



## RECOMMENDED SPECIFICATIONS FOR C-509 RESILIENT WEDGE GATE VALVES

KENNEDY VALVE

### RESILIENT SEATED GATE VALVE 2"-12" C-509

1. Valves shall conform to the latest version of AWWA Standard C-509 covering Resilient Seated gate Valves for Water Supply Service.
2. The valves shall have a cast iron body, bonnet and wedge. The wedge shall be totally encapsulated with rubber.
3. The sealing rubber shall be permanently bonded to the wedge to meet ASTM tests for rubber metal bond ATSM D249.
4. Valves shall be supplied with O-Ring seals at all joints (no gaskets are used in the valve design).
5. The valves shall be either non-rising or rising stem, opening by turning (left, right,) and provided with 2" square operating nut or a handwheel with the "Open" and an arrow cast in the metal to indicate the direction to open.
6. Stems for NRS assemblies shall be cast bronze with integral collars in full compliance with AWWA. OS&Y (rising stems) shall be of bronze. All stems shall operate with bronze stem nuts, independent of stem (in NRS valves). NRS stems shall have (2) O-Rings located above thrust collar and (1) O-Ring below. All stem O-Rings shall be replaceable with valve fully opened and subjected to full pressure. The NRS stems shall also have (2) low torque thrust bearings located above and below stem collar to reduce friction during operation.
7. Waterway shall be smooth, unobstructed and free of all pockets, cavities and depressions in the seat area. Valves shall accept a full size tapping cutter.
8. The body, bonnet and stuffing plate shall be coated with fusion bonded epoxy, both interior and exterior on body and bonnet. Epoxy shall be applied in accordance with AWWA C550 and be NSF 61 and UL certified. PIV plates shall be painted black.
9. Each valve shall have a maker's name, pressure rating, and year in which it was manufactured cast in the body. Prior to shipment from the factory, each valve shall be tested by hydrostatic pressure equal to requirements of both AWWA and UL/FM.
10. All internal parts shall be accessible without removing the body from the line.
11. Valves shall have all brass components cast and assembled in the USA and shall be manufactured by Kennedy Valve Company or equal.

**RECOMMENDED SPECIFICATIONS  
FOR C-515 RESILIENT  
WEDGE GATE VALVES**

KENNEDY VALVE

**RESILIENT SEATED GATE VALVE 4"-24"  
C-515**

1. Valves shall conform to the latest version of AWWA Standard C-515 covering Resilient Seated gate Valves for Water Supply Service.
2. The valves shall have a ductile iron body and bonnet. The wedge shall be totally encapsulated with rubber.
3. The sealing rubber shall be permanently bonded to the wedge to meet ASTM tests for rubber metal bond ATSM D249.
4. Valves shall be supplied with O-Ring seals at all joints. No flat gaskets shall be allowed.
5. The valves shall be either non-rising or rising stem, opening by turning left to right, and provided with 2" square operating nut or a handwheel with the "Open" and an arrow cast in the metal to indicate the direction to open.
6. Stems for NRS assemblies shall be cast bronze with integral collars in full compliance with AWWA. OS&Y (rising stems) shall be of bronze. All stems shall operate with bronze stem nuts, independent of stem (in NRS valves). NRS stems shall have (2) O-Rings located above thrust collar and (1) O-Ring below. All stem O-Rings shall be replaceable with valve fully opened and subjected to full pressure. The NRS stems shall also have (2) low torque thrust bearings located above and below stem collar to reduce friction during operation.
7. Waterway shall be smooth, unobstructed and free of all pockets, cavities and depressions in the seat area. Valves shall accept a full size tapping cutter.
8. The body, bonnet and stuffing plate shall be coated with fusion bonded epoxy, both interior and exterior on body and bonnet. Epoxy shall be applied in accordance with AWWA C550 and be PU0 F00 A00 U00 H00 C00 A00. PIV plates shall be painted black.
9. Each valve shall have a maker's name, pressure rating, and year in which it was manufactured cast in the body. Prior to shipment from the factory, each valve shall be tested by hydrostatic pressure equal to requirements of AWWA.
10. Valves shall have all brass components cast and assembled in the USA and shall be manufactured by Kennedy Valve Company or equal.

