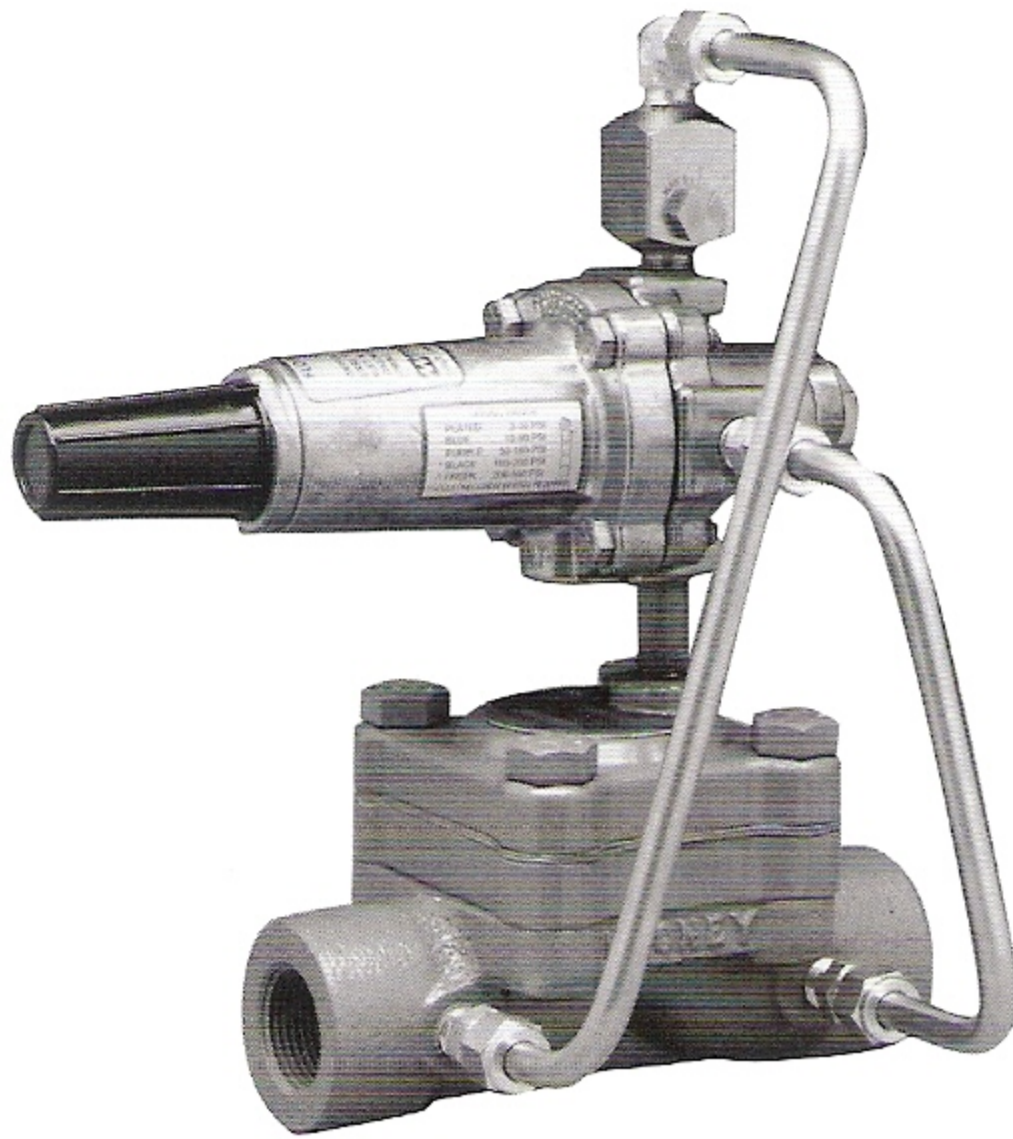
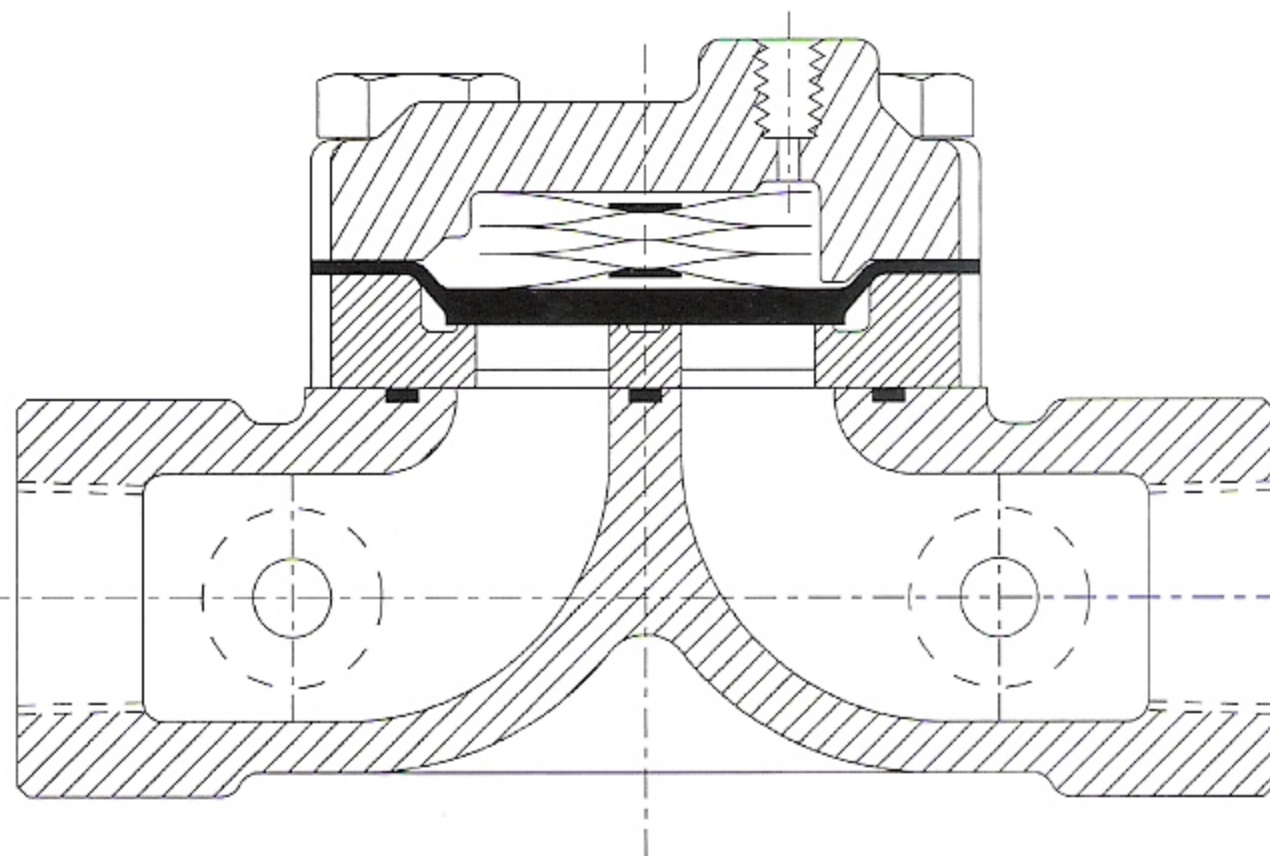


1" & 1-1/4" Single Port

NPT CL 600
SWE CL 600



1" Flowgrid® Valve with Series 20 Pilot



SECTIONAL VIEW

OVERPRESSURE PROTECTION

The Flowgrid® Valve is bi-directional and has a full ANSI rating on both the inlet and outlet. Overpressure protection is required only if the pressure can exceed the flange or body rating.

The pilots, like most regulators, may have an outlet pressure rating lower than the inlet pressure rating. If this is the case then some external form of overpressure protection must be provided for the pilot.

Anytime the Flowgrid® valve or pilot system is exposed to pressure in excess of its rating it should be inspected for damage.

The 1" Flowgrid® Valve is an economical and easy to maintain pilot operated valve for both gas and liquid applications. The valve is designed to be used in conjunction with a self contained pilot control system as pictured. The 1" regulator is the perfect size when a "farm tap regulator" is too small. The low profile and easy in line maintenance make it ideal for skid mounted, vault and enclosure installations.

SPECIFICATIONS

Size	1" & 1-1/4"
Body Style	Single Port (1")
End Connections	1" & 1-1/4" CL600 NPT, CL600 SWE
Temperature	Working -20°F to 150°F Emergency -40°F to 175°F
Max. Operating Differential	1000 psi
Max. Emergency Differential	1500 psi
Min. Differential	Refer to graph on page 2
Cracking Differential	Refer to graph on page 2
Max. Inlet Pressure	1480 psig*
Outlet Pressure Range	Limited By Pilot
Flow Direction	Bi-Directional**
Body Taps	Two 1/4" - 18NPT

* Limited by pilot or flange rating

** Reverse flow by changing pilot connections and reversing spring case

MATERIALS OF CONSTRUCTION

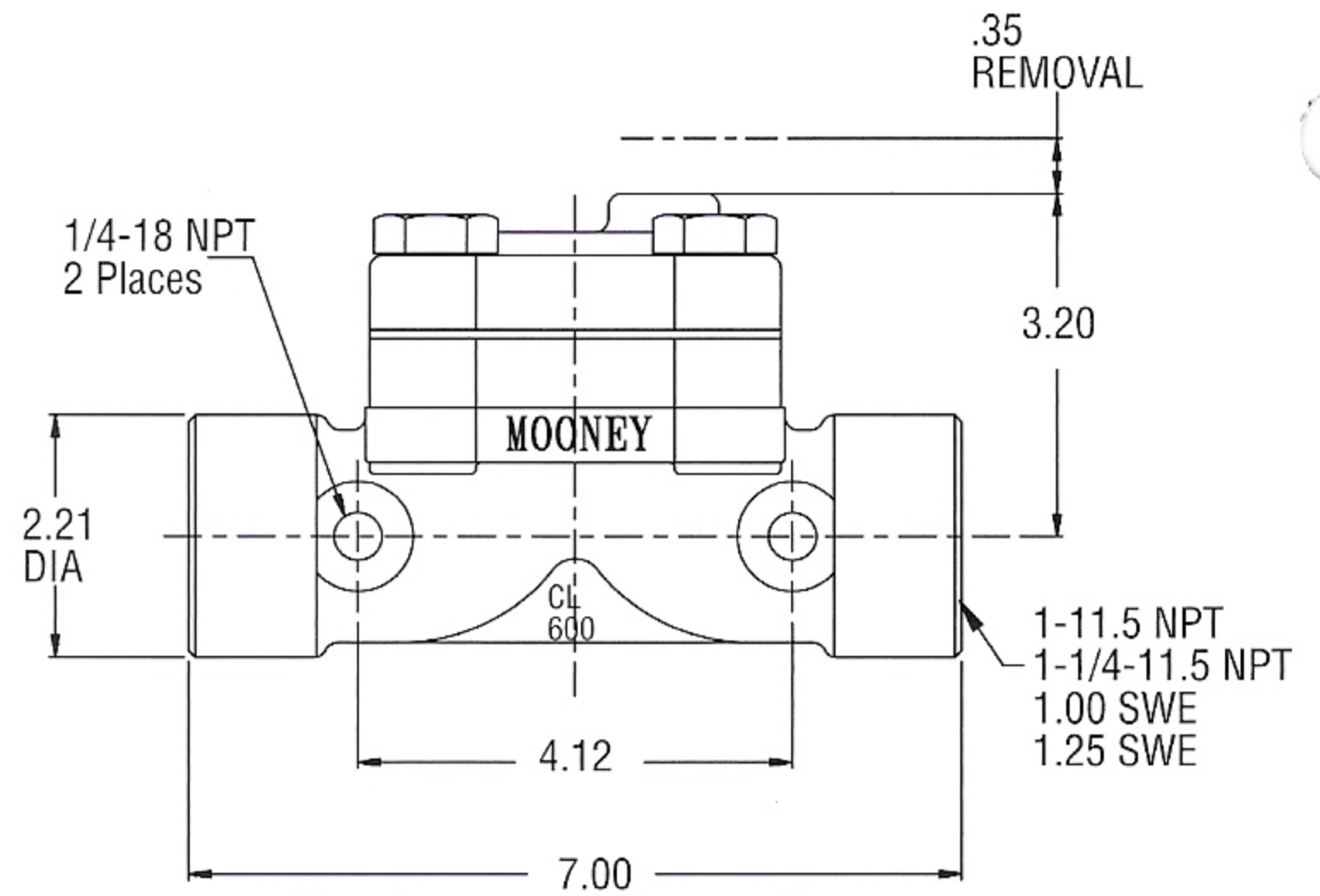
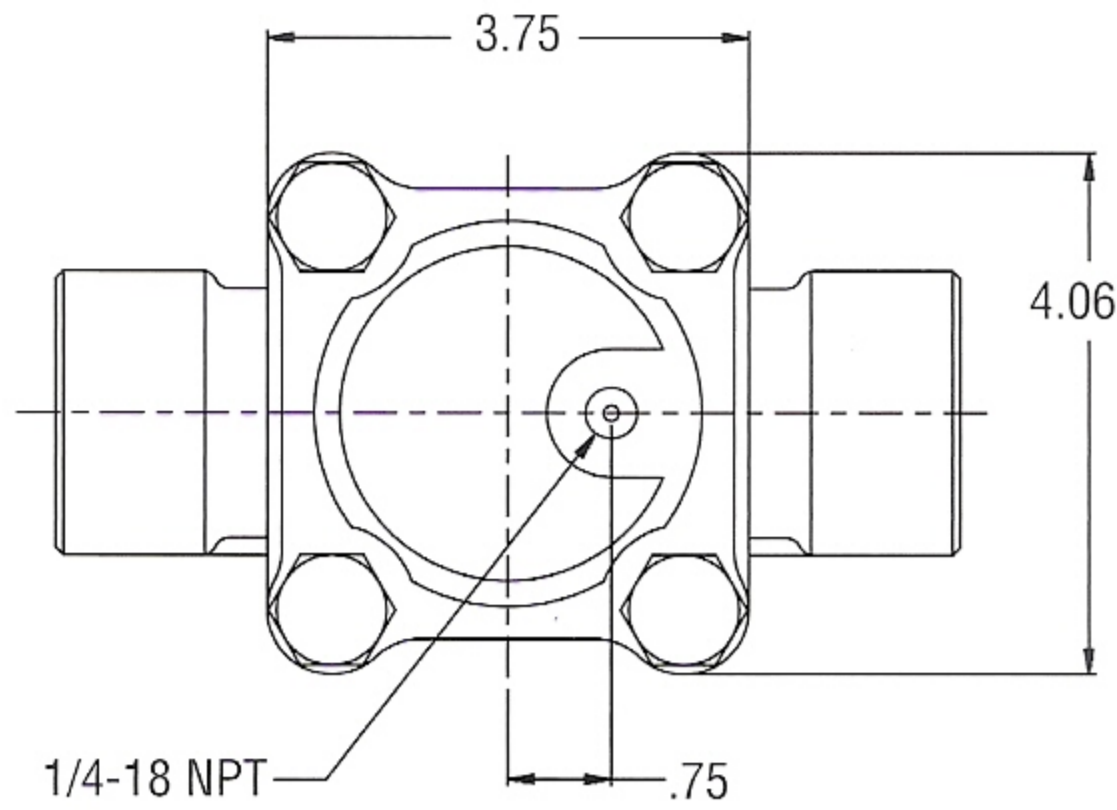
Body & Spring Case	ASTM A 216 GR WCB Carbon Steel
Throttle Plate	17 - 4PH Stainless Steel or A515 Carbon Steel with ENC Coating
Diaphragm	Nitrile/Nylon* Optional (Viton/Nylon)
O-Ring & Seals	Nitrile, Optional (Viton)
Bolting	ASTM A 193 GR B-7 or Equal
Spring	301 Stainless Steel

*Refer to diaphragm selection chart on page 2

STOCK NUMBERS

1" Single Port Valve	Stock Number	Weight
CL600 NPT	FG-11	11 lbs.
CL600 SWE	FG-12	11 lbs.
1 1/4" Single Port Valve		
CL600 NPT	FG-13	11 lbs.
CL600 SWE	FG-14	11 lbs.

