

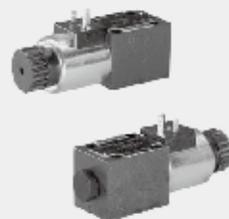


2.21

3/2 and 4/2 directional poppet valve with solenoid actuation

Type M-.SED6...L1X

Size 6
Up to 350 bar
Up to 25 L/min



Contents

Function and configuration	02
Symbols	03
Ordering code	03
Technical data	04
Electrical data	04
Characteristic curves	05
Unit dimensions	06-07

Features

- Direct operated directional poppet valve with solenoid actuation
- Mounting face as per DIN24 340 A ISO 4401 and CETOP-RP 121H
- Closed port is leak-free isolated
- Keep switch flexibility under high pressure
- Pressure-tight chamber does not need to be opened when changing of the coil
- Solenoid coil can be rotated through 90°
- With optional concealed manual override

Function and configuration

· **M-3SED6 are directional poppet valves with solenoid actuation. They control the start, stop and direction of flow.**

The directional valve mainly consist of housing (1), solenoid (2), valve seats (7) and (11) and closing element (4). With the help of manual override (6) the valves can be operated without energisation of the solenoid.

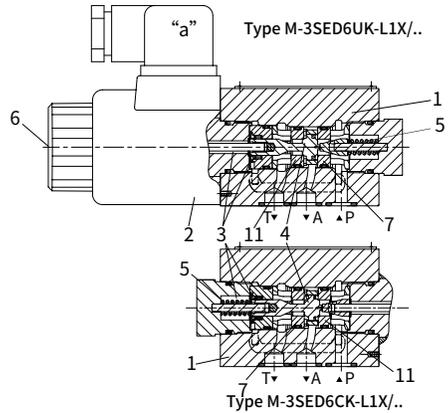
General principle (3/2 directional poppet valve):

The initial position of the valve (normally open "UK" or normally closed "CK") is determined by the arrangement of the spring (5).

Chamber (3) behind closing element (4) is connected to port P and closed towards port T. The valve is therefore pressurebalanced with regard to the actuating forces (solenoid and spring).

Due to the special closing element (4) ports P, A and T can be pressurized to the maximum operating pressure (350 bar), and the flow can be directed in both directions (see symbols)!

In the initial position, closing element (4) is pressed by the spring (5) onto seat (11), in the shifted position, it is pushed by the solenoid (2) onto seat (7). The flow is leak-free blocked.



· **M-4SEW6 4/2 directional poppet valve**

In conjunction with a sandwich plate, the Plus-1 plate, under the 3/2 directional poppet valve, the function of a 4/2 directional poppet valve can be realized.

1). Initial position:

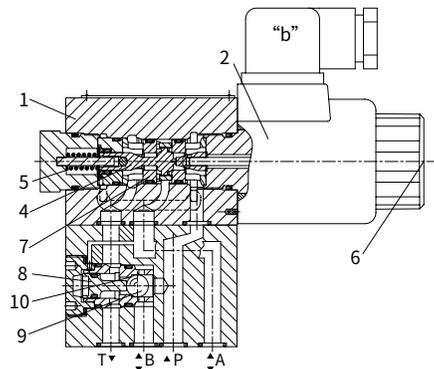
The main valve is not operated. Spring (5) holds closing element (4) on seat (11). Port P is blocked, and A is connected to T. A pilot line is provided from A to the large area of pilot spool (8), which is therefore unloaded to tank. The pressure applied via P now shifts ball (9) onto seat (10). This opens the connection from P to B and A to T.

2). Transition position:

When the main valve is operating, closing element (4) is shifted against spring (5) and pressed onto seat (10). This results in closing of port T, while P, A and B are briefly connected.

3). Switching position:

P is connected to A. Since the pump pressure acts via A on the large area of pilot spool (8), ball (9) is pressed onto seat (12). B is therefore connected to T, and P to A. Ball (9) in the Plus-1 plate has a "positive overlap".



· **Cartridge type orifice plug(model M-.SED6.L1X/...)**

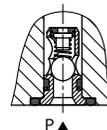
For the work status of the valve during switching process, the flow may be over the value permitted by the valve performance limit curve; in this case, a cartridge orifice plug is necessary.

The orifice plug is installed in port P.

· **Cartridge check valve (model M-.SED6.L1X/...)**

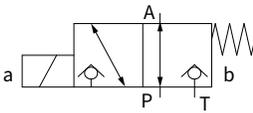
Cartridge check valve allows the oil flows from P to A freely with no leaks from A to P.

One-way valve is installed on port P.

