Dondlinger CONSTRUCTION
2656 S. Sheridan, Wichita, Kansas 67217
P.O. Box 398, Wichita, Kansas 67201-0398
Phone: 316.945.0555 Fax: 316.945.9009

SUBMITTAL NO. 2

SUBMITTAL COVER SHEET

Project Name: COW - Cheney Transmission Line Improvements
Architect: BURNS & MCDONNELL
Submittal Date: 12/11/2017
Revision Number: 0
Submittal Package: 33000
Submittal Number: 2
Submittal Title: Utility Valves and Accessories
Specification: 333900
Drawing/Detail:

RECEIVED FROM	SENT TO	RETURNED BY	FORWARDED TO
WICHITA WINWATER WORKS CO.	BURNS & MCDONNELL	BURNS & MCDONNELL	WICHITA WINWATER WORKS CO.
12/11/2017	12/11/2017	12/20/2017	12/28/2017

SUBMITTAL ITEM	STATUS	ACTIVITY DATE	SENT	COPIES	DUE	NOTES

DONDLINGER AND SONS CONST. CO., INC.

[X] Reviewed eferguson
[ ] Reviewed as Noted
[ ] Revise and Resubmit
[X] Date 12/28/2017
[X] Submittal No. 33000 Utility Valves and Accessories

REVIEW OF ITEMS DOES NOT RELIEVE VENDOR FROM COMPLYING WITH REQUIREMENTS OF CONTRACT PLANS AND SPECIFICATIONS, CONTRACT AND CITY, STATE AND LOCAL CODES.

Engineer's Action

Initials & Date	Initials & Date
A- CAM 1/3/18	E_____
B_____	F_____
C_____	G_____
D_____	

A - SUBMITTAL APPROVED
B - SUBMITTAL APPROVED AS NOTED - CONFIRM
C - SUBMITTAL RETURNED FOR REVISION (RESUBMIT)
D - SUBMITTAL NOT APPROVED (SUBMIT ANEW)
E - PRELIMINARY SUBMITTAL
F - FOR REFERENCE, NO APPROVAL REQUIRED
G - DISTRIBUTION COPY (PREVIOUSLY APPROVED)

Cheney Transmission Main
Val-Matic Air Valves
Wichita, KS
SUBMITTALS:

Section 32 12 16 2.04 Combination Air/Vacuum Valves

Item 1
Quantity: 9
Size: 2”
Description: A.R.I. Model D040P02 Combination Air Valve, Reinforced Nylon Body, EPDM Seal, Reinforced Nylon and Polypropylene Internals.

A.R.I. FLOW CONTROL ACCESSORIES Ltd.

D-040 250 PSI

Water Supply

NSF

Combination Air Valve

Description

The D-040 series Combination Air Valve has the features of both an air release valve and an air & vacuum valve.
The air release component is designed to automatically release small pockets of air to the atmosphere as they accumulate along a pipeline or piping system when it is full and operating under pressure.
The air & vacuum component is designed to automatically discharge or admit large volumes of air during the filling or draining of a pipeline or piping system. This valve will open to relieve negative pressures whenever water column separation occurs.

Applications

- Pump stations: after the pump and after the check valve
- Downstream (after) and upstream (before) of shut-off valves
- After deep-well pumps
- On long constant-sloped pipeline segments
- At peaks along the pipeline and at peaks relative to hydraulic gradient.
- At end lines
- Before water meters
- On strainers and filters

D-040-C - additional applications

- Water pipelines vulnerable to vandalism and/or water theft.
- Water systems found in remote areas.

Operation

The air & vacuum component, with the large orifice, discharges air at high flow rates during the filling of the system and admits air into the system at high flow rates during its drainage and at water column separation.
High velocity air should not blow the float shut. Water will lift the float, which seals the valve.
At any time during system operation, should internal pressure of the system fall below atmospheric pressure, air will re-enter the system.
The smooth discharge of air reduces pressure surges and other destructive phenomena.
The intake of air in response to negative pressure protects the system from destructive vacuum conditions and prevents damage caused by water column separation. Air re-entry is essential to efficiently drain the system.
The air release component releases entrapped air in pressurized systems.

Without air valves, pockets of accumulated air may cause the following destructive phenomena:

- Obstruction of effective flow and hydraulic conductivity of the system along with a throttling effect as would a partially closed valve. In extreme cases this will cause complete flow stoppage.
- Acceleration of cavitation damages
- High-pressure surges.
- Acceleration of corrosion to metal parts.
- Danger of a high-energy burst of compressed air.
- Inaccuracies in flow metering.

As the system starts to fill, the valve functions according to the following stages:

1. Entrapped air in the pipeline is discharged by the valve.
2. Liquid enters the valve, lifting the float which pushes the sealing mechanism to its sealing position.
3. Entrapped air, which accumulates at peaks along the system (where combination air valves should be installed), rises to the top of the valve, which in turn displaces the liquid in the valve's body.
4. The float descends, unsealing the rolling seal. The air release orifice opens and the accumulated air is released.
5. Liquid penetrates into the valve and the float rises, pushing the rolling seal back to its sealing position.

When internal pressure falls below atmospheric pressure (negative pressure):

1. The float will immediately drop down, opening the air & vacuum and air release orifices.
2. Air will reenter the system.

Main Features

- Working pressure range: 3 - 250 psi.
- Testing pressure: 360 psi.
- Maximum working temperature: 140° F.
- Maximum intermittent temperature: 194° F.
- Reliable operation reduces water hammer incidents.
- Dynamic design allows for high velocity air discharge while preventing premature closure.
- Lightweight, small dimensions, simple and reliable structure.
- The drainage outlet enables removal of excess fluids.
- **The large size of the automatic air release orifice relative to the air valve body:**

D-040

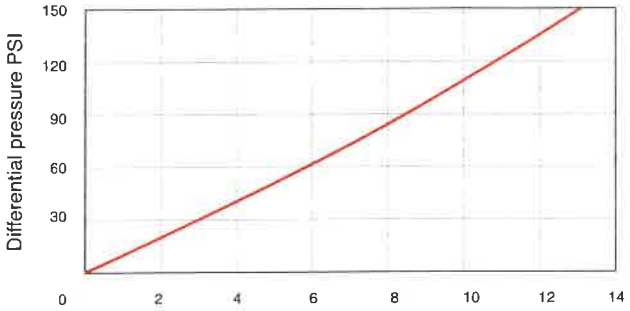
- Discharges air at high flow rates.
- Lessens the danger of its obstruction by debris.
- Enables the usage of the patented rolling seal mechanism, making it less sensitive to pressure differential than a direct float seal.

- The body is made of high-strength composite materials and all operating parts are made of specially selected, corrosion- resistant materials.
- Due to its light weight, the valve may be installed on plastic piping systems, as well as other lightweight piping systems.

D-040-C the body is protected in a metal shell for anti-vandalism/ theft applications

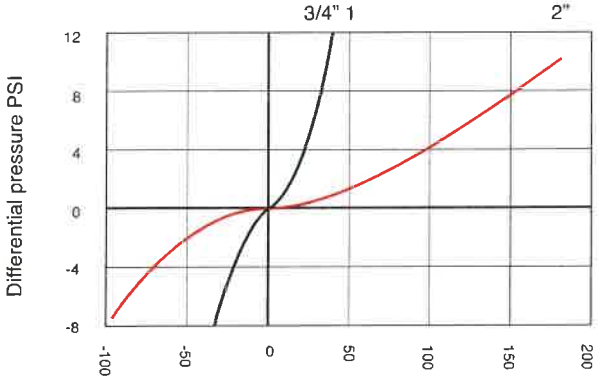
D-040 2" | D-040 NT 2" | D-040 ST 2" | D-040 3/4" 1"

AUTOMATIC AIR RELEASE



Air release rates CFM

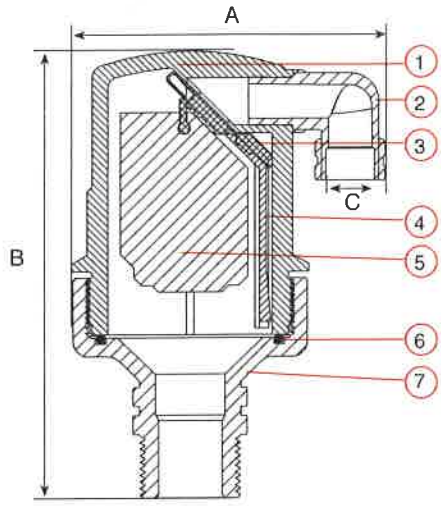
AIR AND VACUUM FLOW RATE



Flowrates CFM

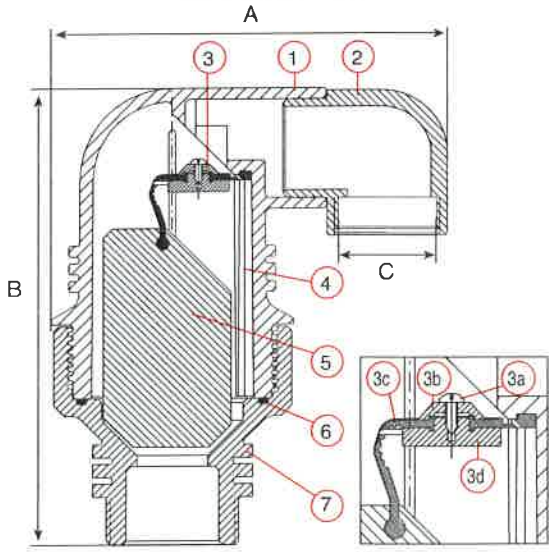
DIMENSIONS AND WEIGHT

Nominal Size	Dimensions inch A	B	Internal C	external	Weight Lbs.	Orifice Area Sq.in Air & Vac.	Auto.
D-040 3/4" 1"	3.9	5.5	⅜ NPT	0.86	0.73	0.155	0.012
D-040 2"	7	8.2	1½ NPT	2.16	2.35	1.246	0.018
D-040 NT 2"	5	8.2	1½ NPT	2.16	2.2	1.246	0.018



PARTS LIST AND SPECIFICATION

No. Part	Material
1. Body	NSF 61 Certified Reinforced Nylon
2. Discharge Outlet	NSF 61 Certified Polypropylene
3. 3/4" 1" Rolling Seal	NSF 61 Certified E.P.D.M.
2" Rolling Seal Assembly	
3a. Screws	Stainless Steel
3b. Plug Cover	NSF 61 Certified Reinforced Nylon
3c. Rolling Seal	NSF 61 Certified E.P.D.M.
3d. Plug	NSF 61 Certified Reinforced Nylon
4. Clamping Stem	NSF 61 Certified Reinforced Nylon
5. Float	NSF 61 Certified Foamed Polypropylene
6. O - Ring	NSF 61 Certified NBR 70
7. Base	NSF 61 Certified Reinforced Nylon



Valve Selection

The air valve is available with:
- Wide size range: 3/4", 1", 2" threaded male NPT connections.
- D-040 body made of composite materials.
- D-040-C the body is protected in a metal casting for anti-vandalism/theft applications
- D-040 STST body made of Stainless Steel.
- D-040 ST with Stainless Steel base.
- Available in 2", 3" flange

ACCESSORIES

One-way models

The D-040 series air valve is available as:
D040-V -With a vacuum guard, out-only attachment, allows air discharge only, prevents air intake (all models).
D-040-I -With a vacuum breaker, in-only attachment, allows air intake only, not allowing air discharge (D-040 2" only).
D-040-NS -With a non-slam, discharge-throttling attachment, allows full air intake, throttles air discharge (D-040 2" only).

