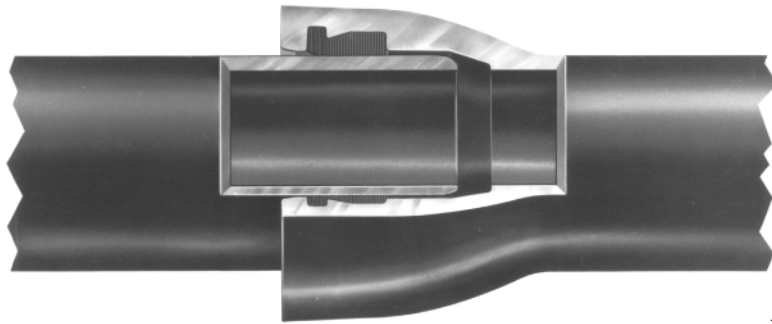




ACIPCO Fastite® Joint Pipe in sizes 100mm through 1,600mm for water, sewage, or other liquids has the proven long-life and high-strength qualities inherent in pipe produced centrifugally in accordance with AWWA C151 and ISO 2531. In addition, this significant **ACIPCO** development – a dependable, single gasket, push-on type joint meeting the requirements of AWWA C111 – affords the customer lower joint cost and time-saving advantages in installation.

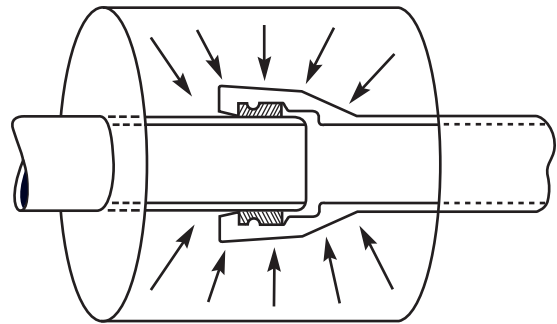
**ACIPCO
FASTITE®
JOINT
PIPE**

It provides exceptional strength and flexibility and has been widely accepted by engineers, contractors, and utility officials since the early 1950s. For added flexibility during construction, and for possible elimination of bends, a liberal 5° allowable deflection is standard in all sizes through 800mm, offering 535mm offset in a nominal 6m length of pipe. Extra deflection can be provided in larger diameter pipe with special Fastite deflection bells.



Tested: 68 BAR internal pressure
29kg/cm² external pressure
1 BAR negative air pressure
Results: No leakage, no infiltration

The patented **ACIPCO** Fastite Joint embodies many advanced design features. For specific conditions the joint can be approved for higher pressure rating. The socket, which is scientifically designed with two gasket recesses and a dividing buttress, is manufactured to close tolerances so that the gasket is self-centered, securely confined, and firmly compressed for a permanent, tight, trouble-free joint. A sloping gasket seat at an angle to the pipe axis produces a wedging effect on the gasket surface, providing maximum sealing under pressure.



DUCTILE FASTITE JOINT TEST

FASTITE JOINT ASSEMBLY The bell opening is slightly tapered to provide easy entry of the pipe end; the flared socket design permits liberal joint deflection. The plain end of the pipe is tapered to facilitate entry into the bell and centering in the gasket. On pipe cut in the field, the plain end can be easily beveled by the use of a heavy file, portable grinding wheel, or other suitable apparatus. Two stripes are painted on the plain end of **ACIPCO** Fastite Joint Pipe to provide a visual means of checking the joint to ensure proper assembly.



FASTITE GASKET The Fastite Joint sealing component—a molded rubber ring gasket of two hardnesses, shaped to fit the configuration of the gasket socket—is manufactured under **ACIPCO**'s own rigid specifications, ensuring closely controlled dimensional and hardness properties. The smaller end of the gasket is of harder rubber, approximately 85 durometer hardness, which provides a strong shoulder for self-centering on the gasket buttress, a permanent seal against cold flow, and protection from deterioration. The larger end of the gasket is of softer rubber, approximately 65 durometer hardness, providing ease of assembly and positive sealing at maximum deflection under low or high pressures. The design eliminates the problem of infiltration and also ensures positive sealing against negative pressure, thus preventing gasket “pullout” should a vacuum be created in the line.

A taper on the inside of the gasket allows the entering pipe to locate and center on the hard section and reduces friction loads during subsequent assembly. The snug fit and hard section of the gasket, in conjunction with the design of the buttress, act to restrain the gasket against dislodgment during assembly. Additional internal pressure results in increased tightness of the joint when pipe is either in straight alignment or deflected.

Gaskets made of SBR (Styrene Butadiene Rubber) are standard. For information on gaskets made of special types of rubber, for applications involving air or liquid temperatures in excess of 65° Celsius, or for chemical, hydrocarbon, or other special service applications, consult **ACIPCO** for recommendations.

FASTITE LUBRICANT **ACIPCO** Fastite Joint Lubricant is a non-toxic water soluble material imparting neither taste nor odor to the conveyed water. The lubricant is suitable for use in hot or cold weather and will adhere to wet or dry pipe. **ACIPCO** Fastite Joint Pipe can be assembled when submerged; for such installation, **ACIPCO** underwater joint lubrication is recommended. **ACIPCO** Fastite Joint Lubricant is NSF approved for contact with potable water.

FASTITE JOINT MATERIALS Standard joint materials include Fastite plain rubber gaskets and a sufficient supply of Fastite joint lubricant.

FITTINGS **ACIPCO** 100mm through 1,600mm Fastite Joint Fittings are most extensively used with Fastite Joint Pipe. Mechanical joint fittings are also available for sleeves or collars meant for drop-in service.

COATING AND LINING **ACIPCO** Fastite Joint Pipe can be furnished asphaltic coated, cement lined, or with special coating or lining where required.

