

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

# AMG<sup>3</sup><sub>5</sub>02 Series

Orifice: AMG302: Ø6 to Ø10
 AMG402: Ø14.7 to Ø16
 AMG502: Ø20

Subject to Export Trade Control Ordinances

\*Target: AMG402 and 502 only

#### Specifications

| Desc      | riptions                           | AMG302   | AMG302 AMG402                                    |   |  |  |  |  |  |  |  |  |
|-----------|------------------------------------|--|--|---|--|--|--|--|--|--|--|--|
| Worki     | ng fluid                           |  | Chemical liquids, pure water (Note 1)            |   |  |  |  |  |  |  |  |  |
| Fluid t   | temperature °C                     | 5 to 90 (5 to  | 160) (Note 5)                                    | 5 to 90 (Note 5)  |  |  |  |  |  |  |  |  |
| Withsta   | anding pressure MPa                |  | 0.9  |   |  |  |  |  |  |  |  |  |
| Working p | pressure range (A -> B) MPa        |  | 0 to 0.3 (Note 4)                                |   |  |  |  |  |  |  |  |  |
| Working p | pressure range (B -> A) MPa        |  | 0 to 0.1 (Note 4)                                |   |  |  |  |  |  |  |  |  |
| Valves    | seat leakage cm³/min               | 0 (at, water pressure)   |  |   |  |  |  |  |  |  |  |  |
| Back      | pressure MPa                       | 0 to 0.1   |  |   |  |  |  |  |  |  |  |  |
| Ambie     | ent temperature °C                 | 0 to 60  |  |   |  |  |  |  |  |  |  |  |
| Frequ     | ency                               | 30 times/min or less 20 times/min or less  |  |   |  |  |  |  |  |  |  |  |
| Install   | ation attitude                     |  | Free   |   |  |  |  |  |  |  |  |  |
| Conne     | ection                             | ODØ10, Ø12 tube connection (fitting integrated type)<br>OD3/8", 1/2" tube connection (fitting integrated type) | OD3/4" tube connection (fitting integrated type) | ODØ25 tube connection (fitting integrated type)<br>OD1" tube connection (fitting integrated type) |  |  |  |  |  |  |  |  |
| Orifice   | e                                  | Ø6 to Ø10 (Note 3)   | Ø14.7 to Ø16 (Note 3)                            | Ø20   |  |  |  |  |  |  |  |  |
| Operation | Operation pressure range MPa       |  | 0.3 to 0.5                                       |   |  |  |  |  |  |  |  |  |
| section   | Operation pressure connection port |  | Rc1/8 (Note 2)                                   |   |  |  |  |  |  |  |  |  |

Note 1: Check the compatibility of the product's configuration materials, working fluid, and ambient atmosphere before use.

Note 2: Connect a resin fitting when connecting to the operation port.

When using a metal fitting, select one with a reinforcement ring.

Note 3: Confirm the orifice for each connection in the Model indication section.

Note 4: See page 56 for high-pressure specifications.

Note 5: 5 to 40 °C for hydrofluoric acids.

### AMG302<sub>Series</sub>

How to order

AMG302 Series (Connection: Ø10, 3/8" tube)

