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HDPE Product Catalog

- > Pipe
- > Fittings
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Version 3.0 2009



W

elcome to the fourth edition of the ISCO Product Catalog. We have designed this tool to be your go-to resource for all your HDPE piping needs. It contains detailed information about HDPE pipe and specifications, HDPE molded and fabricated fittings, McElroy fusion machines, mechanical connections, accessories and much more – all in an easy-to-read indexed format.

We're proud to offer these quality products listed in the catalog. However, please realize that ISCO is much more than the products we manufacture and sell. ISCO is hundreds of skilled professionals nationwide, dedicated to providing exceptional customer service across all areas including sales; training and technical support; fusion equipment sales, rental and repair; fabrication; shipping and transportation.

We assure you that no company will work harder to earn your HDPE piping business.

As our slogan says, ISCO "Comes through" with the HDPE product you need, when you need it, backed by experts on-hand to help make your project run smoothly – and profitably.

As always, thank you for your business and continued interest in our company. We look forward to serving you.

Jimmy Kirchdorfer
PRESIDENT

Mark Kirchdorfer
V.P., OPERATIONS

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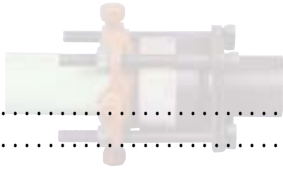
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HDPE Pipe

High-Density Polyethylene Pipe

Introduction

ISCO Industries, LLC is the largest high-density polyethylene pipe distributor in North America. ISCO can serve your needs anywhere in the USA and internationally. ISCO offers a complete package of HDPE piping products. Butt fusion machines are offered for sale or rental. Fusion technicians are available to provide on-site training or assistance to your project. Please call 1-800-345-ISCO for all your HDPE piping needs.

Some of The Characteristics of HDPE Pipe are:

Economical	Flexible and Coilable
Corrosion Resistant	Heat Fused
Zero Leak-Rate	Mechanically Joined (As Needed)
Hydraulically Smooth	Strong and Ductile
Fatigue and Surge Resistant	Weather Resistant
Long Design Life	Impact Resistant
Tappable	Freeze Resistant
Chemically Resistant	Durable
Easily Installed	Abrasion Resistant
Small to Large Diameters	Inert
Non-Toxic, Non-Tasting	Self Restrained Pipe (Monolithic)
Lightweight	Listed and Approved
Reliable	

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Important Standards for High Density Polyethylene (HDPE) Pipe

Standards important for HDPE pipe relate to the resin the pipe is made from and the standards related to manufacturing sizes and tolerances. The American Society of Testing Materials (ASTM) standard for resin from which the pipe is made is ASTM D 3350-05, Standard Specification for Polyethylene Plastics Pipe and Fittings Materials. This standard defines the physical properties of the resin that the pipe is made from.

Pipe dimensions and manufacturing requirements:

ASTM F 714-05 Standard Specification for Polyethylene (PE) Pipe (SDR-PR) Based on Outside Diameter. This standard is used for most large diameter HDPE pipe (4" to 63") applications other than gas pipe.

ASTM D 2513-05 Standard Specification for Thermoplastic Gas Pressure Pipe, Tubing and Fittings. Polyethylene pipe and other plastic for natural gas distribution are described in great detail in this standard.

ASTM D 3035-03a Standard Specification for Polyethylene (PE) Plastic Pipe (DR-PR) Based on Controlled Outside Diameter. Most HDPE water tubing (1/2 inch to 3") is made to the dimensions in this standard. While pipe sizes up to 24" are provided, very little large diameter pipe is made to this standard.

Installation Standards:

ASTM D 2321-05 Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity Flow Applications

ASTM D 2774-04 Standard Practice for Underground Installation of Thermoplastic Pressure Piping

ASTM F 1962 Standard Guide for Use of Maxi-Horizontal Directional Drilling for Placement of Polyethylene Pipe or Conduit under Obstacles, Including River Crossings

ASTM F 585-94 Standard Practice for Insertion of Flexible Polyethylene Pipe into Existing Sewers

American Water Works Association Standards

ANSI/AWWA C 901-2005 Polyethylene Pressure Pipe and Tubing, .5 in (13 mm) Through 3 in. (76 mm) for Water Services

ANSI/AWWA C 906-2006 Polyethylene Pipe and Fittings, 4 in (100 mm) Through 63 In (1,575 mm) for Water Distribution

Pipe Joining Standards:

ASTM F 2620 – Standard Practice for Heat Fusion of Polyethylene Pipe and Fittings

ASTM D 2657 – Standard Practice of Heat Fusion Joining of Polyolefin Pipe and Fittings

ASTM F 1290 – Standard Practice for Electrofusion Joining Polyolefin Pipe and Fittings

Fitting Standards

ASTM D 3261 Standard Specification for Butt Heat Fusion Polyethylene (PE) Plastic Fittings for Butt Fusion Polyethylene (PE) Plastic Fittings for Polyethylene (PE) Plastic Pipe and Tubing

ASTM F 1055 Standard Specification for Electrofusion Fittings for Outside Diameter Controlled Polyethylene Pipe and Tubing



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HDPE Pipe

Specifications for HDPE Pipe

The physical properties of high-density polyethylene pipe are described using ASTM D 3350-05, "Standard Specification for Polyethylene Plastic Pipe and Fittings Materials". Recently this standard was changed. The two key areas changed are, density and slow crack growth. In the 05 version, the cell classifications for density were increased from four cells to seven cells defining the density ranges for various resins.

New high performance bimodal resins, PE 4710 resins, have higher PENT test values. Slow crack grow properties can now be defined using eight cells.

As of December 2006, most HDPE pipe is made from resin with a cell classification of PE 345464C. The pipe is labeled as PE3408/3608. The physical properties for PE 345464C are:

PROPERTY VALUE	SPECIFICATION	UNIT	NOMINAL VALUE
Material Designation	PPI / ASTM		PE 3408/3608
Cell Classification	ASTM D 3350		345464C
Density	(3) ASTM D 1505	g/cm ³	0.941-943
Melt Index	(4) ASTM D 1238	gm/ 10 min	0.05 -.11
Flexural Modulus	(5) ASTM D 790	psi	110,000 to 140,000
Tensile Strength	(4) ASTM D 638	psi	3,200
Slow Crack Growth			
ESCR	ASTM D 1693	hours in 100% igepal	>5,000
PENT	(6) ASTM F 1473	hours	>100
HDB @ 73 deg F	(4) ASTM D 2837	psi	1,600
UV Stabilizer	(C) ASTM D 1603	%C	2 to 2.5%

The density provided is without carbon black. Typical HDPE pipe has a density of .955 to .957 with carbon black.

Types of Polyethylene Pipe

All polyethylene (PE) is not the same. In ASTM D 3350-05, low density PE is defined as having a density range of 0.919 to 0.925 g/cc; medium density has a range of 0.926 to 0.940 g/cc and high density is defined with a range from 0.941 to 0.955. All densities are without carbon black.

Density influences key properties in polyethylene materials. As the density increases, the tensile strength increases; also chemical resistance increases.

Medium density PE resins have been used for gas distribution. This original selection was made based on superior slow crack growth properties of medium density resins. Medium density pipe is designated as PE 2406 and PE 2708.

Today new bimodal resins are being used in gas distribution because of higher pressure ratings plus superior slow crack growth. These resins are designated PE 3408, PE 3608, PE 3708, PE 3710 and PE 4710.

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Slow Crack Growth

The Pent test is used to determine stress crack resistance for PE resins. The PENT test is conducted in accordance with ASTM F 1473, "Standard Test Method for Notch Tensile Test to Measure the Resistance to Slow Crack Growth of Polyethylene Pipes and Resins". This test uses a solid sample of material which is notched and tested.

The PENT test is a good test of slow crack growth. Scratches and gouges can cause crack propagation. Materials with high PENT numbers are less likely to fail because of slow crack growth.

Traditional PE 3408/3608 resins have PENT test values of about 100 hours. New bimodal resins used to make PE 3710 and PE 4710 pipes have values ranging from 600 hours to several thousand hours.

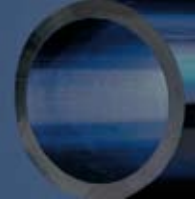
Physical Properties of PE 4710

HDPE pipe with a designation of PE 4710 is made from resin with a cell classification of PE 445474C or PE 445574C. We suggest using a specification calling for a minimum cell classification of PE 445474 C or higher. Both cell classifications can be used if specified in this way. The pipe is labeled as PE 4710. The physical properties for PE 445474C are provided below:

PROPERTY VALUE	SPECIFICATION	UNIT	NOMINAL VALUE
Material Designation	PPI / ASTM		PE 4710
Cell Classification	ASTM D 3350		445474 C
Density	(4) ASTM D 1505	g/cm ³	0.947-955
Melt Index	(4) ASTM D 1238	gm/ 10 min	<.15
Flexural Modulus	(5) ASTM D 790	psi	110,000 to 160,000
Tensile Strength	(5) ASTM D 638	psi	3500-4000
Slow Crack Growth			
ESCR	ASTM D 1693	hours in 100% igepal	>5,000
PENT	(7) ASTM F 1473	hours	>500
HDB @ 73 deg F	(4) ASTM D 2837	psi	1,600
UV Stabilizer	(C) ASTM D 1603	%C	2 to 2.5 %

The density provided is without carbon black. Typical PE 4710 HDPE pipe has a density of 0.956 to 0.964 with carbon black.

To be called a PE 4710, the pipe and resin has substantiation at 50 years.



HDPE Pipe

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PE 3608/3408 IPS HDPE Pipe Sizes

Pressure Rating	Nominal Size Actual O.D.	3/4"	1"	1 1/4"	1 1/2"	2"	3"	4"	5"	5"	6"	7"	8"	10"	12"	14"	16"
DR 7 (267psi)	Min. wall	0.150"	0.188"	0.237"	0.271"	0.339"	0.500"	0.643"	0.768"	0.795"	0.946"	1.018"	1.232"	1.536"	1.821"	2.000"	2.286"
	Average I.D.	0.732"	0.917"	1.157"	1.325"	1.656"	2.440"	3.137"	3.747"	3.878"	4.619"	4.967"	6.013"	7.494"	8.889"	9.760"	11.154"
	Weight lb/ft	0.190	0.290	0.460	0.603	0.950	2.060	3.400	4.850	5.200	7.360	8.490	12.480	19.400	27.280	32.900	42.970
DR 7.3 (254psi)	Min. wall	0.144"	0.180"	0.227"	0.260"	0.325"	0.479"	0.616"	0.736"	0.762"	0.908"	0.976"	1.182"	1.473"	1.747"	1.918"	2.192"
	Average I.D.	0.745"	0.933"	1.178"	1.348"	1.685"	2.484"	3.193"	3.814"	3.947"	4.701"	5.056"	6.120"	7.628"	9.047"	9.934"	11.353"
	Weight lb/ft	0.180	0.280	0.445	0.583	0.911	1.980	3.280	4.680	5.020	7.120	8.230	12.060	18.740	26.360	31.780	41.510
DR 9 (200psi)	Min. wall	0.117"	0.146"	0.184"	0.211"	0.264"	0.389"	0.500"	0.597"	0.618"	0.736"	0.792"	0.958"	1.194"	1.417"	1.556"	1.778"
	Average I.D.	0.803"	1.005"	1.269"	1.452"	1.816"	2.676"	3.440"	4.109"	4.253"	5.064"	5.447"	6.593"	8.218"	9.747"	10.702"	12.231"
	Weight lb/ft	0.150	0.234	0.372	0.490	0.770	1.660	2.750	3.920	4.200	5.932	6.890	10.054	15.680	22.070	26.610	34.750
DR 11 (160psi)	Min. wall	0.095"	0.120"	0.151"	0.173"	0.216"	0.318"	0.409"	0.489"	0.506"	0.602"	0.648"	0.784"	0.977"	1.159"	1.273"	1.455"
	Average I.D.	0.848"	1.062"	1.340"	1.534"	1.917"	2.825"	3.633"	4.339"	4.491"	5.348"	5.752"	6.963"	8.678"	10.293"	11.302"	12.916"
	Weight lb/ft	0.130	0.200	0.312	0.410	0.640	1.387	2.300	3.290	3.520	4.990	5.780	8.460	13.140	18.490	22.300	29.120
DR 13.5 (128psi)	Min. wall	---	---	---	---	0.176"	0.259"	0.333"	0.398"	0.412"	0.491"	0.528"	0.639"	0.796"	0.944"	1.037"	1.185"
	Average I.D.	---	---	---	---	2.002"	2.950"	3.793"	4.531"	4.689"	5.585"	6.006"	7.271"	9.062"	10.748"	11.801"	13.487"
	Weight lb/ft	---	---	---	---	0.531	1.160	1.910	2.730	2.920	4.150	4.800	7.030	10.920	15.360	18.520	24.190
DR 15.5 (110psi)	Min. wall	---	---	---	---	0.153"	0.226"	0.290"	0.347"	0.359"	0.427"	0.460"	0.556"	0.694"	0.823"	0.903"	1.032"
	Average I.D.	---	---	---	---	2.050"	3.021"	3.885"	4.640"	4.802"	5.719"	6.150"	7.445"	9.280"	11.006"	12.085"	13.812"
	Weight lb/ft	---	---	---	---	0.470	1.020	1.680	2.400	2.570	3.637	4.210	6.164	9.580	13.480	16.242	21.214
DR 17 (100psi)	Min. wall	---	---	---	---	0.140"	0.206"	0.265"	0.316"	0.327"	0.390"	0.419"	0.507"	0.632"	0.750"	0.824"	0.941"
	Average I.D.	---	---	---	---	2.079"	3.064"	3.939"	4.705"	4.869"	5.799"	6.236"	7.549"	9.409"	11.160"	12.254"	14.005"
	Weight lb/ft	---	---	---	---	0.430	0.932	1.540	2.200	2.353	3.340	3.860	5.660	8.880	12.362	14.910	19.470
DR 19 (89psi)	Min. wall	---	---	---	---	---	---	0.237"	0.283"	0.293"	0.349"	0.375"	0.454"	0.566"	0.671"	0.737"	0.842"
	Average I.D.	---	---	---	---	---	---	3.998"	4.775"	4.942"	5.886"	6.330"	7.663"	9.551"	11.327"	12.438"	14.215"
	Weight lb/ft	---	---	---	---	---	---	1.390	1.980	2.120	3.010	3.480	5.100	7.920	11.140	13.430	17.540
DR 21 (80psi)	Min. wall	---	---	---	---	---	---	0.214"	0.256"	0.265"	0.315"	0.339"	0.411"	0.512"	0.607"	0.667"	0.762"
	Average I.D.	---	---	---	---	---	---	4.046"	4.832"	5.001"	5.956"	6.406"	7.754"	9.665"	11.463"	12.587"	14.385"
	Weight lb/ft	---	---	---	---	---	---	1.262	1.801	1.930	2.740	3.170	4.640	7.21	10.134	12.220	15.960
DR 26 (64 psi)	Min. wall	---	---	---	---	---	---	0.173"	0.207"	0.214"	0.255"	0.274"	0.332"	0.413"	0.490"	0.538"	0.615"
	Average I.D.	---	---	---	---	---	---	4.133"	4.937"	5.109"	6.085"	6.544"	7.922"	9.873"	11.710"	12.858"	14.695"
	Weight lb/ft	---	---	---	---	---	---	1.030	1.470	1.574	2.233	2.582	3.790	5.880	8.270	9.970	13.022
DR 32.5 (51 psi)	Min. wall	---	---	---	---	---	---	0.138"	0.165"	0.171"	0.204"	0.219"	0.265"	0.331"	0.392"	0.431"	0.492"
	Average I.D.	---	---	---	---	---	---	4.206"	5.024"	5.200"	6.193"	6.660"	8.062"	10.049"	11.918"	13.087"	14.956"
	Weight lb/ft	---	---	---	---	---	---	0.831	1.190	1.270	1.801	2.083	3.053	4.750	6.671	8.050	10.510

HDPE Pipe

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40' for 2"-24"
50' for 26" and larger
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PE 3608/3408 IPS HDPE Pipe Sizes

18"	20"	22"	24"	26"	28"	30"	32"	34"	36"	42"	48"	54"	63"	Nominal Size Actual O.D.	Pressure Rating
2.571"	2.857"	3.143"	3.429"	---	---	---	---	---	---	---	---	---	---	Min. wall	DR 7 (267psi)
12.549"	13.943"	15.337"	16.731"	---	---	---	---	---	---	---	---	---	---	Average I.D.	
54.370	67.130	80.170	96.680	---	---	---	---	---	---	---	---	---	---	Weight lb/ft	
2.466"	2.740"	3.014"	3.288"	3.562"	---	---	---	---	---	---	---	---	---	Min. wall	DR 7.3 (254psi)
12.773"	14.192"	15.611"	17.030"	18.449"	---	---	---	---	---	---	---	---	---	Average I.D.	
52.530	64.850	78.140	93.390	110.769	---	---	---	---	---	---	---	---	---	Weight lb/ft	
2.000"	2.222"	2.444"	2.667"	2.889"	3.111"	3.333"	3.556"	---	---	---	---	---	---	Min. wall	DR 9 (200psi)
13.760"	15.289"	16.818"	18.347"	19.876"	21.404"	22.933"	24.462"	---	---	---	---	---	---	Average I.D.	
43.970	54.280	65.412	78.180	92.535	107.312	123.183	140.183	---	---	---	---	---	---	Weight lb/ft	
1.636"	1.818"	2.000"	2.182"	2.364"	2.545"	2.727"	2.909"	3.091"	3.273"	---	---	---	---	Min. wall	DR 11 (160psi)
14.531"	16.145"	17.760"	19.375"	20.989"	22.604"	24.218"	25.833"	27.447"	29.062"	---	---	---	---	Average I.D.	
36.840	45.490	54.820	65.520	77.440	89.785	103.076	117.285	132.411	148.454	---	---	---	---	Weight lb/ft	
1.333"	1.481"	1.630"	1.778"	1.926"	2.074"	2.222"	2.370"	2.519"	2.667"	3.111"	3.556"	---	---	Min. wall	DR 13.5 (128psi)
15.173"	16.859"	18.545"	20.231"	21.917"	23.603"	25.289"	26.975"	28.661"	30.347"	35.404"	40.462"	---	---	Average I.D.	
30.610	37.790	45.550	54.440	64.261	74.522	85.543	97.324	109.905	123.208	167.675	217.895	---	---	Weight lb/ft	
1.161"	1.290"	1.419"	1.548"	1.677"	1.806"	1.935"	2.065"	2.194"	2.323"	2.710"	3.097"	3.484"	---	Min. wall	DR 15.5 (110psi)
15.538"	17.265"	18.991"	20.717"	22.444"	24.170"	25.897"	27.623"	29.350"	31.076"	36.255"	41.435"	46.614"	---	Average I.D.	
26.849	33.146	40.107	47.731	56.532	65.563	75.264	85.672	96.714	108.424	147.568	192.774	243.921	---	Weight lb/ft	
1.059"	1.176"	1.294"	1.412"	1.529"	1.647"	1.765"	1.882"	2.000"	2.118"	2.471"	2.824"	3.176"	---	Min. wall	DR 17 (100psi)
15.755"	17.506"	19.256"	21.007"	22.758"	24.508"	26.259"	28.009"	29.760"	31.511"	36.762"	42.014"	47.266"	---	Average I.D.	
24.640	30.420	36.810	43.810	51.856	60.154	69.068	78.557	88.700	99.457	135.372	176.813	223.713	---	Weight lb/ft	
0.947"	1.053"	1.158"	1.263"	1.368"	1.474"	1.579"	1.684"	1.789"	1.895"	2.211"	2.526"	2.842"	---	Min. wall	DR 19 (89psi)
15.992"	17.768"	19.545"	21.322"	23.099"	24.876"	26.653"	28.429"	30.206"	31.983"	37.314"	42.644"	47.975"	---	Average I.D.	
22.200	27.410	33.162	39.470	46.701	54.189	62.196	70.755	79.865	89.571	121.925	159.198	201.502	---	Weight lb/ft	
0.857"	0.952"	1.048"	1.143"	1.238"	1.333"	1.429"	1.524"	1.619"	1.714"	2.000"	2.286"	2.571"	3.000"	Min. wall	DR 21 (80psi)
16.183"	17.981"	19.779"	21.577"	23.375"	25.173"	26.971"	28.770"	30.568"	32.366"	37.760"	43.154"	48.549"	56.631"	Average I.D.	
20.200	24.940	30.172	35.990	42.486	49.266	56.585	64.370	72.657	81.446	110.874	144.833	183.253	248.550	Weight lb/ft	
0.692"	0.769"	0.846"	0.923"	1.000"	1.077"	1.154"	1.231"	1.308"	1.385"	1.615"	1.846"	2.077"	2.423"	Min. wall	DR 26 (64 psi)
16.532"	18.369"	20.206"	22.043"	23.880"	25.717"	27.554"	29.391"	31.228"	33.065"	38.575"	44.086"	49.597"	57.854"	Average I.D.	
16.480	20.350	24.620	29.300	34.648	40.187	46.135	52.494	59.264	66.444	90.393	118.082	149.464	202.810	Weight lb/ft	
0.554"	0.615"	0.677"	0.738"	0.800"	0.862"	0.923"	0.985"	1.046"	1.108"	1.292"	1.477"	1.662"	1.938"	Min. wall	DR 32.5 (51 psi)
16.826"	18.695"	20.565"	22.434"	24.304"	26.174"	28.043"	29.913"	31.782"	33.652"	39.260"	44.869"	50.478"	58.881"	Average I.D.	
13.300	16.420	19.863	23.640	27.940	32.421	37.196	42.340	47.773	53.581	72.893	95.233	120.556	163.620	Weight lb/ft	

HDPE Pipe

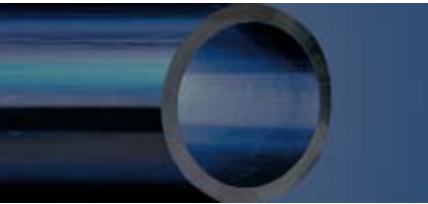
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PE 3608/3408 DIPS HDPE Pipe Sizes



HDPE Pipe

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50' for 26" and larger
Coils available for 3"-4"

Pressure Rating	Nominal Size	3"	4"	6"	8"	10"	12"	14"	16"	18"
	Actual O.D.	3.96"	4.800"	6.90"	9.05"	11.100"	13.20"	15.30"	17.400"	19.500"
DR 7 (267psi)	Min. wall	0.566"	0.686"	0.986"	1.293"	1.586"	1.886"	2.186"	2.486"	2.786"
	Average I.D.	2.761"	3.346"	4.810"	6.309"	7.738"	9.202"	10.666"	12.130"	13.594"
	Weight lb/lf	2.620	3.850	7.960	13.960	20.590	29.120	39.120	50.600	63.550
DR 7.3 (254psi)	Min. wall	---	0.658"	0.945"	1.240"	1.521"	1.808"	2.096"	2.384"	2.671"
	Average I.D.	---	3.406"	4.896"	6.422"	7.876"	9.367"	10.857"	12.347"	13.837"
	Weight lb/lf	---	3.720	7.690	13.220	19.890	28.130	37.790	48.880	61.390
DR 9 (200psi)	Min. wall	0.440"	0.533"	0.767"	1.006"	1.233"	1.467"	1.700"	1.933"	2.167"
	Average I.D.	3.027"	3.669"	5.275"	6.918"	8.485"	10.091"	11.696"	13.301"	14.907"
	Weight lb/lf	2.120	3.110	6.430	11.070	16.650	23.550	31.640	40.920	51.390
DR 11 (160psi)	Min. wall	0.360"	0.436"	0.627"	0.823"	1.009"	1.200"	1.391"	1.582"	1.773"
	Average I.D.	3.197"	3.875"	5.570"	7.306"	8.961"	10.656"	12.351"	14.047"	15.742"
	Weight lb/lf	1.780	2.610	5.390	9.280	13.950	19.730	26.510	34.290	43.070
DR 13.5 (128psi)	Min. wall	0.293"	0.356"	0.511"	0.6704"	0.822"	0.978"	1.133"	1.289"	1.444"
	Average I.D.	3.338"	4.046"	5.816"	7.629"	9.357"	11.127"	12.897"	14.668"	16.438"
	Weight lb/lf	1.480	2.170	4.480	7.710	11.600	16.400	22.030	28.490	35.790
DR 15.5 (110psi)	Min. wall	0.255"	0.310"	0.445"	0.5839"	0.716"	0.852"	0.987"	1.123"	1.258"
	Average I.D.	3.418"	4.143"	5.956"	7.812"	9.582"	11.395"	13.207"	15.020"	16.833"
	Weight lb/lf	1.299	1.893	3.906	6.723	10.110	14.306	19.210	24.856	31.205
DR 17 (100psi)	Min. wall	0.233"	0.282"	0.406"	0.532"	0.653"	0.776"	0.900"	1.024"	1.059"
	Average I.D.	3.466"	4.201"	6.040"	7.921"	9.716"	11.554"	13.392"	15.230"	17.255"
	Weight lb/lf	1.190	1.750	3.620	6.230	9.370	13.250	17.800	23.030	28.920
DR 21 (80psi)	Min. wall	---	0.229"	0.329"	0.431"	0.529"	0.629"	0.729"	0.829"	0.857"
	Average I.D.	---	4.315"	6.203"	8.136"	9.979"	11.867"	13.755"	15.643"	17.683"
	Weight lb/lf	---	1.440	2.970	5.110	7.810	10.870	14.600	18.880	23.710
DR 26 (64 psi)	Min. wall	---	0.185"	0.265"	0.3481"	0.427"	0.508"	0.588"	0.669"	0.692"
	Average I.D.	---	4.409"	6.337"	8.312"	10.195"	12.124"	14.052"	15.981"	18.032"
	Weight lb/lf	---	1.170	2.420	4.170	6.270	8.870	11.910	15.400	19.340
DR 32.5 (51 psi)	Min. wall	---	0.148"	0.212"	0.2785"	0.342"	0.406"	0.471"	0.535"	0.554"
	Average I.D.	---	4.487"	6.450"	8.460"	10.376"	12.339"	14.302"	16.265"	18.326"
	Weight lb/lf	---	0.950	1.950	3.360	5.060	7.150	9.310	12.490	15.610

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20"	24"	30"	36"	42"	48"	54"	60"	Nominal Size	Pressure Rating
21.600"	25.800"	32.000"	38.30"	44.50"	50.80"	57.56"	61.61"	Actual O.D.	
3.086"	---	---	---	---	---	---	---	Min. wall	DR 7 (267psi)
15.058"	---	---	---	---	---	---	---	Average I.D.	
77.980	---	---	---	---	---	---	---	Weight lb/lf	
2.959"	3.534"	---	---	---	---	---	---	Min. wall	DR 7.3 (254psi)
15.327"	18.307"	---	---	---	---	---	---	Average I.D.	
75.004	109.056	---	---	---	---	---	---	Weight lb/lf	
2.400"	2.867"	3.556"	---	---	---	---	---	Min. wall	DR 9 (200psi)
16.512"	19.723"	24.462"	---	---	---	---	---	Average I.D.	
63.060	91.123	140.183	---	---	---	---	---	Weight lb/lf	
1.964"	2.345"	2.909"	3.482"	---	---	---	---	Min. wall	DR 11 (160psi)
17.437"	20.828"	25.833"	30.919"	---	---	---	---	Average I.D.	
52.850	76.229	117.285	166.140	---	---	---	---	Weight lb/lf	
1.600"	1.911"	2.370"	2.837"	3.296"	---	---	---	Min. wall	DR 13.5 (128psi)
18.208"	21.748"	26.975"	32.285"	37.512"	---	---	---	Average I.D.	
43.910	63.270	97.324	138.050	186.360	---	---	---	Weight lb/lf	
1.394"	1.665"	2.065"	2.471"	2.871"	3.277"	---	---	Min. wall	DR 15.5 (110psi)
18.646"	22.271"	27.623"	33.062"	38.414"	43.852"	---	---	Average I.D.	
38.301	55.693	85.672	122.062	164.779	214.710	---	---	Weight lb/lf	
1.176"	1.518"	1.882"	2.253"	2.618"	2.988"	3.386"	---	Min. wall	DR 17 (100psi)
19.106"	22.583"	28.009"	33.524"	38.951"	44.465"	50.382"	---	Average I.D.	
35.490	51.086	78.557	111.550	150.600	196.230	251.945	---	Weight lb/lf	
0.952"	1.229"	1.524"	1.824"	2.119"	2.419"	2.741"	2.934"	Min. wall	DR 21 (80psi)
19.581"	23.195"	28.770"	34.434"	40.008"	45.672"	51.749"	55.390"	Average I.D.	
29.100	41.852	64.370	91.450	123.450	160.880	206.540	236.626	Weight lb/lf	
0.769"	0.992"	1.231"	1.473"	1.712"	1.954"	2.214"	2.370"	Min. wall	DR 26 (64 psi)
19.969"	23.696"	29.391"	35.177"	40.872"	46.658"	52.867"	56.586"	Average I.D.	
23.740	34.107	52.494	74.610	100.750	131.280	168.530	193.070	Weight lb/lf	
0.615"	0.794"	0.985"	1.178"	1.369"	1.563"	1.771"	1.896"	Min. wall	DR 32.5 (51 psi)
20.295"	24.117"	29.913"	35.802"	41.597"	47.486"	53.805"	57.591"	Average I.D.	
19.160	27.517	42.340	60.200	81.270	105.910	135.970	155.770	Weight lb/lf	



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PE 4710 IPS HDPE Pipe Sizes

Pressure Rating	Nominal Size	1"	1 1/4"	1 1/2"	2"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"
	Actual O.D.	1.32"	1.660"	1.90"	2.38"	3.500"	4.50"	5.563"	6.625"	8.625"	10.750"	12.75"	14.00"	16.00"	18.00"
DR 7 (336psi)	Min. wall	0.188"	0.237"	0.271"	0.339"	0.500"	0.643"	0.795"	0.946"	1.232"	1.536"	1.821"	2.000"	2.286"	2.571"
	Average I.D.	0.917"	1.157"	1.325"	1.656"	2.440"	3.137"	3.878"	4.619"	6.013"	7.494"	8.889"	9.760"	11.154"	12.549"
	Weight lb/lf	0.291	0.463	0.607	0.950	2.060	3.402	5.200	7.374	12.498	19.416	27.312	32.930	43.010	54.435
DR 7.3 (320psi)	Min. wall	0.180"	0.227"	0.260"	0.325"	0.479"	0.616"	0.762"	0.908"	1.182"	1.473"	1.747"	1.918"	2.192"	2.466"
	Average I.D.	0.933"	1.178"	1.348"	1.685"	2.484"	3.193"	3.947"	4.701"	6.120"	7.628"	9.047"	9.934"	11.353"	12.773"
	Weight lb/lf	0.281	0.450	0.590	0.920	1.990	3.290	5.022	7.130	12.070	18.750	26.380	31.810	41.550	52.580
DR 9 (252psi)	Min. wall	0.146"	0.184"	0.211"	0.264"	0.389"	0.500"	0.618"	0.736"	0.958"	1.194"	1.417"	1.556"	1.778"	2.000"
	Average I.D.	1.005"	1.269"	1.452"	1.816"	2.676"	3.440"	4.253"	5.064"	6.593"	8.218"	9.747"	10.702"	12.231"	13.760"
	Weight lb/lf	0.235	0.374	0.490	0.770	1.664	2.751	4.204	5.963	10.110	15.700	22.085	26.630	34.780	44.020
DR 11 (202psi)	Min. wall	0.120"	0.151"	0.173"	0.216"	0.318"	0.409"	0.506"	0.602"	0.784"	0.977"	1.159"	1.273"	1.455"	1.636"
	Average I.D.	1.062"	1.340"	1.534"	1.917"	2.825"	3.633"	4.491"	5.348"	6.963"	8.678"	10.293"	11.302"	12.916"	14.531"
	Weight lb/lf	0.200	0.314	0.411	0.642	1.395	2.310	3.523	5.000	8.470	13.160	18.510	22.320	29.150	36.890
DR 13.5 (161psi)	Min. wall	---	---	---	0.176"	0.259"	0.333"	0.412"	0.491"	0.639"	0.796"	0.944"	1.037"	1.185"	1.333"
	Average I.D.	---	---	---	2.002"	2.950"	3.793"	4.689"	5.585"	7.271"	9.062"	10.748"	11.801"	13.487"	15.173"
	Weight lb/lf	---	---	---	0.534	1.160	1.920	2.928	4.152	7.040	10.932	15.380	18.540	24.220	30.651
DR 15.5 (139psi)	Min. wall	---	---	---	0.153"	0.226"	0.290"	0.359"	0.427"	0.556"	0.694"	0.823"	0.903"	1.032"	1.161"
	Average I.D.	---	---	---	2.050"	3.021"	3.885"	4.802"	5.719"	7.445"	9.280"	11.006"	12.085"	13.812"	15.538"
	Weight lb/lf	---	---	---	0.470	1.020	1.687	2.580	3.656	6.197	9.626	13.530	16.310	21.300	26.950
DR 17 (126psi)	Min. wall	---	---	---	0.140"	0.206"	0.265"	0.327"	0.390"	0.507"	0.632"	0.750"	0.824"	0.941"	1.059"
	Average I.D.	---	---	---	2.079"	3.064"	3.939"	4.869"	5.799"	7.549"	9.409"	11.160"	12.254"	14.005"	15.755"
	Weight lb/lf	---	---	---	0.431	0.940	1.550	2.360	3.360	5.690	8.834	12.430	14.983	19.570	24.770
DR 21 (101psi)	Min. wall	---	---	---	---	---	0.214"	0.265"	0.315"	0.411"	0.512"	0.607"	0.667"	0.762"	0.857"
	Average I.D.	---	---	---	---	---	4.046"	5.001"	5.956"	7.754"	9.665"	11.463"	12.587"	14.385"	16.183"
	Weight lb/lf	---	---	---	---	---	1.270	1.940	2.750	4.662	7.242	10.190	12.282	16.042	20.304
DR 26 (81 psi)	Min. wall	---	---	---	---	---	0.173"	0.214"	0.255"	0.332"	0.413"	0.490"	0.538"	0.615"	0.692"
	Average I.D.	---	---	---	---	---	4.133"	5.109"	6.085"	7.922"	9.873"	11.710"	12.858"	14.695"	16.532"
	Weight lb/lf	---	---	---	---	---	1.035	1.582	2.250	3.800	5.910	8.312	10.022	13.090	16.570
DR 32.5 (64 psi)	Min. wall	---	---	---	---	---	0.138"	0.171"	0.204"	0.265"	0.331"	0.392"	0.431"	0.492"	0.554"
	Average I.D.	---	---	---	---	---	4.206"	5.200"	6.193"	8.062"	10.049"	11.918"	13.087"	14.956"	16.826"
	Weight lb/lf	---	---	---	---	---	0.835	1.280	1.811	3.070	4.770	6.710	8.090	10.561	13.370

