



WATERWORKS

Olivehurst Public Utility District

1970 9th Ave
Olivehurst, CA. 95961

June 3, 2026

Project: OPUD WATER MAIN & SERVICE LINE MATERIAL RFB

Bid Due Date: June 12, 2026

Bid Opening: June 12, 2026, Shortly after bid due date

Attached:

OPUD Bid Form

Submittals for bid materials

PACE Supply quote on company letterhead

Regards,

Rick Merri

Waterworks Valley Manager
PACE Supply Corp.
8400 24th Ave
Sacramento, CA. 95826
916-826-7060

OLIVEHURST PUBLIC UTILITY DISTRICT
NOTICE OF REQUEST FOR SEALED BID'S

(DATE) MAY 21, 2026

OWNER: **Olivehurst Public Utility District**
PROJECT: **OPUD WATER MAIN & SERVICE LINE MATERIAL RFB**

TO: Contractor / Bidder
BID DUE DATE: June 12, 2026 2:00 P.M.
BID OPENING DATE/TIME: June 12, 2026 Shortly after Bid Due Date.

SUBMIT BID
TO: **Olivehurst Public Utility District**
1970 9th Avenue
Olivehurst, CA 95961
(530) 682-0736

Notice is hereby given to all prospective Contractors /Suppliers to **submit a sealed BID** on or before the above date. Contractor / Supplier agree to supply all equipment described in the available CONTRACT DOCUMENTS consisting of Plans, proposal document and Specifications. OPUD is looking for BIDS for the purchase of various water service material and pipe material. Copies of the CONTRACT DOCUMENTS may be obtained from Olivehurst Public Utility District, upon the non-refundable payment of \$ 50 per set, or you may request a free electronic copy from the District Public Works Manager via email at sboyal@opud.org.

Any question should be submitted to the Public Works manager via email at sboyal@opud.org or via phone at 530-682-0736. All **questions are due by Wednesday, June 3rd at 2 PM** for Clarification or addendum items.

Sincerely,

Swarnjit Boyal

Swarnjit Boyal, MS
Public Works Manager

OLIVEHURST PUBLIC UTILITY DISTRICT
1970 9TH Avenue
Olivehurst, CA 95961
Phone: (530) 682-0736

OLIVEHURST PUBLIC UTILITY DISTRICT

Our mission is to provide high quality services to enhance our community's quality of life.



BOARD OF DIRECTORS

Deannise Burbank Lacey Nelson John Floe Mary Jane Griego Marc Perrault

GENERAL MANAGER

John Tillotson

May 21st, 2026

To: Prospective Bidders

RE: Purchase of aforementioned Water Service Materials for Service Line Replacements throughout Historic Olivehurst

Bids shall include any and all taxes, freight, federal/state fees, hazardous waste disposal fee, weight certificate of completed unit, etc. and be an 'Out-The-Door' cost. Please make sure to include a specification page/build sheet of materials in order to verify compliance with the requested specifications above. Any questions shall be directed to the OPUD Public Works Department at 530-682-0736 or via email at sboval@opud.org. Attached please find an example of what OPUD is looking for (or similar). Item # & MFG# was used as sample from local vendor as reference only. Olivehurst Public Utility District will be accepting as specified below:

Bid FORM for following water service materials:

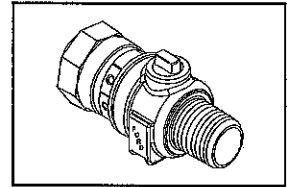
RFB - BID SHEET FOR WATER SERVICES MATERIAL SUBMITAL - BID FORM

Title	Brand	Item #	MFG #	Unit of Measure	Quantity	Price	TOTAL
1 B-250228N Ball Corporation Stop, 1in, MNPT x 1/10 CIS, Brass	Muelier Co or similar	MUEB250228N1	025028330N	Each	160	78.00	12,480.00
2 Angle Meter Valve, 1in, 110 CRXx Meter Nut, Brass	Muelier Co or similar	MUEB24258N1	024258330N	Each	160	140.00	22,400.00
3 Bushing, 5/8 x 3/4 to 1in, MNPT x Meter Nut, Brass	Muelier Co or similar	MUEH10879N88841	H-10879N 5/8X3/4X1	Per Pair	80	31.00	2,480.00
4 Potable Water Polyethylene Pipe, SDR 9, 4710, 1in, 100 ft L, CIS	VARIES	WPP1100BLK	WPP1100BLK	Per Roll	35	60.00	2,100.00
5 Double Strap Pipe Saddle, 10in, 1in FNPT	A.Y. McDonald or similar	MCD3826101	4148-035	Each	30	197.00	5,910.00
6 Hinged Pipe Saddle, 8in, 1in FNPT	FORD or similar	FORS91804	S91-804	Each	10	32.00	320.00
7 Double Strap Pipe Saddle, 8in, 1in FNPT	A.Y. McDonald or similar	MCD3826861	4148-015	Each	95	163.00	15,485.00
8 2-Piece Pipe Saddle, 12in, 1in FNPT	FORD or similar	FORS911204	S91-1204	Each	30	238.00	7,140.00
9 Tracer Wire, 10 AWG, 45 mil, Blue, (500 ft rolls or spool)	VARIES	TRW10BL145	TRW10BL145	Each	8	175.00	1,400.00
10 Copper Split Bolt Connector (Needs to be compatible with .10 AWG Tracer wire mentioned above)	VARIES	TRWCRC38	TRWCRC38	Each	160	5.00	800.00
11 DR 18 PVC Pipe, 6in, Bell x plain, 20ft L sticks, Blue	VARIES	PVPDR188	PVPDR188	LF	20	4.35	87.00
12 DR 18 PVC Pipe, 8in, Bell x plain, 20ft L sticks, Blue	VARIES	PVPDR188	PVPDR188	LF	300	16.00	4,800.00
13 DR 18 PVC Pipe, 12in, Bell x plain, 20ft L sticks, Blue	VARIES	PVPDR1812	PVPDR1812	LF	20	32.80	656.00
14 Cross, 12x 8in, Flange, Cement Lined	Various Vendors	DCFRCROSSFLG128	DCFRCROSSFLG128	Each	1	1664.00	1664.00
15 Reducer Coupling, 8x 6in, Flange, Cement Lined	Various Vendors	DCREDFLG86	DCREDFLG86	Each	1	294.00	294.00
16 Reducer Coupling, 12x 8in, Flange, Cement Lined	Various Vendors	DCREDFLG128	DCREDFLG128	Each	1	625.00	625.00
17 22.5 deg Elbow, 8in, Mechanical Joint, Fusion Bond Epoxy Coated	Various Vendors	DCF2212M18	DCF2212M18	Each	2	172.00	344.00
18 22.5 deg Elbow, 8in, Mechanical Joint x Flange, Cement Lined	Various Vendors	DCF2212M1FLG8	DCF2212M1FLG8	Each	1	242.00	242.00
19 Non-Rising Stem Gate Valve, 8in, Flange, Ductile Iron	Various Vendors	WGVFR8	WGVFR8	Each	2	1475.00	2950.00
20 Non-Rising Stem Gate Valve, 12in, Mechanical Joint x Flange, Ductile Iron	Various Vendors	WGVMF12	WGVMF12	Each	1	2550.00	2550.00
21 Non-Rising Stem Gate Valve, 6in, Flange, Ductile Iron	Various Vendors	WGVFR6	WGVFR6	Each	1	947.00	947.00
22 Gland, 6in, Mechanical Joint, PVC, Steel Hardware, Domestic	Star Pipe Products	STDSRETPVCAIS6	PVCPKSA006G2DD	Each	2	66.00	132.00
23 Gland, 8in, Mechanical Joint, PVC, Steel Hardware, Domestic	Star Pipe Products	STDSRETPVCAIS8	PVCPKSA008G2DD	Each	3	89.00	267.00
24 Gland, 12in, Mechanical Joint, PVC, Steel Hardware, Domestic	Star Pipe Products	STDSRETPVCAIS12	PVCPKSA012G2DD	Each	1	162.00	162.00
25 Bolt Set, 10 to 12in 150#, Zinc CR+3, Grade 2	Various Vendors	WBLBS1012	WBLBS1012	Each	2	20.00	40.00
26 Bolt Set, 8in 150#, Zinc CR+3, Grade 2	Various Vendors	WBLBS8	WBLBS8	Each	8	8.00	64.00
27 Ring Gasket, 8in, Star Title	Star Pipe Products	STRG8	FAH08RG	Each	4	20.50	82.00
28 Ring Gasket, 6in, Star Title	Star Pipe Products	STRG6	FAH06RG	Each	4	14.50	58.00
29 Full Face Gasket, 12in, Star Title	Star Pipe Products	STTFG12	FAH12FFG	Each	2	35.50	71.00
30 Full Face Gasket, 8in, Star Title	Star Pipe Products	STTFG8	FAH08FFG	Each	2	20.50	41.00
31 860 Transition Coupling, 12in, Various, Carbon Steel	HVMAXE	HVM2CP1G12	860-540-0515-16	Each	1	613.00	613.00
32 874 Transition Coupling, 8in, Flange x Various, Carbon Steel	HVMAXE	HVM1FA8	874-54-08021712	Each	1	530.00	530.00
33 22.5 deg Elbow, 6in, Mechanical Joint x Flange, Cement Lined	Various Vendors	DCF2212M1FLG6	DCF2212M1FLG6	Each	1	203.00	203.00
34							
						TAX (8.25%)	7308.43
						SUM	95,895.43

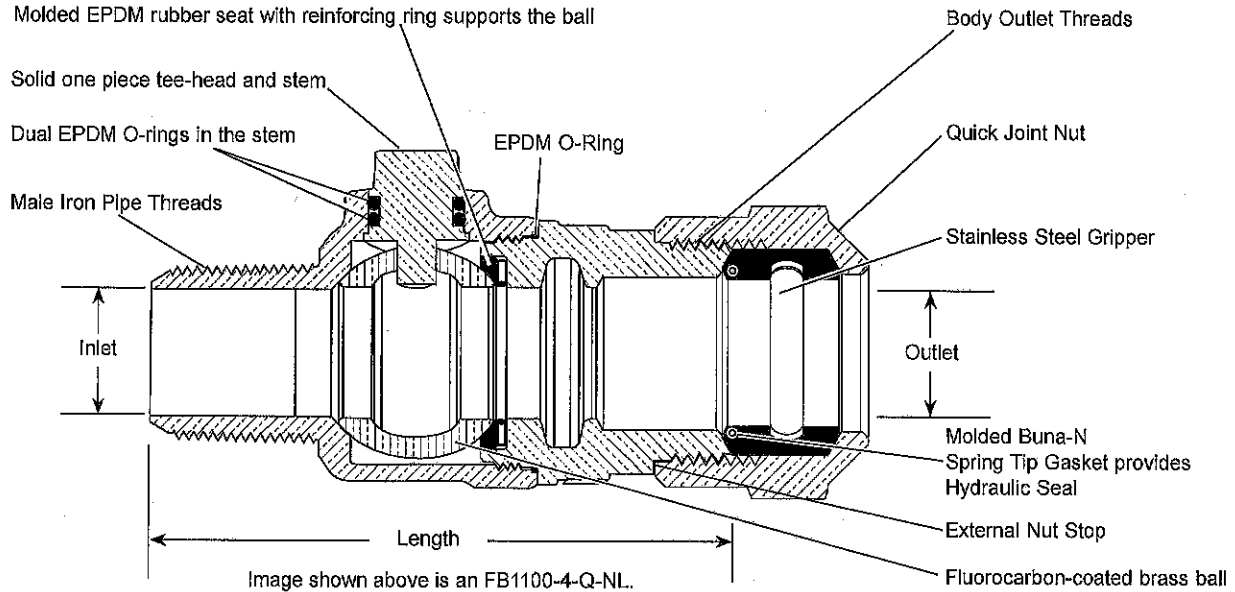
Bill Moore | PMS SUPPLY

SUBMITTAL INFORMATION

Ballcorp Corporation Stops - (FB1100-xx-Q-NL style)



MALE IRON PIPE THREAD INLET BY QUICK JOINT FOR COPPER OR PLASTIC TUBING (CTS) OUTLET



VALVE SIZE	INLET SIZE	OUTLET SIZE	VALVE LENGTH	BODY OUTLET THREADS	APPROX. WT. LBS	PART NUMBER	✓ SUBMITTED ITEM(S)
3/4"	3/4"	3/4"	4-19/64"	3/4" Flare Copper	1.8	FB1100-3-Q-NL	
1-1/2"	1-1/2"	1-1/2"	5-11/16"	1-1/2" Special Thread	4.9	FB1100-6-Q-NL	
2"	2"	2"	7-1/32"	2" Special Thread	7.9	FB1100-7-Q-NL	

Note: Ford recommends using insert stiffeners with plastic pipe or tubing.

* 1-1/4" Quick Joint has EPDM spring tip gasket.

FEATURES

- All brass that comes in contact with potable water conforms to AWWA Standard C800 (ASTM B584, UNS C89833)
- The product has the letters "NL" cast into the main body for lead-free identification
- Certified to NSF/ANSI Standard 61 and NSF/ANSI Standard 372 where applicable
- Brass components that do not come in contact with potable water conform to AWWA Standard C800 (ASTM B62 and ASTM B584, UNS C83600, 85-5-5-5)
- Ends are integral or secured with adhesive to prevent unintentional disassembly
- 300 PSI working pressure

The Ford Meter Box Company considers the information in this submittal form to be correct at the time of publication. Item and option availability, including specifications, are subject to change without notice. Please verify that your product information is current.



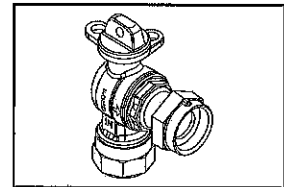
The Ford Meter Box Company, Inc.
 P.O. Box 443, Wabash, Indiana U.S.A. 46992-0443
 Phone: 260-563-3171 / Fax: 800-826-3487
 Overseas Fax: 260-563-0167
 www.fordmeterbox.com

03/30/16

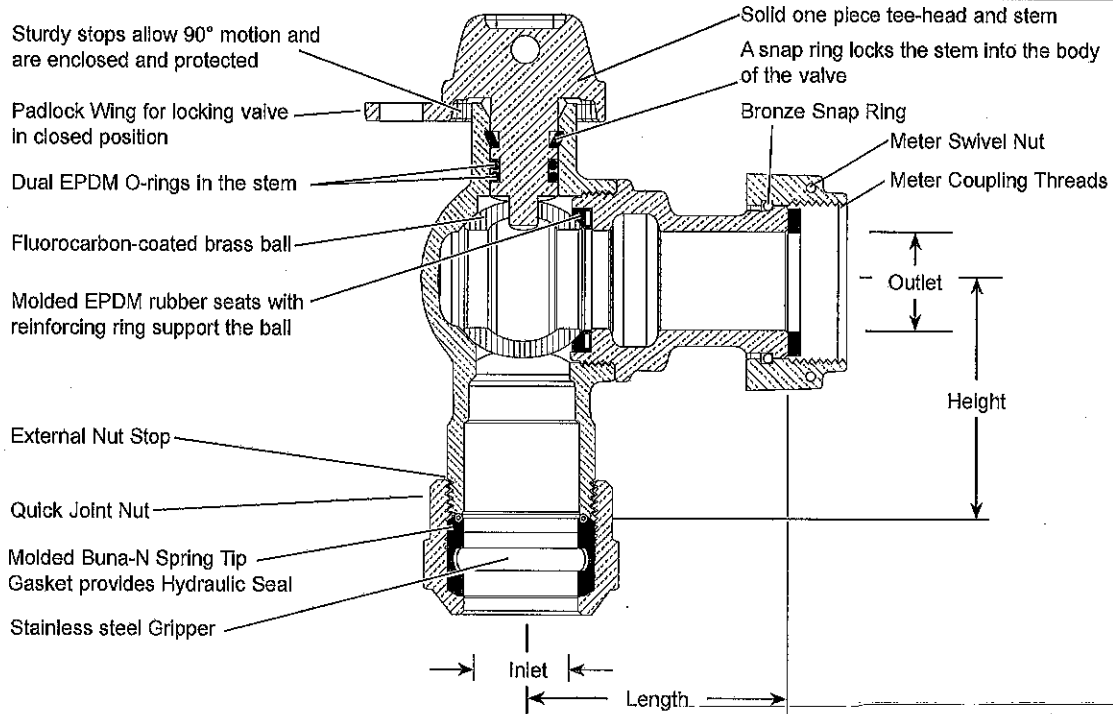
Submitted By:

SUBMITTAL INFORMATION

Angle Ball Meter Valves - (BA43-444W-Q-NL style)



QUICK JOINT FOR COPPER OR PLASTIC TUBING (CTS) INLET BY METER SWIVEL NUT OUTLET



VALVE SIZE	SERVICE LINE SIZE INLET	METER SIZE OUTLET	LENGTH	HEIGHT	APPROX. WT. LBS	PART NUMBER	✓ SUBMITTED ITEM(S)
1"	1"	1"	2-43/64"	2-29/64"	3.7	BA43-444W-Q-NL	

Note: Ford recommends using insert stiffeners with plastic pipe or tubing.

FEATURES

- All brass that comes in contact with potable water conforms to AWWA Standard C800 (ASTM B584, UNS C89833)
- The product has the letters "NL" cast into the main body for lead-free identification
- Certified to NSF/ANSI Standard 61 and NSF/ANSI Standard 372 where applicable
- Brass components that do not come in contact with potable water conform to AWWA Standard C800 (ASTM B62 and ASTM B584, UNS C83600, 85-5-5-5)
- Ends are integral or secured with adhesive to prevent unintentional disassembly
- Hole for attaching handle is provided in tee-head
- 300 PSI working pressure
- Padlock Wing for locking valve in closed position
- Conforms to AWWA C700 for Meter threads
- Meter nut drilled for seal wire

Note: Recommended for inlet side shut-off.

Optional full 360° tee-head rotation. Add "R" to end of part number.

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05/16/14

Submitted By:

OLIVEHURST PUBLIC UTILITY DISTRICT

Our mission is to provide high quality services to enhance our community's quality of life.



GENERAL MANAGER
John C. Tillotson

May 29, 2026

RFB – OPUD WATER MAIN & SERVICE LINE MATERIALS Addendum 1

To All Bidders,

The following Item for request on clarification, substitutes, and changes are being made to the OPUD WATER MAIN & SERVICE LINE MATERIAL Request for Bid:

Line item #1: QUESTION: for the requested item B-25028N Ball Corporation Stop Mueller, I wanted to bid the FORD FB1100-4Q-NL, Submittal attached, is this acceptable?

RESPONSE: This specification is acceptable

Line item #2: QUESTION: For the request item on the Angle Meter Valve 1" 110 CTS x Meter Nut Brass I wanted to bid the FORD BA43-444-W-Q-NL, Submittal attached, is this acceptable?

RESPONSE: This specification is acceptable

Line item #3: QUESTION: For the request item on the Bushing, 5/8 x 3/4 to 1" MNPT x Meter Nut Brass I wanted to bid for the FORD A-24-NL, Submittal attached, is this acceptable?

RESPONSE: This specification is acceptable

Line item # 14-16,18,33: QUESTION: For these line items, I'm wanting to confirm are fittings to be cement lined Bit coated. Line 17 is epoxy lined and coated.

RESPONSE: This specification can either be all epoxy line and coated or all cement lined and coated.

Line item# 21-24: QUESTION: This is for the Mechanical restraints. Do they have to be domestic or is Import acceptable, import submittal attached.

RESPONSE: This specification is NOT limited to domestic; import is acceptable.

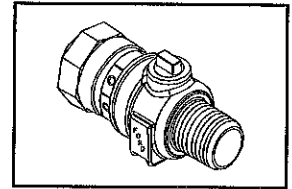
Regards,

Swarnjit Boyal

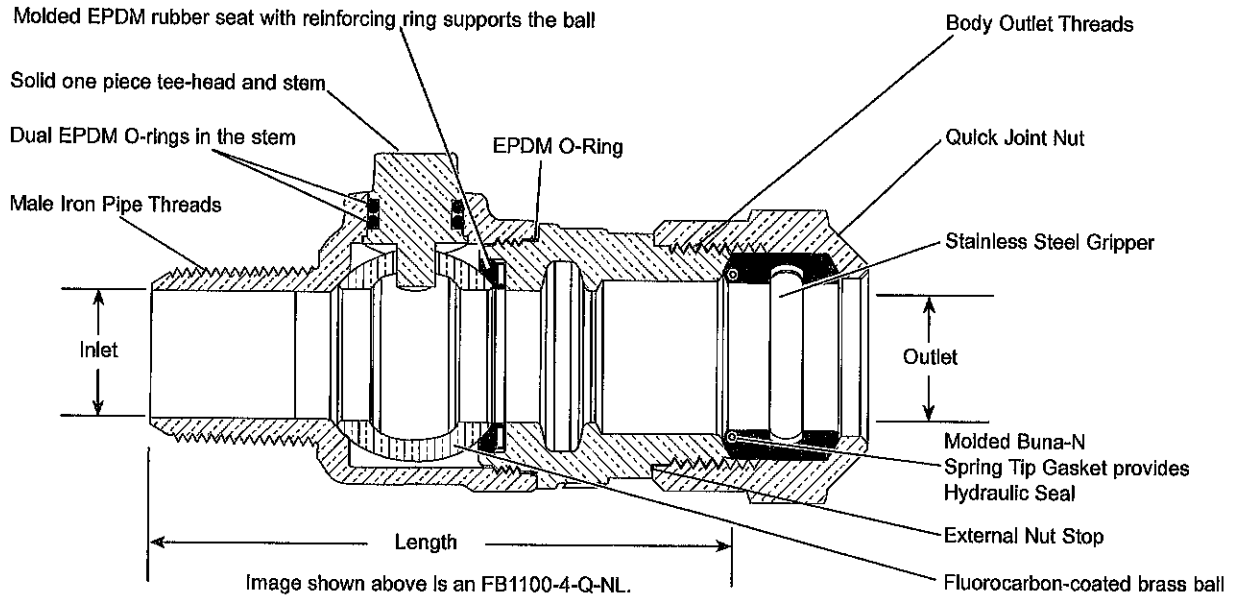
Swarnjit Boyal,
Public Works Manager

SUBMITTAL INFORMATION

Ballcorp Corporation Stops - (FB1100-xx-Q-NL style)



MALE IRON PIPE THREAD INLET BY QUICK JOINT FOR COPPER OR PLASTIC TUBING (CTS) OUTLET



VALVE SIZE	INLET SIZE	OUTLET SIZE	VALVE LENGTH	BODY OUTLET THREADS	APPROX. Wt. LBS	PART NUMBER	✓ SUBMITTED ITEM(S)
3/4"	3/4"	3/4"	4-19/64"	3/4" Flare Copper	1.8	FB1100-3-Q-NL	
1"	1"	1"	4-13/64"	1" Flare Copper	2.7	FB1100-4-Q-NL	
1-1/2"	1-1/2"	1-1/2"	5-11/16"	1-1/2" Special Thread	4.9	FB1100-6-Q-NL	
2"	2"	2"	7-1/32"	2" Special Thread	7.9	FB1100-7-Q-NL	

Note: Ford recommends using insert stiffeners with plastic pipe or tubing.

* 1-1/4" Quick Joint has EPDM spring tip gasket.

FEATURES

- All brass that comes in contact with potable water conforms to AWWA Standard C800 (ASTM B584, UNS C89833)
- The product has the letters "NL" cast into the main body for lead-free identification
- Certified to NSF/ANSI Standard 61 and NSF/ANSI Standard 372 where applicable
- Brass components that do not come in contact with potable water conform to AWWA Standard C800 (ASTM B62 and ASTM B584, UNS C83600, 85-5-5-5)
- Ends are integral or secured with adhesive to prevent unintentional disassembly
- 300 PSI working pressure

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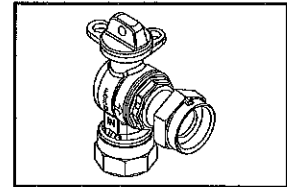
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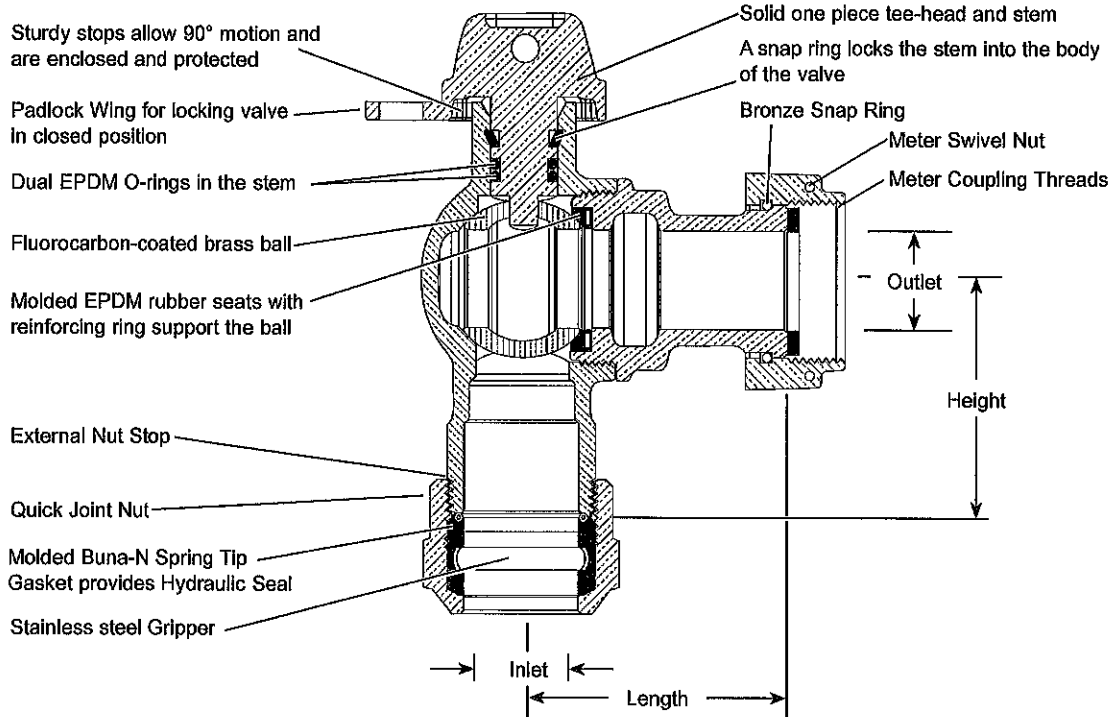
Submitted By:

SUBMITTAL INFORMATION

Angle Ball Meter Valves - (BA43-444W-Q-NL style)



QUICK JOINT FOR COPPER OR PLASTIC TUBING (CTS) INLET BY METER SWIVEL NUT OUTLET



VALVE SIZE	SERVICE LINE SIZE INLET	METER SIZE OUTLET	LENGTH	HEIGHT	APPROX. WT. LBS	PART NUMBER	✓ SUBMITTED ITEM(S)
1"	1"	1"	2-43/64"	2-29/64"	3.7	BA43-444W-Q-NL	

Note: Ford recommends using insert stiffeners with plastic pipe or tubing.

