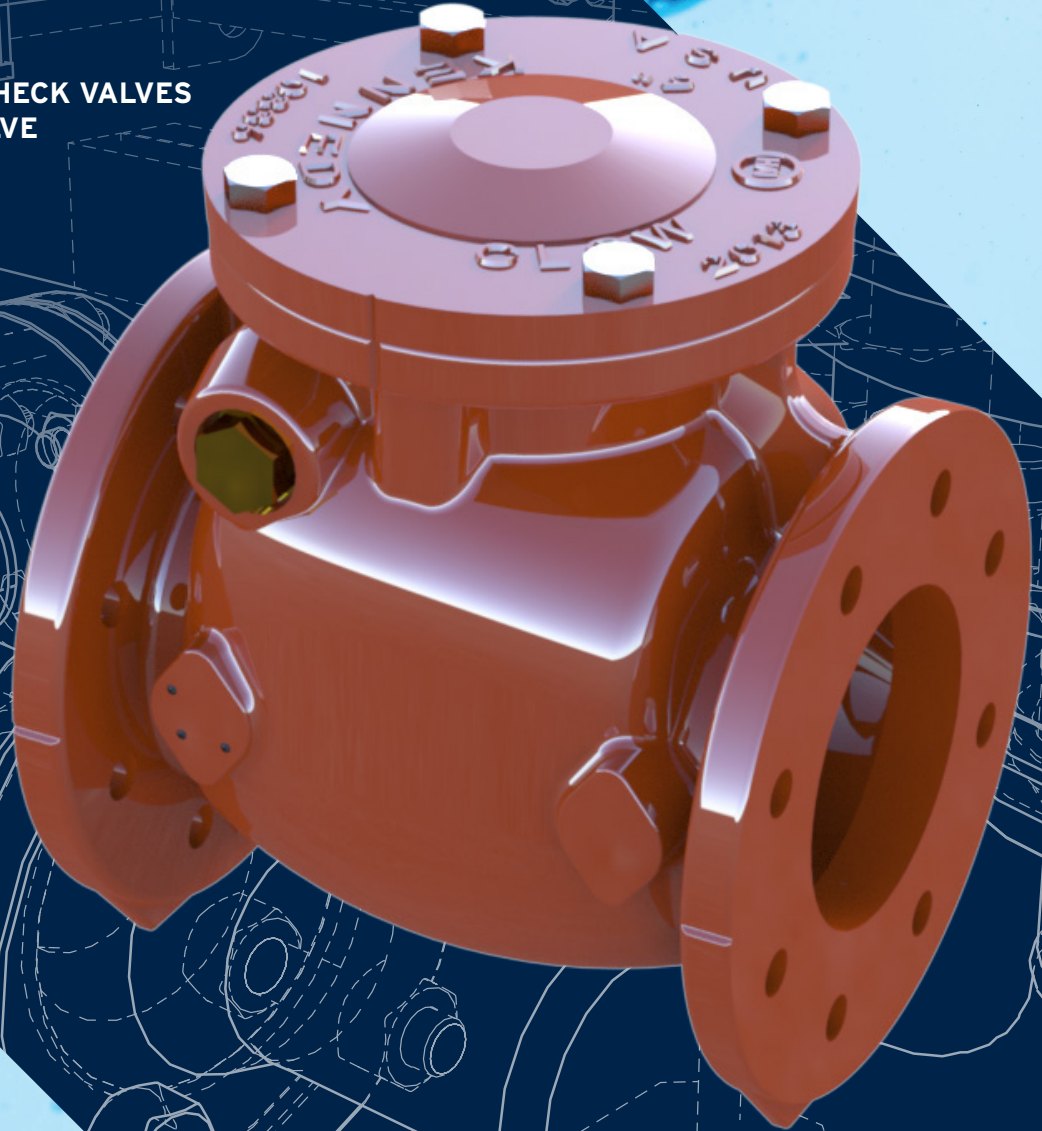


CHECK VALVES

AWWA C508 SWING CHECK VALVES
KEN-FLEX CHECK VALVE

mcwanepi.com



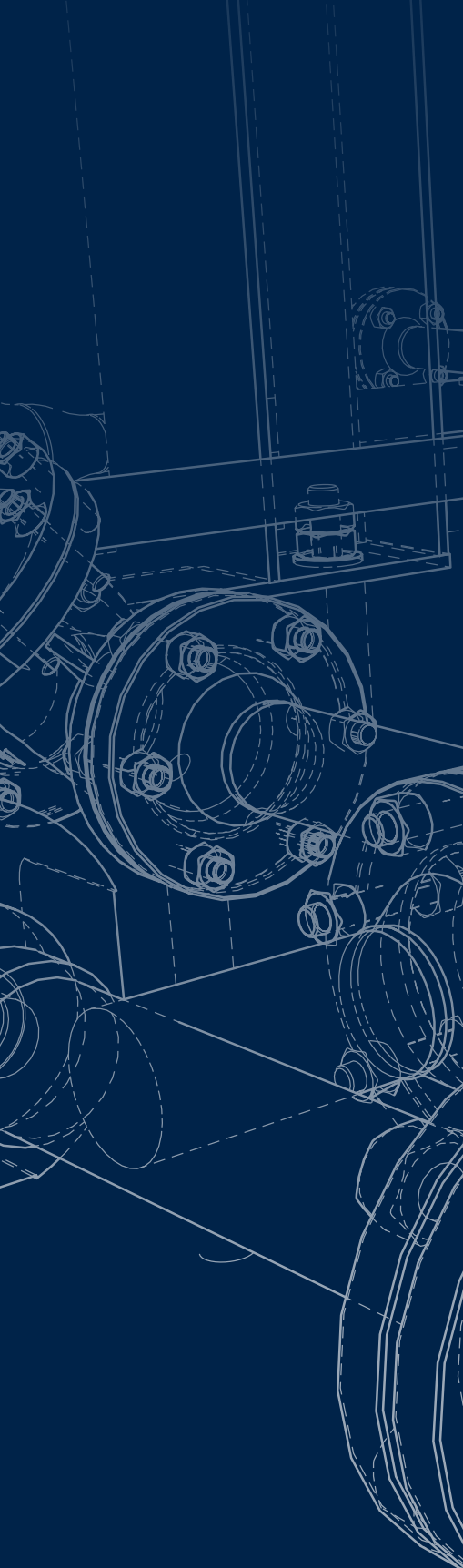


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THE INTEGRATED SOLUTION FOR TREATMENT PLANT NEEDS

Combining expertise from eight key water infrastructure brands in the McWane family of companies, McWane Plant & Industrial (MPI) provides a singular access point for the essential products and service required for any water or wastewater plant project.

WHY MPI?

We're a new kind of company formed on the basis of three simple goals:

- To provide a primary source for best-in-class products from time-tested brands
- Offer veteran specialists as resources for any plant project of any scale
- Increase the ease and efficiency of the planning and completion of our clients' projects

Our dedicated team is comprised of dozens of treatment plant specialists with decades of experience. We work cooperatively with industry

partners to give each project the attention it deserves, providing unprecedented levels of communication, access and collaboration. Our support teams work within dedicated service regions allowing our experts to apply regionally specific knowledge, including state regulations, codes and environmental specifications. Our nationally certified Associate Design-Build Professionals are a valuable asset to Design-Build projects.

The extended manufacturing capabilities of MPI mean your precise requirements are closer in reach and delivered faster with less legwork from you. We offer products that conform to rigorous industry standards and can work with your team to customize and fulfill unique requests. As part of our commitment to American workers and industries, we're proud of our ability to provide products from domestic facilities and to meet all domestic funding requirements.

MPI – best in-class

SWING CHECK VALVE



PRODUCT OVERVIEW

MPI's Swing Check Valves are designed and manufactured in conformance with AWWA C508. Under certain circumstances where it is desirable to have more positive control of the closing on the disc, the valves can be supplied with either level-and-spring or level-and-weight.

Swing check valves are used for the prevention of backflow in water systems where there is the possibility of a pollutant in the user's system back flowing into the potable water system. They are self-contained, free-swinging disc style which can be purchased with an outside lever and weight or outside lever and spring options conforming to AWWA C508 standards. The valves can also be purchased with outside air or oil cylinders when

required by customer requirements or project specifications. Valves sizes 2"-24" can be ordered with double lever arms. Valve sizes 30" and larger come with standard double lever arms.

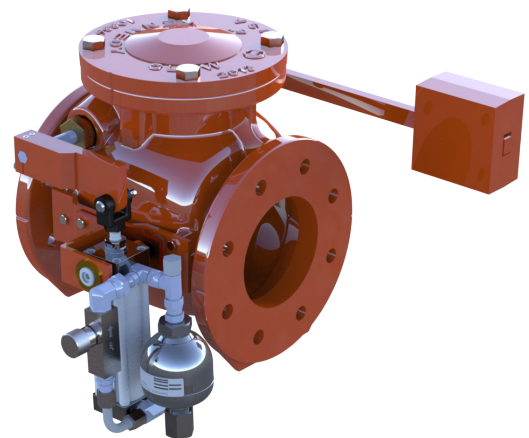
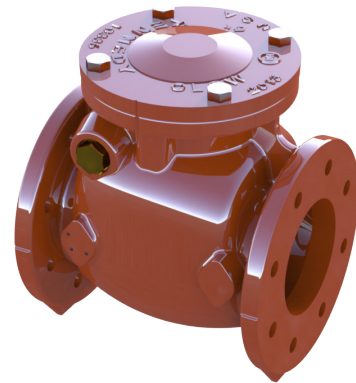
For check valves to function properly and not be a source of chatter and water hammer, there must be at least 1/2 psi differential across the valve under normal flow conditions. When in doubt the check valve should be undersized. For service in normal environments (clear water or dry air) at temperatures less than 100° F, resilient seated valves will allow less backflow and minimize water hammer vs. metallic seated valves. For service other than clean water consult the factory.

KEY CHARACTERISTICS	
Size Range	2"-36"
Materials	Bronze or Resilient disc seat, Cast Iron A126B or Ductile Iron A536 body, Bronze or SS body seat ring, Limit Switch, Double Lever Arms, air and oil cushions
Pressure Range	2"-12" 200 PSI, 14"-36" 150 PSI
Temperature Range	Resilient Seat Max Temp 125°F, Bronze Seat Max Temp 150°F
Body Style	Flanged Connection
Standards	AWWA C508, NSF/ANSI 61/372 certified

SWING CHECK VALVE FEATURES & BENEFITS

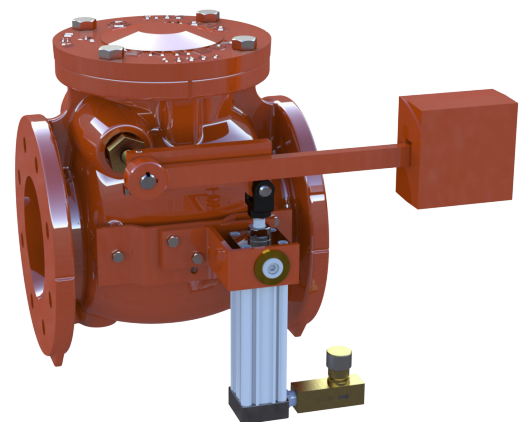
STANDARD FEATURES

- Sizes: 2" - 36"
- Size 30" - 36" valves come standard with double lever arms
- Bronze or resilient seated
- Working parts removable through top of valve for ease of maintenance
- Stainless steel hinge pin
- NSF/ANSI 61/372 Certified
- Fusion bonded epoxy coated
- ANSI B16 125# flange connection
- Sizes 2"-12" 200 psi rated working pressure
- Sizes 14"-36" 150 psi rated working pressure
- Full waterway flow through the valve equal to nominal diameter of the pipe
- Horizontal or vertical (flow up) installation
- Field adjustable to best adapt to operating conditions
- Dual lever arms available for extreme rapid flow reversal applications