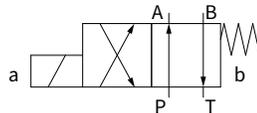


Spool symbols

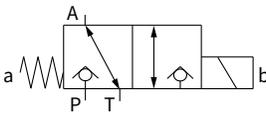
Type M-3SED6UK-L1X/..



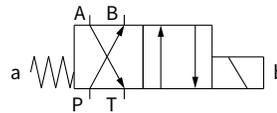
Type M-4SED6D-L1X/..



Type M-3SED6CK-L1X/..



Type M-4SED6Y-L1X/..



Ordering code

	M	SED	6	-	L1X/35	C	N	/		*
3 work ports	= 3									Further details in clear text
4 work ports	= 4									
Poppet valve										No code = NBR seals V = FKM seals
Size 6			=6							No code = Without cartridge check valve, without cartridge restriction choke P=Without Cartridge check valve B12 = Orifice Φ 1.2 mm B15 = Orifice Φ 1.5 mm B18 = Orifice Φ 1.8 mm B20 = Orifice Φ 2.0 mm B22 = Orifice Φ 2.2 mm
Spool symbols										
L10 ~ L19series					=L1X					
Work pressure to 350bar						=35				
Wet-pin solenoid with detachable coil							=C			
12VDC							= G12			
24VDC							= G24			
110VDC							= G110			
205VDC							= G205			
220VDC							= G220			
110VAC							=W110R			
220VAC							=W220R			
With manual emergency button									=N	
										K4 = Without plug Z4 = With square plug Z5L = Square plug with light Z5 = With rectifier plug (just for W110R and W220R) Note: K4, Z4, Z5L is not suitable for W110R and W220R

Technical data

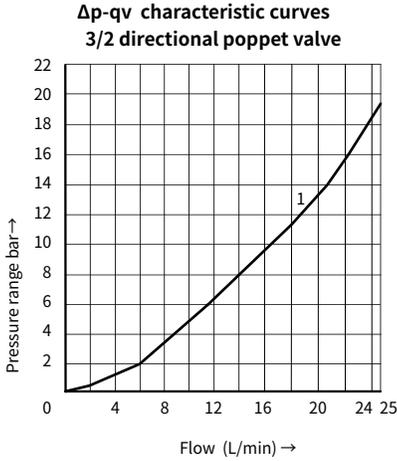
Installation position		Optional	
Environment temperature		°C	-30 to +50 (NBR seal) -20 to +50 (FKM seal)
Weight	2/2,3/2 directional poppet valve	Kg	1.5
	4/2 directional poppet valve	Kg	2.3
Max operation pressure		bar	350 (P > A ≥ B > T)
Max flow		L/min	25
Hydraulic fluid		Mineral oil suitable for NBR and FKM seal Phosphate ester for FKM seal	
Hydraulic fluid temperature range		°C	-30 to +80 (NBR seal) -20 to +80 (FKM seal)
Viscosity range		mm ² /s	2.8 to 500
Degree of contamination		Maximum permissible degree of fluid contamination: Class 9. NAS 1638 or 20/18/15, ISO4406	

Electrical data

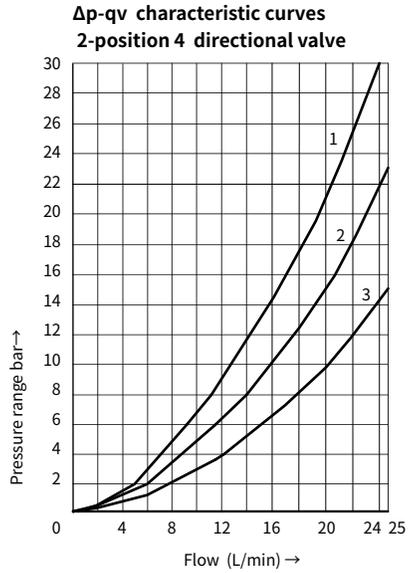
Voltage type		DC		AC									
Available voltage		V	12, 24, 110, 205, 220	110, 220 (Only by Z5 rectifier plug)									
Voltage tolerance (nominal voltage)		%	+10 ~ -15										
Power consumption		W	30										
Duty cycle		100%											
Switching time to ISO 6403 (installation position: Solenoid installed horizontally)													
Pressure bar	Flow L/min	DC				AC + rectifier							
		On/ms (without oil tank pressure)				Off/ms		On/ms (without oil tank pressure)				Off/ms	
		UK	CK	D	Y	UK, CK	D, Y	U	C	D	Y	U, C	D, Y
70	25	45	40	50	50	10	15	45	40	45	40	40	40
140	25	60	40	50	50	10	15	55	40	55	40	40	40
210	25	60	45	60	50	10	15	60	45	60	45	40	40
280	25	60	45	60	50	10	15	65	45	65	45	40	40
315	25	65	45	65	50	10	15	65	45	65	45	40	40
350	25	65	45	65	50	10	15	65	45	65	45	40	40
Note: switching time is related to flow direction (P to A / A to T); there may be deviation for reverse flow													
Switching frequency		times/h		Up to 15000									
Type of protection to DIN 40050		IP65											
Max coil temperature		°C		+150									

Note: When making the electrical connection, properly connect the protective conductor(PE \perp).

