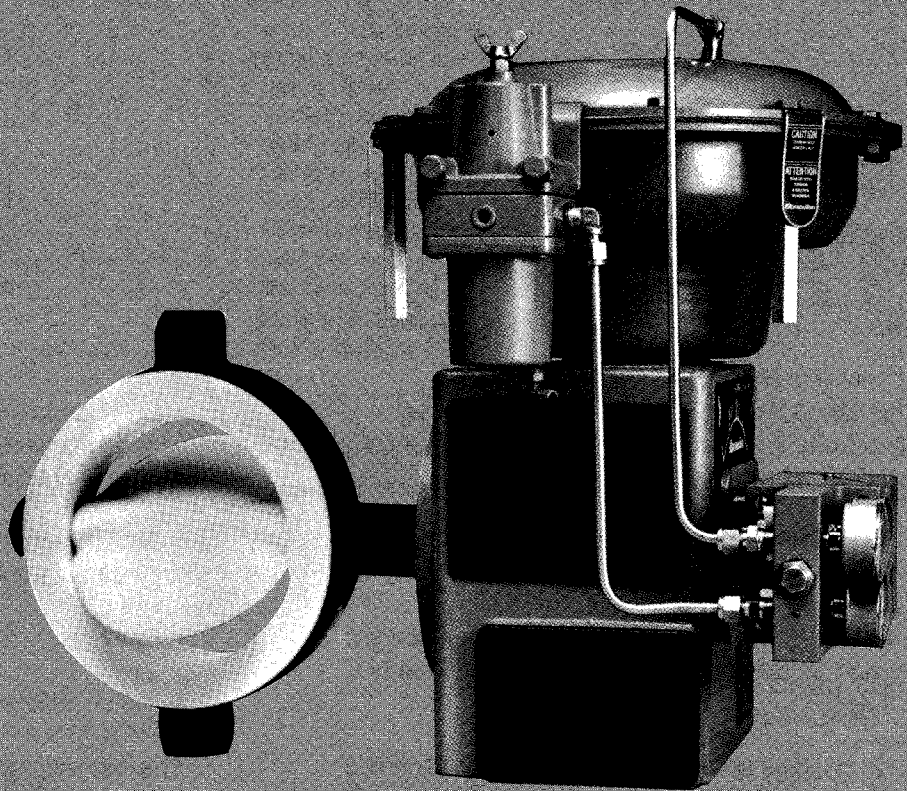


# 38002 Series

## TFE-Lined Body and Disc

Heavy Duty Automatic  
Throttling Control Butterfly Valves



## Table of Contents

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Numbering System .....	3
General Data .....	3
Body Assembly Data .....	4
Actuator Data (Model 33) .....	4, 5
Flow Coefficients - Rated $C_v$ .....	5
Allowable Pressure Drops .....	5
Materials .....	6
Dimensions & Weights .....	7
Options & Accessories .....	8

## Foreword

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The 38002 Series Teflon®-lined butterfly valve is an automatic throttling control valve incorporating the design features listed below:

