

## 402 Series Two Way, 1" Angle Valve

### Application

- Used for snap acting on-off control of higher pressure liquids or gas
- Oil and gas separators, gas scrubbers or any liquid accumulators are a few applications
- NACE material packages available

### Features and Benefits of the 402 Series Valve

- 1" carbon steel body standard; other connections available
- 316L Stainless steel body and wetted parts available
- Topworks available in 45 in<sup>2</sup>, 23 in<sup>2</sup> and 9 in<sup>2</sup> sizes
- Variety of trim plug and seat materials
- Packing gland and seals material options
- Custom connections available
- Inline serviceability of internal components
- Fail closed for safety
- Rebuild kits available for all Pathway valves

### Benefits of ALL Pathway Control Products

- Personalized service and support expertise
- Responsive, on-time delivery
- Time-tested & proven design providing dependable, long-term service
- Valves Made in USA



## 402 Series Two Way, 1" Angle Valve

### Specifications

**Connection Size & Type:** 1" MNPT vessel connection, 1" FNPT outlet standard  
1" RF or RTJ flanged from 150# to 900#  
Smaller NPT connections available upon request

**Working Pressure:** 4000 psig max

**Maximum Differential Pressure:**

Topworks	9"		23"		45"	
Supply PSIG	20	30	20	30	20	30
Orifice						
¼"	570	550	1250	4000	4000	4000
⅜"	250	675	625	1850	2885	3305
½"	170	450	425	1250	1925	2205

**Temperature:** -20°F to +180°F; available to +240°F

**Topworks- Pneumatic Actuated:** Pressed steel 23 in<sup>2</sup> or 45 in<sup>2</sup> diaphragm housing; Cast iron 9 in<sup>2</sup> diaphragm housing; nitrile diaphragm (nylon reinforced)  
50 psig maximum Supply pressure

Effective Area	Diameter
45 in <sup>2</sup>	10.5"
23 in <sup>2</sup>	9"
9 in <sup>2</sup>	5.5"

**Trim Size:**

⅛"  
¼"  
⅜"  
½"

**CV Factor:**

0.4  
2.2  
4.6  
8.4

### Material Selections

**Body: 402** Carbon steel  
**402SS** 316L stainless steel

**Trim Set:** Snap acting or Throttling 17-4 PH SST trim set standard;  
Available in:  
Snap acting or Throttling Carbide trim plug, 17-4 PH SST trim seat  
Snap acting or Throttling Carbide-K coating trim set  
Snap acting or Throttling Acetal soft trim plug, 17-4 PH SST trim seat

**Seals & Packing:** Molythane/brass packing gland, nitrile seals standard;  
Available in:  
Fluorocarbon/brass packing gland, fluorocarbon seals  
Molythane/316 SST packing gland, nitrile seals, K500 Monel stem  
Fluorocarbon/316 SST packing gland, fluorocarbon seals, K500 Monel stem

**Stem Material:** 303 SST standard; K500 Monel available

**NACE Package:** NACE materials include 316L SST body and wetted internal components, fluorocarbon/316 SST packing gland, fluorocarbon seals, K500 Monel stem, 316 SST trim set

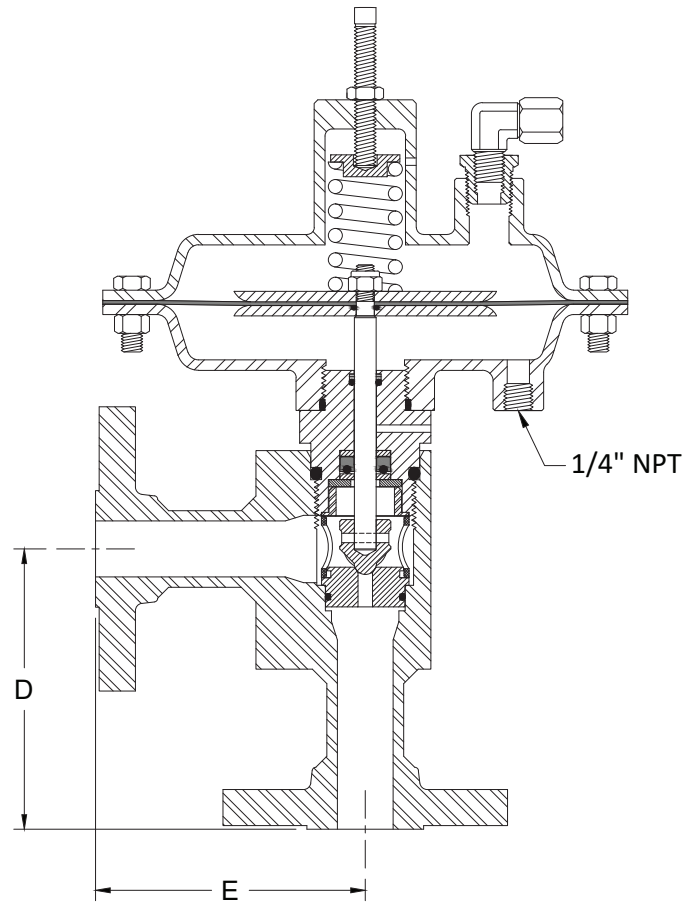
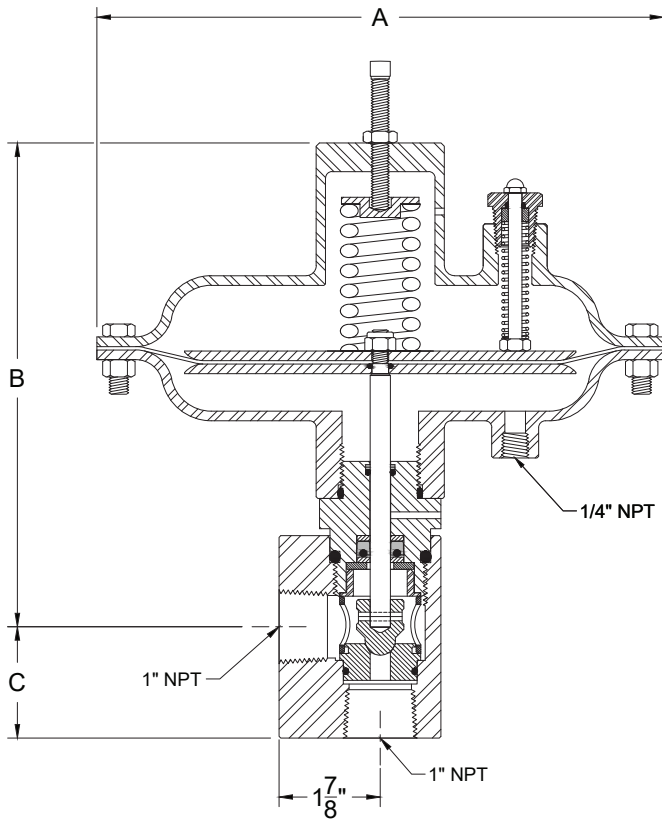
### Maintenance

