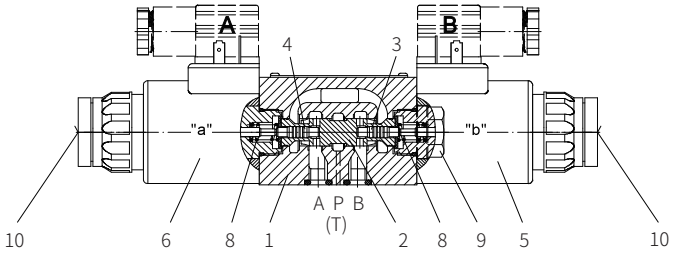
De-energization of solenoid (5).

→the control spool (2) is pushed back to the center position by the compression spring.

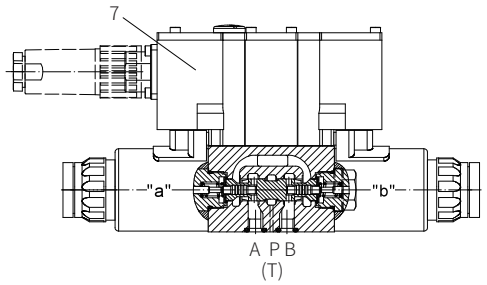
In the middle position the connections from A and B to T are open, therefore, the pressure oil can freely flow to tank. An optional manual emergency operation is required to move the control spool (2) without solenoid energization.

Attention:

The unconsciously activation of manual emergency operation can cause uncontrolled movement of equipment!



Model 3DREP6...-2XJ/...



Model 3DREPE6...-2XJ/...

Note:

To prevent leakage of tank lines, a back pressure valve is required to install (back pressure about 2 bar) according to the installation condition.

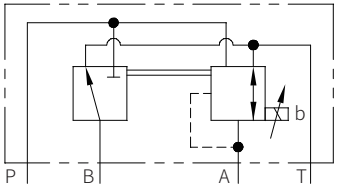
Valve with 2 positions:

(Model 3DREP.. A... or 3DREP.. B...)

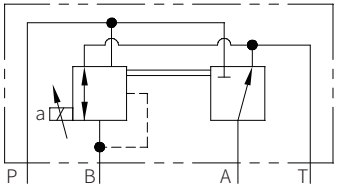
The function of this valve is basically the same as the valve with three positions, but the two position valve is only installed with solenoid "a" or "b", and with a plug (9) instead of the second solenoid.

Functional symbols

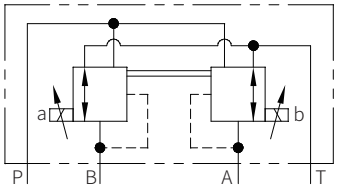
Model 3DREP...6A-2XJ/...E(detailed)



Model 3DREP...6B-2XJ/...E(detailed)

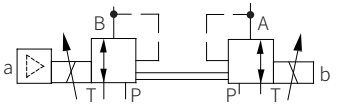


Model 3DREP...6C-2XJ/...E(detailed)



Example of valve with integrated control electronic

Model 3DREPE...6C-2XJ/...E(simplified)



Models and specifications

3DREP | 6 | 2X | J | E | G24 | | | | | | *

more information in text

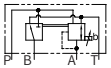
with external amplifier =No code
with integrated amplifier =E

sealing material
No code= NBR seals
V= FKM seals
(consult for other seals)

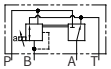
size 6 =6

for model 3DREPE
A1= command value 0 to 10 V
F1= command value 4 to 20 mA

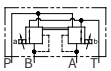
functional symbols



=A



=B



=C

3DREP electrical connection:
K4= square socket without plug
3DREPE electrical connection:
K31= with plug-in connector

20 to 29 series =2X
(20 to 29 series installation and connection size unchanged)

