



Manual valve for chemical liquids

MMD³₄⁵02 Series

● Connection tube size: ø10, ø12, ø25, 3/8", 1/2", 3/4", 1"



Export controlled items

*Eligibility: MMD402, 502

Specifications

Item	MMD302	MMD402	MMD502
Working fluid	Chemical liquids, pure water, air, N ₂ gas (*1)		
Fluid temperature °C	5 to 90 (*2)		
Proof pressure MPa	1.2		
Working pressure (A→B)MPa	0 to 0.4		
Working pressure (B→A)MPa	0 to 0.4		
Valve seat leakagecm ³ /min	0 (water pressure)		
Back pressure MPa	0 to 0.4		
Ambient temperature°C	0 to 60		
Mounting orientation	Unrestricted		
Connection	O.D. ø10 tube connection (integrated fitting) O.D. ø12 tube connection (integrated fitting) O.D. 3/8" tube connection (integrated fitting) O.D. 1/2" tube connection (integrated fitting)	O.D. 3/4" tube connection (Integrated fitting)	O.D. ø25 tube connection (integrated fitting) O.D. 1" tube connection (integrated fitting)
Orifice size	ø6.3 ø6.4 ø7.5 Ø 8 ø9.4 ø9.5 ø10	ø14.7 ø15.9 ø16	ø20
Cv value	0.8 1.25 1.8	5	8
Weight kg	0.20	0.40	0.76

*1: Check the compatibility of product structural materials, working fluids and atmosphere.

*2: For use with hydrofluoric acid, or when the fluid temperature exceeds 40°C, consult with CKD.

*3: MMD*02 Series cannot be used for flow rate adjustment. Use it either fully closed or fully opened.

Part 3R
Part 2
Part 1
High pressure
Metal-free
Large bore size
PVC
Drainage
Part 3RN
Part 2
High pressure
Metal-free
Large bore size
Single unit
Air operated Integrated
Pilot
Manual
Electric
Manual
Manual Fine flow rate
Fine level Switch
Related products

Air operated valve
Manual valve
Drip prevention valve
Regulator
Flow rate adjusting valve

Always read the precautions on Intro Pages 7 to 14 before use.

MMD302 Series

How to order

●MMD302 Series (connection: $\phi 10$, 3/8" tube connection)

MMD302 - 10UP - 8 - U

Model No. Orifice diameter

① Connection ② Fluid

		① Connection										
		10US	10BUS	10UP	10BUP	10UA	10BUA	10UR	10BUR	10UK	10BUK	10BUW
		Super Type Pillar fitting Integrated		Super 300 Pillar fitting P series integrated		F-LOCK 20A Series Integrated fitting		F-LOCK 60 Series Integrated fitting		Final Lock Fitting Integrated		Flaretek Fitting Integrated
		$\phi 10 \times \phi 8$ tube connection 3/8" x 1/4" tube connection		$\phi 10 \times \phi 8$ tube connection 3/8" x 1/4" tube connection		$\phi 10 \times \phi 8$ tube connection 3/8" x 1/4" tube connection		$\phi 10 \times \phi 8$ tube connection 3/8" x 1/4" tube connection		$\phi 10 \times \phi 8$ tube connection 3/8" x 1/4" tube connection		$\phi 10 \times \phi 8$ tube connection 3/8" x 1/4" tube connection
Code	Description	Orifice size						$\phi 7.5$	$\phi 6.4$	$\phi 7.5$		$\phi 6.3$
Body material												
PFA: PFA molded body, PTFE: PTFE machined body		PFA	PFA	PFA	PFA	PFA	PFA	PFA	PFA	PFA	PFA	PTFE
		② Fluid										
U	General chemical liquids	●	●	●	●	●	●	●	●	●	●	●
P	For hydrofluoric acid	●	●	●	●	●	●	●	●	●	●	●

* Machined PTFE products will be manufactured on a per-order basis.

