

# Masoneilan™ 80000 Series

Three-Way Control  
Valves Combining and  
Diverting Service



# Table of Contents

Features .....	3..
Numbering System .....	4
Ratings/Connections .....	4
General Data.....	5..
Temperature Range/Seat Leakage .....	6..
Flow Direction and Application .....	7
$C_v$ and $F_L$ versus Travel.....	7
$C_v$ and Flow Direction .....	8
Materials of Construction .....	9
Valve Dimensions .....	16
Valve Weights.....	20
Actuator Dimensions and Weights.....	21..
Accessories .....	23

# Features

The 80000 Series is a heavy duty three-way control valve designed for either combining or diverting service. Standard features include:

## Heavy Guiding

Construction of the Masoneilan 80000 Series includes top guiding in the plug, as well as guiding within the seat ring locations providing an extremely well supported and stable design.

## High Capacity

Large flow galleries in the 80000 Series provide high capacity designs with low pressure recoveries. High critical flow factors are attained in both combining and diverting configurations.

## Flow Stability

The 80000 Series is a dual seated design with flow tending to open the valve at both ports. This provides inherent dynamic stable resulting in excellent throttling control performance.

## Wide Operating Range

Designs are available in various sizes and can be configured to operate within an extremely wide temperature range. This is accomplished through use of high performance materials and design configurations.

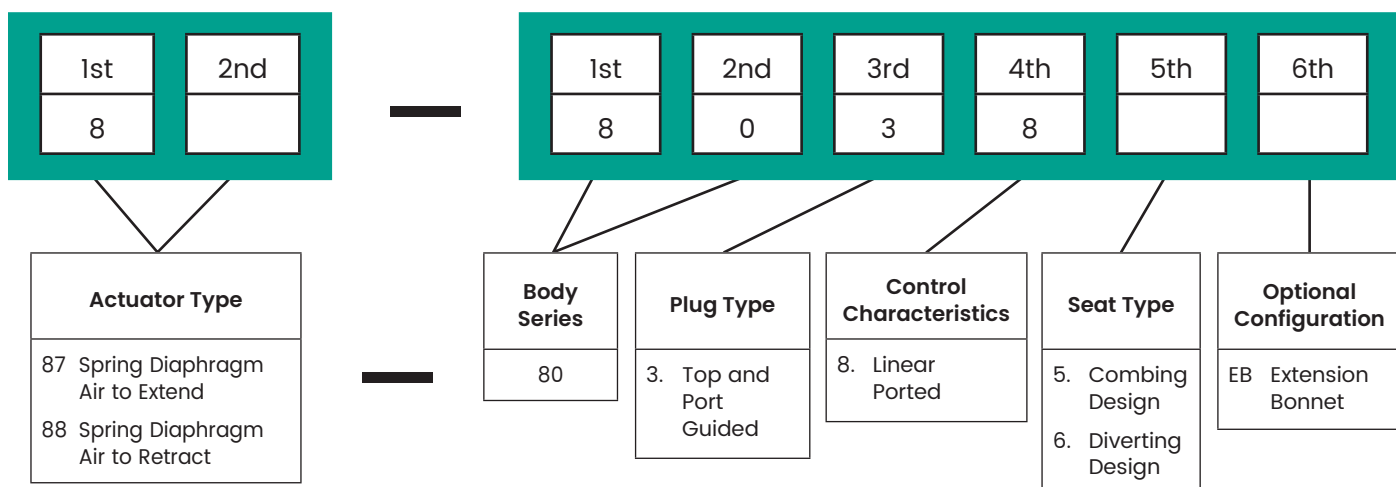
## Reduced Emissions

The 80000 Series can be supplied with the Masoneilan *Low-E™* Packing design to provide low emissions performance meeting various environmental regulations worldwide.

## NACE Compliance

Construction for Sour Service Applications in accordance with NACE standard MR 0103 is readily available. Applications requiring compliance to MR 0175, 2003 Rev or ISO 15156 can also be provided.

# Numbering System



# Ratings/Connections

□ Flanged ■ Butt Weld △ RT Joint ● Threaded ○ Socket Weld

Valve Sizes		ASME Class		
inches	mm	150	300	600
0.75, 1, 1.5, 2	20, 25, 40, 50	n   △ m	n   △ m	n   △ m
3 through 12	80 through 300	n △	n △	n △

1. 0.75" & 1" (20mm & 25mm) sizes not available in 80386 version - Diverting Design Utilize combining design and consult factory for details.

2. Welded end connections, other flanged configurations, and ASME ratings above 600 Class are available upon request. Consult factory for details.

# General Data

## Body

Type: 3-way  
Flow Direction: Flow to open (both ports)  
C<sub>v</sub> Ratio: 50:1  
Materials: Carbon steel  
Stainless steel  
Chrome-molybdenum steel  
Others

## Bonnet

Type: Bolted  
Packing Box: Bolted  
Optional: Extension  
Materials: Carbon steel  
Stainless steel  
Chrome-molybdenum steel  
Others

## Trim

Type: 385 - combining  
386 - diverting

## Flow Characteristics

Linear  
Full capacity only  
Actuator

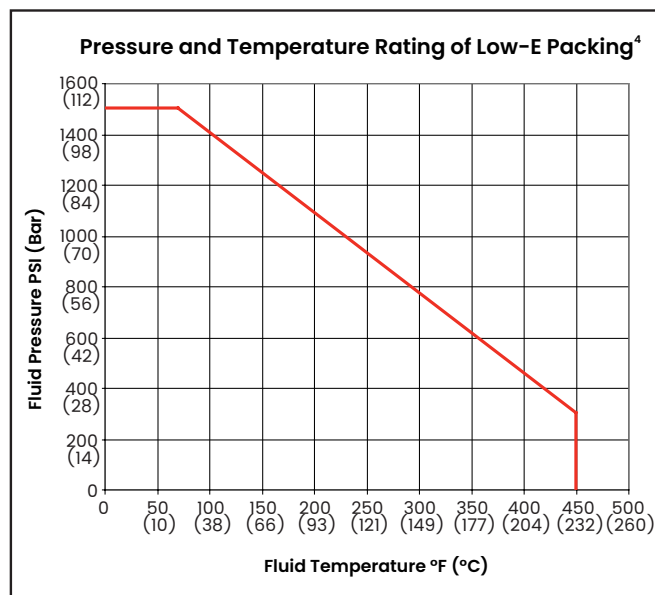
## Actuator

Type: Spring diaphragm  
Direct, air to extend  
Reverse, air to retract

# Temperature Range/Seat Leakage

Valve Size <sup>1</sup>		Body Rating	Body & Bonnet Material	Temperature Ranges <sup>2</sup>				Seat Leakage IEC 60534-4 and ASME/FCI 70.2 Class <sup>3</sup>
				Standard Bonnet		Extension Bonnet		
inch	mm			Min.	Max.	Min.	Max.	
0.75 to 12	20 to 300	ASME Class 150 to 600 (PN 10 to 100)	Carbon Steel	-20°F (-29°C)	+450°F <sup>2</sup> (+232°C)	-20°F (-29°C)	+800°F (+427°C)	II, III, or IV
			Stainless Steel	-20°F (-29°C)	+450°F <sup>2</sup> (+232°C)	-20°F (-29°C)	+800°F (+427°C)	
			Chrome-Moly	+32°F (0°C)	+450°F <sup>2</sup> (+232°C)	+32°F (0°C)	+800°F (+427°C)	
			NACE	-20°F (-29°C)	+450°F <sup>2</sup> (+232°C)			

