

Explosion-proof Solenoid Directional Valve

Model: GD-WE6...6XJ



01

- ◆ Size 6
- ◆ Maximum working pressure 350 bar
- ◆ Maximum working flow rate 80 L/min-DC
60 L/min-AC

Contents

Function description, sectional drawing	02
Models and specifications	03
Technical parameters	04
Functional symbols	05-06
Characteristic curve	06
Characteristic limit	07-08
Component size	09

Features

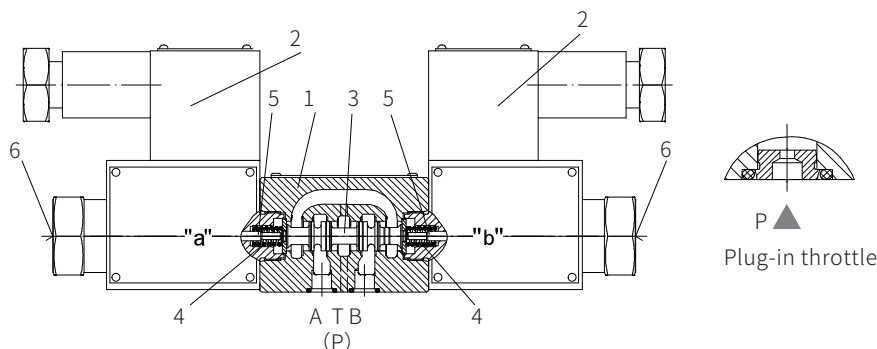
- With the direct type solenoid operated directional spool valve as the standard type
- Wet-pin explosion-proof solenoid with detachable coil

Function description, sectional drawing

The GD-WE6 directional control valve is a directional spool valve operated by a explosion-proof solenoid, it is used to control the opening, closing and flow direction of the liquid flow.

This directional control valve mainly includes valve body (1), one or two explosion-proof solenoids (2), control spool (3) and one or two reset springs (4).

In the non-energized condition, the control spool (3) is held in the middle or initial position by the reset spring (4). The control spool (3) is operated by the wet-pin explosion-proof solenoid (2). To ensure the proper functioning, the pressure chamber of the solenoid must be filled with oil. The force of the explosion-proof solenoid (2) acts on the control spool (3) through the push rod (5) to push from the stationary position to the required position. In this way, the oil flows freely from P to A and B to T, or P to B and A to T. When the explosion-proof solenoid (2) is powered off, the control spool (3) is pushed back to the initial position by the reset spring (4).



Model GD-4WE6E...6XJ/

Models and specifications

	GD	WE	6	-6X	J						*
explosion proof class I	=G1										more information in text
explosion proof class II	=G2										sealing material
explosion proof valve											No code= NBR seals
3 working oil ports		=3									V= FKM seals
4 working oil ports		=4									(consult for other seals)
function symbol											No code=no plug-in throttle port
60 to 69 series				=6X							plug-in throttle port(see table)
(60 to 69 series installation and connection size unchanged)											
Rekith					=J						
with reset spring					=No code						
no reset spring					=O						
no reset spring, with detent					=OF						
voltage											
24V DC=					=G24						
36V AC with rectifier					=B36						
127V AC with rectifier					=B127						
220V AC with rectifier					=B220						

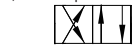
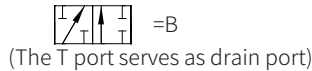
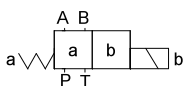
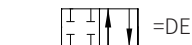
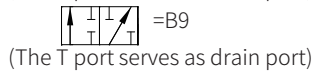
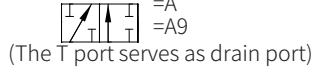
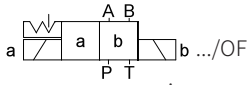
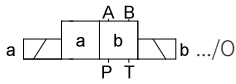
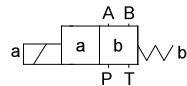
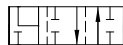
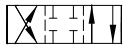
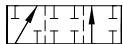
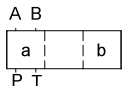
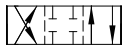
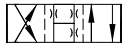
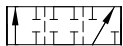
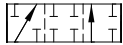
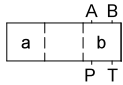
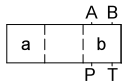
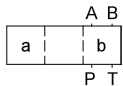
Note:

G1 explosion-proof grade EXD I

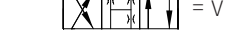
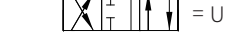
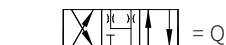
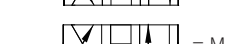
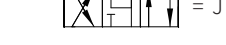
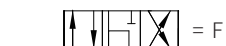
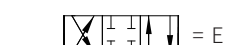
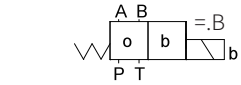
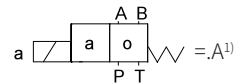
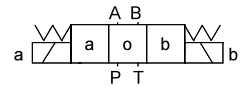
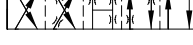
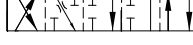
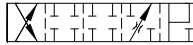
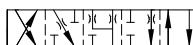
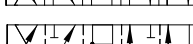
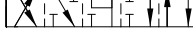
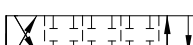
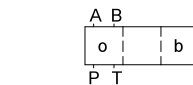
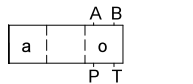
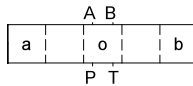
G2 explosion-proof grade EXD II CT4

Functional symbols

Transition function Spool valve function



Transition function Spool valve function



1) For example:

The function symbol EA means
the coil on side A

Note: Functions A9 and B9 are only used
as pilot valves

Technical parameters

Hydraulic		
Maximum working pressure	Oil ports A, B, P bar	350
	Oil port T bar	210 (DC) When the working pressure exceeds the allowable pressure, the valves with symbols A and B must use T port as the drain port.
Maximum flow	L/min	80
Effective over-flow section (spool position)	mm ²	6% of rated cross-sectional area for symbol Q
		3% of rated cross-sectional area for symbol W
Oil fluid		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	-30 to +80 (NBR seal)
		-15 to +80 (FKM seal)
Viscosity range	mm ² /s	2.8 to 500
Cleanliness of oil ³⁾		The maximum allowable pollution level of oil is ISO4406 Class 20/18/15

1) For NBR seal and FKM seal.

2) Only for FKM seal.

3) 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.

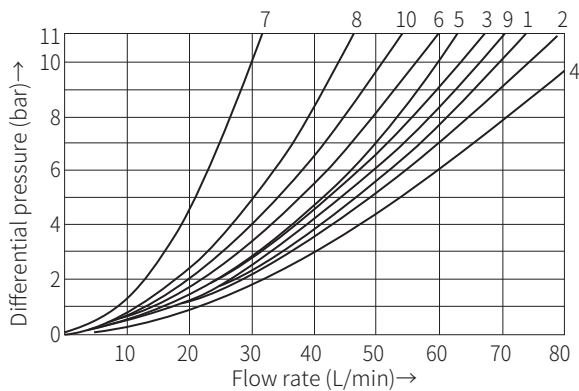
Technical parameters

Electric			
Voltage type		DC	AC Rectifier
Voltage available ⁴⁾		24	36,127,220
Allowable voltage tolerance (voltage unit)		±10	±10
Power consumption		30	-
Holding power		-	50
Impact power		-	220
Power rate		100%	100%
Switching time to ISO6403	On	ms	25-45
	Off	ms	10-20
Maximum switching frequency 1/h		15000	7200

4) Other voltages are determined as required

Characteristic curve

(Measured when using HLP46, $\vartheta_{oil} = 40^\circ\text{C} \pm 5^\circ\text{C}$)