DIMENSIONS

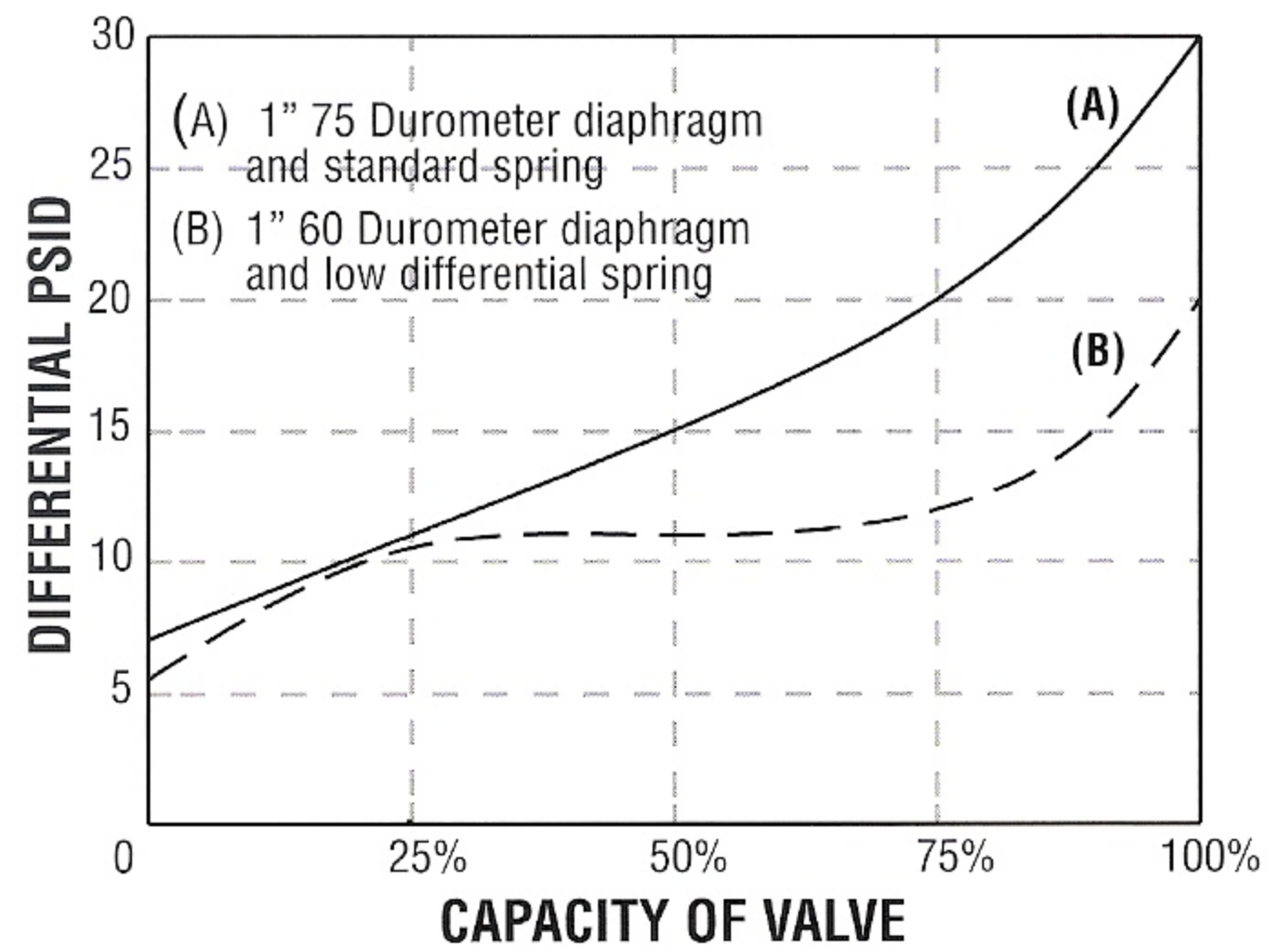


FLOW COEFFICIENTS AND CONSTANTS

1" Single Port Valve				Swage Factor	
Percent Capacity	Cv	C1	Cg	1.5:1	2:1
100%	13.2	34	450	0.96	0.93
75%	10.6	30	320	0.97	0.95
50%	8.9	27	240	0.98	0.96
35%	5.4	26	140	1.00	0.99

NOTE: Allow a 5% factor of safety when calculating relief capacity

MINIMUM PRESSURE DIFFERENTIAL VS. CAPACITY



DIAPHRAGM SELECTION

Compound	Temp. Range (Degrees F)	Maximum Differential	Characteristics	Recommended Applications
75 Duro	-20 to 150	1000 psid	Best All Around Material	60 psid to Max. Differential
60 Duro	-25 to 150	300 psid	Best Shutoff at Low Differential Pressure	Low Differential (100 psid or less) or Low Temperature
80 Duro High ACN	-5 to 175	1000 psid	Higher Abrasion and Swelling Resistance	High Differential (400 psid or higher) or Abrasive Conditions with Distillates
80 Duro Low ACN	-20 to 150	1000 psid	Higher Abrasion Resistance and Low Temperature Flexibility	High Differential (400 psid or higher) or Abrasive Conditions at Low Temperatures

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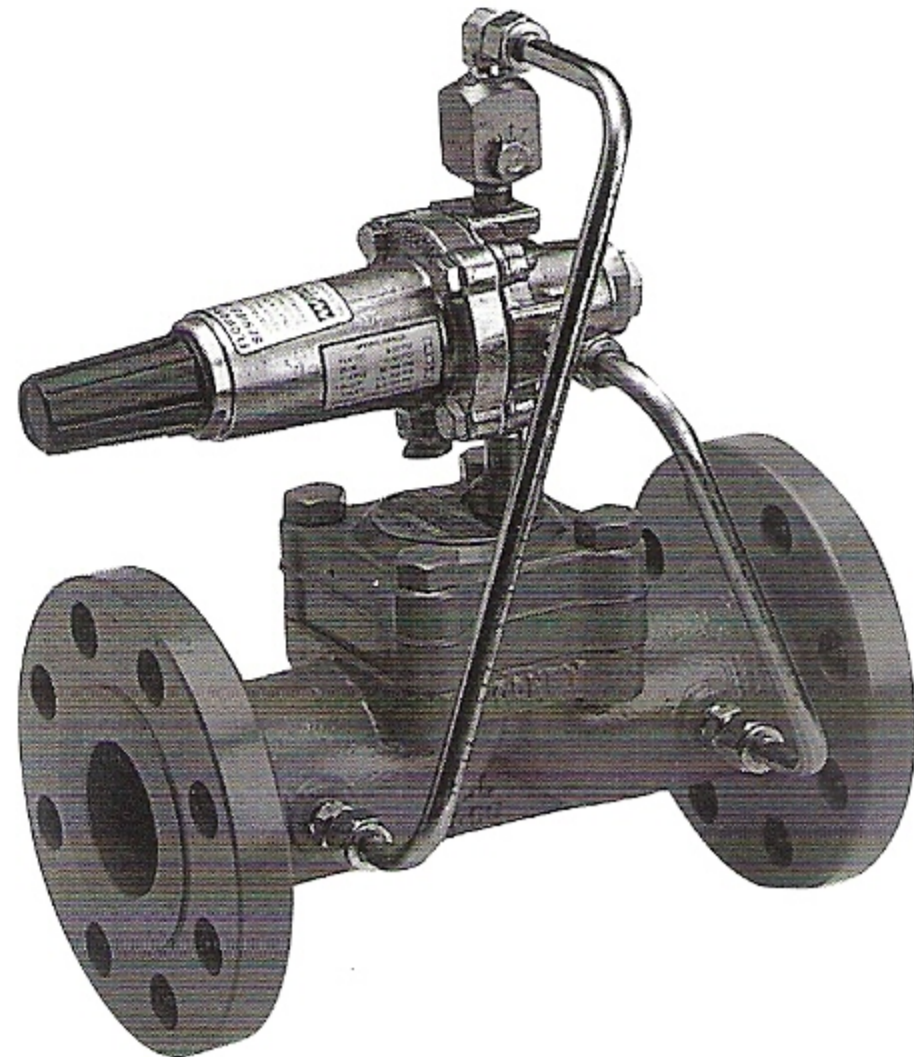


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1" & 1-1/4" Flowgrid® Single Port Valve
5.08

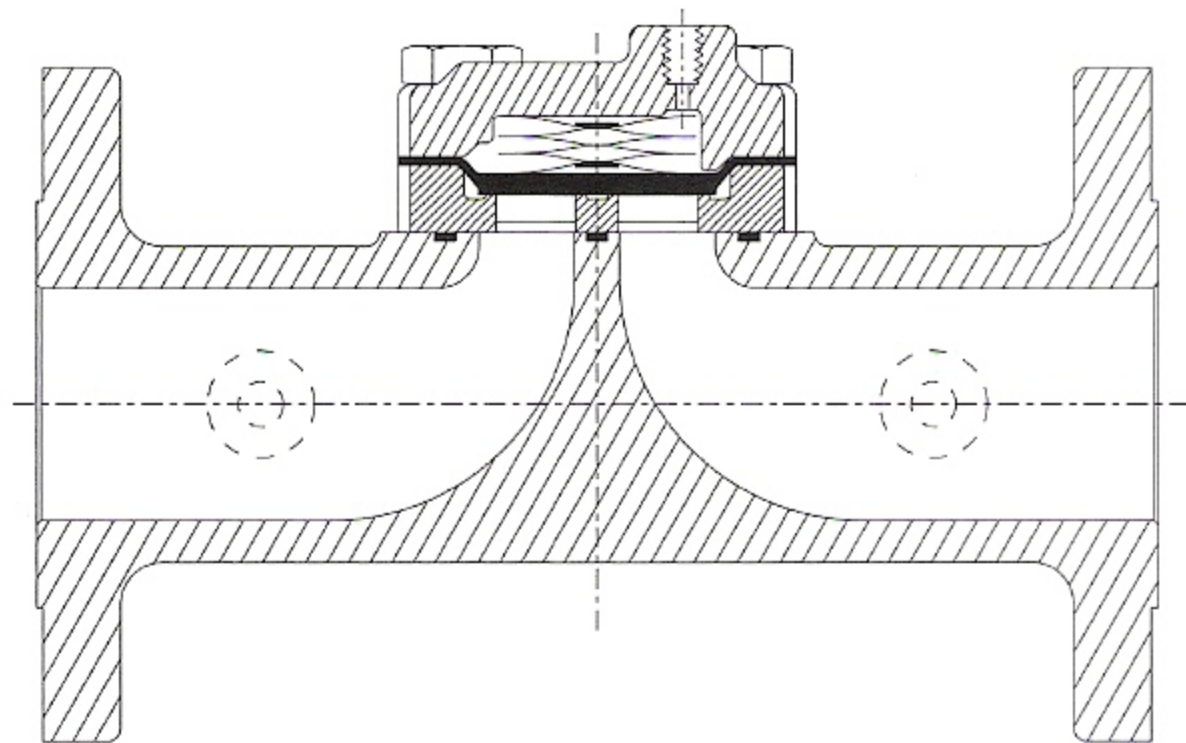
2" x 1" Single Port

Flanged CL 150 & 300
NPT & SWE CL 600



2" x 1" Flowgrid® Valve with Series 20 Pilot

SECTIONAL VIEW



OVERPRESSURE PROTECTION

The Flowgrid® Valve is bi-directional and has a full ANSI rating on both the inlet and outlet. Overpressure protection is required only if the pressure can exceed the flange or body rating.

The pilots, like most regulators, may have an outlet pressure rating lower than the inlet pressure rating. If this is the case then some external form of overpressure protection must be provided for the pilot.

Anytime the Flowgrid® valve or pilot system is exposed to pressure in excess of its rating it should be inspected for damage.

The 2" x 1" Flowgrid® Valve is an economical and easy to maintain pilot operated valve for both gas and liquid applications. The valve is designed to be used in conjunction with a self contained pilot control system as pictured. This valve combines a 2" flanged body with a 1" port producing a very strong piping installation with low regulator outlet velocity. It is ideal for skid mounted, vault and enclosure installations.

SPECIFICATIONS

Size	2"
Body Style	Single Port (1")
End Connections	2" CL150, 300, 600 Flanged 2" CL 600 NPT, SWE
Temperature	Working -20°F to 150°F Emergency -40°F to 175°F
Max. Operating Differential	1000 psi
Max. Emergency Differential	1500 psi
Min. Differential	Refer to graph on page 2
Cracking Differential	Refer to graph on page 2
Max. Inlet Pressure	1480 psig*
Outlet Pressure Range	Limited By Pilot
Flow Direction	Bi-Directional**
Body Taps	Two 1/4" - 18NPT

* Limited by pilot or flange rating

** Reverse flow by changing pilot connections and reversing spring case

MATERIALS OF CONSTRUCTION

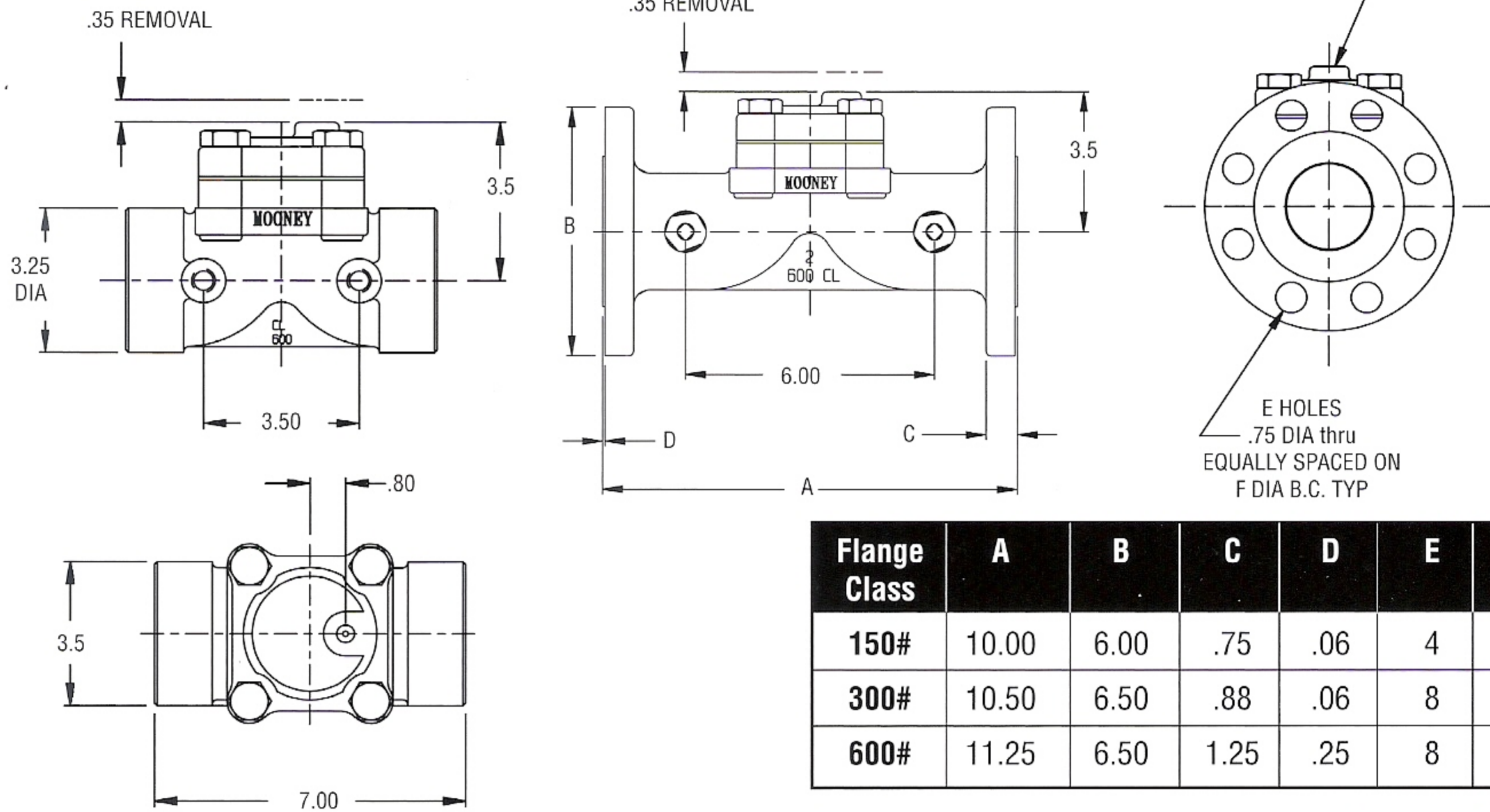
Body & Spring Case	ASTM A 216 GR WCB Carbon Steel
Throttle Plate	17 - 4PH Stainless Steel or A515 Carbon Steel with ENC Coating
Diaphragm	Nitrile/Nylon* Optional (Viton/Nylon)
O-Ring & Seals	Nitrile, Optional (Viton)
Bolting	ASTM A 193 GR B-7 or Equal
Spring	301 Stainless Steel

*Refer to diaphragm selection chart on page 2

STOCK NUMBERS

2" x 1" Single Port Valve	Stock Number	Weight
150# Flange	FG-51	23 lbs.
300# Flange	FG-52	26 lbs.
600# Flange	FG-53	30 lbs.
NPT CL 600	FG-49	14 lbs.
SWE CL 600	FG-50	14 lbs.

DIMENSIONS



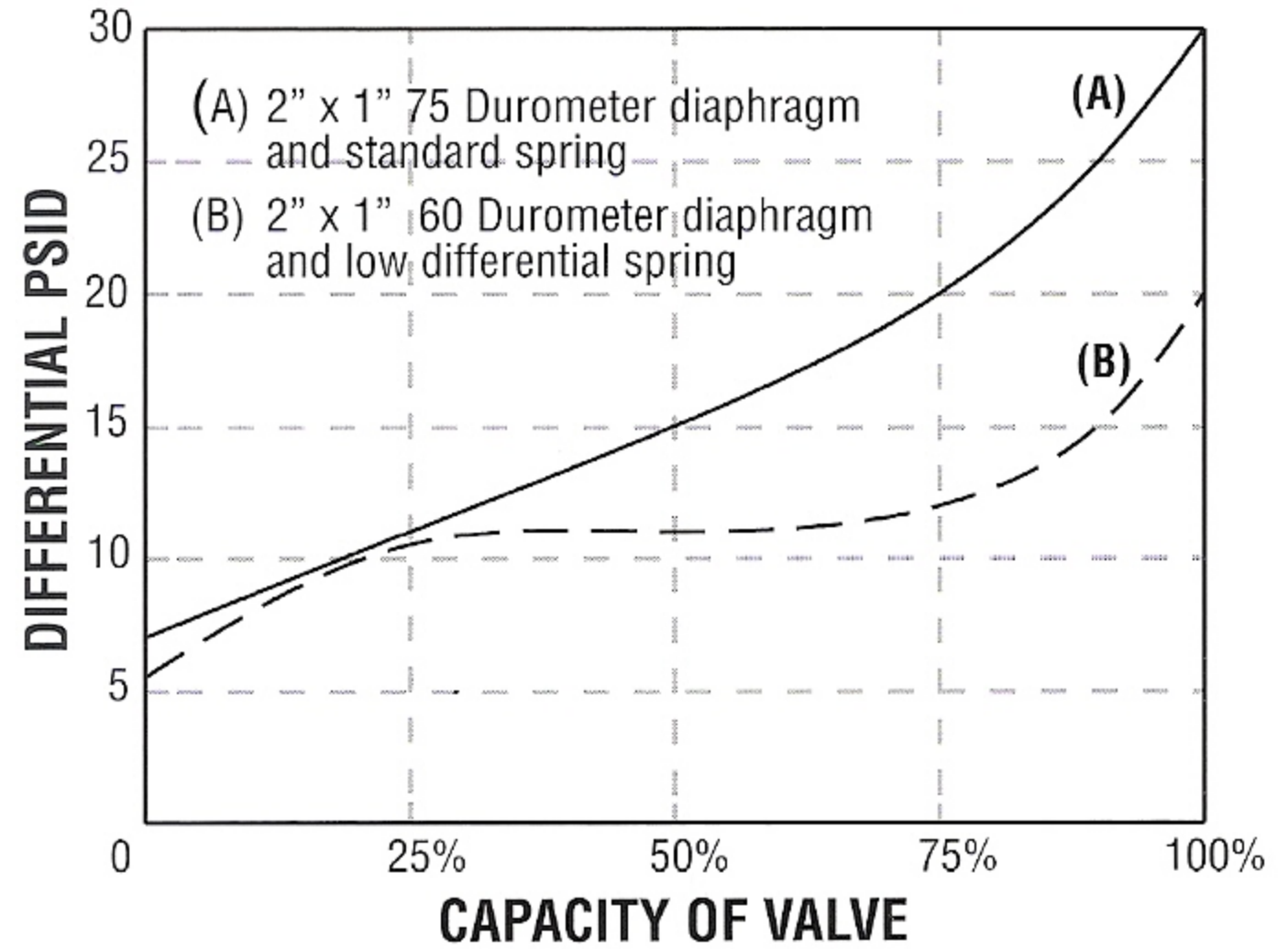
Flange Class	A	B	C	D	E	F
150#	10.00	6.00	.75	.06	4	4.75
300#	10.50	6.50	.88	.06	8	5.00
600#	11.25	6.50	1.25	.25	8	5.00

