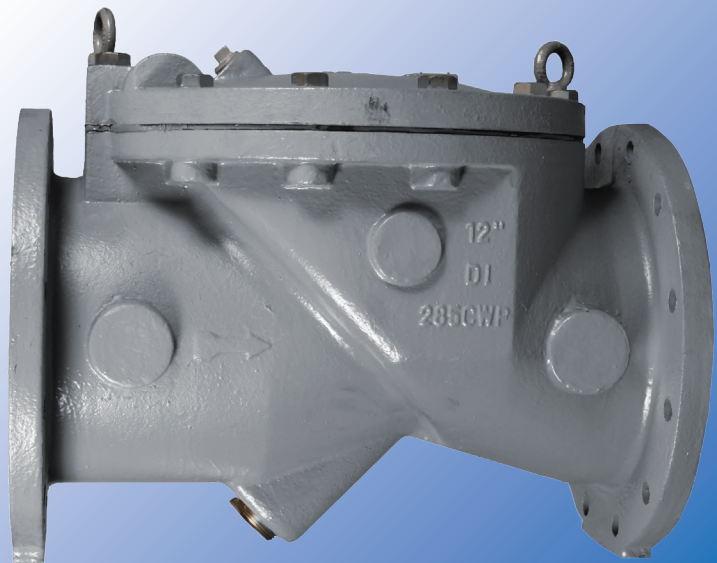


Rubber Flapper Swing Check Valve

Includes Spring Assisted Slaminator^(R)



AWWA C508

RUBBER FLAPPER SWING CHECK VALVES

QUIET CLOSING



WATER OR SEWAGE SERVICE

More than a century
of valve design and
manufacturing.

Consult factory for
availability of options.

Working Pressure
3" through 24" . . . 250 psi

Hydrostatic Test Pressure
3" through 24" . . . 500 psi

Figure No. 200

FEATURES

1. Meets or exceeds AWWA C508 design, materials of construction and testing requirements
2. Heavy-duty NSF-61 epoxy lined and coated ASTM A536 ductile iron body and cover
3. ANSI Class 125/150 flanges
4. 100% flow area, full waterway for low headloss
5. Rubber seated, zero leakage
6. Horizontal or vertical installation
7. No shaft packing or bearings to leak or wear out
8. Easily rubber lined for abrasion resistance
9. Optional visual and/or electrical position indication (4" and larger)
9. Available with internal spring assist for improved slam resistance (See Slaminator™ page 6)

1,000,000 CYCLE "PROOF of DESIGN TEST"

1200 Penn Avenue
Pittsburgh, PA 15222
Phone: (412) 588-5553
Fax: (412) 281-8489



July 12, 2004

GA Industries, Inc.
9025 Marshall Road
Cranberry Township, PA. 16066-3696

Attention: Mr. R. R. Schweitzer
Project Manager

Subject: 8" Diameter Rubber Flapper Swing Check Valve Model: Fig. 200
Valve Disc Cycle Testing
Test Oversight Services

1,000,000 Cycle Witness Test

PJM&D Project No. 031101.00

Dear Mr. Schweitzer:

We are submitting the attached report to satisfy your requirements for witnessing the conclusion of 1,000,000 cycles opening and closing the valve disc on the subject valve.

I have personally witnessed the tests and verified the valve tested had met the requirements of the Fig. 200 8" Rubber Flapper Swing Check Valve.

We appreciate your contracting PJM&D Engineering Corporation for your Test Oversight. If you have any further questions or information needed for this test certification, please do not hesitate to let me know.

