



## 37002 Series MiniTork® II Control Valves

Heavy Duty Control Butterfly Valves





# Dresser Masoneilan 37002 Series MiniTork® II Control Valves

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## Features

The MiniTork® II is a heavy duty, throttling control butterfly valve that provides superior performance by incorporating the following features:

**Low Dynamic Torque** – the unique cupped shape disc results in a dynamic torque considerably lower than conventional butterfly valves.

**Triple Bearing System** – provides exceptional support and guiding for the shaft.

**Valve Position Indicator** – highly visible, which allows quick visual inspection of disc position.

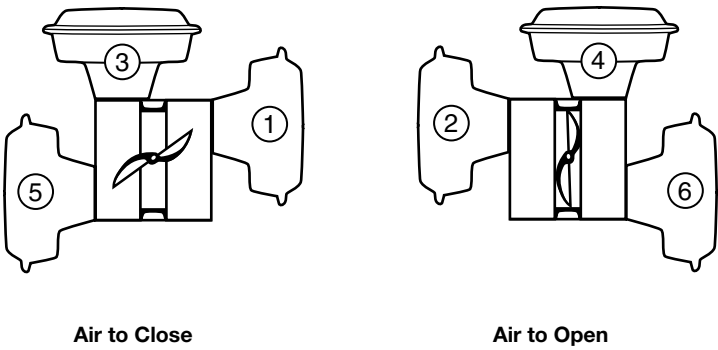
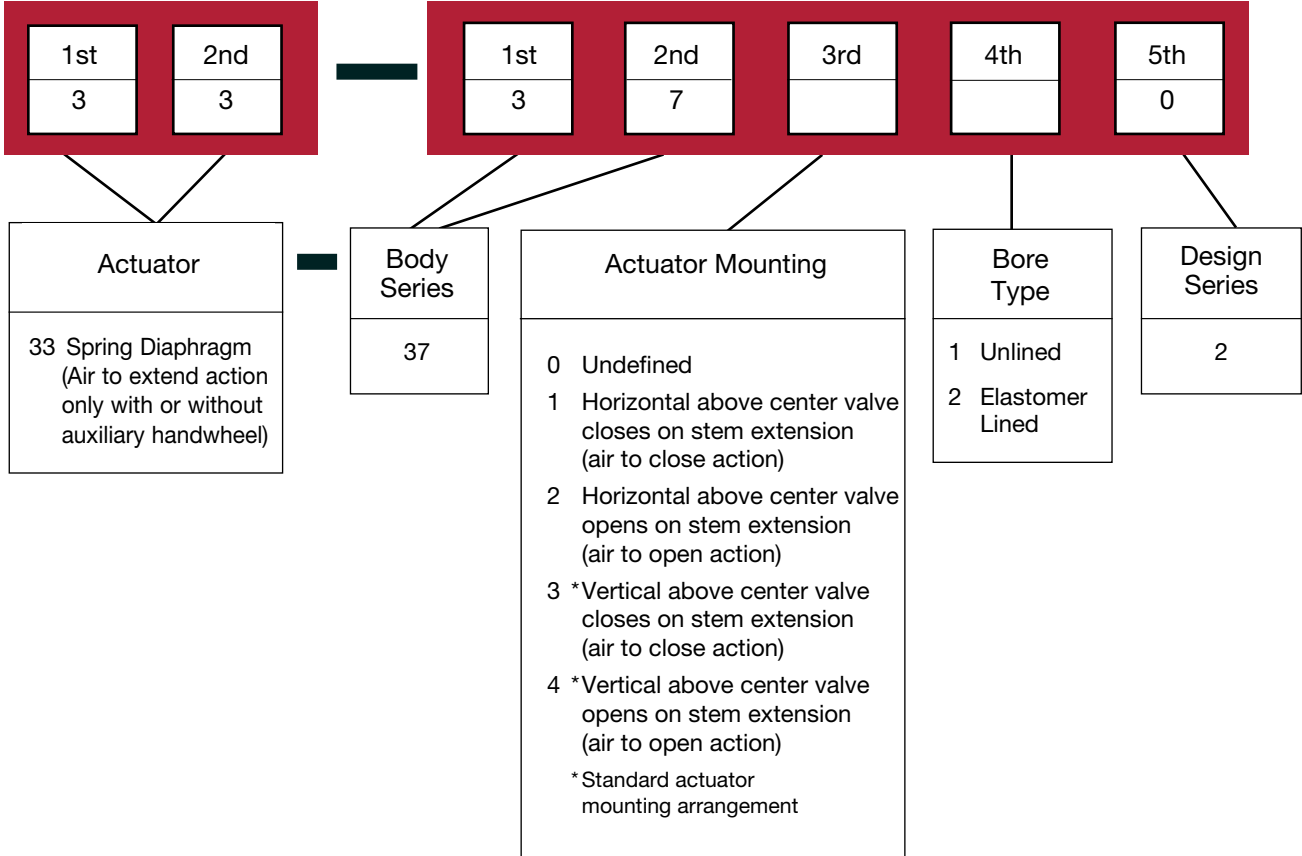
**Integrally Cast Extension Bonnet** – provides ability to handle wide range of process temperatures.