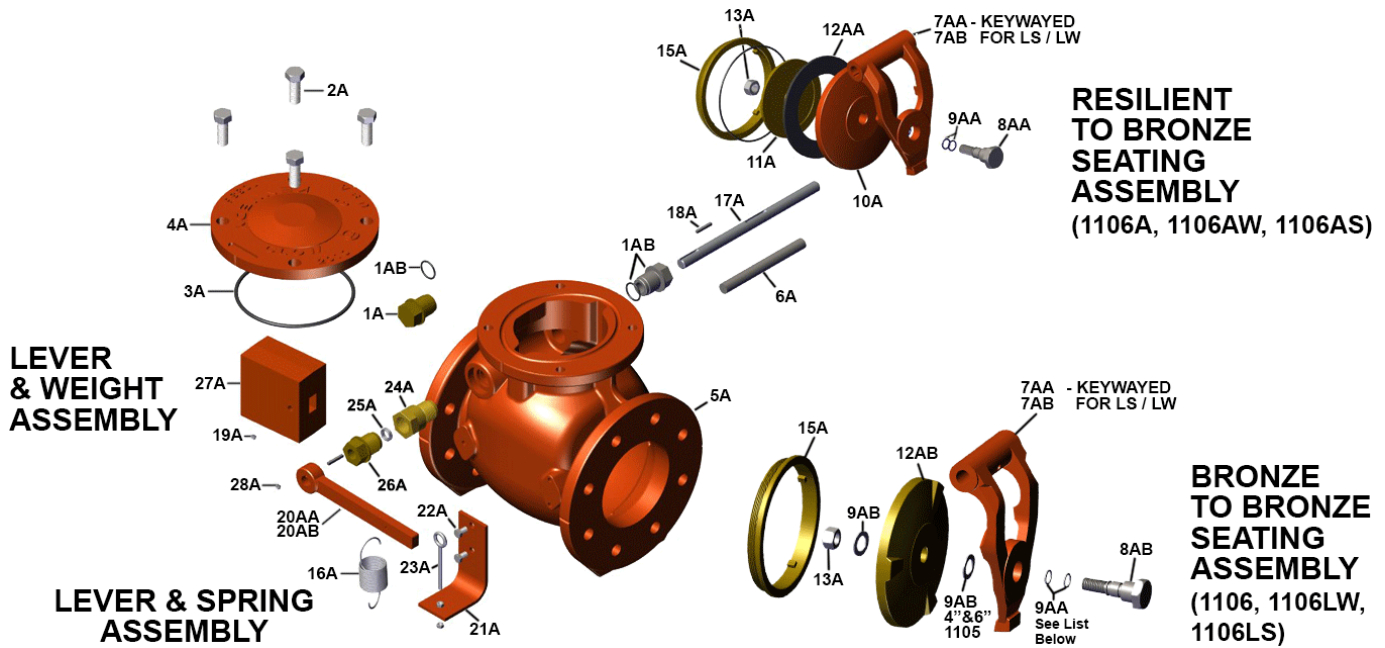
OPTIONS

- Optional double lever arms on sizes 2"-24"
- Plain/gravity operated
- Lever arm and weight
- Lever arm and spring
- Air and oil cylinders for additional control
- Tapped bosses available for drainage or by-pass

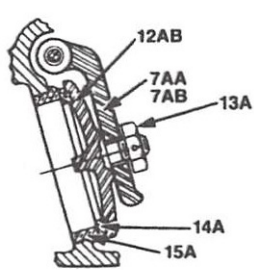


SWING CHECK VALVE COMPONENTS

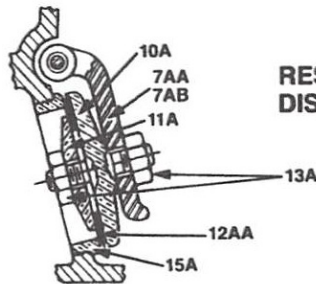
SIZES 2"-12"



Disc Arrangement 2"-3"



BRONZE DISC



RESILIENT DISC

Resilient/Bronze - Figure #1106A, 1106AW, 1106AS
 Resilient/Bronze - Figure #1106A, 1106AW, 1106AS

No.	DESCRIPTION	MATERIAL	No.	DESCRIPTION	MATERIAL
1AB	Side Plug with O-Ring	Bronze	14A	Disc Ring (4"-12") - (2"-3")	Bronze
2A	Cap Bolts	Stainless Steel	15A	Seat Ring	Bronze
3A	O-Ring	Syn. Rubber	16A	Spring	Steel
4A	Cap	Cast Iron	17A	Extended Hinge Pin for LS/LW	Stainless Steel
5A	Body	Cast Iron	18A	Key for LS/LW	Stainless Steel
6A	Hinge Pin	Stainless Steel	19A	Set Screw	Steel
7AA	Hinge	Bronze	20AA	Lever Arm for LS	Steel
7AB	Hinge w/ Keyway for LS/LW	Bronze	20AB	Lever Arm for LW	Steel
8AA	Disc Bolt (4"-12")	Bronze	21A	Bracket	Steel
8AB	Disc Bolt (4"-12")	Bronze	22A	Hex Head Bracket Bolt	Steel
9AA	Disc Bolt O-Ring (4"-12" 1106A, 8"-12" 1106)	Syn. Rubber	23A	Eye Bolt w/ 2 Hex Nuts	Steel
9AB	Disc Bolt Gasket (4" & 8" 1106)		24A	Stuffing Box	Bronze
10A	Disc Holder	Bronze, Cast Iron	25A	Packing	Graphite Filled
11A	Disc Plate	Bronze	26A	Gland	Bronze
12AA	Disc	Nitrile (Buna N) Rubber	27A	Weight	Cast Iron
12AB	Disc	Bronze (2"-3"), Cast Iron (4"-12")	28A	Set Screw	Steel
13A	Disc Nut	Stainless Steel			

KEN-FLEX CHECK VALVE

12" (16" & 24" SPRING LOADED AVAILABLE)



PRODUCT OVERVIEW

The Ken-Flex Resilient Hinged Check Valve eliminates most problems associated with swing check valves. Because of its simplicity, it is ideal for "dirty water" applications. The addition of the position indicator not only provides flapper location feedback, but also acts as a surge preventer. The position indicator is spring loaded, causing the flapper to quickly close in the event of loss of flow. The Jack Screw option allows the check valve to be back flushed, clearing the waterway.

The AWWA C508 Ken-Flex Spring-Loaded Check Valve features buckling springs to aid in eliminating water hammer (patent pending). Buckling springs produce their highest load when extended, where it's most valuable, when the check valve is closed. Opposite, leaf spring loaded Flex Check Valves have their highest load when fully open and lowest at closed. As a result, buckling springs offer a superior solution when dealing with water hammer.

KEY CHARACTERISTICS	
Size Range	3"-12" (16" & 24" spring loaded available)
Materials	Ductile Iron Body, EPDM Flapper, Stainless Steel Hardware, Buna-N O-Rings
Pressure Range	250 PSI
Temperature Range	Up to 125°F
Body Style	Flanged Connection
Standards	AWWA C508, NSF/ANSI 61/372 certified

AIR CUSHION CHECK VALVE



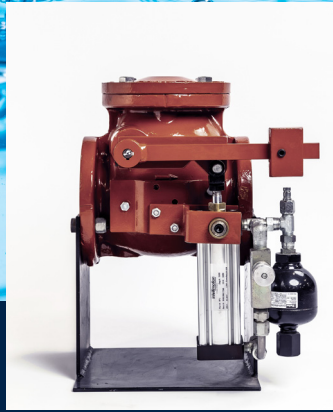
PRODUCT OVERVIEW

Where water hammer cannot be eliminated through system design, the Kennedy 1206A air cushion check valve serves as a suitable option. The 1206A air cushion check valve features a pneumatic cylinder that reduces check valve slam and the accompanying pressure surge. This is accomplished by a cylinder and adjustable needle valve, which allow the valve to open freely during normal flow conditions, yet close slowly when flow reverses.

The Kennedy valve figure 1206A air cushion valve complies with AWWA C508 specifications and may be ordered from the factory for horizontal or vertical installation. Unless specified otherwise, the cylinder arrangement shall be supplied on the right side (when facing the inlet) and for horizontal flow. The valve features a resilient seat and a hinge pin constructed of durable, heat treated 431 stainless steel.

KEY CHARACTERISTICS	
Size Range	Full Wall 2"-36" and Reduced Wall 14"-36"
Materials	Bronze or Resilient disc seat, Cast Iron A126B or Ductile Iron A536 body, Bronze or SS body seat ring, Limit Switch, Double Lever Arms, air and oil cushions
Pressure Range	2"-12" 200 PSI, 14"-36" 150 PSI
Temperature Range	Resilient Seat Max Temp 125°F, Bronze Seat Max Temp 150°F
Body Style	Flanged Connection
Standards	AWWA C508, NSF/ANSI 61/372 certified

OIL CUSHION CHECK VALVE

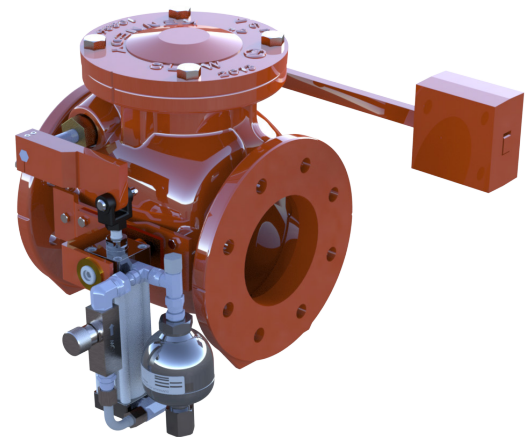


PRODUCT OVERVIEW

The purpose of the introduction of an oil cushion on a swing check valve is to reduce line surge and water hammer. This is accomplished by having the disc stroke speed fully controllable from adjustment of the flow control valve. As the disc changes position, oil flowing through the closed system with accumulator causes cushioning of the disc as it closes. Although the closing speed is fully adjustable, many customers prefer a fast closing operation to deter the water momentum back against the closing disc.

STANDARD FEATURES

- Size range 3" - 24"
- AWWA C-508
- Stainless Hinge Pins/EPDM Flapper
- 100% Flow Area
- 2"-12" 200PSI, 14"-24" 150PSI
- Class 125 Flanges
- Fusion Bonded Epoxy Paint NSF 61
- Enclosed Oil Cushion System W/Accumulator
- Closed Speed Adjustable
- Horizontal/Vertical Installation
- Bronze or Resilient Seating
- Stainless Steel Seats Available
- Outside Lever & Weight
- Limit Switches

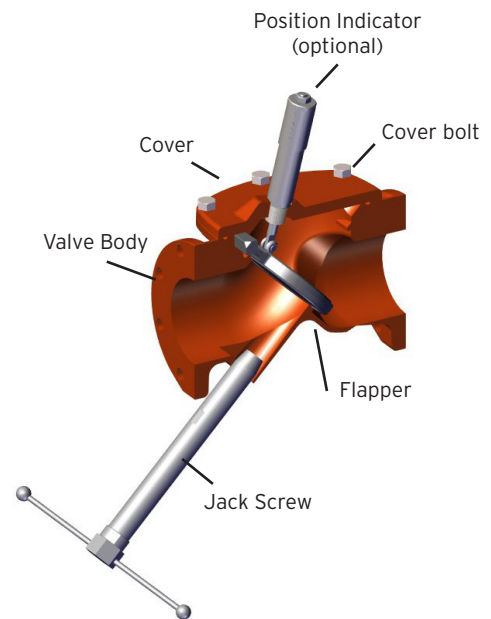


KEN-FLEX CHECK VALVE FEATURES & BENEFITS

STANDARD FEATURES

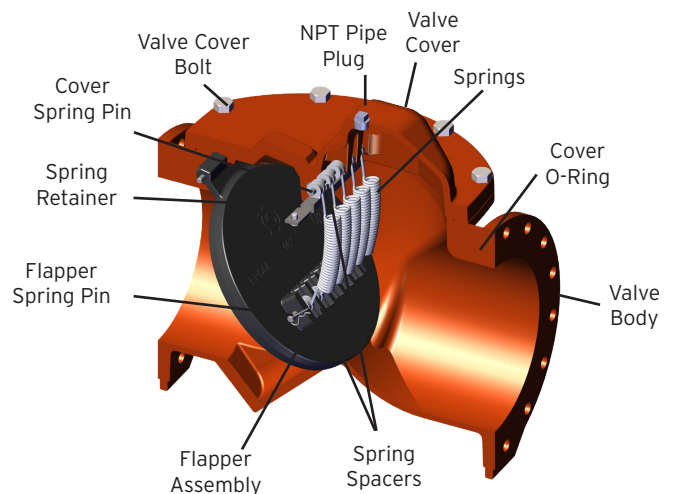
Ken-Flex Resilient Hinged Check Valve

- 3"-12" sizes available
- A.W.W.A. C508
- ASME B16.1 Class 125 Flanges
- 100% flow area
- Ductile iron body and cover
- Weighted disc
- Quiet operation with non-slam design
- Optional position Indicator provides continuous feedback of flapper positions (506-SP)
- Back flushing through the use of optional jack screw



