



Air operated valve for chemical liquids (3-port valve)

AMG³⁴⁵02 Series

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



Export controlled items

*Eligibility: AMG402 and 502 only

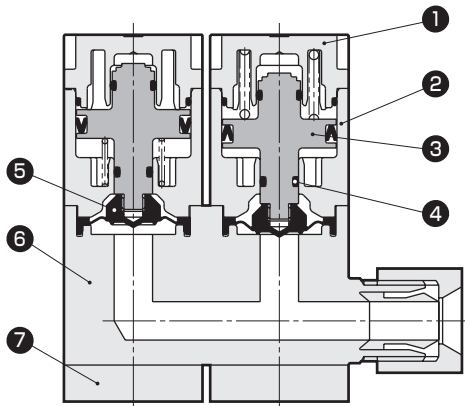
Specifications

Item		AMG302	AMG402	AMG502
Working fluid		Chemical liquids, pure water, air, N ₂ gas (*1)		
Fluid temperature °C		5 to 90 (For high temperature: 5 to 160) (*5)		5 to 90 (*5)
Proof pressure MPa		1.0		
Working pressure (A→B) MPa		0 to 0.3 (*4...High pressure specification)		
Working pressure (B→A) MPa		0 to 0.1 (*4...High pressure specification)		
Valve seat leakage cm ³ /min		0 (water pressure)		
Back pressure MPa		0 to 0.1 (*4...High pressure specification)		
Ambient temperature °C		0 to 60		
Frequency		30 cycles/min. or less	20 cycles/min. or less	
Mounting orientation		Unrestricted		
Connection		O.D. ø10/ø12 tube connection (integrated fitting) O.D. 3/8", 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 to ø10 (*3)	ø14.7 to ø16 (*3)	ø20
Operating section	Operating pressure MPa	0.3 to 0.5 (0.3 to 0.35 for high temperature)		
	Operating port	Rc1/8 (*2)		
Weight kg		0.44	1.0	2.1

*1: Check the compatibility of product structural materials, working fluids and atmosphere.
 *2: Use a resin fitting for connection to the operating port. (When using a metal fitting, select one with reinforcing ring. However, a reinforcing ring cannot be selected for those with fluid code P for nitric acid and hydrofluoric acid.)
 *3: Check the orifice of each connection in How to order.
 *4: Refer to page 64 for high-pressure specifications.
 *5: For use with hydrofluoric acid, or when the fluid temperature exceeds 40°C, consult with CKD.

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

Internal structure and parts list



Part No.	Part name	Material (by fluid code)		
		Standard/Y	M	P
1	Cover	PPS		PP
2	Cylinder	PPS		PP
3	Piston rod	PPS		PVDF
4	O-ring	FKM	EPDM	FKM
5	Diaphragm	PTFE		
6	Body	PTFE		
7	Mounting plate	PPS		PP

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

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 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				

AMG302 Series

How to order

●AMG302 Series (connection: ø10, 3/8" tube connection)

AMG302 - **10BUS** - **0** - **M** **L**

Model No. ① Connection ② Option ③ Fluid ④ Port A position

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
ø10 x ø8 tube connection	3/8" x 1/4" tube connection	ø10 x ø8 tube connection	3/8" x 1/4" tube connection	ø10 x ø8 tube connection	3/8" x 1/4" tube connection	ø10 x ø8 tube connection	3/8" x 1/4" tube connection	ø10 x ø8 tube connection	3/8" x 1/4" tube connection	3/8" x 1/4" tube connection
ø8						ø7	ø6	ø8		ø6.3
PTFE machined body										
●	●	●	●	●	●	●	●	●	●	●
●	●	●	●	●	●	●	●	●	●	●
●	●	●	●	●	●	●	●	●	●	●
●	●	●	●	●	●	●	●	●(*1)	●(*1)	●
●	●	●	●	●	●	●	●	●(*1)	●(*1)	●
●	●	●	●	●	●	●	●	●(*1)	●(*1)	●
●	●	●	●	●	●			●(*1)	●(*1)	
●	●	●	●	●	●	●	●	●	●	●
●	●	●	●	●	●	●	●	●	●	●

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

●Model No. of operating port with reinforcing ring

AMG302 - **①** - **②** - **③** **④** **R**

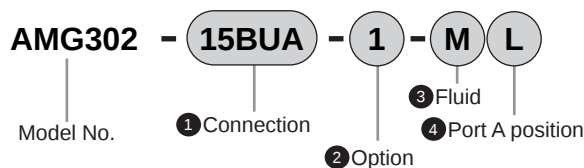
With reinforcing ring

⚠ Precautions for model No. selection

- *1: Since the Final Lock Fitting Nut and operating air piping may interfere, be sure to check the dimensions before making the selection.
- *2: It cannot be used for nitric acid or hydrofluoric acid.
- *3: If P is selected in ③, R with reinforcing ring cannot be selected.