**KS-FW (C509)  
MATERIAL SPECIFICATIONS**

KENNEDY VALVE

## Material Specifications

**CAST IRON Specification ASTM A126 Class B**

*Physical Properties*

Minimum tensile strength	31,000 psi
Minimum transverse strength	3,300 lbs.
Minimum deflection (12" centers)	.12 in

*Chemical Analysis (percent)*

Phosphorus (maximum)	.75
Sulfur (maximum)	.15

**STANDARD**

**CAST BRONZE - ASTM B763 C99500 (Stem Nut)**

*Physical Properties*

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

*Chemical Analysis*

Copper	Remainder
Lead (maximum)	.25
Aluminum	0.5 - 2.0
Iron	3.0 - 5.0
Nickel (maximum)	3.5 - 5.5
Zinc	0.5 - 2.0
Silicon	0.5 - 2.0
Manganese (maximum)	0.5

**CAST BRONZE - ASTM B584 C86700 (NRS Stem)**

*Physical Properties*

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

*Chemical Analysis*

Copper	57.0 - 60.0
Lead (maximum)	.50 - 1.50
Aluminum	1.0 - 3.0
Iron	1.0 - 3.0
Nickel (maximum)	1.0
Zinc	30.0 - 38.0
Tin (maximum)	1.5

**(EPDM) Ethylene Propylene Diene Monomer**

Hardness (Shore A)	80± 5
Tensile (PSI)	1,500 min
Elongation (%)	150 min
Compression set, ASTM D395 Method B	20% max

**KS-RW (C515)  
MATERIAL SPECIFICATIONS**

KENNEDY VALVE

## Material Specifications

**DUCTILE IRON Specification ASTM A536 Grade 70-50-5**

*Physical Properties*

Minimum tensile strength	70,000 psi
Minimum transverse strength	50,000 lbs
Minimum deflection (12" centers)	5%

**STANDARD**

**CAST BRONZE - ASTM B763 C99500 (Stem Nut)**

*Physical Properties*

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

*Chemical Analysis*

Copper	Remainder
Lead (maximum)	.25
Aluminum	0.5 - 2.0
Iron	3.0 - 5.0
Nickel (maximum)	3.5 - 5.5
Zinc	0.5 - 2.0
Silicon	0.5 - 2.0
Manganese (maximum)	0.5

**CAST BRONZE - ASTM B584 C86700 (NRS Stem)**

*Physical Properties*

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

*Chemical Analysis*

Copper	57.0 - 60.0
Lead (maximum)	.50 - 1.50
Aluminum	1.0 - 3.0
Iron	1.0 - 3.0
Nickel (maximum)	1.0
Zinc	30.0 - 38.0
Tin (maximum)	1.5

**(EPDM) Ethylene Propylene Diene Monomer**

Hardness (Shore A)	80± 5
Tensile (PSI)	1,500 min
Elongation (%)	150 min
Compression set, ASTM D395 Method B	20% max

**KS-RW & KS-FW  
LOW ZINC  
MATERIAL SPECIFICATIONS**

KENNEDY VALVE

**Material Specifications**

**ALTERNATE**

**CAST BRONZE - NDZ ASTM B763 C99500 (NRS Stem & Stem Nut)**

*Physical Properties*

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

*Chemical Analysis*

Copper	Remainder
Lead (maximum)	.25
Aluminum	0.5 - 2.0
Iron	3.0 - 5.0
Nickel	3.5 - 5.5
Zinc	0.5 - 2.0
Silicon	0.5 - 2.0
Manganese (maximum)	0.5

**2' - (, " KS-RW & FW  
RESILIENT SEAT VALVE  
FLOW COEFFICIENTS**

KENNEDY VALVE

Valve Size	Cv (Full Open)	K (Full Open)
2	300	0.15
2.5	500	0.13
3	800	0.115
4	1500	0.105
6	3600	0.09
8	6700	0.08
10	10500	0.08
12	15000	0.08
14	20800	0.08
16	27200	0.08
18	34400	0.08
20	42400	0.08
24	61100	0.08
30	95500	0.08
36	138000	0.08
42	187000	0.08
48	244000	0.08

