



# M-SEW 6...type Solenoid Ball Valve



## M-SEW6...3XJ...type

Size 6

Max. Working Pressure: 420/630 bar

Max. Flow: 25 L/min

### Contents

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

### Features

- Direct-acting solenoid ball valve
- Mounting face as per DIN24 340 A ISO 4401 and CETOP-RP 121H
- Free of leakage
- Switching flexibility in high-pressure state
- Replace the coil, can take pressure operation
- Solenoid coil can rotate for 90 degrees
- Manual emergency operation available

## Function and configuration

### M-SEW6 2-position 2/3-way solenoid ball valve

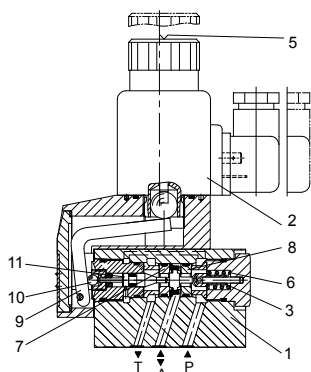
M-SEW6 type valve is a solenoid actuation directional seat valve. It controls start, stop and flow direction.

The valve consists of valve body (1), Solenoid (2), and valve element (3).

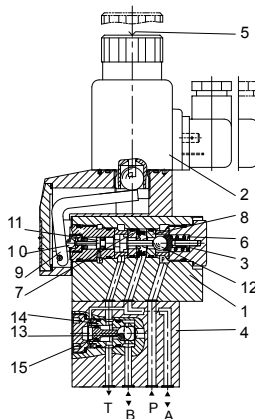
In the initial position, the spool is pressed to the seat by the spring (6). And in the switching position, it is pressed by the solenoid (2). The force of the solenoid (2) acts by the angled lever (9) and ball (10) on the push bar (11) of the two-side seal, the chamber between the two sealing elements is connected to port P. Thus the valve element is pressure-compensated in relation to the actuating force (solenoid or spring). It means that the valve can be used up to 630 bar.

The manual emergency button (5) allows for the switching of the valve without solenoid energization.

Make sure that the specified maximum flow is not exceeded. If necessary, use a throttle insert to limit the flow.



**M-3SEW6 2-position 2/3-way solenoid ball valve**



**M-4SEW6 2-position 4-way solenoid ball valve**

### M-SEW6 2-position 4-way solenoid ball valve

With a sandwich plate, the Plus-1 plate, under the 3/2 directional seat valve, the function of a 4/2 directional seat valve is achieved.

#### Function of the Plus-1 plate:

##### Initial position:

when the Solenoid is not energized, pretension of spring (6) keeps valve element (12) on valve seat (8) on the right, oil port P is closed and port A connected to T; pressure oil supplied from oil port P push steel ball (13) to valve seat (14), upon which oil port P is connected to B and A connected to T; besides, a control oil line is connected from oil port A acts on the big area of control piston (15), which can be used for unloading to oil tank.

##### Switching position:

after the Solenoid is energized, oil port P is connected to A; pressure oil from the pump goes through the control oil line connected from port A and acts on the big area of control piston (15); steel ball (13) is pushed to the other side of valve seat (14), thus oil port P is connected to A and B connected to T.

### Cartridge restriction choke (model M-.SEW6.3XJ/.../B...)

To restrict flow through the valve, a restriction choke can be installed.

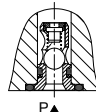
Restriction choke is installed on port P.



### Cartridge type one-way valve (model M-.SEW6.3XJ/.../P)

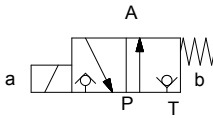
Cartridge type one-way valve allows oil flow in from port P and it is closed for reverse flowing.

One-way valve installed on port P.

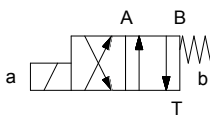


## Spool symbols

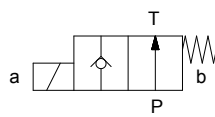
Type M-3SEW6U-3XJ/..



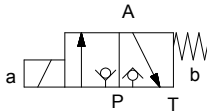
Type M-4SEW6D-3XJ/..



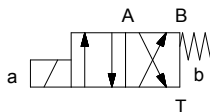
Type M-2SEW6P-3XJ/..



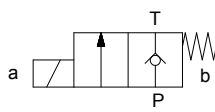
Type M-3SEW6C-3XJ/..