D-040 NS 2"

Screen

Prevents penetration of debris and insects and can be assembled on the valve before or after the Discharge outlet.
Each strainer has 2 threaded connections 1.5" NPSM/ 2" NPSM.

Air Valve Enclosure

A.R.I. air valve enclosure is used to protect air valve , for above surface air valve installations.
The special enclosure protects and hide the air valves from vandalism and damages.

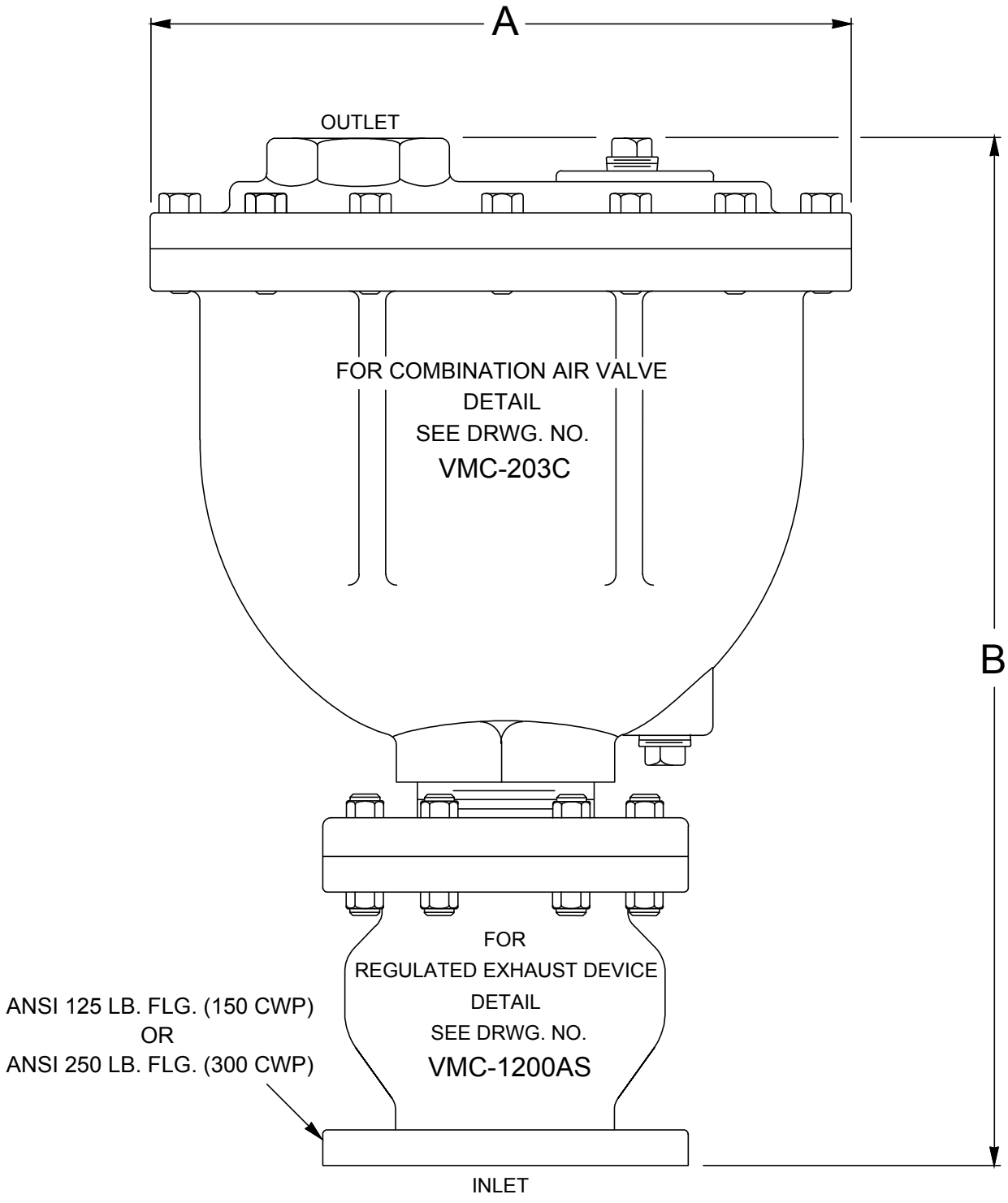
A.R.I. USA, Inc. A.R.I. FLOW CONTROL ACCESSORIES Ltd. www.arivalves.com e-mail: ariusa@ari.co.il Tel: (559) 269-9653

Cheney Transmission Main
Val-Matic Air Valves
Wichita, KS
SUBMITTALS:

Section 32 12 16 2.04 Combination Air/Vacuum Valves

Item 2

Quantity:	8
Size:	4”
Description:	Val-Matic Air Combination Valve Model 204CSS.14X, Flanged Inlet and Threaded Outlet, Single Body, Ductile Iron Body, Stainless Steel Internals, Stainless Steel External Bolts, and Fusion Bonded Epoxy Interior and Exterior. Includes Surge Suppression Check Valve on Inlet and Hood on Outlet SPK-4H.



IDENTIFY VALVE SIZE AND MODEL NO.

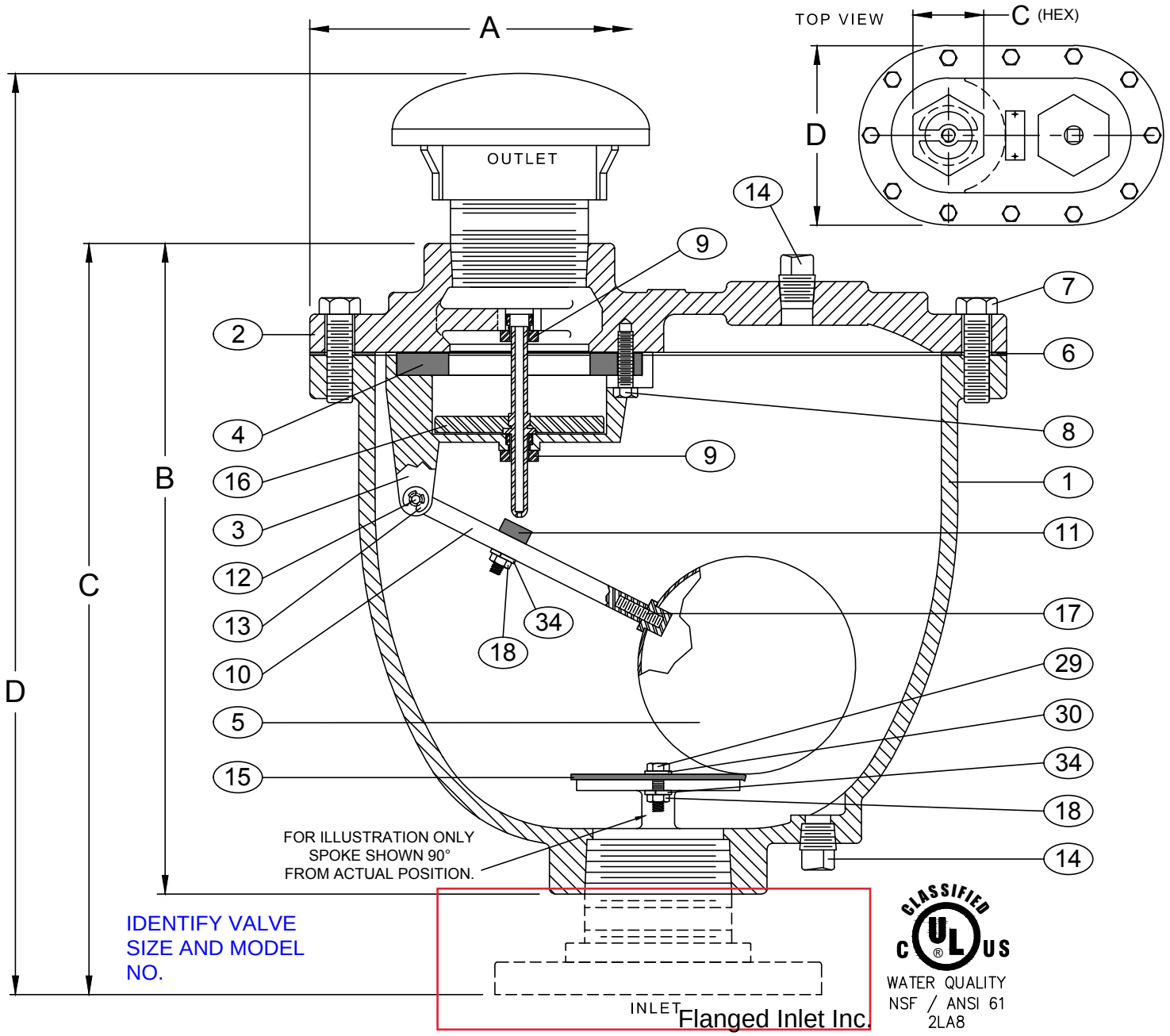
VALVE SIZE	125 LB.MODEL NO.	250 LB.MODEL NO.	A	B
3	203CSSA	253CSSA	16.00	22.75
4	204CSS.14X	~~254CSSA~~	18.50	27.00

SURGE SUPRESSION AIR VALVE

DATE 1-11-17

VAL-MATIC® VALVE AND MANUFACTURING CORP.

DRWG. NO. VM-203CSSA



SEE DRAWING NO. VM-201C-M FOR STANDARD MATERIALS OF CONSTRUCTION.

