

KENNEDY AWWA C515 RESILIENT WEDGE GATE VALVES (2000)

During the decade of the 1980's the waterworks industry was introduced to the Resilient Seated Gate Valve, a design principal that is dominate in preference for use in distribution systems. Kennedy Valve Company was at the forefront in this industry-wide movement by introducing the Style 8000, our AWWA C509 Resilient Seated Gate Valve.

After the official adoption of the AWWA C515 specification, Kennedy Valve once again is on the forefront of modern valve design and construction.

The Kennedy Valve Style 7000 Resilient Seated Gate Valve embodies all of the latest valve technology for simplicity, durability and superior performance. With the end user in mind, Kennedy Valve engineering designed the Kennedy Style 7000 to be fully interchangeable with the Kennedy C509 Style 8000. Kennedy Style 7000 meets or exceeds AWWA C515 and C550. Kennedy C515 valves are listed by Underwriters Laboratories and are approved by Factory Mutual Research. With no compromise in materials or workmanship, Kennedy Style 7000 valves carry a 10 year limited warranty. . it's the clear choice of those who demand the best.

EASE OF OPERATION

The Kennedy Valve RSGV has only two moving internal parts—the gate and the stem.

The gate is fully supported throughout travel by an integrally cast tongue and groove fit between it and the valve body. Lugs on the gate fully engage the coated guides cast into the valve body so the gate closes smoothly, without “chatter”, every time.

This positive gate alignment, plus positioning and engagement of the stem nut, virtually eliminate stem binding, and provide balanced loads and low operating torques. The Kennedy Valve RSGV is among the lowest in operating torques of all available competitive type valves

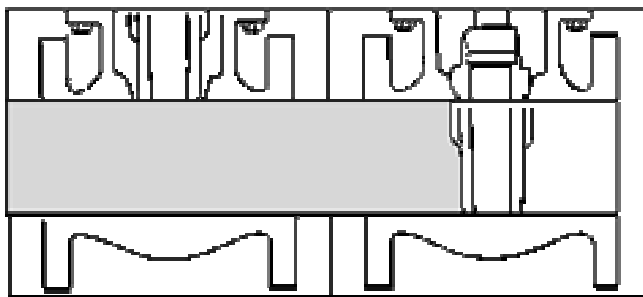
POSITIVE SEALING

A dual rubber seal is formed between the rubber encapsulated resilient wedge and the valve body to guarantee drop-tight shut-off every time. The combination of true compression and dynamic wedging of the gate is created without harmful sliding, shearing or other wear-inducing action.

The massive vulcanized rubber seating edges on the gate self-absorb normal wear and tear, assuring a positive seal, even after years of service. The Kennedy Valve RSGV will seal bubble-tight to 250 psi working pressure, with the flow in either direction and the valve in any position.

FULL FLOW CAPACITY / DUAL SEATING

The Kennedy Valve RSGV features an unobstructed, thru-conduit flow path for full flow capacity. Closed, the RSGV provides bottle-tight, zero leakage in either direction at full rated differential pressure with dual body gate seating.



FEATURES & BENEFITS / PERFORMANCE INFORMATION
KENNEDY AWWA C515 RESILIENT WEDGE GATE VALVES (2000)

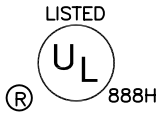
FEATURES	BENEFIT
Ductile Iron Body, Bonnet, Stuffing Box	• Easier handling
Bubble Tight Closure at 250 psi (AWWA) 4" – 12" at 250 psi (AWWA)	• No Leakage – No loss of water
Dual Rubber Seal	• Assures drop-tight shut-off in either direction.
Smooth, unobstructed waterway to maximize flow.	• High flow characteristics • 100% smooth passage without turbulent flow • No sediment build up • Will not impede travel of line cleaning tools
Only Three Internal Parts	• Virtually maintenance free
Only Two Moving Parts, the gate & the stem	• Less friction, less torque, longer life.
Integral Cast Tongue and Groove between wedge and valve body.	• Positive gate alignment every time
No Seat Rings	• Nothing to be damaged by scoring
Delrin* Anti-Friction Thrust Bearing	• Operating torque to close and open held to absolute minimum
Solid, Bronze Stem Nut and High Strength Bronze Stem	• No corrosion • Trouble free service
Stem Nut is Self Centering	• Eliminates possible stress on stem and wedge
Two O-Ring Seals Above Stem Thrust Collar and One Below	• Two O-Rings can be replaced with valve in service
High Strength Iron Wedge Fully Encapsulated with rubber Permanently Bonded to Metal.	• Trouble free service • No leaks – no wear
No Lubrication Required	• Trouble free service
American Cast and Assembled	• American Jobs • American backed product for more than 100 years • American quality
10 year limited warranty against defective materials or workmanship	• Customer assurance that Kennedy Valve believes in the strong product they produce.
Body / Bonnet Epoxy Coating Inside & Out	• Unprecedented Protection Against Corrosion and abrasion