●Model No. for bottom mounting

MMD302 - ① - 8 - ② X

Bottom mounting

Part 3R	High pressure	Air operated valve
Part 2	Metal-free	
Part 1	Large bore size	
	PVC	
	Drainage	
Part 3RN	Manual valve	
Part 2	High pressure	Manual valve
	Metal-free	
	Large bore size	
	Single unit	Drip prevention valve
	Air operated Integrated	
	Pilot	Regulator
	Manual	
	Electric	
	Manual	Flow rate adjusting valve
	Manual Fine flow rate	
	Fine level Switch	
Related products		

How to order

●MMD302 Series (connection: $\phi 12$, 1/2" tube connection)

MMD302 - 12UR -10- U

Model No. Orifice diameter Fluid

① Connection

① Connection										
12US	15BUS	12UP	15BUP	12UA	15BUA	12UR	15BUR	12UK	15BUK	15BUW
Super Type Pillar fitting Integrated		Super 300 Pillar fitting P series integrated		F-LOCK 20A Series Integrated fitting		F-LOCK 60 Series Integrated fitting		Final Lock Fitting Integrated		Flaretek Fitting Integrated
$\phi 12 \times \phi 10$ tube connection	1/2" x 3/8" tube connection	$\phi 12 \times \phi 10$ tube connection	1/2" x 3/8" tube connection	$\phi 12 \times \phi 10$ tube connection	1/2" x 3/8" tube connection	$\phi 12 \times \phi 10$ tube connection	1/2" x 3/8" tube connection	$\phi 12 \times \phi 10$ tube connection	1/2" x 3/8" tube connection	1/2" x 3/8" tube connection
Orifice size						$\phi 10$		$\phi 9.5$		$\phi 10$
Body material						PFA molded body				

Code	Description	Orifice size
		$\phi 10$
		$\phi 9.5$
		$\phi 10$
		$\phi 9.4$

② Fluid

U	General chemical liquids	●	●	●	●	●	●
P	For hydrofluoric acid	●	●	●	●	●	●

●Model No. for bottom mounting

MMD302 - ① -10- ② X

Bottom mounting

Part3R	Part2	Part1	High pressure	Metar-free	Large bore size	Polyvinyl chloride	Drainage	Part3RN	Part2	High pressure	Metar-free	Large bore size	Single unit	Air operated Integrated	Regulator	Pilot	Manual	Flow rate adjusting valve	Electric	Manual	Manual Fine flow rate	Fine level Switch	Related products
			Air operated valve							Manual valve			Drip prevention valve										

MMD402 Series

How to order

● MMD402 Series

MMD402 - 20BUA -16- U

Model No. Instruction on orifice size

② Fluid

① Connection

① Connection					
20BUS	20BUP	20BUA	20BUR	20BUK	20BUW
Super-type pillar integrated fitting	Super 300 type Pillar fitting P Series integrated	F-LOCK 20A Series Integrated fitting	F-LOCK 60 Series Integrated fitting	Final Lock Integrated fitting	Flaretek Integrated fitting
3/4" x 5/8" tube connection					
Code	Description	Orifice size			
		ø16		ø15.9	ø16
	Body material	PFA	PTFE	PFA	PTFE

Code	Description	Orifice size			
		ø16	ø15.9	ø16	ø14.7
	Body material	PFA	PTFE	PFA	PTFE

② Fluid					
Code	Description	20BUS	20BUP	20BUA	20BUR
U	General chemical liquids	●	●	●	●
P	For hydrofluoric acid	●	●	●	●

* Machined PTFE products will be manufactured on a per-order basis.

● Model No. for bottom mounting

MMD402 - ① -16- ② X

Bottom mounting

- Part 3R
- Part 2
- Part 1
- High pressure
- Metal-free
- Large bore size
- PVC
- Drainage
- Part 3RN
- Part 2
- High pressure
- Metal-free
- Large bore size
- Single unit
- Air operated Integrated
- Pilot
- Manual
- Electric
- Manual
- Manual Fine flow rate
- Fine level Switch
- Related products