VALVE SIZE	MODEL NUMBER	A	B	C	D	E	F	INLET SIZE	OUTLET SIZE	ORIFICE SIZE	CWP PSI	INLET FLANGE	SCREENED HOOD
3	203CH.2	16.00	15.00	———	———	9.63	4.38	3" NPT	3" NPT	3/32"	300	———	SPK-3H
3	203CH.14	16.00	———	16.75	21.25	9.63	4.38	3" 125 LB.	3" NPT	3/32"	150	SPK-003F*	SPK-3H
4	204CSS.14X	18.50	———	19.00	21.88	11.00	5.38	4" 125 LB.	4" NPT	3/32"	150	INTEGRAL	SPK-4H
3	203CH.15	16.00	———	17.25	21.75	9.63	4.38	3" 250 LB.	3" NPT	3/32"	300	SPK-203F*	SPK-3H
4	204CH.15	18.50	———	20.25	22.63	11.00	5.38	4" 250 LB.	4" NPT	3/32"	300	SPK-204F*	SPK-4H

* OPTIONAL FLANGED INLET SHIPPED LOOSE.

1	BODY	7	COVER BOLTS	13	RETAINING RING	29	CUSHION RETAINER
2	COVER	8	RETAINING SCREWS	14	PIPE PLUG	30	WASHER
3	BAFFLE	9	BUSHING	15	CUSHION	34	LOCK WASHER
4	SEAT	10	FLOAT ARM	16	PLUG		
5	FLOAT	11	ORIFICE BUTTON	17	FLOAT RETAINER		
6	GASKET	12	PIVOT PIN	18	LOCK NUT		

Revised 8-25-16 (Rev 1)

COMBINATION AIR VALVE WITH HOOD (SINGLE BODY TYPE)

DATE 6-19-13

VAL-MATIC® VALVE AND MANUFACTURING CORP.

DRWG. NO. VMC-203CH

COMBINATION AIR VALVES (SINGLE BODY TYPE)

SERIES NO. 200C 4" Model 204CSS.14X

DI SUPER VALVE MATERIALS OF CONSTRUCTION

PART NO.	PART NAME	MATERIAL
1	BODY	DUCTILE IRON ASTM A536, GRADE 65-45-12
2	COVER	DUCTILE IRON ASTM A536, GRADE 65-45-12
3	BAFFLE	CAST IRON ASTM A126, CLASS B
4	SEAT	EPDM
5	FLOAT	STAINLESS STEEL T316, ASTM A240
6	GASKET	COMPRESSED NON-ASBESTOS FIBER
7	COVER BOLT	STAINLESS STEEL T316, ASTM F593
8	RETAINING SCREWS	STAINLESS STEEL T316, ASTM F593
9	GUIDE BUSHING	STAINLESS STEEL T316, ASTM A240
10	FLOAT ARM	STAINLESS STEEL T316, ASTM A240
11	ORIFICE BUTTON	STAINLESS STEEL & EPDM
12	PIVOT PIN	STAINLESS STEEL T316, ASTM A276
13	RETAINING RING	STAINLESS STEEL PH 15-7 MO
14	PIPE PLUG	STAINLESS STEEL
15	CUSHION	BUNA-N
16	PLUG	STAINLESS STEEL T316, ASTM A276
17	FLOAT RETAINER	STAINLESS STEEL T316, ASTM F880
18	LOCK NUT	STAINLESS STEEL T316, ASTM F594
29	CUSHION RETAINER	STAINLESS STEEL T316, ASTM F593
30	WASHER	STAINLESS STEEL T316, ASTM A240
34	LOCK WASHER	STAINLESS STEEL T316, ASTM A240

IDENTIFY VALVE SIZE THIS PERTAINS TO

12/28/17 - IEE
Pertains to Valve 4" Val-Matic Model 204CSS.14X

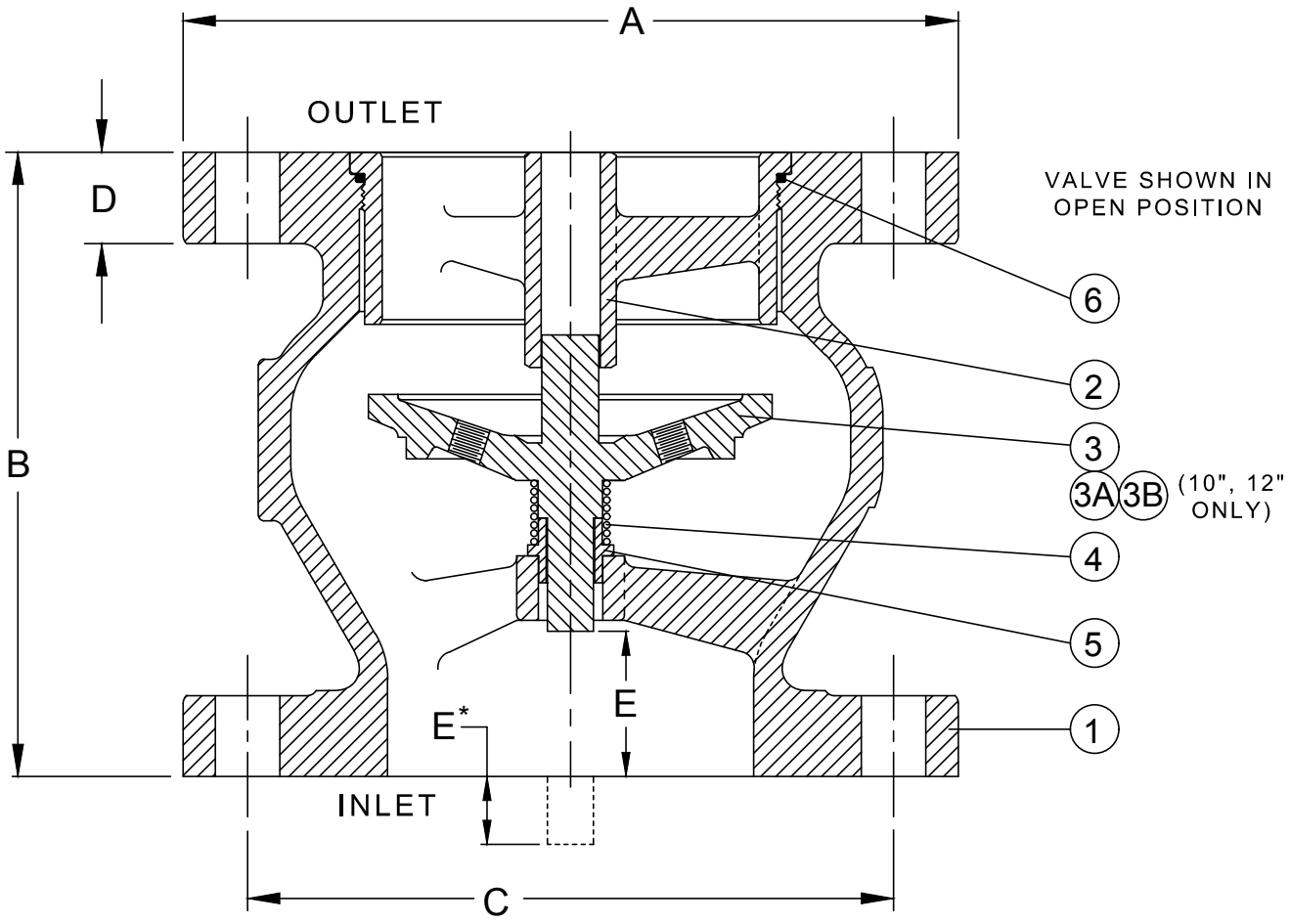
NOTE: ALL SPECIFICATIONS AS LAST REVISED.

MATERIALS OF CONSTRUCTION

DATE 8/19/14

VAL-MATIC® VALVE AND MANUFACTURING CORP.

DRWG. N0. VM-201CDISV-M



DRAWING DEPICTS 4" 125 LB. SIZE TO SCALE.
SEE DRAWING NO. VM-1200AS.1-M FOR STANDARD MATERIALS OF CONSTRUCTION.

ANSI CLASS 125									
VALVE SIZE	MODEL NO.	CWP PSI	A	B	C	D	E	BOLT SIZE	NO. OF BOLTS
3	1203AS	200	7.50	6.00	6.00	0.94	1.38	5/8	4
4	1204AS	200	9.00	7.25	7.50	0.94	1.75	5/8	8
6	1206AS	200	11.00	9.75	9.50	1.00	2.50	3/4	8
8	1208AS	200	13.50	12.50	11.75	1.13	3.25	3/4	8
10	1210AS	200	16.00	15.50	14.25	1.19	4.25	7/8	12
12	1212AS	200	19.00	14.25	17.00	1.25	0.63 *	7/8	12
ANSI CLASS 250									
VALVE SIZE	MODEL NO.	CWP PSI	A	B	C	D	E	BOLT SIZE	NO. OF BOLTS
3	1253AS	400	8.25	6.00	6.63	1.13	1.38	3/4	8
4	1254AS	400	10.00	7.25	7.88	1.25	1.75	3/4	8
6	1256AS	400	12.50	9.75	10.63	1.44	2.50	3/4	12
8	1258AS	400	15.00	12.50	13.00	1.63	3.25	7/8	12
10	1260AS	400	17.50	15.50	15.25	1.88	4.25	1	16
12	1262AS	400	20.50	14.25	17.75	2.00	0.63 *	1 1/8	16

* SHAFT EXTENDS PAST FLANGE FACE.

12/28/17 - IEE Surge component of 4" Model 204CCS.14X

IDENTIFY VALVE SIZE AND MODEL NO.

ANSI CLASS 125 & 250 LB. REGULATED EXHAUST DEVICE

DATE 1-14-17

VAL-MATIC® VALVE AND MANUFACTURING CORP.

DRWG. NO. VMC-1200AS

REGULATED EXHAUST DEVICE

2 1/2" - 12" 1200AS.1 SERIES (LEAD FREE)

STANDARD MATERIALS OF CONSTRUCTION

PART NO.	PART NAME	MATERIAL
	BODY	CAST IRON ASTM A126, CLASS B
	BODY*	DUCTILE IRON ASTM A536, GRADE 65-45-12
2	SEAT	SILICON BRONZE ASTM B584, C87600
3	DISC	SILICON BRONZE ASTM B584, C87600
3A**	DISC	SILICON BRONZE ASTM B584, C87600
3B**	DISC SHAFT	SILICON BRONZE ASTM B584, C87600
5	BUSHING	ALUMINUM BRONZE ASTM B505, ALLOY C95400
6	O-RING	EPDM (NSF61 AND WRAS APPROVED)
7	RETAINING NUT	ALUMINUM BRONZE, ASTM B505, ALLOY C95400

*12", CLASS 250 ONLY
**10", 12" ONLY

NOTE: ALL SPECIFICATIONS AS LAST REVISED.