FEATURES

- All brass that comes in contact with potable water conforms to AWWA Standard C800 (ASTM B584, UNS C89833)
- The product has the letters "NL" cast into the main body for lead-free identification
- Certified to NSF/ANSI Standard 61 and NSF/ANSI Standard 372 where applicable
- Brass components that do not come in contact with potable water conform to AWWA Standard C800 (ASTM B62 and ASTM B584, UNS C83600, 85-5-5-5)
- Ends are integral or secured with adhesive to prevent unintentional disassembly
- Hole for attaching handle is provided in tee-head
- 300 PSI working pressure
- Padlock Wing for locking valve in closed position
- Conforms to AWWA C700 for Meter threads
- Meter nut drilled for seal wire

Note: Recommended for inlet side shut-off.

Optional full 360° tee-head rotation. Add "R" to end of part number.

The Ford Meter Box Company considers the information in this submittal form to be correct at the time of publication. Item and option availability, including specifications, are subject to change without notice. Please verify that your product information is current.



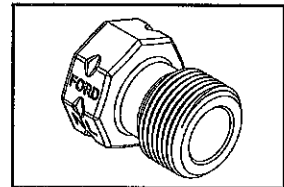
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05/16/14

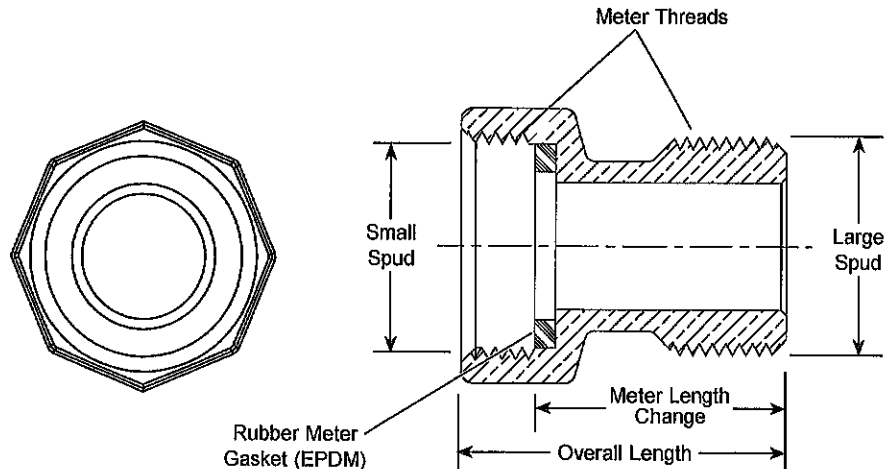
Submitted By:

SUBMITTAL INFORMATION

Meter Adapter - (Axx-NL Extended Body Style)



ADAPTERS TO CHANGE METER SPUD SIZE AND/OR LENGTH (5/8" THROUGH 1")



Due to design variations related to sizing, items may differ from images above.

DESCRIPTION		OVERALL LENGTH	METER LENGTH CHANGE	APPROX. WT. LBS.	PART NUMBER	✓ SUBMITTED ITEM(S)
SMALL SPUD SIZE	LARGE SPUD SIZE					
5/8"	3/4"	1-5/32"	3/4"	0.5	A13-NL	
5/8"	1"	2"	1-5/8"	0.7	A14-NL	
5/8"x3/4"	3/4"	1-15/16"	1-1/2"	0.6	*A23-NL	
5/8"x3/4"	1"	2-1/16"	1-5/8"	1.3	A24-NL	

* Adapter number A23-NL extends the meter length only and therefore only one per meter is required.
All other adapters listed are furnished in pairs.

FEATURES

- All brass that comes in contact with potable water conforms to AWWA Standard C800 (ASTM B584, UNS C89833)
- The product has the letters "NL" cast into the main body for lead-free identification
- Certified to NSF/ANSI Standard 61 and NSF/ANSI Standard 372 where applicable
- Brass components that do not come in contact with potable water conform to AWWA Standard C800 (ASTM B62 and ASTM B584, UNS C83600, 85-5-5-5)
- Meter adapters listed are furnished in pairs with the exception of A23-NL
- Body design provides wrench flats to facilitate installation
- Conforms to AWWA C700 for meter threads

The Ford Meter Box Company considers the information in this submittal form to be correct at the time of publication. Item and option availability, including specifications, are subject to change without notice. Please verify that your product information is current. Our standard warranty applies.



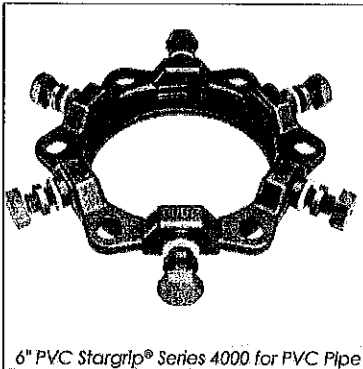
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12/15/22

Submitted By:



PVC Stargrip® series 4000
Mechanical Joint Wedge Action Restraint
for Plastic Pressure Pipe



6" PVC Stargrip® Series 4000 for PVC Pipe

SUBMITTAL INFORMATION

PROJECT NAME: []
ENGINEER: []
CONTRACTOR: []
SPEC. SECTION: []



FEATURES & ADVANTAGES

- The design has been proven in the market since 1992.
- Can be used on AWWA C900, AWWA C905 PVC pipe, IPS PVC pipe, AWWA C909 PVC pipe, and HDPE pipe. See pressure rating table for approved DRs and sizes. Plastic pressure pipes manufactured to an IPS diameter regimen will require a transition gasket. HDPE pipe requires use of stainless steel pipe stiffener.
- Gland is made from high strength Ductile Iron per ASTM A536 Grade 65-45-12 and is compatible with all Mechanical Joints conforming to ANSI/AWWA C111/A21.11.
- Eliminates the need for tie rods and thrust blocks
- Listed with Underwriters Laboratories and approved by Factory Mutual research in sizes 4"-12".
- Tested to and meets the requirements of ASTM F1674 through 14".
- The safety factor is twice (2:1) the standardized pressure rating listed on next page.
- Will fit any Mechanical Joint configuration, meaning compatibility with different types of installations.
- PVC Stargrip® offers 5° deflection through 12", 3° on 14"-24" and 2° on 30"-36".
- Larger ID allows easier installation on out-of-round pipe.
- Torque limiting bolts are designed to prevent over torquing.
- All sizes have curved wedges that do not flatten pipe.
- Standard gland color is Coral Red (RAL 3016).

MATERIAL SPECIFICATIONS:

- Gland: Ductile Iron per ASTM A536, Grade 65-45-12
- Wedges: Ductile Iron per ASTM A536, Grade 65-45-12
 - Wedge Finish: Thermally cured fluoropolymer epoxy coating

GLAND FINISH OPTIONS (Please check one):

- Standard: alkyd enamel coating
- Optional: Starbond™ TGIC polyester powder coating applied by an electrostatic spray process
- Optional: Other (specify) _____

COUNTRY OF ORIGIN OPTION (Please check one):

- Import
 - 100% Domestic¹
 - Domestic gland with import components¹
- ¹Please see Domestic Restraint Options Available on our website.

HARDWARE OPTIONS (Please check):

- Standard: T-bolts and nuts are high strength low alloy steel manufactured in accordance with ANSI/AWWA C111/A21.11
- Optional: T-bolts alloy SS 304 per ASTM F593; Nuts alloy SS 304 per ASTM F594 CW
- Optional: T-bolts SS 316 per ASTM F593; Nuts SS 316 per ASTM A194 Grade 8M
- Optional: T-bolts and nuts Fluoropolymer Star-Blue coated high strength low alloy steel manufactured in accordance with ANSI/AWWA C111/A21.11

REV.17.02

© REGISTERED TRADEMARK OF STAR PIPE PRODUCTS



STAR PIPE PRODUCTS



PVC Stargrip® series 4000

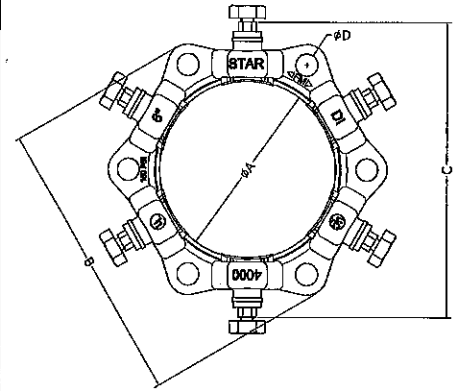
Mechanical Joint Wedge Action Restraint
for Plastic Pressure Pipe

TECHNICAL INFORMATION

PVC STARGRIP® 4000 SPECIFICATIONS*								
NOM. SIZE	ØA	B	C¹	ØD	T-BOLTS SIZE (QTY)	WEDGES (QTY)	APPROX. WT. (LBS)	
<input type="checkbox"/>	3	4.09	7.69	8.50	3/4	5/8 (4)	4	7
<input type="checkbox"/>	4	4.93	9.12	9.53	7/8	3/4 (4)	4	9
<input type="checkbox"/>	6	7.03	11.12	11.63	7/8	3/4 (6)	6	13
<input type="checkbox"/>	8	9.18	13.37	13.97	7/8	3/4 (6)	6	17
<input type="checkbox"/>	10	11.23	15.62	16.18	7/8	3/4 (8)	8	23
<input type="checkbox"/>	12	13.33	17.87	18.18	7/8	3/4 (8)	8	28
<input type="checkbox"/>	14	15.45	20.75	20.36	7/8	3/4 (10)	10	50
<input type="checkbox"/>	16	17.55	23.00	22.46	7/8	3/4 (12)	12	60
<input type="checkbox"/>	18	19.65	25.25	24.56	7/8	3/4 (12)	12	65
<input type="checkbox"/>	20	21.75	27.50	26.66	7/8	3/4 (14)	14	76
<input type="checkbox"/>	24	25.95	32.00	30.86	7/8	3/4 (16)	16	98
<input type="checkbox"/>	30	32.18	39.38	36.82	1-1/8	1 (20)	20	173
<input type="checkbox"/>	36	38.48	46.25	43.12	1-1/8	1 (24)	24	219

Please check sizes:

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6" PVC Stargrip® Series 4000

*All dimensions in inches except where indicated.
¹ - dimension after assembly on pipe

Table A. Maximum Working Pressure Rating with Occasional or Recurring Surges in PSI for Plastic Pipes Made to a CIOD Diameter Regimen

NOM. SIZE (IN)	Actual Plastic Pipe OD	AWWA C900 PVC			AWWA C905 PVC				AWWA C909 PVC			AWWA C906 HDPE*					
		DR14	DR18	DR25	DR18	DR21	DR25	DR32.5	IPEX PVC0	JM EAGLE PVC0	PC165	DR 7.3	DR 9	DR 9.3	DR11	DR13.5	DR17
									PC235	PC235	PC165						
4	4.80	305	235	165					235			254	200	193	160	130	100
6	6.90	305	235	165					235	235		254	200	193	160	130	100
8	9.05	305	235	165					235	235		254	200	193	160	130	100
10	11.10	305	235	165					235	235		254	200	193	160	130	100
12	13.20	305	235	165					235	235		254	200	193	160	130	100
14	15.30				235	200	165	125	235				200	193	160	130	100
16	17.40				235	200	165	125	235		165				160		
18	19.50				235	200	165	125	200						160		
20	21.60				235	200	165	125									
24	25.80				235	200	165	125									
30	32.00						165	125									
36	38.30						165	125									

* A stainless steel pipe stiffener (provided by others) is required for the Series 4000 to be installed on HDPE pressure pipe. The stiffener must be installed in the HDPE pipe before installing the Series 4000. The stainless steel pipe stiffener must be of sufficient length to support the full bearing length of the restrainer.

Table B. Maximum Working Pressure Rating with Occasional or Recurring Surges in PSI for Plastic Pipes Made to an IPS Diameter Regimen

NOM. SIZE (IN)	Actual Plastic Pipe OD	ASTM D2241 PVC			AWWA C901 and AWWA C906 HDPE**					
		SDR17	SDR21	SDR26	DR 7.3	DR 9	DR 9.3	DR11	DR13.5	DR17
3	3.50	250	200	160	254	200		160	130	100
4	4.50	250	200	160	254	200		160	130	100
6	6.63	250	200	160	254	200	193	160	130	100
8	8.63	250	200	160	254	200	193	160	130	100
10	10.75	250	200	160	254	200	193	160	130	100
12	12.75	250	200	160	254	200	193	160	130	100

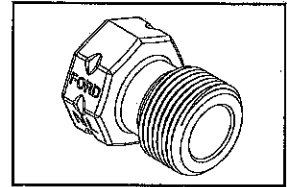
NOTE: A transition gasket is required for use with pipes made to an IPS diameter regimen.

** A stainless steel pipe stiffener (provided by others) is required for the Series 4000 to be installed on HDPE pressure pipe. The stiffener must be installed in the HDPE pipe before installing the Series 4000. The stainless steel pipe stiffener must be of sufficient length to support the full bearing length of the restrainer.

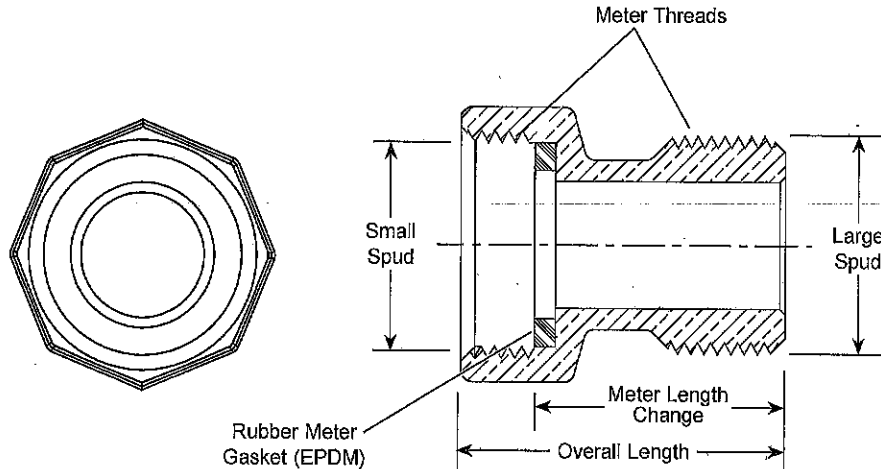


SUBMITTAL INFORMATION

Meter Adapter - (Axx-NL Extended Body Style)



ADAPTERS TO CHANGE METER SPUD SIZE AND/OR LENGTH (5/8" THROUGH 1")



Due to design variations related to sizing, items may differ from images above.

DESCRIPTION		OVERALL LENGTH	METER LENGTH CHANGE	APPROX. Wt. LBS.	PART NUMBER	✓ SUBMITTED ITEM(S)
SMALL SPUD SIZE	LARGE SPUD SIZE					
5/8"	3/4"	1-5/32"	3/4"	0.5	A13-NL	
5/8"	1"	2"	1-5/8"	0.7	A14-NL	
5/8"x3/4"	3/4"	1-15/16"	1-1/2"	0.6	*A23-NL	
(5/8"x3/4")	(1")	(2-1/16")	(1-5/8")	(1.3)	(A24-NL)	

* Adapter number A23-NL extends the meter length only and therefore only one per meter is required. All other adapters listed are furnished in pairs.

FEATURES

- All brass that comes in contact with potable water conforms to AWWA Standard C800 (ASTM B584, UNS C89833)
- The product has the letters "NL" cast into the main body for lead-free identification
- Certified to NSF/ANSI Standard 61 and NSF/ANSI Standard 372 where applicable
- Brass components that do not come in contact with potable water conform to AWWA Standard C800 (ASTM B62 and ASTM B584, UNS C83600, 85-5-5-5)
- Meter adapters listed are furnished in pairs with the exception of A23-NL
- Body design provides wrench flats to facilitate installation
- Conforms to AWWA C700 for meter threads

The Ford Meter Box Company considers the information in this submittal form to be correct at the time of publication. Item and option availability, including specifications, are subject to change without notice. Please verify that your product information is current. Our standard warranty applies.



The Ford Meter Box Company, Inc.
 P.O. Box 443, Wabash, Indiana U.S.A. 46992-0443
 Phone: 260-563-3171 / Fax: 800-826-3487
 Overseas Fax: 260-563-0167
 www.fordmeterbox.com

12/15/22

Submitted By:



ADS POTABLE WATER SERVICE TUBING (CTS PE4710)

ADS Potable water service tubing (CTS) is a leader in today's potable water service market. Its flexibility and durability distinguish it from the competition and make it ideal for a variety of applications.

ADS CTS tubing is strong and resistant to many common causes of damage such as vibrations, surface loads and pressure surges.

APPLICATIONS:

Residential & Commercial Water Service
Well/Pump Water Systems
Municipal Service Lines
Farm & Ranch Water Systems

FEATURES:

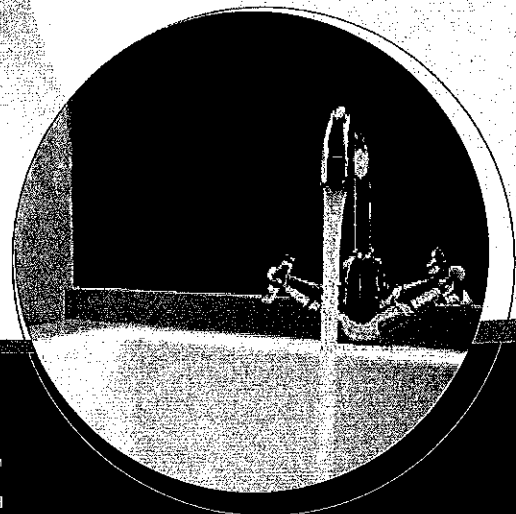
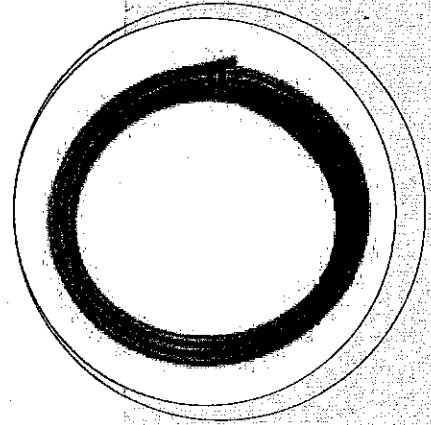
- Material conforms to ASTM D3350 requirements
- Certified to meet NSF 14/61 standard
- Durable plastic material stands the test of time
- Flexibility makes it ideal for a variety of projects
- Strength withstands weather and the human element
- Incremental footage markers printed every 2 feet throughout each coil length
- Light weight
- Chemically resistant
- Consistent outside diameter regardless of wall thickness or pressure rating

BENEFITS:

- Resistant to rot or corrosion
- Fast and easy to install
- Easy installation provides cost-efficiency
- Flexible lengths can be installed in uneven terrain
- Available in many lengths

ADS Service: ADS representatives are committed to providing you with the answers to all your questions, including specifications, and installation and more.

ADS PolyFlex™



THE MOST ADVANCED NAME IN WATER MANAGEMENT SOLUTIONS™



ADS POTABLE WATER SERVICE TUBING (CTS) PIPE SPECIFICATIONS

SCOPE

This specification describes ADS Potable Water Service Tubing (CTS) pipe SDR 9 for use in potable water service applications.

PIPE REQUIREMENTS

ADS potable water service tubing shall meet the requirements of ASTM D2737, AWWA C901 and NSF Standards 14 and 61. Pipe dimensions shall meet Copper Tubing Size (CTS) standards.

MATERIAL PROPERTIES

Tubing material shall be high-density polyethylene conforming to the minimum requirements of cell classification 445574E as defined and described in ASTM D3350. The resin shall have a material designation code of PE4710 by the Plastic Pipe Institute.

DISINFECTION/MAINTENANCE

The active chlorine content of disinfecting solutions shall not exceed 12%. All disinfecting solution must be flushed from all lines within the system. Industry accepted procedures, like ANSI/AWWA C651 Disinfecting Water Mains, should be followed for both new and repaired potable water lines.

INSTALLATION

Installation is similar to other flexible tubing/pipe products. Methods including direct bury, plowing or pulling are applicable per local, state or federal guidelines for the application.

	SDR 9 4710 CTS				
	3/4"	1"	1 1/4"	1 1/2"	2"
Outside Diameter in (mm)	0.875 ±0.004 (22.2 ±0.10)	1.125 ±0.005 (28.6 ±0.13)	1.375 ±0.005 (34.9 ±0.13)	1.625 ±0.006 (41.3 ±0.15)	2.125 ±0.006 (54.0 ±0.51)
Wall Thickness in (mm)	0.097 +0.010 (2.5 +0.25)	0.125 +0.012 (3.2 +0.30)	0.153 +0.015 (3.9 +0.38)	0.181 +0.018 (4.6 +0.46)	0.236 +0.024 (6.0 +0.61)
Pressure Rating @ 73° F, psi (kPa)	250 (1724)	250 (1724)	250 (1724)	250 (1724)	250 (1724)
Weight gm/ft (gm/m)	46 ±2 (151 ±7)	78 ±3 (256 ±10)	125 ±4 (410 ±13)	162 ±4 (531 ±13)	275 ±5 (902 ±16)

For more information on ADS CTS pipe and other ADS products, please contact our Customer Service Representatives at 1-800-821-6710

ADS "Terms and Conditions of Sale" are available on the ADS website, www.ads-pipe.com
 The ADS logo and the Green Stripe are registered trademarks of Advanced Drainage Systems, Inc.
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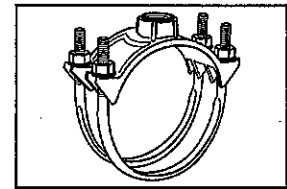
THE MOST ADVANCED NAME IN WATER MANAGEMENT SOLUTIONS™

Advanced Drainage Systems, Inc.
 4640 Trueman Blvd., Hilliard, OH 43026
 1-800-821-6710 www.ads-pipe.com



SUBMITTAL INFORMATION

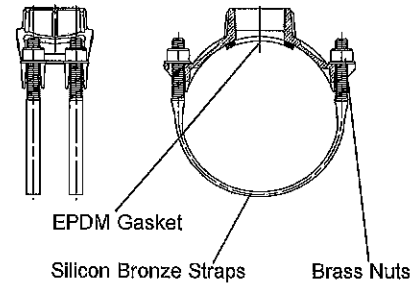
Brass Saddles - (202B-xxx-xxx style)



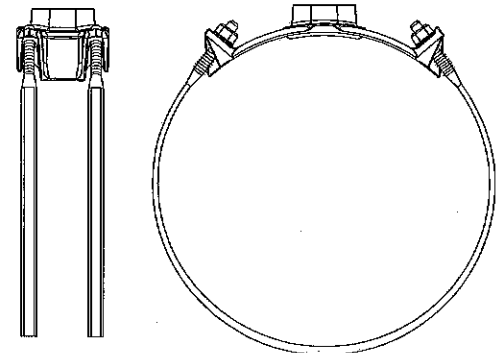
202B DOUBLE STRAP BRASS SADDLES FOR AC AND DUCTILE IRON PIPE

NOM. PIPE SIZE	O.D. RANGE	APPROX. WT. LBS.	CATALOG NUMBER	✓ SUBMITTED ITEM(S)
*4"	4.80 - 5.40	6.6	202B-540-Tap	
	4.80 - 5.10	7.3	202B-510-Tap	
	5.10 - 5.40	7.3	202B-540-Tap	
**6"	6.90 - 7.50	7.7	202B-750-Tap	
(8")	(9.05 - 9.62)	(8.8)	202B-982-Tap	
(10")	(11.10 - 12.12)	(10.7)	202B-1212-Tap	
12"	13.20 - 14.38	11.8	202B-1438-Tap	
**14"	15.30 - 16.25	18.0	202B-1625-Tap	
**16"	16.30 - 17.25	19.1	202B-1725-Tap	
	17.40 - 18.40	23.0	202B-1840-Tap	
	18.50 - 19.25	24.0	202B-1925-Tap	
**18"	19.50 - 20.50	25.0	202B-2050-Tap	
**20"	21.20 - 22.20	25.5	202B-2220-Tap	
	22.50 - 23.50	25.7	202B-2350-Tap	
**24"	23.80 - 24.80	26.0	202B-2480-Tap	
	25.60 - 26.50	26.5	202B-2650-Tap	
**30"	31.74 - 32.74	27.0	202B-3274-Tap	

4" - 12"



14" - 30"



OUTLET TAP CODE

CC (AWWA) THREAD		IP THREAD		✓ SUBMITTED ITEM(S)
THREAD	CODE NUMBER	THREAD	CODE NUMBER	
3/4" CC	CC3	3/4" IP	IP3	
1" CC	CC4	(1" IP)	(IP4)	
1-1/4" CC	Δ CC5	1-1/4" IP	Δ IP5	
1-1/2" CC	CC6	1-1/2" IP	IP6	
2" CC	CC7	2" IP	IP7	

Δ Contact factory for availability

* **Please Note:** 4" Saddles with 2" taps have a limited range. Specifically, 4.80 - 5.10 or 5.10 - 5.40. All other tap sizes have the standard 4.80 - 5.40 range.