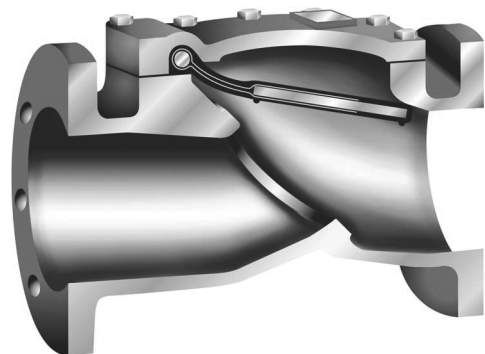
PJM&D ENGINEERING CORPORATION

Kishor R. Patel
Kishor R. Patel, P.E.
Vice President of Engineering

KRP:mgm
Enclosure



CROSS SECTION



Applications

Water Systems
Raw Sewage
Salt Water
Chemicals
Industrial Waste
Light Slurries

Acid Lines
Tailing Systems
Scrubbers
Brine
Sea Water
Corrosive Service

Figure 200 Rubber Flapper Check Valve

GENERAL DIMENSIONS and LIST OF MATERIALS

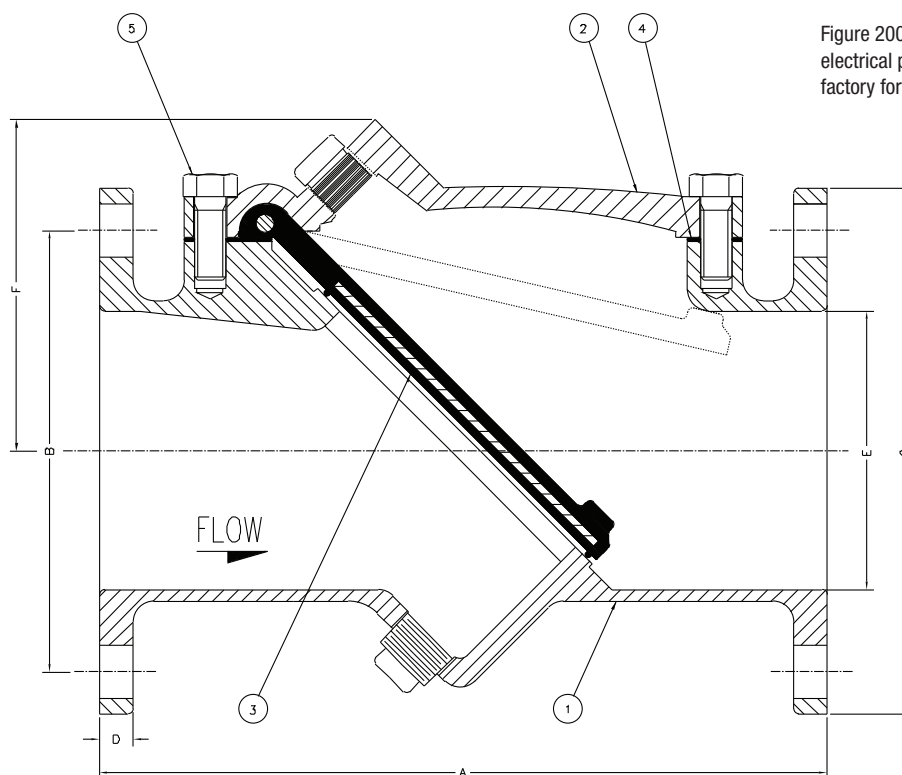


Figure No. 200

GENERAL DIMENSIONS (Flanges Per ANSI Class 125/150)

Valve Size	2"	2-1/2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"
A	8	8-1/2	9-1/2	11-1/2	15	19-1/2	24-1/2	27-1/2	31	32	36	40	48
B	4-3/4	5-1/2	6	7-1/2	9-1/2	11-3/4	14-1/4	17	18-3/4	21-1/4	22-3/4	25	28-1/2
C	6	7	7-1/2	9	11	13-1/2	16	19	21	23-1/2	25	27-1/2	32
D	5/8	11/16	3/4	15/16	1	1-1/8	1-3/16	1-1/4	1-3/8	1-7/16	1-9/16	1-11/16	1-7/8
E	2	2-1/2	3	4	6	8	10	12	14	16	18	20	24
F	3-3/8	3-3/8	5-1/8	5-3/4	6-7/8	8-3/8	10-3/4	12-1/2	13	14-1/4	15-1/4	16-7/8	19-1/4
Weight	28	33	38	69	125	230	377	615	735	1040	1550	1850	2500

Dimensions in inches, weight in pounds.

