



UTILITY PIPE FITTINGS AND ACCESSORIES

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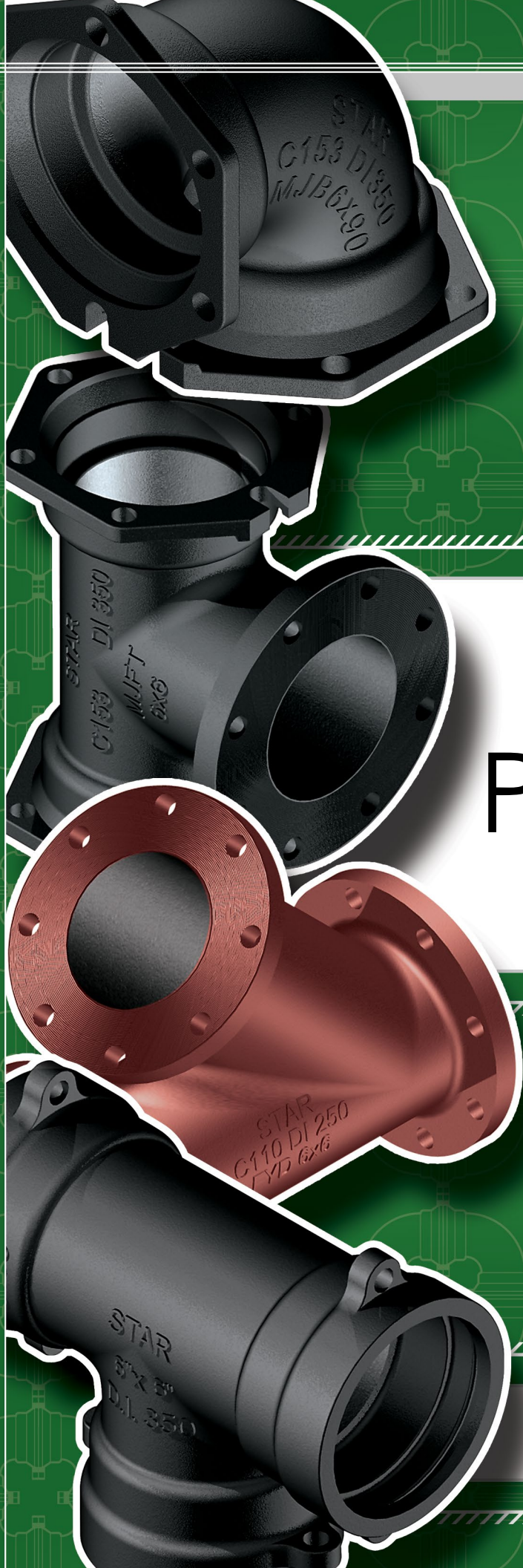
TÜVRheinland®

Certified to
ISO 9001:2015

Star® Pipe Products
10500 Richmond Avenue, St. 100
Houston, TX 77042

Toll-Free: (800) 999-3009
Tel: (281) 558-3000
Fax: (281) 558-9000

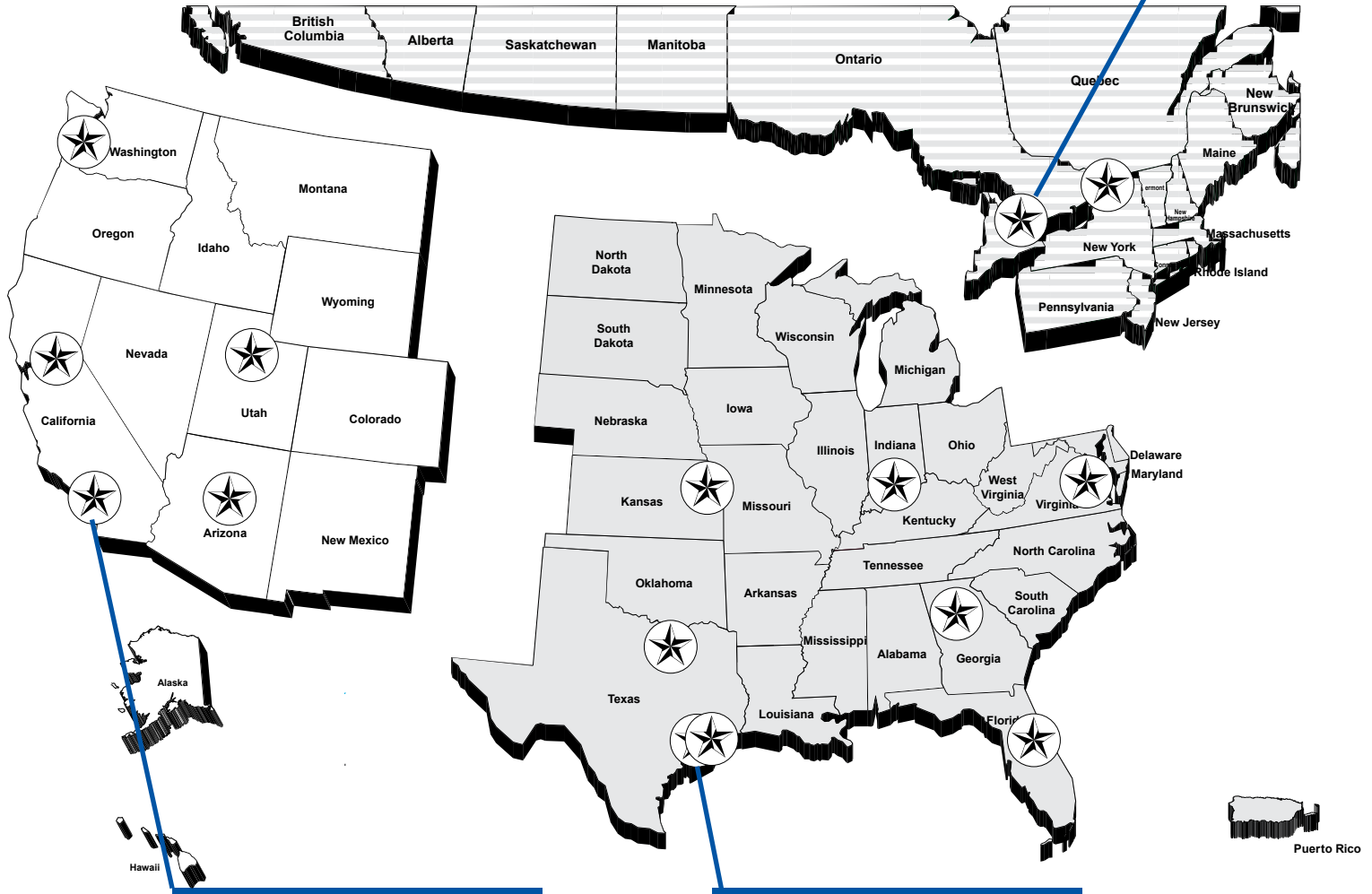
www.starpipeproducts.com



Call Centers

CAMBRIDGE CALL CENTER

1144 Industrial Road
 Cambridge, Ontario, N3H4W4
 Tel: (519) 650-1550
 Toll Free: (888) 893-7827
 Fax: (519) 650-1553



CORONA CALL CENTER

1223 Sherborn Street, Ste 102
 Corona, CA 92879
 Tel: (951) 898-0770
 Toll Free: (877) 701-7827
 Fax: (951) 898-9561

HOUSTON CALL CENTER

Corporate Headquarters
 10500 Richmond Avenue, St. 100
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Distribution Centers

Sacramento, CA
 830 W. National Drive, Ste 150
 Sacramento, CA 95834

Orlando, FL
 601 Gills Drive, Ste 100
 Orlando, FL 32824

Richmond, VA
 2301 Commerce Road
 Richmond, VA 23234

Phoenix, AZ
 1250 East Hadley Street, Ste 2
 Phoenix, AZ 85034

Salt Lake City, UT
 2861 West Parkway Blvd.
 West Valley City, UT 84119

Seattle, WA
 13605 52nd Street East
 Sumner, WA 98390

Montreal, CAN
 3067 Rue Joseph A. Bombardier
 Laval, QC H7P 6C5

Atlanta, GA
 2885 Pacific Drive, Suite A
 Norcross, GA 30071

Houston, TX
 4023 Westhollow Pkwy, Suite 108
 Houston, TX 77082

Kansas City, MO
 1836 Levee Road
 North Kansas City, MO 64116

Indianapolis, IN
 7955 Zionsville Road
 Indianapolis, IN 46268

Dallas, TX
 1515 Monetary Lane
 Carrollton, TX 75006

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LININGS & COATINGS

- Ceramic Epoxy
- Cement Lined
- Double Cement Lined
- UL/ANSI/NSF Standards 61 and 372 Epoxy
- Coal Tar Epoxy
- Asphalt Coatings
- Fusion Bonded Epoxy
- Glass Lining
- Bare/Bare Available

{ Additional Linings & Coatings Available }

PLEASE CALL FOR

- Product Data/Specifications Sheets
- Material Safety Data Sheets
- Special Coating Options

800.999.3009



STAR[®] PIPE PRODUCTS

General Terms and Conditions

GENERAL

Star Pipe Products' ("Seller") terms and conditions of sale (the "Terms") shall control with respect to any sale of Seller's products (the "Goods") to any customer (each, a "Buyer") (each, an "Order"). No waiver, alteration or modification of these terms and conditions whether on Buyer's purchase order or otherwise shall be valid unless the waiver, alteration or modification is specifically accepted in writing and signed by an authorized representative of Seller. Buyer acknowledges that these Terms and Conditions are subject to change from time to time and the parties agree that each sale of Goods will be independently governed by the version of the Terms available online at www.starpipeproducts.com at the time of acceptance by Seller such order. All references by Seller to Buyer's specifications and similar requirements are only to describe Goods and work covered hereby and no warranties or other terms will have any force or effect. Buyer may not rely on any representation, promise or term not set forth herein and Seller expressly objects to and rejects all terms not contained in these Terms. Seller's acceptance of an Order, whether oral or written, and/or its delivery of Goods to Buyer is based on the express condition that Buyer agrees to all of these Terms.

GOVERNING LAW; VENUE

These Terms (and every Order) shall be deemed made under and governed by the laws of the State of Texas and shall be construed and enforced in accordance therewith (without regard to its rules respecting conflicts of Law). Buyer irrevocably submits to the jurisdiction and venue of the state and federal courts located in Harris County, State of Texas, hereby waives any objections or defenses to such forum jurisdiction and venue selection, and agrees and consents that service of process may be made upon it in any legal proceeding relating to these Terms by any means allowed under Texas or federal law. **No party shall have the right to litigate, include in any lawsuit, or otherwise present claims for any other person or entity or for any class of persons or entities, and each party waives any such rights or claims it might have.**

QUOTATIONS

Where Seller issues a quotation to place a bid, Seller's quotation is for prompt acceptance (not later than 30 days) and Seller reserves the right to modify and/or withdraw such quotation without notice. Buyer's prompt acceptance of the quotation and these Terms are material terms of the quotation and any resulting Order. In cases where freight allowance is included in the quotation, Buyer shall be liable for any rate increase and/or additional expense over the calculated allowance resulting from compliance with Buyer's shipping instructions.

DELIVERY

Seller will make every effort to complete delivery of Goods as indicated on an Order, but Seller shall have no responsibility or liability, and will accept no back charge, for losses or damages arising from delivery delays or failure to give notice of expected delay. Seller may terminate any Order without liability of any nature, by written notice to Buyer, in the event that the delay in delivery or performance resulting from any of the aforesaid causes shall continue for a period of longer than sixty (60) days.

WARRANTY

Seller warrants Goods of its own manufacture for one (1) calendar year from the date of shipment shall conform to the material and technical specifications set forth in the Order. Goods manufactured by others are sold "as is" except to the extent the manufacturer honors any applicable warranty made by the manufacturer. Secondhand goods are sold "as is". If the new Goods fail to conform with such specifications upon inspection by Seller, Seller will, at its option and as Buyer's sole remedy, either repair or replace such Goods having defects in material or workmanship with the type originally furnished. Seller shall not be liable or responsible and Seller's warranty obligations shall not apply if (A) upon inspection any defects are attributed to normal wear and tear, erosion or corrosion, improper storage, use or maintenance or use of Goods with incompatible products, (B) the defect is in any portion or part of Goods not manufactured by Seller, (C) Goods have been repaired or altered outside of Seller's factory, in any manner; (D) Goods have been subjected to misuse, negligence or accidents; or (E) Goods have been used in a manner contrary to Seller's instructions or recommendations. If (B) above is applicable, Seller will, as an accommodation to Buyer, assign to Buyer any warranties given to it by any such other manufacturers; provided, however, that the foregoing will not extend Seller's warranty to any accessory products unless otherwise agreed to in writing by Seller. If Seller's examination shall disclose to its satisfaction that the Good is defective, cannot be replaced and an adjustment is required, the amount of such adjustment shall not exceed the net line item sales price of the defective Good only and no allowance will be made for labor or expense of repairing or replacing defective Good or workmanship or damage resulting from the same. No adjustment shall be implemented unless the Good in question is returned to Seller in its originally installed condition, still connected to other components of the joint. Buyer must contact Seller as quickly as possible so Seller can assess the Good in its installed condition. No claims will be honored unless claim is made within forty-five (45) days of the defect being discovered. Where engineering design or fabrication work is supplied, Buyer's acceptance of Seller's design or of delivery of work shall relieve Seller of all further obligation for such services. THIS CLAUSE CONTAINS SELLER'S SOLE WARRANTY. SELLER MAKES NO OTHER WARRANTY OF ANY KIND, EXPRESSED OR IMPLIED AND ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE WHICH EXCEED SELLER'S AFORESTATED OBLIGATION ARE HEREBY DISCLAIMED BY SELLER AND EXCLUDED FROM THIS WARRANTY. Seller neither assumes, nor authorizes any person to assume for it, any other obligation in connection with the sale of its engineering designs or Goods. Seller shall not be responsible for design errors due to inaccurate or incomplete information supplied by Buyer or its representatives. This warranty is non-transferable.

LIABILITY

Seller shall not be liable for any loss, damage, cost of repairs, labor costs, special, incidental or consequential damages of any kind, whether based upon warranty (except for the obligation accepted by Seller under "Warranty" above), contract or negligence, arising in connection with the design, manufacture, sale, use or repair of the Goods or of the engineering designs supplied to Buyer. IN NO EVENT SHALL SELLER'S AGGREGATE LIABILITY ARISING OUT OF OR RELATED TO ANY ORDER ISSUED PURSUANT TO ANY ORDER, WHETHER ARISING OUT OF OR RELATED TO BREACH OF CONTRACT, TORT (INCLUDING NEGLIGENCE OF ANY KIND) OR OTHERWISE, EXCEED THE LINE ITEM PRICE OF THE GOOD(S) GIVING RISE TO THE CLAIM OR \$10,000 USD, WHICHEVER IS LESS.

(Continued)

General Terms and Conditions

DISCLAIMER	(1) PER AWWA/ANSI C110 A21.10, THE FLANGED JOINT IS GENERALLY SPECIFIED FOR ABOVE GROUND SERVICE. UNDERGROUND USE OF THE FLANGED JOINT IS GENERALLY NOT DESIRABLE DUE TO THE RIGIDITY OF THE JOINT. (2) SELLER WILL NOT PROVIDE WARRANTY FOR OR BE RESPONSIBLE FOR THE REPAIR OR REPLACEMENT OF GOOD DAMAGED BY PRESSURE JETTING OF ANY KIND, REGARDLESS OF AGE OR CAUSE.
RETURNS	Seller will not accept return of any Good(s) unless Seller's written permission has been first obtained, in which case the Goods will be credited subject to the following: (a) All material returned must, on its arrival at Seller's plant, be found to be in first-class condition; if not, cost of putting in saleable condition will be deducted from credit memoranda; (b) A handling charge deduction of twenty-five percent (25%) will be made from all credit memoranda issued for material returned; (c) Transportation charges, if not prepaid will be deducted from credit memoranda.
SHIPMENTS	All Goods sent out will be carefully examined, counted and packed. The cost of any special packing or special handling caused by Buyer's requirements or requests shall be added to the amount of the Order. No claim for shortages will be allowed unless made in writing within ten (10) days of receipt of a shipment. Claims for Goods damaged or lost in transit should be made on the carrier, as Seller's responsibility ceases, and title passes, on delivery to the carrier.
GOODS	Orders covering special, made-to-order, rush or non-standard Goods are not subject to cancellation except on such terms as Seller may specify on application.
PRICES	All prices and designs are subject to change without notice. All prices are F.O.B. Point of Shipment, unless otherwise stated.
FORCE MAJEURE	Seller shall not be responsible or liable in any way for any failure to perform due to acts of God, fire, flood, serious accidents, foreign or United States embargo, war or riot, serious shortages, unavailability or significant price increases in commodities, materials or components, labor disputes, interruption of transportation, loss of essential production services, laws, rules, regulations, instructions or acts of any U.S. or foreign governmental authority, or by any other event beyond the reasonable control of Seller or its subcontractors.
TAXES	The amount of any sales, excise or other taxes, if any, applicable to the Goods covered by this order, shall be added to the purchase price and shall be paid by Buyer unless Buyer provides Seller with an exemption certificate acceptable to the taxing authorities.
MISCELLANEOUS	Seller produces both domestic and import Goods and each are cast with country of origin. The responsibility lies with the ordering and receiving parties to determine the suitability and origin of all Goods being requested. All Goods should be installed per Seller's installation instructions. Seller's Terms always apply. Please contact Seller if either are not readily available. All Domestic fittings are compliant with the Consolidated Appropriations Act of 2014 (AIS), the Recovery and Reinvestment Act of 2009 (ARRA) and the Buy America Acts of 1983 and 1933. We offer two (2) types of Domestic restraint Goods: (1) AIS Compliant and (2) Buy American Compliant.

(1) All Goods described as AIS Compliant meet all requirements of the American Iron and Steel provision of the Consolidated Appropriations Act of 2014 (AIS), the Buy America Act of 1983 and the Buy American Act of 1933.

(2) Buy American Compliant Goods meet the original Federal Buy American Act of 1933. These Goods may include import components and this will be noted in the description of the Good.

Pressure Cleaning Guidelines: The Ductile Iron Pipe Research Association publishes the Installation Guide for Ductile Iron Pipe. The following language comes from Chapter 7 of the February 2012 edition of this document: "The use of pressure washing to clean the inside diameter of cement-mortar-lined iron pipe is not recommended due to the possibility of damage to the seal coat and/or cement-mortar lining. The aggressiveness of the pressure washing is dependent on water pressure, travel speed, water jets, water jet angle to the lining, distance of the water jets from the lining, diameter of pipe, type of lining application, etc. Any attempt to do so is at the sole risk of the equipment operator." Seller concurs with this position. Seller will not provide warranty for or be responsible for the repair or replacement of Good damaged by pressure jetting of any kind.

Non-Pressure Sewer Applications: If a mandrel test is required, or if a particular inside diameter is needed in order to accommodate CCTV equipment or some other tool, it is recommended that the installer check inside diameter compatibility by passing an object of the same size through the fitting prior to installation in order to ensure that the fitting's inside diameter is compatible with the test or inspection desired. Mandrels, CCTV equipment, testing balls, and any other object passed through the fitting shall be constructed such that it does not damage the fitting's lining when transported through it. Seller will not be responsible for buried sewer fittings that are incompatible with the aforementioned objects if that inside diameter that has not been assessed prior to installation.

STAR[®] PIPE PRODUCTS



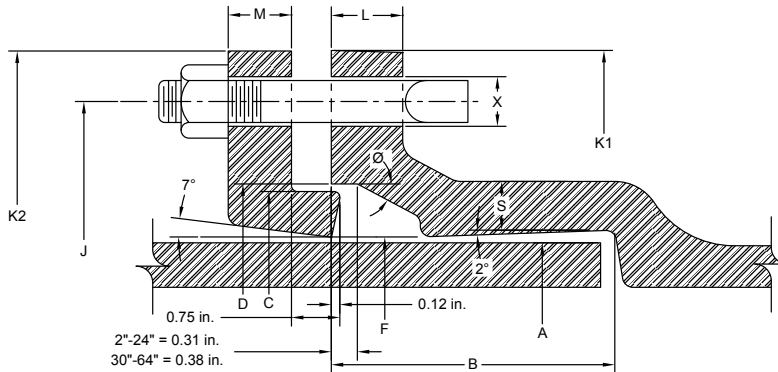
Compact MJ Fittings

ANSI/AWWA C153/A21.53

2" - 64" DUCTILE IRON MECHANICAL JOINT COMPACT FITTINGS

GENERAL SPECIFICATIONS

- MATERIAL:** Ductile Iron per ASTM A536
- 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, ANSI/AWWA C111/A21.11, UL and FM 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" - 64"=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. [Click here for a pressure jetting discussion](#) or visit http://www.starpipeproducts.com/pressure_cleaning_guidelines.asp.
- 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 (see pg. 20)
- T-BOLTS/NUTS:** Low alloy steel in accordance with ANSI/AWWA C111/A21.11 (see pg. 22)
- APPROVALS:** 3" - 12" UL/ULC Listed | 2" and greater are UL/ANSI/NSF Standards 61 and 372 | 3" - 16" FM APPROVED. Please consult factory for detail listing and approvals.
- DIMENSIONS:** All dimensions are in inches unless noted otherwise. ([Click here for a short commentary on non-pressure sewer applications](#) or visit http://www.starpipeproducts.com/non-pressure_sewer_applications.asp. Review commentary before ordering or installing fittings for this application.)
- INSTALLATION:** Per ANSI/AWWA C600 and C111 using DIP conforming to C150/C151 and PVC pipe conforming to C900



MECHANICALJOINT DIMENSIONS															
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	5/8 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	5/8 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 1/8	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 1/8	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 3/8	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 3/8	1 1/4 x 6	32
54	57.56	4.00	58.82	59.02	57.73	63.20	65.70	65.70	1.88	2.00	1.50	20°	1 3/8	1 1/4 x 6 1/2	36
60	61.61	4.00	62.87	63.07	61.78	67.72	70.22	70.22	1.88	2.00	1.55	20°	1 3/8	1 1/4 x 6 1/2	36
64	65.67	4.00	66.96	67.13	65.84	71.86	74.36	74.36	1.88	2.00	1.62	20°	1 3/8	1 1/4 x 6 1/2	38

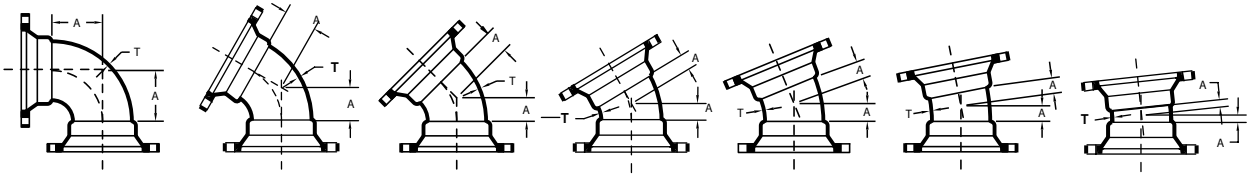
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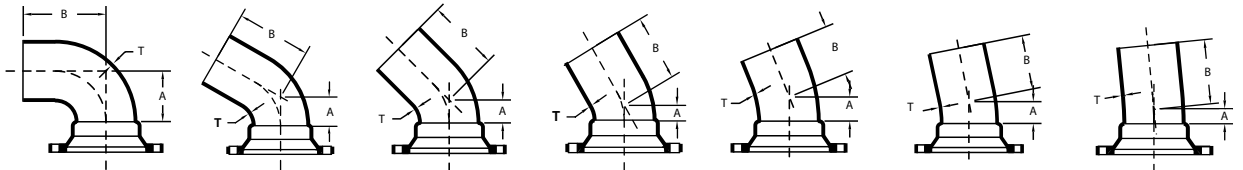


Compact MJ Fittings

ANSI/AWWA C153/A21.53



MJ x MJ BENDS		90° MJ x MJ BENDS (1/4)		60° MJ x MJ BENDS (1/6)		45° MJ x MJ BENDS (1/8)		30° MJ x MJ BENDS (1/12)		22 1/2° MJ x MJ BENDS (1/16)		11 1/4° MJ x MJ BENDS (1/32)		5 5/8° MJ x MJ BENDS (1/64)	
NOM. SIZE	T	A	WT (LBS.)	A	WT (LBS.)	A	WT (LBS.)	A	WT (LBS.)	A	WT (LBS.)	A	WT (LBS.)	A	WT (LBS.)
2	0.30	3.25	14	-	-	1.80	13	-	-	1.00	9	1.00	8	-	-
3	0.33	3.50	23	-	-	1.50	21	-	-	1.00	16	1.00	14	1.00	13
4	0.34	4.00	27	3.00	21	2.00	23	-	-	1.50	18	1.25	16	1.25	16
6	0.36	5.00	39	4.00	35	3.00	32	-	-	2.00	32	1.50	30	1.50	27
8	0.38	6.50	57	4.50	50	3.50	46	3.00	44	2.50	46	1.75	42	1.75	38
10	0.40	7.50	89	-	-	4.50	70	-	-	3.00	64	2.00	58	2.00	56
12	0.42	9.00	108	6.50	104	5.50	98	4.00	87	3.50	84	2.25	74	2.25	73
14	0.47	11.50	180	-	-	5.00	145	-	-	3.75	140	2.50	128	2.50	121
16	0.50	12.50	264	7.50	210	5.50	202	4.50	177	3.75	178	2.50	148	2.50	150
18	0.54	14.00	335	-	-	6.00	250	-	-	4.50	255	3.00	205	3.00	204
20	0.57	15.00	400	10.50	365	7.00	305	-	-	4.50	262	3.00	245	3.00	239
24	0.61	17.00	565	10.50	479	7.50	405	6.00	385	4.50	412	3.00	315	3.00	317
30	0.66	21.50	1005	13.50	843	11.50	798	9.75	692	6.75	665	4.75	568	4.75	568
36	0.74	24.50	1562	17.00	1350	11.50	1164	11.00	1080	7.75	960	5.00	840	5.00	825
42	0.82	29.25	2506	19.00	2150	14.00	1792	12.00	1465	9.00	1350	6.00	1319	6.00	1125
48	0.90	33.25	3045	21.00	2650	15.00	2390	13.25	2075	10.00	1886	6.50	1700	6.50	1600
54	1.05	37.00	4023	-	-	20.25	3062	-	-	10.25	2198	5.00	1711	-	-
60	1.10	39.50	4714	24.00	3673	21.25	3487	19.00	3307	10.75	2434	7.00	2033	-	-
64	1.16	42.00	5508	-	-	22.25	4000	18.50	3620	11.00	2727	7.00	2245	7.00	2247



MJ x PE BENDS		90° MJ x PE BENDS (1/4)			60° MJ x PE BENDS (1/6)			45° MJ x PE BENDS (1/8)			30° MJ x PE BENDS (1/12)			22 1/2° MJ x PE BENDS (1/16)			11 1/4° MJ x PE BENDS (1/32)			5 5/8° MJ x PE BENDS (1/64)		
NOM. SIZE	T	A	B	WT (LBS.)	A	B	WT (LBS.)	A	B	WT (LBS.)	A	B	WT (LBS.)	A	B	WT (LBS.)	A	B	WT (LBS.)	A	B	WT (LBS.)
3	0.33	3.50	8.50	16	-	-	-	1.50	7.00	13	-	-	-	1.00	6.50	12	1.00	6.50	12	-	-	-
4	0.34	4.00	9.50	22	-	-	-	2.00	7.50	19	-	-	-	1.50	7.00	18	1.25	6.25	17	-	-	-
6	0.36	5.00	12.00	40	-	-	-	3.00	8.50	31	-	-	-	2.00	7.50	29	1.50	7.00	27	-	-	-
8	0.38	6.50	12.50	61	-	-	-	3.50	9.00	46	-	-	-	2.50	8.00	43	1.75	7.25	39	-	-	-
10	0.40	7.50	13.00	83	-	-	-	4.50	10.00	68	-	-	-	3.00	8.50	61	2.00	7.50	52	-	-	-
12	0.42	9.00	14.50	114	-	-	-	5.50	11.00	95	-	-	-	3.50	9.00	81	2.25	7.75	70	-	-	-
14	0.47	11.50	19.50	197	-	-	-	5.00	13.00	148	-	-	-	3.75	11.25	133	2.50	10.50	122	-	-	-
16	0.50	12.50	20.50	248	-	-	-	5.50	13.50	184	-	-	-	3.75	11.75	166	2.50	10.50	148	-	-	-
18	0.54	14.00	21.00	325	-	-	-	6.00	13.00	235	-	-	-	6.00	13.00	235	6.00	13.00	235	-	-	-
20	0.57	15.00	22.50	390	-	-	-	7.00	14.00	300	-	-	-	7.00	14.00	300	7.00	14.00	300	-	-	-
24	0.61	17.00	25.00	575	-	-	-	7.50	14.50	390	-	-	-	7.50	14.50	395	7.50	14.50	400	-	-	-
30	0.66	22.75	31.75	865	13.50	22.50	846	10.50	19.50	715	9.75	18.75	762	6.75	15.75	600	4.75	13.75	535	4.75	13.75	505
36	0.74	24.50	33.50	1355	-	-	-	12.00	21.00	1040	-	-	-	7.75	16.75	865	5.00	14.00	725	-	-	-
42	0.82	29.25	38.25	2055	-	-	-	14.00	23.00	1460	-	-	-	9.00	18.00	1200	6.00	15.00	1030	-	-	-
48	0.90	33.25	42.25	2805	-	-	-	15.00	24.00	1905	-	-	-	10.00	19.00	1575	6.50	15.50	1290	-	-	-

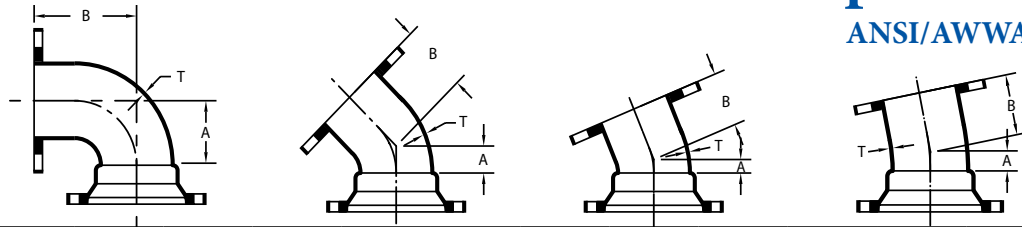
UCAT22.01
 * REGISTERED TRADEMARK OF STAR PIPE PRODUCTS



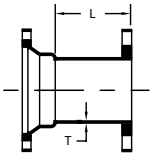


Compact MJ Fittings

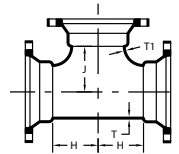
ANSI/AWWA C153/A21.53



MJ x FE BENDS		90° MJ x FE BENDS (1/4)			45° MJ x FE BENDS (1/8)			22 1/2° MJ x FE BENDS (1/16)			11 1/4° MJ x FE BENDS (1/32)		
NOM. SIZE	T	A	B	WT (LBS.)	A	B	WT (LBS.)	A	B	WT (LBS.)	A	B	WT (LBS.)
3	0.33	3.50	5.50	20	1.50	3.00	17	1.00	3.00	17	1.00	3.00	15
4	0.34	4.00	6.50	26	2.00	4.00	24	1.50	4.00	26	1.25	4.00	19
6	0.36	5.00	8.00	47	3.50	5.00	40	2.00	5.00	36	1.50	5.00	30
8	0.38	6.50	9.00	68	3.50	5.50	57	2.50	5.50	53	1.75	5.50	50
10	0.40	7.50	11.00	102	4.50	6.50	83	3.00	6.50	102	2.00	6.50	75
12	0.42	9.00	12.00	134	5.50	7.50	110	3.50	7.50	134	2.25	7.50	88
14	0.47	11.50	14.00	227	5.00	7.50	207	3.75	7.50	166	---	---	---
16	0.50	12.50	15.00	306	5.50	8.00	239	3.75	8.00	228	2.50	8.00	201
18	0.54	14.00	16.50	357	6.00	8.50	268	4.50	8.50	259	3.00	8.50	247
20	0.57	15.00	18.00	445	7.00	9.50	339	4.50	9.50	321	3.00	9.50	307
24	0.61	17.00	22.00	650	7.50	11.00	474	4.50	11.00	444	3.00	11.00	427
30	0.66	21.50	25.00	1070	10.50	15.00	858	6.75	15.00	764	4.75	15.00	733
36	0.74	24.50	28.00	1554	11.50	18.00	1240	7.75	18.00	1176	5.00	18.00	1118
42	0.82	29.25	31.00	2190	14.00	21.00	1820	---	---	---	6.00	21.00	1627
48	0.90	33.25	34.00	3015	15.00	24.00	2421	---	---	---	---	---	---



MJ x FLANGE ADAPTER			
NOM. SIZE	T	L	WT (LBS.)
3	0.33	3.50	13
4	0.34	3.50	22
6	0.36	3.50	32
8	0.38	3.50	47
10	0.40	4.00	66
12	0.42	4.00	91
14	0.47	5.00	141
16	0.50	5.00	170
18	0.54	5.00	176
20	0.57	5.00	252
24	0.61	5.00	320
30	0.66	7.00	558
36	0.74	8.50	796
42	0.82	12.00	1180
48	0.90	12.00	1499
54	1.05	13.00	1889
60	1.10	13.00	2148