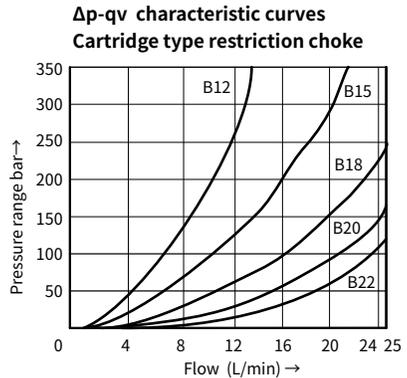
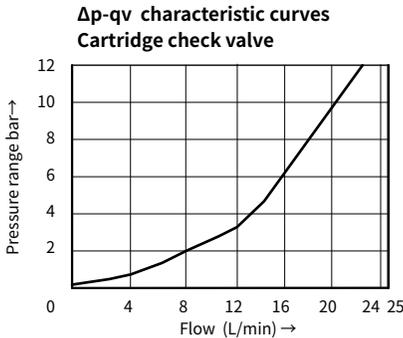
Characteristic curves (Measured at $\vartheta_{oil}=40^{\circ}\text{C} \pm 5^{\circ}\text{C}$, using HLP46)



1 M-3SED6^{CK}_{UK}..., P to A and A to T



- 1 M-4SED6^D_V..., A to T
- 2 M-4SED6^D_V..., P to A
- 3 M-4SED6^D_V..., P to B, B to T

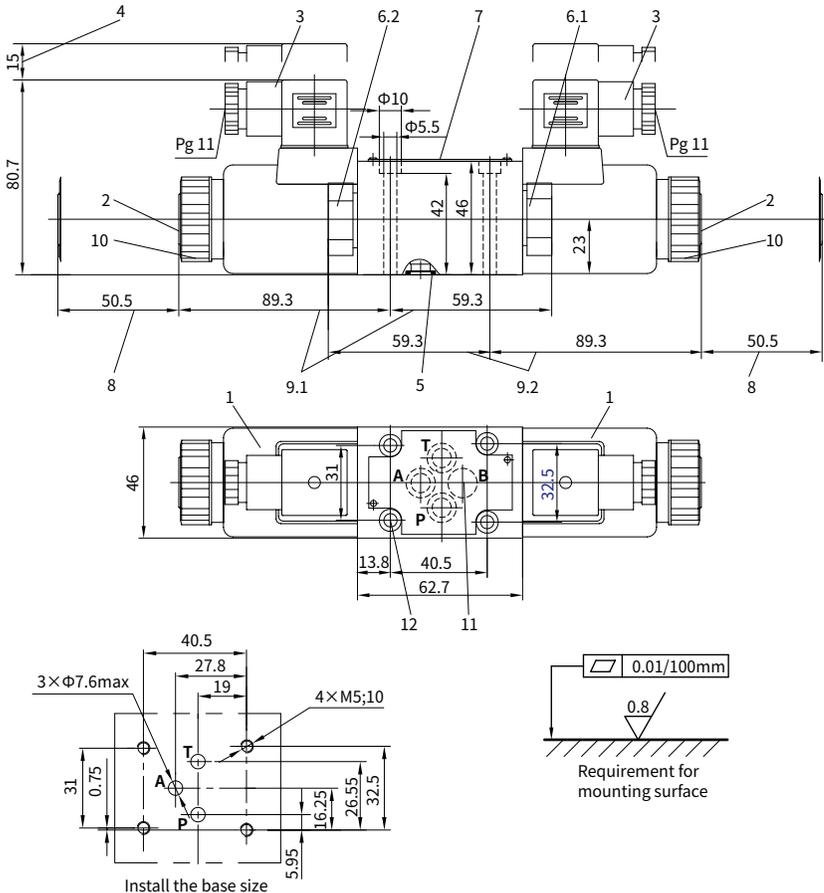


02

Unit dimensions

(Dimensions in mm)