LIST OF STANDARD MATERIALS

Part Number	Part Name	Standard Material
1	Body	Ductile Iron, ASTM A536 Grade 65-45-12*
2	Cover	Ductile Iron, ASTM A536 Grade 65-45-12*
3	Flexible Disc	Buna-N Rubber, Nylon and Steel Reinforced
4	Cover Gasket	Buna-N Rubber
5	Cover Bolts	Stainless Steel, Type 304

* Lined and Coated with NSF-61 Certified Amerlok 400 Epoxy

Figure 200BF Rubber Flapper Check Valve with Backflow Device

GENERAL DIMENSIONS and LIST OF MATERIALS

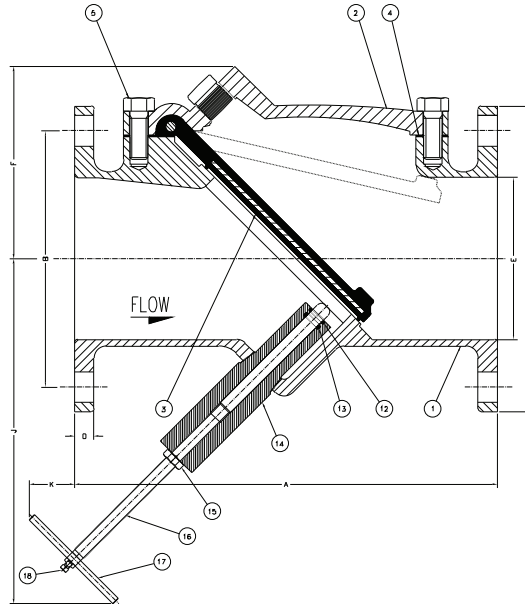


Figure 200BF available with visual and/or electrical position indicator, consult factory for information.

- Figure No. 200BF**
- 1. To Backflush a Clogged Pump
 - 2. To Prime a Pump
 - 3. To Drain System

Figure No. 200BF

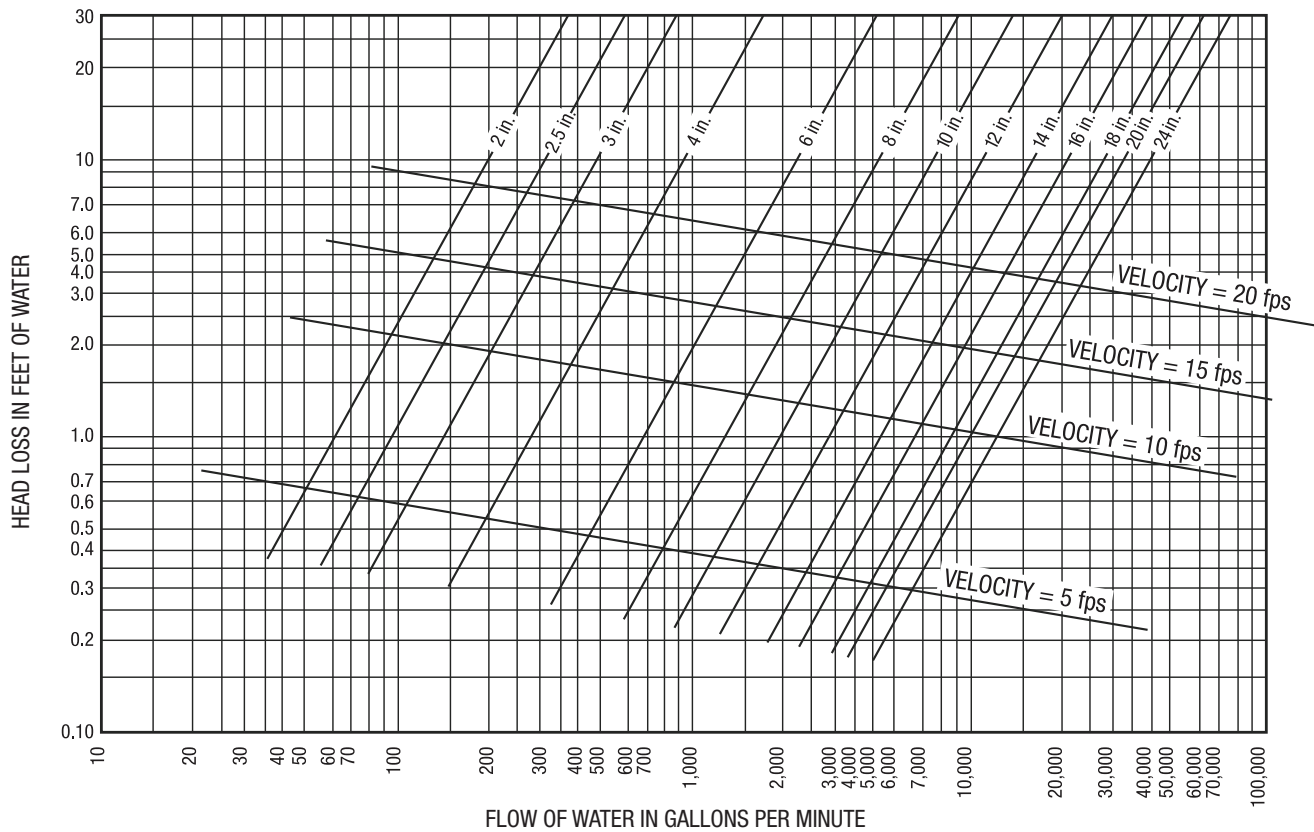
GENERAL DIMENSIONS (Flanges Per ANSI Class 125/150)													
Valve Size	2"	2-1/2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"
A	8	8-1/2	9-1/2	11-1/2	15	19-1/2	24-1/2	27-1/2	31	32	36	40	48
B	4-3/4	5-1/2	6	7-1/2	9-1/2	11-3/4	14-1/4	17	18-3/4	21-1/4	22-3/4	25	28-1/2
C	6	7	7-1/2	9	11	13-1/2	16	19	21	23-1/2	25	27-1/2	32
D	5/8	11/16	3/4	15/16	1	1-1/8	1-3/16	1-1/4	1-3/8	1-7/16	1-9/16	1-11/16	1-7/8
E	2	2-1/2	3	4	6	8	10	12	14	16	18	20	24
F	3-3/8	3-3/8	5-1/8	5-3/4	6-7/8	8-3/8	10-3/4	12-1/2	13	14-1/4	15-1/4	16-7/8	19-1/4
J	7	7	8	8	13	17	20	23	27	31	34	38	35
K	0	0	0	2	2	3	4	4	4	5	6	6	7
Weight	28	33	38	69	125	230	377	615	735	1040	1550	1850	2500