How to order

● MMD502 Series

MMD502 - 25BUP -20- U

Model No. Orifice diameter Fluid

① Connection

		① Connection									
		25US	25BUS	25UP	25BUP	25BUA	25UR	25BUR	25UK	25BUK	25BUW
		Super Type Pillar fitting Integrated		Super 300 Pillar fitting P series integrated		F-LOCK 20A Series Fitting Integrated	F-LOCK 60 Series Integrated fitting		Final Lock Fitting Integrated		Flaretek Fitting Integrated
		ø25 x ø22 tube connection	1" x 7/8" tube connection	ø25 x ø22 tube connection	1" x 7/8" tube connection	1" x 7/8" tube connection (*1)	ø25 x ø22 tube connection	1" x 7/8" tube connection	ø25 x ø22 tube connection	1" x 7/8" tube connection	1" x 7/8" tube connection
Code	Description	ø20									
Body material											
PFA: PFA molded body, PTFE: PTFE machined body		PFA	PFA	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE
② Fluid											
U	General chemical liquids	●	●	●	●	●	●	●	●	●	●
P	For hydrofluoric acid	●	●	●	●	●	●	●	●	●	●

* Machined PTFE products will be manufactured on a per-order basis.

● Model No. for bottom mounting

MMD502 - ① -20- ② X

Bottom mounting

⚠ Precautions for model No. selection

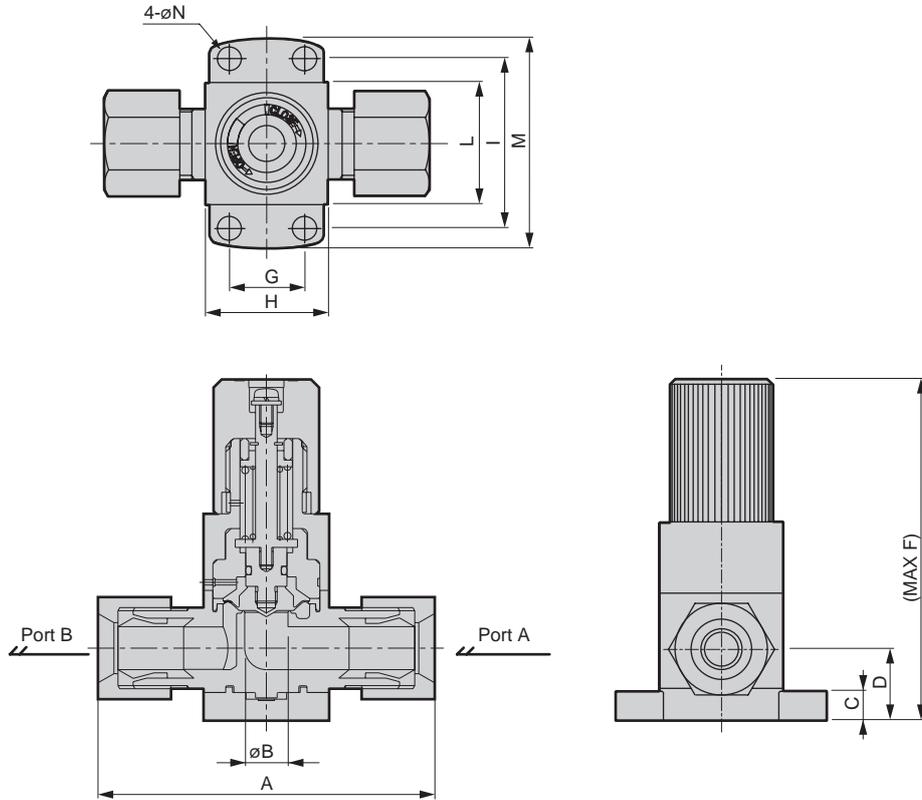
*1: Can also be used for ø25 x ø22 tube connection.

Part3R	Part2	Part1	High pressure	Part3RN	Part2	Single unit	Pilot	Electric	Manual	Manual Fine flow rate	Fine level Switch	Related products
			Air operated valve			Drip prevention valve	Regulator	Flow rate adjusting valve				
			High pressure			Air operated	Manual					
			Manual valve			Integrated	Regulator					
			High pressure			Manual valve						
			Manual valve			Manual valve						
			High pressure			Manual valve						
			Manual valve			Manual valve						
			High pressure			Manual valve						
			Manual valve			Manual valve						

Dimensions

● Integrated fitting

- MMD302-
- MMD402-
- MMD502-



Model No.	C	D	F	G	H	I	L	M	N
MMD302	8.5	21	106	22	38	50	36	62	7
MMD402	9	27	134	28	47	64	46	82	9
MMD502	10	35	167	40	60	78	60	96	9