Type M-4SEW6Y-3XJ/..



Type M-2SEW6N-3XJ/..



## Specification

M - SEW 6 - 3XJ / M N									
2 work ports	= 2								Further details in clear text
3 work ports	= 3								
4 work ports	= 4								
Solenoid ball valve									No code = NBR seals V = FKM seals
Diameter 6	=6								No code = Without cartridge one-way valve, without cartridge restriction choke P= Without Cartridge check valve B12 = Orifice Φ1.2 mm B15 = Orifice Φ1.5 mm B18 = Orifice Φ1.8 mm B20 = Orifice Φ2.0 mm B22 = Orifice Φ2.2 mm
Spool symbols									
30J ~ 39J series	=3XJ								
Work pressure to 420 bar	=420								K4 = Without plug Z4 = With square plug Z5L= Square plug with light
Work pressure to 630 bar	=630								
Coil replaceable (air gap type) Solenoid	=M								
12VDC	= G12								
24VDC	= G24								
110VDC	= G110								
205VDC	= G205								
220VDC	= G220								
110VAC (Need to take rectifying plug Z5)	=W110R								
220VAC (Need to take rectifying plug Z5)	=W220R								
With manual emergency button	=N9								

# Technical data

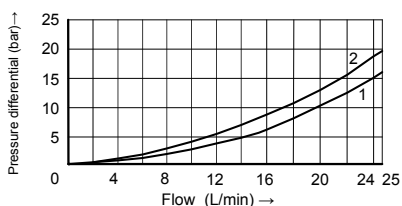
Installation position			Optional
Environment temperature		°C	-30 to +50 (NBR seal)
			-20 to +50 (FKM seal)
Weight	Two two-way Solenoidic directional valve	Kg	1.5
	Two three-way Solenoidic directional valve	Kg	1.5
	Two four-way Solenoidic directional valve	Kg	2.3
Max operation pressure	Port P, A, B	bar	420
	Port T		100
Max flow		L/min	25
Fluid			Mineral oil suitable for NBR and FKM seal
			Phosphate ester for FKM seal
Fluid temperature range		°C	-30 to +50 (NBR seal)
			-20 to +50 (FKM seal)
Viscosity range		mm <sup>2</sup> /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 )			
Allowed voltage (deviation)				%				+10 ~ -15							
Required power				W				30							
Continuous power-on time				%				100							
Switching time in compliance with ISO 6403															
Pressure bar	Flow L/min	DC							AC50HZ						
		on/ms (without oil tank pressure)				off/ms			on/ms (without oil tank pressure)				off/ms		
		U	C	D	Y	U, C	D, Y	U	C	D	Y	U, C	D, Y		
140	25	25	30	25	30	10	10	30	40	30	40	35	35		
280	25	25	30	25	30	10	10	35	45	35	45	40	40		
320	25	25	35	25	35	10	10	35	50	35	50	40	40		
420	25	25	35	25	35	10	10	40	50	40	50	50	50		
Switching frequency						Time/h		Up to 15000							
IP rating as per DIN 40050						IP65									
Max coil temperature						°C		+150							

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

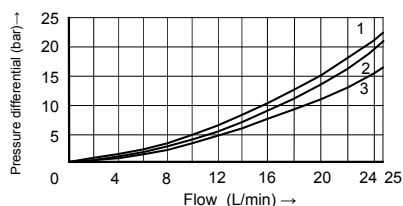
**$\Delta p$ - $q_v$  characteristic curves**  
2-position 2-way solenoid ball valve



