

# MODEL 206-PGM / S206-PGM INTEGRAL BACK-UP, DUAL DIAPHRAGM, HYDRAULICALLY ACTUATED VALVE

## KEY FEATURES

- Ideal for applications requiring redundant and back-up security
- Virtually uninterrupted control under a variety of system failures
- Remote annunciation option available
- Available in globe and angle style



## PRODUCT OVERVIEW

The 206-PGM and S206-PGM valves are designed for particularly sensitive applications or situations where valves are difficult to access and maintain.

The PGM series valves provide integral back-up control and the ability to signal should the desired function move off limits. It can also provide an independent and very positive override.

It is a variation of the standard single chamber 206-PG valve with modifications that add the following features:

- Back-up diaphragm
- Completely self-contained
- Modulating or emergency close back-up
- Back-up components kept out of the main stream until required
- Extremely positive shut-off
- Emergency close for security breach or earthquake

The PGM series valves may be combined with additional Singer Valve specific accessories to add further customization such as:

- Back-up pilot system
- Annunciation with a Single Pole Double Throw Limit Switch

Refer to Main Valve Options on page 62 and Pilots & Accessories on page 207 to customize the valve to suit specific applications.

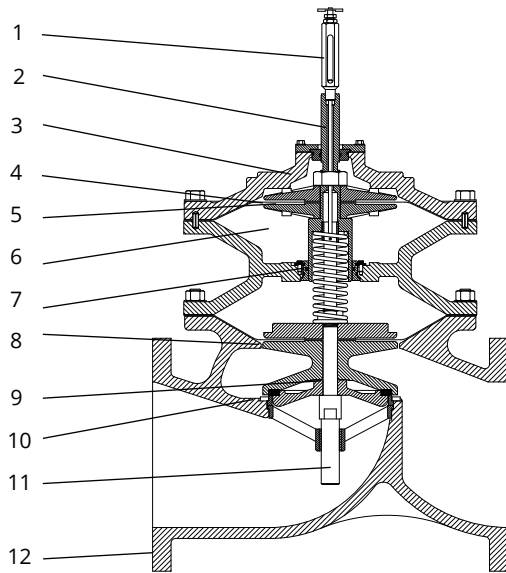
## ALTERNATIVE MODELS



A206-PGM Angle

# MODEL 206-PGM / S206-PGM INTEGRAL BACK-UP, DUAL DIAPHRAGM, HYDRAULICALLY ACTUATED VALVE

## PRODUCT LINE DRAWING



1. Primary Stem / Position Indicator
2. Secondary Stem
3. ASTM A536 Ductile Iron Construction
4. Buna-N or EPDM Secondary Diaphragm
5. Back-Up Secondary Assembly
6. Atmosphere
7. Sliding Guide
8. Buna-N or EPDM Primary Diaphragm
9. Buna-N or EPDM Resilient Disc
10. AISI 316 Stainless Steel Seat
11. AISI 316 Stainless Steel Stem
12. NSF 61 Fusion Bonded Epoxy Coating

## VALVE SIZES & MATERIALS

	Valve Materials	
	Standard	Optional
Available Sizes	Flanged	-
Globe	4 in to 36 in (100-900 mm)	-
Angle	4 in to 8 in (100 mm-200 mm)	-
<b>Valve Components</b>		
1. Valve Body, Cover	65-45-12 Ductile Iron	-
2. Seat Ring	316 Stainless Steel	-
3. Disc Retainer	B16 Brass / B62 Bronze / A536 Ductile Iron	316 Stainless Steel
4. Stem	316 Stainless Steel	-
5. Stem Nut	B16 Brass	316 Stainless Steel
6. Spring	316 Stainless Steel	-
7. Guide Bushings	B16 Brass or SAE 660 Bronze	316 Stainless Steel
8. Diaphragm	EPDM	Buna-N / Viton (limited sizes)
9. Resilient Disc	EPDM	Buna-N / Viton (limited sizes)
10. Coating	NSF61 Approved Fusion Bonded Epoxy - Thickness 10-14 mils (250-350 microns)	-
11. Fasteners	18-8 Stainless Steel	316 Stainless Steel

## SELECTION

The Singer Model 206-PGM incorporates a second actuator. If the primary system and/or the main valve fails then the back-up pilot system takes over. Under normal operating conditions, there is no external discharge from the PGM. In modulating applications, when the back-up pilot system operates, there is a small (less than 1 USGPM / 0.06 L/s) continuous discharge that should be taken to drain.

