

## Solenoid Operated Directional Valve

Model: WE10...5XJ



- ◆ Size 10
- ◆ Maximum working pressure 315 bar
- ◆ Maximum working flow 120 L/min

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### Features

- Direct acting high-power solenoid operated directional spool valve
- Wet-pin DC or AC solenoids
- The solenoid coil can be rotated by 90°
- Replace the coil without releasing the oil
- Individual or central electrical connection, optional
- Optional manual operation

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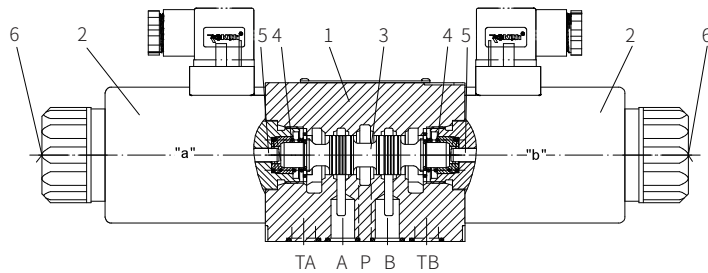


**Function description, sectional drawing**

The valve mainly consists of valve body (1), one or two solenoids (2), control spool (3), and one or two reset springs (4).

When the solenoid is not energized, the control spool (3) is held in the neutral or starting position by the reset springs (4) (except for impulse spools). The action of the control spool (3) is achieved by wet-pin solenoid (2). When the solenoid (2) is energized, the force of the solenoid acts on the control spool (3) through the push rod (5) to push it from its stationary position to the working position. In this way, the oil passes from P to A and B to T, or from P to B and A to T.

When the solenoid is powered off, the control spool (3) is pushed back to its original position by the reset springs (4). At this time, the manual button (6) can be pushed to move the control spool.



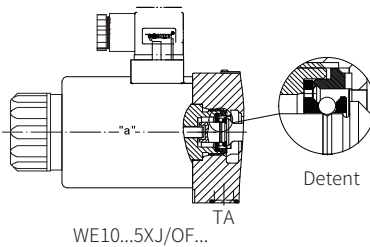
4WE10E 5X/J type structural diagram

**Model WE10...5XJ/O...:**

This type is a two-position valve operated by two solenoids, but without reset spring and detent, and is no definite switching position in the power loss state. Its working position can only be determined when powered on, and the solenoids need to be powered on for a long time.

**Model WE10...5XJ/OF...:**

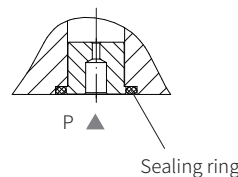
This type is also a two-position valve operated by two solenoids without reset spring but with detent, both working positions can be fixed. The spool is held in the fixed switching position without requirement of constant energization of the solenoids.



WE10...5XJ/OF...

**Plug-in damper:**

Due to working conditions limitations, it is possible that the flow exceeds the given value of the characteristics curve during the spool switching process. It is necessary to insert an plug-in throttle into port P of the valve.



**Models and specifications**

WE	10	-	5X	J	/	C					*
<p>3 working oil ports = 3 4 working oil ports = 4</p> <p>size 10 =10</p> <p>symbols e.g. C, E, EA, EB etc.</p> <p>50 to 59 series (50 to 59 series installation and connection size unchanged) =5X</p> <p>Rekith = J</p> <p>no reset spring =O no reset spring, with detent =OF with reset spring =No code</p> <p>wet pin solenoid with detachable coil =C</p> <p>220V AC 50Hz/240V AC 60Hz =W220 24V DC =G24 28V DC =G28 solenoid with rectifier (AC voltage 220V) =W220R</p> <p>No code= No plug-in throttle port N= with manual emergency operation N9= with hidden manual emergency operation</p> <p>more information in text</p> <p>sealing material No code = NBR seals V= FKM seals (consult for other seals)</p> <p>No code= No plug-in throttle port B08= throttling diameter 0.8mm B10= throttling diameter 1.0mm B12= throttling diameter 1.2mm</p> <p>single connection Z4= standard plug Z5L= large right angle lamp plug K4= no insert plug FS2= deutsch waterproof plug centralized connection DL= connection box with lamp</p>											