APPROVAL The **ACIPCO** Fastite Joint is approved in appropriate sizes by Underwriters' Laboratories, Inc. and Factory Mutual Research Corporation.

FASTITE GASKET			
Common Name or Trade Name	Chemical Name	Temperature Capability	Common Uses
Plain Rubber	Styrene Butadiene	65° Celsius	Fresh Water, Salt Water, Sanitary Sewage
EPDM	Ethylene	121° Celsius	Water, Sewage, Ketones, Dilute Acids and Alkalies, Vegetable Oil, Alcohols, outdoor exposure

ACIPCO reserves the right to furnish any Trade or Brand rubber for the chemical formulation specified. Temperature is in reference to conveyed fluid.

Refer higher temperatures or other special requirements to **ACIPCO** for recommendations regarding suitable gasket material.





The **ACIPCO** Fastite Joint is a push-on joint meeting all the rigorous requirements of AWWA C111. The ANSI/AWWA C600 Standard covers in detail the installation of ductile iron water mains, including assembly instructions for push-on joint pipe.

Field cutting of **ACIPCO** Fastite Ductile Iron pipe can be easily performed, thus eliminating the necessity for factory-made special lengths of Fastite pipe. The plain end of Fastite pipe cut in the field requires little or no preparation for assembly into the socket of a mechanical joint fitting. Where a cut pipe is to be assembled into a Fastite socket, the required beveling or rounding of the plain end can be easily accomplished by the use of a portable grinding wheel or other suitable apparatus. Methods of cutting ductile iron pipe are described in Section 14.

ACIPCO FASTITE JOINT PIPE ASSEMBLY INSTRUCTIONS

The **ACIPCO** Fastite Joint requires only one joint component, the rubber gasket which, when properly installed, fits snugly in the gasket recess in the bell socket. A special lubricant supplied with the pipe is applied to the plain end and the inside surface of the gasket before assembly. The pipe end is tapered or rounded to provide self-centering of the plain end in the gasket and ease of assembly. A circumferential stripe on the plain end provides a visual indication for checking the proper insertion of the joint. The stripe, shown in the photographs illustrating assembly methods, substantially disappears into the bell when the plain end is fully inserted into the socket with the two lengths of pipe in alignment. Joints can then be safely deflected up to the extent shown in this section. In deflected joints, all or part of the stripe will be visible after assembly.

Easier assembly is effected if the pipe is suspended 25mm or so off the bottom of the trench during the jointing operation.

The following instructions should be followed in order to properly assemble the joints and to fully realize the maximum speed and ease of assembly of the Fastite Joint:

1. Clean socket and plain end thoroughly, removing mud, gravel, or any other matter that might cause the front of the gasket to protrude into the path of the entering spigot.



Photo 1

2. Insert gasket fully into the gasket recess of the socket, large end of the gasket entering first. Gasket may be installed with one or more V-shaped folds as shown (Photo 1). After the gasket is in place at the bottom, the top of the gasket is positioned fully into the gasket recess. Gaskets and lubricants to be installed in very cold weather should be warmed first (as by storage in a heated equipment cab or truck, etc.) for optimum assembly.

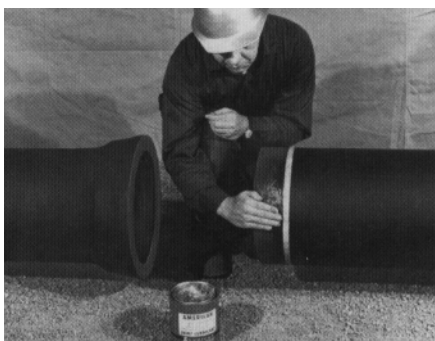


Photo 2

3. Apply a thin film of regular **ACIPCO** Fastite Joint Lubricant to the rounded or tapered spigot end of the pipe, the immediate outside pipe surface between the stripe and the end of the pipe (Photo 2), and also to the inside surface of the gasket. Special **ACIPCO** Fastite Joint Lubricant intended specifically for underwater or very wet installations can be supplied when requested. Caution: If a spigot end contacts the ground or trench side after lubrication, any adhering dirt or rocks should be cleaned off and the area should be re-lubricated prior to assembly.

4. Insert the plain end in the socket. For optimum assembly it is preferable that the entering pipe be in reasonably straight alignment; however, the Fastite Joint may be readily assembled if necessary with the pipe deflected within its rated deflection. Push the plain end into the socket using any of the applicable assembly methods described hereinafter. If the joint cannot be assembled with a moderate force, remove the pipe and check for the cause of the difficulty, such as improper positioning of gasket, insufficient or wrong type lubricant, dirt under or behind the gasket, dirt adhering to the pipe, or any other cause which would result in increased friction between pipe and gasket surface. For assurance of proper gasket positioning, a thin automotive feeler gauge can also be used if desired for quick and easy probe determination of installed gasket position around the joint.

ACIPCO FASTITE
JOINT ASSEMBLY TOOLS



Photo 3

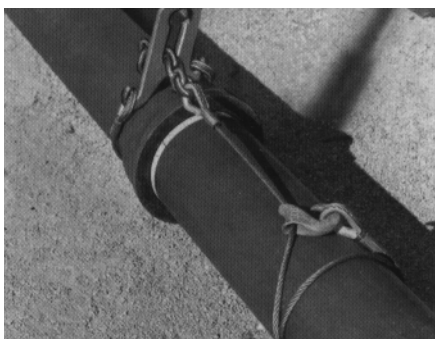


Photo 4

100mm - 200mm PIPE

In general, Fastite Joints in 100mm-200mm sizes may be assembled without special tools under normal conditions. However, a lever tool can be furnished for these sizes for use as required. This tool consists of a lever, a bell cable and a pulling cable for the pipe end.