FLOW COEFFICIENTS AND CONSTANTS

2" x 1" Single Port Valve				Swage Factor	
Percent Capacity	Cv	C1	Cg	1.5:1	2:1
100%	13.4	37	500	0.96	0.93
75%	10.7	30	320	0.97	0.95
50%	9.1	27	245	0.98	0.96
35%	5.5	26	144	1.00	0.99

NOTE: Allow a 5% factor of safety when calculating relief capacity

MINIMUM PRESSURE DIFFERENTIAL VS. CAPACITY



DIAPHRAGM SELECTION

Compound	Temp. Range (Degrees F)	Maximum Differential	Characteristics	Recommended Applications
75 Duro	-20 to 150	1000 psid	Best All Around Material	60 psid to Max. Differential
60 Duro	-25 to 150	300 psid	Best Shutoff at Low Differential Pressure	Low Differential (100 psid or less) or Low Temperature
80 Duro High ACN	-5 to 175	1000 psid	Higher Abrasion and Swelling Resistance	High Differential (400 psid or higher) or Abrasive Conditions with Distillates
80 Duro Low ACN	-20 to 150	1000 psid	Higher Abrasion Resistance and Low Temperature Flexibility	High Differential (400 psid or higher) or Abrasive Conditions at Low Temperatures

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2" x 1" Single Port
5.08

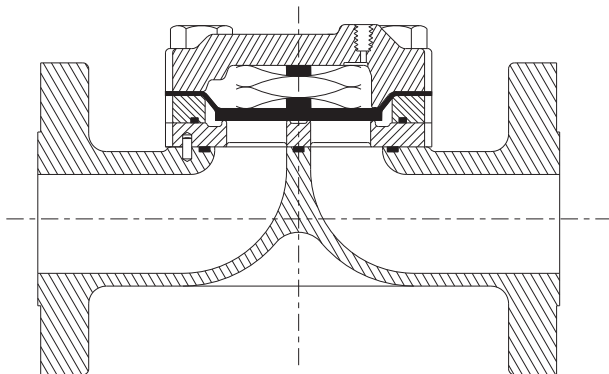
2" Standard Single Port

Flanged CL 150 - 600
NPT & SWE CL 600
Buttweld CL 600



2" Standard Single Port Flowgrid® Valve with Series 20 Pilot

SECTIONAL VIEW



OVERPRESSURE PROTECTION

The Flowgrid® Valve is bi-directional and has a full ANSI rating on both the inlet and outlet. Overpressure protection is required only if the pressure can exceed the flange or body rating.

The pilots, like most regulators, may have an outlet pressure rating lower than the inlet pressure rating. If this is the case then some external form of overpressure protection must be provided for the pilot.

Anytime the Flowgrid® valve or pilot system is exposed to pressure in excess of its rating it should be inspected for damage.

The 2" Flowgrid® Valve is an economical and easy to maintain pilot operated valve for both gas and liquid applications. The valve is designed to be used in conjunction with a self contained pilot control system as pictured. The low profile and easy in line maintenance make it ideal for skid mounted, vault and enclosure installations. The valve can be converted into a 2" Large Single Port for extra capacity simply by changing the Spring Case, Diaphragm, Spacer, and Throttle Plate.

SPECIFICATIONS

Size	2"
Body Style	Standard Single Port (2")
End Connections	2" CL150, 300, 600 Flanged 2" CL 600 NPT, SWE, Buttweld
Temperature	Working -20°F to 150°F Emergency -40°F to 175°F
Max. Operating Differential	800 psi
Max. Emergency Differential	1000 psi
Min. Differential	Refer to graph on page 2
Cracking Differential	Refer to graph on page 2
Max. Inlet Pressure	1480 psig*
Outlet Pressure Range	Limited By Pilot
Flow Direction	Bi-Directional**
Body Taps	Two 1/4" - 18NPT

* Limited by pilot or flange rating

** Reverse flow by changing pilot connections and reversing spring case

MATERIALS OF CONSTRUCTION

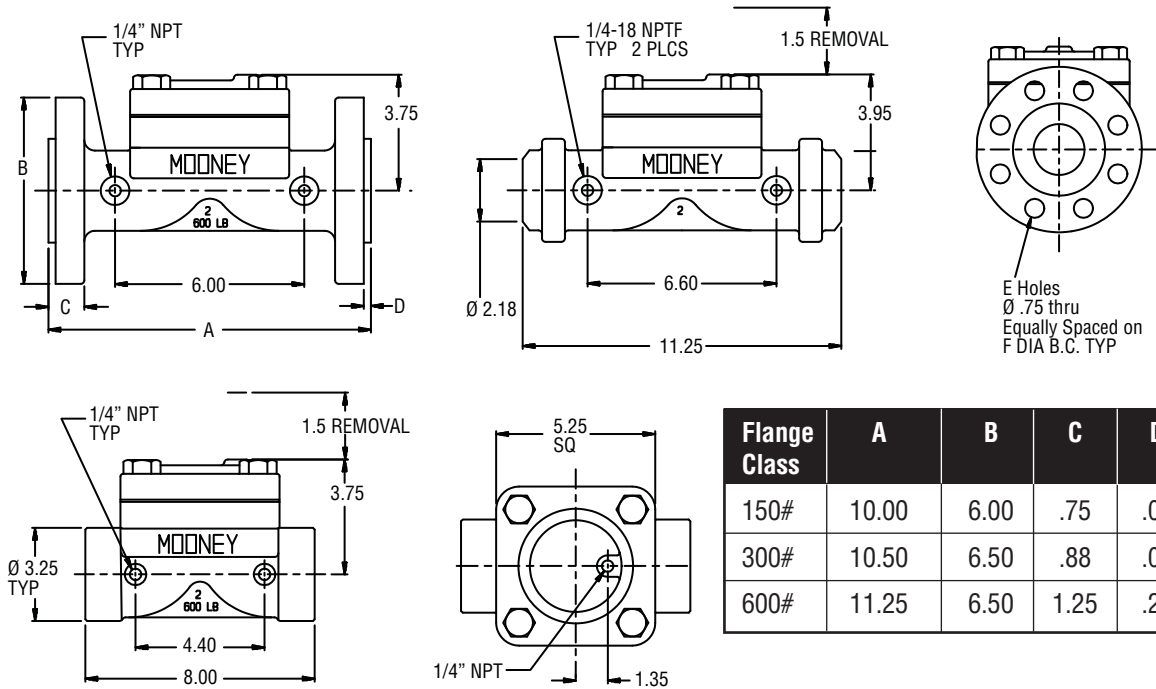
Body & Spring Case	ASTM A 216 GR WCB Carbon Steel
Throttle Plate	17 - 4PH Stainless Steel or A515 Carbon Steel with ENC Coating
Diaphragm	Nitrile/Nylon* Optional (Viton/Nylon)
O-Ring & Seals	Nitrile, Optional (Viton)
Bolting	ASTM A 193 GR B-7 or Equal
Spring	301 Stainless Steel

* Refer to diaphragm selection chart on page 2

STOCK NUMBERS

2" Single Port Valve	Stock Number	Weight
150# Flange	FG-3	36 lbs.
300# Flange	FG-4	37 lbs.
600# Flange	FG-5	43 lbs.
NPT CL 600	FG-1	25 lbs.
SWE CL 600	FG-2	25 lbs.
Buttweld CL 600	FG-76	31 lbs.

DIMENSIONS

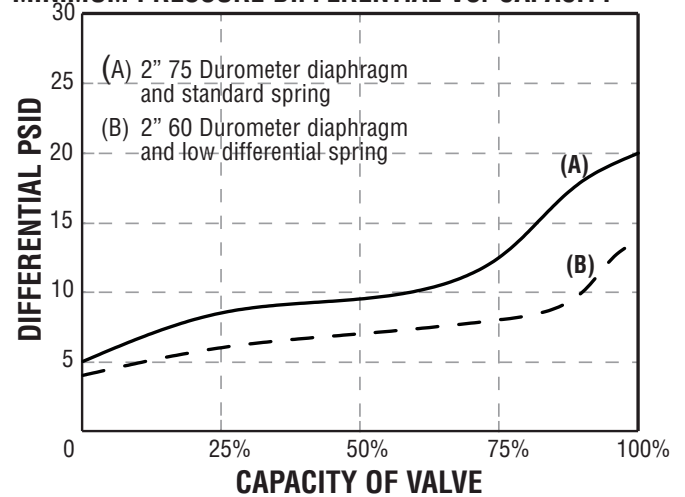


FLOW COEFFICIENTS AND CONSTANTS

2" x 1" Single Port Valve				Swage Factor	
Percent Capacity	Cv	C1	Cg	1.5:1	2:1
100%	32	35	1130	0.98	0.97
75%	28	30	850	0.99	0.98
50%	25	27	680	1.00	0.98
35%	15	26	380	1.00	1.00

NOTE: Allow a 5% factor of safety when calculating relief capacity

MINIMUM PRESSURE DIFFERENTIAL VS. CAPACITY



DIAPHRAGM SELECTION

Compound	Temp. Range (Degrees F)	Maximum Differential	Characteristics	Recommended Applications
75 Duro	-20 to 150	1000 psid	Best All Around Material	60 psid to Max. Differential
60 Duro	-25 to 150	300 psid	Best Shutoff at Low Differential Pressure	Low Differential (100 psid or less) or Low Temperature
80 Duro High ACN	-5 to 175	1000 psid	Higher Abrasion and Swelling Resistance	High Differential (400 psid or higher) or Abrasive Conditions with Distillates
80 Duro Low ACN	-20 to 150	1000 psid	Higher Abrasion Resistance and Low Temperature Flexibility	High Differential (400 psid or higher) or Abrasive Conditions at Low Temperatures

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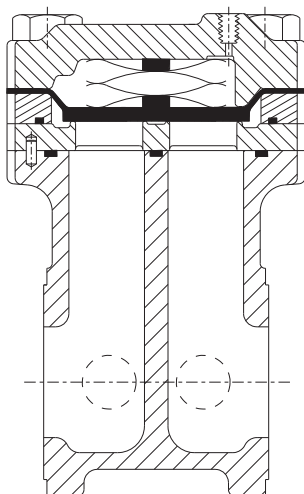
2" Standard Single Port

Flangeless CL 150 – 600



2" Standard Single Port Flangeless Flowgrid® Valve with Series 20 Pilot

SECTIONAL VIEW



OVERPRESSURE PROTECTION

The Flowgrid® Valve is bi-directional and has a full ANSI rating on both the inlet and outlet. Overpressure protection is required only if the pressure can exceed the flange or body rating.

The pilots, like most regulators, may have an outlet pressure rating lower than the inlet pressure rating. If this is the case then some external form of overpressure protection must be provided for the pilot.

Anytime the Flowgrid® valve or pilot system is exposed to pressure in excess of its rating it should be inspected for damage.

The 2" Standard Single Port Flangeless Flowgrid® Valve is an economical and easy to maintain pilot operated valve for both gas and liquid applications. This space saving valve has a face to face dimension of only 4.187". This dimension is the same as the obsolete REDQ™ Model 82 and current Model 83 making the Flowgrid® Valve an ideal replacement. The valve can be converted into a 2" Large Single Port for extra capacity simply by changing the Spring Case, Diaphragm, Spacer, and Throttle Plate.

SPECIFICATIONS

Size	2"
Body Style	Standard Single Port (2")
End Connections	2" CL150, 300, 600 Flangeless
Temperature	Working -20°F to 150°F Emergency -40°F to 175°F
Max. Operating Differential	800 psi
Max. Emergency Differential	1000 psi
Min. Differential	Refer to graph on page 2
Cracking Differential	Refer to graph on page 2
Max. Inlet Pressure	1480 psig*
Outlet Pressure Range	Limited By Pilot
Flow Direction	Bi-Directional**
Body Taps	Two 1/4" - 18NPT

* Limited by pilot or flange rating

** Reverse flow by changing pilot connections and reversing spring case

MATERIALS OF CONSTRUCTION

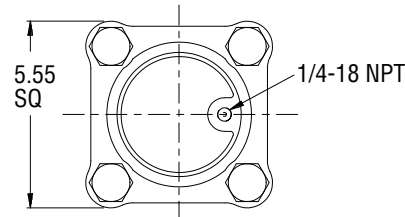
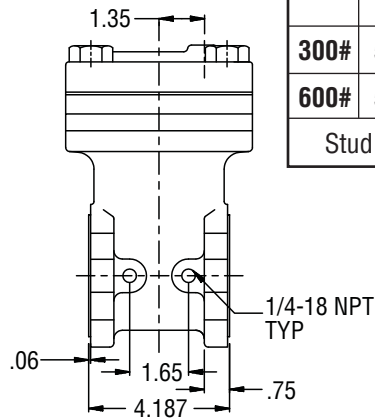
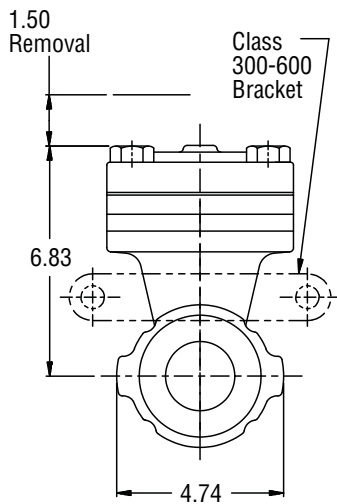
Body & Spring Case	ASTM A 216 GR WCB Carbon Steel
Throttle Plate	17 - 4PH Stainless Steel or A515 Carbon Steel with ENC Coating
Diaphragm	Nitrile/Nylon*
O-Ring & Seals	Nitrile, Optional (Viton)
Bolting	ASTM A 193 GR B-7 or Equal
Spring	301 Stainless Steel

*Refer to diaphragm selection chart on page 2

STOCK NUMBERS

2" Std Single Port Flangeless	Stock #	Weight
150# Flangeless	FG-15	29 lbs.
300# Flangeless	FG-15	29 lbs.

DIMENSIONS



Class	Bolt Circle	Bolt Size	Quantity	Stud Length	Bracket Stud Length	Quantity
150#	4.75	5/8-11UNC	4	8.50	Not Required	Not Required
300#	5.00	5/8-11UNC	6	8.50	11.0	2
600#	5.00	5/8-11UNC	6	8.50	11.0	2

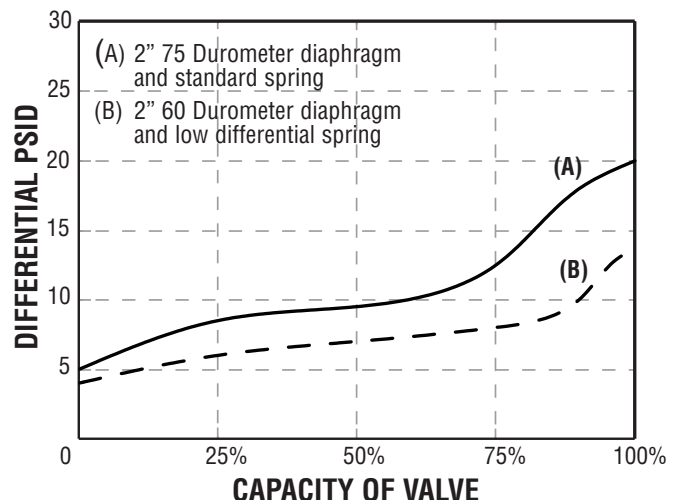
Stud Material: A193 Grade B7 Nut Material: A194 Grade 2H

FLOW COEFFICIENTS AND CONSTANTS

2" Standard Single Port Flangeless Valve				Swage Factor	
Percent Capacity	Cv	C1	Cg	1.5:1	2:1
100%	32	35	1120	0.98	0.97
75%	27	30	827	0.99	0.98
50%	23	27	620	1.00	0.98
35%	13	26	338	1.00	1.00

NOTE: Allow a 5% factor of safety when calculating relief capacity

MINIMUM PRESSURE DIFFERENTIAL VS. CAPACITY



DIAPHRAGM SELECTION

Compound	Temp. Range (Degrees F)	Maximum Differential	Characteristics	Recommended Applications
75 Duro	-20 to 150	1000 psid	Best All Around Material	60 psid to Max. Differential
60 Duro	-25 to 150	300 psid	Best Shutoff at Low Differential Pressure	Low Differential (100 psid or less) or Low Temperature
80 Duro High ACN	-5 to 175	1000 psid	Higher Abrasion and Swelling Resistance	High Differential (400 psid or higher) or Abrasive Conditions with Distillates
80 Duro Low ACN	-20 to 150	1000 psid	Higher Abrasion Resistance and Low Temperature Flexibility	High Differential (400 psid or higher) or Abrasive Conditions at Low Temperatures

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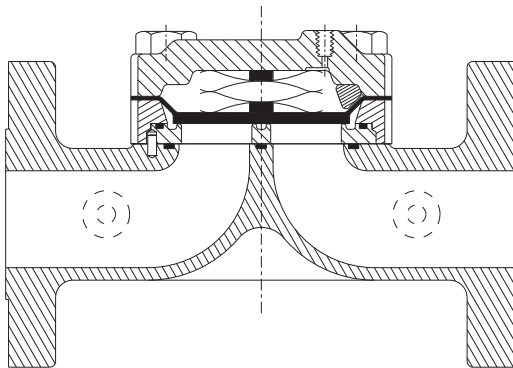
2" Large Single Port

Flanged CL 150 – 600
 NPT & SWE CL 600
 Butt weld CL 600



2" Large Single Port Flowgrid® Valve with Series 20 Pilot

SECTIONAL VIEW



OVERPRESSURE PROTECTION

The Flowgrid® Valve is bi-directional and has a full ANSI rating on both the inlet and outlet. Overpressure protection is required only if the pressure can exceed the flange or body rating.

The pilots, like most regulators, may have an outlet pressure rating lower than the inlet pressure rating. If this is the case then some external form of overpressure protection must be provided for the pilot.

Anytime the Flowgrid® valve or pilot system is exposed to pressure in excess of its rating it should be inspected for damage.

The 2" Large Single Port Flowgrid® Valve is simply a higher capacity version of the original 2" Single Port Valve. The two constructions share the same Body, O-Ring, Body Seal, and Main Spring. The Spring Case, Diaphragm, Spacer, and Throttle Plate are unique to this construction.