No code= without manual emergency operation
N9= with manual emergency operation

Rekith =J

No code= 1500mA coil
-8 800mA coil

pressure stage 16 bar =16
pressure stage 25 bar =25
pressure stage 45 bar =45

G24= power supply voltage 24V DC

E= proportional solenoid with detachable coil

Technical parameters

Overview				
Valve model			3DREP	3DREPE
Installation position			optional, preferably horizontal	
Storage temperature range		°C	-20 to +80	
Environment temperature range		°C	-20 to +70	-20 to +50
Weight		kg	2.0	2.2
Hydraulic				
Working pressure range	Oil port P	bar bar bar	20 to 100 for pressure stage 16 30 to 100 for pressure stage 25 50 to 100 for pressure stage 45	
	Oil port T	bar	0 to +30	
Maximum flow		L/min	15 (△p=50bar)	
Pressure medium			Mineral oil (HL, HLP)[1] in accordance with DIN 51524; Fast living organisms degraded oil according to VDMA 24568; HETG (Rapeseed oil)[1]; HEPG (Polyethyleneglycol)[2] ; HEES (Synthetic Fats) [2]	
Oil temperature range		°C	-20 to +80 (preferably +40 to +50)	
Viscosity range		mm^2/s	20 to 380 (preferably 40 to 60)	
Cleanliness of oil to ISO			The maximum allowable pollution level of oil is ISO4406 Class C	
Hysteresis		%	⩽5	
Repeatability		%	⩽1	
Sensitivity		%	⩽0.5	
Reversal span		%	1	
Electrical, solenoid				
Valve model			3DREP	3DREPE
Voltage type			DC	
Command value signal	Voltage input "A1"	V	-	±10
Maximum current per solenoid		A	0.8 or 1.5	2.5
Solenoid coil resistance	Cold value at 20°C	Ω	4.8	2
	Max. warm value	Ω	7.2	3
Duty		%	100	
Coil temperature		°C	up to 150	
Electrical connections	3DREP		With component plug to DIN 175 301-803	
			With plug-in connector to DIN EN 175 301-803	
	3DREPE		With component plug to DIN 43 563-AM6-3	
			With plug-in connector to DIN 43 563-BF6-3	
Valve protection to DINEN 60 529/VDE 0470 part 1			IP65, plug installed and locked	

1)The oil must meet the cleanliness degree requested by the components in the hydraulic system. Effective oil filtration can prevent failure and increase the service life of the components.

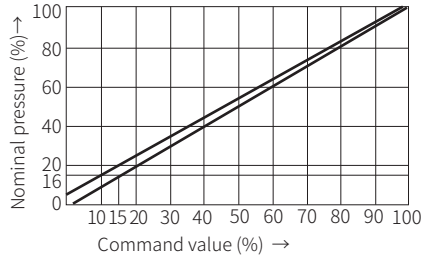
Technical parameters

Electrical, amplifier			
Integrated amplifier for model 3DREPE			Integrated in the valve
Supply voltage	Nominal voltage	VDC	24
	Lower limiting value	V	19
	Upper limiting value	V	35
Amplifier current consumption	/max	A	1.8
	Impulse current	A	4
Modular external amplifier for model 3DREP			RT-PVDA-0 X-D2-30-CN-A1/F1

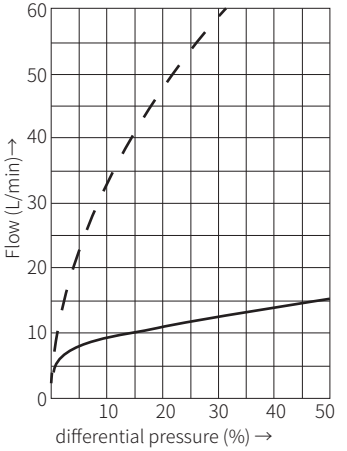
Characteristic curve

(Measured when using HLP46, ϑ_{oil}=40°C ± 5°C)