Place the lever on the pipe barrel behind the bell radius. Incline the lever at about 45° to simplify connecting the bell cable. Pass

the bell cable under the pipe and connect first one end and then the other to the lever by passing cable thimbles over the hooks at each side of the lever (Photo 3). A separate bell cable must be used for each size of pipe.

One size pulling cable is used on all 100mm-200mm sizes. Double wrap this cable around the plain end and connect the thimble end to the sliding hook as shown (Photo 4), making sure the cable is positioned on the pipe to reduce slack. Incline the lever toward the end of

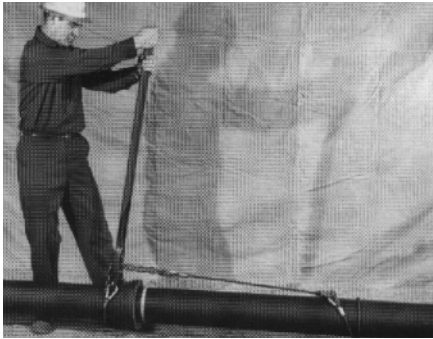


Photo 5



Photo 6

the pipe and hook the chain end of the cable in the lever slot. The joint is then assembled by pulling on the lever (Photo 5).

The lever may be used to disassemble the joint by attaching it onto the plain end of the pipe with the bell cable and using a pry block between lever and bell face (Photo 6).

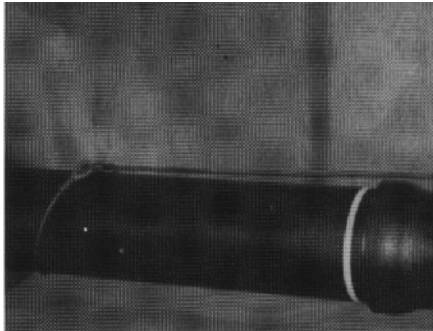


Photo 7

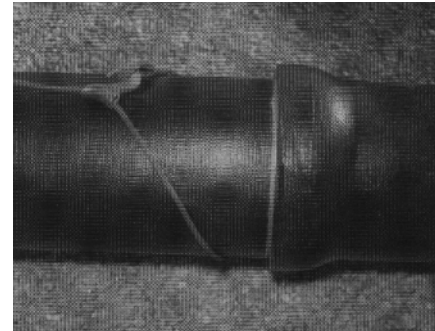


Photo 8

250mm - 600mm PIPE

Assembly of 250mm - 600mm Fastite Joint pipe may be accomplished quickly and easily by pushing or pulling the pipe together without the use of complicated tools. In general, ACIPCO push-on joint pipes are purposefully "tight."

In pulling operations, simply wrap a sound wire rope choker cable or nylon sling around the barrel of the entering pipe. Secure the other end of the choker to a pulling device (e.g., backhoe, come-along, etc.). Use the mechanism to pull the cable taut in the assembly direction (Photo 7). Continue pulling the cable in a smooth, continuous motion until the pipe is in the fully assembled position.

The joint may be disassembled in a similar manner, reversing the direction of pull with the choker cable (Photo 8).

700mm - 900mm PIPE

A roller chain come-along can be furnished, if ordered, with 700mm - 900mm Fastite Joint pipe. This tool is provided with hooks at each end which fit into rings on bell and spigot pulling cables. The spigot pulling cable runs to the bell end of the entering pipe and fastens to the bell with a special hook (Photo 9).



Photo 9

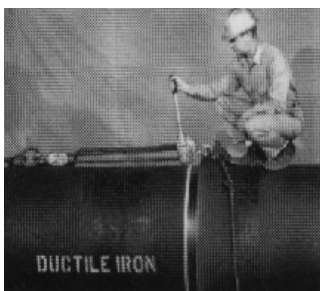


Photo 10



Photo 11

The bell cable is passed under the previously installed pipe, and the ends of the cable are joined around the pipe with a hook and ring. The ring on the bell cable also engages the hook on the end of the come-along as shown in the photograph. Connect the come-along and take up slack, leaving sufficient travel to assemble the joint. Pull the pipe home by operating the ratchet lever on the come-along (Photo 10).

1,200mm-1,600mm PIPE

Fastite Joint pipe in sizes 1,200mm - 1,600mm is assembled in much the same manner as 700mm - 900mm pipe. The only difference in the rigging is the use of twin pulling cables at the top of the pipe which attach to the bell hook and pass through a pulley (Photo 11). This approximately doubles the assembly force provided by the roller chain come-along (Photo 12). All this special rigging can be furnished when ordered.

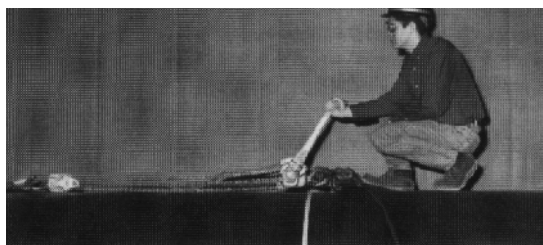
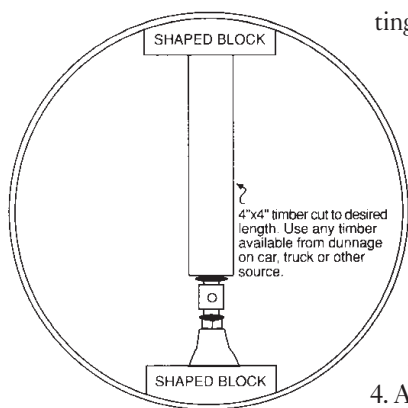


Photo 12

FITTINGS Push-on fitting joint assembly is basically the same as that of pipe, though special rigging may be necessary to hold these short items reasonably stable for assembly. Similar concepts can also be applied to the assembly of larger fittings with stronger field-fabricated rigging suitable for the specific installation conditions.

