Submittal item detail

#40 05 65-001-A-0: Check Valves

Status	Created on	Ball in court due date
Closed	Jan 20, 2025	

ID	40
Ball in court	**Lake Shore Engineering**
Manager	**Daniel Tremor** (Barge Design Solutions)
Responsible contractor	**Lake Shore Engineering**
Watchers	**Barge Design Solutions** **Macon Water Authority**
Spec section	40 05 65 Valves for Pump Control and Check Service
Spec sub section	
Description	Check Valves
Final Response	Reviewed / No Exceptions Taken
Final Response Attachments	40 05 65-001-A - CHECK VALVES_BARGE RESPONSE.PDF, Feb 20, 2025, 4:23 PM UTC
Final Response Comments	
Package	

References and Attachments

Submittals (1)			
Open In Review	#40 05 65-001-B - Check Valves	**Former Member** **Former Member**	Mar 6, 2025

Ball in court	Sent	Due	Returned	Response/Action	Attachments
Submitted					
Lake Shore Engineering	-	-	Jan 20, 2025	**Submitted**	40 05 65-1 - Check Valves.pdf Transmittal.docx
Comments	-				
Sent for review					
Daniel Tremor (Barge Design Solutions) Sent by Daniel Tremor	Jan 20, 2025	-	Jan 23, 2025	**Sent for review**	40 05 65-001-A - Check Valves.pdf
Comments	-				
Review Step 1					
Mike Alexander (Barge Design Solutions) Reviewed By Mike Alexander	Jan 23, 2025	Feb 6, 2025	Feb 6, 2025	**Reviewed / No Exceptions Taken**	Process Review Comments 40 05 65-001-A - Check Valves.pdf
Comments	No exceptions taken				
jherndon jherndon (Macon Water Authority) Reviewed By jherndon jherndon	Jan 23, 2025	Feb 6, 2025	Feb 11, 2025	**Reviewed / No Exceptions Taken**	
Comments					

BARGE DESIGN SOLUTIONS
6525 THE CORNERS PKWY NW
NORCROSS, GA 30092 (678) 515-9411

COMMENTS TO SUBMITTAL DATA
LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
BARGE: 36181-21
SUBMITTAL NAME: 40 05 65 001-A Check Valves

REVIEWED / NO EXCEPTIONS TAKEN	☒
REJECTED	☐
REVIEWED / EXCEPTIONS NOTED	☐
REVISE AND RESUBMIT	☐
NOT SUBJECT TO REVIEW	☐

Review of this submittal is expressly limited as provided in the Contract Documents and are only to determine general conformance with information given in the Contract Documents and compatibility with the design concept for the completed project as a functioning whole as indicated in the Contract Documents. Corrections or comments made for this review do not relieve the Contractor from compliance with the Contract Documents. Contractor is, and Engineer is **NOT**, responsible for all matters relating to confirmation/correlation of dimensions at the jobsite, fabrication, shipping, handling, storage, assembly, installation, construction (including all safety aspects of performing the work), and for coordinating the Work.

Mike A. 2/6/2025

BARGE DESIGN SOLUTIONS, INC. DATE

Comments

No.	Comment	Related Specification/ Drawing No.
1	Min pressure 15 max pressure 40	

END OF COMMENTS

LAKESHORE ENGINEERING

TRANSMITTAL OF SUBMITTAL

DATE: **1-20-2025**

TO: Barge Design Solutions
6525 The Corners Pkwy
Suite 450
Peachtree Corners Ga 30092

FROM: LAKESHORE ENGINEERING
1259 Ellsworth Drive
Atlanta, GA 30318

PROJECT: Lower Poplar Water Reclamation Facility

New Submittal X Resubmittal

Specification Section No. : 40 05 65

Supplier: Principal Environmental

Manufacturer: GA Industries

The following items are hereby submitted:

Number of Copies	Description of Item Submitted (Type, Size, Model Number, Etc.)	Submittal number	Submittal Type	Contains Variation to Contract	
				No	Yes
Electronic	Check Valves	40 05 65-1	Product Data & Shop Drawings	X	

Comments:

CONTRACTOR hereby certifies that (i) CONTRACTOR has complied with the requirements of Contract Documents in preparation, review, and submission of designated Submittal and (ii) the Submittal is complete and in accordance with the Contract Documents. The CONTRACTOR has endeavored to list all deviations to the contract documents on this submittal cover page.