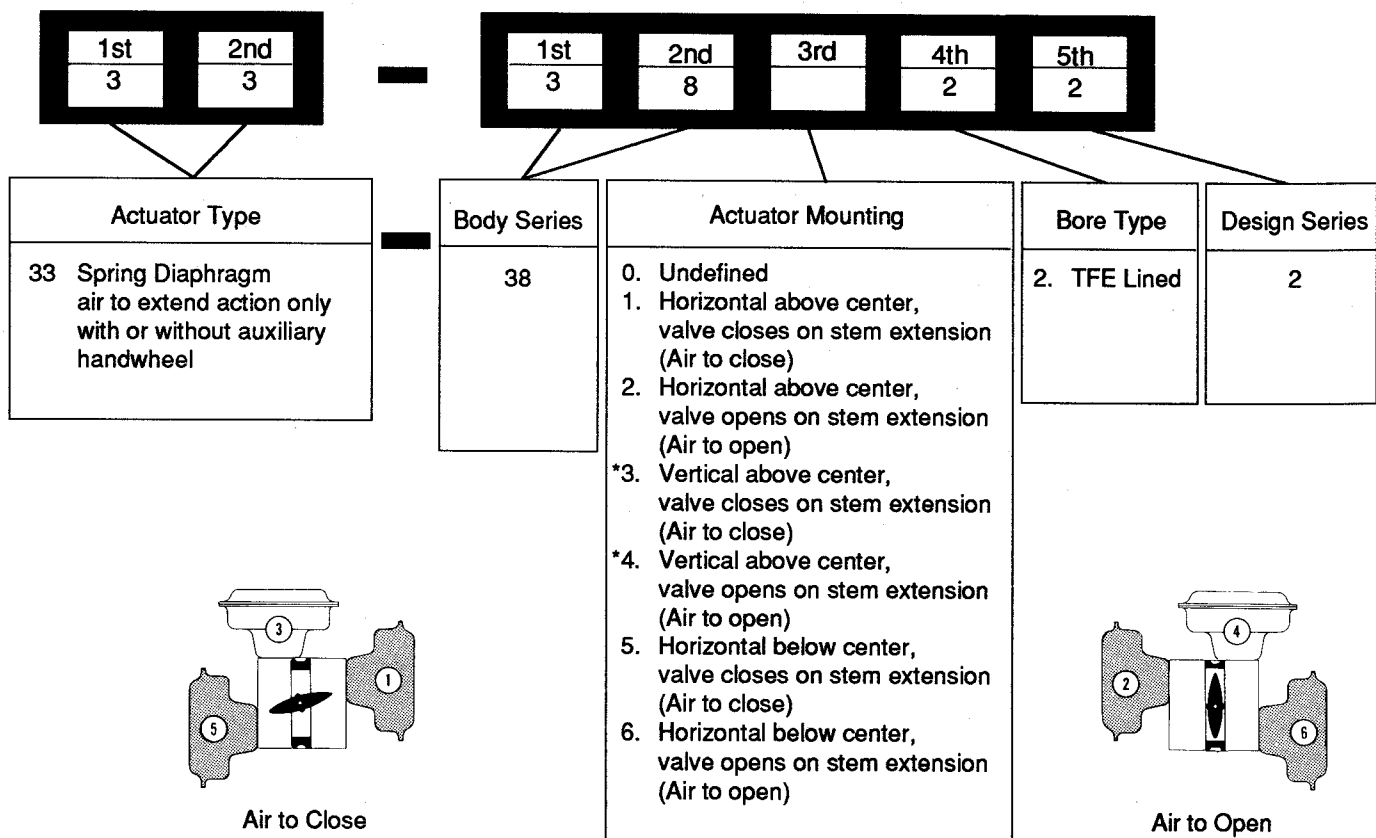
- All internal components are protected by highly corrosion resistant Teflon.
- Meets FDA standards (an excellent choice for pharmaceuticals, food stuffs, other industrial fluids).
- No pockets or crevices which lead to bacterial growth and contamination, so important to avoid in food and beverage applications.

Teflon® is a registered trademark of DuPont.

- Built-in seals protect bearings and other internal parts from process - and conversely, process from valve parts.
- Splined actuator linkage provides back-lash free precision throttling.
- Enclosed actuator protects all moving parts.
- Highly visible valve position indicator.

The following specifications have been assembled to provide technical information required to specify valves in the 38002 Series. For additional information, contact your local Masoneilan Representative.