HDPE Pipe

- Items highlighted in Blue indicates standard stocking items that are more readily available.
- Pressures are based on using water at 23°C (73°F).
- Average inside diameter calculated using nominal OD and minimum wall plus 6% for use in estimating fluid flows. Actual ID will vary.
- Service factors should be utilized to compensate for the effect of liquids other than water, and for other temperatures.
- Other piping sizes or DR's may be available upon request.
- Standard Lengths:
40' for 2"-24"
50' for 26" and larger
Coils available for 3/4"-6"(8" by special order)

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PE 4710 IPS HDPE Pipe Sizes

20"	22"	24"	26"	28"	30"	32"	34"	36"	42"	48"	54"	63"	Nominal Size Actual O.D.	Pressure Rating
20.00"	22.00"	24.00"	26.00"	28.00"	30.00"	32.00"	34.00"	36.00"	42.00"	48.00"	54.00"	62.99"		
2.857"	3.143"	3.429"	---	---	---	---	---	---	---	---	---	---	Min. wall	DR 7 (336psi)
13.943"	15.337"	16.731"	---	---	---	---	---	---	---	---	---	---	Average I.D.	
67.203	80.591	95.916	---	---	---	---	---	---	---	---	---	---	Weight lb/lf	
2.740"	3.014"	3.288"	3.562"	---	---	---	---	---	---	---	---	---	Min. wall	DR 7.3 (320psi)
14.192"	15.611"	17.030"	18.449"	---	---	---	---	---	---	---	---	---	Average I.D.	
64.910	78.550	93.480	110.769	---	---	---	---	---	---	---	---	---	Weight lb/lf	
2.222"	2.444"	2.667"	2.889"	3.111"	3.333"	3.556"	---	---	---	---	---	---	Min. wall	DR 9 (252psi)
15.289"	16.818"	18.347"	19.876"	21.404"	22.933"	24.462"	---	---	---	---	---	---	Average I.D.	
54.342	65.754	78.250	92.535	107.312	123.183	140.183	---	---	---	---	---	---	Weight lb/lf	
1.818"	2.000"	2.182"	2.364"	2.545"	2.727"	2.909"	3.091"	3.273"	---	---	---	---	Min. wall	DR 11 (202psi)
16.145"	17.760"	19.375"	20.989"	22.604"	24.218"	25.833"	27.447"	29.062"	---	---	---	---	Average I.D.	
45.541	55.105	65.580	77.440	89.785	103.076	117.285	132.411	148.454	---	---	---	---	Weight lb/lf	
1.481"	1.630"	1.778"	1.926"	2.074"	2.222"	2.370"	2.519"	2.667"	3.111"	---	---	---	Min. wall	DR 13.5 (161psi)
16.859"	18.545"	20.231"	21.917"	23.603"	25.289"	26.975"	28.661"	30.347"	35.404"	---	---	---	Average I.D.	
37.840	45.790	54.490	64.261	74.522	85.543	97.324	109.905	123.208	167.675	---	---	---	Weight lb/lf	
1.290"	1.419"	1.548"	1.677"	1.806"	1.935"	2.065"	2.194"	2.323"	2.710"	3.097"	3.484"	---	Min. wall	DR 15.5 (139psi)
17.265"	18.991"	20.717"	22.444"	24.170"	25.897"	27.623"	29.350"	31.076"	36.255"	41.435"	46.614"	---	Average I.D.	
33.280	39.712	47.920	56.532	65.563	75.264	85.672	96.714	108.424	147.568	192.774	243.921	---	Weight lb/lf	
1.176"	1.294"	1.412"	1.529"	1.647"	1.765"	1.882"	2.000"	2.118"	2.471"	2.824"	3.176"	---	Min. wall	DR 17 (126psi)
17.506"	19.256"	21.007"	22.758"	24.508"	26.259"	28.009"	29.760"	31.511"	36.762"	42.014"	47.266"	---	Average I.D.	
30.580	37.000	44.031	51.856	60.154	69.068	78.557	88.700	99.457	135.372	176.813	223.713	---	Weight lb/lf	
0.952"	1.048"	1.143"	1.238"	1.333"	1.429"	1.524"	1.619"	1.714"	2.000"	2.286"	2.571"	3.000"	Min. wall	DR 21 (101psi)
17.981"	19.779"	21.577"	23.375"	25.173"	26.971"	28.770"	30.568"	32.366"	37.760"	43.154"	48.549"	56.631"	Average I.D.	
25.070	30.330	36.100	42.486	49.266	56.585	64.370	72.657	81.446	110.874	144.833	183.253	249.570	Weight lb/lf	
0.769"	0.846"	0.923"	1.000"	1.077"	1.154"	1.231"	1.308"	1.385"	1.615"	1.846"	2.077"	2.423"	Min. wall	DR 26 (81 psi)
18.369"	20.206"	22.043"	23.880"	25.717"	27.554"	29.391"	31.228"	33.065"	38.575"	44.086"	49.597"	57.854"	Average I.D.	
20.453	24.750	29.452	34.570	40.187	46.135	52.494	59.264	66.444	90.393	118.082	149.464	203.630	Weight lb/lf	
0.615"	0.677"	0.738"	0.800"	0.862"	0.923"	0.985"	1.046"	1.108"	1.292"	1.477"	1.662"	1.938"	Min. wall	DR 32.5 (64 psi)
18.695"	20.565"	22.434"	24.304"	26.174"	28.043"	29.913"	31.782"	33.652"	39.260"	44.869"	50.478"	58.881"	Average I.D.	
16.501	19.970	23.762	27.940	32.421	37.196	42.340	47.773	53.581	72.893	95.233	120.556	164.280	Weight lb/lf	

HDPE Pipe

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40' for 2"-24"
50' for 26" and larger
Coils available for 3/4"-6" (8" by special order)

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PE 4710 DIPS HDPE Pipe Sizes

Pressure Rating	Nominal Size	4"	6"	8"	10"	12"	14"	16"
	Actual O.D.	4.80"	6.90"	9.05"	11.10"	13.20"	15.30"	17.40"
DR 7 (336psi)	Min. wall	0.686"	0.986"	1.293"	1.586"	1.886"	2.186"	2.486"
	Average I.D.	3.346"	4.810"	6.309"	7.738"	9.202"	10.666"	12.130"
	Weight lb/lf	3.871	7.999	13.760	20.700	29.274	39.329	50.866
DR 7.3 (320psi)	Min. wall	0.658"	0.945"	1.240"	1.521"	1.808"	2.096"	2.384"
	Average I.D.	3.406"	4.896"	6.422"	7.876"	9.367"	10.857"	12.347"
	Weight lb/lf	3.740	7.730	13.290	20.000	28.280	37.990	49.130
DR 9 (252psi)	Min. wall	0.533"	0.767"	1.006"	1.233"	1.467"	1.700"	1.933"
	Average I.D.	3.669"	5.275"	6.918"	8.485"	10.091"	11.696"	13.301"
	Weight lb/lf	3.130	6.470	11.130	16.740	23.671	31.802	41.132
DR 11 (202psi)	Min. wall	0.436"	0.627"	0.823"	1.009"	1.200"	1.391"	1.582"
	Average I.D.	3.875"	5.570"	7.306"	8.961"	10.656"	12.351"	14.047"
	Weight lb/lf	2.623	5.420	9.325	14.030	19.840	26.652	34.470
DR 13.5 (161psi)	Min. wall	0.356"	0.511"	0.670"	0.822"	0.978"	1.133"	1.289"
	Average I.D.	4.046"	5.816"	7.629"	9.357"	11.127"	12.897"	14.668"
	Weight lb/lf	2.180	4.504	7.750	11.660	16.483	22.150	28.641
DR 15.5 (139psi)	Min. wall	0.310"	0.445"	0.584"	0.716"	0.852"	0.987"	1.123"
	Average I.D.	4.143"	5.956"	7.812"	9.582"	11.395"	13.207"	15.020"
	Weight lb/lf	1.893	3.906	6.723	10.110	14.306	19.210	24.856
DR 17 (126psi)	Min. wall	0.282"	0.406"	0.532"	0.653"	0.776"	0.900"	1.024"
	Average I.D.	4.201"	6.040"	7.921"	9.716"	11.554"	13.392"	15.230"
	Weight lb/lf	1.761	3.640	6.261	9.420	13.319	17.894	23.150
DR 21 (101psi)	Min. wall	0.229"	0.329"	0.431"	0.529"	0.629"	0.729"	0.829"
	Average I.D.	4.315"	6.203"	8.136"	9.979"	11.867"	13.755"	15.643"
	Weight lb/lf	1.450	2.990	5.132	7.730	10.930	14.680	18.980
DR 26 (81 psi)	Min. wall	0.185"	0.265"	0.348"	0.427"	0.508"	0.588"	0.669"
	Average I.D.	4.409"	6.337"	8.312"	10.195"	12.124"	14.052"	15.981"
	Weight lb/lf	1.180	2.434	4.190	6.300	8.910	11.969	15.481
DR 32.5 (64 psi)	Min. wall	0.148"	0.212"	0.278"	0.342"	0.406"	0.471"	0.535"
	Average I.D.	4.487"	6.450"	8.460"	10.376"	12.339"	14.302"	16.265"
	Weight lb/lf	0.950	1.964	3.379	5.090	7.190	9.660	12.490

HDPE Pipe

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40' for 2"-24"
50' for 26" and larger
Coils available for 4"

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PE 4710 DIPS HDPE Pipe Sizes

18"	20"	24"	30"	36"	42"	48"	Nominal Size Actual O.D.	Pressure Rating
19.50"	21.60"	25.80"	32.00"	38.30"	44.50"	50.80"		
2.786"	3.086"	---	---	---	---	---	Min. wall	DR 7 (336psi)
13.594"	15.058"	---	---	---	---	Average I.D.		
63.885	78.386	---	---	---	---	Weight lb/lf		
2.671"	2.959"	3.534"	---	---	---	---	Min. wall	DR 7.3 (320psi)
13.837"	15.327"	18.307"	---	---	---	Average I.D.		
61.710	75.004	109.056	---	---	---	Weight lb/lf		
2.167"	2.400"	2.867"	3.556"	---	---	---	Min. wall	DR 9 (252psi)
14.907"	16.512"	19.723"	24.462"	---	---	Average I.D.		
51.660	63.385	91.123	140.183	---	---	Weight lb/lf		
1.773"	1.964"	2.345"	2.909"	3.482"	---	---	Min. wall	DR 11 (202psi)
15.742"	17.437"	20.828"	25.833"	30.919"	---	Average I.D.		
43.292	53.120	76.229	117.285	167.010	---	Weight lb/lf		
1.444"	1.600"	1.911"	2.370"	2.837"	3.296"	---	Min. wall	DR 13.5 (161psi)
16.438"	18.208"	21.748"	26.975"	32.285"	37.512"	Average I.D.		
35.970	44.140	63.270	97.324	138.770	187.330	Weight lb/lf		
1.258"	1.394"	1.665"	2.065"	2.471"	2.871"	3.277"	Min. wall	DR 15.5 (139psi)
16.833"	18.646"	22.271"	27.623"	33.062"	38.414"	43.852"	Average I.D.	
31.205	38.301	55.693	85.672	122.701	165.642	215.834	Weight lb/lf	
1.059"	1.176"	1.518"	1.882"	2.253"	2.618"	2.988"	Min. wall	DR 17 (126psi)
17.255"	19.106"	22.583"	28.009"	33.524"	38.951"	44.465"	Average I.D.	
29.070	35.680	51.086	78.557	112.132	151.390	197.050	Weight lb/lf	
0.857"	0.952"	1.229"	1.524"	1.824"	2.119"	2.419"	Min. wall	DR 21 (101psi)
17.683"	19.581"	23.195"	28.770"	34.434"	40.008"	45.672"	Average I.D.	
23.840	29.250	41.852	64.370	91.930	124.093	161.717	Weight lb/lf	
0.692"	0.769"	0.992"	1.231"	1.473"	1.712"	1.954"	Min. wall	DR 26 (81 psi)
18.032"	19.969"	23.696"	29.391"	35.177"	40.872"	46.658"	Average I.D.	
19.443	23.860	34.107	52.494	75.005	101.280	131.953	Weight lb/lf	
0.554"	0.615"	0.794"	0.985"	1.178"	1.369"	1.563"	Min. wall	DR 32.5 (64 psi)
18.326"	20.295"	24.117"	29.913"	35.802"	41.597"	47.486"	Average I.D.	
15.690	19.260	27.517	42.340	60.514	81.692	106.460	Weight lb/lf	



HDPE Pipe

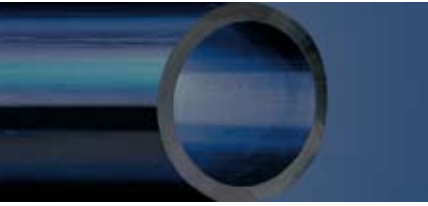
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Coils available for 4"

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Weholite: Lightweight Piping System



HDPE Pipe

In addition to solid wall HDPE pipe, ISCO offers a profile wall system known as Weholite manufactured by KWH pipe. This patented structured (profile) wall pipe has a smooth interior and exterior with a hollow core that offers exceptional strength to weight characteristics. Its unique structure can be offered in a range of sizes up 120" diameter and a variety of pipe stiffness depending on customer requirements. Weholite offers superior corrosion resistance and toughness over metal and concrete. It has better flow characteristics than any other large diameter piping materials, which makes it ideal for relining failing culverts and sewers. It is very lightweight and impact resistant which typically involves less installation equipment and more forgiving handling on site. Weholite can be welded for a leak free system capable of operating at low pressure.



New Culvert & Culvert Relining



Odor Control (Foul Air) / Biofilter Systems



Storm Water Drainage and Retention



Irrigation, Water Conservation & Diversion



Sanitary Sewer & Insert Renewal

Versatile lightweight pipe system for gravity and low-pressure applications.



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Typical Resin Properties for Weholite Pipe (73° F)			
Property	Standard	Value	Unit
Density (Compounded)	ASTM D1505	0.955	gm/cm3
Melt Index (Pipe Condition 190/21.6)	ASTM D1238	7.5	gm/10min
Secant Flexural Modulus (2% Strain)	ASTM D790	118,000	psi
Tensile Strength at Yield	ASTM D638	3,200	psi
Environmental Stress Crack Resistance (Condition C)	ASTM D1693	>5,000	F ₀ hrs
Hydrostatic Design Basis	ASTM D2837	1,600	psi
Carbon Black	ASTM D1603	minimum 2	%
Elongation at Break	ASTM D638	850	%

Weholite is manufactured in accordance with ASTM F894.

Weholite Pipe Size	Nominal Pipe ID (inches)	Average Outside Diameter	
		for Max. Stiffness (inches)	for Min. Stiffness (inches)
18	18	20.2	19.9
19.5	19.5	21.7	21.7
21	21	23.7	22.9
24	24	27.1	26.2
27	27	30.4	30.0
30	30	33.8	32.7
33	33	39.6	37.6
36	36	40.7	39.1
40	40	45.2	43.4
42	42	47.5	45.4
48	48	53.8	51.8
54	54	60.5	58.7
60	60	67.2	65.2
66	66	73.9	70.7
72	72	80.6	77.8
78	78	87.4	84.5
84	84	94.1	90.5
90	90	100.8	97.2
96	96	107.5	103.2
108	108	121.0	115.9
120	120	134.4	128.6

Notes

1. The above chart represents a range of sizes and stiffness classes. Stock will vary from plant to plant. Contact ISCO for availability.
2. Weholite is available in a series of different Ring Stiffness Constants (RSC) values that comply with ASTM F-894-98 "Polyethylene Large Diameter Profile Wall Sewer and Drain Pipe".
3. Weholite is available in standard lengths of 20 and 40 feet with custom sizes 3 feet to 50 feet.
4. Contact your local ISCO Representative for design assistance to meet your specific project needs.



HDPE Pipe

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HDPE
Fabricated
and
Molded
Fittings

HDPE Fabricated and Molded Fittings

Pressure Ratings for Molded and Fabricated Fittings

There are two basic methods of creating most HDPE fittings, either by injection molding or by fabricating from pipe or cylinders. Molded fittings are typically fully pressure rated, since the body of the molded fitting is thicker (extra material around the OD, except at the ends) than the pipe to provide additional strength and maintain the intended pressure rating. Fittings that are typically made by injection molding are 90 degree ells, 45 degree ells, tees, reducers, and end caps, and flange adapters. Molded fittings are typically available in 12" and smaller sizes due to cost and processing reasons.

Fabricated elbows or ells have a reduced pressure rating because the miter cut and weld create an effective diameter change at that point. Stress is increased because of changes in flow direction. The larger the angle of the miter cut, the greater the stress and the greater the need to decrease the pressure rating to maintain an adequate safety factor, typically accepted as 2 to 1.

In the past, a standard 25% derating for HDPE elbows has commonly been used throughout the industry. With the advent of ells made with larger miter angles (i.e. 3 segment 90/2 segment 45), and new resins, a more systematic approach was needed. The American Society of Mechanical Engineers offers an equation within the process piping code B31.3. In section 304.2, equations 4a and 4b are used to determine pressure ratings of mitered ells. For HDPE piping, the pressure rating is based on three criteria: the miter angle, the resin's material properties (Pipe Design Stress), and the wall thickness.

The outputs of these equations result in the pressure rating charts that are shown in the margins of the pages for each style ell. In a couple of instances, the listed pressure ratings are 2-3% higher than the calculated values so that, for simplicity in ordering, they will match an existing pressure rating of a pipe with a higher DR (thinner wall). This is justifiable when you consider the majority of pipe comes with an average wall thickness that is 3 to 6% greater than the required minimum wall. Also, rarely is a pipe system designed so that it operates consistently at 98% or greater of full pipe pressure rating. The standard ISCO warranty applies to all fittings at the listed ratings we publish in this catalog version.

Other fittings such as tees and wyes do not have formulas to account for the pressure ratings. Recently, modeling of fittings has served to confirm or contradict historical/legacy rating of fittings. Fabricated tees have typically held a 25% derating in the past, but as with ells, the strength of the fitting is affected by the wall thickness. Tees made from DR 13.5 or thinner are now derated by 35%. Crosses are of similar form and function, so for DR 11 and thicker crosses, the derating factor will be 50%, while thinner walls will be 60% derated. Wyes have had a historical/legacy derating in the industry of 40% but modeling has confirmed they should be considered much weaker, so a new derating factor of 67% is considered appropriate.

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Table 1: Derating Factors For HDPE Fittings

Description	Derating Factor
Fabricated 90 degree Ell - Five Segment	Per DR
PerFabricated 90 degree Ell Three	Per DR
Fabricated 45 degree Ell Three	Per DR
Fabricated 45 degree Ell Two	Per DR
Fabricated 22.5 degree Ell Two	Per DR
Fabricated Tees, Three Piece	Per DR
Fabricated Cross	60%
Fabricated Wye, Three piece	67%
Reducing Tee	none
Fabricated Cleanouts	<i>*see note</i>
Concentric Reducers	none
Transition Fittings	none
MJ Adapters	none
Bell MJ Adapters	none
Flange Adapters	none
Stub Ends	none
Molded Caps	none
Wall Anchors	none
Blind Flanges	<i>*see note</i>
Fabricated Caps	<i>*see note</i>

***NOTE: Plastic blind flanges are normally used for gravity or low pressure applications. Fabricated caps are typically designed to handle the required pressure. Blind Flanges and fabricated caps pressure ratings vary with size, type of material and thickness. Please indicate pressure requirements when ordering.**

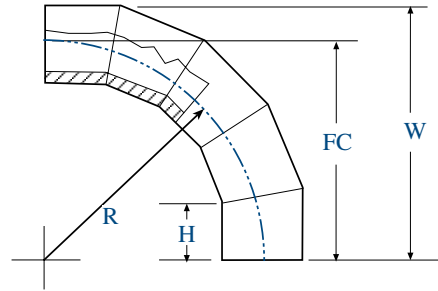


**HDPE
Fabricated
and Molded
Fittings**

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IPS Fittings Fabricated 90° Ell - Five-Segment



IPS HDPE Fittings

Pressure Rating is based on miter angle, pipe DR (Wall thickness), and resin properties.

Ratings based on 3608 resin/11.25 angle:	
DR	Pressure Rating
7	219 psi
9	160 psi
11	128 psi
13.5	100 psi
15.5	82 psi
17	73 psi
21	57 psi
26	44 psi
32.5	34 psi

Ratings based on 4710 resin/11.25 angle:	
DR	Pressure Rating
7	274 psi
9	202 psi
11	161 psi
13.5	126 psi
15.5	103 psi
17	92 psi
21	72 psi
26	55 psi
32.5	42 psi

Note: Size/DR listings shown are commonly requested. Many DR options not listed are available. Please consult an ISCO representative for availability.

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Nominal Size (in)	Pipe OD (in)	DR	Part #	Dimensions				Weight (lbs)	Shipping Method
				R (in)	H (in)	FC (in)	W (in)		
2	2.375	07	ISFF900207IPS	13.125	4	14.75	15.94	2	FedEx
		09	ISFF900209IPS	"	"	"	"	2	"
		11	ISFF900211IPS	"	"	"	"	2	"
3	3.5	07	ISFF900307IPS	13.625	4	15.25	17	4	FedEx
		09	ISFF900309IPS	"	"	"	"	4	"
		11	ISFF900311IPS	"	"	"	"	3	"
		17	ISFF900317IPS	"	"	"	"	2	"
4	4.5	07	ISFF900407IPS	14.25	5	16.875	19.13	8	FedEx
		09	ISFF900409IPS	"	"	"	"	7	"
		11	ISFF900411IPS	"	"	"	"	6	"
		17	ISFF900417IPS	"	"	"	"	4	"
6	6.625	07	ISFF900607IPS	15.25	6	16.875	20.19	19	FedEx
		09	ISFF900609IPS	"	"	"	"	16	"
		11	ISFF900611IPS	"	"	"	"	13	"
		17	ISFF900617IPS	"	"	"	"	9	"
		32.5	ISFF9006325IPS	"	"	"	"	5	"
8	8.625	07	ISFF900807IPS	16.25	6.5	20.375	24.69	29	FedEx
		09	ISFF900809IPS	"	"	"	2	5	"
		11	ISFF900811IPS	"	"	"	"	24	"
		17	ISFF900817IPS	"	"	"	"	16	"
		32.5	ISFF9008325IPS	"	"	"	"	9	"
10	10.75	07	ISFF901007IPS	17.25	6.5	21.375	26.75	58	LTL
		09	ISFF901009IPS	"	"	"	"	47	"
		11	ISFF901011IPS	"	"	"	"	39	"
		17	ISFF901017IPS	"	"	"	"	26	"
		32.5	ISFF9010325IPS	"	"	"	"	14	"
12	12.75	07	ISFF901207IPS	19.5	8	24.875	31.25	95	LTL
		09	ISFF901209IPS	"	"	"	"	77	"
		11	ISFF901211IPS	"	"	"	"	64	"
		17	ISFF901217IPS	"	"	"	"	43	"
		32.5	ISFF9012325IPS	"	"	"	"	23	"
14	14	07	ISFF901407IPS	21	8	26.25	33.25	120	LTL
		09	ISFF901409IPS	"	"	"	"	97	"
		11	ISFF901411IPS	"	"	"	"	81	"
		17	ISFF901417IPS	"	"	"	"	54	"
		32.5	ISFF9014325IPS	"	"	"	"	29	"
16	16	07	ISFF901607IPS	24	8	28.875	36.88	164	LTL
		09	ISFF901609IPS	"	"	"	"	137	"
		11	ISFF901611IPS	"	"	"	"	115	"
		17	ISFF901617IPS	"	"	"	"	77	"
		32.5	ISFF9016325IPS	"	"	"	"	42	"



IPS Fittings Fabricated 90° Ell - Five Segment (continued)

IPS Fittings Fabricated 90° Ell - Five Segment									
Nominal Size (in)	Pipe,OD (in)	DR	Part #	Dimensions				Weight (lbs)	Shipping Method
				R (in)	H (in)	FC (in)	W (in)		
18	18	09	ISFF901809IPS	27	8	31.375	40.38	189	LTL
		11	ISFF901811IPS	"	"	"	"	158	"
		17	ISFF901817IPS	"	"	"	"	106	"
		32.5	ISFF9018325IPS	"	"	"	"	57	"
20	20	09	ISFF902009IPS	30	8	34	44	250	LTL
		11	ISFF902011IPS	"	"	"	"	210	"
		17	ISFF902017IPS	"	"	"	"	141	"
		32.5	ISFF9020325IPS	"	"	"	"	76	"
22	22	17	ISFF902217IPS	33	8	36.625	47.63	183	LTL
		32.5	ISFF9022325IPS	"	"	"	"	99	"
24	24	09	ISFF902409IPS	36	8	39.25	51.25	413	LTL
		11	ISFF902411IPS	"	"	"	"	346	"
		17	ISFF902417IPS	"	"	"	"	230	"
		32.5	ISFF9024325IPS	"	"	"	"	125	"
26	26	17	ISFF902617IPS	39	14	47.875	60.88	376	LTL
		32.5	ISFF9026325IPS	"	"	"	"	203	"
28	28	11	ISFF902811IPS	42	14	50.375	64.38	619	LTL
		17	ISFF902817IPS	"	"	"	"	415	"
		32.5	ISFF9028325IPS	"	"	"	"	224	"
30	30	11	ISFF903011IPS	45	14	53	68	744	LTL
		17	ISFF903017IPS	"	"	"	"	500	"
		32.5	ISFF9030325IPS	"	"	"	"	270	"
32	32	11	ISFF903211IPS	48	14	55.625	71.63	885	LTL
		17	ISFF903217IPS	"	"	"	"	594	"
		32.5	ISFF9032325IPS	"	"	"	"	321	"
36	36	11	ISFF903611IPS	54	14	60.875	78.88	1218	LTL
		17	ISFF903617IPS	"	"	"	"	810	"
		26	ISFF903626IPS	"	"	"	"	541	"
		32.5	ISFF903632IPS	"	"	"	"	433	"
42	42	17	ISFF904217IPS	63	21	75.625	96.63	1400	LTL
		21	ISFF904221IPS	"	"	"	"	1150	"
		26	ISFF904226IPS	"	"	"	"	937	"
		32.5	ISFF904232IPS	"	"	"	"	750	"
48	48	21	ISFF904821IPS	72	21	83.5	107.5	1630	LTL
		26	ISFF904826IPS	"	"	"	"	1328	"
		32.5	ISFF904832IPS	"	"	"	"	1063	"
54	54	26	ISFF905426IPS	81	21	91.25	118.25	1840	LTL
		32.5	ISFF905432IPS	"	"	"	"	1472	"
63	63	26	ISFF906326IPS	85.5	21	95.8	127.3	2650	LTL
		32.5	ISFF906332IPS	"	"	"	"	2135	"



IPS HDPE Fittings

Pressure Rating is based on miter angle, pipe DR (Wall thickness), and resin properties.

Ratings based on 3608 resin/11.25 angle:	
DR	Pressure Rating
7	219 psi
9	160 psi
11	128 psi
13.5	100 psi
15.5	82 psi
17	73 psi
21	57 psi
26	44 psi
32.5	34 psi

Ratings based on 4710 resin/11.25 angle:	
DR	Pressure Rating
7	274 psi
9	202 psi
11	161 psi
13.5	126 psi
15.5	103 psi
17	92 psi
21	72 psi
26	55 psi
32.5	42 psi

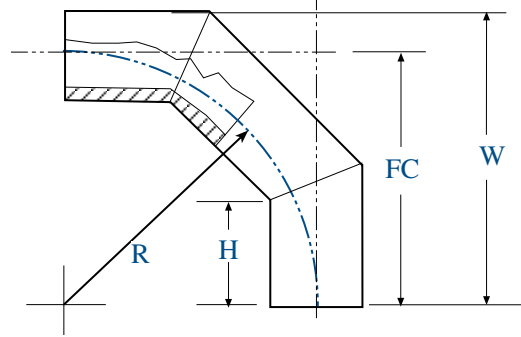
Note: Size/DR listings shown are commonly requested. Many DR options not listed are available. Please consult an ISCO representative for availability.

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IPS Fittings Fabricated 90° Ell - Three Segment



IPS HDPE Fittings

Pressure Rating is based on miter angle, pipe DR (Wall thickness), and resin properties.

Ratings based on 3608 resin/22.5 angle:	
DR	Pressure Rating
7	183 psi
9	131 psi
11	100 psi
13.5	77 psi
15.5	64 psi
17	57 psi
21	43 psi
26	33 psi
32.5	25 psi

Ratings based on 4710 resin/22.5 angle:	
DR	Pressure Rating
7	229 psi
9	164 psi
11	126 psi
13.5	96 psi
15.5	81 psi
17	71 psi
21	54 psi
26	41 psi
32.5	31 psi

Note: Size/DR listings shown are commonly requested. Many DR options not listed are available. Please consult an ISCO representative for availability.