Approved By: Ken Fuller
Ken Fuller

- Please confirm Min/Max inlet pressures as requested on page 2

DRAWING SUBMITTAL

January 17, 2025

(QUANTITY) SIZE: (2) - 16" and (4) - 24"
FIGURE NO: 220-DS Swing Check Valve with Lever and Weight
GAI SERIAL NO: 432047292
AIS Compliant

PROJECT:
CONTRACTOR:
CONSULTANT:

ADVISE OR CONFIRM FOLLOWING INFORMATION FOR MANUFACTURING OF VALVE:

1. Min\Max Inlet Pressure: Min: 15 PSI Max: 40 PSI
2. Valve Installation Position: _____ (Horizontal, Vertical/Up or Vertical/Down).
3. AIS Compliant

VAG USA, LLC
234 Clay Avenue • Mars • PA 16046
Phone (724)776-1020 • Fax (724) 776-1254
www.vag-usa.com

Figures 220-D, 220-U
Lever & Weight Swing Check Valve

Data Sheet 220.01G

Description

GA Industries Figures 220-D and 220-U are heavy duty, customizable swing check valves that utilize an adjustable counterweight assisted closure to minimize slam and hammer. The valve is typically installed in the discharge of a pump to prevent backflow when the pump is off-line, it opens smoothly at pump start and closes quickly and quietly upon pump shutdown.

Figures 220-D and 220-U meet the design, materials of construction and testing required by AWWA C508 and are suitable for use with water or sewage.

Product Features

- Heavy duty construction withstands rigors of pump station operation
- Full flow area when swung only 25° away from seat for low head loss and reduced pumping cost
- Replaceable rubber disc seat for tight seating at low and high pressure
- Lever & weight field convertible right hand to left hand side, and from horizontal to vertical installation

Standard Materials

- Body & Disc — Cast Iron, ASTM A126 Class B
- Cover — Steel, ASTM A36
- Body Seat — Stainless Steel, Type 316
- Disc Seat — Buna-N
- Hinge Shaft — Stainless Steel, Type 303
- External Fasteners — Steel, A307, Zinc Plated
- Coating — Internal and external NSF-61/600 certified 2-part epoxy

Non-Shock Working Water Pressure at up to 150F (66C)		
Figure No.	**220-D**	**220-U**
Flange Drilling	ANSI B16.1 Class 125	ANSI B16.1 Class 250
Size	2" to 24"	2" to 24"
Max Working Pressure	200 PSI	300 PSI
Shell Test	400 PSI	450 PSI

See Data Sheet 220.02 for larger sizes

Approvals & Certifications

- NSF-61 Certified for Contact with Drinking Water
- NSF-372 Certified Lead Free (Max 0.25% Lead Content by Weighted Average)
- AIS and BABA Compliant

Options

- Option 1D — With Honeywell HDLS NEMA 1, 3, 4, 4X, 6, 6P, 12 & 13 DPDT Limit Switch
- Option LH — With Lever & Weight Factory Installed on Left Side Facing Inlet
- Option P3 — With 316 SS Hinge Shaft, Disc Center Pin, Lock Nut and Washer, Shaft End Plate and External Fasteners
- Option S3 — With Type 316 Stainless Steel Hinge Shaft (Included in Option P3)
- Option SE — With 316 Stainless Steel External Fasteners (Included in Option P3)
- Option VI — Configured for Vertical Flow Up Installation

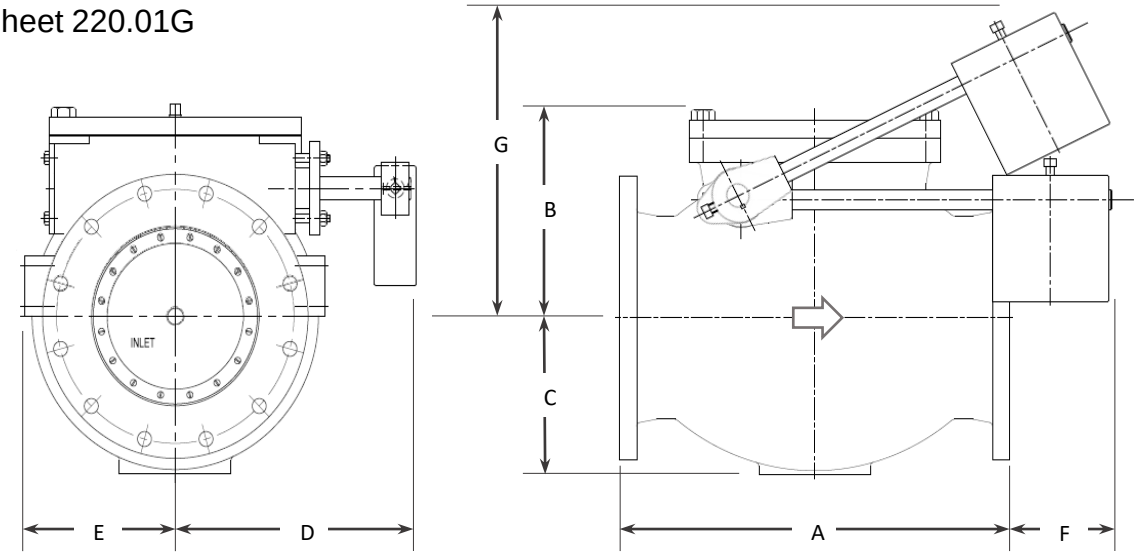
Ordering Data

Figure Number (220-D or 220-U)
Size
Options and/or Accessories

VAG USA, LLC
234 Clay Avenue • Mars, PA 16046 USA
Phone (724) 776-1020 • E-mail info-ga@vag-group.com