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

**▲ P** = (Delta P) Differential pressure (psi) between two points

**Cv** = Flow coefficient for valves: expresses flow rate in gallons per minute of 60°F water with 1.0 psi pressure drop across valve

**Q** = Rate of flow in gallons per minute

**K** = Resistance coefficient or velocity head loss

**f** = Friction factor

**L** = Length of pipe in feet

**D** = Internal diameter of pipe in feet

Updated 05/06/15

## KENNEDY VALVE POWDER COATING

KENNEDY VALVE

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

Kennedy 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 for food additives, Section 175.300 entitled "Resinous and Polymeric Coatings".

Kennedy Powder Coating is applied by a heat application, fusion - bonding process which secures the coating material to the metal valve components. This process provides a coating averaging 9 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 C-550 entitled "Protective Interior Coatings for Valves and Hydrants".

**PRODUCT ANALYSIS  
MODELS KS-FW & KS-RW  
RESILIENT WEDGE VALVE**

KENNEDY VALVE

<b>Features</b>	<b>Benefits</b>
Bubble Tight at 250 psi	<ul style="list-style-type: none"> <li>● No Leakage - no loss of water</li> </ul>
Smooth, Unobstructed Waterway	<ul style="list-style-type: none"> <li>● High flow characteristics</li> <li>● 100% smooth passage without turbulent flow</li> <li>● No sediment build-up</li> <li>● Will not impede travel of line cleaning tools</li> </ul>
Only Three Internal Parts	<ul style="list-style-type: none"> <li>● Virtually maintenance free</li> </ul>
No Seat Rings	<ul style="list-style-type: none"> <li>● Nothing to be damaged by scoring</li> </ul>
Anti-Friction Thrust Bearing	<ul style="list-style-type: none"> <li>● Operating torque to close and open held to absolute minimum</li> </ul>
Solid, Bronze Stem Nut and High Strength Bronze Stem	<ul style="list-style-type: none"> <li>● No corrosion</li> <li>● Trouble-free service</li> </ul>
Stem Nut is Self Centering	<ul style="list-style-type: none"> <li>● Eliminates possible stress on stem and wedge</li> </ul>
Two "O" Ring Seals Above Stem Thrust Collar	<ul style="list-style-type: none"> <li>● Can be replaced with valve in service</li> </ul>
Third O-Ring Below Stem Collar	<ul style="list-style-type: none"> <li>● Facilitates Repacking Under Pressure</li> </ul>
High Strength Iron Wedge Fully Encapsulated with Rubber Permanently Bonded to Metal. Wedge Design Incorporated Two Seating Surfaces	<ul style="list-style-type: none"> <li>● Trouble-free service with minimum maintenance</li> <li>● No Leaks - no wear</li> </ul>
High Strength Cast or Ductile Iron Body, Bonnet and Stuffing Box	<ul style="list-style-type: none"> <li>● Superior tensile strength</li> <li>● Meets or exceeds AWWA C509 or C515 standards</li> </ul>



**RECOMMENDED SPECIFICATIONS  
FOR C-509 & C-515 RESILIENT  
WEDGE GATE VALVES**

KENNEDY VALVE

**URNS TO FULLY OPEN RSGV**

**MODEL KS-FW (C509) and KS-RW (C515)**

<b>SIZE</b>	<b>Without Gearing</b>	<b>With Spur Gear</b>	<b>With Bevel Gear</b>
2"	6 1/2	---	---
2 1/2"	8	---	---
3"	10	---	---
4"	13 1/2	---	---
6"	19 1/2	---	---
8"	25 1/2	---	---
10"	31 1/2	---	---
12"	37 3/4	---	---
14"	52	104	104
16"	52	104	104
18"	64	192	192
20"	64	192	192
24"	76	228	228
30"	98	588	588
36"	114	684	684
* 42"	100	800	800
* 48"	100	800	800
* 54"	100	800	800

\* 2TPI Stem Threads



# **Kennedy Valve**

A DIVISION OF McWANE, INC.

[www.kennedyvalve.com](http://www.kennedyvalve.com)

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