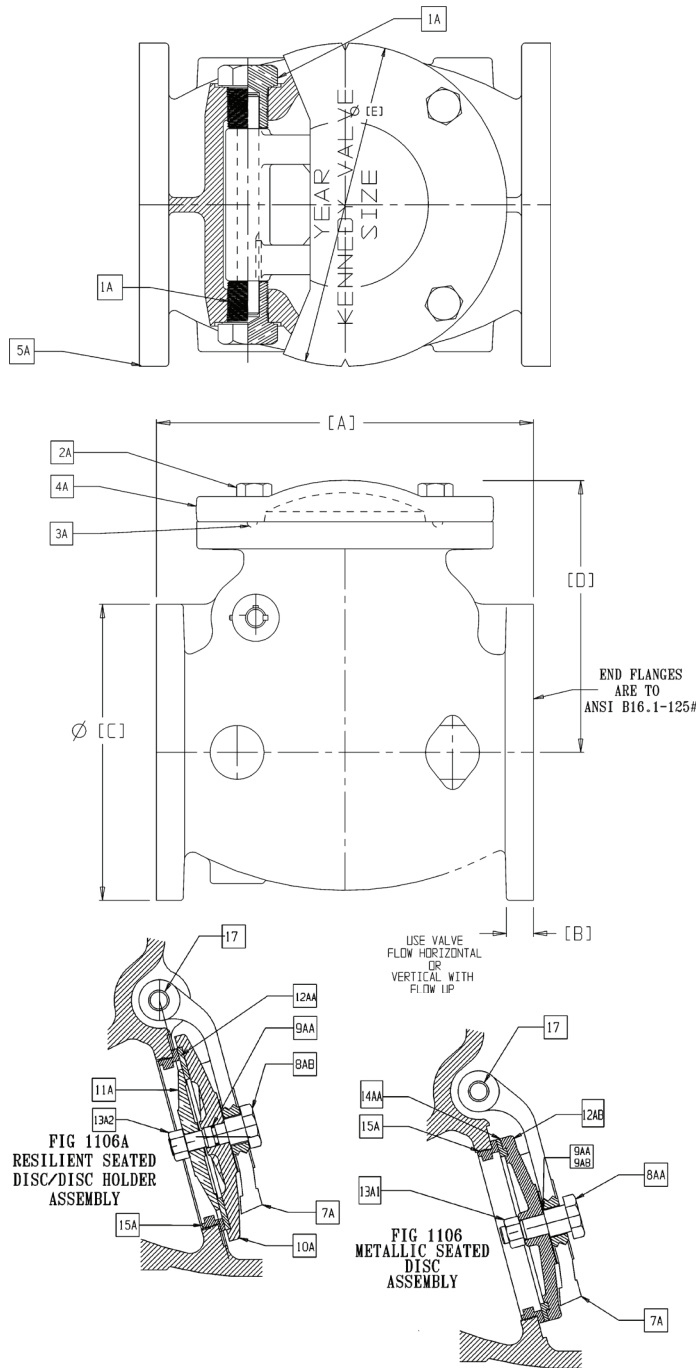
AWWA C508 Ken-Flex Spring-Loaded Check Valve

- 16" & 24" sizes available
- 100% Flow Area
- Quiet operation with non-slam design
- No external moving parts
- 1 spring standard; more available upon special request
- Rated pressure 250 psi
- Test pressure Seat 400 psi, shell 500 psi



GRAVITY / PLAIN SWING CHECK VALVE

SIZES 2"-12" FULL WALL / DOMESTIC



PARTS LIST		
PART No.	PART	MATERIAL & ASTM DESIGNATION
1A	Side Plug	Bronze B371 C69300
2A	Hex Bolt	SS18-8
3A	O-ring Seal Cover to Body	Buna-N
4A	Check Valve Cap	Gray, Cast Iron ASTM A 126B
5A	Body	Gray, Cast Iron
7A	Hinge	Bronze (2"-3") / D.I. (4"-12")
8AA	Disc Bolt - Fig. 1106 (Metal to Metal)	Steel (4"-8") / Bronze (10" & 12")
8AB	Disc Bolt - Fig. 1106A (Resilient)	Bronze (4"-12")
9AA	Disc Bolt O-ring	Buna-N (10" & 12")
9AB	Disc Bolt Gasket	Fibre (4"-8")
10A	Disc Holder - Fig. 1106A	Gray, Cast Iron (4"-12", exc. 8")
10A	Disc Holder with Integral Bolt	Bronze (2"-3")
11A	Disc Plate - Fig. 1106A	Bronze
12AA	Replacable Rubber Disc - Fig. 1106A	Rubber
12AB	Disc with Integral Bronze Ring - Fig. 1106	Gray, Cast Iron (4"-12")
12AB	Disc with Integral Bolt and Ring - Fig. 1106	Bronze (2"-3")
13A1	Hex Nut-Disc - Fig. 1106	SS18-8 (2"-12")
13A2	Hex Nut-Disc Holder - Fig. 1106A	SS18-8 (2"-3")
14AA	Disc Ring Integral with Disc - Fig. 1106	Bronze (4"12")
15A	Seat Ring	Bronze B584 C89833 / C87850
17	Hinge Pin	Stainless Steel SS A-276 (304)

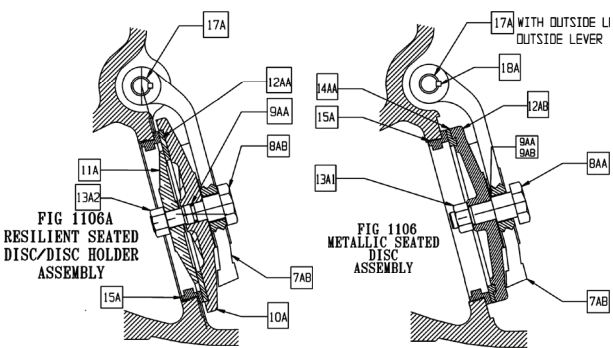
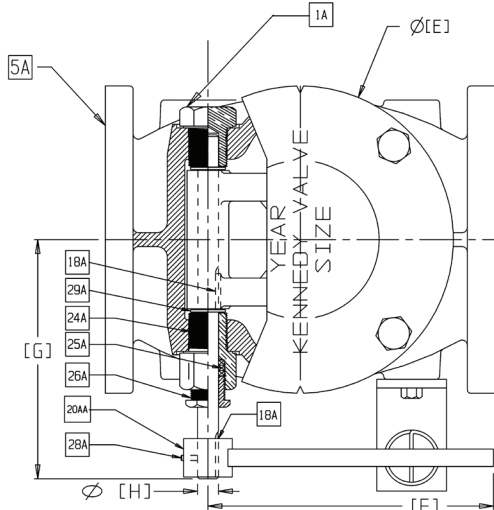
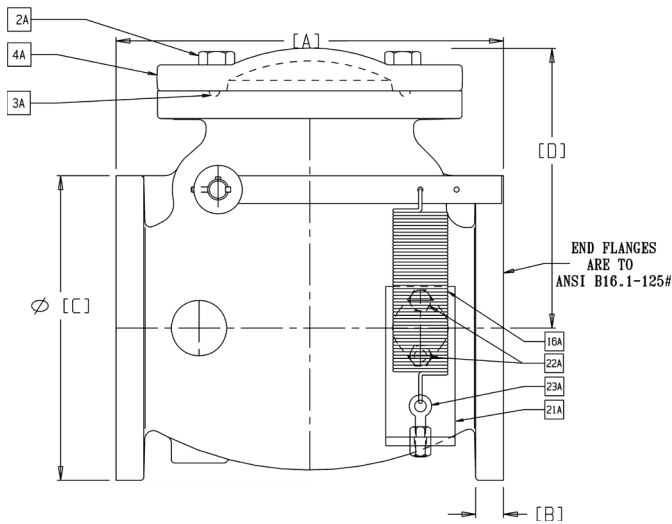
SIZE	DIMENSIONS					
	DA LG	FLG THK	FLG DD	DA HT	COVER DD	WALL THK
2	8	0.66	6	6	6	0.34
2 1/2	8.5	0.72	7	6.44	7	0.41
3	9.5	0.78	7.5	6.85	7.5	0.44
4	11.5	1.00	9	8.69	9	0.50
6	14	1.06	11	10.51	11	0.62
8	19.5	1.25	13.5	12.56	13.5	0.75
10	24.5	1.31	16	14.07	16.75	0.81
12	27.5	1.38	19	16.13	19	0.88

NOTES:

- Standard syntax for a standard check valve is:
161XXXX1106 (brass to brass) or
161XXXX1106A (resilient to brass), where XXXX signifies the size.
- A special "Buy America" valve can be obtained by specifying "DOM" after the standard number.

SWING CHECK VALVE WITH LEVER AND SPRING

SIZES 2"-12" FULL WALL / DOMESTIC

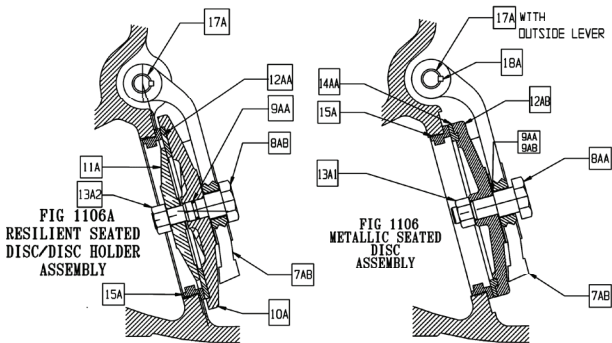
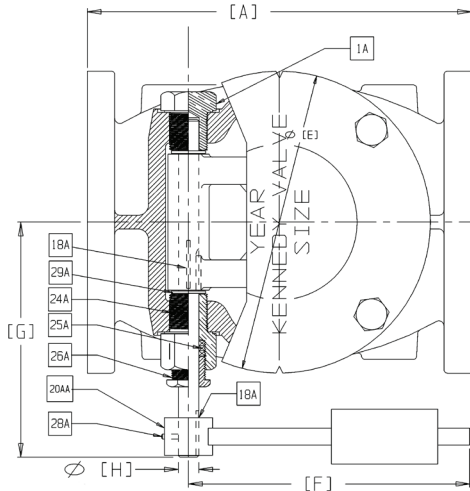
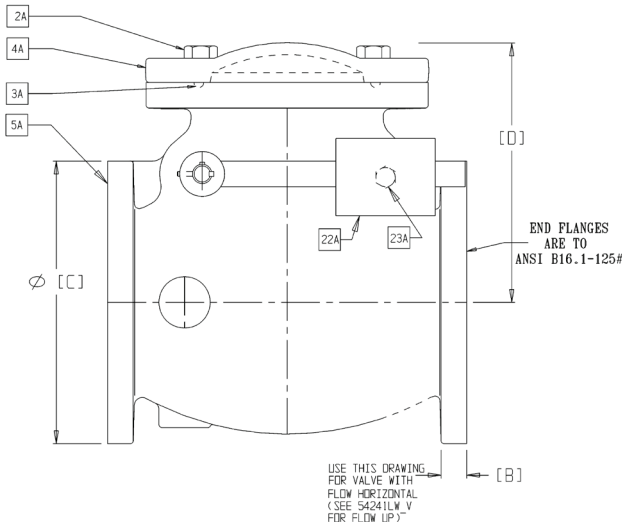


PARTS LIST		
PART No.	PART	MATERIAL & ASTM DESIG.
1A	Side Plug	Bronze B371 C69300
2A	Hex Bolt	SS18-8
3A	O-ring Seal Cover to Body	Buna-N
4A	Check Valve Cap	Gray, Cast Iron ASTM A 126B
5A	Body	Gray, Cast Iron ASTM A 126B
7AB	Keyed Hinge with Lever	Bronze (2"-3")/D.I. (4"-12")
8AA	Disc Bolt - Fig. 1106 (Metal to Metal)	Steel (4"-8")
8AA	Disc Bolt - Fig. 1106 (Metal to Metal)	Bronze (10" & 12")
8AB	Disc Bolt - Fig. 1106A (Resilient)	Bronze (4"-12")
9AA	Disc Bolt O-ring	Buna-N (10" & 12")
9AB	Disc Bolt Gasket	Fibre (4"-8")
10A	Disc Holder - Fig. 1106A	Gray, Cast Iron (4"-12", exc. 8")
10A	Disc Holder with Integral Bolt	Bronze (2"-3")
11A	Disc Plate - Fig. 1106A	Bronze
12AA	Replacable Rubber Disc - Fig. 1106A	Rubber
12AB	Disc with Integral Bronze Ring - Fig. 1106	Gray, Cast Iron (4"-12")
12AB	Disc with Integral Bolt and Ring - Fig. 1106	Bronze (2"-3")
13A1	Hex Nut-Disc - Fig. 1106	SS18-8 (2"-12")
13A2	Hex Nut-Disc Holder - Fig. 1106A	SS18-8 (2"-3")
14AA	Disc Ring Integral with Disc - Fig. 1106	Bronze (4" 12")
15A	Seat Ring	Bronze B584 C89833 / C87850
16A	Spring	Steel
17A	Hinge Pin	Stainless Steel SS A-276 (304)
18A	Key	- - -
20AA	Lever Arm (for L/S)	Steel
21A	Bracket (for D/S)	Steel
22A	Hex Head Bolt (L/S Bracket)	Steel A307
23A	Eye Bolt w/ 2 Hex Nuts	Steel A1258
24A	Side Plug Stuffing Box	Bronze B371 C69300
25A	Packing	Non-Asbestos
26A	Gland	Stainless Steel B371 C69300
28A	Lever Set Screw	Steel
29A	Washers	Stainless Steel

LEVER & WEIGHT - DIMENSIONS									
	DA LG	FLG THK	FLG DD	DA HT	COVER DD	LEVER LG	CL to PIN END	PIN DIA	WALL THK
SIZE	A	B	C	D	E	F	G	H	J
2	8	0.66	6	6	6	6	4.72	0.50	0.34
2 1/2	8.5	0.72	7	6.44	7	6	4.94	0.50	0.41
3	9.5	0.78	7.5	6.85	7.5	6	5.35	0.50	0.44
4	11.5	1.00	9	8.69	9	7.75	8.19	0.63	0.50
6	14	1.06	11	10.51	11	9.75	9	0.75	0.62
8	19.5	1.25	13.5	12.56	13.5	14.13	10.19	0.88	0.75
10	24.5	1.31	16	14.07	16.75	18	11.63	1.00	0.81
12	27.5	1.38	19	16.13	19	18	13.75	1.00	0.88