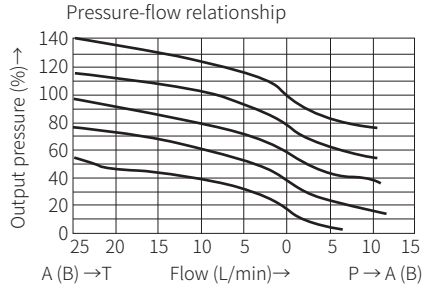
Pressure stage 16，25 and 45bar



Pressure stage 16，25 and 45bar



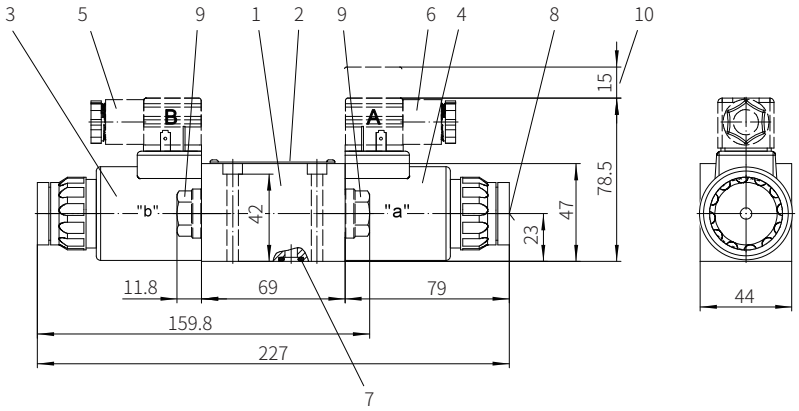
Pressure-flow relationship

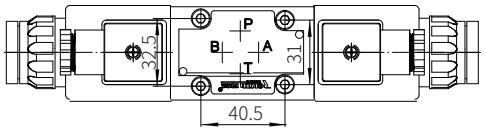


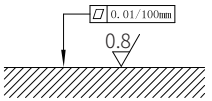
Component size

Size unit: mm

Model 3DREP6..-2XJ/..





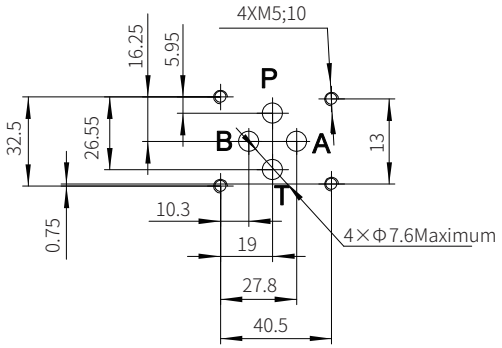


Required surface finishing of mating components

Valve fixing screw

M5x50-10.9 grade GB/T70.1-2000

Tightening torque M_A=7.8Nm

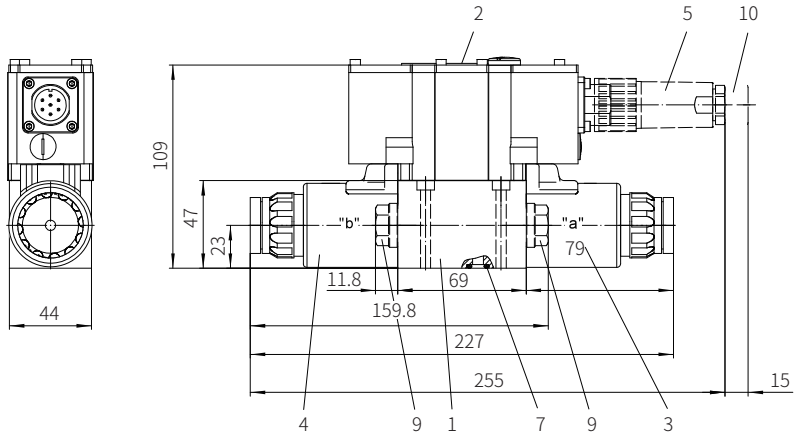


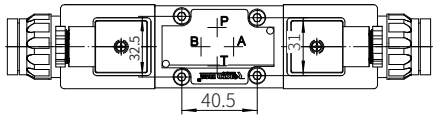
1 Valve body
2 Name plate
3 Proportional solenoid “b”
4 Proportional solenoid “a”
5 Black plug “B”
6 Grey plug “A”
7 O ring (for port P, A, B, T)
8 Manual emergency operation "N9"
9 Plug for valve with one solenoid
10 Space required to remove the plug

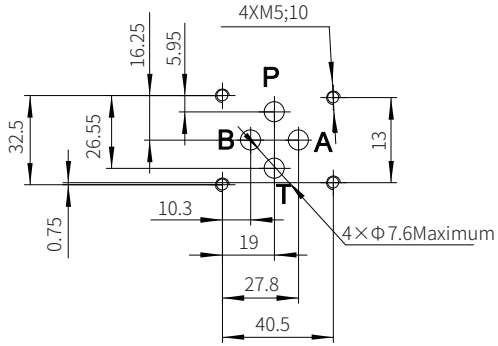
Component size

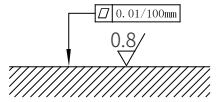
Size unit: mm

Model 3DREPE6..-2XJ/..









Required surface finishing of mating components

Valve fixing screw

M5x50-10.9 grade GB/T70.1-2000

Tightening torque M_A=7.8Nm

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2 Name plate
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4 Proportional solenoid “a”
5 Plug
6 O ring (for port P, A, B, T)
7 Manual emergency operation "N9"
8 Plug for valve with one solenoid
9 Space required to remove the plug