

Diaphragm Operated Two-way Valves: Series 415 – Ductile Body, Series 416 – Steel Body

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The **Series 415** is ideal for low-pressure separators or any application that needs to dump large volumes or fluid quickly. The Series 416 is ideal for high pressure separators or any application that requires moving large volumes of fluid quickly.

Features

- **Quick-Opening Trim** – Better flow characteristics
- **Ductile or Steel Bodies** – Meets low or high pressure demands.
- **Threaded or Grooved Bodies** – Meets more application demands.
- **Throttling or Quick Opening Trim** – Covers all operating conditions.
- **Nace Adaptable (RNCE available)** – Can be modified for use in sour service.

Standard Specifications

Body Cover

Steel

End Connections

2" FNPT and 2" grooved

Diaphragm Cases

Steel

Diaphragm

- 65 sq. in. reinforced Buna N
- Maximum recommended operating pressure 70 psi
- Maximum containment pressure 100 psi

Packing

1/2 x 1 inch Non-Lubricated Buna N

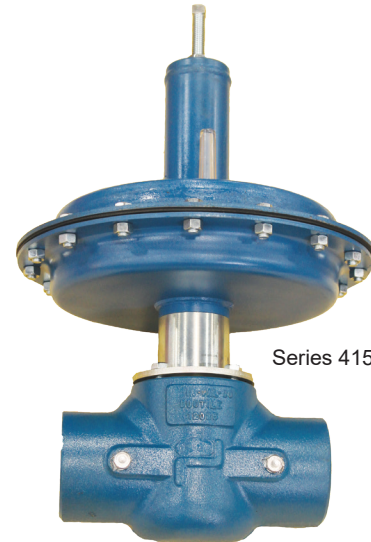
Stem, Seat, Plug

303 S.S., Fluoroelastomer Facing

Body Material

See Ordering Information Chart

Note: All parts are interchangeable with the obsolete Series 414 Cast Iron Valve.



Series 415 Ductile Valve

Standard Specifications (continued)

Maximum Working Pressure

See Chart

Temperature Limits

-20°F to 250°F

Valve Travel

1-1/8 inches

Spring Rate

750 lbs per inch

Spring Pre-load

(3-15 psi Bench Range) Norm. 210 lbs. Maximum 750 lbs.

Flow Direction

- Under the seat for precise modulation.
- Over the seat for shut-in service, on-off service, noncritical modulation.

Flow Characteristic

Modified equal percentage, see graph.

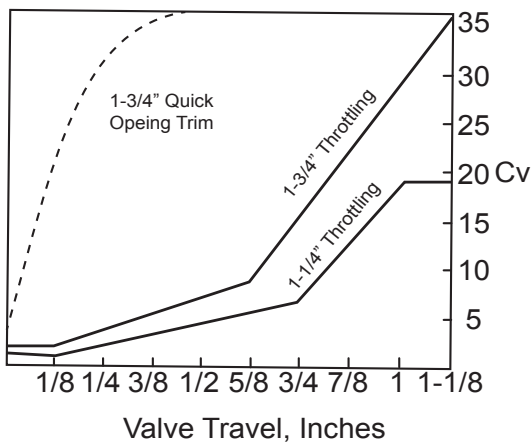
Notes:

1. Standard topworks is direct action (normally closed) with 65 sq. in. effective area.
2. Cv and Cg values are for fully open inner valve.
3. Part numbers applicable only when valve desired is exactly as described above.
4. To order specify Model Number, Part Number, Trim Description.
5. See reverse side for parts list.

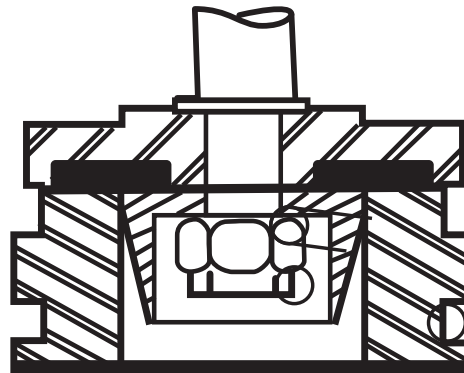
Ordering Information

Description		Size	Model Number	Max W.P.	Trim	Full Open		Part Number	Wt. (lbs)
						Cv	Cg		
Series 415	Globe Body Threaded	2"	DSG-203-415	300 psi	1-1/4" Throttling	19.0	660	80004378	62
					1-3/4" Throttling	36.0	1200	80004374	
					1-3/4" Quick Opening	36.0	1200	80004373	
Ductile Iron A-395	Angle Body Threaded	2"	DSA-203-415	300 psi	1-1/4" Throttling	19.0	660	80004192	56
					1-3/4" Throttling	36.0	1200	80004195	
					1-3/4" Quick Opening	36.0	1200	80004196	
Series 416 Steel WCB	Globe Body Threaded	2"	DSG-214-416	1440 psi	1-1/4" Throttling	19.0	660	80004362	62
					1-3/4" Throttling	36.0	1200	80004367	
					1-3/4" Quick Opening	36.0	1200	80004370	