Revised 3-29-17

MATERIALS OF CONSTRUCTION	DATE 9/9/09
VAL MATIC® VALVE AND MANUFACTURING CORP.	DRWG. NO. VM-1200AS.1-M

FUSION BONDED EPOXY (FBE) COATING

General Description:

Fusion Bonded Epoxy is a one-part, heat cured, thermosetting epoxy coating that is applied as a dry powder to the sandblasted surface of a pre-heated valve and then fused and cured in a high-temperature oven. The result is a durable coating with exceptional abrasion and chemical resistance ideally suited for valves in water and wastewater applications.

Advantages of FBE:

1. The coating is applied in accordance with AWWA Standard C550 “Protective Epoxy Coatings for Valves and Hydrants” and certified by to the requirements of ANSI/ NSF Standard 61 - “Drinking Water System Components - Health Effects” for coating valves and fittings.
2. FBE coatings are applied in an automated one-part process so that the mixing, surface preparation, and multiple-coat problems associated with liquid paints are eliminated.
3. The electrostatic application process for FBE provides a smooth, even coating thickness with no runs, sags, or thin spots common with applying liquid paints.
4. FBE coatings are durable and provide twice the impact strength of liquid epoxies. The surface provides high abrasion resistance and has become a standard seating material for resilient gate and check valves.
5. FBE has a long-term performance history in water and sewage environments including salt water, slurries, methane and hydrogen sulfide exposure.

Application Process:

1. FBE is applied in an automated manufacturing process in accordance with the coating manufacturers’ procedures and industry standards to assure consistency and high quality.
2. The valve is cleaned, sandblasted, and preheated in an oven.
3. An electrical charge is applied to the body and the powder is deposited over the surfaces of the valve to the specified thickness.
4. The epoxy is post cured in an oven to cure specifications and allowed to air cool to room temperature.
5. The final surface is visually and electrically (when specified) tested to verify thickness and that it is holiday free.

Typical Performance Characteristics:

1.	Color:	Blue	
2.	Thickness	12-20 mils	1 Coat
3.	Gloss at 60 deg:	60-80 units	Din 67 530
4.	Impact Resistance	>5 Joule (44 in-lb)	Din 30 677-2
5.	Elongation:	>5%	Din 30 671
6.	Hardness:	>100	Din 53 153
7.	Water Immersion:	No visible change	90C, 672 Hours
8.	Salt Spray Test:	>3000 hours	Din 53167
9.	Adhesion:	16 Mpa (2320 psi)	7 days, 90C EN 24 624

Revised 2-15-17

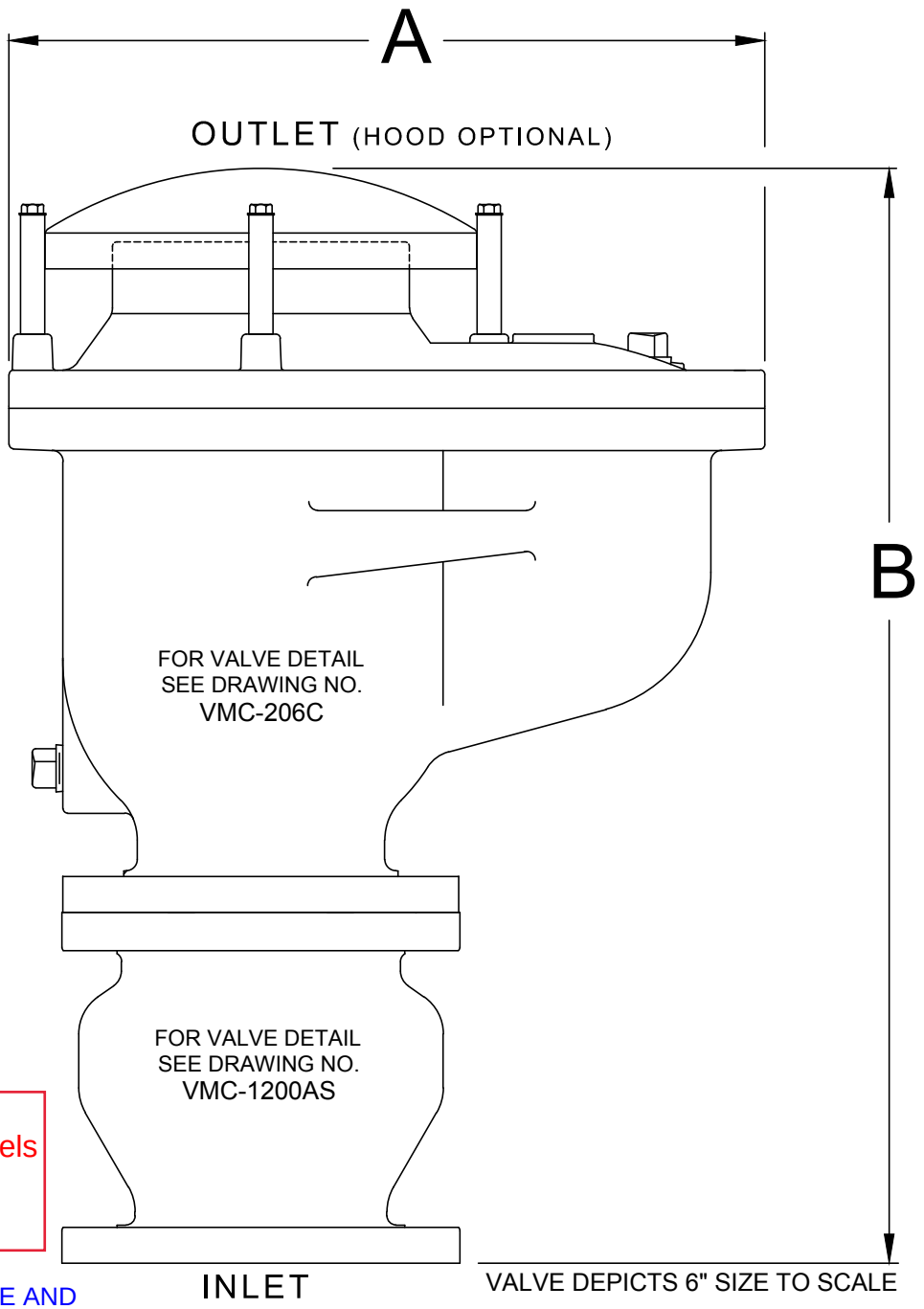
FUSION BONDED EPOXY (FBE) COATING	DATE 7-17-02
VAL-MATIC® VALVE AND MANUFACTURING CORP.	DRWG. NO. SS-1847

Cheney Transmission Main
Val-Matic Air Valves
Wichita, KS
SUBMITTALS:

Section 32 12 16 2.04 Combination Air/Vacuum Valves

Item 3
Quantity: 1
Size: 6”
Description: Val-Matic Air Combination Valve Model 206CSS.14X, Flanged Inlet and Threaded Outlet, Single Body, Ductile Iron Body, Stainless Steel Internals, Stainless Steel External Bolts, and Fusion Bonded Epoxy Interior and Exterior. Includes Surge Suppression Check Valve on Inlet and Hood on Outlet SPK-206CH.

Item 4
Quantity: 5
Size: 8”
Description: Val-Matic Air Combination Valve Model 208CSS.14X, Flanged Inlet and Threaded Outlet, Single Body, Ductile Iron Body, Stainless Steel Internals, Stainless Steel External Bolts, and Fusion Bonded Epoxy Interior and Exterior. Includes Surge Suppression Check Valve on Inlet and Hood on Outlet SPK-208CH.



12/28/17 - IEE
6" and 8" Size Models
206CSS.14X and
208CSS.14X

IDENTIFY VALVE SIZE AND MODEL NO.

VALVE SIZE	125 LB. MODEL NO.	250 LB. MODEL NO.	A	B	INLET SIZE	OUTLET SIZE	ORIFICE SIZE	
							150 PSI	300 PSI
6"	206CSS.14X	~~256CSSA~~	21.00	30.00	6" FLG.	6"	3/8	7/32
8"	208CSS.14X	~~258CSSA~~	25.00	36.00	8" FLG.	8"	3/8	7/32

6" & 8" SURGE SUPPRESSION AIR VALVE

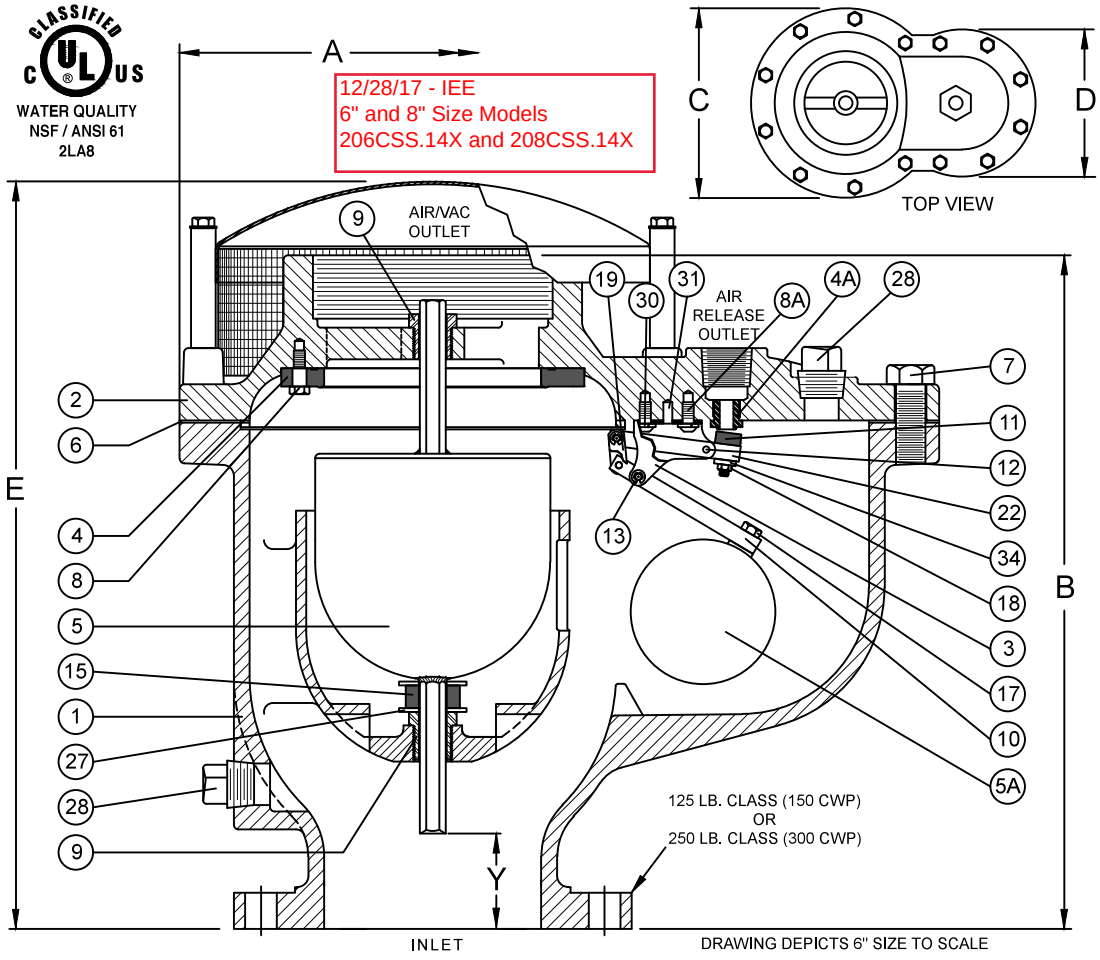
DATE 6-30-10

VAL-MATIC® VALVE AND MANUFACTURING CORP.