Figures 220-D, 220-U
Lever & Weight Swing Check Valve

Data Sheet 220.01G

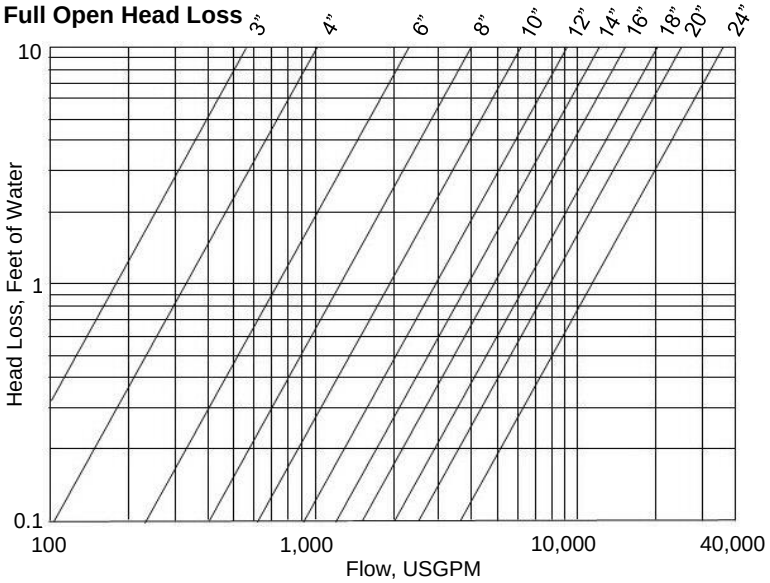


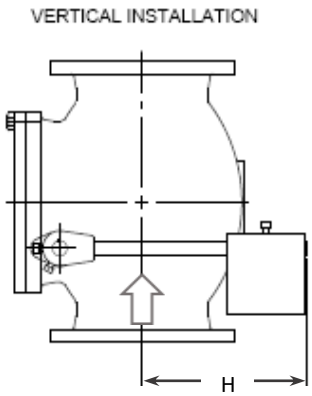
Installation Dimensions

SIZE	2", 2½", 3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"
A	12	13	17½	18	23	28	33	36	40	40	48
B	7	8½	9	12	14	16	22	23	24	24	28
C	5	5	6	9	9	11	13	14	17¼	17¼	20
D	10	11	12	14	15	17	20	24	28	28	36
E	5	5	7	8	9	11	14	16	18	18	21
F	5	4	3	3	1	8	-	-	--	--	1½
G	15	16	19	21	23	32	34	35	37	37	44
H	9¼	8½	10⅝	9	8	17	14¾	13¾	22½	22½	22½
WGT	100	150	230	310	480	970	1480	1800	2400	2800	6000

- Dimension G is valve fully open, Dimensions F and H are valve fully closed
- Face to face same for both Class 125 and Class 250 flanged valves, Class 250 supplied with flat face
- Larger sizes available, consult factory
- Dimensions in inches, weight in pounds and are approximate. Request certified drawings if critical.

Full Open Head Loss





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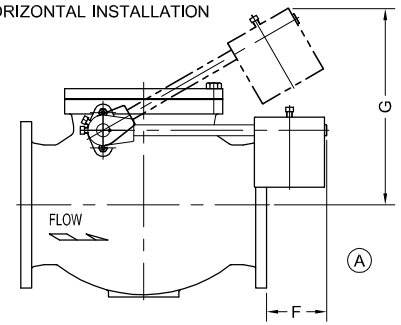
	2 1/2"		3"		4"		6"		8"		10"		12"		14"		16"		18"		20"	
	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM
A*	12	305	12	305	13	330	17 1/2	445	18	457	23	584	28	711	33	838	36	914	40	1016	40	1016
B	7	178	7	178	8 1/2	216	9	229	12	305	14	356	16	406	22	559	23	584	24	610	24	610
C	5	127	5	127	5	127	6	152	9	229	9	229	11	279	13	330	14	356	17 1/4	438	17 1/4	438
D	10	254	10	254	11	279	12	305	14	356	15	381	17	432	20	508	24	610	28	711	28	711
E	5	127	5	127	5	127	7	178	8	203	9	229	11	279	14	356	16	406	18	457	18	457
F	5	127	5	127	4	102	3	77	3	77	-	-	8	204	-	-	-	-	-	-	-	-
G	15	381	15	381	16	406	19	483	21	533	23	584	32	813	34	864	35	889	37	940	37	940
H	9 1/4	235	9 1/4	235	8 1/2	216	10 5/8	270	9	229	8	203	17	432	14 3/4	375	13 3/4	349	-	-	-	-