SPECIFICATIONS

Size	2"
Body Style	Large Single Port (2")
End Connections	2" CL150, 300, 600 Flanged 2" CL 600 NPT, SWE, Butt weld
Temperature	Working -20°F to 150°F Emergency -40°F to 175°F
Max. Operating Differential	800 psi
Max. Emergency Differential	1000 psi
Min. Differential	Refer to graph on page 2
Cracking Differential	Refer to graph on page 2
Max. Inlet Pressure	1480 psig*
Outlet Pressure Range	Limited By Pilot
Flow Direction	Bi-Directional**
Body Taps	Two 1/4" - 18NPT

* Limited by pilot or flange rating

** Reverse flow by changing pilot connections and reversing spring case

MATERIALS OF CONSTRUCTION

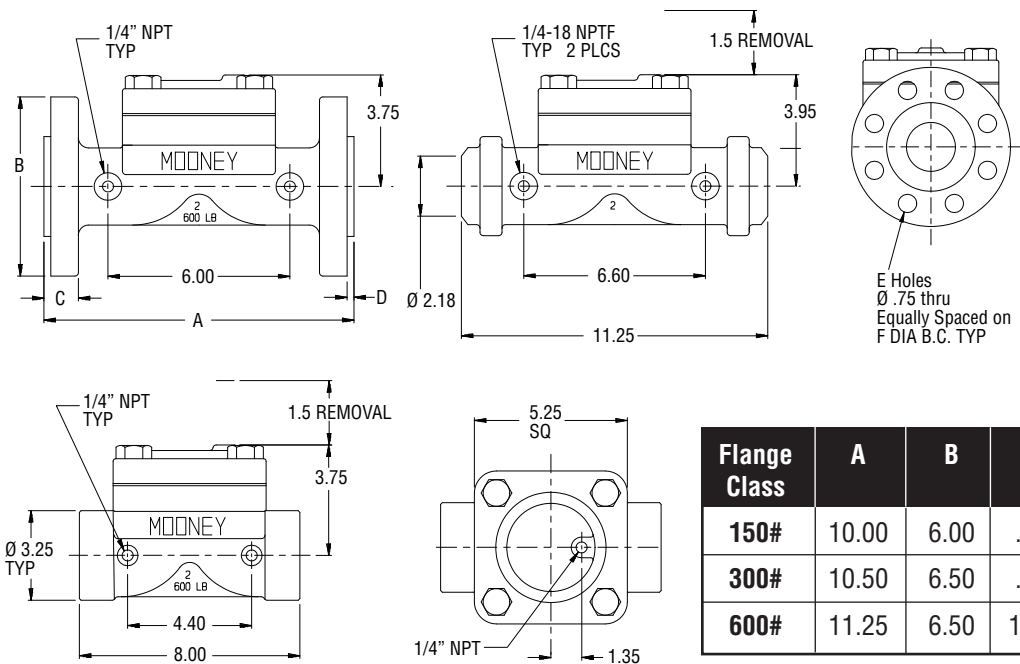
Body & Spring Case	ASTM A 216 GR WCB Carbon Steel
Throttle Plate	17 - 4PH Stainless Steel or A515 Carbon Steel with ENC Coating
Diaphragm	Nitrile/Nylon* or Viton/Nylon
O-Ring & Seals	Nitrile, Optional (Viton)
Bolting	ASTM A 193 GR B-7 or Equal
Spring	301 Stainless Steel

*Refer to diaphragm selection chart on page 2

STOCK NUMBERS

2" Large Single Port Valve	Stock #	Weight
150# Flange	FG-29	34 lbs.
300# Flange	FG-30	36 lbs.
600# Flange	FG-31	41 lbs.
NPT CL 600	FG-27	25 lbs.
SWE CL 600	FG-28	23 lbs.
Butt weld CL 600	FG-77	30 lbs.

DIMENSIONS

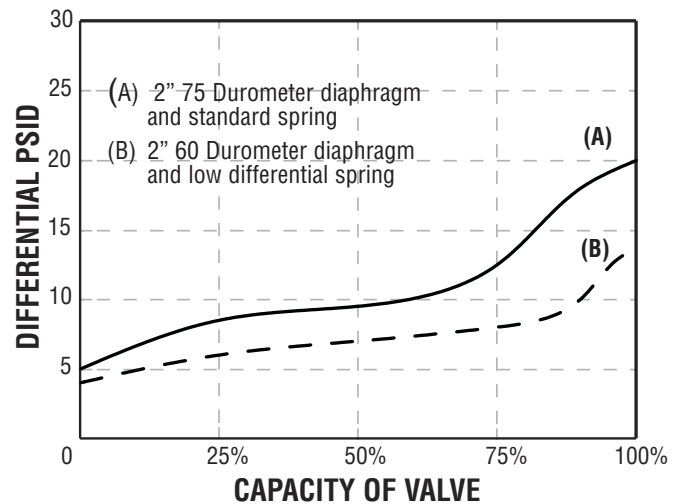


FLOW COEFFICIENTS AND CONSTANTS

2" Large Single Port Valve				Swage Factor	
Percent Capacity	Cv	C1	Cg	1.5:1	2:1
100%	40	35	1420	0.97	0.96
75%	34	33	1130	0.98	0.97
50%	27	30	820	0.99	0.98
35%	20	30	610	1.00	1.00

NOTE: Allow a 5% factor of safety when calculating relief capacity

MINIMUM PRESSURE DIFFERENTIAL VS. CAPACITY



DIAPHRAGM SELECTION

Compound	Temp. Range (Degrees F)	Maximum Differential	Characteristics	Recommended Applications
75 Duro	-20 to 150	1000 psid	Best All Around Material	60 psid to Max. Differential
60 Duro	-25 to 150	300 psid	Best Shutoff at Low Differential Pressure	Low Differential (100 psid or less) or Low Temperature
80 Duro High ACN	-5 to 175	1000 psid	Higher Abrasion and Swelling Resistance	High Differential (400 psid or higher) or Abrasive Conditions with Distillates
80 Duro Low ACN	-20 to 150	1000 psid	Higher Abrasion Resistance and Low Temperature Flexibility	High Differential (400 psid or higher) or Abrasive Conditions at Low Temperatures

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2" Large Single Port

Type A Flangeless
CL 150 – 600



The 2" Single Port Type A Flangeless Flowgrid® Valve is an economical and easy to maintain top entry pilot operated valve for both gas and liquid operations. This space saving valve has a face to face dimension of only 3.03" for the 150/300 CL valve and 3.41" for the 600 CL valve. These dimensions are the same as the American Axial Flow™ regulator, making the top-entry Flowgrid® Valve an ideal replacement.

SPECIFICATIONS

Size	2"
Body Style	Large Single Port (2")
End Connections	2" CL150, 300, 600 Flangeless
Temperature	Working -20°F to 150°F Emergency -40°F to 175°F
Max. Operating Differential	800 psi
Max. Emergency Differential	1000 psi
Min. Differential	Refer to graph on page 2
Cracking Differential	Refer to graph on page 2
Max. Inlet Pressure	1480 psig*
Outlet Pressure Range	Limited By Pilot
Flow Direction	Bi-Directional**
Body Taps	Two 1/4" - 18NPT

* Limited by pilot or flange rating

** Reverse flow by changing pilot connections and reversing spring case

2" Large Single Port Type A Flangeless Flowgrid® Valve with Series 20 Pilot

OVERPRESSURE PROTECTION

The Flowgrid® Valve is bi-directional and has a full ANSI rating on both the inlet and outlet. Overpressure protection is required only if the pressure can exceed the flange or body rating.

The pilots, like most regulators, may have an outlet pressure rating lower than the inlet pressure rating. If this is the case then some external form of overpressure protection must be provided for the pilot.

Anytime the Flowgrid® valve or pilot system is exposed to pressure in excess of its rating it should be inspected for damage.

MATERIALS OF CONSTRUCTION

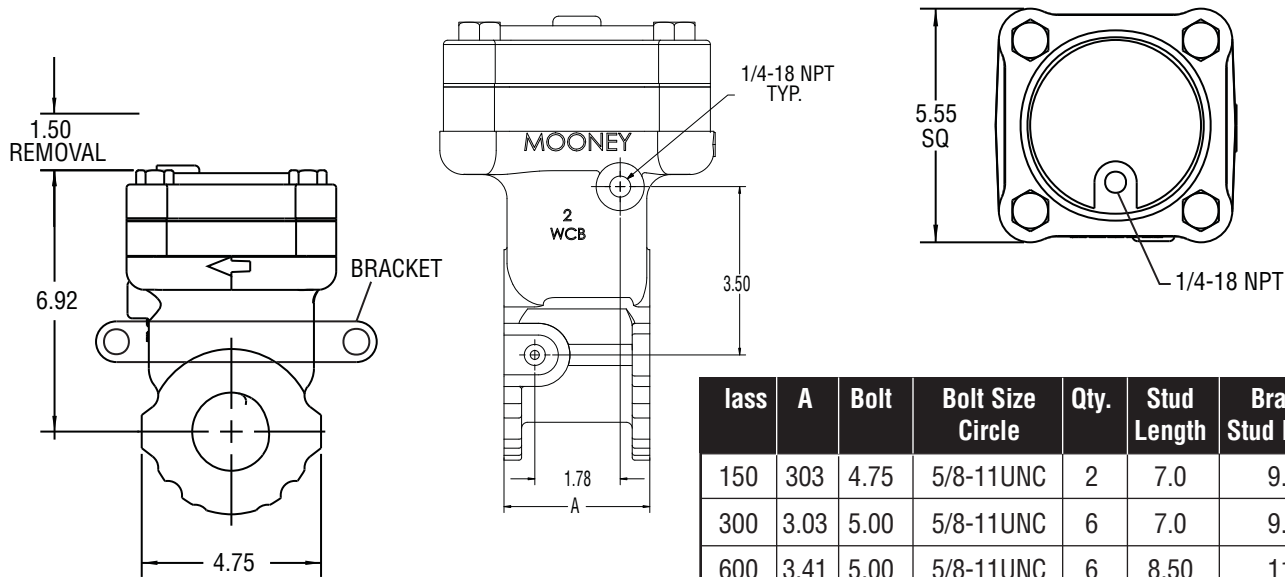
Body & Spring Case	ASTM A 216 GR WCB Carbon Steel
Throttle Plate	17 - 4PH Stainless Steel or A515 Carbon Steel with ENC Coating
Diaphragm	Nitrile/Nylon* or Viton/Nylon
O-Ring & Seals	Nitrile, Optional (Viton)
Bolting	ASTM A 193 GR B-7 or Equal
Spring	301 Stainless Steel

*Refer to diaphragm selection chart on page 2.

STOCK NUMBERS

2" Large Single Port Type A Flangeless Valve	Stock #	Weight
150# Flangeless	FG-100	28 lbs.
300# Flangeless	FG-101	28 lbs.
600# Flangeless	FG-102	28 lbs.

DIMENSIONS



Class	A	Bolt	Bolt Size Circle	Qty.	Stud Length	Bracket Stud Length	Qty.
150	303	4.75	5/8-11UNC	2	7.0	9.50	2
300	3.03	5.00	5/8-11UNC	6	7.0	9.50	2
600	3.41	5.00	5/8-11UNC	6	8.50	11.0	2

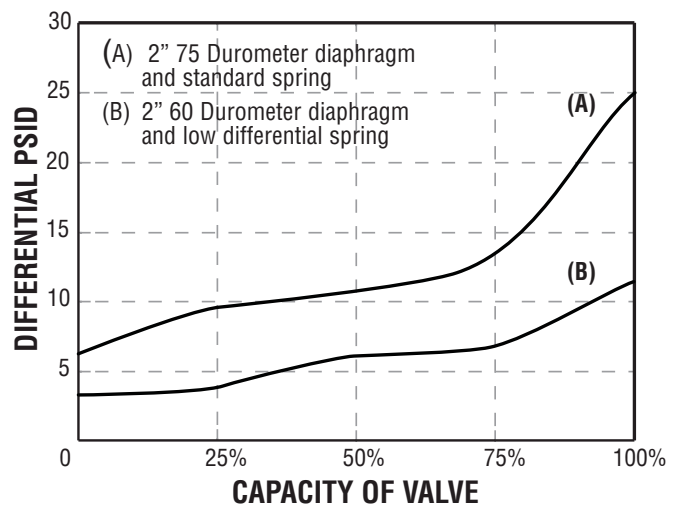
Stud Material: A193 Grade B7 Nut Material: A194 Grade 2H

FLOW COEFFICIENTS AND CONSTANTS

2" Large Single Port Type A Flangeless Valve				Swage Factor	
Percent Capacity	Cv	C1	Cg	1.5:1	2:1
100%	40	35	1400	0.98	0.96
75%	33	33	1083	0.98	0.97
50%	27	30	824	0.99	0.98
35%	20	30	590	1.00	1.00

NOTE: Allow a 5% factor of safety when calculating relief capacity

MINIMUM PRESSURE DIFFERENTIAL VS. CAPACITY



DIAPHRAGM SELECTION

Compound	Temp. Range (Degrees F)	Maximum Differential	Characteristics	Recommended Applications
75 Duro	-20 to 150	1000 psid	Best All Around Material	60 psid to Max. Differential
60 Duro	-25 to 150	300 psid	Best Shutoff at Low Differential Pressure	Low Differential (100 psid or less) or Low Temperature
80 Duro High ACN	-5 to 175	1000 psid	Higher Abrasion and Swelling Resistance	High Differential (400 psid or higher) or Abrasive Conditions with Distillates
80 Duro Low ACN	-20 to 150	1000 psid	Higher Abrasion Resistance and Low Temperature Flexibility	High Differential (400 psid or higher) or Abrasive Conditions at Low Temperatures

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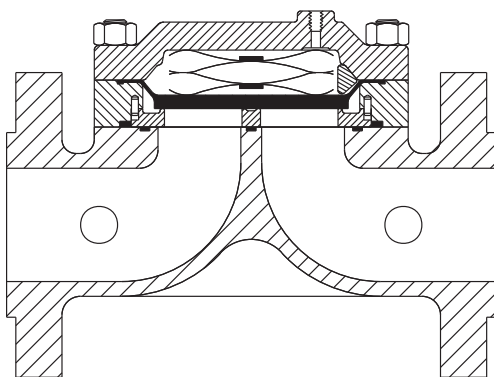
3" Single Port

Flanged CL 150 – 600
Buttweld



3" Flowgrid® Valve with Series 20 Pilot

SECTIONAL VIEW



OVERPRESSURE PROTECTION

The Flowgrid® Valve is bi-directional and has a full ANSI rating on both the inlet and outlet. Overpressure protection is required only if the pressure can exceed the flange or body rating.

The pilots, like most regulators, may have an outlet pressure rating lower than the inlet pressure rating. If this is the case then some external form of overpressure protection must be provided for the pilot.

Anytime the Flowgrid® valve or pilot system is exposed to pressure in excess of its rating it should be inspected for damage.

The 3" Flowgrid® Valve is an economical and easy to maintain pilot operated valve for both gas and liquid applications. The valve is designed to be used in conjunction with a self contained pilot control system. The low profile and easy in line maintenance make it ideal for skid mounted, vault, and enclosure installations.

SPECIFICATIONS

Size	3"
Body Style	Single Port
End Connections	3" CL150, 300, 600 Flanged & Buttweld
Temperature	Working -20°F to 150°F Emergency -40°F to 175°F
Max. Operating Differential	800 psi
Max. Emergency Differential	1000 psi
Min. Differential	Refer to graph on page 2
Cracking Differential	Refer to graph on page 2
Max. Inlet Pressure	1480 psig*
Outlet Pressure Range	Limited By Pilot
Flow Direction	Bi-Directional**
Body Taps	Two 1/4" - 18NPT

*Limited by pilot or flange rating

**Reverse flow by changing pilot connections and reversing spring case

MATERIALS OF CONSTRUCTION

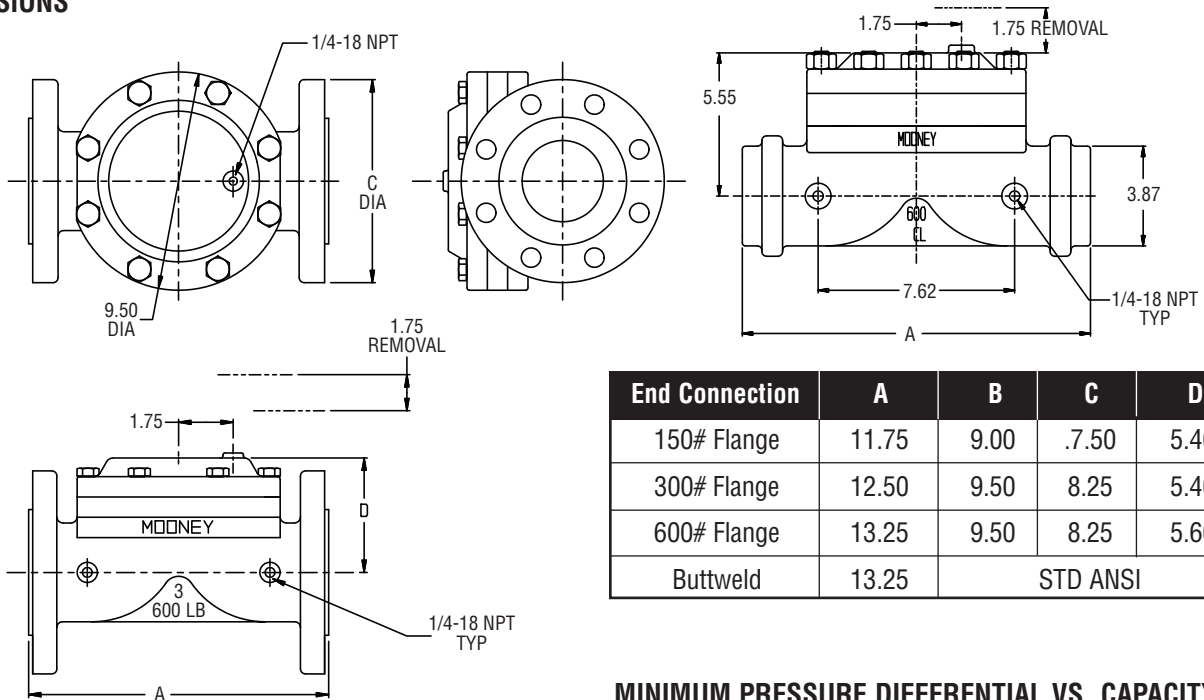
Body & Spring Case	ASTM A 216 GR WCB Carbon Steel
Throttle Plate	17 - 4PH Stainless Steel or A515 Carbon Steel with ENC Coating
Diaphragm	Nitrile/Nylon*
O-Ring & Seals	Nitrile, Optional (Viton)
Bolting	ASTM A 193 GR B-7 or Equal
Spring	301 Stainless Steel

*Refer to diaphragm selection chart on page 2

STOCK NUMBERS

3" Single Port Valve	Stock #	Weight
150# Flange	FG-16	73 lbs.
300# Flange	FG-17	85 lbs.
600# Flange	FG-18	94 lbs.
150-300# Buttweld	FG-61	65 lbs.
600# Buttweld	FG-62	69 lbs.