Dimensions in inches, weight in pounds.

LIST OF STANDARD MATERIALS		
Part Number	Part Name	Standard Material
1	Body	Ductile Iron, ASTM A536 Grade 65-45-12*
2	Cover	Ductile Iron, ASTM A536 Grade 65-45-12*
3	Flexible Disc	Buna-N Rubber, Nylon and Steel Reinforced
4	Cover Gasket	Buna-N Rubber
5	Cover Bolts	Stainless Steel, Type 304
12	Rod Wiper	Urethane
13	Rod Seal	Buna-N Rubber
14	Backflow Tube	Brass
15	Backflow Jam Nut	Brass
16	Backflow Rod	Stainless Steel, Type 18-8
17	Backflow Handle	Stainless Steel, Type 18-8
18	Setscrew	Stainless Steel, Type 18-8

* Lined and Coated with NSF-61 Certified Amerlok 400 Epoxy

VALVE HEAD LOSS



RUBBER FLAPPER CHECK VALVE SPECIFICATIONS

1.0 GENERAL

1.1 Manufacturer shall have a minimum of five (5) years' experience in the manufacture of rubber flapper check valves.

1.2 When requested, manufacturer shall provide detailed product data and descriptive literature including dimensions, weight, headloss, pressure rating, materials of construction and cross-sectional drawings clearly illustrating the individual components.

2.0 PRODUCT

2.1 The valve shall be rated for 250 PSI, have integral ANSI Class 125/150 flanged connections and employ only three components – the body, the cover and the flexible disc. The body shall have a "full waterway" with a flow area not less than the nominal pipe area through the valve. Valves 4-inch and larger shall be capable of passing a 3-inch sphere. To minimize closure time, the valve shall seat on a 45 degree angle. The valve body shall incorporate a bottom threaded port with pipe plug to allow field installation of a backflow device without the need for special tools.

2.2 The cover shall be removable and allow removal of the flexible disc without removing the valve from the line. The cover shall be of a "domed" shape to facilitate self-cleaning. There shall be a threaded port with pipe plug to permit installation of a visual or electrical position indicator (4" and larger).

2.3 The flexible disc shall be one-piece and precision molded with alloy steel and Nylon reinforcement and an integral O-ring style seat for drop tight seating at low pressure. As required by

AWWA C508, the flexible disc shall have been independently tested to a minimum of 1,000,000 cycles with no signs of wear, abrasion or cracking and be drop-tight at the conclusion of testing.