* "A" DIMENSION OF VALVES WITH RAISED FACE DOES NOT INCLUDE RAISED FACE HEIGHT

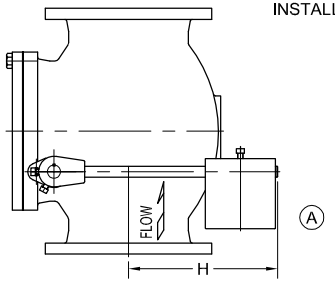
Ⓐ

NO.	PART NAMES	NO.	PART NAMES
1	BODY	12	DISC ARM SET SCREW
2	BODY SEAT	13	INNER BUSHING
2A	SEAT O RING	14	OUTER BUSHING
2B	SEAT PIN	15	GLAND
3	DISC & CENTER PIN	16	GLAND STUDS
4	DISC ARM	17	GLAND PACKING
5A	RENEWABLE SEAT	18	SHAFT LOCK PIN
5B	SEAT FOLLOWER	19	DISC ARM KEY
5C	SEAT SCREWS	30	COUNTERWEIGHT ARM
6	DISC NUT	30A	COUNTERWEIGHT ARM SET SCREWS
6A	DISC NUT WASHER	30B	COUNTERWEIGHT ARM KEY
6B	DISC NUT PIN	31	COUNTERWEIGHT
8	COVER GASKET	31A	COUNTERWEIGHT SET SCREW
9	COVER	33	COVER PLUG (14"-20" VALVES ONLY)
10	COVER BOLTS	34	SHAFT END PLATE
11	SHAFT	35	SHAFT END PLATE BOLTS
		36	SHAFT END PLATE SEAL