SWING CHECK VALVE WITH LEVER AND WEIGHT

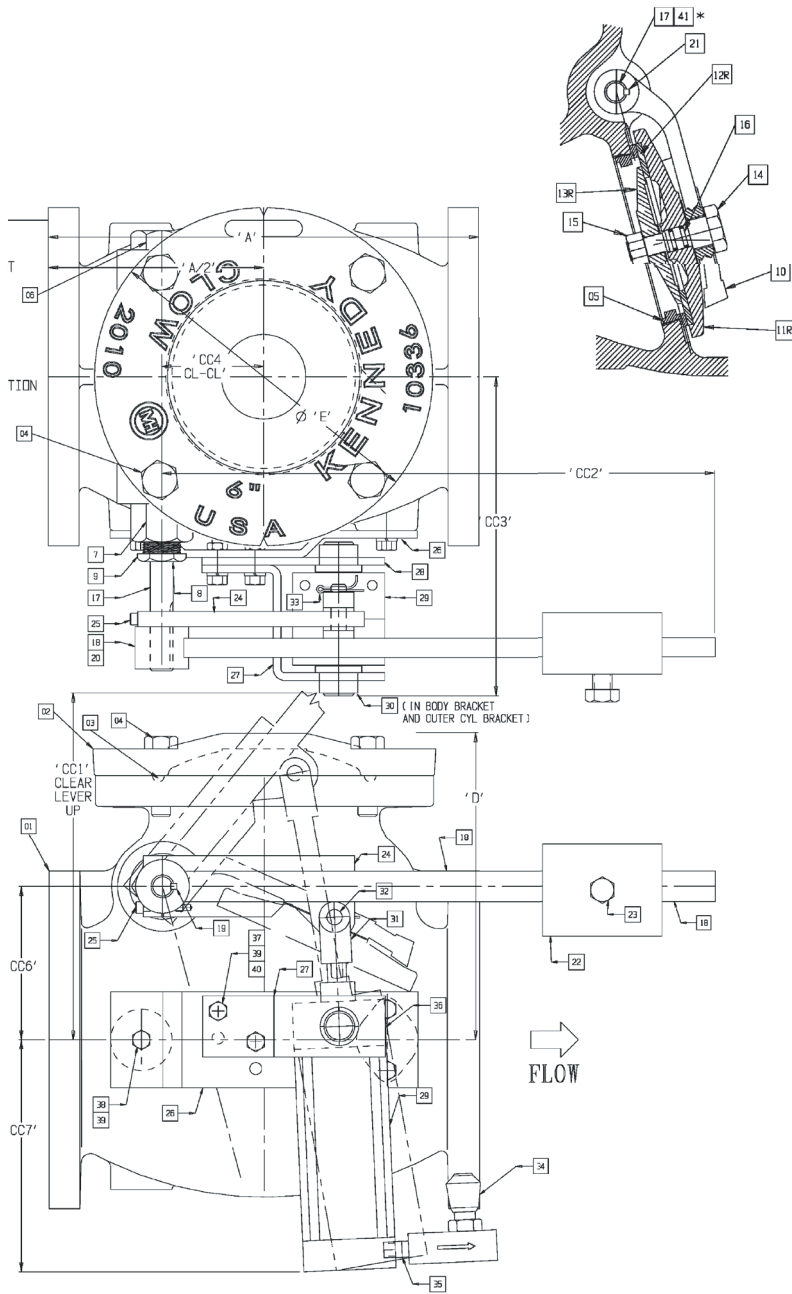
SIZES 2"-12" FULL WALL / DOMESTIC



PARTS LIST		
PART No.	PART	MATERIAL & ASTM DESIGNATION
1A	Side Plug	Bronze B371 C69300
2A	Hex Bolt	SS18-8
3A	O-ring Seal Cover to Body	Buna-N
4A	Check Valve Cap	Gray, Cast Iron ASTM A 126B
5A	Body	Gray, Cast Iron ASTM A 126B
7AB	Keyed Hinge with Lever(s)	Bronze (2"-3") / D.I. (4"-12")
8AA	Disc Bolt - Fig. 1106 (Metal to Metal)	Steel (4"-8") / Bronze (10" & 12")
8AB	Disc Bolt - Fig. 1106A (Resilient)	Bronze (4"-12")
9AA	Disc Bolt O-ring	Buna-N (10" & 12")
9AB	Disc Bolt Gasket	Fibre (4"-8")
10A	Disc Holder - Fig. 1106A	Gray, Cast Iron (4"-12", exc. 8")
10A	Disc Holder with Integral Bolt	Bronze (2"-3")
11A	Disc Plate - Fig. 1106A	Bronze
12AA	Replacable Rubber Disc - Fig. 1106A	Rubber
12AB	Disc with Integral Bronze Ring - Fig. 1106	Gray, Cast Iron (4"-12")
12AB	Disc with Integral Bolt and Ring - Fig. 1106	Bronze (2"-3")
13A1	Hex Nut-Disc - Fig. 1106	SS18-8 (2"-12")
13A2	Hex Nut-Disc Holder - Fig. 1106A	SS18-8 (2"-3")
14AA	Disc Ring Integral with Disc - Fig. 1106	Bronze (4"12")
15A	Seat Ring	Bronze B584 C89833 / C87850
17A	Hinge Pin	Stainless Steel SS A-276 (304)
18A	Key	---
22A	Set Screw for Weight	Steel, Plated A307
23A	Weight	Gray Iron A1258
24A	Side Plug Stuffing Box	Bronze B371 C69300
25A	Packing	Non-Asbestos
26A	Gland	Stainless Steel B371 C69300
28A	Lever Set Screw	Steel
29A	Washers	Stainless Steel

DIMENSIONS									
	DA	FLG	FLG	DA	COVER	LEVER	CL to	PIN	WALL
	LG	THK	DD	HT	DD	LG	PIN	DIA	THK
SIZE	A	B	C	D	E	F	G	H	J
2	8	0.66	6	6	6	6	4.72	0.50	0.34
2 ½	8.5	0.72	7	6.44	7	6	4.94	0.50	0.41
3	9.5	0.78	7.5	6.85	7.5	6	5.35	0.50	0.44
4	11.5	1.00	9	8.69	9	7.75	8.19	0.63	0.50
6	14	1.06	11	10.51	11	9.75	9	0.75	0.62
8	19.5	1.25	13.5	12.56	13.5	14.13	10.19	0.88	0.75
10	24.5	1.31	16	14.07	16.75	18	11.63	1.00	0.81
12	27.5	1.38	19	16.13	19	18	13.75	1.00	0.88

SWING CHECK VALVE WITH LEVER AND WEIGHT WITH AIR CUSHION SIZES 2"-12" FULL WALL / DOMESTIC



PARTS LIST			
PART No.	PART	MATERIAL	ASTM DESIG.
1	Body	Gray Iron	A126 B
2	Cover	Gray Iron	A126 B
3	Cover / Body O-ring	Buna-N	---
4	Cover Bolts	18-8 Stainless	F593, F594
5	Seat Ring	Bronze	C89833 or C87850
6	Side Plug	Bronze	C69300
7	Stuffing Box	Bronze	C69300
8	Packing (not shown)	Non-Asbestos	by GARLOCK
9	Gland Follower	Bronze	C69300
10	Hinge (Keyed)	Ductile Iron	---
11R	Disc Holder	Iron	---
12R	Disc, Resilient	Rubber, Buna-N	---
13R	Disc Plate	Bronze	C89833 or C87850
14	Disc Bolt	Brass	C69300
15	Nut, Disc Bolt	18-8 Stainless	---
16	O-ring, Disc Bolt	Buna-N	---
17	Hinge Pin (H.T.)	431 Stainless Steel	---
18	Lever	Steel	---
19	Key for Lever	Stainless Steel	---
20	Set Screw for Lever	Steel, Plated	A307
21	Key for Hinge	Stainless Steel	---
22	Weight	Gray Iron	A126 B
23	Set Screw for Weight	Steel, Plated	A307
24	Cylinder Arm	Steel	---
25	Set Screw for Arm	Steel, Plated	A307
26	Body Bracket	Steel	---
27	Outer Cylinder Bracket	Steel	---
28	Inner Cylinder Bracket	Steel	---
29	Cylinder	Per Catalogue	Ref. to BOM
30	Bushing(s)	Bronze	---
31	Rod End	Iron / Steel	---
32	Pin	Steel	---
33	Cotter Pin	Stainless	---
34	Control Valve	Per Catalogue	---
35	Nipple	Brass	---
36	Muffler	Per Catalogue	---
37	Body Bracket Bolts	Steel, Plated	Grade 5
38	Cylinder Bracket Bolts	Steel, Plated	Grade 5
39	Lock Washer (HiCollar)	Steel, Plated	---
40	Nuts (Jam)	Steel, Plated	---
41	Washers	Stainless Steel	---

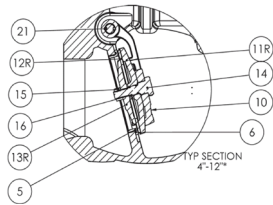
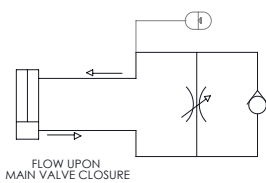
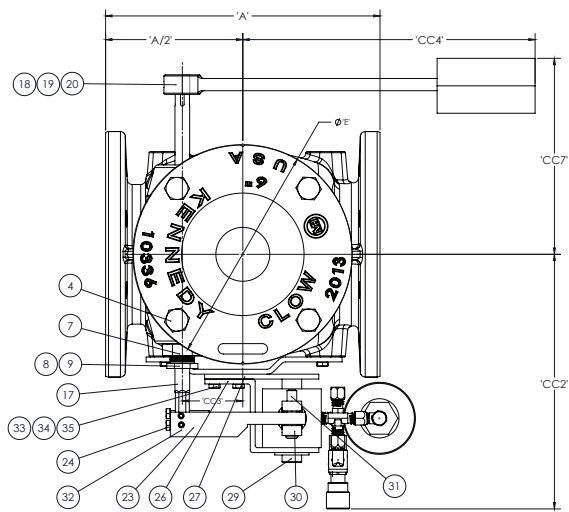
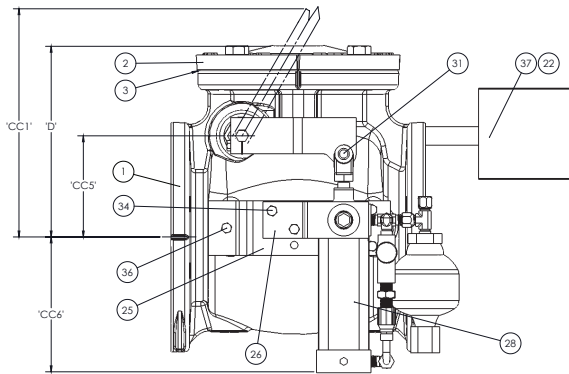
Dimensions are approximate- for Checking Clearances only.
Allow clearance 2 sides to remove side plug and access hinge pin.

NOTES:

- 6" valve shown
- Valve shown with cushion arrangement on right hand size (facing inlet). Left hand version available.
- Valve opening is sudden. Install guards or otherwise assure that persons are well clear.
- Dimensions are approximate and for layout purposes only.
- Configuration for vertical installation different than shown- see specific drawing.
- Standard - Resilient Seated. Special - Metal Seated
Note: By their nature, metal seated valves are likely to sound louder than resilient.