- 0.75" & 1" (20 & 25mm) sizes are not available in the 80386 diverting configuration. Utilize combining version 80385 and consult factory for details.
- Maximum temperature shown is with PTFE and Low-E packing. Extended max. operating temperature of 800°F (427°C) allowable with Graphite packing.
- Class II shutoff is standard leakage rating. Class III and IV can be provided depending on application service conditions. Consult with factory on Class III and IV applications and requirements.
- Low-E Packing for low emissions applications is limited to maximum pressure and temperature as shown in chart below.



# Flow Direction & Application

Valve Model	Type of Service	Valve Size		Flow Direction (Both Ports)
		inches	mm	
80385	Combining	0.75 to 12	20 to 300	FTO
80385 <sup>1</sup>	Diverting	0.75 & 1	20 & 25	FTC
80386	Diverting	1.5 to 12	40 to 300	FTO

1. 0.75" & 1" (20 & 25mm) sizes are not available in the 80386 diverting configuration. Utilize combining version 80385 and consult factory for details.

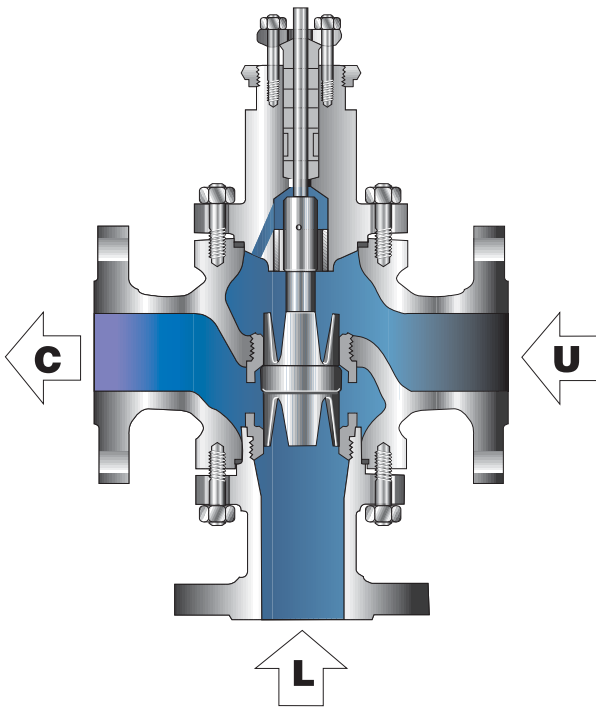
## $C_v$ and $F_L$ versus Travel

Direction: FLOW-TO-OPEN (FTO)  
Flow Characteristic: LINEAR

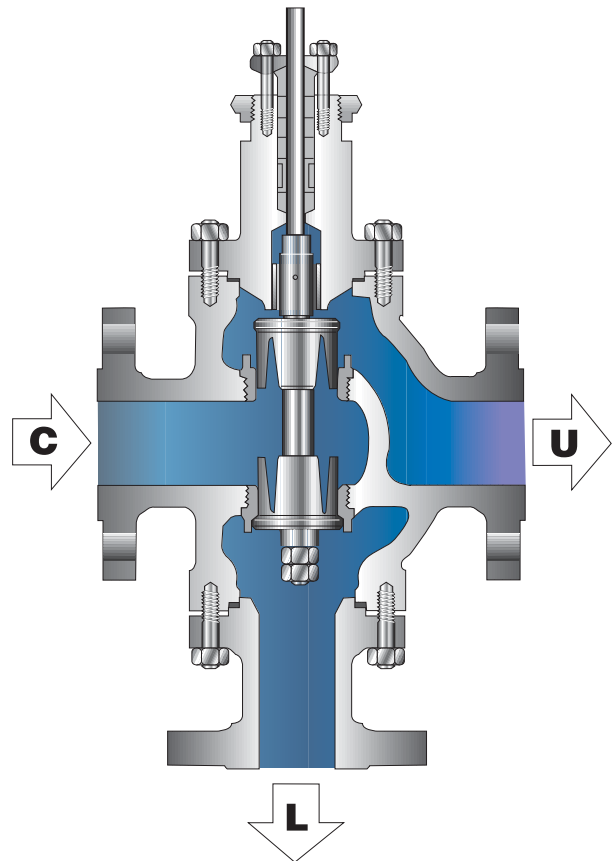
Percent of Travel							10	20	30	40	50	60	70	80	90	100	
$F_L$							0.90	0.91	0.91	0.92	0.92	0.92	0.91	0.91	0.90	0.90	0.90
Valve Size		ASME Rating	Orifice Diameter		Travel		Rated $C_v$										
inch	mm		inch	mm	inch	mm											
0.75	20	150 to 600	0.88	22.3	0.5	12.7	0.6	1.2	1.8	2.4	3	3.6	4.2	4.8	5.4	6	
1	25		1.06	26.9	0.5	12.7	0.9	1.8	2.7	3.6	4.5	5.4	6.3	7.2	8.1	9	
1.5	40		1.5	38.1	0.8	20.3	2.1	4.2	6.3	8.4	10.5	12.6	14.7	16.8	18.9	21	
2	50		2.00	50.8	0.8	20.3	3.6	7.2	10.8	14.4	18	21.6	25.2	28.8	32.4	36	
3	80		2.62	66.5	1.5	38.1	7.5	15	22.5	30	37.5	45	52.5	60	67.5	75	
4	100		3.50	88.9	1.5	38.1	12.4	24.8	37.2	49.6	62	74.4	86.8	99.2	112	124	
6	150		5.25	133	2.0	50.8	27	54	81	108	135	162	189	216	243	270	
8	200		7.00	178	2.5	63.5	48	96	144	192	240	288	336	384	432	480	
10	250		8.75	222	2.5	63.5	75	150	225	300	375	450	525	600	675	750	
12 <sup>1</sup>	300		10.5	267	3.5	88.9	108	216	324	432	540	648	756	864	972	1080	