Functional symbol	Flow direction			
	P-A	P-B	A-T	B-T
A; B	3	3	—	—
C	1	1	3	1
D; Y	5	5	3	3
E	3	3	1	1
F	1	3	1	1
T	10	10	9	9
H	2	4	2	2
J; Q	1	1	2	1
L	3	3	4	9
M	2	4	3	3
P	3	1	1	1
R	5	5	4	—
V	1	2	1	1
W	1	1	2	2
U	3	3	9	4
G	6	6	9	9

7 Symbol R in control position B→A

8 Symbols G and T in center position

9 Symbols H and T in center position P→T

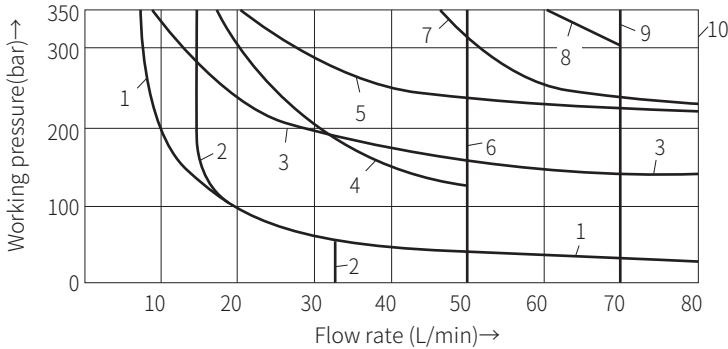
Characteristic limit

Attention!

The given working limit is suitable for the use of flow in both directions (e. g. from P to A and return from B to T at the same time).

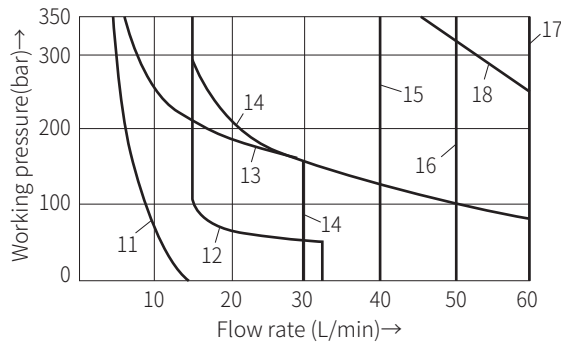
Due to the power of the fluid in the valve, the power limit allowed for only one flow direction might be significantly reduced (e.g. from P to A, while B is closed)!

The power limit is measured when the solenoid is at the operating temperature, at 10% below the standard voltage and without tank preloading.

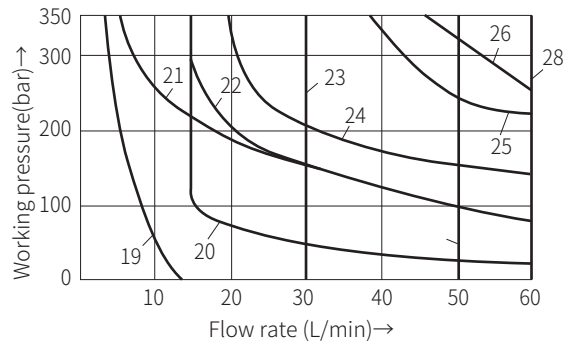


DC Solenoid			
Characteristic curve	Function symbol	Characteristic curve	Function symbol
1	A; B	6	G; H; T
2	V	7	A/O; A/OF; L; U
3	A; B	8	C; D; Y
4	F; P	9	M
5	J	10	E; E1; R; C/O; C/OF; D/O; D/OF; Q; W

Characteristic limit



AC Solenoid-50 Hz	
Characteristic curve	Function symbol
11	A; B
12	V
13	A; B
14	F; P
15	G; T
16	H
17	A/O; A/OF; C/O; C/OF; D/O; D/OF; E; E1; J; L; M; Q; R; U; W
18	C; D; Y