MMD3 (10mm)

*1 (Connector No.)	A	B
10US	86	8
10BUS	86	8
10UP	86	8
10BUP	86	8
10UA	78	8
10BUA	78	8
10UR	110	7.5
10BUR	114	6.4
10UK	96	7.5
10BUK	96	7.5
10BUW	97	6.3

MMD3 (12mm)

*1 (Connector No.)	A	B
12US	95	10
15BUS	95	10
12UP	94	10
15BUP	94	10
12UA	86	10
15BUA	86	10
12UR	110	9.5
15BUR	114	9.5
12UK	102	10
15BUK	102	10
15BUW	103	9.4

MMD4

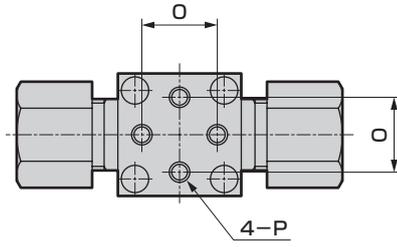
*1 (Connector No.)	A	B
20BUS	124	16
20BUP	118	16
20BUA	108	16
20BUR	134	15.9
20BUK	119	16
20BUW	122	14.7

MMD5

*1 (Connector No.)	A	B
25BUS	147	20
25BUP	147	20
25BUP	146	20
25BUP	146	20
25BUA	140	20
25UR	159	20
25BUR	162	20
25BUP	141	20
25BUK	141	20
25BUW	156	20

Dimensions

● Bottom mounting



Model No.	O	P
MMD302	22±0.3	M6 depth 9
MMD402	28±0.3	M8 depth 10
MMD502	40±0.3	M8 depth 13

Air operated valve	Part3R	High pressure	Metal-free	Large bore size	Polyvinyl chloride	Drainage	Part3RRN	Manual valve	Part2	High pressure	Metal-free	Large bore size	Drip prevention valve	Single unit	Air operated integrated	Regulator	Pilot	Manual	Electric	Manual	Manual Fine flow rate	Manual Fine flow rate	Fine level Switch	Related products
	Part2																							
	Part1																							
	High pressure																							



Stainless steel body manual valve for chemical liquids

MMD³₄⁵02 Series

Stainless steel body with stable seal structure

Ideal for explosion-proof environments such as solvents



Specifications

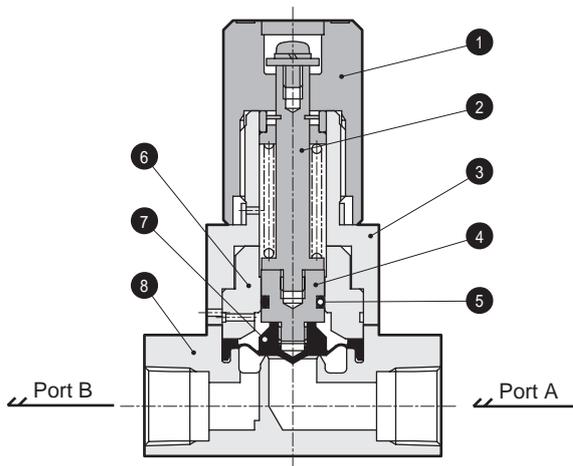
Item	MMD302	MMD402	MMD502
Working fluid	Chemical liquids, pure water, air, N ₂ gas (*1)		
Fluid temperature °C	5 to 90		
Proof pressure MPa	1.2		
Working pressure (A→B)MPa	0 to 0.4		
Working pressure (B→A)MPa	0 to 0.4		
Valve seat leakagecm ³ /min	0 (water pressure)		
Back pressure MPa	0 to 0.4		
Ambient temperature°C	0 to 60		
Mounting orientation	Unrestricted		
Connection	Rc1/4, Rc3/8 ø3/8" SUS tube Double barbed fitting for ø3/8" (*2) ø1/2" SUS tube Double barbed fitting for ø1/2" (*2)	Rc1/2 ø3/4" SUS tube Double barbed fitting for ø3/4" (*2)	ø1" SUS tube Double barbed fitting for ø1" (*2)
Orifice size	ø8, ø10	ø16	ø20
Weight kg	0.45	0.88	1.3

*1: Check the compatibility of product structural materials, working fluids and atmosphere.