How to order

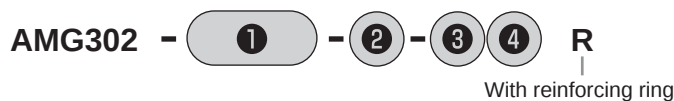
●AMG302 Series (connection: ø12,1/2" tube connection)



		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	
		ø12 x ø10 tube connection	1/2" x 3/8" tube connection	ø12 x ø10 tube connection	1/2" x 3/8" tube connection	ø12 x ø10 tube connection	1/2" x 3/8" tube connection	ø12 x ø10 tube connection	1/2" x 3/8" tube connection	ø12 x ø10 tube connection	1/2" x 3/8" tube connection	1/2" x 3/8" tube connection	
Code	Description	Orifice size		ø10				ø9		ø10		ø9.4	
Body material			PTFE machined body										
② Option													
0	ON/OFF only		●	●	●	●	●	●	●	●	●	●	●
1	With flow rate adjustment		●	●	●	●	●	●	●	●	●	●	●
6	With indicator		●	●	●	●	●	●	●	●	●	●	●
③ Fluid													
Blank	Standard		●	●	●	●	●	●	●	●	●(*1)	●(*1)	●
M	For ammonia		●	●	●	●	●	●	●	●	●(*1)	●(*1)	●
P	For nitric acid, for hydrofluoric acid (*3)		●	●	●	●	●	●	●	●	●(*1)	●(*1)	●
Y	For high temperature (5 to 160°C) (*2)		●	●	●	●	●	●			●(*1)	●(*1)	
④ Port A position													
Blank	Right		●	●	●	●	●	●	●	●	●	●	●
L	Left		●	●	●	●	●	●	●	●	●	●	●

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

●Model No. of operating port with reinforcing ring



⚠ Precautions for model No. selection

- *1: Since the Final Lock Fitting Nut and operating air piping may interfere, be sure to check the dimensions before making the selection.
- *2: It cannot be used for nitric acid or hydrofluoric acid.
- *3: If P is selected in ③, R with reinforcing ring cannot be selected.

Part3R	Part2	Part1	High pressure	Metalfree	Large bore size	Polyvinyl chloride	Drainage	Part3RN	Part2	High pressure	Metalfree	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				

AMG402 Series

How to order

●AMG402 Series

AMG402 - **20BUP** - **0** - **M** **L**

Model No. ① Connection ② Option ③ Fluid ④ Port A position

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 Fitting Integrated
3/4"8" tube connection					

Code	Description	Orifice size		ø16	ø15	ø16	ø14.7
Body material		PTFE machined body					

② Option							
0	ON/OFF only	●	●	●	●	●	●
1	With flow rate adjustment	●	●	●	●	●	●
6	With indicator	●	●	●	●	●	●

③ Fluid							
Blank	Standard	●	●	●	●	●	●
M	For ammonia	●	●	●	●	●	●
P	For nitric acid, for hydrofluoric acid (*2)	●	●	●	●	●	●
Y	For high temperature (5 to 160°C) (*1)	●	●	●		●	

④ Port A position							
Blank	Right	●	●	●	●	●	●
L	Left	●	●	●	●	●	●

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

●Model No. of operating port with reinforcing ring

AMG402 - **①** - **②** - **③** **④** **R**

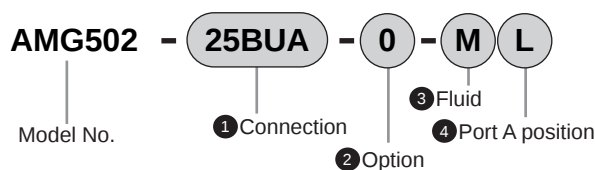
With reinforcing ring

⚠ Precautions for model No. selection

*1: It cannot be used for nitric acid or hydrofluoric acid.