The primary pilot function can be duplicated in the secondary pilot system to provide continuing back-up operations or the secondary system can be used for override functions. Consult with Singer Valve with your specific application requirements.

Sizing of PGM valves is based on the same criteria as standard PG models.

## AVAILABLE OPTIONS

**Further customize the valve by adding any of the available options below.**

## MAIN VALVE OPTIONS, REFER TO PAGE 62

**Position Indicators (Available for install at Singer Valve or as a field modification)**

- Model X129 limit switch assembly with Single Pole Double Throw limit switch (Double Pole Double Throw optional)
- Model X156 analog position transmitters (4 - 20 mA)

**Oxy-Nitride Stem**

**Internal Drop Check**

**Grooved Ends**

**Reclaimed Water**

## PILOTS & ACCESSORIES, REFER TO PG. 207

## MATERIALS OF CONSTRUCTION

Most individual components can be upgraded from ductile iron, bronze and brass to stainless steel. Consult with Singer Valve.

## ORDERING INSTRUCTIONS

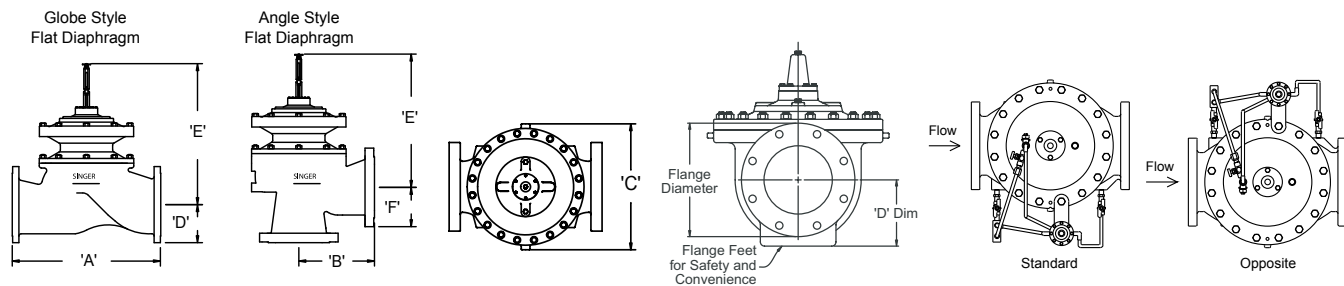
Refer to page 244 for the order form and ordering instructions.