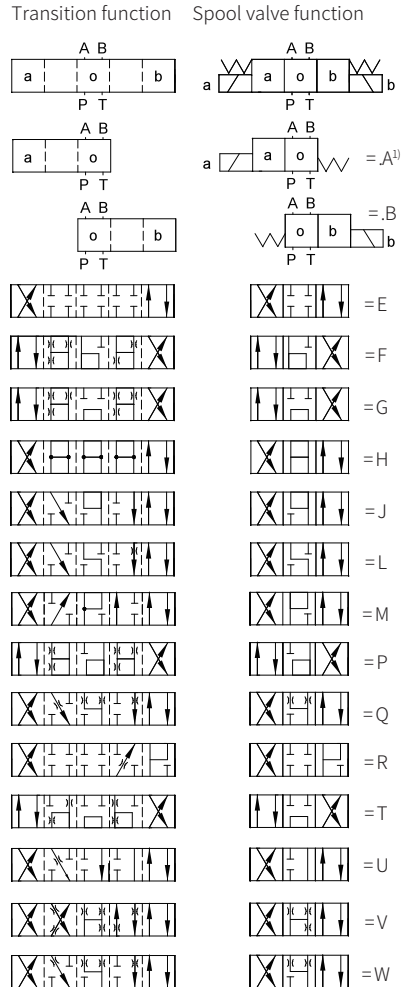
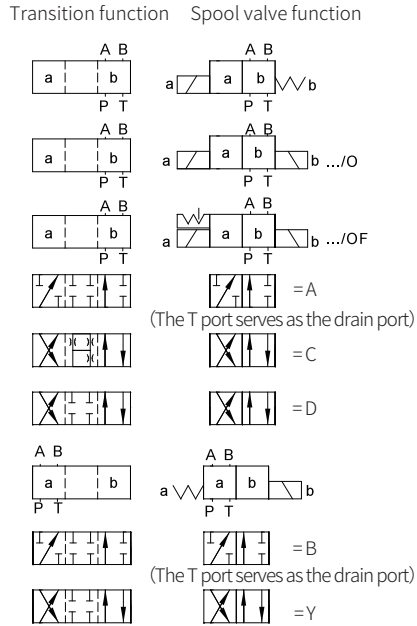
**Technical Parameter**

work pressure (MPa)	Oil port A, B, P Oil port T	to 315 to 210(DC), 160(AC)
Flow	L/min	120
Over-flow section	middle position	6% of rated cross-sectional area for symbol Q, 3% of rated cross-sectional area for symbol W
Pressure medium		Mineral oil (HL, HLP) <sup>1)</sup> in accordance with DIN 51524; Fast living organisms degraded oil according to VDMA 24568; HETG (Rapeseed oil) <sup>1)</sup> HEPG(Polyethylene glycol) <sup>2)</sup> HEES (synthetic ester) <sup>2)</sup>
Working medium temperature range	°C	-30 to +80 (NBR seal) -20 to +80 (FKM seal)
Viscosity range	mm <sup>2</sup> /s	2.8 to 500
Weight (kg)	Single solenoid	5.1 DC; 4.3 AC
	Double solenoids	6.7 DC; 5.1 AC

1) For NBR seal and FKM seal. 2) Only for FKM seal.

Note: For symbols A and B, if the working pressure exceeds the allowable pressure of the T chamber, port T must be used as a drain port.

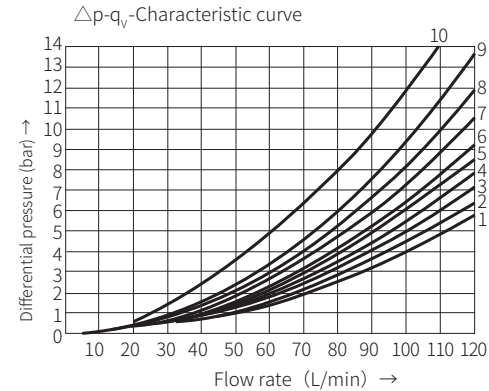
Functional symbols



1)For example:  
the function symbol EA means the  
solenoid on side A.

Characteristic curve

(Measured when using HLP 46,  $v_{oil} = 40^\circ\text{C} \pm 5^\circ\text{C}$ )



Open position		P to A	B to A	A to T	P to T
R		-	9	-	-
Open position	P to A	P to B	B to T	A to T	P to T
F	4	-	-	9	9
P	-	5	8	-	10
G, T	-	-	-	-	9
H	-	-	-	-	3

Function symbol	Flow direction			
	P to A	P to B	A to T	B to T
A, B	3	3	-	-
C	3	3	4	5
D, Y	5	5	6	6
E	1	1	4	4
F	2	3	7	4
G	3	3	6	7
H	1	1	6	7
J	1	1	3	3
L	2	2	3	5
M	1	1	4	5
P	4	2	5	7
Q	1	2	1	3
R	3	6	4	-
T	3	3	6	7
U, V	2	2	3	3
W	2	2	4	5

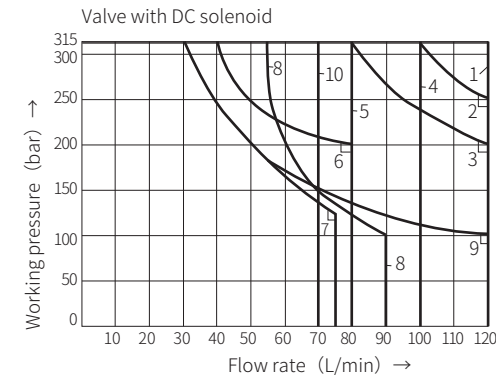
Characteristic limit

(Measured when using HLP 46,  $v_{oil} = 40^\circ\text{C} \pm 5^\circ\text{C}$ )

The indicated limit applies to two flow directions (e.g. from P to A and simultaneous return oil flow from B to T).

Due to the effect of hydraulic power inside the valve, the allowable power will be significantly reduced when there is only one flow direction (e.g. from P to A, and the B oil port 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.



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

- 1) Return oil flow  
(Independent from area ratio)
- 2) Applicable only in the middle position