HORIZONTAL INSTALLATION

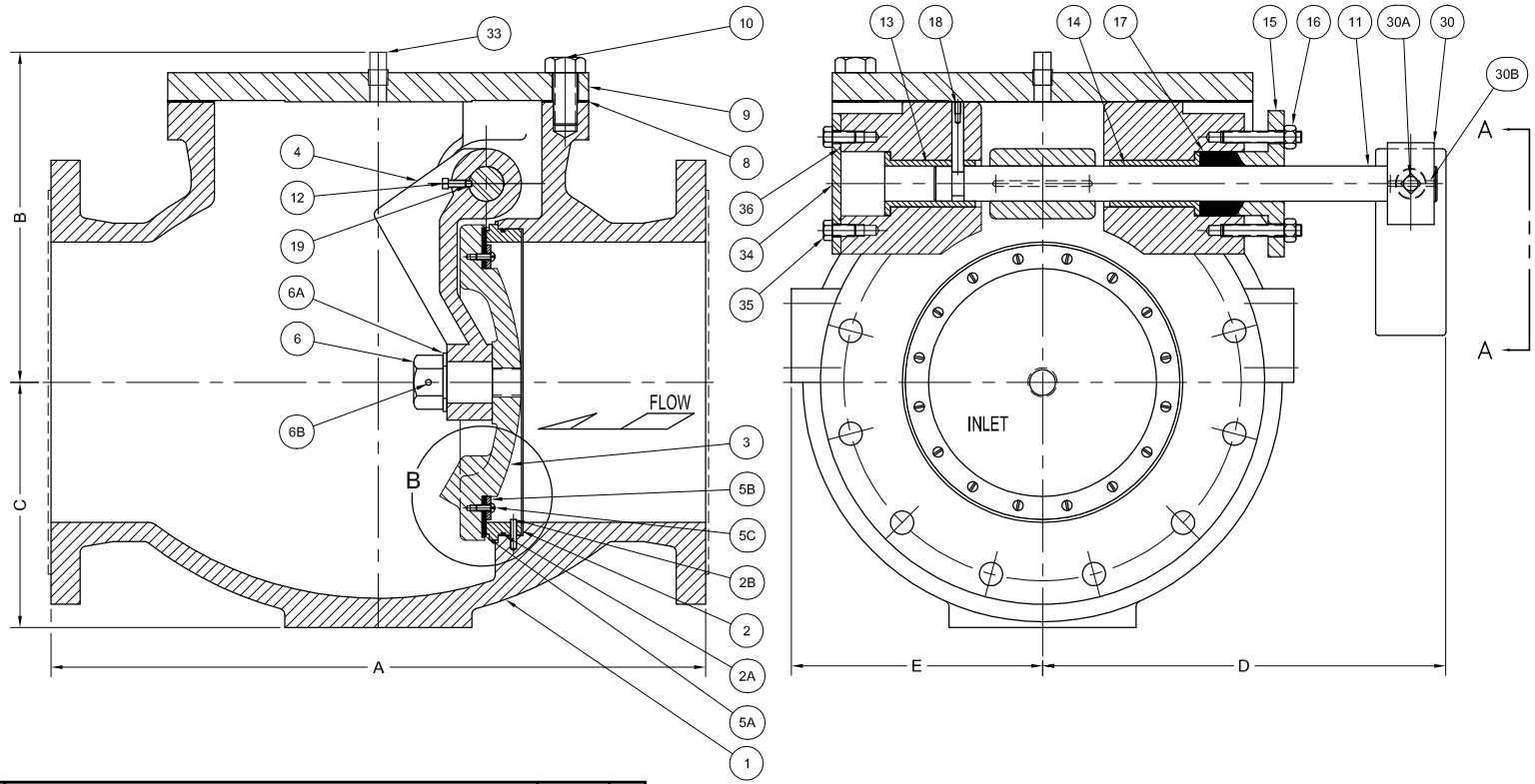


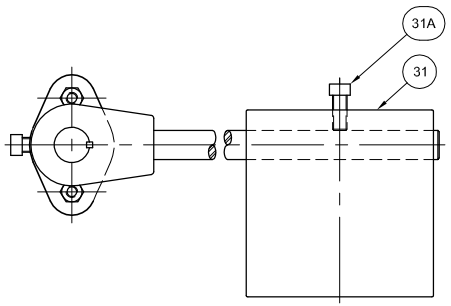
VERTICAL INSTALLATION



NOTE: SUFFIX "A" USED AFTER FIGURE NUMBER FOR VERTICAL INSTALLATION (FIG.NO.220-DA)

Ⓒ





VIEW A–A

REV.	DESCRIPTION	DATE	BY
C	REVISED TITLEBLOCK AND VERTICAL INSTALLATION NOTE	05-30-2019	JT
B	REMOVED MM VIEW	08-10-2018	JH
A	ADD SIZES TO TITLE BLOCK; ELIMINATE FIGURE NUMBER TABLE; RE-DRAWN IN AUTOCAD; ADD DIMENSIONS F, G, & H	10-30-2013	BRF

GA INDUSTRIES

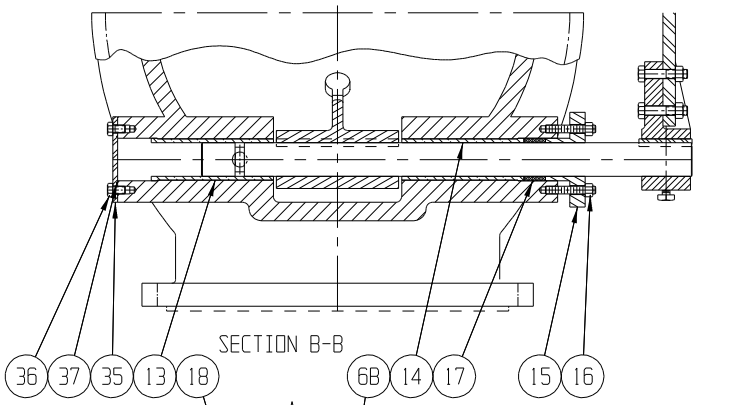
2 1/2" - 20" FIGURE 220
SWING CHECK VALVE
LEVER AND WEIGHT

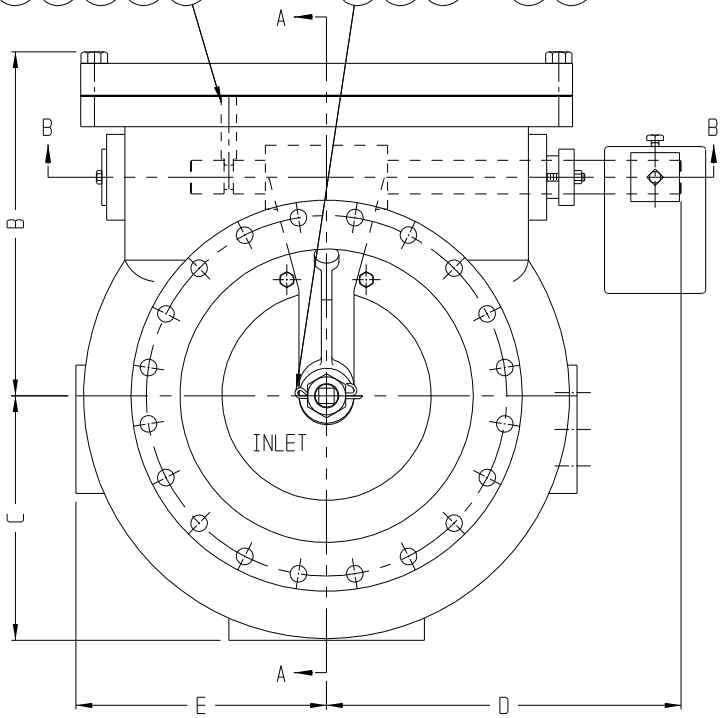
DIMENSIONS IN INCHES
STANDARD TOLERANCES (UNLESS OTHERWISE NOTED)
.X = ±.1
.XX = ±.01
.XXX = ±.005
FRACTIONS = ±1/64
ANGLES = ±1°
DRAFTS 3° MAX
CASTING STOCK MINIMUM (SMALLEST DIM. TO SURFACE)
0 TO <1 = 1/8
1 TO <5 = 3/16
5 TO <12 = 1/4
12 AND > = 3/8
PER ANSI Y14.5M SDST -1982 FLATNESS, ROUNDNESS, POSITION