**Spring Diaphragm Actuator** – with total enclosure of all moving parts provides increased resistance to environmental corrosion.



Handwheel and positioner are optional.

# Numbering System



Actuator in front of line.  
 Unnumbered actuator positions above same as numbered positions when valve is rotated 180° in line.

# General Data

- **Flow Characteristic:** Equal percentage
- **Flow Direction:** Universal
- **Temperature Range:** Unlined valves  
St. St. body  
-250°F to +500°F (-256°C to +260°C)  
carbon steel body  
-20°F to +500°F (-29°C to +260°C)  
lined valves—see liner material page 8
- **Seat Leakage:**  
Metal Seal: 2" – 4" (DN25-100), 2% of rated  $C_v$   
6" – 12" (DN150-300), 1% of rated  $C_v$   
elastomer seat: per ANSI / FCI 70.2 Class VI
- **$C_v$  Ratio:** 100:1

## Connections

Valve Size		ANSI Class 150 & 300
Inches	DN	Carbon & St. St.
2	50	•
3	80	•
4	100	•
6	150	•
8	200	•
10	250	•
12	300	•

# Body Assembly Data

<b>Body Type:</b>	Cast wafer with integral bonnet	<b>Disc Type:</b>	Low dynamic torque reverse cupped disc
<b>Sizes:</b>	2"-12" (DN 25-300)	<b>Materials:</b>	316 stainless steel
<b>Materials:</b>	Carbon steel <sup>(1)</sup> ASTM A216 Gr WCB Stainless steel ASTM A351 Gr CF8M	<b>Shaft Type:</b>	One piece shaft, splined on outboard end
<b>Connections:</b>	Flangeless – clamped between ANSI Class 125, 150, 250 and 300 line flanges	<b>Material:</b>	17-4 PH stainless steel 316 stainless steel (optional)
<b>Rating:</b>	ANSI Class 300 – carbon steel and stainless steel	<b>Bushings:</b>	Stellite® Alloy 6
<b>Elastomer Liner Type:</b>	Replaceable metal reinforced flangeless ring with controlled compression	<b>Bracket Bearing:</b>	A dirt sealed, permanently lubricated ball bearing
<b>Materials:</b>		<b>Packet Box:</b>	Bolted
Buna-N®	+10°F to +180°F (-23°C to +82°C)	<b>Packing:</b>	Carbon Core Braided PTFE Teflon fiber ring (optional) EF® Seal for fugitive emission protection (optional)
Nordel®	-30°F to +250°F (-34°C to +121°C)		
Viton®	-10°F to +400°F (-23°C to +204°C) (+180°F (+82°C) max. for liquids and steam)		

1) Carbon steel is the standard body material in elastomer lined valves.