## Numbering System



\*Standard actuator mounting arrangement

**Note:** Valve is viewed from the actuator and bracket end (the valve body would not be visible).

## General Data

**flow characteristic:** modified equal percentage

**flow direction:** bi-directional

**min and max temperatures:** 0°F to +400°F  
(-20°C to +205°C)

**seat leakage:** Class VI per ANSI  
B16.104 (1976)

**C<sub>v</sub> ratio:** 100:1

Valve Size (inches)	ANSI Class 125 Ductile Iron
2	•
3	•
4	•
6	•
8	•
10	•

## Body Assembly Data

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<b>body type:</b> cast wafer with integral bonnet	<b>temperature range:</b> 0°F to +400°F (-20°C to +205°C)
<b>sizes:</b> 2", 3", 4", 6", 8", 10" (50, 80, 100, 150, 200, 250 mm)	<b>disc type:</b> conventional
<b>body material:</b> epoxy painted ductile iron	<b>materials:</b> molded virgin TFE with a completely encapsulated iron reinforcing insert
<b>connections:</b> flangeless, mounts between 125, 150, 250 or 300 lb. ANSI flanges with the exception of 8" & 10" which mount between 125 and 150 lb. ANSI flanges only. If bore is less than standard weight (unlined schedule 40), Teflon spacers will be required (Consult Masoneilan)	<b>disc seals:</b> TFE with elastomer backup
<b>elastomer liner type:</b> molded virgin TFE with elastomer backup	<b>shaft type:</b> one piece shaft, splined on outboard end
	<b>materials:</b> 17-4 PH stainless steel ASTM A564 Gr 630 (H1075 condition)
	<b>bushings:</b> TFE- lined DU bushings

Trade names noted are for reference only. Masoneilan reserves the right to supply the trade-named material or its equivalent.

## Actuator Data (Model 33)

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<b>type:</b> spring-diaphragm, floating stem pneumatic actuator	<b>bracket:</b> cast iron
<b>action:</b> increasing air extends stem	<b>bracket bearing:</b> sealed, permanently lubricated ball bearing
<b>bench range:</b> B size 7-15 psig (50-100 kPa) (nominal) C size 9-15 psig (60-100 kPa) (nominal)	<b>handwheel (optional) type:</b> push type tilting, rising stem, permanently lubricated
<b>connections:</b> 1/4" NPT	<b>materials:</b> AISI 416 st. st. shaft with cast iron handwheel
<b>fail safe action:</b> field reversible	<b>limit stops:</b> limits opening and/or closing (specify % of lift requirement in both directions)

**Actuator Data (Model 33) Continued**

Actuator Size	Valve Size		Shaft Diameter		Actuator			
	(inches)	(mm)	(inches)	(mm)	Effective Area		Stroke	
					sq. in.	sq. cm.	(inches)	(mm)
B	2	(50)	1/2	(12.7)	70	452	2 1/4	(57.0)
	3	(80)	1/2	(12.7)	70	452	2 1/4	(57.0)
	4	(100)	5/8	(16.0)	70	452	2 1/4	(57.0)
C	6	(150)	1	(25.4)	140	903	2 1/4	(57.0)
	8	(200)	1	(25.4)	140	903	2 1/4	(57.0)
	10	(250)	1	(25.4)	140	903	2 1/4	(57.0)

**Flow Coefficients (C<sub>v</sub>) and Critical Flow Factors (F<sub>L</sub>) at % of Maximum Opening (75°)**

Percent (%) of Max. Opening	10	20	30	40	50	60	70	80	90	100	
Percent (%) of Max. C <sub>v</sub>	1	2	6	10	17	26	40	63	86	100	
Critical Flow Factor - F <sub>L</sub>	.80	.79	.77	.73	.69	.65	.62	.61	.60	.60	
Valve Size		Rated C <sub>v</sub>									
(inches)	(mm)										
2	(50)	1.3	2.6	7.8	13.0	22	34	52	82	112	130
3	(80)	2.7	5.3	15.9	27	45	69	106	167	228	265
4	(100)	4.6	9.2	28	46	78	120	184	290	396	460
6	(150)	10.3	21	62	103	174	267	410	646	882	1025
8	(200)	17.8	36	107	178	302	462	710	1118	1527	1775
10	(200)	25	50	150	250	425	650	1000	1575	2150	2500