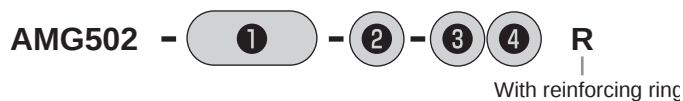
*2: If P is selected in ③, R with reinforcing ring cannot be selected.

●AMG502 Series

[illegible]

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

●Model No. of operating port with reinforcing ring



Precautions for model No. selection

*1: Can also be used for $\varnothing 25 \times \varnothing 22$ tube connection.

*2: If P is selected in ③, R with reinforcing ring cannot be selected.

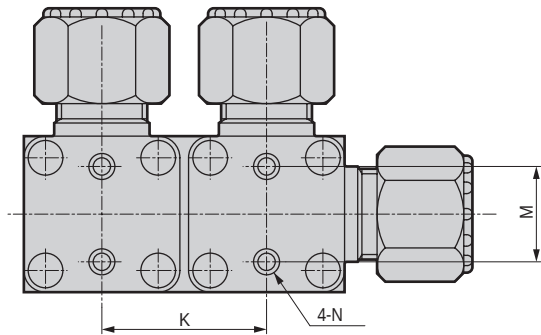
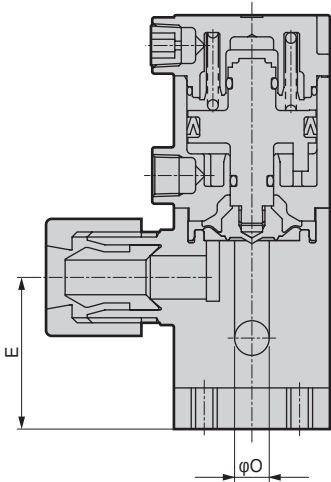
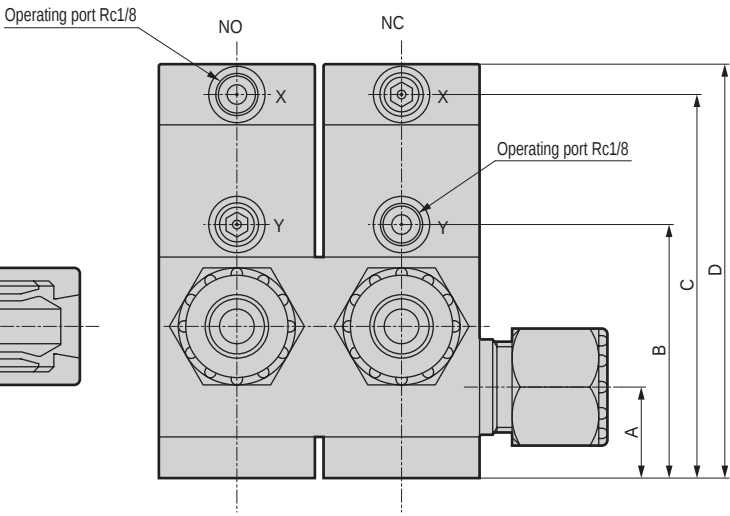
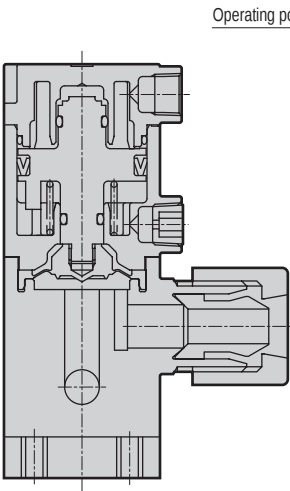
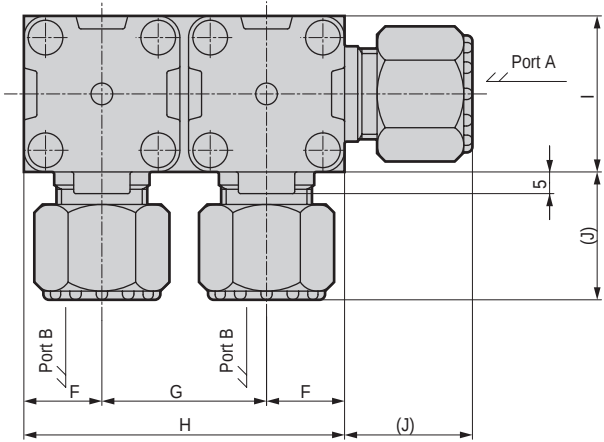
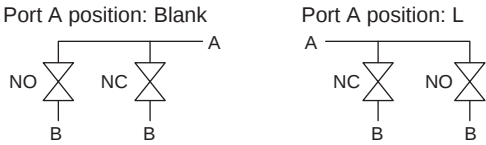
Related products	Fine level Switch	Manual		Electric	Manual	Pilot	Air operated Integrated	Single unit	Large bore size		Metal-free	High pressure	Part 2		Part 3RN		Drainage	PVC	Large bore size	Metal-free	High pressure	Part 1	Part 2	Part 3R	
		Flow rate adjusting valve	Regulator	Drip prevention valve			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