** Only the 6" (6.90-7.50 range) saddle and 14" saddles and larger are available with a 1-1/4" tap.

To Order: Select the catalog number for the desired pipe range and complete the catalog number by adding the outlet thread tap code. Example: A double strap saddle for 6.90 D.I. pipe with a 3/4" CC thread would be 202B-750-CC3.

FEATURES

- All brass conforms to AWWA Standard C800 (ASTM B62 and ASTM B584, UNS C83600, 85-5-5-5)
- Straps are 5/8" high quality silicon bronze flattened to provide a wider bearing surface against pipe
- Gasket is EPDM rubber ASTM D2000

The Ford Meter Box Company considers the information in this submittal form to be correct at the time of publication. Item and option availability, including specifications, are subject to change without notice. Please verify that your product information is current.



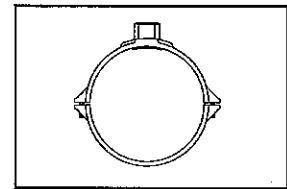
The Ford Meter Box Company, Inc.
 P.O. Box 443, Wabash, Indiana U.S.A. 46992-0443
 Phone: 260-563-3171 / Fax: 800-826-3487
 Overseas Fax: 260-563-0167
 www.fordmeterbox.com

02/22/18

Submitted By:

SUBMITTAL INFORMATION

Brass Saddles For C900 PVC - (S912-xxx style)

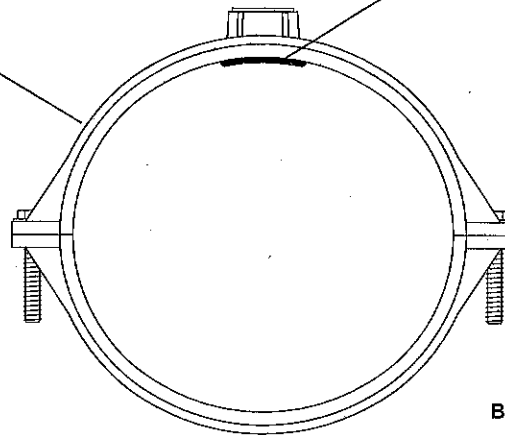


BRASS SADDLES WITH IP TAPS FOR C900 PVC PIPE

Brass alloy body and strap,
meeting ASTM B62, ASTM B584
and AWWA C800

EPDM Rubber O-Ring gasket

Silicon Bronze Bolts and Nuts



2-Piece
Bolted Design

PVC PIPE SIZE	ACTUAL O.D.	TAP SIZE	APPROX. WT. LBS.	CATALOG NUMBER	✓ SUBMITTED ITEM(S)
4"	4.80	3/4"	2.9	S912-403	
		1"	2.8	S912-404	
		1-1/2"	7.5	S912-406	
		2"	7.1	S912-407	
6"	6.90	3/4"	4.6	S912-603	
		1"	4.5	S912-604	
		1-1/2"	9.1	S912-606	
		2"	8.5	S912-607	
8"	9.05	3/4"	5.4	S912-803	
		1"	5.3	S912-804	
		1-1/2"	12.6	S912-806	
		2"	11.9	S912-807	
10"	11.10	1-1/2"	12.9	S912-1006	
		2"	12.6	S912-1007	
12"	13.20	1-1/2"	14.3	S912-1206	
		2"	14.3	S912-1207	

FEATURES

- All brass conforms to AWWA Standard C800 (ASTM B62 and ASTM B584, UNS No C83600 - 85-5-5-5)
- These saddles conform to the design and sizing requirements held by the Uni-Bell Handbook and the AWWA manual M23 for use on PVC pipe.
- O-Ring gasket is EPDM rubber, ASTM D2000.

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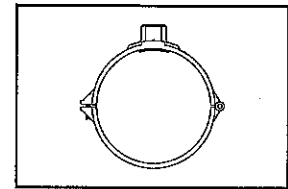
The Ford Meter Box Company, Inc.
P.O. Box 443, Wabash, Indiana U.S.A. 46992-0443
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Overseas Fax: 260-563-0167
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05/07/15

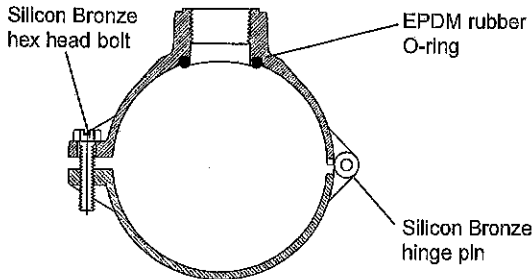
Submitted By:

SUBMITTAL INFORMATION

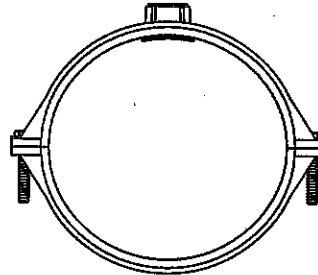
Brass Saddles For C900 PVC - (S91-xxx style)



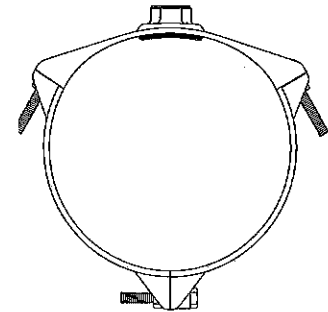
S91 BRASS SADDLES WITH IRON PIPE TAPS FOR C900 PVC PIPE



Style A (Hinged Design)



Style B 2-Piece (Bolted Design)



Style C 3-Piece (Bolted Design)

PVC PIPE SIZE	ACTUAL O.D.	TAP SIZE	APPROX. Wt. Lbs.	CATALOG NUMBER	STYLE	✓ SUBMITTED ITEM(S)
2"	2.50	1/2"	.9	S91-201	A	
		3/4"	1.1	S91-203	A	
		1/2"	1.8	S91-401	A	
4"	4.80	3/4"	1.8	S91-403	A	
		1"	2.0	S91-404	A	
		1-1/2"	6.5	S91-406	A	
		2"	6.4	S91-407	A	
		3/4"	2.6	S91-603	A	
6"	6.90	1"	2.6	S91-604	A	
		1-1/2"	8.9	S91-606	A	
		2"	7.3	S91-607	A	
		1/2"	2.8	S91-801	A	
8"	9.05	3/4"	2.8	S91-803	A	
		1"	3.2	S91-804	A	
		1-1/2"	8.0	S91-806	A	
		2"	8.5	S91-807	A	
		3/4"	9.3	S91-1003	B	
10"	11.10	1"	9.1	S91-1004	B	
		1-1/2"	10.5	*S71-S91-1006	C	
		2"	10.5	*S71-S91-1007	C	
		3/4"	11.1	S91-1203	B	
12"	13.20	1"	11.0	(S91-1204)	(B)	
		1-1/2"	11.5	*S71-S91-1206	C	
		2"	11.0	*S71-S91-1207	C	

* These saddles will cover Steel size PVC and C900 PVC O.D. range.

FEATURES

- All brass conforms to AWWA Standard C800 (ASTM B62 and ASTM B584, UNS NO C83600 - 85-5-5-5)
- Style A Saddle body and strap permanently held together with silicon bronze pin for saddles sized 2" thru 8"
- Bolt is 5/16" slotted hex head silicon bronze for saddles sized 2" thru 8"
- A three-piece bolted design is used for S91 Saddles sized 10" and 12" with 1-1/2" and 2" taps, two-piece for 3/4" and 1" taps
- All 10" and 12" saddles are held together with 1/2" silicon bronze bolts (3/4" hex head)
- 150 psi working pressure rating

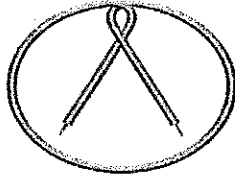
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 Phone: 260-563-3171 / Fax: 800-826-3487
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01/12/16

Submitted By:



AGAVE WIRE, LTD

Toll-Free (800) 690-3408

An ISO 9001 Certified Quality Management System

Fax: (469) 547-4242

PRODUCT DATA SHEET

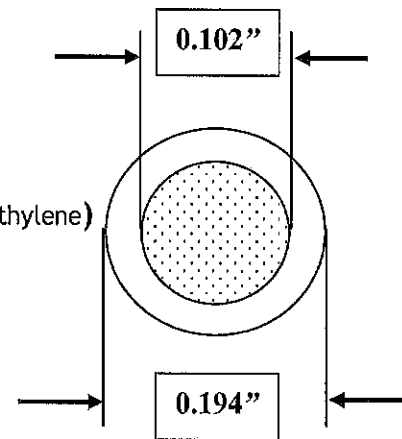
PRODUCT OVERVIEW:

APUT-1001

CONSTRUCTION: One 10 AWG Solid Copper HMW-PE Insulated Conductor
APPROVALS: UL - Tracer Wire
APPLICATION: Tracer Wire Suitable For Detecting Buried Facilities

CONSTRUCTION PARAMETERS:

CONDUCTOR: 10 AWG Annealed Bare Copper
STRANDING: Solid
NUMBER OF CONDUCTORS: 1
INSULATION MATERIAL: HMW-PE (High Molecular Weight Polyethylene)
INSULATION THICKNESS: 0.045" Nominal
COPPER O.D.: 0.102" Nominal
FINISHED O.D.: 0.194" Nominal
WEIGHT PER 1000ft: 39.95-lbs/1000'



ELECTRICAL & ENVIRONMENTAL PROPERTIES:

TEMPERATURE RATING: -20° c to 80° c
OPERATING VOLTAGE: 600v
DC RESISTANCE @ 20° c: 0.9988 Ohms/1000'
INSULATION COLOR: Various Colors Available **BLUE**

PRINT LEGEND:

"AGAVE WIRE - 10AWG HMW-PE-(45) TRACER WIRE 600v (UL) E246360"

On special orders, the customer will accept all mil lengths and +/- 10% of total order requested. The information presented here is, to the best of our knowledge, is true and accurate. However, since conditions of use are beyond our control, all recommendations or suggestions are presented without guarantee or responsibility on our part. We disclaim all liability in connection with the use of information contained herein or otherwise

This specification is proprietary intellectual property of Agave Wire. Any information contained herein shall not be disclosed to any party without written consent of Agave Wire.

NORTHTOWN

Product Data Sheet

Pipe Protection Products

Split Bolt Connectors
 For use on all combinations: Split Bolt
 Aluminum to aluminum
 Aluminum to copper
 Copper to copper



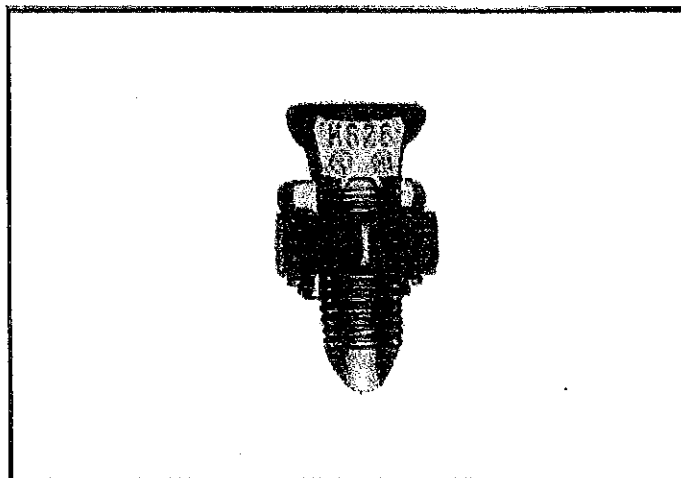
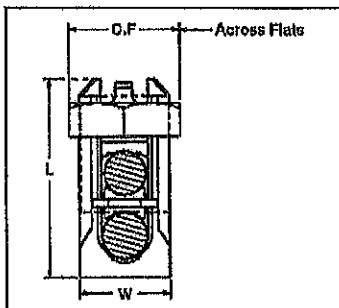
Compact, high strength, high copper alloy split-bolt has free-running threads and easy to grip wrench flats. Highly resistant to corrosion and season cracking, these split bolt connectors provide maximum pressure and assures a secure connection on all combinations of run and tap conductors. Type KS-3 accomodates 3 maximum size conductors.

Catalog Number	Gross Flats	L	W	165 Conductor		Conductor				Recommended Tightening Torque In-lb
				Copper		Copperweld				
				Range for Equal Run and Tap	Min. Tap with Max. Run	Maximum Run and Tap				
				Sol.	Str.	Type A	Type D			
† KS90	.60	.65	.38	12 Str. - 10 Str.	16 Str.	#10	---	---	---	80
† KS16	.60	.65	.38	10 Str. - 8 Str.	14 Str.	#8	---	---	---	
† KS17	.63	1.14	.45	8 Str. - 6 Sol.	14 Str.	#6	3 #12	8A	9-1/2D	165

† In addition to UL listed for wire connectors and CSA Certified, these itmes are also rated for direct burial.

▲ Listed torque values are for maximum conductor combinations accomodated.

Split Bolt Diagram



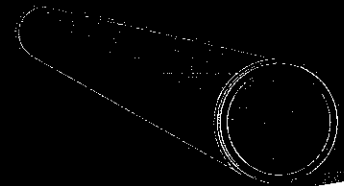
800 WRAP-A-PIPE

P.O. Box 2064 Huntington Beach CA 92647
 714 897-0700 Fax 714 897-0600



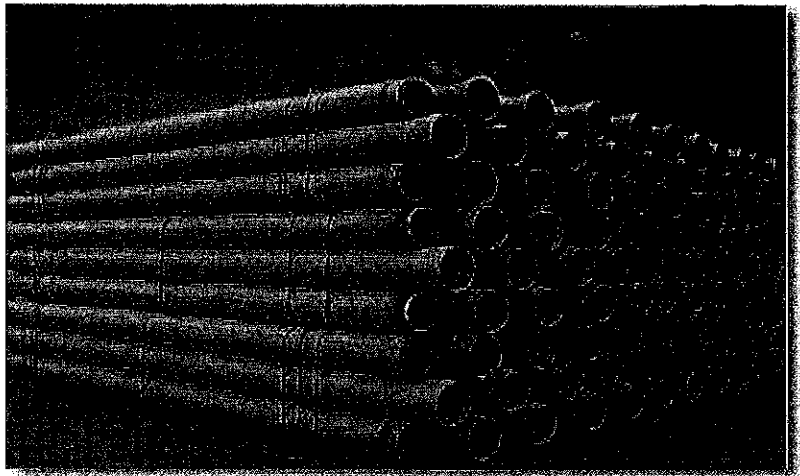
C900 : PVC Pressure Pipe

SPECIFICATION DATA



Diamond (C900) PVC Pipe (4" through 12") is made of 12454 compound per ASTM D1784, in accordance with the dimensional, chemical, and physical requirements of AWWA C900.

Diamond (C900) PVC Pipe bears the mark of NSF, International (NSF), the listing of Underwriters Laboratory, Inc. (UL), and (DR14 & DR18) bears the listing of Factory Mutual (FM). Some factory locations produce C900 bearing the mark of the Canadian Standards Association (CSA).



Diamond (C900) PVC Pipe utilizes a gasket, per ASTM F477, to seal the integral bell socket to the spigot of the next joint (which conforms to the requirements of ASTM D3139.) Each male end is beveled to facilitate joint assembly, and the spigot is referenced marked to ensure proper insertion depth. Diamond furnished lubricant is to be used in the joining process. Specialty gaskets may be available upon request.

Diamond C900 is supplied in 20 foot laying lengths.

Physical Properties of PVC 12454:

Property	ASTM Test	Minimum
Specific Gravity	D792	1.40
Tensile Strength, psi	D638	7,000
Tensile Modulus, psi	D638	400,000
IZOD Impact Strength	D256	.65ft., lb./in.



Underwriters Laboratories Inc.®



SHORT FORM Specification for Diamond C900 PVC Water Pipe

Diamond C900 PVC Water Pipe shall be made of compounds conforming to ASTM D1784 with a cell classification of 12454. Diamond C900 shall meet all the dimensional, chemical, and physical requirements as outlined in AWWA C900 and will be supplied in 20 foot laying lengths. Joints shall meet the requirements of ASTM D3139 and shall be formed using Rieber Technology. Gaskets shall meet the requirements of ASTM F477. Potable water pipe shall be manufactured from National Sanitation Foundation (NSF) approved compounds.

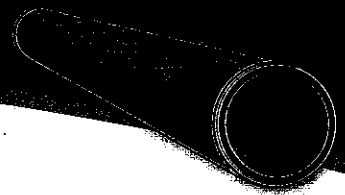
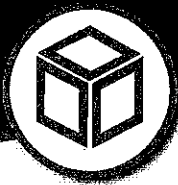


DIAMOND PLASTICS®
CORPORATION

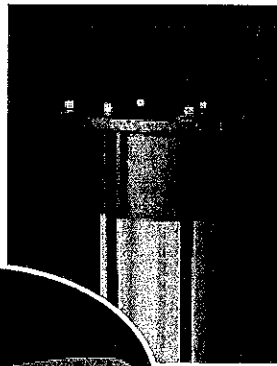
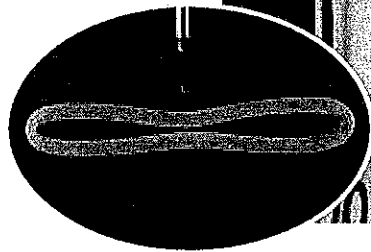
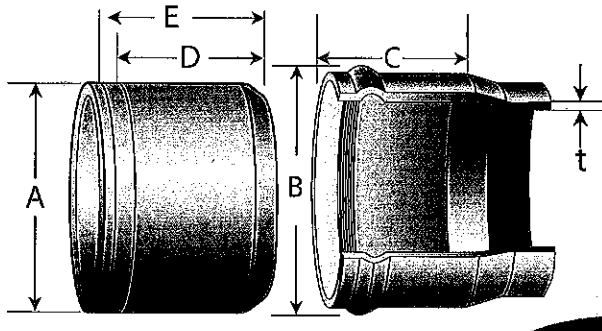


Corporate Headquarters • 1212 Johnstown Road • P.O. Box 1608 • Grand Island, NE 68802-1608

DISTRIBUTION PIPE FOR THE 21st CENTURY



Rieber Joint Illustration



Extreme Testing Conditions

C900 PVC pressure pipe, available in pressure ratings for a wide range of water transfer applications (Available in sizes from 4" through 12")

AWWA C900

C900™

AWWA C900 SPECIFICATION DATA

Nominal Pipe Size in. (mm)	Outside Dia. A Inches	Bell Dia. B Inches	Approximate Bell Depth C Inches	Assembly Mark 1 (D) Inches #	Assembly Mark 2 (E) Inches #	C900 DR-14 305 psi Min Wall (t) Inches	C900 DR-18 235 psi Min Wall (t) Inches	C900 DR-25 165 psi Min Wall (t) Inches
4" (100)	4.800	6-1/2"	6	4-1/4"	5-1/4"	0.343	0.267	0.192
6" (150)	6.900	9-1/4"	6.5	4-5/8"	5-5/8"	0.493	0.383	0.276
8" (200)	9.050	11-3/4"	7	5-1/8"	6-1/8"	0.646	0.503	0.362
10" (250)	11.100	14-1/4"	7.5	5-3/4"	6-3/4"	0.793	0.617	0.444
12" (300)	13.200	16-3/4"	8	6-1/8"	7-1/8"	0.943	0.733	0.528

"Possession of this page does not constitute an offer of sale"

#Tolerance of +/- 1/4" allowed

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DISTRIBUTION PIPE FOR THE 21st CENTURY

VINYLTECH AWWA C900-07

TECHNICAL DATA SUBMITTAL



CONFORMANCE

These specifications designate the requirements for manufacturing and installing Vinyltech AWWA C900-07 water pipe.

AWWA C900-07 - Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 4 In. Through 12 In. (100mm Through 300mm), for Water Transmission and Distribution

AWWA C605 - Underground Installation of Polyvinyl Chloride (PVC) Pressure Pipe and Fittings for Water

ASTM D1784 - Standard Specification for Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds

ASTM D3139 - Standard Specification for Joints for Plastic Pressure Pipes Using Flexible Elastomeric Seals

ASTM F477 - Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe

ASTM D2412 - Standard Test Method for Determination of External Loading Characteristics of Plastic Pipe by Parallel-Plate Loading

PIPE COMPOUND

The pipe shall be extruded from compounds meeting (PVC1120) the requirements of Cell Classification 12454, as defined in ASTM D1784, Standard Specification for Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds. The PVC shall also be listed by the National Sanitation Foundation (NSF) for use in potable water.

PIPE

Vinyltech pipe shall be manufactured in accordance with AWWA C900-07.

GASKET JOINT

The gasket shall be reinforced with a steel band and meet the requirements of ASTM F477. Vinyltech pipe shall have an integral bell end with a locked-in factory installed gasket and shall meet the joint requirements of ASTM D3139.

MARKING

The pipe shall be marked in accordance with AWWA C900 as in the following example.

- Manufacturer's name and production codes
- Nominal size, dimension ratio number, and O.D. base (for example, 8" DR 18 CIS)
- Materials cell classification (PVC1120)
- AWWA pressure class (235 psi or 305 psi) and hydrostatic test pressure (T600, or T800)
- AWWA designation number (AWWA C900-07)
- National Sanitation Foundation (NSF-61)
- Underwriters Laboratories (UL) logo, third party certification.
- Production date and time code (VABB15B 48.34)
- FM Approvals (FM) logo, required FM pressure rating (150 or 200 psi), third party certification

QUALITY CONTROL

Each length of the pipe including the bell shall be hydrostatically tested. The pipe shall meet all additional test requirements as described in AWWA C900-07. Our full time quality assurance staff continually administers a rigid program of tests to maintain the production of the best pipe products available.

INSTALLATION

Recommended installation procedures of Vinyltech Corporation are outlined in AWWA C605, Underground Installation of Polyvinyl Chloride (PVC) Pressure Pipe and Fittings for Water. The AWWA Manual M23, PVC Pipe-Design and Installation, is also an invaluable resource guide for design and installation.

TAPPING

The consistent success of tapping PVC pressure pipe is contingent upon the use of proper procedures and equipment. Vinyltech recommends strict compliance with the requirements as specified in AWWA C605.

ASSEMBLING THE PIPE

Assembly of Vinyltech PVC water pipe is easily accomplished. A depth of entry mark is on each spigot end to serve as a visual check for rapid, accurate joint inspection. **Do not over insert.**

- Remove any mud, sand, or other foreign matter from the belled and spigot ends of the pipe. Carefully clean the gasket area.
- With a clean applicator (a brush or hand) lubricate the entire surface of the pipe from the spigot end to the depth of entry mark and the contact surface of the gasket with **Vinyltech Brand Lubricant**.
- Brace the bell to avoid disturbing the already installed joints. Align the pipe, insert the spigot into the bell and push.
- Do not insert past the entry mark line.**



201 S. 61st Avenue • Phoenix, AZ 85043
602 233-0071 • 602 272-4847 Fax • www.vtpipe.com



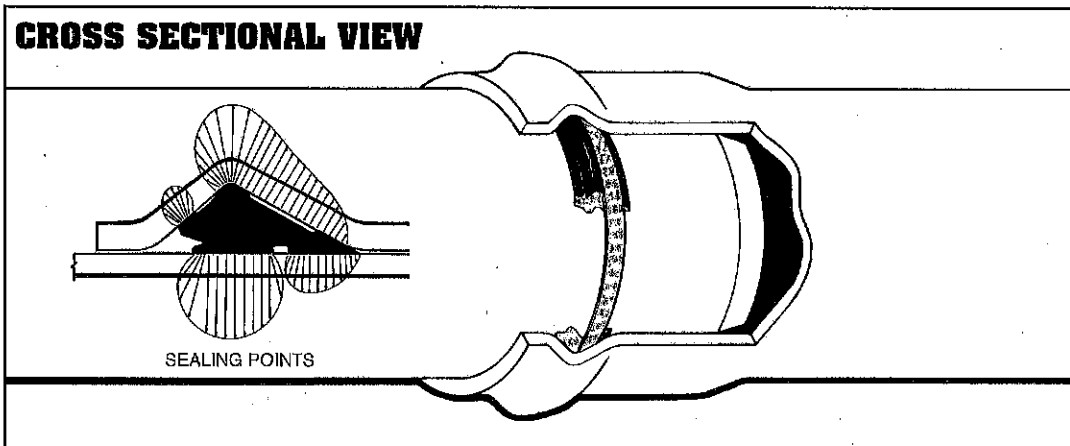
AWWA C900-07

VINYLTECH AWWA C900-07 TECHNICAL DATA SUBMITTAL

AWWA C900-07

C900 DR 18 PRESSURE CLASS 235						
NOMINAL SIZE (IN)		OUTER DIAMETER (IN)	MINIMUM WALL (IN)	LIFTS PER TRUCK	FEET PER LIFT	APPROXIMATE WEIGHT (LB/100')
4	(100)	4.800	0.267	16	1020	251.6
6	(150)	6.900	0.388	16	440	521.2
8	(200)	9.050	0.503	20	200	903.0
10	(250)	11.100	0.617	12	240	1364.4
12	(300)	13.200	0.733	28	60-80	1935.8

C900 DR 14 PRESSURE CLASS 305						
NOMINAL SIZE (IN)		OUTER DIAMETER (IN)	MINIMUM WALL (IN)	LIFTS PER TRUCK	FEET PER LIFT	APPROXIMATE WEIGHT (LB/100')
4	(100)	4.800	0.343	16	1020	317.5
6	(150)	6.900	0.493	16	440	658.7
8	(200)	9.050	0.646	20	200	1139.7
10	(250)	11.100	0.793	12	240	1722.3
12	(300)	13.200	0.943	28	60-80	2445.5



THE RIEBER SEALING SYSTEM

The Rieber system provides a proven pipe joint with an excellent track record in the field. It is the fastest growing system in the world because of its many advantages.