* DuPont Trademark

PERFORMANCE INFORMATION

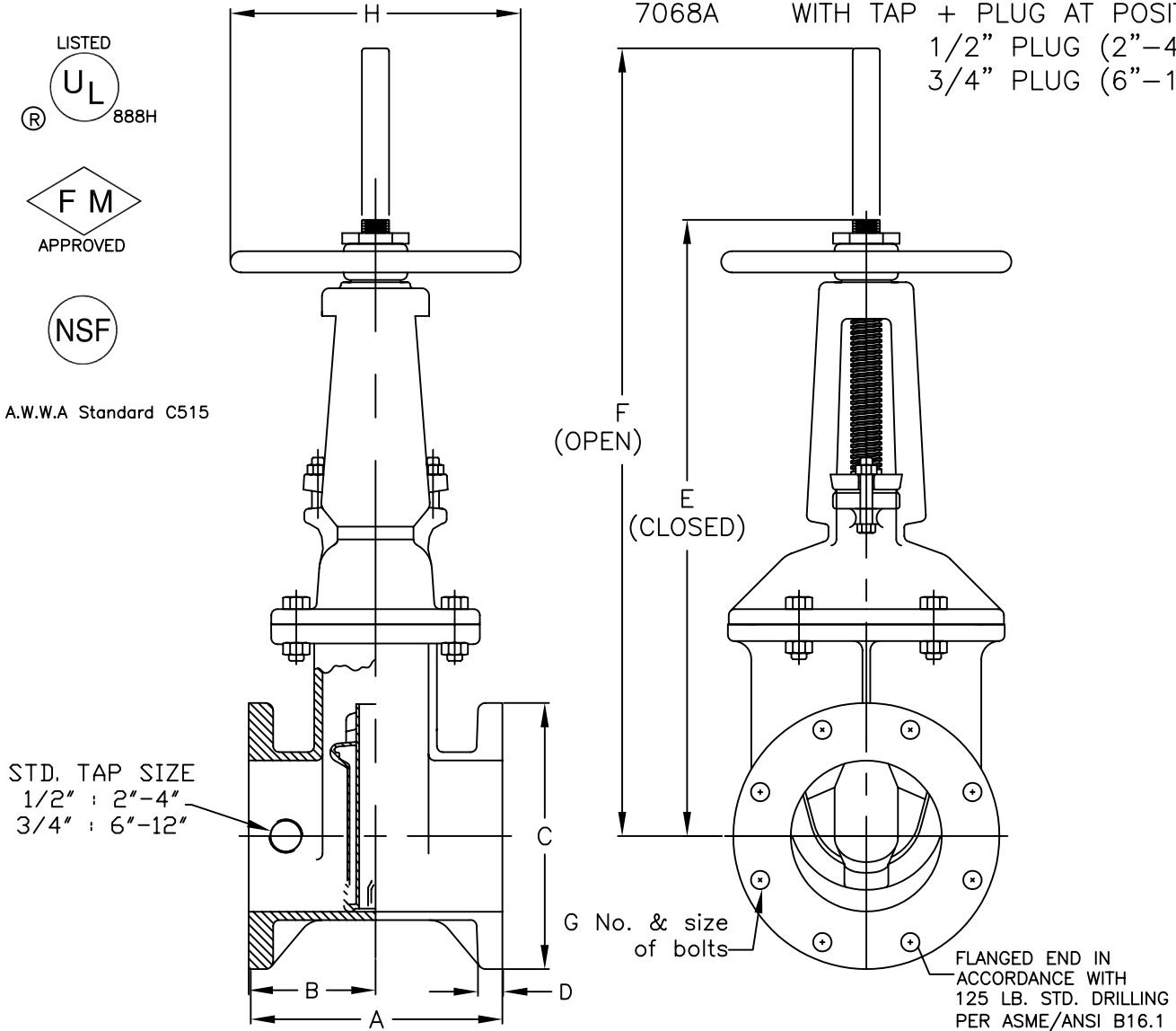
- 4"- 6" valves sizes have been hydrostatically shell tested at five (5) times UL rated pressure (1000 psi).
- 8", 10", and 12" have been hydrostatically shell tested at four (4) times UL rated pressure (800 psi).
- Valve is bubble-tight at all pressures up to full rated pressure (250 psi).
- Valve is capable of bubble-tight seal at pressures up to (400psi) for short periods of time.
- Valve has been subjected to torques 150 percent of the designated minimum required torques.
- Valve has been cycle tested 5,000 times without loss of bubble-tight seal.
- Rubber to iron bond on wedge is inspected for strength as per ASTM D429 specification