10BUS AMG302 -( 0 Μ L **C**Fluid **A**Connection Model No. DPort A position

BOption

|        |   | A Co                     | nnectio  | n                        |                             |  |                             |                          |                             |                          |                             |                          |                             |                             |
|--------|---|--------------------------|--|--------------------------|-----------------------------|--|-----------------------------|--------------------------|-----------------------------|--------------------------|-----------------------------|--------------------------|-----------------------------|-----------------------------|
|        |   | 10US                     | 10BUS  | 10UJ                     | 10BUJ                       | 10UP                                       | 10BUP                       | 10UA                     | 10BUA                       | 10UR                     | 10BUR                       | 10UK                     | 10BUK                       | 10BUW                       |
|        |   | Super t                  | Super type Pillar  |                          | 300 type                    | Super 300 type                             |                             | F-LOCK 20A series        |                             | F-LOCK 60 series         |                             | Final lock fitting       |                             | FLARTEC                     |
|        |   | fitting inte             | g integrated type Pillar fitting J series<br>integrated type |                          |                             | Pillar fitting P series<br>integrated type |                             | fitting integrated type  |                             | grated type              | integrated type             |                          | fitting<br>integrated typ   |                             |
|        |   | 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 | Ø10 X Ø8 tube connection | 3/8" X 1/4" tube connection | 3/8" X 1/4" tube connection |
| Symbol | Orifice   | Q                        | Ø8   |                          | Ø8                          |  | Ø8                          |                          | Ø8                          |                          | Ø6                          | Ø8                       |                             | Ø6.3                        |
| B Opt  | tion  |                          |  |                          |                             |  |                             |                          |                             |                          |                             |                          |                             |                             |
| 0      | ON/OFF only                                     |                          |  | •                        | •                           |  |                             | •                        |                             |                          |                             |                          |                             | •                           |
| 1      | With flow adjustment                            |                          |  | •                        | •                           |  |                             | •                        |                             |                          |                             |                          |                             | •                           |
| 6      | With indicator                                  | •                        |  | •                        | •                           |  |                             | •                        |                             |                          |                             |                          |                             |                             |
| C Flui | id  |                          |  |                          |                             |  |                             |                          |                             |                          |                             |                          |                             |                             |
| Blank  | Standard  | •                        | •  |                          | •                           | •  | •                           | •                        | •                           |                          | •                           | (Note 1                  | ) • (Note 1)                |                             |
| М      | For ammonia                                     |                          |  |                          |                             |  |                             |                          |                             |                          |                             | (Note 1                  | ) • (Note 1)                |                             |
| Р      | For nitric acid, for hydrofluoric acid (Note 3) |                          |  |                          | •                           |  |                             | •                        |                             |                          |                             | (Note 1                  | ) • (Note 1)                |                             |
| Y      | For high temperature (5 to 160°C) (Note 2)      |                          |  | •                        | •                           |  |                             | •                        |                             |                          |                             | (Note 1                  | ) • (Note 1)                |                             |
| D Por  | t A position                                    |                          |  |                          |                             |  |                             |                          |                             |                          |                             |                          |                             |                             |
| Blank  | Right   |                          |  |                          | •                           |  |                             | •                        |                             | •                        |                             | •                        |                             | •                           |
|        | Left  |                          |  |                          |                             |  |                             |                          |                             |                          |                             |                          |                             |                             |

Available with PTFE machined body.

A

Model No. for type with coated metal section

AMG302

С D

Coated

Model No. for type with operation port reinforcement ring

С

C

С

D

D

В

В

В

AMG302 -( A

With reinforcement ring

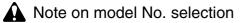
R

Model No. for type with coated metal section + operation port reinforcement ring С

R

AMG302 -A

Coated With reinforcement ring



Note 1: The final lock fitting nut and operation air piping could interfere, so check dimensions before selecting.

Note 2: This valve is not compatible with nitric acid, hydrofluoric acid, or chlorine.

Note 3: C (with coated metal section) is included in the C Fluid P item.

## AMG302Series

How to order

AMDZ AMD0

AMD0\*2

AMD3\*2

AMD4\*2 AMD5\*2 AMGZ0

AMG\*02 GAMD\*\*2 High-pressure specifications

AMD

AMB

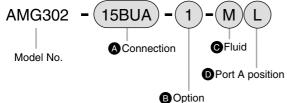
Flow

GMMD\*02 MMD\*0 TMD\*02 AMS AMDS TQAS

Fine regulat

KML

#### How to order AMG302 Series (Connection: Ø12, 1/2" tube)



|         |   | A Co                             | nnectio  | n                         |  |                           |                             |                           |                             |                           |                             |                              |                             |                             |
|---------|---|----------------------------------|--|---------------------------|--|---------------------------|-----------------------------|---------------------------|-----------------------------|---------------------------|-----------------------------|------------------------------|-----------------------------|-----------------------------|
|         |   | 12US                             | 15BUS  | 12UJ                      | 15BUJ  | 12UP                      | 15BUP                       | 12UA                      | 15BUA                       | 12UR                      | 15BUR                       | 12UK                         | 15BUK                       | 15BUW                       |
|         |   | Super type Pillar Super 300 type |  |                           | 300 type   | F-LOCK 20A series         |                             | F-LOCK 60 series          |                             | Final lock fitting        |                             | FLARTEC                      |                             |                             |
|         |   | titting integ                    | fitting integrated type Pillar fitting J series F<br>integrated type |                           | Pillar fitting P series fitting integrated type fintegrated type |                           | fitting integrated type     |                           | integrated type             |                           | fitting<br>integrated type  |                              |                             |                             |
|         |   | 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 | Ø12 X Ø10 tube connection    | 1/2" X 3/8" tube connection | 1/2" X 3/8" tube connection |
| Symbol  | Orifice   | ø                                | 10   | ø                         | 10   | ø                         | 10                          | ø                         | 10                          | Q                         | )9<br>)                     | ø                            | 10                          | Ø9.4                        |
| B Opt   | lion  |                                  |  |                           |  |                           |                             |                           |                             |                           |                             |                              |                             |                             |
| 0       | ON/OFF only                                     |                                  | •  | •                         |  | •                         |                             |                           |                             | •                         |                             | •                            | •                           |                             |
| 1       | With flow adjustment                            |                                  | •  |                           |  | •                         |                             |                           |                             | •                         |                             | •                            |                             |                             |
| 6       | With indicator                                  |                                  |  |                           |  | •                         |                             |                           |                             |                           |                             | •                            |                             |                             |
| C Flui  | id  |                                  |  |                           |  |                           |                             |                           |                             |                           |                             |                              |                             |                             |
| Blank   | Standard  |                                  |  |                           |  |                           |                             |                           |                             |                           | •                           | (Note 1)                     | • (Note 1)                  |                             |
| М       | For ammonia                                     |                                  |  |                           |  |                           |                             |                           |                             |                           |                             | (Note 1)                     | • (Note 1)                  |                             |
| Р       | For nitric acid, for hydrofluoric acid (Note 3) |                                  |  |                           |  | •                         |                             |                           |                             |                           |                             | <ul> <li>(Note 1)</li> </ul> | (Note 1)                    |                             |
| Y       | For high temperature (5 to 160°C) (Note 2)      |                                  | •  | •                         |  | •                         |                             | •                         | •                           |                           |                             | (Note 1)                     | • (Note 1)                  |                             |
| D Por   | t A position                                    |                                  |  |                           |  |                           |                             |                           |                             |                           |                             |                              |                             |                             |
| Blank   | Right   |                                  | •  | •                         |  | •                         | •                           | •                         | •                           | •                         | •                           | •                            | •                           | •                           |
| L       | Left  |                                  | •  | •                         |  | •                         |                             | •                         | •                           | •                         | •                           | •                            | •                           | •                           |
| Availab | le with PTFE machined body.                     |                                  |  |                           |  |                           |                             |                           |                             |                           |                             |                              |                             |                             |