- Factory installed, locked-in gasket
- The pipe bell forms over the gasket, making a perfect fit
- Avoids the possibility of installing the wrong gasket
- Reduces installation problems
- The locked-in gasket eliminates gasket roll-out during joining
- The gasket is molded vs. extruded and spliced
- Works equally well under pressure or vacuum
- Three sealing points achieved vs. two
- **LEAK-PROOF JOINTS**
- **"THE WORLDS BEST JOINT"**

PRODUCT SPECIFICATION

AQUASPRING™ C900 IB PVC PIPE

Gasketed Integral Bell

Our AquaSpring™ C900 Gasketed Integral Bell PVC Pipe product line is manufactured to meet the needs of modern municipal water, wastewater, and reclaimed water systems. With top quality raw materials and modern processing technology, AquaSpring C900 pipe meets all industry standards in addition to our own rigorous quality control requirements.

AquaSpring C900 pipe utilizes Rieber style gaskets throughout the entire product offering to create a leak-free joint.

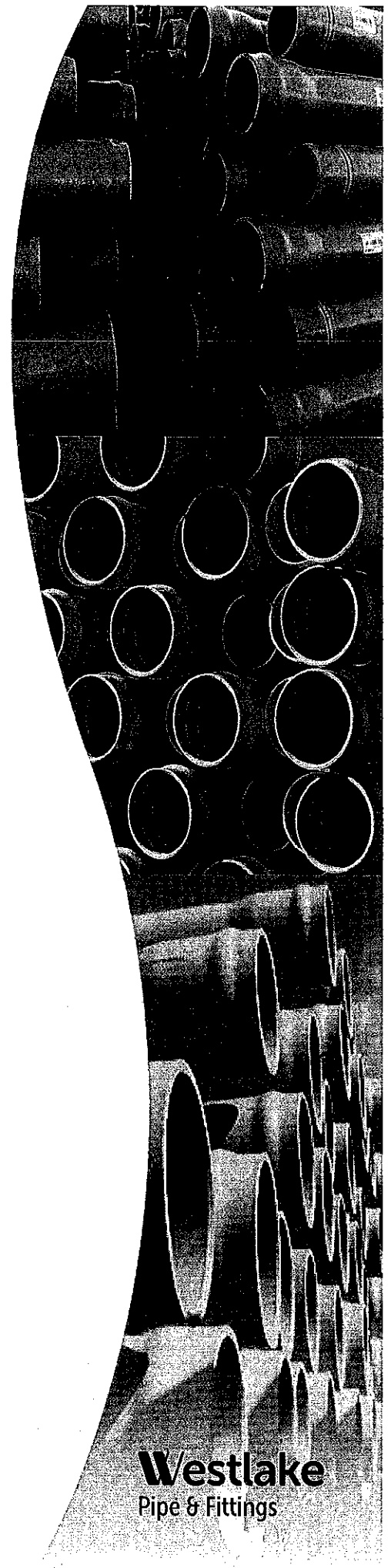
Short Form Specification											
Pipe Standard:	AWWA C900-16										
Diameter Std.:	Cast Iron Outside Diameter (CIOD)										
Nominal Sizes:	4", 6", 8", 10", 12", 14", 16", 18", 20", 24", 30", 36"										
Dimension Ratios & Pressure Ratings	<table border="0"> <tr> <td>DR 51 – 80 psi</td> <td>DR 18 – 235 psi (185 psi)**</td> </tr> <tr> <td>DR 41 – 100 psi</td> <td>DR 14 – 305 psi (250 psi)**</td> </tr> <tr> <td>DR 32.5 – 125 psi</td> <td></td> </tr> <tr> <td>DR 25 – 165 psi</td> <td></td> </tr> <tr> <td>DR 21 – 200 psi</td> <td></td> </tr> </table>	DR 51 – 80 psi	DR 18 – 235 psi (185 psi)**	DR 41 – 100 psi	DR 14 – 305 psi (250 psi)**	DR 32.5 – 125 psi		DR 25 – 165 psi		DR 21 – 200 psi	
DR 51 – 80 psi	DR 18 – 235 psi (185 psi)**										
DR 41 – 100 psi	DR 14 – 305 psi (250 psi)**										
DR 32.5 – 125 psi											
DR 25 – 165 psi											
DR 21 – 200 psi											
Lay Length:	20' [6.1m]										
Pipe Compound:	ASTM D1784 Cell Class 12454										
Pipe Joint Std.:	ASTM D3139										
Max. Angular Joint Deflection:†	1°										
Gasket Standard:	ASTM F477, UL 157										
Gasket Material Offerings:	Standard – SBR Optional – NBR or EPDM										
Installation Std.:	AWWA C605										

Applications	Potable Water	Wastewater	Reclaimed Water
Color:	Blue	Green	Purple
Certifications:*	NSF 14, NSF 61 CSA B137.3* UL 1285 FM 1612** BNQ 3624-250 (24in)*, BNQ 3660-950 (24in)	CSA B137.3*	CSA B137.3*

*See Certification Letter for full explanation and list of exceptions.

**FM 1612 calculates pressure ratings differently than AWWA for 4"-12" only with DR 18 as 185 psi and DR 14 as 250 psi.

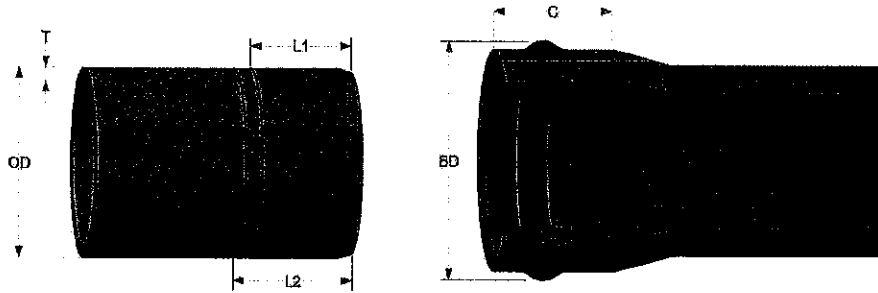
†See Installation Guide for more information.



PRODUCT SPECIFICATION

AQUASPRING™ C900 IB PVC PIPE

Gasketed Integral Bell



AQUASPRING™ C900 IB PIPE DIMENSIONS & PERFORMANCE

Nom. Size	Outside Diameter (OD)	DR	Pressure Class psi [kPa]	Min. Wall Thickness (T)	Internal Diameter (ID)	Approx. Bell Diameter (BD)	Bell Depth (C)	1 st Insertion Mark (L1)	2 nd Insertion Mark (L2)
4" [100mm]	4.800 [121.9]	25	165 [1150]	0.192 [4.88]	4.416 [112.1]	6.250 [158.8]	5.000 [127]	3.375 [85.7]	4.375 [111.1]
		18	235 [1620]	0.267 [6.78]	4.266 [108.3]				
		14	305 [2130]	0.343 [8.70]	4.114 [104.5]				
6" (150mm)	6.900 (175.3)	25	165 [1150]	0.276 [7.00]	6.348 [161.3]	8.625 [219.1]	5.750 [146.1]	4.625 [117.5]	5.625 [135.3]
		18	235 [1620]	0.383 [9.72]	6.134 [155.9]				
		14	305 [2130]	0.493 [12.50]	5.914 [150.3]				
8" [200mm]	9.050 (229.9)	25	165 [1150]	0.362 [9.20]	8.326 [211.5]	11.500 [292.1]	7.000 [177.8]	5.625 [135.3]	6.625 [168.3]
		18	235 [1620]	0.503 [12.80]	8.044 [204.3]				
		14	305 [2130]	0.646 [16.40]	7.758 [197.1]				
10" [250mm]	11.100 [281.9]	25	165 [1150]	0.444 [11.30]	10.212 [259.3]	14.000 [355.6]	7.250 [184.2]	6.125 [155.6]	7.125 [181.0]
		18	235 [1620]	0.617 [15.70]	9.866 [250.3]				
		14	305 [2130]	0.793 [20.10]	9.514 [241.7]				
12" (300mm)	13.200 [335.3]	25	165 [1150]	0.528 [13.40]	12.144 [308.5]	16.563 [420.7]	8.000 [203.2]	6.875 [174.6]	7.875 [200]
		18	235 [1620]	0.733 [18.60]	11.734 [298.1]				
		14	305 [2130]	0.943 [23.90]	11.314 [287.5]				
14" [350mm]	15.300 [388.6]	32.5	125 [860]	0.471 [12.0]	14.358 [364.7]	19.063 [484.2]	9.000 [228.6]	7.500 [190.5]	8.500 [215.9]
		25	165 [1150]	0.612 [15.6]	14.076 [357.5]				
		21	200	0.729	13.842				
		18	235 [1620]	0.850 [21.6]	13.600 [345.4]				
		14	305	1.093	13.114				
16" [400mm]	17.400 [442.0]	41	100	0.424	16.552	21.750 [552.5]	10.000 [254.0]	8.500 [215.9]	9.500 [241.3]
		32.5	125 [860]	0.535 [13.6]	16.330 [414.8]				
		25	165 [1150]	0.696 [17.7]	16.008 [406.6]				
		21	200	0.829	15.742				
		18	235 [1620]	0.967 [24.6]	15.466 [392.8]				
		14	305	1.243	14.914				

PRODUCT SPECIFICATION

AQUASPRING™ C900 IB PVC PIPE

Gasketed Integral Bell

AQUASPRING™ C900 IB PIPE DIMENSIONS & PERFORMANCE

Nom. Size	Outside Diameter (OD)	DR	Pressure Class psi [kPa]	Min. Wall Thickness (T)	Internal Diameter (ID)	Approx. Bell Diameter (BD)	Bell Depth (C)	1 st Insertion Mark (L1)	2 nd Insertion Mark (L2)
18" [450mm]	19.500 [459.3]	41	100	0.476	18.548	23.563 [598.5]	10.375 [263.5]	8.875 [225.4]	9.875 [250.8]
		32.5	125 [860]	0.600 [15.2]	18.300 [464.8]				
		25	165 [1150]	0.780 [19.8]	17.940 [455.7]				
		21	200	0.929	17.642				
		18	235 [1620]	1.083 [27.5]	17.334 [440.3]				
20" [500mm]	21.600 [548.6]	32.5	125 [860]	0.665 [16.9]	20.270 [514.9]	26.063 [662.0]	11.000 [279.4]	9.500 [241.3]	10.500 [266.7]
		25	165 [1150]	0.864 [22.0]	19.872 [504.7]				
		21	200	1.029	19.542				
		18	235 [1620]	1.200 [30.5]	19.200 [487.7]				
24" [600mm]	25.800 [655.3]	41	100	0.629	24.542	31.063 [789.0]	13.000 [330.2]	11.500 [292.1]	12.500 [317.5]
		32.5	125 [860]	0.794 [20.2]	24.212 [615.0]				
		25	165 [1150]	1.032 [26.2]	23.736 [602.9]				
		21	200	1.229	23.342				
		18	235 [1620]	1.433 [36.4]	22.934 [582.5]				
30" [750mm]	32.000 [812.8]	51	80 [550]	0.627 [15.90]	30.746 [781]	37.500 [952.5]	15.125 [384.2]	13.625 [346.1]	14.625 [371.5]
		41	100 [650]	0.780 [19.80]	30.440 [773.2]				
		32.5	125 [860]	0.985 [25.00]	30.030 [762.8]				
		25	165 [1150]	1.280 [32.50]	29.440 [747.8]				
		21	200	1.524	28.952				
		18	235 [1620]	1.778 [45.20]	28.444 [722.4]				
36" [900mm]	38.300 [972.8]	51	80 [550]	0.751 [19.10]	36.798 [934.6]	44.500 [1130.3]	19.125 [485.8]	17.625 [447.7]	18.625 [473.1]
		41	100 [650]	0.934 [23.70]	36.432 [925.4]				
		32.5	125 [860]	1.178 [29.90]	35.944 [913.0]				
		25	165 [1150]	1.532 [38.90]	35.236 [895.0]				
		21	200	1.824	34.652				

Notes:

1. These dimensions are for estimating purposes only. All dimensions not in brackets are in inches unless otherwise specified.
2. Products certified to CSA B137.3 have dimensions in brackets in millimeters unless otherwise specified.
3. DR = Dimension Ratio
4. AWWA and CSA Pressure Class @ 73°F [23°C] which includes a 2:1 safety factor.
5. Internal diameter calculated using nominal outside diameter and minimum wall thickness.
6. Dimension given for Approx. Bell Diameter (BD) is for highest pressure class.



Ductile Iron Flanged Fittings

ANSI/AWWA C110/A21.10

GENERAL SPECIFICATIONS

MATERIAL: Ductile iron per ASTM A536
PRESSURE: 250 PSI rating for 1" - 48" sizes and 150 PSI rating for 54" - 64"
TESTING: In accordance with ANSI/AWWA C110/A21.10, UL and FM requirements
LAYING LENGTH: 2" - 48" sizes in accordance with ANSI/AWWA C110/A21.10 and ANSI B16.1 and 54" - 64" sizes in accordance with ANSI/AWWA C153/A21.53 (fittings not listed in ANSI/AWWA have dimensions per Star design as noted in the catalog)
WEIGHTS: Are in pounds, unless noted otherwise and do not include accessories, cement lining and coatings
DRILLING: In accordance with ANSI/AWWA C110/A21.10, ANSI/AWWA C153/A21.53 and ANSI B16.1 Class 125 Flanges
CEMENT LINING: In accordance with ANSI/AWWA C104/A21.4 -- sizes 1" - 3" single thickness and sizes 4" - 64" double thickness
APPROVALS: 2" - 12" Underwriters Laboratories and ULC Listed and Factory Mutual approved for 300 PSI rating. Please consult factory for detail listing and approvals. 2" and greater are UL/NSF-61.
DIMENSIONS: All dimensions are in inches unless noted otherwise.



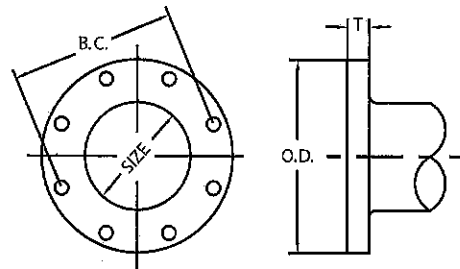
SUBMITTAL INFORMATION

PROJECT NAME: _____

ENGINEER: _____

CONTRACTOR: _____

SPEC. SECTION: _____



FLANGE DETAILS

NOM. SIZE	O.D.	B.C.	T	BOLT HOLE DIA.	BOLTS	
					SIZE	NO.
1	4.25	3.12	0.44	0.62	1/2 x 2	4
1 1/2	5.00	3.88	0.56	0.62	1/2 x 2	4
2	6.00	4.75	0.62	0.75	5/8 x 2 1/4	4
2 1/2	7.00	5.50	0.69	0.75	5/8 x 2 1/2	4
3	7.50	6.00	0.75	0.75	5/8 x 2 1/2	4
4	9.00	7.50	0.94	0.75	5/8 x 3	8
5	10.00	8.50	0.94	0.88	3/4 x 3	8
6	11.00	9.50	1.00	0.88	3/4 x 3 1/2	8
8	13.50	11.75	1.12	0.88	3/4 x 3 1/2	8
10	16.00	14.25	1.19	1.00	7/8 x 4	12
12	19.00	17.00	1.25	1.00	7/8 x 4	12
14	21.00	18.75	1.38	1.13	1 x 4 1/2	12
16	23.50	21.25	1.44	1.13	1 x 4 1/2	16
18	25.00	22.75	1.56	1.25	1 1/8 x 5	16
20	27.50	25.00	1.69	1.25	1 1/8 x 5	20
24	32.00	29.50	1.88	1.38	1 1/4 x 5 1/2	20
30	38.75	36.00	2.12	1.38	1 1/4 x 6 1/2	28
36	46.00	42.75	2.38	1.63	1 1/2 x 7	32
42	53.00	49.50	2.62	1.63	1 1/2 x 7 1/2	36
48	59.50	56.00	2.75	1.63	1 1/2 x 8	44
54	66.25	62.75	3.00	2.00	1 3/4 x 8 1/2	44
60	73.00	69.25	3.12	2.00	1 3/4 x 9	52
64	80.00	76.00	3.38	2.00	1 3/4 x 9	52

SIZE RANGE (Please specify):

Size Range _____

LINING OPTIONS (Please check one):

- Standard: Cement-lined and asphalt seal coat per ANSI/AWWA C104/A21.4 and UL/NSF-61
- Optional: FBE (Fusion Bonded Epoxy) per ANSI/AWWA C116/A21.15 and UL/NSF-61
- Optional: P40i (Protecto 40i) Ceramic Epoxy - sewer applications only. Not NSF-61
- Optional: Other (specify) _____

COATING OPTIONS (Please check one):

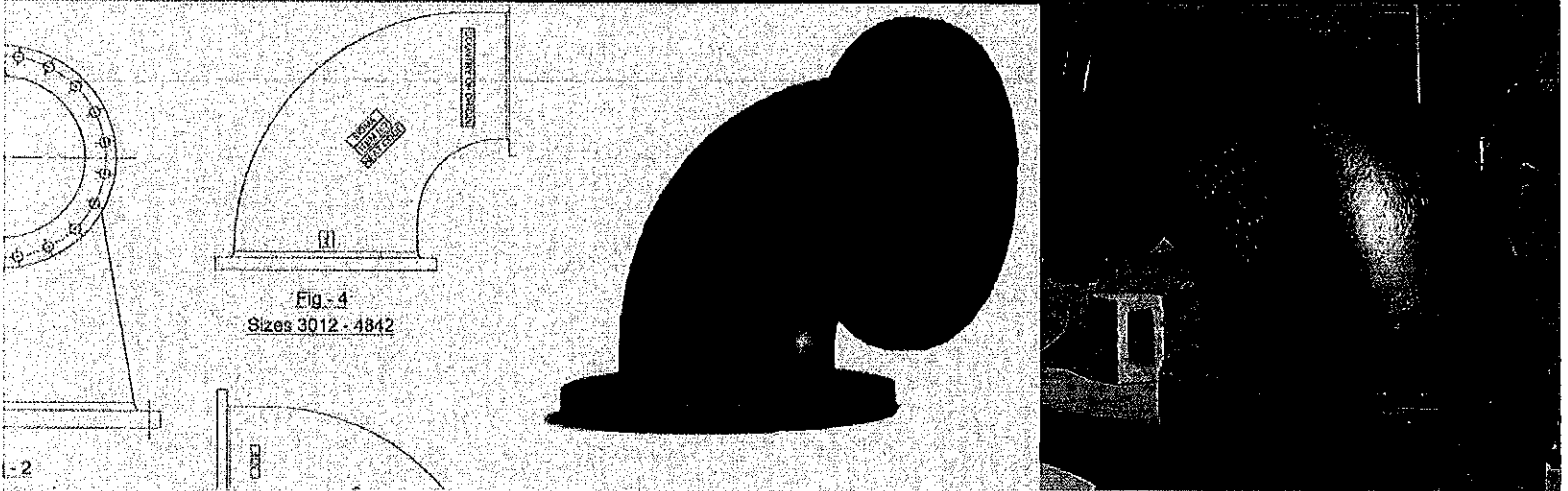
- Standard: Red Prime Coat
- Optional: Asphaltic seal coat per ANSI/AWWA C104/A21.4
- Optional: FBE (Fusion Bonded Epoxy) per ANSI/AWWA C116/A21.15 and UL/NSF-61
- Optional: Other (specify) _____





Quality – Service – Commitment – Delivered.

C110 Flanged Fittings



2-64in C110 CAST IRON/DUCTILE IRON FLANGED FITTINGS BASIC SPECIFICATIONS

- MATERIAL:** Ductile Iron ASTM A536 Grade 60-42-10, 65-45-12 or 70-50-05.
- PRESSURE:** 250 PSI Water Working Pressure for Cast Iron sizes 2" - 12"
250 PSI Water Working Pressure for Ductile Iron sizes 2" - 48"
150 PSI Water Working Pressure for Ductile Iron sizes 54" - 64"
150 PSI Water Working Pressure for Cast Iron sizes 14" - 54"
- TESTING:** In accordance with ANSI / AWWA C110 / A21.10 where applicable.
Other items are in accordance with manufacturer's standards.
54" and above Flanged Fittings are manufactured as per AWWA C153/A21.53
- LAYING LENGTH:** In accordance with ANSI / AWWA C110 / A21.10 where applicable.
Other items are in accordance with manufacturer's standards.
54" and above Flanged Fittings are manufactured as per AWWA C153/A21.53
- CEMENT LINING:** In accordance with ANSI / AWWA C104 / A21.4
- COATING:** Tar coated (bituminous) inside in accordance with ANSI / AWWA C104 / A21.04
Red Primer Outside.
For special conditions, other types of coatings and linings are available.
Please specify when ordering.
- APPROVALS:** 2"-16" Underwriters Laboratories listed and Factory Mutual Approved.
- STANDARDS:** ANSI / AWWA C110 / A21.10 Where applicable.
Other items are in accordance with manufacturer's standards.
54" and above Flanged Fittings are manufactured as per AWWA C153/A21.53

Note: call for Cast Iron Fittings



SIGMA Corporation

700 Goldman Drive
Cream Ridge, NJ 08514

800 999 2550 p
609 758 1163 f
cim-sales@sigmaco.com

www.sigmaco.com



28U - ANSI/AWWA C110/A21.10
 Class 125 Flange Joint Full Body
 Ductile Iron Fittings
 Revised 4/2018

DOMESTIC

NON-DOMESTIC

SUBMITTAL: C110 FLANGE JOINT CLASS 125 PRODUCT

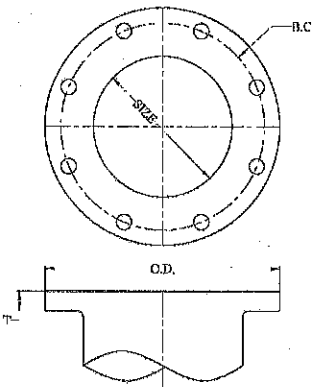
(Current revisions for the noted Standards apply)

- SIZES:** 2" - 64" (Contact Tyler Union for 54" - 64" flange fitting information)
- STANDARDS:** ANSI/AWWA C110/A21.10, NFPA 13/24, ASME B16.1, 3" - 12" UL listed and FM approved
- MATERIAL:** Cast of ASTM A536 qualified ductile iron. Date code is cast on and required for traceability.
- PRESSURE RATING:** *Flanged fittings *2" - 48" rated at 250 psi. 54" - 64" rated at 150psi.
 *Note: With rubber annular ring flange gasket, 2" - 24" flanged fittings can be rated at 350 psi.
- DEFLECTION:** Deflection is "not" recommended for flange joint due to the rigidity of the joint.
- NSF-61 & NSF372:** Meets all requirements including Annex G, Tyler Union's Underwriters Laboratory listing MH16439.
- COATING:** Asphaltic or Primer per ANSI/AWWA C104/A21.4, Standard primer is Tnemec Potapox N140-1211. Contact Tyler Union for additional coating options.
- CEMENT LINING:** Per ANSI/AWWA C104/A21.4, with double cement lining available upon request.
- EPOXY COATING:** Fusion bonded epoxy per ANSI/AWWA C116/A21.16. Additional coatings available upon request.
- BARE FITTINGS:** Available upon request.
- FLANGES:** ANSI Class 125 per ASME B16.1 and ANSI/AWWA C111/A21.11. Bolt holes shall straddle the center line
NOTE: Class 125 ASME B16.1 are not compatible with Class 250 Flanges
NOTE: Class 250 ASME B16.1 fittings are available upon request.
- FASTNERS:** High strength low alloy weathering steel per ANSI/AWWA C111/A21.11 and ASTM A242
- INSTALLATION:** Install per AWWA C600/C651 using pipe conforming to ANSI/AWWA C151/A21.51.

