



# M-SEW 10...type Solenoid Ball Valve



## M-SEW10...1XJ...type

Size 10  
Max. Working Pressure: 420/630 bar  
Max. Flow: 40 L/min

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### Features

- Direct-acting solenoid ball valve
- Mounting face as per DIN24 340 A  
ISO 4401 and CETOP-RP 121H
- Free of leakage
- Keeping switching flexibility in  
high-pressure state
- DC Solenoid of removable coil
- Solenoid coil can rotate for 90 degrees
- Optional manual emergency operation

# Function and configuration

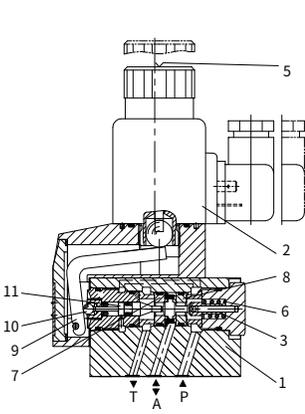
## M-SEW10 2-position 3-way solenoid ball valve

M-SEW10 type valve is a solenoid actuation directional seat valve, it controls start, stop and flow direction. The valve main consists of valve body (1), Solenoid (2), and valve element(3).

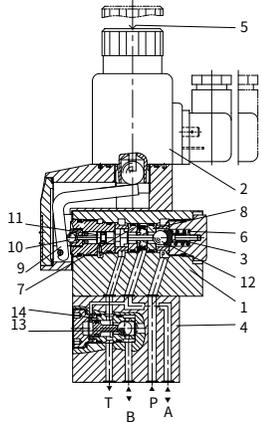
In the initial position, the spool is pressed to the seat by the spring(6), and by the solenoid(2) in the switching position. The force of the solenoid(2) acts by the angled lever(9) and the ball(10) on the push bar(11) with two-side seal. The chamber between the two sealing elements is connected to 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-3SEW10 2-position TEE solenoid ball valve**



**M-4SEW10 2-position 4-way solenoid ball valve**

## M-4SEW10 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:

#### 1). Initial position:

when the Solenoid is not energized, pretention 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; control oil line is connected from oil port A acts on the larger area of control piston (12), which can be used for unloading to oil tank.

#### 2). 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 larger area of control piston (12); 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.

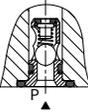
### Cartridge restriction choke (model M-.SEW10.1XJ/./B...)

To restrict flow through the valve, a restriction choke can be installed. Restriction choke is installed on port P.



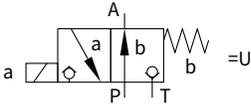
### Cartridge type one-way valve (model M-.SEW10.1XJ/./P)

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.

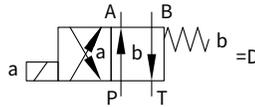


# Spool symbols

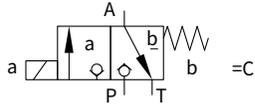
Type M-3SEW10U-1XJ/..



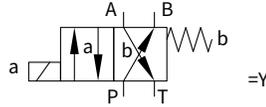
Type M-4SEW10D-1XJ/..



Type M-3SEW10C-1XJ/..



Type M-4SEW10Y-1XJ/..



# Specification

M	SEW	10	-	1XJ	/	M	N	/	*
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3 work ports	= 3									Further details in clear text
4 work ports	= 4									
Solenoid ball valve										No code = NBR seals V = FKM seals
Nominal size 10	=10									No code = Without cartridge one-way valve, without cartridge restriction choke
Spool symbols										P= Without Cartridge check valve
10J ~ 19J series (10J to 19J: unchanged installation and connection dimensions)				=1XJ						B12 = Orifice $\Phi$ 1.2 mm B15 = Orifice $\Phi$ 1.5 mm B18 = Orifice $\Phi$ 1.8 mm B20 = Orifice $\Phi$ 2.0 mm B22 = Orifice $\Phi$ 2.2 mm
Work pressure to 420bar										
Work pressure to 630bar										
Replaceable coil (air gap type) Solenoid									=M	
12VDC										K4 = Without plug
24VDC										Z4 = With square plug
110VDC										Z5L = Square plug with light
205VDC										
220VDC										
110VAC										
220VAC										
With manual override										=N9