Model No. for type with coated metal section

A

AMG302

AMG302 -

Model No. for type with operation port reinforcement ring

С

С

D

В

В

AMG302 -В С D A R

With reinforcement ring

R

Model No. for type with coated metal section + operation port reinforcement ring С

С

Coated

Coated With reinforcement ring

Note on model No. selection

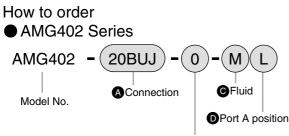
A

Note 1: The final lock fitting nut and operation air piping could interfere, so check dimensions before selecting. Note 2: This valve is not compatible with nitric acid, hydrofluoric acid, or chlorine.

D

Note 3: C (with coated metal section) is included in the **G** Fluid P item.

### AMG402<sub>Series</sub>



BOption

|        |   | A Co                                      | nnectio  | n  |   |  |                                    |                                 |
|--------|---|---|--|--|---|--|------------------------------------|---------------------------------|
|        |   | 20BUS                                     | 20BUJ  | 20BUP  | 20BUA                                     | 20BUR                                    | 20BUK                              | 20BUW                           |
|        |   | Super type Pillar fitting integrated type | Super 300 type Pillar fitting P series integrated type | Super 300 type Pillar fitting P series integrated type | F-LOCK 20A series fitting integrated type | F-LOCK 60 series fitting integrated type | Final lock fitting integrated type | FLARTEC fitting integrated type |
|        |   |   | 3/4  | " X 5/8  | " tube c                                  | connect                                  | ion                                |                                 |
| Symbol | Orifice   | Ø16                                       | Ø16  | Ø16  | Ø16                                       | Ø15                                      | Ø16                                | Ø14.7                           |
| B Opt  | ion   |   |  |  |   |  |                                    |                                 |
| 0      | ON/OFF only                                     | •   |  |  |   |  |                                    |                                 |
| 1      | With flow adjustment                            | •   | •  | •  |   |  | •                                  |                                 |
| 6      | With indicator                                  | •   | •  |  |   |  | •                                  |                                 |
| C Flui | d   |   |  |  |   |  |                                    |                                 |
| Blank  | Standard  | •   | •  |  |   |  |                                    |                                 |
| М      | For ammonia                                     | •   | •  |  |   |  |                                    | •                               |
| Р      | For nitric acid, for hydrofluoric acid (Note 2) | •   | •  |  |   | •  | •                                  |                                 |
| Y      | For high temperature (5 to 160°C) (Note 1)      | •   | •  | •  |   |  | •                                  |                                 |
| D Por  | t A position                                    |   |  |  |   |  |                                    |                                 |
| Blank  | Right   |   |  |  |   |  |                                    |                                 |
| L      | Left  | •   |  | •  | •   |  |                                    | •                               |
|        |   |   |  |  |   |  |                                    |                                 |

Available with PTFE machined body.