FLANGE DETAILS IN INCHES

BOLTS

Size Inches	Diameter DI Pipe	Flange O.D.	B.C. Diameter	Flange Thickness T	Bolt Hole Diameter	Size	Qty
2	2.51	6.00	4.75	0.62	0.750	5/8 x 2-1/4	4
3	3.96	7.50	6.00	0.75	0.750	5/8 x 2-1/4	4
4	4.80	9.00	7.50	0.94	0.750	5/8 x 3	8
6	6.90	11.00	9.50	1.00	0.875	3/4 x 3-1/2	8
8	9.05	13.50	11.75	1.12	0.875	3/4 x 3-1/2	8
10	11.10	16.00	14.25	1.19	1.000	7/8 x 4	12
12	13.20	19.00	17.00	1.25	1.000	7/8 x 4	12
14	15.30	21.00	18.75	1.38	1.125	1 x 4-1/2	12
16	17.40	23.50	21.25	1.44	1.125	1 x 4-1/2	16
18	19.50	25.00	22.75	1.56	1.250	1-1/8 x 5	16
20	21.60	27.50	25.00	1.69	1.250	1-1/8 x 5	20
24	25.80	32.00	29.50	1.88	1.375	1-1/4 x 5-1/2	20
30	32.00	38.75	36.00	2.12	1.375	1-1/4 x 5-1/2	28
36	38.30	46.00	42.75	2.38	1.625	1-1/2 x 7	32
42	44.50	53.00	49.50	2.62	1.625	1-1/2 x 7-1/2	36
48	50.80	59.50	56.00	2.75	1.625	1-1/2 x 8	44
54	Available on Request						
60	Available on Request						
64	Available on Request						



Anniston: 1501 W 17th St. • Anniston, AL 36201 • (800) 226-7601
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Tyler: 11910 CR 492 • Tyler, Texas 75706 • (800) 527-8478
Dallas: 1201 Ave. S. Suite100 • Grande Prairie, TX 75050

Elmer: 701 Kenyon Ave. • Elmer, New Jersey 03318
New Lenox: 2200 West Haven • New Lenox, IL 60451
Portland: 15670 N. Lombard St. • Portland, OR 97203
Oxford: 1800 Greenbrier Dear Road • Anniston, AL 36207



Ductile Iron MJ Compact Fittings

ANSI/AWWA C153/A21.53

GENERAL SPECIFICATIONS

- MATERIAL:** Ductile Iron per ASTM A536, Grade 65-45-12
- PRESSURE:** 350 PSI rating for 2" - 24" sizes, 250 PSI rating for 30" - 48" sizes and 150 PSI rating for 54" - 64" sizes
- TESTING:** In accordance with ANSI/AWWA C153/A21.53 and UL requirements
- LAYING LENGTH:** In accordance with ANSI/AWWA C153/A21.53 (fittings not listed in ANSI/AWWA have dimensions per Star design as noted in the catalog)
- DEFLECTION:** 2"-4"=8° | 6"-7" | 8"-12"=5° | 14"-16"=3 1/2° | 18"-24"=3° | 30"-48"=2°
- WEIGHTS:** Are in pounds, unless noted otherwise and do not include accessories, cement lining and coating
- FLANGES:** Flanged ends on fittings match ANSI/AWWA C115/A21.15 and ANSI B16.1 class 125 flanges
- CEMENT LINING:** In accordance with ANSI/AWWA C104/A21.4 -- size 2" - 3" single thickness and sizes 4" - 64" double thickness
- COATING:** Asphaltic seal coat inside and out in accordance with ANSI/AWWA C104/A21.4 and referenced in ANSI/AWWA C153/A21.53
- GASKETS:** SBR in accordance with ANSI/AWWA C111/A21.11
- T-BOLTS/NUTS:** Low alloy steel in accordance with ANSI/AWWA C111/A21.11
- APPROVALS:** 3" - 12" UL/ULC Listed | 3" and greater are UL/NSF-61 | 3" - 16" FM APPROVED. Please consult factory for detail listing and approvals.
- DIMENSIONS:** All dimensions are in inches unless noted otherwise.



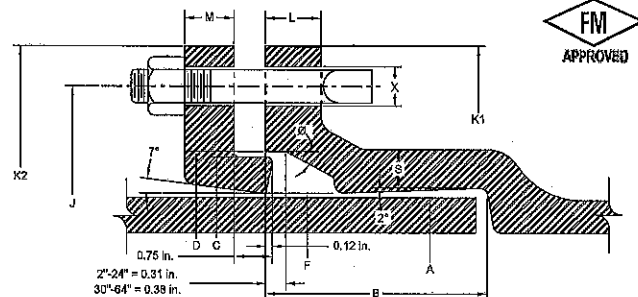
SUBMITTAL INFORMATION

PROJECT NAME: _____

ENGINEER: _____

CONTRACTOR: _____

SPEC. SECTION: _____



NOM. SIZE	A DIA.	B	C DIA.	D DIA.	F DIA.	J DIA.	K1 DIA.	K2 DIA.	L	M	S	Ø	X DIA.	BOLTS	
														SIZE	NO.
2	2.50	2.50	3.39	3.50	2.61	4.75	6.19	6.25	0.58	0.62	0.36	28°	3/4	3/4 x 3	2
3	3.96	2.50	4.84	4.94	4.06	6.19	7.62	7.69	0.58	0.62	0.39	28°	3/4	3/4 x 3	4
4	4.80	2.50	5.92	6.02	4.90	7.50	9.06	9.12	0.60	0.75	0.39	28°	7/8	3/4 x 3 1/2	4
6	6.90	2.50	8.02	8.12	7.00	9.50	11.06	11.12	0.63	0.88	0.43	28°	7/8	3/4 x 3 1/2	6
8	9.05	2.50	10.17	10.27	9.15	11.75	13.31	13.37	0.66	1.00	0.45	28°	7/8	3/4 x 3 1/2	6
10	11.10	2.50	12.22	12.34	11.20	14.00	15.62	15.62	0.70	1.00	0.47	28°	7/8	3/4 x 3 1/2	8
12	13.20	2.50	14.32	14.44	13.30	16.25	17.88	17.88	0.73	1.00	0.49	28°	7/8	3/4 x 3 1/2	8
14	15.30	3.50	16.40	16.54	15.44	18.75	20.25	20.25	0.79	1.25	0.55	28°	7/8	3/4 x 4	10
16	17.40	3.50	18.50	18.64	17.54	21.00	22.50	22.50	0.85	1.31	0.58	28°	7/8	3/4 x 4	12
18	19.50	3.50	20.60	20.74	19.64	23.25	24.83	24.75	1.00	1.38	0.68	28°	7/8	3/4 x 4	12
20	21.60	3.50	22.70	22.84	21.74	25.50	27.08	27.00	1.02	1.44	0.69	28°	7/8	3/4 x 4	14
24	25.80	3.50	26.90	27.04	25.94	30.00	31.58	31.50	1.02	1.56	0.75	28°	7/8	3/4 x 4 1/2	16
30	32.00	4.00	33.29	33.46	32.17	36.88	39.12	39.12	1.31	2.00	0.82	20°	1 1/2	1 x 5 1/2	20
36	38.30	4.00	39.59	39.76	38.47	43.75	46.00	46.00	1.45	2.00	1.00	20°	1 1/2	1 x 5 1/2	24
42	44.50	4.00	45.79	45.96	44.67	50.62	53.12	53.12	1.45	2.00	1.25	20°	1 3/4	1 1/4 x 6	28
48	50.80	4.00	52.09	52.26	50.97	57.50	60.00	60.00	1.45	2.00	1.35	20°	1 3/4	1 1/4 x 6	32

SIZE RANGE (Please specify):

Size Range _____

LINING OPTIONS (Please check one):

- Standard: Cement-lined and asphalt seal coat per ANSI/AWWA C104/A21.4 and UL/NSF-61
- Optional: FBE (Fusion Bonded Epoxy) per ANSI/AWWA C116/A21.15 and UL/NSF-61
- Optional: P401 (Protecto 401) Ceramic Epoxy - sewer applications only. Not NSF-61.
- Optional: Other (specify) _____

COATING OPTIONS (Please check one):

- Standard: Asphaltic seal coat per ANSI/AWWA C104/A21.4
- Optional: FBE (Fusion Bonded Epoxy) per ANSI/AWWA C116/A21.15 and UL/NSF-61
- Optional: Other (specify) _____



UCAP.12.01-SUB REGISTERED TRADEMARK OF STAR PIPE PRODUCTS

STAR PIPE PRODUCTS HOUSTON CORPORATE TOLL FREE 1-800-999-3009 FAX 281-558-9000 www.starpipeproducts.com

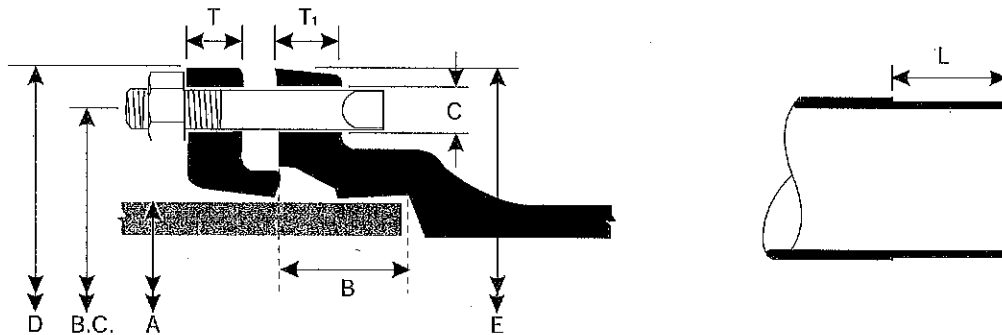


MECHANICAL JOINT COMPACT FITTINGS
 DUCTILE IRON CLASS 350 as per ANSI / AWWA C153 / A21.53

3"-48" DUCTILE IRON MECHANICAL JOINT FITTINGS CLASS 350

BASIC SPECIFICATIONS

- MATERIAL:** Ductile Iron ASTM A536
- PRESSURE:** 350 PSI Water Working Pressure (CLASS 350) 3"-24": 250 PSI 30"-48"
- TESTING:** In accordance with ANSI / AWWA C153 / A21.53 & UL - FM requirements
- LAYING LENGTH:** Short body design-straight section of body deleted to provide a compact and lighter fitting without reducing strength or flow characteristics, in accordance with ANSI / AWWA C153 / A21.53 (3"-48")
- CEMENT LINING:** In accordance with ANSI / AWWA C104 / A21.4
- COATING:** Tar coated (bituminous) inside and out in accordance with ANSI / AWWA C104 / A21.4
- GASKETS:** SBR In accordance with ANSI / AWWA C111 / A21.11
- T-BOLTS:** Low alloy corrosion resistant high strength steel in accordance with ANSI / AWWA C111 / A21.11
- APPROVALS:** 3"-16" Underwriters Laboratories listed and Factory Mutual Approved.
- STANDARDS:** Certified to NSF 61 Standard
 ANSI / AWWA C153 / A21.53 for Compact Ductile Iron Fittings 3"-24" for water and other liquids.



MECHANICAL JOINT DETAILS

PLAIN END DETAILS

Size	A	B	B.C.	C	D	E	T	T ₁	Bolts			Size	O.D.	L
									No.	Size	L			
3	3.96	2.50	6.19	3/4	7.69	7.62	.62	.58	4	5/8	3	3	3.96	5.5
4	4.80	2.50	7.50	7/8	9.12	9.06	.75	.60	4	3/4	3.5	4	4.80	5.5
6	6.90	2.50	9.50	7/8	11.12	11.06	.88	.63	6	3/4	3.5	6	6.90	5.5
8	9.05	2.50	11.75	7/8	13.37	13.31	1.00	.66	6	3/4	4	8	9.05	5.5
10	11.10	2.50	14.00	7/8	15.62	15.62	1.00	.70	8	3/4	4	10	11.10	5.5
12	13.20	2.50	16.25	7/8	17.88	17.88	1.00	.73	8	3/4	4	12	13.20	5.5
14	15.30	3.50	18.75	7/8	20.25	20.25	1.25	.79	10	3/4	4	14	15.30	8.0
16	17.40	3.50	21.00	7/8	22.50	22.50	1.31	.85	12	3/4	4	16	17.40	8.0
18	19.50	3.50	23.25	7/8	24.83	24.75	1.38	1.00	12	3/4	4	18	19.50	8.0
20	21.60	3.50	25.50	7/8	27.00	27.00	1.44	1.02	14	3/4	4	20	21.60	8.0
24	25.80	3.50	30.00	7/8	31.50	31.50	1.56	1.02	16	3/4	4.5	24	25.80	8.0
30	32.00	4.00	36.88	1 1/8	39.12	39.12	2.00	1.54	20	1	6	30	32.00	8.0
36	38.30	4.00	43.75	1 1/8	46.00	46.00	2.00	1.70	24	1	6	36	38.30	8.0
42	44.50	4.00	50.62	1 3/8	53.12	53.12	2.00	1.45	28	1 1/4	6	42	44.50	8.0
48	50.80	4.00	57.50	1 3/8	60.00	60.00	2.00	1.45	32	1 1/4	6	48	50.80	8.0

Weights in pounds
 Dimensions in inches
 All Weights shown without accessories



23U - ANSI/AWWA C153/A21.53

Mechanical Joint Compact

Ductile Iron Fittings

Revised 4/2018

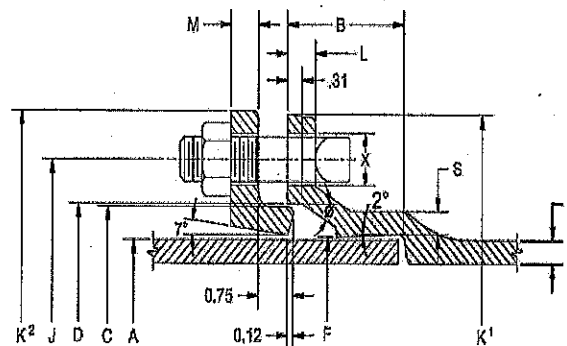
DOMESTIC

NON-DOMESTIC

SUBMITTAL: C153 MECHANICAL JOINT PRODUCT

(Current revisions for the noted Standards apply)

- SIZES:** 2" - 64" (2" not included in ANSI/AWWA C153 standard)
- STANDARDS:** ANSI/AWWA C153/A21.53, NFPA13/24, 3"-16" UL and 3"-10" FM listed & approved (File - Tyler Union)
- MATERIAL:** Cast of ASTM A536 qualified ductile iron. Date code is cast on and required for traceability.
- PRESSURE RATING:** *Flanged fittings rated at 250 psi. Mechanical joints 2" - 24" rated at 350 psi and 30" - 48" at 250 psi.
*Note: With rubber annular ring flange gasket, 2" - 24" Flanged fittings can be rated at 350 psi.
Note: Wyes over 12" are not pressure rated. Contact Tyler Union for rating in your application.
- DEFLECTION:** Joint deflection 5° max for 2"- 12" and 3° max for 14"- 48". Reduces by 50% at nominal pipe & fitting diameters
- NSF-61 & NSF372:** Meets all requirements including Annex G, Tyler Union's Underwriters Laboratory listing MH16439.
- ASPHALT COATING:** Per ANSI/AWWA C104/A21.4 and ANSI/AWWA C153/A21.53.
- CEMENT LINING:** Per ANSI/AWWA C104/A21.4, with double cement lining available upon request.
- EPOXY COATING:** Fusion bonded epoxy per ANSI/AWWA C116/A21.16. Additional coatings available upon request.
- BARE FITTINGS:** Available upon request.
- FASTNERS:** High strength low alloy weathering steel per ANSI/AWWA C111/A21.11 and ASTM A242
- INSTALLATION:** Install per AWWA C600/C651 using pipe conforming to ANSI/AWWA C151/A21.51 or AWWA C900/905.



NOMINAL JOINT DIMENSIONS IN INCHES

BOLTS

Size Inches	A Dia. Di. Pipe	B Hub Depth	C Dia. GLAND.	D Dia.	F Dia.	J Dia. GLAND.	K' Dia.	K ² Dia. GLAND.	L	M GLAND.	S	T	X	Size	Qty
2	2.51	2.50	3.50	3.60	2.61	4.75	6.19	6.89	0.58	0.62	0.36	0.30	3/4	5/8x3	2
3	3.96	2.50	4.84	4.94	4.06	6.19	7.62	7.69	0.58	0.62	0.39	0.33	3/4	5/8x3	4
4	4.80	2.50	5.92	6.02	4.90	7.50	9.06	9.12	0.60	0.75	0.39	0.34	7/8	3/4x3-1/2	4
6	6.90	2.50	8.02	8.12	7.00	9.50	11.06	11.12	0.63	0.88	0.43	0.36	7/8	3/4x3-1/2	6
8	9.05	2.50	10.17	10.27	9.15	11.75	13.31	13.37	0.66	1.00	0.45	0.38	7/8	3/4x4	6
10	11.10	2.50	12.22	12.34	11.20	14.00	15.62	15.62	0.70	1.00	0.47	0.40	7/8	3/4x4	8
12	13.20	2.50	14.32	14.44	13.30	16.25	17.88	17.88	0.73	1.00	0.49	0.42	7/8	3/4x4	8
14	15.30	3.50	16.40	16.54	15.44	18.75	20.31	20.25	0.79	1.25	0.55	0.47	7/8	3/4x4-1/2	10
16	17.40	3.50	18.50	18.64	17.54	21.00	22.56	22.50	0.85	1.31	0.58	0.50	7/8	3/4x4-1/2	12
18	19.50	3.50	20.60	20.74	19.64	23.25	24.83	24.75	1.00	1.38	0.68	0.54	7/8	3/4x4-1/2	12
20	21.60	3.50	22.70	22.84	21.74	25.50	27.08	27.00	1.02	1.44	0.69	0.57	7/8	3/4x4-1/2	14
24	25.80	3.50	26.90	27.04	25.94	30.00	31.58	31.50	1.02	1.56	0.75	0.61	7/8	3/4x5	16
30	32.00	4.50	33.29	33.46	32.17	36.88	39.12	39.12	1.31	2.00	0.82	0.66	1-1/8	1x6	20
36	38.30	4.50	39.59	39.76	38.47	43.75	46.00	46.00	1.45	2.00	1.00	0.74	1-1/8	1x6	24
42	44.50	4.50	45.79	45.96	44.67	50.62	53.12	53.12	1.45	2.00	1.25	0.82	1-3/8	1-1/4x6-1/2	28
48	50.80	4.50	52.09	52.26	50.97	57.50	60.00	60.00	1.45	2.00	1.35	0.90	1-3/8	1-1/4x6-1/2	32
54	Available on Request														
60	Available on Request														
64	Available on Request														

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New Lenox: 2200 West Haven • New Lenox, IL 60451
Portland: 15670 N. Lombard St. • Portland, OR 97203
Oxford: 1800 Greenbrier Dear Road • Anniston, AL 36207

**RESILIENT
WEDGE VALVES**

CLOW VALVE COMPANY

**CLOW AWWA Resilient Wedge Gate Valves
Meet or Exceed the Requirements of
AWWA Standard C509**

Size Range	Water Working Pressure psi	Bubble Tight Test psi	Hydrostatic Shell Test psi
AWWA 2"-12"	250	250	500
ULFM 2 1/2"-12"	200	200	400

Available in either non-rising stem, outside screw & yoke.

Available End Connections & Size Range

Figure No.

FLG End (NRS)	2"-12"	F-6102
M.J.	2"-12" (except 2 1/2")	F-6100
FLG & M.J.	3"-12"	F-6106
Push-on for PVC (SDR)	2"-12"	F-6110
FLG End (OS & Y)	2"-12"	F-6136
M.J. for Tapping	3"-12"	F-6114
Tyton for D.I. & C900 PVC	4"-12"	F-6112
M.J. Cutting-in	4"-12"	F-6111
Tyton for D.I. X FLG	4"-12"	F-6113
Threaded	2"-3"	F-6103

Accessories (Illustrated in the Gate Valve Section)

Indicator Posts	2" Sq. Operating Nuts
"T" Handles	Handwheels
Stem Guides	Extension Stems
Electric Motor Actuators	Floor Boxes
	Chain Wheels
	Floorstands (non-rising stem)

MODEL 2639	AWWA C509	FULL BODY DUCTILE IRON
MODEL 2640	AWWA C509	FULL BODY GRAY IRON

2640-100
A 6/23/14

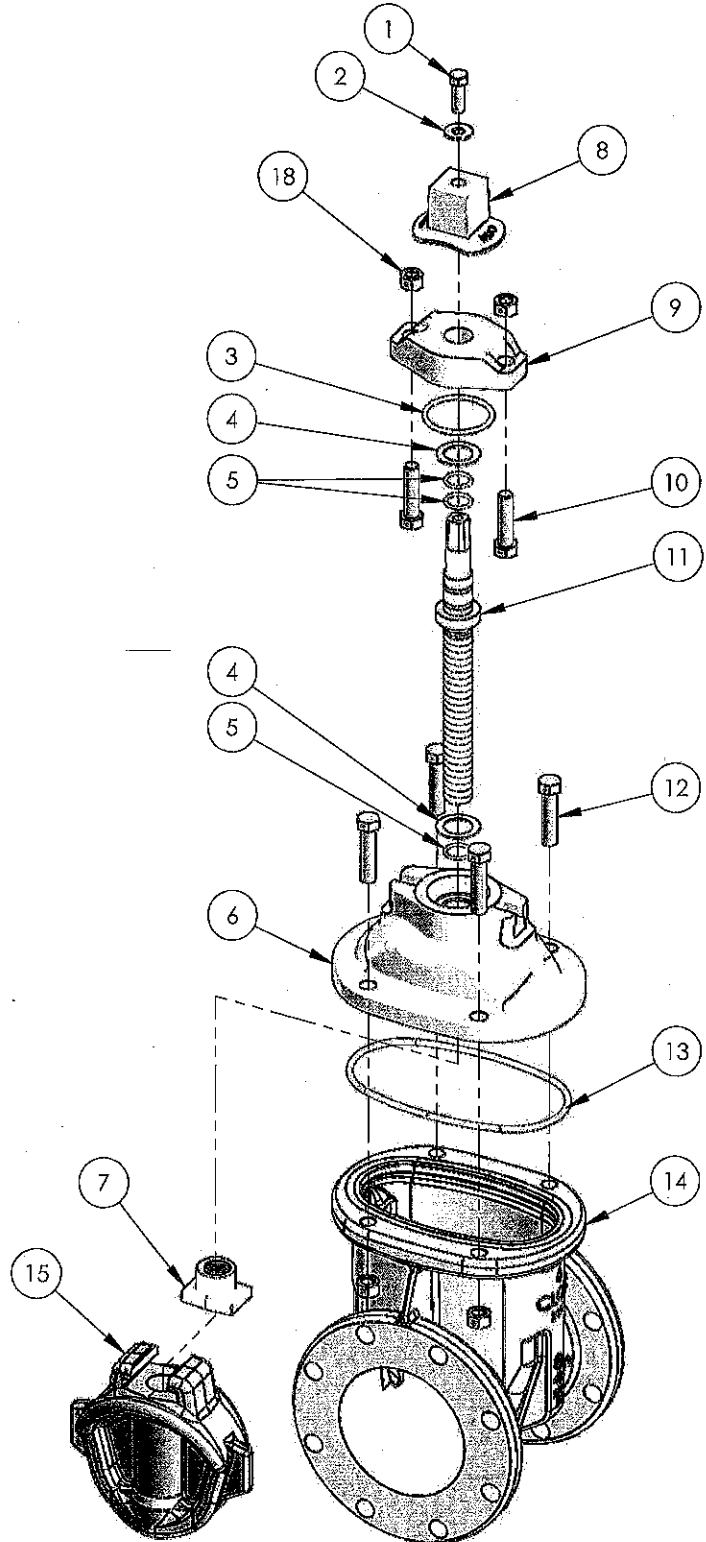
Complies with applicable requirements of AWWA C509

2"-12" R/S VALVE NRS
EXPLODED VIEW MATERIAL LIST

CLOW VALVE COMPANY

MODELS 2639 & 2640

ITEM NO.	DESCRIPTION	Material - 2639	Material - 2640	QTY.
1	Hex Head Bolt	Stainless Steel	Stainless Steel	1
2	Flat Washer	Stainless Steel	Stainless Steel	1
3	O-Ring	Rubber	Rubber	1
4	Thrust Washer	Delrin	Delrin	2
5	O-Ring	Rubber	Rubber	3
6	Cover	Ductile Iron	Gray Iron	1
7	Stem Nut	Copper Alloy	Copper Alloy	1
8	Operating Nut	Gray Iron	Gray Iron	1
9	Follower Plate	Ductile Iron	Ductile Iron	1
10	Hex Head Bolt	Stainless Steel	Stainless Steel	2
11	Stem	Copper Alloy	Copper Alloy	1
12	Cover Bolt	Stainless Steel	Stainless Steel	--
13	Cover O-Ring	Rubber	Rubber	1
14	Body	Ductile Iron	Gray Iron	1
15	Wedge	Ductile Iron / Rubber	Ductile Iron / Rubber	1
18	Hex Nut	Stainless Steel	Stainless Steel	6