1. Use spring-diaphragm actuator Model 37/38 for 12" (300 mm) valve size.

# C<sub>v</sub> and Flow Direction



**80385 Combining**



**80386 Diverting**

C = Common    L = Lower    U = Upper

**Body Ratings: ASME Class 150 through 600 (PN 10 to 100)**

**Sizes: 0.75" through 12" (20mm through 300mm)<sup>1</sup>**

**Flow Direction: flow to open (both ports)**

**Flow Characteristic: linear**

0% - Plug in Up Position  
100% - Plug in Down Position

Valve Size <sup>1</sup>		Percent of Plug Travel																					
inches	mm	Plug Up 0%	10%		20%		30%		40%		50%		60%		70%		80%		90%		Plug Down 100%		
0.75	20	0	6	0.6	5.4	1.2	4.8	1.8	4.2	2.4	3.6	3	3	3.6	2.4	4.2	1.8	4.8	1.2	5.4	0.6	6	0
1	25	0	9	0.9	8.1	1.8	7.2	2.7	6.3	3.6	5.4	4.5	4.5	5.4	3.6	6.3	2.7	7.2	1.8	8.1	0.9	9	0
1.5	40	0	21	2.1	18.9	4.2	16.8	6.3	14.7	8.4	12.6	10.5	10.5	12.6	8.4	14.7	6.3	16.8	4.2	18.9	2.1	21	0
2	50	0	36	3.6	32.4	7.2	28.8	10.8	25.2	14.4	21.6	18.0	18.0	21.6	14.4	25.5	10.8	28.8	7.2	32.4	3.6	36	0
3	80	0	75	7.5	67.5	15	60	22.5	52.5	30	45	37.5	37.5	45	30	52.5	22.5	60	15	67.5	7.5	75	0
4	100	0	124	12.4	111.6	24.8	99.2	37.2	86.8	49.6	74.4	62	62	74.4	49.6	86.8	37.2	99.2	24.8	111.6	12.4	124	0
6	150	0	270	27	243	54	216	81	189	108	162	135	135	162	108	189	81	216	54	243	27	270	0
8	200	0	480	48	432	96	384	144	336	192	288	240	240	288	192	336	144	384	96	432	48	480	0
10	250	0	750	75	675	150	600	225	525	300	450	375	375	450	300	525	225	600	150	675	75	750	0
12	300	0	1080	108	972	216	864	324	756	432	648	540	540	648	432	756	324	864	216	972	108	1080	0

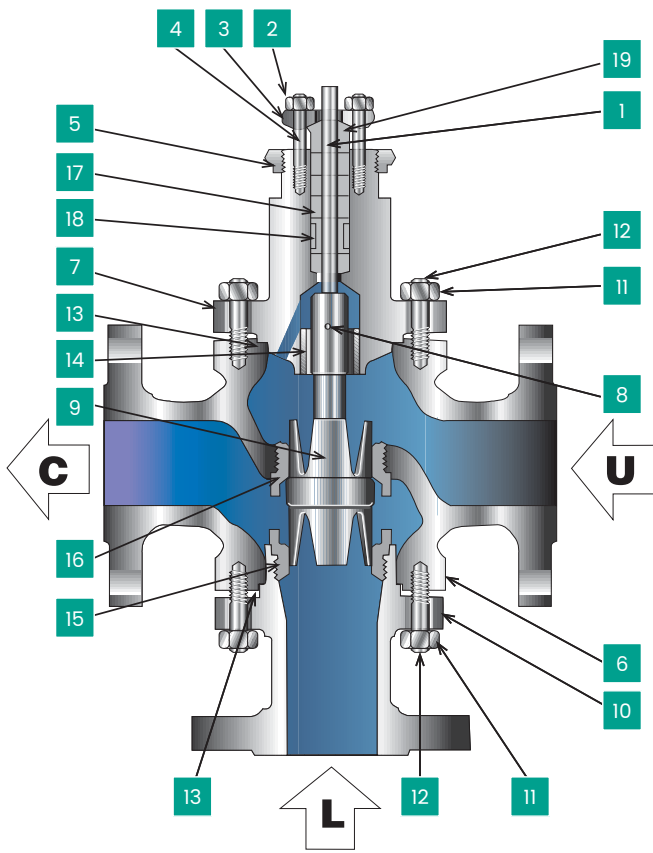
<sup>1</sup> 1" (25mm) size not available in 80386 version - Diverting Design. Utilize combining design and consult factory for details.