3.0 MATERIALS

3.1 Valve bodies and covers shall be made from ductile iron per ASTM A536 Grade 65-45-12

3.2 The flexible disc shall be made from Buna-N (NBR) rubber.

3.3 The valve body and cover shall be factory lined and coated with 2-part epoxy, NSF-61 certified for contact with drinking water.

4.0 OPTIONS [Include when required]

4.1 A backflow device shall be provided to permit the valve to be manually opened in order to prime or flush a pump. The backflow device shall be of the "rising stem" type and made from brass and stainless steel.

4.2 A mechanical position indicator shall be provided to provide a visual indication of the disc on valves 4" and larger.

4.3 An electrical position switch shall provide remote indication of valve closed/not closed on valves 4" and larger. The switch shall be UL-Listed, NEMA 4, 4X, 6 and 6P, rated for 5 amps 12VDC to 250VAC.

5.0 MANUFACTURER

5.1 Valves shall be GA Industries Figure 200 as manufactured by VAG USA, LLC Mars PA USA.

Figure SB200D

SLAMINATOR^(R)**4" to 24" Spring Assisted Rubber Flapper**

GENERAL DIMENSIONS								
Size	A	B	C	D	E	F	Bolt Size	No. of Bolts
4	11-1/2	7-1/2	9	15/16	4	5-3/4	5/8	8
6	15	9-1/2	11	1	6	6-7/8	3/4	8
8	19-1/2	11-3/4	13-1/2	1-1/8	8	8-3/8	3/4	8
10	24-1/2	14-1/4	16	1-3/16	10	10-3/4	7/8	12
12	27-1/2	17	19	1-1/4	12	12-1/2	7/8	12
14	31	18-3/4	21	1-3/8	14	13	1	12
16	32	21-1/4	23-1/2	1-7/16	16	14-1/4	1	16
18	36	22-3/4	25	1-9/16	18	15-1/4	1-1/8	16
20	40	25	27-1/2	1-11/16	20	16-7/8	1-1/8	20
24	48	28-1/2	32	1-7/8	24	19-1/4	1-1/4	20

Dimensions in inches, weight in pounds.

BILL OF MATERIALS		
Part Number	Part Name	Standard Material
1	Body	Ductile Iron, ASTM A536 Grade 65-45-12*
2	Cover	Ductile Iron, ASTM A536 Grade 65-45-12*
3	Flexible Disc	Buna-N Rubber, Nylon and Steel Reinforced
4	Cover Gasket	Buna-N Rubber
5	Cover Bolts	Stainless Steel, Type 304
6	Spring	Stainless Steel, Type 302 half-hard
7	Spring Retainer	Stainless Steel, Type 304
8	Retainer Screws	Stainless Steel, Type 316

* Lined and Coated with NSF-61 Certified Amerlok 400 Epoxy

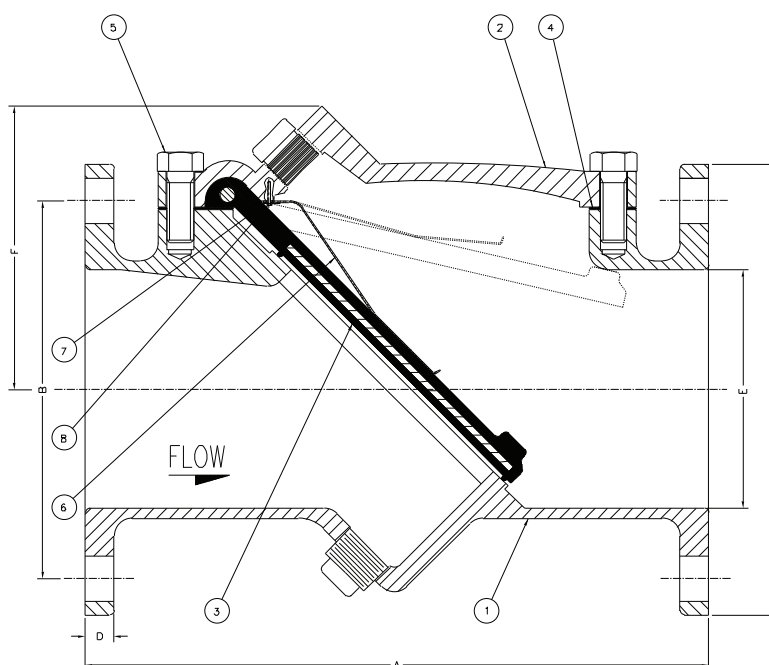


Figure No. SB200D

NOTE: Slaminator^(R) available with backflow device and/or visual or electrical position indicator. If not supplied, body and cover threaded ports are provided with steel pipe plugs.

