

# 01 Series Modular Valves

## Type of Modular Valve

Class	Name and Model Numbers	Graphic Symbols	Page	Class	Name and Model Numbers	Graphic Symbols	Page
Pressure Control Valves	Solenoid Operated Directional Valve (S-) DSG-01-***-70 E-DSG-01-***-D*-70 T-DSG-01-***-D24*-70 G-DSG-01-***-51		★	Flow Control Valves	Throttle Valves (for "P-Line") MSP-01-50		F-29
	Relief Valves (for "P-Line") MBP-01-***-70		F-12		Throttle Valves (for "T-Line") MST-01-50		F-29
	Relief Valves (for "A-Line") MBA-01-***-70		F-12		Check and Throttle Valves (for "P-Line") MSCP-01-30		F-30
	Relief Valves (for "B-Line") MBB-01-***-70		F-12		Throttle and Check Valves (for "A-Line", Meter-out) MSA-01-X-70		F-31
	Reducing Valves (for "P-Line") MRP-01-***-70		F-14		Throttle and Check Valves (for "A-Line", Meter-in) MSA-01-Y-70		F-31
	Reducing Valves (for "A-Line") MRA-01-***-70		F-14		Throttle and Check Valves (for "B-Line", Meter-out) MSB-01-X-70		F-31
	Reducing Valves (for "B-Line") MRB-01-***-70		F-14		Throttle and Check Valves (for "B-Line", Meter-in) MSB-01-Y-70		F-31
	Two Pressure Reducing Valves (for "P-Line") MRDP-01-***-10		F-16		Throttle and Check Valves (for "A&B-Lines", Meter-out) MSW-01-X-70		F-31
	Brake Valves MBR-01-***-30		F-18		Throttle and Check Valves (for "A&B-Lines", Meter-in) MSW-01-Y-70		F-31
	Sequence Valves (for "P-Line") MHP-01-***-70		F-19	Directional Control Valves	Check Valves (for "P-Line") MCP-01-***-70		F-33
Flow Control Valves	Counterbalance Valves (for "A-Line") MHA-01-***-70		F-19		Check Valves (for "A-Line") MCA-01-***-70		F-33
	Counterbalance Valves (for "B-Line") MHB-01-***-70		F-19		Check Valves (for "B-Line") MCB-01-***-70		F-33
	Pressure Switch Valves (for "P-Line") MJP-01-***-10		F-22		Check Valves (for "T-Line") MCT-01-***-70		F-33
	Pressure Switch Valves (for "A-Line") MJA-01-***-10		F-22		Check Valves (for "A&B-Line") MCW-01-***-70		F-33
	Pressure Switch Valves (for "B-Line") MJB-01-***-10		F-22		Anti-Cavitation Valves MAC-01-30		F-35
	Pressure Switch Valves (for "A&B-Line") MJW-01-J*-10		F-22		Pilot Operated Check Valves (for "A-Line") MPA-01-***-70		F-36
	Flow Control Valves (for "P-Line") MFP-01-10		F-25		Pilot Operated Check Valves (for "B-Line") MPB-01-***-70		F-36
	Flow Control and Check Valves (for "A-Line", Meter-out) MFA-01-X-10		F-25		Pilot Operated Check Valves (for "A&B-Lines") MPW-01-***-70		F-36
	Flow Control and Check Valves (for "A-Line", Meter-in) MFA-01-Y-10		F-25	Modular Plates and Mounting Bolts	End Plates (Blocking Plates) MDC-01-A-30		F-38
	Flow Control and Check Valves (for "B-Line", Meter-out) MFB-01-X-10		F-25		End Plates (Bypass plates) MDC-01-B-30		F-38
	Flow Control and Check Valves (for "B-Line", Meter-in) MFB-01-Y-10		F-25		Connecting Plates (for "P&A-Lines") MDS-01-PA-30		F-38
	Flow Control and Check Valves (for "A&B-Lines", Meter-out) MFW-01-X-10		F-25		Connecting Plates (for "P&B-Lines") MDS-01-PB-30		F-38
	Flow Control and Check Valves (for "A&B-Lines", Meter-in) MFW-01-Y-10		F-25		Connecting Plates (for "A&T-Lines") MDS-01-AT-30		F-38
	Temperature Compensated Throttle and Check Valves (for "A-Line", Throttle-out) MSTA-01-X-10		F-27		Base Plates MMC-01-***-40		F-39
	Temperature Compensated Throttle and Check Valves (for "B-Line", Meter-out) MSTB-01-X-10		F-27		Bolt Kits MBK-01-***-70		F-41
	Temperature Compensated Throttle and Check Valves (for "A&B-Lines", Meter-out) MSTW-01-X-10		F-27				

★ Please refer to the catalog page of "E: Directional Control Valves"