# MODEL 206-PGM / S206-PGM INTEGRAL BACK-UP, DUAL DIAPHRAGM, HYDRAULICALLY ACTUATED VALVE

## ANSI VALVE DATA (US UNITS)

Size	DWG	Standard	Flat Diaphragm System			
Inches	REF	ANSI	4 in	6 in	8 in	10 in
<b>Globe Dimensions</b>			<b>All figures shown in inches unless otherwise stated</b>			
Lay Length	A	FNPT	-	-	-	-
Centerline to Bottom	D	FNPT	-	-	-	-
Lay Length	A	150F	15.00	20.13	25.00	24.50
Centerline to Bottom	D	150F	4.60	5.60	6.75	8.56
Lay Length	A	300F	15.63	21.00	26.00	25.88
Centerline to Bottom	D	300F	5.00	6.25	7.50	9.31
<b>Angle Dimensions</b>						
Center Inlet to Discharge	B	FNPT	-	-	-	-
Center Discharge to Inlet	F	FNPT	-	-	-	-
Center Inlet to Discharge	B	150F	7.56	10.19	12.50	-
Center Discharge to Inlet	F	150F	5.94	6.19	9.00	-
Center Inlet to Discharge	B	300F	7.88	10.63	13.00	-
Center Discharge to Inlet	F	300F	6.25	6.81	9.50	-
<b>Common Dimensions (Globe &amp; Angle)</b>						
Width	C		10.00	12.50	16.00	20.00
Height (To Indicator) Globe	E		19.13	20.88	23.38	30.63
Height (To Indicator) Angle	E		17.38	19.25	20.50	-
Body Port Tapping		FNPT	3/8	3/8	3/8	1/2
Stem Cap Plug		MNPT	3/8	3/8	3/8	3/8
Cover Port Tapping		FNPT	3/8	3/8	1/2	1/2
Valve Stroke			1-1/8	1-7/16	1-11/16	2-7/8
Displaced Bonnet Volume (Gallons)			0.1	0.2	0.6	1.7
Approximate Shipping Weight (Lbs)			150.0	210.0	385.0	585.0
<b>Flow Capacities (USGPM) Globe &amp; Angle</b>						
C <sub>v</sub> - Globe			150	250	505	985
C <sub>v</sub> - Angle			150	250	560	-
Continuous (Globe)			580	1025	2300	4100
Intermittent (Globe)			690	1190	2700	4670
Momentary (Globe)			1236	2160	4800	8400
<b>Maximum Pressure Ratings (Ductile Only)</b>						
PSI		FNPT	-	-	-	-
PSI		150F	250	250	250	250
PSI <sup>1</sup>		300F	400	400	400	400
<b>Maximum Temperature</b>						
Fahrenheit			180°	180°	180°	180°

<sup>1</sup>Valves rated and stamped 400 psi as standard. Valves rated and stamped 600 psi on request.



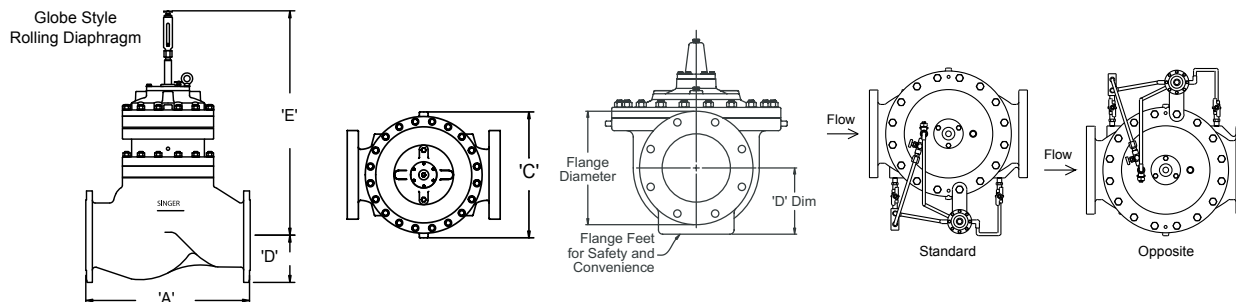
See pilot system information, page 207.  
For additional Engineering notes, see page 242.

