

03 Series Modular Valves

Type of Modular Valve

Class	Name and Model Numbers	Graphic Symbols	Page	Class	Name and Model Numbers	Graphic Symbols	Page	
Solenoid Operated Directional Valves	(S-) DSG-03-***-50 E-DSG-03-***-D-50 T-DSG-03-***-D24-50 G-DSG-03-***-51		★	Flow Control Valves	Temperature Compensated Throttle and Check Valves (for "A&B-Lines", Meter-out) MSTW-03-X-20		F-58	
	Pressure Control Valves	Relief Valves (for "P-Line") MBP-03-**-70			F-48	Throttle Valves (for "P-Line") MSP-03-30		F-60
Relief Valves (for "A-Line") MBA-03-**-70			F-48	Check and Throttle Valves (for "P-Line") MSCP-03-20		F-61		
Relief Valves (for "B-Line") MBB-03-**-70			F-48	Throttle and Check Valves (for "A-Line", Meter-out) MSA-03-X-70		F-62		
Relief Valves (for "A&B-Lines") MBW-03-**-70			F-48	Throttle and Check Valves (for "A-Line", Meter-in) MSA-03-Y-70		F-62		
Reducing Valves (for "P-Line") MRP-03-**-70			F-50	Throttle and Check Valves (for "B-Line", Meter-out) MSB-03-X-70		F-62		
Reducing Valves (for "A-Line") MRA-03-**-70			F-50	Throttle and Check Valves (for "B-Line", Meter-in) MSB-03-Y-70		F-62		
Reducing Valves (for "B-Line") MRB-03-**-70			F-50	Throttle and Check Valves (for "A&B-Lines", Meter-out) MSW-03-X-70		F-62		
Reducing Valves for Low Pressure Setting (for "P-Line") MRLP-03-10			F-52	Throttle and Check Valves (for "A&B-Lines", Meter-in) MSW-03-Y-70		F-62		
Reducing Valves for Low Pressure Setting (for "A-Line") MRLA-03-10			F-52	Directional Control Valves	Check Valves (for "P-Line") MCP-03-**-70		F-64	
Reducing Valves for Low Pressure Setting (for "B-Line") MRLB-03-10			F-52		Check Valves (for "A-Line") MCA-03-**-70		F-64	
Sequence Valves (for "P-Line") MHP-03-**-20			F-54		Check Valves (for "B-Line") MCB-03-**-70		F-64	
Counterbalance Valves (for "A-Line") MHA-03-**-20			F-54		Check Valves (for "T-Line") MCT-03-**-70		F-64	
Counterbalance Valves (for "B-Line") MHB-03-**-20			F-54		Check Valves (for "A&B-Lines") MCW-03-**-70		F-64	
Flow Control Valves		Flow Control Valves (for "P-Line") MFP-03-11			F-56	Check Valves (for "P&T-Lines") MCPT-03-P-**-T-10		F-66
	Flow Control and Check Valves (for "A-Line", Meter-in) MFA-03-X-11		F-56		Anti-Cavitation Valves MAC-03-10		F-67	
	Flow Control and Check Valves (for "A-Line", Meter-out) MFA-03-Y-11		F-56		Pilot Operated Check Valves (for "A-Line") MPA-03-**-70		F-68	
	Flow Control and Check Valves (for "B-Line", Meter-out) MFB-03-X-11		F-56		Pilot Operated Check Valves (for "B-Line") MPB-03-**-70		F-68	
	Flow Control and Check Valves (for "B-Line", Meter-in) MFB-03-Y-11		F-56		Pilot Operated Check Valves (for "A&B-Lines") MPW-03-**-70		F-68	
	Flow Control and Check Valves (for "A&B-Lines", Meter-out) MFW-03-X-11		F-56		Modular Plates and Mounting Bolts	End Plates (Blocking Plates) MDC-03-A-10		F-70
	Flow Control and Check Valves (for "A&B-Lines", Meter-in) MFW-03-Y-11		F-56			End Plates (Bypass Plates) MDC-03-B-10		F-70
	Temperature Compensated Throttle and Check Valves (for "A-Line", Meter-out) MSTA-03-X-20		F-58			Connecting Plates MDS-03-10		F-70
	Temperature Compensated Throttle and Check Valves (for "B-Line", Meter-out) MSTB-03-X-20		F-58			Base Plates MMC-03-T-**-21		F-71
				Bolt Kits MBK-03-**-10			F-73	