1 M-2SEW6N ..., P to T

2 M-2SEW6P ..., P to T

**$\Delta p$ - $q_v$  characteristic curves**  
2-position 3-way solenoid ball valve

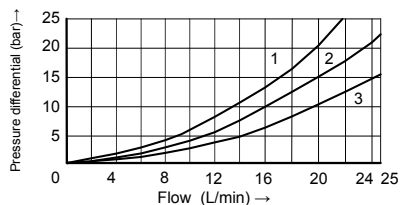


1 M-3SEW6<sup>U</sup> ..., A to T

2 M-3SED6U ..., P to A

3 M-3SED6C ..., P to A

**$\Delta p$ - $q_v$  characteristic curves**  
2-position 4-way solenoid ball valve

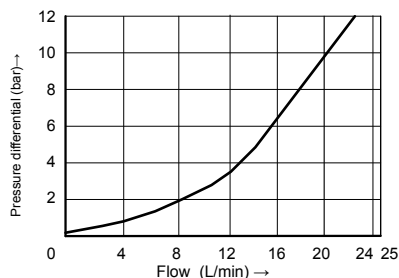


1 M-4SEW6<sup>D</sup> ..., A to T

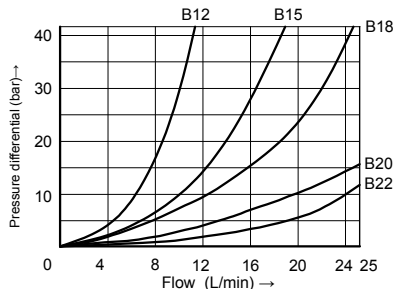
2 M-4SEW6<sup>D</sup> ..., P to A

3 M-4SEW6<sup>D</sup> ..., P to B, B to T

**$\Delta p$ - $q_v$  characteristic curves**  
Cartridge check valve

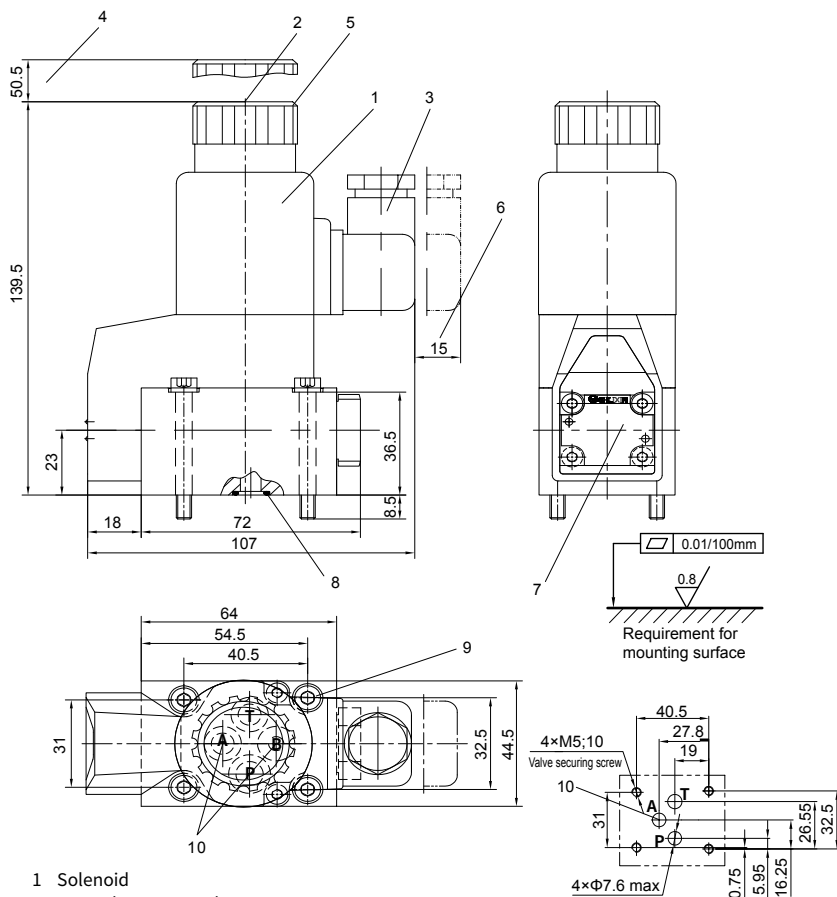


**$\Delta p$ - $q_v$  characteristic curves**  
Cartridge type restriction choke



## Unit dimensions

### · 2-position 2-way, 2-position 3-way solenoid ball valve



- 1 Solenoid
- 2 Manual emergency button
- 3 Plug as per DIN43650 (can rotate for 90 degrees)
- 4 Remove space needed for Solenoid coil.
- 5 Lock nut, tightening torque  $M_A=4Nm$
- 6 Remove space
- 7 Name plate.
8. Oil port A and B use O ring  $9.25 \times 1.78$ , P uses O-ring  $10 \times 2$
9. Valve securing screw:  $M5 \times 45$  GB/T70.1- class 10.9, Tightening torque  $M_A=8.9Nm$
- 10 2-position 2-way directional valve has oil port A and B which are blind holes;  
3/2 directional poppet valve has oil port A and B which are blind holes.

## Unit dimensions

### ·2-position 4-way solenoid ball valve