80385 U to C  L to C

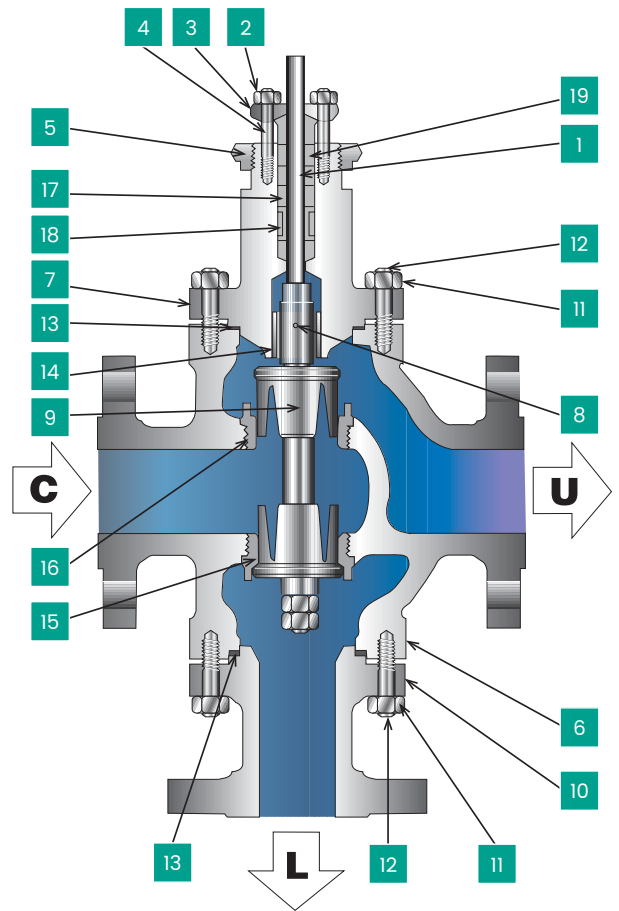
80386 U to C  L to C



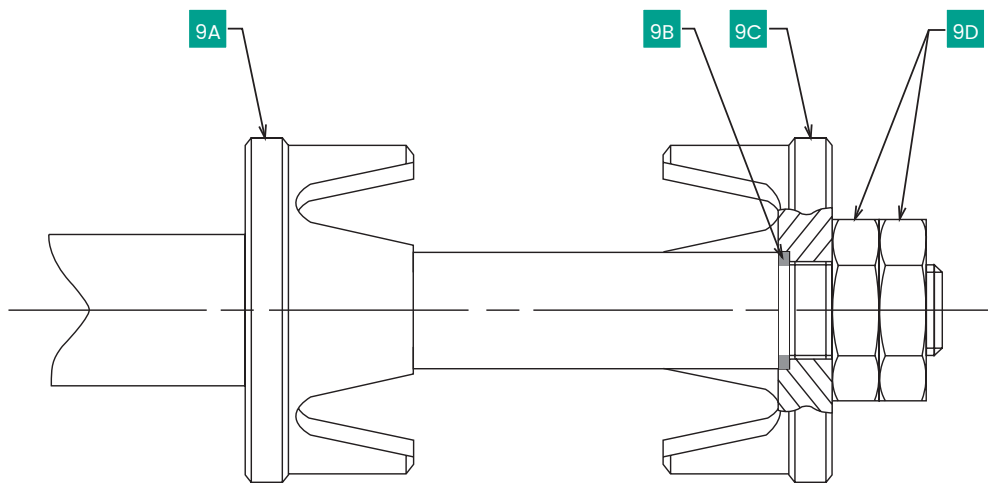
# Materials of Construction



80385 Combining



80386 Diverting



# Materials of Construction

## Standard Carbon Steel Version

Valve Sizes: 0.75" to 12" (20mm to 300mm)  
Body Ratings: ASME Class 150 to 600

Ref. No.	Temperature Range	-20°F	650°F	800°F
	Description	Materials		
1	Plug Stem	316 St. St. ASTM 479 TY 316		
2	Packing Flange Nut	St. St. ASTM A194 GR 8		
3	Packing Flange	Zinc Dichromate Carbon Steel ASTM A105		
4	Packing Flange Stud	304 St. St. ASTM A193 GR B8		
5	Drive Nut	Carbon Steel SAE 1117 or ASTM A216 GR WCC		
6	Valve Bonnet	Carbon Steel ASTM A216 Grade WCC or ASTM A105		
7	Valve Body	Carbon Steel ASTM A216 Grade WCC		
8	Plug Pin	316 St. St. ASTM 479 TY 316		
9	Plug	316 St. St. ASTM 479 TY 316	316 St. St. with Hardfaced Seat and Guide	
		316 St.St.with Hardfaced Seat		
	9A - Upper Skirt <sup>1</sup>	316 St. St. ASTM 479 TY 316	316 St. St. with Hardfaced Seat	
		316 St.St.with Hardfaced Seat		
	9B - Plug Gasket <sup>1</sup>	316 St. St. ASTM 479 TY 316		
	9C - Lower Skirt <sup>1</sup>	316 St. St. ASTM 479 TY 316	316 St. St. with Hardfaced Seat	
316 St.St.with Hardfaced Seat				
9D - Jam Nuts <sup>1</sup>	ASTM A194 GR 8M			
10	Lower Flange	Carbon Steel ASTM A216 Grade WCC or ASTM A105		
11	Body Stud Nut	Carbon Steel ASTM A194 GR 2H		
12	Body Stud	Alloy Steel ASTM A193 GR B7		
13	Body Gasket	316L St. St. w/Flexible Graphite Filler (Spiral Wound)		
14	Guide Bushing	440C St. St. ASTM A276 TY 440C	Stellite or Equivalent 6 UNS 30006 <sup>2</sup>	
15	Lower Seat Ring	316 St. St. ASTM 479 TY 316	316 St. St. with Hardfaced Seat	
		316 St.St. with Hardfaced Seat		
16	Upper Seat Ring	316 St. St. ASTM 479 TY 316	316 St. St. with Hardfaced Seat	
		316 St.St. with Hardfaced Seat		
18	Lantern Ring (Optional)	Austenitic 300 Series Stainless Steel		
19	Packing Follower	Austenitic 300 Series Stainless Steel		
Ref. No.	Temperature Range	-29°C	343°C	427°C

1. Separate plug components only required for Model 80386.

2. Hardfaced bushings and plug guiding surfaces are required for temperatures above 650°F (343°C).

# Materials of Construction

Valve Sizes: 0.75" to 12" (20mm to 300mm)  
Body Ratings: ASME Class 150 to 600

## Stainless Steel Version

Ref. No.	Temperature Range	-148°F -20°F		650°F		800°F		
		Description		Materials				
1		Plug Stem					316 St. St. ASTM 479 TY 316	
2		Packing Flange Nut					St. St. ASTM A194 GR 8	
3		Packing Flange					Zinc Dichromate Carbon Steel ASTM A105	
4		Packing Flange Stud					304 St. St. ASTM A193 GR B8	
5		Drive Nut					Carbon Steel SAE 1117 or ASTM A216 GR WCC	
6			Valve Bonnet Plain Version				316 Stainless Steel ASTM A351 Grade CF8M or ASTM A182 Grade F316	
			Valve Bonnet Extended Version				316 Stainless Steel ASTM A351 Grade CF8M or ASTM A182 Grade F316	
7		Valve Body					316 Stainless Steel ASTM A351 Grade CF8M	
8		Plug Pin					316 St. St. ASTM 479 TY 316	
9			Plug		316 St. St. ASTM 479 TY 316	316 St. St. with Hardfaced Seat and Guide		
					316 St.St.with Hardfaced Seat			
			9A - Upper Skirt <sup>1</sup>		316 St. St. ASTM 479 TY 316	316 St. St. with Hardfaced Seat		
					316 St.St.with Hardfaced Seat			
			9B - Plug Gasket <sup>1</sup>					316 St. St. ASTM 479 TY 316
				9C - Lower Skirt <sup>1</sup>		316 St. St. ASTM 479 TY 316	316 St. St. with Hardfaced Seat	
				316 St.St.with Hardfaced Seat				
		9D - Jam Nuts <sup>1</sup>					ASTM A194 GR 8M	
10		Lower Flange					316 Stainless Steel ASTM A351 Grade CF8M or ASTM A182 Grade F316	
11			Body Stud Nut		Carbon Steel ASTM A194 GR 2H Zinc Dichromate Plating	C. S. ASTM A194 GR 2H (No Zinc)		
							ASTM A194 Gr. 8	
12			Body Stud		Alloy Steel ASTM A193 GR B7 Zinc Dichromate Plating	Alloy Steel ASTM A193 GR B7		
							ASTM A193 Gr. B8 <sup>2</sup>	
13		Body Gasket					316L St. St. w/Flexible Graphite Filler (Spiral Wound)	
14		Guide Bushing					Stellite or Equivalent 6 <sup>3</sup>	
15			Lower Seat Ring		316 St. St. ASTM 479 TY 316	316 St. St. with Hardfaced Seat		
					316 St.St. with Hardfaced Seat			
16			Upper Seat Ring		316 St. St. ASTM 479 TY 316	316 St. St. with Hardfaced Seat		
					316 St.St. with Hardfaced Seat			
18		Lantern Ring (Optional)					Austenitic 300 Series Stainless Steel	
19		Packing Follower					Austenitic 300 Series Stainless Steel	
Ref. No.	Temperature Range	-100°C -29°C		343°C		427°C		

1. Separate plug components only required for Model 80386.

2. ASTM A453 Gr. 660 Body Studs may be required for low temperature applications or for corrosion resistance requirements.