IPS Fittings Fabricated 90° Ell - Three Segment

Nominal Size(in)	Pipe OD(in)	DR	Part #	Dimensions				Weight (lbs)	Shipping Method
				R (in)	H (in)	FC (in)	W (in)		
2	2.375	07	ISFF900207IPS3P	6.62	4.50	8.87	10.06	1	FedEx
		09	ISFF900209IPS3P	"	"	"	"	1	"
		11	ISFF900211IPS3P	"	"	"	"	1	"
3	3.5	07	ISFF900307IPS3P	7.18	4.50	9.43	11.18	3	FedEx
		09	ISFF900309IPS3P	"	"	"	"	2	"
		11	ISFF900311IPS3P	"	"	"	"	2	"
		17	ISFF900317IPS3P	"	"	"	"	1	"
4	4.5	07	ISFF900407IPS3P	7.68	4.50	9.93	12.18	5	FedEx
		09	ISFF900409IPS3P	"	"	"	"	4	"
		11	ISFF900411IPS3P	"	"	"	"	3	"
		17	ISFF900417IPS3P	"	"	"	"	2	"
6	6.625	07	ISFF900607IPS3P	9.95	5.50	12.70	16.01	14	FedEx
		09	ISFF900609IPS3P	"	"	"	"	11	"
		11	ISFF900611IPS3P	"	"	"	"	9	"
		17	ISFF900617IPS3P	"	"	"	"	6	"
		32.5	ISFF900632IPS3P	"	"	"	"	3	"
8	8.625	07	ISFF900807IPS3P	12.16	6.50	15.41	19.72	28	FedEx
		09	ISFF900809IPS3P	"	"	"	"	23	"
		11	ISFF900811IPS3P	"	"	"	"	19	"
		17	ISFF900817IPS3P	"	"	"	"	17	"
10	10.75	32.5	ISFF900832IPS3P	"	"	"	"	7	"
		07	ISFF901007IPS3P	12.63	6.50	16.13	21.50	43	LTL
		09	ISFF901009IPS3P	"	"	"	"	37	"
		11	ISFF901011IPS3P	"	"	"	"	31	"
		17	ISFF901017IPS3P	"	"	"	"	21	"
12	12.75	32.5	ISFF901032IPS3P	"	"	"	"	11	"
		07	ISFF901207IPS3P	13.63	8.50	19.12	25.50	72	LTL
		09	ISFF901209IPS3P	"	"	"	"	61	"
		11	ISFF901211IPS3P	"	"	"	"	51	"
		17	ISFF901217IPS3P	"	"	"	"	34	"
14	14	32.5	ISFF901232IPS3P	"	"	"	"	18	"
		07	ISFF901407IPS3P	14.25	8.50	19.75	26.75	89	LTL
		09	ISFF901409IPS3P	"	"	"	"	75	"
		11	ISFF901411IPS3P	"	"	"	"	62	"
		17	ISFF901417IPS3P	"	"	"	"	42	"

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IPS Fittings Fabricated 90° Ell - Three Segment (continued)

IPS Fittings Fabricated 90° Ell - Three Segment									
Nominal Size(in)	Pipe OD(in)	DR	Part #	Dimensions				Weight (lbs)	Shipping Method
				R (in)	H (in)	FC (in)	W (in)		
16	16	07	ISFF901607IPS3P	15.25	8.50	20.75	28.75	120	LTL
		09	ISFF901609IPS3P	"	"	"	"	100	"
		11	ISFF901611IPS3P	"	"	"	"	85	"
		17	ISFF901617IPS3P	"	"	"	"	56	"
		32.5	ISFF901632IPS3P	"	"	"	"	30	"
18	18	09	ISFF901809IPS3P	16.25	8.50	21.75	30.75	135	LTL
		11	ISFF901811IPS3P	"	"	"	"	113	"
		17	ISFF901817IPS3P	"	"	"	"	76	"
		32.5	ISFF901832IPS3P	"	"	"	"	41	"
20	20	09	ISFF902009IPS3P	17.25	8.50	22.75	32.75	175	LTL
		11	ISFF902011IPS3P	"	"	"	"	147	"
		17	ISFF902017IPS3P	"	"	"	"	98	"
		32.5	ISFF902032IPS3P	"	"	"	"	53	"
22	22	17	ISFF902217IPS3P	23.07	8.50	26.57	37.57	134	LTL
		32.5	ISFF902232IPS3P	"	"	"	"	72	"
24	24	09	ISFF902409IPS3P	24.07	8.50	27.57	39.57	298	LTL
		11	ISFF902411IPS3P	"	"	"	"	252	"
		17	ISFF902417IPS3P	"	"	"	"	170	"
		32.5	ISFF902432IPS3P	"	"	"	"	92	"
26	26	17	ISFF902617IPS3P	26.5	10	30.9	43.9	239	LTL
		32.5	ISFF902632IPS3P	"	"	"	"	175	"
28	28	11	ISFF902811IPS3P	28.5	10	32.5	46.5	427	LTL
		17	ISFF902817IPS3P	"	"	"	"	283	"
		32.5	ISFF902832IPS3P	"	"	"	"	175	"
30	30	11	ISFF903011IPS3P	30.5	10	34.1	49.1	510	LTL
		17	ISFF903017IPS3P	"	"	"	"	345	"
		32.5	ISFF903032IPS3P	"	"	"	"	285	"
32	32	11	ISFF903211IPS3P	38	10	38.9	54.9	738	LTL
		17	ISFF903217IPS3P	"	"	"	"	496	"
		32.5	ISFF903232IPS3P	"	"	"	"	400	"
36	36	11	ISFF903611IPS3P	43	10	42.6	60.6	1019	LTL
		17	ISFF903617IPS3P	"	"	"	"	686	"
		26	ISFF903626IPS3P	"	"	"	"	600	"
		32.5	ISFF903632IPS3P	"	"	"	"	530	"
42	42	17	ISFF904217IPS3P	50	16	54	75	1050	LTL
		21	ISFF904221IPS3P	"	"	"	"	856	"
		26	ISFF904226IPS3P	"	"	"	"	800	"
		32.5	ISFF904232IPS3P	"	"	"	"	775	"
48	48	21	ISFF904821IPS3P	58	16	59.9	83.9	1208	LTL
		26	ISFF904826IPS3P	"	"	"	"	984	"
		32.5	ISFF904832IPS3P	"	"	"	"	900	"
54	54	26	ISFF905426IPS3P	64	16	64.7	91.7	1401	LTL
		32.5	ISFF905432IPS3P	"	"	"	"	1126	"
63	63	26	ISFF906326IPS3P	57.4	18	64.7	96.18	2424	LTL
		32.5	ISFF906332IPS3P	"	"	"	"	1956	"



IPS HDPE Fittings

Pressure Rating is based on miter angle, pipe DR (Wall thickness), and resin properties.

Ratings based on 3608 resin/22.5 angle:	
DR	Pressure Rating
7	183 psi
9	131 psi
11	100 psi
13.5	77 psi
15.5	64 psi
17	57 psi
21	43 psi
26	33 psi
32.5	25 psi

Ratings based on 4710 resin/22.5 angle:	
DR	Pressure Rating
7	229 psi
9	164 psi
11	126 psi
13.5	96 psi
15.5	81 psi
17	71 psi
21	54 psi
26	41 psi
32.5	31 psi

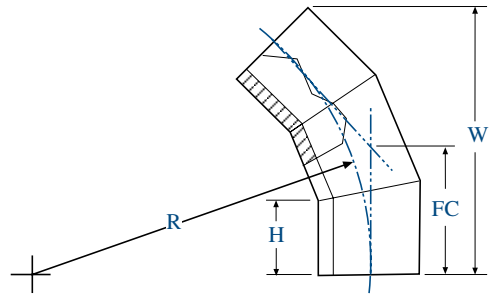
Note: Size/DR listings shown are commonly requested. Many DR options not listed are available. Please consult an ISCO representative for availability.

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IPS Fittings Fabricated 45° EII - Three Segment



IPS HDPE Fittings

Pressure Rating is based on miter angle, pipe DR (Wall thickness), and resin properties.

Ratings based on 3608 resin/11.25 angle:	
DR	Pressure Rating
7	219 psi
9	160 psi
11	128 psi
13.5	100 psi
15.5	82 psi
17	73 psi
21	57 psi
26	44 psi
32.5	34 psi

Ratings based on 4710 resin/11.25 angle:	
DR	Pressure Rating
7	274 psi
9	202 psi
11	161 psi
13.5	126 psi
15.5	103 psi
17	92 psi
21	72 psi
26	55 psi
32.5	42 psi

Note: Size/DR listings shown are commonly requested. Many DR options not listed are available. Please consult an ISCO representative for availability.

Nominal Size (in)	Pipe OD (in)	DR	Part #	Dimensions				Weight (lbs)	Shipping Method
				R (in)	H (in)	FC (in)	W (in)		
2	2.375	07	ISFF450207IPS	13.125	4	7	12.9	1	FedEx
		09	ISFF450209IPS	"	"	"	"	1	"
		11	ISFF450211IPS	"	"	"	"	1	"
3	3.5	07	ISFF450307IPS	13.625	4	7.25	13.69	3	FedEx
		09	ISFF450309IPS	"	"	"	"	2	"
		11	ISFF450311IPS	"	"	"	"	2	"
		17	ISFF450317IPS	"	"	"	"	1	"
4	4.5	07	ISFF450407IPS	14.25	5	8.5	16.11	5	FedEx
		09	ISFF450409IPS	"	"	"	"	4	"
		11	ISFF450411IPS	"	"	"	"	3	"
		17	ISFF450417IPS	"	"	"	"	2	"
6	6.625	07	ISFF450607IPS	15.25	6	10	19.32	12	FedEx
		09	ISFF450609IPS	"	"	"	"	10	"
		11	ISFF450611IPS	"	"	"	"	8	"
		17	ISFF450617IPS	"	"	"	"	5	"
		32.5	ISFF4506325IPS	"	"	"	"	3	"
8	8.625	07	ISFF450807IPS	16.25	6.5	10.875	21.58	22	FedEx
		09	ISFF450809IPS	"	"	"	"	18	"
		11	ISFF450811IPS	"	"	"	"	15	"
		17	ISFF450817IPS	"	"	"	"	10	"
		32.5	ISFF4508325IPS	"	"	"	"	5	"
10	10.75	07	ISFF451007IPS	17.25	6.5	11.25	23.09	35	LTL
		09	ISFF451009IPS	"	"	"	"	29	"
		11	ISFF451011IPS	"	"	"	"	24	"
		17	ISFF451017IPS	"	"	"	"	16	"
12	12.75	32.5	ISFF4510325IPS	"	"	"	"	9	"
		07	ISFF451207IPS	19.5	8	13.5	27.52	60	LTL
		09	ISFF451209IPS	"	"	"	"	48	"
		11	ISFF451211IPS	"	"	"	"	40	"
		17	ISFF451217IPS	"	"	"	"	27	"
14	14	32.5	ISFF4512325IPS	"	"	"	"	15	"
		07	ISFF451407IPS	21	8	13.875	28.64	74	LTL
		09	ISFF451409IPS	"	"	"	"	60	"
		11	ISFF451411IPS	"	"	"	"	50	"
		17	ISFF451417IPS	"	"	"	"	34	"
16	16	32.5	ISFF4514325IPS	"	"	"	"	18	"
		07	ISFF451607IPS	24	8	14.75	30.74	99	LTL
		09	ISFF451609IPS	"	"	"	"	83	"
		11	ISFF451611IPS	"	"	"	"	70	"
		17	ISFF451617IPS	"	"	"	"	46	"
		32.5	ISFF4516325IPS	"	"	"	"	25	"

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IPS Fittings Fabricated 45° Ell - Three Segment (continued)

IPS Fittings Fabricated 45° Ell - Three Segment									
Nominal Size (in)	Pipe OD (in)	DR	Part #	Dimensions			Weight (lbs)	Shipping Method	
				R (in)	H (in)	FC (in)			
18	18	09	ISFF451809IPS	27	8	15.625	33.08	111	LTL
		11	ISFF451811IPS	"	"	"	"	92	"
		17	ISFF451817IPS	"	"	"	"	62	"
		32.5	ISFF4518325IPS	"	"	"	"	33	"
20	20	09	ISFF452009IPS	30	8	16.5	35.19	144	LTL
		11	ISFF452011IPS	"	"	"	"	121	"
		17	ISFF452017IPS	"	"	"	"	80	"
		32.5	ISFF4520325IPS	"	"	"	"	43	"
22	22	17	ISFF452217IPS	33	8	17.25	37.3	104	LTL
		32.5	ISFF4522325IPS	"	"	"	"	56	"
24	24	09	ISFF452409IPS	36	8	18.25	39.4	228	LTL
		11	ISFF452411IPS	"	"	"	"	191	"
		17	ISFF452417IPS	"	"	"	"	129	"
		32.5	ISFF4524325IPS	"	"	"	"	70	"
26	26	17	ISFF452617IPS	39	14	25.0	51.85	209	LTL
		32.5	ISFF4526325IPS	"	"	"	"	113	"
28	28	11	ISFF452811IPS	42	14	25.88	54.09	372	LTL
		17	ISFF452817IPS	"	"	"	"	250	"
		32.5	ISFF4528325IPS	"	"	"	"	135	"
30	30	11	ISFF453011IPS	45	14	26.625	56.2	441	LTL
		17	ISFF453017IPS	"	"	"	"	296	"
		32.5	ISFF4530325IPS	"	"	"	"	160	"
32	32	11	ISFF453011IPS	48	14	27.5	58.31	516	LTL
		17	ISFF453217IPS	"	"	"	"	347	"
		32.5	ISFF4532325IPS	"	"	"	"	187	"
36	36	11	ISFF453611IPS	54	14	29.22	62.52	693	LTL
		17	ISFF453617IPS	"	"	"	"	466	"
		26	ISFF453626IPS	"	"	"	"	311	"
		32.5	ISFF4536325IPS	"	"	"	"	249	"
42	42	17	ISFF454217IPS	63	21	38.75	81.02	844	LTL
		21	ISFF454221IPS	"	"	"	"	691	"
		26	ISFF454226IPS	"	"	"	"	563	"
		32.5	ISFF4542325IPS	"	"	"	"	451	"
48	48	21	ISFF454821IPS	72	21	41.25	87.34	960	LTL
		26	ISFF454826IPS	"	"	"	"	782	"
		32.5	ISFF4548325IPS	"	"	"	"	626	"
54	54	26	ISFF455426IPS	81	21	43.75	93.9	1051	LTL
		32.5	ISFF4554325IPS	"	"	"	"	841	"
63	63	26	ISFF456326IPS	85.5	21	45.7	100.3	1920	LTL
		32.5	ISFF4563325IPS	"	"	"	"	1550	"



IPS HDPE Fittings

Pressure Rating is based on miter angle, pipe DR (Wall thickness), and resin properties.

Ratings based on 3608 resin/11.25 angle:	
DR	Pressure Rating
7	219 psi
9	160 psi
11	128 psi
13.5	100 psi
15.5	82 psi
17	73 psi
21	57 psi
26	44 psi
32.5	34 psi

Ratings based on 4710 resin/11.25 angle:	
DR	Pressure Rating
7	274 psi
9	202 psi
11	161 psi
13.5	126 psi
15.5	103 psi
17	92 psi
21	72 psi
26	55 psi
32.5	42 psi

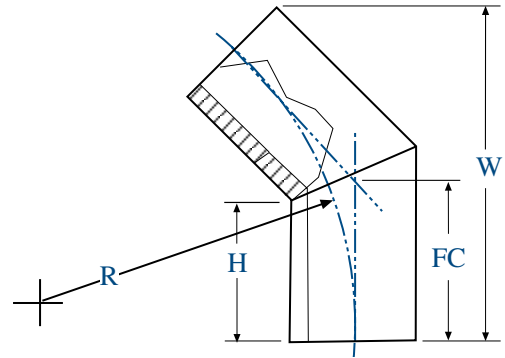
Note: Size/DR listings shown are commonly requested. Many DR options not listed are available. Please consult an ISCO representative for availability.

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IPS Fittings Fabricated 45° Ell - Two Segment



IPS
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Pressure Rating is based on miter angle, pipe DR (Wall thickness), and resin properties.

Ratings based on 3608 resin/22.5 angle:	
DR	Pressure Rating
7	183 psi
9	131 psi
11	100 psi
13.5	77 psi
15.5	64 psi
17	57 psi
21	43 psi
26	33 psi
32.5	25 psi

Ratings based on 4710 resin/22.5 angle:	
DR	Pressure Rating
7	229 psi
9	164 psi
11	126 psi
13.5	96 psi
15.5	81 psi
17	71 psi
21	54 psi
26	41 psi
32.5	31 psi

Note: Size/DR listings shown are commonly requested. Many DR options not listed are available. Please consult an ISCO representative for availability.

IPS Fittings - Fabricated 45° Ell - Two Segment										
Nominal Size (in)	Pipe OD (in)	DR	Part #	Dimensions				Weight (lbs)	Shipping Method	
				R (in)	H (in)	FC (in)	W (in)			
2	2.375	07	ISFF450207IPS2P	6.62	4.50	5	9.36	1	FedEx	
		09	ISFF450209IPS2P	"	"	"	"	1	"	
		11	ISFF450211IPS2P	"	"	"	"	1	"	
3	3.5	07	ISFF450307IPS2P	7.18	4.50	5.25	10.16	2	FedEx	
		09	ISFF450309IPS2P	"	"	"	"	1	"	
		11	ISFF450311IPS2P	"	"	"	"	1	"	
		17	ISFF450317IPS2P	"	"	"	"	1	"	
4	4.5	07	ISFF450407IPS2P	7.68	4.50	5.43	10.86	3	FedEx	
		09	ISFF450409IPS2P	"	"	"	"	2	"	
		11	ISFF450411IPS2P	"	"	"	"	2	"	
		17	ISFF450417IPS2P	"	"	"	"	1	"	
6	6.625	07	ISFF450607IPS2P	9.95	5.50	6.88	14.07	8	FedEx	
		09	ISFF450609IPS2P	"	"	"	"	7	"	
		11	ISFF450611IPS2P	"	"	"	"	6	"	
		17	ISFF450617IPS2P	"	"	"	"	4	"	
		32.5	ISFF450632IPS2P	"	"	"	"	2	"	
8	8.625	07	ISFF450807IPS2P	12.16	6.50	8.25	17.19	17	FedEx	
		09	ISFF450809IPS2P	"	"	"	"	14	"	
		11	ISFF450811IPS2P	"	"	"	"	12	"	
		17	ISFF450817IPS2P	"	"	"	"	10	"	
		32.5	ISFF450832IPS2P	"	"	"	"	4	"	
10	10.75	07	ISFF451007IPS2P	12.63	6.50	8.73	18.70	26	LTL	
		09	ISFF451009IPS2P	"	"	"	"	22	"	
		11	ISFF451011IPS2P	"	"	"	"	18	"	
		17	ISFF451017IPS2P	"	"	"	"	12	"	
		32.5	ISFF451032IPS2P	"	"	"	"	6	"	
12	12.75	07	ISFF451207IPS2P	13.63	8.50	11.14	23.53	45	LTL	
		09	ISFF451209IPS2P	"	"	"	"	38	"	
		11	ISFF451211IPS2P	"	"	"	"	32	"	
		17	ISFF451217IPS2P	"	"	"	"	21	"	
		32.5	ISFF451232IPS2P	"	"	"	"	11	"	
14	14	07	ISFF451407IPS2P	14.25	8.50	11.4	24.41	58	LTL	
		09	ISFF451409IPS2P	"	"	"	"	48	"	
		11	ISFF451411IPS2P	"	"	"	"	40	"	
		17	ISFF451417IPS2P	"	"	"	"	27	"	
		32.5	ISFF451432IPS2P	"	"	"	"	15	"	
16	16	07	ISFF451607IPS2P	15.25	8.50	11.81	25.82	79	LTL	
		09	ISFF451609IPS2P	"	"	"	"	66	"	
		11	ISFF451611IPS2P	"	"	"	"	55	"	
		17	ISFF451617IPS2P	"	"	"	"	37	"	
		32.5	ISFF451632IPS2P	"	"	"	"	20	"	



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IPS Fittings Fabricated 45° Ell - Two Segment (continued)

IPS Fittings - Fabricated 45° Ell - Two Segment										
Nominal Size (in)	Pipe OD (in)	DR	Part #	Dimensions			Weight (lbs)	Shipping Method		
				R (in)	H (in)	FC (in)			W (in)	
18	18	09	ISFF451809IPS2P	16.25	8.50	12.23	27.24	83	LTL	
		11	ISFF451811IPS2P	"	"	"	"	70	"	
		17	ISFF451817IPS2P	"	"	"	"	47	"	
		32.5	ISFF451832IPS2P	"	"	"	"	25	"	
20	20	09	ISFF452009IPS2P	17.25	8.50	12.64	28.65	108	LTL	
		11	ISFF452011IPS2P	"	"	"	"	90	"	
		17	ISFF452017IPS2P	"	"	"	"	60	"	
		32.5	ISFF452032IPS2P	"	"	"	"	32	"	
22	22	17	ISFF452217IPS2P	23.1	8.50	13.05	30.00	76	LTL	
		32.5	ISFF452232IPS2P	"	"	"	"	41	"	
24	24	09	ISFF452409IPS2P	24.1	8.50	13.5	31.50	168	LTL	
		11	ISFF452411IPS2P	"	"	"	"	141	"	
		17	ISFF452417IPS2P	"	"	"	"	94	"	
		32.5	ISFF452432IPS2P	"	"	"	"	51	"	
26	26	17	ISFF452617IPS2P	26.5	10	15.4	35.44	141	LTL	
		32.5	ISFF452632IPS2P	"	"	"	"	90	"	
28	28	11	ISFF452811IPS2P	28.5	10	15.8	36.875	623	LTL	
		17	ISFF452817IPS2P	"	"	"	"	158	"	
		32.5	ISFF452832IPS2P	"	"	"	"	86	"	
30	30	11	ISFF453011IPS2P	30.5	10	16.2	38.31	279	LTL	
		17	ISFF453017IPS2P	"	"	"	"	187	"	
		32.5	ISFF453032IPS2P	"	"	"	"	74	"	
32	32	11	ISFF453211IPS2P	38	10	16.6	39.69	325	LTL	
		17	ISFF453217IPS2P	"	"	"	"	218	"	
		32.5	ISFF453232IPS2P	"	"	"	"	118	"	
36	36	11	ISFF453611IPS2P	43	10	17.5	42.5	432	LTL	
		17	ISFF453617IPS2P	"	"	"	"	290	"	
		26	ISFF453626IPS2P	"	"	"	"	193	"	
		32.5	ISFF453632IPS2P	"	"	"	"	156	"	
42	42	17	ISFF454217IPS2P	50	16	24.7	57	557	LTL	
		21	ISFF454221IPS2P	"	"	"	"	456	"	
		26	ISFF454226IPS2P	"	"	"	"	372	"	
		32.5	ISFF454232IPS2P	"	"	"	"	300	"	
48	48	21	ISFF454821IPS2P	58	16	25.9	61.25	625	LTL	
		26	ISFF454826IPS2P	"	"	"	"	510	"	
		32.5	ISFF454832IPS2P	"	"	"	"	411	"	
54	54	26	ISFF455426IPS2P	64	16	27.2	65.5	678	LTL	
		32.5	ISFF455432IPS2P	"	"	"	"	547	"	
63	63	26	ISFF456326IPS2P	57.45	18	31.06	75.25	1050	LTL	
		32.5	ISFF456332IPS2P	"	"	"	"	847	"	



IPS HDPE Fittings

Pressure Rating is based on miter angle, pipe DR (Wall thickness), and resin properties.

Ratings based on 3608 resin/22.5 angle:	
DR	Pressure Rating
7	183 psi
9	131 psi
11	100 psi
13.5	77 psi
15.5	64 psi
17	57 psi
21	43 psi
26	33 psi
32.5	25 psi

Ratings based on 4710 resin/22.5 angle:	
DR	Pressure Rating
7	229 psi
9	164 psi
11	126 psi
13.5	96 psi
15.5	81 psi
17	71 psi
21	54 psi
26	41 psi
32.5	31 psi

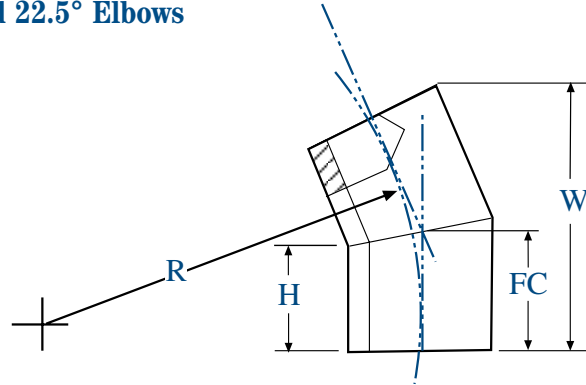
Note: Size/DR listings shown are commonly requested. Many DR options not listed are available. Please consult an ISCO representative for availability.

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IPS Fittings Fabricated 22.5° Elbows



IPS HDPE Fittings

Pressure Rating is based on miter angle, pipe DR (Wall thickness), and resin properties.

Ratings based on 3608 resin/11.25 angle:	
DR	Pressure Rating
7	219 psi
9	160 psi
11	128 psi
13.5	100 psi
15.5	82 psi
17	73 psi
21	57 psi
26	44 psi
32.5	34 psi

Ratings based on 4710 resin/11.25 angle:	
DR	Pressure Rating
7	274 psi
9	202 psi
11	161 psi
13.5	126 psi
15.5	103 psi
17	92 psi
21	72 psi
26	55 psi
32.5	42 psi

Note: Size/DR listings shown are commonly requested. Many DR options not listed are available. Please consult an ISCO representative for availability

Nominal Pipe Size (in)	DR	DR	Part #	Dimensions				Weight (lbs)	Shipping Method
				R (in)	H (in)	FC (in)	W (in)		
2	2.375	07	ISFF220207IPS	13.125	4	4.25	8.6	1	FedEx
		09	ISFF220209IPS	"	"	"	"	1	"
		11	ISFF220211IPS	"	"	"	"	1	"
3	3.5	07	ISFF220307IPS	13.625	4	4.375	9.03	2	FedEx
		09	ISFF220309IPS	"	"	"	"	1	"
		11	ISFF220311IPS	"	"	"	"	1	"
		17	ISFF220317IPS	"	"	"	"	1	"
4	4.5	07	ISFF220407IPS	14.25	5	5.5	11.34	3	FedEx
		09	ISFF220409IPS	"	"	"	"	3	"
		11	ISFF220411IPS	"	"	"	"	2	"
		17	ISFF220417IPS	"	"	"	"	1	"
6	6.625	07	ISFF220607IPS	15.25	6	6.625	14.08	8	FedEx
		09	ISFF220609IPS	"	"	"	"	7	"
		11	ISFF220611IPS	"	"	"	"	6	"
		17	ISFF220617IPS	"	"	"	"	4	"
		32.5	ISFF2206325IPS	"	"	"	"	2	"
8	8.625	07	ISFF220807IPS	16.25	6.5	7.375	15.81	15	FedEx
		09	ISFF220809IPS	"	"	"	"	12	"
		11	ISFF220811IPS	"	"	"	"	10	"
		17	ISFF220817IPS	"	"	"	"	6	"
		32.5	ISFF2208325IPS	"	"	"	"	3	"
10	10.75	07	ISFF221007IPS	17.25	6.5	7.625	16.62	24	FedEx
		09	ISFF221009IPS	"	"	"	"	20	"
		11	ISFF221011IPS	"	"	"	"	17	"
		17	ISFF221017IPS	"	"	"	"	11	"
		32.5	ISFF2210325IPS	"	"	"	"	6	"
12	12.75	07	ISFF221207IPS	19.5	8	9.25	20.27	42	FedEx
		09	ISFF221209IPS	"	"	"	"	34	"
		11	ISFF221211IPS	"	"	"	"	28	"
		17	ISFF221217IPS	"	"	"	"	19	"
		32.5	ISFF2212325IPS	"	"	"	"	10	"
14	14	07	ISFF221407IPS	21	8	9.375	20.75	51	FedEx
		09	ISFF221409IPS	"	"	"	"	41	"
		11	ISFF221411IPS	"	"	"	"	35	"
		17	ISFF221417IPS	"	"	"	"	23	"
		32.5	ISFF2214325IPS	"	"	"	"	12	"

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IPS Fittings Fabricated 22.5° Elbows(continued)

IPS Fittings Fabricated 22.5° Elbows									
Nominal Pipe Size(in)	Pipe OD(in)	DR	Part #	Dimensions				Weight (lbs)	Shipping Method
				R (in)	H (in)	FC (in)	W (in)		
16	16	07	ISFF221607IPS	24	8	9.625	21.51	66	FedEx
		09	ISFF221609IPS	"	"	"	"	55	"
		11	ISFF221611IPS	"	"	"	"	46	"
		17	ISFF221617IPS	"	"	"	"	31	"
		32.5	ISFF2216325IPS	"	"	"	"	17	"
18	18	09	ISFF221809IPS	27	8	9.75	22.28	71	FedEx
		11	ISFF221811IPS	"	"	"	"	60	"
		17	ISFF221817IPS	"	"	"	"	41	"
		32.5	ISFF2218325IPS	"	"	"	"	22	"
20	20	09	ISFF222009IPS	30	8	10	23.04	90	LTL
		11	ISFF222011IPS	"	"	"	"	75	"
		17	ISFF222017IPS	"	"	"	"	51	"
		32.5	ISFF2220325IPS	"	"	"	"	28	"
22	22	17	ISFF222217IPS	33	8	10.25	23.81	63	LTL
		32.5	ISFF2222325IPS	"	"	"	"	34	"
24	24	09	ISFF222409IPS	36	8	10.375	24.58	135	LTL
		11	ISFF222411IPS	"	"	"	"	113	"
		17	ISFF222417IPS	"	"	"	"	76	"
		32.5	ISFF2224325IPS	"	"	"	"	41	"
26	26	17	ISFF222617IPS	39	14	16.625	36.88	142	LTL
		32.5	ISFF2226325IPS	"	"	"	"	77	"
28	28	11	ISFF222811IPS	42	14	16.75	37.65	249	LTL
		17	ISFF222817IPS	"	"	"	"	167	"
		32.5	ISFF2228325IPS	"	"	"	"	90	"
30	30	11	ISFF223011IPS	45	14	17	38.41	289	LTL
		17	ISFF223017IPS	"	"	"	"	194	"
		32.5	ISFF2230325IPS	"	"	"	"	105	"
32	32	11	ISFF223211IPS	48	14	17.125	39.18	333	LTL
		17	ISFF223217IPS	"	"	"	"	223	"
		32.5	ISFF2232325IPS	"	"	"	"	120	"
36	36	11	ISFF223611IPS	54	14	17.625	40.71	426	LTL
		17	ISFF223617IPS	"	"	"	"	289	"
		26	ISFF223626IPS	"	"	"	"	191	"
		32.5	ISFF2236325IPS	"	"	"	"	153	"
42	42	17	ISFF224217IPS	63	21	25.125	56.47	563	LTL
		21	ISFF224221IPS	"	"	"	"	462	"
		26	ISFF224226IPS	"	"	"	"	377	"
		32.5	ISFF2242325IPS	"	"	"	"	301	"
48	48	21	ISFF224821IPS	72	21	25.75	58.77	753	LTL
		26	ISFF224826IPS	"	"	"	"	617	"
		32.5	ISFF2248325IPS	"	"	"	"	494	"
54	54	26	ISFF225426IPS	81	21	26.375	61.07	652	LTL
		32.5	ISFF2254325IPS	"	"	"	"	522	"
63	63	26	ISFF226326IPS	85.5	21	27.3	64.5	912	LTL
		32.5	ISFF2263325IPS	"	"	"	"	745	"



IPS HDPE Fittings

Pressure Rating is based on miter angle, pipe DR (Wall thickness), and resin properties.

Ratings based on 3608 resin/11.25 angle:	
DR	Pressure Rating
7	219 psi
9	160 psi
11	128 psi
13.5	100 psi
15.5	82 psi
17	73 psi
21	57 psi
26	44 psi
32.5	34 psi

Ratings based on 4710 resin/11.25 angle:	
DR	Pressure Rating
7	274 psi
9	202 psi
11	161 psi
13.5	126 psi
15.5	103 psi
17	92 psi
21	72 psi
26	55 psi
32.5	42 psi

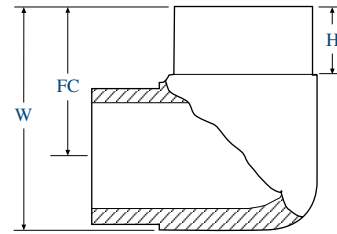
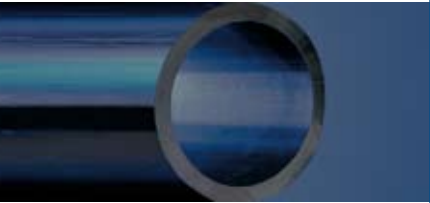
Note: Size/DR listings shown are commonly requested. Many DR options not listed are available. Please consult an ISCO representative for availability.

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IPS Fittings Molded 90° EI



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Pressure Rating of Molded Fittings are equal to pipe of same DR.

Molded Fittings from 3608 resin:	
DR	Pressure Rating
7	267 psi
9	200 psi
11	128 psi
13.5	128 psi
15.5	110 psi
17	100 psi
21	80 psi
26	64 psi
32.5	51 psi

Molded Fittings from 4710 resin:	
DR	Pressure Rating
7	336 psi
9	252 psi
11	202 psi
13.5	161 psi
15.5	139 psi
17	126 psi
21	101 psi
26	81 psi
32.5	64 psi

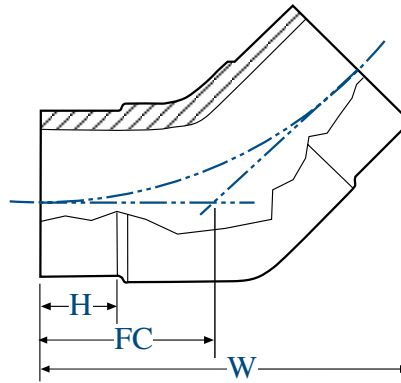
Note: Size/DR listings shown are commonly requested. Many DR options not listed are available. Please consult an ISCO representative for availability.