DRWG. NO. VMC-206CSSA

WATER QUALITY
NSF / ANSI 61
2LA8

12/28/17 - IEE
6" and 8" Size Models
206CSS.14X and 208CSS.14X



SEE DRAWING NUMBER VM-206C-M FOR STANDARD MATERIALS OF CONSTRUCTION.
SEE DRAWING NUMBER VM-206CSV-M FOR SUPER VALVE MATERIALS OF CONSTRUCTION.

VALVE SIZE	125 LB. MODEL NO.	250 LB. MODEL NO.	A	B	C	D	E	Y	INLET SIZE	AIR/VAC OUTLET	AIR RELEASE OUTLET	ORIFICE SIZE 150 PSI	ORIFICE SIZE 300 PSI	HOOD KIT NO.
6	206CH	256CH	21.00	18.63	14.00	10.88	20.69	2.38	6" FLG.	6" NPT	1" NPT	3/8	7/32	SPK-206CH
8	208CH	258CH	25.00	21.75	17.00	11.00	26.63	0.88	8" FLG.	8" NPT	1" NPT	3/8	7/32	SPK-208CH

IDENTIFY VALVE SIZE THIS PERTAINS TO

OLT
IG SCREW
IG SCREW

4A	SEAT	9	GUIDE BUSHING	12	PIVOT PIN	22	ORIFICE BUTTON ARM
5	FLOAT	10	FLOAT ARM	13	RETAINING RING	27	WASHER (8" ONLY)
5A	FLOAT	11	ORIFICE BUTTON	15	CUSHION	28	PIPE PLUG
				17	FLOAT RETAINER	30	WASHER
				18	LOCK NUT	18	LOCK NUT
				19	LINK	34	LOCK WASHER
				21	LOCATING PIN		

COMBINATION AIR VALVE WITH HOOD (SINGLE BODY TYPE)

DATE 6-19-13

VAL-MATIC VALVE AND MANUFACTURING CORP.

DRWG. NO. VMC-206CH

COMBINATION AIR VALVE (SINGLE BODY TYPE)

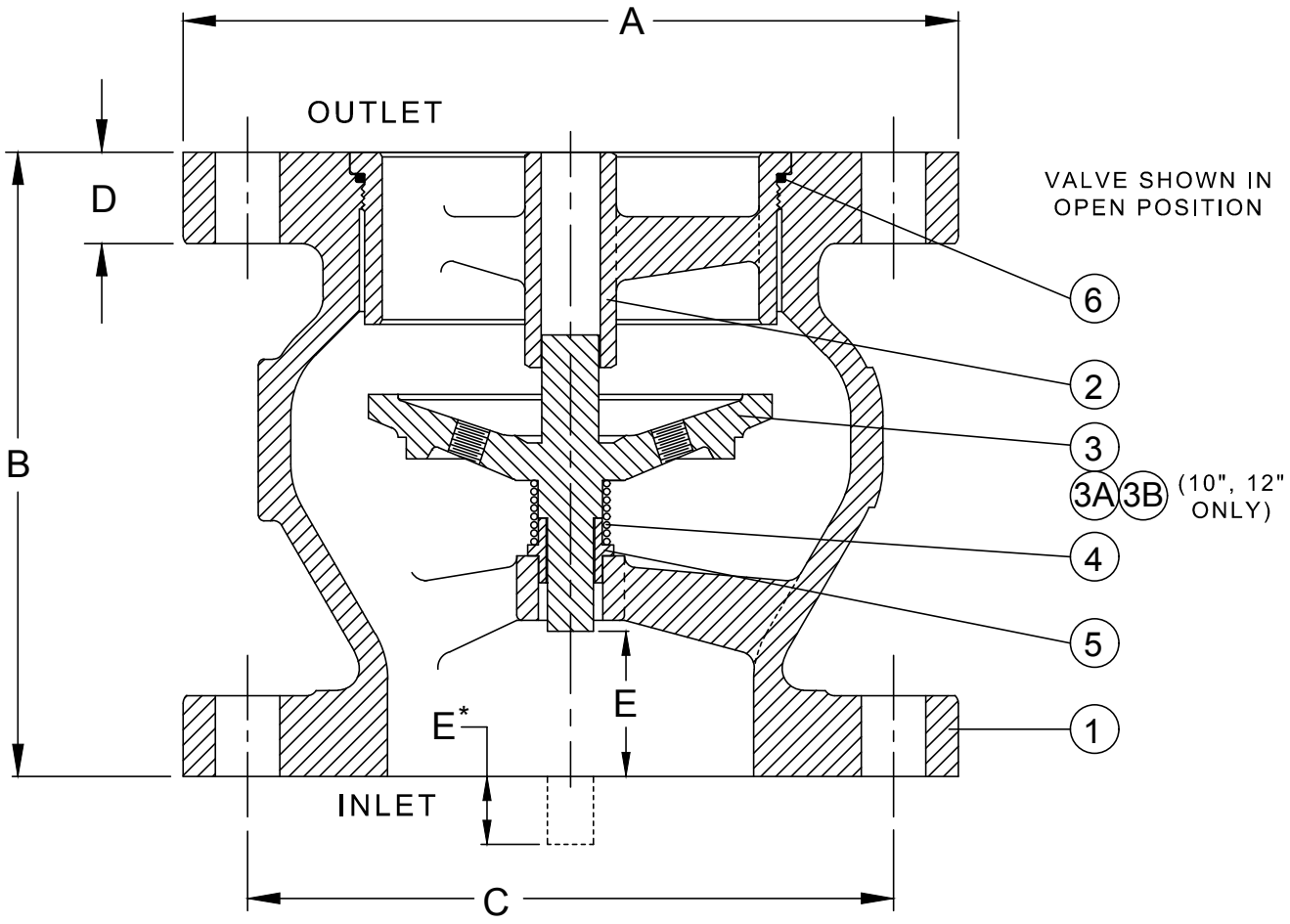
6” & 8” SERIES NO. 200C

12/28/17 - IEE
6" and 8" Size Models
206CSS.14X and 208CSS.14X

DI SUPER VALVE MATERIALS OF CONSTRUCTION

PART NO.	PART NAME	MATERIAL
1	BODY	DUCTILE IRON ASTM A536, GRADE 65-45-12
2	COVER	DUCTILE IRON ASTM A536, GRADE 65-45-12
3	LEVERAGE FRAME	STAINLESS STEEL T316, ASTM A240
4	SEAT	EPDM
4A	SEAT	STAINLESS STEEL T316, ASTM A582
5	FLOAT	STAINLESS STEEL T316, ASTM A240
5A	FLOAT	STAINLESS STEEL T316, ASTM A240
6	GASKET	COMPRESSED NON-ASBESTOS FIBER
7	COVER BOLT	STAINLESS STEEL T316, ASTM F593
8	RETAINING SCREW	STAINLESS STEEL T316, ASTM F593
8A	RETAINING SCREW	STAINLESS STEEL T316, ASTM F879
9	GUIDE BUSHING	STAINLESS STEEL T316, ASTM A582
10	FLOAT ARM	STAINLESS STEEL T316, ASTM A582
11	ORIFICE BUTTON	STAINLESS STEEL & EPDM
12	PIVOT PIN	STAINLESS STEEL T316, ASTM A276
13	RETAINING RING	STAINLESS STEEL PH 15-7 MO
15	CUSHION	BUNA-N
17	FLOAT RETAINER	STAINLESS STEEL T316, ASTM F593
18	LOCK NUT	STAINLESS STEEL T316, ASTM F594
19	LINK	STAINLESS STEEL T316, ASTM A240
21	LOCATING PIN	STAINLESS STEEL T420
22	ORIFICE BUTTON ARM	STAINLESS STEEL T316, ASTM A582
27	WASHER (8" ONLY)	STAINLESS STEEL T316, ASTM A240
28	PIPE PLUG	STAINLESS STEEL
30	WASHER	STAINLESS STEEL T316, ASTM A240
34	LOCK WASHER	STAINLESS STEEL T316, ASTM A240

NOTE: ALL SPECIFICATIONS AS LAST REVISED.



DRAWING DEPICTS 4" 125 LB. SIZE TO SCALE.
SEE DRAWING NO. VM-1200AS.1-M FOR STANDARD MATERIALS OF CONSTRUCTION.

ANSI CLASS 125									
VALVE SIZE	MODEL NO.	CWP PSI	A	B	C	D	E	BOLT SIZE	NO. OF BOLTS
3	1203AS	200	7.50	6.00	6.00	0.94	1.38	5/8	4
4	1204AS	200	9.00	7.25	7.50	0.94	1.75	5/8	8
6	1206AS	200	11.00	9.75	9.50	1.00	2.50	3/4	8
8	1208AS	200	13.50	12.50	11.75	1.13	3.25	3/4	8
10	1210AS	200	16.00	15.50	14.25	1.19	4.25	7/8	12
12	1212AS	200	19.00	14.25	17.00	1.25	0.63 *	7/8	12
ANSI CLASS 250									
VALVE SIZE	MODEL NO.	CWP PSI	A	B	C	D	E	BOLT SIZE	NO. OF BOLTS
3	1253AS	400	8.25	6.00	6.63	1.13	1.38	3/4	8
4	1254AS	400	10.00	7.25	7.88	1.25	1.75	3/4	8
6	1256AS	400	12.50	9.75	10.63	1.44	2.50	3/4	12
8	1258AS	400	15.00	12.50	13.00	1.63	3.25	7/8	12
10	1260AS	400	17.50	15.50	15.25	1.88	4.25	1	16
12	1262AS	400	20.50	14.25	17.75	2.00	0.63 *	1 1/8	16

* SHAFT EXTENDS PAST FLANGE FACE.

IDENTIFY VALVE SIZE AND MODEL NO.

12/28/17 - IEE
6" and 8" Size Models 206CSS.14X and 208CSS.14X. This is Surge Component on Bottom of Valve Inlet.