# MODEL 206-PGM / S206-PGM INTEGRAL BACK-UP, DUAL DIAPHRAGM, HYDRAULICALLY ACTUATED VALVE

## ANSI VALVE DATA (US UNITS)

Size	DWG	Standard	Rolling Diaphragm System							
Inches	REF	ANSI	12 in	16 in	18 in	20 in	24 in x 16 in	24 in x 20 in	30 in	36 in
<b>Globe Dimensions</b>			<b>All figures shown in inches unless otherwise stated.</b>							
Lay Length	A	FNPT	-	-	-	-	-	-	-	-
Centerline to Bottom	D	FNPT	-	-	-	-	-	-	-	-
Lay Length	A	150F	27.50	36.00	42.00	45.00	50.50	61.50	69.93	69.93
Centerline to Bottom	D	150F	9.50	11.75	12.50	13.93	16.50	17.13	20.68	23.75
Lay Length	A	300F	29.00	37.63	43.63	46.63	52.25	63.25	-	-
Centerline to Bottom	D	300F	10.25	12.75	14.00	15.25	18.00	19.65	-	-
<b>Angle Dimensions</b>										
Center Inlet to Discharge	B	FNPT	-	-	-	-	-	-	-	-
Center Discharge to Inlet	F	FNPT	-	-	-	-	-	-	-	-
Center Inlet to Discharge	B	150F	-	-	-	-	-	-	-	-
Center Discharge to Inlet	F	150F	-	-	-	-	-	-	-	-
Center Inlet to Discharge	B	300F	-	-	-	-	-	-	-	-
Center Discharge to Inlet	F	300F	-	-	-	-	-	-	-	-
<b>Common Dimensions (Globe and Angle)</b>										
Width	C		22.13	26.00	31.50	31.50	36.00	36.00	49.75	49.75
Height (To Indicator) Globe	E		39.38	44.56	53.00	53.00	53.00	59.50	61.50	61.50
Height (To Indicator) Angle	E		-	-	-	-	-	-	-	-
Body Port Tapping		FNPT	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4
Stem Cap Plug		MNPT	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4
Cover Port Tapping		FNPT	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4
Valve Stroke			3-1/4	3-3/4	4-3/4	4-3/4	4-3/4	5-9/16	6	6
Displaced Bonnet Volume (Gallons)			1.5	2.3	6.8	6.8	6.8	9.0	14.8	14.8
Approximate Shipping Weight (Lbs)			880	1540	2530	2730	2980	4750	7300	7500
<b>Flow Capacities (USGPM) Globe &amp; Angle</b>										
C <sub>v</sub> - Globe			1550	2200	3300	3400	3500	5100	7800	8000
C <sub>v</sub> - Angle			-	-	-	-	-	-	-	-
Continuous (Globe)			6400	9230	16500	16500	16500	21700	33650	33800
Intermittent (Globe)			7370	10470	20915	20915	20915	26000	37490	37640
Momentary (Globe)			13200	19200	30000	30050	30100	39000	67490	67640
<b>Maximum Pressure Ratings (Ductile Only)</b>										
PSI		FNPT	-	-	-	-	-	-	-	-
PSI		150F	250	250	250	250	250	250	250	250
PSI <sup>1</sup>		300F	400	400	400	400	400	400	400	400
<b>Maximum Temperature</b>										
Fahrenheit			180°	180°	180°	180°	180°	180°	180°	180°

<sup>1</sup>Valves rated and stamped 400 psi as standard. Valves rated and stamped 600 psi on request.



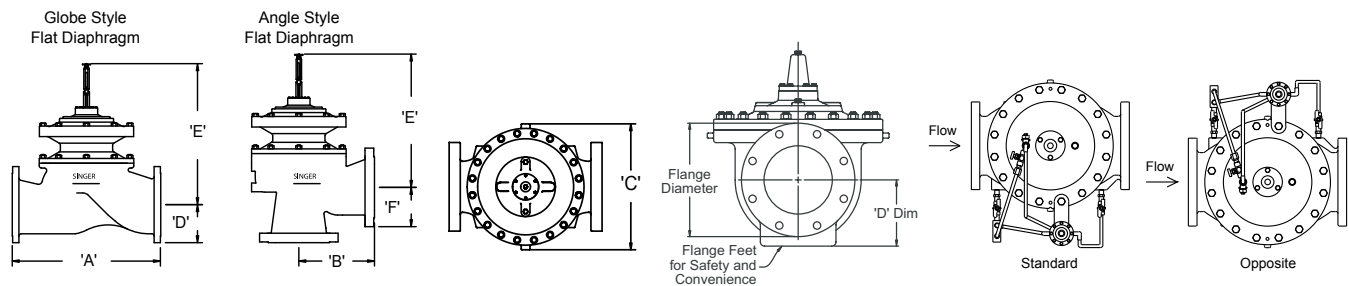
See pilot system information, page 207.  
For additional Engineering notes, see page 242.