## Technical data

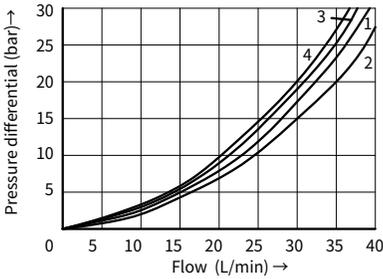
Installation position		Optional	
Environment temperature		°C	-30 to +50 (NBR seal) -20 to +50 (FKM seal)
Weight	Two tee Solenoidic directional valve		kg
	2.0 Two four-way Solenoidic directional valve		
Max operation pressure	Port P, A, B	bar	420
	Port T		100
Max flow	L/min	40	
Fluid		Mineral oil suitable 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									
		U	C	D	Y	U, C	D, Y	U	C	D	Y	U	C	D	Y
140	40	20	40	20	40	12	17	20	40	20	40	60	45	40	50
280	40	25	45	20	45	12	17	20	45	25	45	60	45	45	55
320	40	25	45	20	45	12	17	25	45	25	45	60	45	45	55
420	40	30	45	20	50	12	17	25	45	25	50	60	45	45	55
Switching frequency		Time/h		Up to 15000											
IP rating as per DIN 40050		IP65													
Max coil temperature		°C		+150											

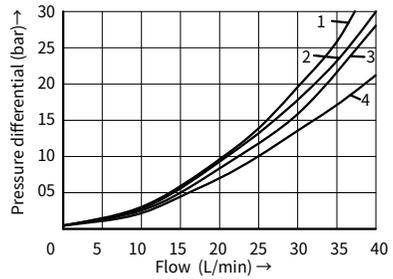
# Characteristic curves (Measured at $t=40^{\circ}\text{C}\pm 5^{\circ}\text{C}$ , using HLP46)

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



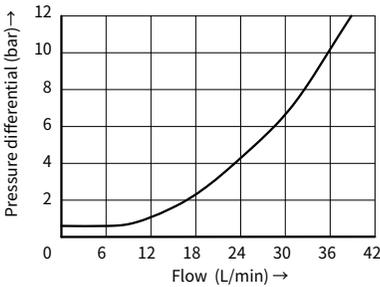
- 1 M-3SEW 10 C ..., P to A
- 2 M-3SEW 10 C ..., A to T
- 3 M-3SEW 10 U ..., P to A
- 4 M-3SEW 10 U ..., A to T

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

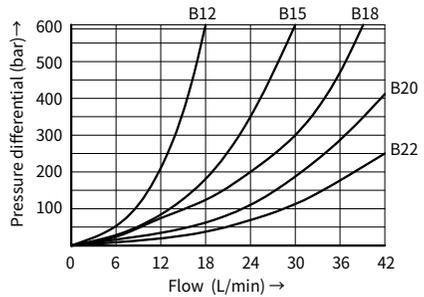


- 1 M-3SEW 10<sup>D</sup><sub>Y</sub> ..., A to T
- 2 M-3SEW 10<sup>D</sup><sub>Y</sub> ..., P to A
- 3 M-3SEW 10<sup>D</sup><sub>Y</sub> ..., P to B
- 4 M-3SEW 10<sup>D</sup><sub>Y</sub> ..., B to T