FIELD ROUNDING Occasionally, field rounding of pipe ends may be necessary to accomplish assembly, particularly when large diameter pipes are cut to be assembled into mechanical joints or couplings. Need for rounding in assembly of mechanical or stuffing-box type joints can be predetermined by sliding the gland or end ring over the end of the pipe. Rounding may be accomplished in the following manner using a mechanical jack and shaped blocks.

(Note: This procedure may also be used with assemblies involving push-on joint pipe, fittings, valves, etc.; however, rounding is less frequently necessary for assembly of push-on joints.)



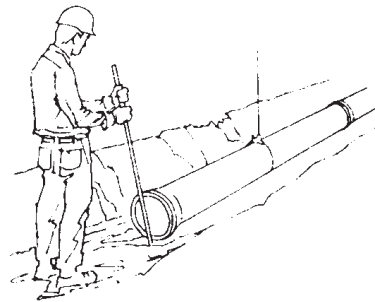
1. Determine the minimum diameter of the ends to be rounded.
2. Place the jack and the shaped blocks in line with the minimum diameter as shown in the sketch, using a sound 100mm x 100mm spacer timber cut square to the required length to take up the space.
3. Apply a load carefully with the jack only until the minimum diameter equals the maximum diameter, or until the gland will easily slip over the end. No more jacking should be attempted or necessary -- **DO NOT ATTEMPT TO PERMANENTLY ROUND END.**

4. After the joint is completely assembled and the bolts (if involved) are uniformly tightened to the required torque, carefully relax and remove the jack and timbers from the pipe.

**ACIPCO
FASTITE
JOINT**

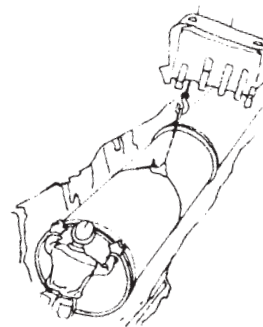
COMMON ASSEMBLY METHODS In seeking ways to take even greater advantage of the cost-reducing features of the Fastite Joint, utility contractors have developed other methods of assembling this joint without special tools. The following methods are described for the information of the user, who may elect to use them at his discretion, keeping in mind that these methods may not be effective for all installations and under all field conditions.

SPADE OR CROWBAR METHOD This is applicable to the smaller sizes of **ACIPCO** Fastite Joint pipe, and consists of centering the lubricated end of the entering pipe in the gasket and then pushing against the bell face of the entering pipe with a spade or crowbar driven into the ground in front of the bell face. This method requires the trench bottom to be fairly firm soil. The method may not be effective in a rocky trench or with a trench that is soft, muddy, or sandy. A wooden block between the bell face and the pry bar may increase the leverage. Easier assembly is effected if the pipe is suspended an inch or so off the bottom of the trench.



Spade or Crowbar Method

SLING OR BACKHOE METHOD This method is usually applicable to the intermediate and larger sizes of **ACIPCO** Fastite Joint pipe where the bar method might not be effective. It consists of centering the end of the entering pipe in the gasket as the pipe to be assembled is suspended from the backhoe. Then it can be pulled into the adjoining socket with the pipe sling by moving the backhoe arm toward the previously assembled pipe. In other instances, the pipe may be assembled by placing the backhoe bucket against the bell face of the entering pipe and pushing it into the socket. When pushing against the bell face, care should be taken to avoid very small contact areas and possible damage to the pipe bells or spigots. Wood cushions between the backhoe bucket and the pipe are particularly effective in preventing damage.



Sling or Backhoe Method

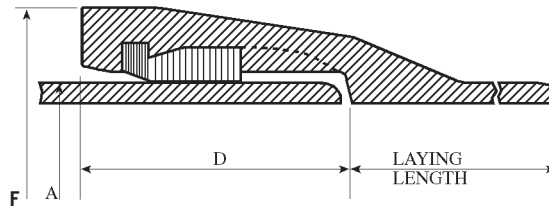
**ACIPCO FASTITE
JOINT LUBRICANT
REQUIREMENT BY
SIZE OF PIPE**

LUBRICATION REQUIREMENTS		
PIPE SIZE (mm)	APPROX. POUNDS OF LUBRICANT PER JOINT	APPROX. NO. OF JOINTS PER POUND OF LUBRICANT
100	.03	33
150	.045	22
200	.06	17
250	.07	14
300	.08	12
350	.09	11
400	.11	9
450	.12	8
500	.14	7
600	.17	6
700	.30	3
800	.30	3
900	.36	3
1000	.44	2
1200	.50	2
1400	.59	2
1500	.66	1
1600	.71	1



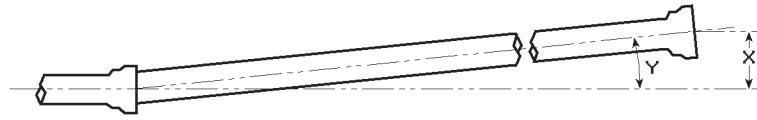
1,600mm ACIPCO Fastite Joint pipe being installed in a wastewater application.