MJ x MJ TEES					
NOM. SIZE	T	T1	H	J	WT (LBS.)
2 x 2	0.39	0.39	3.25	3.25	20
3 x 2	0.48	0.39	3.50	3.50	43
3 x 3	0.33	0.33	3.00	3.00	28
4 x 2	.034	0.30	3.00	4.00	29
4 x 3	0.34	0.33	3.50	4.00	30
4 x 4	0.34	0.34	4.00	4.00	32
6 x 3	0.36	0.33	3.50	5.00	42
6 x 4	0.36	0.34	4.00	5.00	46
6 x 4 x 6	0.36	0.36	5.00	5.00	50
6 x 6	0.36	0.36	5.00	5.00	56
6 x 6 x 8	0.36	0.38	6.50	6.50	62
8 x 3	0.38	0.33	4.00	6.50	52
8 x 4	0.38	0.34	4.00	6.50	60
8 x 6	0.38	0.36	5.00	6.50	72
8 x 6 x 6	0.38	0.38	5.00	6.50	62
8 x 6 x 8	0.38	0.38	6.00	6.50	85
8 x 8	0.38	0.38	6.50	6.50	86
10 x 3	0.40	0.33	4.00	7.50	75
10 x 4	0.40	0.34	4.00	7.50	78
10 x 6	0.40	0.36	5.00	7.50	90
10 x 8	0.40	0.38	6.50	7.50	105
10 x 10	0.40	0.40	7.50	7.50	120
12 x 3	0.42	0.33	4.00	8.75	90
12 x 4	0.42	0.34	4.00	8.75	94

(Con't)

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STAR[®] PIPE PRODUCTS



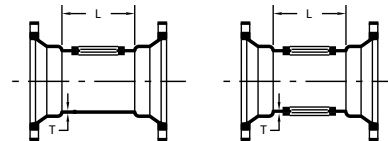
Compact MJ Fittings

ANSI/AWWA C153/A21.53

MJ x MJ TEES (Con't)					
NOM. SIZE	T	T1	H	J	WT (LBS.)
12 x 6	0.42	0.36	5.00	8.75	110
12 x 8	0.42	0.38	6.50	8.75	125
12 x 10	0.42	0.40	7.50	8.75	140
12 x 12	0.42	0.42	8.75	8.75	160
14 x 6	0.47	0.36	6.50	10.50	182
14 x 8	0.47	0.38	7.50	10.50	190
14 x 10	0.47	0.40	8.50	10.50	206
14 x 12	0.47	0.42	9.50	10.50	221
14 x 14	0.47	0.47	10.50	10.50	251
16 x 6	0.50	0.36	6.50	11.50	218
16 x 8	0.50	0.38	7.50	11.50	223
16 x 10	0.50	0.40	8.50	11.50	264
16 x 12	0.50	0.42	9.50	11.50	280
16 x 14	0.50	0.47	10.50	11.50	316
16 x 16	0.50	0.50	11.50	11.50	322
18 x 6	0.54	0.36	6.50	12.50	275
18 x 8	0.54	0.38	7.50	12.50	295
18 x 10	0.54	0.40	8.50	12.50	315
18 x 12	0.54	0.42	9.50	12.50	335
18 x 14	0.54	0.47	10.50	12.50	380
18 x 16	0.54	0.50	11.50	12.50	405
18 x 18	0.54	0.54	12.50	12.50	435
20 x 4	0.57	0.34	5.50	14.00	295
20 x 6	0.57	0.36	6.50	14.00	315
20 x 8	0.57	0.38	8.00	14.00	345
20 x 10	0.57	0.40	9.00	14.00	370
20 x 12	0.57	0.42	10.00	14.00	395
20 x 14	0.57	0.47	11.00	14.00	440
20 x 16	0.57	0.50	12.00	14.00	465
20 x 18	0.57	0.54	13.00	14.00	505
20 x 20	0.57	0.57	14.00	14.00	535
24 x 4	0.61	0.34	6.00	16.00	398
24 x 6	0.61	0.36	7.00	16.00	415
24 x 8	0.61	0.38	8.00	16.00	445
24 x 10	0.61	0.40	9.00	16.00	470
24 x 12	0.61	0.42	10.00	16.00	500
24 x 14	0.61	0.47	11.00	16.00	550
24 x 16	0.61	0.50	12.00	16.00	580
24 x 18	0.61	0.54	13.00	16.00	625
24 x 20	0.61	0.57	14.00	16.00	660
24 x 24	0.61	0.61	16.00	16.00	720
30 x 6	0.66	0.36	8.00	20.00	685
30 x 8	0.66	0.38	8.50	20.00	739
30 x 10	0.66	0.40	10.00	20.00	760
30 x 12	0.66	0.42	10.00	20.00	830
30 x 14	0.66	0.47	11.00	20.00	880
30 x 16	0.66	0.50	12.50	20.00	878
30 x 18	0.66	0.54	14.00	20.00	1039
30 x 20	0.66	0.57	15.00	20.00	1000
30 x 24	0.66	0.61	21.00	22.00	1389
30 x 30	0.66	0.66	20.00	20.00	1323
36 x 4	0.74	0.34	7.00	23.50	924
36 x 6	0.74	0.36	8.00	23.50	1045

(Con't)➔

MJ x MJ TEES (Con't)					
NOM. SIZE	T	T1	H	J	WT (LBS.)
36 x 8	0.74	0.38	9.00	23.50	1095
36 x 10	0.74	0.40	9.00	23.50	1024
36 x 12	0.74	0.42	10.00	23.50	1072
36 x 14	0.74	0.47	11.00	23.50	1135
36 x 16	0.74	0.50	12.50	23.50	1210
36 x 18	0.74	0.54	13.00	23.50	1251
36 x 20	0.74	0.57	15.00	23.50	1350
36 x 24	0.74	0.61	16.00	23.50	1550
36 x 30	0.74	0.66	20.00	23.50	1986
36 x 36	0.74	0.74	23.50	23.50	2072
42 x 6	0.82	0.36	9.00	27.50	1366
42 x 8	0.82	0.38	9.00	27.50	1369
42 x 12	0.82	0.42	14.00	27.50	1885
42 x 16	0.82	0.50	13.00	27.50	1929
42 x 18	0.82	0.54	16.00	27.50	2072
42 x 20	0.82	0.57	18.00	27.50	1947
42 x 24	0.82	0.61	20.00	27.50	2270
42 x 30	0.82	0.66	22.00	29.50	2608
42 x 36	0.82	0.74	30.00	30.00	3000
42 x 42	0.82	0.82	30.00	30.00	3175
48 x 6	0.90	0.36	10.00	32.00	1949
48 x 12	0.90	0.42	14.00	32.00	2535
48 x 16	0.90	0.50	13.00	32.00	2657
48 x 18	0.90	0.54	16.00	32.00	2293
48 x 24	0.90	0.61	23.00	32.00	2870
48 x 30	0.90	0.66	23.00	32.00	3050
48 x 36	0.90	0.74	33.50	32.25	3900
48 x 42	0.90	0.82	33.50	33.50	4100
48 x 48	0.90	0.90	33.50	33.50	4250
54 x 20	1.05	0.57	23.00	37.00	3486
54 x 24	1.05	0.61	23.00	37.00	3505
54 x 30	1.05	0.66	29.30	37.00	4162
54 x 36	1.05	0.77	29.30	37.00	4257
54 x 42	1.05	0.88	31.00	39.00	4610
60 x 30	1.10	0.66	29.50	39.00	4648
64 x 64	1.16	1.16	43.30	43.30	7454



MJ x MJ TAPPED TEES / CROSSES (2" TAP)				
NOM. SIZE	T	L	MAX TAP	WT (LBS.)
3	0.33	6.00	2 ½	18
4	0.34	6.00	3	25
6	0.36	6.00	3	42
8	0.38	6.00	3	55
10	0.40	6.00	3	70
12	0.42	6.00	3	85
16	0.50	6.00	3	164
24	0.61	8.00	3	325

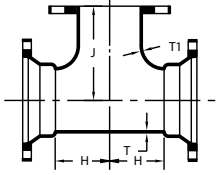
Threads in Accordance with ANSI/ASME B1.20.1

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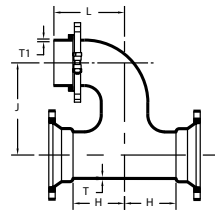
Compact MJ Fittings

ANSI/AWWA C153/A21.53

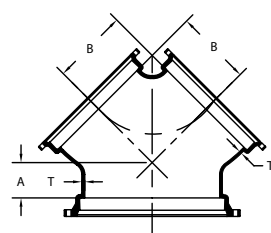


MJ x FE TEES					
NOM. SIZE	T	T1	H	J	WT (LBS.)
3 x 3	0.33	0.33	3.00	5.50	30
4 x 2	0.52	0.39	4.80	4.80	53
4 x 3	0.34	0.33	3.50	6.50	34
4 x 4	0.34	0.34	4.00	6.50	40
6 x 3	0.36	0.33	3.50	8.00	50
6 x 4	0.36	0.34	4.00	8.00	65
6 x 6	0.36	0.36	5.00	8.00	62
8 x 4	0.38	0.34	4.00	9.00	65
8 x 6	0.38	0.36	5.00	9.00	78
8 x 8	0.38	0.38	6.50	9.00	88
10 x 4	0.40	0.34	4.00	11.00	90
10 x 6	0.40	0.36	5.00	11.00	106
10 x 8	0.40	0.38	6.50	11.00	114
10 x 10	0.40	0.40	7.50	11.00	126
12 x 4	0.42	0.34	4.00	12.00	118
12 x 6	0.42	0.36	5.00	12.00	133
12 x 8	0.42	0.38	6.50	12.00	134
12 x 10	0.42	0.40	7.50	12.00	145
12 x 12	0.42	0.42	8.75	12.00	170
14 x 6	0.47	0.36	6.50	14.00	185
14 x 8	0.47	0.38	7.50	14.00	206
14 x 10	0.47	0.40	8.50	14.00	244
14 x 12	0.47	0.42	9.50	14.00	284
14 x 14	0.47	0.47	10.50	14.00	305
16 x 6	0.50	0.36	6.50	15.00	207
16 x 8	0.50	0.38	7.50	15.00	260
16 x 10	0.50	0.40	8.50	15.00	287
16 x 12	0.50	0.42	9.50	15.00	312
16 x 14	0.50	0.47	10.50	15.00	348
16 x 16	0.50	0.50	11.50	15.00	374
18 x 6	0.54	0.36	6.50	15.50	325
18 x 8	0.54	0.38	7.50	15.50	351
18 x 12	0.54	0.42	9.50	15.50	358
18 x 18	0.54	0.54	12.50	16.50	445
20 x 4	0.57	0.34	6.50	17.00	321
20 x 6	0.57	0.36	6.50	17.00	360
20 x 8	0.57	0.38	8.00	17.00	339
20 x 10	0.57	0.40	9.00	17.00	370
24 x 6	0.61	0.36	7.00	19.00	432
24 x 8	0.61	0.38	8.00	19.00	472
24 x 12	0.61	0.42	10.00	19.00	542
24 x 16	0.61	0.50	12.00	19.00	622
24 x 18	0.61	0.54	13.00	22.00	680
24 x 24	0.61	0.61	16.00	22.00	950
30 x 6	0.66	0.36	8.00	23.00	692
30 x 8	0.66	0.38	8.50	23.00	719
30 x 10	0.66	0.40	9.50	23.00	764
30 x 12	0.66	0.42	10.00	23.00	796

MJ x FE TEES (Con't)					
NOM. SIZE	T	T1	H	J	WT (LBS.)
30 x 16	0.66	0.50	12.50	23.00	909
30 x 24	0.66	0.61	16.00	25.00	1290
30 x 30	0.66	0.66	20.00	25.00	1355
36 x 6	0.74	0.36	8.00	26.00	980
36 x 14	0.74	0.47	11.10	26.00	1160
36 x 16	0.74	0.50	12.50	26.00	1241
36 x 20	0.74	0.57	15.00	26.00	1381
42 x 6	0.82	0.36	9.00	30.00	1384
42 x 24	0.82	0.61	20.00	30.00	2130
42 x 42	0.82	0.82	30.00	31.00	3878
48 x 20	0.90	0.57	22.00	34.00	2706
48 x 30	0.90	0.66	23.00	34.00	2872
48 x 48	0.90	0.90	33.50	34.00	4038
54 x 30	1.05	0.66	29.30	37.00	4179



MJ x SWIVEL PARALLEL TEE W/ SWIVEL GLAND						
NOM. SIZE	T	T1	H	J	L	WT (LBS.)
6 x 6	0.36	0.36	8.00	12.50	10.00	83
8 x 6	0.38	0.36	9.00	13.50	11.00	105
10 x 6	0.40	0.36	11.00	14.00	13.00	125
12 x 6	0.42	0.36	12.00	16.00	14.00	235



MJ x MJ TRUE WYES					
NOM. SIZE	T	T1	A	B	WT (LBS.)
20 x 20 x 20	0.57	0.57	7.50	15.00	550
24 x 14 x 14	0.61	0.47	9.00	11.50	395
30 x 24 x 24	0.66	0.61	8.00	17.00	815
30 x 30 x 30	0.66	0.66	10.00	21.50	1380

(Con't)➔

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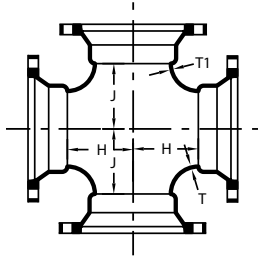
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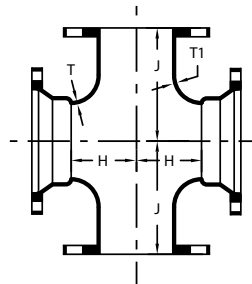
Compact MJ Fittings

ANSI/AWWA C153/A21.53



MJ CROSSES					
NOM. SIZE	T	T1	H	J	WT (LBS.)
3 x 3	0.33	0.33	3.00	3.00	35
4 x 3	0.34	0.33	3.50	4.00	38
4 x 4	0.34	0.34	4.00	4.00	40
6 x 3	0.36	0.33	3.50	5.00	48
6 x 4	0.36	0.34	4.00	5.00	57
6 x 6	0.36	0.36	5.00	5.00	80
8 x 4	0.38	0.34	4.00	6.00	68
8 x 6	0.38	0.36	5.00	6.00	74
8 x 8	0.38	0.38	6.00	6.00	105
10 x 4	0.40	0.34	4.00	7.00	112
10 x 6	0.40	0.36	5.00	7.00	119
10 x 8	0.40	0.38	6.50	7.00	124
10 x 10	0.40	0.40	7.00	7.00	145
12 x 4	0.42	0.34	4.00	8.50	119
12 x 6	0.42	0.36	5.00	8.50	126
12 x 8	0.42	0.38	6.00	8.50	149
12 x 10	0.42	0.40	7.50	8.50	179
12 x 12	0.42	0.42	8.50	8.50	200
14 x 6	0.47	0.36	6.50	10.50	200
14 x 8	0.47	0.38	7.50	10.50	228
14 x 10	0.47	0.40	8.50	10.50	255
14 x 12	0.47	0.42	9.50	10.50	269
14 x 14	0.47	0.47	10.50	10.50	335
16 x 6	0.50	0.36	6.50	11.50	240
16 x 8	0.50	0.38	7.50	11.50	260
16 x 10	0.50	0.40	8.50	11.50	317
16 x 12	0.50	0.42	9.50	11.50	320
16 x 16	0.50	0.50	11.50	11.50	385
18 x 12	0.54	0.42	9.50	12.50	348
18 x 18	0.54	0.54	12.50	12.50	478
20 x 8	0.57	0.38	8.00	14.00	379
20 x 10	0.57	0.40	9.00	14.00	395
20 x 12	0.57	0.42	10.00	14.00	413
20 x 16	0.57	0.50	12.00	14.00	527
20 x 18	0.57	0.54	13.00	14.00	554
20 x 20	0.57	0.57	14.00	14.00	590
24 x 6	0.61	0.36	7.00	16.00	481
24 x 8	0.61	0.38	8.00	16.00	500
24 x 10	0.61	0.40	9.00	16.00	499
24 x 12	0.61	0.42	10.00	16.00	529
24 x 16	0.61	0.50	12.00	16.00	641
24 x 18	0.61	0.54	13.00	16.00	868
24 x 20	0.61	0.57	14.00	16.00	757
24 x 24	0.61	0.61	16.00	16.00	881

MJ CROSSES (Con't)					
NOM. SIZE	T	T1	H	J	WT (LBS.)
30 x 12	0.66	0.42	10.00	20.00	882
30 x 20	0.66	0.57	15.00	20.00	1074
30 x 24	0.66	0.61	16.00	20.00	1246
30 x 30	0.66	0.66	22.00	22.00	1691
36 x 16	0.74	0.50	12.50	23.50	1262
36 x 24	0.74	0.61	16.00	23.50	1785
36 x 36	0.74	0.74	26.00	26.00	2811
42 x 24	0.82	0.61	20.00	27.50	2668
42 x 30	0.82	0.66	22.00	29.50	2950
42 x 36	0.82	0.74	30.00	30.00	3607
42 x 42	0.82	0.82	30.00	30.00	3725
48 x 20	0.90	0.57	20.00	32.00	2636
48 x 24	0.90	0.61	23.00	32.00	2921
48 x 30	0.90	0.66	23.00	32.00	4505
48 x 36	0.90	0.74	33.50	32.25	4700
48 x 48	0.90	0.90	33.50	33.50	5827
54 x 54	1.05	1.05	35.80	35.80	5844



MJ x FLANGE CROSS					
NOM. SIZE	T	T1	H	J	WT (LBS.)
6 x 6	0.36	0.36	5.00	8.00	84
8 x 6	0.38	0.36	5.00	9.00	100
8 x 8	0.38	0.38	6.50	9.00	130
10 x 10	0.40	0.40	7.50	11.00	185
12 x 6	0.42	0.36	5.00	12.00	140
12 x 8	0.42	0.38	6.50	12.00	175
12 x 10	0.42	0.40	7.50	12.00	206
12 x 12	0.42	0.42	8.75	12.00	256
16 x 12	0.50	0.42	9.50	15.00	371

(Con't)➔

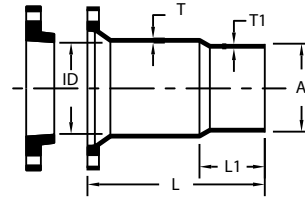
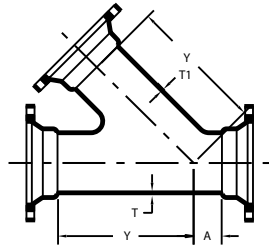
UCAT22.01
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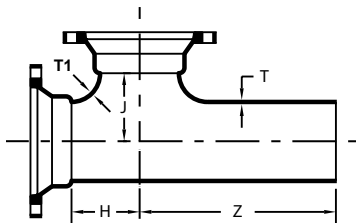
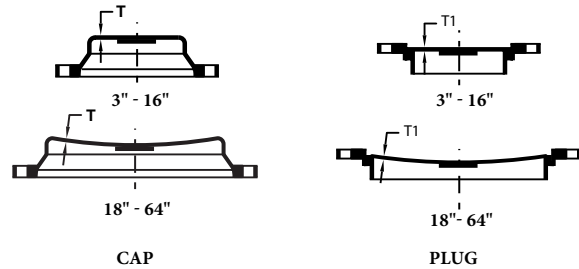
Compact MJ Fittings

ANSI/AWWA C153/A21.53



45° MJ LATERALS					
NOM. SIZE	T	T1	A	Y	WT (LBS.)
3 x 3	0.33	0.33	2.50	8.50	36
4 x 3	0.34	0.33	2.50	8.50	40
4 x 4	0.34	0.34	2.50	8.50	41
6 x 4	0.36	0.34	1.50	11.00	53
6 x 6	0.36	0.36	3.00	12.50	85
8 x 3	0.38	0.33	0.50	13.00	74
8 x 4	0.38	0.34	0.50	13.00	77
8 x 6	0.38	0.36	2.00	14.50	90
8 x 8	0.38	0.38	3.50	16.00	102
10 x 4	0.40	0.34	0.00	15.00	150
10 x 6	0.40	0.36	1.00	16.00	158
10 x 8	0.40	0.38	2.50	17.00	172
10 x 10	0.40	0.40	3.50	19.00	210
12 x 4	0.42	0.34	0.00	16.50	150
12 x 6	0.42	0.36	1.50	18.50	186
12 x 8	0.42	0.38	1.50	18.50	188
12 x 10	0.42	0.40	3.00	20.00	250
12 x 12	0.42	0.42	4.50	22.50	272
14 x 6	0.47	0.36	0.00	19.50	245
14 x 8	0.47	0.38	1.50	21.00	279
14 x 10	0.47	0.40	3.00	22.50	316
14 x 14	0.47	0.47	6.00	25.00	474
16 x 4	0.50	0.34	0.00	21.00	272
16 x 6	0.50	0.36	0.00	21.00	300
16 x 8	0.50	0.38	0.50	22.50	349
16 x 10	0.50	0.40	2.00	24.00	370
16 x 12	0.50	0.42	3.50	25.00	453
16 x 14	0.50	0.47	5.00	26.50	500
16 x 16	0.50	0.50	6.50	28.00	575

MJ x PE CUTTING IN SLEEVE W/ OVER SIZE GLAND							
NOM. SIZE	ID	T	T1	A	L	L1	WT (LBS.)
4	5.10	0.36	0.34	4.80	20.00	9.00	50
6	7.20	0.38	0.36	6.90	20.00	9.00	62
8	9.40	0.40	0.38	9.05	20.00	9.00	70
10	11.50	0.42	0.40	11.10	20.00	9.00	105
12	13.60	0.47	0.42	13.20	20.00	9.00	128
16	17.94	0.54	0.50	17.40	20.00	9.00	275



MJ x PE x MJ TEES						
NOM. SIZE	T	T1	H	J	Z	WT (LBS.)
6 x 4	0.36	0.34	4.00	5.00	12.00	49
6 x 6	0.36	0.36	5.00	5.00	12.00	57
8 x 6	0.38	0.36	5.50	6.50	11.50	74
8 x 8	0.38	0.38	6.50	6.50	15.00	91
10 x 10	0.40	0.40	7.50	7.50	13.00	115
12 x 12	0.42	0.42	8.75	8.75	14.50	155
16 x 16	0.50	0.50	11.50	11.50	20.63	337

MJ CAPS & PLUGS (SOLID OR TAPPED)					
NOM. SIZE	T	T1	MAX. TAP	WT (LBS.)	
				PLUGS	CAPS
3	0.46	0.50	2	9	8
4	0.34	0.40	2	13	9
6	0.42	0.42	2	20	15
8	0.44	0.44	2	30	23
10	0.46	0.46	2	39	33
12	0.48	0.48	2	52	44
14	0.55	0.55	2 1/2	93	64
16	0.56	0.56	2 1/2	116	79
18	0.54	0.54	2 1/2	135	121
20	0.57	0.57	2 1/2	161	140
24	0.61	0.65	3	239	199
30	0.70	0.66	4	387	361
36	1.03	1.00	4	689	635
42	1.13	1.13	4	965	896
48	1.43	1.25	4	1291	1329
54	2.16	2.19	6	2050	2167
60	2.25	2.38	6	2446	2571
64	2.38	2.56	6	2850	3018

Threads in Accordance with ANSI/ASME B1.20.1

STAR[®] PIPE PRODUCTS



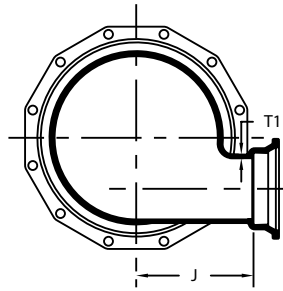
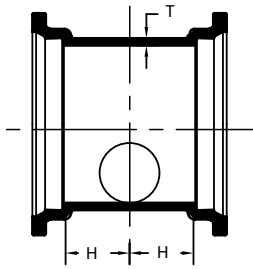
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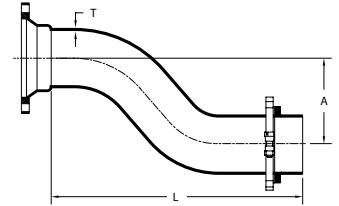
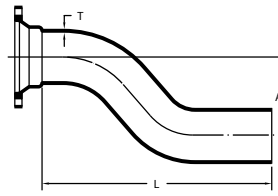
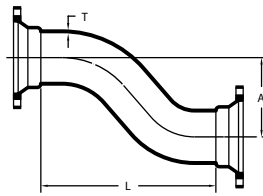


Compact MJ Fittings

ANSI/AWWA C153/A21.53



MJ x MJ TANGENTIAL TEES					
NOM. SIZE	T	T1	H	J	WT (LBS.)
16 x 6	0.50	0.38	6.50	11.50	225
16 x 12	0.50	0.42	9.50	11.50	300
18 x 6	0.54	0.36	6.50	12.50	285
20 x 6	0.57	0.36	6.50	14.00	321
24 x 6	0.61	0.36	7.00	16.00	455
24 x 8	0.61	0.38	8.00	16.00	456
24 x 12	0.61	0.42	10.00	16.00	540
36 x 8	0.74	0.38	9.00	23.50	1027
48 x 8	0.90	0.38	10.00	30.00	1820
48 x 12	0.90	0.42	14.00	30.00	2116



MJ OFFSETS			MJ x MJ		MJ x PE		MJ x SWIVEL W/ SWIVEL GLAND	
NOM. SIZE	T	A	L	WT (LBS.)	L	WT (LBS.)	L	WT (LBS.)
3 x 6	0.33	6.00	9.00	22	---	---	---	---
3 x 12	0.33	12.00	15.00	30	---	---	---	---
3 x 18	0.33	18.00	21.00	39	---	---	---	---
3 x 24	0.33	24.00	27.00	47	---	---	---	---
4 x 6	0.34	6.00	10.00	29	15.50	29	---	---
4 x 12	0.34	12.00	18.00	42	23.50	43	---	---
4 x 18	0.34	18.00	22.00	51	27.50	52	---	---
4 x 24	0.34	24.00	28.00	63	33.50	64	---	---
6 x 6	0.36	6.00	12.00	48	17.50	49	18.00	62
6 x 12	0.36	12.00	18.00	65	23.50	66	30.00	88
6 x 18	0.36	18.00	24.00	83	29.50	84	---	---
6 x 24	0.36	24.00	30.00	100	35.50	102	41.00	121
8 x 6	0.38	6.00	13.00	68	18.50	69	---	---
8 x 12	0.38	12.00	19.00	92	24.50	94	---	---
8 x 18	0.38	18.00	25.00	116	30.50	119	---	---
8 x 24	0.38	24.00	30.00	139	35.50	142	---	---
10 x 6	0.40	6.00	15.00	100	20.50	99	---	---
10 x 12	0.40	12.00	21.00	131	26.50	131	---	---
10 x 18	0.40	18.00	27.00	163	32.50	164	---	---
10 x 24	0.40	24.00	33.00	194	38.50	196	---	---
12 x 6	0.42	6.00	17.00	133	22.50	132	---	---
12 x 12	0.42	12.00	23.00	171	28.50	171	---	---
12 x 18	0.42	18.00	27.00	204	32.50	205	---	---
12 x 24	0.42	24.00	35.00	250	40.50	252	---	---
16 x 12	0.50	12.00	26.00	320	---	---	---	---
16 x 18	0.50	18.00	36.00	402	---	---	---	---
16 x 24	0.50	24.00	36.00	433	---	---	---	---
20 x 12	0.57	12.00	28.00	486	---	---	---	---
20 x 18	0.57	18.00	38.00	603	---	---	---	---

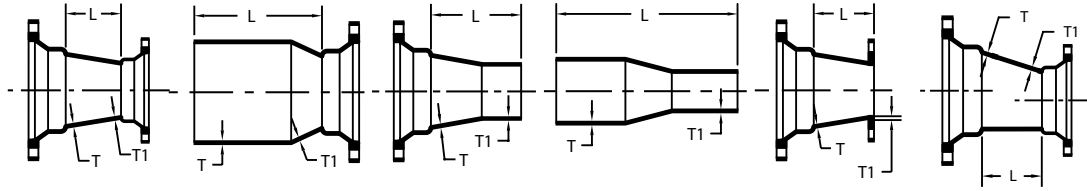
STAR[®] PIPE PRODUCTS

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Compact MJ Fittings

ANSI/AWWA C153/A21.53



REDUCERS		MJ x MJ		SEB		LEB		PE x PE		MJ x FE		ECCENTRIC		
NOM. SIZE	T	T1	L	WT (LBS.)	L	WT (LBS.)	L	WT (LBS.)	L	WT (LBS.)	L	WT (LBS.)	L	WT (LBS.)
4 x 3	0.34	0.33	3.00	16	8.50	17	8.50	16	14.00	14	5.00	19	3.00	15
6 x 2	0.36	0.30	---	---	---	---	---	---	---	---	7.00	23	---	---
6 x 3	0.36	0.33	5.00	22	10.62	24	10.50	19	16.00	19	6.00	25	---	---
6 x 4	0.36	0.34	4.00	24	9.50	23	9.50	23	15.00	22	5.00	30	4.00	24
8 x 4	0.38	0.34	5.00	32	10.50	30	10.50	34	16.00	30	7.00	38	5.00	31
8 x 6	0.38	0.36	4.00	36	9.50	35	9.50	32	15.00	33	6.00	41	---	---
10 x 4	0.40	0.34	7.00	46	12.50	44	12.50	43	---	---	---	---	---	---
10 x 6	0.40	0.36	5.00	47	10.50	46	10.50	46	16.00	46	7.00	54	5.00	46
10 x 8	0.40	0.38	4.00	50	9.50	49	9.50	50	15.00	47	6.00	62	4.00	48
12 x 4	0.42	0.34	9.00	58	14.50	60	14.50	57	20.00	58	11.00	66	---	---
12 x 6	0.42	0.36	7.00	60	12.50	53	12.50	57	18.00	57	9.00	69	7.00	60
12 x 8	0.42	0.38	5.00	60	10.50	61	10.50	59	16.00	54	7.00	82	5.00	59
12 x 10	0.42	0.40	4.00	64	9.50	53	9.50	58	15.00	54	7.00	85	4.00	61
14 x 6	0.47	0.36	9.00	110	16.90	100	14.50	105	---	---	---	---	---	---
14 x 8	0.47	0.38	7.00	122	14.90	99	12.40	98	20.30	91	---	---	---	---
14 x 10	0.47	0.40	5.00	120	12.90	96	10.40	92	18.30	88	8.00	112	---	---
14 x 12	0.47	0.42	4.00	132	11.90	90	9.40	92	17.30	89	---	---	4.00	94
16 x 6	0.50	0.36	11.00	120	21.00	125	16.50	144	24.30	93	13.00	128	---	---
16 x 8	0.50	0.38	9.00	118	18.00	124	14.50	136	22.30	119	11.00	133	9.00	119
16 x 10	0.50	0.40	7.00	118	15.00	124	12.50	125	20.50	119	9.00	136	9.00	129
16 x 12	0.50	0.42	5.00	115	12.90	122	10.50	116	18.30	99	7.00	145	5.00	115
16 x 14	0.50	0.47	4.00	131	12.00	133	12.00	135	19.70	129	---	---	---	---
18 x 8	0.54	0.38	13.00	201	20.00	170	19.50	195	---	---	16.00	190	13.00	165
18 x 10	0.54	0.40	10.00	196	18.00	165	17.40	185	25.50	160	12.00	179	---	---
18 x 12	0.54	0.42	7.00	180	15.50	150	14.00	150	19.50	150	12.00	198	---	---
18 x 14	0.54	0.47	6.00	200	15.00	175	15.00	200	---	---	---	---	6.00	168
18 x 16	0.54	0.50	5.00	196	12.50	170	12.50	192	---	---	---	---	5.00	174
20 x 6	0.57	0.36	---	---	24.00	182	---	---	---	---	18.00	203	---	---
20 x 8	0.57	0.38	16.00	227	24.00	191	---	---	---	---	---	---	---	---
20 x 10	0.57	0.40	16.00	220	22.12	200	19.00	210	---	---	---	---	---	---
20 x 12	0.57	0.42	12.00	227	17.50	170	16.00	205	21.50	164	14.00	234	8.00	183
20 x 14	0.57	0.47	10.00	200	18.00	190	17.90	205	---	---	---	---	---	---
20 x 16	0.57	0.50	7.00	231	13.50	185	13.50	200	---	---	9.00	237	8.00	217
20 x 18	0.57	0.54	4.00	225	12.00	200	12.00	215	---	---	---	---	8.00	235
24 x 6	0.61	0.36	22.00	279	---	---	---	---	---	---	22.00	284	---	---
24 x 8	0.61	0.38	20.00	263	---	---	---	---	22.50	201	---	---	20.00	287
24 x 10	0.61	0.40	18.00	286	21.50	235	---	---	---	---	20.00	306	18.00	287
24 x 12	0.61	0.42	16.00	263	21.50	275	21.00	290	22.50	213	18.00	318	16.00	285
24 x 14	0.61	0.47	14.00	310	22.00	310	21.90	315	25.00	238	16.00	323	14.00	298
24 x 16	0.61	0.50	13.00	279	21.00	285	17.50	285	23.10	323	---	---	12.00	299
24 x 18	0.61	0.54	10.00	284	18.00	300	18.00	310	21.00	228	---	---	---	---
24 x 20	0.61	0.57	7.00	328	15.00	276	13.50	275	24.00	271	---	---	7.00	370
30 x 12	0.66	0.42	30.00	530	---	---	39.00	565	---	---	---	---	---	---
30 x 14	0.66	0.47	30.00	585	---	---	39.00	598	---	---	---	---	30.00	583
30 x 16	0.66	0.50	30.00	633	39.00	565	39.00	623	48.00	690	---	---	30.00	613
30 x 18	0.66	0.54	28.00	658	37.00	654	37.00	635	---	---	---	---	28.00	800
30 x 20	0.66	0.57	24.00	628	33.00	590	33.00	603	---	---	---	---	24.00	630
30 x 24	0.66	0.61	10.00	478	24.50	536	24.50	526	---	---	---	---	10.00	570
36 x 4	0.74	0.34	36.00	712	---	---	---	---	---	---	---	---	---	---

STAR[®] PIPE PRODUCTS

(Cont)➔

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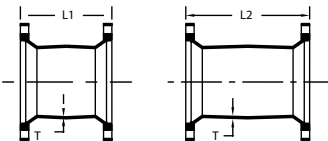