# MODEL 206-PGM / S206-PGM INTEGRAL BACK-UP, DUAL DIAPHRAGM, HYDRAULICALLY ACTUATED VALVE

## ANSI VALVE DATA (METRIC UNITS)

Size	DWG	Standard	Flat Diaphragm System			
mm	REF	ANSI	100 mm	150 mm	200 mm	250 mm
<b>Globe Dimensions</b>			<b>All figures shown in mm unless otherwise stated</b>			
Lay Length	A	FNPT	-	-	-	-
Centerline to Bottom	D	FNPT	-	-	-	-
Lay Length	A	150F	381	511	635	622
Centerline to Bottom	D	150F	117	142	171	217
Lay Length	A	300F	397	533	660	657
Centerline to Bottom	D	300F	127	159	191	236
<b>Angle Dimensions</b>						
Center Inlet to Discharge	B	FNPT	-	-	-	-
Center Discharge to Inlet	F	FNPT	-	-	-	-
Center Inlet to Discharge	B	150F	192	259	318	-
Center Discharge to Inlet	F	150F	151	157	229	-
Center Inlet to Discharge	B	300F	200	270	330	-
Center Discharge to Inlet	F	300F	159	173	241	-
<b>Common Dimensions (Globe &amp; Angle)</b>						
Width	C		254	318	406	508
Height (To Indicator) Globe	E		486	530	594	778
Height (To Indicator) Angle	E		441	489	521	-
Body Port Tapping	FNPT	Inches	3/8	3/8	3/8	1/2
Stem Cap Plug	MNPT	Inches	3/8	3/8	3/8	3/8
Cover Port Tapping	FNPT	Inches	3/8	3/8	1/2	1/2
Valve Stroke		mm	29	37	43	73
Displaced Bonnet Volume (Litres)			0.3	0.8	2.1	6.3
Approximate Shipping Weight (Kilograms)			68	95	175	265
<b>Flow Capacities (L/s) Globe &amp; Angle</b>						
$K_v$ - Globe			36	60	120	230
$K_v$ - Angle			36	60	133	-
Continuous (Globe)			37	65	145	259
Intermittent (Globe)			44	75	170	295
Momentary (Globe)			78	136	303	530
<b>Maximum Pressure Ratings (Ductile Only)</b>						
Bar		FNPT	-	-	-	-
Bar		150F	17	17	17	17
Bar <sup>1</sup>		300F	27.6	27.6	27.6	27.6
<b>Maximum Temperature</b>						
Celsius			82°	82°	82°	82°

<sup>1</sup>Valves rated and stamped 27.6 bar as standard. Valves rated and stamped 41 bar on request



See pilot system information, page 207.  
For additional Engineering notes, see page 242.