**ACIPCO
FASTITE JOINT FOR
DUCTILE IRON PIPE
ISO 2531 STANDARD
DIMENSIONS**

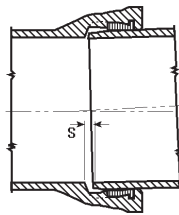


NOMINAL DIAMETER DN	NOMINAL LAYING LENGTH (m)	A OUTSIDE DIAMETER (mm)	D SOCKET DEPTH (mm)	F BELL O.D. (mm)
100	6	118	86	167
150	6	170	91	219
200	6	222	99	274
250	6	274	101	329
300	6	326	101	384
350	6	378	133	438
400	6	429	133	494
450	6	480	140	548
500	6	532	140	600
600	6	635	140	704
700	6	738	165	808
800	6	842	165	914
900	6	945	165	1017
1000	6	1048	165	1124
1200	6	1255	203	1354
1400	6	1462	216	1566
1500	6	1565	222	1671
1600	6	1668	229	1777

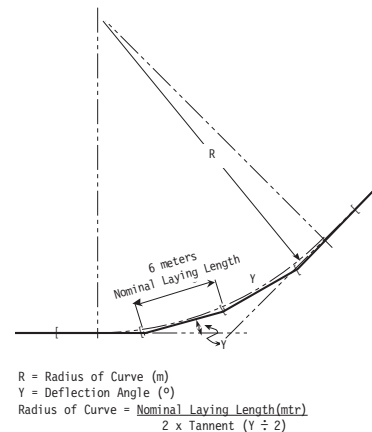
**ACIPCO FASTITE
JOINT PIPE
ALLOWABLE JOINT
DEFLECTION**



NOMINAL DIAMETER DN	NOMINAL LAYING LENGTH (m)	MAXIMUM RECOMMENDED DEFLECTION					
		STANDARD BELL			SPECIAL DEFLECTION BELL		
		X OFFSET (mm)	Y ANGLE (°)	RADIUS OF CURVE (m)	X OFFSET (mm)	Y ANGLE (°)	RADIUS OF CURVE (m)
100	6	535	5	70	-	-	-
150	6	535	5	70	-	-	-
200	6	535	5	70	-	-	-
250	6	535	5	70	-	-	-
300	6	535	5	70	-	-	-
350	6	535	5	70	-	-	-
400	6	535	5	70	-	-	-
450	6	535	5	70	-	-	-
500	6	535	5	70	-	-	-
600	6	535	5	70	-	-	-
700	6	535	5	70	-	-	-
800	6	535	5	70	-	-	-
900	6	427	4	87	535	5	70
1000	6	427	4	87	535	5	70
1200	6	320	3	116	427	4	87
1400	6	320	3	116	427	4	87
1500	6	320	3	116	427	4	87
1600	6	320	3	116	427	4	87



DN (mm)	S SEPARATION (mm)
600	57
700	70
800	70
900	67
1000	70
1200	63
1400	73
1500	79
1600	85

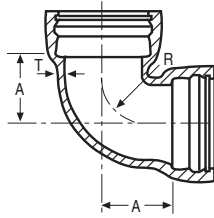


ACIPCO FASTITE
JOINT PIPE ISO
2531 WEIGHTS FOR
STANDARD CLASSES

NOMINAL DIAMETER DN	CLASS	WALL THICKNESS (mm)	MASS (kg)	
			PER METER INCLUDING BELL	PER 6m NOMINAL LENGTH
100	K9	6.1	15.9	97
150	K9	6.3	23.7	145
200	K9	6.4	32.1	197
250	K9	6.8	42.2	259
300	K9	7.2	53.5	328
350	K9	7.7	66.3	405
400	K9	8.1	80.2	490
450	K8	7.6	84.9	518
450	K9	8.6	94.6	578
500	K8	8	99	605
500	K9	9	110.4	674
600	K7	7.7	114.1	697
600	K8	8.8	129.2	789
600	K9	9.9	144.2	881
700	K7	8.4	145.6	889
700	K8	9.6	164.7	1006
700	K9	10.8	183.8	1123
800	K7	9.1	179.7	1098
800	K8	10.4	203.4	1243
800	K9	11.7	227	1387
900	K7	9.8	216.2	1321
900	K8	11.2	244.8	1496
900	K9	12.6	273.4	1670
1000	K7	10.5	257.4	1572
1000	K8	12	291.4	1780
1000	K9	13.5	325.4	1988
1200	K7	11.9	353.3	2154
1200	K8	13.6	399.6	2436
1200	K9	15.3	445.7	2717
1400	K7	13.3	459.4	2800
1400	K8	15.2	519.7	3168
1400	K9	17.1	579.9	3535
1500	K7	14	524.6	3198
1500	K8	16	592.6	3613
1500	K9	18	660.4	4026
1600	K7	14.7	591.2	3604
1600	K8	16.8	667.3	4068
1600	K9	18.9	743.2	4531

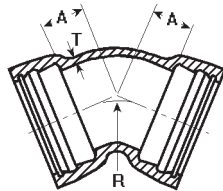


ACIPCO
FASTITE
90° BEND
FITTINGS
ISO 2531



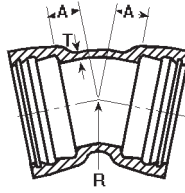
NOMINAL DIAMETER DN	T	A	MASS
80	7	100	11
100	7.2	120	12
150	7.8	170	20
200	8.4	220	34
250	9	270	49
300	9.6	320	69
350	10.2	370	100
400	10.8	420	130
450	11.4	470	168
500	12	520	205
600	13.2	620	313
700	14.4	720	441
800	15.6	820	593
900	16.8	920	770
1000	18	1020	974
1200	20.4	1220	1511
1400	22.9	940	1671
1500	23.8	1003	1965
1600	25.1	1067	2306

ACIPCO
FASTITE
45° BEND
FITTINGS
ISO 2531



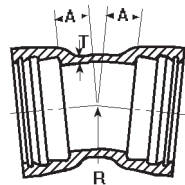
NOMINAL DIAMETER DN	T	A	MASS
80	7	55	10
100	7.2	65	10
150	7.8	85	17
200	8.4	110	28
250	9	130	39
300	9.6	150	53
350	10.2	175	78
400	10.8	195	100
450	11.4	220	128
500	12	240	153
600	13.2	285	231
700	14.4	300	307
800	15.6	370	421
900	16.8	415	536
1000	18	460	667
1200	20.4	550	1018
1400	22.8	515	1293
1500	24	540	1493
1600	25.2	565	1729