July 2005 / C515 Gate Valves



A.W.W.A Standard C515

7068 WITH NO TAPS IN BODY
 7068A WITH TAP + PLUG AT POSITION "A"
 1/2" PLUG (2"-4")
 3/4" PLUG (6"-12")



VALVE SIZE	A	B	C	D	E	F	G	H	WEIGHT 2" NUT
2	7	3 1/2	6	11/16	12	10	4-5/8	7 1/4	SEE NOTE
2 1/2	7 1/2	3 3/4	7	11/16	13 7/8	16 3/8	4 5/8	7 1/4	52
3	8	4	7 1/2	3/4	15 5/8	18 7/8	4 5/8	10	68
4	9	4 1/2	9	15/16	18 1/4	22 3/4	8 5/8	10	94
6	10 1/2	5 1/4	11	1	23 3/4	30 1/8	8 3/4	12	157
8	11 1/2	5 3/4	13 1/2	1 1/8	29 1/4	37 3/4	8 3/4	14	239
10	13	6 1/2	16	1 3/16	35 3/8	45 3/4	12 7/8	18	320
12	14	7	19	1 1/4	40 5/8	53 1/8	12 7/8	18	425

NOTE: 3" AND BELOW MANUFACTURED TO C509 SPEC, BUT MADE OF DUCTILE IRON
 NOTE: 2" CONSULT FACTORY FOR AVAILABILITY---AWAITING UL APPROVAL
 TURNS TO OPEN: 7 3/4(2"), 8(2 1/2"), 10(3"), 13 1/2(4"), 19 1/2(6"), 25 1/2(8"),
 31 1/2(10"), 37 3/4(12")