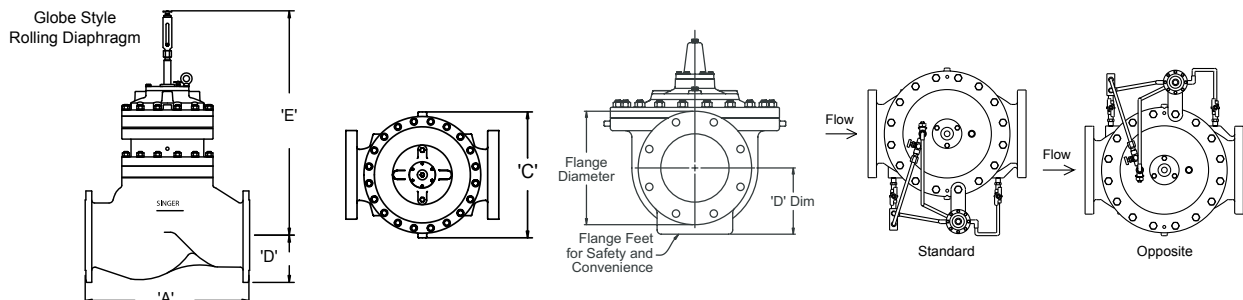
# MODEL 206-PGM / S206-PGM

## INTEGRAL BACK-UP, DUAL DIAPHRAGM, HYDRAULICALLY ACTUATED VALVE

### ANSI VALVE DATA (METRIC UNITS)

Size	DWG	Standard	Rolling Diaphragm System							
MM	REF	ANSI	300 mm	400 mm	450 mm	500 mm	600 x 400 mm	600 x 500 mm	750 mm	900 mm
<b>Globe Dimensions</b>			<b>All figures shown in mm unless otherwise stated.</b>							
Lay Length	A	FNPT	-	-	-	-	-	-	-	-
Centerline to Bottom	D	FNPT	-	-	-	-	-	-	-	-
Lay Length	A	150F	699	914	1067	1143	1283	1562	1776	1776
Centerline to Bottom	D	150F	241	298	318	354	419	435	525	603
Lay Length	A	300F	737	956	1108	1184	1327	1607	-	-
Centerline to Bottom	D	300F	260	324	356	387	457	499	-	-
<b>Angle Dimensions</b>										
Center Inlet to Discharge	B	FNPT	-	-	-	-	-	-	-	-
Center Discharge to Inlet	F	FNPT	-	-	-	-	-	-	-	-
Center Inlet to Discharge	B	150F	-	-	-	-	-	-	-	-
Center Discharge to Inlet	F	150F	-	-	-	-	-	-	-	-
Center Inlet to Discharge	B	300F	-	-	-	-	-	-	-	-
Center Discharge to Inlet	F	300F	-	-	-	-	-	-	-	-
<b>Common Dimensions (Globe &amp; Angle)</b>										
Width	C		562	660	800	800	914	914	1264	1264
Height (To Indicator) Globe	E		1000	1132	1346	1346	1346	1511	1162	1562
Height (To Indicator) Angle	E		-	-	-	-	-	-	-	-
Body Port Tapping	FNPT	Inches	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4
Stem Cap Plug	MNPT	Inches	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4
Cover Port Tapping	FNPT	Inches	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4
Valve Stroke		mm	83	95	120	120	120	141	150	150
Displaced Bonnet Volume (Litres)			5.67	8.69	25.55	25.55	25.55	34.00	55.76	55.83
Approximate Shipping Weight (Kilograms)			399	699	1148	1238	1352	2155	2812	3400
<b>Flow Capacities (L/s) Globe &amp; Angle</b>										
$K_v$ - Globe			370	520	780	810	830	1210	1850	1870
$K_v$ - Angle			-	-	-	-	-	-	-	-
Continuous (Globe)			404	582	1041	1041	1041	1370	2120	2132
Intermittent (Globe)			465	661	1320	1320	1320	1640	2362	2375
Momentary (Globe)			833	1211	1893	1896	1899	2460	4255	4267
<b>Maximum Pressure Ratings (Ductile Only)</b>										
Bar		FNPT	-	-	-	-	-	-	-	-
Bar		150F	17	17	17	17	17	17	17	17
Bar <sup>1</sup>		300F	27.6	27.6	27.6	27.6	27.6	27.6	27.6	27.6
<b>Maximum Temperature</b>										
Celcius			82°	82°	82°	82°	82°	82°	82°	82°

<sup>1</sup>Valves rated and stamped 27.6 Bar as standard. Valves rated and stamped 41 Bar on request.



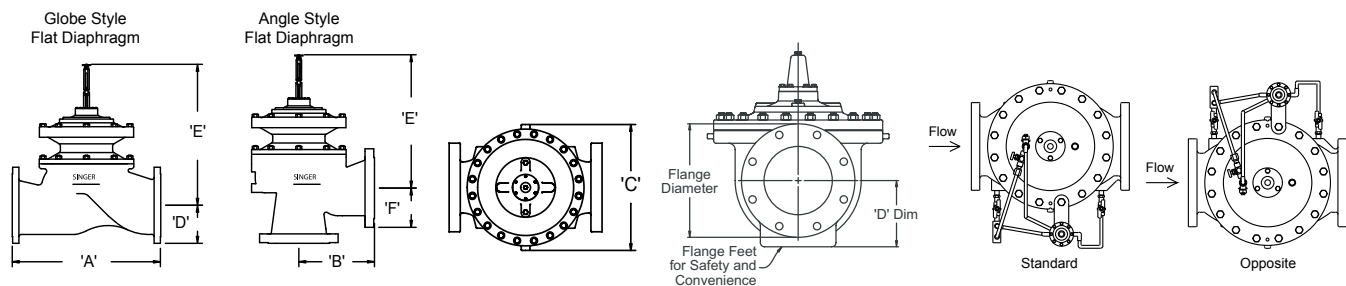
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For additional Engineering notes, see page 242.

