

Masoneilan™ 37002 Series MiniTork™ II Control Valve

Heavy Duty Control
Butterfly Valve



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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.

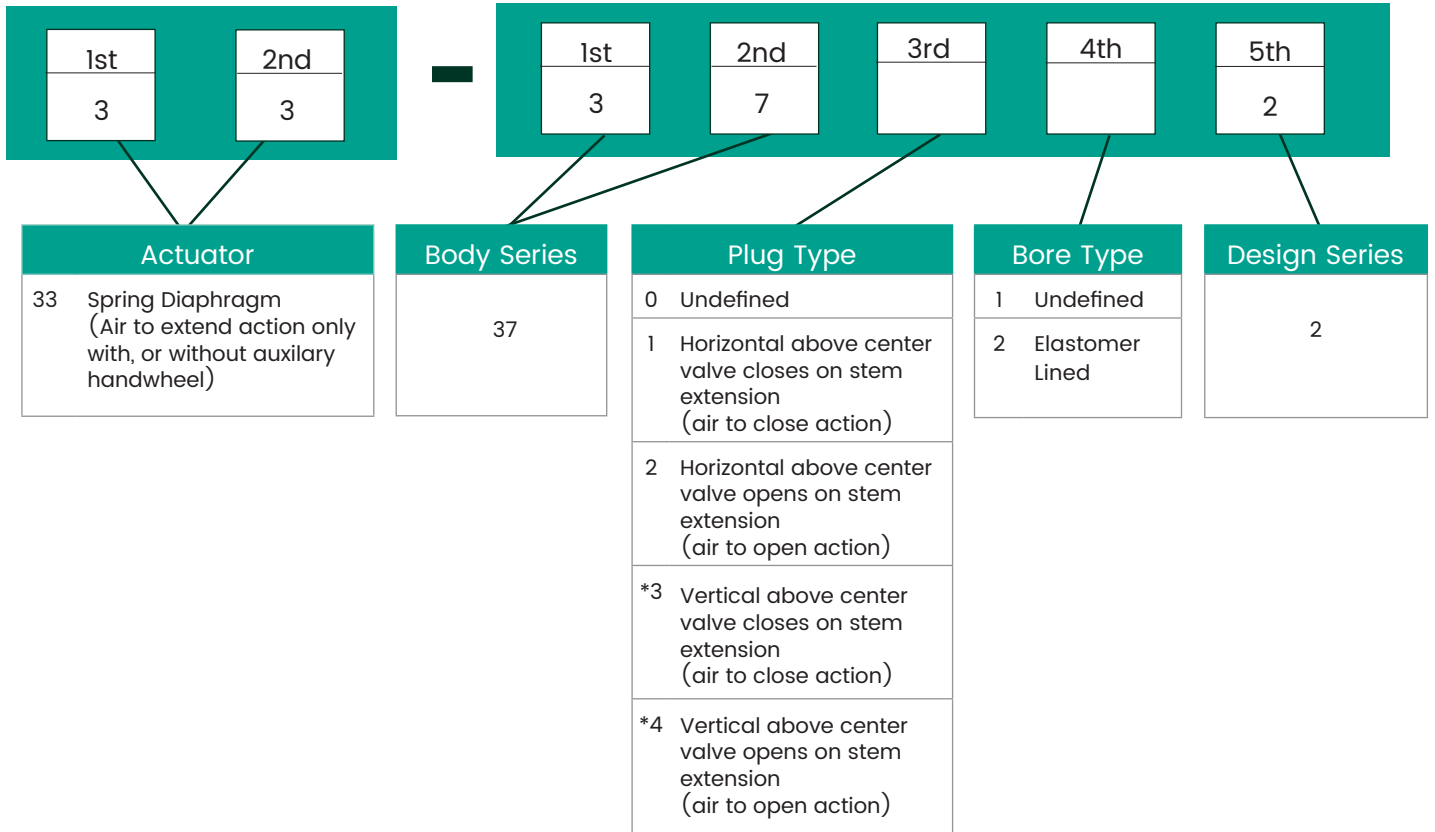
Integrally Cast Extension Bonnet – provides ability to handle wide range of process temperatures.