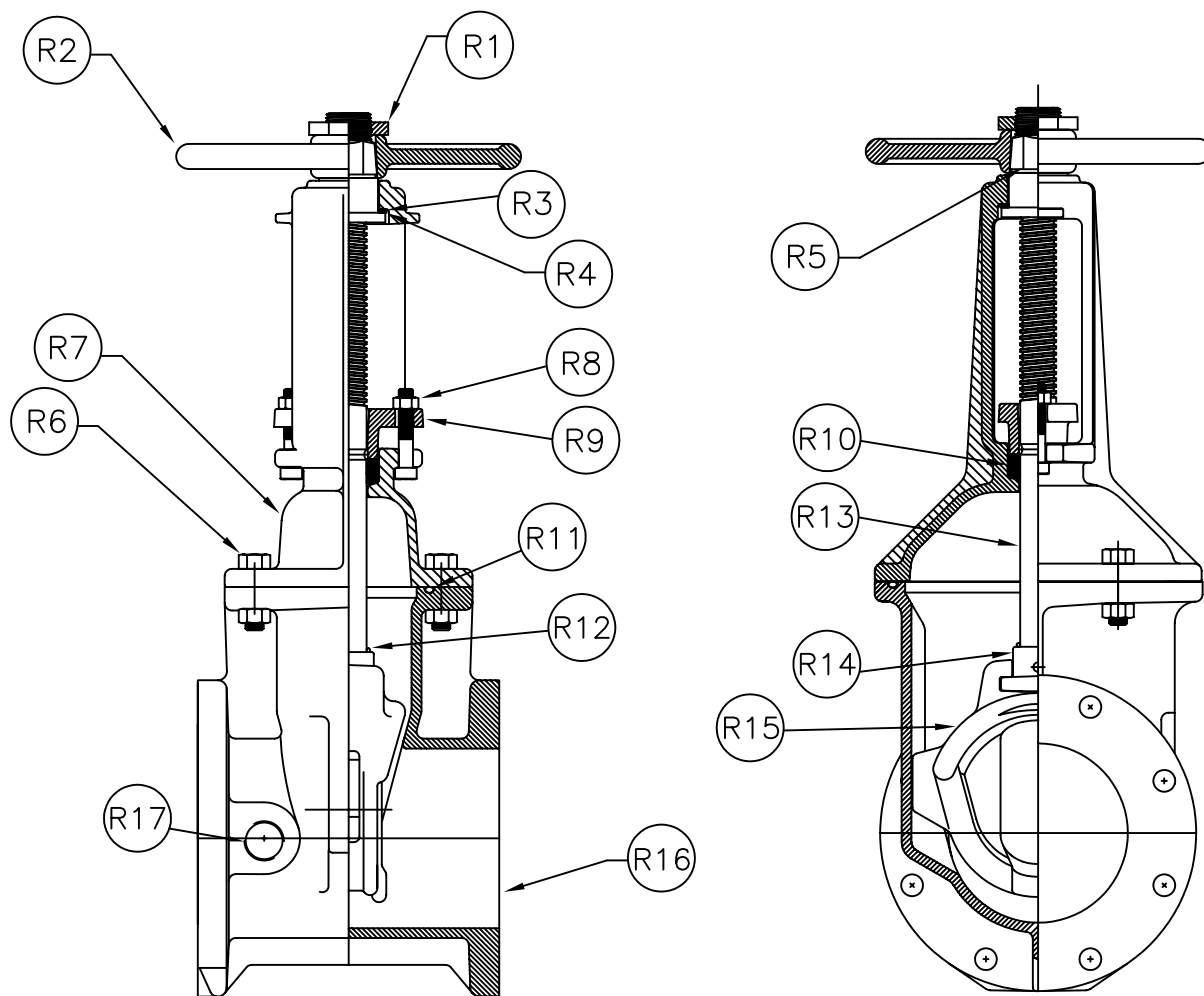
KENNEDY VALVE
 ELMIRA, NEW YORK
 A DIVISION OF MCWANE INC.



DWN: TRIJ
 DATE: 7/1/05
 DWG. NO.
 7068

2" THRU 12"
 RESILIENT SEAT OS&Y GATE VALVE
 C515-STYLE 7068
 FLANGED ENDS

ITEM	DESCRIPTION	MATERIAL	ASTM SPEC.
R1	HAND WHEEL HOLD DOWN NUT	BRONZE (AWWA GRADE A)	ASTM B584 CDA 844
R2	HAND WHEEL	CAST IRON	ASTM A126 CLASS B
R3	UPPER THRUST WASHER	BRONZE	ASTM B36 CDA 260
R4	LOWER THRUST WASHER	BRONZE	-----
R5	YOKE NUT	MANGANESE BRONZE	ASTM B584 CDA 862
R6	BOLTS & NUTS (COVER/YOKE)	ZINC PLATED STEEL	ASTM A307 GRADE B
R7	COVER/YOKE	DUCTILE IRON	ASTM A536 70-50-05
R8	HEX HEAD BOLTS (PACKING GLAND)	ZINC PLATED STEEL	ASTM A307 GRADE B
R8	HEX HEAD NUTS (PACKING GLAND)	BRASS	ASTM A563
R9	PACKING GLAND	DUCTILE IRON	ASTM A536 70-50-05
R10	PACKING	BRAIDED, LUBRICATED (NON-ASBESTOS) FIBER	
R11	O-RING (COVER/YOKE)	NBR	-----
R12	O-RING (STEM)	NBR	-----
R13	STEM	BRONZE	ASTM B584/B21
R14	STEM NUT	BRONZE	ASTM A584 CDA 844
R15	WEDGE	CAST IRON(SBR COATED)	ASTM A126 CL B/D2000
R16	BODY - ALL TYPES	DUCTILE IRON	ASTM A536 70-50-05
R17	PIPE PLUG (OPTIONAL)	GALVANIZED IRON	-----



KENNEDY VALVE
ELMIRA, NEW YORK
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DWN: TRIJ
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2" THRU 12"
RESILIENT SEAT GATE VALVE
VALVE ASSEMBLY / MATERIAL LIST
C515-OS&Y-STYLE 7068