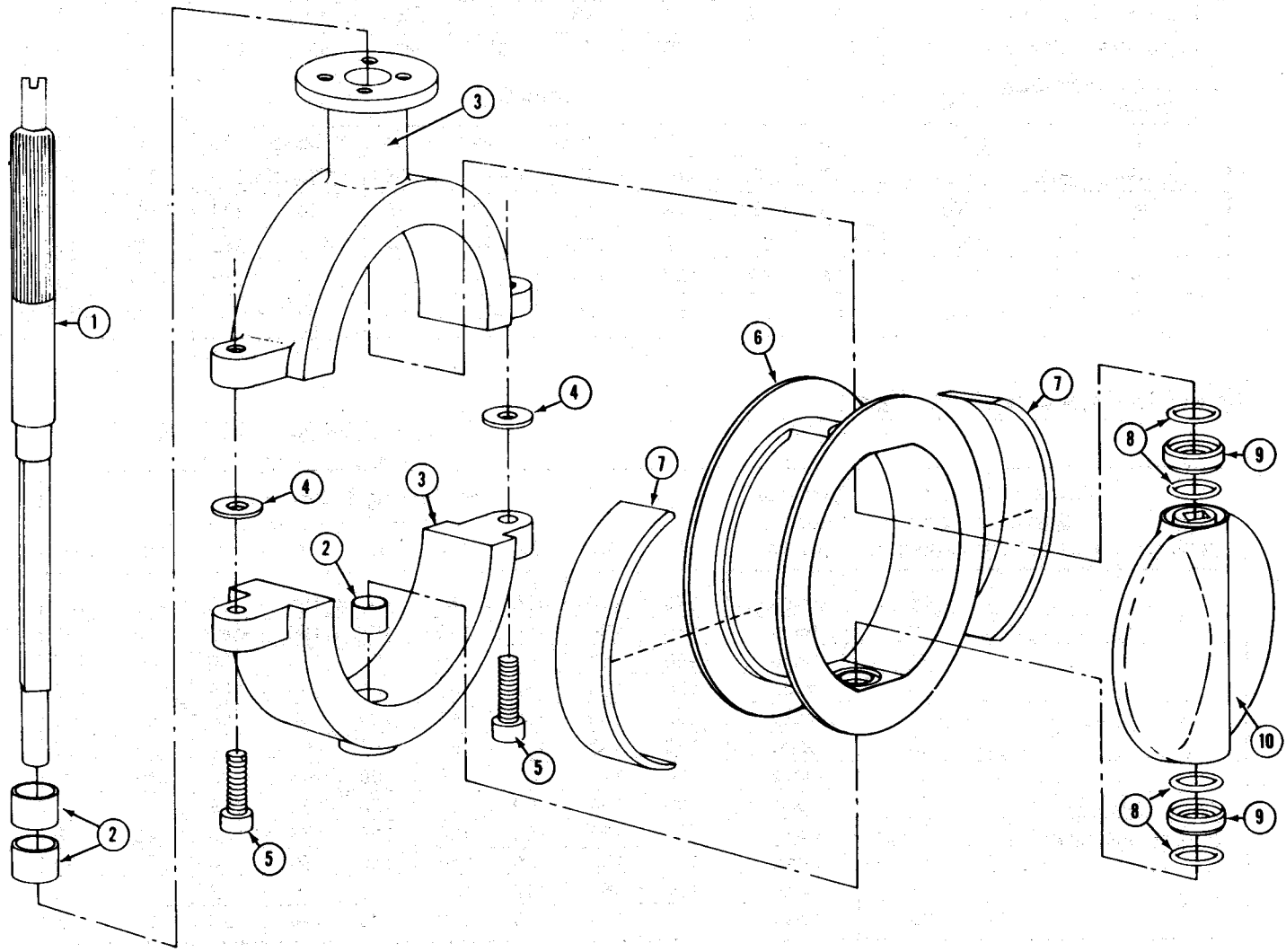
**Allowable Pressure Drops (psi)**

Valve Size (inches)	Actuator Size	Air Supply (psi)	Overall Action Air to	Valve Opening in Degrees									
				0	10	20	30	40	50	60	70	75	
2	B	19	close	150	150	150	150	150	150	150	150	150	150
		19	open	150	150	150	150	150	150	150	150	150	150
3	B	21	close	150	150	150	150	150	150	150	150	140	125
		23	open	150	150	150	150	150	150	150	150	145	135
4	B	21	close	150	150	150	150	150	150	150	94	60	50
		23	open	150	150	150	150	150	150	112	73	65	
6	C	21	close	150	150	150	150	150	143	74	49	40	
		30	open	150	150	150	150	150	150	115	79	75	
8	C	22	close	150	150	150	150	128	58	30	20	18	
		30	open	150	150	150	150	150	86	46	32	30	