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

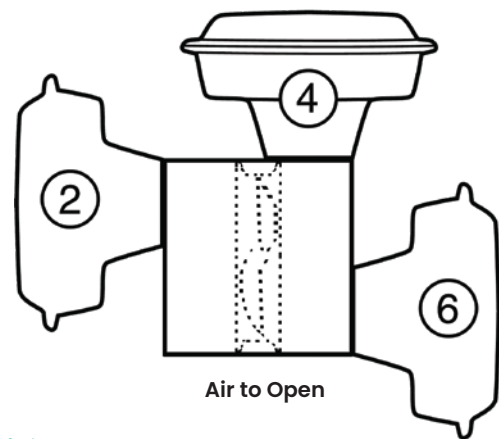
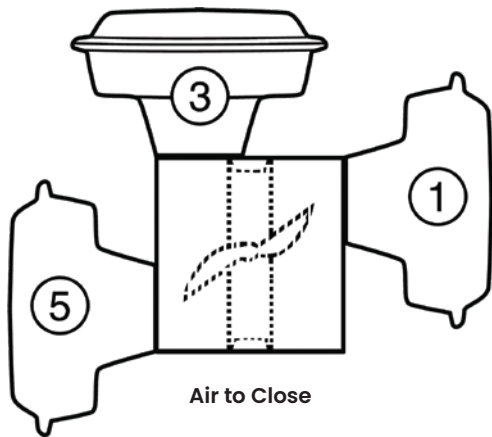


Handwheel and positioner are optional.

Numbering System



*Standard actuator mounting arrangement.



Actuator in front of line

General Data

Flow Characteristic:	Equal percentage
Flow Direction:	Universal
Temperature Range:	Unlined valves St. St. body -250°F to +500°F (-157°C to +260°C) carbon steel body -20°F to +500°F (-29°C to +260°C) lined valves—see liner material page 7.
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 (-12°C to +82°C)	Packing:	Carbon Core Braided PTFE fiber ring (optional) EF™ Seal for fugitive emission protection (optional)
Norde®	-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 maximum 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	
Inches	DN	Inches	DN	Size	Effective Area		Stroke		Inches	mm
					sq. in.	sq. cm	Inches	mm		
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

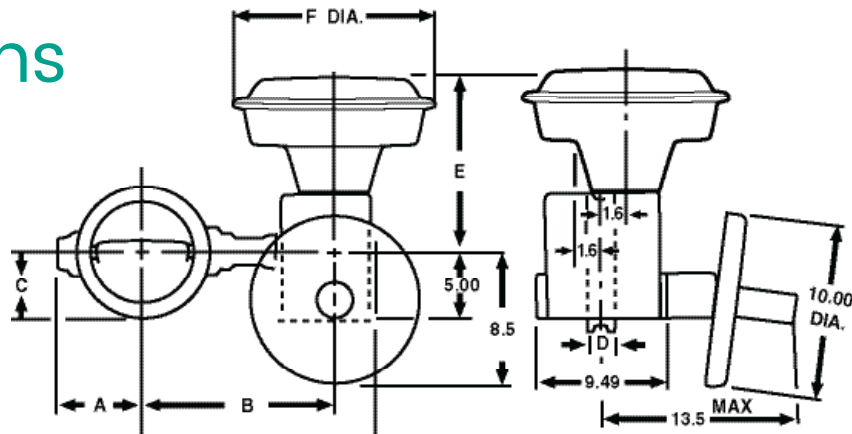
Flow Coefficients (C_V) Versus Valve Travel

% 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

Dimensions



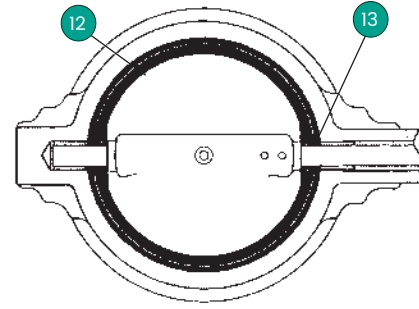
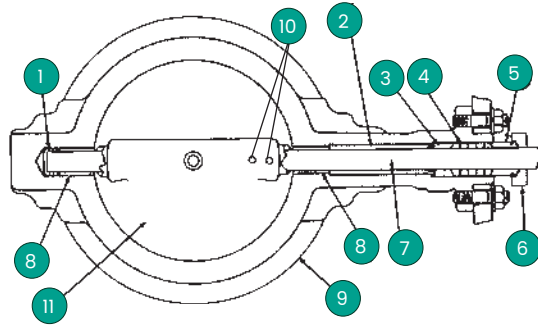
Dimensions (inches)

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

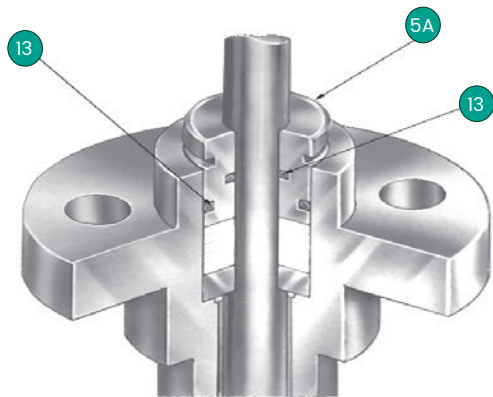
Dimensions (millimeters)

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

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					Buna-N					
13	and O-ring					Nordel					
						Viton					
Temperature	-15°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.

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.



CONTROLS SUPPLY CHAIN

VALVES ACTUATORS INSTRUMENTATIONS