Compact MJ Fittings

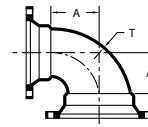
ANSI/AWWA C153/A21.53

STAR® PIPE PRODUCTS

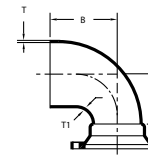
REDUCERS (Con't)			MJ x MJ		SEB		LEB		PE x PE		MJ x FE		★ ECCENTRIC	
NOM. SIZE	T	TI	L	WT (LBS.)	L	WT (LBS.)	L	WT (LBS.)	L	WT (LBS.)	L	WT (LBS.)	L	WT (LBS.)
36 x 6	0.74	0.36	36.00	731	---	---	---	---	---	---	---	---	---	---
36 x 8	0.74	0.38	36.00	750	---	---	---	---	---	---	---	---	36.00	7.52
36 x 10	0.74	0.40	36.00	775	---	---	---	---	---	---	---	---	---	---
36 x 12	0.74	0.42	36.00	1058	---	---	---	---	---	---	---	---	36.00	797
36 x 16	0.74	0.50	40.00	1016	27.00	595	45.00	901	---	---	---	---	---	---
36 x 18	0.74	0.54	38.00	983	37.00	800	---	---	---	---	---	---	38.00	963
36 x 20	0.74	0.57	36.00	1165	45.00	850	45.00	950	54.00	876	---	---	---	---
36 x 24	0.74	0.61	19.00	822	33.12	746	33.00	810	42.00	747	21.00	807	19.00	765
36 x 30	0.74	0.66	15.50	811	24.62	788	24.50	758	33.50	667	17.50	846	15.50	811
42 x 24	0.82	0.61	40.00	1356	49.00	1204	49.00	1320	58.00	1210	42.00	1410	40.00	1782
42 x 30	0.82	0.66	20.00	1083	29.12	1150	29.00	1015	38.00	889	---	---	20.00	1435
42 x 36	0.82	0.74	15.50	1114	24.62	962	24.50	1013	33.50	875	---	---	15.50	1114
48 x 20	0.90	0.57	40.00	1580	49.00	1320	---	---	---	---	---	---	---	---
48 x 24	0.90	0.61	40.00	1761	---	---	---	---	---	---	---	---	40.00	1800
48 x 30	0.90	0.66	40.00	1779	49.00	1594	49.00	1711	58.00	1554	---	---	40.00	1960
48 x 36	0.90	0.74	28.00	1641	37.00	1456	37.00	1540	46.00	1375	---	---	28.00	1668
48 x 42	0.90	0.82	15.50	1426	24.50	1241	24.50	1275	33.50	1112	---	---	15.50	1470
54 x 36	1.05	0.74	27.50	1916	37.25	1754	---	---	---	---	---	---	---	---
54 x 42	1.05	0.82	19.25	1817	29.25	1669	---	---	---	---	---	---	---	---
60 x 48	1.10	0.90	18.00	2038	29.50	1974	---	---	---	---	---	---	---	---



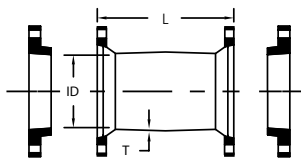
MJ SLEEVES					
NOM. SIZE	T	SHORT SLEEVES		LONG SLEEVES	
		L1	WT (LBS.)	L2	WT (LBS.)
2	0.30	7.50	10	12.00	11
3	0.33	7.50	12	12.00	17
4	0.34	7.50	15	12.00	22
6	0.36	7.50	23	12.00	33
8	0.38	7.50	31	12.00	45
10	0.40	7.50	45	12.00	63
12	0.42	7.50	57	12.00	79
14	0.47	9.50	94	15.00	128
16	0.50	9.50	118	15.00	159
18	0.54	9.00	145	15.00	200
20	0.57	9.00	173	15.00	236
24	0.61	9.00	226	15.00	306
30	0.66	15.00	472	24.00	634
36	0.74	15.00	673	24.00	889
42	0.82	15.00	887	24.00	1114
48	0.90	15.00	1059	24.00	1406
54	1.05	21.00	1534	24.00	1687
60	1.10	21.00	1758	24.00	1930
64	1.16	21.00	1974	24.00	2167



MJ x MJ RED 90°				
Nom. SIZE	T	TI	A	WT (LBS.)
20 x 16	0.57	0.50	15.00	348
48 x 36	0.90	0.74	33.25	2500



PE x MJ RED 90°					
Nom. SIZE	T	TI	A	B	WT (LBS.)
48 x 36	0.90	0.74	33.25	42.25	2643



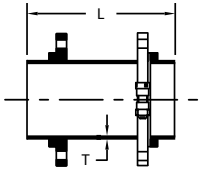
MJ DUAL PURPOSE SLEEVES W/ OVERSIZE GLANDS					
NOM. SIZE	PIPE SIZE	T	L	(I.D.)	WT (LBS.)
4	4.80 - 5.00	0.34	12.00	5.10	20
6	6.90 - 7.10	0.36	12.00	7.20	36
8	9.05 - 9.30	0.38	12.00	9.40	46
10	11.10 - 11.40	0.40	12.00	11.50	62
12	13.20 - 13.50	0.42	12.00	13.60	76
16	17.40 - 17.80	0.50	15.00	17.94	172

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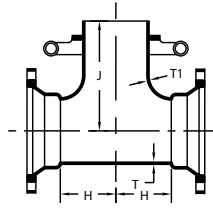


Compact MJ Fittings

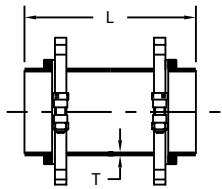
ANSI/AWWA C153/A21.53



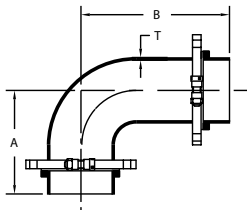
SWIVEL x SOLID HYDRANT ADAPTERS W/ SWIVEL GLAND			
NOM. SIZE	T	L	WT (LBS.)
4 x 13	0.34	13.00	32
6 x 13	0.36	11.50	47
6 x 18	0.36	18.00	60
6 x 24	0.36	24.00	71
6 x 36	0.36	36.00	94
6 x 48	0.36	48.00	122
8 x 13	0.38	13.00	54
8 x 18	0.38	18.00	80
8 x 24	0.38	24.00	97
8 x 48	0.38	48.00	161
12 x 13	0.42	13.00	113



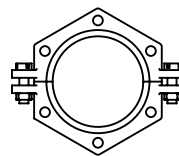
MJ x SWIVEL HYDRANT TEES W/ SWIVEL GLAND					
NOM. SIZE	T	T1	H	J	WT (LBS.)
6 x 4	0.36	0.34	4.00	10.00	54
6 x 6	0.36	0.36	5.00	10.25	65
8 x 4	0.38	0.34	4.00	11.00	69
8 x 6	0.38	0.36	5.00	11.25	85
8 x 8	0.38	0.38	6.50	11.50	100
10 x 4	0.40	0.34	4.00	12.50	86
10 x 6	0.40	0.36	5.00	12.75	105
10 x 8	0.40	0.38	6.50	12.75	118
12 x 4	0.42	0.34	4.00	13.50	104
12 x 6	0.42	0.36	5.00	13.75	126
12 x 8	0.42	0.38	6.50	13.75	128
14 x 6	0.47	0.36	6.50	15.00	211
16 x 4	0.50	0.34	5.50	16.00	207
16 x 6	0.50	0.36	6.50	16.00	279
18 x 6	0.54	0.36	6.50	18.00	278
20 x 6	0.57	0.36	6.50	18.50	358
20 x 8	0.57	0.38	8.00	18.50	362
24 x 6	0.61	0.36	7.00	19.00	430
24 x 8	0.61	0.38	8.00	19.00	459
36 x 6	0.74	0.36	8.00	22.50	980
42 X 6	0.82	0.36	9.00	30.00	1371



SWIVEL x SWIVEL HYDRANT ADAPTERS W/ 2 SWIVEL GLANDS			
NOM. SIZE	T	L	WT (LBS.)
6 x 12	0.36	12.00	50
6 x 18	0.36	18.00	62
6 x 24	0.36	24.00	74



SWIVEL x SWIVEL HYDRANT ELL W/ 2 SWIVEL GLANDS				
NOM. SIZE	T	A	B	WT (LBS.)
6	0.36	10.50	16.00	71



SWIVEL GLANDS		
NOM. SIZE	WT (LBS.)	T-HEAD BOLTS
4	8	(2) 3/4" x 3 1/2"
6	11	(2) 3/4" x 3 1/2"
8	13	(2) 3/4" x 3 1/2"
12	25	(2) 3/4" x 4"

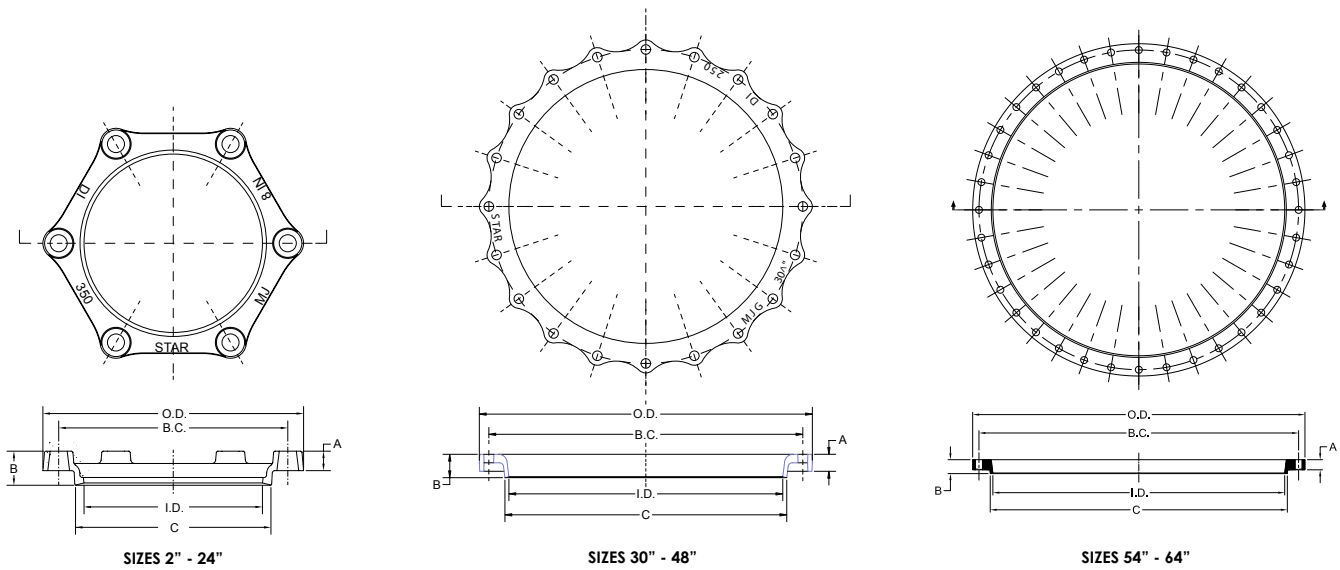
STAR[®] PIPE PRODUCTS



GLANDS, GASKETS, BOLTS & NUTS

GENERAL SPECIFICATION

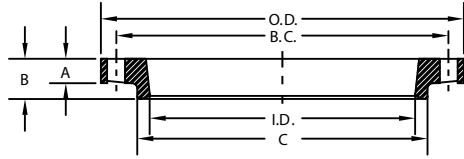
- MATERIAL:** Ductile Iron per ASTM A536
- PRESSURE:** 350 PSI rating for 2" - 24" sizes, 250 PSI rating for 30" - 48" sizes and 150 PSI rating for 54" - 64" sizes
- TESTING:** In accordance with ANSI/AWWA C111/A21.11, UL and FM requirements
- DIMENSIONS:** Are in accordance with ANSI/AWWA C111/A21.11, UL and FM requirements and are in inches unless noted otherwise
- WEIGHTS:** Are in pounds, unless noted otherwise and do not include accessories
- COATING:** Asphaltic seal coat is in accordance with ANSI/AWWA C104/A21.4 unless otherwise specified.
- APPROVALS:** Compact Glands 3" - 12" Underwrites Laboratories & ULC Listed. Factory Mutual approved 3"-16".



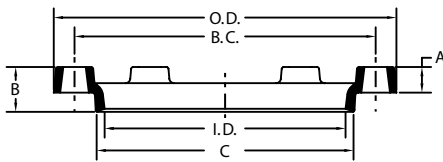
MJ COMPACT GLANDS									
NOM. SIZE	O.D.	A	B	C	I.D.	B.C.	BOLT HOLE	BOLT QTY	WT (LBS.)
2	6.12	0.62	1.18	3.40	2.61	4.75	Ø0.75	2	1
3	7.69	0.62	1.37	4.84	4.06	6.19	Ø0.75	4	2
4	9.12	0.75	1.50	5.92	4.90	7.50	Ø0.88	4	3
6	11.12	0.88	1.63	8.02	7.00	9.50	Ø0.88	6	4
8	13.37	1.00	1.75	10.17	9.15	11.75	Ø0.88	6	5
10	15.62	1.00	1.75	12.22	11.20	14.00	Ø0.88	8	7
12	17.88	1.00	1.75	14.32	13.30	16.25	Ø0.88	8	8
14	20.25	1.25	2.00	16.40	15.44	18.75	Ø0.88	10	11
16	22.50	1.31	2.06	18.50	17.54	21.00	Ø0.88	12	14
18	24.75	1.38	2.13	20.60	19.64	23.25	Ø0.88	12	19
20	27.00	1.44	2.19	22.70	21.74	25.50	Ø0.88	14	27
24	31.50	1.56	2.31	26.90	25.94	30.00	Ø0.88	16	36
30	39.12	2.00	2.75	33.29	32.17	36.88	Ø1.13	20	90
36	46.00	2.00	2.75	39.59	38.47	43.75	Ø1.13	24	118
42	53.12	2.00	2.75	45.79	44.67	50.62	Ø1.38	28	151
48	60.00	2.00	2.75	52.09	50.97	57.50	Ø1.38	32	187
54	65.70	2.00	2.75	58.82	57.73	63.20	Ø1.38	36	362
60	70.22	2.00	2.75	62.87	61.78	67.72	Ø1.38	36	413
64	74.36	2.00	2.75	66.96	65.84	71.86	Ø1.38	38	444

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MJ FULLBODY GLANDS									
NOM. SIZE	O.D.	A	B	C	I.D.	B.C.	BOLT HOLE	BOLT QTY	WT (LBS.)
2	6.12	0.62	1.18	3.40	2.61	4.75	Ø0.75	2	1
3	7.69	0.62	1.37	4.84	4.06	6.19	Ø0.75	4	5
4	9.12	0.75	1.50	5.92	4.90	7.50	Ø0.88	4	6
6	11.12	0.88	1.63	8.02	7.00	9.50	Ø0.88	6	10
8	13.37	1.00	1.75	10.17	9.15	11.75	Ø0.88	6	14
10	15.62	1.00	1.75	12.22	11.20	14.00	Ø0.88	8	20
12	17.88	1.00	1.75	14.32	13.30	16.25	Ø0.88	8	24
14	20.25	1.25	2.00	16.40	15.44	18.75	Ø0.88	10	45
16	22.50	1.31	2.06	18.50	17.54	21.00	Ø0.88	12	55
18	24.75	1.38	2.13	20.60	19.64	23.25	Ø0.88	12	55
20	27.00	1.44	2.19	22.70	21.74	25.50	Ø0.88	14	66
24	31.50	1.56	2.31	26.90	25.94	30.00	Ø0.88	16	90
30	39.12	2.00	2.75	33.29	32.17	36.88	Ø1.13	20	220
36	46.00	2.00	2.75	39.59	38.47	43.75	Ø1.13	24	286
42	53.12	2.00	2.75	45.79	44.67	50.62	Ø1.38	28	288
48	60.00	2.00	2.75	52.09	50.97	57.50	Ø1.38	32	400



MJ OVERSIZE GLANDS									
NOM. SIZE	O.D.	A	B	C	I.D.	B.C.	BOLT HOLE	BOLT QTY	WT (LBS.)
4	9.12	0.75	1.50	5.92	5.10	7.50	Ø0.88	4	3
6	11.12	0.88	1.63	8.02	7.20	9.50	Ø0.88	6	5
8	13.37	1.00	1.75	10.17	9.40	11.75	Ø0.88	6	6
10	15.62	1.00	1.75	12.22	11.50	14.00	Ø0.88	8	8
12	17.88	1.00	1.75	14.32	13.60	16.25	Ø0.88	8	9
16	22.50	1.31	2.06	18.50	17.94	21.00	Ø0.88	12	14

STAR[®] PIPE PRODUCTS



Standard Mechanical Joint Gaskets

(SBR, NBR, EPDM, Neoprene, FKM)

ANSI/AWWA C111/A21.11

GASKET GENERAL SPECIFICATIONS

Star Pipe Products Mechanical Joint (MJ) Gasket dimensions conform to the drawings set forth in ANSI/AWWA C111/A21.11. Gasket markings include size, Manufacturer's mark, Country of origin and product identification. No markings are positioned on sealing surfaces per the ANSI/AWWA C111/A21.11 standard. MJ transition gaskets follow the requirements of ANSI/AWWA C111/A21.11 where applicable.

Standard gasket material is vulcanized styrene butadiene rubber (SBR). Special application elastomers (EPDM, Nitrile, Neoprene & FKM) are available and shall be identified on all documentation and corresponding gaskets. All SBR, EPDM, Nitrile and Fluoroelastomer MJ/transition gaskets supplied by Star Pipe Products are certified to NSF/ANSI 61.

Star Pipe gaskets are manufactured under quality control standards and procedures that are maintained by the gasket supplier. Appropriate documentation is maintained by the manufacturer and available for review upon request.

Star Pipe gasket suppliers maintain a quality assurance program and manual that is reviewed and updated on an ongoing basis to ensure product quality. Star Pipe gasket suppliers perform in house testing and submit to random testing by Underwriters Laboratories, Inc. Star Pipe gasket providers are recognized under the component program (UL 194/ UL 157) of Underwriters Laboratories, Inc.

Star Pipe provides that our Mechanical Joint gaskets for potable or wastewater projects will perform as designed, based on the published chemical and environmental resistance data for "generic" rubber compounds. Star Pipe should be consulted for specific recommendations or for unusual applications.

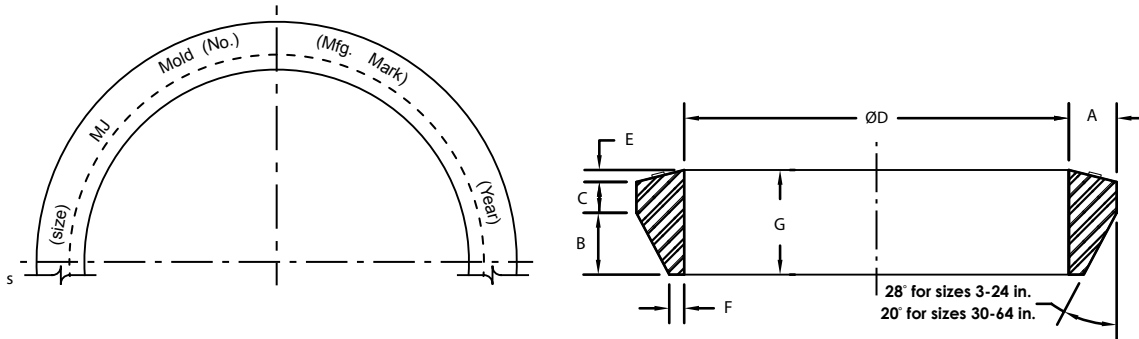
GASKET PROPERTIES		
PROPERTY	ASTM TEST METHOD	REQUIRED VALUE
Hardness, Shore "A"	D2240	75 ± 5
Minimum Tensile	D412	1500 psi
Minimum Elongation	D412	150%
Minimum Aging	D573	60%
Maximum Compression Set	D395, Method B	20%
Resistance to Surface Ozone Cracking	D1149	No Cracking

GASKET TYPE	MAXIMUM CONTINUOUS TEMP	MAXIMUM EXPOSURE TEMP	STANDARD USAGE
SBR (Styrene Butadiene Rubber/ Buna-S)	160 F	180 F	Drinking water, Salt Water, Sanitary Sewage, Reclaimed Water, Raw Water, Storm Water. Not Recommended for Hydrocarbon Service
EPDM (Ethylene Propylene)	250 F	300 F	Alcohols, Dilute Acids, Dilute Alkalis, Ketones (MEK/Acetone), Strong Oxidizing Chemicals; Drinking Water, Salt Water, Sanitary Sewage, Reclaimed Water, Raw Water, Storm Water. Not Recommended for Hydrocarbon Service
Neoprene (Polychlorprene / CR)	225 F	300 F	Hydrocarbons, Unrefined Petroleum Products, Greasy Waste; Salt Water, Sanitary Sewage, Reclaimed Water, Raw Water, Storm Water.
Nitrile (NBR / Buna-N)	160 F	180 F	Refined Oils and Fluids, Fats, Greases and Waste; Drinking Water, Sanitary Sewage, Reclaimed Water, Raw Water, Storm Water.
FKM (Fluoroelastomer / Viton®)	400 F	500 F	Aromatic Hydrocarbons, Chlorinated Hydrocarbons, Vegetable Oils, Most Chemicals; Drinking Water, Reclaimed Water, Raw Water, Storm Water.

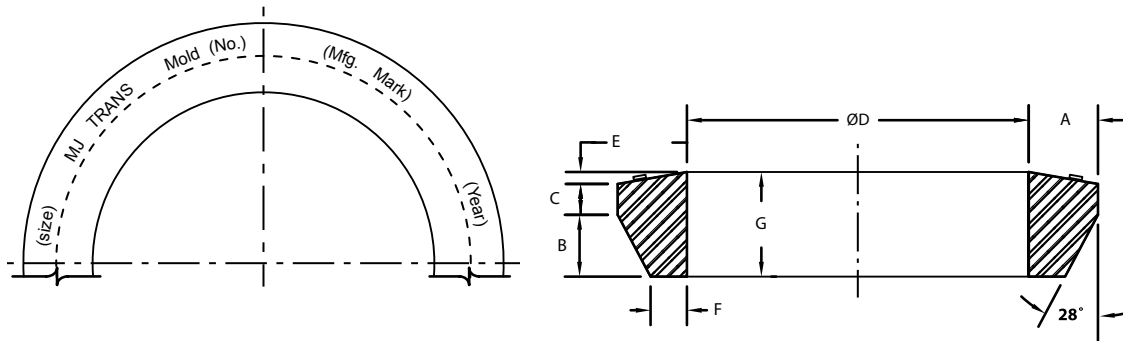
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STAR PIPE PRODUCTS



MECHANICAL-JOINT GASKET								
NOM. SIZE	PIPE O.D.	A	B	C	ØD ±1 %	E	F	G
2	2.50	0.48	0.62	0.31	2.48	0.12	0.15	1.05
3	3.96	0.48	0.62	0.31	3.86	0.12	0.15	1.05
4	4.80	0.62	0.75	0.31	4.68	0.16	0.22	1.22
6	6.90	0.62	0.75	0.31	6.73	0.16	0.22	1.22
8	9.05	0.62	0.75	0.31	8.85	0.16	0.22	1.22
10	11.10	0.62	0.75	0.31	10.87	0.16	0.22	1.22
12	13.20	0.62	0.75	0.31	12.95	0.16	0.22	1.22
14	15.30	0.62	0.75	0.31	14.99	0.16	0.22	1.22
16	17.40	0.62	0.75	0.31	17.07	0.16	0.22	1.22
18	19.50	0.62	0.75	0.31	19.13	0.16	0.22	1.22
20	21.60	0.62	0.75	0.31	21.20	0.16	0.22	1.22
24	25.80	0.62	0.75	0.31	25.34	0.16	0.22	1.22
30	32.00	0.73	1.00	0.38	31.47	0.16	0.37	1.54
36	38.30	0.73	1.00	0.38	37.67	0.16	0.37	1.54
42	44.50	0.73	1.00	0.38	43.78	0.16	0.37	1.54
48	50.80	0.73	1.00	0.38	49.98	0.16	0.37	1.54
54	57.56	0.73	1.00	0.38	56.65	0.16	0.37	1.54
60	61.61	0.73	1.00	0.38	60.67	0.16	0.37	1.54
64	65.67	0.73	1.00	0.38	64.70	0.16	0.37	1.54



TRANSITION MECHANICAL-JOINT GASKET								
NOM. SIZE	PIPE O.D.	A	B	C (REF.)	ØD ±1 %	E	F	G
2	2.375	0.56	0.66	0.31	2.32	0.12	0.21	1.10
3	3.500	0.72	0.64	0.34	3.43	0.12	0.38	1.10
4	4.500	0.76	0.73	0.33	4.43	0.20	0.37	1.26
6	6.625	0.75	0.73	0.32	6.53	0.20	0.36	1.25
8	8.625	0.82	0.73	0.34	8.50	0.20	0.43	1.27
10	10.750	0.79	0.75	0.31	10.59	0.20	0.39	1.26
12	12.750	0.84	0.75	0.33	12.56	0.20	0.44	1.28

STAR[®] PIPE PRODUCTS



T-Bolts, Double Ended Rods & Nuts

H S L A S T E E L

SPECIFICATIONS:

- Bolts & Nuts are manufactured in accordance with ANSI / AWWA C111 / A21.11.
- Material is High Strength Low Alloy Steel per ANSI/AWWA C111/A21.11.
- Threads per ASME B1.1 unified standard coarse (Class 2A & 2B)

MECHANICAL PROPERTIES

- Yield Strength 45000 PSI (min)
- Elongation in 2in. 20% (min)

CHEMICAL PROPERTIES

Carbon	0.20% Max
Manganese	1.25% Max
Sulfur	0.05% Max
Nickel	0.25% Min
Copper	0.20% Min
Combined	1.25% Min (Ni, Cu, Cr)

BLUE BOLT/NUT/ROD

T-Bolts, Rods & Nuts have fluoropolymer coating material which is VOC-compliant, resin-bonded, thermally cured and dry lubricant.

COATING PHYSICAL PROPERTIES

Film Thickness:	0.3 to 0.4 mil per coat
Number of Coats:	3 to 4 coats
Adhesion:	1 mm cross hatch test + 5 Pulls. Good knife resistance
Cure Test:	50+Rubs with MEK. No substrate exposure
Pencil Hardness:	Pencil Hardness: 4-6H
Volatile Organic Compounds	2.74lbs/gal

Stainless Steel T-Bolts & Nuts

ALLOYS SS 304 & SS 316 PER ASTM F593

SPECIFICATIONS:

- T-bolt dimensions are manufactured in accordance with ANSI / AWWA C111 / A21.11.
- T-bolt alloys SS 304 and SS 316 per ASTM F593
- Heavy Hex Nut Alloys SS 304 & SS 316 per ASTM F594.

MECHANICAL PROPERTIES

- Tensile Strength: 85,000 PSI to 140,000 PSI
- Yield Strength: 45,000 PSI (min)

COATING SPECIFICATION

Nuts have fluoropolymer coating material which is VOC-Compliant, resin-bonded, thermally cured and dry lubricant.

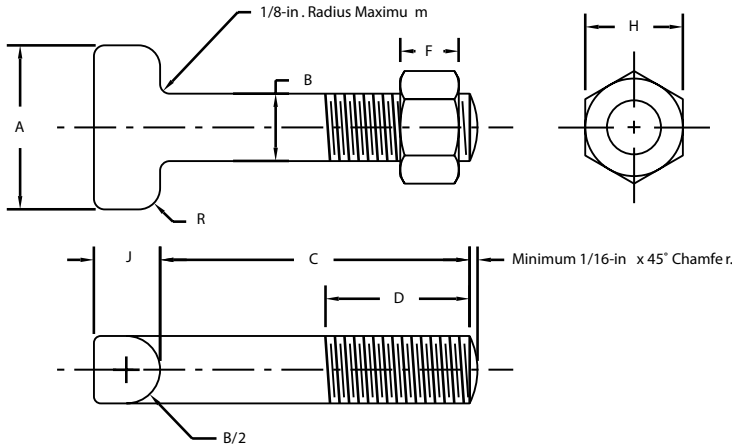
COATING PHYSICAL PROPERTIES

- | | |
|---|---|
| • Film Thickness: 0.3 to 0.4 mil per coat | • Pencil Hardness: 4-6H |
| • Number of Coats: 3 to 4 coats | • Volatile Organic Compounds 2.74 lbs/gal |
| • Adhesion: 1mm cross hatch test + 5 Tape Pulls. | • Continuous use temperature - 356°F |
| • Cure Test: 50+ Rubs with MEK, no substrate exposure | • Color: SS 304 is green, SS 316 is red |

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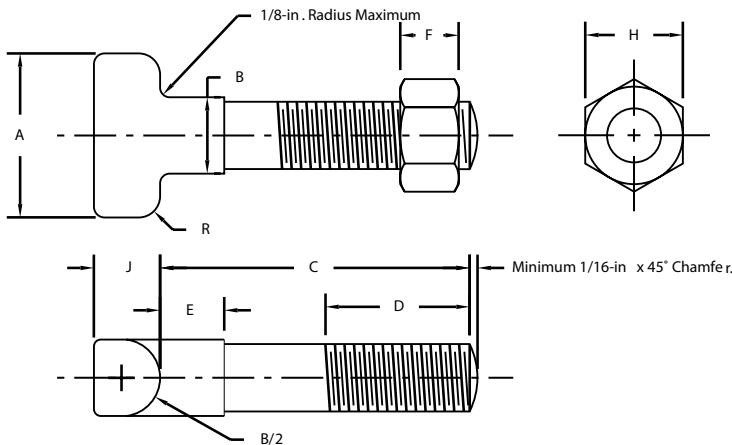


MECHANICAL JOINT BOLT TORQUE		
PIPE SIZE (IN)	BOLT SIZE (IN)	RANGE ¹ OF TORQUE (FT-LBS)
2-3	5/8	45-60
4-24	3/4	75-90
30-36	1	100-120
42-48	1 1/4	120-150

¹These torque ranges are requirements of AWWA C600

T-HEAD (LOW ALLOY STEEL) BOLT & NUT

NOM. SIZE	A	B	C	D	THREADS PER IN.	F	H	J	R
5/8 x 3	1.50	0.625	3.00	2.00	11	0.625	1.062	0.625	0.312
5/8 x 3 1/2	1.50	0.625	3.50	2.70	11	0.625	1.062	0.625	0.312
3/4 x 3 1/2	1.75	0.750	3.50	2.50	10	0.750	1.250	0.750	0.375
3/4 x 4	1.75	0.750	4.00	3.00	10	0.750	1.250	0.750	0.375
3/4 x 4 1/2	1.75	0.750	4.50	3.00	10	0.750	1.250	0.750	0.375
3/4 x 5	1.75	0.750	5.00	3.00	10	0.750	1.250	0.750	0.375
3/4 x 5 1/2	1.75	0.750	5.50	3.70	10	0.750	1.250	0.750	0.375
1 x 5 1/2	2.25	1.000	5.50	3.00	8	1.000	1.625	1.000	0.500
1 x 6	2.25	1.000	6.00	3.00	8	1.000	1.625	1.000	0.500
1 1/4 x 6	2.50	1.250	6.00	3.00	7	1.250	2.000	1.250	0.625
1 1/4 x 6 1/2	2.50	1.250	6.50	3.50	7	1.250	2.000	1.250	0.625
1 1/4 x 8 1/2	2.50	1.250	8.50	3.50	7	1.250	2.000	1.250	0.625



ANTI-ROTATION T-HEAD (LOW ALLOY STEEL) BOLT & NUT

NOM. SIZE	A	B	C	D	E	THREADS PER IN.	F	H	J	R
5/8 x 3	1.50	0.625	3.00	2.00	0.63	11	0.625	1.062	0.625	0.312
5/8 x 3 1/2	1.50	0.625	3.50	2.50	0.63	11	0.625	1.062	0.625	0.312
3/4 x 3 1/2	1.75	0.750	3.50	2.50	0.63	10	0.750	1.250	0.750	0.375
3/4 x 4	1.75	0.750	4.00	3.00	0.63	10	0.750	1.250	0.750	0.375
3/4 x 4 1/2	1.75	0.750	4.50	3.00	0.63	10	0.750	1.250	0.750	0.375
3/4 x 5	1.75	0.750	5.00	3.00	0.63	10	0.750	1.250	0.750	0.375



STAR® PIPE PRODUCTS



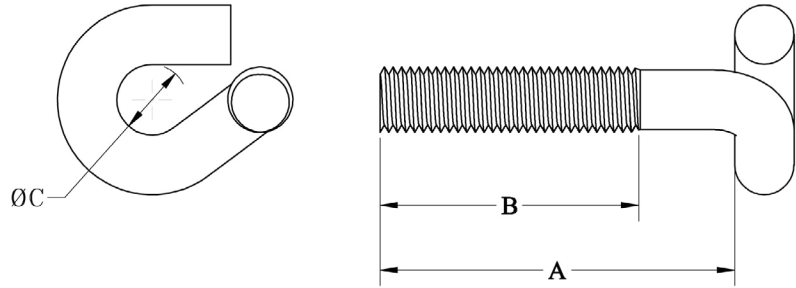
MJ Eyebolt(Pigtail) & Starlug

ANSI/AWWA C115/A21.15

MJ Eyebolt (Pigtail)

GENERAL SPECIFICATIONS

- High Strength Low alloy steel per ANSI/AWWA C111/121.11
- UNC 2A Threads per ASME B1.1
- Eye bolts can be used in place of T-Head bolts
- Used on sizes 4" through 24"
- Max. Load (per bolt): 7,500 lbs



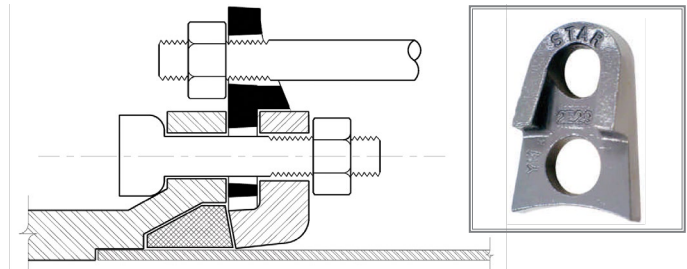
SIZE	A	B	ØC
¾ x 3 ½	3.50	2.50	0.81
¾ x 4	4.00	3.00	0.81
¾ x 4 ½	4.50	3.50	0.81
¾ x 5	5.00	4.00	0.81
¾ x 5 ½	5.50	4.50	0.81

All dimensions in inches.

