



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.

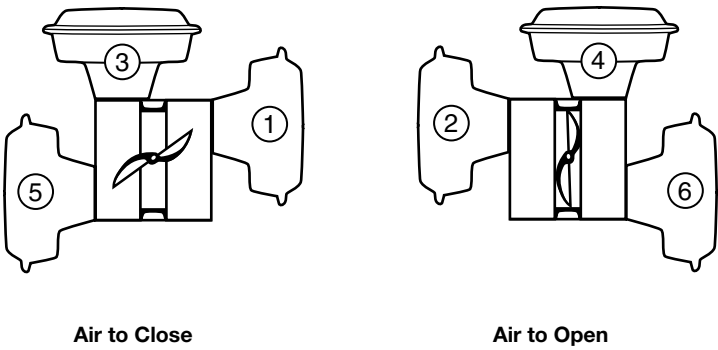
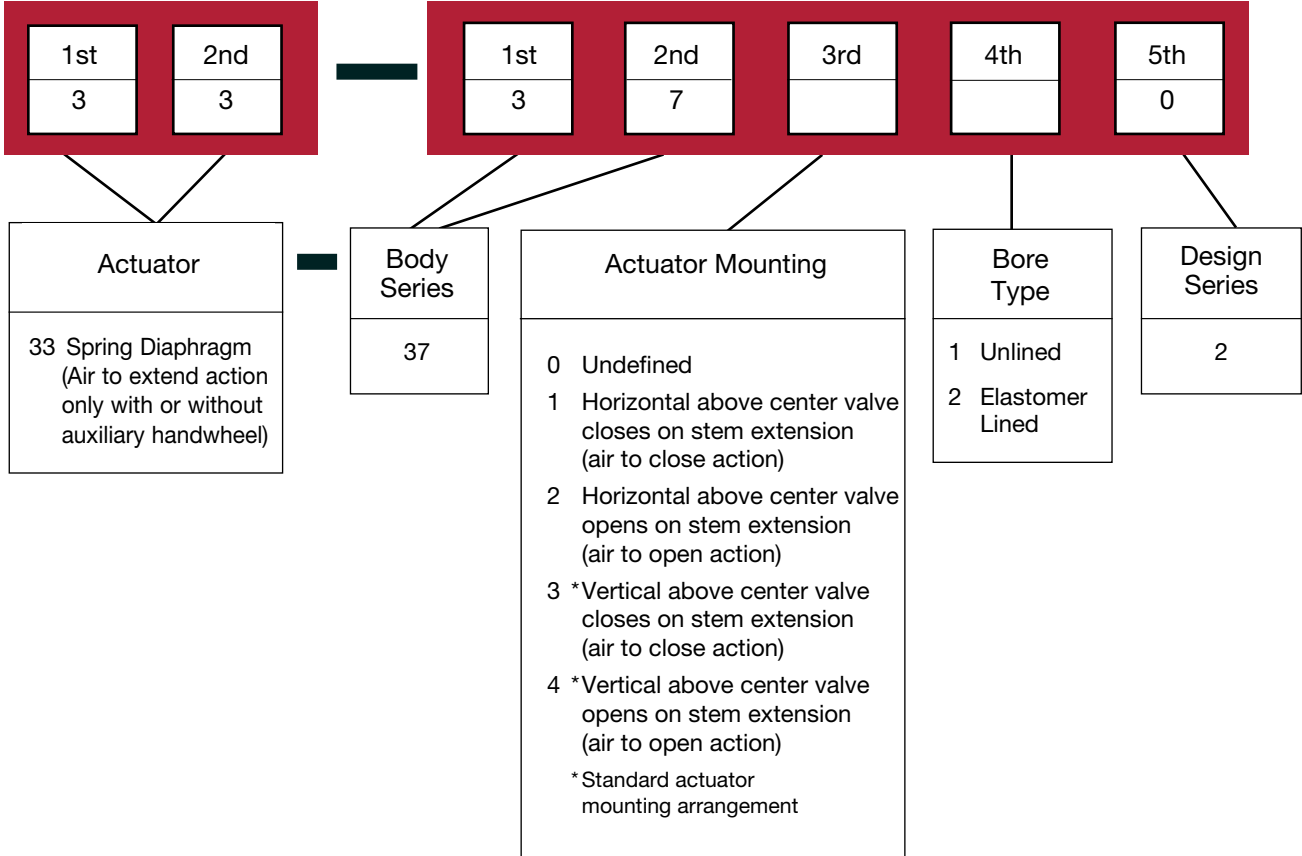
Integrally Cast Extension Bonnet – provides ability to handle wide range of process temperatures.