ANSI CLASS 125 & 250 LB. REGULATED EXHAUST DEVICE

DATE 1-14-17

VAL-MATIC® VALVE AND MANUFACTURING CORP.

DRWG. NO. VMC-1200AS

REGULATED EXHAUST DEVICE

2 1/2" - 12" 1200AS.1 SERIES (LEAD FREE)

STANDARD MATERIALS OF CONSTRUCTION

PART NO.	PART NAME	MATERIAL
	BODY	CAST IRON ASTM A126, CLASS B
	BODY*	DUCTILE IRON ASTM A536, GRADE 65-45-12
2	SEAT	SILICON BRONZE ASTM B584, C87600
3	DISC	SILICON BRONZE ASTM B584, C87600
3A**	DISC	SILICON BRONZE ASTM B584, C87600
3B**	DISC SHAFT	SILICON BRONZE ASTM B584, C87600
5	BUSHING	ALUMINUM BRONZE ASTM B505, ALLOY C95400
6	O-RING	EPDM (NSF61 AND WRAS APPROVED)
7	RETAINING NUT	ALUMINUM BRONZE, ASTM B505, ALLOY C95400

*12", CLASS 250 ONLY
**10", 12" ONLY

NOTE: ALL SPECIFICATIONS AS LAST REVISED.

Revised 3-29-17

MATERIALS OF CONSTRUCTION	DATE 9/9/09
VAL MATIC® VALVE AND MANUFACTURING CORP.	DRWG. NO. VM-1200AS.1-M

FUSION BONDED EPOXY (FBE) COATING

General Description:

Fusion Bonded Epoxy is a one-part, heat cured, thermosetting epoxy coating that is applied as a dry powder to the sandblasted surface of a pre-heated valve and then fused and cured in a high-temperature oven. The result is a durable coating with exceptional abrasion and chemical resistance ideally suited for valves in water and wastewater applications.

Advantages of FBE:

1. The coating is applied in accordance with AWWA Standard C550 “Protective Epoxy Coatings for Valves and Hydrants” and certified by to the requirements of ANSI/ NSF Standard 61 - “Drinking Water System Components - Health Effects” for coating valves and fittings.
2. FBE coatings are applied in an automated one-part process so that the mixing, surface preparation, and multiple-coat problems associated with liquid paints are eliminated.
3. The electrostatic application process for FBE provides a smooth, even coating thickness with no runs, sags, or thin spots common with applying liquid paints.
4. FBE coatings are durable and provide twice the impact strength of liquid epoxies. The surface provides high abrasion resistance and has become a standard seating material for resilient gate and check valves.
5. FBE has a long-term performance history in water and sewage environments including salt water, slurries, methane and hydrogen sulfide exposure.

Application Process:

1. FBE is applied in an automated manufacturing process in accordance with the coating manufacturers’ procedures and industry standards to assure consistency and high quality.
2. The valve is cleaned, sandblasted, and preheated in an oven.
3. An electrical charge is applied to the body and the powder is deposited over the surfaces of the valve to the specified thickness.
4. The epoxy is post cured in an oven to cure specifications and allowed to air cool to room temperature.
5. The final surface is visually and electrically (when specified) tested to verify thickness and that it is holiday free.

Typical Performance Characteristics:

1.	Color:	Blue	
2.	Thickness	12-20 mils	1 Coat
3.	Gloss at 60 deg:	60-80 units	Din 67 530
4.	Impact Resistance	>5 Joule (44 in-lb)	Din 30 677-2
5.	Elongation:	>5%	Din 30 671
6.	Hardness:	>100	Din 53 153
7.	Water Immersion:	No visible change	90C, 672 Hours
8.	Salt Spray Test:	>3000 hours	Din 53167
9.	Adhesion:	16 Mpa (2320 psi)	7 days, 90C EN 24 624

Revised 2-15-17

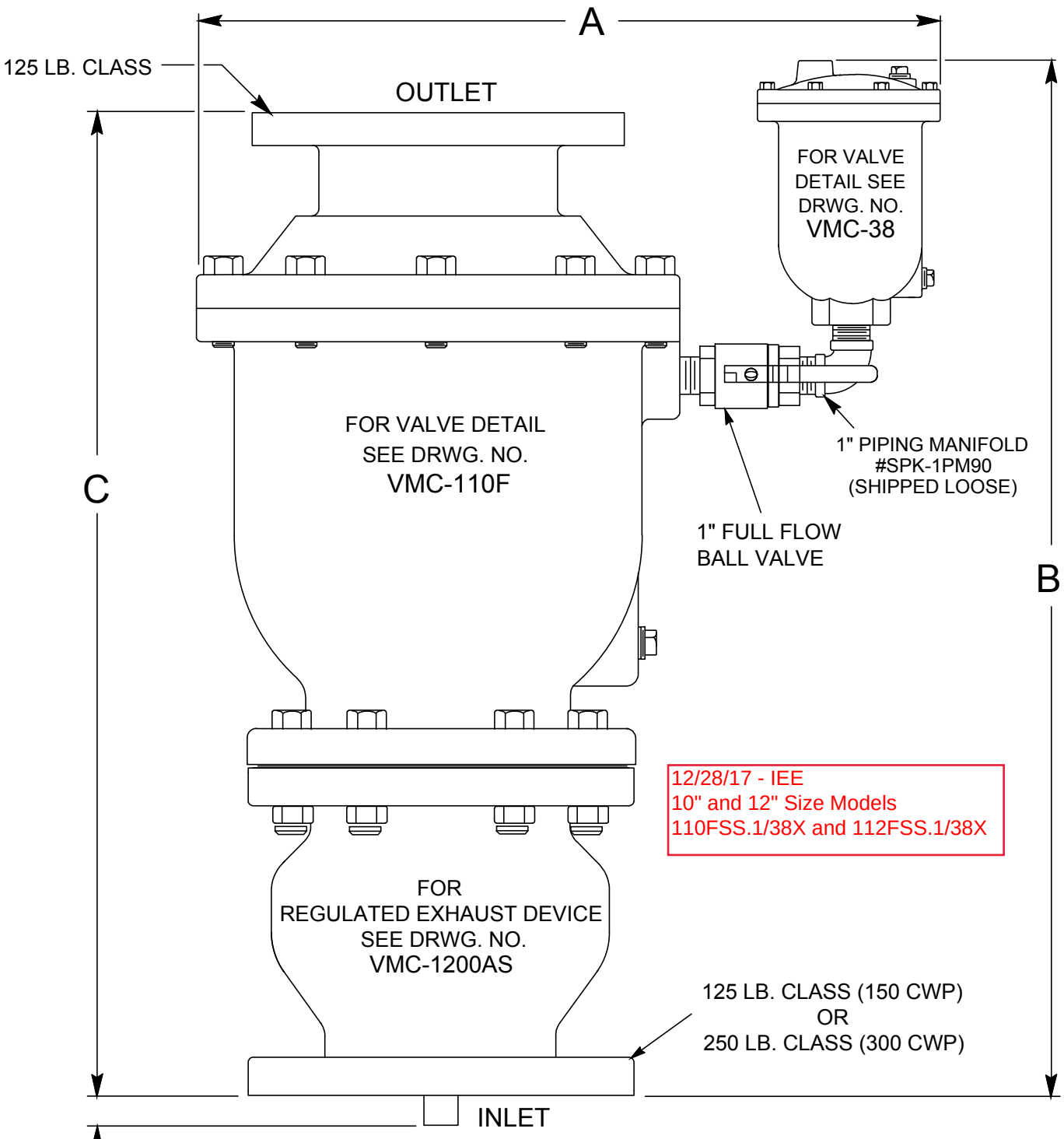
FUSION BONDED EPOXY (FBE) COATING	DATE 7-17-02
VAL-MATIC® VALVE AND MANUFACTURING CORP.	DRWG. NO. SS-1847

Cheney Transmission Main
Val-Matic Air Valves
Wichita, KS
SUBMITTALS:

Section 32 12 16 2.04 Combination Air/Vacuum Valves

Item 5
Quantity: 6
Size: 10”
Description: Val-Matic Air Combination Valve Model 110FSS.1/38X Flanged Inlet and Threaded Outlet, Single Body, Ductile Iron Body, Stainless Steel Internals, Stainless Steel External Bolts, and Fusion Bonded Epoxy Interior and Exterior. Includes Surge Suppression Check Valve on Inlet and Hood on Outlet SPK-110H.

Item 6
Quantity: 3
Size: 12”
Description: Val-Matic Air Combination Valve Model 112FSS.1/38X, Flanged Inlet and Threaded Outlet, Single Body, Ductile Iron Body, Stainless Steel Internals, Stainless Steel External Bolts, and Fusion Bonded Epoxy Interior and Exterior. Includes Surge Suppression Check Valve on Inlet and Hood on Outlet SPK-112H.



VALVE SIZE	MODEL NO.		DIMENSIONS			
	125 LB. CLASS	250 LB. CLASS	A	B	C	E *
10	110FSSA/38	160FSSA/38.5	29.00	43.00	40.06	———
12	112FSSA/38	162FSSA/38.5	33.00	45.00	44.31	1.13
14	114FSSA/38	164FSSA/38.5	35.50	46.00	47.25	1.13
16	116FSSA/38	166FSSA/38.5	39.50	51.00	52.75	1.25
20	120FSSA/38	170FSSA/38.5	43.50	59.13	56.88	2.94