10	C	25	close	150	150	150	129	66	30	15	10	9	
		30	open	150	150	150	150	95	44	24	16	15	

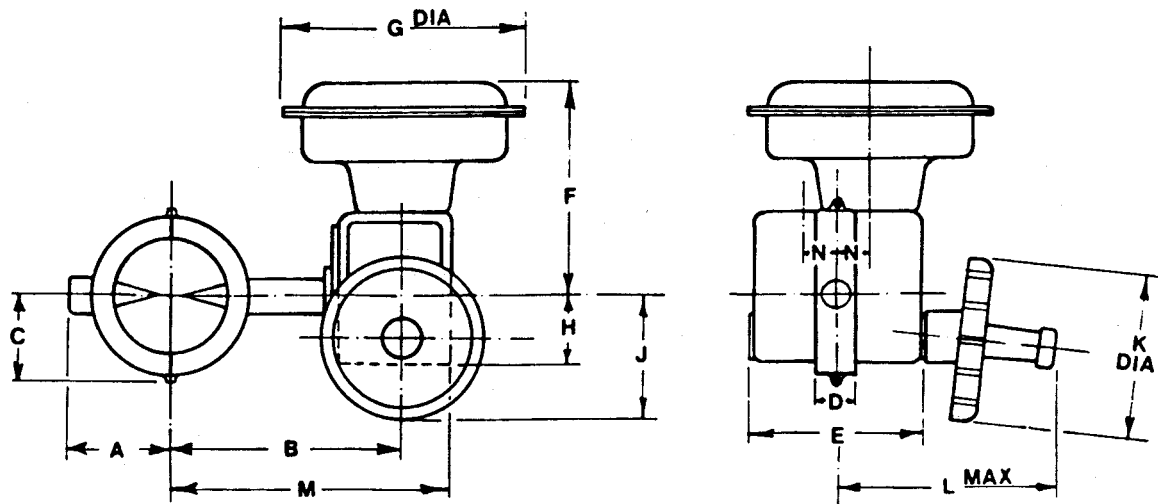
**Materials**

Ref. No.	Temperatures	0°F	400°F
	Description	Standard Materials	
1	Shaft	17-4 PH Stainless Steel ASTM A564 Gr 630 H1075	
2	Bearing	Teflon® Lined DU Bushings	
3	Body	Ductile Iron (Epoxy Painted)	
4	Body Spacer	Lead	
5	Body Bolt	Stainless Steel	
6	Liner	Molded Virgin Teflon	
7	Liner Backup	Elastomer	
8	O-Ring	Elastomer	
9	Disc Seal Rings	Molded Virgin Teflon	
10	Disc	Molded Virgin Teflon (Iron Reinforcing Insert)	

Trade names are for reference only. Masoneilan reserves the right to supply trade named material or equivalent.