3. Solid Stellite or Equivalent bushings are tack welded in bonnet and lower flange for applications above 650°F (343°C) to account for thermal expansion.

# Materials of Construction

## Standard Chrome Moly Version

Valve Sizes: 0.75" to 12" (20mm to 300mm)  
Body Ratings: ASME Class 150 to 600

Ref. No.	Temperature Range	32°F	650°F	800°F
	Description	Materials		
1	Plug Stem	316 St. St. ASTM 479 TY 316		
2	Packing Flange Nut	St. St. ASTM A194 GR 8		
3	Packing Flange	Zinc Dichromate Carbon Steel ASTM A105		
4	Packing Flange Stud	304 St. St. ASTM A193 GR B8		
5	Drive Nut	Carbon Steel SAE 1117 or ASTM A216 GR WCC		
6	Valve Bonnet	Chrome-Molybdenum Steel ASTM A217 Grade WC9		
7	Valve Body	Chrome-Molybdenum Steel ASTM A217 Grade WC9		
8	Plug Pin	316 St. St. ASTM 479 TY 316		
9	Plug	316 St. St. ASTM 479 TY 316	316 St. St. with Hardfaced Seat and Guide	
		316 St.St.with Hardfaced Seat		
	9A - Upper Skirt <sup>1</sup>	316 St. St. ASTM 479 TY 316	316 St. St. with Hardfaced Seat	
		316 St. St. with Hardfaced Seat		
	9B - Plug Gasket <sup>1</sup>	316 St. St. ASTM 479 TY 316		
	9C - Lower Skirt <sup>1</sup>	316 St. St. ASTM 479 TY 316	316 St. St. with Hardfaced Seat	
316 St.St.with Hardfaced Seat				
9D - Jam Nuts <sup>1</sup>	ASTM A194 GR 8M			
10	Lower Flange	Chrome-Molybdenum Steel ASTM A217 Grade WC9		
11	Body Stud Nut	Carbon Steel ASTM A194 GR 2H		
12	Body Stud	Alloy Steel ASTM A193 GR B7		
13	Body Gasket	316L St. St. w/Flexible Graphite Filler (Spiral Wound)		
14	Guide Bushing	440C St. St. ASTM A276 TY 440C	Stellite or Equivalent 6 UNS 30006 <sup>2</sup>	
15	Lower Seat Ring	316 St. St. ASTM 479 TY 316	316 St. St. with Hardfaced Seat	
		316 St.St. with Hardfaced Seat		
16	Upper Seat Ring	316 St. St. ASTM 479 TY 316	316 St. St. with Hardfaced Seat	
		316 St. St. with Hardfaced Seat		
18	Lantern Ring (Optional)	Austenitic 300 Series Stainless Steel		
19	Packing Follower	Austenitic 300 Series Stainless Steel		
Ref. No.	Temperature Range	0°C	343°C	427°C

1. Separate plug components only required for Model 80386.

2. Hardfaced bushings and plug guiding surfaces are required for temperatures above 650°F (343°C).

# Materials of Construction

Valve Sizes: 0.75" to 12" (20mm to 300mm)  
 Body Ratings: ASME Class 150 to 600

## Standard Packing Options

Ref. No.	Temperature Range		-20°F	450°F	800°F
	Description		Materials		
17	Packing	Standard Bonnet	PTFE Packing		
			Low-E Packing		
			Flexible Graphite Packing		
	Packing	Extended Bonnet	PTFE Packing		
			Low-E Packing		
			Flexible Graphite Packing		
Ref. No.	Temperature Range		-29°C	232°C	427°C

# Materials of Construction

Valve Sizes: 0.75" to 12" (20mm to 300mm)  
Body Ratings: ASME Class 150 to 600

## Standard NACE Version

Ref. No.	Temperature Range	-20°F	450°F
	Description	Standard Operating Materials <sup>1</sup>	
1	Plug Stem	316 St. St. ASTM A479 TY 316 (HRC 22 Max.)	
		ASTM A638 Gr 660 <sup>2</sup>	
2	Packing Flange Nut	304 St. St. ASTM A194 Gr 8 <sup>3</sup> (non exposed)	
		Alloy Steel ASTM A194 Gr 8A <sup>4</sup> (exposed)	
3	Packing Flange	Zinc Dichromate Carbon Steel ASTM A105	
4	Packing Flange Stud	304 St. St. ASTM A193 GR B8 (exposed and non exposed)	
5	Drive Nut	Carbon Steel SAE 1117 <sup>3</sup>	
		Carbon Steel ASTM A105 or SAE 1010-1025 <sup>5</sup>	
6	Valve Bonnet	Carbon Steel ASTM A216 Grade WCC (HRC 22 Max.)	
		Carbon Steel ASTM A105 (HRC 22 Max.)	
		316 St. St. ASTM A351 Gr CF8M (HRC 22 Max.)	
7	Valve Body	Carbon Steel ASTM A216 Grade WCC (HRC 22 Max.)	
		316 St. St. ASTM A351 Gr CF8M (HRC 22 Max.)	
8	Plug Pin	316 St. St. ASTM A479 TY 316 (HRC 22 Max.)	
9	Plug	316 St. St. ASTM A479 TY 316 (HRC 22 Max.)	
		316 St. St. ASTM A479 TY 316 with Hardfaced Seat (HRC 22 Max.)	
	9A - Upper Skirt <sup>6</sup>	316 St. St. ASTM A479 TY 316 (HRC 22 Max.)	
		316 St. St. ASTM A479 TY 316 with Hardfaced Seat (HRC 22 Max.)	
	9B - Plug Gasket <sup>6</sup>	316 St. St. ASTM A479 TY 316 (HRC 22 Max.)	
	9C - Lower Skirt <sup>6</sup>	316 St. St. ASTM A479 TY 316 (HRC 22 Max.)	
	9D - Jam Nuts <sup>6</sup>	316 St. St. ASTM A479 TY 316 with Hardfaced Seat (HRC 22 Max.)	
		ASTM A194 Gr. 8M	
10	Lower Flange	Carbon Steel ASTM A216 Grade WCC (HRC 22 Max.)	
		Carbon Steel ASTM A105 (HRC 22 Max.)	
		316 St. St. ASTM A351 Gr CF8M (HRC 22 Max.)	
		ASTM A194 GR 2H Zinc Plating <sup>3 &amp; 5</sup> (non exposed)	
		ASTM A194 Gr 2HM Zinc Plating <sup>4 &amp; 5</sup> (exposed)	
11	Body Stud Nut	ASTM A194 GR 2H <sup>3</sup> (non exposed)	
		ASTM A194 Gr 2HM <sup>4</sup> (exposed)	
12	Body Stud	ASTM A193 GR B7 <sup>3</sup> (non exposed)	
		ASTM A193 Gr B7M <sup>4</sup> (exposed)	
		ASTM A193 GR B7 Zinc Plating <sup>3 &amp; 5</sup> (non exposed)	
		ASTM A193 Gr B7M Zinc Plating <sup>4 &amp; 5</sup> (exposed)	
13	Body Gasket	316L St. St. w/Flexible Graphite Filler (Spiral Wound)	
14	Guide Bushing	Stellite or Equivalent 6 UNS 30006	
15	Lower Seat Ring	316 St. St. ASTM A479 TY 316 (HRC 22 Max.)	
		316 St. St. ASTM A479 TY 316 with Hardfaced Seat (HRC 22 Max.)	
Ref. No.	Temperature Range	-29°C	232°C