DIMENSIONS									
SIZE	A	D	E	CC1	CC2	CC3	CC4	CC6	CC7
4	11.50	8.69	9.00	13.77	12.00	9.56	2.44	3.75	8.89
6	14.00	10.51	11.00	19.28	18.00	10.38	3.31	5.00	7.52
8	19.50	12.56	13.50	22.24	18.00	11.75	4.88	6.25	6.40
10	24.50	14.07	16.75	23.62	18.00	13.68	6.19	7.12	11.46
12	27.50	16.12	19.00	24.57	18.00	14.94	8.38	8.19	10.40

OIL CUSHION CHECK VALVE FULL WALL DOMESTIC SIZES 3"-12"



OIL CUSHION CHECK VALVE MATERIAL LIST

ITEM No.	DESCRIPTION	MATERIAL
1	Body	Gray Iron ASTM A126-B
2	Cap	Gray Iron ASTM A126-B
3	O-ring; Cap Flange	Rubber; Buna-N
4	Bolt; Cap	18-8 Stainless Steel F593, F594
5	Seat Ring	C89833 or C87850 Bronze
6	O-ring; Seat Ring	Rubber; Buna-N
7	Stuffing Box	C69300 Bronze; 12" 304SS
8	Packing	No Asbestos
9	Gland Follower	C69300 Bronze
10	Hinge (Double Key)	Ductile Iron ASTM A536
11 R	Disc Holder	3" Bronze; 4"-12" Gray Iron ASTM A126-B
12 R	Disc	Rubber; Nitrile
13 R	Disc Plate	3" 18-8 Stainless; 4"-12" C89833 or C87850 Bronze
14	Disc Bolt	3" Bronze; 4"-12" Gray Iron ASTM A126-B
15	Disc Bolt Nut	18-8 Stainless Steel F593, F594
16	O-ring; Disc Bolt	Rubber; Buna-N
17	Hinge Pin; Special	ASTM A 576 Grade 73; Tin/Electroless Nickel Plated
18	Lever	Steel
19	Key; Lever	Stainless Steel
20	Set Screw; Lever	Steel Plated
21	Key; Hinge	Stainless Steel; 12" Cold Worked
22	Set Screw; Weight	Steel-Plated
23	Cylinder Arm	Steel; 12" 1045 Steel
24	Hex Head Cap Screw; Cylinder	Steel
25	Bracket; Body Cylinder	Steel
26	Bracket; Outer	Steel
27	Bracket; Inner	Steel
28	Hydraulic Cylinder	Parker 4ML; Hydraulic/Pneumatic Cylinder
29	Bushing; Bracket	Steel
30	Clevis Rod End	Steel
31	Coupling Pins; Clevis	Pivot Point Pin
32	Set Screw; Cylinder Arm	Steel; Plated
33	Lockwasher; Bracket	Steel; Plated
34	Screw; Cylinder Bracket	Steel; Plated
35	Nut; Cylinder Bracket	Steel; Plated
36	Screw	Steel; Plated
37	Weight	Cast Iron

OIL CUSHION CHECK VALVE DIMENSIONS

Size	A	D	E	CC1	CC2	CC3	CC4	CC5	CC6	CC7
3	9.5	7.5	6.6	14	13	2.0	12	3.32	9	8.0
4	11.5	9	9.1	14	13	2.4	12	3.75	9	8.5
6	14.0	10	11.2	20	14	3.1	18	5	8	9.7
8	19.5	13	13.6	23	15	4.9	18	6.25	7	11.7
10	24.5	14	16.8	24	19	6.2	18	7.12	12	13.3
12	27.5	16.5	19.1	25	20	8.4	18	8.19	11	15.5

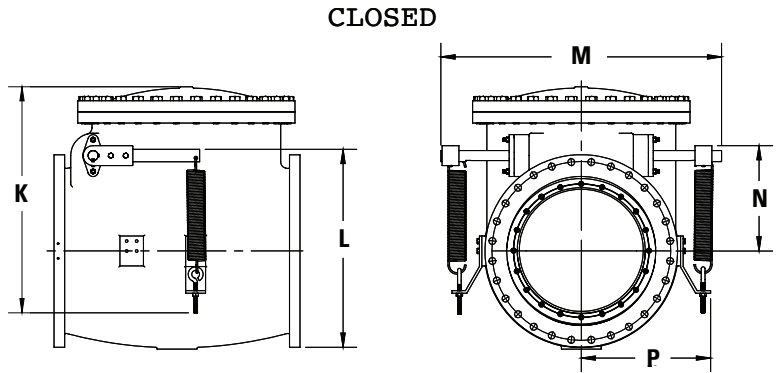
NOTES:

- 6" valve shown. 3"-12" valves available with resilient seat.
- Valve shown with cushion arrangement on right hand side (facing inlet; left hand version available.)
- Valve opening can be sudden. Install guards or otherwise assure that persons are well clear.
- Configuration for vertical installation features lever rotated 90 degrees in clockwise direction. Flow is upward.
- 3" size features Disc Bolt integral to Disc Holder.
- 12" Hinge has (1) Enlarged Key instead of (2) standard ones.

CHECK VALVE WITH LEVER AND SPRING FULL WALL DOMESTIC SIZES 14"-30"

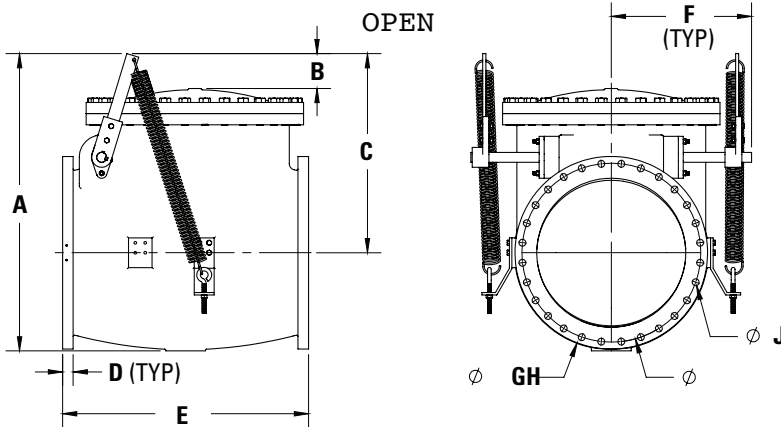
LEVER & SPRING CHECK VALVE ASSEMBLY

ITEM No.	DESCRIPTION	MATERIAL
1	Spring Arm Lever	Ductile Iron A536 65-45-12 or 70-50-05
2	Spring Arm Bar	CR Steel C-1018 / 1020
3	Spring	Steel
4	Spring Bracket Cap Screw	Steel A-307 Grade B
5	Spring Eyebolt	Steel A-307 Grade B



LEVER & SPRING CHECK VALVE - CLOSED

Size	K	L	M	N	P
14	30-9/16	21-3/4	37	12	18-1/2
16	35-11/16	24-7/8	38-3/8	13-7/8	19-3/8
18	37	26-1/2	41-1/2	14-3/4	19-3/8
20	38-3/16	28-9/16	45	15-9/16	19-1/2
24	46	33-1/4	52	18	23-3/4
30	45-1/2	39-13/16	56-1/2	21-3/16	26

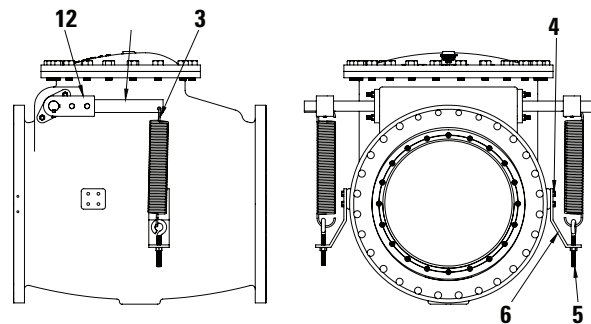


LEVER & SPRING CHECK VALVE - OPEN

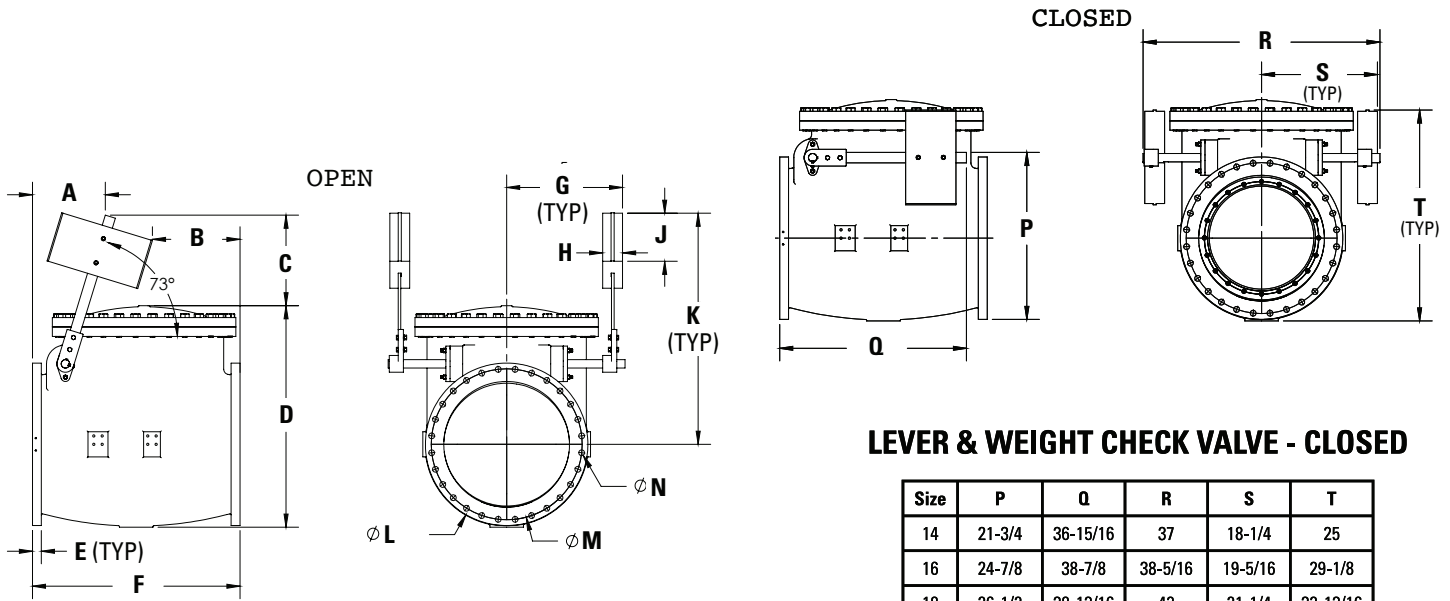
Size	A	B	C	D	E	F	G	H	J
14	35-7/16	5-3/4	24-11/16	1-3/8	30	18-1/2	21	18-3/4	1-1/8
16	39-3/8	4-11/16	26-1/2	1-7/16	35	18-15/16	23-1/2	21-1/4	1-1/8
18	41-1/2	4-1/2	27-13/16	1-9/16	36-1/2	20-3/4	25	22-3/4	1-1/4
20	42-5/8	4-7/16	28-7/8	1-11/16	36-5/8	22-1/2	27-1/2	25 B.C.	1-1/4
24	54-3/4	8-3/4	36-3/4	1-7/8	44	26	32	29-1/2 B.C.	1-3/8
30	59-13/16	7	40-1/16	2-1/8	49-1/2	28-1/4	38-3/4	36	1-3/8

NOTES:

- 30" and larger come standard with double lever arms.
- Flow direction is specified on valve.
- Valve will meet or exceed AWWA C508 requirements.
- Rated and tested for 150psi working pressure.
- Valves are suitable for horizontal or vertical position installation.
- Reference AWWA C508 for flanges and drilling.
- Bolts on each flange (no threaded holes).



CHECK VALVE WITH LEVER AND WEIGHT FULL WALL DOMESTIC SIZES 14"-30"



NOTES:

1. 30" and larger come standard with double lever arms.
2. Flow direction is specified on valve.
3. Valve will meet or exceed AWWA C508 requirements.
4. Rated and tested for 150psi working pressure.
5. Valves are suitable for horizontal or vertical position installation.
6. Reference AWWA C508 for flanges and drilling.
7. Bolts on each flange (no threaded holes).

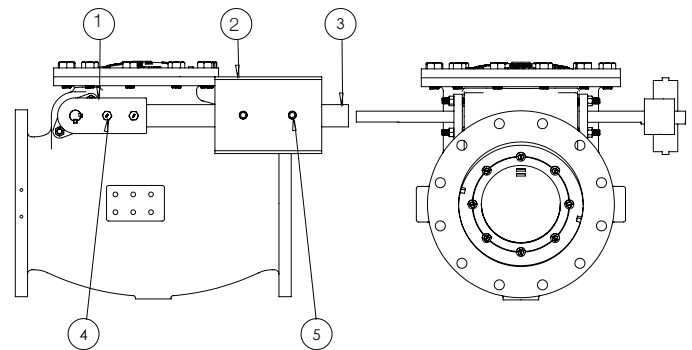
LEVER & WEIGHT CHECK VALVE - CLOSED

Size	P	Q	R	S	T
14	21-3/4	36-15/16	37	18-1/4	25
16	24-7/8	38-7/8	38-5/16	19-5/16	29-1/8
18	26-1/2	38-13/16	42	21-1/4	32-13/16
20	28-9/16	38-3/8	45	21-5/8	33-11/16
24	33-1/4	44-11/16	52	25-7/8	43-3/8
30	39-13/16	44-9/16	56-1/2	27-5/8	50-5/16

LEVER & WEIGHT COMPONENTS

ITEM No.	DESCRIPTION	MATERIAL
1	Weight Lever Arm	Ductile Iron A536 65-45-12 or 70-50-05
2	Weight	Fab. Steel
3	Weight Arm Bar	CR Steel C-1018/1020
4	Arm Bar Fastener*	18-8 Stainless Steel
5	Weight Torque Plug*	18-8 Stainless Steel