## Dimensions & Weights



Dimensions (inches/mm)

Valve Size	A	B	C	D	E	F	G	H	When Handwheel is Specified			M	N
									J	K	L		
2 (50)	2.5 (62)	8.7 (221)	2.9 (75)	1.7 (44)	9.5 (241)	11.6 (294)	13 (330)	5 (127)	8.7 (220)	10 (254)	13.5 (342)	11.4(289)	1.6 (41)
3 (80)	3.1 (79)	9.4 (238)	3.5 (90)	1.7 (44)	9.5 (241)	11.6 (294)	13 (330)	5 (127)	8.7 (220)	10 (254)	13.5 (342)	12 (306)	1.6 (41)
4 (100)	4 (98)	10.7 (272)	4.4 (113)	2 (51)	9.5 (241)	11.6 (294)	13 (330)	5 (127)	8.7 (220)	10 (254)	13.5 (342)	13.4(340)	1.6 (41)
6 (150)	4.8 (121)	12.3 (312)	5.5 (140)	2.1 (54)	9.5 (241)	15.2 (387)	17.5 (445.5)	5 (127)	8.7 (220)	10 (254)	13.5 (342)	15 (380)	1.6 (41)
8 (200)	6 (150)	13.4 (340)	6.6 (168)	2.5 (64)	9.5 (241)	15.2 (387)	17.5 (445.5)	5 (127)	8.7 (220)	10 (254)	13.5 (342)	16 (408)	1.6 (41)
10 (250)	7 (179)	14.4 (365)	7.8 (197)	2.5 (64)	9.5 (241)	15.2 (387)	17.5 (445.5)	5 (127)	8.7 (220)	10 (254)	13.5 (342)	17 (433)	1.6 (41)

## Valve Weights

Valve Size		Valve Weights <sup>①</sup>		Shipping Weight <sup>①</sup>	
(in.)	(mm)	lb.	kg.	lb.	kg.
2	(50)	60	27	70	31
3	(80)	63	28	75	34
4	(100)	70	31	85	38
6	(150)	125	56	140	63
8	(200)	140	63	160	72
10	(250)	165	75	190	86

<sup>①</sup>For handwheel, add 22 lbs.

## Options and Accessories

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#33 Actuator  
Size: B, C

Handwheel

4600A Series Positioner  
(See Specification Data CS20002)  
Instrument Signals  
3-15, 3-27 and 6-30 psi  
3-9 and 9-15 psi split range

8012 Electropneumatic Valve Positioner  
(See Specification Data CS5000)  
Instrument Signals  
10-50 mA; 104 ohms  
4-20 mA; 173 ohms

8006A Electropneumatic Transducer  
(See Specification Data CS6000)  
Input Range 10-50 mA; 104 ohms  
4-20 mA; 173 ohms  
Output Range (Direct or Reverse)  
Model 8006A: 3-15, 6-30, 0-20 or 0-35 psi

I/PEX 9000 Electropneumatic Transducer  
(See Specification CS9000)  
Input Range 4-20 mA  
Split range up to 3 times  
Output (Direct or Reverse)  
3-15 psi, adjustable to 0-20 psi

Model 6000 Electropneumatic Transducer  
(See Specification CS6600)  
Input Range 4-20 mA  
3-15 psi  
Internal Regulator  
Integral Universal Mounting Bracket

496 Rotary Switches  
(See Specification Data CS7000)  
496-1 (1 switch)  
496-2 (2 switches)

80-4 or 80-40 Airset  
77-6 Lockup Valve  
2" Gauge 0-30 psi

2700 Controllers  
(See Specification CW6000)

### Additional Options Available

Other Body Materials  
Other Flange Facings  
Domotor® Actuators  
Other Actuators  
Adjustable Limit Stops

**Refer to specific actuator and accessory specification literature for complete information**