# Materials of Construction

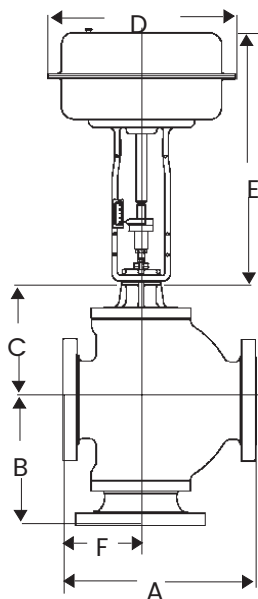
**Valve Sizes: 0.75" to 12" (20mm to 300mm)**  
**Body Ratings: ASME Class 150 to 600**

## Standard NACE Version

Ref. No.	Temperature Range	-20°F	450°F
	Description	Standard Operating Materials <sup>1</sup>	
16	Upper Seat Ring	316 St. St. ASTM A479 TY 316 (HRC 22 Max.)	
		316 St. St. ASTM A479 TY 316 with Hardfaced Seat (HRC 22 Max.)	
17	Packing	PTFE (Teflon)	
18	Lantern Ring (Optional)	304 St. St. ASTM A479 TY 304	
19	Packing Follower	304 St. St. ASTM A479 TY 304	
Ref. No.	Temperature Range	-29°C	232°C

1. Materials and processes in accordance with the requirements of NACE specification MR0103, 2003. Applications requiring compliance to MR0175, 2003 Rev. or ISO 15156 requires factory review.
2. ASTM A638 Gr. 660 Stem option will be substituted in applications as required based on operating pressure conditions.
3. Materials designated for these parts conform to NACE Class III (unexposed) bolting requirements.
4. Materials designated for these parts conform to NACE Class I or Class II (exposed) bolting requirements.
5. Zinc plating is mandatory for St. Steel construction only.
6. Separate plug components only required for Model 80386.

# Valve Dimensions



## 80385 Series Dimensions (inches)

Valve Size		ASME Class 150 and equivalent PN				ASME Class 300 and equivalent PN				ASME Class 600 and equivalent PN				ASME Class 150-600 and equivalent PN	
inches	mm	RF		RTJ		RF		RTJ		RF		RTJ		Threaded & Socket Weld	
		A	B	A	B	A	B	A	B	A	B	A	B	A	B
0.75	20	7.24	5.51	7.76	5.51	7.64	5.51	8.11	5.51	8.11	5.51	8.11	5.51	5.98	5.55
1	25	7.24	5.51	7.76	5.51	7.76	5.51	8.27	5.51	8.27	5.51	8.27	5.51	5.98	5.55
1.5	40	8.74	6.26	9.25	6.26	9.25	6.26	9.76	6.26	9.88	6.26	9.88	6.26	7.99	6.26
2	50	10.00	6.61	10.51	6.61	10.51	6.61	11.10	6.61	11.26	6.61	11.38	6.61	9.25	6.61
3	80	11.73	7.99	12.24	8.62	12.52	7.99	13.11	8.62	13.27	8.62	13.39	8.62		
4	100	13.90	9.02	14.37	10.12	14.49	9.02	15.12	10.12	15.51	10.12	15.63	10.12		
6	150	17.76	11.38	18.11	11.69	18.62	11.38	19.25	11.69	20.00	12.36	20.12	12.36		
8	200	21.38	13.27	21.89	13.54	22.36	13.27	22.99	13.54	24.02	14.25	24.13	4.25		
10	250	24.61	15.39	24.33	15.71	26.02	15.39	26.65	16.97	27.76	17.60	27.87	17.60		
12	300	28.78	17.91	29.25	17.91	30.28	17.91	30.87	17.91	32.01	21.06	32.13	21.06		

Valve Size		ASME Class 150 – 600 and equivalent PN		
inches	mm	C (Std. Bonnet)	C (EB Bonnet)	F
0.75	20	5.12	9.17	See Note 1
1	25	5.12	9.17	
1.5	40	5.24	9.88	
2	50	6.26	10.47	
3	80	7.99	11.81	
4	100	8.39	12.64	
6	150	10.98	16.42	
8	200	12.64	17.95	
10	250	13.11	19.29	
12	300	16.73	22.91	

1. For Model 80385 – Dimension F is equal to one-half dimension A.



## 80385 Series Dimensions (mm)

Valve Size		ASME Class 150 and equivalent PN				ASME Class 300 and equivalent PN				ASME Class 600 and equivalent PN				ASME Class 150-600 and equivalent PN	
mm	inches	RF		RTJ		RF		RTJ		RF		RTJ		Threaded & Socket Weld	
		A	B	A	B	A	B	A	B	A	B	A	B	A	B
20	0.75	184	140	197	140	194	140	206	140	206	140	206	140	152	141
25	1	184	140	197	140	197	140	210	140	210	140	210	140	152	141
40	1.5	222	159	235	159	235	159	248	159	251	159	251	159	203	159
50	2	254	168	267	168	267	168	282	168	286	168	289	168	235	168
80	3	298	203	311	219	318	203	333	219	337	219	340	219		
100	4	353	229	365	257	368	229	384	257	394	257	397	257		
150	6	451	289	460	297	473	289	489	297	508	314	511	314		
200	8	543	337	556	344	568	337	584	344	610	362	613	362		
250	10	625	391	618	399	661	391	677	431	705	447	708	447		
300	12	731	455	743	455	769	455	784	455	813	535	816	535		