★ Refer to the relevant pages of catalog "E: DIRECTIONAL CONTROLS"

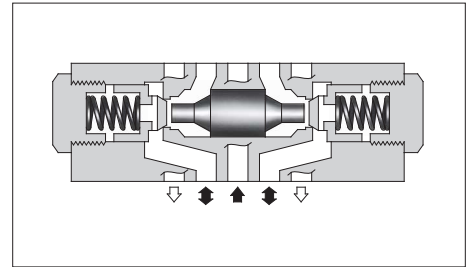
Pilot Operated Check Modular Valves

Specifications

Model Numbers		Max. Operating Pressure MPa	Max. Flow L/min
Standard	MP *-03-* -70	35	120
Low Pilot Pressure Control Type	MP *-03-* -L-70		

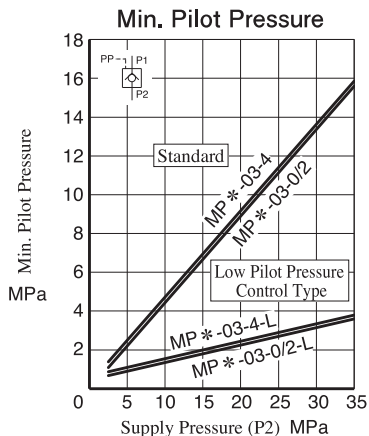
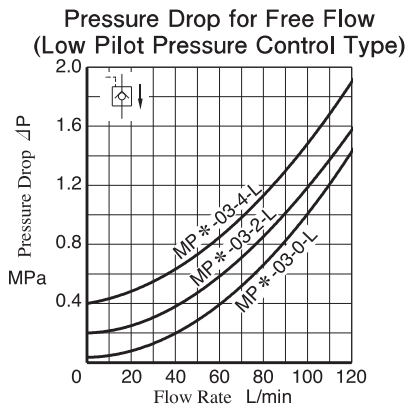
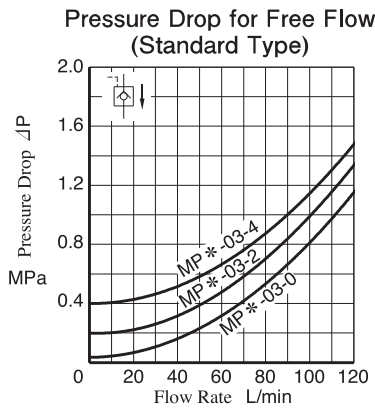
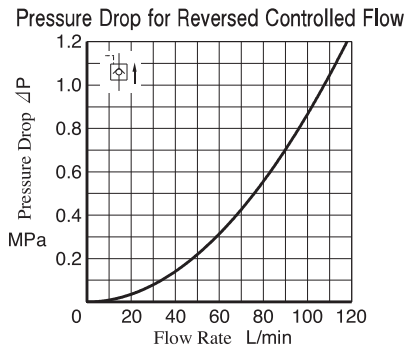
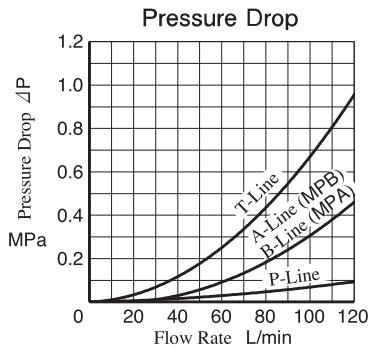
Model Number Designation