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

Body Type:	Cast wafer with integral bonnet	Disc Type:	Low dynamic torque reverse cupped disc
Sizes:	2"-12" (DN 25-300)	Materials:	316 stainless steel
Materials:	Carbon steel ⁽¹⁾ ASTM A216 Gr WCB Stainless steel ASTM A351 Gr CF8M	Shaft Type:	One piece shaft, splined on outboard end
Connections:	Flangeless – clamped between ANSI Class 125, 150, 250 and 300 line flanges	Material:	17-4 PH stainless steel 316 stainless steel (optional)
Rating:	ANSI Class 300 – carbon steel and stainless steel	Bushings:	Stellite® Alloy 6
Elastomer Liner Type:	Replaceable metal reinforced flangeless ring with controlled compression	Bracket Bearing:	A dirt sealed, permanently lubricated ball bearing
Materials:		Packet Box:	Bolted
Buna-N®	+10°F to +180°F (-23°C to +82°C)	Packing:	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

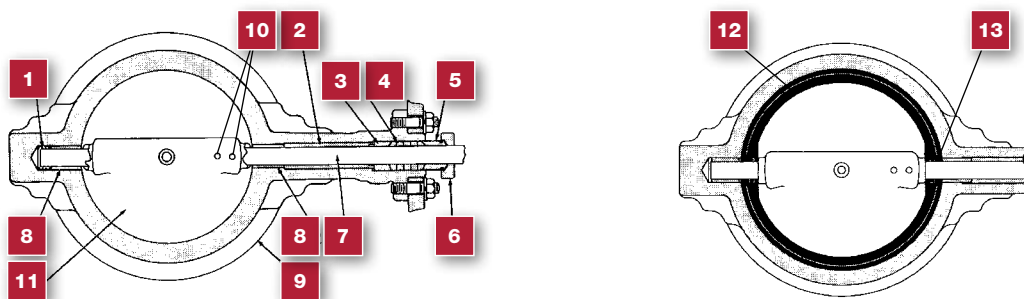
Flow Coefficients (C_V) Versus Valve Travel

% 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

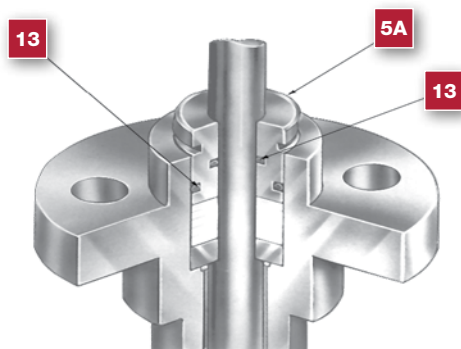
Pressure Recovery Coefficient (F_L) Versus % Maximum C_V

% 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



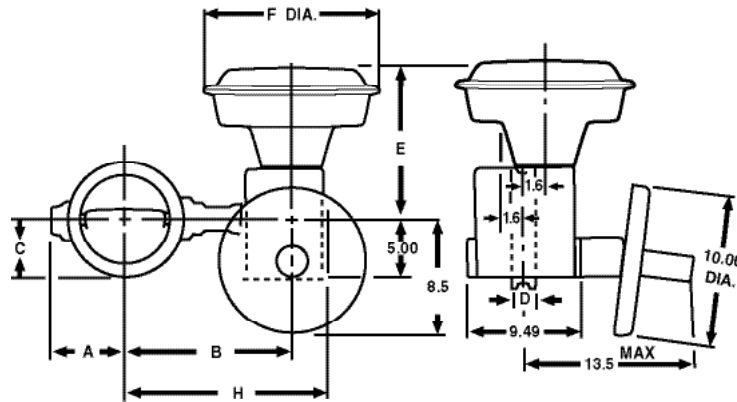
Temperature	-250°F	-30°F	-20°F	-10°F	10°F	180°F	250°F	400°F	450°F	500°F
Ref. No	Description									
Standard Materials										
1	Spring									
2	Spacer Tube									
3	Packing Adapter									
4	Packing									
5	Packing Follower									
5A	EF Seal									
6	Packing Flange									
7	Vane Shaft									
8	Guide Bushing									
9	Valve Body									
10	Shaft Pin									
11	Vane									
12	Liner and O-ring									
13	O-ring									
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⁽¹⁾

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, 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