# Throttle and Check Modular Valves

## Specifications

Model Numbers	Max. Operating Pressure MPa	Max. Flow L/min
MS *-01- *-70	35	80

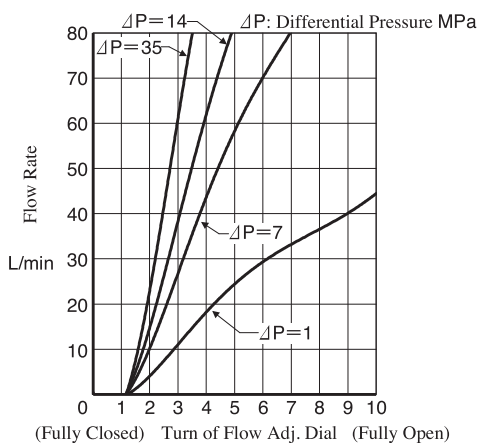
## Model Number Designation

MSW	-01	-X	Y	-70
Series Number	Valve Size	Direction of Flow ("A" Line)	Direction of Flow ("B" Line)	Design Number
MSA: Throttle and Check Valve for A-Line	01	X: Meter-out Y: Meter-in	—	70
MSB: Throttle and Check Valve for B-Line		—	X: Meter-out Y: Meter-in	
MSW: Throttle and Check Valve for A&B-Lines		X: Meter-out Y: Meter-in		
		X: Meter-out Y: Meter-in	Y: Meter-in X: Meter-out	

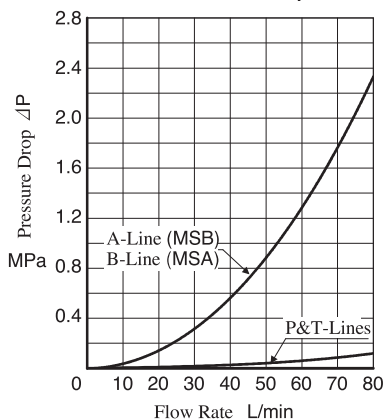
## Typical Performance Characteristics

Hydraulic Fluid: Viscosity 35 mm<sup>2</sup>/s, Specific Gravity 0.850

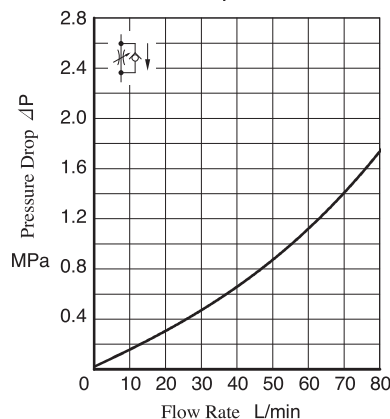
Metered Flow vs. Dial Position



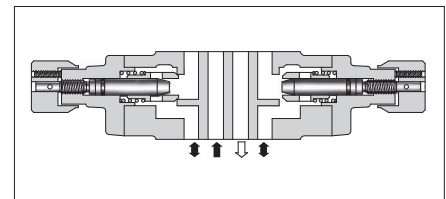
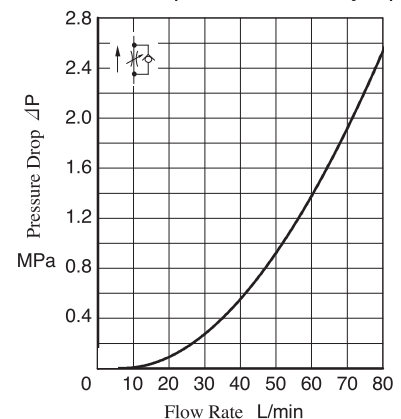
Pressure Drop



Pressure Drop for Free Flow



Pressure Drop at Throttle Fully Open



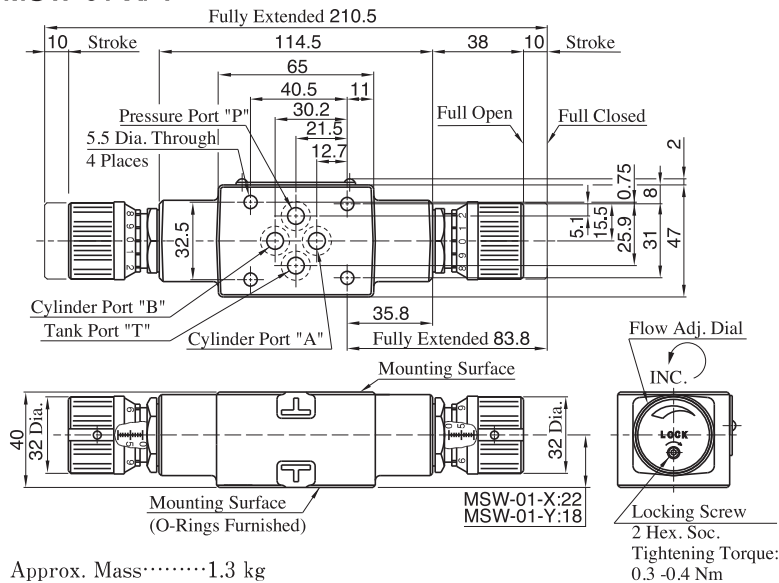
Graphic Symbols

Meter-out	Meter-in
<b>MSA-01-X</b>	<b>MSA-01-Y</b>
<b>MSB-01-X</b>	<b>MSB-01-Y</b>
<b>MSW-01-X</b>	<b>MSW-01-Y</b>
Meter-out • Meter-in	Meter-in • Meter-out
<b>MSW-01-XY</b>	<b>MSW-01-YX</b>