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

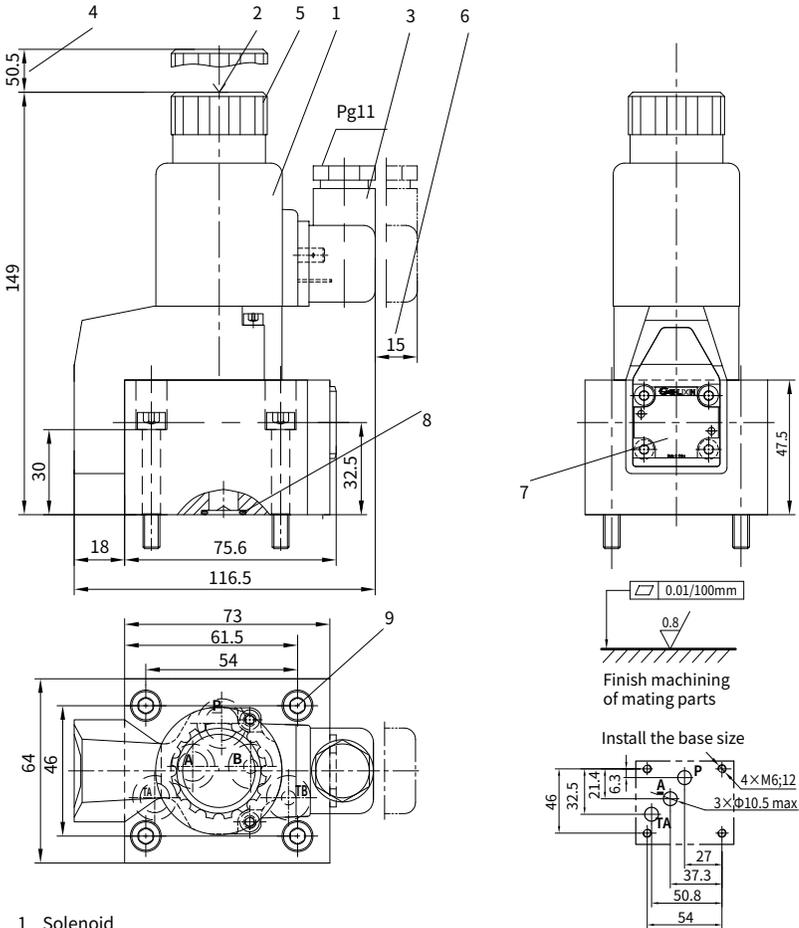


**$\Delta p$ - $q_v$  characteristic curves  
Cartridge type restriction choke**



## Unit dimensions

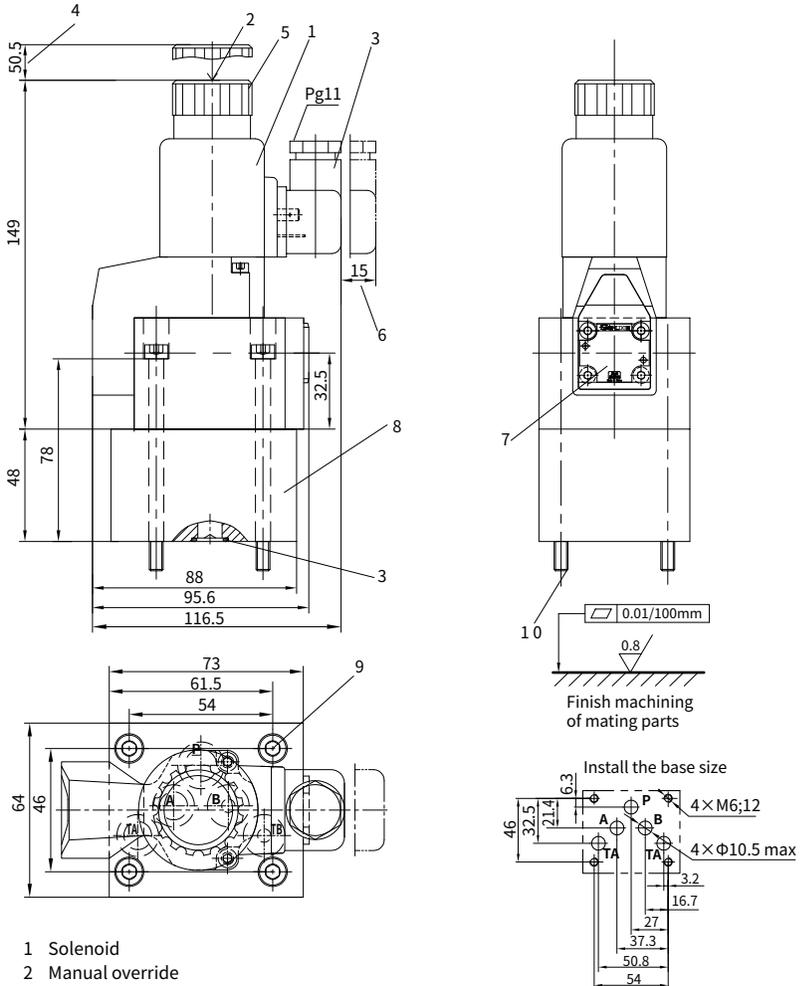
### ·2-position 3-way solenoid ball valve



- 1 Solenoid
- 2 Manual override
- 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. B. TA use O-ring 12×2, Oil port P uses O-ring 14×2
- 9 Valve securing screw, M6×40 GB/T70.1- class 10.9, Tightening torque  $M_A=15.5Nm$

## Unit dimensions

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



- 1 Solenoid
- 2 Manual override
- 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 Connecting valve body
- 9 Oil port A,B,TA use O-ring 12x2, Oil port P uses O-ring 14x2
- 10 Valve securing screw, M6x90 GB/T70.1- class 10.9, Tightening torque  $M_A=15.5Nm$