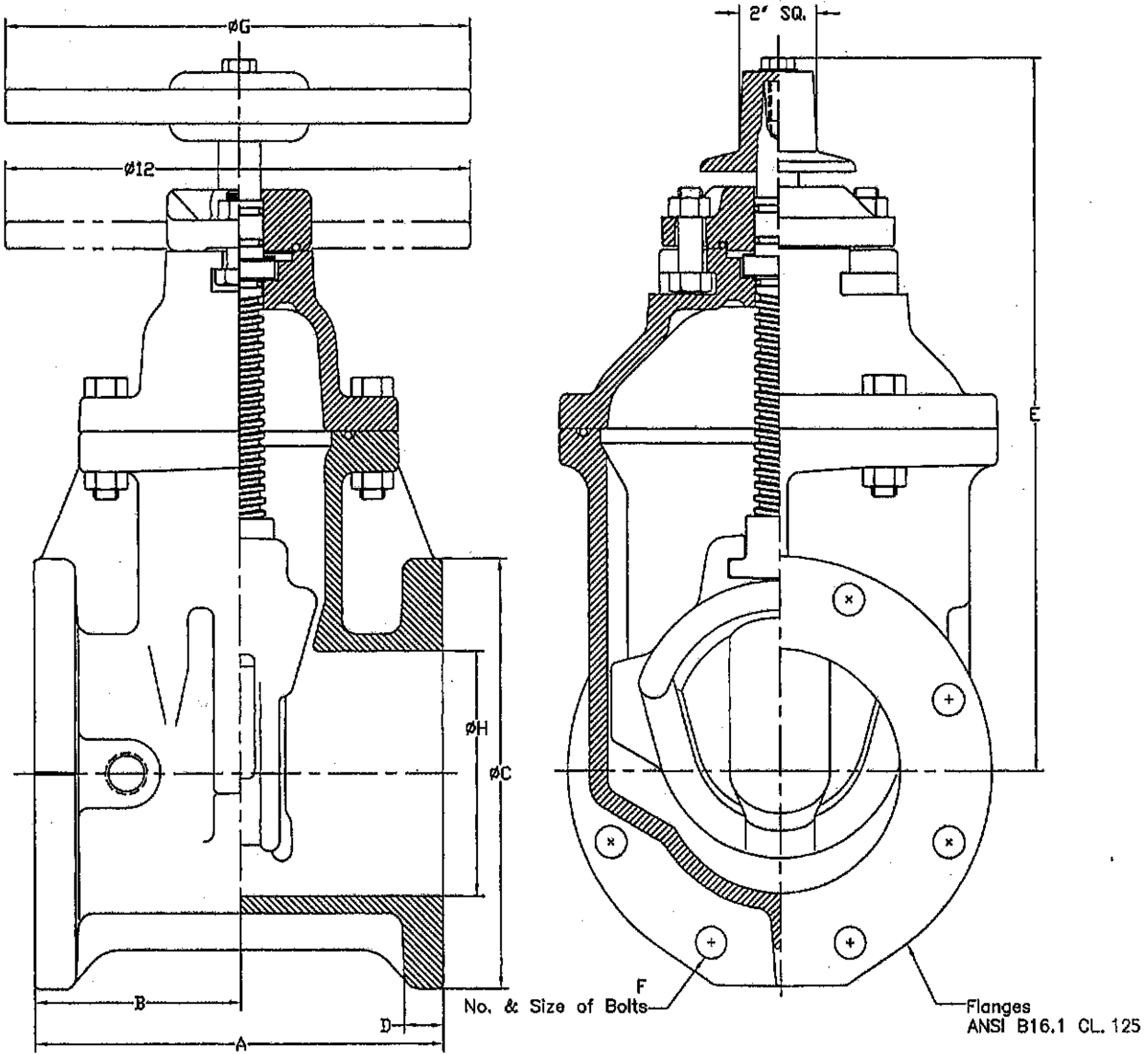
Complies with applicable requirements of AWWA C509

2"-12" R/W VALVE FLANGED ENDS
GENERAL DIMENSION

CLOW VALVE COMPANY

MODEL 2639 & 2640

F-6102



VALVE SIZE	A	B	C	D	E	F	G	H
2	7	3½	6	¾	10%	4-¾	7¼	2
2½	7½	3¾	7	1½	11%	4-¾	7¼	2½
3	8	4	7½	¾	12%	4-¾	10	3
4	9	4½	9	1½	14%	8-¾	10	4¼
6	10½	5¼	11	1	19	8-¾	12	6¼
8	11½	5¾	13½	1½	22½	8-¾	14	8¼
10	13	6½	16	1¾	26½	12-¾	18	10¼
12	14	7	19	1¼	30	12-¾	18	12¼

R/W VALVE
Material Specifications
CLOW VALVE COMPANY

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

Ductile Iron ASTM A536

Minimum tensile strength	65,000 psi
Minimum Yield strength	45,000 psi
(EPDM)	10-12 %

Seat Rubber (EPDM)

Hardness	80+/-2
100% Modulus (PSI)	600
Tensile (PSI)	1,450
Elongation (%)	150
Compression Set, ASTM D395 Method B	18% max

R/W VALVE
Material Specifications

CLOW VALVE COMPANY

STANDARD

Copper Alloy - ASTM B584 CDA836 (Stem Nut)

Physical Properties

Minimum tensile strength	30,000 PSI
Minimum yield strength	14,000 PSI
Minimum elongation (in 2 inches)	20%

Chemical Analysis

Copper	84.0 - 86.0
Lead	4.0 - 6.0
Tin	4.0 - 6.0
Nickel (maximum)	1.0
Zinc	4.0 - 6.0

Copper Alloy - ASTM B584 CDA867 (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 - 1.5
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

ALTERNATE

CAST BRONZE - NDZ-S CA. NO. 995 (Stem)

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

RW Gate Valve
EPDM Wedge Compatibility Chart

CLOW VALVE COMPANY

Chemical	Rating
Acetic (10%)	1
Alcohols	2
Aliphatic Hydrocarbons	4
Aluminum Sulfate	1
Ammonium Chloride	1
Ammonium Hydroxide	1
Aniline	2
Aromatic Hydrocarbons	4
Barium Sulfide	1
Benzene	4
Benzene Sulfonic (10%)	4
Benzoic	4
Boric	1
Calcium Chloride	1
Calcium Hydroxide	1
Carbon Tetrachloride	4
Chloroacetic (10%)	2
Chlorobenzene	4
Chromic (5%)	2
Citric (10%)	1
Copper Chloride	1
Esters	3
Ethers	3
Fatty Acids	3
Formaldehyde (37%)	2
Formic (90%)	1
Gasoline	4
Hydrobromic (20%)	1
Hydrochloric (20%)	3
Hydrocyanic	1

Chemical	Rating
Hydrofluoric (20%)	X
Hypochlorous (5%)	2
Iron Chloride	1
Ketones	1
Lactic (5%)	1
Magnesium Chloride	1
Maleic (25%)	2
Mineral Oils	3
Nickel Chloride	1
Nitric (30%)	3
Nitric (5%)	2
Oleic	4
Oxalic	1
Phenol (5%)	4
Phosphoric	1
Picric	1
Potassium Chloride	1
Potassium Hydroxide	1
Sodium Bicarbonate	1
Sodium Carbonate	1
Sodium Chloride	1
Sodium Hydroxide	1
Sodium Sulfide	1
Stearic	2
Sulfuric (50%)	4
Tannic	1
Trisodium Phosphate	1
Vegetable Oils	3
Zinc Chloride	1

- 1 = Satisfactory
- 2 = Fair (usually acceptable for static seal)
- 3 = Doubtful (sometimes acceptable for static seal)
- 4 = Unsatisfactory
- X = Insufficient Data

Ratings are based on solutions at room temperature. Specific conditions of each application, such as flow and temperature, can significantly affect results. Always test under actual service conditions.

4"-12" R/W VALVE UL/FM
Performance Information

CLOW VALVE COMPANY

MODEL 2639 & 2640

1. Valve complies with AWWA specs where applicable.
2. Valve complies with Underwriters Laboratory standard UL 262.
3. Valve is rated at 200 psi working pressure.
4. Valve is bubble-tight at all pressures up to full rated pressure (200 psi).
5. Valve is capable of bubble-tight seal at twice the rated pressure (400 psi) for short periods of time.
6. 2" thru 6" valve sizes have been hydrostatically shell tested at five (5) times the rated pressure (1000 psi).
7. 8", 10" and 12" valve sizes have been hydrostatically shell tested at four (4) times the rated pressure (800 psi).
8. Valve has been subjected to torques 150 percent of the designated minimum required torques.
9. Valve has been cycle tested 5,000 times without loss of bubble-tight seal.
10. Rubber to iron bond on wedge is inspected for strength as per ASTM D 429 specification.

For complete data on the tests
Underwriters Laboratories performed
reference UL File EX2697
Project 87NK7353

2"-12" R/W VALVE AWWA SERVICE
Performance Information

CLOW VALVE COMPANY

MODEL 2639 & 2640

1. Valve complies with AWWA C509 specs where applicable.
2. Valve is rated at 250 psi working pressure.
3. Valve is bubble-tight at all pressures up to full rated pressure (250 psi).
4. Valve is capable of bubble-tight seal at twice the rated pressure (500 psi) for short periods of time.
5. 2" thru 12" valve sizes have been hydrostatically shell tested at 2.5 times the rated pressure (625 psi).
6. Valve has been subjected to torques 150 percent of the designated minimum required torques.
7. Valve has been cycle tested 5,000 times without loss of bubble-tight seal.
8. Rubber to iron bond on wedge is inspected for strength as per ASTM D 429 specification.

R/W RESILIENT WEDGE GATE VALVE
Product Analysis

CLOW VALVE COMPANY

MODEL 2639 & 2640

Features	Benefits
Bubble Tight Closure at 250 psi (2"-12") (AWWA SERVICE)	<ul style="list-style-type: none"> • No leakage—no loss of water
Smooth, Unobstructed Waterway	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Virtually maintenance free
No Seat Rings	<ul style="list-style-type: none"> • Nothing to be damaged by scoring
Delrin* Anti-Friction Thrust Bearing	<ul style="list-style-type: none"> • Operating torque to close and open held to absolute minimum
Solid, Copper Alloy Stem Nut and High Strength Copper Alloy Stem	<ul style="list-style-type: none"> • No corrosion • Trouble-free service
Stem Nut is Self Centering	<ul style="list-style-type: none"> • Eliminates possible stress on stem and wedge
Two "O" Ring Seals Above Stem Thrust Collar	<ul style="list-style-type: none"> • Can be replaced with valve in service
High Strength Iron Wedge Fully Encapsulated with Rubber Permanently Bonded to Metal. Wedge Design Incorporates Two Sealing Surfaces.	<ul style="list-style-type: none"> • Trouble-free service with minimum maintenance • No leaks—no wear

*DuPont Trademark

**CR (CORROSION RESISTANCE)
COATING (INTERIOR & EXTERIOR)**

CLOW VALVE COMPANY

Clow CR Coating is a high performance, one-part, heat-curable, thermoset coating which provides superior corrosion resistance protection for metal parts.

Clow CR Coating material is a stable, non-toxic resin consisting of 100% solids. It is impervious to and imparts no taste to potable water. Clow CR Coating is formulated from materials deemed acceptable in the Food and Drug Administrations Document Title 21 of the Federal Regulations on food additives, Section 175.300 entitled "Resinous and Polymeric Coatings".

Clow CR Coating is applied by a heat application, fusion—bonding process which secures the coating material to the metal valve components. This process provides a continuous coating 9 mils thick with excellent adhesion qualities.

The durable Clow CR Coating has a hard finish and exhibits excellent corrosion resistance in most aqueous solutions and good abrasion resistance. 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.

Clow CR Coating meets the requirements of the American Water Works Association Standard C-550 entitled "Protective Interior Coatings for Valves and Hydrants". This high performance coating has a ten year history of satisfactory service as a corrosion protection coating used in corrosive potable water applications and soil conditions.

CR (CORROSION RESISTANCE) COATING

CLOW VALVE COMPANY

CHEMICAL	EPOXY RATING		CHEMICAL	EPOXY RATING	
	70°F	180°F		70°F	180°F
ACIDS:			ALKALIES:		
Acetic, 10%	F	N	Ammonium Hydroxide	E	G
Benzene Sulfonic, 10%	E	E	Calcium Hydroxide	E	E
Benzoic	E	E	Potassium Hydroxide	E	E
Boric	E	E	Sodium Hydroxide	E	E
Chloracetic, 10%	E	E	ACID SALTS:		
Chromic, 5%	F	N	Aluminum Sulfate	E	E
Citric, 10%	E	N	Ammonium Chloride*	E	E
Fatty Acids	E	E	Copper Chloride*	E	E
Formic, 90%	E	F	Iron Chloride*	E	E
Hydrobromic, 20%	G	G	Nickel Chloride*	E	E
Hydrochloric, 20%	E	G	Zinc Chloride*	E	E
Hydrocyanic	E	E	ALKALINE SALTS:		
Hydrofluoric, 20%	G	G	Barium Sulfide	E	E
Hypochlorous, 5%	F	N	Sodium Bicarbonate	E	E
Lactic, 5%	F	N	Sodium Carbonate	E	E
Maleic, 25%	E	E	Sodium Sulfide	E	E
Nitric, 5%	E	G	Trisodium Phosphate	E	E
Nitric, 30%	G	P	NEUTRAL SALTS:		
Oleic	E	E	Calcium Chloride*	E	E
Oxalic	E	E	Magnesium Chloride*	E	E
Phosphoric	G	F	Potassium Chloride*	E	E
Picric	G	F	Sodium Chloride*	E	E
Steric	E	E	SOLVENTS:		
Sulfuric, 50%	G	F	Alcohols	E	E
Tannic	E	E	Aliphatic Hydrocarbons	E	E
			Aromatic Hydrocarbons	E	E
Ketones	F	F	Benzene	E	E
Ethers	F	F	Formaldehyde, 37%	E	G
Esters	F	F	Phenol, 5%	G	F
Gasoline	E	E	Mineral Oils	E	E
Carbon Tetrachloride	E	E	Vegetable Oils	E	E
Organics:			Chlorobenzene		
Aniline	G	P			

KEY: E - no attack
 G - appreciably no attack
 F - some attack, but useable in some instances
 P - attacked, not recommended for use
 N - rapidly attacked
 * - and nitrate and sulfate

2" THRU 12" R/W VALVE
Flow Coefficients

CLOW VALVE COMPANY

MODEL 2639 & 2640

VALVE SIZE	Cv (FULL OPEN)	K (FULL OPEN)
2	300	0.15
2½	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

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

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

RESILIENT WEDGE GATE VALVES
Recommended Specifications

CLOW VALVE COMPANY

MODEL 2639 & 2640

Valves shall conform to the latest revision of AWWA Standard C-509 covering resilient wedge gate valves.

The valves shall be either, **non-rising stem or rising stem**, opening by turning stem **left or right** and provided with **2" square operating nut or handwheel** with the word **Open** and an **Arrow** cast in the metal to indicate direction to open.

The wedge shall be of cast iron completely encapsulated with rubber.

The sealing rubber shall be permanently bonded to the cast iron wedge to meet ASTM tests for rubber metal bond ASTM D429

Stems for NRS assemblies shall be cast copper alloy with integral collars in full compliance with AWWA. OS & Y stems shall be copper alloy. The NRS stem stuffing box shall be the o-ring seal type with two o-rings located above thrust collar and one o-ring below. The two o-rings above the thrust collar shall be replaceable with valve fully open and subjected to full rated working pressure.

There shall be two low torque thrust bearings located above and below the stem collar. The stem nut shall be independent of wedge and shall be made of solid copper alloy. There shall be a smooth unobstructed waterway free of all pockets, cavities and depressions in the seat area.

The body and bonnet shall be coated with fusion bonded epoxy both interior and exterior, complying with AWWA C550 and be NSF 61 certified. Each valve shall have maker's name, pressure rating and year in which manufactured cast on the body. Prior to shipment from factory, each valve shall be tested by hydrostatic pressure equal to requirement for both AWWA (twice the specified working pressure) and 400 PSI ULFM requirements.

**RESILIENT
WEDGE VALVES**

CLOW VALVE COMPANY

**CLOW AWWA Resilient Wedge Gate Valves
Meet or Exceed the Requirements of
AWWA Standard C509**

Size Range	Water Working Pressure psi	Bubble Tight Test psi	Hydrostatic Shell Test psi
AWWA 2"-12"	250	250	500
ULFM 2 1/2"-12"	200	200	400

Available in either non-rising stem, outside screw & yoke.

Available End Connections & Size Range

Figure No.

FLG End (NRS)	2"-12"	F-6102
M.J.	2"-12" (except 2 1/2")	F-6100
FLG & M.J.	3"-12"	F-6106
Push-on for PVC (SDR)	2"-12"	F-6110
FLG End (OS & Y)	2"-12"	F-6136
M.J. for Tapping	3"-12"	F-6114
Tyton for D.I. & C900 PVC	4"-12"	F-6112
M.J. Cutting-in	4"-12"	F-6111
Tyton for D.I. X FLG	4"-12"	F-6113
Threaded	2"-3"	F-6103

Accessories (Illustrated in the Gate Valve Section)

Indicator Posts	2" Sq. Operating Nuts
"T" Handles	Handwheels
Stem Guides	Extension Stems
Electric Motor Actuators	Floor Boxes
	Chain Wheels
	Floorstands (non-rising stem)

MODEL 2639	AWWA C509	FULL BODY DUCTILE IRON
MODEL 2640	AWWA C509	FULL BODY GRAY IRON

2640-100
A 6/23/14

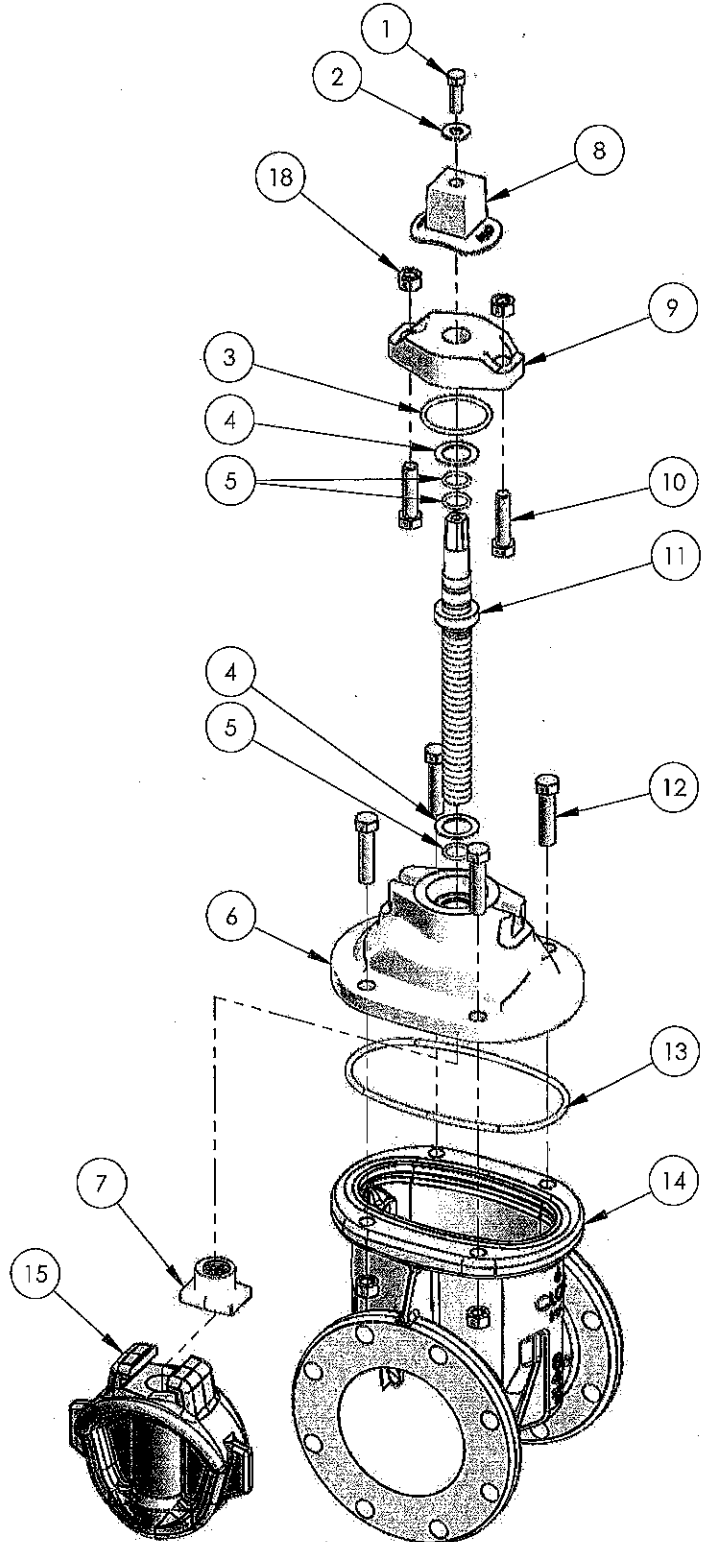
Complies with applicable requirements of AWWA C509

2"-12" R/S VALVE NRS
EXPLODED VIEW MATERIAL LIST

CLOW VALVE COMPANY

MODELS 2639 & 2640

ITEM NO.	DESCRIPTION	Material - 2639	Material - 2640	QTY.
1	Hex Head Bolt	Stainless Steel	Stainless Steel	1
2	Flat Washer	Stainless Steel	Stainless Steel	1
3	O-Ring	Rubber	Rubber	1
4	Thrust Washer	Delrin	Delrin	2
5	O-Ring	Rubber	Rubber	3
6	Cover	Ductile Iron	Gray Iron	1
7	Stem Nut	Copper Alloy	Copper Alloy	1
8	Operating Nut	Gray Iron	Gray Iron	1
9	Follower Plate	Ductile Iron	Ductile Iron	1
10	Hex Head Bolt	Stainless Steel	Stainless Steel	2
11	Stem	Copper Alloy	Copper Alloy	1
12	Cover Bolt	Stainless Steel	Stainless Steel	--
13	Cover O-Ring	Rubber	Rubber	1
14	Body	Ductile Iron	Gray Iron	1
15	Wedge	Ductile Iron / Rubber	Ductile Iron / Rubber	1
18	Hex Nut	Stainless Steel	Stainless Steel	6



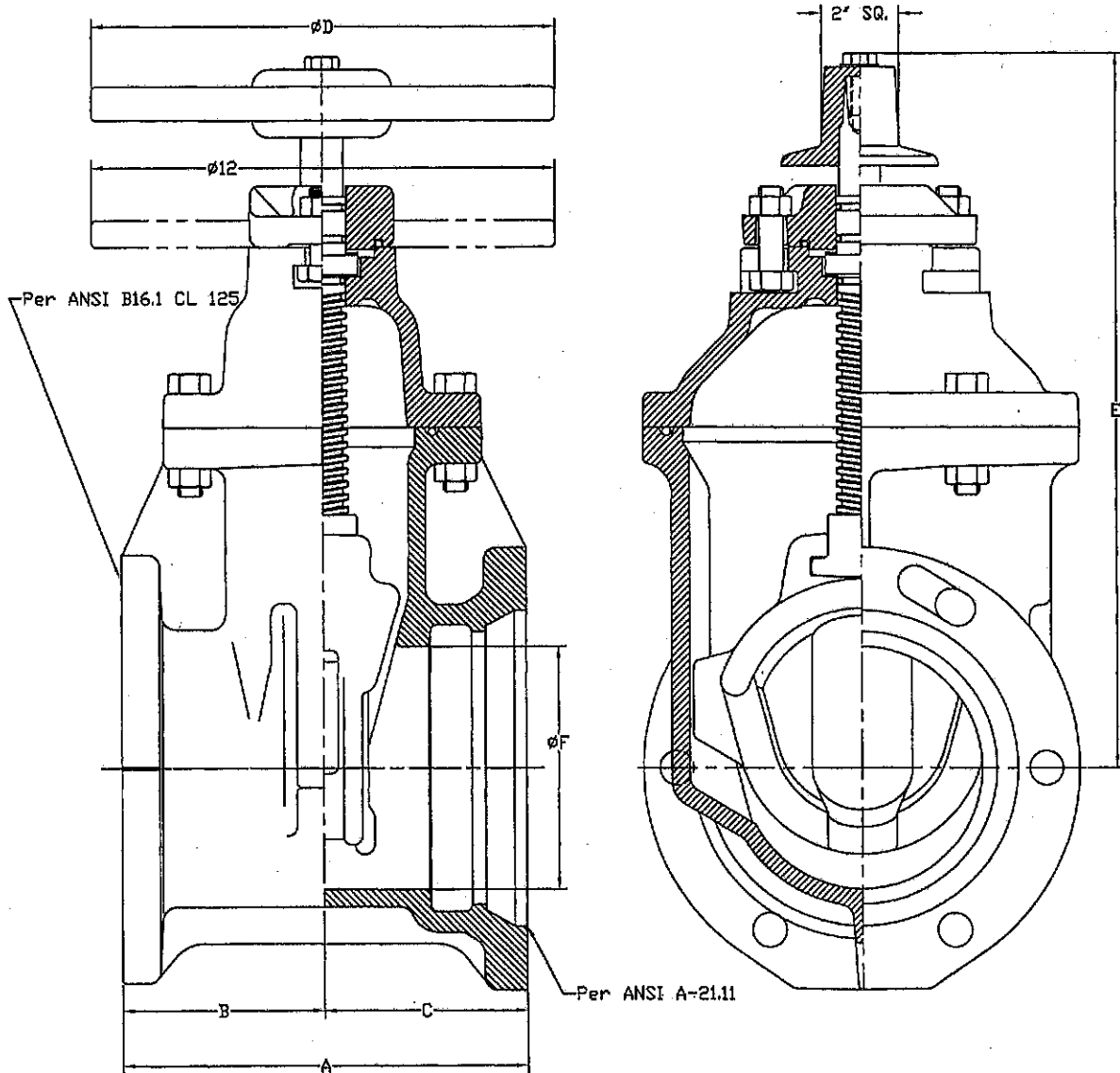
Complies with applicable requirements of AWWA C509