Valve Size		ASME Class 150 – 600 and equivalent PN				
mm	inches	C (Std. Bonnet)		C (EB Bonnet)		F
20	0.75	130		233		See Note 1
25	1	130		233		
40	1.5	133		251		
50	2	159		266		
80	3	203		300		
100	4	213		312		
150	6	279		417		
200	8	321		456		
250	10	333		490		
300	12	425		582		

1. For Model 80385 – Dimension F is equal to one-half dimension A.

# Valve Dimensions

## 80386 Series Dimensions (inches)

Valve Size		ASME Class 150 and equivalent PN				ASME Class 300 and equivalent PN				ASME Class 600 and equivalent PN				ASME Class 150-600 and equivalent PN	
inches	mm	RF		RTJ		RF		RTJ		RF		RTJ		Threaded & Socket Weld	
		A	B	A	B	A	B	A	B	A	B	A	B	A	B
0.75	20	7.24	5.51	7.76	5.51	7.64	5.51	8.11	5.51	8.11	5.51	8.11	5.51	5.98	5.55
1	25	7.24	5.51	7.76	5.51	7.76	5.51	8.27	5.51	8.27	5.51	8.27	5.51	5.98	5.55
1.5	40	8.74	7.01	9.25	7.01	9.25	7.01	9.76	7.01	9.88	7.01	9.88	7.01	7.99	6.26
2	50	10.00	7.76	10.51	7.76	10.51	7.76	11.10	7.76	11.26	7.76	11.38	7.76	9.25	6.61
3	80	11.73	9.37	12.24	9.88	12.52	9.37	13.19	20.51	13.27	9.88	13.39	9.88		
4	100	13.90	10.63	14.41	11.50	14.49	10.63	15.16	11.50	15.51	11.10	15.67	11.50		
6	150	17.76	12.99	18.31	13.31	18.62	12.99	19.29	13.31	20.00	14.02	20.16	13.98		
8	200	21.38	15.39	21.93	15.67	22.36	15.39	23.03	15.67	24.02	16.38	24.17	16.38		
10	250	24.65	17.99	25.12	18.31	26.02	17.99	26.65	18.31	27.76	20.79	27.87	20.79		
12	300	28.78	22.05	29.25	22.05	30.28	22.05	30.87	12.05	32.01	25.20	32.13	25.20		

Valve Size		ASME Class 150 and equivalent PN		ASME Class 150-600 and equivalent PN	ASME Class 150 and equivalent PN		ASME Class 300 and equivalent PN		ASME Class 600 and equivalent PN	
inches	mm	Std. Bonnet	EB Bonnet	Threaded & Socket Weld	RF	RTJ	RF	RTJ	RF	RTJ
		C	C	F	F	F	F	F	F	F
0.75	20	5.12	9.17							
1	25	5.12	9.17							
1.5	40	6.10	10.75	3.70	4.06	4.66	4.29	4.57	4.65	4.65
2	50	7.24	11.46	4.13	4.65	4.92	4.88	5.20	2.24	5.35
3	80	9.25	13.07		5.51	5.79	5.90	6.22	6.25	6.34
4	100	9.37	13.62		6.57	6.85	6.89	7.20	7.36	7.48
6	150	12.64	18.07		7.64	7.91	8.07	8.39	8.74	8.82
8	200	14.76	20.08		8.54	8.82	9.06	9.41	9.88	9.96
10	250	16.38	22.56		10.00	10.24	10.67	10.98	11.54	11.61
12	300	20.87	27.05		11.34	11.57	12.09	12.36	12.95	12.99

1. 0.75" & 1" (20 & 25mm) sizes are not available in the 80386 diverting configuration. Utilize combining version 80385 and consult factory for details.

# Valve Dimensions

## 80386 Series Dimensions (mm)

Valve Size		ASME Class 150 and equivalent PN				ASME Class 300 and equivalent PN				ASME Class 600 and equivalent PN				ASME Class 150-600 and equivalent PN	
mm	inches	RF		RTJ		RF		RTJ		RF		RTJ		Threaded & Socket Weld	
		A	B	A	B	A	B	A	B	A	B	A	B	A	B
20	0.75	184	140	197	140	194	140	206	140	206	140	206	140	152	141
25	1	184	140	197	140	197	140	210	140	210	140	210	140	152	141
40	1.5	222	178	235	178	235	178	248	178	251	178	251	178	203	159
50	2	254	197	267	197	267	197	282	197	286	197	289	197	235	168
80	3	298	238	311	251	318	238	335	251	337	251	340	251		
100	4	353	270	366	292	368	270	385	292	394	282	398	292		
150	6	451	330	465	338	473	330	490	338	508	356	512	355		
200	8	543	391	557	398	568	391	585	398	610	416	614	416		
250	10	626	457	638	465	661	457	677	465	705	528	708	528		
300	12	731	560	743	560	769	560	784	560	813	640	816	640		

Valve Size		ASME Class 150 and equivalent PN		ASME Class 150-600 and equivalent PN	ASME Class 150 and equivalent PN		ASME Class 300 and equivalent PN		ASME Class 600 and equivalent PN	
mm	inches	Std. Bonnet	EB Bonnet	Threaded & Socket Weld	RF	RTJ	RF	RTJ	RF	RTJ
		C	C	F	F	F	F	F	F	F
20	0.75	130	233							
25	1	130	233							
40	1.5	155	273	94	103	110	109	116	118	118
50	2	184	291	105	118	125	124	132	133	136
80	3	235	332		140	147	150	158	159	161
100	4	238	346		167	174	175	183	187	190
150	6	321	459		194	201	205	213	222	224
200	8	375	510		217	224	230	239	251	253
250	10	416	573		254	260	271	279	293	295
300	12	530	687		288	294	307	314	329	330

1. 0.75" & 1" (20 & 25mm) sizes are not available in the 80386 diverting configuration. Utilize combining version 80385 and consult factory for details.