**Rebuild Kits:** Rebuild Kits available which include: valve packing gland, seals, trim set, valve stem, lock nut and diaphragm

**402 Series**  
Two Way, 1" Angle Valve

**MODEL 402-113-12A1**

**MODEL 402-13B2-11A1**



**FLANGED MODELS**

**Dimensions for Standard Models**

	<u>402-113</u>	<u>402-112</u>	<u>402-11</u>
A	10½"	9"	5½"
B	9¼"	7¾"	7¼"
C	2½/16"	2½/16"	2½/16"

**Dimensions for Flanged Models**

<u>1" Flange</u>	<u>D</u>	<u>E</u>
150# RF	4 <sup>7</sup> / <sub>16</sub> "	4¼"
300# RF	4 <sup>13</sup> / <sub>16</sub> "	4 <sup>5</sup> / <sub>8</sub> "
600# RF	5 <sup>1</sup> / <sub>16</sub> "	5"
900# RF	5 <sup>5</sup> / <sub>8</sub> "	5 <sup>5</sup> / <sub>8</sub> "
150# RTJ	4 <sup>5</sup> / <sub>8</sub> "	4 <sup>7</sup> / <sub>16</sub> "
300# RTJ	5"	4 <sup>13</sup> / <sub>16</sub> "
600# RTJ	5 <sup>1</sup> / <sub>16</sub> "	5"
900# RTJ	5 <sup>5</sup> / <sub>8</sub> "	5 <sup>5</sup> / <sub>8</sub> "

**CAUTION:**

Remove spring tension by backing off adjustment screw OR  
apply air pressure under diaphragm BEFORE removing topworks to  
prevent damage to trim.

## 402 Series Two Way, 1" Angle Valve

### Ordering Chart Example:

**402 - 1 1 2 - 1 2 A 2**

(#) Option #, see Special Materials & Features below

Select 402 or 402SS

402 VALVE SIZE	
402	
1	1" Carbon steel body

OR

402SS VALVE SIZE	
402SS	
1	1" 316L Stainless steel body

Other (as needed, add to end of model number)	
1	No visual indicator
2	Heavy duty sealed visual indicator (not on topworks 1)
N	NACE material - also choose: Trim Type 3,4,8,9 or 1,2 (with 17-4 PH SST exception) Seals & Packing C or D
P	Nickel-plated non-stainless wetted parts

CONNECTION	
1	1" FNPT inlet, 1" FNPT outlet
3	Flanged - add letter from Flange Chart

SEALS & PACKING	
A	Nitrile/molythane/brass packing gland, nitrile seals
B	Fluorocarbon/brass packing gland, fluorocarbon seals
C	Nitrile/molythane/316 SST packing gland, nitrile seals, K500 Monel stem
D	Fluorocarbon/316 SST packing gland, fluorocarbon seals, K500 Monel stem

FLANGE CLASS/TYPE CHART	
Add when using connection 3	
A	150# RF
B	300# RF
C	600# RF
D	900# RF
F	150# RTJ
G	300# RTJ
H	600# RTJ
J	900# RTJ

TRIM SIZE	
0	1/8" (Throttling in 17-4 PH SST only)
1	1/4"
2	3/8"
3	1/2"

DIAPHRAGM OPERATED TOPWORKS	
1	Spring on top (9 in <sup>2</sup> - fail closed)
2	Spring on top (23 in <sup>2</sup> - fail closed)
3	Spring on top (45 in <sup>2</sup> - fail closed)

SPECIAL MATERIAL & FEATURES	
5	Used by Pathway to indicate custom material and/or feature. Placed in model number in the position it relates to (eg. trim plug, trim seat, etc.). When used, an option number will be assigned by Pathway (see below)
(#)	Option # (in parentheses at end of model number) Pathway will assign option number unique to custom material and/or features

TRIM TYPE	
1	Snap acting 17-4 PH SST
2	Throttling 17-4 PH SST
3	Snap acting carbide
4	Throttling carbide
6	Snap acting carbide-K coating
7	Throttling carbide-K coating
8	Snap acting acetal - soft trim
9	Throttling acetal - soft trim