Starlug

GENERAL SPECIFICATIONS

- Designed to assist in restraining of mechanical joint fittings, valves, hydrants and pipes by threaded rods. Manufactured with high strength ductile iron per ASTM A 536, Grade 65-45-12
- Designed for use on sizes 4" through 24"
- Installed between MJ Bell and MJ Gland



Please refer to the chart below for determining the number of Starlugs to be used depending on the pipe size and pipe line working pressure.

Packaging: Boxes of 50 each

NOM. PIPE SIZE	MINIMUM NUMBER OF STARLUGS REQUIRED FOR EACH MJ BELL									
	WORKING PRESSURE (PSI)*									
	100	125	150	200	225	250	300	325	350	
4"	2	2	2	2	2	2	2	2	2	2
6"	2	2	2	2	3	3	3	4	4	
8"	2	2	3	4	4	4	6	6	6	
10"	4	4	4	6	6	8	8	8	NR	
12"	4	4	6	8	8	8	NR	NR	NR	
14"	5	6	8	10	NR	NR	NR	NR	NR	
16"	6	8	10	12	NR	NR	NR	NR	NR	
18"	8	10	12	NR	NR	NR	NR	NR	NR	
20"	10	12	14	NR	NR	NR	NR	NR	NR	
24"	14	16	NR	NR	NR	NR	NR	NR	NR	

*Pressure ratings include a nominal 2:1 safety factor.

NR - Not Recommended

STAR® PIPE PRODUCTS



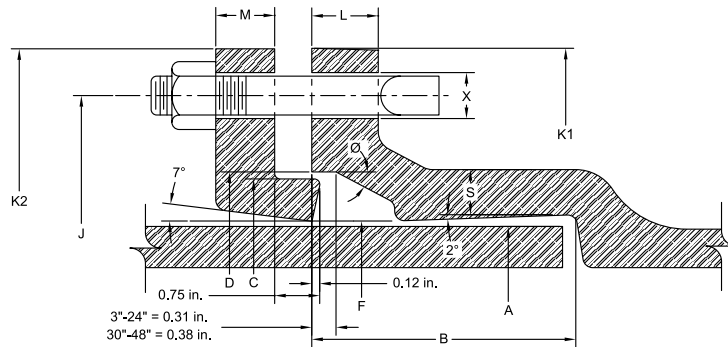
Full Body MJ Fittings

ANSI/AWWA C110/A21.10

2" - 64" DUCTILE IRON MECHANICAL JOINT FULL BODY FITTINGS

GENERAL SPECIFICATIONS

- MATERIAL:** Ductile iron per ASTM A536
- PRESSURE:** 350 PSI rating for 2" - 24" sizes, 250 PSI rating for 30" - 48" and 150 PSI for 54"-64" or as noted
- TESTING:** In accordance with ANSI/AWWA C110/A21.10
- LAYING LENGTH:** In accordance with ANSI/AWWA C110/A21.10 (fittings not listed in ANSI/AWWA have dimensions per Star design as noted in the catalog)
- DEFLECTION:** 2"-4"=8° | 6"-7"=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/AWW C110/A21.10 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. [Click here for a pressure jetting discussion](#) or visit http://www.starpipeproducts.com/pressure_cleaning_guidelines.asp.
- COATING:** Asphaltic seal coat inside and out in accordance with ANSI/AWWA C104/A21.4 and referenced in ANSI/AWWA C110/A21.10
- GASKETS:** SBR in accordance with ANSI/AWWA C111/A21.11 (see pg. 20)
- T-BOLTS/NUTS:** Low alloy steel in accordance with ANSI/AWWA C11/A21.11 (see pg. 22)
- APPROVALS:** Sizes 2" and greater are UL/ANSI/NSF Standards 61 and 372
- DIMENSIONS:** All dimensions are in inches unless noted otherwise. ([Click here for a short commentary on non-pressure sewer applications](#) or visit http://www.starpipeproducts.com/non-pressure_sewer_applications.asp. Review commentary before ordering or installing fittings for this application.)
- INSTALLATION:** Per ANSI/AWWA C600 and C111 using DIP conforming to C150/C151 and PVC pipe conforming to C900



MECHANICAL JOINT DIMENSIONS															
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	6.25	6.25	0.75	0.62	0.44	28°	3/4	5/8 x 3	2
3	3.96	2.50	4.84	4.94	4.06	6.19	7.69	7.69	0.94	0.62	0.52	28°	3/4	5/8 x 3	4
4	4.80	2.50	5.92	6.02	4.90	7.50	9.12	9.12	1.00	0.75	0.65	28°	7/8	3/4 x 3 1/2	4
6	6.90	2.50	8.02	8.12	7.00	9.50	11.12	11.12	1.06	0.88	0.70	28°	7/8	3/4 x 3 1/2	6
8	9.05	2.50	10.17	10.27	9.15	11.75	13.37	13.37	1.12	1.00	0.75	28°	7/8	3/4 x 4	6
10	11.10	2.50	12.22	12.34	11.20	14.00	15.69	15.62	1.19	1.00	0.80	28°	7/8	3/4 x 4	8
12	13.20	2.50	14.32	14.44	13.30	16.25	17.94	17.88	1.25	1.00	0.85	28°	7/8	3/4 x 4	8
14	15.30	3.50	16.40	16.54	15.44	18.75	20.31	20.25	1.31	1.25	0.89	28°	7/8	3/4 x 4 1/2	10
16	17.40	3.50	18.50	18.64	17.54	21.00	22.56	22.50	1.38	1.31	0.97	28°	7/8	3/4 x 4 1/2	12
18	19.50	3.50	20.60	20.74	19.64	23.25	24.83	24.75	1.44	1.38	1.05	28°	7/8	3/4 x 4 1/2	12
20	21.60	3.50	22.70	22.84	21.74	25.50	27.08	27.00	1.50	1.44	1.12	28°	7/8	3/4 x 4 1/2	14
24	25.80	3.50	26.90	27.04	25.94	30.00	31.58	31.50	1.62	1.56	1.22	28°	7/8	3/4 x 5	16
30	32.00	4.00	33.29	33.46	32.17	36.88	39.12	39.12	1.81	2.00	1.50	20°	1 1/8	1 x 6	20
36	38.30	4.00	39.59	39.76	38.47	43.75	46.00	46.00	2.00	2.00	1.80	20°	1 1/8	1 x 6	24
42	44.50	4.00	45.79	45.96	44.67	50.62	53.12	53.12	2.00	2.00	1.95	20°	1 3/8	1 1/4 x 6 1/2	28
48	50.80	4.00	52.09	52.26	50.97	57.50	60.00	60.00	2.00	2.00	2.20	20°	1 3/8	1 1/4 x 6 1/2	32
54	{ Fittings & Dimensions Available On Request }														
60															
64															

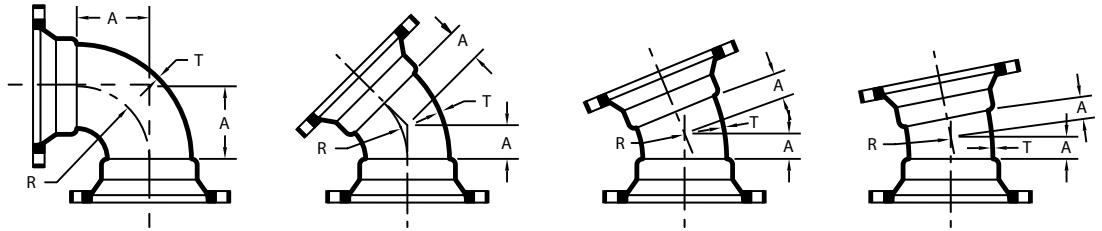
STAR[®] PIPE PRODUCTS



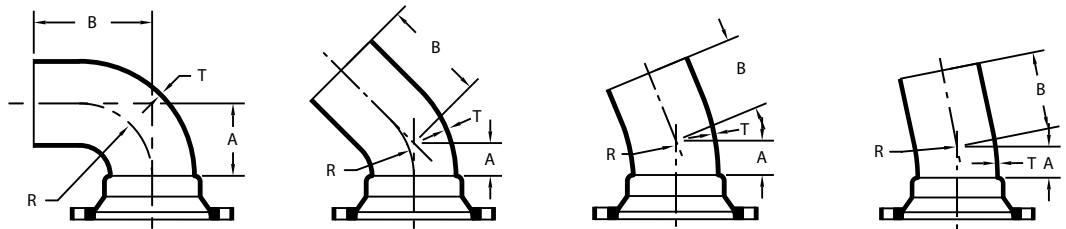


Full Body MJ Fittings

ANSI/AWWA C110/A21.10



MJ x MJ BENDS		90° MJ x MJ BENDS (1/4)			45° MJ x MJ BENDS (1/8)			22 1/2° MJ x MJ BENDS (1/16)			11 1/4° MJ x MJ BENDS (1/32)		
NOM. SIZE	T	A	R	WT (LBS.)	A	R	WT (LBS.)	A	R	WT (LBS.)	A	R	WT (LBS.)
2	0.39	3.25	2.25	14	1.80	1.96	13	1.80	4.02	13	1.80	8.12	13
3	0.48	5.50	4.00	35	3.00	3.62	30	3.00	7.56	30	3.00	15.25	30
4	0.52	6.50	4.50	55	4.00	4.81	50	4.00	10.06	50	4.00	20.31	50
6	0.55	8.00	6.00	85	5.00	7.25	75	5.00	15.06	75	5.00	30.50	75
8	0.60	9.00	7.00	125	5.50	8.44	110	5.50	17.62	110	5.50	35.50	110
10	0.68	11.00	9.00	190	6.50	10.88	155	6.50	22.62	160	6.50	45.69	160
12	0.75	12.00	10.00	255	7.50	13.25	215	7.50	27.62	220	7.50	55.81	220
14	0.66	14.00	11.50	340	7.50	12.06	270	7.50	25.12	275	7.50	50.75	275
16	0.70	15.00	12.50	430	8.00	13.25	340	8.00	27.62	345	8.00	55.81	345
18	0.75	16.50	14.00	545	8.50	14.50	420	8.50	30.19	430	8.50	60.94	430
20	0.80	18.00	15.50	680	9.50	16.88	530	9.50	35.19	535	9.50	71.06	540
24	0.89	22.00	18.50	1025	11.00	18.12	755	11.00	37.69	765	11.00	76.12	770
30	1.03	25.00	21.50	1690	15.00	27.75	1380	15.00	57.81	1400	15.00	116.75	1410
36	1.15	28.00	24.50	2475	18.00	35.00	2095	18.00	72.88	2135	18.00	147.25	2145
42	1.28	31.00	27.50	3410	21.00	42.25	2955	21.00	88.00	3020	21.00	177.69	3035
48	1.42	34.00	30.50	4595	24.00	49.50	4080	24.00	103.06	4170	24.00	208.12	4190



MJ x PE BENDS		90° MJ x PE BENDS (1/4)				45° MJ x PE BENDS (1/8)				22 1/2° MJ x PE BENDS (1/16)				11 1/4° MJ x PE BENDS (1/32)			
NOM. SIZE	T	A	B	R	WT (LBS.)	A	B	R	WT (LBS.)	A	B	R	WT (LBS.)	A	B	R	WT (LBS.)
3	0.48	5.50	13.50	4.00	35	3.00	11.00	3.62	30	3.00	11.00	7.56	30	3.00	11.00	15.25	30
4	0.52	6.50	14.50	4.50	50	4.00	12.00	4.81	45	4.00	12.00	10.06	45	4.00	12.00	20.31	45
6	0.55	8.00	16.00	6.00	80	5.00	13.00	7.25	70	5.00	13.00	15.06	70	5.00	13.00	30.50	70
8	0.60	9.00	17.00	7.00	120	5.50	13.50	8.44	105	5.50	13.50	17.62	105	5.50	13.50	35.50	105
10	0.68	11.00	19.00	9.00	190	6.50	14.50	10.88	155	6.50	14.50	22.62	160	6.50	14.50	45.69	160
12	0.75	12.00	20.00	10.00	255	7.50	15.50	13.25	215	7.50	15.50	27.62	220	7.50	15.50	55.81	220
14	0.66	14.00	22.00	11.50	325	7.50	15.50	12.06	255	7.50	15.50	25.12	260	7.50	15.50	50.75	260
16	0.70	15.00	23.00	12.50	410	8.00	16.00	13.25	320	8.00	16.00	27.62	325	8.00	16.00	55.81	325
18	0.75	16.50	24.50	14.00	517	8.50	16.50	14.50	395	8.50	16.50	30.19	401	8.50	16.50	60.94	402
20	0.80	18.00	26.00	15.50	644	9.50	17.50	16.88	493	9.50	17.50	35.19	501	9.50	17.50	71.06	502
24	0.89	22.00	30.00	18.50	985	11.00	19.00	18.12	715	11.00	19.00	37.69	725	11.00	19.00	76.12	730
30	1.03	25.00	33.00	21.50	1585	15.00	23.00	27.75	1275	15.00	23.00	57.81	1295	15.00	23.00	116.75	1305
36	1.15	28.00	36.00	24.50	2310	18.00	26.00	35.00	1930	18.00	26.00	72.88	1970	18.00	26.00	147.25	1980
42	1.28	31.00	39.00	27.50	3200	21.00	29.00	42.25	2745	21.00	29.00	88.00	2810	21.00	29.00	177.69	2825

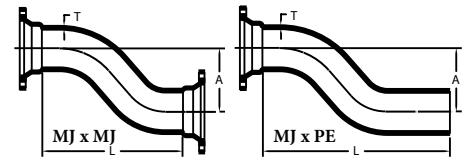
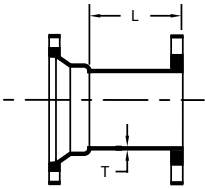
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STAR[®] PIPE PRODUCTS



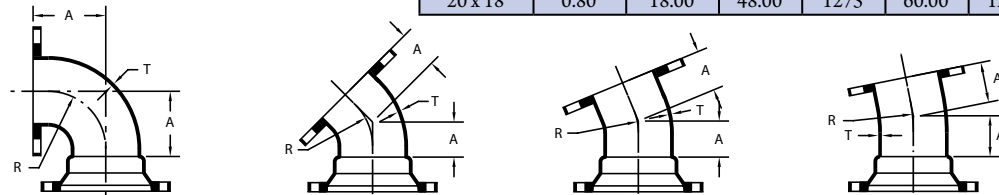
Full Body MJ Fittings

ANSI/AWWA C110/A21.10



MJ x FLANGE ADAPTER			
NOM. SIZE	T	L	WT (LBS.)
3	0.48	8.00	30
4	0.52	8.00	40
6	0.55	8.00	60
8	0.60	8.00	85
10	0.68	8.00	115
12	0.75	8.00	155
14	0.66	8.00	195
16	0.70	8.00	240
18	0.75	8.00	280
20	0.80	8.00	340
24	0.89	8.00	455
30	1.03	10.00	760
36	1.15	10.00	1070

NOM. SIZE	MJ OFFSETS		MJ x MJ		MJ x PE	
	T	A	L	WT (LBS.)	L	WT (LBS.)
4 x 6	0.52	6.00	19.00	75	27.00	70
4 x 12	0.52	12.00	22.00	85	30.00	80
4 x 18	0.52	18.00	30.00	105	38.00	100
4 x 24	0.52	24.00	30.00	125	38.00	115
6 x 6	0.55	6.00	20.00	110	28.00	105
6 x 12	0.55	12.00	26.00	135	34.00	130
6 x 18	0.55	18.00	33.00	165	41.00	160
6 x 24	0.55	24.00	33.00	195	41.00	195
8 x 6	0.60	6.00	21.00	160	29.00	155
8 x 12	0.60	12.00	28.00	200	36.00	195
8 x 18	0.60	18.00	35.00	245	43.00	240
8 x 24	0.60	24.00	36.00	280	44.00	275
10 x 12	0.68	12.00	30.00	250	38.00	280
10 x 18	0.68	18.00	38.00	340	46.00	340
10 x 24	0.68	24.00	38.00	420	46.00	420
12 x 12	0.75	12.00	37.00	420	45.00	420
12 x 18	0.75	18.00	48.00	520	56.00	520
12 x 24	0.75	24.00	48.00	640	56.00	630
16 x 12	0.70	12.00	40.00	600	48.00	580
16 x 18	0.70	18.00	50.00	710	58.00	690
20 x 12	0.80	12.00	40.00	1025	48.00	1015
20 x 18	0.80	18.00	48.00	1275	60.00	1265



MJ x FE BENDS		90° MJ x FE BENDS (1/4)			45° MJ x FE BENDS (1/8)			22 1/2° MJ x FE BENDS (1/16)			11 1/4° MJ x FE BENDS (1/32)		
NOM. SIZE	T	A	R	WT (LBS.)	A	R	WT (LBS.)	A	R	WT (LBS.)	A	R	WT (LBS.)
4	0.52	6.50	4.50	38	4.00	4.81	45	4.00	10.06	45	4.00	20.31	45
6	0.55	8.00	6.00	75	5.00	7.25	69	5.00	15.06	69	5.00	30.50	69
8	0.60	9.00	7.00	115	5.50	8.44	105	5.50	17.62	105	5.50	35.50	105
10	0.68	11.00	9.00	177	6.50	10.88	155	6.50	22.62	155	6.50	45.69	155
12	0.75	12.00	10.00	246	7.50	13.25	215	7.50	27.62	215	7.50	55.81	215
14	0.66	-	-	-	7.50	12.06	245	-	-	-	-	-	-
16	0.70	15.00	12.50	465	8.00	13.25	360	8.00	27.62	360	8.00	55.81	360
18	0.75	16.50	14.00	577	8.50	14.50	422	8.50	30.19	422	8.50	60.94	422
20	0.80	18.00	15.50	745	9.50	16.88	543	9.50	35.19	575	9.50	71.06	575
24	0.89	22.00	18.50	1150	11.00	18.12	800	11.00	37.69	800	11.00	76.12	800
30	1.03	25.00	21.50	1559	-	-	-	15.00	57.81	1270	-	-	-
36	1.15	28.00	24.50	2318	-	-	-	-	-	-	-	-	-
48	1.42	34.00	30.50	4378	-	-	-	-	-	-	-	-	-

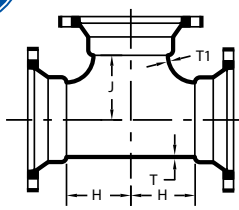
STAR[®] PIPE PRODUCTS





Full Body MJ Fittings

ANSI/AWWA C110/A21.10



STAR[®] PIPE PRODUCTS

MJ x MJ TEES					
NOM. SIZE	T	T1	H	J	WT (LBS.)
2 x 2	0.39	0.39	3.25	3.25	20
3 x 2	0.48	0.39	3.50	3.50	43
3 x 3	0.48	0.48	5.50	5.50	55
4 x 2	0.52	0.39	4.00	4.00	57
4 x 3	0.52	0.48	6.50	6.50	75
4 x 4	0.52	0.52	6.50	6.50	80
4 x 4 x 6	0.52	0.55	8.00	8.00	115
6 x 2	0.55	0.39	8.00	8.00	78
6 x 3	0.55	0.48	8.00	8.00	110
6 x 4	0.55	0.52	8.00	8.00	115
6 x 6	0.55	0.55	8.00	8.00	125
6 x 6 x 8	0.55	0.60	9.00	9.00	185
8 x 2	0.60	0.39	9.00	9.00	125
8 x 3	0.60	0.48	9.00	9.00	155
8 x 4	0.60	0.52	9.00	9.00	165
8 x 6	0.60	0.55	9.00	9.00	175
8 x 8	0.60	0.60	9.00	9.00	185
8 x 8 x 12	0.60	0.75	12.00	12.00	280
10 x 4	0.68	0.52	11.00	11.00	235
10 x 6	0.68	0.55	11.00	11.00	250
10 x 8	0.68	0.60	11.00	11.00	260
10 x 10	0.80	0.80	11.00	11.00	310
12 x 4	0.75	0.52	12.00	12.00	315
12 x 6	0.75	0.55	12.00	12.00	325
12 x 8	0.75	0.60	12.00	12.00	340
12 x 10	0.87	0.80	12.00	12.00	390
12 x 12	0.87	0.87	12.00	12.00	410
14 x 6	0.66	0.55	14.00	14.00	435
16 x 4	0.70	0.52	15.00	15.00	525
16 x 6	0.70	0.55	15.00	15.00	540
16 x 8	0.70	0.60	15.00	15.00	550
16 x 10	0.70	0.68	15.00	15.00	570
16 x 12	0.70	0.75	15.00	15.00	590
16 x 16	0.70	0.70	15.00	15.00	650
18 x 6	0.75	0.55	13.00	15.50	590
18 x 8	0.75	0.60	13.00	15.50	605
18 x 12	0.75	0.75	13.00	15.50	640
18 x 18	0.75	0.75	16.50	16.50	820
20 x 6	0.80	0.55	14.00	17.00	725
20 x 8	0.80	0.60	14.00	17.00	735
20 X 10	0.80	0.68	14.00	17.00	755
20 x 12	0.80	0.75	14.00	17.00	775
20 x 16	0.80	0.70	18.00	18.00	945
20 x 20	0.80	0.80	18.00	18.00	1020
24 x 6	0.89	0.55	15.00	19.00	985
24 x 8	0.89	0.60	15.00	19.00	1000
24 x 10	0.89	0.68	15.00	19.00	958

MJ x MJ TEES (Con't)					
NOM. SIZE	T	T1	H	J	WT (LBS.)
24 x 12	0.89	0.75	15.00	19.00	1030
24 x 14	0.89	0.66	15.00	19.00	1055
24 x 16	0.89	0.70	15.00	19.00	1075
24 x 18	0.89	0.75	22.00	22.00	1400
24 x 20	0.89	0.80	22.00	22.00	1450
24 x 24	0.89	0.89	22.00	22.00	1535
30 x 6	1.03	0.55	18.00	23.00	1730
30 x 8	1.03	0.60	18.00	23.00	1745
30 x 10	1.03	0.68	18.00	23.00	1760
30 x 12	1.03	0.75	18.00	23.00	1780
30 x 14	1.03	0.66	18.00	23.00	1648
30 x 16	1.03	0.70	18.00	23.00	1820
30 x 18	1.03	0.75	18.00	23.00	1845
30 x 20	1.03	0.80	18.00	23.00	1875
30 x 24	1.03	0.89	25.00	25.00	2400
30 x 30	1.03	1.03	25.00	25.00	2595
36 x 6	1.15	0.55	20.00	26.00	2500
36 x 8	1.15	0.60	20.00	26.00	2520
36 x 10	1.15	0.68	20.00	26.00	2535
36 x 12	1.15	0.75	20.00	26.00	2550
36 x 14	1.15	0.66	20.00	26.00	2570
36 x 16	1.15	0.70	20.00	26.00	2585
36 x 18	1.15	0.75	20.00	26.00	2610
36 x 20	1.15	0.80	20.00	26.00	2635
36 x 24	1.15	0.89	20.00	26.00	2690
36 x 30	1.15	1.03	28.00	28.00	3545
36 x 36	1.15	1.15	28.00	28.00	3745
42 x 12	1.28	0.75	23.00	30.00	3555
42 x 14	1.28	0.66	23.00	30.00	3575
42 x 16	1.28	0.70	23.00	30.00	3595
42 x 18	1.28	0.75	23.00	30.00	3615
42 x 20	1.28	0.80	23.00	30.00	3640
42 x 24	1.28	0.89	23.00	30.00	3690
42 x 30	1.28	1.03	31.00	31.00	4650
42 x 36	1.28	1.15	31.00	31.00	4880
42 x 42	1.28	1.28	31.00	31.00	5085
48 x 12	1.42	0.75	26.00	34.00	4870
48 x 14	1.42	0.66	26.00	34.00	4885
48 x 16	1.42	0.70	26.00	34.00	4905
48 x 18	1.42	0.75	26.00	34.00	4925
48 x 20	1.42	0.80	26.00	34.00	4950
48 x 24	1.42	0.89	26.00	34.00	4995
48 x 30	1.42	1.03	26.00	34.00	5140
48 x 36	1.42	1.15	34.00	34.00	6280
48 x 42	1.42	1.28	34.00	34.00	6510
48 x 48	1.42	1.42	34.00	34.00	6765
48 x 36 x 48	1.42	1.15	34.00	34.00	6275

(Con't)

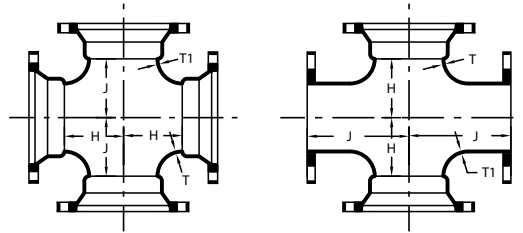
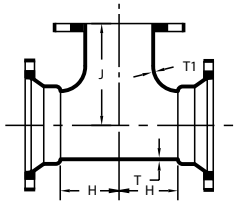
UCAT22.01
 * REGISTERED TRADEMARK OF STAR PIPE PRODUCTS





Full Body MJ Fittings

ANSI/AWWA C110/A21.10



MJ x FE TEES					
NOM. SIZE	T	T1	H	J	WT (LBS.)
4 x 4	0.52	0.52	6.50	6.50	74
4 x 4 x 6	0.52	0.55	8.00	8.00	103
6 x 4	0.55	0.52	8.00	8.00	109
6 x 6	0.55	0.55	8.00	8.00	115
8 x 4	0.60	0.52	9.00	9.00	159
8 x 6	0.60	0.55	9.00	9.00	165
8 x 8	0.60	0.60	9.00	9.00	175
10 x 4	0.68	0.52	11.00	11.00	231
10 x 6	0.68	0.55	11.00	11.00	237
10 x 8	0.68	0.60	11.00	11.00	249
12 x 4	0.75	0.52	12.00	12.00	309
12 x 6	0.75	0.55	12.00	12.00	315
12 x 8	0.75	0.60	12.00	12.00	330
12 x 10	0.87	0.68	12.00	12.00	360
12 x 12	0.87	0.87	12.00	12.00	401
14 x 6	0.66	0.55	14.00	14.00	485
14 x 14	0.66	0.66	14.00	14.00	465
16 x 4	0.70	0.52	15.00	15.00	575
16 x 6	0.70	0.55	15.00	15.00	605
16 x 8	0.70	0.60	15.00	15.00	615
16 x 12	0.70	0.75	15.00	15.00	651
16 x 16	0.70	0.70	15.00	15.00	596
18 x 6	0.75	0.55	13.00	15.50	665
18 x 8	0.75	0.60	13.00	15.50	675
18 x 12	0.75	0.75	13.00	15.50	705
18 x 18	0.75	0.75	16.50	16.50	915
20 x 6	0.80	0.55	14.00	17.00	677
20 x 8	0.80	0.60	14.00	17.00	688
20 x 12	0.80	0.75	14.00	17.00	722
20 x 20	0.80	0.80	18.00	18.00	1165
24 x 6	0.89	0.55	15.00	19.00	1125
24 x 8	0.89	0.60	15.00	19.00	1140
24 x 12	0.89	0.75	15.00	19.00	1165
24 x 16	0.89	0.70	15.00	19.00	988
24 x 24	0.89	0.89	22.00	22.00	1795
30 x 10	1.03	0.68	18.00	23.00	1606
30 x 12	1.03	0.75	18.00	23.00	1626
30 x 30	1.03	1.03	25.00	25.00	3080
36 x 6	1.15	0.55	20.00	26.00	2325
36 x 10	1.15	0.68	20.00	26.00	2345
36 x 12	1.15	0.75	20.00	26.00	2361
36 x 16	1.15	0.70	20.00	26.00	2373
36 x 24	1.15	0.89	20.00	26.00	2432
36 x 30	1.15	1.03	28.00	28.00	3133
48 x 24	1.42	0.89	26.00	34.00	4965

MJ x MJ / MJ x FE CROSSES							
NOM. SIZE	T	T1	H	J	WT (LBS.)		
					MJ X MJ	MJ X FE	
6 x 4	0.55	0.52	8.00	8.00	140	---	
6 x 6	0.55	0.55	8.00	8.00	160	140	
8 x 4	0.60	0.52	9.00	9.00	185	176	
8 x 6	0.60	0.55	9.00	9.00	205	185	
8 x 8	0.60	0.60	9.00	9.00	235	215	
10 x 6	0.68	0.55	11.00	11.00	285	258	
10 x 8	0.68	0.60	11.00	11.00	310	---	
10 x 10	0.80	0.80	11.00	11.00	380	354	
12 x 4	0.75	0.52	12.00	12.00	340	---	
12 x 6	0.75	0.55	12.00	12.00	360	340	
12 x 8	0.75	0.60	12.00	12.00	385	365	
12 x 12	0.87	0.87	12.00	12.00	495	487	
14 x 8	0.66	0.60	14.00	14.00	500	---	
14 x 14	0.66	0.66	14.00	14.00	635	---	
16 x 6	0.70	0.55	15.00	15.00	575	---	
16 x 8	0.70	0.60	15.00	15.00	605	585	
16 x 16	0.70	0.70	15.00	15.00	790	770	
18 x 8	0.75	0.60	13.00	15.50	655	---	
18 x 10	0.75	0.68	13.00	15.50	685	---	
18 x 12	0.75	0.75	13.00	15.50	725	---	
18 x 18	0.75	0.75	16.50	16.50	995	846	
20 x 8	0.80	0.60	14.00	17.00	790	---	
20 x 12	0.80	0.75	14.00	17.00	860	---	
20 x 16	0.80	0.70	18.00	18.00	1085	---	
20 x 20	0.80	0.80	18.00	18.00	1230	---	
24 x 6	0.89	0.55	15.00	19.00	1025	---	
24 x 8	0.89	0.60	15.00	19.00	1045	---	
24 x 12	0.89	0.75	15.00	19.00	1110	---	
24 x 16	0.89	0.70	15.00	19.00	1200	988	
24 x 20	0.89	0.80	22.00	22.00	1675	---	
24 x 24	0.89	0.89	22.00	22.00	1835	---	
30 x 6	1.03	0.55	18.00	23.00	1770	---	
30 x 10	1.03	0.68	18.00	23.00	---	1606	
30 x 12	1.03	0.75	18.00	23.00	1865	1687	
30 x 24	1.03	0.89	25.00	25.00	2675	---	
30 x 30	1.03	1.03	25.00	25.00	3075	---	
36 x 24	1.15	0.89	20.00	26.00	2910	---	
36 x 30	1.15	1.03	28.00	28.00	---	3133	
36 x 36	1.15	1.15	28.00	28.00	4370	---	
42 x 24	1.28	0.89	23.00	30.00	3910	---	
42 x 42	1.28	1.28	31.00	31.00	5840	---	

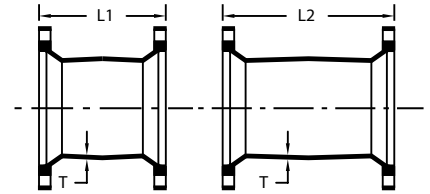
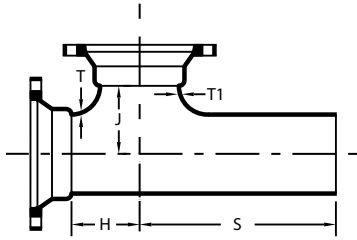
STAR[®] PIPE PRODUCTS





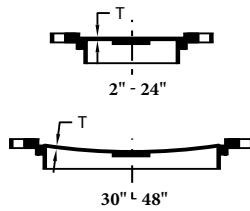
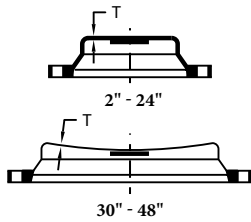
Full Body MJ Fittings

ANSI/AWWA C110/A21.10



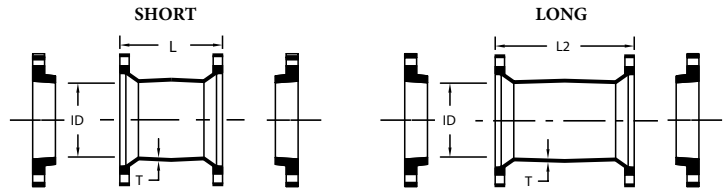
MJ x PE x MJ TEES						
NOM. SIZE	T	T1	H	J	S	WT (LBS.)
4 x 4	0.52	0.52	6.50	6.50	14.50	75
6 x 4	0.55	0.52	8.00	8.00	16.00	112
6 x 6	0.55	0.55	8.00	8.00	16.00	120
8 x 6	0.60	0.55	9.00	9.00	17.00	170
8 x 8	0.60	0.60	9.00	9.00	17.00	180
10 x 10	0.80	0.80	11.00	11.00	19.00	303
12 x 4	0.75	0.52	12.00	12.00	20.00	315
12 x 6	0.75	0.55	12.00	12.00	20.00	325
12 x 8	0.75	0.60	12.00	12.00	20.00	340
12 x 10	0.87	0.80	12.00	12.00	20.00	390
12 x 12	0.87	0.87	12.00	12.00	20.00	407

MJ SOLID SLEEVES					
NOM. SIZE	T	SHORT SLEEVES		LONG SLEEVES	
		L1	WT (LBS.)	L2	WT (LBS.)
2	0.39	7.50	12	12.00	18
3	0.48	7.50	25	12.00	30
4	0.52	7.50	35	12.00	45
6	0.55	7.50	45	12.00	65
8	0.60	7.50	65	12.00	85
10	0.68	7.50	85	12.00	115
12	0.75	7.50	110	12.00	145
14	0.66	9.50	150	15.00	195
16	0.70	9.50	180	15.00	235
18	0.75	9.50	215	15.00	285
20	0.80	9.50	240	15.00	325
24	0.89	9.50	320	15.00	425
30	1.03	15.00	635	24.00	885
36	1.15	15.00	855	24.00	1190
42	1.28	15.00	1115	24.00	1550
48	1.42	15.00	1385	24.00	1940