IPS Fittings Molded 90° EI								
Nominal Size (in)	Pipe OD (in)	DR	Part #	Dimensions			Weight (lbs)	Shipping Method
				H (in)	FC (in)	W (in)		
3/4	1.05	11	ISMF9007511IPS	2.05	2.68	3.2	0.05	FedEx
1	1.315	11	ISMF9001111IPS	2.17	2.91	3.57	0.1	FedEx
1-1/4	1.66	11	ISMF9012511IPS	2.44	3.35	4.18	0.15	FedEx
1-1/2	1.9	11	ISMF9015111IPS	2.64	3.7	4.65	0.22	FedEx
2	2.375	09	ISMF900209IPS	2.5	4.25	5.815	0.5	FedEx
		11	ISMF900211IPS	"	"	"	0.43	"
3	3.5	09	ISMF900309IPS	3	5.25	7.4	1.5	FedEx
		11	ISMF900311IPS	"	"	"	1.2	"
		17	ISMF900317IPS	"	"	"	0.8	"
4	4.5	09	ISMF900409IPS	3	5.875	8.25	3	FedEx
		11	ISMF900411IPS	"	"	"	2.4	"
		17	ISMF900417IPS	"	"	"	1.6	"
6	6.625	09	ISMF900609IPS	4.125	8	12.5	7	FedEx
		11	ISMF900611IPS	"	"	"	6.7	"
		17	ISMF900617IPS	"	"	"	4.8	"
8	8.625	11	ISMF900811IPS	6	12	16.5	15	FedEx
		17	ISMF900817IPS	"	"	"	10	"
10	10.75	11	ISMF901011IPS	6	13.25	18.875	27	FedEx
		17	ISMF901017IPS	"	"	"	18	"
12	12.75	11	ISMF901211IPS	7.5	15.88	22.555	41	FedEx
		17	ISMF901217IPS	"	"	"	27	"



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IPS Fittings Molded 45° Ell



IPS Fittings Molded 45° Ell								
Nominal Pipe Size (in)	Pipe OD (in)	DR	Part #	Dimensions			Weight (lbs)	Shipping Method
				H (in)	FC (in)	W (in)		
3/4	1.05	11	ISMF4507511IPS	2.05	2.28	4.29	0.05	FedEx
1	1.315	11	ISMF4501111IPS	2.17	2.48	4.69	0.08	FedEx
1-1/4	1.66	11	ISMF45012511IPS	2.44	2.83	5.31	0.14	FedEx
1-1/2	1.9	11	ISMF4501511IPS	2.64	3.07	5.91	0.21	FedEx
2	2.375	11	ISMF4502111IPS	2.64	3.23	6.38	0.35	FedEx
3	3.5	09	ISMF450309IPS	3.125	5.25	10.20	2.5	FedEx
		11	ISMF450311IPS	"	"	"	1.5	"
		17	ISMF450317IPS	"	"	"	1	"
4	4.5	09	ISMF450409IPS	3.125	5	10.13	3	FedEx
		11	ISMF450411IPS	"	"	"	2	"
		17	ISMF450417IPS	"	"	"	2	"
6	6.625	09	ISMF450609IPS	4.125	9	17.70	6	FedEx
		11	ISMF450611IPS	"	"	"	5.5	"
		17	ISMF450617IPS	"	"	"	5	"
8	8.625	11	ISMF450811IPS	6	11	21.8	12	FedEx
		17	ISMF450817IPS	"	"	"	11	"
10	10.75	11	ISMF451011IPS	6	13.25	26.42	22	FedEx
		17	ISMF451017IPS	"	"	"	20	"
12	12.75	11	ISMF451211IPS	7.5	15.75	31.39	32	FedEx
		17	ISMF451217IPS	"	"	"	29	"



IPS
HDPE
Fittings

Pressure Rating of Molded Fittings are equal to pipe of same DR.

Molded Fittings from 3608 resin:	
DR	Pressure Rating
7	267 psi
9	200 psi
11	128 psi
13.5	128 psi
15.5	110 psi
17	100 psi
21	80 psi
26	64 psi
32.5	51 psi

Molded Fittings from 4710 resin:	
DR	Pressure Rating
7	336 psi
9	252 psi
11	202 psi
13.5	161 psi
15.5	139 psi
17	126 psi
21	101 psi
26	81 psi
32.5	64 psi

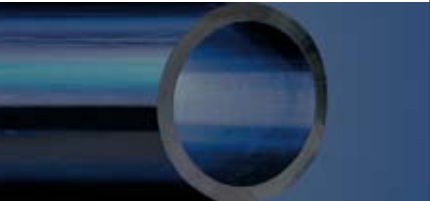
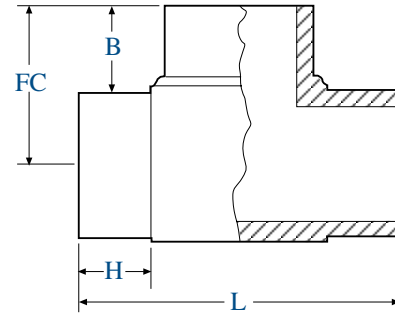
Note: Size/DR listings shown are commonly requested. Many DR options not listed are available. Please consult an ISCO representative for availability.

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IPS Fittings Molded Tees



IPS
HDPE
Fittings

Pressure Rating of Molded Fittings are equal to pipe of same DR.

Molded Fittings from 3608 resin:	
DR	Pressure Rating
7	267 psi
9	200 psi
11	128 psi
13.5	128 psi
15.5	110 psi
17	100 psi
21	80 psi
26	64 psi
32.5	51 psi

Molded Fittings from 4710 resin:	
DR	Pressure Rating
7	336 psi
9	252 psi
11	202 psi
13.5	161 psi
15.5	139 psi
17	126 psi
21	101 psi
26	81 psi
32.5	64 psi

Note: Size/DR listings shown are commonly requested. Many DR options not listed are available. Please consult an ISCO representative for availability.

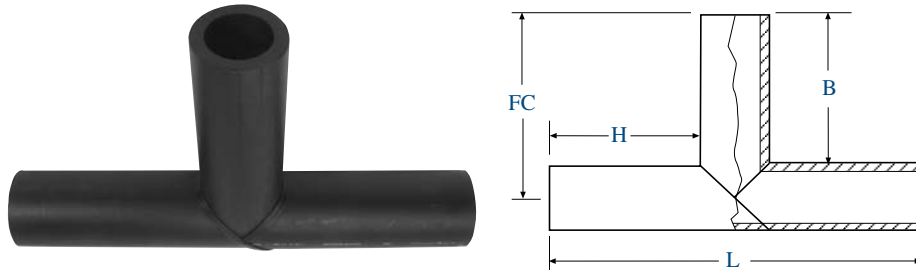
Nominal Pipe Size (in)	OD (in)	DR	Part #	Dimensions				Weight Shipping	
				L (in)	H (in)	FC (in)	B (in)	(lbs)	Method
3/4	1.05	11	ISMFTE07511IPS	5	1.77	2.5	1.98	0.1	FedEx
1	1.315	11	ISTETE01111IPS	5.67	1.77	2.83	2.17	0.17	FedEx
1-1/4	1.66	11	ISMFTE012511IPS	6.61	2.01	3.31	2.48	0.3	FedEx
1-1/2	1.9	11	ISMFTE01511IPS	7.99	2.52	4	3.05	0.47	FedEx
2	2.375	09	ISMFTE0209IPS	8.5	2.5	4.26	3.07	1	FedEx
		11	ISMFTE0211IPS	"	"	"	"	0.82	"
3	3.5	09	ISMFTE0309IPS	11.375	3	5.75	4	2.3	FedEx
		11	ISMFTE0311IPS	"	"	"	"	2.15	"
		17	ISMFTE0317IPS	"	"	"	"	1.45	"
4	4.5	09	ISMFTE0409IPS	12.25	3	6.25	4	4	FedEx
		11	ISMFTE0411IPS	"	"	"	"	3.8	"
		17	ISMFTE0417IPS	"	"	"	"	2.58	"
6	6.625	09	ISMFTE0609IPS	16.25	4	8.25	4.94	11	FedEx
		11	ISMFTE0611IPS	18	4.5	9	5.69	10	"
		17	ISMFTE0617IPS	"	"	"	"	7	"
8	8.625	11	ISMFTE0811IPS	23.75	5.85	11.9	7.59	25	FedEx
		17	ISMFTE0817IPS	"	"	"	"	17	"
10	10.75	11	ISMFTE1011IPS	27	6.15	13.5	8.13	43	FedEx
		17	ISMFTE1017IPS	"	"	"	"	29	"
12	12.75	11	ISMFTE1211IPS	31.6	7.5	15.9	9.53	67	FedEx
		17	ISMFTE1217IPS	"	"	"	"	46	"



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IPS Fittings Fabricated Tee - Three Segment



IPS Fittings Fabricated Tee - Three Segment									
Nominal Pipe Size(in)	Pipe OD(in)	DR	Part #	Dimensions				Weight (lbs)	Shipping Method
				L(in)	H(in)	FC(in)	B(in)		
8	8.625	07	ISFFTE0807IPS	48	19.69	24	19.69	68	FedEx
		09	ISFFTE0809IPS	"	"	"	"	57	"
		11	ISFFTE0811IPS	"	"	"	"	47	"
		17	ISFFTE0817IPS	"	"	"	"	43	"
10	10.75	07	ISFFTE1007IPS	48	18.63	24	18.63	104	FedEx
		09	ISFFTE1009IPS	"	"	"	"	87	"
		11	ISFFTE1011IPS	"	"	"	"	73	"
		17	ISFFTE1017IPS	"	"	"	"	49	"
12	12.75	07	ISFFTE1207IPS	48	17.63	24	17.63	144	FedEx
		09	ISFFTE1209IPS	"	"	"	"	120	"
		11	ISFFTE1211IPS	"	"	"	"	101	"
		17	ISFFTE1217IPS	"	"	"	"	68	"
14	14	07	ISFFTE1407IPS	48	17	24	17	171	LTL
		09	ISFFTE1409IPS	"	"	"	"	144	"
		11	ISFFTE1411IPS	"	"	"	"	120	"
		17	ISFFTE1417IPS	"	"	"	"	81	"
16	16	07	ISFFTE1607IPS	48	16	24	16	220	LTL
		09	ISFFTE1609IPS	"	"	"	"	185	"
		11	ISFFTE1611IPS	"	"	"	"	155	"
		17	ISFFTE1617IPS	"	"	"	"	104	"
18	18	09	ISFFTE1809IPS	48	15	24	15	230	LTL
		11	ISFFTE1811IPS	"	"	"	"	193	"
		17	ISFFTE1817IPS	"	"	"	"	129	"
20	20	09	ISFFTE2009IPS	48	14	24	14	279	LTL
		11	ISFFTE2011IPS	"	"	"	"	234	"
		17	ISFFTE2017IPS	"	"	"	"	157	"
22	22	09	ISFFTE2209IPS	48	13	24	13	332	LTL
		11	ISFFTE2211IPS	"	"	"	"	279	"
		17	ISFFTE2217IPS	"	"	"	"	187	"
24	24	09	ISFFTE2409IPS	48	12	24	12	389	LTL
		11	ISFFTE2411IPS	"	"	"	"	326	"
		17	ISFFTE2417IPS	"	"	"	"	219	"
26	26	11	ISFFTE2611IPS	54	14	27	14	577	LTL
		17	ISFFTE2617IPS	"	"	"	"	390	"
28	28	11	ISFFTE2811IPS	56	14	28	14	689	LTL
		17	ISFFTE2817IPS	"	"	"	"	457	"
30	30	11	ISFFTE3011IPS	58	14	29	14	816	LTL
		17	ISFFTE3017IPS	"	"	"	"	552	"
36	36	17	ISFFTE3617IPS	76	20	51	33	1128	LTL
42	42	17	ISFFTE4217IPS	82	20	54	33	1331	LTL
48	48	26	ISFFTE4826IPS	88	20	57	33	1413	LTL
54	54	26	ISFFTE5426IPS	94	20	60	33	2026	LTL



IPS
HDPE
Fittings

Pressure Rating of Fab Tee is based pipe DR (Wall thickness) and resin properties.

Tees from 3608 resin:	
DR	Pressure Rating
7	200 psi
9	150 psi
11	120 psi
13.5	83 psi
15.5	72 psi
17	65 psi
21	52 psi
26	42 psi
32.5	33 psi

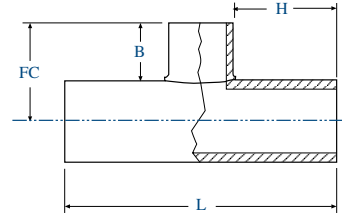
Tees from 4710 resin:	
DR	Pressure Rating
7	252 psi
9	189 psi
11	152 psi
13.5	105 psi
15.5	90 psi
17	82 psi
21	66 psi
26	53 psi
32.5	42 psi

Note: Size/DR listings shown are commonly requested. Many DR options not listed are available. Please consult an ISCO representative for availability.

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IPS Fittings Reducing Tee



IPS HDPE Fittings

Pressure Rating of Reducing Tees are equal to pipe of same DR.

Red. Tees from 3608 resin:	
DR	Pressure Rating
7	267 psi
9	200 psi
11	128 psi
13.5	128 psi
15.5	110 psi
17	100 psi
21	80 psi
26	64 psi
32.5	51 psi

Red Tees from 4710 resin:	
DR	Pressure Rating
7	336 psi
9	252 psi
11	202 psi
13.5	161 psi
15.5	139 psi
17	126 psi
21	101 psi
26	81 psi
32.5	64 psi

Note: Size/DR listings shown are commonly requested. Many DR options not listed are available. Please consult an ISCO representative for availability.

IPS Fittings Reducing Tee									
Nominal Size(in)	Pipe OD(in)	DR	Part #	L (in)	Dimensions			Weight (lbs)	Shipping Method
					H (in)	FC (in)	B (in)		
3 x 2	3.5 x 2.375	11	ISFFRT03X0211IP	16	6.125	7.25	5.5	5	FedEx
4 x 2	4.5 x 2.375	11	ISFFRT04X0211IP	16	6.125	7.75	5.5	6	FedEx
4 x3	4.5 x 3.5	11	ISFFRT04X0311IP	24	9.5	6.5	4.25	10	FedEx
6 x2	6.625 x 2.375	11	ISFFRT06X0211IP	16	6.125	8.75	5.4375	10	FedEx
6 x3	6.625 x 3.5	11	ISFFRT06X0311IP	24	9.5	7.5	4.1875	16	FedEx
6 x4	6.625 x 4.5	11	ISFFRT06X0411IP	24	9	9.25	5.9375	19	FedEx
8 x2	8.625 x 2.375	11	ISFFRT08X0211IP	16	6.125	9.75	5.4375	16	FedEx
8 x3	8.625 x 3.5	11	ISFFRT08X0311IP	24	9.5	8.625	4.3125	25	FedEx
8 x4	8.625 x 4.5	11	ISFFRT08X0411IP	24	9	10.25	5.9375	28	FedEx
8 x6	8.625 x 6.625	11	ISFFRT08X0611IP	28	9.8125	12.25	7.9375	38	FedEx
10 x 2	10.75 x 2.375	11	ISFFRT10X0211IP	16	6.125	10.875	5.5	23	FedEx
10 x3	10.75 x 3.5	11	ISFFRT10X0311IP	24	9.5	9.625	4.25	36	FedEx
10 x 4	10.75 x 4.5	11	ISFFRT10X0411IP	24	9	11.375	6	39	FedEx
10 x 6	10.75 x 6.625	11	ISFFRT10X0611IP	28	9.8125	13.375	8	51	FedEx
10 x 8	10.75 x 8.625	11	ISFFRT10X0811IP	30	9.875	13.625	8.25	60	FedEx
12 x 2	12.75 x 2.375	11	ISFFRT12X0211IP	16	6.125	11.875	5.5	32	FedEx
12 x 3	12.75 x 3.5	11	ISFFRT12X0311IP	24	9.5	10.625	4.25	48	FedEx
12 x 4	12.75 x 4.5	11	ISFFRT12X0411IP	24	9	12.375	6	51	FedEx
12 x 6	12.75 x 6.625	11	ISFFRT12X0611IP	28	9.8125	14.375	8	66	LTL
12 x 8	12.75 x 8.625	11	ISFFRT12X0811IP	30	9.875	14.625	8.25	75	LTL
12 x 10	12.75 x 10.75	11	ISFFRT12X1011IP	30	8.75	12.875	6.5	85	LTL
14 x 2	14 x 2.375	11	ISFFRT14X0211IP	16	6.125	12.5	5.5	38	FedEx
14 x 3	14 x 3.5	11	ISFFRT14X0311IP	24	9.5	11.25	4.25	57	FedEx
14 x 4	14 x 4.5	11	ISFFRT14X0411IP	24	9	13	6	60	FedEx
14 x 6	14 x 6.625	11	ISFFRT14X0611IP	28	9.813	15	8	76	LTL
14 x 8	14 x 8.625	11	ISFFRT14X0811IP	30	9.875	15.25	8.25	87	LTL
14 x 10	14 x 10.75	11	ISFFRT14X1011IP	30	8.75	13.50	6.5	97	LTL
16 x2	16 x 2.375	11	ISFFRT16X0211IP	16	6.125	13.50	5.5	49	FedEx
16 x 3	16 x 3.5	11	ISFFRT16X0311IP	24	9.5	12.25	4.25	74	FedEx
16 x 4	16 x 4.5	11	ISFFRT16X0411IP	24	9	14	6	77	FedEx
16 x 6	16 x 6.625	11	ISFFRT16X0611IP	28	9.813	16	8	95	LTL
16 x 8	16 x 8.625	11	ISFFRT16X0811IP	30	9.875	16.25	8.25	107	LTL
16 x 10	16 x 10.75	11	ISFFRT16X1011IP	30	8.75	14.5	6.5	117	LTL
16 x 12	16 x 12.75	11	ISFFRT16X1211IP	32	8.6	16.5	8.5	133	LTL
18 x 2	18 x 2.375	11	ISFFRT18X0211IP	16	6.125	14.5	5.5	61	FedEx
18 x 3	18 x 3.5	11	ISFFRT18X0311IP	24	9.5	13.25	4.25	92	FedEx
18 x 4	18 x 4.5	11	ISFFRT18X0411IP	24	9	15	6	95	FedEx
18 x 6	18 x 6.625	11	ISFFRT18X0611IP	28	9.813	17	8	117	LTL
18 x 8	18 x 8.625	11	ISFFRT18X0811IP	30	9.875	17.25	8.25	130	LTL
18 x 10	18 x 10.75	11	ISFFRT18X1011IP	30	8.75	15.5	6.5	140	LTL
18 x 12	18 x 12.75	11	ISFFRT18X1211IP	32	8.6	17.5	8.5	157	LTL
20 x 6	20 x 6.625	11	ISFFRT20X0611IP	28	9.81	15.125	5.125	121	LTL
20 x 8	20 x 8.625	11	ISFFRT20X0811IP	30	9.88	17	7	138	LTL

Sizes 18" x 12" and smaller are commonly stocked in DR 9. Other DRs are available upon request.

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ISCO HDPE Product Catalog
IPS Fittings Reducing Tee (continued)

IPS Fittings Reducing Tee									
Nominal Size(in)	Pipe OD(in)	DR	Part #	Dimension			Weight (lbs)	Shipping Method	
				L (in)	H (in)	FC (in)			
20 x 10	20 x 10.75	11	ISFFRT20X1011IP	30	8.75	16.5	6.5	148	LTL
20 x 12	20 x 12.75	11	ISFFRT20X1211IP	32	8.6	17.5	7.5	161	LTL
20 x 16	20 x 16	11	ISFFRT20X1611IP	36	8.5	25	15	191	LTL
22 x 6	22 x 6.625	11	ISFFRT22X0611IP	28	9.81	16.125	5.125	143	LTL
24 x 6	24 x 6.625	11	ISFFRT24X0611IP	28	9.81	17.125	5.125	167	LTL
24 x 8	24 x 8.625	11	ISFFRT24X0811IP	30	9.88	19	7	188	LTL
24 x 10	24 x 10.75	11	ISFFRT24X1011IP	30	8.75	18.5	6.5	198	LTL
24 x 12	24 x 12.75	11	ISFFRT24X1211IP	32	8.6	19.5	7.5	214	LTL
24 x 16	24 x 16	11	ISFFRT24X1611IP	36	8.5	27	15	251	LTL
30 x 6	30 x 6.625	17	ISFFRT30x0617IP	48	19.81	20.125	5.125	285	LTL
30 x 8	30 x 8.625	17	ISFFRT30x0817IP	48	18.88	22	7	295	LTL
30 x 10	30 x 10.75	17	ISFFRT30x1017IP	48	17.75	21.5	6.5	305	LTL
30 x 12	30 x 12.75	17	ISFFRT30x1217IP	48	16.60	22.5	7.5	315	LTL
30 x 16	30 x 16	17	ISFFRT30X1617IP	48	14.5	30	15	325	LTL
32 x 6	32 x 6.625	17	ISFFRT32X0617IP	48	19.813	21.125	5.125	325	LTL
32 x 12	32 x 12.75	17	ISFFRT32X1217IP	48	16.6	23.5	7.5	350	LTL
36x 6	36 x 6.625	17	ISFFRT36X0617IP	48	19.813	23.125	5.125	410	LTL
36 x 12	36 x 12.75	17	ISFFRT36X1217IP	48	16.6	25.5	7.5	440	LTL
42 x 4	42 x 4.5	17	ISFFRT42X0417IP	48	21	24.5	3.5	450	LTL
42 x 12	42 x 12.75	17	ISFFRT42X1217IP	48	16.6	28.5	7.5	465	LTL
42 x 16	42 x 16	17	ISFFRT42X1617IP	48	14.8	36	15	490	LTL
42 x 18	42 x 18	17	ISFFRT42X1817IP	48	14.5	36.5	15.5	500	LTL
48 x4	48 x 4.5	26	ISFFRT48X0426IP	48	21	27.5	3.5	475	LTL
48 x6	48 x 6.625	26	ISFFRT48X0626IP	48	19.813	29.125	5.125	485	LTL

Sizes 18" x 12" and smaller are commonly stocked in DR 9. Other DRs are available upon request.



**IPS
 HDPE
 Fittings**

Pressure Rating of Reducing Tees are equal to pipe of same DR.

Red. Tees from 3608 resin:	
DR	Pressure Rating
7	267 psi
9	200 psi
11	128 psi
13.5	128 psi
15.5	110 psi
17	100 psi
21	80 psi
26	64 psi
32.5	51 psi

Red. Tees from 4710 resin:	
DR	Pressure Rating
7	336 psi
9	252 psi
11	202 psi
13.5	161 psi
15.5	139 psi
17	126 psi
21	101 psi
26	81 psi
32.5	64 psi

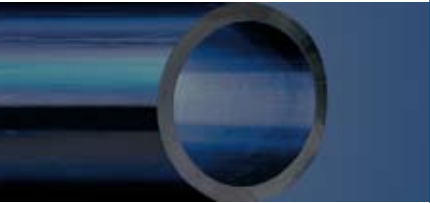
Note: Size/DR listings shown are commonly requested. Many DR options not listed are available. Please consult an ISCO representative for availability.

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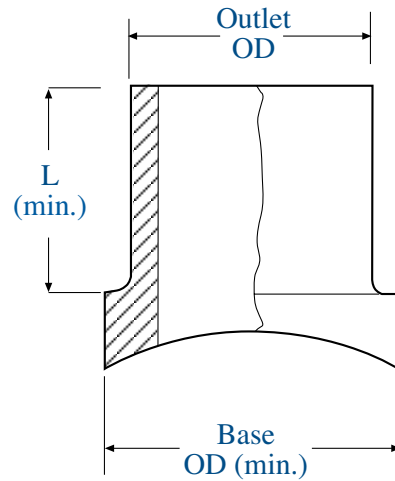
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IPS Branch Saddle



IPS
HDPE
Fittings



IPS Branch Saddle

Nominal Outlet Size(in)	Outlet OD(in)	DR	Part #	Dimensions		Weight (lbs)	Shipping Method
				L (in)	Base OD (in)		
2	2.375	11	Varies*	2.5	2.6	1	FedEx
3	3.5	11	Varies*	3.13	3.88	1	FedEx
4	4.5	11	Varies*	3.13	4.8	2	FedEx
6	6.625	11	Varies*	4.38	6.81	4	FedEx
8	8.625	11	Varies*	5.5	9	8	FedEx
10	10.75	11	Varies*	6	11.5	16	FedEx
12	12.75	11	Varies*	7.5	13.35	32	FedEx

* Any size(IPS/DIPS) main available, but must be larger than outlet size. Consideration must be given that heater plate and fusion unit are available for rent.

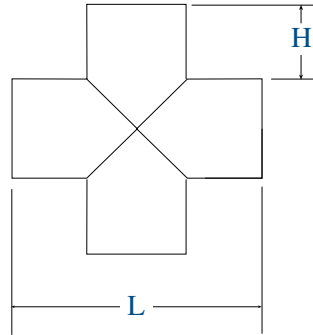
** Hole saws for field cutting coupons are available for purchase. See fusion equipment section for accessory tooling.

*** Pressure rating of saddles are equal to pipe DR of main. Other DR outlets may be available. Contact ISCO for availability.

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IPS Fittings Fabricated Cross



IPS Fittings Fabricated Cross							
Nominal Pipe Size (in)	DR	DR	Part #	Dimensions		Weight (lbs)	Shipping Method
				L (in)	H (in)		
2	2.375	11	ISFFCS0211IPS	8	2.5	1	FedEx
3	3.5	11	ISFFCS0311IPS	8	3	2	FedEx
4	4.5	11	ISFFCS0411IPS	11	3	5	FedEx
6	6.625	11	ISFFCS0611IPS	12	4	11	FedEx
		17	ISFFCS0617IPS	"	"	9	FedEx
8	8.625	11	ISFFCS0811IPS	26.5	6	30	FedEx
		17	ISFFCS0817IPS	"	"	20	"
10	10.75	11	ISFFCS1011IPS	31.75	7.5	50	FedEx
		17	ISFFCS1017IPS	"	"	35	"
12	12.75	07	ISFFCS1207IPS	30	8.625	103	LTL
		11	ISFFCS1211IPS	"	"	72	"
		17	ISFFCS1217IPS	"	"	49	"
14	14	07	ISFFCS1407IPS	33	9.5	137	LTL
		11	ISFFCS1411IPS	"	"	96	"
		17	ISFFCS1417IPS	"	"	65	"
16	16	07	ISFFCS1607IPS	36	10	193	LTL
		11	ISFFCS1611IPS	"	"	135	"
		17	ISFFCS1617IPS	"	"	91	"
18	18	09	ISFFCS1809IPS	40	11	226	LTL
		11	ISFFCS1811IPS	"	"	190	"
		17	ISFFCS1817IPS	"	"	127	"
20	20	09	ISFFCS2009IPS	52	16	378	LTL
		11	ISFFCS2011IPS	"	"	317	"
		17	ISFFCS2017IPS	"	"	213	"
22	22	09	ISFFCS2209IPS	52	15	447	LTL
		11	ISFFCS2211IPS	"	"	375	"
		17	ISFFCS2217IPS	"	"	251	"
24	24	09	ISFFCS2409IPS	54	15	545	LTL
		11	ISFFCS2411IPS	"	"	457	"
		17	ISFFCS2417IPS	"	"	307	"
28	28	11	ISFFCS2811IPS	58	15	651	LTL
		17	ISFFCS2817IPS	"	"	437	"
30	30	11	ISFFCS3011IPS	60	15	764	LTL
		17	ISFFCS3017IPS	"	"	513	"
32	32	11	ISFFCS3211IPS	62	15	889	LTL
		17	ISFFCS3217IPS	"	"	597	"
36	36	11	ISFFCS3611IPS	72	18	1321	LTL
		17	ISFFCS3617IPS	"	"	887	"



IPS
HDPE
Fittings

Pressure Rating of Fab Cross is based pipe DR (Wall thickness) and resin properties.

Crosses from 3608 resin:	
DR	Pressure Rating
7	107 psi
9	80 psi
11	64 psi
13.5	51 psi
15.5	44 psi
17	40 psi
21	32 psi
26	26 psi
32.5	20 psi

Crosses from 4710 resin:	
DR	Pressure Rating
7	134 psi
9	101 psi
11	81 psi
13.5	64 psi
15.5	56 psi
17	50 psi
21	40 psi
26	32 psi
32.5	26 psi

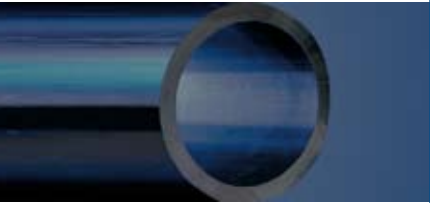
Note: Size/DR listings shown are commonly requested. Many DR options not listed are available. Please consult an ISCO representative for availability.

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IPS Fittings Fabricated 45° Lateral Wye - Three Segment



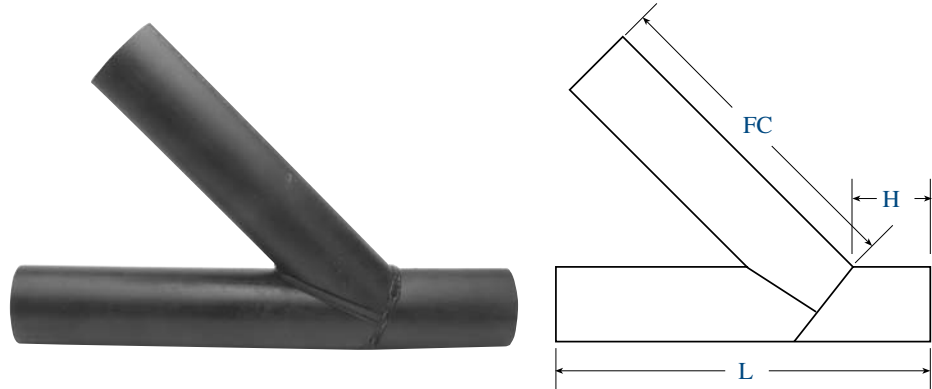
IPS
HDPE
Fittings

Pressure Rating of Fab Wye is based pipe DR (Wall thickness) and resin properties.

Wyes from 3608 resin:	
DR	Pressure Rating
7	89 psi
9	67 psi
11	53 psi
13.5	43 psi
15.5	37 psi
17	33 psi
21	27 psi
26	21 psi
32.5	17 psi

Wyes from 4710 resin:	
DR	Pressure Rating
7	112 psi
9	84 psi
11	67 psi
13.5	54 psi
15.5	46 psi
17	42 psi
21	34 psi
26	27 psi
32.5	21 psi

Note: Size/DR listings shown are commonly requested. Many DR options not listed are available. Please consult an ISCO representative for availability.