DIMENSIONS



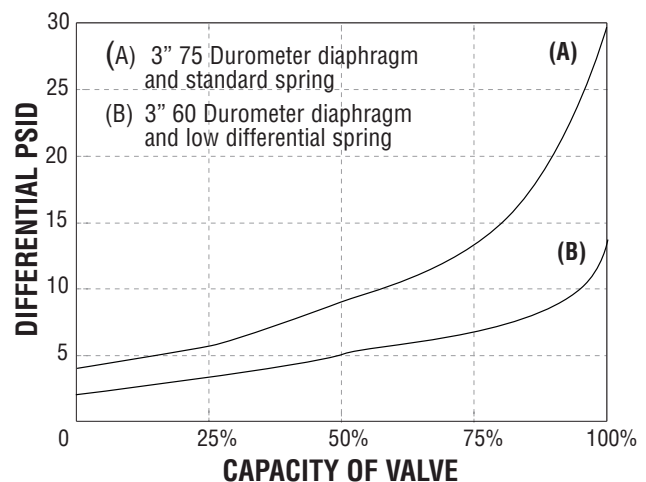
End Connection	A	B	C	D
150# Flange	11.75	9.00	.750	5.40
300# Flange	12.50	9.50	8.25	5.40
600# Flange	13.25	9.50	8.25	5.60
Buttweld	13.25	STD ANSI		

FLOW COEFFICIENTS AND CONSTANTS

3" Single Port Valve				Swage Factor	
Percent Capacity	Cv	C1	Cg	1.5:1	2:1
100%	96	36	3450	0.98	0.95
75%	81	34	2730	1.00	1.00
50%	68	32	2150	1.00	1.00
35%	49	31	1530	1.00	1.00

NOTE: For Relief Sizing, add 5% to Cv and Cg Values

MINIMUM PRESSURE DIFFERENTIAL VS. CAPACITY



DIAPHRAGM SELECTION

Compound	Temp. Range (Degrees F)	Maximum Differential	Characteristics	Recommended Applications
75 Duro	-20 to 150	1000 psid	Best All Around Material	60 psid to Max. Differential
60 Duro	-25 to 150	300 psid	Best Shutoff at Low Differential Pressure	Low Differential (100 psid or less) or Low Temperature
80 Duro High ACN	-5 to 175	1000 psid	Higher Abrasion and Swelling Resistance	High Differential (400 psid or higher) or Abrasive Conditions with Distillates
80 Duro Low ACN	-20 to 150	1000 psid	Higher Abrasion Resistance and Low Temperature Flexibility	High Differential (400 psid or higher) or Abrasive Conditions at Low Temperatures

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3" Single Port

Type A Flangeless
CL 150 – 300



The 3" Single Port Type A Flangeless Flowgrid® Valve is an economical and easy to maintain top entry pilot operated valve for both gas and liquid applications. This space saving valve has a face to face dimension of only 3.72" for the 150/300 CL valve. The face to face dimension is the same as the American Axial Flow™ regulator, making the top entry valve an ideal replacement.

SPECIFICATIONS

Size	3"
Body Style	Single Port (3")
End Connections	3" CL150, 300 Flangeless
Temperature	Working -20°F to 150°F Emergency -40°F to 175°F
Max. Operating Differential	740 psi
Max. Emergency Differential	740 psi
Min. Differential	Refer to graph on page 2
Cracking Differential	Refer to graph on page 2
Max. Inlet Pressure	740 psig*
Outlet Pressure Range	Limited By Pilot
Body Taps	One 1/4" - 18NPT

*Limited by pilot or flange rating

3" Single Port Type A Flangeless Flowgrid® Valve with Series 20 Pilot

OVERPRESSURE PROTECTION

The Flowgrid® Valve is bi-directional and has a full ANSI rating on both the inlet and outlet. Overpressure protection is required only if the pressure can exceed the flange or body rating.

The pilots, like most regulators, may have an outlet pressure rating lower than the inlet pressure rating. If this is the case then some external form of overpressure protection must be provided for the pilot.

Anytime the Flowgrid® valve or pilot system is exposed to pressure in excess of its rating it should be inspected for damage.

MATERIALS OF CONSTRUCTION

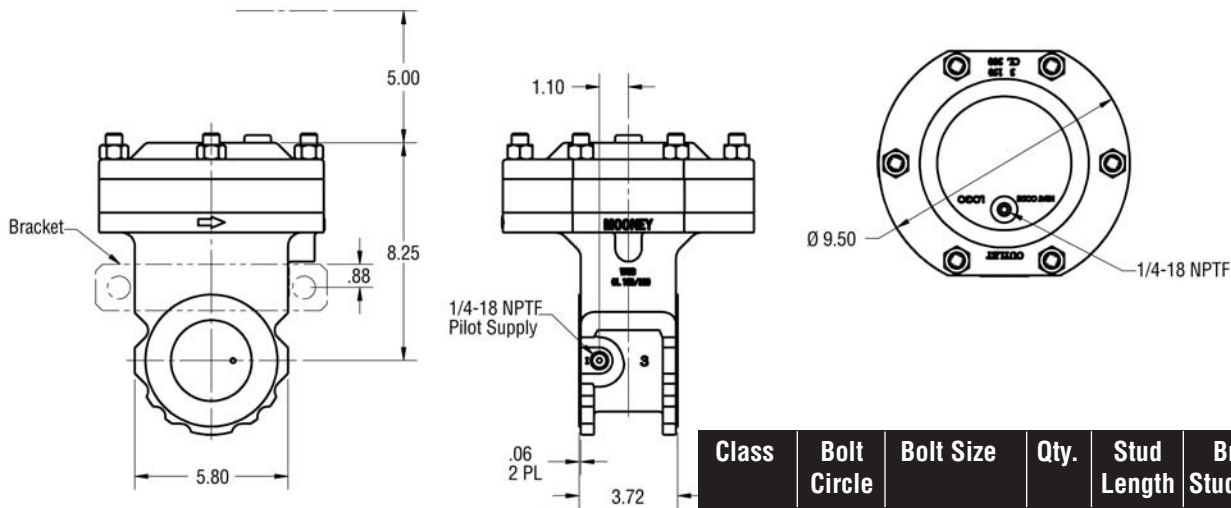
Body & Spring Case	ASTM A 216 GR WCB Carbon Steel
Throttle Plate	17 - 4PH Stainless Steel or A515 Carbon Steel with ENC Coating
Diaphragm	Nitrile/Nylon*
O-Ring & Seals	Nitrile
Bolting	ASTM A 193 GR B-7 or Equal
Spring	301 Stainless Steel

*Refer to diaphragm selection chart on page 2

STOCK NUMBERS

3" Single Port Type A Flangeless Valve	Stock #	Weight
150# Flangeless	FG-103	60 lbs.
300# Flangeless	FG-104	60 lbs.

DIMENSIONS



Class	Bolt Circle	Bolt Size	Qty.	Stud Length	Bracket Stud Length	Qty.
150	6.00	5/8-11UNC	2	7.75	10.75	2
300	6.62	5/8-11UNC	6	8.50	11.75	2

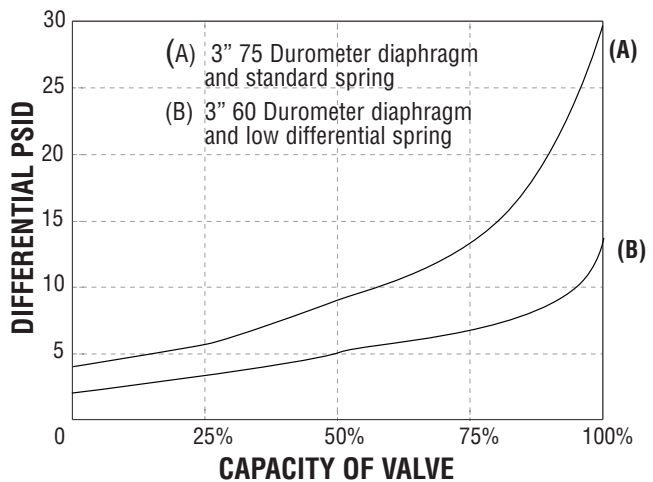
Stud Material: A193 Grade B7 Nut Material: A194 Grade 2H

FLOW COEFFICIENTS AND CONSTANTS

3" Single Port Type A Flangeless Valve				Swage Factor	
Percent Capacity	Cv	C1	Cg	1.5:1	2:1
100%	92	35	3240	0.98	0.96
75%	80	33	2650	0.98	0.97
50%	68	32	2150	0.99	0.98
35%	49	31	1530	1.00	1.00

NOTE: Allow a 5% factor of safety when calculating relief capacity

MINIMUM PRESSURE DIFFERENTIAL VS. CAPACITY



DIAPHRAGM SELECTION

Compound	Temp. Range (Degrees F)	Maximum Differential	Characteristics	Recommended Applications
75 Duro	-20 to 150	1000 psid	Best All Around Material	60 psid to Max. Differential
60 Duro	-25 to 150	300 psid	Best Shutoff at Low Differential Pressure	Low Differential (100 psid or less) or Low Temperature
80 Duro High ACN	-5 to 175	1000 psid	Higher Abrasion and Swelling Resistance	High Differential (400 psid or higher) or Abrasive Conditions with Distillates
80 Duro Low ACN	-20 to 150	1000 psid	Higher Abrasion Resistance and Low Temperature Flexibility	High Differential (400 psid or higher) or Abrasive Conditions at Low Temperatures

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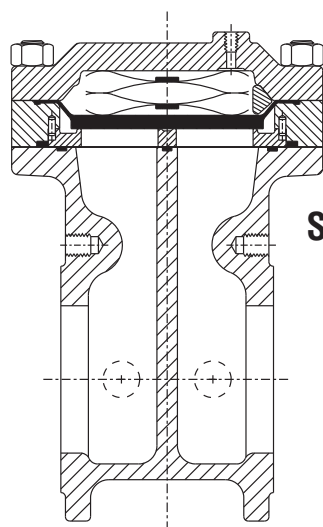


4" x 3" Single Port

Flangeless CL 150 & 300



4" x 3" Flowgrid® Valve with Series 20 Pilot



Sectional View

OVERPRESSURE PROTECTION

The Flowgrid® valve is bi-directional and has a full ANSI rating on both the inlet and outlet. Overpressure protection is required only if the pressure can exceed the flange or body rating.

The pilots, like most regulators, may have an outlet pressure rating lower than the inlet pressure rating. If this is the case then some external form of overpressure protection must be provided for the pilot.

Anytime the Flowgrid® valve or pilot system is exposed to pressures in excess of its rating it should be inspected for damage.

The 4" x 3" Flowgrid® Valve is an economical and easy to maintain pilot operated valve for both gas and liquid applications. The valve is designed to be used in conjunction with a self contained pilot control system. The space saving flangeless design allows the use of a 3" valve in 4" piping eliminating the need for piping swages. The low profile and easy in line maintenance make it ideal for skid mounted, vault, and enclosure installations.

SPECIFICATIONS

Size	4"
Body Style	Single Port (3")
End Connections	4" CL150, 300 Flangeless Face
Temperature	Working -20°F to 150°F Emergency -40°F to 175°F
Max. Operating Differential	740 psi
Max. Emergency Differential	740 psi
Min. Differential	Refer to graph on page 2
Cracking Differential	Refer to graph on page 2
Max. Inlet Pressure	740 psig*
Outlet Pressure Range	Limited by pilot
Flow Direction	Bi-Directional**
Body Taps	Two 1/4" - 18NPT

* Limited by pilot or flange rating

** Reverse flow by changing pilot connections and reversing spring case

MATERIALS OF CONSTRUCTION

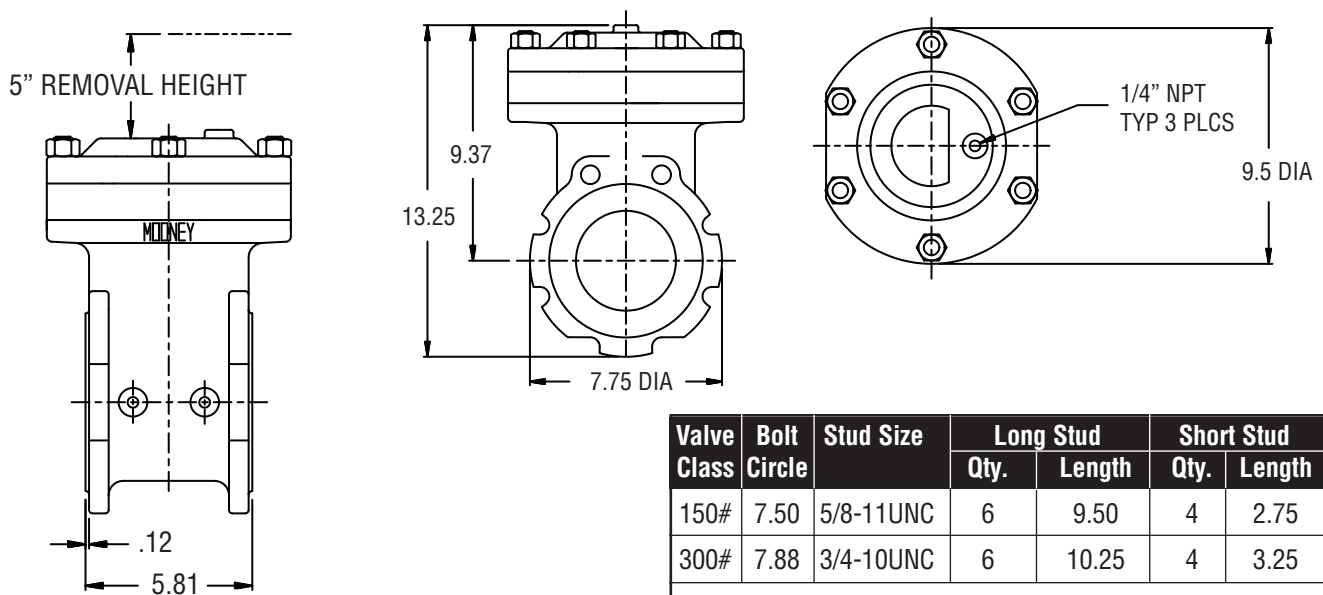
Body & Spring Case	ASTM A 216 GR WCB Carbon Steel
Throttle Plate	17 - 4PH Stainless Steel or A515 Carbon Steel with ENC Coating
Diaphragm	Nitrile/Nylon*
O-Ring & Seals	Nitrile, Optional (Viton)
Bolting	ASTM A 193 GR B-7 or Equal
Spring	301 Stainless Steel

*Refer to diaphragm selection chart on page 2

STOCK NUMBERS

4" x 3" Single Port Valve	Stock	Weight Number
150# Flangeless	FG-19	78 lbs.
300# Flangeless	FG-20	78 lbs.

DIMENSIONS



Valve Class	Bolt Circle	Stud Size	Long Stud		Short Stud	
			Qty.	Length	Qty.	Length
150#	7.50	5/8-11UNC	6	9.50	4	2.75
300#	7.88	3/4-10UNC	6	10.25	4	3.25

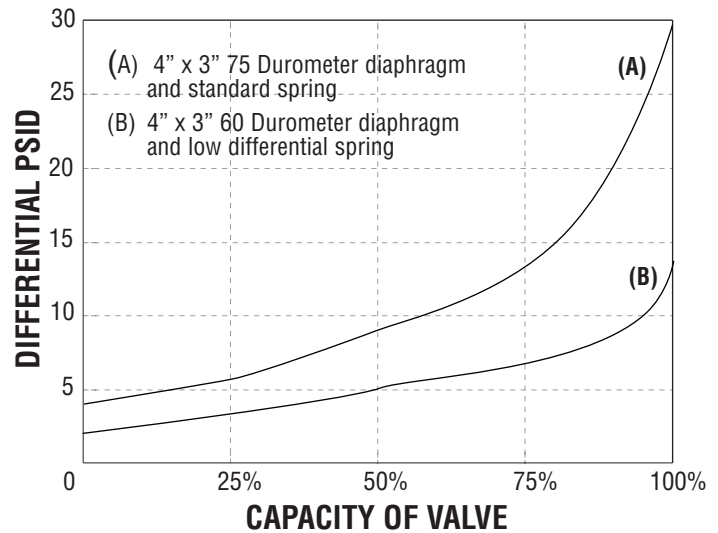
Stud Material: A193 Grade B7 **Nut Material:** A194 Grade 2H

FLOW COEFFICIENTS AND CONSTANTS

4" x 3" Single Port Valve				Swage Factor	
Percent Capacity	Cv	C1	Cg	1.5:1	2:1
100%	95	36	3400	0.99	0.98
75%	79	34	2690	1.00	0.99
50%	62	32	1980	1.00	1.00
35%	48	31	1515	1.00	1.00

NOTE: For relief sizing, add 5% to Cv and Cg values

MINIMUM PRESSURE DIFFERENTIAL VS. CAPACITY



DIAPHRAGM SELECTION

Compound	Temp. Range (Degrees F)	Maximum Differential	Characteristics	Recommended Applications
75 Duro	-20 to 150	1000 psid	Best All Around Material	60 psid to Max. Differential
60 Duro	-25 to 150	300 psid	Best Shutoff at Low Differential Pressure	Low Differential (100 psid or less) or Low Temperature
80 Duro High ACN	-5 to 175	1000 psid	Higher Abrasion and Swelling Resistance	High Differential (400 psid or higher) or Abrasive Conditions with Distillates
80 Duro Low ACN	-20 to 150	1000 psid	Higher Abrasion Resistance and Low Temperature Flexibility	High Differential (400 psid or higher) or Abrasive Conditions at Low Temperatures

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4" x 3" Single Port
3.08

4" Single Port

Type A Flangeless
CL 150 – 300



4" Single Port Type A Flangeless Flowgrid® Valve with Series 20 Pilot

The 4" Single Port Type A Flangeless Flowgrid® Valve is an economical and easy to maintain top entry pilot operated valve for both gas and liquid applications. This space saving valve has a face to face dimension of only 4.50" for the 150/300 CL valve. The face to face dimension is the same as the American Axial Flow™ regulator, making the top entry Flowgrid® valve an ideal replacement.