Figure SB200D Rubber Flapper Check Valve

SLAMINATOR^(R)

Spring Assisted Rubber Flapper Check Valve

1.0 GENERAL

1.1 Manufacturer shall have a minimum of five (5) years' experience in the manufacture of rubber flapper check valves.

1.2 When requested, manufacturer shall provide detailed product data and descriptive literature including dimensions, weight, headloss, pressure rating, materials of construction and cross-sectional drawings clearly illustrating the individual components.

2.0 PRODUCT

2.1 The valve shall be rated for 250 PSI, have integral ANSI Class 125/150 flanged connections and employ only two moving parts – the flexible disc and the spring. The body shall have a “full waterway” with a flow area not less than the nominal pipe area through the valve. Valves 4-inch and larger shall be capable of passing a 3-inch sphere. To minimize closure time, the valve shall seat on a 45 degree angle. The valve body shall incorporate a bottom threaded port with pipe plug to allow field installation of a backflow device without the need for special tools.

2.2 The cover shall be removable and allow removal of the flexible disc without removing the valve from the line. The cover shall be of a “domed” shape to facilitate self-cleaning. There shall be a threaded port with pipe plug to permit installation of a visual or electrical position indicator (4" and larger).

2.3 The flexible disc shall be one-piece and precision molded with alloy steel and Nylon reinforcement and an integral O-ring style seat for drop tight seating at low pressure. As required by AWWA C508, the flexible disc shall have been independently tested to a minimum of 1,000,000 cycles with no signs of wear, abrasion or cracking and be drop-tight at the conclusion of testing.

2.4 The spring assist shall be one-piece construction formed with a large radius to allow smooth movement and provide rapid valve closure. The spring assist shall be secured to the cover using Type 316 screws and field replaceable without removing the valve from the line and or the need for special tools.

3.0 MATERIALS

3.1 Valve bodies and covers shall be made from ductile iron per ASTM A536 Grade 65-45-12

3.2 The flexible disc shall be made from Buna-N (NBR) rubber.

3.3 The spring assist shall be made from type 316 stainless steel.

3.4 The valve body and cover shall be factory lined and coated with 2-part epoxy, NSF-61 certified for contact with drinking water.

4.0 OPTIONS [Include when required]

4.1 A backflow device shall be provided to permit the valve to be manually opened in order to prime or flush a pump. The backflow device shall be of the “rising stem” type and made from brass and stainless steel.

4.2 A mechanical position indicator shall be provided to provide a visual indication of the disc on valves 4" and larger.

4.3 An electrical position switch shall provide remote indication of valve closed/not closed on valves 4" and larger. The switch shall be UL-Listed, NEMA 4, 4X, 6 and 6P, rated for 5 amps 12VDC to 250VAC.

5.0 MANUFACTURER

5.1 Valves shall be GA Industries Figure SB200 as manufactured by VAG USA, LLC Mars, PA USA.



GA Industries offers a broad range of valves designed specifically for the waterworks market.

AWWA C504

Rubber Seated Butterfly Valves

- Flanged and Mechanical Joint Ends
- Manual and Automatic Actuation

AWWA C507

Ball Valves

- Metal Seated
- Resilient Seated
- Hydraulic, Pneumatic, or Electric Motor Actuation

AWWA C508

Check Valves

- Cushioned Swing Check
- Rubber Flapper Check
- Globe and Wafer Silent Check
- Ball Check
- Foot Valves

AWWA C512

Air Valves for Water and Sewage

- Air Release
- Air and Vacuum
- Combination
- Vacuum Breaking

AWWA C517

Eccentric Plug Valves

- Flanged, Threaded, and Mechanical Joint Ends
- Manual and Automatic Actuation

AWWA C530

Control Valves

- Pump Control for Water and Sewage
- Surge Relief for Water and Sewage
- Level Control
- Pressure Regulating
- Solenoid Operated
- Anti-Cavitation

For more information about GA Industries' products, or to contact a sales representative, visit the GA website www.gaindustries.com

VAG USA, LLC Mars, PA 16046 USA

Phone: 724-776-1020 • Fax: 724-776-1254 • E-Mail: info-ga@vag-group.com