For sizes 14"-24" only



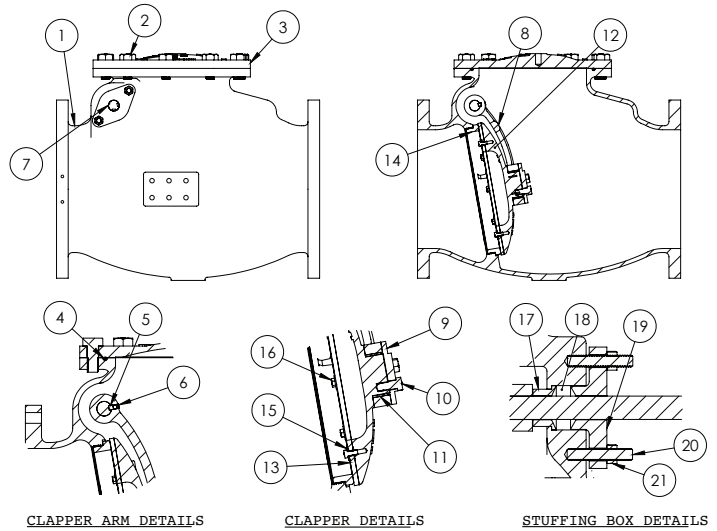
LEVER & WEIGHT CHECK VALVE - OPEN

Size	A	B	C	D	E	F	G	H	J	K	L	M	N
14	11-7/16	13-5/8	21-5/16	29-11/16	1-3/8	30	18-1/4	2-3/4	11-3/4	40-1/4	21	18-3/4 B.C.	1-1/8
16	14-15/16	15-7/16	20	34-11/16	1-7/16	35	19-5/16	2-3/4	11-9/16	41-13/16	23-1/2	21-1/4 B.C.	1-1/8
18	16-11/16	13-3/16	18-15/16	37	1-9/16	36-1/2	21-1/4	4-3/4	11-3/8	42-7/16	25	22-3/4 B.C.	1-1/4
20	12-7/8	17-15/16	19-3/8	38-3/16	1-11/16	37-5/8	21-5/8	4-3/4	11-3/4	43-13/16	27-1/2	25 B.C.	1-1/4
24	18-1/8	16-1/2	23-1/4	46	1-7/8	44	25-7/8	4-3/4	11-7/16	51-7/8	32	29-1/2 B.C.	1-3/8
30	17-3/8	20-7/8	21-9/16	52-13/16	2-1/8	49-1/2	27-5/8	4-3/4	11-1/2	55-1/8	38-3/4	36 B.C.	1-3/8

PLAIN CHECK VALVE FULL WALL DOMESTIC SIZES 14"-30"

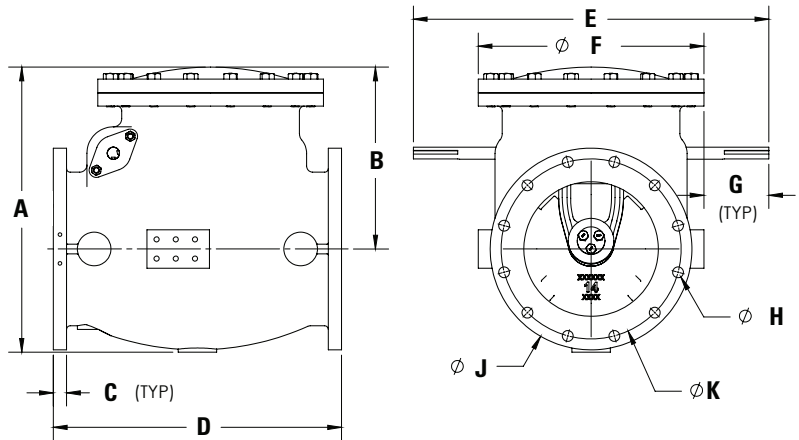
MATERIAL LIST

ITEM No.	DESCRIPTION	MATERIAL
1	Body - F.E.	Ductile Iron A536 65-45-12 or 70-50-05
2	Cover Bolts	ASTM A-307 GR. B or a EZ Plated
3	Cover	Ductile Iron A536 65-45-12 or 70-50-05
4	Cover O-ring	Buna "N" Durometer 70 Approved
5	Clapper Arm Key	304 Stainless Steel
6	Set Screw	Alloy Steel (RC 45-63)
7	Hinge Pin	Stainless Steel ASTM A-276 Type 303
8	Clapper Arm	Ductile Iron A536 65-45-12 or 70-50-05
9	Clapper Cap Plate	304 Stainless Steel
10	Hex Bolt Cap Plate	18-8 Stainless Steel
11	Clapper Arm Bushing	Brass C26000
12	Clapper	Ductile Iron A536 65-45-12 or 70-50-05
13	Encapsulated Rubber Clamp Ring	Buna "N" Durometer 70 Approved
14	Body Ring	Bronze Alloy C89836
15	Washer, Flat	18-8 Stainless Steel
16	Hex Bolt Clamp Ring	18-8 Stainless Steel
17	Stuffing Box Bushing	Bronze Alloy C87850
18	Packing	Multi-Lok Braid Style ML2254 PTFE
19	Stuffing Box Gland	Ductile Iron A536 65-45-12 or 70-50-05
20	Stud	Steel ASTM A307, EZ Plated
21	Hex Nut	18-8 Stainless Steel



NOTES:

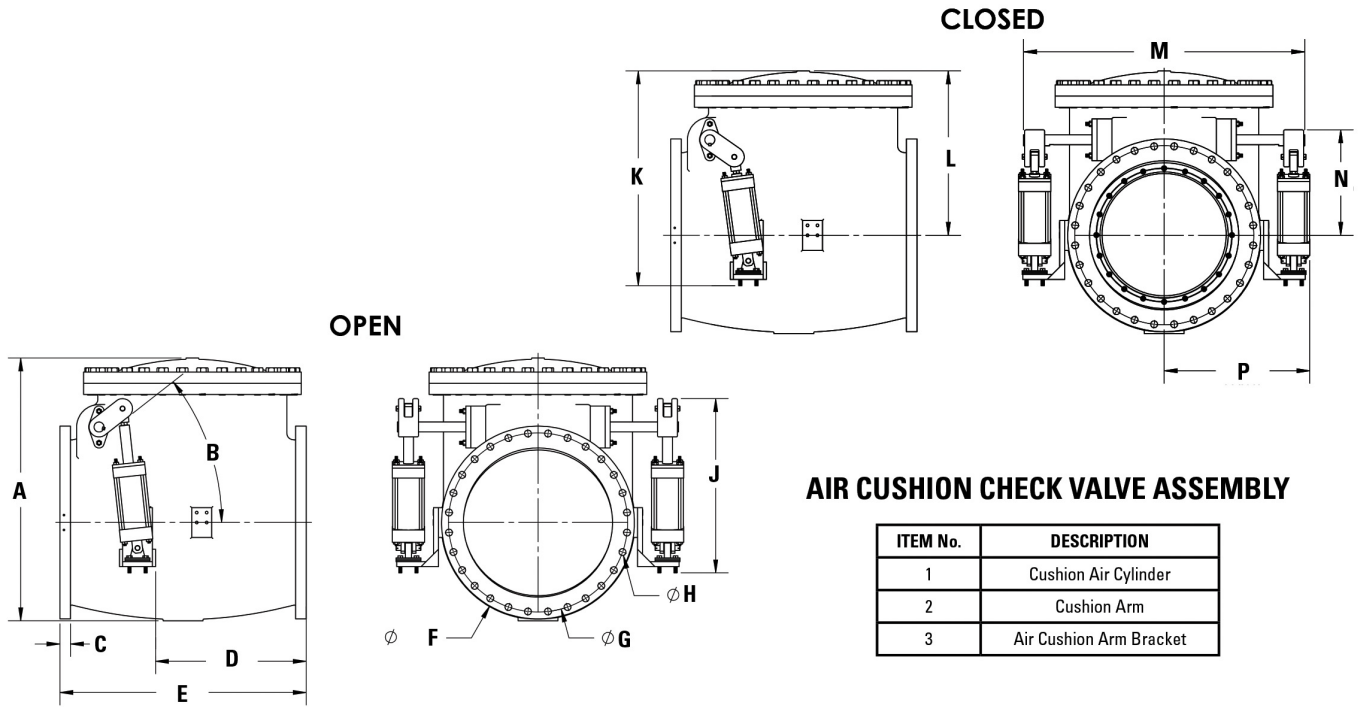
- Flow direction is specified on valve.
- Valve will meet or exceed AWWA C508 requirements.
- Rated and tested for 150psi working pressure.
- Valves are suitable for horizontal or vertical position installation.
- Reference AWWA C508 for flanges and drilling.
- Bolts on each flange (no threaded holes).



PLAIN CHECK VALVE DIMENSIONS

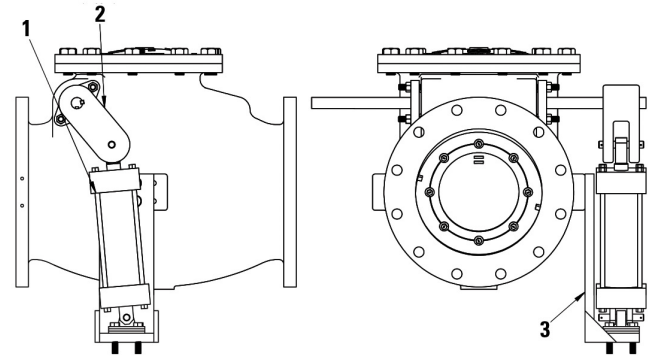
Size	A	B	C	D	E	F	G	H	J	K
14	29-11/16	18-15/16	1-3/8	30	37	23-1/2	6-3/4	1-1/8	21	18-3/4
16	34-11/16	21-13/16	1-7/16	35	38	27-3/4	5-1/8	1-1/8	23-1/2	21-1/4
18	37	23-5/16	1-9/16	36-1/2	41-1/2	27-1/2	7	1-1/4	25	22-3/4
20	38-3/16	24-7/16	1-11/16	37-5/8	45	32	6-1/2	1-1/4	27-1/2	25
24	46	28	1-7/8	44	52	38-3/4	6-5/8	1-3/8	32	29-1/2
30	52-7/16	33-1/16	2-1/8	49-1/2	56-1/2	43-3/4	6-3/8	1-3/8	38-3/4	36

AIR CUSHION CHECK VALVE FULL WALL/DOMESTIC SIZES 4"-30"



AIR CUSHION CHECK VALVE - OPEN

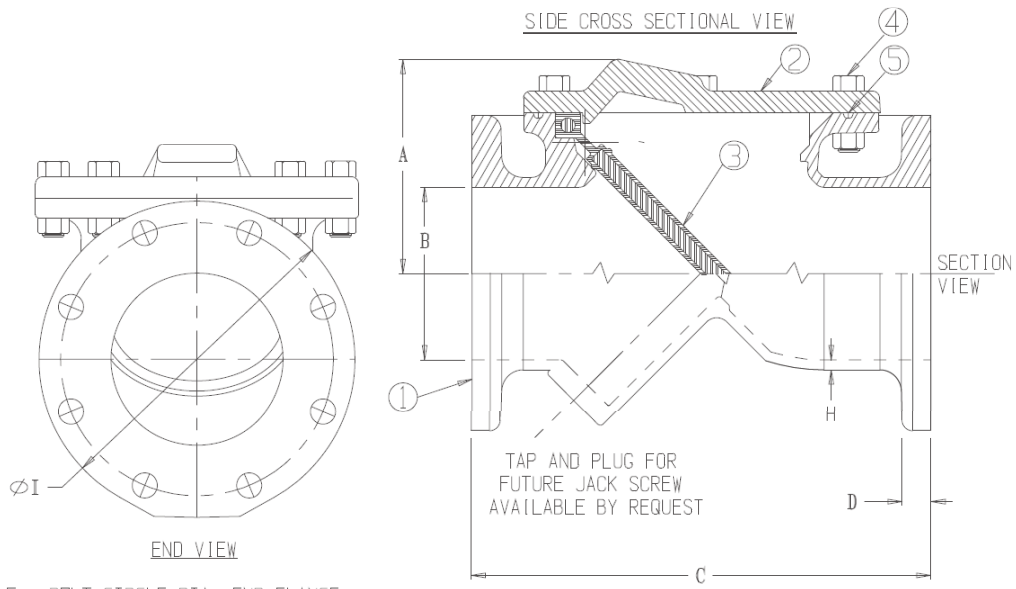
Size	A	B	C	D	E	F	G	H	J
14	29-11/16	48	1-3/8	14-3/4	30	21	18-3/4	1-1/8	34-5/16
16	34-11/16	45	1-7/16	17-3/4	35	23-1/2	21-1/4	1-1/8	32-5/8
18	35-13/16	21.5	1-9/16	19-1/8	36-1/2	25	22-3/4	1-1/4	32-3/16
20	38-3/16	48	1-11/16	20-7/8	37-5/8	27-1/2	25	1-1/4	35-1/4
24	46	37	1-7/8	26-15/16	44	32	29-1/2	1-3/8	35
30	52-13/16	38	2-1/8	30-1/4	49-1/2	38-3/4	36	1-3/8	35



NOTES:

1. 30" and larger come standard with double lever arms.
 2. Flow direction is specified on valve.
 3. Valve will meet or exceed AWWA C508 requirements.
 4. Rated and tested for 150psi working pressure.
 5. Valves are suitable for horizontal or vertical position installation.
 6. Reference AWWA C508 for flanges and drilling.
 7. Bolts on each flange (no threaded holes).
- For more information on Air Cushion components, contact a sales representative.