ACIPCO FASTITE
 22¹/₂° BEND
 FITTINGS
 ISO 2531



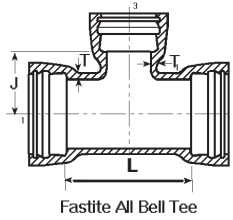
NOMINAL DIAMETER DN	T	A	MASS
80	7	40	10
100	7.2	40	10
150	7.8	55	16
200	8.4	65	23
250	9	75	34
300	9.6	85	45
350	10.2	95	66
400	10.8	110	84
450	11.4	120	106
500	12	130	125
600	13.2	150	187
700	14.4	175	256
800	15.6	195	330
900	16.8	220	413
1000	18	240	502
1200	20.4	285	754
1400	22.8	260	953
1500	24	270	1087
1600	25.2	280	1248

ACIPCO FASTITE
 11¹/₄° BEND
 FITTINGS
 ISO 2531



NOMINAL DIAMETER DN	T	A	MASS
80	7	30	10
100	7.2	30	10
150	7.8	35	15
200	8.4	40	23
250	9	50	31
300	9.6	55	41
350	10.2	60	60
400	10.8	65	75
450	11.4	70	95
500	12	75	110
600	13.2	85	162
700	14.4	95	219
800	15.6	110	282
900	16.8	120	346
1000	18	130	414
1200	20.4	175	623
1400	22.8	165	818
1500	24	178	940
1600	25.2	178	1066

ACIPCO FASTITE
TEE FITTINGS
ISO 2531



NOMINAL SIZE DN		T RUN	T ₁ BRANCH	L	J	MASS
RUN	BRANCH					
100	80	8.4	8.1	170	95	16
100	100	8.4	8.4	190	95	16
150	80	9.1	8.1	170	120	22
150	100	9.1	8.4	195	120	23
150	150	9.1	9.1	255	125	28
200	80	9.8	8.1	175	145	33
200	100	9.8	8.4	200	145	34
200	150	9.8	9.1	260	150	39
200	200	9.8	9.8	315	155	46
250	80	10.5	8.1	180	170	42
250	100	10.5	8.4	200	170	43
250	150	10.5	9.1	260	175	49
250	200	10.5	9.8	315	180	57
250	250	10.5	10.5	375	190	65
300	80	11.2	8.1	180	195	52
300	100	11.2	8.4	205	195	55
300	150	11.2	9.1	260	200	61
300	200	11.2	9.8	320	205	70
300	250	11.2	10.5	380	215	78
300	300	11.2	11.2	435	220	88
350	100	11.9	8.4	210	220	75
350	150	11.9	9.1	270	225	83
350	200	11.9	9.8	320	230	94
350	250	11.9	10.5	380	240	101
350	300	11.9	11.2	440	245	112
350	350	11.9	11.9	495	250	127
400	80	12.6	8.1	190	245	91
400	100	12.6	8.4	210	245	92
400	150	12.6	9.1	270	250	101
400	200	12.6	9.8	330	255	111
400	250	12.6	10.5	380	265	121
400	300	12.6	11.2	440	270	133
400	400	12.6	12.6	560	280	164
450	100	13.3	8.4	215	270	113
450	150	13.3	9.1	270	275	122
450	200	13.3	9.8	330	280	135
450	250	13.3	10.5	390	290	147
450	300	13.3	11.2	445	295	159
450	350	13.3	11.9	505	300	176
450	400	13.3	12.6	560	305	191
450	450	13.3	13.3	620	310	208
500	100	14	8.4	215	295	129
500	150	14	9.1	285	300	143
500	200	14	9.8	330	305	155
500	250	14	10.5	390	315	168
500	300	14	11.2	450	320	181
500	400	14	12.6	560	330	215
500	450	14	13.3	620	335	235
500	500	14	14	680	340	252



ACIPCO FASTITE
TEE FITTINGS
ISO 2531
(CONTINUED)

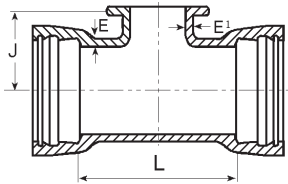
NOMINAL SIZE DN		T RUN	T ₁ BRANCH	L	J	MASS
RUN	BRANCH					
600	80	15.4	8.1	200	345	179
600	100	15.4	8.4	220	345	184
600	150	15.4	9.1	280	350	198
600	200	15.4	9.8	340	355	216
600	250	15.4	10.5	400	365	231
600	300	15.4	11.2	450	370	248
600	350	15.4	11.9	510	375	268
600	400	15.4	12.6	570	380	287
600	450	15.4	13.3	630	385	308
600	500	15.4	14	690	390	328
600	600	15.4	15.4	800	400	378
700	100	16.8	8.4	230	395	244
700	150	16.8	9.1	285	400	261
700	200	16.8	9.8	345	405	280
700	250	16.8	10.5	400	410	299
700	300	16.8	11.2	460	420	319
700	400	16.8	12.6	575	430	365
700	500	16.8	14	690	445	413
700	600	16.8	15.4	925	450	501
700	700	16.8	16.8	925	465	529
800	100	18.2	8.4	235	445	304
800	150	18.2	9.1	290	450	326
800	200	18.2	9.8	350	445	348
800	250	18.2	10.5	410	465	372
800	300	18.2	11.2	465	470	394
800	400	18.2	12.6	580	480	447
800	500	18.2	14	700	490	501
800	600	18.2	15.4	1045	500	646
800	700	18.2	16.8	1045	510	670
800	800	18.2	18.2	1045	525	698
900	100	19.6	8.4	240	495	366
900	150	19.6	9.1	300	500	393
900	200	19.6	9.8	355	505	421
900	350	19.6	11.9	530	525	507
900	400	19.6	12.6	590	530	537
900	600	19.6	15.4	1170	550	816
900	800	19.6	18.2	1170	575	812
900	900	19.6	19.6	1170	585	895
1000	100	21	8.4	245	545	433
1000	150	21	9.1	305	550	463
1000	200	21	9.8	360	555	495
1000	300	21	11.9	480	570	568
1000	400	21	12.6	595	580	629
1000	500	21	14	710	590	697
1000	600	21	15.4	1290	600	1013
1000	700	21	16.8	1290	610	1032
1000	800	21	18.2	1290	625	1055
1000	900	21	19.6	1290	635	1021
1000	1000	21	21	1290	645	1114