CAPS

PLUGS



MJ CAPS & PLUGS (SOLID OR TAPPED)				
NOM. SIZE	T	MAX. TAP	WT (LBS.)	
			CAPS	PLUGS
2	0.39	1 1/2	5	5
3	0.50	2	12	10
4	0.60	3	15	15
6	0.65	4	25	25
8	0.70	4	45	45
10	0.75	4	60	65
12	0.75	4	80	85
14	0.82	5	120	115
16	0.89	6	155	145
18	0.96	6	195	185
20	1.03	6	240	225
24	1.16	6	345	335
30	1.03	6	590	573
36	1.15	6	850	815
42	1.28	6	1180	1110
48	1.42	6	1595	1455

MJ DUAL PURPOSE SLEEVES W/ OVERSIZE GLANDS							
NOM. SIZE	PIPE SIZE	(I.D.)	T	SHORT		LONG	
				L1	WT (LBS.)	L2	WT (LBS.)
4	4.80 - 5.00	5.10	0.52	7.50	35	12.00	35
6	6.90 - 7.10	7.20	0.55	7.50	45	12.00	65
8	9.05 - 9.30	9.40	0.60	7.50	65	12.00	86
10	11.10 - 11.40	11.50	0.68	7.50	85	12.00	115
12	13.20 - 13.50	13.60	0.75	7.50	110	12.00	145
16	17.40 - 17.80	17.94	0.70	---	---	15.00	236

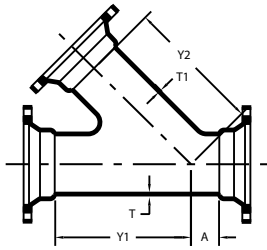
*Threads in Accordance with ANSI/ASME B1.20.1

STAR[®] PIPE PRODUCTS



Full Body MJ Fittings

ANSI/AWWA C110/A21.10



45° MJ LATERALS						
NOM. SIZE	T	T1	A	Y1	Y2	WT (LBS.)
3 x 3	0.48	0.48	3.00	10.00	10.00	60
4 x 3	0.52	0.48	3.00	12.00	12.00	85
4 x 4	0.52	0.52	3.00	12.00	12.00	90
6 x 3	0.55	0.48	3.50	14.50	14.50	125
6 x 4	0.55	0.52	3.50	14.50	14.50	130
6 x 6	0.55	0.55	3.50	14.50	14.50	145
8 x 3	0.60	0.48	4.50	17.50	17.50	185
8 x 4	0.60	0.52	4.50	17.50	17.50	190
8 x 6	0.60	0.55	4.50	17.50	17.50	205
8 x 8	0.60	0.60	4.50	17.50	17.50	230
10 x 6	0.68	0.55	5.00	20.50	20.50	285
10 x 8	0.68	0.60	5.00	20.50	20.50	310
10 x 10	0.68	0.68	5.00	20.50	20.50	340
12 x 8	0.75	0.60	5.50	24.50	24.50	425
12 x 12	0.75	0.75	5.50	24.50	24.50	490
14 x 6	0.66	0.55	6.00	27.00	27.00	570
14 x 14	0.66	0.66	6.00	27.00	27.00	645
16 x 4	0.70	0.52	6.50	30.00	30.00	585
16 x 10	0.70	0.68	6.50	30.00	30.00	665
16 x 12	0.70	0.75	6.50	30.00	30.00	700
16 x 14	0.70	0.66	6.50	30.00	30.00	750
16 x 16	0.70	0.70	6.50	30.00	30.00	770
18 x 4	0.75	0.52	7.00	32.00	32.00	560
18 x 8	0.75	0.60	7.00	32.00	32.00	766
18 x 10	0.75	0.68	7.00	32.00	32.00	801
18 x 12	0.75	0.75	7.00	32.00	32.00	840
18 x 16	0.75	0.70	7.00	32.00	32.00	905
18 x 18	0.75	0.75	7.00	32.00	32.00	953
20 x 4	0.80	0.52	0	27.00	29.50	673
20 x 6	0.80	0.55	0	27.00	29.50	691
20 x 8	0.80	0.60	0	27.00	29.50	710
20 x 10	0.80	0.68	8.00	35.00	35.00	985
20 x 12	0.80	0.75	8.00	35.00	35.00	1025
20 x 14	0.80	0.66	8.00	35.00	35.00	1047
20 x 16	0.80	0.70	8.00	35.00	35.00	1089
20 x 20	0.80	0.80	8.00	35.00	35.00	1203
24 x 4	0.89	0.52	0.50	31.50	31.50	980
24 x 6	0.89	0.55	0.50	31.50	31.50	994
24 x 8	0.89	0.60	0	31.50	34.50	1007
24 x 10	0.89	0.68	9.00	40.50	40.50	1399
24 x 12	0.89	0.75	9.00	40.50	40.50	1442
24 x 14	0.89	0.66	9.00	40.50	40.50	1458
24 x 16	0.89	0.70	9.00	40.50	40.50	1503
24 x 18	0.89	0.75	9.00	40.50	40.50	1556
24 x 20	0.89	0.80	9.00	40.50	40.50	1615
24 x 24	0.89	0.89	9.00	40.50	40.50	1755

(Con't)▶

45° MJ LATERALS (Con't)						
NOM. SIZE	T	T1	A	Y1	Y2	WT (LBS.)
30 x 12	1.37	0.75	10.00	49.00	49.00	2836
30 x 16	1.37	0.89	10.00	49.00	49.00	2959
30 x 20	1.37	1.03	10.00	49.00	49.00	3089
30 x 24	1.37	1.16	10.00	49.00	49.00	3260
30 x 30	1.37	1.37	10.00	49.00	49.00	3710
36 x 6	1.58	0.55	1.00	40.00	40.00	2868
36 x 8	1.58	0.60	15.25	54.00	54.00	4301
36 x 12	1.58	0.75	15.25	54.00	54.00	4376
36 x 14	1.58	0.82	15.25	54.00	54.00	4434
36 x 16	1.58	0.89	15.25	54.00	54.00	4488
36 x 18	1.58	0.96	15.25	54.00	54.00	4549
36 x 20	1.58	1.03	15.25	54.00	54.00	4615
36 x 24	1.58	1.16	15.25	54.00	54.00	4761
36 x 30	1.58	1.37	15.25	56.00	56.00	5266
36 x 36	1.58	1.58	19.50	60.00	60.00	6306
42 x 12	1.78	0.75	0	52.00	52.00	4495
42 x 20	1.78	1.03	12.00	60.00	60.00	6064
42 x 24	1.78	1.16	12.00	60.00	60.00	6203
42 x 30	1.78	1.37	12.00	63.00	63.00	6820
42 x 36	1.78	1.58	12.00	66.00	66.00	7604
42 x 42	1.78	1.78	15.00	71.00	71.00	9018
48 x 14	1.96	0.82	0	52.00	62.00	5723
48 x 18	1.96	0.96	---	52.00	62.00	5810
48 x 20	1.96	1.03	---	52.00	62.00	5861
48 x 24	1.96	1.16	5.00	58.00	64.00	6897
48 x 30	1.96	1.37	4.00	59.00	64.00	7183
48 x 36	1.96	1.58	6.00	64.00	68.00	8294
★ 48 x 42	1.96	1.78	12.00	77.00	77.00	10862
★ 48 x 48	1.96	1.96	16.00	77.00	77.00	11940

★

★ 150 PSI pressure rating

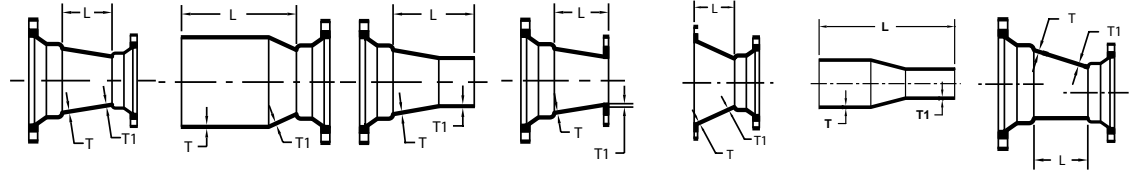
STAR[®] PIPE PRODUCTS





Full Body MJ Fittings

ANSI/AWWA C110/A21.10



REDUCERS			MJ x MJ		SEB		LEB		MJ x FE		FE x MJ		PE x PE		ECCENTRIC	
NOM. SIZE	T	T1	L	WT (LBS.)	L	WT (LBS.)	L	WT (LBS.)	L	WT (LBS.)	L	WT (LBS.)	L	WT (LBS.)	L	WT (LBS.)
3 x 2	0.48	0.39	6.00	25	14.00	14	14.00	20	6.00	20	---	---	---	---	---	---
4 x 2	0.52	0.39	7.00	30	15.00	18	15.00	30	7.00	25	---	---	---	---	---	---
4 x 3	0.52	0.48	7.00	40	15.00	35	15.00	40	7.00	35	7.00	34	---	---	---	---
6 x 2	0.55	0.39	9.00	45	17.00	45	17.00	45	9.00	40	---	---	---	---	---	---
6 x 3	0.55	0.48	9.00	55	17.00	50	17.00	55	9.00	49	---	---	---	---	---	---
6 x 4	0.55	0.52	9.00	60	17.00	60	17.00	60	9.00	53	9.00	60	---	---	9.00	65
8 x 3	0.60	0.48	11.00	75	19.00	70	19.00	70	11.00	65	---	---	---	---	---	---
8 x 4	0.60	0.52	11.00	80	19.00	80	19.00	80	11.00	75	11.00	80	---	---	---	---
8 x 6	0.60	0.55	11.00	95	19.00	90	19.00	90	11.00	80	11.00	89	27.00	85	11.00	100
10 x 4	0.68	0.52	12.00	105	20.00	100	20.00	100	---	---	---	---	---	---	---	---
10 x 6	0.68	0.55	12.00	115	20.00	115	20.00	115	12.00	105	12.00	114	---	---	---	---
10 x 8	0.68	0.60	12.00	135	20.00	130	20.00	130	12.00	130	12.00	130	---	---	12.00	140
12 x 4	0.75	0.52	14.00	135	22.00	130	22.00	130	14.00	125	---	---	---	---	---	---
12 x 6	0.75	0.55	14.00	150	22.00	150	22.00	145	14.00	145	14.00	151	---	---	---	---
12 x 8	0.75	0.60	14.00	165	22.00	165	22.00	165	14.00	175	14.00	183	30.00	165	---	---
12 x 10	0.75	0.68	14.00	190	22.00	190	22.00	185	14.00	185	14.00	190	---	---	14.00	195
14 x 6	0.66	0.55	16.00	190	24.00	175	24.00	185	16.00	195	---	---	32.00	170	---	---
14 x 8	0.66	0.60	16.00	210	24.00	190	24.00	205	16.00	215	---	---	---	---	---	---
14 x 10	0.66	0.68	16.00	230	---	---	---	---	16.00	216	---	---	---	---	---	---
14 x 12	0.66	0.75	16.00	255	24.00	240	24.00	255	16.00	246	---	---	---	---	---	---
16 x 6	0.70	0.55	18.00	230	26.00	210	26.00	230	---	---	---	---	---	---	---	---
16 x 8	0.70	0.60	18.00	250	26.00	230	26.00	250	---	---	---	---	---	---	---	---
16 x 10	0.70	0.68	18.00	280	26.00	255	26.00	275	---	---	---	---	---	---	18.00	275
16 x 12	0.70	0.75	18.00	305	26.00	285	26.00	305	18.00	325	18.00	305	---	---	18.00	302
16 x 14	0.70	0.66	18.00	335	26.00	310	26.00	315	---	---	---	---	---	---	---	---
18 x 8	0.75	0.60	19.00	295	27.00	270	27.00	295	19.00	300	---	---	---	---	---	---
18 x 10	0.75	0.68	19.00	325	27.00	300	27.00	320	19.00	340	---	---	---	---	---	---
18 x 12	0.75	0.75	19.00	350	27.00	325	27.00	350	19.00	360	---	---	---	---	---	---
18 x 14	0.75	0.66	19.00	380	27.00	355	27.00	365	---	---	---	---	---	---	---	---
18 x 16	0.75	0.70	19.00	415	27.00	390	27.00	395	19.00	405	---	---	---	---	---	---
20 x 8	0.80	0.60	20.00	345	28.00	345	---	---	---	---	---	---	---	---	---	---
20 x 10	0.80	0.68	20.00	375	28.00	345	28.00	375	---	---	---	---	---	---	---	---
20 x 12	0.80	0.75	20.00	405	28.00	375	28.00	405	---	---	---	---	---	---	20.00	404
20 x 14	0.80	0.66	20.00	430	---	---	---	---	---	---	---	---	---	---	---	---
20 x 16	0.80	0.70	20.00	470	28.00	435	28.00	445	20.00	510	---	---	---	---	---	---
20 x 18	0.80	0.75	20.00	510	28.00	475	28.00	485	---	---	---	---	---	---	---	---
24 x 8	0.89	0.60	24.00	482	---	---	---	---	---	---	---	---	---	---	---	---
24 x 12	0.89	0.75	24.00	550	32.00	510	32.00	550	24.00	535	---	---	---	---	---	---
24 x 14	0.89	0.66	24.00	---	---	---	---	---	24.00	543	---	---	---	---	---	---
24 x 16	0.89	0.70	24.00	615	32.00	575	32.00	595	---	---	---	---	---	---	---	---
24 x 18	0.89	0.75	24.00	660	32.00	620	32.00	635	---	---	---	---	---	---	---	---
24 x 20	0.89	0.80	24.00	705	32.00	665	32.00	675	24.00	648	---	---	---	---	24.00	710
30 x 12	1.03	0.75	30.00	920	---	---	---	---	---	---	---	---	---	---	---	---
30 x 16	1.03	0.70	30.00	945	38.00	830	---	---	---	---	---	---	---	---	---	---
30 x 18	1.03	0.75	30.00	990	38.00	885	38.00	965	---	---	---	---	---	---	---	---
30 x 20	1.03	0.80	30.00	1050	38.00	945	38.00	1020	---	---	---	---	---	---	---	---
30 x 24	1.03	0.89	30.00	1165	38.00	1060	38.00	1125	---	---	---	---	---	---	30.00	1170
36 x 20	1.15	0.80	36.00	1450	44.00	1285	44.00	1420	---	---	---	---	---	---	---	---
36 x 24	1.15	0.89	36.00	1580	44.00	1410	44.00	1535	---	---	---	---	---	---	---	---

(Con't) ▶

UCAT22.01
 * REGISTERED TRADEMARK OF STAR PIPE PRODUCTS

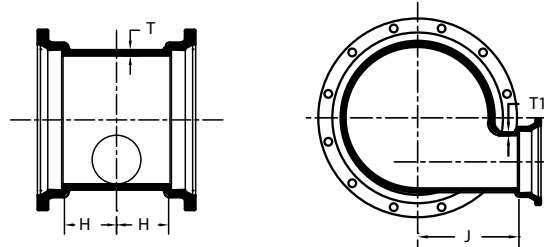
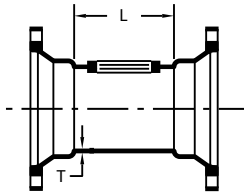




Full Body MJ Fittings

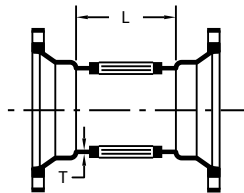
ANSI/AWWA C110/A21.10

REDUCERS (con't)			MJ x MJ		SEB		LEB		MJ x FE		FE x MJ		PE x PE		ECCENTRIC	
NOM. SIZE	T	T1	L	WT (LBS.)	L	WT (LBS.)	L	WT (LBS.)	L	WT (LBS.)	L	WT (LBS.)	L	WT (LBS.)	L	WT (LBS.)
36 x 30	1.15	1.03	36.00	1855	44.00	1690	44.00	1750	---	---	---	---	---	---	36.00	1865
42 x 24	1.28	0.89	42.00	2060	50.00	1855	50.00	2020	---	---	---	---	---	---	---	---
42 x 30	1.28	1.03	42.00	2370	50.00	2165	50.00	2265	---	---	---	---	---	---	---	---
48 x 30	1.42	1.03	48.00	3005	56.00	2740	56.00	2900	---	---	---	---	---	---	---	---
48 x 36	1.42	1.15	48.00	3370	56.00	3100	56.00	3205	---	---	---	---	---	---	48.00	3439
48 x 42	1.42	1.28	---	---	---	---	---	---	---	---	---	---	---	---	48.00	3815

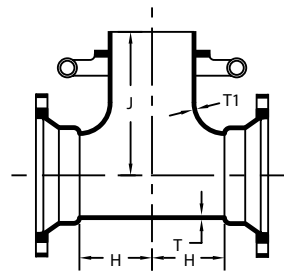


MJ TAPPED TEE				
NOM. SIZE	T	L	MAX TAP	WT (LBS.)
4 x 4	0.52	8.00	3	45
6 x 6	0.55	8.00	3	70
8 x 8	0.60	8.00	3	95
10 x 10	0.68	8.00	3	127
12 x 12	0.75	8.00	3	165
16 x 16	0.70	8.00	3	267
20 x 20	0.80	8.00	3	381
24 x 24	0.89	9.00	3	516

Threads in Accordance with ANSI/ASME B1.20.1



TANGENTIAL TEE					
NOM. SIZE	T	T1	H	J	WT (LBS.)
20 x 4	0.80	0.52	14.00	17.00	820
20 x 8	0.80	0.60	14.00	17.00	846
24 x 4	0.89	0.52	15.00	19.00	1120
24 x 8	0.89	0.60	15.00	19.00	1148



MJ TAPPED CROSS				
NOM. SIZE	T	L	MAX TAP	WT (LBS.)
4 x 4	0.52	8.00	3	45
6 x 6	0.55	8.00	3	70
8 x 8	0.60	8.00	3	95
10 x 10	0.68	8.00	3	130
12 x 12	0.75	8.00	3	165
16 x 16	0.70	8.00	3	267
20 x 20	0.80	8.00	3	381
24 x 24	0.89	9.00	3	516

Threads in Accordance with ANSI/ASME B1.20.1

MJ x SWIVEL HYDRANT TEES W/ SWIVEL GLAND					
NOM. SIZE	T	T1	H	J	WT (LBS.)
6 x 6	0.55	0.55	8.00	10.50	150
8 x 6	0.60	0.55	9.00	11.50	200
8 x 8	0.60	0.60	9.00	11.50	210
10 x 6	0.68	0.55	11.00	13.50	239
12 x 6	0.75	0.55	12.00	14.50	341
16 x 6	0.70	0.55	15.00	17.50	619
16 x 8	0.70	0.60	15.00	17.50	649
20 x 6	0.80	0.55	14.00	19.50	829
30 x 6	1.03	0.55	18.00	24.50	2070



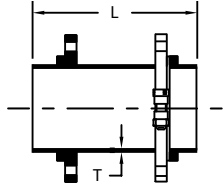
STAR[®] PIPE PRODUCTS



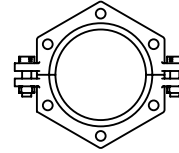
Full Body MJ Fittings

ANSI/AWWA C110/A21.10

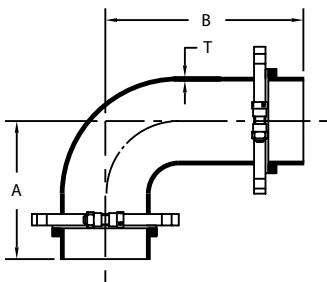
STAR® PIPE PRODUCTS



SWIVEL x SOLID HYDRANT ADAPTER			
NOM. SIZE	T	L	WT (LBS.)
4 x 13	0.52	13.00	28
6 x 13	0.55	13.00	54
6 x 18	0.55	18.00	68
6 x 24	0.55	24.00	81
6 x 36	0.55	36.00	110
6 x 48	0.55	48.00	139
8 x 13	0.60	13.00	68
8 x 18	0.60	18.00	88
8 x 24	0.60	24.00	112
8 x 48	0.60	48.00	208
12 x 13	0.75	13.00	123



SWIVEL GLANDS		
NOM. SIZE	WT (LBS.)	T-HEAD BOLTS
4	8	(2) 3/4" x 3 1/2"
6	11	(2) 3/4" x 3 1/2"
8	13	(2) 3/4" x 3 1/2"
12	25	(2) 3/4" x 4"



SWIVEL x SWIVEL HYDRANT ELL W/ 2 SWIVEL GLANDS				
NOM. SIZE	T	A	B	WT (LBS.)
6	0.55	10.50	15.50	100
8	0.60	11.50	16.50	140

UCAT22.01
* REGISTERED TRADEMARK OF STAR PIPE PRODUCTS



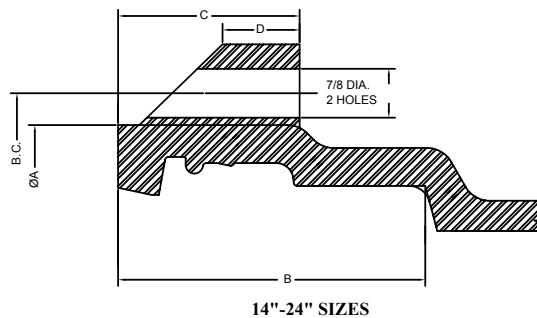
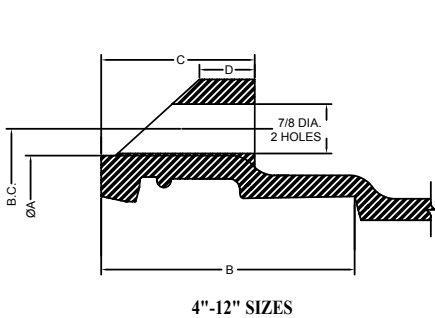
Compact Push-On Fittings

ANSI/AWWA C153/A21.53

4" - 24" DUCTILE IRON PUSH-ON JOINT COMPACT FITTINGS

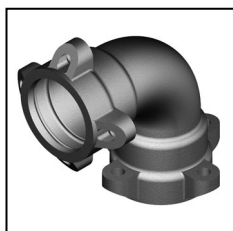
GENERAL SPECIFICATIONS

- MATERIAL:** Ductile iron per ASTM A536
- PRESSURE:** 350 PSI rating for 4" - 24" sizes. Pressure rating applies to fittings only and does not apply to restraining lugs or external restrainers
- 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)
- WEIGHTS:** Are in pounds, unless noted otherwise and do not include accessories, cement lining and coating
- FLANGES:** Flanged ends on fittings match ANSI/AWW C115/A21.15 and ANSI B16.1 class 125 flanges
- CEMENT LINING:** In accordance with ANSI/AWWA C104/A21.4 -- sizes 4" - 24" double thickness. [Click here for a pressure jetting discussion](http://www.starpipeproducts.com/pressure_jetting_discussion) or visit http://www.starpipeproducts.com/pressure_cleaning_guidelines.asp.
- COATING:** Asphaltic seal coat inside and out in accordance with ANSI/AWWA C104/A21.4 and referenced in ANSI/AWWA C153/A21.53
- GASKETS:** Dual hardness SBR in accordance with ANSI/AWWA C111/A21.11 (see pg. 41)
- APPROVALS:** 4" - 12" UL/ULC Listed | 4" and greater are UL/ANSI/NSF Standards 61 and 372 | 4" - 12" FM Approved. Please consult factory for detail listing and approvals.
- DIMENSIONS:** All dimensions are in inches unless noted otherwise. ([Click here for a short commentary on non-pressure sewer applications](http://www.starpipeproducts.com/non-pressure_sewer_applications.asp) or visit http://www.starpipeproducts.com/non-pressure_sewer_applications.asp. Review commentary before ordering or installing fittings for this application.
- INSTALLATION:** Per ANSI/AWWA C600 and C111 using DIP conforming to C150/C151 and PVC pipe conforming to C900/C905



PUSH-ON JOINT DIMENSIONS

NOM. SIZE	ØA	B.C.	B	C	D
4	6.38	7.50	4.02	2.17	1.12
6	8.52	9.56	4.02	2.17	1.12
8	10.80	11.82	4.49	2.72	1.12
10	12.91	14.00	4.49	2.91	1.12
12	15.05	16.25	5.00	2.99	1.12
14	17.89	18.75	5.50	3.12	1.25
16	20.05	21.00	5.50	3.25	1.25
18	22.35	23.25	5.50	3.25	1.25
20	24.47	25.50	5.50	3.25	1.25
24	28.79	30.00	6.00	3.25	1.25



Please note: All fittings are standard with two (2) restraining lugs. Bends 45° & 90° in sizes 4" - 12" are also available with four (4) restraining lugs.

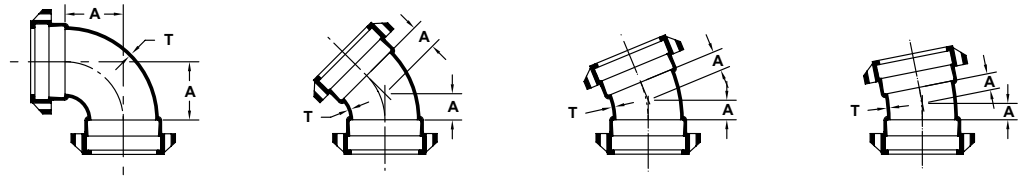
STAR[®] PIPE PRODUCTS



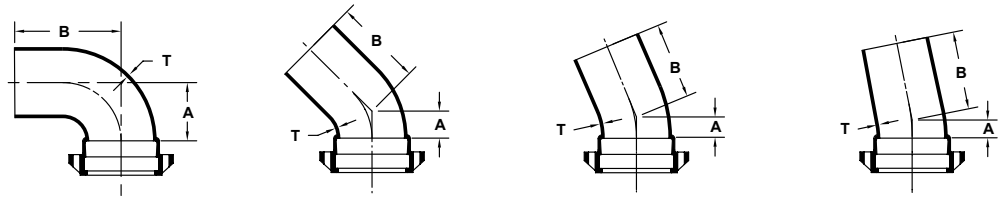


Compact Push-On Fittings

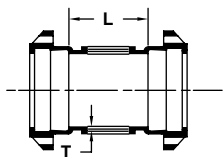
ANSI/AWWA C153/A21.53



PO x PO BENDS		90° PO x PO BENDS (1/4)		45° PO x PO BENDS (1/8)		22 1/2° PO x PO BENDS (1/8)		11 1/4° PO x PO BENDS (1/32)	
NOM. SIZE	T	A	WT (LBS.)	A	WT (LBS.)	A	WT (LBS.)	A	WT (LBS.)
4	0.34	4.00	26	2.00	23	1.50	22	1.25	21
6	0.36	5.00	41	3.00	38	2.00	34	1.50	32
8	0.38	6.50	71	3.50	54	2.50	55	1.75	52
10	0.40	7.50	98	4.50	87	3.00	75	2.00	67
12	0.42	8.75	139	5.50	110	3.50	105	2.25	95
14	0.47	11.50	254	5.00	143	3.75	162	2.50	113
16	0.50	12.50	275	5.50	206	3.75	168	2.50	172
18	0.54	14.00	391	6.00	309	4.50	209	3.00	209
20	0.57	15.00	476	7.00	351	4.50	400	3.00	265
24	0.61	17.00	704	7.50	414	7.50	410	3.00	315

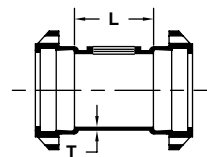


PO x PE BENDS		90° PO x PE BENDS (1/4)			45° PO x PE BENDS (1/8)			22 1/2° PO x PE BENDS (1/8)			11 1/4° PO x PE BENDS (1/32)		
NOM. SIZE	T	A	B	WT (LBS.)	A	B	WT (LBS.)	A	B	WT (LBS.)	A	B	WT (LBS.)
4	0.34	4.00	10.50	24	2.00	8.00	21	1.50	8.00	19	1.25	7.00	18
6	0.36	5.00	12.00	47	3.00	9.00	38	2.00	8.00	35	1.50	7.25	34
8	0.38	6.50	13.00	75	3.50	9.50	60	2.50	8.50	57	1.75	7.50	55



PO x TAPPED CROSS				
NOM. SIZE	T	L	MAX. TAP	WT (LBS.)
4	0.34	6.00	3	35
6	0.36	6.00	3	45
8	0.38	6.00	3	61
10	0.40	6.00	3	100
12	0.42	6.00	3	140

Threads in Accordance with ANSI/ASME B1.20.1



PO x TAPPED TEE				
NOM. SIZE	T	L	MAX. TAP	WT (LBS.)
4	0.34	6.00	3	35
6	0.36	6.00	3	45
8	0.38	6.00	3	61
10	0.40	6.00	3	100
12	0.42	6.00	3	140

Threads in Accordance with ANSI/ASME B1.20.1

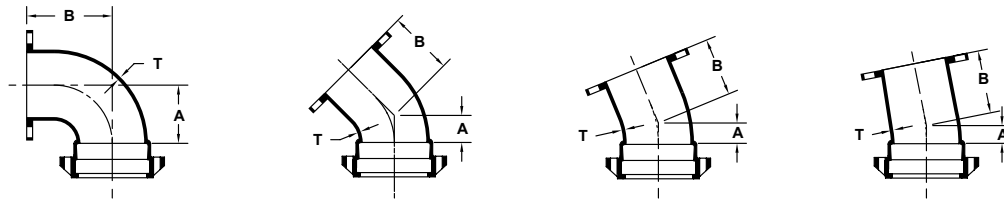
STAR[®] PIPE PRODUCTS

UCAT22.01
* REGISTERED TRADEMARK OF STAR PIPE PRODUCTS

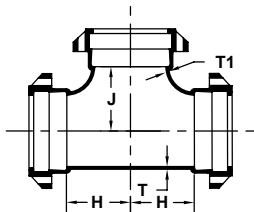


Compact Push-On Fittings

ANSI/AWWA C153/A21.53



PO x FE BENDS		90° PO x FE BENDS (1/4)			45° PO x FE BENDS (1/8)			22 1/2° PO x FE BENDS (1/16)			11 1/4° PO x FE BENDS (1/32)		
NOM. SIZE	T	A	B	WT (LBS.)	A	B	WT (LBS.)	A	B	WT (LBS.)	A	B	WT (LBS.)
4	0.34	4.50	6.50	33	2.00	4.00	21	1.50	4.00	25	1.25	4.00	24
6	0.36	5.50	8.00	47	3.00	5.00	42	2.00	5.00	44	1.50	5.00	30
8	0.38	6.50	9.00	76	3.50	5.50	60	2.50	5.50	64	1.75	5.50	61
10	0.40	7.50	11.00	130	4.50	6.50	93	3.00	6.50	90	2.00	6.50	80
12	0.42	8.75	12.00	158	5.50	7.50	122	3.50	7.50	112	2.25	7.50	94
14	0.47	11.50	14.00	231	5.00	7.50	162	3.75	7.50	174	2.50	7.50	170
16	0.50	12.50	15.00	350	5.50	8.00	275	3.75	8.00	228	2.50	8.00	228
24	0.61	17.00	22.00	---	---	---	---	---	---	---	---	---	---



PO x PO TEES					
NOM. SIZE	T	T1	H	J	WT (LBS.)
4 x 4	0.34	0.34	4.00	4.00	40
6 x 4	0.36	0.34	4.00	5.00	50
6 x 6	0.36	0.36	5.00	5.00	59
8 x 4	0.38	0.34	4.00	6.50	75
8 x 6	0.38	0.36	5.00	6.50	88
8 x 8	0.38	0.38	6.50	6.50	99
10 x 4	0.40	0.34	4.00	7.50	95
10 x 6	0.40	0.36	5.00	7.50	103
10 x 8	0.40	0.38	6.50	7.50	122
10 x 10	0.40	0.40	7.50	7.50	134
12 x 4	0.42	0.34	4.00	8.75	122
12 x 6	0.42	0.36	5.00	8.75	126
12 x 8	0.42	0.38	6.50	8.75	148
12 x 10	0.42	0.40	7.50	8.75	161
12 x 12	0.42	0.42	8.75	8.75	192
14 x 6	0.47	0.36	6.50	10.50	176
14 x 10	0.47	0.40	8.50	10.50	195
14 x 12	0.47	0.42	9.50	10.50	196
14 x 14	0.47	0.47	10.50	10.50	209

(Con't)➔

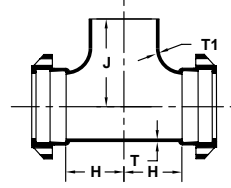
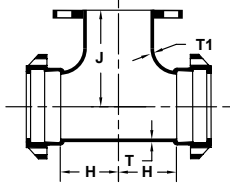
PO x PO TEES (Con't)					
NOM. SIZE	T	T1	H	J	WT (LBS.)
16 x 6	0.50	0.36	6.50	11.50	221
16 x 8	0.50	0.38	7.50	11.50	257
16 x 10	0.50	0.40	8.50	11.50	232
16 x 12	0.50	0.42	9.50	11.50	288
16 x 14	0.50	0.47	10.50	11.50	349
16 x 16	0.50	0.50	12.50	12.50	460
18 x 6	0.54	0.36	6.50	12.50	320
18 x 8	0.54	0.38	7.50	12.50	325
18 x 10	0.54	0.40	8.50	12.50	344
18 x 12	0.54	0.42	9.50	12.50	385
18 x 14	0.54	0.47	10.50	12.50	352
18 x 16	0.54	0.50	11.50	12.50	362
18 x 18	0.54	0.54	14.00	14.00	550
20 x 6	0.57	0.36	6.50	14.00	355
20 x 10	0.57	0.40	9.00	14.00	369
20 x 12	0.57	0.42	10.00	14.00	457
20 x 14	0.57	0.47	11.00	14.00	484
20 x 16	0.57	0.50	12.00	14.00	610
20 x 18	0.57	0.54	13.00	14.00	639
20 x 20	0.57	0.57	15.00	15.00	644
24 x 6	0.61	0.36	7.00	16.00	450
24 x 8	0.61	0.38	8.00	16.00	492
24 x 10	0.61	0.40	9.00	16.00	520
24 x 12	0.61	0.42	10.00	16.00	541
24 x 14	0.61	0.47	11.00	16.00	715
24 x 16	0.61	0.50	12.00	16.00	755
24 x 18	0.61	0.54	13.00	16.00	708
24 x 20	0.61	0.57	14.00	16.00	845
24 x 24	0.61	0.61	17.00	17.00	884