KEN-FLEX CHECK VALVE NO ACCESSORIES



E - BOLT CIRCLE DIA. END FLANGE
 F - NUMBER OF BOLTS REQ'D EACH END FLANGE
 G - BOLT HOLE DIAMETER FOR END FLANGE
 END FLANGES CONFORM TO ANSI B16.1

PARTS LIST			
PART No.	PART	MATERIAL	ASTM DESIGNATION
1	Body (FLG x FLG)	Ductile Iron, Coated	ASTM A536 GR 65-45-1 2
2	Cover Plate	Ductile Iron, Coated	ASTM A536 GR 65-45-1 2
3	Flapper	EPDM Flapper, Met. Insert	A536 DI/D-2000 BK 807
4	Cover Bolts & Nuts	Stainless Steel	SS 18-8 F59 3
5	O-Ring	Nitrile (Buna-N)	ASTM D2000

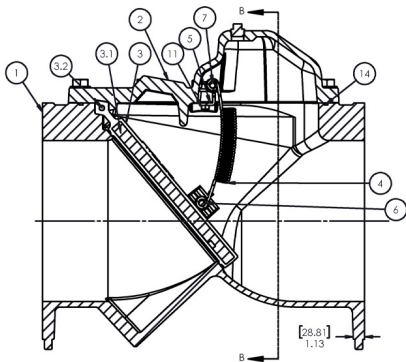
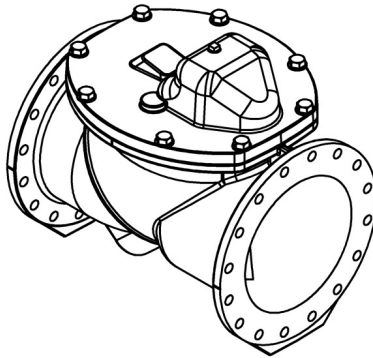
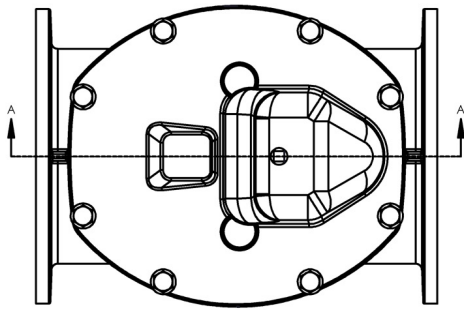
DIMENSIONS									
SIZE	A (APPROX.)	ØB	C	D (NDM)	ØE	F # BOLTS	ØG	H (NDM)	I
3	5.37	4.00	13	1.00	6.00	4	X	0.31	9.0
4	5.37	4.00	13	1.00	7.50	8	0.75	0.31	9.0
6	7.45	6.00	16	1.06	9.50	8	0.88	0.34	11.0
8	8.77	8.00	19.5	1.19	11.75	8	0.88	0.34	13.5
10	10.20	10.00	24.5	1.25	14.25	12	1.00	0.38	16.0
12	11.61	12.00	27.5	1.28	17.00	12	1.00	0.41	19.0

3" Valve (4) 0.62UNC-11-2B Tapped Holes (G) Straddle C.L. similar to other sizes.

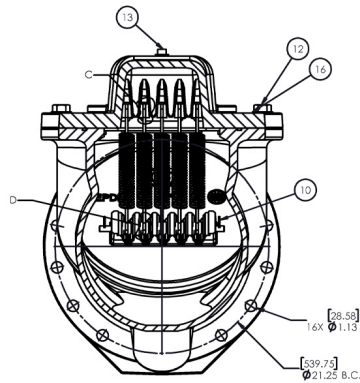
KEN-FLEX CHECK VALVE WITH SPRINGS

ITEM NO.	DRAWING	DESCRIPTION	MATERIAL	QTY.
1	81783	BODY	DUCTILE IRON	1
2	32511	COVER	DUCTILE IRON	1
3	54298	FLAPPER ASSEMBLY	EPDM RUBBER	1
3.1	32339	FLAPPER DISC	DUCTILE IRON	1
3.2	54301	KENFLEX FLAPPER PIN	AISI 1020	1
4	32475	SPRING	302 STAINLESS	5
5	32480	SPRING BRACKET - 16"	STAINLESS STEEL	1
6	54299	FLAPPER SPRING PIN	304 STAINLESS	1
7	54300	COVER SPRING PIN	AISI 304	1
8	32629	SPRING SPACER (TOP)	NYLON	10
9	32630	SPRING SPACER (BOTTOM)	NYLON	10
10	-	COTTER PIN	STAINLESS STEEL	2
11	-	HHCS - 1/2" - 13 X 5/8" LG.	STAINLESS STEEL	2
12	-	HHCS - 1" - 8 X 2 - 3/4" LG.	304SS	8
13	-	PIPE PLUG - 1" NPT	STEEL	1
14	-	O-RING, SIZE -471	-	1
15	OMIT	-	-	-
16	-	WASHER - 1"	STAINLESS STEEL	8

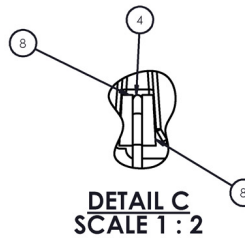
AWWA - TESTING DETAILS	
AWWA C508	250 PSI
DESCRIPTION	TEST PRESSURE
SHELL TEST	500 PSI
SEAT TEST	250 PSI



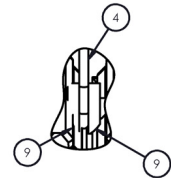
SECTION A-A



SECTION B-B

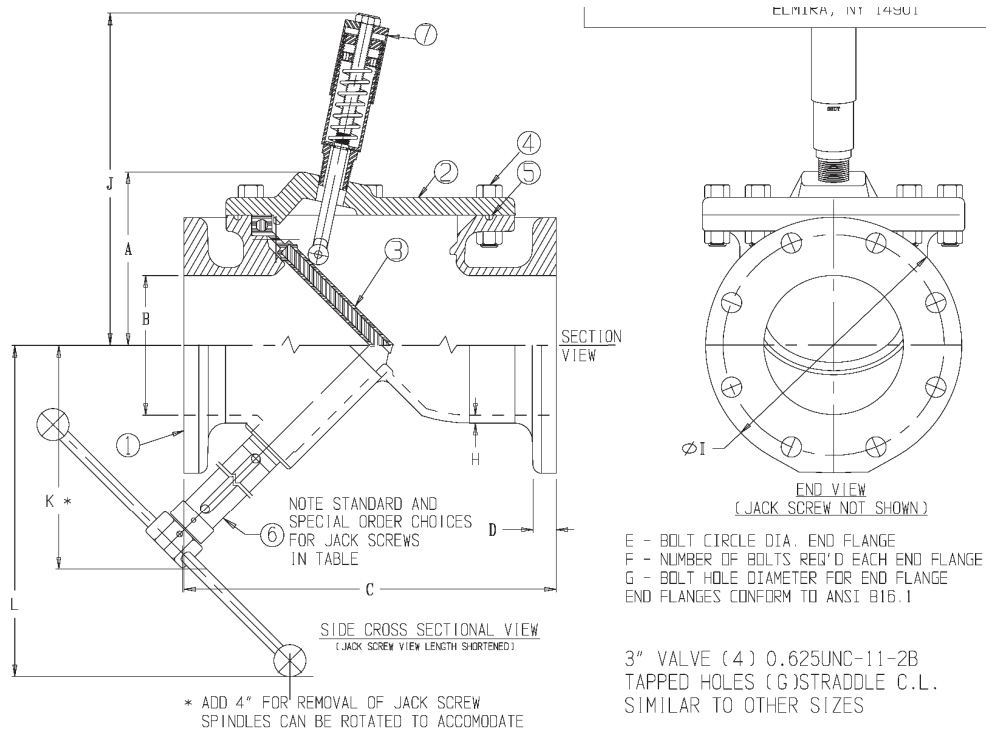


DETAIL C
SCALE 1:2



DETAIL D
SCALE 1:2

KEN-FLEX CHECK VALVE WITH POSITION INDICATOR AND JACK SCREW



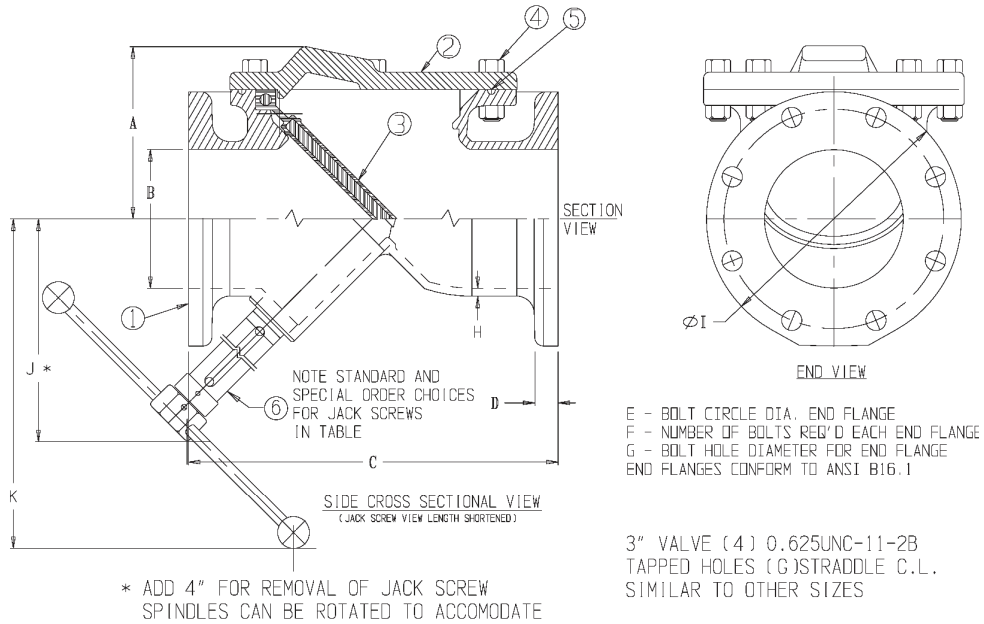
PARTS LIST

PART No.	PART	MATERIAL	ASTM DESIGNATION
1	Body (FLG x FLG)	Ductile Iron, Coated	ASTM A536 GR 65-45-12
2	Cover Plate	Ductile Iron, Coated	ASTM A536 GR 65-45-12
3	Flapper	EPDM Flapper, Met. Insert	A536 DI/D-2000 BK 807
4	Cover Bolts & Nuts	Stainless Steel	SS 18-8 F593
5	O-Ring	Nutrilite (Buna-N)	ASTM D2000
6	*1* Standard: Back Flow Jack Subassembly *2* Special Order: Back Flow Jack Subassembly	Refer to Standard & Special Jack Screw Legend	N/A
7	Position Indicator Subassembly	Stainless Steel Ext. Components	---

DIMENSIONS

SIZE	A (APPROX.)	ØB	C	D (NDM)	ØE	F	ØG	H (NDM)	I	J (APPROX.)	K	L
3	5.37	4.00	13	1.00	6.00	4	TAP SEE ABOVE	0.31	9.0	12.21	11	15
4	5.37	4.00	13	1.00	7.50	8	0.75	0.31	9.0	12.21	11	15
6	7.45	6.00	16	1.06	9.50	8	0.88	0.34	11.0	14.28	17	21
8	8.77	8.00	19.5	1.19	11.75	8	0.88	0.34	13.5	15.61	20	24
10	10.20	10.00	24.5	1.25	14.25	12	1.00	0.38	16.0	17.04	23	28
12	11.61	12.00	27.5	1.28	17.00	12	1.00	0.41	19.0	18.45	24	29

KEN-FLEX CHECK VALVE WITH JACK SCREW

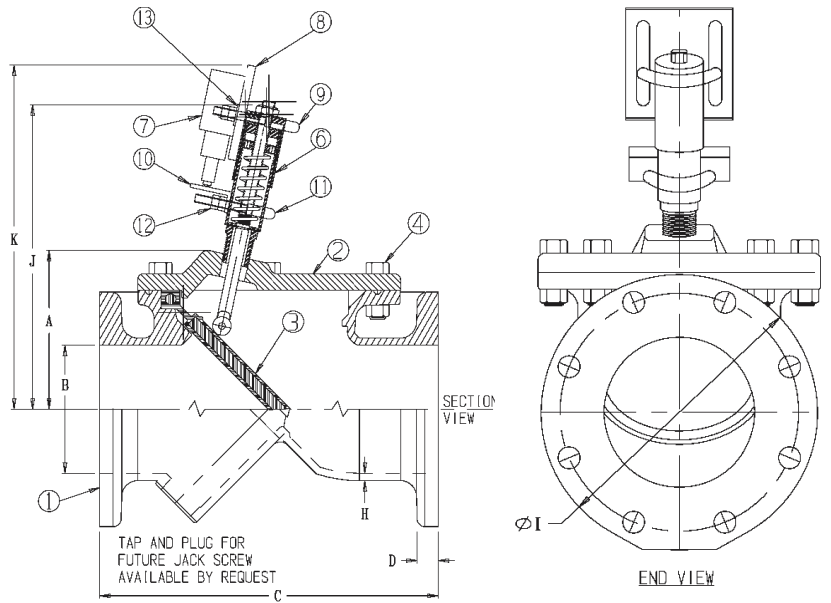


PARTS LIST			
PART No.	PART	MATERIAL	ASTM DESIGNATION
1	Body (FLG x FLG)	Ductile Iron, Coated	ASTM A536 GR 65-45-12
2	Cover Plate	Ductile Iron, Coated	ASTM A536 GR 65-45-12
3	Flapper	EPDM Flapper, Met. Insert	A536 DI/D-2000 BK 807
4	Cover Bolts & Nuts	Stainless Steel	SS 18-8 F593
5	O-Ring	Nutrite (Buna-N)	ASTM D2000
6	*1* Standard: Back Flow Jack Subassembly *2* Special Order: Back Flow Jack Subassembly	---	N/A

- *1* Standard Jack Screws;
4" --> 448010P (Stainless Steel)
6/8" --> 448106P (Stainless Steel)
10/12" --> 448010P (Painted, Steel)
- *2* Special Order Jack Screws;
10/12" --> 448110P (Stainless Steel)

DIMENSIONS											
SIZE	A (APPROX.)	ØB	C	D (NDM)	ØE	F	ØG	H (NDM)	I	J (APPROX.)	K (APPROX.)
3	5.37	4.00	13	1.00	6.00	4	TAP SEE ABOVE	0.31	9.0	11	15
4	5.37	4.00	13	1.00	7.50	8	0.75	0.31	9.0	11	15
6	7.45	6.00	16	1.06	9.50	8	0.88	0.34	11.0	17	21
8	8.77	8.00	19.5	1.19	11.75	8	0.88	0.34	13.5	20	24
10	10.20	10.00	24.5	1.25	14.25	12	1.00	0.38	16.0	23	28
12	11.61	12.00	27.5	1.28	17.00	12	1.00	0.41	19.0	24	29

KEN-FLEX CHECK VALVE WITH POSITION INDICATOR AND SWITCH



INSTALLATION NOTE S

1. Preferred KV installs switch, though with caution, customer is able to perform at their own risk.
2. Requires electrical service to switch (which oscillates flexible wiring / conduit / strain relief to meet all local code.
3. For further detail, drawing 55014 may be referred to.