*2: For double barbed fitting, fluorine lubricant is applied to the sliding surface between the front ferrule and fitting body.

*3: MMD*02 Series cannot be used for flow rate adjustment. Use it either fully closed or fully opened.

Internal structure and parts list



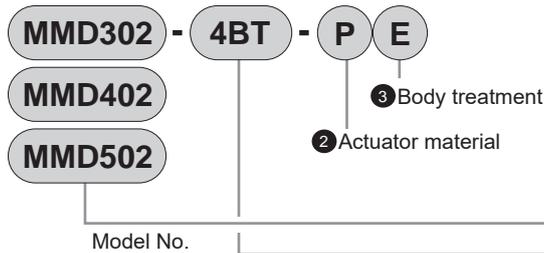
Part No.	Part name	Material (by actuator material)	
		P	A
1	Knob	PE	A5056
2	Shaft	SUS304	SUS304
3	Cover	PP	A5056
4	Rod	PP	
5	O-ring	EPDM	
6	Diaphragm holder	PP	A5056
7	Diaphragm	PTFE	
8	Body	SUS316L	

The material and structure may vary depending on the model number. Contact CKD for details.

Always read the precautions on Intro Pages 7 to 14 before use.

How to order

●MMD*02 Series



		MMD302					MMD402			MMD502							
		8	3BT	6S	10	4BT	8S	15	6BT	12S	8BT	16S					
1 Connection																	
Description		Rc 1/4			3/8" x1.0 SUS tube 3/8"tube connection Double barbed fitting			Rc 3/8		1/2" x1.24 SUS tube 1/2"tube connection Double barbed fitting		Rc 1/2		3/4" x1.24 SUS tube 3/4"tube connection Double barbed fitting		1" x 1.65SUS tube 1"tube connection Double barbed fitting	
Orifice size		ø8			ø10			ø16			ø20						
2 Actuator material																	
P	PP	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
A	A5056	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
3 Body treatment																	
Blank	None	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
E	With electrolytic polishing	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	

Products that have electropolished bodies must be manufactured on a case-by-case basis.

⚠ Precautions for model No. selection

*Consult with CKD for connections other than the ones listed.

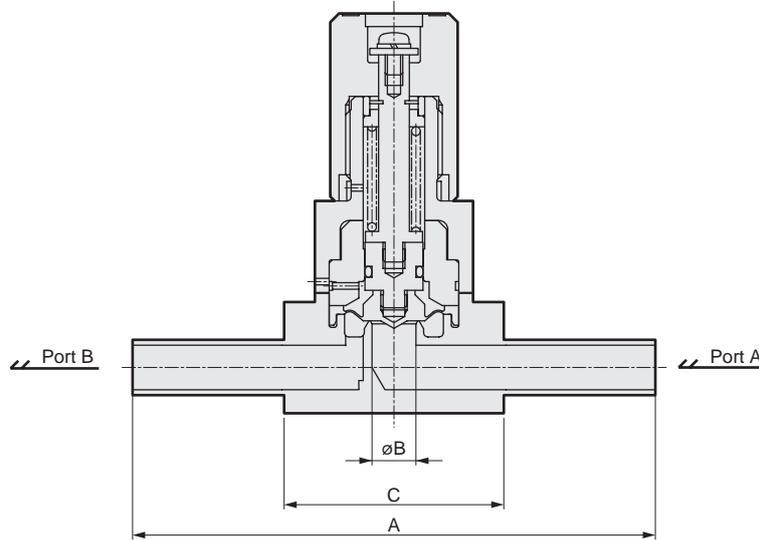
*Connection Rc is not compatible with electrolytic polishing specifications.