MPA	-03	-2	-L	-70
Series Number	Valve Size	Cracking Pressure MPa	Pilot Pressure Control Type	Design Number
MPA: Pilot Operated Check Valve for A-Line MPB: Pilot Operated Check Valve for B-Line MPW: Pilot Operated Check Valve for A&B-Lines	03	0: 0.035 2: 0.2 4: 0.4	None: Standard L: Low Pilot Pressure Control Type	70



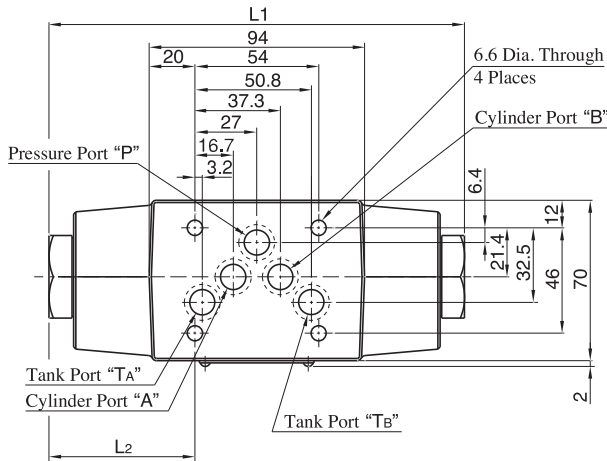
Typical Performance Characteristics

Hydraulic Fluid: Viscosity 35 mm²/s, Specific Gravity 0.850

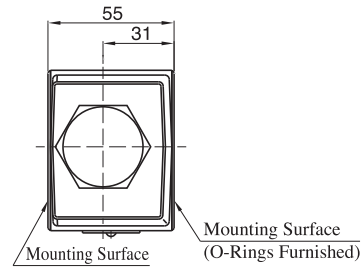


Model Numbers	Graphic Symbols	
MPA-03		
MPB-03		
MPW-03		

MPW-03

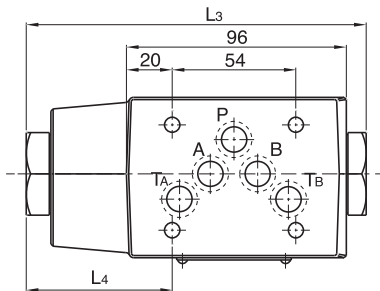


Model Numbers	L1	L2
MPW-03- *	177.4	61.7
MPW-03- *-L	181.4	63.7



Approx. Mass.....3.7 kg

MPA-03

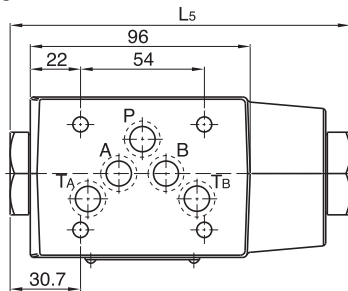


Model Numbers	L3	L4
MPA-03- *	146.4	61.7
MPA-03- *-L	148.4	63.7

Approx. Mass.....3.0 kg

For other dimensions, refer to "MPW-03" in the drawing above.

MPB-03



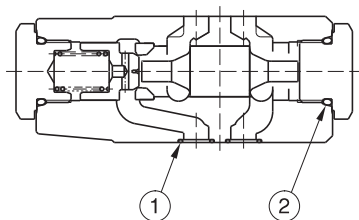
Model Numbers	L5
MPB-03- *	146.4
MPB-03- *-L	148.4

Approx. Mass.....3.0 kg

For other dimensions, refer to "MPW-03" in the drawing above.

List of Seals

MPA-03 MPB-03 MPW-03



MPA-03

- MPB-03: Check valve is assembled on the right side.
- MPW-03: Check valve is assembled on the both left and right side.

Item	Name of Parts	Part Numbers	Qty.
1	O-Ring	AS568-014 (NBR-90)	5
2	O-Ring	OR NBR-90 P24-N	2

Interchangeability in Installation between Current and New Design

The following models of 03 Series Modular Valves have changed to 70 design numbers model to operate higher pressure and modification for large flow use.