## Instructions

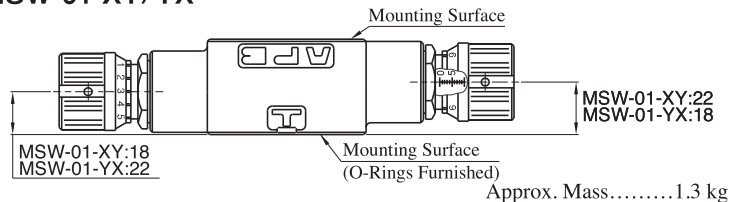
- To make flow rate adjustment, loosen locking screw for the dial and turn the flow adjustment dial clockwise. For a decrease of flow turn the dial clockwise. Be sure to re-tighten the locking screw firmly after the adjustment of the flow rate.

### MSW-01-X/Y



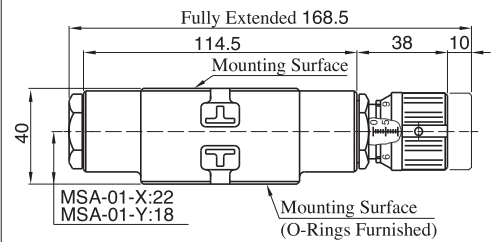
Approx. Mass.....1.3 kg

### MSW-01-XY/YX



For other dimensions, refer to "MSW-01-X/Y" in the drawing above.

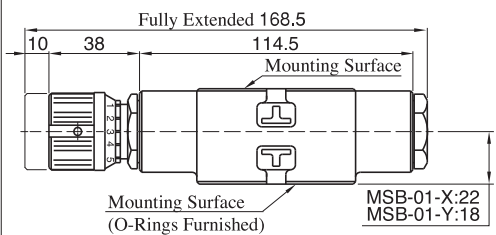
### MSA-01-X/Y



Approx. Mass.....1.15 kg

For other dimensions, refer to "MSW-01" in the drawing left.

### MSB-01-X/Y

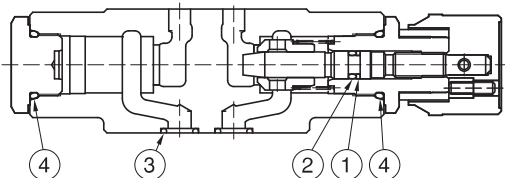


Approx. Mass.....1.15 kg

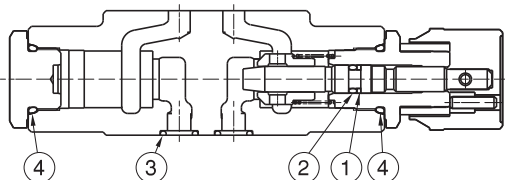
For other dimensions, refer to "MSW-01" in the drawing left.

### List of Seals

#### MSA-01, MSB-01, MSW-01



#### MSA-01-X



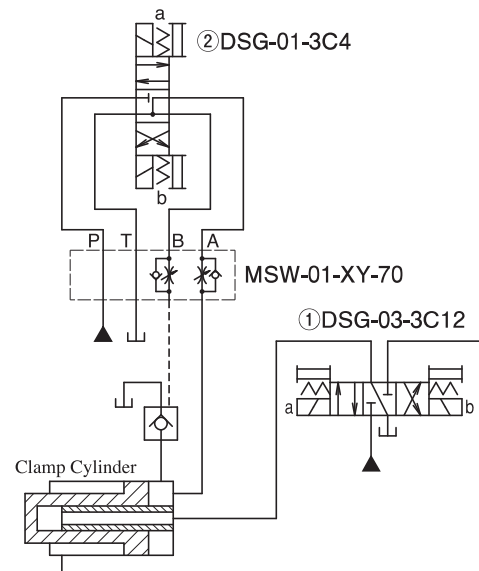
#### MSA-01-Y

- MSB-01: Flow control part is built in the left side.
- MSW-01: Flow control part is built in the both left and right sides.

Item	Name of Parts	Part Numbers	Qty.	
			MSA,MSB	MSW
1	Back-up Ring	BR JIS B 2401-4-T2-P6	1	2
2	O-Ring	OR NBR-70-1 P6-N	1	2
3	O-Ring	OR NBR-90 P9-N	4	4
4	O-Ring	OR NBR-90 P18-N	2	2

### Application

- Circuit of Clamp Cylinder for Injection Molding Machine



### Operation Sequence

Clamp Cylinder	Advance	End Point Pressurization	Decompression	Retreat
Solenoid Operated Directional Valve ①	Sol.a ON	→	Center Position	Sol.b ON
Solenoid Operated Directional Valve ②	Sol.b ON	Sol.a ON	Sol.b ON	→