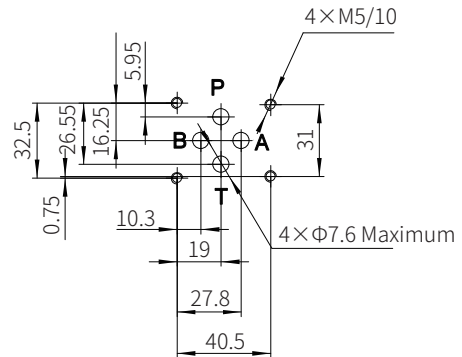
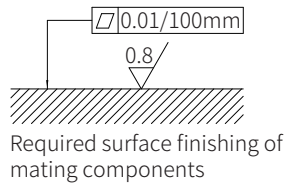
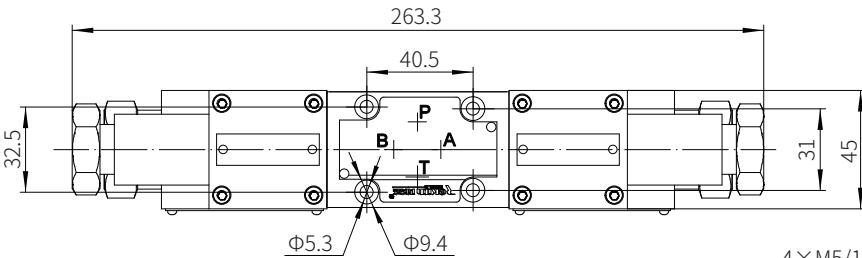
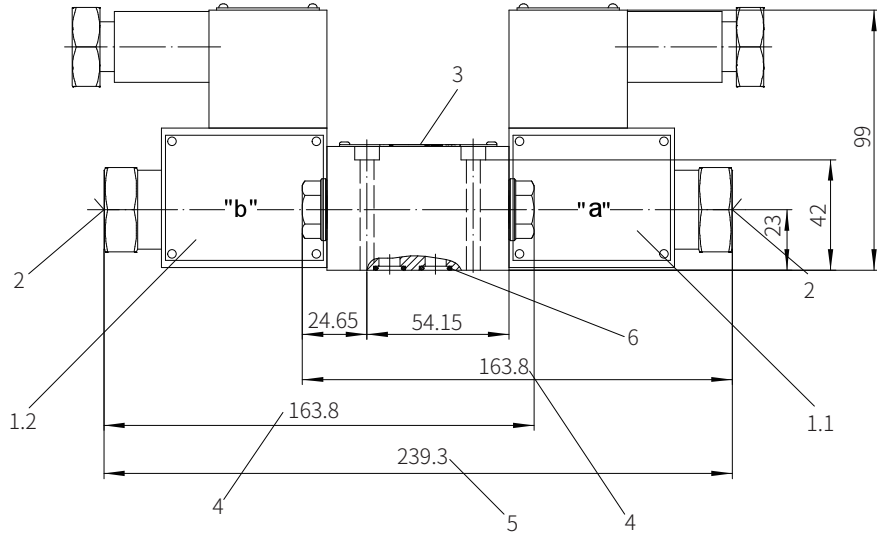
1) P-A/B Pre-opening 2) Back from the actuator to the oil tank

AC Solenoid-60 Hz	
Characteristic curve	Function symbol
19	A; B
20	V
21	A; B
22	F; P
23	G; T
24	J; L; U
25	A/O; A/OF; Q; W
26	C; D; Y
27	H
28	C/O; C/OF; D/O; D/OF; E; E1; M; R

Component size

Size unit: mm

Model GD-4WE6...-6XJ/...



- 1.1 Solenoid a
- 1.2 Solenoid b
- 2 Hidden emergency button
- 3 Name plate
- 4 Size of 2-position valve
- 5 Size of 3-position valve
- 6 O-ring 9.25x178 (for oil port P, A, B, T)

Valve fixing screw
M5x50-10.9 grade GB/T70.1-2000
Tightening torque $M_A=7.8\text{Nm}$

It must be ordered separately
if connection subplate is needed.
Subplate model:

G341/01 (G1/4") ; G341/02 (M14x1.5)
G342/01 (G3/8") ; G342/02 (M18x1.5)
G502/01 (G1/2") ; G502/02 (M22x1.5)