Name	Model Numbers
Relief Modular Valves	MB *-03- *-70
Reducing Modular Valves	MR *-03- *-70
Throttle and Check Modular Valves	MS *-03- *-70
Check Modular Valves	MC *-03- *-70
Pilot Operated Check Modular Valves	MP *-03- *- *-70

Major Changes

- (1) Max. Operating Pressure (35MPa) & Max. Flow have substantially increased respectively.
- (2) Selectable low pilot operation type as standard model for Pilot Operated Check Modular Valves.

Mounting Interchangeability

Yes

Mounting surface is not changed from current models.

Specifications

Max. Operating Pressure

Name	Current		New	
	Model Numbers	Max. Operating Pressure MPa	Model Numbers	Max. Operating Pressure MPa
Relief Modular Valves	MB *-03- *-30	31.5	MB *-03- *-70	35
Reducing Modular Valves	MR *-03- *-30	25	MR *-03- *-70	
Throttle and Check Modular Valves	MS *-03- *-40		MS *-03- *-70	
Check Modular Valves	MCP/MCT-03- *-10 MCA/MCB/MCW-03- *-20		MC *-03- *-70	
Pilot Operated Check Modular Valves	MP *-03- *-20		MP *-03- *-70	
	MP *-03- *-2001		MP *-03- *-L-70	

Max. Flow

Name	Current		New	
	Model Numbers	Max. Flow L/min	Model Numbers	Max. Flow L/min
Relief Modular Valves	MB *-03- *-30	70	MB *-03- *-70	120
Reducing Modular Valves	MR *-03- *-30	70	MR *-03-A-70	80
			MR *-03-B/C/H-70	120
Throttle and Check Modular Valves	MS *-03- *-40	120	MS *-03- *-70	160
Check Modular Valves	MCP/MCT-03- *-10 MCA/MCB/MCW-03- *-20	70	MC *-03- *-70	120
			Pilot Operated Check Modular Valves	
MP *-03- *-2001	MP *-03- *-70			
			MP *-03- *-L-70	

● Model Number Designation

Function Addition

Name	Model Numbers	Additional Functions
Pilot Operated Check Modular Valves	MP *-03- *-L-70	Low pilot operation type, selectable as standard product

Pressure Adjustment Range

Name	Current		New	
	Model Numbers	Pres. Adj. Range MPa	Model Numbers	Pres. Adj. Range MPa
Relief Modular Valves	MB *-03- *-30	B: ★-7 H: 3.5-31.5	MB *-03- *-70	B: ★-7 C: 3.5-14 K: 7-35
Reducing Modular Valves	MR *-03- *-30	B: 1-7 H: 3.5-24.5	MR *-03- *-70	A: ★-3.5 B: 1-7 C: 3.5-14 H: 7-31.5

Cracking Pressure

Name	Current		New	
	Model Numbers	Cracking Pressure MPa	Model Numbers	Cracking Pressure MPa
Check Modular Valves	MCP/MCT-03- *-10 MCA/MCB/MCW-03- *-20	0: 0.035 2: 0.2	MC *-03- *-70	0: 0.035 2: 0.2 2: 0.4
Pilot Operated Check Modular Valves	MP *-03- *-20 MP *-03- *-2001	2: 0.2 2: 0.4	MP *-03- *-70 MP *-03- *-L-70	0: 0.035 2: 0.2 4: 0.4

● Typical Performance Characteristics

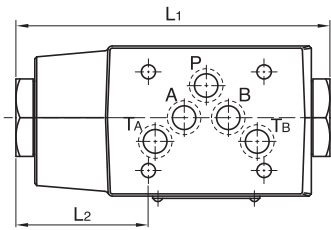
Characteristics of all models have been changed.