# Valve Weights

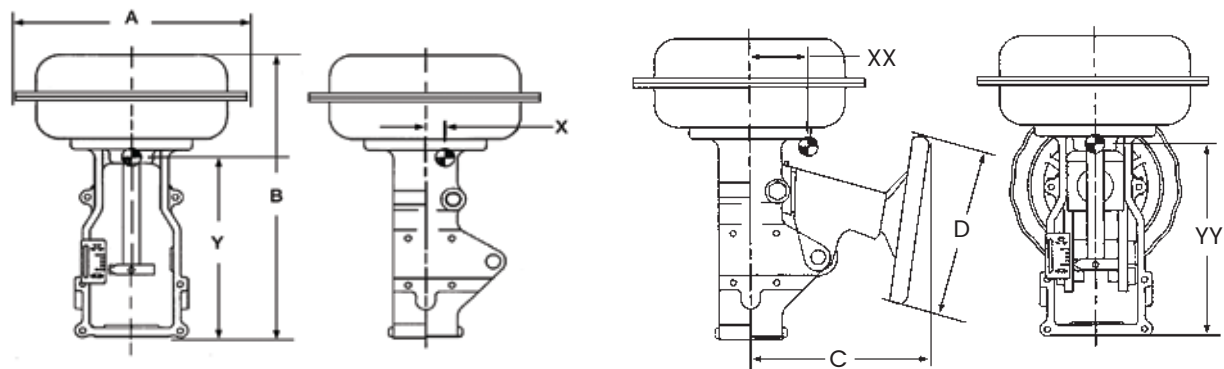
## Body Sub-Assembly with Standard Bonnet (lbs)

Valve Size		ASME Class 150-600 and equivalent PN	ASME Class 150 and equivalent PN	ASME Class 300 and equivalent PN	ASME Class 600 and equivalent PN
inches	mm	Threaded & Socket Weld	Flanged		
0.75	20	33	44	44	70
1	25	33	44	44	70
1.5	40	88	90	90	99
2	50	123	125	125	139
3	80	207	220	220	233
4	100	273	299	299	328
6	150	504	524	524	614
8	200	693	772	772	933
10	250	1351	1714	1714	2083
12	300	1683	2875	2875	3522

## Body Sub-Assembly with Standard Bonnet (kg)

Valve Size		ASME Class 150-600 and equivalent PN	ASME Class 150 and equivalent PN	ASME Class 300 and equivalent PN	ASME Class 600 and equivalent PN
mm	inches	Threaded & Socket Weld	Flanged		
20	0.75	15	20	20	32
25	1	15	20	20	32
40	1.5	40	41	41	45
50	2	56	57	57	63
80	3	94	100	100	106
100	4	124	136	136	149
150	6	229	238	238	279
200	8	315	351	351	424
250	10	614	779	779	947
300	12	765	1307	1307	1601

# Actuator Dimensions and Weights (in./lbs)



Shown with optional Handwheel

## Dimensions and Weights

Actuator Size	Actuator Dimensions (inches)				Weights (lbs.)	
	A	B (Model 88)	C	D	Standard	w/ Handwheel
6	11.50	15.54 (17.52)	10.00	9.00	45	60
10	14.50	19.58 (21.54)	10.90	10.90	85	105
16	18.75	28.22 (30.79)	14.00	14.00	210	245
23	21.63	30.71 (33.27)	16.00	16.00	265	320

Actuator Removal Clearance = 6 inches

## Center of Gravity (inches)

Without Handwheel

Size	X	Y
6	0.19	9.75
10	0	12.88
16	0.13	18.50
23	0.06	21.13

With Handwheel

Size	XX	YY
6	1.25	9.13
10	0.88	12.00
16	1.38	16.75
23	1.38	19.00

## Limit Stops (inches)

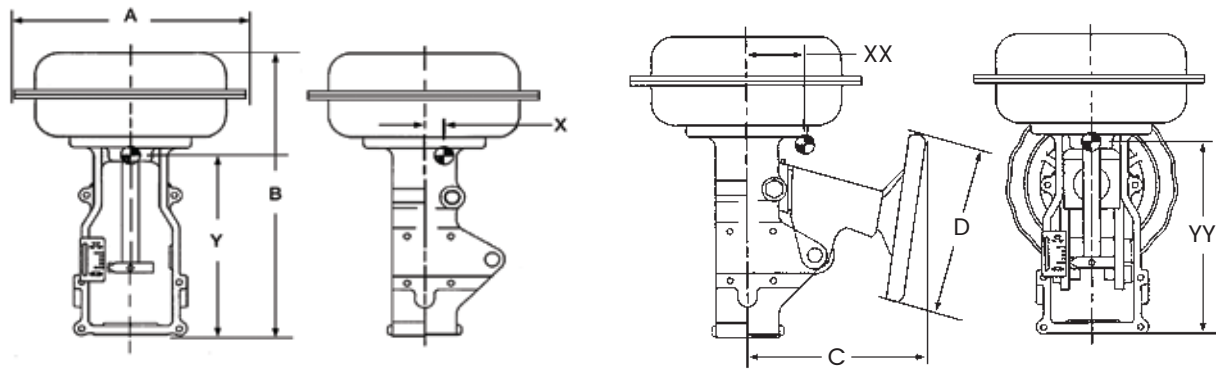
Up Stop

Size	Model	Overall Height B
6	87	19.45
10		25.43
16		36.42
23		38.84
6	88	19.16
10		25.06
16		35.48
23		38.65

Down Stop

Size	Model	Overall Height B
6	87	19.80
10		25.98
16		37.20
23		39.90
6	88	19.74
10		25.85
16		37.46
23		40.33

# Actuator Dimensions and Weights (mm/kg)



Shown with optional Handwheel

## Dimensions and Weights

Actuator Size	Actuator Dimensions (mm)				Weights (kg)	
	A	B (Model 88)	C	D	Standard	w/ Handwheel
6	292	395 (445)	254	229	20	27
10	368	497 (547)	277	305	39	48
16	476	717 (782)	356	457	95	111
23	549	780 (845)	406	457	120	145

Actuator Removal Clearance = 152 mm

## Center of Gravity (mm)

Without Handwheel

Size	X	Y
6	5	248
10	0	327
16	3	470
23	2	537

With Handwheel

Size	XX	YY
6	32	232
10	22	305
16	35	425
23	35	483

## Limit Stops (mm)

Up Stop

Size	Model	Overall Height B
6	87	494
10		646
16		925
23		987
6	88	487
10		636
16		901
23		982

Down Stop

Size	Model	Overall Height B
6	87	503
10		660
16		945
23		1014
6	88	501
10		657
16		952
23		1024

# Accessories

## Options:

- Extension Bonnets
- Environmental Capabilities (Low-E Packing)
- Lubricator & Isolation Valve
- Other Flange Facings
- Limit Stops
- Body Drain Plug
- Reducer and Nipple Connections
- NACE Compliance
- Custom Trim Materials
- U.O.P. Trim Materials
- Other Materials
- Non-Destructive Examination
- Oxygen Cleaning
- Electric Actuators

For Accessories, consult Baker Hughes.



CONTROLS SUPPLY CHAIN

VALVES ACTUATORS INSTRUMENTATIONS