STAR[®] PIPE PRODUCTS



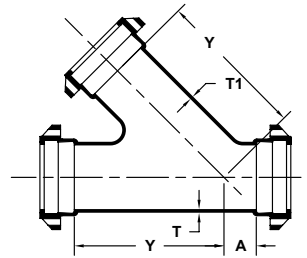
Compact Push-On Fittings

ANSI/AWWA C153/A21.53



PO x FE TEES					
NOM. SIZE	T	T1	H	J	WT (LBS.)
4 x 4	0.34	0.34	4.50	6.50	47
6 x 4	0.36	0.34	4.50	8.00	60
6 x 6	0.36	0.36	5.50	8.00	69
8 x 4	0.38	0.34	4.50	9.00	81
8 x 6	0.38	0.36	5.50	9.00	87
8 x 8	0.38	0.38	6.50	9.00	115
10 x 4	0.40	0.34	4.50	11.00	97
10 x 6	0.40	0.36	5.50	11.00	114
10 x 8	0.40	0.38	6.50	11.00	133
10 x 10	0.40	0.40	7.50	11.00	165
12 x 4	0.42	0.34	4.50	12.00	125
12 x 6	0.42	0.36	5.50	12.00	131
12 x 8	0.42	0.38	6.50	12.00	166
12 x 10	0.42	0.40	7.50	12.00	142
12 x 12	0.42	0.42	8.75	12.00	210
16 x 6	0.50	0.36	6.50	15.00	236
16 x 8	0.50	0.38	7.50	15.00	269
16 x 10	0.50	0.40	8.50	15.00	310
16 x 12	0.50	0.42	9.50	15.00	348
16 x 14	0.50	0.47	10.50	15.00	342
16 x 16	0.50	0.50	11.50	15.00	355
18 x 6	0.54	0.36	6.50	15.50	301
18 x 8	0.54	0.38	7.50	15.50	319
18 x 10	0.54	0.40	8.50	15.50	337
18 x 14	0.54	0.47	10.50	15.50	393
18 x 16	0.54	0.50	11.50	15.50	420
20 x 6	0.57	0.36	6.50	17.00	341
20 x 10	0.57	0.40	9.00	17.00	420
20 x 14	0.57	0.47	11.00	17.00	474
20 x 16	0.57	0.50	12.00	18.00	498
20 x 18	0.57	0.54	13.00	18.00	528
24 x 6	0.61	0.36	7.00	19.00	420
24 x 10	0.61	0.40	9.00	19.00	468
24 x 12	0.61	0.42	10.00	19.00	503
24 x 14	0.61	0.47	11.00	19.00	531
24 x 16	0.61	0.50	12.00	19.00	555

PO x PE TEES					
NOM. SIZE	T	T1	H	J	WT (LBS.)
6 x 6	0.36	0.36	5.00	11.50	55
8 x 6	0.38	0.36	5.00	12.50	75
12 x 6	0.42	0.36	5.00	15.50	130



45° PO LATERALS					
NOM. SIZE	T	T1	A	Y	WT (LBS.)
4 x 4	0.34	0.34	2.50	9.50	55
6 x 4	0.36	0.34	3.00	13.00	76
6 x 6	0.36	0.36	3.00	13.00	85
8 x 4	0.38	0.34	3.50	16.00	89
8 x 6	0.38	0.36	3.50	16.00	125
8 x 8	0.38	0.38	3.50	16.00	140
10 x 4	0.40	0.34	3.50	19.00	144
10 x 6	0.40	0.36	3.50	19.00	154
10 x 8	0.40	0.38	3.50	19.00	160
10 x 10	0.40	0.40	3.50	19.00	170
12 x 4	0.42	0.34	4.50	22.50	224
12 x 6	0.42	0.36	4.50	22.50	236
12 x 8	0.42	0.38	4.50	22.50	259
12 x 10	0.42	0.40	4.50	22.50	282
12 x 12	0.42	0.42	4.50	22.50	300
14 x 6	0.47	0.36	0.00	19.50	236
14 x 8	0.47	0.38	1.50	21.00	255
14 x 10	0.47	0.40	3.00	22.50	325
14 x 14	0.47	0.47	6.00	25.00	475
16 x 6	0.50	0.36	0.00	21.00	281
16 x 8	0.50	0.38	1.00	22.50	305
16 x 12	0.50	0.42	3.50	25.00	346
16 x 16	0.50	0.50	6.00	28.00	380
18 x 18	0.75	0.75	7.00	29.00	812

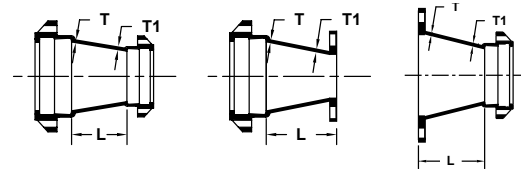
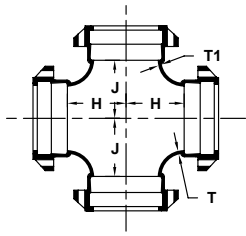
STAR® PIPE PRODUCTS

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* REGISTERED TRADEMARK OF STAR PIPE PRODUCTS

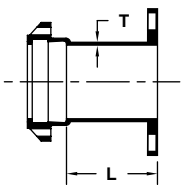


Compact Push-On Fittings

ANSI/AWWA C153/A21.53

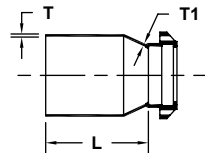


PO CROSSES					
NOM. SIZE	T	T1	H	J	WT (LBS.)
4 x 4	0.34	0.34	4.00	4.00	55
6 x 6	0.36	0.36	5.00	5.00	74
8 x 6	0.38	0.36	5.00	6.50	103
8 x 8	0.38	0.38	6.50	6.50	115
10 x 4	0.40	0.34	4.00	7.50	116
10 x 8	0.40	0.38	6.50	7.50	150
10 x 10	0.40	0.40	7.50	7.50	160
12 x 8	0.42	0.38	6.50	8.75	171
12 x 10	0.42	0.40	7.50	8.75	176
12 x 12	0.42	0.42	8.75	8.75	216
14 x 6	0.47	0.36	6.50	10.50	189
14 x 8	0.47	0.38	7.50	10.50	204
14 x 10	0.47	0.40	8.50	10.50	222
14 x 12	0.47	0.42	9.50	10.50	239
14 x 14	0.47	0.47	10.50	10.50	270
16 x 6	0.50	0.36	6.50	11.50	234
16 x 8	0.50	0.38	7.50	11.50	245
16 x 10	0.50	0.40	8.50	11.50	268
16 x 12	0.50	0.42	9.50	11.50	274
16 x 14	0.50	0.47	10.50	11.50	322
16 x 16	0.50	0.50	12.50	12.50	417
18 x 8	0.54	0.38	7.50	12.50	363
24 x 24	0.61	0.61	17.00	17.00	1056



PO x FLANGE ADAPTER			
NOM. SIZE	T	L	WT (LBS.)
4	0.34	3.50	22
6	0.36	3.50	34
8	0.38	3.50	46
10	0.40	3.50	59
12	0.42	3.50	98
14	0.47	5.00	113
16	0.50	5.00	180
24	0.61	5.00	308

NOM. SIZE	T	T1	PO x PO		PO x FE		FE x PO	
			L	WT (LBS.)	L	WT (LBS.)	L	WT
6 x 4	0.36	0.34	4.00	30	6.00	32		
8 x 4	0.38	0.34	5.00	42	7.00	46		
8 x 6	0.38	0.36	4.00	43	6.00	47	6.00	45
10 x 4	0.40	0.34	7.00	53	9.00	55		
10 x 6	0.40	0.36	5.00	58	7.00	59		
10 x 8	0.40	0.38	4.00	62	6.00	61		
12 x 4	0.42	0.34	9.00	70	11.00	78		
12 x 6	0.42	0.36	7.00	77	9.00	73		
12 x 8	0.42	0.38	5.00	80	7.00	74		
12 x 10	0.42	0.40	4.00	82	6.00	95		
14 x 6	0.47	0.36	9.00	84	11.00	121		
14 x 8	0.47	0.38	7.00	85	9.00	128		
14 x 10	0.47	0.40	5.00	87	7.00	127		
14 x 12	0.47	0.42	4.00	104	6.00	144		
16 x 6	0.50	0.36	11.00	138	13.00	133		
16 x 8	0.50	0.38	9.00	137	11.00	141		
16 x 10	0.50	0.40	7.00	130	9.00	158		
16 x 12	0.50	0.42	5.00	135	7.00	172		
16 x 14	0.50	0.47	4.00	139	6.00	196		
18 x 8	0.54	0.38	13.00	140	16.00	157		
18 x 10	0.54	0.40	10.00	142	14.00	175		
18 x 12	0.54	0.42	7.00	167	12.00	215		
18 x 14	0.54	0.47	6.00	217	11.50	234		
18 x 16	0.54	0.50	5.00	202	10.50	246		
20 x 10	0.57	0.40	14.00	180	16.00	234		
20 x 12	0.57	0.42	12.00	205	---	---		
20 x 14	0.57	0.47	10.00	233	13.50	249		
20 x 16	0.57	0.50	7.00	250	11.50	272		
20 x 18	0.57	0.54	4.00	248	---	---		
24 x 12	0.61	0.42	16.00	308	18.00	262		
24 x 14	0.61	0.47	14.00	340	17.50	315		
24 x 16	0.61	0.50	12.00	324	15.50	328		
24 x 18	0.61	0.54	10.00	390	---	---		
24 x 20	0.61	0.57	7.00	421	---	---		



PO SMALL END BELL (SEB) REDUCER				
NOM. SIZE	T	T1	L	WT (LBS.)
6 x 4	0.37	0.35	9.50	27
8 x 4	0.39	0.35	9.50	29
8 x 6	0.39	0.37	9.50	37
12 x 6	0.43	0.37	12.50	63
12 x 8	0.43	0.39	10.50	64

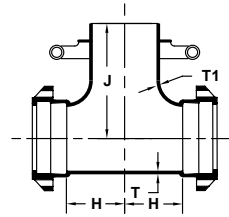
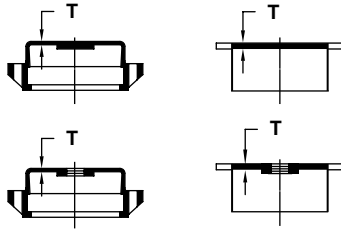
STAR[®] PIPE PRODUCTS





Compact Push-On Fittings

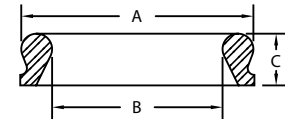
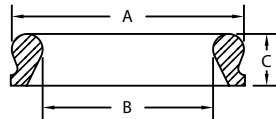
ANSI/AWWA C153/A21.53



PO CAPS & PLUGS (SOLID OR TAPPED)				
NOM. SIZE	T	MAX. TAP	WT (LBS.)	
			CAPS	PLUGS
4	0.37	2	13	12
6	0.39	2	20	17
8	0.41	2	30	29
10	0.44	2	40	36
12	0.46	2	62	47
14	0.60	2.5	70	74
16	0.83	2.5	156	144
24	0.90	3	212	202

PO x SWIVEL HYDRANT TEES					
NOM. SIZE	T	T1	H	J	WT (LBS.)
6 x 6	0.36	0.36	6.00	9.50	71
8 x 6	0.38	0.36	6.00	10.50	87
10 x 6	0.40	0.36	7.00	12.50	100
12 x 6	0.42	0.36	7.00	13.50	138
16 x 6	0.50	0.36	6.50	15.00	229
20 x 6	0.57	0.36	7.00	17.50	400
24 x 6	0.61	0.36	7.00	19.50	525

Threads in Accordance with ANSI/ASME B1.20.1



PO GASKETS			
NOM. SIZE	A	B	C
4	5.74	4.54	1.00
6	7.86	6.64	1.00
8	10.15	8.73	1.21
10	12.22	10.80	1.30
12	14.34	12.92	1.30
14	16.90	15.90	1.65
16	19.01	17.01	1.65
18	21.13	19.13	1.65
20	23.25	21.25	1.65
24	27.48	25.48	1.65

PO TRANSITION GASKETS			
NOM. SIZE	A	B	C
4	5.74	4.18	1.00
6	7.86	6.31	1.10
8	10.15	8.32	1.29
10	12.22	10.30	1.36
12	14.34	12.70	1.45

STAR[®] PIPE PRODUCTS



Standard Push-On Joint Gaskets

(SBR, NBR, EPDM, Neoprene, FKM)

ANSI/AWWA C111/A21.11

GASKET GENERAL SPECIFICATIONS

Star Pipe Products Push-On Gasket dimensions conform to the requirements for Trim Tyton[®] style bells. Gasket markings include size, Manufacturer's mark, Country of origin and product identification. No markings are positioned on sealing surfaces per the ANSI/AWWA C111/A21.11 standard. Push-on Transition gaskets follow the requirements of ANSI/AWWA C111/A21.11 where applicable.

Standard gasket material is vulcanized styrene butadiene rubber (SBR). Special application elastomers (EPDM, Nitrile, Neoprene & FKM) are available and shall be identified on all documentation and corresponding gaskets. All SBR, EPDM, Nitrile and Flouroelastomer Push-On joint gaskets supplied by Star Pipe Products are certified to NSF/ANSI 61.

Star Pipe gaskets are manufactured under quality control standards and procedures that are maintained by the gasket supplier. Appropriate documentation is maintained by the manufacturer and available for review upon request.

Star Pipe gasket suppliers maintain a quality assurance program and manual that is reviewed and updated on an ongoing basis to ensure product quality. Star Pipe gasket suppliers perform in house testing and submit to random testing by Underwriters Laboratories, Inc. Star Pipe gasket providers are recognized under the component program (UL 194/ UL 157) of Underwriters Laboratories, Inc.

Star Pipe provides that our Push-On gaskets for potable or wastewater projects will perform as designed, based on the published chemical and environmental resistance data for "generic" rubber compounds. Star Pipe should be consulted for specific recommendations or for unusual applications.

GASKET PROPERTIES			
PROPERTY	ASTM TEST METHOD	MAIN BODY	HEEL
Hardness, Shore "A"	D2240	55±5	83±5
Minimum Tensile	D412	2000 PSI	1200 PSI
Minimum Elongation	D412	300%	125%
Minimum Aging	D573	60%	---
Maximum Compression Set	D395, Method B	20%	---
Resistance to Surface Ozone Cracking	D1149	No Cracking	---

GASKET TYPE	MAXIMUM CONTINUOUS TEMP	STANDARD USAGE
SBR (Styrene Butadiene Rubber/ Buna-S)	150 F	Drinking Water, Salt Water, Sanitary Sewage, Reclaimed Water, Raw Water, Storm Water. Not Recommended for Hydrocarbon Service
EPDM (Ethylene Propylene)	212 F	Alcohols, Dilute Acids, Dilute alkalis, Ketones (MEK/Acetone), Strong Oxidizing Chemicals; Drinking Water, Salt Water, Sanitary Sewage, Reclaimed Water, Raw Water, Storm Water. Not Recommended for Hydrocarbon Service
Neoprene (Polychlorprene / CR)	200 F	Hydrocarbons, Unrefined Petroleum Products, Greasy Waste; Salt Water, Sanitary Sewage, Reclaimed Water, Raw Water, Storm Water.
Nitrile (NBR / Buna-N)	150 F	Refined Oils and Fluids, Fats, Greases and Waste; Drinking water, Sanitary Sewage, Reclaimed Water, Raw Water, Storm Water.
FKM (Flouroelastomer / Viton [®])	212 F	Aromatic Hydrocarbons, Chlorinated Hydrocarbons, Vegetable Oils, most Chemicals; Drinking Water, Reclaimed Water, Raw Water, Storm Water.

Trim Tyton[®] is a registered trademark of United States Pipe and Foundry Company.

Viton[®] is a registered trademark of E.I. Du Pont De Nemours & Company.

STAR[®] PIPE PRODUCTS





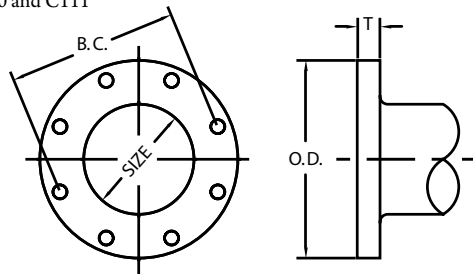
Flanged Fittings

ANSI/AWWA C110/A21.10

1" - 64" DUCTILE IRON FLANGED FITTINGS

GENERAL SPECIFICATIONS

- MATERIAL:** Ductile iron per ASTM A536
- PRESSURE:** 250 PSI rating for 1" - 48" sizes and 150 PSI rating for 54" - 64" *24" and smaller sizes can be rated for 350 PSI with the use of STAR-TITE Gasket
- 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 -- size 1" - 3" single thickness and sizes 4" - 64" double thickness. [Click here for a pressure jetting discussion](#) or visit http://www.starpipeproducts.com/pressure_cleaning_guidelines.asp.
- COATING:** Asphaltic seal coat inside in accordance with ANSI/AWWA C104/A21.4 and prime coat outside
- APPROVALS:** 2" - 12" Underwriters Laboratories and ULC Listed and Factory Mutual approved for 250 PSI rating. Please consult factory for detail listing and approvals. 2" and greater are UL/ANSI/NSF Standards 61 and 372.
- DIMENSIONS:** All dimensions are in inches unless noted otherwise.
- INSTALLATION:** Per ANSI/AWWA C110 and C111



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

STAR[®] PIPE PRODUCTS



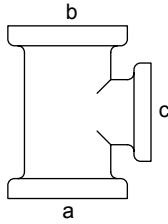


Flanged Fittings

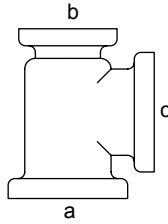
ANSI/AWWA C110/A21.10

METHOD OF DESIGNATING OUTLETS OF REDUCING FITTINGS FOR SPECIFICATIONS

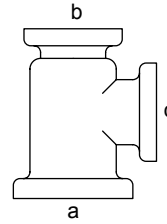
Reducing Tees



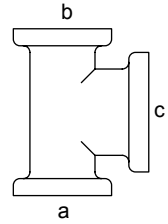
Reducing on Outlet



Reducing on One Run

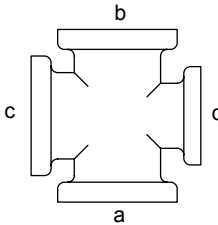


Reducing on One Run and Outlet

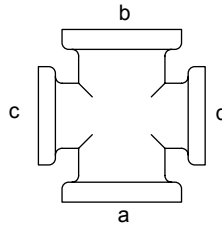


Reducing on Both Runs (Bull Head)

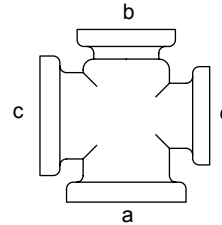
Reducing Crosses



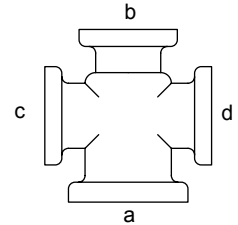
Reducing on One Outlet



Reducing on Both Outlets

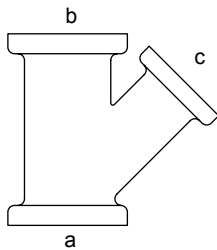


Reducing on One Run and Outlet

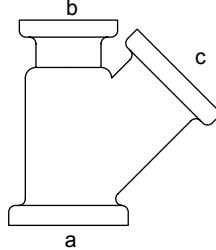


Reducing on One Run and Both Outlets

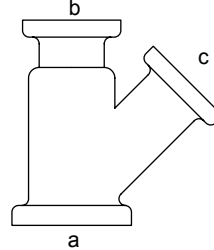
Reducing Laterals



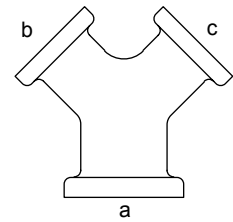
Reducing on Branch



Reducing on One Run

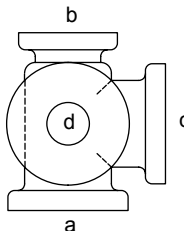


Reducing on One Run and Branch

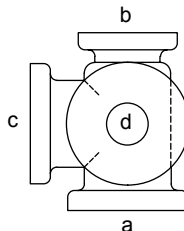


True Y

Side Outlet Tee

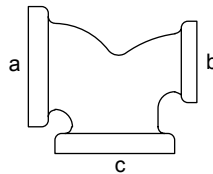


Right Hand

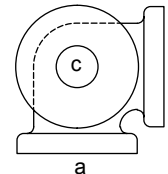


Left Hand

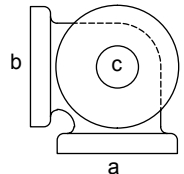
Double Branch Elbow



Side Outlet 90 deg. Elbow



Right Hand



Left Hand

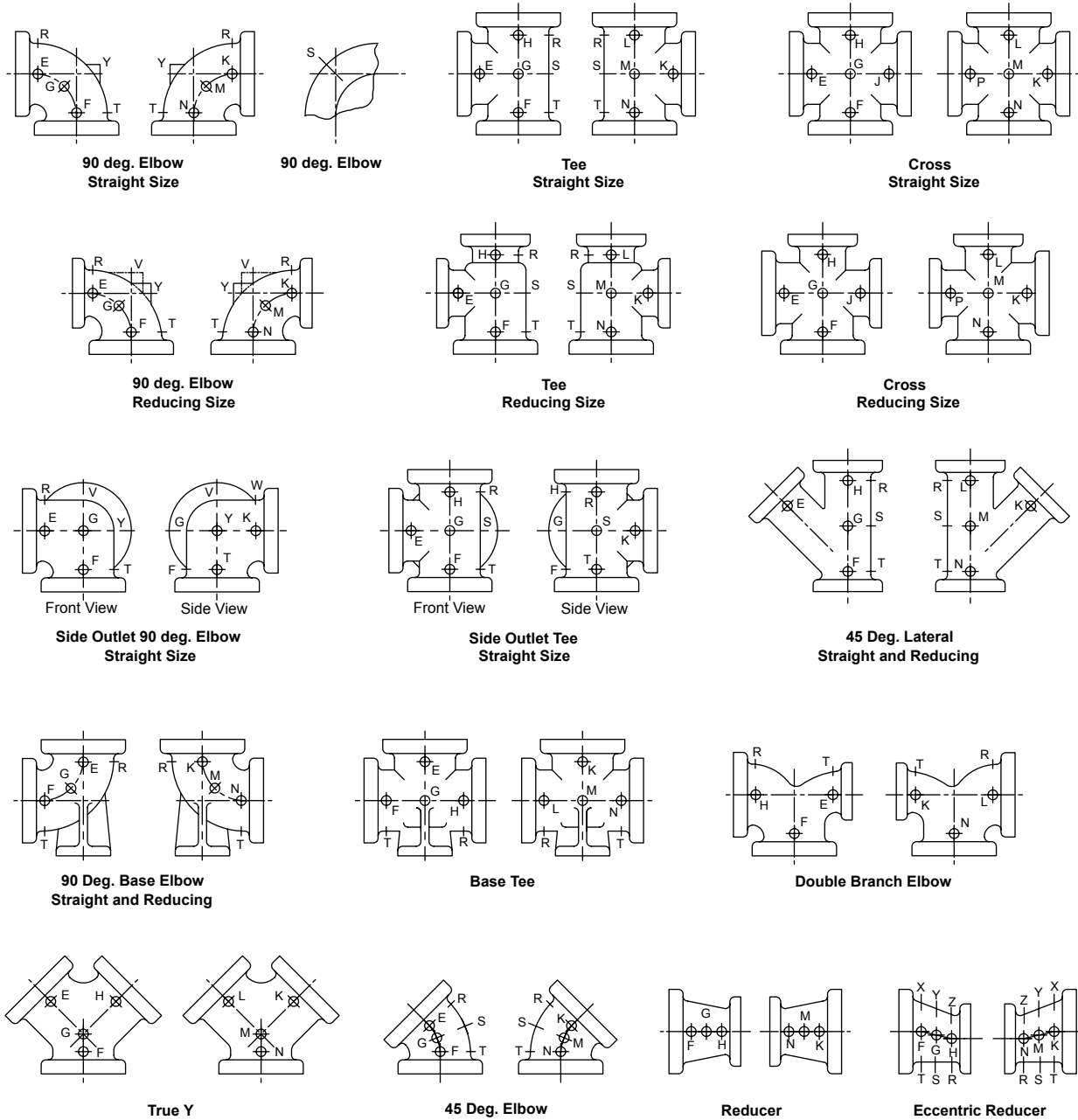
The largest opening establishes the basic size of a reducing fitting. The largest opening is named first, except for bull head tees which are reducing on both runs and double branch elbows where both branches are reducing; the outlet is the largest opening and named last in both cases.

In designating the opening of reducing fittings, they should be read in order indicated by the sequence of the letters a, b, c and d. In designating the outlets of side outlet of side outlet reducing fittings, the side outlet is named last; and in the case of the cross which is not shown, the side outlet is designated by the letter e.

STAR PIPE PRODUCTS



METHOD OF DESIGNATING LOCATION OF TAPPED HOLES FOR DRAINS WHEN SPECIFIED



The above illustrations show two views of the same fitting and represent fittings with symmetrical shapes, with the exception of the side outlet elbow and the side outlet tee (straight sizes)

A boss is always required at location "Y" and "V" on straight and reducing sizes of 90° elbows, and on tapered sides of reducers.

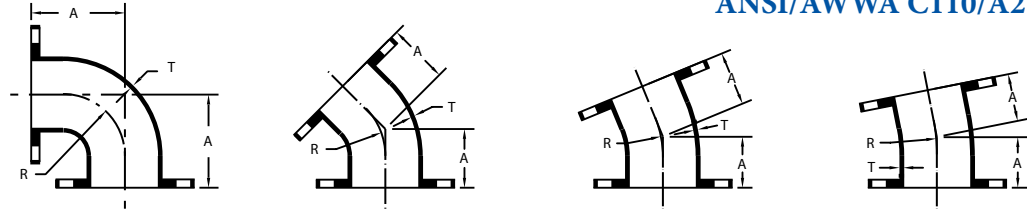
NOM. SIZE	MAX TAP SIZE WITHOUT BOSS
3	½
4-6	¾
8	1 ¼
10-16	1 ½
18-64	2

STAR[®] PIPE PRODUCTS

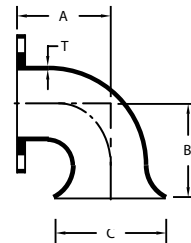
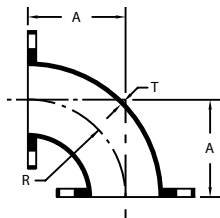


Flanged Fittings

ANSI/AWWA C110/A21.10



FLANGED BENDS		90° FLANGED BENDS (1/4)			45° FLANGED BENDS (1/8)			22 1/2° FLANGED BENDS (1/16)			11 1/4° FLANGED BENDS (1/32)		
NOM. SIZE	T	A	R	WT (LBS.)	A	R	WT (LBS.)	A	R	WT (LBS.)	A	R	WT (LBS.)
2	0.31	4.50	3.00	14	2.50	2.41	12	2.50	6.04	12	2.50	12.69	12
2 1/2	0.31	5.00	3.50	21	3.00	3.62	19	---	---	---	---	---	---
3	0.48	5.50	4.00	25	3.00	3.62	20	3.00	7.56	20	3.00	15.25	20
4	0.52	6.50	4.50	45	4.00	4.81	40	4.00	10.06	40	4.00	20.31	40
5	0.88	7.50	5.50	52	4.50	6.04	45	---	---	---	---	---	---
6	0.55	8.00	6.00	65	5.00	7.25	55	5.00	15.06	55	5.00	30.50	55
8	0.60	9.00	7.00	105	5.50	8.44	90	5.50	17.62	90	5.50	35.50	90
10	0.68	11.00	9.00	165	6.50	10.88	130	6.50	22.62	135	6.50	45.69	135
12	0.75	12.00	10.00	235	7.50	13.25	195	7.50	27.62	205	7.50	55.81	205
14	0.66	14.00	11.50	290	7.50	12.06	220	7.50	25.12	225	7.50	50.75	225
16	0.70	15.00	12.50	370	8.00	13.25	280	8.00	27.62	285	8.00	55.81	285
18	0.75	16.50	14.00	450	8.50	14.50	325	8.50	30.19	335	8.50	60.94	335
20	0.80	18.00	15.50	580	9.50	16.88	430	9.50	35.19	435	9.50	71.06	435
24	0.89	22.00	18.50	900	11.00	18.12	630	11.00	37.69	640	11.00	76.12	645
30	1.03	25.00	21.50	1430	15.00	27.75	1120	15.00	57.81	1135	15.00	116.75	1150
36	1.15	28.00	24.50	2135	18.00	35.00	1755	18.00	72.88	1790	18.00	147.25	1805
42	1.28	31.00	27.50	3055	21.00	42.25	2600	21.00	88.00	2665	21.00	177.69	2680
48	1.42	34.00	30.50	4095	24.00	49.50	3580	24.00	103.06	3665	24.00	208.12	3695
54	0.90	39.00	35.42	3740	20.50	41.05	2735	14.00	32.42	2260	12.00	30.81	2100
60	0.94	43.00	---	4965	23.50	---	3790	14.00	---	2985	10.50	---	2665
64	0.99	48.00	38.80	6745	25.00	---	5105	13.50	---	3995	9.50	---	3585



90° FLANGED LONG RADIUS BENDS				
NOM. SIZE	T	A	R	WT (LBS.)
3	0.48	7.75	6.25	30
4	0.52	9.00	7.00	50
6	0.55	11.50	9.50	80
8	0.60	14.00	12.00	140
10	0.68	16.50	14.50	215
12	0.75	19.00	17.00	325
14	0.66	21.50	19.00	400
16	0.70	24.00	21.50	525
18	0.75	26.50	24.00	750
20	0.80	29.00	26.50	875
24	0.89	34.00	30.50	1250
30	1.03	41.50	38.00	2105
36	1.15	49.00	45.50	3285
42	1.28	56.50	53.00	4865
48	1.42	64.00	60.50	7800
54	0.90	73.50	69.50	6205

90° FLANGE x FLARE BENDS					
NOM. SIZE	T	A	B	C	WT (LBS.)
3	0.48	5.50	11.00	7.50	25
4	0.52	6.50	12.00	9.00	40
6	0.55	8.00	12.00	11.00	70
8	0.60	9.00	14.00	13.50	110
10	0.68	11.00	17.00	16.00	175
12	0.75	12.00	18.00	19.00	245
14	0.66	14.00	20.00	21.00	260
16	0.70	15.00	21.00	23.50	460
18	0.75	16.50	22.50	25.00	560
20	0.80	18.00	24.00	27.50	700
24	0.89	22.00	28.00	32.00	1100
30	1.03	25.00	32.00	38.75	1640
36	1.15	28.00	35.00	46.00	2700
42	1.28	31.00	38.00	53.00	3250
48	1.42	34.00	41.00	59.50	4215
54	0.90	39.00	46.00	66.25	3965

UCAT22.01
 * REGISTERED TRADEMARK OF STAR PIPE PRODUCTS

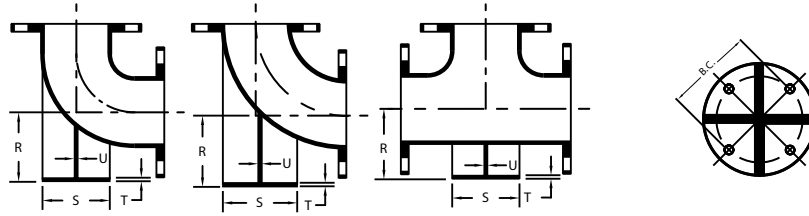


STAR[®] PIPE PRODUCTS

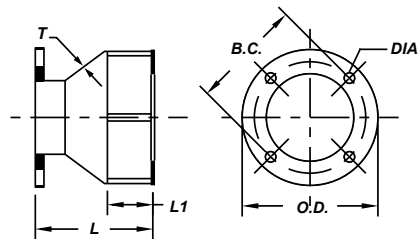
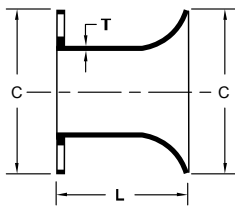


Flanged Fittings

ANSI/AWWA C110/A21.10



90° FLANGED LONG RADIUS BASE BENDS & BASE TEES								BASE DRILLING DETAILS		
NOM. SIZE	R	S	T	U	WT. (LBS.)			B.C.	BOLT HOLE DIA.	NO. OF BOLTS
					90°	90°LR	TEE			
2	4.12	4.62	0.50	0.50	17	20	23	3.50	0.63	4
2 1/2	4.50	4.62	0.50	0.50	25	---	34	3.50	0.63	4
3	4.88	5.00	0.56	0.50	35	40	45	3.88	0.63	4
4	5.50	6.00	0.62	0.50	55	60	75	4.75	0.75	4
5	6.25	7.00	0.69	0.62	70	85	95	5.50	0.75	4
6	7.00	7.00	0.69	0.62	85	100	110	5.50	0.75	4
8	8.38	9.00	0.94	0.88	145	180	185	7.50	0.75	4
10	9.75	9.00	0.94	0.88	210	260	300	7.50	0.75	4
12	11.25	11.00	1.00	1.00	300	390	430	9.50	0.88	4
14	12.50	11.00	1.00	1.00	360	490	485	9.50	0.88	4
16	13.75	11.00	1.00	1.00	445	606	600	9.50	0.88	4
18	15.00	13.50	1.12	1.12	565	787	740	11.75	0.88	4
20	16.00	13.50	1.12	1.12	700	1200	930	11.75	0.88	4
24	18.50	13.50	1.12	1.12	1030	1770	1410	11.75	0.88	4
30	23.00	16.00	1.19	1.15	1625	2295	2270	14.25	1.00	4
36	26.00	19.00	1.25	1.15	2385	3535	3320	17.00	1.00	4
42	30.00	23.50	1.44	1.28	3465	5275	4740	21.25	1.13	4
48	34.00	25.00	1.56	1.42	4610	7305	6235	22.75	1.25	4
54	38.00	27.50	1.69	1.55	4415	6880	6465	25.00	1.25	4