# Actuator Data (Model 33)

- **Type:** Spring diaphragm, floating stem  
pneumatic actuator
- **Action:** Increasing air extends stem
- **Bench Range:** B size 7-14 psig  
C size 9-15 psig
- **Connection:** 1/4" NPT
- **Fail Safe Action:** Field reversible
- **Bracket:** Cast iron
- **Handwheel:** Push type tilting, rising stem,  
(optional) Permanently lubricated

Valve Size		Shaft Diameter		Actuator					Handwheel Diameter	
				Size	Effective Area		Stroke			
Inches	DN	Inches	DN			sq. in.	sq. cm	Inches	mm	Inches
2	50	0.500	12.7	B	70	450	2.25	57	10	254
3	80	0.500	12.7	B	70	450	2.25	57	10	254
4	100	0.625	15.9	B	70	450	2.25	57	10	254
6	150	0.625	15.9	B	70	450	2.25	57	10	254
8	200	1.000	25.4	C	140	900	2.25	57	10	254
10	250	1.000	25.4	C	140	900	2.25	57	10	254
12	300	1.000	25.4	C	140	900	2.25	57	10	254



# Maximum Rated Flow Coefficients ( $C_V$ ) and Pressure Recovery Coefficients ( $F_L$ ) at Maximum Opening (75°)

Valve Size		$C_V^{(1)}$	$F_L$
Inches	DN		
2	50	90	0.65 at Max. Opening
3	80	280	
4	100	480	
6	150	1330	
8	200	2370	
10	250	3700	
12	300	5300	

1)  $C_V$  rating per ISA Test Procedure SP 39.2

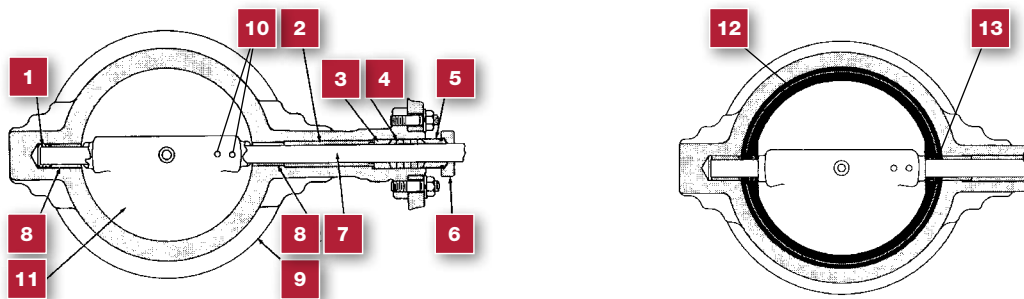
## Flow Coefficients ( $C_V$ ) Versus Valve Travel

% Max. Opening	10	20	30	40	50	60	70	80	90	100
% Max. $C_V$	1.2	2.5	5	9	14	23	34	51	72	100

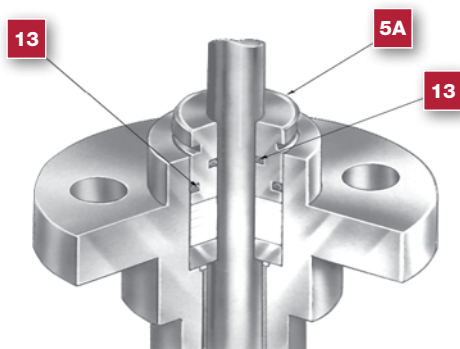
## Pressure Recovery Coefficient ( $F_L$ ) Versus % Maximum $C_V$

% Max. $C_V$	10	20	30	40	50	60	70	80	90	100
Pressure Recovery Coefficient $F_L$	.80	.78	.76	.75	.73	.71	.69	.67	.66	.65