# MODEL 206-PGM / S206-PGM INTEGRAL BACK-UP, DUAL DIAPHRAGM, HYDRAULICALLY ACTUATED VALVE

## ISO VALVE DATA (METRIC UNITS)

Size	DWG	Standard	Flat Diaphragm System			
mm	REF	ISO	100 mm	150 mm	200 mm	250 mm
<b>Globe Dimensions</b>			<b>All figures shown in mm unless otherwise stated</b>			
Lay Length	A	BSPT	-	-	-	-
Centerline to Bottom	D	BSPT	-	-	-	-
Lay Length	A	PN10 / PN16	381	511	635	622
Centerline to Bottom	D	PN10 / PN16	117	143	171	217
Lay Length	A	PN25 / PN40	397	533	660	657
Centerline to Bottom	D	PN25 / PN40	127	161	191	236
<b>Angle Dimensions</b>						
Center Inlet to Discharge	B	BSPT	-	-	-	-
Center Discharge to Inlet	F	BSPT	-	-	-	-
Center Inlet to Discharge	B	PN10 / PN16	192	259	318	-
Center Discharge to Inlet	F	PN10 / PN16	151	157	229	-
Center Inlet to Discharge	B	PN25 / PN40	200	270	330	-
Center Discharge to Inlet	F	PN25 / PN40	159	173	241	-
<b>Common Dimensions (Globe &amp; Angle)</b>						
Width	C		254	318	406	508
Height (To Indicator) Globe	E		486	530	594	778
Height (To Indicator) Angle	E		441	489	521	-
Body Port Tapping	FNPT	Inches	3/8	3/8	3/8	1/2
Stem Cap Plug	MNPT	Inches	3/8	3/8	3/8	3/8
Cover Port Tapping	FNPT	Inches	3/8	3/8	1/2	1/2
Valve Stroke		mm	29	37	43	73
Displaced Bonnet Volume (Litres)			0.3	0.8	2.1	6.3
Approximate Shipping Weight (Kilograms)			68	95	175	265
<b>Flow Capacities (L/s) Globe &amp; Angle</b>						
$K_v$ - Globe			36	60	120	230
$K_v$ - Angle			36	60	133	-
Continuous (Globe)			37	65	145	259
Intermittent (Globe)			44	75	170	295
Momentary (Globe)			78	136	303	530
<b>Maximum Pressure Ratings</b>						
Bar		BSPT	-	-	-	-
Bar		PN16	16	16	16	16
Bar*		PN25	25	25	25	25
<b>Maximum Temperature</b>						
Celcius			82°	82°	82°	82°

\*Valves rated and stamped 27.6 Bar as standard. Valves rated and stamped 41 Bar upon request



See pilot system information, page 207.  
For additional Engineering notes, see page 242.