Part3R	Part2	Part1	High pressure	Metal-free	Large bore size	Polyvinyl chloride	Drainage	Part3RN	Part2	High pressure	Metal-free	Large bore size	Single unit	Air operated	Pilot	Manual	Electric	Manual	Manual/Fine flow rate	Fine level Switch	Related products
			Air operated valve							Manual valve			Drip prevention valve	Integrated	Regulator		Flow rate adjusting valve				

Dimensions

●SUS tube

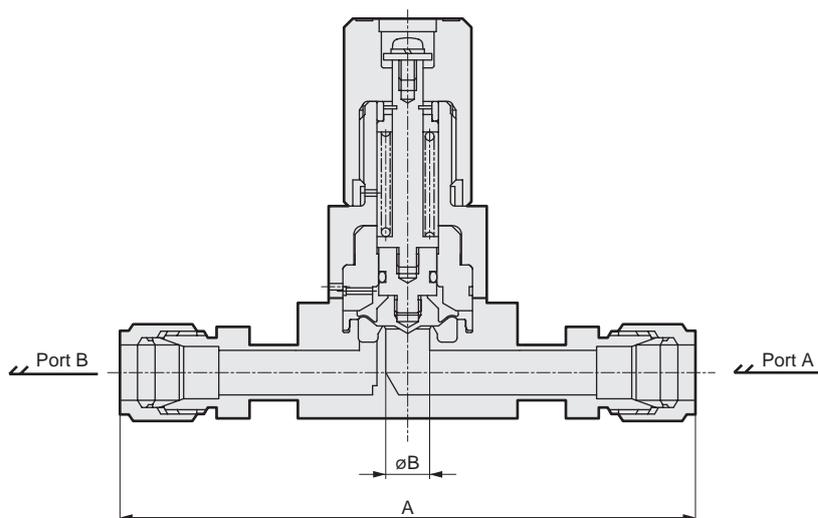
- MMD302-3BT/4BT
- MMD402-6BT



Model No.	A	B	C
MMD302-3BT	116	8	50
MMD302-4BT	116	10	50
MMD402-6BT	126	16	61

●Double barbed fitting

- MMD302-6S/8S
- MMD402-12S

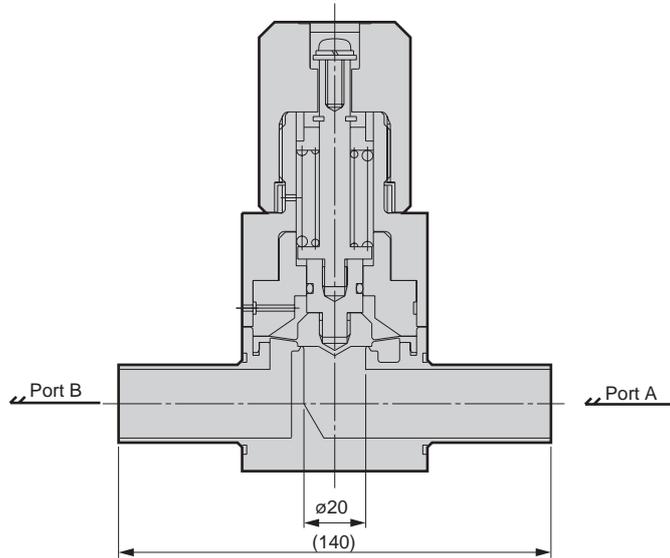


Model No.	A	B
MMD302-6S	116	8
MMD302-8S	130	10
MMD402-12S	150	16

Air operated valve	Part3R	High pressure	Metal-free	Large bore size	Polyvinyl chloride	Drainage
	Part2					
	Part1					
Manual valve	Part3RN	High pressure	Metal-free	Large bore size	Drip prevention valve	Air operated integrated
	Part2					
	Regulator					
	Flow rate adjusting valve					
Related products	Flow rate adjusting valve	Electric	Manual	Manual/Fine flow rate		
	Flow rate adjusting valve	Manual	Manual	Manual/Fine flow rate		
	Flow rate adjusting valve	Manual	Manual	Manual/Fine flow rate		

Dimensions

- SUS tube
- MMD502-8BT



Part3R	Part2	Part1	Air operated valve	High pressure	Metal-free	Large bore size	Polyvinyl chloride	Drainage	Part3RR	Manual valve	Part2	High pressure	Metal-free	Large bore size	Single unit	Air operated integrated	Regulator	Pilot	Manual	Flow rate adjusting valve	Electric	Manual	Manual Fine flow rate	Fine level Switch	Related products