Flow Characteristics



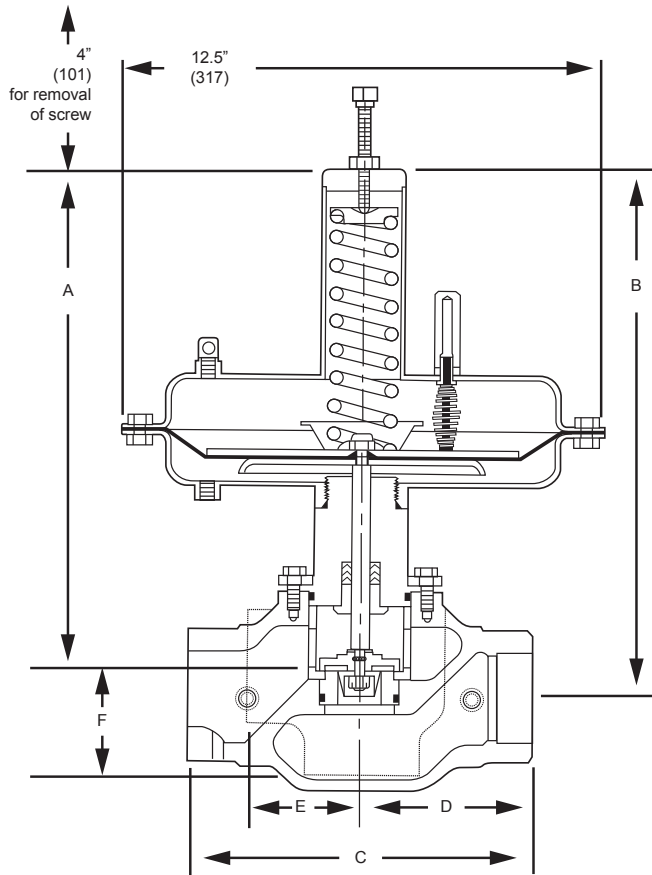
Typical for 1-1/4" and 1-3/4" Trim



Differential Pressure Capability and Actual Diaphragm Pressure Ranges

Spring Pre-compression	Trim Size	Flow Over The Seat	Flow Under The Seat
Normal Spring Pre-load 9/32" Compression	1-1/4"	180 psi 9-15	150 psi 0-15
	1-3/4"	180 psi 9-15	150 psi 0-15
Maximum Spring Pre-load 1" Compression	1-1/4"	360 psi 0-23	500 psi 0-23
	1-3/4"	360 psi 0-23	500 psi 0-23

Note: Do not exceed valve working pressure. See ordering information above.