SPECIFICATIONS / AVAILABLE CONFIGURATIONS & STYLE NUMBERS
KENNEDY AWWA C515 RESILIENT WEDGE GATE VALVES (2000)

Size Range	Water Working Pressure psi	Bubble Tight Seat Test psi	Hydrostatic Shell Test psi
AWWA 4" – 12"	250 Water Works	250 & 400	500
ULFM 4" – 12"	200 Fire Protection	250 & 400	500

Available End Connections	Size Range	Style No. With 2" Nut	Style No. With Hand wheel	Style No. With Post Plate
Mechanical Joint (NRS)	2"-12"(no 2 1/2")	7571	7571-HW	(3"-12") 7571-P
Flanged Ends (NRS)	2"-12"	7561	7561-HW	(3"-12") 7561-P
Note: 7561A is Tapped & Plugged in "A" Position 2" – 4" = 1/2 " Tap 6" – 12" = 3/4" Tap				
Flanged End X Mechanical Joint (NRS)	3"-12"	7572	7572-HW	7572-P
Push-on (For PVC / SDR)	2"-8"	7597	7597-HW	(3"-8") 7597-P
Threaded (NRS)	2"-3"	7057	7057-HW	(3" only) 7057-P
Push-on (For D.I. / C900) (NRS)	4"-12"	7901	7901-HW	7901-P
Push-on X Flange (For D.I. / C900)(NRS)	4"-12"	7902	7902-HW	7902-P
Flanged Ends (OS&Y)	2 1/2"-12"	7068	N/A	N/A
Note: 7068A is Tapped & Plugged in "A" Position 2" – 4" = 1/2 " Tap 6" – 12" = 3/4" Tap				
Tapping Valve (NRS)	4"-12"	7950	7950-HW	7950-P
Note: Each size accommodates a full size diameter tapping cutter.				
M.J. Cutting-in Valve (NRS)	4"-12"	7576	7576-HW	7576-P

Note: 3" and below manufactured to c509 spec, but made of ductile iron.

VALVE ACCESSORIES

Mechanical operational accessories are used for valves having special operational needs such as;

1. Location with limited access
2. Hazardous locations
3. Revision of operational position
4. High Torque Operation
5. Indication of Valve Position

Accessory selection must be evaluated for its capability to transmit the required torque requirements to the valve. To assure long-term trouble free operation, its materials of construction should take into account factors relating to corrosion and maintenance.

Accessories used on Kennedy valves can include the following:

Electric Motor Operators	Stem Guides
Indicator Posts	Hand wheels
"T" Handles	Extension Stems
Floor Boxes	Chain Wheels
Floor stands (Non-rising stem)	Position Indicators
Miter Box Gearing	Electronic Switches

SUGGESTED SPECIFICATIONS (4"-12") (Styles 8000 NRS: 8068 OS&Y)(1 of 2)
KENNEDY AWWA C515 RESILIENT WEDGE GATE VALVES (2000)

General: Gate valves shall be of the resilient seated wedge type, fusion bonded epoxy coated to ANSI / AWWA C550, ductile iron body design. They shall comply with the American Water Works Association Gate Valve Standard C-515-99 as latest revised.

Approvals: Gate Valve to Meet or Exceed the Requirements of AWWA C515
Gate Valve to Meet or Exceed the Requirements of UL-262
Gate Valve to Meet or Exceed FM – 1120 / 1130
Gate Valve to Meet NSF 61
Gate Valve Wedge to Meet or Exceed The Requirements of ASTM D429

Testing: Each valve shall be hydrostatically tested to the requirements of both AWWA and UL/FM and be rated for 250 psi AWWA service.

Valves shall be rated for zero leakage at 250psi water working pressure and have a 500psi hydrostatic test for structural soundness for 4" through 12".

All testing shall be conducted in accordance with AWWA C-515

Pressure Ratings:	Size Range	Water Working Pressure psi	Bubble-tight Test psi	Hydrostatic Shell Test psi
	4"-12" AWWA	250psi	250psi	500psi
	4"-12" ULFM	200psi	200psi	400psi

Materials: All cast iron shall conform to ASTM-A126 Class B. Castings shall be clean and sound without defects that will impair their service. No plugging or welding of such defects will be allowed.