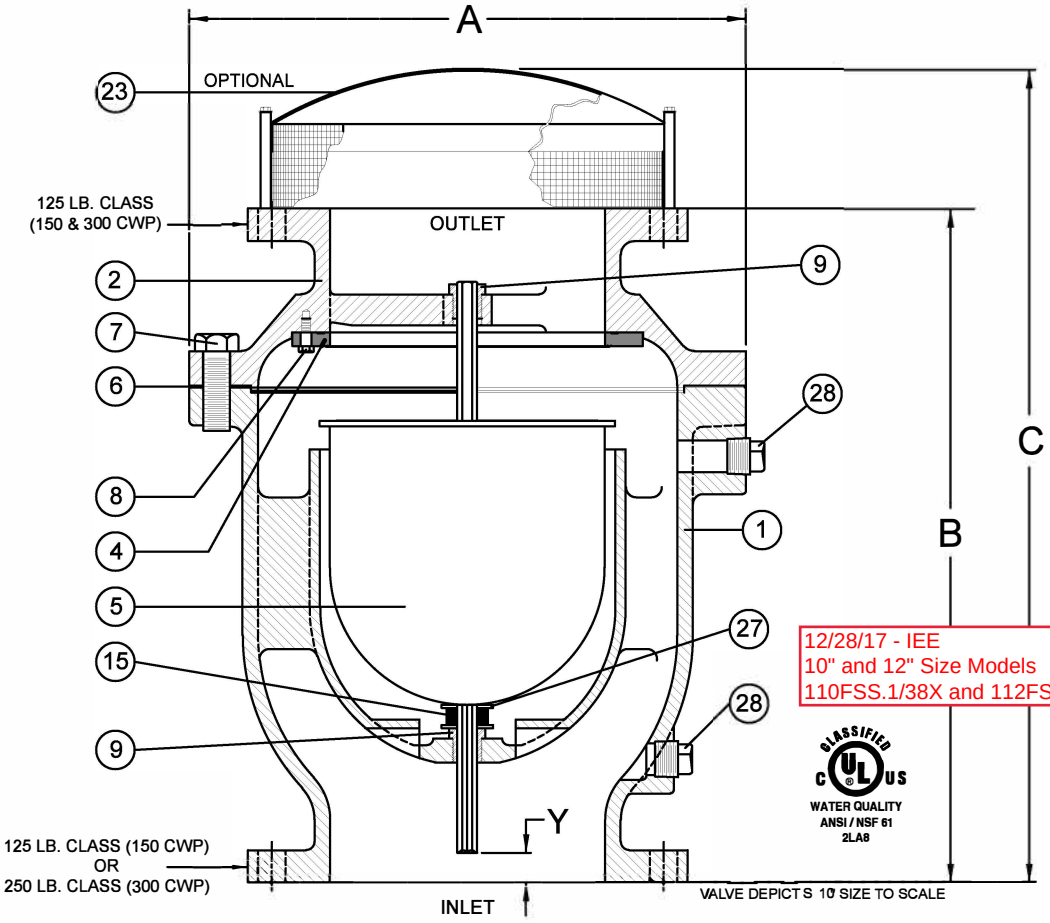
* SHAFT EXTENDS PAST FLANGE FACE

SURGE SUPRESSION AIR VALVE

DATE 1-11-17

VAL-MATIC® VALVE AND MANUFACTURING CORP.

DRWG. NO. VM-110FSSA/38



12/28/17 - IEE
10" and 12" Size Models
110FSS.1/38X and 112FSS.1/38X

CLASSIFIED C UL US
WATER QUALITY
ANSI / NSF 61
2LA8

SEE DRAWING NUMBER VM-106S-M FOR STANDARD MATERIALS OF CONSTRUCTION.

VALVE SIZE	125 LB. MODEL NO.	250 LB. MODEL NO.	A	B	C	Y*	INLET SIZE	OUTLET SIZE	HOOD KIT NO.
10	110F	160F	20.25	24.50	29.63	1.00	10" FLG.	10"	SPK-110H
12	112F	162F	24.00	30.00	36,13	2.75	12" FLG.	12"	SPK-112H
			27.00	29.50	36.25	1.50	14" FLG.		
			30.50	35.19	42.63	1.63	16" FLG.		
			34.00	36.44	44.50	1.75	18" FLG.		
			38.25	42.06	52.00	1.88	20" FLG.		

IDENTIFY VALVE SIZE AND MODEL NO.

A WAFER OR LUG STYLE BUTTERFLY VALVE.
EENED HOOD.
. PIECE DETAIL.

:T

2	COVER	7	COVER BOLT	15	CUSHION
4	SEAT	8	RETAINING SCREW	23	SCREENED HOOD (OPTIONAL)
5	FLOAT	9	GUIDE BUSHING	27	WASHER
				28	PIPE PLUG

Revised 4-17-15 (Rev 2)

AIR/VACUUM VALVE

DATE 3-2-12

VAL-MATIC VALVE AND MANUFACTURING CORP.

DRWG. NO. VMC-110F

AIR/VACUUM VALVE

6" - 20" SERIES NO. 100

12/28/17 - IEE
10" and 12" Size Models
110FSS.1/38X and 112FSS.1/38X

STANDARD MATERIALS OF CONSTRUCTION

HIGHLIGHT WHICH MATERIAL WILL BE USED

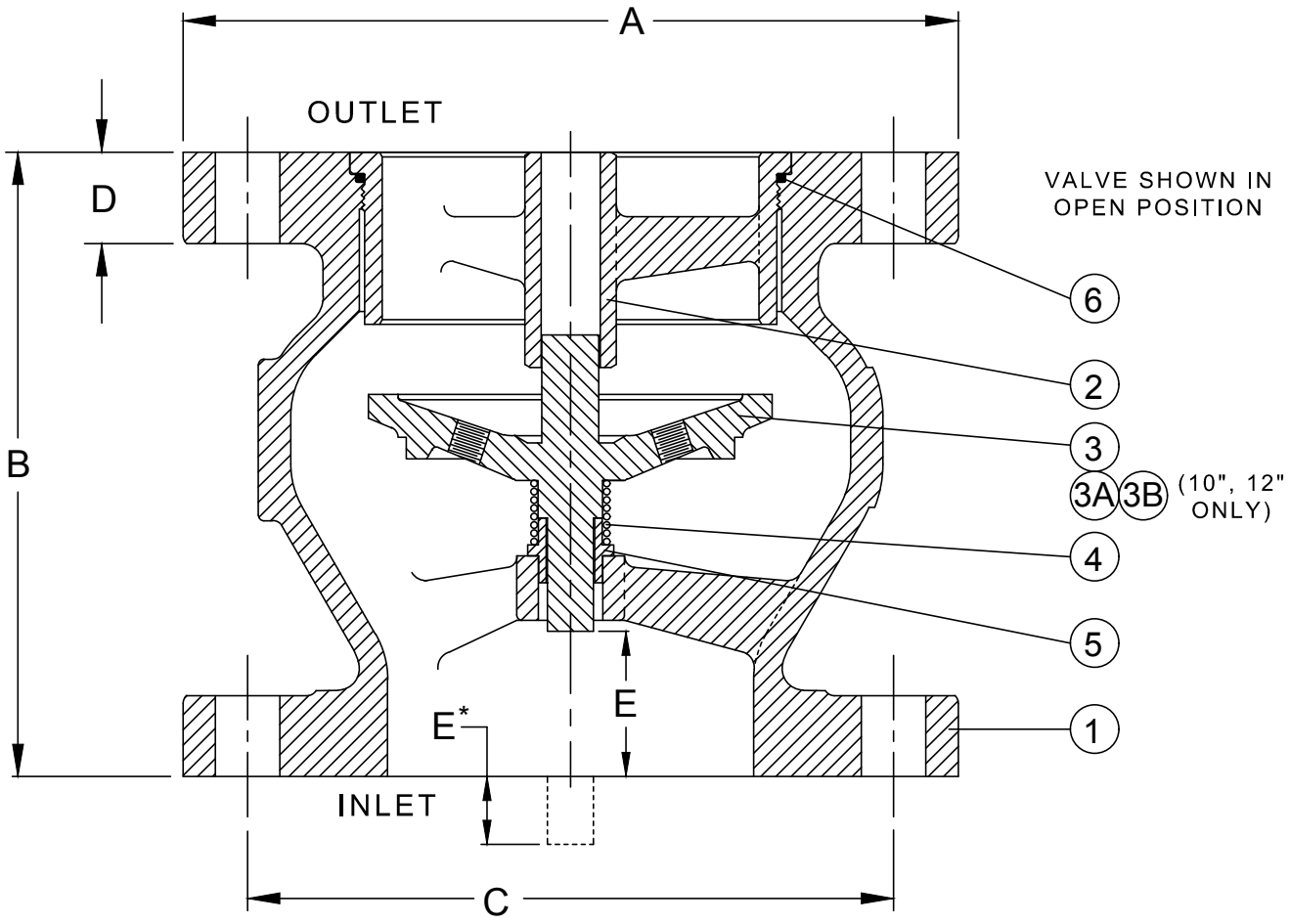
PART NO.	PART NAME	MATERIAL
1	BODY	~~CAST IRON ASTM A126, CLASS B~~
	BODY (SERIES 164-170)	DUCTILE IRON ASTM A536, GRADE 65-45-12
2	COVER	~~CAST IRON ASTM A126, CLASS B~~
	COVER (SERIES 164-170)	DUCTILE IRON ASTM A536, GRADE 65-45-12
4	SEAT	BUNA-N
5	FLOAT	STAINLESS STEEL T316, ASTM A240
6	GASKET	COMPRESSED NON-ASBESTOS FIBER
7	COVER BOLT	~~ALLOY STEEL SAE, GRADE 5~~ SS T316 External Bolts
8	RETAINING SCREW	STAINLESS STEEL T316, ASTM F593
	SHING	STAINLESS STEEL T316, ASTM A582
15	CUSHION	BUNA-N
23	HOOD ASSEMBLY (OPTIONAL)	STEEL - #1020
27 *	WASHER-INTERNAL	STAINLESS STEEL T316, ASTM A240
28	PIPE PLUG	STEEL

EXTERNAL NUTS AND BOLTS TO BE STAINLESS STEEL

* NOT FURNISHED ON 6" VALVE

NOTE: ALL SPECIFICATIONS AS LAST REVISED.

MATERIALS OF CONSTRUCTION	DATE 5/30/07
VAL-MATIC® VALVE AND MANUFACTURING CORP.	DRWG. NO. VM-106S-M



DRAWING DEPICTS 4" 125 LB. SIZE TO SCALE.
SEE DRAWING NO. VM-1200AS.1-M FOR STANDARD MATERIALS OF CONSTRUCTION.

ANSI CLASS 125									
VALVE SIZE	MODEL NO.	CWP PSI	A	B	C	D	E	BOLT SIZE	NO. OF BOLTS
3	1203AS	200	7.50	6.00	6.00	0.94	1.38	5/8	4
4	1204AS	200	9.00	7.25	7.50	0.94	1.75	5/8	8
6	1206AS	200	11.00	9.75	9.50	1.00	2.50	3/4	8
8	1208AS	200	13.50	12.50	11.75	1.13	3.25	3/4	8
10	1210AS	200	16.00	15.50	14.25	1.19	4.25	7/8	12
12	1212AS	200	19.00	14.25	17.00	1.25	0.63 *	7/8	12

ANSI CLASS 250									
VALVE SIZE	MODEL NO.	CWP PSI	A	B	C	D	E	BOLT SIZE	NO. OF BOLTS
3	1253AS	400	8.25	6.00	6.63	1.13	1.38	3/4	8
4	1254AS	400	10.00	7.25	7.88	1.25	1.75	3/4	8
6	1256AS	400	12.50	9.75	10.63	1.44	2.50	3/4	12
8	1258AS	400	15.00	12.50	13.00	1.63	3.25	7/8	12
10	1260AS	400	17.50	15.50	15.25	1.88	4.25	1	16
12	1262AS	400	20.50	14.25	17.75	2.00	0.63 *	1 1/8	16

* SHAFT EXTENDS PAST FLANGE FACE.

