

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							
Pressure Control Valves	Relief Valves (for "P-Line") MBP-03-**-70		F-48	Flow Control Valves	Temperature Compensated Throttle and Check Valves (for "A&B-Lines", Meter-out) MSTW-03-X-20		F-58
	Relief Valves (for "A-Line") MBA-03-**-70		F-48		Throttle Valves (for "P-Line") MSP-03-30		F-60
	Relief Valves (for "B-Line") MBB-03-**-70		F-48		Check and Throttle Valves (for "P-Line") MSCP-03-20		F-61
	Relief Valves (for "A&B-Lines") MBW-03-**-70		F-48		Throttle and Check Valves (for "A-Line", Meter-out) MSA-03-X-70		F-62
	Reducing Valves (for "P-Line") MRP-03-**-70		F-50		Throttle and Check Valves (for "A-Line", Meter-in) MSA-03-Y-70		F-62
	Reducing Valves (for "A-Line") MRA-03-**-70		F-50		Throttle and Check Valves (for "B-Line", Meter-out) MSB-03-X-70		F-62
	Reducing Valves (for "B-Line") MRB-03-**-70		F-50		Throttle and Check Valves (for "B-Line", Meter-in) MSB-03-Y-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-out) MSW-03-X-70		F-62
	Reducing Valves for Low Pressure Setting (for "A-Line") MRLA-03-10		F-52	Directional Control Valves	Throttle and Check Valves (for "A&B-Lines", Meter-in) MSW-03-Y-70		F-62
	Reducing Valves for Low Pressure Setting (for "B-Line") MRLB-03-10		F-52		Check Valves (for "P-Line") MCP-03-**-70		F-64
	Sequence Valves (for "P-Line") MHP-03-**-20		F-54		Check Valves (for "A-Line") MCA-03-**-70		F-64
	Counterbalance Valves (for "A-Line") MHA-03-**-20		F-54		Check Valves (for "B-Line") MCB-03-**-70		F-64
	Counterbalance Valves (for "B-Line") MHB-03-**-20		F-54		Check Valves (for "T-Line") MCT-03-**-70		F-64
Flow Control Valves	Flow Control Valves (for "P-Line") MFP-03-11		F-56		Check Valves (for "A&B-Lines") MCW-03-**-70		F-64
	Flow Control and Check Valves (for "A-Line", Meter-in) MFA-03-X-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-Y-11		F-56		Anti-Cavitation Valves MAC-03-10		F-67
	Flow Control and Check Valves (for "B-Line", Meter-out) MFB-03-X-11		F-56		Pilot Operated Check Valves (for "A-Line") MPA-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 "B-Line") MPB-03-**-70		F-68
	Flow Control and Check Valves (for "A&B-Lines", Meter-out) MFW-03-X-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-in) MFW-03-Y-11		F-56	Modular Plates and Mounting Bolts	End Plates (Blocking Plates) MDC-03-A-10		F-70
	Temperature Compensated Throttle and Check Valves (for "A-Line", Meter-out) MSTA-03-X-20		F-58		End Plates (Bypass Plates) MDC-03-B-10		F-70
	Temperature Compensated Throttle and Check Valves (for "B-Line", Meter-out) MSTB-03-X-20		F-58		Connecting Plates MDS-03-10		F-70
					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"

Check Modular Valves

Specifications

Model Numbers	Max. Operating Pressure MPa	Max. Flow L/min
MCP-03-* -70	35	120
MCA-03-* -70		
MCB-03-* -70		
MCW-03-* -70		
MCT-03-* -70		

Model Number Designation

MCP	-03	-0	-70
Series Number	Valve Size	Cracking Pressure MPa	Design Number
MCP:Check Valve for P-Line MCA:Check Valve for A-Line MCB:Check Valve for B-Line MCW:Check Valve for A&B-Lines MCT:Check Valve for T-Line	03	0: 0.035 2: 0.2 4: 0.4	70

Instructions

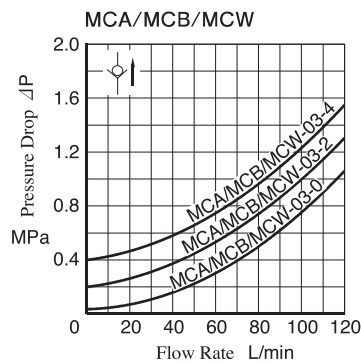
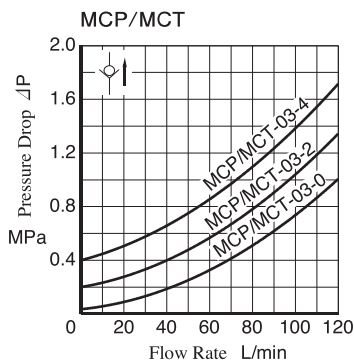
Tank Line Used

Check Valve function of MCT-03 is included in TA-Line.
Therefore, the tank line for a circuit that used this valve must be TA-Line.