All ductile iron shall conform to ASTM-536 70-50-05

Stem and wedge nut shall be a copper alloy in accordance with section 4.4.5 of AWWA C515

Bolts for above ground valves shall be electro-zinc plated steel with hex heads and hex nuts in accordance with ASTM A-307, and A-563 respectively.

Bolts for below ground valves shall be 304 stainless steel with hex heads and hex nuts.

Powder Coating: A high performance, one-part, heat-curable, thermosetting coating which provides superior corrosion resistance protection for metal parts.

Kennedy Valve Powder Coating material is a stable, non-toxic resin consisting of 100% solids. It is impervious to and imparts no taste to potable water. Kennedy Powder Coating is formulated from materials deemed acceptable in the Food and Drug Administration Document Title 21 of the Federal Regulations on food additives; Section 175.3000 entitled "Resinous and Polymeric Coatings".

Kennedy Powder Coating is applied using a heat application, fusion-bonding process which secures the coating material to the metal valve components. This process provides a visibly void-free coating 5-8 mils thick with excellent adhesion qualities.

The durable Kennedy Powder Coating has a hard finish and exhibits excellent corrosion resistance in most aqueous solutions. It will not sag or cold flow or become soft during long-term storage. In addition to excellent corrosion resistance to aqueous solutions, the coating has excellent stability and resistance to acidic soil conditions.

Kennedy Powder Coating meets both the application and performance requirements of the American Water Works Association standard ANSI / AWWA C550 entitled "Protective Interior Coatings for Valves and Hydrants".

SUGGESTED SPECIFICATIONS (4"-12") (Styles 8000 NRS: 8068 OS&Y)(2 of 2)

Design: Resilient Seated valves shall conform to the latest revision of AWWA Standard C-515-99. 4"-12" shall be UL listed and FM approved.

The valve shall have a ductile iron body and bonnet.

All internal parts shall be accessible for repair or maintenance without removing the body from the line.

NRS and OS&Y stems shall be of cast bronze. NRS stems shall have integral thrust collar with Delrin thrust bearing above and below the collar. NRS stems shall have two machined grooves above the thrust collar and one groove below for O-ring seals. The upper two O-rings shall be field removable with the valve under pressure.

Valves shall be supplied with O-ring seals at all joints. No flat gaskets allowed.

Blind bolts threaded into tapped holes in bonnet or body shall not be acceptable.

The stem nut shall be of cast bronze and independent of the stem and wedge for NRS valves. Stem nuts for OS&Y valves shall be securely fastened to the stem.

Tapping valve shall pass a full size cutter 4"-12"

The waterway in the seat area shall be smooth, unobstructed, free of cavities and for valves 4" and larger at least 0.19" greater in diameter than the nominal valve size.

Coating Thickness 5-8 mill inside and out.

Wedge / Gate: The wedge shall be of cast iron and completely encapsulated with a resilient elastomer material permanently bonded to the wedge and have a rubber tearing bond that meets ASTM D429.

Marking: Markings in accordance with AWWA C-515 standard. Includes name of manufacturer, the year of manufacture, maximum working pressure and size of valve. In addition, country of origin to be clearly cast into body & cover castings.

Warranty: Resilient seated gate valves shall be covered by a ten-year limited warranty against defective materials or workmanship.

End Connections: Mechanical joint end valves to match ANSI / AWWA C111/A21.11.
Flanged end valves to match ANSI / AWWA C110/A21.10 (ASME B16.1, Class 125)
Tapping valves through 12" shall mate all sleeves through 12" outlet regardless of manufacturer. Valves shall be furnished with tapping sleeve side to ASME B16.1 Class 125 flanged end with centering ring. Outlet side of valve shall be mechanical joint with (without) accessories to ANSI / AWWA C111/A21.11.
Push-on ends suitable for stab joints with ductile or cast iron.

Laying Lengths / Configurations Valves not listed in ANSI, AWWA, UL, or FM have dimensions per Kennedy design as noted in catalog.