IDENTIFY VALVE SIZE AND MODEL NO.

12/28/17 - IEE
10" and 12" Size Models 110FSS.1/38X and 112FSS.1/38X
This is Surge Component on Bottom of Valve.

ANSI CLASS 125 & 250 LB. REGULATED EXHAUST DEVICE

DATE 1-14-17

VAL-MATIC® VALVE AND MANUFACTURING CORP.

DRWG. NO. VMC-1200AS

REGULATED EXHAUST DEVICE

2 1/2" - 12" 1200AS.1 SERIES (LEAD FREE)

12/28/17 - IEE
10" and 12" Size Models
110FSS.1/38X and 112FSS.1/38X

STANDARD MATERIALS OF CONSTRUCTION

PART NO.	PART NAME	MATERIAL
	BODY	CAST IRON ASTM A126, CLASS B
	BODY*	DUCTILE IRON ASTM A536, GRADE 65-45-12
2	SEAT	SILICON BRONZE ASTM B584, C87600
3	DISC	SILICON BRONZE ASTM B584, C87600
3A**	DISC	SILICON BRONZE ASTM B584, C87600
3B**	DISC SHAFT	SILICON BRONZE ASTM B584, C87600
5	BUSHING	ALUMINUM BRONZE ASTM B505, ALLOY C95400
6	O-RING	EPDM (NSF61 AND WRAS APPROVED)
7	RETAINING NUT	ALUMINUM BRONZE, ASTM B505, ALLOY C95400

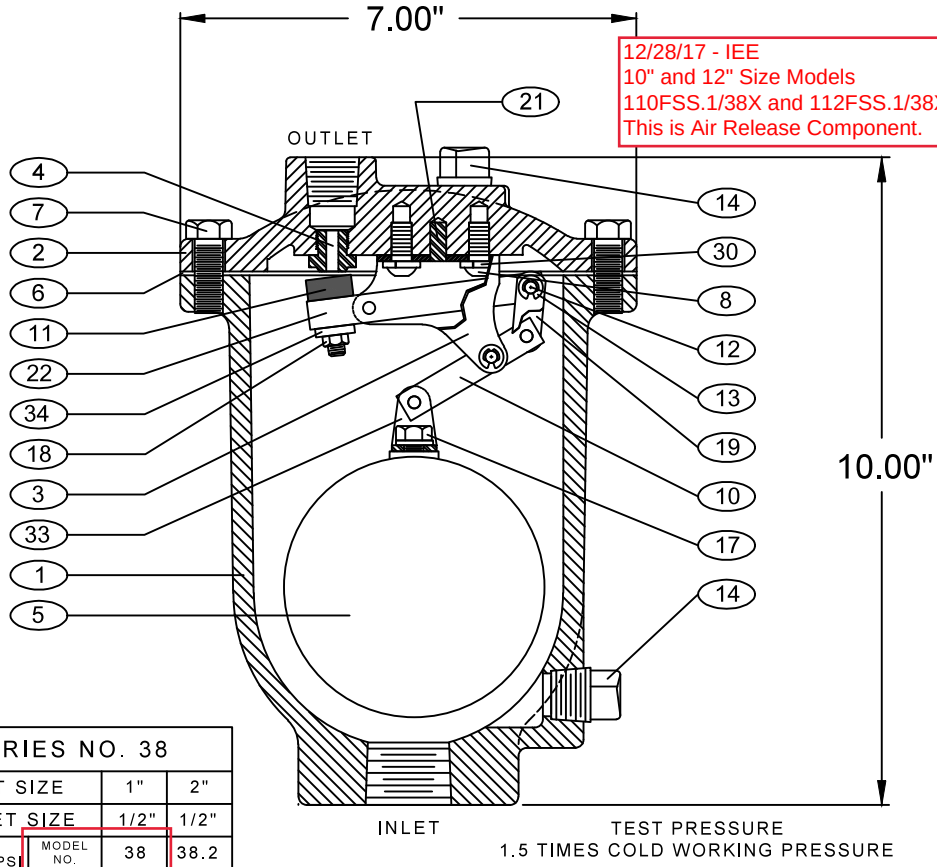
*12", CLASS 250 ONLY
**10", 12" ONLY

NOTE: ALL SPECIFICATIONS AS LAST REVISED.

Revised 3-29-17

MATERIALS OF CONSTRUCTION	DATE 9/9/09
VALMATIC® VALVE AND MANUFACTURING CORP.	DRWG. NO. VM-1200AS.1-M

12/28/17 - IEE
10" and 12" Size Models
110FSS.1/38X and 112FSS.1/38X
This is Air Release Component.



SERIES NO. 38				
INLET SIZE			1"	2"
OUTLET SIZE			1/2"	1/2"
WORKING PRESSURE	150 PSI CWP	MODEL NO.	38	38.2
		ORIFICE SIZE	3/16"	3/16"
	300 PSI CWP	MODEL NO.	38.5	38.6
		ORIFICE SIZE	5/32"	5/32"
	500 PSI CWP	MODEL NO.	38HP	38HP.2
		ORIFICE SIZE	1/8"	1/8"

IDENTIFY VALVE SIZE AND MODEL NO.

CLASSIFIED C UL US
WATER QUALITY
NSF / ANSI 61
2LA8

SEE DRAWING NO. VM-38-M FOR STANDARD MATERIALS OF CONSTRUCTION
SEE DRAWING NO. VM-38DISV-M FOR SUPER VALVE MATERIALS OF CONSTRUCTION

1. BODY
2. COVER
3. LEVER FRAME
4. SEAT
5. FLOAT
6. GASKET
7. COVER BOLT
8. RETAINING SCREW
10. FLOAT ARM
11. ORIFICE BUTTON
12. PIVOT PIN
13. RETAINING RING
14. PIPE PLUG
17. FLOAT RETAINER
18. LOCK NUT
19. LINK
21. LOCATING PIN
22. ORIFICE BUTTON ARM
30. WASHER
33. CLEVIS
34. LOCK WASHER

Revised 8-19-14 (Rev 1)

AIR RELEASE VALVE

DATE 6-16-10

VAL-MATIC VALVE AND MANUFACTURING CORP.

DRWG. NO. VMC-38

AIR RELEASE VALVE

SERIES NO. 38

12/28/17 - IEE
10" and 12" Size Models
110FSS.1/38X and 112FSS.1/38X
This is Air Release Component.

DI SUPER VALVE MATERIALS OF CONSTRUCTION

PART NO.	PART NAME	MATERIAL
1	BODY	DUCTILE IRON ASTM A536, GRADE 65-45-12
2	COVER	DUCTILE IRON ASTM A536, GRADE 65-45-12
3	LEVERAGE FRAME	STAINLESS STEEL T316, ASTM A240
4	SEAT	STAINLESS STEEL T316, ASTM A582
5	FLOAT	STAINLESS STEEL T316, ASTM A240
6	GASKET	COMPRESSED NON-ASBESTOS FIBER
7	COVER BOLT	STAINLESS STEEL T316, ASTM F593
8	RETAINING SCREW	STAINLESS STEEL T316, ASTM F879
10	FLOAT ARM	STAINLESS STEEL T316, ASTM A582
11	ORIFICE BUTTON	STAINLESS STEEL & EPDM
12	PIVOT PIN	STAINLESS STEEL T316, ASTM A276
13	RETAINING RING	STAINLESS STEEL PH 15-7 MO
14	PIPE PLUG	STAINLESS STEEL
17	FLOAT RETAINER	STAINLESS STEEL T316, ASTM F593
18	LOCK NUT	STAINLESS STEEL T316, ASTM F594
19	LINK	STAINLESS STEEL T316, ASTM A240
21	LOCATING PIN	STAINLESS STEEL T420
22	ORIFICE BUTTON ARM	STAINLESS STEEL T316, ASTM A582
30	WASHER	STAINLESS STEEL T316, ASTM A240
33	CLEVIS	STAINLESS STEEL T316, ASTM A240
34	LOCK WASHER	STAINLESS STEEL T316, ASTM A240

NOTE: ALL SPECIFICATIONS AS LAST REVISED.

FUSION BONDED EPOXY (FBE) COATING

General Description:

Fusion Bonded Epoxy is a one-part, heat cured, thermosetting epoxy coating that is applied as a dry powder to the sandblasted surface of a pre-heated valve and then fused and cured in a high-temperature oven. The result is a durable coating with exceptional abrasion and chemical resistance ideally suited for valves in water and wastewater applications.

Advantages of FBE:

1. The coating is applied in accordance with AWWA Standard C550 “Protective Epoxy Coatings for Valves and Hydrants” and certified by to the requirements of ANSI/ NSF Standard 61 - “Drinking Water System Components - Health Effects” for coating valves and fittings.
2. FBE coatings are applied in an automated one-part process so that the mixing, surface preparation, and multiple-coat problems associated with liquid paints are eliminated.
3. The electrostatic application process for FBE provides a smooth, even coating thickness with no runs, sags, or thin spots common with applying liquid paints.
4. FBE coatings are durable and provide twice the impact strength of liquid epoxies. The surface provides high abrasion resistance and has become a standard seating material for resilient gate and check valves.
5. FBE has a long-term performance history in water and sewage environments including salt water, slurries, methane and hydrogen sulfide exposure.

Application Process:

1. FBE is applied in an automated manufacturing process in accordance with the coating manufacturers’ procedures and industry standards to assure consistency and high quality.
2. The valve is cleaned, sandblasted, and preheated in an oven.
3. An electrical charge is applied to the body and the powder is deposited over the surfaces of the valve to the specified thickness.
4. The epoxy is post cured in an oven to cure specifications and allowed to air cool to room temperature.
5. The final surface is visually and electrically (when specified) tested to verify thickness and that it is holiday free.

Typical Performance Characteristics:

1.	Color:	Blue	
2.	Thickness	12-20 mils	1 Coat
3.	Gloss at 60 deg:	60-80 units	Din 67 530
4.	Impact Resistance	>5 Joule (44 in-lb)	Din 30 677-2
5.	Elongation:	>5%	Din 30 671
6.	Hardness:	>100	Din 53 153
7.	Water Immersion:	No visible change	90C, 672 Hours
8.	Salt Spray Test:	>3000 hours	Din 53167
9.	Adhesion:	16 Mpa (2320 psi)	7 days, 90C EN 24 624

Revised 2-15-17

FUSION BONDED EPOXY (FBE) COATING	DATE 7-17-02
VAL-MATIC® VALVE AND MANUFACTURING CORP.	DRWG. NO. SS-1847