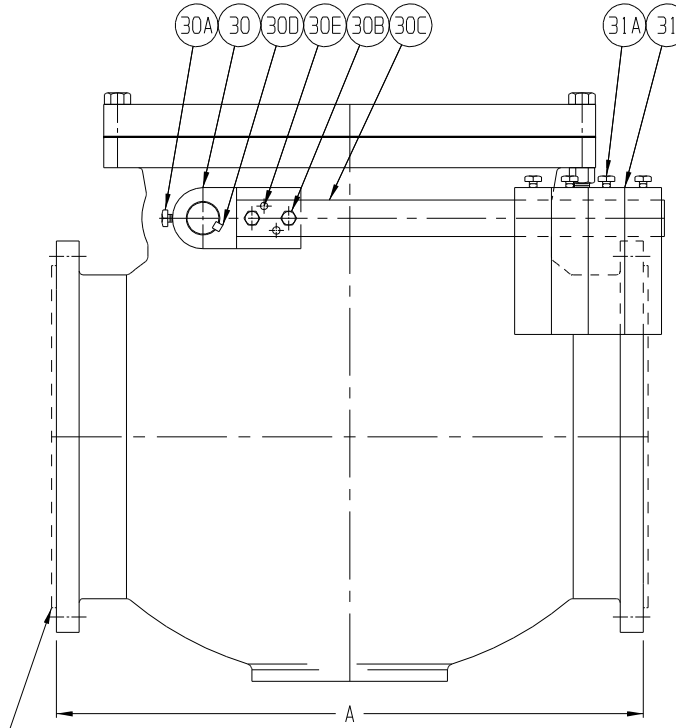
SERIAL NO.		DRAWN BY	MM
FIG. NUMBER	220D/220U	APPR. BY	
DATE	01-29-1991	SCALE	NTS
PROPERTY OF VAG USA, LLC			
REFERENCES	FILE	DRAWING NO.	REV.
C-1018-G	C3	C-1146	C

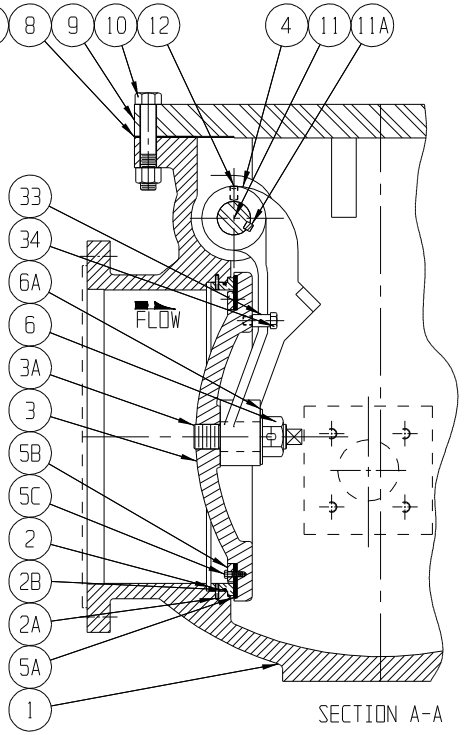
J:\Autocad\GA-Valve\GA-Show\C-1146-C.dwg

NO	DESCRIPTION	NO	DESCRIPTION	NO	DESCRIPTION	NO	DESCRIPTION
1	BODY	6	DISC NUT	14	OUTER SHAFT BUSHING	30E	COUNTERWEIGHT ARM PINS
2	SEAT RING	6A	DISC WASHER	15	GLAND	31	COUNTERWEIGHT
2A	SEAT RING RETAINING PIN	6B	DISC COTTER PIN	16	GLAND STUDS & NUTS	31A	COUNTERWEIGHT SET SCREWS
2B	SEAT RING SEAL	8	COVER GASKET	17	GLAND PACKING	33	ANTI-ROTATION PIN
3	DISC	9	COVER	18	SHAFT PIN	34	ANTI-ROTATION PIN SCREW
3A	DISC CENTER PIN	10	COVER BOLTS	30	COUNTERWEIGHT ARM HUB	35	BLIND GLAND
4	DISC ARM	11	SHAFT	30A	CWT ARM HUB SET SCREW	36	BLIND GLAND BOLTS
5A	RENEWABLE SEAT	11A	DISC ARM KEY	30B	COUNTERWEIGHT ARM BOLTS	37	BLIND GLAND O-RING
5B	SEAT FOLLOWER	12	DISC ARM SET SCREWS	30C	COUNTERWEIGHT ARM		
5C	SEAT FOLLOWER SCREWS	13	INNER SHAFT BUSHING	30D	CWT. ARM HUB KEY		









SECTION A-A

NOTE: "A" DIMENSION ON VALVES WITH RAISED FACE FLANGES DOES NOT INCLUDE THE RAISED FACE HEIGHT

F:\GA-VALVE\GA-SHOW\C-1167-A.PRT

REV	DESCRIPTION	DATE	BY
A	REDRAWN, ADDED BLIND GLAND, BOLTS & SEAL (DELETED PIPE PLUG AT SHAFT END	2-22-02	HGM

	DIMENSIONS									
	A		B		C		D		E	
SIZE	IN.	MM	IN.	MM	IN.	MM	IN.	MM	IN.	MM
24"	48	1219	28	711	20	508	34	864	21	533

GA INDUSTRIES, INC.