**ACIPCO FASTITE
TEE FITTINGS
ISO 2531
(CONTINUED)**

NOMINAL SIZE DN		T RUN	T ₁ BRANCH	L	J	MASS
RUN	BRANCH					
1200	400	23.8	12.7	840	680	1030
1200	600	23.8	15.4	840	700	1047
1200	800	23.8	18.2	1070	725	1243
1200	900	23.8	19.6	1185	735	1343
1200	1000	23.8	21	1535	745	1612
1200	1200	23.8	23.8	1535	770	1697
1400	1000	26.6	21	1315	845	1855
1400	1400	26.6	26.6	1960	980	2700
1500	600	28	15.4	1270	990	1999
1500	1400	28	26.6	2080	1040	3096
1500	1500	28	28	2080	1040	3158
1600	800	29.4	18.2	1275	1040	2277
1600	1600	29.4	29.4	2020	1010	3377

**ACIPCO FASTITE
FLANGE TEE
FITTINGS
ISO 2531**



NOMINAL SIZE DN		E RUN	E ¹ BRANCH	L	J	MASS PN16
RUN	BRANCH					
100	80	8.4	8.1	170	175	18
100	100	8.4	8.4	190	185	18
150	80	9.1	8.1	170	205	24
150	100	9.1	8.4	195	210	25
150	150	9.1	9.1	255	220	31
200	80	9.8	8.1	175	235	35
200	100	9.8	8.4	200	240	36
200	150	9.8	9.1	255	250	42
200	200	9.8	9.8	315	260	49
250	80	10.5	8.1	180	260	43
250	100	10.5	8.4	200	270	45
250	150	10.5	9.1	260	280	53
250	200	10.5	9.8	315	290	62
250	250	10.5	10.5	375	300	74
300	80	11.2	8.1	180	290	54
300	100	11.2	8.4	205	300	57
300	150	11.2	9.1	260	310	65
300	200	11.2	9.8	320	320	75
300	250	11.2	10.5	380	330	87
300	300	11.2	11.2	435	340	101
350	100	11.9	8.4	205	330	77
350	150	11.9	9.1	265	340	86
350	200	11.9	9.8	325	350	96
350	300	11.9	11.2	440	370	125
350	350	11.9	11.9	495	380	141
400	80	12.6	8.1	185	350	93
400	100	12.6	8.4	210	360	94
400	150	12.6	9.1	295	370	105

**ACIPCO FASTITE
FLANGE TEE
FITTINGS
ISO 2531
(CONTINUED)**

NOMINAL SIZE DN		E RUN	E ¹ BRANCH	L	J	MASS PN16
RUN	BRANCH					
400	200	12.6	9.8	325	380	115
400	250	12.6	10.5	385	390	128
400	300	12.6	11.2	440	400	142
400	400	12.6	12.6	560	420	176
450	100	13.3	8.4	215	390	115
450	150	13.3	9.1	270	400	126
450	200	13.3	9.8	330	410	139
450	250	13.3	10.5	385	420	154
450	300	13.3	11.2	445	430	169
450	350	13.3	11.9	505	440	186
450	400	13.3	12.6	560	450	204
450	450	13.3	13.3	620	460	224
500	100	14	8.4	215	429	131
500	150	14	9.1	275	430	147
500	200	14	9.8	330	440	159
500	250	14	10.5	390	450	175
500	300	14	11.2	450	460	191
500	400	14	12.6	565	480	229
500	450	14	13.3	620	490	251
500	500	14	14	680	500	278
600	100	15.4	8.4	220	480	187
600	150	15.4	9.1	280	490	203
600	200	15.4	9.8	340	500	220
600	250	15.4	10.5	395	510	238
600	300	15.4	11.2	455	520	259
600	350	15.4	11.9	510	530	280
600	400	15.4	12.6	570	540	302
600	450	15.4	13.3	630	550	326
600	500	15.4	14	685	560	355
600	600	15.4	15.4	800	580	418
700	100	16.8	8.4	230	510	246
700	150	16.8	9.1	285	515	265
700	200	16.8	9.8	345	525	284
700	250	16.8	10.5	400	535	305
700	300	16.8	11.2	460	545	327
700	400	16.8	12.6	575	555	375
700	500	16.8	14	690	570	433
700	600	16.8	15.4	925	585	531
700	700	16.8	16.8	925	600	550
800	100	18.2	8.4	235	570	306
800	150	18.2	9.1	290	580	330
800	200	18.2	9.8	350	585	353
800	250	18.2	10.5	410	595	379
800	300	18.2	11.2	465	600	403
800	400	18.2	12.6	580	615	459
800	500	18.2	14	700	630	523
800	600	18.2	15.4	1045	645	678
800	700	18.2	16.8	1045	660	694