3"-12" R/W VALVE NRS FLANGED x MECHANICAL JOINT ENDS GENERAL DIMENSIONS

CLOW VALVE COMPANY

MODEL 2639 & 2640

F-6106



VALVE SIZE	A	B	C	D	E	F
3	8 1/4	4	4 1/4	10	12 3/8	3
4	9 1/4	4 1/2	4 3/4	10	14 3/4	4 1/4
6	10 1/2	5 1/4	5 1/4	12	19	6 1/4
8	12 5/16	5 3/4	6 9/16	14	22 1/2	8 1/4
10	14 1/4	6 1/2	7 3/4	18	26 1/2	10 1/4
12	15	7	8	18	30	12 1/4

R/W VALVE
Material Specifications
CLOW VALVE COMPANY

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

Ductile Iron ASTM A536

Minimum tensile strength	65,000 psi
Minimum Yield strength (EPDM)	45,000 psi 10-12 %

Seat Rubber (EPDM)

Hardness	80+/-2
100% Modulus (PSI)	600
Tensile (PSI)	1,450
Elongation (%)	150
Compression Set, ASTM D395 Method B	18% max

R/W VALVE
Material Specifications

CLOW VALVE COMPANY

STANDARD

Copper Alloy - ASTM B584 CDA836 (Stem Nut)

Physical Properties

Minimum tensile strength	30,000 PSI
Minimum yield strength	14,000 PSI
Minimum elongation (in 2 inches)	20%

Chemical Analysis

Copper	84.0 - 86.0
Lead	4.0 - 6.0
Tin	4.0 - 6.0
Nickel (maximum)	1.0
Zinc	4.0 - 6.0

Copper Alloy - ASTM B584 CDA867 (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 - 1.5
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

ALTERNATE

CAST BRONZE - NDZ-S CA. NO. 995 (Stem)

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

RW Gate Valve
EPDM Wedge Compatibility Chart

CLOW VALVE COMPANY

Chemical	Rating
Acetic (10%)	1
Alcohols	2
Aliphatic Hydrocarbons	4
Aluminum Sulfate	1
Ammonium Chloride	1
Ammonium Hydroxide	1
Aniline	2
Aromatic Hydrocarbons	4
Barium Sulfide	1
Benzene	4
Benzene Sulfonic (10%)	4
Benzoic	4
Boric	1
Calcium Chloride	1
Calcium Hydroxide	1
Carbon Tetrachloride	4
Chloroacetic (10%)	2
Chlorobenzene	4
Chromic (5%)	2
Citric (10%)	1
Copper Chloride	1
Esters	3
Ethers	3
Fatty Acids	3
Formaldehyde (37%)	2
Formic (90%)	1
Gasoline	4
Hydrobromic (20%)	1
Hydrochloric (20%)	3
Hydrocyanic	1

Chemical	Rating
Hydrofluoric (20%)	X
Hypochlorous (5%)	2
Iron Chloride	1
Ketones	1
Lactic (5%)	1
Magnesium Chloride	1
Maleic (25%)	2
Mineral Oils	3
Nickel Chloride	1
Nitric (30%)	3
Nitric (5%)	2
Oleic	4
Oxalic	1
Phenol (5%)	4
Phosphoric	1
Picric	1
Potassium Chloride	1
Potassium Hydroxide	1
Sodium Bicarbonate	1
Sodium Carbonate	1
Sodium Chloride	1
Sodium Hydroxide	1
Sodium Sulfide	1
Stearic	2
Sulfuric (50%)	4
Tannic	1
Trisodium Phosphate	1
Vegatable Oils	3
Zinc Chloride	1

- 1 = Satisfactory
- 2 = Fair (usually acceptable for static seal)
- 3 = Doubtful (sometimes acceptable for static seal)
- 4 = Unsatisfactory
- X = Insufficient Data

Ratings are based on solutions at room temperature. Specific conditions of each application, such as flow and temperature, can significantly affect results. Always test under actual service conditions.

4"-12" R/W VALVE UL/FM
Performance Information

CLOW VALVE COMPANY

MODEL 2639 & 2640

1. Valve complies with AWWA specs where applicable.
2. Valve complies with Underwriters Laboratory standard UL 262.
3. Valve is rated at 200 psi working pressure.
4. Valve is bubble-tight at all pressures up to full rated pressure (200 psi).
5. Valve is capable of bubble-tight seal at twice the rated pressure (400 psi) for short periods of time.
6. 2" thru 6" valve sizes have been hydrostatically shell tested at five (5) times the rated pressure (1000 psi).
7. 8", 10" and 12" valve sizes have been hydrostatically shell tested at four (4) times the rated pressure (800 psi).
8. Valve has been subjected to torques 150 percent of the designated minimum required torques.
9. Valve has been cycle tested 5,000 times without loss of bubble-tight seal.
10. Rubber to iron bond on wedge is inspected for strength as per ASTM D 429 specification.

For complete data on the tests
Underwriters Laboratories performed
reference UL File EX2697
Project 87NK7353

2"-12" R/W VALVE AWWA SERVICE
Performance Information

CLOW VALVE COMPANY

MODEL 2639 & 2640

1. Valve complies with AWWA C509 specs where applicable.
2. Valve is rated at 250 psi working pressure.
3. Valve is bubble-tight at all pressures up to full rated pressure (250 psi).
4. Valve is capable of bubble-tight seal at twice the rated pressure (500 psi) for short periods of time.
5. 2" thru 12" valve sizes have been hydrostatically shell tested at 2.5 times the rated pressure (625 psi).
6. Valve has been subjected to torques 150 percent of the designated minimum required torques.
7. Valve has been cycle tested 5,000 times without loss of bubble-tight seal.
8. Rubber to iron bond on wedge is inspected for strength as per ASTM D 429 specification.

R/W RESILIENT WEDGE GATE VALVE
Product Analysis

CLOW VALVE COMPANY

MODEL 2639 & 2640

Features	Benefits
Bubble Tight Closure at 250 psi (2"-12") (AWWA SERVICE)	<ul style="list-style-type: none"> • No leakage—no loss of water
Smooth, Unobstructed Waterway	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Virtually maintenance free
No Seat Rings	<ul style="list-style-type: none"> • Nothing to be damaged by scoring
Delrin* Anti-Friction Thrust Bearing	<ul style="list-style-type: none"> • Operating torque to close and open held to absolute minimum
Solid, Copper Alloy Stem Nut and High Strength Copper Alloy Stem	<ul style="list-style-type: none"> • No corrosion • Trouble-free service
Stem Nut is Self Centering	<ul style="list-style-type: none"> • Eliminates possible stress on stem and wedge
Two "O" Ring Seals Above Stem Thrust Collar	<ul style="list-style-type: none"> • Can be replaced with valve in service
High Strength Iron Wedge Fully Encapsulated with Rubber Permanently Bonded to Metal. Wedge Design Incorporates Two Seating Surfaces.	<ul style="list-style-type: none"> • Trouble-free service with minimum maintenance • No leaks—no wear

*DuPont Trademark

**CR (CORROSION RESISTANCE)
COATING (INTERIOR & EXTERIOR)**

CLOW VALVE COMPANY

Clow CR Coating is a high performance, one-part, heat-curable, thermoset coating which provides superior corrosion resistance protection for metal parts.

Clow CR Coating material is a stable, non-toxic resin consisting of 100% solids. It is impervious to and imparts no taste to potable water. Clow CR Coating is formulated from materials deemed acceptable in the Food and Drug Administrations Document Title 21 of the Federal Regulations on food additives, Section 175.300 entitled "Resinous and Polymeric Coatings".

Clow CR Coating is applied by a heat application, fusion—bonding process which secures the coating material to the metal valve components. This process provides a continuous coating 9 mils thick with excellent adhesion qualities.

The durable Clow CR Coating has a hard finish and exhibits excellent corrosion resistance in most aqueous solutions and good abrasion resistance. 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.

Clow CR Coating meets the requirements of the American Water Works Association Standard C-550 entitled "Protective Interior Coatings for Valves and Hydrants". This high performance coating has a ten year history of satisfactory service as a corrosion protection coating used in corrosive potable water applications and soil conditions.

CR (CORROSION RESISTANCE) COATING

CLOW VALVE COMPANY

CHEMICAL	EPOXY RATING		CHEMICAL	EPOXY RATING	
	70°F	180°F		70°F	180°F
ACIDS:			ALKALIES:		
Acetic, 10%	F	N	Ammonium Hydroxide	E	G
Benzene Sulfonic, 10%	E	E	Calcium Hydroxide	E	E
Benzoic	E	E	Potassium Hydroxide	E	E
Boric	E	E	Sodium Hydroxide	E	E
Chloracetic, 10%	E	E	ACID SALTS:		
Chromic, 5%	F	N	Aluminum Sulfate	E	E
Citric, 10%	E	N	Ammonium Chloride*	E	E
Fatty Acids	E	E	Copper Chloride*	E	E
Formic, 90%	E	F	Iron Chloride*	E	E
Hydrobromic, 20%	G	G	Nickel Chloride*	E	E
Hydrochloric, 20%	E	G	Zinc Chloride*	E	E
Hydrocyanic	E	E	ALKALINE SALTS:		
Hydrofluoric, 20%	G	G	Barium Sulfide	E	E
Hypochlorous, 5%	F	N	Sodium Bicarbonate	E	E
Lactic, 5%	F	N	Sodium Carbonate	E	E
Maleic, 25%	E	E	Sodium Sulfide	E	E
Nitric, 5%	E	G	Trisodium Phosphate	E	E
Nitric, 30%	G	P	NEUTRAL SALTS:		
Oleic	E	E	Calcium Chloride*	E	E
Oxalic	E	E	Magnesium Chloride*	E	E
Phosphoric	G	F	Potassium Chloride*	E	E
Picric	G	F	Sodium Chloride*	E	E
Steric	E	E	SOLVENTS:		
Sulfuric, 50%	G	F	Alcohols	E	E
Tannic	E	E	Aliphatic Hydrocarbons	E	E
			Aromatic Hydrocarbons	E	E
Ketones	F	F	Benzene	E	E
Ethers	F	F	Formaldehyde, 37%	E	G
Esters	F	F	Phenol, 5%	G	F
Gasoline	E	E	Mineral Oils	E	E
Carbon Tetrachloride	E	E	Vegetable Oils	E	E
Organics:			Chlorobenzene		
Aniline	G	P			

KEY: E - no attack
 G - appreciably no attack
 F - some attack, but useable in some instances
 P - attacked, not recommended for use
 N - rapidly attacked
 * - and nitrate and sulfate

2" THRU 12" R/W VALVE
Flow Coefficients

CLOW VALVE COMPANY

MODEL 2639 & 2640

VALVE SIZE	Cv (FULL OPEN)	K (FULL OPEN)
2	300	0.15
2½	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

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

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

RESILIENT WEDGE GATE VALVES
Recommended Specifications

CLOW VALVE COMPANY

MODEL 2639 & 2640

Valves shall conform to the latest revision of AWWA Standard C-509 covering resilient wedge gate valves.

The valves shall be either, **non-rising stem or rising stem**, opening by turning stem **left or right** and provided with **2" square operating nut or handwheel** with the word **Open** and an **Arrow** cast in the metal to indicate direction to open.

The wedge shall be of cast iron completely encapsulated with rubber.

The sealing rubber shall be permanently bonded to the cast iron wedge to meet ASTM tests for rubber metal bond ASTM D429

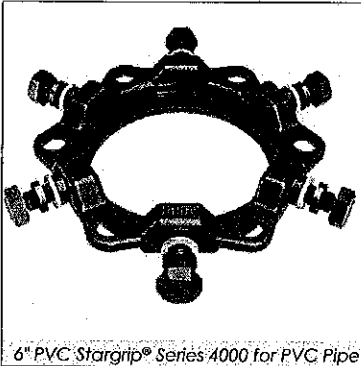
Stems for NRS assemblies shall be cast copper alloy with integral collars in full compliance with AWWA. OS & Y stems shall be copper alloy. The NRS stem stuffing box shall be the o-ring seal type with two o-rings located above thrust collar and one o-ring below. The two o-rings above the thrust collar shall be replaceable with valve fully open and subjected to full rated working pressure.

There shall be two low torque thrust bearings located above and below the stem collar. The stem nut shall be independent of wedge and shall be made of solid copper alloy. There shall be a smooth unobstructed waterway free of all pockets, cavities and depressions in the seat area.

The body and bonnet shall be coated with fusion bonded epoxy both interior and exterior, complying with AWWA C550 and be NSF 61 certified. Each valve shall have maker's name, pressure rating and year in which manufactured cast on the body. Prior to shipment from factory, each valve shall be tested by hydrostatic pressure equal to requirement for both AWWA (twice the specified working pressure) and 400 PSI ULFM requirements.



PVC Stargrip® series 4000
Mechanical Joint Wedge Action Restraint
for Plastic Pressure Pipe



6" PVC Stargrip® Series 4000 for PVC Pipe

SUBMITTAL INFORMATION

PROJECT NAME:

ENGINEER:

CONTRACTOR:

SPEC. SECTION:



FEATURES & ADVANTAGES

- The design has been proven in the market since 1992.
- Can be used on AWWA C900, AWWA C905 PVC pipe, IPS PVC pipe, AWWA C909 PVCO pipe, and HDPE pipe. See pressure rating table for approved DRs and sizes. Plastic pressure pipes manufactured to an IPS diameter regimen will require a transition gasket. HDPE pipe requires use of stainless steel pipe stiffener.
- Gland is made from high strength Ductile Iron per ASTM A536 Grade 65-45-12 and is compatible with all Mechanical Joints conforming to ANSI/AWWA C111/A21.11.
- Eliminates the need for tie rods and thrust blocks.
- Listed with Underwriters Laboratories and approved by Factory Mutual research in sizes 4"-12".
- Tested to and meets the requirements of ASTM F1674 through 14".
- The safety factor is twice (2:1) the standardized pressure rating listed on next page.
- Will fit any Mechanical Joint configuration, meaning compatibility with different types of installations.
- PVC Stargrip® offers 5° deflection through 12", 3° on 14"-24" and 2° on 30"-36".
- Larger ID allows easier installation on out-of-round pipe.
- Torque limiting bolts are designed to prevent over torquing.
- All sizes have curved wedges that do not flatten pipe.
- Standard gland color is Coral Red (RAL 3016).

MATERIAL SPECIFICATIONS:

- Gland: Ductile Iron per ASTM A536, Grade 65-45-12
- Wedges: Ductile Iron per ASTM A536, Grade 65-45-12
 - Wedge Finish: Thermally cured fluoropolymer epoxy coating

GLAND FINISH OPTIONS (Please check one):

- Standard: alkyd enamel coating
- Optional: Starbond™ TGIC polyester powder coating applied by an electrostatic spray process
- Optional: Other (specify) _____

COUNTRY OF ORIGIN OPTION (Please check one):

- Import
 - 100% Domestic¹
 - Domestic gland with Import components¹
- ¹Please see Domestic Restraint Options Available on our website.)

HARDWARE OPTIONS (Please check):

- Standard: T-bolts and nuts are high strength low alloy steel manufactured in accordance with ANSI/AWWA C111/A21.11
- Optional: T-bolts alloy SS 304 per ASTM F593; Nuts alloy SS 304 per ASTM F594 CW
- Optional: T-bolts SS 316 per ASTM F593; Nuts SS 316 per ASTM A194 Grade 8M
- Optional: T-bolts and nuts Fluoropolymer Star-Blue coated high strength low alloy steel manufactured in accordance with ANSI/AWWA C111/A21.11

STAR® PIPE PRODUCTS



HEX BOLTS A307 GRADE A

SUBMITTAL SPECIFICATIONS ABSTRACT OF ASTM A307 GRADE A

GRADE: Low Carbon Steel 60,000 PSI

CHEMICAL REQUIREMENTS

Chemical analysis shall be performed in accordance with ASTM A751

CARBON MAX	MANGANESE MAX	PHOSPHOROUS MAX	SULFUR MAX
0.29	1.20	0.04	0.15

MECHANICAL REQUIREMENTS

HARDNESS BRINEL		HARDNESS ROCKWELL		TENSILE STRENGTH (KSI)		ELONGATION IN 2 IN. (50MM)
MIN	MAX	MIN	MAX	MIN	MAX	MIN
121	241	69	100	60	-	18

Hex Nuts ASTM A563 (ASME B18.2.2) Heavy Hex Nuts ASTM A563 (ASME B18.2.2)

Washers ASTM F844-04 (ASME B18.22.1)



BOLTS AND NUTS MAY BE SUPPLIED

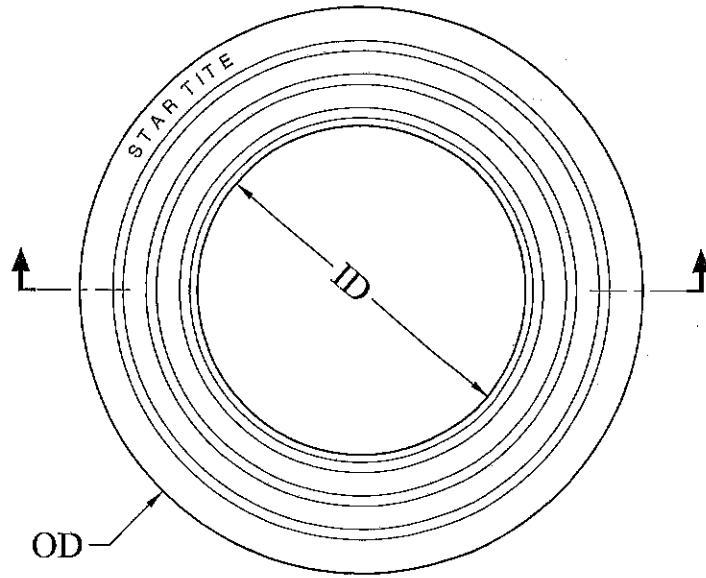
Plain Zinc Plated per ASTM B633 Hot Dip Galvanized Per ASTM A153 Cadmium Plated

LOCATION

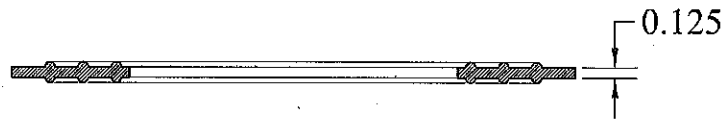
Buried Submerged Above Grade Below Grade Other

DIMENSIONAL DATA: Unless otherwise specified in the purchase order, parts shall be the coarse threaded series as specified in the latest issue of ANSI / ASME B1.1, page A-26. Having a 2A tolerance. Grade A Bolts shall have Hex Bolt Dimensions as given in the latest issue of ANSI / ASME B 18.2.1, Page C1. Unless otherwise specified Grade A Bolts should be used with Hex Nuts.

ADDITIONAL INFORMATION: Additional information can be found in ASTM A307A-07B, ASTM A563-04A



TOP VIEW




SECTION VIEW

SIZE	Part Number	ID	OD	Estimated Weight (lbs)	Maximum Pressure Rating (psi)	Bolt Torque (ft-lb)
3"	FAH03RG	3.000	5.375	0.105	350	110
4"	FAH04RG	4.000	6.875	0.159	350	110
6"	FAH06RG	6.000	8.750	0.209	350	110
8"	FAH08RG	8.000	11.000	0.289	350	110
10"	FAH10RG	10.000	13.375	0.466	350	130
12"	FAH12RG	12.000	16.125	0.651	350	130
14"	FAH14RG	14.000	17.750	0.685	350	150
16"	FAH16RG	16.000	20.250	0.858	350	160
18"	FAH18RG	18.000	21.625	0.836	350	180
20"	FAH20RG	20.000	23.875	0.972	350	200
24"	FAH24RG	24.000	28.250	1.242	350	220
30"	FAH30RG	30.000	34.750	1.677	250	140
36"	FAH36RG	36.000	41.250	2.165	250	160

SPECIFICATIONS:

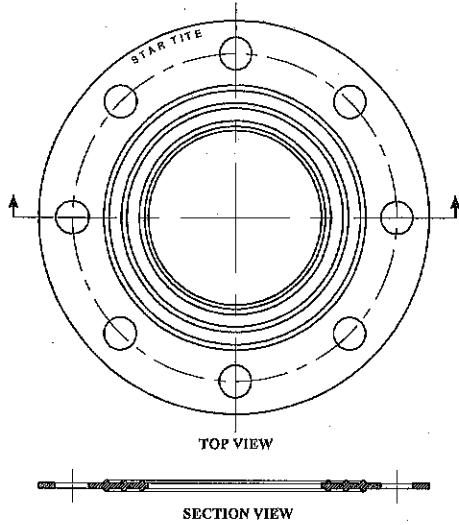
- MATERIAL:** VULCANIZED STYRENE BUTADIENE RUBBER (SBR)
- COLOR:** BLACK
- COMPATIBILITY:** STAR-TITE GASKETS ARE FOR USE WITH FLANGE DRILLING PER ANSI/AWWA C110/A21.10, ANSI/AWWA C111/A21.11, ANSI/AWWA C115/A21.15, ASME B16.1 CLASS 125 AND ASME B16.42 CLASS 150.
- STANDARD SBR GASKET SIZES 3" AND GREATER ARE UL/NSF STANDARD 61 APPROVED.**
- DIMENSIONS ARE IN INCHES.**

- ECN - 0930		11-11-16	JK	MAB	SF
- RELEASE SPP - 1514		11-16-15	JK	MAB	SF
SYM	REVISIONS	DATE	BY	APPR	REL
 STAR PIPE PRODUCTS 4018 WESTHOLLOW PARKWAY, HOUSTON, TX, 77082 PH. (281)558-3000 - FAX (281)558-9000		PART No. FAH03-36RG		DATED 11-16-15 DRAWN JK	
		SUBMITTAL		DWG. NO. A-6531	



Full Face Star-Tite™ Flanged Gasket

3" to 36", Full Face



INTRODUCTION

Historically, flat red rubber gaskets have been used for sealing flanged joints. These gaskets may not have NSF/ANSI 61 or NSF/ANSI 372 certification and do not qualify for higher ratings in standards such as ANSI/AWWA C110/A21.10. The Full Face Star-Tite™ gasket is specially designed to qualify for higher ratings and is also listed by UL as satisfying both NSF/ANSI 61 and NSF/ANSI 372 requirements for potability.



LOWER TORQUE

The Full Face Star-Tite™ Gasket incorporates three bulbs that are molded on both faces of the gasket. This geometry greatly improves performance when compared to typical flat full face red rubber gaskets. Incorporating the three bulbs on the gasket faces results in a reduction of the bolt torque required to achieve a proper seal.

HIGHER PERFORMANCE

AWWA standard ANSI/AWWA C110/A21.10 describes specially designed gaskets as follows:

Also available for most sizes are specially designed gaskets, either ring or full-face, using one or more annular rings molded into the gasket to improve the gasket performance.

Appendix A, Section A.2, Gaskets

Footnotes below the pressure rating tables in ANSI/AWWA C110/A21.10 for flanged fittings allow the rating of flanged fittings that use these special gaskets to be 350 psi in sizes 24-inch and less. The Star-Tite™ gasket qualifies as one of these special gasket designs. When normal flat full face red rubber gaskets are used, the rating is 250 psi.

The bulb type rings on the Full Face Star-Tite™ gasket allow the gasket material to compress in three localized areas of the flange. The inner bulb is located inside the tapered pipe thread that is typical with fabricated pipe. This creates a pressure boundary that prevents leakage through the threaded connection, which is shown in Figure 1 on the next page. The outer two bulbs better accommodate minor misalignment that occasionally occurs when flat surfaces are mated together.