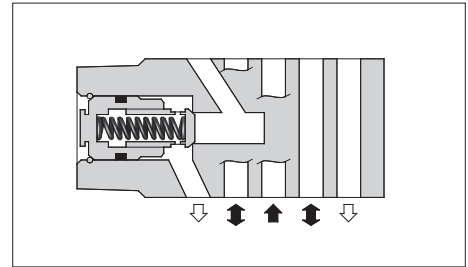
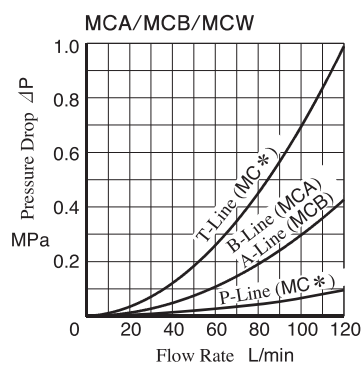
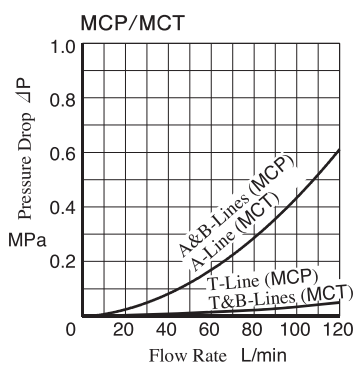
Typical Performance Characteristics

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

Pressure Drop for Free Flow

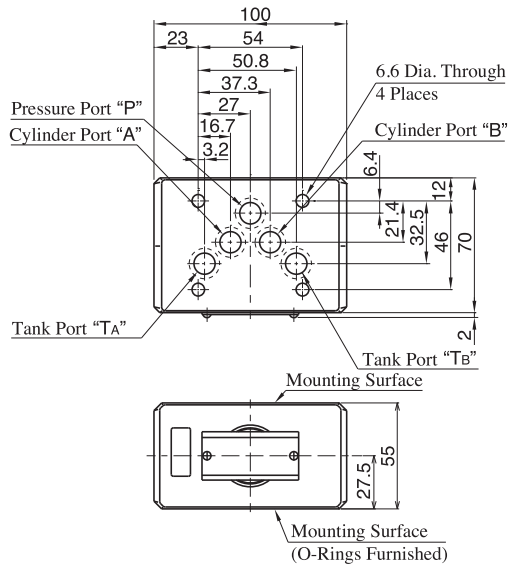


Pressure Drop



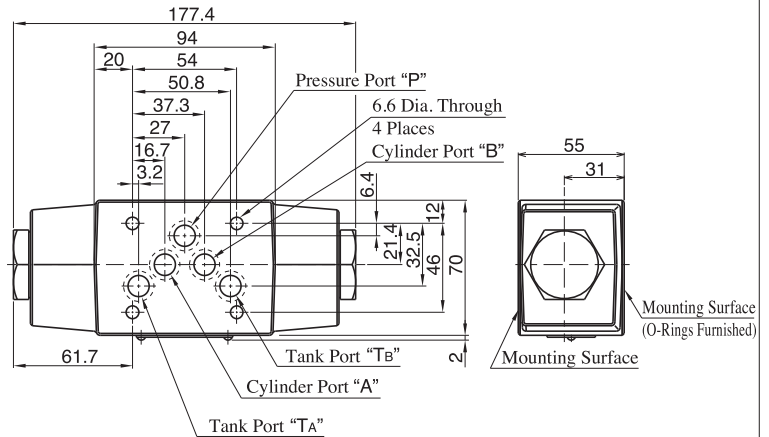
Model Numbers	Graphic Symbols	
MCP-03		
MCA-03		
MCB-03		
MCW-03		
MCT-03		

MCP-03



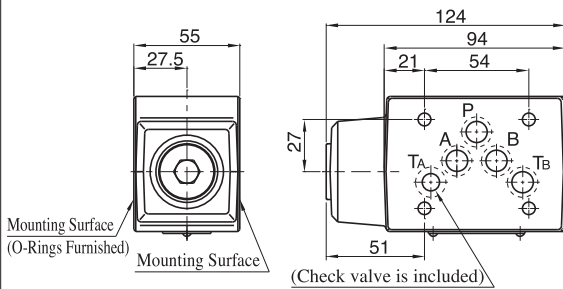
Approx. Mass.....2.6 kg

MCW-03



Approx. Mass.....3.7 kg

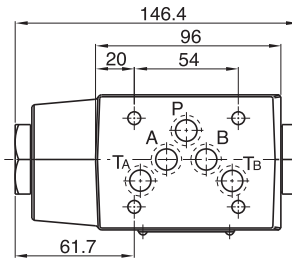
MCT-03



Approx. Mass.....3.0 kg

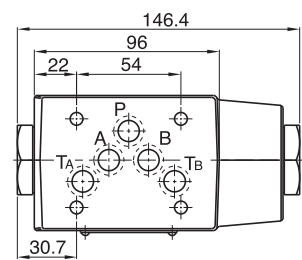
For other dimensions, refer to "MCW-03" in the drawing above.