24" SWING CHECK VALVE ASSEMBLY
W/O CUSHION CHAMBER

STANDARD TOLERANCES (UNLESS OTHERWISE NOTED)
FINISHED SURFACES ONLY
DIMENSIONS SHOWN IN INCHES
.X ± .02
.XX ± .01
.XXX ± .005
FRACTIONS ± 1/64"
ANGLES ± 1°
FINISH 0°- XX RMS

SERIAL NO.
SCALE NTS
DRAWN BY HGM
APPR. BY
REFERENCES
EFFECTIVE DATE 11-87
TO
FIG. NUMBER 250-D
FILE C
DRAWING NO. C-1167
REV A

Hydroplate® 1086

PRODUCT DATA SHEET

SELECTION & SPECIFICATION DATA

Generic Type	Advanced High-Solids Polyamine Epoxy
Description	High solids epoxy used as a lining and exterior coating for potable water and wastewater assets. The advanced formula provides ultimate corrosion protection in a high solids coating that has tremendous ease of application properties. Product is self-priming and is frequently applied to steel, concrete, and ductile iron substrates.
Features	• Certified by UL to meet NSF/ANSI/CAN 61 and NSF/ANSI/CAN 600* • Meets the requirements of AWWA C210 • Conforms to multiple AWWA D102 ICS and OCS systems • Low VOC and HAPs • Suitable for service in moderate wastewater environments • Excellent thermal shock resistance • Good abrasion resistance • Suitable for use in SCAQMD restricted areas *Valid when manufactured at a certified location.
Typical Uses	Steel and concrete potable water storage tanks, water treatment facilities, atmospheric and immersed steel and concrete in moderately corrosive environments, water transmission pipe, ductile iron pipe, water fittings, valves, and other appurtenances
Color	Light Grey (N700), White (N800), Blue (N100)
Finish	Semi-Gloss
Primer	Self-priming
Dry Film Thickness	4 - 10 mils (102 - 254 microns) per coat Can be applied 2 or 3 coats. Do not exceed 20 mils total DFT.
Solids Content	By Volume 86% +/- 2%
Theoretical Coverage Rate	1379 ft²/gal at 1.0 mils (33.9 m²/l at 25 microns) 345 ft²/gal at 4.0 mils (8.5 m²/l at 100 microns) 138 ft²/gal at 10.0 mils (3.4 m²/l at 250 microns) Allow for loss in mixing and application.
VOC Value(s)	As Supplied: 0.52 lbs./gal (62 g/l) Per EPA Method 24: 0.56 lbs/gal (67 g/l) Per EPA Method 24: 13 oz/gal of Thinner 225 E: 0.56 lbs./gal (67 g/l)
Dry Temp. Resistance	Continuous: 250°F (121°C) Non-Continuous: 275°F (135°C)
Limitations	Epoxies may lose gloss, discolor and chalk when exposed to sunlight.

SELECTION & SPECIFICATION DATA

Potable Water Certifications

UL Potable Water	Tank	Valve/Fittings	Pipe	Dry Film Thickness	Cure to Service
Certification Rating	≥ 50 gallons	≥ 1.5 inches	≥ 15 inches	2-3 coats < 20 mils	14 days
Additional Cure Option	≥ 70,000	N/A	N/A	2-3 coats < 20 mils	7 days

SUBSTRATES & SURFACE PREPARATION

General
Surfaces must be clean and dry. Employ adequate methods to remove dirt, dust, oil and all other contaminants that could interfere with adhesion of the coating.

Steel
Immersion: SSPC-SP10/NACE 2
Non-immersion:: SSPC-SP6/NACE 3
Surface Profile: 2-3½ mils (50-88 microns)

Concrete or CMU
Concrete shall be designed, placed, cured, and prepared per NACE No. 6/SSPC-SP 13, latest edition. Abrade to remove all laitance, loose concrete, etc. and to create surface profile in accordance with the appropriate ICRI CSP 2-5. This product can tolerate SSD (saturated surface dry) surfaces.
Consult Carboline Technical Service for more specific recommendations.

Non-Ferrous Metals
Surface profile should be a dense angular 1.5 - 3 mils and is best achieved through abrasive blasting in accordance with SSPC-SP16 for atmospheric exposure, or SSPC-SP17 for immersion environments.

Ductile or Cast Iron
Immersion and Buried Service: Abrasive blast clean per NAPF 500-03-04.
Non-Immersion: Remove all oil and grease from surface by Solvent Cleaning per NAPF 500-03-01.