STRAIGHT FLANGE x FLARE PIECES				
NOM. SIZE	T	L	C	WT (LBS.)
3	0.48	8.00	7.50	20
4	0.52	8.00	9.00	30
6	0.55	8.00	11.00	40
8	0.60	10.00	13.50	70
10	0.68	10.00	16.00	95
12	0.75	12.00	19.00	155
14	0.66	12.00	21.00	165
16	0.70	16.00	23.50	240
18	0.75	16.00	25.00	275
20	0.80	18.00	27.50	360
24	0.89	18.00	32.00	480
30	1.03	24.00	38.75	850
36	1.15	24.00	46.00	1200
42	1.28	30.00	53.00	1900
48	1.42	30.00	59.50	2300
54	0.90	36.00	66.25	2225

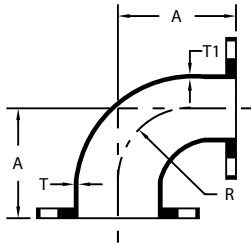
SLUDGE SHOE							
NOM. SIZE	T	OD	B.C.	L	L1	BOLT HOLE DIA.	WT (LBS.)
6	0.55	9.50	7.88	12.00	6.00	0.88	47
8	0.60	11.75	10.12	12.00	6.00	0.88	69

STAR[®] PIPE PRODUCTS



Flanged Fittings

ANSI/AWWA C110/A21.10



90° FLANGED REDUCING BENDS					
NOM. SIZE	T	T1	A	R	WT (LBS.)
3 x 1 1/2	0.48	0.31	5.50	4.00	18
3 x 2	0.48	0.31	5.50	4.00	20
3 x 2 1/2	0.48	0.31	5.50	4.00	23
4 x 2	0.52	0.31	6.50	4.50	29
4 x 2 1/2	0.52	0.31	6.50	4.50	33
4 x 3	0.52	0.48	6.50	4.50	35
5 x 2	0.50	0.31	7.50	5.50	42
5 x 2 1/2	0.50	0.31	7.50	5.50	44
5 x 3	0.50	0.48	7.50	5.50	45
5 x 4	0.50	0.50	7.50	5.50	50
6 x 2	0.55	0.31	8.00	6.00	40
6 x 2 1/2	0.55	0.31	8.00	6.00	44
6 x 3	0.55	0.48	8.00	6.00	45
6 x 4	0.55	0.52	8.00	6.00	55
6 x 5	0.55	0.50	8.00	6.00	60
8 x 4	0.60	0.52	9.00	7.00	80
8 x 5	0.60	0.50	9.00	7.00	80
8 x 6	0.60	0.55	9.00	7.00	90
10 x 4	0.68	0.52	11.00	9.00	105
10 x 6	0.68	0.55	11.00	9.00	125
10 x 8	0.68	0.60	11.00	9.00	150
12 x 6	0.75	0.55	12.00	10.00	165
12 x 8	0.75	0.60	12.00	10.00	190
12 x 10	0.75	0.68	12.00	10.00	220
14 x 6	0.66	0.55	14.00	11.50	144
14 x 8	0.66	0.60	14.00	11.50	200
14 x 10	0.66	0.68	14.00	11.50	260
14 x 12	0.66	0.75	14.00	11.50	270
16 x 6	0.70	0.55	15.00	12.50	220
16 x 8	0.70	0.60	15.00	12.50	240
16 x 10	0.70	0.68	15.00	12.50	344
16 x 12	0.70	0.75	15.00	12.50	373
16 x 14	0.70	0.66	15.00	12.50	330
18 x 6	0.75	0.55	16.50	14.00	260
18 x 8	0.75	0.60	16.50	14.00	280
18 x 10	0.75	0.68	16.50	14.00	320
18 x 12	0.75	0.75	16.50	14.00	365
18 x 14	0.75	0.66	16.50	14.00	370
18 x 16	0.75	0.70	16.50	14.00	410
20 x 6	0.80	0.55	18.00	15.50	320
20 x 8	0.80	0.60	18.00	15.50	345
20 x 10	0.80	0.68	18.00	15.50	385
20 x 12	0.80	0.75	18.00	15.50	415
20 x 14	0.80	0.66	18.00	15.50	518

(Con't)

90° FLANGED REDUCING BENDS (Con't)					
NOM. SIZE	T	T1	A	R	WT (LBS.)
20 x 16	0.80	0.70	18.00	15.50	533
20 x 18	0.80	0.75	18.00	15.50	515
24 x 6	0.89	0.55	22.00	18.50	480
24 x 8	0.89	0.60	22.00	18.50	505
24 x 10	0.89	0.68	22.00	18.50	545
24 x 12	0.89	0.75	22.00	18.50	795
24 x 14	0.89	0.66	22.00	18.50	837
24 x 16	0.89	0.70	22.00	18.50	635
24 x 18	0.89	0.75	22.00	18.50	675
24 x 20	0.89	0.80	22.00	18.50	740
30 x 12	1.03	0.75	25.00	21.50	840
30 x 14	1.03	0.66	25.00	21.50	860
30 x 16	1.03	0.70	25.00	21.50	900
30 x 18	1.03	0.75	25.00	21.50	940
30 x 20	1.03	0.80	25.00	21.50	1005
30 x 24	1.03	0.89	25.00	21.50	1205
36 x 12	1.15	0.75	28.00	24.50	1195
36 x 14	1.15	0.66	28.00	24.50	1215
36 x 16	1.15	0.70	28.00	24.50	1255
36 x 18	1.15	0.75	28.00	24.50	1295
36 x 20	1.15	0.80	28.00	24.50	1315
36 x 24	1.15	0.89	28.00	24.50	1520
36 x 30	1.15	1.03	28.00	24.50	1785
42 x 12	1.28	0.75	31.00	27.50	1655
42 x 14	1.28	0.66	31.00	27.50	1675
42 x 16	1.28	0.70	31.00	27.50	1715
42 x 18	1.28	0.75	31.00	27.50	1755
42 x 20	1.28	0.80	31.00	27.50	1820
42 x 24	1.28	0.89	31.00	27.50	1980
42 x 30	1.28	1.03	31.00	27.50	2245
42 x 36	1.28	1.15	31.00	27.50	2600
48 x 12	1.42	0.75	34.00	30.50	2175
48 x 14	1.42	0.66	34.00	30.50	2195
48 x 16	1.42	0.70	34.00	30.50	2235
48 x 18	1.42	0.75	34.00	30.50	2275
48 x 20	1.42	0.80	34.00	30.50	2340
48 x 24	1.42	0.89	34.00	30.50	2500
48 x 30	1.42	1.03	34.00	30.50	3000
48 x 36	1.42	1.15	34.00	30.50	3115
48 x 42	1.42	1.28	34.00	30.50	3580
54 x 12	0.90	0.75	39.00	35.29	1990
54 x 14	0.90	0.66	39.00	35.29	2015
54 x 16	0.90	0.70	39.00	35.29	2055
54 x 18	0.90	0.75	39.00	35.29	2095
54 x 20	0.90	0.80	39.00	35.29	2160
54 x 24	0.90	0.89	39.00	35.29	2320
54 x 30	0.90	0.90	39.00	35.29	2585
54 x 36	0.90	0.90	39.00	35.29	2980
54 x 42	0.90	0.90	39.00	35.29	3395
54 x 48	0.90	0.90	39.00	35.29	3565

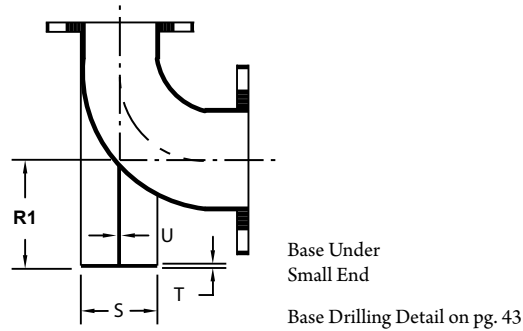
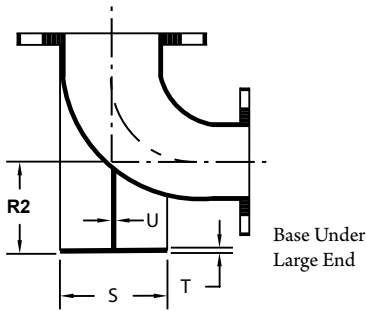
STAR[®] PIPE PRODUCTS

UCAT22.01
 * REGISTERED TRADEMARK OF STAR PIPE PRODUCTS



Flanged Fittings

ANSI/AWWA C110/A21.10



90° FLANGED REDUCING BASE BENDS

NOM. SIZE	R1	R2	S	T	U	WT (LBS.)
4 x 3	5.50	4.88	6.00	0.62	0.50	45
5 x 4	6.25	5.50	7.00	0.69	0.62	68
6 x 3	7.00	4.88	7.00	0.69	0.62	65
6 x 4	7.00	5.50	7.00	0.69	0.62	75
6 x 5	7.00	6.25	7.00	0.69	0.62	80
8 x 4	8.38	5.50	9.00	0.94	0.88	120
8 x 6	8.38	7.00	9.00	0.94	0.88	130
10 x 6	9.75	7.00	9.00	0.94	0.88	170
10 x 8	9.75	8.38	9.00	0.94	0.88	195
12 x 6	11.25	7.00	11.00	1.00	1.00	230
12 x 8	11.25	8.38	11.00	1.00	1.00	255
12 x 10	11.25	9.75	11.00	1.00	1.00	285
14 x 6	12.50	7.00	11.00	1.00	1.00	214
14 x 8	12.50	8.38	11.00	1.00	1.00	270
14 x 10	12.50	9.75	11.00	1.00	1.00	310
14 x 12	12.50	11.25	11.00	1.00	1.00	340
16 x 6	13.75	7.00	11.00	1.00	1.00	295
16 x 8	13.75	8.38	11.00	1.00	1.00	315
16 x 10	13.75	9.75	11.00	1.00	1.00	355
16 x 12	13.75	11.25	11.00	1.00	1.00	385
16 x 14	13.75	12.50	11.00	1.00	1.00	405
18 x 6	15.00	7.00	13.50	1.12	1.12	375
18 x 8	15.00	8.38	13.50	1.12	1.12	395
18 x 10	15.00	9.75	13.50	1.12	1.12	435
18 x 12	15.00	11.25	13.50	1.12	1.12	465
18 x 14	15.00	12.50	13.50	1.12	1.12	485
18 x 16	15.00	13.75	13.50	1.12	1.12	525
20 x 6	16.00	7.00	13.50	1.12	1.12	440
20 x 8	16.00	8.38	13.50	1.12	1.12	465
20 x 10	16.00	9.75	13.50	1.12	1.12	505
20 x 12	16.00	11.25	13.50	1.12	1.12	535
20 x 14	16.00	12.50	13.50	1.12	1.12	555
20 x 16	16.00	13.75	13.50	1.12	1.12	595
20 x 18	16.00	15.00	13.50	1.12	1.12	635
24 x 6	18.50	7.00	13.50	1.12	1.12	610
24 x 8	18.50	8.38	13.50	1.12	1.12	635
24 x 10	18.50	9.75	13.50	1.12	1.12	675
24 x 12	18.50	11.25	13.50	1.12	1.12	705
24 x 14	18.50	12.50	13.50	1.12	1.12	725
24 x 16	18.50	13.75	13.50	1.12	1.12	765
24 x 18	18.50	15.00	13.50	1.12	1.12	805

90° FLANGED REDUCING BASE BENDS (Con't)

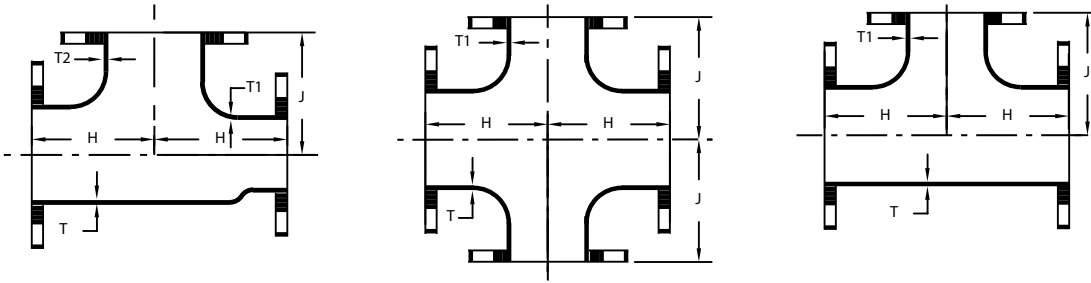
NOM. SIZE	R1	R2	S	T	U	WT (LBS.)
24 x 20	18.50	16.00	13.50	1.12	1.12	870
30 x 12	23.00	11.25	16.00	1.19	1.15	1030
30 x 14	23.00	12.50	16.00	1.19	1.15	1050
30 x 16	23.00	13.75	16.00	1.19	1.15	1090
30 x 18	23.00	15.00	16.00	1.19	1.15	1130
30 x 20	23.00	16.00	16.00	1.19	1.15	1195
30 x 24	23.00	18.50	16.00	1.19	1.15	1355
36 x 12	26.00	11.25	19.00	1.25	1.15	1445
36 x 14	26.00	12.50	19.00	1.25	1.15	1465
36 x 16	26.00	13.75	19.00	1.25	1.15	1505
36 x 18	26.00	15.00	19.00	1.25	1.15	1545
36 x 20	26.00	16.00	19.00	1.25	1.15	1610
36 x 24	26.00	18.50	19.00	1.25	1.15	1770
36 x 30	26.00	23.00	19.00	1.25	1.15	2035
42 x 12	30.00	11.25	23.50	1.44	1.28	2065
42 x 14	30.00	12.50	23.50	1.44	1.28	2085
42 x 16	30.00	13.75	23.50	1.44	1.28	2125
42 x 18	30.00	15.00	23.50	1.44	1.28	2165
42 x 20	30.00	16.00	23.50	1.44	1.28	2230
42 x 24	30.00	18.50	23.50	1.44	1.28	2390
42 x 30	30.00	23.00	23.50	1.44	1.28	2655
42 x 36	30.00	26.00	23.50	1.44	1.28	3010
48 x 12	34.00	11.25	25.00	1.56	1.42	2690
48 x 14	34.00	12.50	25.00	1.56	1.42	2710
48 x 16	34.00	13.75	25.00	1.56	1.42	2750
48 x 18	34.00	15.00	25.00	1.56	1.42	2790
48 x 20	34.00	16.00	25.00	1.56	1.42	2855
48 x 24	34.00	18.50	25.00	1.56	1.42	3015
48 x 30	34.00	23.00	25.00	1.56	1.42	3280
48 x 36	34.00	26.00	25.00	1.56	1.42	3630
48 x 42	34.00	30.00	25.00	1.56	1.42	4095
54 x 12	38.00	11.25	27.50	1.69	1.55	2665
54 x 14	38.00	12.50	27.50	1.69	1.55	2690
54 x 16	38.00	13.75	27.50	1.69	1.55	2730
54 x 18	38.00	15.00	27.50	1.69	1.55	2770
54 x 20	38.00	16.00	27.50	1.69	1.55	2835
54 x 24	38.00	18.50	27.50	1.69	1.55	2995
54 x 30	38.00	23.00	27.50	1.69	1.55	3260
54 x 36	38.00	26.00	27.50	1.69	1.55	3615
54 x 42	38.00	30.00	27.50	1.69	1.55	4070
54 x 48	38.00	34.00	27.50	1.69	1.55	4240

STAR[®] PIPE PRODUCTS



Flanged Fittings

ANSI/AWWA C110/A21.10



FLANGED TEES & CROSSES								
NOM. SIZE	T	T1	T2	H	J	WT. (LBS.)		
						TEE	CROSS	
1 1/2 x 1 1/2 x 2	0.31	0.31	0.31	4.50	4.50	15	---	
2 x 1 1/2 x 1 1/2	0.31	0.31	0.31	4.50	4.50	16	---	
2 x 2	0.31	0.31	---	4.50	4.50	20	---	
2 1/2 x 2 x 2	0.31	0.31	0.31	5.00	5.00	27	---	
2 1/2 x 2 x 2 1/2	0.31	0.31	0.31	5.00	5.00	28	---	
2 1/2 x 1	0.31	0.31	---	5.00	5.00	25	---	
2 1/2 x 1 1/2	0.31	0.31	---	5.00	5.00	26	---	
2 1/2 x 2 1/2	0.31	0.31	---	5.00	5.00	30	---	
3 x 1	0.48	0.31	---	5.50	5.50	32	---	
3 x 1 1/2	0.48	0.31	---	5.50	5.50	33	---	
3 x 2	0.48	0.31	---	5.50	5.50	35	45	
3 x 2 1/2	0.48	0.31	---	5.50	5.50	36	---	
3 x 3	0.48	0.48	---	5.50	5.50	40	50	
4 x 3 x 3	0.52	0.48	0.48	6.50	6.50	55	---	
4 x 2	0.52	0.31	---	6.50	6.50	50	60	
4 x 2 x 4	0.52	0.31	0.52	6.50	6.50	51	---	
4 x 2 1/2	0.52	0.31	---	6.50	6.50	56	65	
4 x 2 1/2 x 4	0.52	0.31	0.52	6.50	6.50	55	---	
4 x 3	0.52	0.48	---	6.50	6.50	60	70	
4 x 4	0.52	0.52	---	6.50	6.50	65	80	
4 x 4 x 5	0.50	0.50	0.50	7.50	7.50	75	---	
4 x 4 x 6	0.52	0.52	0.55	8.00	8.00	90	---	
5 x 2 1/2	0.50	0.31	---	7.50	7.50	73	---	
5 x 4	0.50	0.50	---	7.50	7.50	77	92	
5 x 5	0.50	0.50	---	7.50	7.50	80	---	
5 x 5 x 6	0.50	0.50	0.55	8.00	8.00	87	---	
6 x 3 x 3	0.55	0.48	0.48	8.00	8.00	75	---	
6 x 3 x 5	0.55	0.48	0.50	8.00	8.00	81	---	
6 x 4 x 4	0.55	0.52	0.52	8.00	8.00	85	---	
6 x 4 x 5	0.55	0.50	0.50	8.00	8.00	85	---	
6 x 4 x 6	0.55	0.52	0.55	8.00	8.00	90	---	
6 x 5 x 2 1/2	0.55	0.50	0.31	8.00	8.00	73	---	
6 x 5 x 3	0.55	0.50	0.48	8.00	8.00	81	---	
6 x 5 x 5	0.55	0.50	0.50	8.00	8.00	87	---	
6 x 2	0.55	0.31	---	8.00	8.00	82	90	
6 x 2 1/2	0.55	0.31	---	8.00	8.00	84	93	
6 x 3	0.55	0.48	---	8.00	8.00	85	95	
6 x 4	0.55	0.52	---	8.00	8.00	90	110	
6 x 5	0.55	0.50	---	8.00	8.00	91	115	
6 x 6	0.55	0.55	---	8.00	8.00	95	120	
6 x 6 x 8	0.55	0.55	0.60	9.00	9.00	140	---	
8 x 4 x 8	0.60	0.52	0.60	9.00	9.00	138	---	
8 x 5 x 4	0.60	0.50	0.50	9.00	9.00	126	---	
8 x 6 x 4	0.60	0.55	0.52	9.00	9.00	130	---	
8 x 6 x 6	0.60	0.55	0.55	9.00	9.00	135	---	

FLANGED TEES & CROSSES (Con't)								
NOM. SIZE	T	T1	T2	H	J	WT. (LBS.)		
						TEE	CROSS	
8 x 6 x 8	0.60	0.55	0.60	9.00	9.00	145	---	
8 x 2 1/2	0.60	0.31	---	9.00	9.00	128	---	
8 x 3	0.60	0.48	---	9.00	9.00	130	140	
8 x 4	0.60	0.52	---	9.00	9.00	140	155	
8 x 5	0.60	0.50	---	9.00	9.00	144	160	
8 x 6	0.60	0.55	---	9.00	9.00	145	165	
8 x 8	0.60	0.60	---	9.00	9.00	155	195	
8 x 8 x 10	0.60	0.60	0.68	11.00	11.00	260	---	
8 x 8 x 12	0.60	0.60	0.75	12.00	12.00	310	---	
10 x 4 x 10	0.68	0.52	0.68	11.00	11.00	250	---	
10 x 6 x 4	0.68	0.55	0.52	11.00	11.00	195	---	
10 x 6 x 6	0.68	0.55	0.55	11.00	11.00	200	---	
10 x 6 x 10	0.68	0.55	0.68	11.00	11.00	255	---	
10 x 8 x 6	0.68	0.60	0.55	11.00	11.00	210	---	
10 x 8 x 8	0.68	0.60	0.60	11.00	11.00	220	---	
10 x 8 x 10	0.68	0.60	0.68	11.00	11.00	265	---	
10 x 2	0.68	0.31	---	11.00	11.00	199	---	
10 x 3	0.68	0.48	---	11.00	11.00	201	---	
10 x 4	0.68	0.52	---	11.00	11.00	205	220	
10 x 5	0.68	0.50	---	11.00	11.00	211	230	
10 x 6	0.68	0.55	---	11.00	11.00	215	240	
10 x 8	0.68	0.60	---	11.00	11.00	225	265	
10 x 10	0.80	0.80	---	11.00	11.00	270	330	
10 x 10 x 12	0.80	0.80	0.87	12.00	12.00	355	---	
10 x 10 x 14	0.68	0.68	0.66	14.00	14.00	375	---	
12 x 6 x 6	0.75	0.55	0.55	12.00	12.00	325	---	
12 x 6 x 8	0.75	0.55	0.60	12.00	12.00	345	---	
12 x 8 x 6	0.75	0.60	0.55	12.00	12.00	340	---	
12 x 8 x 8	0.75	0.60	0.60	12.00	12.00	290	---	
12 x 8 x 12	0.75	0.60	0.75	12.00	12.00	365	---	
12 x 10 x 6	0.75	0.68	0.55	12.00	12.00	375	---	
12 x 10 x 8	0.75	0.68	0.60	12.00	12.00	380	---	
12 x 10 x 10	0.87	0.80	0.80	12.00	12.00	345	---	
12 x 10 x 12	0.87	0.80	0.87	12.00	12.00	370	---	
12 x 4	0.75	0.52	---	12.00	12.00	290	310	
12 x 5	0.75	0.50	---	12.00	12.00	291	315	
12 x 6	0.75	0.55	---	12.00	12.00	295	320	
12 x 8	0.75	0.60	---	12.00	12.00	310	345	
12 x 10	0.87	0.80	---	12.00	12.00	360	415	
12 x 12	0.87	0.87	---	12.00	12.00	385	460	
14 x 4	0.66	0.52	---	14.00	14.00	370	---	
14 x 6	0.66	0.55	---	14.00	14.00	375	400	

(Con't)➔

STAR[®] PIPE PRODUCTS

UCAT:22.01
 * REGISTERED TRADEMARK OF STAR PIPE PRODUCTS





Flanged Fittings

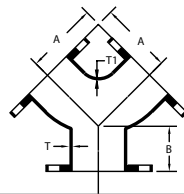
ANSI/AWWA C110/A21.10

STAR[®] PIPE PRODUCTS

FLANGED TEES & CROSSES (Con't)							
NOM. SIZE	T	T1	T2	H	J	WT. (LBS.)	
						TEE	CROSS
14 x 8	0.66	0.60	---	14.00	14.00	390	425
14 x 10	0.66	0.68	---	14.00	14.00	400	460
14 x 12	0.66	0.75	---	14.00	14.00	425	505
14 x 14	0.66	0.66	---	14.00	14.00	435	530
16 x 4	0.70	0.52	---	15.00	15.00	460	---
16 x 6	0.70	0.55	---	15.00	15.00	465	490
16 x 8	0.70	0.60	---	15.00	15.00	475	520
16 x 10	0.70	0.68	---	15.00	15.00	495	555
16 x 12	0.70	0.75	---	15.00	15.00	520	605
16 x 14	0.70	0.66	---	15.00	15.00	530	620
16 x 16	0.70	0.70	---	15.00	15.00	550	665
18 x 6	0.75	0.55	---	13.00	15.50	480	505
18 x 8	0.75	0.60	---	13.00	15.50	495	535
18 x 10	0.75	0.68	---	13.00	15.50	510	560
18 x 12	0.75	0.75	---	13.00	15.50	535	610
18 x 14	0.75	0.66	---	16.50	16.50	630	720
18 x 16	0.75	0.70	---	16.50	16.50	650	765
18 x 18	0.75	0.75	---	16.50	16.50	665	795
20 x 6	0.80	0.55	---	14.00	17.00	610	635
20 x 8	0.80	0.60	---	14.00	17.00	620	665
20 x 10	0.80	0.68	---	14.00	17.00	635	685
20 x 12	0.80	0.75	---	14.00	17.00	660	735
20 x 14	0.80	0.66	---	14.00	17.00	665	745
20 x 16	0.80	0.70	---	18.00	18.00	810	915
20 x 18	0.80	0.75	---	18.00	18.00	820	945
20 x 20	0.80	0.80	---	18.00	18.00	855	1015
24 x 6	0.89	0.55	---	15.00	19.00	845	875
24 x 8	0.89	0.60	---	15.00	19.00	860	895
24 x 10	0.89	0.68	---	15.00	19.00	880	930
24 x 12	0.89	0.75	---	15.00	19.00	890	960
24 x 14	0.89	0.66	---	15.00	19.00	900	975
24 x 16	0.89	0.70	---	15.00	19.00	915	1010
24 x 18	0.89	0.75	---	22.00	22.00	1220	1365
24 x 20	0.89	0.80	---	22.00	22.00	1255	1430
24 x 24	0.89	0.89	---	22.00	22.00	1330	1570
30 x 6	1.03	0.55	---	18.00	23.00	1329	1352
30 x 8	1.03	0.60	---	18.00	23.00	1340	1373
30 x 10	1.03	0.68	---	18.00	23.00	1470	---
30 x 12	1.03	0.75	---	18.00	23.00	1490	1565
30 x 14	1.03	0.66	---	18.00	23.00	1490	1570
30 x 16	1.03	0.70	---	18.00	23.00	1505	1605
30 x 18	1.03	0.75	---	18.00	23.00	1515	1615
30 x 20	1.03	0.80	---	18.00	23.00	1540	1670
30 x 24	1.03	0.89	---	25.00	25.00	2025	2245
30 x 30	1.03	1.03	---	25.00	25.00	2150	2500
36 x 8	1.15	0.60	---	20.00	26.00	1977	---
36 x 10	1.15	0.68	---	20.00	26.00	2150	---
36 x 12	1.15	0.75	---	20.00	26.00	2170	2240
36 x 14	1.15	0.66	---	20.00	26.00	2175	2240
36 x 16	1.15	0.70	---	20.00	26.00	2185	2270
36 x 18	1.15	0.75	---	20.00	26.00	2190	2280
36 x 20	1.15	0.80	---	20.00	26.00	2210	2325
36 x 24	1.15	0.89	---	20.00	26.00	2255	2405
36 x 24 x 24	1.15	0.89	0.89	28.00	28.00	2670	---
36 x 30	1.15	1.03	---	28.00	28.00	3000	3300
36 x 36	1.15	1.15	---	28.00	28.00	3160	3620
36 x 30 x 30	1.15	1.03	1.03	28.00	28.00	2885	---

(Con't)➔

FLANGED TEES & CROSSES (Con't)							
NOM. SIZE	T	T1	T2	H	J	WT. (LBS.)	
						TEE	CROSS
36 x 36 x 48	1.15	1.15	1.42	34.00	34.00	4360	---
42 x 12	1.28	0.75	---	23.00	30.00	3165	3240
42 x 14	1.28	0.66	---	23.00	30.00	3170	3240
42 x 16	1.28	0.70	---	23.00	30.00	3180	3270
42 x 18	1.28	0.75	---	23.00	30.00	3185	3275
42 x 20	1.28	0.80	---	23.00	30.00	3205	3320
42 x 24	1.28	0.89	---	23.00	30.00	3245	3395
42 x 30	1.28	1.03	---	31.00	31.00	4125	4375
42 x 36	1.28	1.15	---	31.00	31.00	4265	4655
42 x 42	1.28	1.28	---	31.00	31.00	4470	5065
48 x 12	1.42	0.75	---	26.00	34.00	4315	4390
48 x 14	1.42	0.66	---	26.00	34.00	4315	4385
48 x 16	1.42	0.70	---	26.00	34.00	4330	4415
48 x 18	1.42	0.75	---	26.00	34.00	4330	4420
48 x 20	1.42	0.80	---	26.00	34.00	4350	4460
48 x 24	1.42	0.89	---	26.00	34.00	4385	4535
48 x 30	1.42	1.03	---	26.00	34.00	4455	4670
48 x 36	1.42	1.15	---	34.00	34.00	5555	5880
48 x 42	1.42	1.28	---	34.00	34.00	5720	6215
48 x 48	1.42	1.42	---	34.00	34.00	5900	6570
54 x 12	1.05	0.75	---	29.00	37.00	4435	4575
54 x 14	1.05	0.66	---	29.00	37.00	4435	4575
54 x 16	1.05	0.70	---	29.00	37.00	4450	4605
54 x 18	1.05	0.75	---	29.00	37.00	4460	4625
54 x 20	1.05	0.80	---	29.00	37.00	4480	4665
54 x 24	1.05	0.89	---	29.00	37.00	4515	4700
54 x 30	1.05	0.72	---	31.00	37.00	4615	4800
54 x 36	1.05	0.77	---	31.00	37.00	4695	4950
54 x 42	1.05	0.88	---	39.00	39.00	5461	6210
54 x 48	1.05	0.94	---	39.00	39.00	5850	6425
54 x 54	1.05	1.05	---	39.00	39.00	6025	6780
60 x 24	1.10	0.89	---	29.00	42.00	4990	---
60 x 36	1.10	0.77	---	33.00	42.00	6015	6330
60 x 48	1.10	0.94	---	43.00	43.00	6923	7524
60 x 60	1.10	1.10	---	43.00	43.00	7334	8346
64 x 42	1.16	0.88	---	48.00	45.00	9610	10085
64 x 64	1.16	1.16	---	48.00	48.00	10995	12855



FLANGED TRUE WYE					
NOM. SIZE	T	T1	A	B	WT (LBS.)
3 x 3 x 3	0.48	0.48	5.50	2.50	32
4 x 4 x 4	0.52	0.52	6.50	3.00	50
6 x 4 x 4	0.55	0.52	8.00	3.50	75
6 x 6 x 6	0.55	0.55	8.00	3.50	80
8 x 6 x 6	0.60	0.55	9.00	4.50	120
8 x 8 x 8	0.60	0.60	9.00	4.50	125
10 x 8 x 8	0.68	0.60	11.00	5.00	155
12 x 12 x 12	0.75	0.75	12.00	5.50	300
16 x 16 x 16	0.70	0.70	15.00	6.50	456

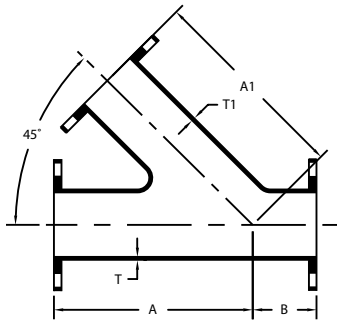
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*REGISTERED TRADEMARK OF STAR PIPE PRODUCTS



Flanged Fittings

ANSI/AWWA C110/A21.10



FLANGED WYE LATERALS						
NOM. SIZE	T	T1	A	A1	B	WT (LBS.)
3 x 3	0.48	0.48	10.00	10.00	3.00	45
4 x 3	0.52	0.48	12.00	12.00	3.00	65
4 x 4	0.52	0.52	12.00	12.00	3.00	75
6 x 4	0.55	0.52	14.50	14.50	3.50	105
6 x 6	0.55	0.55	14.50	14.50	3.50	120
8 x 4	0.60	0.52	17.50	17.50	4.50	165
8 x 6	0.60	0.55	17.50	17.50	4.50	175
8 x 8	0.60	0.60	17.50	17.50	4.50	200
10 x 4	0.68	0.52	20.50	20.50	5.00	240
10 x 6	0.68	0.55	20.50	20.50	5.00	250
10 x 8	0.68	0.60	20.50	20.50	5.00	335
10 x 10	0.68	0.68	20.50	20.50	5.00	335
12 x 4	0.75	0.52	24.50	24.50	5.50	350
12 x 6	0.75	0.55	24.50	24.50	5.50	427
12 x 8	0.75	0.60	24.50	24.50	5.50	452
12 x 10	0.75	0.68	24.50	24.50	5.50	420
12 x 12	0.75	0.75	24.50	24.50	5.50	515
14 x 6	0.66	0.55	27.00	27.00	6.00	475
14 x 8	0.66	0.60	27.00	27.00	6.00	500
14 x 10	0.66	0.68	27.00	27.00	6.00	525
14 x 12	0.66	0.75	27.00	27.00	6.00	570
14 x 14	0.66	0.66	27.00	27.00	6.00	605
16 x 6	0.70	0.55	30.00	30.00	6.50	620
16 x 8	0.70	0.60	30.00	30.00	6.50	645
16 x 10	0.70	0.68	30.00	30.00	6.50	736
16 x 12	0.70	0.75	30.00	30.00	6.50	792
16 x 14	0.70	0.66	30.00	30.00	6.50	755
16 x 16	0.70	0.70	30.00	30.00	6.50	805
18 x 8	0.75	0.60	32.00	32.00	7.00	780
18 x 10	0.75	0.68	32.00	32.00	7.00	810
18 x 12	0.75	0.75	32.00	32.00	7.00	850
18 x 14	0.75	0.66	32.00	32.00	7.00	885
18 x 16	0.75	0.70	32.00	32.00	7.00	935
18 x 18	0.75	0.75	32.00	32.00	7.00	980
20 x 10	0.80	0.68	35.00	35.00	8.00	1025
20 x 12	0.80	0.75	35.00	35.00	8.00	1065
20 x 14	0.80	0.66	35.00	35.00	8.00	1110
20 x 16	0.80	0.70	35.00	35.00	8.00	1155
20 x 20	0.80	0.80	35.00	35.00	8.00	1265
24 x 8	0.89	0.60	40.50	40.50	9.00	1425