SPECIFICATIONS

Size	4"
Body Style	Single Port (4")
End Connections	4" CL150, 300 Flangeless
Temperature	Working -20°F to 150°F Emergency -40°F to 175°F
Max. Operating Differential	740 psi
Max. Emergency Differential	740 psi
Min. Differential	Refer to graph on page 2
Cracking Differential	Refer to graph on page 2
Max. Inlet Pressure	740 psig*
Outlet Pressure Range	Limited By Pilot
Body Taps	One 1/4" - 18NPT

*Limited by pilot or flange rating

OVERPRESSURE PROTECTION

The Flowgrid® Valve is bi-directional and has a full ANSI rating on both the inlet and outlet. Overpressure protection is required only if the pressure can exceed the flange or body rating.

The pilots, like most regulators, may have an outlet pressure rating lower than the inlet pressure rating. If this is the case then some external form of overpressure protection must be provided for the pilot.

Anytime the Flowgrid® valve or pilot system is exposed to pressure in excess of its rating it should be inspected for damage.

MATERIALS OF CONSTRUCTION

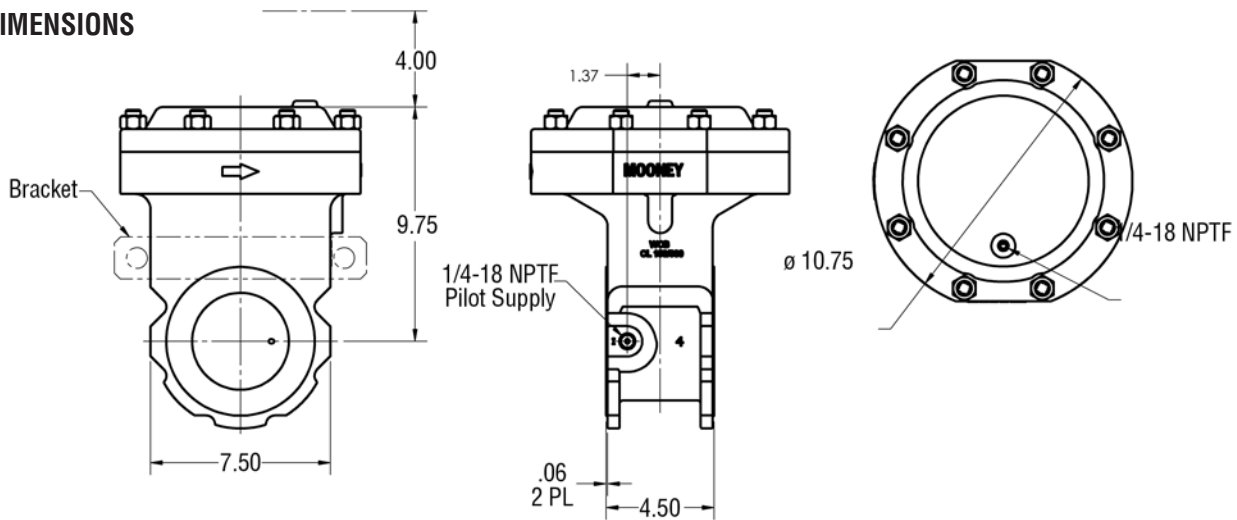
Body & Spring Case	ASTM A 216 GR WCB Carbon Steel
Throttle Plate	17 - 4PH Stainless Steel
Diaphragm	Nitrile/Nylon*
O-Ring & Seals	Nitrile
Bolting	ASTM A 193 GR B-7 or Equal
Spring	301 Stainless Steel

*Refer to diaphragm selection chart on page 2

STOCK NUMBERS

4" Single Port Type A Flangeless Valve	Stock #	Weight
150# Flangeless	FG-106	85 lbs.
300# Flangeless	FG-107	85 lbs.

DIMENSIONS



Class	Bolt Circle	Stud Size	Qty.	Stud Length	Bracket Stud Length	Qty.
150	7.50	5/8-11UNC	6	8.50	11.50	2
300	7.88	3/4-10UNC	6	10.25	13.00	2

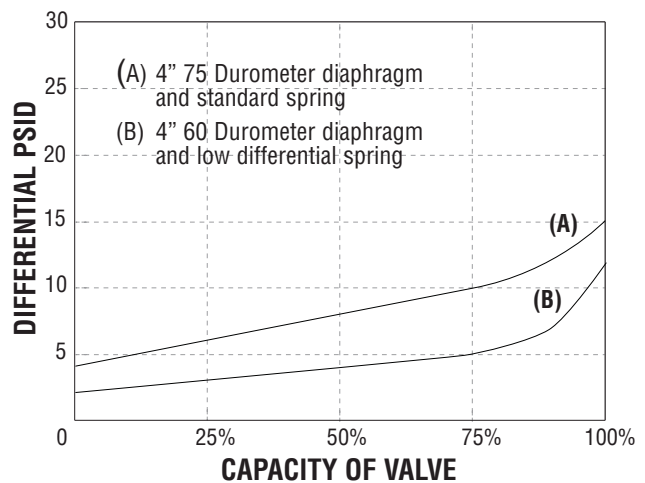
Stud Material: A193 Grade B7 Nut Material: A194 Grade 2H

FLOW COEFFICIENTS AND CONSTANTS

4" Single Port Type A Flangeless Valve				Swage Factor	
Percent Capacity	Cv	C1	Cg	1.5:1	2:1
100%	168	35	5800	0.98	0.96
75%	135	37	5000	0.98	0.97
50%	100	35	3550	0.99	0.98
35%	76	35	2700	1.00	1.00

NOTE: Allow a 5% factor of safety when calculating relief capacity

MINIMUM PRESSURE DIFFERENTIAL VS CAPACITY



DIAPHRAGM SELECTION

Compound	Temp. Range (Degrees F)	Maximum Differential	Characteristics	Recommended Applications
75 Duro	-20 to 150	1000 psid	Best All Around Material	60 psid to Max. Differential
60 Duro	-25 to 150	300 psid	Best Shutoff at Low Differential Pressure	Low Differential (100 psid or less) or Low Temperature
80 Duro High ACN	-5 to 175	1000 psid	Higher Abrasion and Swelling Resistance	High Differential (400 psid or higher) or Abrasive Conditions with Distillates
80 Duro Low ACN	-20 to 150	1000 psid	Higher Abrasion Resistance and Low Temperature Flexibility	High Differential (400 psid or higher) or Abrasive Conditions at Low Temperatures

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4" Single Port Type A
Flangeless Valve
3.08

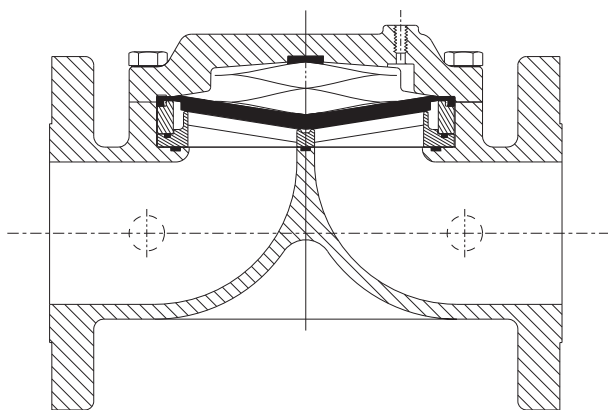
4" Single Port

Flanged CL 150 – 600
Buttweld



4" Flowgrid® Valve with Series 20 Pilot

SECTIONAL VIEW



OVERPRESSURE PROTECTION

The Flowgrid® Valve is bi-directional and has a full ANSI rating on both the inlet and outlet. Overpressure protection is required only if the pressure can exceed the flange or body rating.

The pilots, like most regulators, may have an outlet pressure rating lower than the inlet pressure rating. If this is the case then some external form of overpressure protection must be provided for the pilot.

Anytime the Flowgrid® valve or pilot system is exposed to pressure in excess of its rating it should be inspected for damage.

The 4" Flowgrid® Valve is a versatile, economical, and easy to maintain pilot operated valve for both gas and liquid applications. The valve is designed to be used in conjunction with a self contained pilot control system as pictured. The valve combines large capacity and easy in line maintenance with a compact size to make it ideal for skid mounted, vault, and enclosure installations.

SPECIFICATIONS

Size	4"
Body Style	Single Port (4")
End Connections	4" CL150, 300, 600 Flanged & Buttweld
Temperature	Working -20°F to 150°F Emergency -40°F to 175°F
Max. Operating Differential	800 psi
Max. Emergency Differential	1000 psi
Min. Differential	Refer to graph on page 2
Cracking Differential	Refer to graph on page 2
Max. Inlet Pressure	1480 psig*
Outlet Pressure Range	Limited By Pilot
Flow Direction	Bi-Directional**
Body Taps	Two 1/4" - 18NPT

* Limited by pilot or flange rating

** Reverse flow by changing pilot connections and reversing spring case

MATERIALS OF CONSTRUCTION

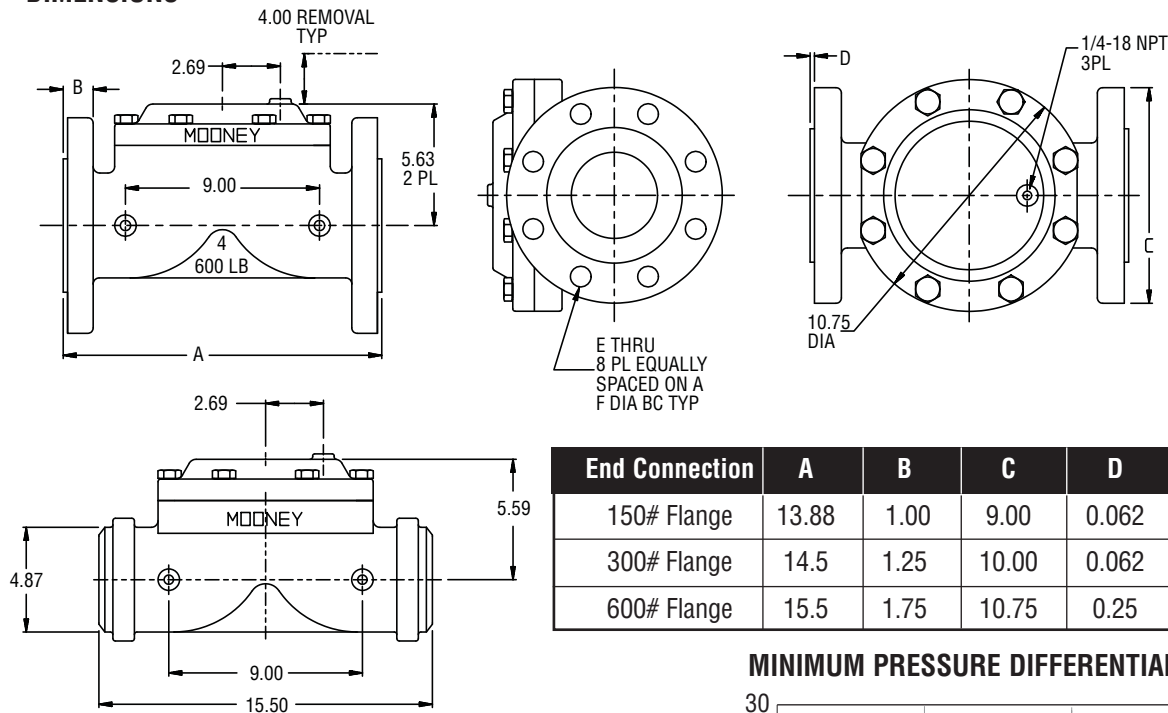
Body & Spring Case	ASTM A 216 GR WCB Carbon Steel
Throttle Plate	17 - 4PH Stainless Steel
Diaphragm	Nitrile/Nylon*
O-Ring & Seals	Nitrile, Optional (Viton)
Bolting	ASTM A 193 GR B-7 or Equal
Spring	301 Stainless Steel

*Refer to diaphragm selection chart on page 2

STOCK NUMBERS

4" Single Port Valve	Stock #	Weight
150# Flange	FG-39	103 lbs.
300# Flange	FG-40	117 lbs.
600# Flange	FG-41	145 lbs.
150-300# Buttweld	FG-63	86 lbs.
600# Buttweld	FG-64	98 lbs.

DIMENSIONS



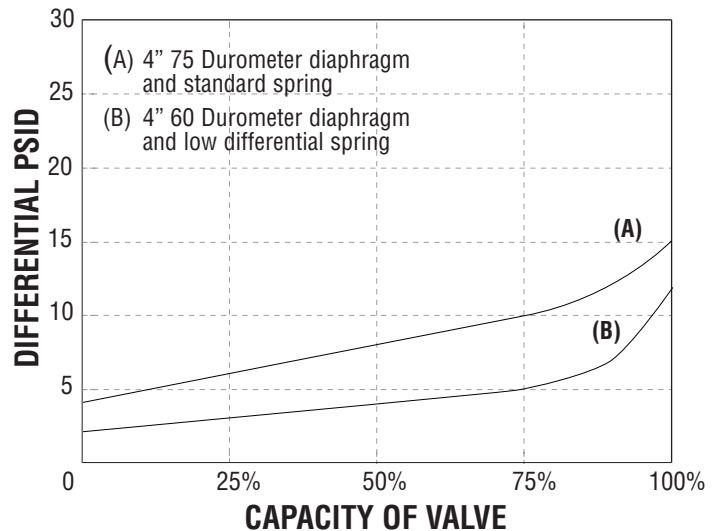
End Connection	A	B	C	D	E	F
150# Flange	13.88	1.00	9.00	0.062	0.750	7.50
300# Flange	14.5	1.25	10.00	0.062	0.875	7.87
600# Flange	15.5	1.75	10.75	0.25	1.00	8.50

FLOW COEFFICIENTS AND CONSTANTS

4" Single Port Valve				Swage Factor	
Percent Capacity	Cv	C1	Cg	1.5:1	2:1
100%	172	38	6500	0.97	0.95
75%	142	37	5300	0.98	0.96
50%	100	35	3550	0.99	0.98
35%	76	35	2700	1.00	1.00

NOTE: Allow a 5% factor of safety when calculating relief capacity

MINIMUM PRESSURE DIFFERENTIAL VS. CAPACITY



DIAPHRAGM SELECTION

Compound	Temp. Range (Degrees F)	Maximum Differential	Characteristics	Recommended Applications
75 Duro	-20 to 150	1000 psid	Best All Around Material	60 psid to Max. Differential
60 Duro	-25 to 150	300 psid	Best Shutoff at Low Differential Pressure	Low Differential (100 psid or less) or Low Temperature
80 Duro High ACN	-5 to 175	1000 psid	Higher Abrasion and Swelling Resistance	High Differential (400 psid or higher) or Abrasive Conditions with Distillates
80 Duro Low ACN	-20 to 150	1000 psid	Higher Abrasion Resistance and Low Temperature Flexibility	High Differential (400 psid or higher) or Abrasive Conditions at Low Temperatures

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4" Single Port Valve
3.08

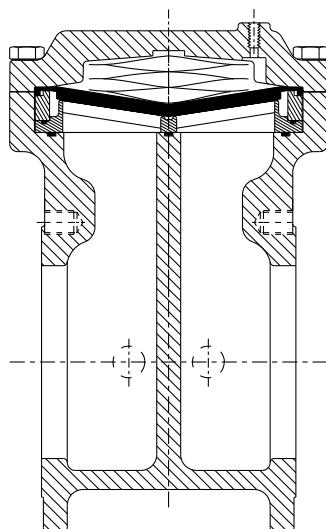
6" x 4" Single Port

Flangeless CL 150 & 300



6" x 4" Flowgrid® Valve with Series 20 Pilot

Sectional View



OVERPRESSURE PROTECTION

The Flowgrid® valve is bi-directional and has a full ANSI rating on both the inlet and outlet. Overpressure protection is required only if the pressure can exceed the flange or body rating.

The pilots, like most regulators, may have an outlet pressure rating lower than the inlet pressure rating. If this is the case then some external form of overpressure protection must be provided for the pilot.

Anytime the Flowgrid® valve or pilot system is exposed to pressures in excess of its rating it should be inspected for damage.

The 6" x 4" Flowgrid® Valve is an economical and easy to maintain pilot operated valve for both gas and liquid applications. The valve is designed to be used in conjunction with a self contained pilot control system as pictured. The flangeless design allows the valve to bolt in 6" piping eliminating the need for inlet and outlet reducers. These features make it ideal for skid mounted, vault, and enclosure installations.

SPECIFICATIONS

Size	6"
Body Style	Single Port (4")
End Connections	6" CL150, 300 Flangeless Face
Temperature	Working -20°F to 150°F Emergency -40°F to 175°F
Max. Operating Differential	740 psi
Max. Emergency Differential	740 psi
Min. Differential	Refer to graph on page 2
Cracking Differential	Refer to graph on page 2
Max. Inlet Pressure	740 psig*
Outlet Pressure Range	Limited by pilot
Flow Direction	Bi-Directional**
Body Taps	Two 1/4" - 18NPT

* Limited by pilot or flange rating

** Reverse flow by changing pilot connections and reversing spring case

MATERIALS OF CONSTRUCTION

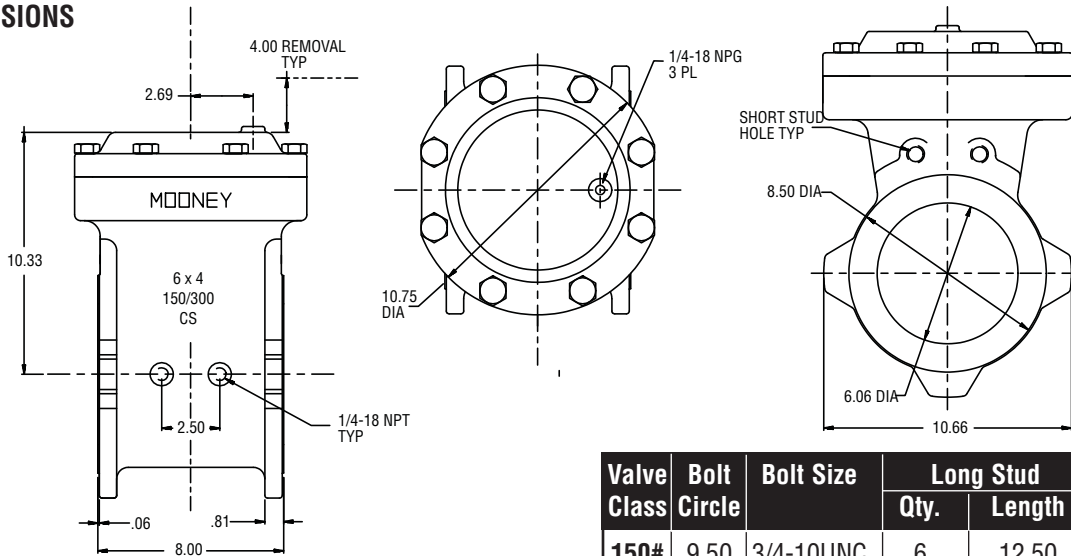
Body & Spring Case	ASTM A 216 GR WCB Carbon Steel
Throttle Plate	17 - 4PH Stainless Steel or A515 Carbon Steel with ENC Coating
Diaphragm	Nitrile/Nylon*
O-Ring & Seals	Nitrile, Optional (Viton)
Bolting	ASTM A 193 GR B-7 or Equal
Spring	301 Stainless Steel

*Refer to diaphragm selection chart on page 2

STOCK NUMBERS

6" x 4" Single Port Valve	Stock	Weight Number
150# Flangeless	FG-42	123 lbs.
300# Flangeless	FG-43	123 lbs.