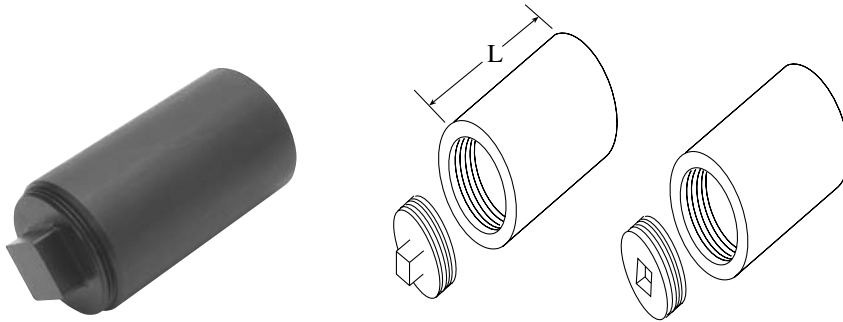


Nominal Size (in)	Pipe OD (in)	DR	Part #	Dimensions			Weight (lbs)	Shipping Method
				L (in)	H (in)	FC (in)		
2	2.375	07	ISFFWY0207IPS	25	5.8	17.5	3	FedEx
3	3.5	07	ISFFWY0307IPS	25	6.78	18.7	7	FedEx
		11	ISFFWY0311IPS	"	"	"	5	"
4	4.5	07	ISFFWY0407IPS	26.5	5.89	19.5	13	FedEx
		11	ISFFWY0411IPS	"	"	"	9	"
6	6.625	07	ISFFWY0607IPS	35.5	6.38	27.9	38	FedEx
		11	ISFFWY0611IPS	"	"	"	27	"
		17	ISFFWY0617IPS	"	"	"	18	"
8	8.625	07	ISFFWY0807IPS	58	12	44	102	FedEx
		11	ISFFWY0811IPS	"	"	"	72	"
		17	ISFFWY0817IPS	"	"	"	64	"
10	10.75	07	ISFFWY1007IPS	58	13	44	133	LTL
		11	ISFFWY1011IPS	"	"	"	111	"
		17	ISFFWY1017IPS	"	"	"	75	"
12	12.75	07	ISFFWY1207IPS	64	16	48	245	LTL
		11	ISFFWY1211IPS	"	"	"	172	"
		17	ISFFWY1217IPS	"	"	"	115	"
14	14	07	ISFFWY1407IPS	64	16	48	295	LTL
		11	ISFFWY1411IPS	"	"	"	207	"
		17	ISFFWY1417IPS	"	"	"	139	"
16	16	07	ISFFWY1607IPS	73	19	54	437	LTL
		11	ISFFWY1611IPS	"	"	"	307	"
		17	ISFFWY1617IPS	"	"	"	206	"
18	18	07	ISFFWY1807IPS	73	19	54	554	LTL
		11	ISFFWY1811IPS	"	"	"	388	"
		17	ISFFWY1817IPS	"	"	"	261	"
20	20	07	ISFFWY2007IPS	109	22	87	1055	LTL
		11	ISFFWY2011IPS	"	"	"	883	"
		17	ISFFWY2017IPS	"	"	"	601	"
22	22	11	ISFFWY2211IPS	109	22	87	895	LTL
		17	ISFFWY2217IPS	"	"	"	601	"
24	24	09	ISFFWY2409IPS	109	22	87	1272	LTL
		11	ISFFWY2411IPS	"	"	"	1066	"
		17	ISFFWY2417IPS	"	"	"	716	"



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IPS Fittings Clean Outs



IPS Fittings Clean Outs						
Nominal Size(in)	Pipe OD(in)	DR	Part #	Nominal Length L (in)	Weight (lbs)	Shipping Method
2	2.375	11	ISFFCO0211IPS	6	1	FedEx
3	3.5	11	ISFFCO0311IPS	6	1.5	FedEx
4	4.5	11	ISFFCO0411IPS	6	2	FedEx
6	6.625	11	ISFFCO0611IPS	6	3	FedEx
8	8.625	11	ISFFCO0811IPS	6	5	FedEx
10	10.75	11	ISFFCO1011IPS	6	8	FedEx
12	12.75	11	ISFFCO1211IPS	6	11	FedEx

**Fittings rated for gravity service only
 ***Male boss standard - female boss available upon request



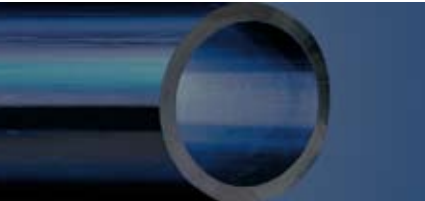
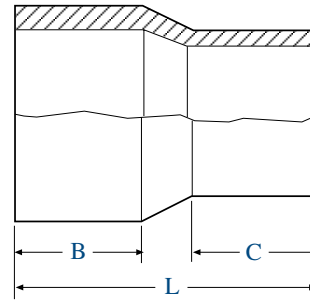
IPS
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IPS Fittings Concentric Reducer



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Fittings

Pressure Rating of Con. Reducers are equal to pipe of same DR.

Reducers from 3608 resin:	
DR	Pressure Rating
7	267 psi
9	200 psi
11	128 psi
13.5	128 psi
15.5	110 psi
17	100 psi
21	80 psi
26	64 psi
32.5	51 psi

Reducers from 4710 resin:	
DR	Pressure Rating
7	336 psi
9	252 psi
11	202 psi
13.5	161 psi
15.5	139 psi
17	126 psi
21	101 psi
26	81 psi
32.5	64 psi

Note: Size/DR listings shown are commonly requested. Many DR options not listed are available. Please consult an ISCO representative for availability.

Nominal Size(in)	Pipe OD(in)	DR	Part #	Dimensions			Weight (lbs)	Shipping Method
				L (in)	B (in)	C (in)		
1 x 3/4	1.315 x 1.05	09	ISMFCR01X3/49.3	4.5	1.5	2.5	0.1	FedEx
		11	ISMFCR01X3/411	"	"	"	"	"
1-1/4 x 1	1.66 x 1.315	11	ISMFCR0125X111	4.3	1.8	1.25	0.1	FedEx
1-1/2 x 3/4	1.9 x 1.05	09	ISMFCR015X3/49I	5.688	2.5	2.5	0.2	FedEx
		11	ISMFCR015X3/411	"	"	"	"	"
1-1/2 x 1	1.9 x 1.315	09	ISMFCR015X0193I	6	3.25	1.25	0.2	FedEx
		11	ISMFCR015X01111	"	"	"	"	"
1-1/2 x 1-1/4	1.9 x 1.66	11	ISFFCR01.5X1.25	4	1.88	2	0.2	FedEx
2 x 3/4	2.375 x 1.05	11	ISMFCR02X07511I	6.25	3.25	1.25	0.3	FedEx
2 x 1	2.375 x 1.315	11	ISMFCR02X0111IP	6.25	3.25	1.25	0.3	FedEx
2 x 1-1/4	2.375 x 1.66	11	ISMFCR02X012511	6.25	3.25	2.25	0.3	FedEx
2 x 1-1/2	2.375 x 1.9	09	ISMFCR02X01509I	7	3	2.5	0.3	FedEx
		11	ISMFCR02X01511I	"	"	"	"	"
3 x 2	3.5 x 2.375	09	ISMFCR03X0209IP	6.75	3	2.5	0.7	FedEx
		11	ISMFCR03X0211IP	"	"	"	"	"
4 x 2	4.5 x 2.375	11	ISMFCR04X0211IP	7.5	3	2.5	1.2	FedEx
		17	ISMFCR04X0217IP	"	"	"	0.8	"
4 x 3	4.5 x 3.5	09	ISMFCR04X0309IP	7.25	2.75	2.75	4	FedEx
		11	ISMFCR04X0311IP	"	"	"	3	"
		17	ISMFCR04X0317IP	"	"	"	2	"
5 x 4	5.563 x 4.5	11	ISMFCR05X0411IP	3.75	1.75	1.25	2.5	FedEx
6 x 3	6.625 x 3.5	11	ISMFCR06X0311IP	11.42	5.12	3.94	3	FedEx
		17	ISMFCR06X0317IP	"	"	"	2	"
6 x 4	6.625 x 4.5	09	ISMFCR06X0409IP	11	4.5	3.5	4	FedEx
		11	ISMFCR06X0411IP	"	"	"	3.5	"
		17	ISMFCR06X0417IP	"	"	"	2.4	"
6 x 5	6.625 x 5.563	11	ISMFCR06X0511IP	3.75	1.75	1.25	2.5	FedEx
8 x 6	8.625 x 6.625	09	ISFFCR08X0609IP	12	4.5	4	9	FedEx
		11	ISMFCR08X0611IP	"	"	"	7.3	"
		17	ISMFCR08X0617IP	"	"	"	5	"
10 x 8	10.75 x 8.625	09	ISFFCR10X0809IP	16	6	6	16	FedEx
		11	ISFFCR10X0811IP	"	"	"	13	"
		17	ISFFCR10X0817IP	"	"	"	9	"
12 x 8	12.75 x 8.625	11	ISFFCR12X0811IP	16	6	6	19	FedEx
		17	ISFFCR12X0817IP	"	"	"	13	"
12 x 10	12.75 x 10.75	09	ISFFCR12X1009IP	16	6	6	25	FedEx
		11	ISFFCR12X1011IP	"	"	"	21	"
		17	ISFFCR12X1017IP	"	"	"	14	"
14 x 12	14.0 x 12.75	09	ISFFCR14X1209IP	18	7	7	34	FedEx
		11	ISFFCR14X1211IP	"	"	"	28	"
		17	ISFFCR14X1217IP	"	"	"	19	"

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IPS Fittings Concentric Reducer (continued)

IPS Fittings Concentric Reducer								
Nominal Size(in)	Pipe OD(in)	DR	Part#	Dimensions			Weight (lbs)	Shipping Method
				L (in)	B (in)	C (in)		
16 x 14	16.0 x 14.0	09	ISFFCR16X1409IP	18	7	7	43	FedEx
		11	ISFFCR16X1411IP	"	"	"	36	"
		17	ISFFCR16X1417IP	"	"	"	24	"
18 x 12	18.0 x 12.7	11	ISFFCR18X1211IP	19	8	8	40	FedEx
		17	ISFFCR18X1217IP	"	"	"	27	"
18 x 16	18.0 x 16.0	09	ISFFCR18X1609IP	18	7	7	56	FedEx
		11	ISFFCR18X1611IP	"	"	"	47	"
		17	ISFFCR18X1617IP	"	"	"	31	"
20 x 18	20.0 x 18.0	11	ISFFCR20X1811IP	18	7	7	56	FedEx
		17	ISFFCR20X1817IP	"	"	"	38	"
22 x 20	22.0 x 20.0	11	ISFFCR22X2011IP	20	8	8	69	FedEx
		17	ISFFCR22X2017IP	"	"	"	46	"
24 x 18	24.0 x 18.0	11	ISFFCR24X1811IP	19	8	8	75	FedEx
		17	ISFFCR24X1817IP	"	"	"	50	"
24 x 22	24.0 x 22.0	11	ISFFCR24X2211IP	22	9	9	84	FedEx
		17	ISFFCR24X2217IP	"	"	"	56	"
30 x 24	30.0 x 24.0	11	ISFFCR30X2411IP	27	12	12	175	LTL
		17	ISFFCR30X2417IP	"	"	"	120	"
36 x 30	36.0 x 30.0	11	ISFFCR36X3011IP	27	12	12	260	LTL
		17	ISFFCR36X3017IP	"	"	"	175	"
42 x 36	42.0 x 36.0	17	ISFFCR42X3617IP	27	12	12	245	LTL
		26	ISFFCR42X3626IP	"	"	"	163	"
48 x 42	48.0 x 42.0	17	ISFFCR48X4217IP	27	12	12	323	LTL
		26	ISFFCR48X4226IP	"	"	"	215	"
54 x 48	54.0 x 48.0	17	ISFFCR54X4817IP	27	12	12	414	LTL
		26	ISFFCR54X4826IP	"	"	"	277	"



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Fittings

Pressure Rating of Con. Reducers are equal to pipe of same DR.

Reducers from 3608 resin:	
DR	Pressure Rating
7	267 psi
9	200 psi
11	128 psi
13.5	128 psi
15.5	110 psi
17	100 psi
21	80 psi
26	64 psi
32.5	51 psi

Reducers from 4710 resin:	
DR	Pressure Rating
7	336 psi
9	252 psi
11	202 psi
13.5	161 psi
15.5	139 psi
17	126 psi
21	101 psi
26	81 psi
32.5	64 psi

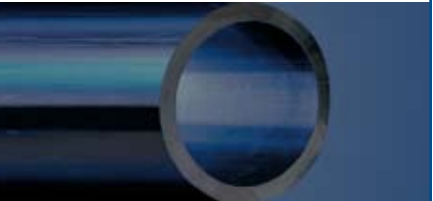
Note: Size/DR listings shown are commonly requested. Many DR options not listed are available. Please consult an ISCO representative for availability.

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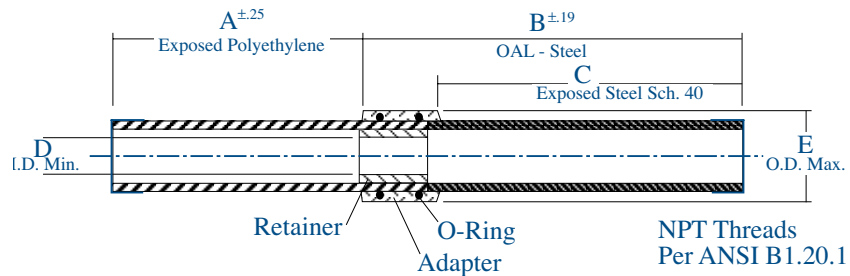
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IPS Transition Fittings Threaded End



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Fittings



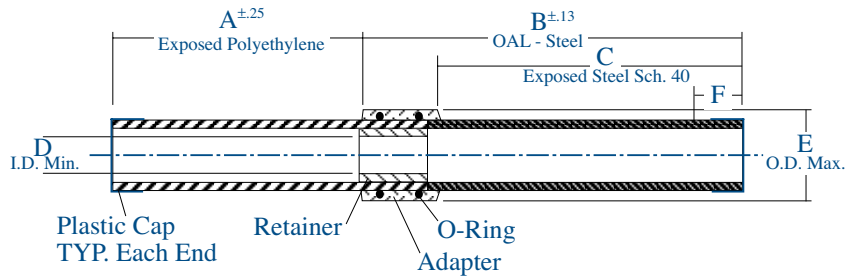
Nominal Size Steel x Plastic inches	Dimension A Exposed Plastic inches	Dimension B OAL Steel inches	Dimension C Exposed Steel inches	Dimension D Retainer ID inches	Dimension E Adapter OD inches
3/4 x 1/2 CTS Wall .090	12.14	5.11	4.00	0.324	1.390
3/4 x 1/2 IPS DR 9.3	11.81	5.31	4.00	0.516	1.390
3/4 x 3/4 IPS DR 11	11.81	5.31	3.81	0.630	1.453
1 x 1 IPS DR 11	11.90	5.52	3.81	0.817	1.703
1 1/4 x 1 1/4 IPS DR 10 or 11	11.94	5.88	3.88	1.056	2.070
1 1/2 x 1 1/2 IPS DR 11	12.03	6.19	3.88	1.322	2.317
2 x 2 IPS DR 11	12.16	6.22	3.88	1.625	2.700
3 x 3 IPS DR 11 or 11.5	11.97	7.03	3.88	2.360	4.08
4 x 4 IPS DR 11 or 11.5	12.06	7.06	3.88	2.955	4.95
6 x 6 IPS DR 11 or 11.5	17.40	12.09	5.88	4.985	7.330
8 x 8 IPS DR 11 or 11.5	24.44	13.31	5.75	6.482	9.590
10 x 10 IPS DR 11 or 11.5	22.50	15.28	5.75	7.972	11.595
12 x 12 IPS DR 11 or 11.5	20.44	17.31	5.75	9.716	14.100



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IPS Transition Fittings Weld End



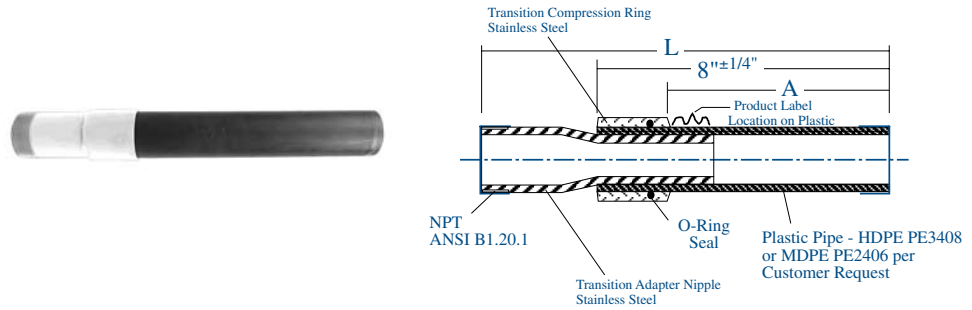
Nominal Size Steel x Plastic inches	Dimension A Exposed Plastic inches	Dimension B OAL Steel inches	Dimension C Exposed Steel inches	Dimension D Retainer ID inches	Dimension E Adapter OD inches	Dimension F Block Back inches
3/4 x 1/2 CTS (Wall .090)	12.14	12.67	11.56	0.324	1.890	2
3/4 x 1/2 IPS (DR 9.3)	11.81	12.88	11.56	0.516	1.390	2
3/4 x 3/4 IPS (DR 11)	11.81	12.88	11.38	0.630	1.453	2
1 x 1 IPS (DR 11)	11.90	13.16	11.38	0.817	1.703	2
1 1/4 x 1 IPS (DR 10 or 11)	11.94	13.44	11.44	1.056	2.070	2
1 1/2 x 1 1/2 IPS (DR 10 or 11)	12.03	13.66	11.44	1.322	2.317	2
2 x 2 IPS (DR 11)	12.16	13.78	11.44	1.625	2.700	2
3 x 3 IPS (DR 11 or 11.5)	11.97	14.84	11.69	2.360	4.080	2
4 x 4 IPS (DR 11 or 11.5)	12.06	14.88	11.69	2.955	4.950	2
6 x 6 IPS (DR 11 or 11.5)	17.40	17.90	11.69	4.985	7.330	2
8 x 8 IPS (DR 11 or 11.5)	24.44	22.88	15.31	6.482	9.590	2
10 x 10 IPS (DR 11 or 11.5)	22.50	27.09	17.56	7.972	11.595	4
12 x 12 IPS (DR 11 or 11.5)	20.44	27.88	16.31	9.716	14.100	4

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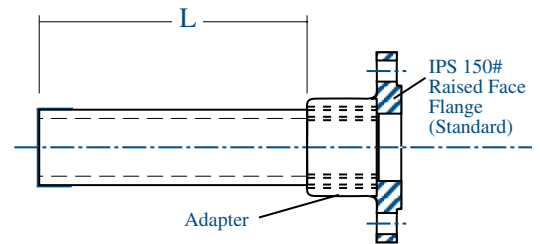
IPS Stainless Steel Threaded Transition Fittings



Nominal Size inches Steel x Plastic	Dimension A Exposed Plastic inches	Dimension L OAL inches
3/4" x 3/4" IPS	6.26	10.26
1" x 1" IPS	6.26	10.26
1-1/4" x 1-1/4" IPS	6.11	10.11
1-1/2" x 1-1/2" IPS	5.17	10.67
2" x 2" IPS	5.38	10.88

Transition Fittings with Flange

Nominal Size inches	Dimension L Expanded Plastic inches
2 IPS (DR 7 or 11)	12.00
3 IPS (DR 7 or 11)	12.00
4 IPS (DR 7 or 11)	12.00
6 IPS (DR 7 or 11)	17.50
8 IPS (DR 7 or 11)	24.50
10 IPS (DR 7 or 11)	22.50
12 IPS (DR 7 or 11)	20.50

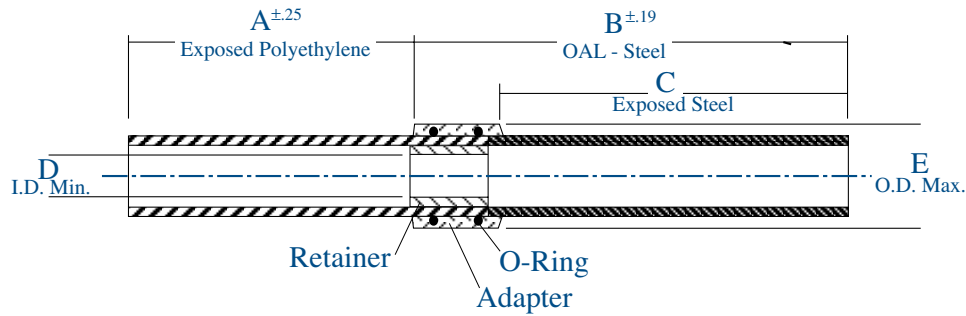


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IPS Transition Fittings Victaulic



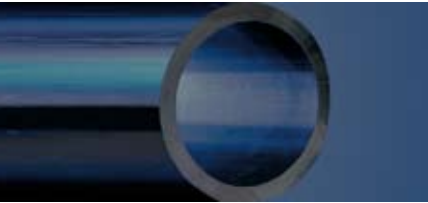
Nominal Size Steel x Plastic inches	Dimension A Exposed Plastic inches	Dimension B OAL Steel inches	Dimension C Exposed Steel inches	Dimension D Retainer ID inches	Dimension E Adapter OD inches
2 x 2 IPS (DR 11)	12.00	6.22	3.88	1.625	2.70
3 x 3 IPS (DR 11 or 11.5)	12.00	7.03	3.88	2.360	4.080
4 x 4 IPS (DR 11 or 11.5)	12.00	7.06	3.88	2.955	4.950
6 x 6 IPS (DR 11 or 11.5)	18.00	12.09	5.88	4.985	7.330
8 x 8 IPS (DR 11 or 11.5)	24.50	13.31	5.75	6.482	9.590
10 x 10 IPS 11 or 11.5)	24.75	15.28	5.75	7.972	11.595

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IPS Fittings MJ Adapter Kit (Mechanical Joint Adapter)

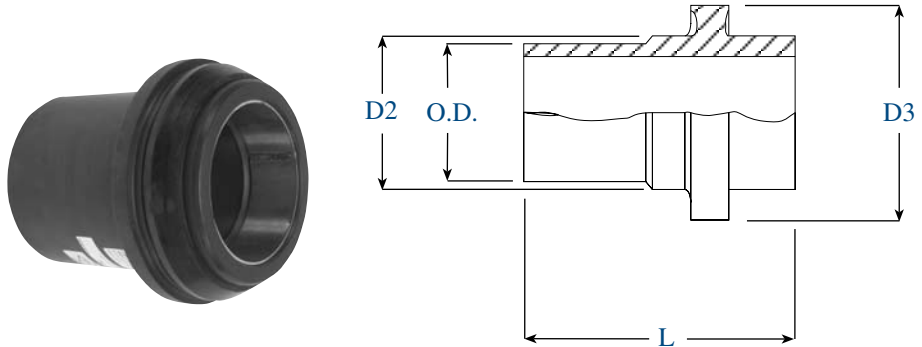


IPS
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Pressure Rating of MJ Adapter are equal to pipe of same DR.

MJ Adapter from 3608 resin:	
DR	Pressure Rating
7	267 psi
9	200 psi
11	128 psi
13.5	128 psi
15.5	110 psi
17	100 psi
21	80 psi
26	64 psi
32.5	51 psi
MJ Adapter from 4710 resin:	
DR	Pressure Rating
7	336 psi
9	252 psi
11	202 psi
13.5	161 psi
15.5	139 psi
17	126 psi
21	101 psi
26	81 psi
32.5	64 psi

Note: Size/DR listings shown are commonly requested. Many DR options not listed are available. Please consult an ISCO representative for availability.



The MJ Adapter Kit consist of: HDPE MJ Adapter with metal insert, Metal Gland, Gasket, and attachment Bolts and Nuts.



IPS Fittings MJ Adapter (Mechanical Joint Adapter)

Nominal Size (in)	Pipe OD (in)	DR	Part #	Dimensions			Weight (lbs)	Shipping Method
				L (in)	D2 (in)	D3 (in)		
2	2.375	9	ISMFMJ0209IPS	8	2.375	3.5	10	FedEx
		11	ISMFMJ0211IPS	"	"	"	9	"
3	3.5	9	ISMFMJ0309IPS	8	3.96	5.37	11	FedEx
		11	ISMFMJ0311IPS	"	"	"	10	"
4	4.5	9	ISMFMJ0409IPS	8	4.8	6.625	13	FedEx
		11	ISMFMJ0411IPS	"	"	"	12	"
6	6.625	9	ISMFMJ0609IPS	9	6.9	8.625	23	FedEx
		11	ISMFMJ0611IPS	"	"	"	18	"
8	8.625	9	ISMFMJ0809IPS	11.5	9.05	10.75	36	FedEx
		11	ISMFMJ0811IPS	"	"	"	35	"
10	10.75	9	ISMFMJ1009IPS	11.5	11.1	13.2	48	FedEx
		11	ISMFMJ1011IPS	"	"	"	45	"
12	12.75	9	ISMFMJ1209IPS	11.5	13.2	15.38	62	FedEx
		11	ISMFMJ1211IPS	"	"	"	60	"
14	14	9	ISMFMJ1409IPS	12.5	15.3	17.5	87	FedEx
		11	ISMFMJ1411IPS	"	"	"	84	"
16	16	9	ISMFMJ1609IPS	12.5	17.4	20	120	FedEx
		11	ISMFMJ1611IPS	"	"	"	115	"
18	18	9	ISMFMJ1809IPS	12.5	19.5	22	132	LTL
		11	ISMFMJ1811IPS	"	"	"	125	"
20	20	11	ISMFMJ2011IPS	14	21.6	24	165	LTL
24	24	11	ISMFMJ2411IPS	16	25.8	28	225	LTL

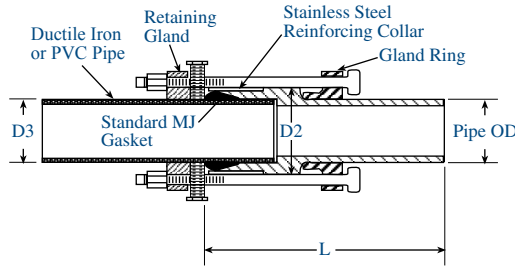
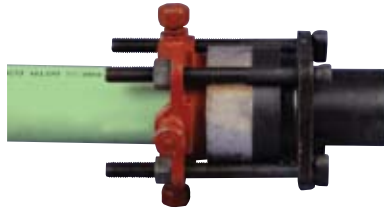
* ALL WEIGHTS INCLUDE GLAND PACKS

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IPS Bell MJ Adapter with Kit



Kit Contains:

- HDPE Bell MJ Fitting with stainless, reinforced support ring
 - Ductile iron, C110, heavy body gland ring
 - Gasket
 - Special Extra Long T-bolts
 - Mechanical Joint Restraint for PVC or Ductile Iron pipe
- Specify pipe material at time of order.



For connecting to PVC Pipe

IPS Bell MJ Adapter with Kit for PVC Pipe								
Nominal Pipe Size(in)	DR	OD(in)	Part #	Dimensions			Weight (lbs)	Shipping Method
				L (in)	D2 (in)	D3 (in)		
2	2.38	11	ISMFMJ02IPSBELL	8	3.5	2.61	15	FedEx
3	3.5	11	ISMFMJ03IPSBELL	8	5.37	3.97	20	FedEx
4	4.5	11	ISMFMJ04IPSBELL	8	6.63	4.81	25	FedEx
6	6.63	11	ISMFMJ06IPSBELL	10	8.63	6.92	35	FedEx
8	8.63	11	ISMFMJ08IPSBELL	11	10.75	9.05	55	FedEx
10	10.75	11	ISMFMJ10IPSBELL	11	12.75	11.13	70	FedEx
12	12.75	11	ISMFMJ12IPSBELL	13	15.35	13.24	95	FedEx

* ALL WEIGHTS INCLUDE GLAND PACKS AND MJ RESTRAINT

For connecting to Ductile Iron Pipe

IPS Bell MJ Adapter with Kit for DI Pipe								
Nominal Pipe Size(in)	DR	OD(in)	Part #	Dimensions			Weight (lbs)	Shipping Method
				L (in)	D2 (in)	D3 (in)		
2	2.38	11	ISMFMJ02IPSDUCT	8	3.5	2.61	15	FedEx
3	3.5	11	ISMFMJ03IPSDUCT	8	5.37	3.97	20	FedEx
4	4.5	11	ISMFMJ04IPSDUCT	8	6.63	4.81	25	FedEx
6	6.63	11	ISMFMJ06IPSDUCT	10	8.63	6.92	35	FedEx
8	8.63	11	ISMFMJ08IPSDUCT	11	10.75	9.05	55	FedEx
10	10.75	11	ISMFMJ10IPSDUCT	11	12.75	11.13	70	FedEx
12	12.75	11	ISMFMJ12IPSDUCT	13	15.35	13.24	95	FedEx

* ALL WEIGHTS INCLUDE GLAND PACKS AND MJ RESTRAINT

IPS HDPE Fittings

Pressure Rating of Bell MJ are equal to pipe of same DR.

Bell MJ from 3608 resin:	
DR	Pressure Rating
7	267 psi
9	200 psi
11	128 psi
13.5	128 psi
15.5	110 psi
17	100 psi
21	80 psi
26	64 psi
32.5	51 psi

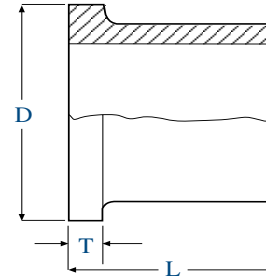
Bell MJ from 4710 resin: DR	
DR	Pressure Rating
7	336 psi
9	252 psi
11	202 psi
13.5	161 psi
15.5	139 psi
17	126 psi
21	101 psi
26	81 psi
32.5	64 psi

Note: Size/DR listings shown are commonly requested. Many DR options not listed are available. Please consult an ISCO representative for availability.

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IPS Fittings Flange Adapter



IPS
HDPE
Fittings

Pressure Rating of Flanges are equal to pipe of same DR.

Flanges from 3608 resin:	
DR	Pressure Rating
7	267 psi
9	200 psi
11	128 psi
13.5	128 psi
15.5	110 psi
17	100 psi
21	80 psi
26	64 psi
32.5	51 psi

Flanges from 4710 resin:	
DR	Pressure Rating
7	336 psi
9	252 psi
11	202 psi
13.5	161 psi
15.5	139 psi
17	126 psi
21	101 psi
26	81 psi
32.5	64 psi

Note: Size/DR listings shown are commonly requested. Many DR options not listed are available. Please consult an ISCO representative for availability.

Nominal Size	Pipe OD (in)	DR	D (in)	Dimensions T(in)	L (in)	Weight (lbs)	Shipping Method
3/4	1.05	11	2	0.2	4	0.1	FedEx
1	1.315	11	2.375	0.21 - 0.24	4	0.1	FedEx
1-1/4	1.66	11	2.75	0.25	4 - 6	0.2	FedEx
1-1/2	1.9	11	3.125	0.29 - 0.3	4 - 6	0.2	FedEx
2	2.375	7	3.75 - 4.0	0.39 - 0.44	5.5 - 6	1	FedEx
		9	"	0.39 - 0.44	5.5 - 6	1	"
		11,17	"	0.3 - 0.55	5.5 - 6.125	1	"
3	3.5	7,9	4.625 - 5	0.6 - 0.63	6	2	FedEx
		11,17	"	0.4 - 0.67	6 - 6.125	2	"
4	4.5	7	6.0 - 6.625	0.54 - 0.8	6	3	FedEx
		9	"	0.54 - 0.8	6	3	"
		11,17,21	"	0.5 - 0.8	6 - 7.125	3	"
6	6.625	7	8.125 - 8.625	1.1 - 1.14	8 - 8.125	8	FedEx
		9	"	1.1 - 1.14	8 - 8.125	8	"
		11,17,21	"	0.7 - 1.02	8 - 8.07	4.07 - 7	"
		26, 32.5	"	1	8	7	"
8	8.625	7	10.6 - 10.75	1.4 - 1.5	8.625 - 9	11	FedEx
		9	"	1.13 - 1.47	8.625 - 9	10.0 - 11	"
		11	"	0.8 - 1.26	9.02 - 11	7.0 - 10	"
		17	"	0.9 - 1.02	9.02 - 11	5.0 - 10	"
		21,26, 32.5	"	0.9 - 1	11	5.0 - 10	"
10	10.75	7	12.75 - 13	1.28 - 2	8.75 - 12	19	FedEx
		9	"	1.28 - 2	8.75 - 12	19	"
		11	"	1.1 - 1.38	9.02 - 12	18	"
		17	"	0.9 - 1.28	9.02 - 12	18	"
		21,26, 32.5	"	1.1 - 1.28	11.0 - 12	18	"
12	12.75	7	15 - 15.75	1.54 - 2.3	9.125 - 12	25	FedEx
		9	"	1.54 - 2.3	9.125 - 12	25	"
		11	"	1.3 - 1.54	10.79 - 12	24	"
		17	"	1 - 1.54	10.79 - 12	24	"
		21,26, 32.5	"	1.3 - 1.5	11.0 - 12	24	"
14	14.00	7	17.0 - 17.5	1.5 - 2.35	12	41.8	FedEx
		9	"	1.5 - 2.35	12	35.9	"
		11	"	1.5 - 1.7	11.0 - 12	40	"
		17	"	1.1 - 1.6	11.0 - 12	40	"
		21,26, 32.5	"	1.5 - 1.6	11 - 11.5	40	"
16	16.00	7	19.5 - 20	1.75 - 2.69	12	56.2	FedEx
		9	"	1.75 - 2.69	12	48.5	"
		11	"	1.7 - 1.9	11.5 - 12	60	"
		17	"	1.2 - 1.8	11.5 - 12	60	"
		21,26, 32.5	"	1.7 - 1.8	11.5 - 12	60	"



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IPS Fittings Flange Adapter (continued)

IPS Fittings Flange Adapter (continued)							
Nominal Size(in)	Pipe OD(in)	DR	Dimensions			Weight (lbs)	Shipping Method
			D(in)	T (in)	L (in)		
18	18.00	7	20.13 - 21.38	1.88, 3.02	12	64.2	FedEx
		9	"	1.88, 3.02	12	59	"
		11	"	1.88 - 2.1	11.5 - 12	64	"
		17	"	1.4 - 2	11.5 - 12	64	"
		21,26, 32.5	"	1.9 - 2	11.5 - 12	64	"
20	20.00	7	23.25 - 23.5	3.35	12	70	FedEx
		9	"	2.27, 3.35	"	67	"
		11	"	2.15 - 2.5	"	66	"
		17	"	1.5 - 2.5	"	66	"
		32.5	"	2.5	"	66	"
22	22.00	7	25.25 - 25.6	3.68	12	85	FedEx
		9	"	3.68	"	85	"
		11	"	2.3 - 2.5	"	68	"
		17	"	1.6 - 2.5	"	68	"
		32.5	"	2.5	"	68	"
24	24.00	7	27.69 - 28	4.07	12.0 - 14	83	FedEx
		9	"	2.82 - 4.07	12.0 - 14	79	"
		11	"	2.5 - 2.9	12.0 - 14	79	"
		17	"	1.8 - 2.7	12.0 - 14	79	"
		32.5	"	2.7	14	79	"
26	26.00	7	29.75 - 30	3.4 - 4.10	14	125	LTL
		9	"	3.4 - 4.10	"	125	"
		11	"	2.7 - 2.95	"	120	"
		17	"	1.91 - 2.79	"	87	"
		32.5	"	1.91 - 2.79	"	87	"
28	28.00	9	32 - 32.3	3.65 - 4.5	14	95	LTL
		11	"	3.18 - 4.5	"	129	"
		17 - 32.5	"	2.06 - 3	"	95	"
30	30.00	9	34 - 34.3	3.91 - 4.8	14	108	LTL
		11	"	3.21 - 4.8	"	134	"
		17 - 32.5	"	2.21 - 3.21	"	108	"
32	32.00	11	36.125 - 36.7	3.3 - 3.42	14	124	LTL
		17 - 32.5	"	2.35 - 3.42	"	124	"
34	34.00	11	38.125 - 38.6	3.5 - 3.63	14	150	LTL
		17 - 32.5	"	2.5 - 3.63	"	150	"
36	36.00	11	40.5 - 40.8	3.7 - 3.84	14	159	LTL
		17 - 32.5	"	2.65 - 3.84	"	159	"
42	42.00	17	47.125 - 47.5	3.1 - 3.73	21	306	LTL
		21 - 32.5	"	2.6 - 3.73	"	238	"
48	48.00	17	53.5 - 54	3.32 - 4.27	21, 22	405	LTL
		26 - 32.5	"	2.6 - 3.5	"	316	"
54	54.00	21	59.5 - 60	3.3 - 3.8	21	370	LTL
		26 - 32.5	"	2.6 - 3.8	"	370	"
63	63.208	21 - 32.5	66.79	3.54 - 4.3	14.134 - 21	425	LTL



IPS HDPE Fittings

Pressure Rating of Flanges are equal to pipe of same DR.