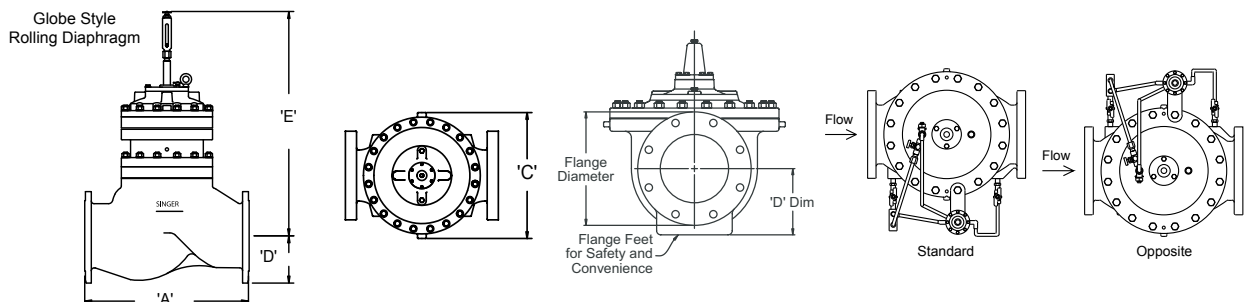
# MODEL 206-PGM / S206-PGM

## INTEGRAL BACK-UP, DUAL DIAPHRAGM, HYDRAULICALLY ACTUATED VALVE

### ISO VALVE DATA (METRIC UNITS)

Size	DWG	Standard	Rolling Diaphragm System								
MM	REF	ISO	300 mm	400 mm	450 mm	500 mm	600 x 400 mm	600 x 500 mm	700 mm	800 mm	900 mm
<b>Globe Dimensions</b>			All figures shown in mm unless otherwise stated.								
Lay Length	A	BSPT	-	-	-	-	-	-	-	-	-
Centerline to Bottom	D	BSPT	-	-	-	-	-	-	-	-	-
Lay Length	A	PN10 / PN16	699	914	1067	1143	1283	1562	1607	1776	1776
Centerline to Bottom	D	PN10 / PN16	241	298	318	354	419	435	499	526	603
Lay Length	A	PN25 / PN40	737	956	1108	1184	1327	1607	-	-	-
Centerline to Bottom	D	PN25 / PN40	267	324	356	387	457	499	-	-	-
<b>Angle Dimensions</b>											
Center Inlet to Discharge	B	BSPT	-	-	-	-	-	-	-	-	-
Center Discharge to Inlet	F	BSPT	-	-	-	-	-	-	-	-	-
Center Inlet to Discharge	B	PN10 / PN16	-	-	-	-	-	-	-	-	-
Center Discharge to Inlet	F	PN10 / PN16	-	-	-	-	-	-	-	-	-
Center Inlet to Discharge	B	PN25 / PN40	-	-	-	-	-	-	-	-	-
Center Discharge to Inlet	F	PN25 / PN40	-	-	-	-	-	-	-	-	-
<b>Common Dimensions (Globe &amp; Angle)</b>											
Width	C		562	660	795	800	914	914	1262	1262	1262
Height (To Indicator) Globe	E		1000	1132	1346	1346	1346	1511	1562	1562	1562
Height (To Indicator) Angle	E		-	-	-	-	-	-	-	-	-
Body Port Tapping	FNPT	Inches	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4
Stem Cap Plug	MNPT	Inches	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4
Cover Port Tapping	FNPT	Inches	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4
Valve Stroke		mm	83	95	120	120	120	141	150	150	150
Displaced Bonnet Volume (Litres)			6	9	26	26	26	34	56	56	56
Approximate Shipping Weight (Kilograms)			399	699	1148	1238	1352	2155	2812	2993	3175
<b>Flow Capacities (L/s) Globe &amp; Angle</b>											
K <sub>v</sub> - Globe			370	520	780	810	830	1210	1850	1870	1900
K <sub>v</sub> - Angle			-	-	-	-	-	-	-	-	-
Continuous (Globe)			404	582	1041	1041	1041	1370	2120	2126	2132
Intermittent (Globe)			465	661	1320	1320	1320	1640	2362	2368	2375
Momentary (Globe)			833	1211	1893	1896	1899	2460	4255	4261	4267
<b>Maximum Pressure Ratings</b>											
Bar		BSPT	-	-	-	-	-	-	-	-	-
Bar		PN16	16	16	16	16	16	16	16	16	16
Bar*		PN25	25	25	25	25	25	25	25	25	25
<b>Maximum Temperature</b>											
Celsius			82°	82°	82°	82°	82°	82°	82°	82°	82°

\*Valves rated and stamped 27.6 Bar as standard. Valves rated and stamped 41 Bar on request.



See pilot system information, page 207.  
For additional Engineering notes, see page 242.