• M-3SED6^{CK}_{UK} -L1X/...solenoid directional poppet valve



- 1 Solenoid
- 2 Manual emergency button
- 3 Plug as per DIN43650 (can rotate for 90 degrees)
- 4 Space required to remove cable socket
- 5 O-ring 9.25×1.78 for port P, T, A and B
- 6.1 Plug for M-3SED6UK-L1X/..
- 6.2 Plug for M-3SED6CK-L1X/..
- 7 Name plate.
- 8 Space required to remove coil
- 9.1 M-3SED6UK-L1X/.. total length
- 9.2 M-3SED6CK-L1X/.. total length
- 10 Fixing nut, Tightening torque $M_A=4\text{Nm}$
- 11 Oil port B of the valve is a blind bore.
- 12 Valve fixing screw:
M5 \times 50 GB/T70.1-10.9
Tightening torque $M_A=8.9\text{Nm}$

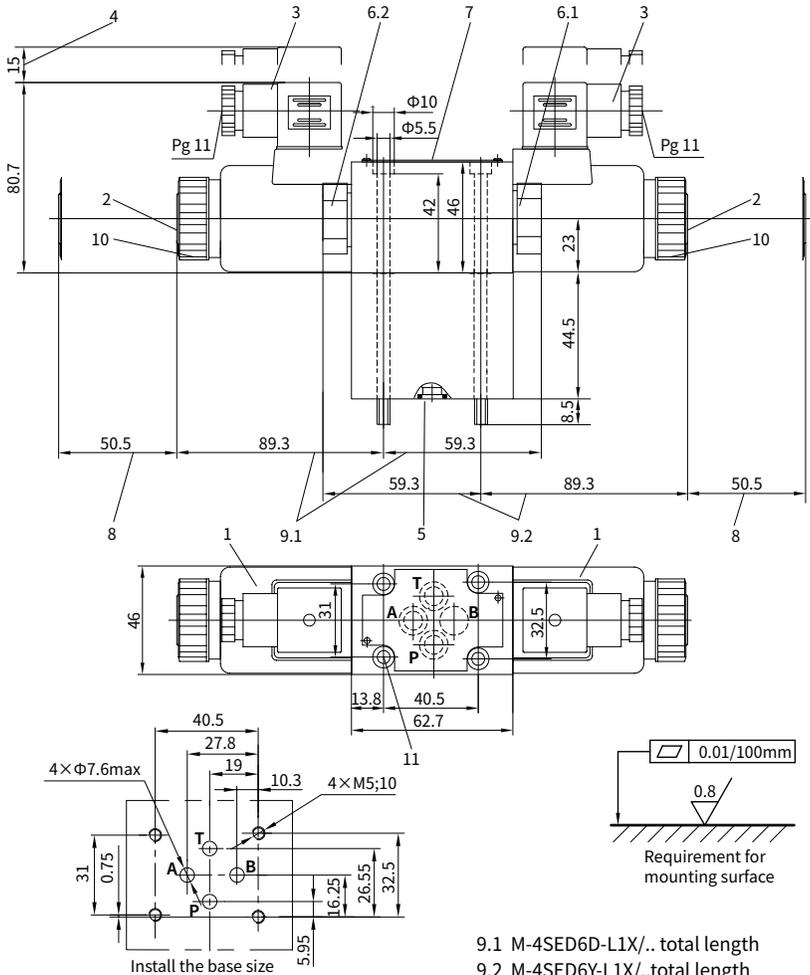
It must be ordered separately, if connection plate is needed. Type:

G341/01(G1/4), G341/02(M14 \times 1.5)
G342/01(G3/8), G342/02(M18 \times 1.5)
G502/01(G1/2), G502/02(M22 \times 1.5)

Unit dimensions

(Dimensions in mm)

• M-4SED6^D -L1X/..solenoid directional poppet valve



- 1 Solenoid
- 2 Manual emergency button
- 3 Plug as per DIN43650 (can rotate for 90 degrees)
- 4 Space required to remove cable socket
- 5 O-ring 9.25×1.78 for port P, T, A and B
- 6.1 Plug for M-4SED6D-L1X/..
- 6.2 Plug for M-4SED6Y-L1X/..
- 7 Name plate.
- 8 Space required to remove coil

- 9.1 M-4SED6D-L1X/.. total length
- 9.2 M-4SED6Y-L1X/..total length
- 10 Fixing nut, Tightening torque $M_A=4Nm$
M5×50 GB/T70.1-10.9
Tightening torque $M_A=8.9Nm$

It must be ordered separately, if connection plate is needed. Type:
 G341/01(G1/4), G341/02(M14×1.5)
 G342/01(G3/8), G342/02(M18×1.5)
 G502/01(G1/2), G502/02(M22×1.5)

China

+86 400 101 8889

America

+01 630 995 3674

Germany

+49 172 3683463

Japan

+81 03 6809 1696



© This brochure can be reproduced, edited, reproduced or transmitted electronically without the authorization of Hengli Hydraulic Company. Due to the continuous development of the product, the information in this brochure is not specific to the specific conditions or applicability of the industry, thus, Hengli does not take any responsibility for any incomplete or inaccurate description.