MIXING & THINNING

Mixing
Power mix separately, then combine and power mix. **DO NOT MIX PARTIAL KITS.**

Induction Time
Requires a 15 min sweat-in time.

Thinning
Potable Water Uses and Applications:
Thin up to 10% by volume with Carboline Thinner 225E

Use of thinners other than those supplied or recommended by Carboline may adversely affect product performance, void product warranty, and may void UL or NSF approval whether expressed or implied.

Ratio
2:1 Ratio (A to B)

Pot Life
1¼ Hours at 75°F (24°C)
2 Hours at 60°F (15.5°C)
Pot life ends when coating loses body and begins to sag. Pot life times will be less at higher temperatures.

APPLICATION EQUIPMENT GUIDELINES

Listed below are general equipment guidelines for the application of this product. Job site conditions may require modifications to these guidelines to achieve the desired results.

Conventional Spray	Pressure pot equipped with dual regulators, 3/8" I.D. minimum material hose, 0.070" I.D. fluid tip and appropriate air cap. Adjust air pressure to approximately 50 psi at the gun and provide 10-20 lbs. of pot pressure.
Airless Spray	Pump Ratio: 30:1 (min.) GPM Output: 2.5 (min.) Material Hose: 3/8" I.D. (min.) Tip Size: 0.017"-0.021" Output PSI: 1500-2300 Filter Size: 60 mesh PTFE packings are recommended and available from the pump manufacturer.
Brush & Roller (General)	Recommended for small areas and repairs only. Use a high quality brush, and apply a very light crisscross brush coat. Allow to dry for approximately 5 minutes. Then apply a heavy coat using a crisscross brush pattern. Normally, a film thickness of 2.5-3 mils (62- 75 microns) can be obtained per coat by this method.

APPLICATION CONDITIONS

Condition	Material	Surface	Ambient	Humidity
Minimum	50°F (10°C)	50°F (10°C)	50°F (10°C)	0%
Maximum	90°F (32°C)	125°F (52°C)	110°F (43°C)	90%

This product requires the substrate temperature to be above the dew point. Condensation due to substrate temperatures below the dew point can cause flash rusting on prepared steel and interfere with proper adhesion to the substrate. Special application techniques may be required above or below normal application conditions.
Note: Prior to spray application, stripe brush all weld attachments and surface irregularities using Hydroplate 1086 thinned 10% by volume with Thinner #225E.

CURING SCHEDULE

Surface Temp.	Dry to Recoat	Final Cure Immersion	Maximum Recoat Time
50°F (10°C)	36 Hours	14 Days	90 Days
60°F (16°C)	20 Hours	10 Days	60 Days
75°F (24°C)	10 Hours	7 Days	45 Days
90°F (32°C)	5 Hours	5 Days	21 Days

These times are based on a 4.0-6.0 mil (102-152 microns) dry film thickness. Higher film thickness, insufficient ventilation or cooler temperatures will require longer cure times and could result in solvent entrapment and premature failure. Excessive humidity or condensation on the surface during curing can interfere with the cure, can cause discoloration and may result in a surface haze. Any haze or blush must be removed by water washing before recoating. If the maximum recoat times have been exceeded, the surface must be abraded by sweep blasting or sanding prior to the application of additional coats. **Refer to Carboline's certified product listing on UL's Product iQ website (info.carboline.com/potable) for details on cure, maximum DFT, and other requirements.**

CLEANUP & SAFETY

Cleanup	Use Thinner #225E. In case of spillage, absorb and dispose of in accordance with local applicable regulations.

CLEANUP & SAFETY

Safety	Read and follow all caution statements on this product data sheet and on the SDS for this product. Employ normal workmanlike safety precautions.
Ventilation	When used as a tank lining or in enclosed areas, thorough air circulation must be used during and after application until the coating is cured. The ventilation system should be capable of preventing the solvent vapor concentration from reaching the lower explosion limit for the solvents used. User should test and monitor exposure levels to insure all personnel are below guidelines. If not sure or if not able to monitor levels, use MSHA/NIOSH approved supplied air respirator
Caution	This product contains flammable solvents. Keep away from sparks and open flames. All electrical equipment and installations should be made and grounded in accordance with the National Electric Code. In areas where explosion hazards exist, workmen should be required to use non-ferrous tools and wear conductive and non-sparking shoes.

PACKAGING, HANDLING & STORAGE

Shelf Life	Part A: 12 months at 75°F (24°C) Part B: 6 months at 75°F (24°C) *Shelf Life: When kept at recommended storage conditions and in original unopened containers.
Storage Temperature & Humidity	40° - 110°F (4°- 43°C) 0-100% Relative Humidity
Storage	Store Indoors.
Shipping Weight (Approximate)	1 Gallon Kit - 15 lbs (6.8 kg) 5 Gallon Kit - 75 lbs (34 kg)
Flash Point (Setaflash)	Part A: 24°F (-4.5°C) Part B: 41°F (5°C)

WARRANTY

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