Model No. for type with coated metal section

AMG402 -A В С D

Coated

D

D

С

Model No. for type with operation port reinforcement ring

В C AMG402 -( A

With reinforcement ring

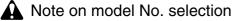
R

Model No. for type with coated metal section + operation port reinforcement ring С

R

AMG402 -A В С

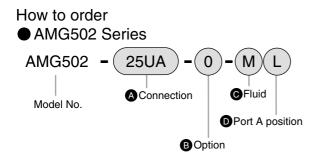
Coated With reinforcement ring



Note 1: This valve is not compatible with nitric acid, hydrofluoric acid, or chlorine. Note 2: C (with coated metal section) is included in the **G** Fluid P item.

# AMG502Series

How to order



|        |   | A Co                  | nnectio         | n                                |                           |                           |                           |                                    |                             |                           |                           |                    |                        |
|--------|---|-----------------------|-----------------|----------------------------------|---------------------------|---------------------------|---------------------------|------------------------------------|-----------------------------|---------------------------|---------------------------|--------------------|------------------------|
|        |   | 25US                  | 25BUS           | 25UJ                             | 25BUJ                     | 25UP                      | 25BUP                     | 25BUA                              | 25UR                        | 25BUR                     | 25UK                      | 25BUK              | 25BUW                  |
|        |   | Super type Pillar     |                 | Super type Pillar Super 300 type |                           |                           | Super 300 type            |                                    | F-LOCK 20A F-LOCK 60 series |                           |                           | Final lock fitting |                        |
|        |   | fitting integ         | grated type     | Pillar fitting J series          |                           | Pillar fitting P series   |                           | series fitting                     |                             |                           |                           | integrated type    |                        |
|        |   | 0                     |                 | Ň                                | ted type                  | integrat                  |                           | integrated type                    |                             |                           | 0                         |                    | integrated type        |
|        |   | Ø25 X (               | 1" X 7/8"       | 125 X (                          | " X 7/                    | 125 X G                   | " X 7/                    | ' X 7/8'                           | 125 X G                     | " X 7/                    | 125 X G                   | 1" X 7/8"          | " X 7/                 |
|        |   | )22 tu                | 3" tub          | )22 tul                          | 3" tub                    | 022 tu                    | 3" tub                    | tube co                            | 022 tul                     | 3" tub                    | )22 tu                    | 3" tub             | 3" tub                 |
|        |   | be con                | e conr          | be con                           | econr                     | be con                    | e conr                    | nnection                           | be con                      | e conr                    | be con                    | e conr             | e conr                 |
|        |   | X Ø22 tube connection | tube connection | 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 (Note 2) | Ø25 X Ø22 tube connection   | 1" X 7/8" tube connection | Ø25 X Ø22 tube connectior | tube connection    | X 7/8" tube connection |
| Symbol | Orifice   | Ø20                   |                 | Ø20                              |                           | Ø20                       |                           | Ø20                                | Ø20                         |                           | Ø20                       |                    | Ø20                    |
| B Opt  | tion  |                       |                 |                                  |                           |                           |                           |                                    |                             |                           |                           |                    |                        |
| 0      | ON/OFF only                                     |                       |                 |                                  |                           |                           |                           |                                    |                             |                           |                           |                    |                        |
| 1      | With flow adjustment                            | •                     |                 | •                                | •                         |                           | •                         | •                                  |                             |                           | •                         |                    |                        |
| 6      | With indicator                                  |                       |                 |                                  |                           |                           |                           |                                    |                             |                           |                           |                    |                        |
| C Flui | id  |                       |                 |                                  |                           |                           |                           |                                    |                             |                           |                           |                    |                        |
| Blank  | Standard  | •                     |                 | •                                |                           |                           | •                         |                                    |                             |                           |                           |                    |                        |
| М      | For ammonia                                     |                       |                 |                                  | •                         |                           |                           |                                    |                             |                           |                           |                    |                        |
| Р      | For nitric acid, for hydrofluoric acid (Note 1) | •                     |                 |                                  |                           |                           | •                         | •                                  |                             |                           |                           |                    |                        |
| D Por  | t A position                                    |                       |                 |                                  |                           |                           |                           |                                    |                             |                           |                           |                    |                        |
| Blank  | Right   |                       |                 |                                  |                           |                           |                           |                                    |                             |                           |                           |                    |                        |
| L      | Left  |                       |                 |                                  |                           |                           | •                         |                                    |                             |                           |                           |                    |                        |

Available with PTFE machined body.

Model No. for type with coated metal section

AMG502 A В С D

Model No. for type with operation port reinforcement ring

AMG502 -В C D R Α

With reinforcement ring

R

Model No. for type with coated metal section + operation port reinforcement ring С

D

С

Coated

AMG502 -A В C

Coated With reinforcement ring

Note on model No. selection

Note 1: C (with coated metal section) is included in the **G** Fluid P item. Note 2: Also usable for the Ø25 x Ø22 diameter tube connection.