DIMENSIONS



Valve Class	Bolt Circle	Bolt Size	Long Stud		Short Stud	
			Qty.	Length	Qty.	Length
150#	9.50	3/4-10UNC	6	12.50	4	3.50
300#	10.62	3/4-10UNC	10	13.50	4	3.75

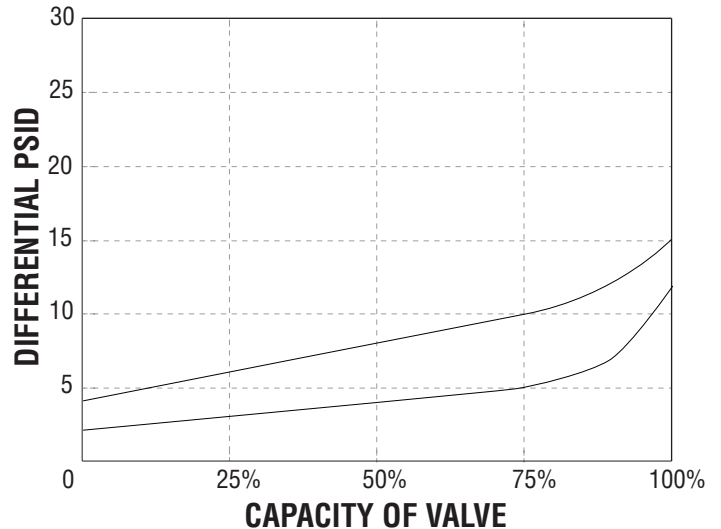
Stud Material: A193 Grade B7 **Nut Material:** A194 Grade 2H

FLOW COEFFICIENTS AND CONSTANTS

6" x 4" Single Port Valve				Swage Factor	
Percent Capacity	Cv	C1	Cg	1.5:1	2:1
100%	172	37	6400	0.97	0.95
75%	142	32	4500	0.98	0.96
50%	100	30	3000	1.00	0.98
35%	76	30	2250	1.00	1.00

NOTE: Allow a 5% factor of safety when calculating capacity

MINIMUM PRESSURE DIFFERENTIAL VS. CAPACITY



DIAPHRAGM SELECTION

Compound	Temp. Range (Degrees F)	Maximum Differential	Characteristics	Recommended Applications
75 Duro	-20 to 150	1000 psid	Best All Around Material	60 psid to Max. Differential
60 Duro	-25 to 150	300 psid	Best Shutoff at Low Differential Pressure	Low Differential (100 psid or less) or Low Temperature
80 Duro High ACN	-5 to 175	1000 psid	Higher Abrasion and Swelling Resistance	High Differential (400 psid or higher) or Abrasive Conditions with Distillates
80 Duro Low ACN	-20 to 150	1000 psid	Higher Abrasion Resistance and Low Temperature Flexibility	High Differential (400 psid or higher) or Abrasive Conditions at Low Temperatures

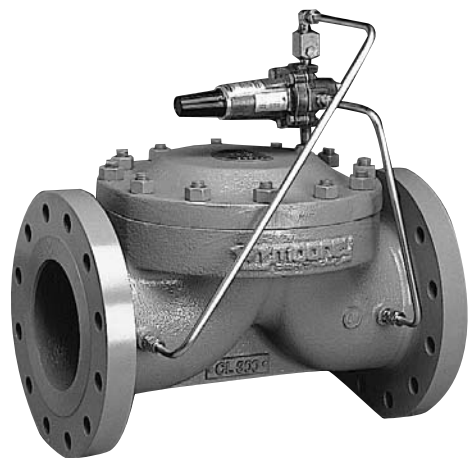
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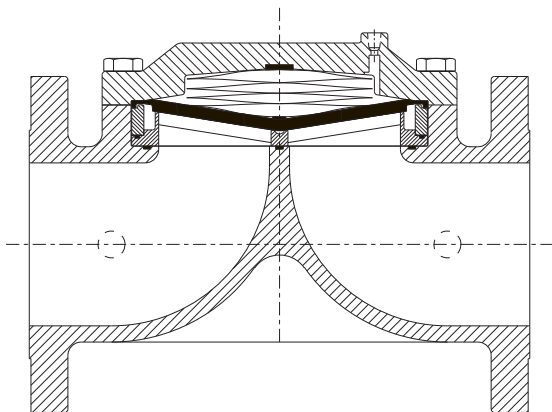
6" Single Port

Flanged CL 150 – 600
Buttweld



6" Flowgrid® Valve with Series 20 Pilot

SECTIONAL VIEW



OVERPRESSURE PROTECTION

The Flowgrid® Valve is bi-directional and has a full ANSI rating on both the inlet and outlet. Overpressure protection is required only if the pressure can exceed the flange or body rating.

The pilots, like most regulators, may have an outlet pressure rating lower than the inlet pressure rating. If this is the case then some external form of overpressure protection must be provided for the pilot.

Anytime the Flowgrid® valve or pilot system is exposed to pressure in excess of its rating it should be inspected for damage.

The 6" Flowgrid® Valve is an economical and easy to maintain pilot operated valve for both gas and liquid applications. The valve is designed to be used in conjunction with a self contained pilot control system as pictured. The low profile and easy in line maintenance make it ideal for skid mounted, vault, and enclosure installations.

SPECIFICATIONS

Size	6"
Body Style	Single Port (6")
End Connections	6" CL150, 300, 600 Flanged & Buttweld
Temperature	Working -20°F to 150°F Emergency -40°F to 175°F
Max. Operating Differential	800 psi
Max. Emergency Differential	1000 psi
Min. Differential	Refer to graph on page 2
Cracking Differential	Refer to graph on page 2
Max. Inlet Pressure	1480 psig*
Outlet Pressure Range	Limited By Pilot
Flow Direction	Bi-Directional**
Body Taps	Two 1/4" - 18NPT

* Limited by pilot or flange rating

** Reverse flow by changing pilot connections and reversing spring case

MATERIALS OF CONSTRUCTION

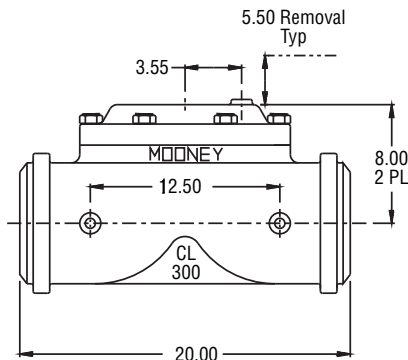
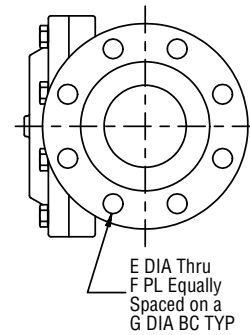
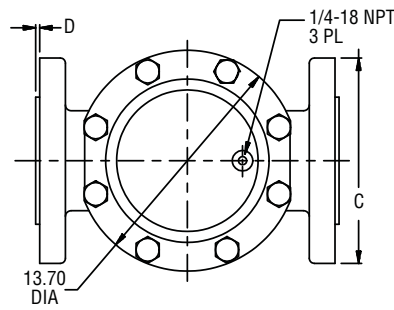
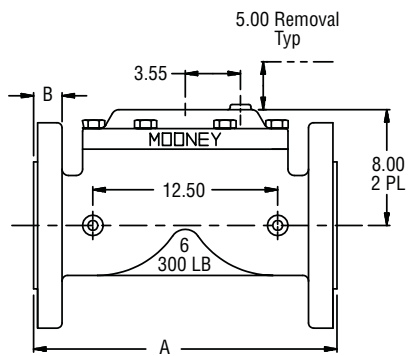
Body & Spring Case	ASTM A 216 GR WCB Carbon Steel
Throttle Plate	17 - 4PH Stainless Steel or A515 Carbon Steel with ENC Coating
Diaphragm	Nitrile/Nylon*
O-Ring & Seals	Nitrile, Optional (Viton)
Bolting	ASTM A 193 GR B-7 or Equal
Spring	301 Stainless Steel

*Refer to diaphragm selection chart on page 2

STOCK NUMBERS

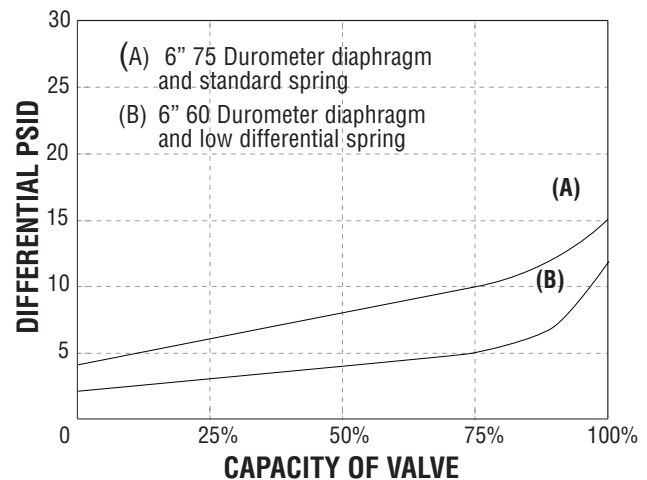
6" Single Port Valve	Stock #	Weight
150# Flange	FG-44	200 lbs.
300# Flange	FG-45	240 lbs.
600# Flange	FG-46	330 lbs.
150-300# Buttweld	FG-65	190 lbs.
600# Buttweld	FG-66	267 lbs.

DIMENSIONS



Flange Class	A	B	C	D	E	F	G
150#	17.75	1.00	11.00	0.062	0.875	8	9.50
300#	18.62	1.44	12.50	0.062	0.875	12	10.62
600#	20.00	2.12	14.00	0.25	1.12	12	11.50

MINIMUM PRESSURE DIFFERENTIAL VS. CAPACITY



FLOW COEFFICIENTS AND CONSTANTS

6" Single Port Valve				Swage Factor	
Percent Capacity	Cv	C1	Cg	1.5:1	2:1
100%	313	40	12500	0.99	0.97
50%	240	28	6750	1.00	0.98

NOTE: Allow a 5% factor of safety when calculating relief capacity

DIAPHRAGM SELECTION

Compound	Temp. Range (Degrees F)	Maximum Differential	Characteristics	Recommended Applications
75 Duro	-20 to 150	1000 psid	Best All Around Material	60 psid to Max. Differential
60 Duro	-25 to 150	300 psid	Best Shutoff at Low Differential Pressure	Low Differential (100 psid or less) or Low Temperature
80 Duro High ACN	-5 to 175	1000 psid	Higher Abrasion and Swelling Resistance	High Differential (400 psid or higher) or Abrasive Conditions with Distillates
80 Duro Low ACN	-20 to 150	1000 psid	Higher Abrasion Resistance and Low Temperature Flexibility	High Differential (400 psid or higher) or Abrasive Conditions at Low Temperatures

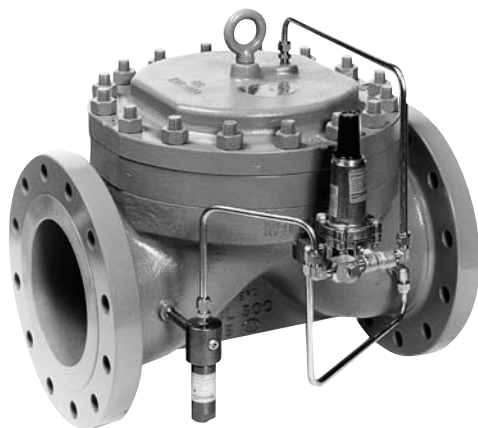
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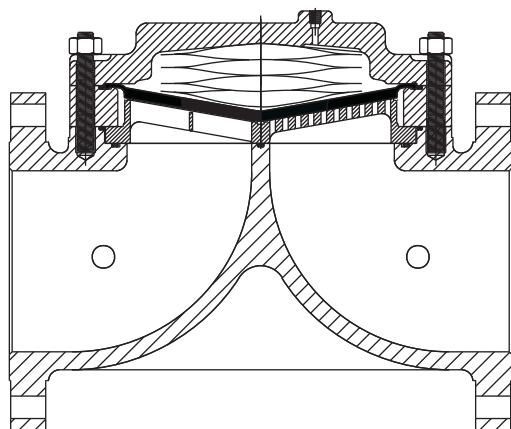
8" Single Port

Flanged CL 150 – 600



8" Flowgrid® Valve with Series 20 Pilot

SECTIONAL VIEW



OVERPRESSURE PROTECTION

The Flowgrid® Valve is bi-directional and has a full ANSI rating on both the inlet and outlet. Overpressure protection is required only if the pressure can exceed the flange or body rating.

The pilots, like most regulators, may have an outlet pressure rating lower than the inlet pressure rating. If this is the case then some external form of overpressure protection must be provided for the pilot.

Anytime the Flowgrid® valve or pilot system is exposed to pressure in excess of its rating it should be inspected for damage.

The 8" Flowgrid® Valve is an economical and easy to maintain pilot operated valve for both gas and liquid applications. The valve is designed to be used in conjunction with a self contained pilot control system as pictured. The low profile and easy in line maintenance make it ideal for skid mounted, vault, and enclosure installations.

SPECIFICATIONS

Size	8"
Body Style	Single Port (8")
End Connections	8" CL150, 300, 600 Flanged & Butt weld
Temperature	Working -20°F to 150°F Emergency -40°F to 175°F
Max. Operating Differential	800 psi
Max. Emergency Differential	1000 psi
Min. Differential	Refer to graph on page 2
Cracking Differential	Refer to graph on page 2
Max. Inlet Pressure	1480 psig*
Outlet Pressure Range	Limited By Pilot
Flow Direction	Bi-Directional**
Body Taps	Two 1/4" - 18NPT

* Limited by pilot or flange rating

** Reverse flow by changing pilot connections and reversing spring case

MATERIALS OF CONSTRUCTION

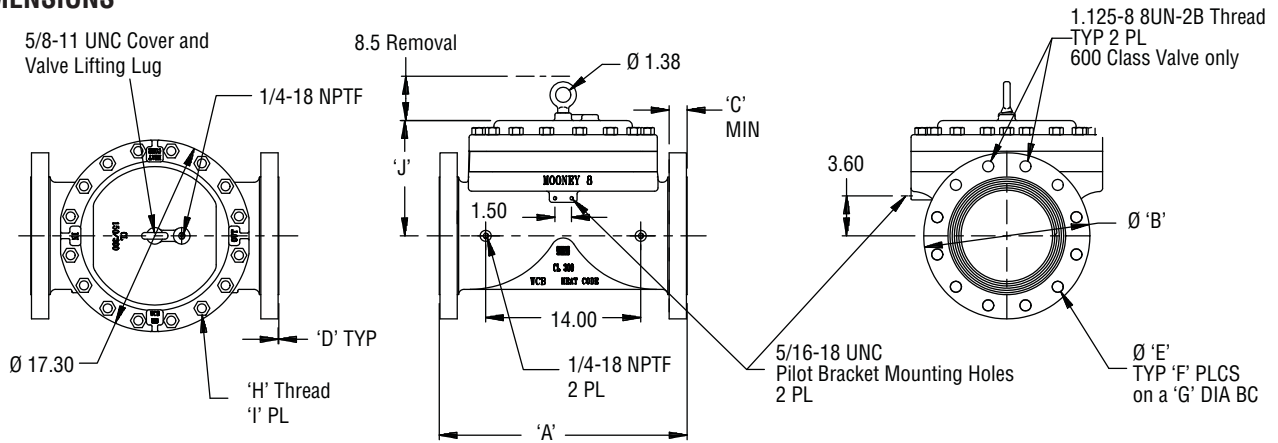
Body & Spring Case	ASTM A 216 GR WCB Carbon Steel
Throttle Plate	17 - 4PH Stainless Steel
Diaphragm	Nitrile/Nylon*
O-Ring & Seals	Nitrile
Bolting	ASTM A 193 GR B-7 or Equal
Spring	301 Stainless Steel

*Refer to diaphragm selection chart on page 2

STOCK NUMBERS

8" Single Port Valve	Stock #	Weight
150# Flange	FG-72	450 lbs.
300# Flange	FG-73	500 lbs.
600# Flange	FG-80	650 lbs.