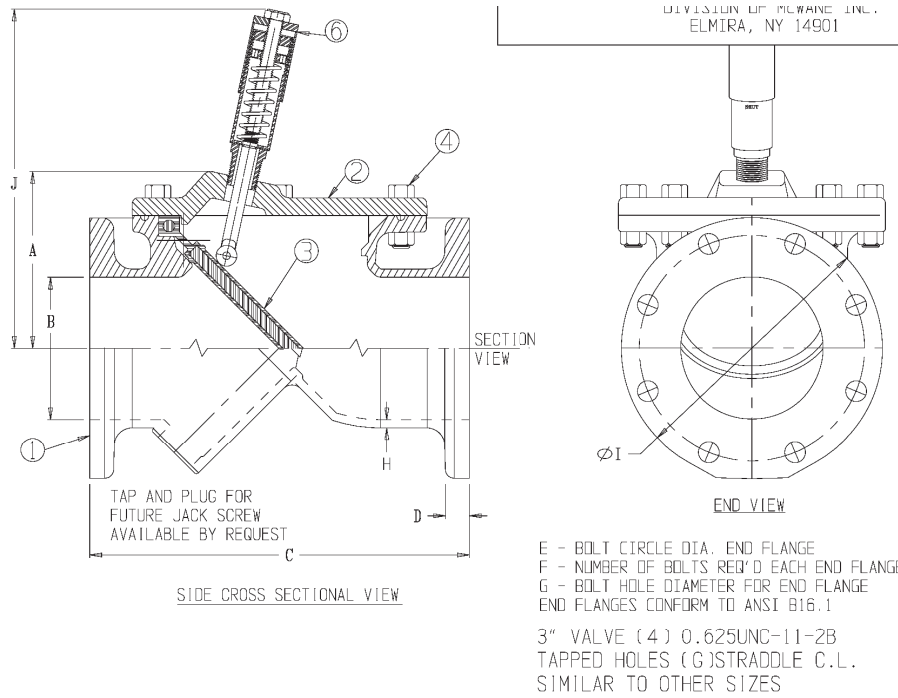
E - BOLT CIRCLE DIA. END FLANGE
 F - NUMBER OF BOLTS REQ'D EACH END FLANGE
 G - BOLT HOLE DIAMETER FOR END FLANGE
 END FLANGES CONFORM TO ANSI B16.1

PARTS LIST			
PART No.	PART	MATERIAL	ASTM DESIGNATION
1	Body (FLG x FLG)	Ductile Iron, Coated	ASTM A536 GR 65-45-12
2	Cover Plate	Ductile Iron, Coated	ASTM A536 GR 65-45-12
3	Flapper	EPDM Flapper, Met. Insert	A536 DI/D-2000 BK 807
4	Cover Bolts & Nuts	Stainless Steel	SS 18-8 F593
5	O-Ring	Nitrile (Buna-N)	ASTM D2000
6	Position Indicator Subassembly - p/n 448100P	Stainless Steel Ext. Components	----
7	A-B Rockwell 802T-BA Push Switch	Flex Cord Required	----
8	Adapter Plate	Stainless Steel 304	ASTM 276
9	Upper U-Bolt - Rubber Cushioned	McMasterr-Carr 30555T44	ASTM A193
10	Trip Angle	Stainless Steel 304 1 x 1 x 3/16	ASTM 276
11	Lower U-Bolt - Rubber Cushioned	McMasterr-Carr 30555T43	ASTM A193
12	Nuts - Add one to each side of clamp	304 SS (Some may come w/ U Bolts)	ASTM A193
13	Washers - 3/8 Diameter	Stainless Steel 304	ASTM A193

DIMENSIONS											
SIZE	A (APPROX.)	ØB	C	D (NDM)	ØE	F	ØG	H (NDM)	I	J (APPROX.)	K (APPROX.)
3	5.37	4.00	13	1.00	6.00	4	*1*	0.31	9.0	12.21	14.21
4	5.37	4.00	13	1.00	7.50	8	0.75	0.31	9.0	12.21	14.21
6	7.45	6.00	16	1.06	9.50	8	0.88	0.34	11.0	14.28	16.28
8	8.77	8.00	19.5	1.19	11.75	8	0.88	0.34	13.5	15.61	17.61
10	10.20	10.00	24.5	1.25	14.25	12	1.00	0.38	16.0	17.04	19.04
12	11.61	12.00	27.5	1.28	17.00	12	1.00	0.41	19.0	18.45	20.45

1 HOLES ARE TAPPED 0.625UNC-11-2B, STRADDLE C.L.

KEN-FLEX CHECK VALVE WITH POSITION INDICATOR



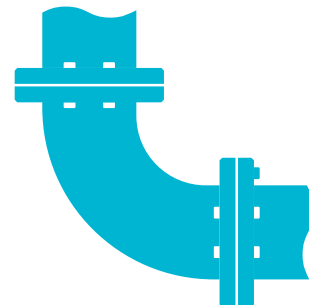
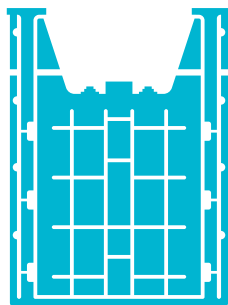
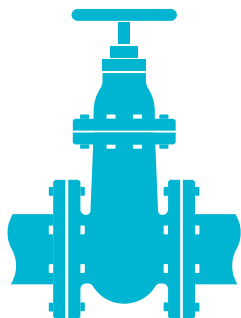
PARTS LIST			
PART No.	PART	MATERIAL	ASTM DESIGNATION
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3	Flapper	EPDM Flapper, Met. Insert	A536 DI/D-2000 BK 807
4	Cover Bolts & Nuts	Stainless Steel	SS 18-8 F593
5	O-Ring	Nutrilite (Buna-N)	ASTM D2000
6	Position Indicator Subassembly	Stainless Steel Ext. Components	---

DIMENSIONS										
SIZE	A (APPROX.)	ØB	C	D (NDM)	ØE	F	ØG TAP SEE ABOVE	H (NDM)	I	J (APPROX.)
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4	5.37	4.00	13	1.00	7.50	8	0.75	0.31	9.0	12.21
6	7.45	6.00	16	1.06	9.50	8	0.88	0.34	11.0	14.28
8	8.77	8.00	19.5	1.19	11.75	8	0.88	0.34	13.5	15.61
10	10.20	10.00	24.5	1.25	14.25	12	1.00	0.38	16.0	17.04
12	11.61	12.00	27.5	1.28	17.00	12	1.00	0.41	19.0	18.45



MPI PRODUCT LINE

VALVES • GATES • PIPE & FITTINGS



VALVES

SOLUTIONS:

- Rotating Disc Gate Valves (AWWA C500)
- Eccentric Plug Valves (AWWA C517)
- Butterfly Valves (AWWA C504)
- High Performance Butterfly Valves (API 609)
- Swing Check Valve (AWWA C508)
- Ken-Flex Resilient Hinged Check Valve
- Telescoping Valve
- Resilient Seat Gate Valve (AWWA C509/C515)
- Pressure Relief Valves (Floor & Wall)
- Mud Valves
- Shear Gate Valves
- Solid Wedge Gate Valve

GATES

SOLUTIONS:

- Fabricated Stainless Steel Gates
- Fabricated Aluminum Gates
- Stop Logs & Stop Gates
- Cast Iron Slide (Sluice) Gates
- Rectangular Butterfly Gates
- Automatic Level Control Gates
- Flap Gates

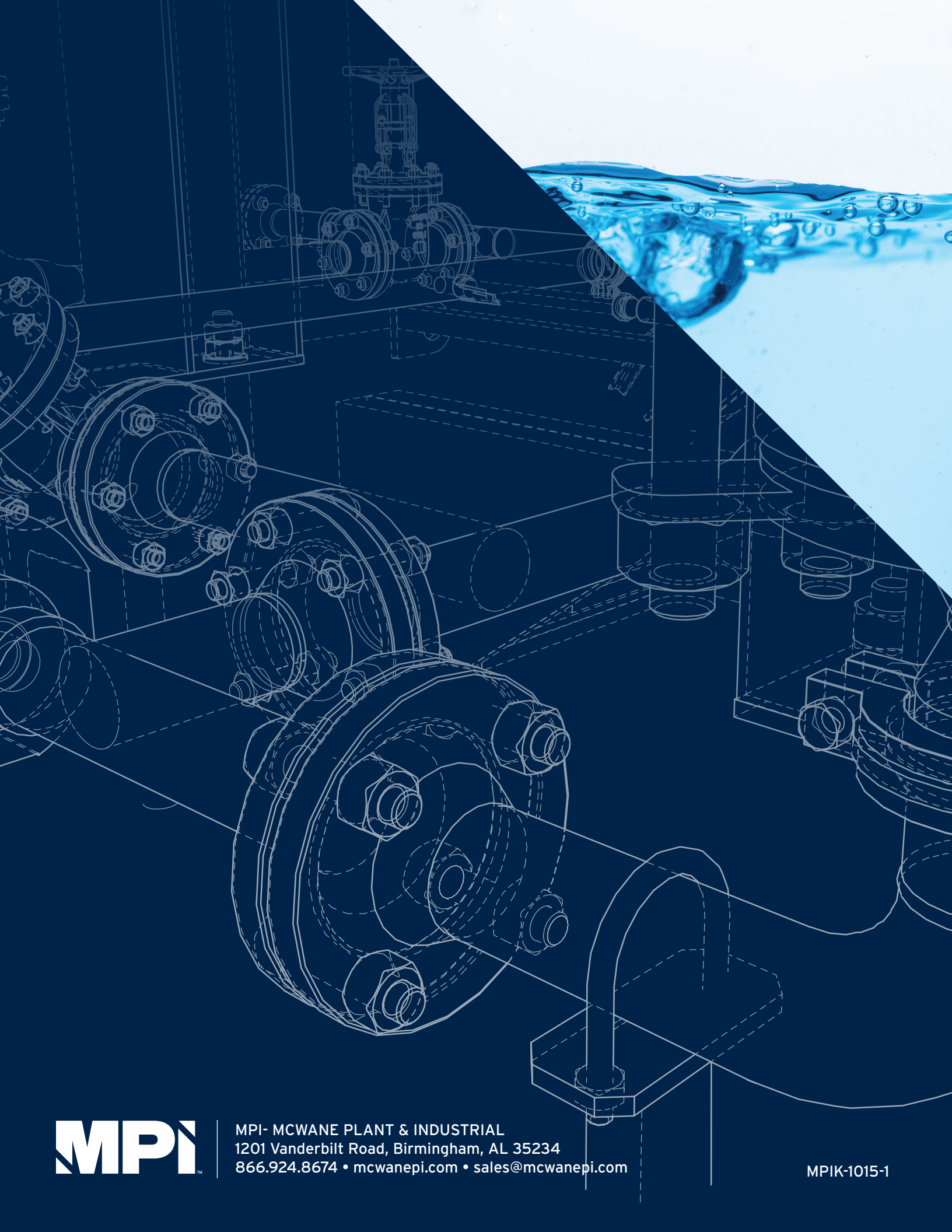
PIPE & FITTINGS

SOLUTIONS:

- Fabricated Flange and Wall Pipe
- Ductile Iron Pipe
- Grooved Pipe & Fittings
- Pipe Linings: cement, glass, Protecto 401™
- Welded Outlets, Thread-O-Lets, Welded Boss
- Restrained Joint Fittings
- Seismic Solutions



NOTES:



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MPIK-1015-1