MCA-03



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

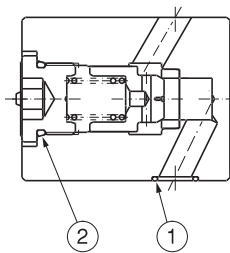
MCB-03



Approx. Mass.....3.0 kg

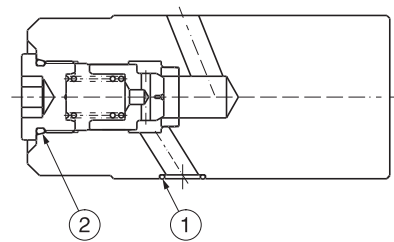
List of Seals

MCP-03



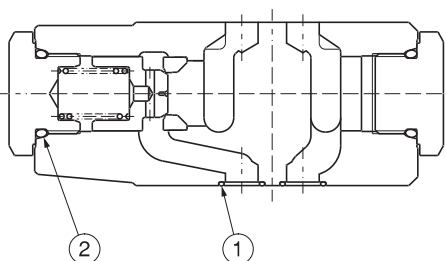
Item	Name of Parts	Part Numbers	Qty.
1	O-Ring	AS568-014 (NBR-90)	5
2	O-Ring	OR NBR-90 P21-N	1

MCT-03



Item	Name of Parts	Part Numbers	Qty.
1	O-Ring	AS568-014 (NBR-90)	5
2	O-Ring	OR NBR-90 P21-N	1

MCA-03 MCB-03 MCW-03



MCA-03

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

- MCB-03: Check valve is assembled on the right side.
- MCW-03: Check valve is assembled on the both sides.

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		MC *-03- *-70	
	MCA/MCB/MCW-03- *-20			
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	70	MC *-03- *-70	120
	MCA/MCB/MCW-03- *-20			
Pilot Operated Check Modular Valves	MP *-03- *-20		MP *-03- *-70	
	MP *-03- *-2001		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	2: 0.2 2: 0.4	MP *-03- *-70	0: 0.035 2: 0.2 4: 0.4
	MP *-03- *-2001		MP *-03- *-L-70	

● Typical Performance Characteristics

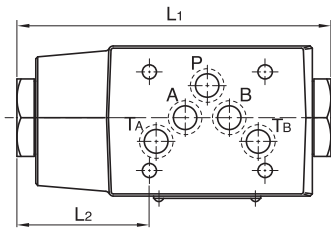
Characteristics of all models have been changed.

● Approx. Mass

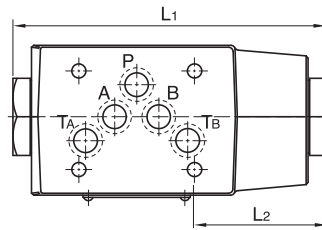
Name	Current		New	
	Model Numbers	Approx. Mass kg	Model Numbers	Approx. Mass kg
Relief Modular Valves	MBP/MBA/MBB-03- *-30	3.1	MBP/MBA/MBB-03- *-70	3.4
	MBW-03- *-30	3.8	MBW-03- *-70	4.0
Reducing Modular Valves	MR *-03- *-30	3.3	MR *-03- *-70	3.8
Throttle and Check Modular Valves	MSA/MSB-03- *-40	3.5	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

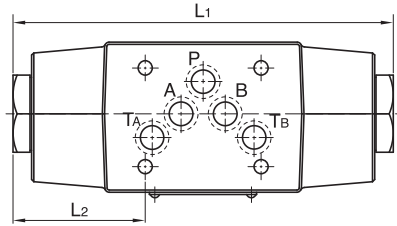
MCA-03



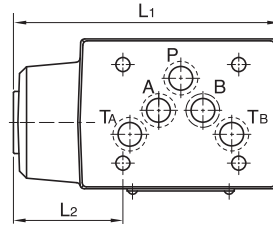
MCB-03



MCW-03



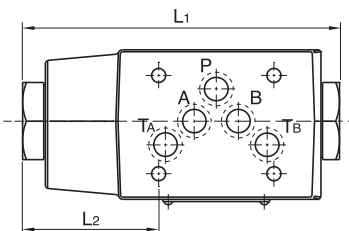
MCT-03



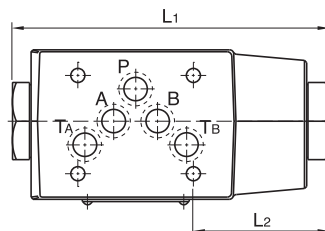
Model Numbers		L ₁	L ₂
Current	MCA/MCB-03- *-20	174	60
	MCW-03- *-20	174	60
	MCT-03- *-10	117	44
New	MCA/MCB-03- *-70	146.4	61.7
	MCW-03- *-70	177.4	61.7
	MCT-03- *-70	124	51

(5) Pilot Operated Check Modular Valves

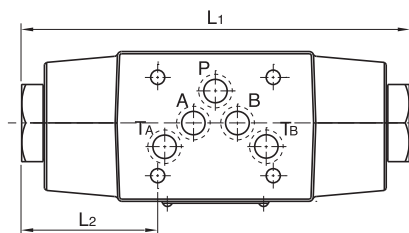
MPA-03- *
MPA-03- *-L



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