Flanges from 3608 resin:	
DR	Pressure Rating
7	267 psi
9	200 psi
11	128 psi
13.5	128 psi
15.5	110 psi
17	100 psi
21	80 psi
26	64 psi
32.5	51 psi

Flanges from 4710 resin:	
DR	Pressure Rating
7	336 psi
9	252 psi
11	202 psi
13.5	161 psi
15.5	139 psi
17	126 psi
21	101 psi
26	81 psi
32.5	64 psi

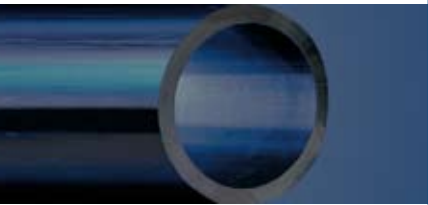
Note: Size/DR listings shown are commonly requested. Many DR options not listed are available. Please consult an ISCO representative for availability.

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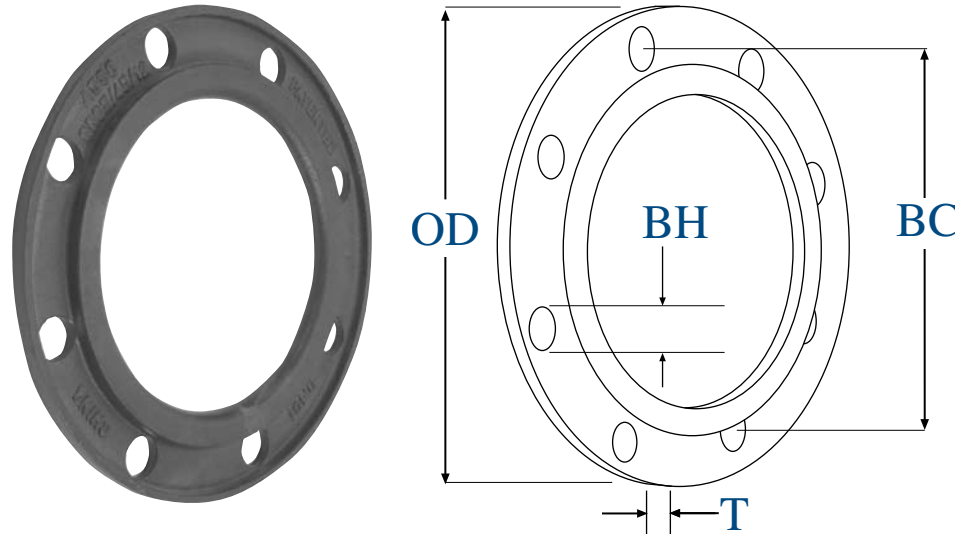
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IPS Fittings Back Up Rings (For use with the Flange Adapter)



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IPS Fittings Back Up Rings (For use with the Flange Adapter)

Nominal Pipe Size(in)	Pipe OD(in)	Material	Dimensions					Pressure Rating	Weight (lbs)	Shipping Method
			OD(in)	T(in)	Bolts(#)	BH(in)	BC(in)			
3/4	1.05	Ductile Iron	3.875	0.5 - 0.53	4	0.625	2.75	267	1	FedEx
1	1.315	Ductile Iron	4.25	0.53 - 0.56	4	0.625	3.125	267	1	FedEx
		Stainless Steel	"	0.56	"	"	"	267	2	"
1 1/4	1.66	Ductile Iron	4.625	0.63	4	0.625	3.5	267	2	FedEx
1 1/2	1.9	Ductile Iron	5	0.69	4	0.625	3.875	267	2	FedEx
		Stainless Steel	"	0.69	"	"	"	267	2	"
2	2.375	Ductile Iron	6	0.5, 0.75	4	0.75	4.75	160, 267	1.5, 3	FedEx
		PP Coated DI	6.5	0.71	"	"	"	128, 275	1.8	"
		Stainless Steel	6	0.4, 0.75	"	"	"	160, 267	2, 2.6	"
3	3.5	Ductile Iron	7.5	0.53, 0.94	4	0.75	6	160, 267	2.5, 4.5	FedEx
		PP Coated DI	7.8	0.71, 0.73	"	"	"	128, 275	2.4	"
		Stainless Steel	7.5	0.4, 0.94	"	"	"	128, 267	3, 5"	"
4	4.5	Ductile Iron	9	0.55, 0.94	8	0.75	7.5	160, 267	3.5, 5.5	FedEx
		PP Coated DI	9.21	0.71, 0.98	"	"	"	128, 275	2.5, 4.2	"
		Stainless Steel	9	0.5 - 0.94	"	"	"	128, 267	5, 6"	"
6	6.625	Ductile Iron	11	0.63, 1	8	0.875	9.5	160, 267	4.5, 7.5	FedEx
		PP Coated DI	11.57	0.79, 1.18	"	"	"	128, 275	4.0, 7.1	"
		Stainless Steel	11	0.6, 1	"	"	"	128, 267	6, 9"	"
8	8.625	Ductile Iron	13.5	0.85, 1.125	8	0.875	11.75	160, 267	8, 12	FedEx
		PP Coated DI	13.86	1.1, 1.34	"	"	"	128, 275	7.5, 11.6	"
		Stainless Steel	13.5	0.7 - 1.13	"	"	"	128, 267	9, 13	"
10	10.75	Ductile Iron	16	0.98, 1.19	12	1	14.25	160, 267	12, 16	FedEx
		PP Coated DI	16.61	1.22, 1.52	"	"	"	128, 275	10.5, 16	"
		Stainless Steel	16	0.9, 1.19	"	"	"	128, 267	12, 18	"
12	12.75	Ductile Iron	19	1.25 - 1.5	12	1	17	160 - 267	20, 25	FedEx
		PP Coated DI	19.37	1.61, 2.01	"	"	"	128, 275	17.5, 28.2	"
		Stainless Steel	19	1.05 - 1.77	"	"	"	128 - 267	21 - 37	"

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IPS Fittings Back Up Rings (For use with the Flange Adapter) (continued)

IPS Fittings Back Up Rings (For use with the Flange Adapter) (continued)

Nominal Pipe Size (in)	Pipe OD (in)	Material	Dimensions					Pressure Rating	Weight (lbs)	Shipping Method
			OD (in)	T (in)	Bolts (#)	BH (in)	BC (in)			
14	14.00	Ductile Iron	21	1.38, 1.63	12	1.125	18.75	160, 267	29, 37	FedEx
		PP Coated DI	21.26	1.61, 2.05	"	"	"	128, 275	23, 35.7	"
		Stainless Steel	21	1.13 - 1.78	"	"	"	100 - 267	25 - 50	"
16	16.00	Ductile Iron	23.5	1.63 - 1.88	16	1.125	21.25	160, 267	39 - 49	FedEx
		PP Coated DI	23.82	1.75, 2.44	"	"	"	128, 275	30, 66.4	"
		Stainless Steel	23.5	1.25 - 2.17	"	"	"	80 - 267	31 - 67	"
18	18.00	Ductile Iron	25	1.67 - 2	16	1.25	22.75	160 - 267	42 - 53	LTL
		PP Coated DI	25.51	1.91, 2.44	"	"	"	128, 275	34, 60.6	"
		Stainless Steel	25	1.34 - 2.06	"	"	"	80 - 267	33 - 67	"
20	20.00	Ductile Iron	27.5	1.81 - 2.23	20	1.25	25	160 - 200	55 - 70	LTL
		PP Coated DI	27.87	2.13, 2.68	"	"	"	128, 275	42, 93.5	"
		Stainless Steel	27.5	1.47 - 2.27	"	"	"	80 - 267	39 - 90	"
22	22.00	Ductile Iron	29.5	2 - 2.41	20	1.375	27.25	160 - 200	65 - 80	LTL
		PP Coated DI	"	3.19	"	"	"	275	104.9	"
		Stainless Steel	"	1.54 - 2.43	"	"	"	80 - 267	50 - 106	"
24	24.00	Ductile Iron	32	2.13 - 2.56	20	1.375	29.5	160 - 200	80 - 103	LTL
		PP Coated DI	32.52	2.24, 3.19	"	"	"	128, 275	58.5, 142.2	"
		Stainless Steel	32	1.6 - 2.6	"	"	"	64 - 267	65 - 116	"
26	26.00	Ductile Iron	34.25	2 - 2.53	24	1.375	31.75	100 - 200	83 - 109	LTL
		Stainless Steel	"	2.2, 2.5	"	"	"	80, 160	96, 119	"
28	28.00	Ductile Iron	36.5	2.06 - 2.6	28	1.375	34	100 - 200	92 - 130	LTL
		PP Coated DI	36.95	2.99, 3.9	"	"	"	128, 275	105, 224.4	"
		Stainless Steel	36.5	2.3 - 2.68	"	"	"	80 - 160	109 - 134	"
30	30.00	Ductile Iron	38.75	2.06 - 2.68	28	1.375	36	65 - 200	104 - 153	LTL
		PP Coated DI	39.45	3.13, 3.9	"	"	"	128, 275	119, 247.1	"
		Stainless Steel	38.75	2.18 - 3.8	"	"	"	64 - 267	121 - 302	"
32	32.00	Ductile Iron	41.75	2.06 - 2.84	28	1.625	38.5	65 - 200	111 - 175	LTL
		Stainless Steel	"	2.36 - 2.85	"	"	"	64 - 128	145 - 199	"
34	34.00	Ductile Iron	43.75	2.14 - 2.88	32	1.625	40.5	60 - 100	137 - 191	LTL
		Stainless Steel	"	2.68 - 3.3	"	"	"	64 - 128	168 - 228	"
36	36.00	Ductile Iron	46	2.06 - 3.14	32	1.625	42.75	50 - 160	129 - 225	LTL
		PP Coated DI	46.65	3.86	"	"	"	128	197	"
		Stainless Steel	46	2.35 - 3	"	"	"	50 - 100	167 - 230	"
40	39.37	Ductile Iron	50.75	3.5	36	1.625	47.25	128	307	LTL
		Stainless Steel	"	3.45	"	"	"	80	341	"
42	42.00	Ductile Iron	53	2.26 - 3.53	36	1.625	49.5	40 - 128	253 - 396	LTL
		Stainless Steel	"	2.48 - 3.25	"	"	"	40 - 80	223 - 330	"
48	48.00	Ductile Iron	59.5	3.5 - 3.82	44	1.625	56	64 - 100	332 - 400	LTL
		Stainless Steel	"	2.45 - 3.63	"	"	"	30 - 64	291 - 405	"
54	54.00	Ductile Iron	66.25	2.57 - 4.1	44	1.875	62.75	30 - 80	318 - 519	LTL
		Stainless Steel	"	2.8 - 4.03	"	"	"	30 - 64	365 - 513	"
63	62.99	Ductile Iron	73	2.8, 3.15	52	1.875	69.25	32, 64	277, 437	LTL
		Stainless Steel	"	3.23, 3.54	"	"	"	32, 51	455, 495	"

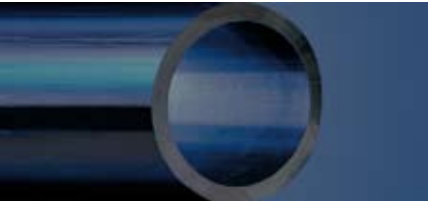
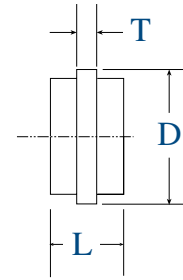
IPS
HDPE
Fittings

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IPS Fittings Wall Anchor (Force Transfer / Restraint Fitting)



IPS
HDPE
Fittings

Pressure Rating of Wall Anchors are equal to pipe of same DR.

Wall Anchors from 3608 resin:	
DR	Pressure Rating
7	267 psi
9	200 psi
11	128 psi
13.5	128 psi
15.5	110 psi
17	100 psi
21	80 psi
26	64 psi
32.5	51 psi

Wall Anchors from 4710 resin:	
DR	Pressure Rating
7	336 psi
9	252 psi
11	202 psi
13.5	161 psi
15.5	139 psi
17	126 psi
21	101 psi
26	81 psi
32.5	64 psi

Note: Size/DR listings shown are commonly requested. Many DR options not listed are available. Please consult an ISCO representative for availability.

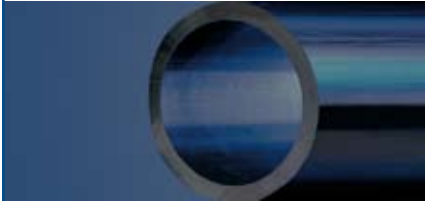
IPS Fittings Wall Anchor								
Nominal Size (in)	Pipe OD (in)	DR	Part #	D (in)	Dimensions T (in)	L (in)	Weight (lbs)	Shipping Method
3/4	1.05	11	ISFFWA07511IPS	1.85	1	12	0.5	FedEx
1	1.315	11	ISFFWA0111IPS	2.4	1	12	0.7	FedEx
1 1/4	1.66	11	ISFFWA012511IPS	2.75	1	12	1	FedEx
1 1/2	1.9	11	ISFFWA01511IPS	3.125	1	12	1	FedEx
2	2.375	09	ISFFWA0209IPS	3.9	1	12	2	FedEx
		11	ISFFWA0211IPS	"	"	"	1	"
3	3.5	09	ISFFWA0309IPS	5	1	12	4	FedEx
		11	ISFFWA0311IPS	"	"	"	3	"
		17	ISFFWA0317IPS	"	"	"	2	"
4	4.5	09	ISFFWA0409IPS	6.6	1	12	5	FedEx
		11	ISFFWA0411IPS	"	"	"	5	"
		17	ISFFWA0417IPS	"	"	"	3	"
6	6.625	09	ISFFWA0609IPS	8.5	1.1	16	14	FedEx
		11	ISFFWA0611IPS	"	"	"	20	"
		17	ISFFWA0617IPS	"	"	"	18	"
		26	ISFFWA0626IPS	"	"	"	5	"
8	8.625	09	ISFFWA0809IPS	10.6	1.25	16	23	FedEx
		11	ISFFWA0811IPS	"	"	"	20	"
		17	ISFFWA0817IPS	"	"	"	18	"
		26	ISFFWA0826IPS	"	"	"	9	"
10	10.75	09	ISFFWA1009IPS	12.75	1.5	18	39	FedEx
		11	ISFFWA1011IPS	"	"	"	33	"
		17	ISFFWA1017IPS	"	"	"	22	"
		26	ISFFWA1026IPS	"	"	"	15	"
12	12.75	09	ISFFWA1209IPS	15.5	1.5	18	55	FedEx
		11	ISFFWA1211IPS	"	"	"	46	"
		17	ISFFWA1217IPS	"	"	"	31	"
		26	ISFFWA1226IPS	"	"	"	21	"
14	14	7	ISFFWA1407IPS	17.5	2.4	24	95	FedEx
		11	ISFFWA1411IPS	"	1.5	"	67	"
		17	ISFFWA1417IPS	"	"	"	45	"
		32.5	ISFFWA1432IPS	"	"	"	24	"
16	16	7	ISFFWA1607IPS	20	2.8	24	124	FedEx
		11	ISFFWA1611IPS	"	1.5	"	87	"
		17	ISFFWA1617IPS	"	"	"	58	"
		32.5	ISFFWA1632IPS	"	"	"	32	"
18	18	7	ISFFWA1807IPS	21.1	3.1	24	157	LTL
		11	ISFFWA1811IPS	"	2	"	110	"
		17	ISFFWA1817IPS	"	"	"	74	"
		32.5	ISFFWA1832IPS	"	"	"	40	"

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IPS Fittings Wall Anchor (continued)

IPS Fittings Wall Anchor								
Nominal Pipe Size(in)	OD(in)	DR	Part #	Dimensions			Weight (lbs)	Shipping Method
				D (in)	T (in)	L (in)		
20	20	7	ISFFWA2007IPS	23.5	3.5	24	196	LTL
		11	ISFFWA2011IPS	"	2	"	136	"
		17	ISFFWA2017IPS	"	"	"	91	"
		32.5	ISFFWA2032IPS	"	"	"	49	"
22	22	7	ISFFWA2207IPS	25.6	3.8	24	234	LTL
		11	ISFFWA2211IPS	"	2.3	"	164	"
		17	ISFFWA2217IPS	"	1.7	"	110	"
		32.5	ISFFWA2232IPS	"	1	"	60	"
24	24	7	ISFFWA2407IPS	27.9	4.1	24	279	LTL
		11	ISFFWA2411IPS	"	2.5	"	196	"
		17	ISFFWA2417IPS	"	1.8	"	131	"
		32.5	ISFFWA2432IPS	"	1.1	"	71	"
26	26	11	ISFFWA2611IPS	30	2.7	30	320	LTL
		17	ISFFWA2617IPS	"	1.9	"	268	"
		26	ISFFWA2626IPS	"	1.4	"	120	"
		32.5	ISFFWA2632IPS	"	1.1	"	97	"
28	28	11	ISFFWA2811IPS	32.3	2.9	30	371	LTL
		17	ISFFWA2817IPS	"	2.1	"	311	"
		26	ISFFWA2826IPS	"	1.5	"	140	"
		32.5	ISFFWA2832IPS	"	1.2	"	113	"
30	30	11	ISFFWA3011IPS	34.25	3.1	30	426	LTL
		17	ISFFWA3017IPS	"	2.2	"	357	"
		26	ISFFWA3026IPS	"	1.6	"	240	"
		32.5	ISFFWA3032IPS	"	1.3	"	129	"
32	32	11	ISFFWA3211IPS	36.5	3.3	30	406	LTL
		17	ISFFWA3217IPS	"	2.4	"	273	"
		26	ISFFWA3226IPS	"	1.7	"	182	"
		32.5	ISFFWA3232IPS	"	1.4	"	147	"
36	36	11	ISFFWA3611IPS	40.8	3.7	30	514	LTL
		17	ISFFWA3617IPS	"	2.7	"	345	"
		26	ISFFWA3626IPS	"	1.9	"	231	"
		32.5	ISFFWA3632IPS	"	1.6	"	186	"
40	39.37	17	ISFFWA4017IPS	45.25	2.9	42	530	LTL
		21	ISFFWA4021IPS	"	2.5	"	435	"
		26	ISFFWA4026IPS	"	2.1	"	355	"
		32.5	ISFFWA4032IPS	"	1.7	"	287	"
42	42	17	ISFFWA4217IPS	47.5	3.1	42	604	LTL
		21	ISFFWA4221IPS	"	2.6	"	495	"
		26	ISFFWA4226IPS	"	2.2	"	404	"
		32.5	ISFFWA4232IPS	"	1.8	"	326	"
48	48	17	ISFFWA4817IPS	54	3.6	42	789	LTL
		21	ISFFWA4821IPS	"	3	"	646	"
		26	ISFFWA4826IPS	"	2.5	"	527	"
		32.5	ISFFWA4832IPS	"	2.1	"	426	"
54	54	21	ISFFWA5421IPS	60.0	3.4	42	818	LTL
		26	ISFFWA5426IPS	"	2.8	"	667	"
		32.5	ISFFWA5432IPS	"	2.3	"	539	"



IPS HDPE Fittings

Pressure Rating of wall anchors are equal to pipe of same DR.

Wall Anchors from 3608 resin:	
DR	Pressure Rating
7	267 psi
9	200 psi
11	128 psi
13.5	128 psi
15.5	110 psi
17	100 psi
21	80 psi
26	64 psi
32.5	51 psi

Wall Anchors from 4710 resin:	
DR	Pressure Rating
7	336 psi
9	252 psi
11	202 psi
13.5	161 psi
15.5	139 psi
17	126 psi
21	101 psi
26	81 psi
32.5	64 psi

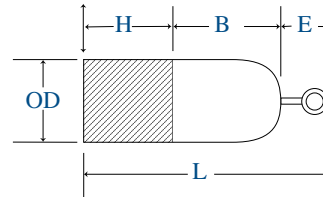
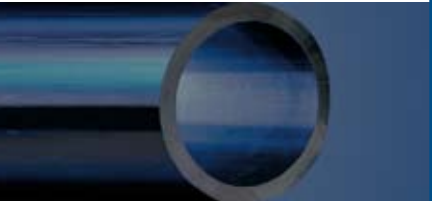
Note: Size/DR listings shown are commonly requested. Many DR options not listed are available. Please consult an ISCO representative for availability.

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IPS Steel Pulling Head Transition



IPS
HDPE
Fittings

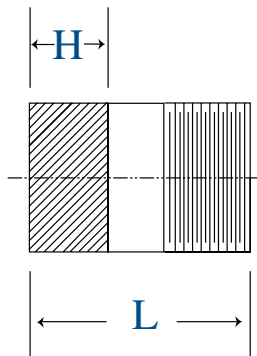
Nominal Size (in)	Pipe OD (in)	Material	Part #	L (in)	Dimensions			Weight (lbs)	Shipping Method
					B	H (in)	E (in)		
2	2.375	Steel	ISFFPH0211IPS	11.25	4	5	2.25	3	FedEx
3	3.5	Steel	ISFFPH0311IPS	14	6	5	3	7	FedEx
4	4.5	Steel	ISFFPH0411IPS	15.5	7	5	3.5	11	FedEx
6	6.625	Steel	ISFFPH0611IPS	23	10	8	5	38	FedEx
8	8.625	Steel	ISFFPH0811IPS	26	11	8	7	60	LTL
10	10.75	Steel	ISFFPH1011IPS	29	13	8	8	93	LTL
12	12.75	Steel	ISFFPH1211IPS	32	15	8	9	175	LTL



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IPS Male Threaded Transition Fitting



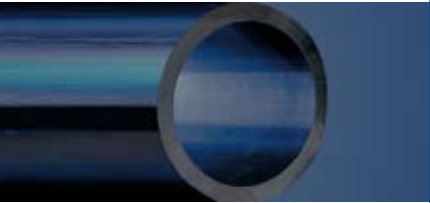
IPS
HDPE
Fittings

IPS Male Threaded Transition Fitting							
Nominal Size (in)	Pipe OD (in)	Material	Part #	Dimensions		Weight (lbs)	Shipping Method
				L (in)	H (in)		
3/4	1.05	Steel	ISFFTF003/411IP	4	2.4	.17	FedEx
		Stainless Steel	ISFFTF003/411SS	"	"	"	"
		Brass	ISFFTF003/411BI	"	"	"	"
1	1.315	Steel	SFFTF0111IP	5	3	.27	FedEx
		Stainless Steel	ISFFTF0111IPSSS	"	"	"	"
		Brass	ISFFTF0111BIP	"	"	"	"
1 1/4	1.66	Steel	ISFFTF01.2511IP	5	3.4	.27	FedEx
		Stainless Steel	ISFFTF01.2511SS	"	"	"	"
		Brass	ISFFTF01.2511BI	"	"	"	"
1 1/2	1.9	Steel	ISFFTF01.5111IP	6	3.4	.55	FedEx
		Stainless Steel	ISFFTF01.5011SS	"	"	"	"
		Brass	ISFFTF01.5111BIP	"	"	"	"
2	2.375	Steel	ISFFTF0211IP	8	4.5	1	FedEx
		Stainless Steel	ISFFTF0211IPSSS	"	"	"	"
		Brass	ISFFTF0211BIP	"	"	"	"
3	3.5	Steel	ISFFTF0311IP	8	4	2.4	FedEx
		Stainless Steel	ISFFTF0311IPSSS	"	"	"	"
		Brass	ISFFTF0311BIP	"	"	"	"
4	4.5	Steel	ISFFTF0411IP	8	4	4.3	FedEx
		Stainless Steel	ISFFTF0411IPSSS	"	"	"	"
6	6.625	Steel	ISFFTF0611IP	12	7.5	12	FedEx
		Stainless Steel	ISFFTF0611IPSSS	"	"	"	"
8	8.625	Steel	ISFFTF0811IP	13	6	20.7	FedEx
		Stainless Steel	ISFFTF0811IPSSS	"	"	"	"
10	10.75	Steel	ISFFTF1011IP	15	7	38.1	FedEx
		Stainless Steel	ISFFTF1011IPSSS	"	"	"	"
12	12.75	Steel	ISFFTF1211IP	16	7	57.1	FedEx
		Stainless Steel	ISFFTF1211IPSSS	"	"	"	"

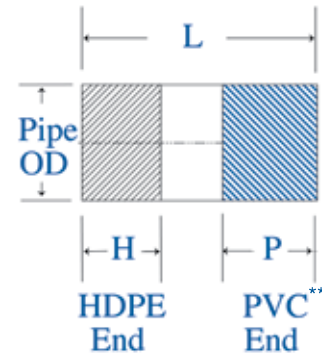
**Female Transitions available through 8" in same materials as male counterparts.



IPS HDPE to PVC Transition Fitting



IPS
HDPE
Fittings



IPS HDPE To PVC Transition Fitting								
Nominal Size (in)	Pipe OD (in)	Material	Part #	Dimensions			Weight (lbs)	Shipping Method
				H (in)	L (in)	P (in)		
3/4	1.05	Steel	ISFFTF003/4PVC	3	8	3	0.7	FedEx
		Stainless Steel	ISFFTF003/4PVCSS	"	"	"	"	"
1	1.315	Steel	SFFTF0111PVC	3	8.5	3	0.8	FedEx
		Stainless Steel	ISFFTF0111PVCSS	"	"	"	"	"
1 1/4	1.66	Steel	ISFFTF01.25PVC	4	11.5	4	1	FedEx
		Stainless Steel	ISFFTF01.25PVCSS	"	"	"	"	"
1 1/2	1.9	Steel	ISFFTF01.5PVC	4	12	4	1.25	FedEx
		Stainless Steel	ISFFTF01.50PVCSS	"	"	"	"	"
2	2.375	Steel	ISFFTF0211PVC	4	12.5	4	1.5	FedEx
		Stainless Steel	ISFFTF0211PVCSS	"	"	"	"	"
3	3.5	Steel	ISFFTF0311PVC	4.5	14	4.5	3	FedEx
		Stainless Steel	ISFFTF0311PVCSS	"	"	"	"	"
4	4.5	Steel	ISFFTF0411PVC	4.5	15	4.5	5	FedEx
		Stainless Steel	ISFFTF0411PVCSS	"	"	"	"	"
6	6.625	Steel	ISFFTF0611PVC	8	22	6	10	FedEx
		Stainless Steel	ISFFTF0611PVCSS	"	"	"	"	"
8	8.625	Steel	ISFFTF0811PVC	9	24	6	18	FedEx
		Stainless Steel	ISFFTF0811PVCSS	"	"	"	"	"
10	10.75	Steel	ISFFTF1011PVC	9	24	6	20	FedEx
		Stainless Steel	ISFFTF1011PVCSS	"	"	"	"	"

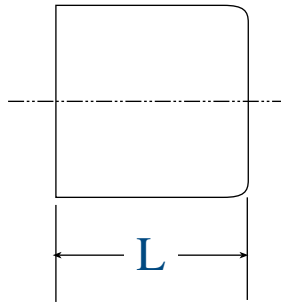
** PVC available as SCH 40 or SCH 80.



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IPS Fittings Cap



IPS Fittings Cap						
Nominal Size (in)	Pipe OD (in)	DR	Part #	Dimensions L (in)	Weight (lbs)	Shipping Method
3/4	1.05	11	ISMFCP07511IPS	2.375	0.05	FedEx
1	1.315	11	ISMFCP0111IPS	2.375	0.1	FedEx
1 1/4	1.66	11	ISMFCP012511IPS	2.25	0.1	FedEx
1 1/2	1.9	11	ISMFCP01511IPS	2.83	0.25	FedEx
2	2.375	09	ISMFCP0209IPS	3.25	0.3	FedEx
		11	ISMFCP0211IPS	"	"	"
3	3.5	09	ISMFCP0309IPS	3.25	0.8	FedEx
		11	ISMFCP0311IPS	"	"	"
4	4.5	09	ISMFCP0409IPS	5.5	2	FedEx
		11	ISMFCP0411IPS	"	"	"
6	6.625	09	ISMFCP0609IPS	4.5	3	FedEx
		11	SMFCP0611IPS	"	"	"
8	8.625	11	ISMFCP0811IPS	4.75	4.4	FedEx
10	10.75	11	ISMFCP1011IPS	4	13	FedEx
12	12.75	11	ISMFCP1211IPS	4	18	FedEx
14	14.00	7	ISFFCP1407IPS	4	21	FedEx
		11	ISFFCP1411IPS	"	21	"
		7	ISFFCP1407IPSLG	16	53	FedEx
		11	ISFFCP1411IPSLG	"	44	"
16	16.00	7	ISFFCP1607IPS	5	35	FedEx
		11	ISFFCP1611IPS	4	28	"
		7	ISFFCP1607IPSLG	16	76	FedEx
		11	ISFFCP1611IPSLG	"	57	"
18	18.00	7	ISFFCP1807IPS	5	44	FedEx
		11	ISFFCP1811IPS	5	44	"
		7	ISFFCP1807IPSLG	16	96	FedEx
		11	ISFFCP1811IPSLG	"	81	"
20	20.00	7	ISFFCP2007IPS	6	65	FedEx
		11	ISFFCP2011IPS	5	55	"
		7	ISFFCP2007IPSLG	16	130	LTL
		11	ISFFCP2011IPSLG	"	100	"
22	22.00	7	ISFFCP2207IPS	6	79	FedEx
		11	ISFFCP2211IPS	5	66	"
		7	ISFFCP2207IPSLG	16	157	LTL
		11	ISFFCP2211IPSLG	"	121	"
24	24.00	11	ISFFCP2411IPS	6	94	FedEx
		11	ISFFCP2411IPSLG	16	159	LTL



IPS
HDPE
Fittings

Pressure Rating of Caps are equal to pipe of same DR.