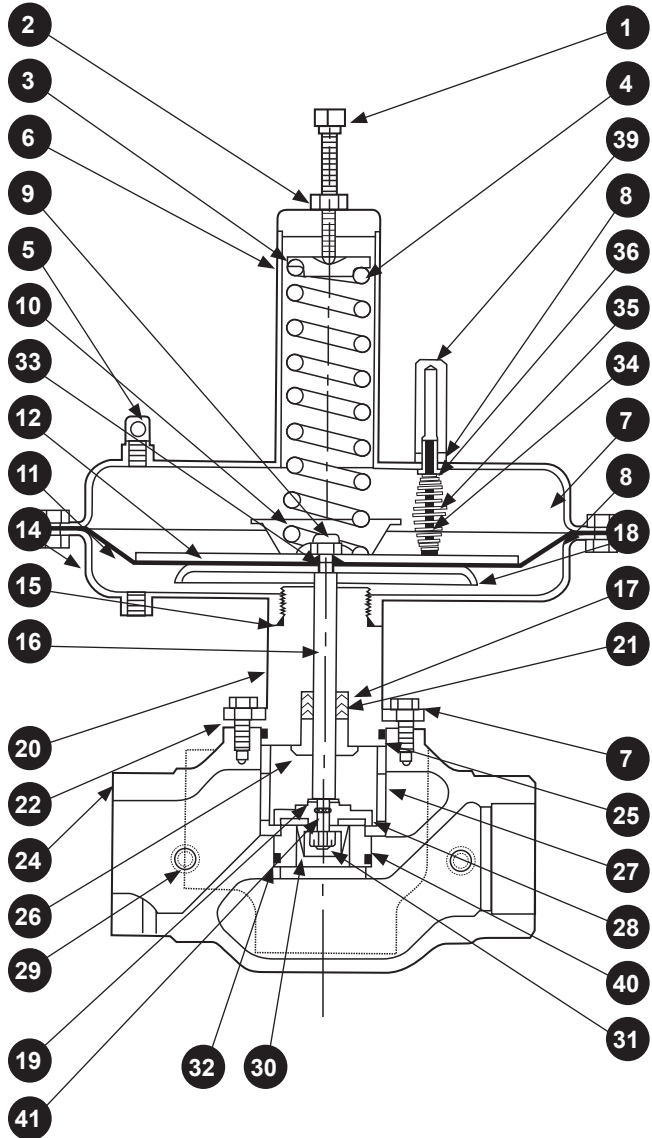
Dimensions

Pump Model	A	B	C	D	E	F
DSA-203	13.6" (344)	—	—	—	3" (76)	3" (76)
DSG-203 DQG-203	—	14.4" (366)	9" (228)	4.5" (114)	—	—
DSG-214	—	15.1" -382	9" -228	4.5" -114	—	—

Dimensions – Inches to the nearest tenth (millimeters to the nearest whole mm), each independently dimensioned from engineering drawings.

Parts

Item	N	Description	Qty.	Part No.
1		Screw 1/2-13 x 3" SQHSS	1	65000625
2		Nut 1/2-13 Hex Jam	1	65008551
3		Upper Spring Rest	1	45001858
4	*	Spring	1	45008406
5		Bleeder Filter	1	45002612
6		Upper Diaphragm Case	1	48004020
7	1	Screw 3/8-16 x 7/8" HHCS	20/24	65003440
8		Nut 3/8-16 Hex	1	65001966
9		Nut 3/8-24 Flexloc	1	65001401
10		Travel Stop	1	45002343
11	*	Diaphragm	1	45003460
12		Upper Diaphragm Plate	1	45002776
14		Lower Diaphragm Case	1	48003459
15	*	O-Ring Bun-225-90	1	67101299
16		Stem (Series 415)	1	45001936
		Stem (Series 416)	1	450011947
17	*	Packing Ring Flat 1/2 x 1"	1	45001948
18		Lower Diaphragm Plate	1	45001789
19	*	Gasket, Copper Pre - 1994	1	45001942
20		Body Cover	1	45015533
21	*	Packing Ring Reg 1/2 x 1"	3	45001947
22		Clamp Ring (Series 415)	1	45003128
		Clamp Ring (Series 416)	1	45011972
24		Body DSG-203-415	1	45012095
		Body DSA-203-415	1	45012024
		Body DQG-203-415	1	45012359
		Body DSG-214-416	1	45012097
25	*	O-Ring Bun-230-90	1	67101540
26		Packing Nut	1	45001939
27		Cage (Series 415)	1	45011585
		Cage (Series 416)	1	45011946
28	*	Plug, Fluoroelastomer	1	45001851
29	+	1/4" Pipe Plug	2	45002595
30	@	Throttle Nose 1-1/4"	1	45015538
	@	Throttle Nose 1-3/4"	1	45015539
31		Nut 3/8-24 Flexloc Thin	1	65003075
32		O-Ring BUN-226-90	1	67101534
33		O-Ring BUN-011-90	1	67101725
34		Indicator Pin, 2-14" Lg	1	45004275
35		Spring	1	45004315
36		Bushing	1	45003129
39		Sight Glass	1	45004223
40	*	Seat 1-1/4"	1	45003161
		Seat 1-3/4"	1	45006687
41	*	O-Ring BUN-010-10, Post 1994	1	67101327



Parts Key

* Recommended spare parts.

@ Not required with Quick-Opening Trim

1. 20 required Series 415, 24 required Series 416

+ Included 1 required on DSG-203-415, 0 required on DSA-203-415. with trim sets.

The specifications contained herein are subject to change without notice and any user of said specifications should verify from the manufacturer that the specifications are currently in effect. Otherwise, the manufacturer assumes no responsibility for the use of specifications which may have been changed and are no longer in effect.