STAR® PIPE PRODUCTS





Full Face Star-Tite™ Flanged Gasket

3" to 36", Full Face

TECHNICAL INFORMATION

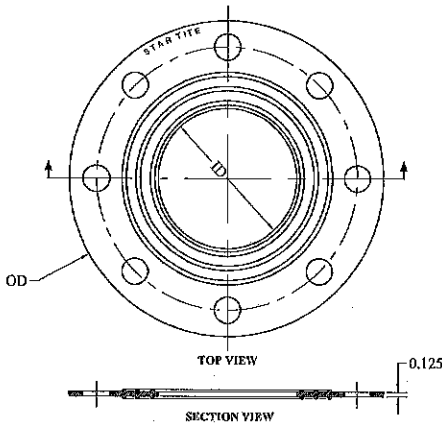
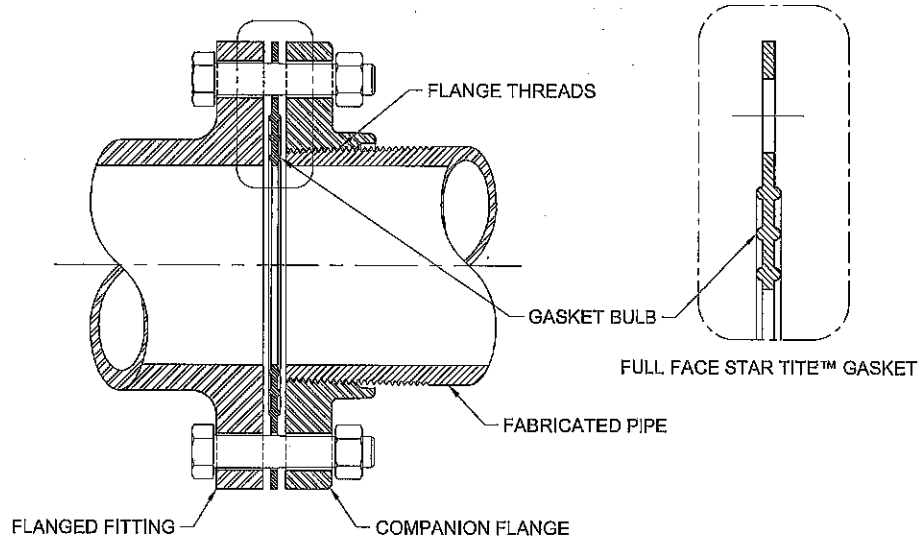


Table 1 - FLANGE ACCESSORY PACKS C111/A.21.11*

NOM. SIZE	ID	OD	BOLTS	BOLTS (QTY)	MAX. PRESSURE RATING (PSI)	BOLT TORQUE (FT-LB)	APPROX. WT. (LBS)
3	3.000	7.500	5/8 x 2 1/2	4	350	110	1.59
4	4.000	9.000	5/8 x 3	8	350	110	3.66
6	6.000	11.000	3/4 x 3 1/2	8	350	110	5.43
8	8.000	13.500	7/8 x 3 1/2	8	350	110	6.70
10	10.000	16.000	7/8 x 4	12	350	130	12.80
12	12.000	19.000	7/8 x 4	12	350	130	16.13
14	14.000	21.000	1 x 4 1/2	12	350	150	18.71
16	16.000	23.500	1 x 4 1/2	16	350	160	24.66
18	18.000	25.000	1 1/8 x 5	16	350	180	34.57
20	20.000	27.500	1 1/8 x 5	20	350	200	44.37
24	24.000	32.000	1 3/4 x 5 1/2	20	350	220	60.08
30	30.000	38.750	1 3/4 x 6 1/4	28	250	140	93.77
36	36.000	46.000	1 1/2 x 7	32	250	160	175.57

*All dimensions in inches except where indicated.

GENERAL SPECIFICATIONS

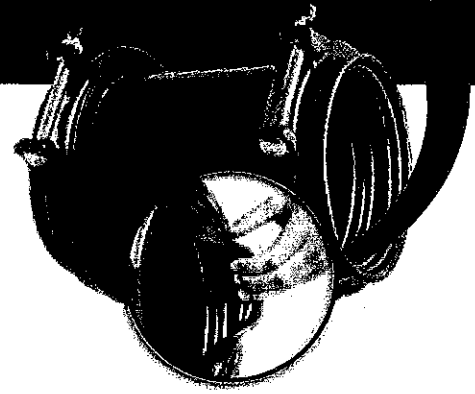
- HEX BOLTS:** Per ANSI/ASME B18.2.1 - Material per ASTM A307 Grade B, Zinc Plated
- HEX NUTS:** Per ANSI/ASME B18.2.2 - Material per ASTM A563 Grade A or B, Zinc Plated
- GASKET MATERIAL:** Vulcanized Styrene Butadiene Rubber (SBR)
- DIMENSIONS:** Refer to Table 1 above or FAH03-36FFG submittal drawing number A7040.
- CERTIFICATIONS:** UL listed to NSF/ANSI 61 and NSF/ANSI 372 for potability.
- PRESSURE RATING:** 350 psi for sizes 3" to 24"; 250 psi for sizes 30" to 36".

STAR® PIPE PRODUCTS

PRODUCT SPECIFICATIONS

HYMAX 2

HYMAX[®] 2 COUPLING (4" - 12")



FEATURES

- ADVANCED WIDE-RANGE COUPLING WITH A PATENTED FLIP GASKET
- ELIMINATES GASKET REMOVAL MISTAKES AND MAXIMIZES INSTALLER WORK EFFICIENCY
- ONLY 2-4 TOP FACING BOLTS, FOR FASTER AND SAFER INSTALLATION
- READY-TO-USE DESIGN TO ELIMINATE EXTENSIVE PREPARATORY UNDER-PIPE DIGGING
- ALLOWS 4° DYNAMIC DEFLECTION ON EACH END, REDUCING FUTURE PIPE DAMAGE
- PATENTED HYDRAULICALLY-ASSISTED GASKET WITH 2-STAGE SEALING
- SUITABLE FOR ALL TYPES OF PIPES - DUCTILE IRON, CAST IRON, STEEL, COPPER, PE, PVC, AC, GRP
- ONE PRODUCT CAN CONNECT PIPES OF TWO DIFFERENT MATERIALS
- BASED ON THE GAME-CHANGING HYMAX THAT HAS BEEN FIELD-PROVEN IN MILLIONS OF INSTALLATIONS IN THE US
- PRODUCT PERFORMANCE, OD RANGE AND PRESSURES ARE IDENTICAL TO THOSE OF THE ORIGINAL HYMAX

SPECIFICATIONS

STANDARDS

HYMAX2 MEETS OR EXCEEDS STANDARDS AWWA C-219, NSF 61, NSF 372.

SIZE

AVAILABLE IN NOMINAL DIAMETER FROM 4" - 12" STANDARD. CALL KRAUSZ FOR DETAILS.

MATERIALS

END RINGS 4" - 12" ASTM A283 / A283M GRADE C STEEL.

CENTER RING 4" - 12" ASTM A53 GRADE A STEEL.

GASKETS EPDM COMPOUNDED FOR WATER AND SEWAGE, MEETS INTERNATIONAL STANDARDS FOR CONTACT WITH DRINKING WATER.

BRIDGE AISI 304 STAINLESS STEEL.

SPHERICAL SPACERS AISI 304L STAINLESS STEEL.

COATING 100% FUSION BONDED EPOXY FOR ENHANCED CORROSION PROTECTION. NOMINAL THICKNESS 14 MIL.

NUTS & BOLTS AISI 304 STAINLESS STEEL. ROLLED THREAD AND ANTI-GALLING COATING.

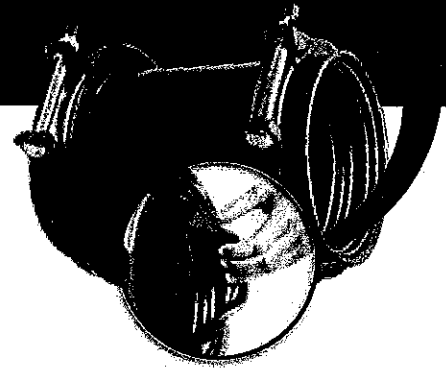
HYMAX[®]

Repair the past. Connect the future.

KRAUSZ is the creator of HYMAX

PRODUCT SPECIFICATIONS

HYMAX 2



PRODUCT PERFORMANCE (*)

WORKING TEMPERATURE	-20°F UP TO +125°F
DYNAMIC DEFLECTION	UP TO 4° PER SIDE
MIN. PIPE INSERTION	2.25"
MAXIMUM OFFSET FOR MISALIGNED PIPES	0.51"
MAXIMUM OUT OF ROUNDES	0.31"
WORKING PRESSURE	260
RATED PRESSURE	390
VACUUM TEST	12 PSI

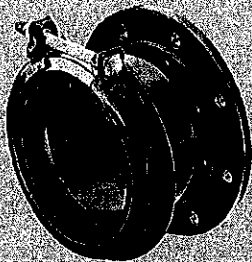
* See Submittal Drawings For Details.

PRODUCT TABLES

HYMAX® 2 NOMINAL SIZES (4" - 12")

Krausz Part Number	Nominal Diameter (inch)	Overall Range (inch)	Range in closed gasket position (inch)	Range in open gasket position (inch)	Bolt Qty. and Size (mm)	Torque (Ft-Lbs)	Approx. Weight (Lbs)
860-54-0108-16	4	4.25-5.63	4.25-5.00	4.92-5.63	2 -M14	75	15
860-54-0130-16	5	5.12-6.38	5.12-5.75	5.71-6.38	2 -M14	75	19
860-54-0163-16	6	6.42-7.68	6.42-7.05	7.01-7.68	2 -M14	75	23
860-54-0190-16	7	7.48-8.74	7.48-8.11	8.07-8.74	2 -M14	75	24
860-54-0217-16	8	8.54-9.84	8.54-9.17	9.13-9.84	2 -M14	75	28
860-54-0272-16	10	10.70-12.00	10.70-11.37	11.33-12.00	2 -M14	75	32
860-54-0278-16	10	10.96-12.26	10.96-11.63	11.59-12.26	2 -M14	75	33
860-54-0315-16	12	12.40-13.66	12.40-13.03	12.99-13.66	2 -M14	80	39
860-54-0334-16	12	13.15-14.41	13.15-13.78	13.74-14.41	2 -M14	80	39

For specific sizes of products in stock, call Krausz for details.



HYMAX[®]

**FLANGE ADAPTOR AND HYMAX
LONG BODY FLANGE ADAPTOR
(1.5" - 60")**



PRODUCT SPECIFICATIONS

FEATURES

- USING THE GAME-CHANGING HYMAX TECHNOLOGY, PROVEN IN OVER 1M INSTALLATIONS IN THE US
- SUITABLE FOR ALL TYPES OF PIPES - DUCTILE IRON, CAST IRON, STEEL, COPPER, PE, PVC, AC, GRP
- PATENTED HYDRAULICALLY-ASSISTED GASKET WITH 2-STAGE SEALING
- LIGHTWEIGHT CONSTRUCTION ENABLES FAST AND EASY INSTALLATION
- ALLOWS 4° DYNAMIC DEFLECTION, REDUCING FUTURE PIPE DAMAGE

SPECIFICATIONS

STANDARDS

HYMAX[®] FLANGE ADAPTOR AND LONG BODY FLANGE ADAPTOR MEET OR EXCEED REQUIREMENTS OF STANDARDS: AWWA C219, NSF-61 AND NSF-372.

SIZE/LENGTH

AVAILABLE IN NOMINAL DIAMETER FROM 1.5" - 24" STANDARD.
26"-60" MTO (MADE TO ORDER). CONTACT KRAUSZ FOR DETAILS.

MATERIALS

FLANGED BODY

1.5"-12" ASTM A53 GRADE A STEEL.
14"-60" ASTM A283 / A283M GRADE C STEEL.

FLANGE

1.5"-2" OVAL FLANGE FOR FLOW METER.
3" MEETS ANSI B16.5.
4"-24" MEETS AWWA CLASS D.
26"-60" CONTACT KRAUSZ FOR DETAILS.

END RINGS

1.5" - 12" ASTM A283 / A283M GRADE C STEEL.
14" - 16" ASTM A283 / A283M GRADE C STEEL.
(OR DUCTILE IRON CASTING ASTM A536 GRADE 60-40-18).
18"-60" ASTM A283 / A283M GRADE C STEEL.

SPHERICAL SPACERS

AISI 304L STAINLESS STEEL.

GASKET

EPDM COMPOUNDED FOR WATER AND SEWERAGE,
MEETS INTERNATIONAL STANDARDS FOR CONTACT WITH DRINKING WATER.

BRIDGE

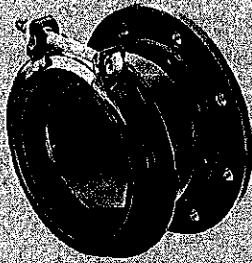
AISI 304 STAINLESS STEEL.

COATING

100% FUSION BONDED EPOXY FOR ENHANCED CORROSION PROTECTION.
NOMINAL THICKNESS 14 MIL.

NUTS AND BOLTS

AISI 304 STAINLESS STEEL. ROLLED THREAD AND ANTI-GALLING COATING.



HYMAX[®]

**FLANGE ADAPTOR AND HYMAX
LONG BODY FLANGE ADAPTOR
(1.5" - 60")**



PRODUCT SPECIFICATIONS

PRODUCT PERFORMANCE (*)

WORKING TEMPERATURE	-20°F UP TO +125°F			
DYNAMIC DEFLECTION	UP TO 4°			
MIN. PIPE INSERTION	1.5" - 12" 2.25"	14" - 60" 4"		
MAXIMUM OFFSET FOR MISALIGNED PIPE	1.5" - 3" 0.2"	4" - 60" 0.24"		
MAXIMUM OUT OF ROUNDNESS	1.5" 0.08"	2" - 3" 0.20"	4" - 12" 0.31"	14" - 60" 0.51"
WORKING PRESSURE	1.5" - 24": 175 PSI (26" - 60": CONTACT KRAUSZ FOR DETAILS)			
RATED PRESSURE	1.5" - 24": 262 PSI (26" - 60": CONTACT KRAUSZ FOR DETAILS)			
VACUUM TEST	12 PSI			

* SEE SUBMITTAL DRAWINGS FOR DETAILS.

PRODUCT TABLES

HYMAX FLANGE ADAPTOR NOMINAL SIZE 1.5"-2"

Krausz Part Number	Nominal Diameter (inch)	Flange	Overall Range (inch)	Before removal of the inner layer (inch)	After removal of the inner layer (inch)	Bolts Qty. and Size (mm)	Torque (Ft-Lbs)	Working Pressure (PSI)	Rated Pressure (PSI)	Approx. Weight (Lbs)
874-56-01004112	1.5"	1.5"	1.61-2.13	1.61-1.97	1.96-2.13	1-M12	35	175	262	7
874-56-02005412	2"	2"	2.10-3.03	2.10-2.60	2.56-3.03	1-M12	50	175	262	8

HYMAX FLANGE ADAPTOR NOMINAL SIZE 3"-12"

Krausz Part Number	Nominal Diameter (inch)	Flange	Overall Range (inch)	Before removal of the inner layer (inch)	After removal of the inner layer (inch)	Bolts Qty. and Size (mm)	Torque (Ft-Lbs)	Working Pressure (PSI)	Rated Pressure (PSI)	Approx. Weight (Lbs)
874-56-03008812	3"	3"	3.46-4.33	3.46-3.90	3.86-4.33	1-M12	50	175	262	12
874-56-04010812	4"	4"	4.25-5.63	4.25-5.00	4.92-5.63	1-M14	65	175	262	14
874-56-05013012	5"	5"	5.12-6.38	5.12-5.75	5.71-6.38	1-M14	65	175	262	21
874-56-06013012	5"	6"	5.12-6.38	5.12-5.75	5.71-6.38	1-M14	65	175	262	22
874-56-06016312	6"	6"	6.42-7.68	6.42-7.05	7.01-7.68	1-M14	65	175	262	23
874-56-08019012	7"	8"	7.48-8.74	7.48-8.11	8.07-8.74	1-M14	65	175	262	31
874-56-08021712	8"	8"	8.54-9.84	8.54-9.17	9.13-9.84	1-M14	65	175	262	32
874-56-10027212	10"	10"	10.70-12.00	10.70-11.37	11.33-12.00	1-M14	65	175	262	38
874-56-10027812	10"	10"	10.96-12.26	10.96-11.63	11.59-12.26	1-M14	65	175	262	41
874-56-12031512	12"	12"	12.40-13.66	12.40-13.03	12.99-13.66	1-M14	65	175	262	52
874-56-12033412	12"	12"	13.15-14.41	13.15-13.78	13.74-14.41	1-M14	65	175	262	57

HYMAX FLANGE ADAPTOR NOMINAL SIZE 14"-24"

Krausz Part Number	Nominal Diameter (inch)	Flange	Overall Range (inch)	Before removal of the inner layer (inch)	After removal of the inner layer (inch)	Bolts Qty. and Size (mm)	Torque (Ft-Lbs)	Working Pressure (PSI)	Rated Pressure (PSI)	Approx. Weight (Lbs)
874-56-14037812	14"	14"	15.00-17.10	15.00-16.10	16.02-17.10	2-M16	150	175	262	115
874-56-16043412	16"	16"	17.10-19.20	17.10-18.19	18.11-19.20	2-M16	150	175	262	125
874-56-18048812	18"	18"	19.20-21.30	19.20-20.29	20.21-21.30	2-M16	150	175	262	135
874-56-20054012	20"	20"	21.25-23.35	21.25-22.35	22.27-23.35	2-M16	150	175	262	155
874-56-24060612	24"	24"	23.85-25.95	23.85-24.96	24.88-25.95	2-M16	150	175	262	184
874-56-24062412	24"	24"	24.60-26.70	24.60-25.67	25.59-26.70	2-M16	150	175	262	187

HYMAX FLANGE ADAPTOR NOMINAL SIZE 26"-60"

26"-60" - MTO (MADE TO ORDER) IS AVAILABLE

PRODUCT TABLES

HYMAX FLANGE ADAPTOR LONG BODY NOMINAL SIZE 1.5"-12"

Krausz Part Number	Nominal Diameter (inch)	Flange	Overall Range (inch)	Before removal of the inner layer (inch)	After removal of the inner layer (inch)	Bolts Num. and Size (mm)	Torque (Ft-Lbs)	Working Pressure (PSI)	Rated Pressure (PSI)	Approx. Weight (Lbs)
974-56-01004112	1.5"	1.5"	1.61-2.13	1.61-1.97	1.96-2.13	1 -M12	35	175	262	9
974-56-02005412	2"	2"	2.10-3.03	2.10-2.60	2.56-3.03	1 -M12	50	175	262	10
974-56-03008812	3"	3"	3.46-4.33	3.46-3.90	3.86-4.33	1 -M12	50	175	262	16
974-56-04010812	4"	4"	4.25-5.63	4.25-5.00	4.92-5.63	1 -M14	65	175	262	23
974-56-05013012	5"	5"	5.12-6.38	5.12-5.75	5.71-6.38	1 -M14	65	175	262	30
974-56-06013012	5"	6"	5.12-6.38	5.12-5.75	5.71-6.38	1 -M14	65	175	262	33
974-56-06016312	6"	6"	6.42-7.68	6.42-7.05	7.01-7.68	1 -M14	65	175	262	36
974-56-08019012	7"	8"	7.48-8.74	7.48-8.11	8.07-8.74	1 -M14	65	175	262	42
974-56-08021712	8"	8"	8.54-9.84	8.54-9.17	9.13-9.84	1 -M14	65	175	262	49
974-56-10027212	10"	10"	10.70-12.00	10.70-11.37	11.33-12.00	1 -M14	65	175	262	56
974-56-10027812	10"	10"	10.96-12.26	10.96-11.63	11.59-12.26	1 -M14	65	175	262	60
974-56-12031512	12"	12"	12.40-13.66	12.40-13.03	12.99-13.66	1 -M14	65	175	262	61
974-56-12033412	12"	12"	13.15-14.41	13.15-13.78	13.74-14.41	1 -M14	65	175	262	63

HYMAX FLANGE ADAPTOR LONG BODY NOMINAL SIZE 14"-24"

Krausz Part Number	Nominal Diameter (inch)	Flange	Overall Range (inch)	Before removal of the inner layer (inch)	After removal of the inner layer (inch)	Bolts Num. and Size (mm)	Torque (Ft-Lbs)	Working Pressure (PSI)	Rated Pressure (PSI)	Approx. Weight (Lbs)
974-56-14037812	14"	14"	15.00-17.10	15.00-16.10	16.02-17.10	2 -M16	150	175	262	117
974-56-16043412	16"	16"	17.10-19.20	17.10-18.19	18.11-19.20	2 -M16	150	175	262	133
974-56-18048812	18"	18"	19.20-21.30	19.20-20.29	20.21-21.30	2 -M16	150	175	262	142
974-56-20054012	20"	20"	21.25-23.35	21.25-22.35	22.27-23.35	2 -M16	150	175	262	151
974-56-24060612	24"	24"	23.85-25.95	23.85-24.96	24.88-25.95	2 -M16	150	175	262	168
974-56-24062412	24"	24"	24.60-26.70	24.60-25.67	25.59-26.70	2 -M16	150	175	262	173

HYMAX FLANGE ADAPTOR LONG BODY NOMINAL SIZE 26"-60"

26"-60" - MTO (MADE TO ORDER) IS AVAILABLE

PS0007 REV A



PACE SUPPLY CORP
 8400 24TH AVE.
 SACRAMENTO CA 95826
 916-386-8347

Quote#	Q224898
Quote Date	06/03/26
Page#	1

QUOTATION

OLIVEHURST PUBLIC UTIL DIST P O BOX 670 OLIVEHURST, CA 95961	23449-00	Expiration Date	06/30/26	Requested By	
		FOB	OT	Prepared By	RICK MERRI rmerri@pacesupply.com
Ship To: OLIVEHURST PUBLIC UTIL DIST 3908 MARY AVE OLIVEHURST, CA 95961				Salesperson	Steven Wright
		Job Name			

WE ARE PLEASED TO QUOTE YOU ON THE FOLLOWING MATERIAL

Ln#	Part Number	Description	Price	Qty	Unit	Extended Price
1	forfb11004qnl	1 MIP X COMP CTS Q LF BRS CORP BALL STOP FORD	78.00	160	EA	12480.00
2	forba43444wqnl	1 CTS Q X MN LF BRS ANGLE BALL METER VLV W/ LW FORD	140.00	160	EA	22400.00
3	FORA24NL	5/8 X 3/4 TO 1 LF ADPT METER (1=2PCS) FORD	31.00	80	PR	2480.00
4	WPP1100BLK	1X100 CTS 250PSI SDR9 BLACK PE4710	60.00	35	RL	2100.00
5	FOR202B1212IP4	10 X 1 IP BRS 11.10-12.12 DBL STRAP SADDLE FORD	197.00	30	EA	5910.00
6	FORS912804	8 PVC X 1 IP BRS 2-PC BOLTED SADDLE F/ C900 FORD	82.00	10	EA	820.00
7	FOR202B962IP4	8 X 1 IP BRS 9.05-9.62 DBL STRAP SADDLE FORD	163.00	95	EA	15485.00
8	FORS911204	12 PVC X 1 IP BRS 2-PC BOLTED SADDLE F/ C900 FORD	238.00	30	EA	7140.00
9	TRW10BLU45	10 GA 45 MIL BLUE COATED TRACER WIRE 500FT MIN	35.00	4000	CF	1400.00
10	TRWCSBCS8	COPPER SPLIT BOLT CONN 16 - 8GA S8	5.00	160	EA	800.00
11	PVPDR186	6 X 20 PVC C900 DR18 BLUE PIPE	935.00	20	CF	187.00
12	PVPDR188	8 X 20 PVC C900 DR18 BLUE PIPE	1600.00	300	CF	4800.00
13	PVPDR1812	12 X 20 PVC C900 DR18 BLUE PIPE	3280.00	20	CF	656.00
14	DCFCROSSFLG128	12*8 FLG CROSS AC CL	1664.00	1	EA	1664.00
15	DCFREDFLG86	8*6 FLG REDUCER AC CL	294.00	1	EA	294.00
16	DCFREDFLG128	12*8 FLG REDUCER AC CL	625.00	1	EA	625.00
17	DCF2212MJ8	8 MJ 22 1/2 ELL AC CL	172.00	2	EA	344.00
18	DCF2212MJFLG8	8 MJ*FLG 22 1/2 ELL AC CL	292.00	1	EA	292.00
19	WGVFF8	8 FLG*FLG C509 DI GATE VALVE	1475.00	2	EA	2950.00
20	WGVMF12	12 MJ*FLG C509 DI GATE VALVE	2550.00	1	EA	2550.00
21	WGVFF6	6 FLG*FLG C509 DI GATE VALVE	947.00	1	EA	947.00
22	DCFACCRETPVC6	6 RET WEDGE ACTION ACC PVC	66.00	2	EA	132.00
23	DCFACCRETPVC8	8 RET WEDGE ACTION ACC PVC	89.00	3	EA	267.00
24	DCFACCRETPVC12	12 RET WEDGE ACTION ACC PVC	162.00	1	EA	162.00
25	WBLBS1012	10 - 12 BOLT SET PLTD 307A (12) 7/8 X 4	20.00	2	EA	40.00
26	WBLBS8	8 BOLT SET PLTD 307A (8) 3/4 X 3 1/2	8.00	8	EA	64.00
27	STTRG8	8 STAR TITE FLG RING GASKET STAR PIPE	20.50	4	EA	82.00
28	STTRG6	6 STAR TITE FLG RING GASKET STAR PIPE	14.50	4	EA	58.00
29	STIFFG12	12 STAR TITE FULL FACE GASKET STAR PIPE	35.50	2	EA	71.00
30	STIFFG8	8 STAR TITE FULL FACE GASKET STAR PIPE	20.50	2	EA	41.00
31	HYM2CPLG12	12 CPLG 12.40-13.66 OD 860-54-0315-16 HYMAX2	613.00	1	EA	613.00
32	HYMFA8	8 FLG ADPT 8.54-9.84 OD 874-54-08021712 HYMAX	530.00	1	EA	530.00
33	DCF2212MJFLG6	6 MJ*FLG 22 1/2 ELL AC CL	203.00	1	EA	203.00

Subtotal	88587.00
Estimated Sales Tax	7308.43
Estimated Freight	0.00
Total	95895.43