MATERIAL SPECIFICATIONS

KENNEDY AWWA C515 RESILIENT WEDGE GATE VALVES (2000)

STANDARD CAST BRONZE—ASTM B584 CDA844 (Stem Nut) – To AWWA GRADE A

Physical Properties

Minimum tensile strength	29,000psi
Minimum yield strength	14,000psi
Minimum elongation (in 2 inches)	18%

Chemical Analysis

*Copper	78.0 – 82.0
Lead	6.0 – 8.0
Tin	2.3 – 3.5
Nickel (maximum)	1.0
Zinc	7.0 – 10.0
* = CU + NI = 79% Min	

CAST BRONZE – ASTM B584 CDA867 (NRS Stem) – To AWWA Grade C

Physical Properties

Minimum tensile strength	80,000 psi
Minimum yield strength	32,000 psi
Minimum elongation (in 2 inches)	15%

Chemical Analysis

Copper	55.0 – 60.0	Lead (maximum)	.50 – 1.5
Aluminum			1.0 – 3.0
Iron			1.0 – 3.0
Nickel (maximum)			1.0
Zinc			30.0 – 38.0
Manganese			1.0 – 3.5
Tin (maximum)			.2

STYRENE BUTADINE RUBBER – ASTM D-5000

Hardness	78±5
100% Modulus (PSI)	800

ALTERNATE CAST BRONZE – NDZ-S CA. No. 995 (NRS Stem) To AWWA GRADE E

Physical Properties

Minimum tensile strength	70,000 psi
Minimum yield strength	40,000 psi
Minimum elongation (in 2 inches)	12%

Chemical Analysis

Copper	82.8
Lead (maximum)	.25
Aluminum (maximum)	2.0
Iron (maximum)	5.5
Nickel (maximum)	5.5
Zinc (maximum)	2.0
Silicon (maximum)	2.0

KENNEDY AWWA C515 RESILIENT WEDGE GATE VALVES (2000)

FLOW COEFFICIENTS

VALVE SIZE	Cv (FULL OPEN)	K (FULL OPEN)
2"	300	0.15
2 1/2"	500	0.130
3"	800	0.115
4"	1500	0.105
6"	3600	0.090
8"	6700	0.080
10"	10,500	0.080
12"	15,000	0.080

Note: 2", 2 1/2", 3" are C509 spec but made of ductile.

$$C_v = \frac{Q}{\sqrt{\Delta P}} \qquad K = f \frac{L}{D}$$

Values given are calculated, based on hydraulic lab test on 6" R/W valve.

NEW VALVE ORDERING INFORMATION

Be sure to give correct style number along with an end connection description when ordering

All valves furnished open left unless specified otherwise.

If product application requires materials other than standard, give specification of component parts material to be used.

All mechanical joint valves are furnished with accessories unless specified otherwise.

A 2-inch square-operating nut on underground valves is standard unless specified otherwise.

Handwheel on OS&Y and flanged end valves are standard unless specified otherwise.

ORDERING PARTS FOR VALVES

When ordering parts indicate the following:

Part number and descriptions

Size of valve

Direction to open

Year of manufacture

End configuration

NRS or OS&Y

Pressure Rating

LIMITED WARRANTY

KENNEDY AWWA C515 RESILIENT WEDGE GATE VALVES (2000)

KENNEDY VALVE CO. RESILIENT SEAT GATE VALVE TEN YEAR LIMITED WARRANTY

Kennedy Valve Company warrants that its Resilient Seated Wedge Gate Valves will be free from defects in material and workmanship under normal and customary use and maintenance for a period of ten (10) years from the date of purchase, provided the valve is installed and maintained according to Kennedy instruction, and applicable codes. The foregoing warranty does not cover failure of any part or parts from external forces, including but not limited to earthquake, vandalism, vehicular or other impact, and application of excessive torque to the operating mechanism or frost heave.

Should any Kennedy Valve Company part or parts fail to conform to the foregoing warranty, Kennedy shall, upon prompt written notice thereof, repair or replace, F.O.B. point of manufacture, such defective part or parts. Purchaser shall, if requested, return the part or parts to Kennedy, transportation prepaid. Purchaser shall bear all responsibility and expense incurred for removal, reinstallation and shipping in connection with any part supplied under the foregoing warranty.

THE FOREGOING WARRANTY IS IN LIEU OF AN EXCLUDES ALL OTHER WARRANTIES NOT EXPRESSLY SET FORTH HEREIN, WHETHER EXPRESS OR IMPLIED BY OPERATION OF LAW OR OTHERWISE, INCLUDING BUT NOT LIMITED TO ANY WARRANTIES OF MERCHANT ABILITY OR FITNESS. IN NO EVENT SHALL KENNEDY VALVE COMPANY BE RESPONSIBLE OR LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL LOSSES, DAMAGES OR EXPENSES.

July 2005 / C515 Gate Valves