DIMENSIONS



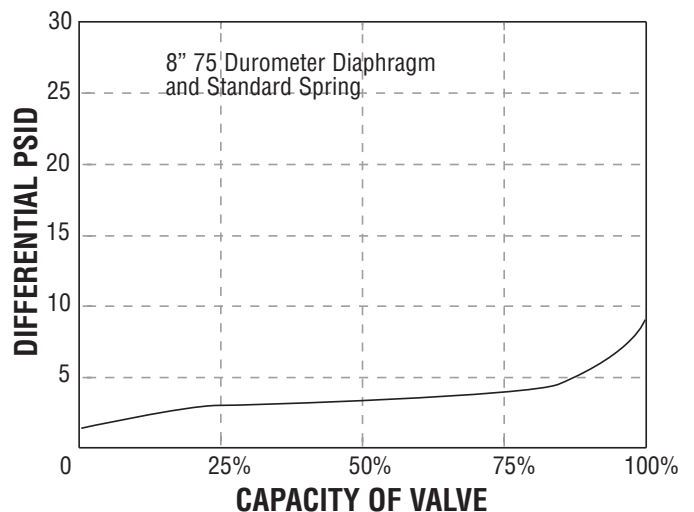
Flange Class	A	B	C	D	E	F	G	H	I	J
150#	21.38	13.5	1.12	0.06	0.88	8	11.75	.750 - 10 UNC	16	10.41
300#	22.38	15.00	1.62	0.06	1.00	12	13.00	.750 - 10 UNC	16	10.41
600#	24.00	16.50	2.44	0.25	1.25	10	13.75	.875 - 9 UNC	24	11.75

FLOW COEFFICIENTS AND CONSTANTS

8" Single Port Valve				Swage Factor	
Percent Capacity	Cv	C1	Cg	1.5:1	2:1
100%	530	38	20200	0.97	0.95
75%	515	30	15200	0.98	0.96
50%	350	29	10000	0.99	0.98
35%	250	28	7100	1.00	1.00

NOTE: Allow a 5% factor of safety when calculating relief capacity

MINIMUM PRESSURE DIFFERENTIAL VS. CAPACITY



DIAPHRAGM SELECTION

Compound	Temp. Range (Degrees F)	Maximum Differential	Characteristics	Recommended Applications
75 Duro	-20 to 150	1000 psid	Best All Around Material	60 psid to Max. Differential
60 Duro	-25 to 150	300 psid	Best Shutoff at Low Differential Pressure	Low Differential (100 psid or less) or Low Temperature
80 Duro High ACN	-5 to 175	1000 psid	Higher Abrasion and Swelling Resistance	High Differential (400 psid or higher) or Abrasive Conditions with Distillates
80 Duro Low ACN	-20 to 150	1000 psid	Higher Abrasion Resistance and Low Temperature Flexibility	High Differential (400 psid or higher) or Abrasive Conditions at Low Temperatures

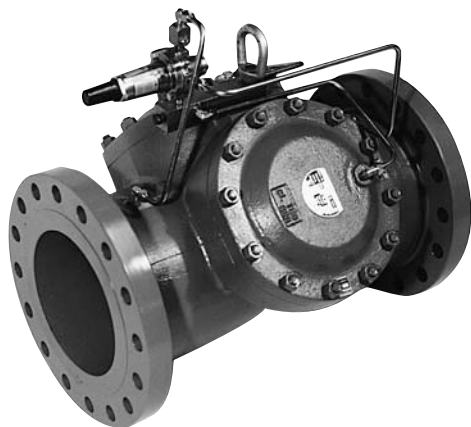
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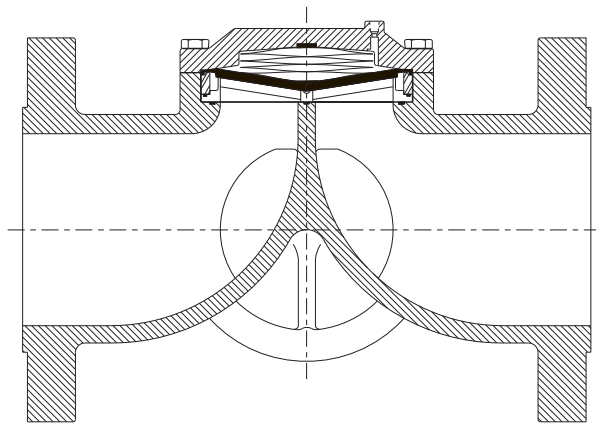
10" Dual Port V-6

Flanged CL 150 – 600



10" Dual Port V-6 Flowgrid® Valve with Series 20 Pilot

SECTIONAL VIEW



OVERPRESSURE PROTECTION

The Flowgrid® Valve is bi-directional and has a full ANSI rating on both the inlet and outlet. Overpressure protection is required only if the pressure can exceed the flange or body rating.

The pilots, like most regulators, may have an outlet pressure rating lower than the inlet pressure rating. If this is the case then some external form of overpressure protection must be provided for the pilot.

Anytime the Flowgrid® valve or pilot system is exposed to pressure in excess of its rating it should be inspected for damage.

The 10" Dual Port V-6 Flowgrid® Valve is an economical and easy to maintain pilot operated valve for both gas and liquid applications. The valve can be used with dual pilots for redundant control (acts as two regulators in parallel), but is primarily a large capacity valve that can be maintained by one person. The ports are mounted at 45 degree angles for easy in line maintenance. The low profile makes it ideal for skid mounted, vault, and enclosure installations.

SPECIFICATIONS

Size	10"
Body Style	Dual Port (6")
End Connections	10" CL150, 300, 600 Flanged
Temperature	Working -20°F to 150°F Emergency -40°F to 175°F
Max. Operating Differential	800 psi
Max. Emergency Differential	1000 psi
Min. Differential	Refer to graph on page 2
Cracking Differential	Refer to graph on page 2
Max. Inlet Pressure	1480 psig*
Outlet Pressure Range	Limited By Pilot
Flow Direction	Bi-Directional**
Body Taps	Four 1/4" - 18NPT

* Limited by pilot or flange rating

** Reverse flow by changing pilot connections and reversing spring case

MATERIALS OF CONSTRUCTION

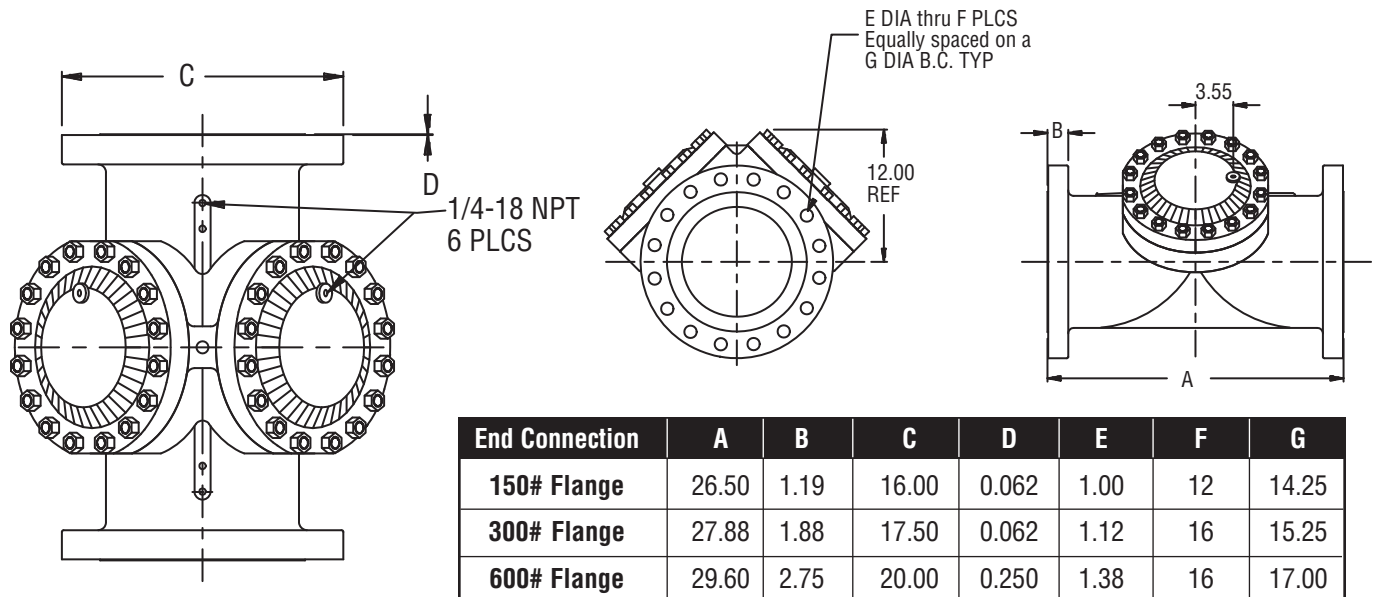
Body & Spring Case	ASTM A 216 GR WCB Carbon Steel
Throttle Plate	17 - 4PH Stainless Steel
Diaphragm	Nitrile/Nylon*
O-Ring & Seals	Nitrile
Bolting	ASTM A 193 GR B-7 or Equal
Spring	301 Stainless Steel

* Refer to diaphragm selection chart on page 2

STOCK NUMBERS

10" Dual Port Valve	Stock #	Weight
150# Flange	FG-57	590 lbs.
300# Flange	FG-58	670 lbs.
600# Flange	FG-59	900 lbs.

DIMENSIONS

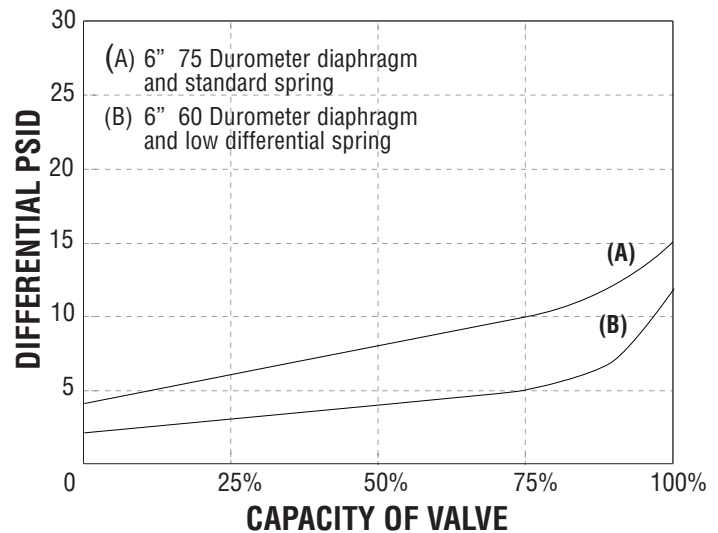


FLOW COEFFICIENTS AND CONSTANTS

10" Dual Port Valve				Swage Factor	
Percent Capacity	Cv	C1	Cg	1.5:1	2:1
100%	650	33	22000	1.00	0.99
75%	550	30	16500	1.00	0.99
50%	472	28	13200	1.00	0.99
35%	290	27	7830	1.00	1.00

NOTE: Allow a 5% factor of safety when calculating relief capacity

MINIMUM PRESSURE DIFFERENTIAL VS. CAPACITY



DIAPHRAGM SELECTION

Compound	Temp. Range (Degrees F)	Maximum Differential	Characteristics	Recommended Applications
75 Duro	-20 to 150	1000 psid	Best All Around Material	60 psid to Max. Differential
60 Duro	-25 to 150	300 psid	Best Shutoff at Low Differential Pressure	Low Differential (100 psid or less) or Low Temperature
80 Duro High ACN	-5 to 175	1000 psid	Higher Abrasion and Swelling Resistance	High Differential (400 psid or higher) or Abrasive Conditions with Distillates
80 Duro Low ACN	-20 to 150	1000 psid	Higher Abrasion Resistance and Low Temperature Flexibility	High Differential (400 psid or higher) or Abrasive Conditions at Low Temperatures

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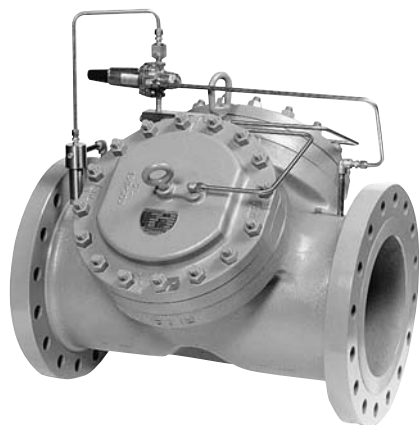
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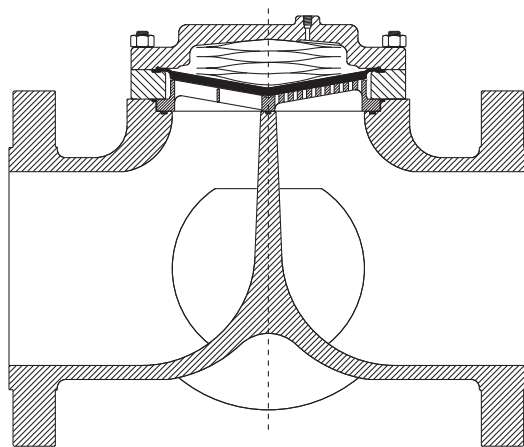
12" Dual Port

Flanged CL 150 – 600



12" Dual Port Flowgrid® Valve with Series 20 Pilot

SECTIONAL VIEW



OVERPRESSURE PROTECTION

The Flowgrid® Valve is bi-directional and has a full ANSI rating on both the inlet and outlet. Overpressure protection is required only if the pressure can exceed the flange or body rating.

The pilots, like most regulators, may have an outlet pressure rating lower than the inlet pressure rating. If this is the case then some external form of overpressure protection must be provided for the pilot.

Anytime the Flowgrid® valve or pilot system is exposed to pressure in excess of its rating it should be inspected for damage.

The 12" Dual Port V-6 Flowgrid® Valve is an economical and easy to maintain pilot operated valve for both gas and liquid applications. The valve can be used with dual pilots for redundant control (acts as two regulators in parallel), but is primarily a large capacity valve that can be maintained by one person. The ports are mounted at 45 degree angles for easy in line maintenance. The low profile and easy in line maintenance makes it ideal for skid mounted, vault, and enclosure installations.

SPECIFICATIONS

Size	12"
Body Style	Dual Port (8")
End Connections	12" CL150, 300, 600 Flanged
Temperature	Working -20°F to 150°F Emergency -40°F to 175°F
Max. Operating Differential	800 psi
Max. Emergency Differential	1000 psi
Min. Differential	Refer to graph on page 2
Cracking Differential	Refer to graph on page 2
Max. Inlet Pressure	1480 psig*
Outlet Pressure Range	Limited By Pilot
Flow Direction	Bi-Directional**
Body Taps	Four 1/4" - 18NPT

* Limited by pilot or flange rating

** Reverse flow by changing pilot connections and reversing spring case

MATERIALS OF CONSTRUCTION

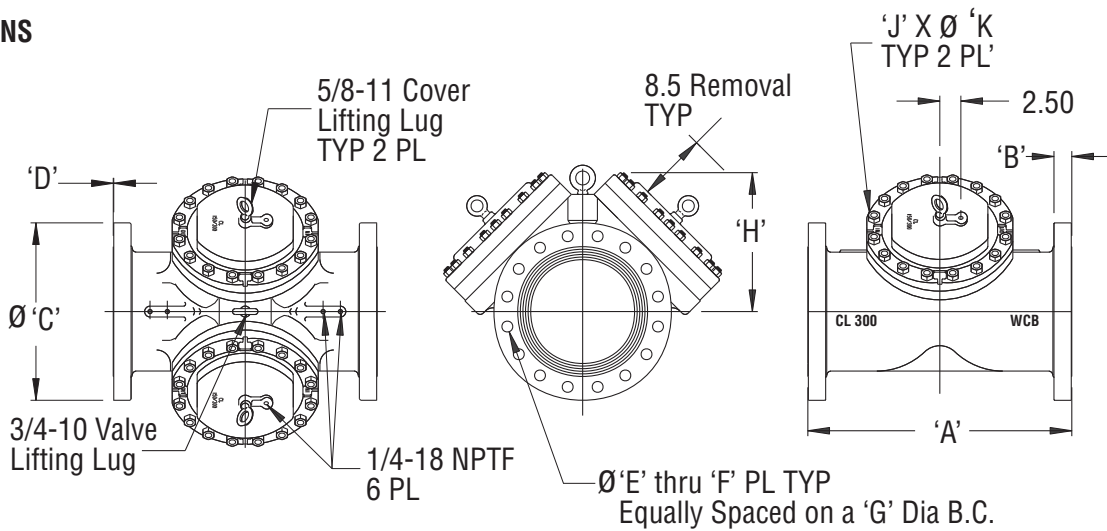
Body & Spring Case	ASTM A 216 GR WCB Carbon Steel
Throttle Plate	17 - 4PH Stainless Steel
Diaphragm	Nitrile/Nylon*
O-Ring & Seals	Nitrile
Bolting	ASTM A 193 GR B-7 or Equal
Spring	301 Stainless Steel

*Refer to diaphragm selection chart on page 2

STOCK NUMBERS

12" Dual Port Valve	Stock #	Weight
150# Flange	FG-74	1100 lbs.
300# Flange	FG-75	1200 lbs.
600# Flange	FG-81	1400 lbs.

DIMENSIONS



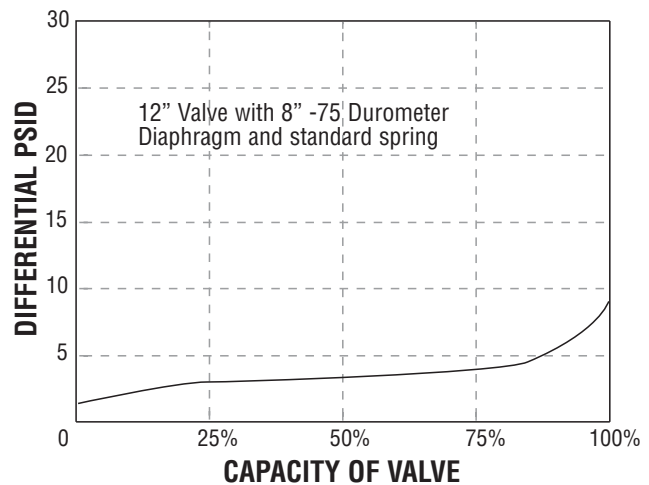
End Connection	A	B	C	D	E	F	G	H	J	K
150# Flange	29.00	1.25	19.00	0.062	1.00	12	17.00	16.50	16	.75 - 10 UNC-2B
300# Flange	30.50	2.00	20.50	0.062	1.25	16	17.75	16.50	16	.75 - 10 UNC-2B
600# Flange	32.25	2.88	22.00	0.250	1.38	20	19.25	17.00	24	.875 - 9 UNC-2B

FLOW COEFFICIENTS AND CONSTANTS

12" Dual Port Valve				Swage Factor	
Percent Capacity	Cv	C1	Cg	1.5:1	2:1
100%	1060	38	40400	0.97	0.95
75%	1030	30	30400	0.98	0.96
50%	700	29	20000	0.99	0.98
35%	500	28	14200	1.00	1.00

NOTE: Allow a 5% factor of safety when calculating relief capacity

MINIMUM PRESSURE DIFFERENTIAL VS. CAPACITY



DIAPHRAGM SELECTION

Compound	Temp. Range (Degrees F)	Maximum Differential	Characteristics	Recommended Applications
75 Duro	-20 to 150	1000 psid	Best All Around Material	60 psid to Max. Differential
60 Duro	-25 to 150	300 psid	Best Shutoff at Low Differential Pressure	Low Differential (100 psid or less) or Low Temperature
80 Duro High ACN	-5 to 175	1000 psid	Higher Abrasion and Swelling Resistance	High Differential (400 psid or higher) or Abrasive Conditions with Distillates
80 Duro Low ACN	-20 to 150	1000 psid	Higher Abrasion Resistance and Low Temperature Flexibility	High Differential (400 psid or higher) or Abrasive Conditions at Low Temperatures

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