# Materials



Temperature		-250°F	-30°F	-20°F	-10°F	10°F	180°F	250°F	400°F	450°F	500°F	
Ref. No	Description	Standard Materials										
1	Spring	302 Stainless Steel ASTM A313 Type 302										
2	Spacer Tube	316 Stainless Steel ASTM A269 Gr Type 316										
3	Packing Adapter	316 Stainless Steel ASTM A479 Type 316										
4	Packing	Carbon Core Braided PTFE										
		Teflon® Fiber Ring Chesterton 324 (optional)										
5	Packing Follower	316 Stainless Steel ASTM A276 Type 316										
5A	EF Seal	A582 Type 303 St. St. with 2 Viton Rings										
6	Packing Flange	Cadmium Plated Steel ASTM A105 Gr 11										
7	Vane Shaft	17-4 Stainless Steel ASTM A564 Gr 630 H1075										
		316 Stainless Steel ASTM A276 Type 316 (optional)										
8	Guide Bushing	Stellite Alloy 6										
9	Valve Body	316 Stainless Steel ASTM A351 Gr CF8M										
		Carbon Steel ASTM A216 WCB										
10	Shaft Pin	316 Stainless Steel ASTM A479 Type 316										
11	Vane	316 Stainless Steel ASTM A351 Gr CF8M										
12	Liner and O-ring	Buna-N										
		Nordel										
13	O-ring	Viton										
Temperature		-157°C	-34°C	-29°C	-23°C	12°C	82°C	121°C	204°C	232°C	260°C	

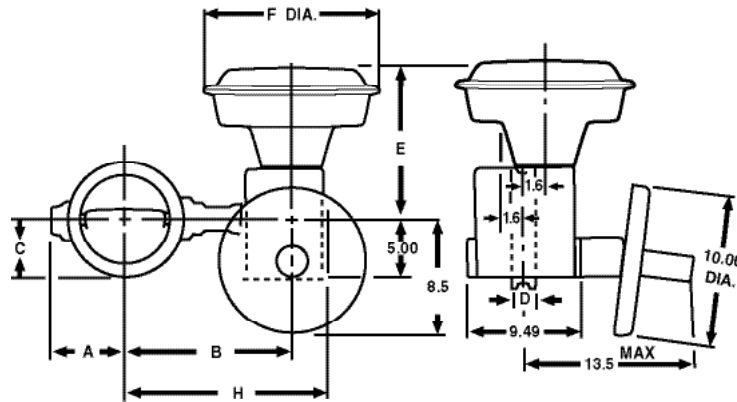


**EF Seal Option**  
**Double O-Ring Seal Packing Follower**  
 Fugitive Emission Containment Package

Provides long term reliable extremely low emission shaft seal performance. This economical solution to fugitive emissions won't compromise control performance and is suitable for use in environmentally sensitive applications.



# Dimensions



## Dimensions (inches)

Valve Size		Actuator Size	A	B	C	D	E	F
Inches	DN							
2	50	B	2.8	10.3	1.8	1.8	11.5	13.0
3	80	B	3.3	10.8	2.5	1.9	11.5	13.0
4	100	B	3.8	11.3	3.1	2.0	11.5	13.0
6	150	B	5.4	12.5	4.3	2.3	11.5	13.0
8	200	C	7.0	15.4	5.5	2.5	15.2	17.5
10	250	C	8.0	16.4	6.4	2.5	15.2	17.5
12	300	C	9.0	17.4	7.4	3.0	15.2	17.5

## Dimensions (millimeters)

Valve Size		Actuator Size	A	B	C	D	E	F
DN	Inches							
50	2	B	71	262	46	46	292	330
80	3	B	84	274	64	48	292	330
100	4	B	97	287	79	51	292	330
150	6	B	137	318	109	58	292	330
200	8	C	178	391	140	64	386	445
250	10	C	203	417	163	64	386	445
300	12	C	229	442	188	76	386	445

# Weights

## Assembly Weights<sup>(1)</sup>

Valve Size		Valve Weight	
in.	DN	lbs	Kg
2	50	59	27
3	80	61	28
4	100	66	30
6	150	72	33
8	200	142	64
10	250	157	71
12	300	186	84

1) Add 22 lbs. (10 Kgs) for assemblies with handwheels.



# Notes

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## About Dresser, Inc.

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## Dresser Masoneilan

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## About Dresser Masoneilan

Dresser Masoneilan, headquartered in Houston, Texas, has been the leading global partner in process control valves and solutions for more than 100 years. A business segment of Dresser, Inc., the company delivers customized products, services and diagnostic solutions for oil and gas, process and power generation applications. [www.dresser.com](http://www.dresser.com)