Caps from 3608 resin:	
DR	Pressure Rating
7	267 psi
9	200 psi
11	128 psi
13.5	128 psi
15.5	110 psi
17	100 psi
21	80 psi
26	64 psi
32.5	51 psi

Cap from 4710 resin:	
DR	Pressure Rating
7	336 psi
9	252 psi
11	202 psi
13.5	161 psi
15.5	139 psi
17	126 psi
21	101 psi
26	81 psi
32.5	64 psi

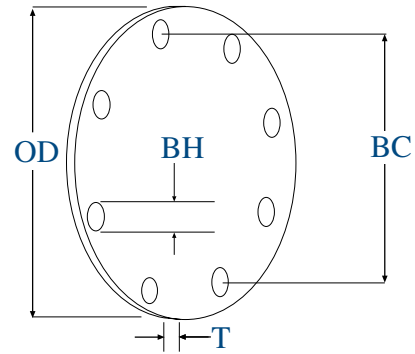
Note: Size/DR listings shown are commonly requested. Many DR options not listed are available. Please consult an ISCO representative for availability.

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Blind Flange



IPS-DIPS
HDPE
Fittings

Nominal Size(in)	Material	Part #	Dimensions					Weight (lbs)	Shipping Method
			OD (in)	T(in)	Bolts(#)	BH(in)	BC(in)		
3/4	HDPE	ISFFBF075HDPIPS	3.875	1	4	0.625	2.75	0.2	FedEx
	PVC	ISFFBF075PVCIPS	"	"	"	"	"	0.3	"
1	HDPE	ISFFBF01HDPIPS	4.25	1	4	0.625	3.125	0.3	FedEx
	PVC	ISFFBF01PVCIPS	"	"	"	"	"	0.5	"
1 1/4	HDPE	ISFFBF0125HDPIP	4.625	1	4	0.625	3.5	0.5	FedEx
	PVC	ISFFBF0125PVCIP	"	"	"	"	"	1	"
1 1/2	HDPE	ISFFBF015HDPIPS	5	1	4	0.625	3.875	0.5	FedEx
	PVC	ISFFBF015PVCIPS	"	"	"	"	"	1	"
	STEEL	BU015STBLNDFLG	"	0.625	"	"	"	3.6	"
2	HDPE	ISFFBF02HDPIPS	6	1	4	0.75	4.75	1	FedEx
	PVC	ISFFBF02PVCIPS	"	"	"	"	"	1.5	"
	STEEL	BU02STBLNDFLG	"	0.625	"	"	"	5.1	"
3	HDPE	ISFFBF03HDPIPS	7.5	1	4	0.75	6	1	FedEx
	PVC	ISFFBF03PVCIPS	"	"	"	"	"	2	"
	STEEL	BU03STBLNDFLG	"	0.625	"	"	"	8.2	"
4	HDPE	ISFFBF04HDPIPS	9	1	8	0.75	7.5	2	FedEx
	PVC	ISFFBF04PVCIPS	"	"	"	"	"	3	"
	STEEL	BU04STBLNDFLG	"	0.625	"	"	"	11.7	"
6	HDPE	ISFFBF06HDPIPS	11	1	8	0.875	9.5	3	FedEx
	PVC	ISFFBF06PVCIPS	"	"	"	"	"	4	"
	STEEL	BU06STBLNDFLG	"	0.688	"	"	"	17.8	"
8	HDPE	ISFFBF08HDPIPS	13.5	1	8	0.875	11.75	5	FedEx
	PVC	ISFFBF08PVCIPS	"	"	"	"	"	7	"
	STEEL	BU08STBLNDFLG	"	0.688	"	"	"	27.2	"
10	HDPE	ISFFBF10HDPIPS	16	1	12	1	14.25	6	FedEx
	PVC	ISFFBF10PVCIPS	"	"	"	"	"	9	"
	STEEL	BU10STBLNDFLG	"	0.688	"	"	"	38.1	"
12	HDPE	ISFFBF12HDPIPS	19	1	12	1	17	9	FedEx
	PVC	ISFFBF12PVCIPS	"	"	"	"	"	13	"
	STEEL	BU12STBLNDFLG	"	0.812	"	"	"	63.1	"
14	HDPE	ISFFBF14HDPIPS	21	1	12	1.125	18.75	11	FedEx
	PVC	ISFFBF14PVCIPS	"	"	"	"	"	16	"
	STEEL	BU14STBLNDFLG	"	0.938	"	"	"	88.8	"
16	HDPE	ISFFBF16HDPIPS	23.5	1	16	1.125	21.25	14	FedEx
	PVC	ISFFBF16PVCIPS	"	"	"	"	"	20	"
	STEEL	BU16STBLNDFLG	"	"	"	"	"	118.4	LTL
18	HDPE	ISFFBF18HDPIPS	25	1	16	1.25	22.75	16	FedEx
	PVC	ISFFBF18PVCIPS	"	"	"	"	"	23	"
	STEEL	BU18STBLNDFLG	"	1.062	"	"	"	140.6	LTL

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Blind Flange (continued)

Nominal Size(in)	Material	Part #	Dimensions					Weight (lbs)	Shipping Method
			OD(in)	T(in)	Bolts(#)	BH(in)	BC(in)		
20	HDPE	ISFFBF20HDPIPS	27.5	1	20	1.25	25	20	FedEx
	PVC	ISFFBF20PVCIPS	"	"	"	"	"	29	"
	STEEL	BU20STBLNDFLG	"	1.125	"	"	"	181.5	LTL
22	HDPE	ISFFBF22HDPIPS	29.5	1	20	1.375	27.25	23	FedEx
	PVC	ISFFBF22PVCIPS	"	"	"	"	"	33	"
	STEEL	BU22STBLNDFLG	"	1.188	"	"	"	212.7	LTL
24	HDPE	ISFFBF24HDPIPS	32	1	20	1.375	29.5	26	FedEx
	PVC	ISFFBF24PVCIPS	"	"	"	"	"	38	"
	STEEL	BU24STBLNDFLG	"	1.25	"	"	"	274.4	LTL
26	HDPE	ISFFBF26HDPIPS	34.25	1	24	1.375	31.75	30	LTL
28	HDPE	ISFFBF28HDPIPS	36.5	1	28	1.375	34	35	LTL
	STEEL	BU28STBLNDFLG	"	1.312	"	"	"	369.3	"
30	HDPE	ISFFBF30HDPIPS	38.75	1	28	1.375	36	40	LTL
	PVC	ISFFBF30PVCIPS	"	"	"	"	"	58	"
	STEEL	BU30STBLNDFLG	"	1.375	"	"	"	443.6	"
32	HDPE	ISFFBF32HDPIPS	41.75	1	28	1.625	38.5	45	LTL
	STEEL	BU32STBLNDFLG	"	1.5	"	"	"	587.3	"
36	HDPE	ISFFBF36HDPIPS	46	1	32	1.625	42.75	55	LTL
	PVC	ISFFBF36PVCIPS	"	"	"	"	"	80	"
	STEEL	BU36STBLNDFLG	"	1.625	"	"	"	734.6	"
40	HDPE	ISFFBF40HDPIPS	50.75	1	36	1.625	47.25	65	LTL
	STEEL	BU40STBLNDFLG	"	1.625	"	"	"	800	"
42	HDPE	ISFFBF42HDPIPS	53	1	36	1.625	49.5	75	LTL
	STEEL	BU42STBLNDFLG	"	1.75	"	"	"	1085	"
48	HDPE	ISFFBF48HDPIPS	59.5	1	44	1.625	56	100	LTL
	STEEL	BU48STBLNDFLG	"	1.75	"	"	"	1369	"
54	HDPE	ISFFBF54HDPIPS	66.25	1	44	1.875	62.75	120	LTL
	STEEL	BU54STBLNDFLG	"	2.125	"	"	"	2180	"

* HDPE and PVC Blinds are not rated for full pressure above 6”.

*Steel Blinds may not be fully pressure rated above 10” depending on pipe (system) DR.

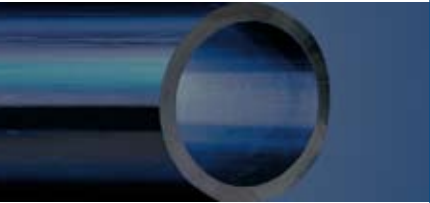
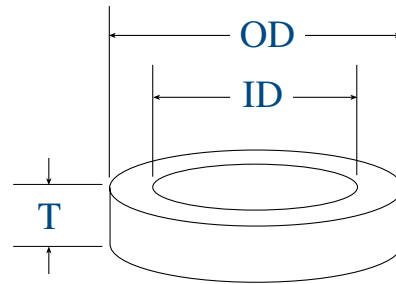
*Bolt circle for IPS Blind Flanges are the same for DIPS Blind Flanges 24” and smaller.



IPS-DIPS
HDPE
Fittings



Valve Spacers



IPS-DIPS
HDPE
Fittings

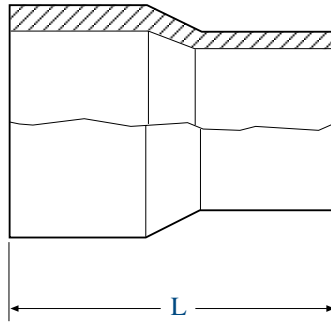
Nominal Size(in)	Pressure Rating	Part #	Dimensions			Weight Shipping	
			OD (in)	ID (in)	T (in)	(lbs)	Method
2	160	ISFFVS0211IPS	3.5	2.8	2	0.25	FedEx
3	160	ISFFVS0311IPS	4.8	3.6	2	0.5	FedEx
4	160	ISFFVS0411IPS	6.625	5.15	2	1	FedEx
6	160	ISFFVS0611IPS	8.625	6.625	2	2	FedEx
8	160	ISFFVS0811IPS	10.75	8.625	2	2.5	FedEx
10	160	ISFFVS1011IPS	13.0	10.75	2	4	FedEx
12	160	ISFFVS1211IPS	15.25	12.45	2	5	FedEx
14	160	ISFFVS1411IPS	17.5	14.0	2	6	FedEx
16	160	ISFFVS1611IPS	20	16.0	2	7	FedEx
18	160	ISFFVS1811IPS	21.1	17.25	2	8	FedEx
20	160	ISFFVS2011IPS	23.5	19.25	2	9	FedEx
22	160	ISFFVS2211IPS	25.6	22.4	2	11	FedEx
24	160	ISFFVS2411IPS	28	22.75	2	13	FedEx



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Concentric Reducer: IPS - DIPS



Concentric Reducer: IPS - DIPS

Nominal Size(in)	Pipe OD(in)	DR	Part #	Dimensions L (in)	Weight (lbs)	Shipping Method
4 DIPS x 2 IPS	4.8 x 2.375	11	ISMFCR04DX0215I	6	1	FedEx
4 DIPS x 3 IPS	4.8 x 3.5	11	ISMFCR04DX0311I	8.5	2	FedEx
4	4.8 x 4.5	11	ISFFCR0411IPXDI	8	2	FedEx
6 DIPS x 4 IPS	6.8 x 4.5	11	ISFFCR06DX0411I	9	4	FedEx
6 IPS x 4 DIPS	6.625 x 4.8	11	ISFFCR06IPX04DI	10	4	FedEx
6	6.9 x 6.625	11	ISFFCR0611IPXDI	10	5	FedEx
8 IPS x 6 DIPS	8.625 x 6.9	11	ISFFCR08IPX06DI	10	8	FedEx
8	9.05 x 8.625	11	ISFFCR0811IPXDI	12	9	FedEx
10 IPS x 8 DIPS	10.75 x 9.05	11	ISFFCR10IPX08DI	12	13	FedEx
10	11.1 x 10.75	11	ISFFCR1011IPXDI	12	14	FedEx
12 IPS x 10 DIPS	12.75 x 11.1	11	ISFFCR12IPX10DI	12	20	FedEx
12	13.2 x 12.75	11	ISFFCR1211IPXDI	12	21	FedEx
14 IPS x 12 DIPS	14.0 x 13.2	11	ISFFCR14IPX12DI	12	24	FedEx
14	15.3 x 14.0	11	ISFFCR1411IPXDI	12	28	FedEx
16 IPS x 14 DIPS	16.0 x 15.3	11	ISFFCR16IPX14DI	12	31	FedEx
16	17.4 x 16.0	11	ISFFCR1611IPXDI	12	36	FedEx
18 IPS x 16 DIPS	18.0 x 17.4	11	ISFFCR18IPX16DI	12	39	FedEx
18	19.5 x 18.0	11	ISFFCR1811IPXDI	12	45	FedEx
20 IPS x 18 DIPS	20.0 x 19.5	11	ISFFCR20IPX18DI	12	50	FedEx
20	21.6 x 20	11	ISFFCR2011IPXDI	12	55	FedEx
22 IPS x 20 DIPS	22.0 x 21.6	11	ISFFCR22IPX20DI	12	60	FedEx
24	25.8 x 24.0	11	ISFFCR2411IPXDI	12	81	FedEx



IPS-DIPS
HDPE
Fittings

Pressure Rating of Con. Reducers are equal to pipe of same DR.

Reducers from 3608 resin:	
DR	Pressure Rating
7	267 psi
9	200 psi
11	128 psi
13.5	128 psi
15.5	110 psi
17	100 psi
21	80 psi
26	64 psi
32.5	51 psi

Reducers from 4710 resin:	
DR	Pressure Rating
7	336 psi
9	252 psi
11	202 psi
13.5	161 psi
15.5	139 psi
17	126 psi
21	101 psi
26	81 psi
32.5	64 psi

Note: Size/DR listings shown are commonly requested. Many DR options not listed are available. Please consult an ISCO representative for availability.

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DIPS Fittings Fabricated 90° Ell-Five Segment



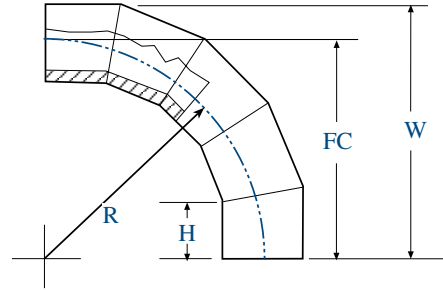
DIPS
HDPE
Fittings

Pressure Rating is based on miter angle, pipe DR (Wall thickness), and resin properties.

Ratings based on 3608 resin/11.25 angle:	
DR	Pressure Rating
7	219 psi
9	160 psi
11	128 psi
13.5	100 psi
15.5	82 psi
17	73 psi
21	57 psi
26	44 psi
32.5	34 psi

Ratings based on 4710 resin/11.25 angle:	
DR	Pressure Rating
7	274 psi
9	202 psi
11	161 psi
13.5	126 psi
15.5	103 psi
17	92 psi
21	72 psi
26	55 psi
32.5	42 psi

Note: Size/DR listings shown are commonly requested. Many DR options not listed are available. Please consult an ISCO representative for availability.

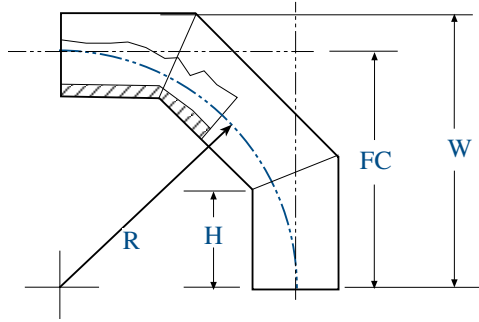


Nominal Size (in)	Pipe OD (in)	DR	Part #	Dimensions				Weight (lbs)	Shipping Method
				R (in)	H (in)	FC (in)	W (in)		
4	4.8	11	ISFF900411DIPS	14.33	7	18.95	21.35	7	FedEx
		17	ISFF900417DIPS	"	"	"	"	5	"
6	6.9	11	ISFF900611DIPS	20.61	8	25.20	28.55	20	FedEx
		17	ISFF900617DIPS	"	"	"	"	14	"
8	9.05	11	ISFF900811DIPS	22.62	8	27.02	31.55	38	FedEx
		17	ISFF900817DIPS	"	"	"	"	25	"
10	11.1	11	ISFF901011DIPS	22.62	8	27.23	32.78	56	FedEx
		17	ISFF901017DIPS	"	"	"	"	38	"
12	13.2	11	ISFF901211DIPS	26.39	10	32.46	39.06	96	FedEx
		17	ISFF901217DIPS	"	"	"	"	64	"
14	15.3	11	ISFF901411DIPS	27.44	12	35.51	43.16	141	LTL
		17	ISFF901417DIPS	"	"	"	"	95	"
16	17.4	11	ISFF901611DIPS	34.94	12	41.72	50.42	215	LTL
		17	ISFF901617DIPS	"	"	"	"	144	"
18	19.5	11	ISFF901811DIPS	38.96	12	45.15	54.9	292	LTL
		17	ISFF901817DIPS	"	"	"	"	196	"
20	21.6	11	ISFF902011DIPS	43.23	13	49.78	60.58	395	LTL
		17	ISFF902017DIPS	"	"	"	"	265	"
24	25.8	11	ISFF902411DIPS	51.53	13	56.58	69.75	643	LTL
		17	ISFF902417DIPS	"	"	"	"	432	"
30	32.0	17	ISFF903017DIPS	54.63	13	59.95	75.95	700	LTL



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DIPS Fittings Fabricated 90° Ell-Three Segment



DIPS Fittings Fabricated 90° Ell-Three Segment									
Nominal Pipe Size(in)	Pipe OD(in)	DR	Part #	Dimensions				Weight (lbs)	Shipping Method
				R (in)	H (in)	FC (in)	W(in)		
4	4.8	11	ISFF900411DIP3P	6.00	5.5	10.00	12.40	6	FedEx
		17	ISFF900417DIP3P	"	"	"	"	4	"
6	6.9	11	ISFF900611DIP3P	9.50	6	13.00	16.45	13	FedEx
		17	ISFF900617DIP3P	"	"	"	"	9	"
8	9.05	11	ISFF900811DIP3P	10.50	6.5	14.50	19.03	24	FedEx
		17	ISFF900817DIP3P	"	"	"	"	16	"
10	11.1	11	ISFF901011DIP3P	12.75	6.5	16.29	21.84	39	FedEx
		17	ISFF901017DIP3P	"	"	"	"	26	"
12	13.1	11	ISFF901211DIP3P	13.88	8.5	19.38	25.98	64	FedEx
		17	ISFF901217DIP3P	"	"	"	"	43	"
14	15.3	11	ISFF901411DIP3P	14.88	8.5	20.38	28.03	81	LTL
		17	ISFF901417DIP3P	"	"	"	"	54	"
16	17.4	11	ISFF901611DIP3P	16.00	8.5	21.44	30.14	128	LTL
		17	ISFF901617DIP3P	"	"	"	"	86	"
18	19.5	11	ISFF901811DIP3P	17.00	8.5	22.49	32.24	174	LTL
		17	ISFF901817DIP3P	"	"	"	"	117	"
20	21.6	11	ISFF902011DIP3P	22.88	8.5	26.37	37.17	241	LTL
		17	ISFF902017DIP3P	"	"	"	"	162	"
24	25.8	11	ISFF902411DIP3P	25.00	8.5	28.47	41.37	321	LTL
		17	ISFF902417DIP3P	"	"	"	"	262	"
30	32.00	11	ISFF903011DIP3P	38.00	10	38.90	54.90	738	LTL
		17	ISFF903017DIP3P	"	"	"	"	496	"



DIPS
HDPE
Fittings

Pressure Rating is based on miter angle, pipe DR (Wall thickness), and resin properties.

Ratings based on 3608 resin/22.5 angle:	
DR	Pressure Rating
7	183 psi
9	131 psi
11	100 psi
13.5	77 psi
15.5	64 psi
17	57 psi
21	43 psi
26	33 psi
32.5	25 psi

Ratings based on 4710 resin/22.5 angle:	
DR	Pressure Rating
7	229 psi
9	164 psi
11	126 psi
13.5	96 psi
15.5	81 psi
17	71 psi
21	54 psi
26	41 psi
32.5	31 psi

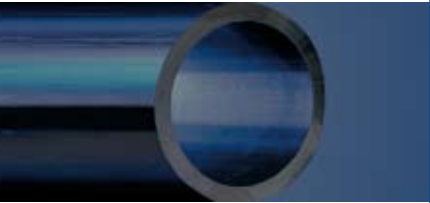
Note: Size/DR listings shown are commonly requested. Many DR options not listed are available. Please consult an ISCO representative for availability.

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DIPS Fittings Fabricated 45° Ell-Three Segment



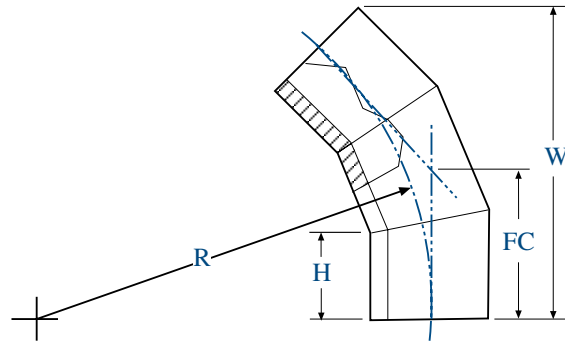
DIPS
HDPE
Fittings

Pressure Rating is based on miter angle, pipe DR (Wall thickness), and resin properties.

Ratings based on 3608 resin/11.25 angle:	
DR	Pressure Rating
7	219 psi
9	160 psi
11	128 psi
13.5	100 psi
15.5	82 psi
17	73 psi
21	57 psi
26	44 psi
32.5	34 psi

Ratings based on 4710 resin/11.25 angle:	
DR	Pressure Rating
7	274 psi
9	202 psi
11	161 psi
13.5	126 psi
15.5	103 psi
17	92 psi
21	72 psi
26	55 psi
32.5	42 psi

Note: Size/DR listings shown are commonly requested. Many DR options not listed are available. Please consult an ISCO representative for availability.

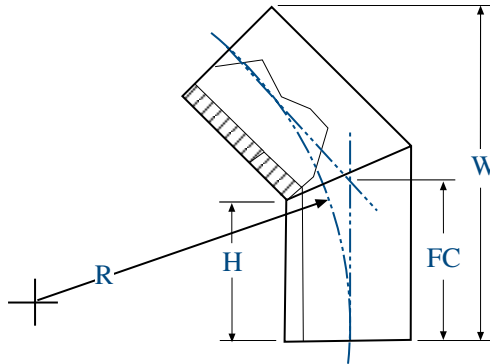


Nominal Size (in)	Pipe OD (in)	DR	Part #	Dimensions			Weight (lbs)	Shipping Method
				R (in)	H (in)	FC (in)		
4	4.8	11	ISFF450411DIPS	14.33	7	10.56	19.73	5 FedEx
		17	ISFF450417DIPS	"	"	"	"	3 "
6	6.9	11	ISFF450611DIPS	20.61	8	13.12	24.84	12 FedEx
		17	ISFF450617DIPS	"	"	"	"	8 "
8	9.05	11	ISFF450811DIPS	22.62	8	13.77	26.71	21 FedEx
		17	ISFF450817DIPS	"	"	"	"	14 "
10	11.1	11	ISFF451011DIPS	22.62	8	13.97	27.78	32 FedEx
		17	ISFF451017DIPS	"	"	"	"	22 "
12	13.2	11	ISFF451211DIPS	26.39	10	17.00	33.68	56 FedEx
		17	ISFF451217DIPS	"	"	"	"	38 "
14	15.3	11	ISFF451411DIPS	26.39	12	19.43	38.58	86 FedEx
		17	ISFF451417DIPS	"	"	"	"	58 "
16	17.4	11	ISFF451611DIPS	34.94	12	21.25	42.43	121 LTL
		17	ISFF451617DIPS	"	"	"	"	82 "
18	19.5	11	ISFF451811DIPS	38.96	12	22.33	45.00	160 LTL
		17	ISFF451817DIPS	"	"	"	"	108 "
20	21.6	11	ISFF452011DIPS	43.23	13	24.46	49.39	215 LTL
		17	ISFF452017DIPS	"	"	"	"	145 "
24	25.8	11	ISFF452411DIPS	51.53	13	26.66	54.63	335 LTL
		17	ISFF452417DIPS	"	"	"	"	225 "
30	32	17	ISFF453017DIPS	54.63	13	27.94	59.03	363 LTL



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DIPS Fittings Fabricated 45° Ell-Two Segment



DIPS Fittings Fabricated 45° Ell-Two Segment									
Nominal Pipe Size (in)	OD (in)	DR	Part #	Dimensions				Weight (lbs)	Shipping Method
				R (in)	H (in)	FC (in)	W (in)		
4	4.8	11	ISFF450411DIPS2P	6	5.5	6.50	12.79	3	FedEx
		17	ISFF450417DIPS2P	"	"	"	"	2	"
6	6.9	11	ISFF450611DIPS2P	9.50	6	7.43	15.12	8	FedEx
		17	ISFF450617DIPS2P	"	"	"	"	6	"
8	9.05	11	ISFF450811DIPS2P	10.50	6.5	8.38	17.50	15	FedEx
		17	ISFF450817DIPS2P	"	"	"	"	11	"
10	11.1	11	ISFF451011DIPS2P	12.75	6.5	8.80	18.95	24	FedEx
		17	ISFF451017DIPS2P	"	"	"	"	16	"
12	13.1	11	ISFF451211DIPS2P	13.88	8.5	11.25	23.87	40	FedEx
		17	ISFF451217DIPS2P	"	"	"	"	27	"
14	15.3	11	ISFF451411DIPS2P	14.88	8.5	11.67	25.25	50	LTL
		17	ISFF451417DIPS2P	"	"	"	"	34	"
16	17.4	11	ISFF451611DIPS2P	16	8.5	12.10	26.81	82	LTL
		17	ISFF451617DIPS2P	"	"	"	"	55	"
18	19.5	11	ISFF451811DIPS2P	17	8.5	12.54	28.30	108	LTL
		17	ISFF451817DIPS2P	"	"	"	"	73	"
20	21.6	11	ISFF452011DIPS2P	22.88	8.5	12.97	29.78	128	LTL
		17	ISFF452017DIPS2P	"	"	"	"	101	"
24	25.8	11	ISFF452411DIPS2P	25	8.5	13.84	32.75	195	LTL
		17	ISFF452417DIPS2P	"	"	"	"	157	"
30	32	11	ISFF453011DIPS2P	38.00	10	16.60	39.69	325	LTL
		17	ISFF453017DIPS2P	"	"	"	"	218	"



DIPS
HDPE
Fittings

Pressure Rating is based on miter angle, pipe DR (Wall thickness), and resin properties.

Ratings based on 3608 resin/22.5 angle:	
DR	Pressure Rating
7	183 psi
9	131 psi
11	100 psi
13.5	77 psi
15.5	64 psi
17	57 psi
21	43 psi
26	33 psi
32.5	25 psi

Ratings based on 4710 resin/22.5 angle:	
DR	Pressure Rating
7	229 psi
9	164 psi
11	126 psi
13.5	96 psi
15.5	81 psi
17	71 psi
21	54 psi
26	41 psi
32.5	31 psi

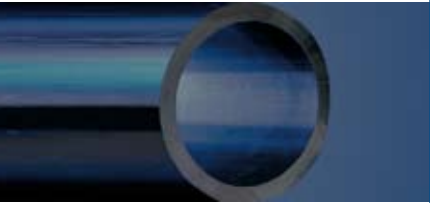
Note: Size/DR listings shown are commonly requested. Many DR options not listed are available. Please consult an ISCO representative for availability.

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DIPS Fittings Fabricated 22.5° Ell



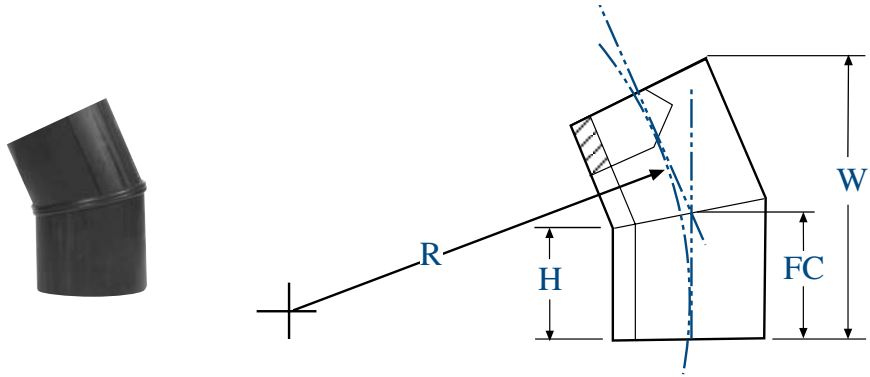
DIPS
HDPE
Fittings

Pressure Rating is based on miter angle, pipe DR (Wall thickness), and resin properties.

Ratings based on 3608 resin/11.25 angle:	
DR	Pressure Rating
7	219 psi
9	160 psi
11	128 psi
13.5	100 psi
15.5	82 psi
17	73 psi
21	57 psi
26	44 psi
32.5	34 psi

Ratings based on 4710 resin/11.25 angle:	
DR	Pressure Rating
7	274 psi
9	202 psi
11	161 psi
13.5	126 psi
15.5	103 psi
17	92 psi
21	72 psi
26	55 psi
32.5	42 psi

Note: Size/DR listings shown are commonly requested. Many DR options not listed are available. Please consult an ISCO representative for availability.



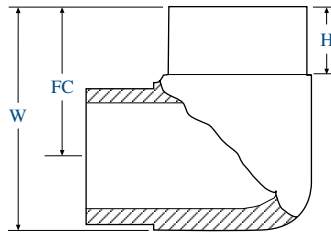
DIPS Fittings Fabricated 22.5° Ell									
Nominal Pipe Size(in)	OD(in)	DR	Part #	Dimensions				Weight (lbs)	Shipping Method
				R (in)	H (in)	FC (in)	W (in)		
4	4.8	11	ISFF220411DIPS	14.33	7	7.48	14.10	3	FedEx
		17	ISFF220417DIPS	"	"	"	"	2	"
6	6.9	11	ISFF220611DIPS	20.61	8	8.69	18.22	8	FedEx
		17	ISFF220617DIPS	"	"	"	"	5	"
8	9.05	11	ISFF220811DIPS	22.62	8	8.90	19.78	14	FedEx
		17	ISFF220817DIPS	"	"	"	"	9	"
10	11.1	11	ISFF221011DIPS	22.62	8	9.10	20.56	21	FedEx
		17	ISFF221017DIPS	"	"	"	"	14	"
12	13.2	11	ISFF221211DIPS	26.39	10	11.31	24.75	37	FedEx
		17	ISFF221217DIPS	"	"	"	"	25	"
14	15.3	11	ISFF221411DIPS	34.94	12	13.52	27.94	60	FedEx
		17	ISFF221417DIPS	"	"	"	"	40	"
16	17.4	11	ISFF221611DIPS	34.94	12	13.73	31.50	78	LTL
		17	ISFF221617DIPS	"	"	"	"	53	"
18	19.5	11	ISFF221811DIPS	38.96	12	13.94	33.78	100	LTL
		17	ISFF221817DIPS	"	"	"	"	67	"
20	21.6	11	ISFF222011DIPS	42.23	13	15.15	37.16	133	LTL
		17	ISFF222017DIPS	"	"	"	"	90	"
24	25.8	11	ISFF222411DIPS	51.53	13	15.57	41.81	196	LTL
		17	ISFF222417DIPS	"	"	"	"	131	"
30	32	17	ISFF223017DIPS	54.63	13	16.18	45.32	210	LTL



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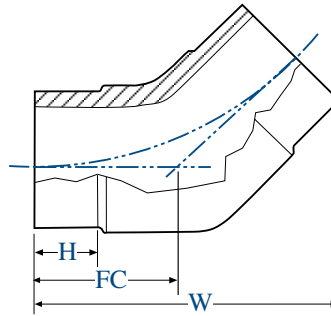


DIPS Fittings Molded 90° Ell



DIPS Fittings Molded 90° Ell			Part #	Dimensions			Weight (lbs)	Shipping Method
Nominal Pipe Size (in)	OD (in)	DR		H (in)	FC (in)	W (in)		
4	4.8	11	ISMF900411DIPS	4.1	7.82	10.39	3	FedEx
6	6.9	11	ISMF900611DIPS	5.1	9.67	13.37	8	FedEx
8	9.05	11	ISMF900811DIPS	5.17	11.58	16.305	17	FedEx
10	11.1	11	ISMF901011DIPS	6	13.25	18.875	30	FedEx
12	13.2	11	ISMF901211DIPS	7.5	15.88	22.555	45	FedEx

DIPS Fittings Molded 45° Ell



DIPS Fittings Molded 45° Ell			Part #	Dimensions			Weight (lbs)	Shipping Method
Nominal Pipe Size (in)	OD (in)	DR		H (in)	FC (in)	W (in)		
4	4.8	11	ISMF450411DIPS	4.1	6.05	12.02	3	FedEx
6	6.9	11	ISMF450611DIPS	5.1	7.16	14.66	8	FedEx
8	9.05	11	ISMF450811DIPS	5.17	8.32	17.40	14	FedEx
10	11.1	11	ISMF451011DIPS	6	13.25	26.54	25	FedEx
12	13.2	11	ISMF451211DIPS	7.5	15.88	31.77	35	FedEx



DIPS HDPE Fittings

Pressure Rating of Molded Fittings are equal to pipe of same DR.