Dimensions

●ON/OFF only

- AMG302- *1
- AMG402- *1
- AMG502- *1

Note: NC and NO arrangements differ by port A position.
The valve close to the port A side is NC, while the other is NO.



Dimensions

Model No.	A	B	C	D (by fluid code)		E	F	G	H	I	K	M	N
				Blank/M/Y	P								
AMG302	21	59	89	96	96	35	18	38	74	36	38±0.3	22±0.3	M6 depth 9
AMG402	27	79	116	125	126	46	23	48	94	46	48±0.4	28±0.3	M8 depth 10
AMG502	35	101	143	153	157	60	30	62	122	60	62±0.4	40±0.3	M8 depth 13

AMG3 (10 mm / 3/8")

*1 (Connector No.)	J	O
10US	25	8
10BUS	25	8
10UP	25	8
10BUP	25	8
10UA	21	8
10BUA	21	8
10UR	37	7
10BUR	39	6
10UK	30	8
10BUK	30	8
10BUW	31	6.3

AMG3(12mm / 1/2")

*1 (Connector No.)	J	O
12US	29.5	10
15BUS	29.5	10
12UP	29	10
15BUP	29	10
12UA	25	10
15BUA	25	10
12UR	37	9
15BUR	39	9
12UK	33	10
15BUK	33	10
15BUW	33.5	9.4

AMG4

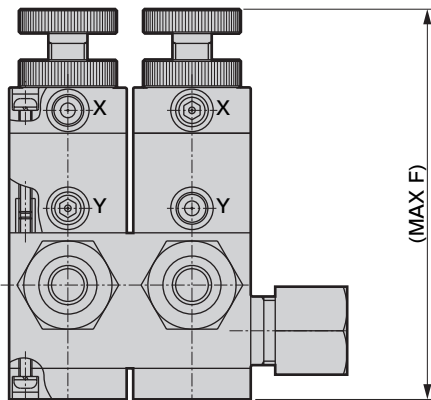
*1 (Connector No.)	J	O
20BUS	39	16
20BUP	36	16
20BUA	31	16
20BUR	44	15
20BUK	36.5	16
20BUW	38	14.7

AMG5

*1 (Connector No.)	J	O
25US	43.5	20
25BUS	43.5	20
25UP	43	20
25BUP	43	20
25BUA	40	20
25UR	49.5	20
25BUR	51	20
25UK	40.5	20
25BUK	40.5	20
25BUW	48	20

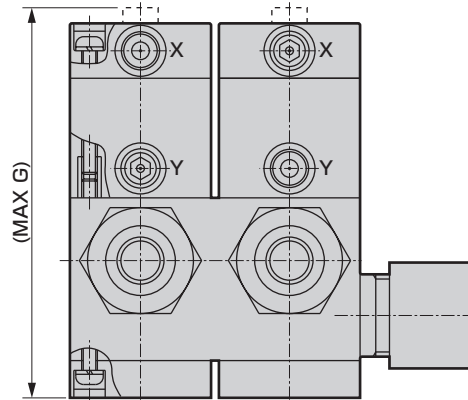
● With flow rate adjustment

· AMG*02-*-1



● With indicator

· AMG*02-*-6



Model No.	F (by fluid code)		G (by fluid code)	
	Blank/M/Y	P	Blank/M/Y	P
AMG302	120	120	98	98
AMG402	149	152	129	130
AMG502	185	192	158	162