● Approx. Mass

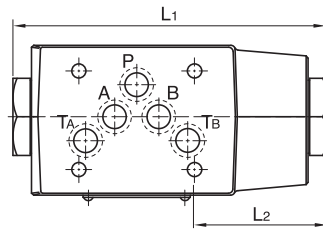
Name	Current		New	
	Model Numbers	Approx. Mass kg	Model Numbers	Approx. Mass kg
Relief Modular Valves	MBP/MBA/MBB-03- *-30	3.1	MBP/MBA/MBB-03- *-70	3.4
	MBW-03- *-30	3.8	MBW-03- *-70	4.0
Reducing Modular Valves	MR *-03- *-30	3.3	MR *-03- *-70	3.8
Throttle and Check Modular Valves	MSA/MSB-03- *-40	3.5	MSA/MSB-03- *-70	2.8
	MSW-03- *-40	3.7	MSW-03- *-70	3.5
Check Modular Valves	MCP-03- *-10	2.5	MCP-03- *-70	2.6
	MCA/MCB-03- *-20	3.5	MCA/MCB-03- *-70	3.0
	MCW-03- *-20	3.5	MCW-03- *-70	3.7
	MCT-03- *-10	2.8	MCT-03- *-70	3.0
Pilot Operated Check Modular Valves	MPA/MPB-03- *-20	3.5	MPA/MPB-03- *- *-70	3.0
	MPW-03- *-2001	3.5	MPW-03- *- *-70	3.7

(4) Check Modular Valves

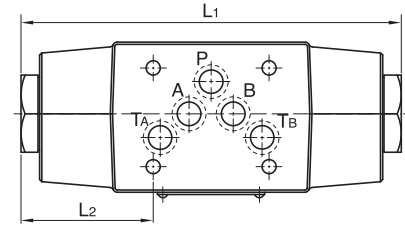
MCA-03



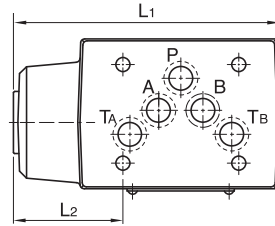
MCB-03



MCW-03



MCT-03

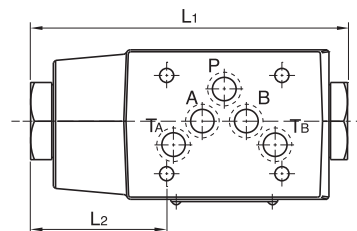


Model Numbers		L ₁	L ₂
Current	MCA/MCB-03- *-20	174	60
	MCW-03- *-20	174	60
	MCT-03- *-10	117	44
New	MCA/MCB-03- *-70	146.4	61.7
	MCW-03- *-70	177.4	61.7
	MCT-03- *-70	124	51

(5) Pilot Operated Check Modular Valves

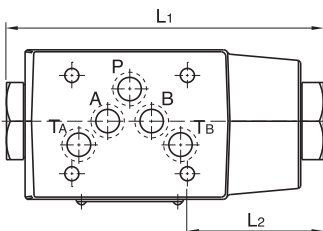
MPA-03- *

MPA-03- *-L



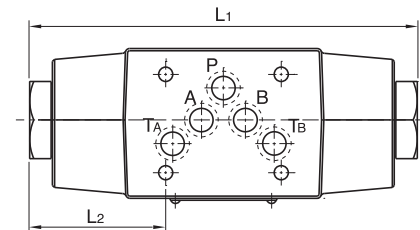
MPB-03- *

MPB-03- *-L



MPW-03- *

MPW-03- *-L



Model Numbers		L ₁	L ₂
Current	MPA/MPB-03- *-20	174	60
	MPW-03- *-20	174	60
	MPA/MPB-03- *-2001	178	62
	MPW-03- *-2001	178	62
New	MPA/MPB-03- *-70	146.4	61.7
	MPW-03- *-70	177.4	61.7
	MPA/MPB-03- *-L-70	148.4	63.7
	MPW-03- *-L-70	181.4	63.7