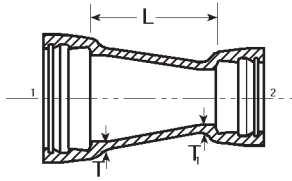


**ACIPCO FASTITE
FLANGE TEE
FITTINGS
ISO 2531
(CONTINUED)**

NOMINAL SIZE DN		E RUN	E' BRANCH	L	J	MASS PN16
RUN	BRANCH					
800	800	18.2	18.2	1045	675	736
900	100	19.6	8.4	240	630	369
900	150	19.6	9.1	300	640	397
900	200	19.6	9.8	355	645	426
900	350	19.6	11.9	530	670	517
900	400	19.6	12.6	590	675	550
900	600	19.6	15.4	1170	705	851
900	800	19.6	18.2	1170	735	853
900	900	19.6	19.6	1170	750	945
1000	100	21	8.4	245	690	436
1000	150	21	9.1	305	700	468
1000	200	21	9.8	360	705	500
1000	250	21	10.5	420	715	540
1000	300	21	11.2	480	720	571
1000	400	21	12.6	595	735	643
1000	500	21	14	710	750	722
1000	600	21	15.4	1290	765	1049
1000	700	21	16.8	1290	780	1062
1000	800	21	18.2	1290	795	1098
1000	900	21	19.6	1290	810	1076
1000	1000	21	21	1290	825	1204
1200	150	23.8	9.1	315	820	652
1200	200	23.8	9.8	375	825	695
1200	300	23.8	11.2	490	840	785
1200	400	23.8	12.6	605	855	1044
1200	600	23.8	15.4	840	885	1088
1200	800	23.8	18.2	1070	915	1293
1200	900	23.8	19.6	1185	930	1405
1200	1000	23.8	21	1300	945	1712
1200	1200	23.8	23.8	1535	975	1856
1400	1000	26.6	21	1490	1040	1952
1400	1400	26.6	26.6	1960	1100	2802
1500	1400	28	26.6	1965	1155	3193
1500	1500	28	28	2080	1170	3321
1600	800	29.4	18.2	1275	1120	2290
1600	1600	29.4	29.4	2202	1240	3666



ACIPCO FASTITE
REDUCER FITTINGS
ISO 2531



NOMINAL DIAMETER DN		T LARGE END	T ₁ SMALL END	L	MASS
LARGE END	SMALL END				
100	80	7.2	7	90	10
150	80	7.8	7	190	11
150	100	7.8	7	150	12
200	80	8.4	7	290	14
200	100	8.4	7.2	250	13
200	150	8.4	7.8	150	17
250	100	9	7.2	300	19
250	150	9	7.8	250	22
250	200	9	8.4	150	22
300	100	9.6	7.2	50	29
300	150	9.6	7.8	350	33
300	200	9.6	8.4	250	21
300	250	9.6	9	150	24
350	200	10.2	8.4	360	28
350	250	10.2	9	260	29
350	300	10.2	9.6	160	29
400	150	10.8	7.8	560	72
400	200	10.8	8.4	460	72
400	250	10.8	9	360	71
400	300	10.8	9.6	260	70
400	350	10.8	10.2	160	71
450	250	11.4	9	460	91
450	300	11.4	9.6	360	89
450	350	11.4	10.2	260	90
450	400	11.4	10.8	160	88
500	250	12	9	560	109
500	300	12	9.6	460	109
500	350	12	10.2	360	110
500	400	12	10.8	260	107
500	450	12	11.4	160	104
600	200	13.2	8.4	860	167
600	300	13.2	9.6	660	157
600	400	13.2	10.8	460	161
600	450	13.2	11.4	360	159
600	500	13.2	12	260	152
700	200	14.4	8.4	1080	235
700	400	14.4	10.8	680	229
700	500	14.4	12	480	220
700	600	14.4	13.2	280	212
800	350	15.6	10.2	980	308
800	400	15.6	10.8	880	306
800	600	15.6	13.2	480	287
800	700	15.6	14.4	280	270
900	700	16.9	14.4	480	357
900	800	16.8	15.6	280	329
1000	500	18	12	1080	483
1000	600	18	13.2	880	474
1000	700	18	14.4	680	457

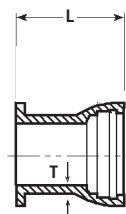


**ACIPCO FASTITE
REDUCER FITTINGS
ISO 2531
(CONTINUED)**

NOMINAL DIAMETER DN		T LARGE END	T ₁ SMALL END	L	MASS
LARGE END	SMALL END				
1000	800	18	15.6	480	430
1000	900	18	16.8	280	391
1200	900	20.4	16.8	680	651
1200	1000	20.4	18	480	600
1400	900	22.8	16.8	660	771
1400	1200	22.8	20.4	850*	735
1500	900	24	16.8	760	897
1500	1200	24	20.4	460	863
1500	1400	24	22.8	260	815
1600	1200	25.2	20.4	560	1002

* This dimension differs from that shown in ISO 2531. Contact ACIPCO.

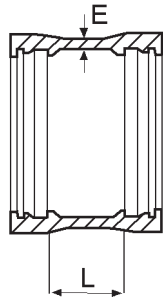
**ACIPCO
FLANGE-FASTITE
SOCKET ISO 2531**



NOMINAL DIAMETER DN	T	L	MASS PN16
80	7	130	11
100	7.2	130	11
150	7.8	135	17
200	8.4	140	28
250	9	145	35
300	9.6	150	46
350	10.2	155	65
400	10.8	160	80
450	11.4	165	94
500	12	170	121
600	13.2	180	177
700	14.4	190	220
800	15.6	200	283
900	16.8	210	346
1000	18	220	431
1200	20.4	190*	632
1400	22.8	310	766
1500	24	320	986
1600	25.2	330	1046

* This dimension differs from that shown in ISO 2531. Contact ACIPCO.

ACIPCO FASTITE
COLLAR FITTINGS
ISO 2531



NOMINAL DIAMETER DN	E	L	MASS
80	7	160	11
100	7.2	160	12
150	7.8	165	19
200	8.4	170	30
250	9	175	39
300	9.6	180	51
350	10.2	185	74
400	10.8	190	91
450	11.4	195	111
500	12	200	130
600	13.2	210	189
700	14.4	220	254
800	15.6	230	321
900	16.8	240	395
1000	18	250	464
1200	20.4	270	625