(Con't)➔

FLANGED WYE LATERALS (Con't)						
NOM. SIZE	T	T1	A	A1	B	WT (LBS.)
24 x 10	0.89	0.68	40.50	40.50	9.00	1460
24 x 12	0.89	0.75	40.50	40.50	9.00	1550
24 x 14	0.89	0.66	40.50	40.50	9.00	1560
24 x 16	0.89	0.70	40.50	40.50	9.00	1615
24 x 18	0.89	0.75	40.50	40.50	9.00	1680
24 x 20	0.89	0.80	40.50	40.50	9.00	1750
24 x 24	0.89	0.89	40.50	40.50	9.00	1905
30 x 12	1.37	0.75	49.00	49.00	10.00	2545
30 x 14	1.37	0.66	49.00	49.00	10.00	2590
30 x 16	1.37	0.70	49.00	49.00	10.00	2645
30 x 18	1.37	0.96	49.00	49.00	10.00	2690
30 x 20	1.37	1.03	49.00	49.00	10.00	2760
30 x 24	1.37	1.16	49.00	49.00	10.00	2915
30 x 30	1.37	1.37	52.50	52.50	18.30	3794
36 x 12	1.58	0.75	54.00	54.00	15.30	4017
36 x 14	1.58	0.66	54.00	54.00	15.30	4007
36 x 16	1.58	0.89	54.00	54.00	15.30	4108
36 x 18	1.58	0.96	54.00	54.00	15.30	4150
36 x 20	1.58	1.03	54.00	54.00	15.30	4214
36 x 24	1.58	1.16	54.00	54.00	15.30	4346
36 x 30	1.58	1.37	56.00	56.00	15.30	4785
36 x 36	1.58	1.58	60.00	60.00	19.50	5800
42 x 20	1.78	1.03	60.00	60.00	12.00	5629
42 x 24	1.78	1.16	60.00	60.00	12.00	5757
42 x 30	1.78	1.37	63.00	63.00	12.00	6305
42 x 36	1.78	1.58	66.00	66.00	12.00	7040
42 x 42	1.78	1.78	71.00	71.00	15.00	8405
48 x 18	1.96	0.96	65.00	65.00	9.00	7000
48 x 24	1.96	1.16	68.00	68.00	9.00	8695
48 x 30	1.96	1.37	72.00	72.00	9.00	8573
48 x 36	1.96	1.58	72.00	72.00	9.00	9515
48 x 42	1.96	1.78	77.00	77.00	12.00	11030
48 x 48	1.96	1.96	77.00	77.00	16.00	12115
54 x 24	1.55	0.89	67.00	67.00	5.00	6220
54 x 30	1.55	1.03	72.00	74.00	9.00	7478
54 x 36	1.55	1.15	76.00	76.00	9.00	7600
54 x 42	1.55	1.28	81.00	81.00	14.00	8930
54 x 48	1.55	1.42	86.00	86.00	18.00	9480
54 x 54	1.55	1.55	90.00	90.00	20.00	11780
60 x 30	1.67	1.03	76.00	79.00	5.00	9045
64 x 36	1.96	1.58	80.00	86.00	5.00	12634

STAR[®] PIPE PRODUCTS

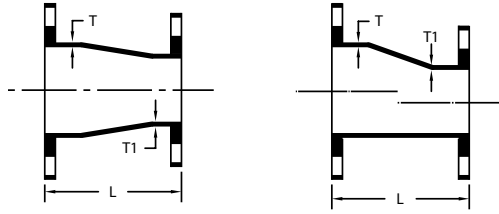
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 * REGISTERED TRADEMARK OF STAR PIPE PRODUCTS





Flanged Fittings

ANSI/AWWA C110/A21.10



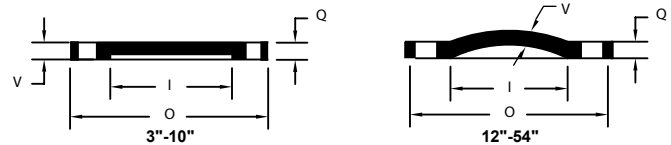
FE CONCENTRIC & ECCENTRIC REDUCERS

NOM. SIZE	T	T1	L	WT (LBS.)
2 x 1 1/2	0.31	0.31	5.50	10
2 1/2 x 2	0.31	0.31	5.50	14
3 x 2	0.48	0.31	6.00	16
3 x 2 1/2	0.48	0.31	6.00	21
4 x 2	0.52	0.31	7.00	25
4 x 2 1/2	0.52	0.31	7.00	28
4 x 3	0.52	0.48	7.00	30
5 x 2	0.50	0.31	8.00	34
5 x 2 1/2	0.50	0.31	8.00	35
5 x 3	0.50	0.48	8.00	37
5 x 4	0.50	0.50	8.00	41
6 x 1 1/2	0.55	0.31	9.00	33
6 x 2	0.55	0.31	9.00	35
6 x 2 1/2	0.55	0.31	9.00	38
6 x 3	0.55	0.48	9.00	40
6 x 4	0.55	0.52	9.00	45
6 x 5	0.55	0.52	9.00	52
8 x 3	0.60	0.48	11.00	60
8 x 4	0.60	0.52	11.00	65
8 x 5	0.60	0.52	11.00	70
8 x 6	0.60	0.55	11.00	75
10 x 3	0.68	0.48	12.00	81
10 x 4	0.68	0.52	12.00	85
10 x 6	0.68	0.55	12.00	90
10 x 8	0.68	0.60	12.00	110
12 x 4	0.75	0.52	14.00	120
12 x 5	0.75	0.50	14.00	126
12 x 6	0.75	0.55	14.00	130
12 x 8	0.75	0.60	14.00	145
12 x 10	0.75	0.68	14.00	170
14 x 6	0.66	0.55	16.00	155
14 x 8	0.66	0.60	16.00	175
14 x 10	0.66	0.68	16.00	190
14 x 12	0.66	0.75	16.00	220
16 x 6	0.70	0.55	18.00	190
16 x 8	0.70	0.60	18.00	210
16 x 10	0.70	0.68	18.00	235
16 x 12	0.70	0.75	18.00	265
16 x 14	0.70	0.66	18.00	280
18 x 8	0.75	0.60	19.00	240
18 x 10	0.75	0.68	19.00	265
18 x 12	0.75	0.75	19.00	295
18 x 14	0.75	0.66	19.00	310
18 x 16	0.75	0.70	19.00	340
20 x 8	0.80	0.60	20.00	290
20 x 10	0.80	0.68	20.00	310
20 x 12	0.80	0.75	20.00	345
20 x 14	0.80	0.66	20.00	355
20 x 16	0.80	0.70	20.00	390

(Con't)➔

FE CONCENTRIC & ECCENTRIC REDUCERS (Con't)

NOM. SIZE	T	T1	L	WT (LBS.)
20 x 18	0.80	0.75	20.00	410
24 x 10	0.89	0.68	24.00	450
24 x 12	0.89	0.75	24.00	480
24 x 14	0.89	0.66	24.00	490
24 x 16	0.89	0.70	24.00	525
24 x 18	0.89	0.75	24.00	550
24 x 20	0.89	0.80	24.00	590
30 x 8	1.03	0.60	30.00	700
30 x 12	1.03	0.75	30.00	730
30 x 14	1.03	0.66	30.00	752
30 x 16	1.03	0.70	30.00	770
30 x 18	1.03	0.75	30.00	810
30 x 20	1.03	0.80	30.00	870
30 x 24	1.03	0.89	30.00	970
36 x 16	1.15	0.70	36.00	1105
36 x 20	1.15	0.80	36.00	1230
36 x 24	1.15	0.89	36.00	1345
36 x 30	1.15	1.03	36.00	1555
42 x 20	1.28	0.80	42.00	1712
42 x 24	1.28	0.89	42.00	1820
42 x 30	1.28	1.03	42.00	2060
42 x 36	1.28	1.15	42.00	2345
48 x 30	1.42	1.03	48.00	2625
48 x 36	1.42	1.15	48.00	2950
48 x 42	1.42	1.28	48.00	3320
54 x 24	0.90	0.89	32.00	1820
54 x 30	0.90	0.61	32.00	1625
54 x 36	0.90	0.66	28.00	1680
54 x 42	0.90	0.76	25.00	1800
54 x 48	0.90	0.80	18.00	1695
60 x 54	0.94	0.90	15.00	2055



BLIND FLANGES (SOLID OR TAPPED)

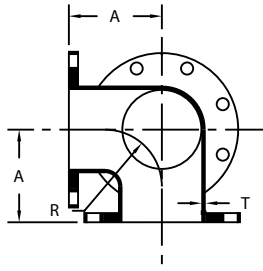
NOM. SIZE	O	Q	V	I	WT (LBS.)
3	7.50	0.75	0.69	3.00	9
4	9.00	0.94	0.88	4.00	16
6	11.00	1.00	0.94	6.00	25
8	13.50	1.12	1.06	8.00	42
10	16.00	1.19	1.12	10.00	63
12	19.00	1.25	0.81	12.00	85
14	21.00	1.38	0.88	14.00	120
16	23.50	1.44	1.00	16.00	145
18	25.00	1.56	1.06	18.00	164
20	27.50	1.69	1.12	20.00	245
24	32.00	1.88	1.25	24.00	318
30	38.75	2.12	1.44	30.00	500
36	46.00	2.38	1.62	36.00	960
42	53.00	2.62	1.81	42.00	1300
48	59.50	2.75	2.00	48.00	1740
54	66.25	3.00	2.25	54.00	2233
60	73.00	3.12	2.38	60.00	2845
64	80.00	3.38	2.56	64.00	3744

STAR[®] PIPE PRODUCTS



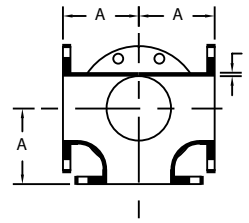
Flanged Fittings

ANSI/AWWA C110/A21.10



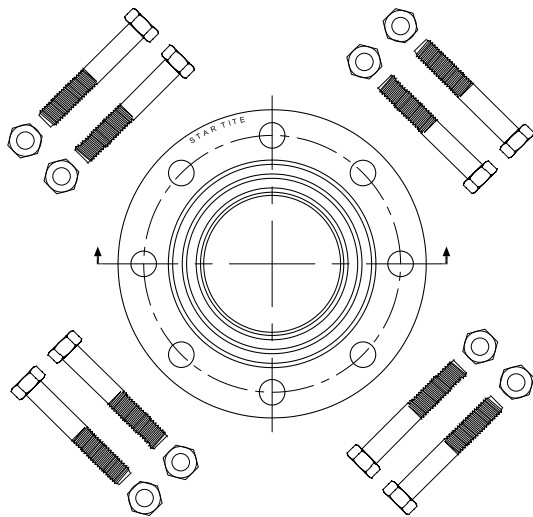
90° FLANGED SIDE OUTLET BEND

NOM. SIZE	T	A	R	WT (LBS.)
3	0.48	5.50	4.00	35
4	0.52	6.50	4.50	60
6	0.55	8.00	6.00	95
8	0.60	9.00	7.00	145
10	0.68	11.00	9.00	240
12	0.75	12.00	10.00	345
14	0.66	14.00	11.50	478



FLANGED SIDE OUTLET TEE

NOM. SIZE	T	A	WT (LBS.)
4 x 4	0.52	6.50	80
6 x 6	0.55	8.00	120
8 x 8	0.60	9.00	195
10 x 10	0.80	11.00	316
16 x 16	0.70	15.00	629
20 x 20	0.80	18.00	952
24 x 24	0.89	22.00	1479



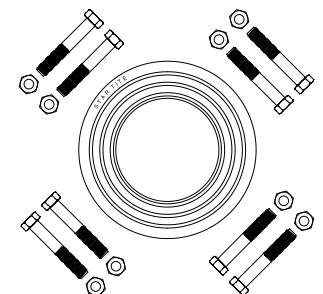
STAR-TITE[™] FLANGE ACCESSORY PACKS* C111/A.21.11

NOM SIZE (IN)	ID	STAR-TITE [™] RING GASKET	FULL FACE STAR-TITE [™] GASKET	BOLT SIZE (IN)	BOLTS (QTY)	MAX PRESSURE RATING (psi)	Bolt Torque (ft.-lbs)	APPROX. WT. (LBS)
3	3.000	5.375	7.500	5/8 x 2 1/2	4	350	110	2
4	4.000	6.875	9.000	5/8 x 3	8	350	110	4
6	6.000	8.750	11.000	3/4 x 3 1/2	8	350	110	5
8	8.000	11.000	13.500	3/4 x 3 1/2	8	350	110	5
10	10.000	13.375	16.000	7/8 x 4	12	350	130	12
12	12.000	16.125	19.000	7/8 x 4	12	350	130	13
14	14.000	17.750	21.000	1 x 4 1/2	12	350	150	19
16	16.000	20.250	23.500	1 x 4 1/2	16	350	160	25
18	18.000	21.625	25.000	1 1/8 x 5	16	350	180	36
20	20.000	23.875	27.500	1 1/8 x 5	20	350	200	45
24	24.000	28.250	32.000	1 1/4 x 5 1/2	20	350	220	61
30	30.000	34.750	38.750	1 1/4 x 6 1/2	28	250	140	94
36	36.000	41.250	46.000	1 1/2 x 7	32	250	160	176

*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). Listed by UL as satisfying both NSF/ANSI 61 and NSF/ANSI 372 requirements for potability.

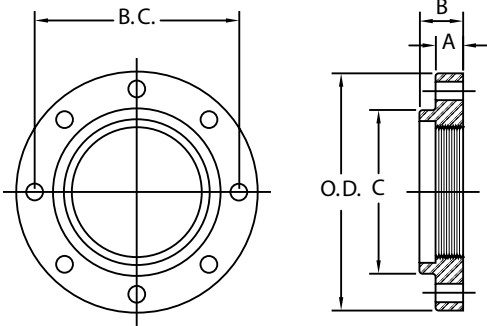


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*REGISTERED TRADEMARK OF STAR PIPE PRODUCTS



Flanges

ANSI/AWWA C115/A21.15

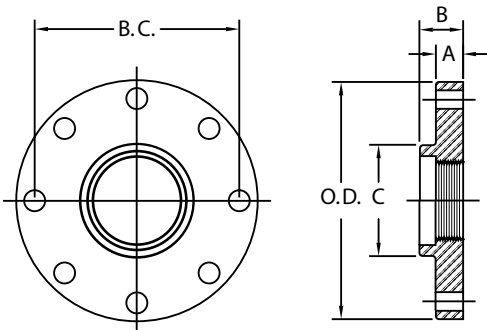


GENERAL SPECIFICATIONS

- MATERIAL:** Ductile Iron per ASTM A536
- PRESSURE:** 250 PSI
- DRILLING:** In accordance with ANSI/AWWA C110/21.10, ASME B16.1 Class 125 and ASME B16.42 Class 150
- DIMENSIONS:** Per ANSI/AWWA C115/A21.15
Flange O.D. & thickness per ANSI/AWWA C110/21.10
- FLANGE THREADS:** Taper pipe thread per ASME B1.20.1 adapted to ductile iron pipe O.D.

HI HUB THREADED 125 LB. FLANGES FOR DUCTILE PIPE (DUCTILE IRON)

NOM. SIZE	OD PIPE	FLANGE THK. A	FLANGE THK. B	THREAD LENGTH	OD FLANGE O.D.	HUB DIA. C	BOLT CIRCLE B.C.	BOLT HOLE DIA.	BOLT DIA. & LENGTH	NO. OF BOLT HOLES	WT (LBS.)
2	2.50	0.62	1.25	1.00	6.00	3.06	4.75	3/4	5/8 x 2 1/4	4	4
3	3.96	0.75	1.69	1.25	7.50	4.45	6.00	3/4	5/8 x 2 1/2	4	7
4	4.80	0.94	1.81	1.37	9.00	5.32	7.50	3/4	5/8 x 3	8	12
6	6.90	1.00	2.00	1.53	11.00	7.56	9.50	7/8	3/4 x 3 1/2	8	17
8	9.05	1.12	2.25	1.75	13.50	9.69	11.75	7/8	3/4 x 3 1/2	8	26
10	11.10	1.19	2.44	1.88	16.00	12.00	14.25	1	7/8 x 4	12	37
12	13.20	1.25	2.56	2.12	19.00	14.06	17.00	1	7/8 x 4	12	55
14	15.30	1.38	2.62	2.12	21.00	16.25	18.75	1 1/8	1 x 4 1/2	12	70
16	17.40	1.44	2.75	2.12	23.50	18.44	21.25	1 1/8	1 x 4 1/2	16	80
18	19.50	1.56	3.00	2.25	25.00	20.53	22.75	1 1/4	1 1/8 x 5	16	85
20	21.60	1.69	3.25	2.44	27.50	22.63	25.00	1 1/4	1 1/8 x 5	20	106
24	25.80	1.88	3.50	2.75	32.00	26.82	29.50	1 3/8	1 1/4 x 5 1/2	20	147
30	32.00	2.12	3.75	3.37	38.75	32.75	36.00	1 3/8	1 1/4 x 6 1/2	28	224
36	38.30	2.38	5.00	4.00	46.00	39.12	42.75	1 5/8	1 1/2 x 7	32	337
42	44.50	2.62	5.12	4.50	53.00	46.00	49.50	1 5/8	1 1/2 x 7 1/2	36	495
48	50.80	2.75	5.50	5.12	59.50	52.25	56.00	1 5/8	1 1/2 x 8	44	622
54	57.56	3.00	6.45	4.75	66.25	58.75	62.75	2	1 3/4 x 8 1/2	44	711
60	61.61	3.12	6.75	5.00	73.00	63.00	69.25	2	1 3/4 x 9	52	1084
64	65.67	3.38	7.06	5.25	80.00	67.18	76.00	2	1 3/4 x 9	52	1575



GENERAL SPECIFICATIONS

- MATERIAL:** Ductile Iron per ASTM A536
- PRESSURE:** 250 PSI
- DRILLING:** In accordance with ANSI/AWWA C110/21.10, ASME B16.1 Class 125 and ASME B16.42 Class 150
- DIMENSIONS:** Per ANSI/AWWA C115/A21.15
Flange O.D. & thickness per ANSI/AWWA C110/21.10
- FLANGE THREADS:** Taper pipe thread per ASME B1.20.1 adapted to ductile iron pipe O.D.

REDUCING 125 LB. FLANGES FOR DUCTILE PIPE (DUCTILE IRON)

NOM. SIZE	OD PIPE	FLANGE THK. A	FLANGE THK. B	THREAD LENGTH	OD FLANGE O.D.	HUB DIA. C	BOLT CIRCLE B.C.	BOLT HOLE DIA.	BOLT DIA. & LENGTH	NO. OF BOLT HOLES	WT (LBS.)
4 x 3	3.96	0.94	1.37	0.94	9.00	4.45	7.50	3/4	5/8 x 3	8	16
6 x 4	4.80	1.00	1.56	1.00	11.00	5.32	9.50	7/8	3/4 x 3 1/2	8	25
8 x 4	4.80	1.12	1.75	1.00	13.50	5.32	11.75	7/8	3/4 x 3 1/2	8	40
8 x 6	6.90	1.12	1.75	1.16	13.50	7.56	11.75	7/8	3/4 x 3 1/2	8	35
10 x 8	9.05	1.19	2.00	1.38	16.00	9.69	14.25	1	7/8 x 4	12	50
12 x 8	9.05	1.25	2.19	1.38	19.00	9.69	17.00	1	7/8 x 4	12	85
12 x 10	11.10	1.25	2.19	1.38	19.00	12.00	17.00	1	7/8 x 4	12	65

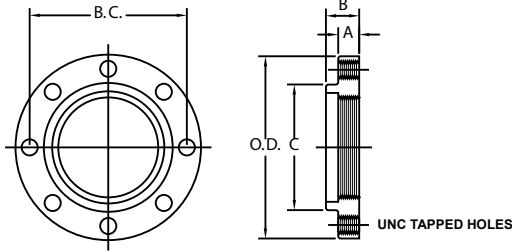


STAR[®] PIPE PRODUCTS



Flanges

ANSI/AWWA C115/A21.15

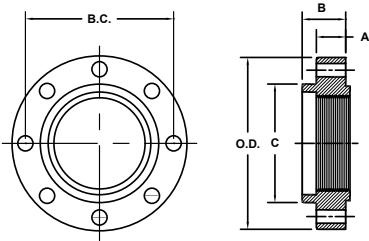


GENERAL SPECIFICATIONS

- MATERIAL:** Ductile Iron per ASTM A536
- PRESSURE:** 250 PSI
- DRILLING:** In accordance with ANSI/AWWA C110/21.10, ASME B16.1 Class 125 and ASME B16.42 Class 150
- DIMENSIONS:** Per ANSI/AWWA C115/A21.15
Flange O.D. & thickness per ANSI/AWWA C110/21.10
- BOLT HOLE THREADS:** UNC-2B Per ASME B1.1
- FLANGE THREADS:** Taper pipe thread per ASME B1.20.1 adapted to ductile iron pipe O.D.

THREADED 125 LB. FLANGES FOR STUDS FOR DUCTILE PIPE (DUCTILE IRON)

NOM. SIZE	OD PIPE	FLANGE THK. A	FLANGE THK. B	THREAD LENGTH	OD FLANGE O.D.	HUB DIA. C	BOLT CIRCLE B.C.	BOLT HOLE THREADS (UNC-2B)	NO. OF BOLT HOLES	WT (LBS.)
2	2.50	0.62	1.25	1.00	6.00	3.06	4.75	5/8 - 11	4	4
3	3.96	0.75	1.69	1.25	7.50	4.45	6.00	5/8 - 11	4	7
4	4.80	0.94	1.81	1.37	9.00	5.32	7.50	5/8 - 11	8	12
6	6.90	1.00	2.00	1.53	11.00	7.56	9.50	3/4 - 10	8	17
8	9.05	1.12	2.25	1.75	13.50	9.69	11.75	3/4 - 10	8	26
10	11.10	1.19	2.44	1.88	16.00	12.00	14.25	7/8 - 9	12	37
12	13.20	1.25	2.56	2.12	19.00	14.06	17.00	7/8 - 9	12	55
14	15.30	1.38	2.62	2.12	21.00	16.25	18.75	1 - 8	12	70
16	17.40	1.44	2.75	2.12	23.50	18.44	21.25	1 - 8	16	80
18	19.50	1.56	3.00	2.25	25.00	20.53	22.75	1 1/8 - 7	16	85
20	21.60	1.69	3.25	2.44	27.50	22.63	25.00	1 1/8 - 7	20	106
24	25.80	1.88	3.50	2.75	32.00	26.82	29.50	1 1/4 - 7	20	147
30	32.00	2.12	3.75	3.37	38.75	32.75	36.00	1 1/4 - 7	28	224
36	38.30	2.38	5.00	4.00	46.00	39.12	42.75	1 1/2 - 6	32	337
42	44.50	2.62	5.12	4.50	53.00	46.00	49.50	1 1/2 - 6	36	495
48	50.80	2.75	5.50	5.12	59.50	52.25	56.00	1 1/2 - 6	44	622
54	57.56	3.00	6.45	4.75	66.25	58.75	62.75	1 3/4 - 5	44	711
60	61.61	3.12	6.75	5.00	73.00	63.00	69.25	1 3/4 - 5	52	1084
64	65.67	3.38	7.06	5.25	80.00	67.18	76.00	1 3/4 - 5	52	1575



GENERAL SPECIFICATIONS

- MATERIAL:** Ductile Iron per ASTM A536
- PRESSURE:** 640 PSI
- DRILLING:** In accordance with ASME B16.1 Class 250 and ASME B16.42 Class 300
- DIMENSIONS:** Per ANSI/B16.1 Class 250 and ASME B16.42 Class 300.
- FLANGE THREADS:** Taper pipe thread per ASME B1.20.1 adapted to ductile iron pipe O.D.

THREADED 250 LB. FLANGES FOR DUCTILE PIPE (DUCTILE IRON)

NOM. SIZE	OD PIPE	FLANGE THK. A	FLANGE THK. B	THREAD LENGTH	OD FLANGE O.D.	HUB DIA. C	BOLT CIRCLE B.C.	BOLT HOLE DIA.	BOLT DIA. & LENGTH	NO. OF BOLT HOLES	WT (LBS.)
3	3.96	1.12	1.56	1.19	8.25	4.62	6.62	7/8	3/4 x 3 1/2	8	10
4	4.80	1.25	1.75	1.31	10.00	5.75	7.88	7/8	3/4 x 4	8	19
6	6.90	1.44	1.94	1.56	12.50	8.12	10.62	7/8	3/4 x 4	12	31
8	9.05	1.62	2.19	1.75	15.00	10.25	13.00	1	7/8 x 4 1/2	12	47
10	11.10	1.88	2.38	1.94	17.50	12.62	15.25	1 1/8	1 x 5 1/2	16	70
12	13.20	2.00	2.56	2.19	20.50	14.75	17.75	1 1/4	1 1/8 x 5 1/2	16	114
14	15.30	2.12	2.69	2.25	23.00	16.25	20.25	1 1/4	1 1/8 x 6	20	122
16	17.40	2.25	2.88	2.50	25.50	18.38	22.50	1 3/8	1 1/4 x 6 1/2	20	159
18	19.50	2.38	3.00	2.56	28.00	20.53	24.75	1 3/8	1 1/4 x 6 1/2	24	205
20	21.60	2.50	3.31	2.87	30.50	22.63	27.00	1 3/8	1 1/4 x 7	24	220
24	25.80	2.75	3.75	3.25	36.00	26.82	32.00	1 3/8	1 1/2 x 7 1/2	24	342
30	32.00	3.00	4.75	4.33	43.00	35.00	39.25	2	1 3/4 x 8 1/2	28	502
36	38.30	3.38	5.37	4.63	50.00	41.25	46.00	2 1/4	2 x 9 1/2	32	690
42	44.50	3.69	6.00	5.38	57.00	48.50	52.75	2 1/4	2 x 10	36	986
48	50.80	4.00	6.63	6.25	65.00	56.55	60.75	2 1/4	2 x 11	40	1499

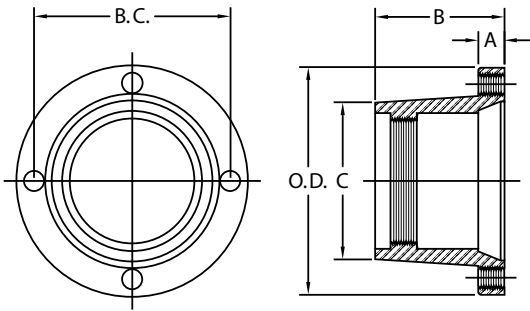
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STAR[®] PIPE PRODUCTS



Flanges

ANSI/AWWA C115/A21.15

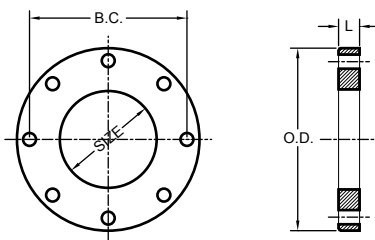


GENERAL SPECIFICATIONS

- MATERIAL:** Ductile Iron per ASTM A536
- PRESSURE:** 350 PSI 3"-24" and 250 PSI 30"-48"
- DRILLING:** In accordance with ANSI/AWWA C111/A21.11
- DIMENSIONS:** MJ BELL per ANSI/AWWA C111/A21.11
- BOLT HOLE THREADS:** UNC-2B Per ASME B1.1
- FLANGE THREADS:** Taper pipe thread per ASME B1.20.1 adapted to ductile iron pipe O.D.

MJ THREADED BELL FOR DUCTILE PIPE (DUCTILE IRON)

NOM. SIZE	OD PIPE	FLANGE THK. A	TOTAL THK. B	THREAD LENGTH	OD FLANGE O.D.	HUB DIA. C	BOLT CIRCLE B.C.	BOLT HOLE THREADS (UNC-2B)	NO. OF BOLT HOLES	WT (LBS.)
3	3.96	0.94	4.12	0.94	7.69	4.50	6.19	5/8 - 11	4	11
4	4.80	1.00	4.25	1.00	9.12	5.32	7.50	3/4 - 10	4	15
6	6.90	1.06	4.43	1.16	11.12	7.56	9.50	3/4 - 10	6	22
8	9.05	1.12	4.75	1.38	13.37	9.73	11.75	3/4 - 10	6	35
10	11.10	1.19	4.87	1.50	15.69	12.06	14.00	3/4 - 10	8	46
12	13.20	1.25	5.12	1.75	17.94	14.16	16.25	3/4 - 10	8	55
14	15.30	1.31	6.50	1.87	20.31	16.25	18.75	3/4 - 10	10	94
16	17.40	1.38	6.75	2.06	22.56	18.44	21.00	3/4 - 10	12	118
18	19.50	1.44	7.00	2.25	24.83	20.53	23.25	3/4 - 10	12	125
20	21.60	1.50	7.25	2.44	27.08	22.63	25.50	3/4 - 10	14	150
24	25.80	1.62	7.50	2.75	31.58	26.82	30.00	3/4 - 10	16	235
30	32.00	1.81	9.13	3.37	39.12	32.75	36.88	1 - 8	20	375
36	38.30	2.00	9.75	4.00	46.00	39.12	43.75	1 - 8	24	500
42	44.50	2.00	10.50	4.00	53.12	46.00	50.62	1 1/4 - 7	28	735
48	50.80	2.00	11.00	4.12	60.00	52.25	57.50	1 1/4 - 7	32	940
54	57.56	2.00	11.50	4.25	65.70	59.18	63.20	1 1/4 - 7	36	978
60	61.61	2.00	11.50	5.00	70.22	63.00	67.72	1 1/4 - 7	36	1109



GENERAL SPECIFICATIONS

- MATERIAL:** Standard: Gray Iron Per ASTM A48 Class 30B
Optional: Ductile Iron per ASTM A536
- DRILLING:** In accordance with ANSI/AWWA C110/21.10, ASME B16.1 Class 125
And ASME B16.42 Class 150

FILLER FLANGES (DUCTILE IRON & CAST GRAY IRON)

NOM. SIZE	OD FLANGE O.D.	BOLT CIRCLE B.C.	BOLT HOLE DIA.	NO. OF BOLT HOLES	L / WT. (LBS.)									
					1/2	3/4	1	1 1/2	2	3	4	5	6	
3	7.50	6.00	3/4	4	5	7	9	14	18	27	36	45	54	
4	9.00	7.50	3/4	8	6	9	12	19	25	37	49	62	74	
6	11.00	9.50	7/8	8	8	12	16	24	32	48	64	81	97	
8	13.50	11.75	7/8	8	11	17	23	34	46	69	92	114	137	
10	16.00	14.25	1	12	15	22	29	44	59	88	118	147	176	
12	19.00	17.00	1	12	21	31	42	63	84	126	167	209	251	
14	21.00	18.75	1.12	12	23	35	47	70	94	141	188	235	282	
16	23.50	21.25	1.12	16	28	42	56	85	113	169	225	282	338	
18	25.00	22.75	1.25	16	28	42	56	85	113	169	225	282	338	
20	27.50	25.00	1.25	20	33	50	66	100	133	199	265	332	398	
24	32.00	29.50	1.38	20	42	63	84	126	167	251	335	419	502	
30	38.75	36.00	1.38	28	56	84	112	168	224	336	448	560	672	
36	46.00	42.75	1.63	32	75	113	150	225	300	450	601	751	901	



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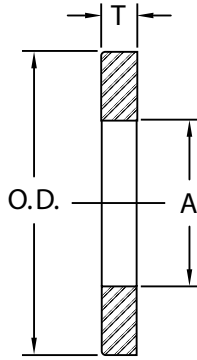
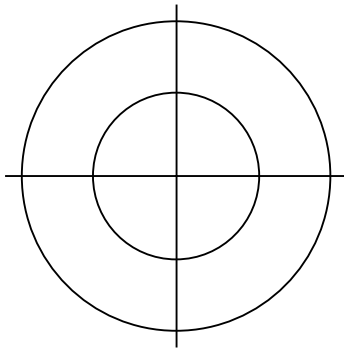


Flanges

ANSI/AWWA C115/A21.15

GENERAL SPECIFICATIONS

MATERIAL: Ductile iron per ASTM A536



DUCTILE IRON ANCHOR FLANGES

NOM. SIZE	THICKNESS T	OD FLANGE O.D.	ID FLANGE A	WT (LBS.)
3	0.50	6.50	4.06	3
4	0.50	7.40	4.90	3
6	0.50	9.50	7.00	4
8	0.50	12.00	9.15	6
10	0.50	14.10	11.20	7
12	0.50	16.25	13.30	9
14	0.50	18.40	15.44	10
16	0.50	21.00	17.54	14
18	0.50	23.10	19.64	15
20	0.50	25.70	21.74	19
24	0.50	30.00	25.94	23
30	0.63	37.00	32.17	43
36	0.63	43.40	38.47	52
42	1.00	50.00	44.67	103
48	1.00	56.50	50.97	121
54	1.25	62.50	57.73	146
60	1.25	69.00	61.78	241
64	1.25	75.75	65.84	358

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