Flanges from 3608 resin:	
DR	Pressure Rating
7	267 psi
9	200 psi
11	128 psi
13.5	128 psi
15.5	110 psi
17	100 psi
21	80 psi
26	64 psi
32.5	51 psi

Flanges from 4710 resin:	
DR	Pressure Rating
7	336 psi
9	252 psi
11	202 psi
13.5	161 psi
15.5	139 psi
17	126 psi
21	101 psi
26	81 psi
32.5	64 psi

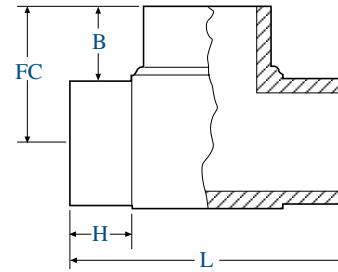
Note: Size/DR listings shown are commonly requested. Many DR options not listed are available. Please consult an ISCO representative for availability.

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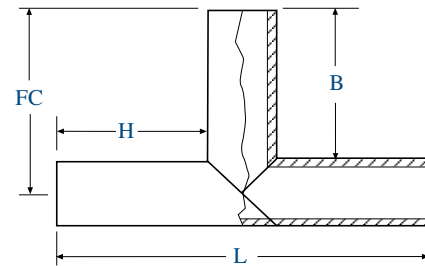
DIPS Fittings Molded Tees



DIPS Fittings Molded Tee

Nom. Size(in)	Pipe		Part #	Dimensions				Weight (lbs)	Shipping Method
	OD(in.)	DR		(L)	(H)	(FC)	(B)		
4	4.8	11	ISMFTE0411DIPS	15.63	3.88	7.82	5.42	5	FedEx
6	6.9	11	ISMFTE0611DIPS	19.34	4.5	9.67	6.22	12	FedEx
8	9.05	11	ISMFTE0811DIPS	23.15	5.17	11.58	7.06	30	FedEx
10	11.1	11	ISMFTE1011DIPS	26.5	6	13.25	7.70	50	FedEx
12	13.2	11	ISMFTE1211DIPS	31.75	7.5	15.88	9.28	80	FedEx

DIPS Fittings Fabricated Tees - Three Segment



DIPS Fittings Fabricated Tees - Three Segment

Nominal Size(in)	Pipe		Part #	Dimensions				Weight (lbs)	Shipping Method
	OD(in)	DR		L(in)	H(in)	FC(in)	B(in)		
8	9.05	11	ISFFTE0811DIPS	48.0	19.475	24	19.475	52	FedEx
10	11.1	11	ISFFTE1011DIPS	48.0	18.45	24	18.45	77	FedEx
12	13.1	11	ISFFTE1211DIPS	48.0	17.45	24	17.45	108	FedEx
14	15.3	11	ISFFTE1411DIPS	48.0	16.35	24	16.35	142	LTL
16	17.4	11	ISFFTE1611DIPS	48.0	15.3	24	15.3	181	LTL
		17	ISFFTE1617DIPS	"	"	"	"	121	"
18	19.5	11	ISFFTE1811DIPS	48.0	14.25	24	14.25	223	LTL
		17	ISFFTE1817DIPS	"	"	"	"	150	"
20	21.6	11	ISFFTE2011DIPS	48.0	13.2	24	13.2	270	LTL
		17	ISFFTE2017DIPS	"	"	"	"	181	"
24	25.8	11	ISFFTE2411DIPS	54	14.1	42	29.1	522	LTL
		17	ISFFTE2417DIPS	"	"	"	"	351	"
30	32	11	ISFFTE3011DIPS	62	15	42	26	850	LTL
		17	ISFFTE3017DIPS	"	"	"	"	571	"

DIPS HDPE Fittings

See previous page for Pressure Rating for Molded Fittings.

Pressure Rating of Fab Tee is based pipe DR (Wall thickness) and resin properties.

Tees from 3608 resin:	
DR	Pressure Rating
7	200 psi
9	150 psi
11	120 psi
13.5	83 psi
15.5	72 psi
17	65 psi
21	52 psi
26	42 psi
32.5	33 psi

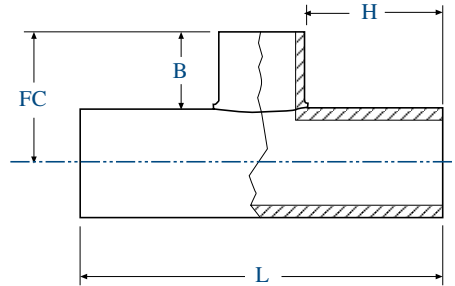
Tees from 4710 resin:	
DR	Pressure Rating
7	252 psi
9	189 psi
11	152 psi
13.5	105 psi
15.5	90 psi
17	82 psi
21	66 psi
26	53 psi
32.5	42 psi

Note: Size/DR listings shown are commonly requested. Many DR options not listed are available. Please consult an ISCO representative for availability.

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DIPS Fittings Reducing Tee



DIPS Fittings Reducing Tee										
Nominal Pipe Size(in)	Pipe OD(in)	Pressure		Part #	Dimensions				Weight Shipping	
		DR	Rating		L (in)	H (in)	FC (in)	B (in)	(lbs)	Method
6 x 4	6.9x 4.8	11	160	ISFFRT06X0411DI	24	8.2	8.45	5	13	FedEx
8 x 4	9.05x4.8	11	160	ISFFRT08X0411DI	24	8.2	9.525	5	21	FedEx
8 x 6	9.05x6.9	11	160	ISFFRT08X0611DI	28	9.20	11.025	6.5	26	FedEx
10 x 4	11.1 x 4.8	11	160	ISFFRT10X0411DI	24	8.2	10.55	5	30	FedEx
10 x 6	11.1 x 6.9	11	160	ISFFRT10X0611DI	28	9.20	12.05	6.5	37	FedEx
10 x 8	11.1 x 9.05	11	160	ISFFRT10X0811DI	30	8.75	13.05	7.5	44	FedEx
12 x 4	13.2 x 4.8	11	160	ISFFRT12X0411DI	24	8.2	11.6	5	41	FedEx
12 x 6	13.2 x 6.9	11	160	ISFFRT12X0611DI	28	9.20	13.10	6.5	50	LTL
12 x 8	13.2 x 9.05	11	160	ISFFRT12X0811DI	30	8.75	14.10	7.5	58	LTL
12 x 10	13.2 x 11.1	11	160	ISFFRT12X1011DI	30	7.6	16.60	10	65	LTL
14 x 4	15.3 x 4.8	11	160	ISFFRT14X0411DI	24	8.2	12.65	5	55	FedEx
14 x 6	15.3 x 6.9	11	160	ISFFRT14X0611DI	28	9.20	14.15	6.5	66	LTL
14 x 8	15.3 x 9.05	11	160	ISFFRT14X0811DI	30	8.75	15.15	7.5	75	LTL
14 x 10	15.3 x 11.1	11	160	ISFFRT14X1011DI	30	7.6	17.65	10	82	LTL
16 x 4	17.4 x 4.8	11	160	ISFFRT16X0411DI	24	8.2	13.70	5	71	FedEx
16 x 6	17.4 x 6.9	11	160	ISFFRT16X0611DI	28	9.20	15.20	6.5	84	LTL
16 x 8	17.4 x 9.05	11	160	ISFFRT16X0811DI	30	8.75	16.20	7.5	95	LTL
16 x 10	17.4 x 11.1	11	160	ISFFRT16X1011DI	30	8.75	18.70	10	117	LTL
16 x 12	17.4 x 13.2	11	160	ISFFRT16X1211DI	32	7.5	20.7	12	123	LTL
18 x 4	19.5 x 4.8	11	160	ISFFRT18X0411DI	24	8.2	14.75	5	88	FedEx
18 x 6	19.5 x 6.9	11	160	ISFFRT18X0611DI	28	9.20	16.25	6.5	104	LTL
18 x 8	19.5 x 9.05	11	160	ISFFRT18X0811DI	30	8.75	17.25	7.5	117	LTL
18 x 10	19.5 x 11.1	11	160	ISFFRT18X1011DI	30	7.6	19.75	10	124	LTL
18 x 12	19.5 x 13.2	11	160	ISFFRT18X1211DI	32	7.5	21.75	12	147	LTL
20 x 6	21.6 x 6.9	11	160	ISFFRT20X0611DI	28	9.20	17.30	6.5	127	LTL
20 x 8	21.6 x 9.05	11	160	ISFFRT20X0811DI	30	8.75	18.30	7.5	141	LTL
20 x 10	21.6 x 11.1	11	160	ISFFRT20X1011DI	30	7.60	20.80	10	148	LTL
20 x 12	21.6 x 13.2	11	160	ISFFRT20X1211DI	32	7.50	22.80	12	173	LTL
24 x 6	25.8 x 6.9	11	160	ISFFRT24X0611DI	28	9.20	19.40	6.5	180	LTL
24 x 8	25.8 x 9.05	11	160	ISFFRT24X0811DI	30	8.75	20.40	7.5	197	LTL
24 x 10	25.8 x 11.1	11	160	ISFFRT24X1011DI	30	7.60	22.90	10	204	LTL
24 x 12	25.8 x 13.2	11	160	ISFFRT24X1211DI	32	7.50	24.90	12	233	LTL



DIPS
HDPE
Fittings

Pressure Rating of Reducing Tees are equal to pipe of same DR.

Red. Tees from 3608 resin:	
DR	Pressure Rating
7	267 psi
9	200 psi
11	128 psi
13.5	128 psi
15.5	110 psi
17	100 psi
21	80 psi
26	64 psi
32.5	51 psi

Red Tees from 4710 resin:	
DR	Pressure Rating
7	336 psi
9	252 psi
11	202 psi
13.5	161 psi
15.5	139 psi
17	126 psi
21	101 psi
26	81 psi
32.5	64 psi

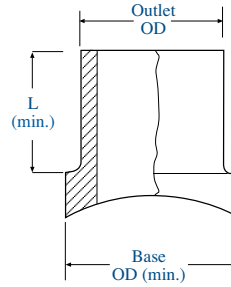
Note: Size/DR listings shown are commonly requested. Many DR options not listed are available. Please consult an ISCO representative for availability.

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DIPS Branch Saddle



DIPS Branch Saddle

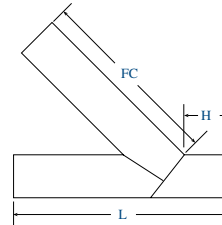
Nominal Outlet Size (in)	Outlet OD (in)	DR	Part #	Dimensions		Weight (lbs)	Shipping Method
				L (in)	Base OD (in)		
4	4.8	11	Varies*	4	6.6	4	FedEx
6	6.9	11	Varies*	5	8.6	9	FedEx
8	9.05	11	Varies*	6	11.5	17	FedEx
10	11.1	11	Varies*	8	13.8	31	FedEx
12	13.2	11	Varies*	10	16	47	FedEx

* Any size(IPS/DIPS) main available, but must be larger than outlet size. Consideration must be given that heater plate and fusion unit are available for rent.

** Hole saws for field cutting coupons are available for purchase. See fusion equipment accessory tooling section.

*** Pressure rating of saddles are equal to pipe DR of main. Other DR outlets may be available. Contact ISCO for availability.

DIPS Fittings Fabricated 45° Lateral Wye Three Segment



DIPS Fittings Fabricated 45° Lateral Wye - Three Segment

Nominal Pipe Size (in)	Pipe OD (in)	DR	Part #	Dimensions			Weight (lbs)	Shipping Method
				L (in)	H (in)	FC (in)		
4	4.8	11	ISFFWY0411DIPS	26.5	5.83	19.5	10	FedEx
6	6.9	11	ISFFWY0611DIPS	35.5	6.33	27.9	28	FedEx
8	9.05	11	ISFFWY0811DIPS	58	12	44	79	FedEx
10	11.1	11	ISFFWY1011DIPS	58	13	44	119	LTL
12	13.10	11	ISFFWY1211DIPS	64	16	48	184	LTL
14	15.3	11	ISFFWY1411DIPS	64	16	48	247	LTL
			ISFFWY1611DIPS	73	19	54	363	LTL
16	17.4	11	ISFFWY1617DIPS	"	"	"	244	"
			ISFFWY1811DIPS	73	19	54	456	LTL
18	19.5	17	ISFFWY1817DIPS	"	"	"	306	"
			ISFFWY2011DIPS	109	22	87	863	LTL
20	21.6	17	ISFFWY2017DIPS	"	"	"	580	"

DIPS HDPE Fittings

Pressure Rating of Fab Wye is based pipe DR (Wall thickness) and resin properties.

Wyes from 3608 resin:	
DR	Pressure Rating
7	89 psi
9	67 psi
11	53 psi
13.5	43 psi
15.5	37 psi
17	33 psi
21	27 psi
26	21 psi
32.5	17 psi

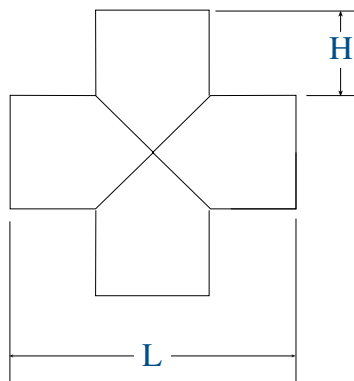
Wyes from 4710 resin:	
DR	Pressure Rating
7	112 psi
9	84 psi
11	67 psi
13.5	54 psi
15.5	46 psi
17	42 psi
21	34 psi
26	27 psi
32.5	21 psi

Note: Size/DR listings shown are commonly requested. Many DR options not listed are available. Please consult an ISCO representative for availability.

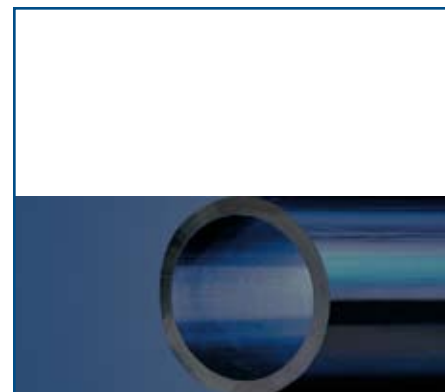
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DIPS Fabricated Cross



DIPS Fittings Fabricated Cross						
Nominal Pipe Size (in)	OD (in)	DR	Part #	Dimensions L (in) H (in)		Weight (lbs) Shipping Method
4	4.8	11	ISFFCS0411DIPS	15.64	4.1	5 FedEx
6	6.9	11	ISFFCS0611DIPS	19.34	5.1	13 FedEx
8	9.05	11	ISFFCS0811DIPS	23.16	5.17	26 FedEx
10	11.1	11	ISFFCS1011DIPS	26.5	6	45 FedEx
12	13.2	11	ISFFCS1211DIPS	30	8.45	77 LTL
14	15.3	11	ISFFCS1411DIPS	33	8.85	112 LTL
16	17.4	11	ISFFCS1611DIPS	36	9.3	156 LTL
		17	ISFFCS1617DIPS	"	"	105 "
18	19.50	11	ISFFCS1811DIPS	40	10.25	217 LTL
		17	ISFFCS1817DIPS	"	"	146 "
20	21.60	11	ISFFCS2011DIPS	52	15.2	363 LTL
		17	ISFFCS2017DIPS	"	"	244 "
24	25.80	11	ISFFCS2411DIPS	54	14.1	516 LTL
		17	ISFFCS2417DIPS	"	"	347 "



DIPS HDPE Fittings

Pressure Rating of Fab Cross is based pipe DR (Wall thickness) and resin properties.

Crosses from 3608 resin:	
DR	Pressure Rating
7	107 psi
9	80 psi
11	64 psi
13.5	51 psi
15.5	44 psi
17	40 psi
21	32 psi
26	26 psi
32.5	20 psi

Crosses from 4710 resin:	
DR	Pressure Rating
7	134 psi
9	101 psi
11	81 psi
13.5	64 psi
15.5	56 psi
17	50 psi
21	40 psi
26	32 psi
32.5	26 psi

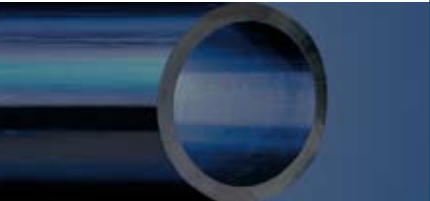
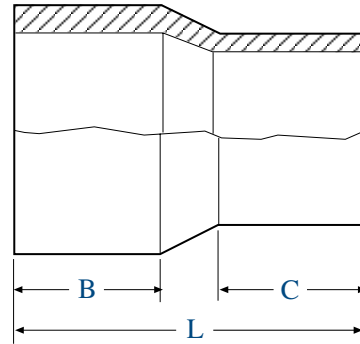
Note: Size/DR listings shown are commonly requested. Many DR options not listed are available. Please consult an ISCO representative for availability.

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DIPS Fittings Concentric Reducer



DIPS
HDPE
Fittings

Pressure Rating of Con. Reducers are equal to pipe of same DR.

Reducers from 3608 resin:	
DR	Pressure Rating
7	267 psi
9	200 psi
11	128 psi
13.5	128 psi
15.5	110 psi
17	100 psi
21	80 psi
26	64 psi
32.5	51 psi

Reducers from 4710 resin:	
DR	Pressure Rating
7	336 psi
9	252 psi
11	202 psi
13.5	161 psi
15.5	139 psi
17	126 psi
21	101 psi
26	81 psi
32.5	64 psi

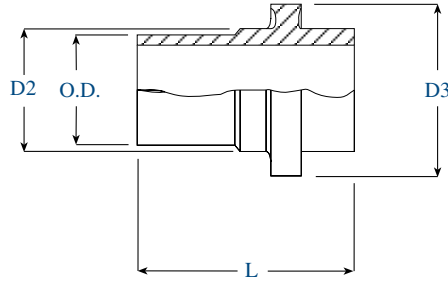
Note: Size/DR listings shown are commonly requested. Many DR options not listed are available. Please consult an ISCO representative for availability.

DIPS Fitting Concentric Reducers								
Nom. Size (in)	Pipe OD (in.)	DR	Part Number	Dimensions			Wt. (lbs)	Shipping Method
				(L)	(B)	(C)		
6 X 4	6.9 x 4.8	11	ISFFCR06X0411DI	6	3	3	2	FedEx
		17	ISFFCR06X0417DI	"	"	"	2	"
8 X 6	9.05 x 6.9	11	ISFFCR08X0611DI	10	5	5	3	FedEx
		17	ISFFCR08X0617DI	"	"	"	2	"
10 X 8	11.1 x 9.05	11	ISFFCR10X0811DI	12	6	6	8	FedEx
		17	ISFFCR10X0817DI	"	"	"	6	"
12 X 10	13.2 x 11.1	11	ISFFCR12X1011DI	12	6	6	15	FedEx
		17	ISFFCR12X1017DI	"	"	"	12	"
14 X 12	15.3 x 13.2	11	ISFFCR14X1211DI	14	7	7	21	FedEx
		17	ISFFCR14X1217DI	"	"	"	17	"
16 X 14	17.4 x 15.3	11	ISFFCR16X1411DI	14	7	7	33	FedEx
		17	ISFFCR16X1417DI	"	"	"	25	"
18 X 12	19.5 x 13.2	11	ISFFCR18X1211DI	19	8	8	45	FedEx
		17	ISFFCR18X1217DI	"	"	"	30	"
18 X 16	19.5 x 17.4	11	ISFFCR18X1611DI	14	7	7	43	FedEx
		17	ISFFCR18X1617DI	"	"	"	33	"
20 X 18	21.6 x 19.5	11	ISFFCR20X1811DI	25	14	11	52	FedEx
		17	ISFFCR20X1817DI	"	"	"	40	"
24 X 18	25.8 x 19.5	11	ISFFCR24X1811DI	19	8	8	85	LTL
		17	ISFFCR24X1817DI	"	"	"	60	"
24 X 20	25.8 x 21.6	11	ISFFCR24X2211DI	25	14	11	96	LTL
		17	ISFFCR24X2217DI	"	"	"	80	"
30 X 24	32 x 25.8	17	ISFFCR30X2417DI	27	12	12	135	LTL



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DIPS Fittings MJ Adapter Kit (Mechanical Joint Adapter)



The MJ Adapter Kit consist of: HDPE MJ Adapter with metal insert, Metal Gland, Gasket, and attachment Bolts and Nuts.



DIPS Fittings MJ Adapter (Mechanical Joint Adapter)

Nominal Size(in)	Pipe OD(in)	DR	Part #	Dimensions			Weight (lbs)	Shipping Method
				L(in)	D2(in)	D3(in)		
4	4.8	9	ISMFMJ0409DIPS	8	4.8	6.625	13	FedEx
		11	ISMFMJ0411DIPS	"	"	"	12	"
6	6.9	9	ISMFMJ0609DIPS	9	6.9	8.625	23	FedEx
		11	ISMFMJ0611DIPS	"	"	"	18	"
8	9.05	9	ISMFMJ0809DIPS	11.5	9.05	10.75	36	FedEx
		11	ISMFMJ0811DIPS	"	"	"	35	"
10	11.1	9	ISMFMJ1009DIPS	11.5	11.1	13.2	48	FedEx
		11	ISMFMJ1011DIPS	"	"	"	45	"
12	13.2	9	ISMFMJ1209DIPS	11.5	13.2	15.38	62	FedEx
		11	ISMFMJ1211DIPS	"	"	"	60	"
14	15.3	9	ISMFMJ1409DIPS	12.5	15.3	17.5	87	FedEx
		11	ISMFMJ1411DIPS	"	"	"	84	"
16	17.4	9	ISMFMJ1609DIPS	12.5	17.4	20	120	FedEx
		11	ISMFMJ1611DIPS	"	"	"	115	"
18	19.50	9	ISMFMJ1809DIPS	12.5	19.5	22	132	LTL
		11	ISMFMJ1811DIPS	"	"	"	125	"
20	21.60	11	ISMFMJ2011DIPS	14	21.6	24	165	LTL
24	25.80	11	ISMFMJ2411DIPS	16	25.8	28	225	LTL

* ALL WEIGHTS INCLUDE GLAND PACKS

DIPS HDPE Fittings

Pressure Rating of MJ Adapters are equal to pipe of same DR.

MJ from 3608 resin:	
DR	Pressure Rating
7	267 psi
9	200 psi
11	128 psi
13.5	128 psi
15.5	110 psi
17	100 psi
21	80 psi
26	64 psi
32.5	51 psi

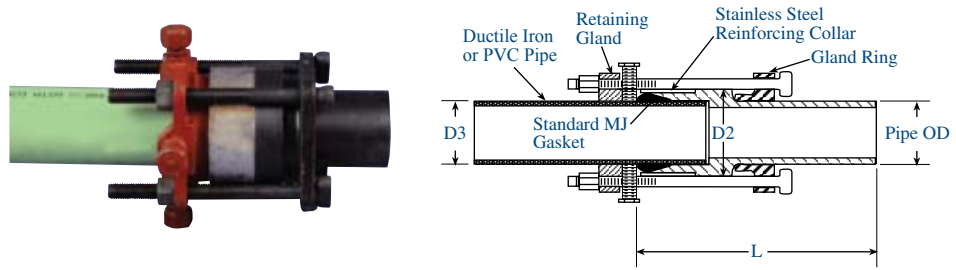
MJ from 4710 resin:	
DR	Pressure Rating
7	336 psi
9	252 psi
11	202 psi
13.5	161 psi
15.5	139 psi
17	126 psi
21	101 psi
26	81 psi
32.5	64 psi

Note: Size/DR listings shown are commonly requested. Many DR options not listed are available. Please consult an ISCO representative for availability

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DIPS Bell MJ Adapter with Kit



Kit Contains:

- HDPE Bell MJ Fitting with stainless, reinforced support ring
 - Ductile iron, C110, heavy body gland ring
 - Gasket
 - Special Extra Long T-bolts
 - Mechanical Joint Restraint for PVC or Ductile Iron pipe
- Specify pipe material at time of order.



For connecting to PVC Pipe

DIPS Bell MJ Adapter with Kit for PVC Pipe

Nominal Size(in)	Pipe OD(in)	DR	Part #	Dimensions			Weight (lbs)	Shipping Method
				L(in)	D2(in)	D3(in)		
2	2.5	11	ISMFMJ02DIPSBEL	8	3.5	2.51	15	FedEx
3	3.96	11	ISMFMJ03DIPSBEL	8	5.37	3.97	20	FedEx
4	4.8	11	ISMFMJ04DIPSBEL	8	6.63	4.81	25	FedEx
6	6.9	11	ISMFMJ06DIPSBEL	10	8.63	6.92	35	FedEx
8	9.05	11	ISMFMJ08DIPSBEL	11	10.75	9.05	55	FedEx
10	11.1	11	ISMFMJ10DIPSBEL	11	12.75	11.13	70	FedEx
12	13.2	11	ISMFMJ12DIPSBEL	13	15.35	13.24	95	FedEx

* ALL WEIGHTS INCLUDE GLAND PACKS AND MJ RESTRAINT

For connecting to Ductile Iron Pipe

DIPS Bell MJ Adapter with Kit for DI Pipe

Nominal Pipe Size(in)	Pipe OD(in)	DR	Part #	Dimensions			Weight (lbs)	Shipping Method
				L (in)	D2 (in)	D3 (in)		
2	2.5	11	ISMFMJ02DIPSTODI	8	3.5	2.61	15	FedEx
3	3.96	11	ISMFMJ03DIPSTODI	8	5.37	3.97	20	FedEx
4	4.8	11	ISMFMJ04DIPSTODI	8	6.63	4.81	25	FedEx
6	6.9	11	ISMFMJ06DIPSTODI	10	8.63	6.92	35	FedEx
8	9.05	11	ISMFMJ08DIPSTODI	11	10.75	9.05	55	FedEx
10	11.1	11	ISMFMJ10DIPSTODI	11	12.75	11.13	70	FedEx
12	13.2	11	ISMFMJ12DIPSTODI	13	15.35	13.24	95	FedEx

* ALL WEIGHTS INCLUDE GLAND PACKS AND MJ RESTRAINT

DIPS HDPE Fittings

Pressure Rating of Bell MJ are equal to pipe of same DR.

Bell MJ from 3608 resin:	
DR	Pressure Rating
7	267 psi
9	200 psi
11	128 psi
13.5	128 psi
15.5	110 psi
17	100 psi
21	80 psi
26	64 psi
32.5	51 psi

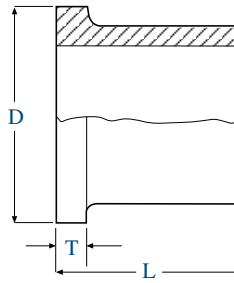
Bell MJ from 4710 resin: DR	
Pressure Rating	
7	336 psi
9	252 psi
11	202 psi
13.5	161 psi
15.5	139 psi
17	126 psi
21	101 psi
26	81 psi
32.5	64 psi

Note: Size/DR listings shown are commonly requested. Many DR options not listed are available. Please consult an ISCO representative for availability.

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DIPS Flange Adapter



DIPS Flange Adapter							
Nominal Size (in)	Pipe OD (in)	DR	Dimensions		L (in)	Weight (lbs)	Shipping Method
			D (in)	T(in)			
4	4.8	11	6.3125 - 6.625	0.485 - 0.68	6	2	FedEx
		17	"	0.485 - 0.585	"	2	"
		32.5	"	0.55	"	2	"
6	6.9	9	8.1875 - 8.625	1.08 - 1.109	6.625 - 8	5.75	FedEx
		11	"	0.695 - 1.08	"	4.52	"
		17	"	0.695 - 0.78	"	4	"
		32.5	"	0.78	"	3	"
8	9.05	9	10.375 - 10.75	1.38 - 1.427	9	9.48	FedEx
		11	"	0.91 - 1.38	"	9	"
		17	"	0.91 - 1.03	"	6	"
		32.5	"	1.03	"	6	"
10	11.1	9	12.75 - 13.17	1.749 - 1.88	9	15	FedEx
		11	"	1.115 - 1.88	"	15	"
		17	"	1.115 - 1.26	"	10	"
		32.5	"	1.26	"	10	"
12	13.2	9	15 - 15.97	2.079 - 2.13	11 - 12	29	FedEx
		11	"	1.325 - 2.13	"	26	"
		17	"	1.325 - 2.13	"	18	"
		32.5	"	1.5	"	17	"
14	15.3	9	17.125 - 17.5	2.509	12	28	FedEx
		11	"	1.37 - 1.74	11 - 12	28	"
		17	"	1.37 - 1.74	11 - 12	28	"
		32.5	"	1.74	11	28	"
16	17.4	9	19.625 - 20	2.639	12	35	FedEx
		11	"	1.6 - 1.745	"	35	"
		17	"	1.58 - 1.645	"	37	"
		32.5	"	1.6	"	35	"
18	19.5	9	21 - 21.5	3.069	12	46	FedEx
		11	"	1.955 - 2.22	"	46	"
		17	"	1.955 - 2.22	"	46	"
		32.5	"	2.22	"	46	"
20	21.6	9	23.25 - 23.6	3.399	12	55	FedEx
		11	"	2.185 - 2.46	"	55	"
		17	"	2.185 - 2.46	"	55	"
		32.5	"	2.46	"	55	"
24	25.8	9	27.625 - 27.8	4.059	12	81	LTL
		11	"	2.583 - 2.93	12 - 14	81	"
		17	"	2.583 - 2.93	12 - 14	81	"
		32.5	"	2.93	14	81	"
30	32.0	11	34.125 - 34.3	3.205 - 3.64	14	114	LTL
		17	"	3.205 - 3.64	"	114	"
		32.5	"	3.64	"	114	"



DIPS
HDPE
Fittings

Pressure Rating of Flanges are equal to pipe of same DR.

Flanges from 3608 resin:	
DR	Pressure Rating
7	267 psi
9	200 psi
11	128 psi
13.5	128 psi
15.5	110 psi
17	100 psi
21	80 psi
26	64 psi
32.5	51 psi

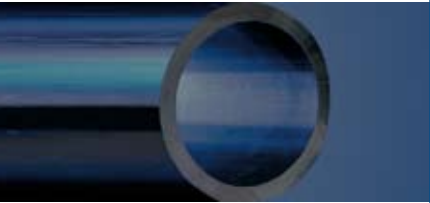
Flanges from 4710 resin:	
DR	Pressure Rating
7	336 psi
9	252 psi
11	202 psi
13.5	161 psi
15.5	139 psi
17	126 psi
21	101 psi
26	81 psi
32.5	64 psi

Note: Size/DR listings shown are commonly requested. Many DR options not listed are available. Please consult an ISCO representative for availability.

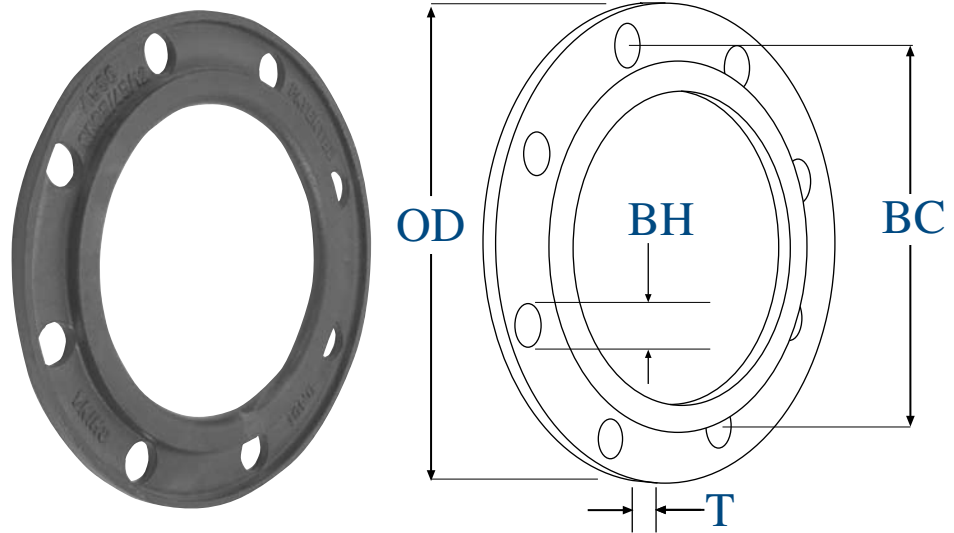
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DIPS Back Up Rings (For use with the Flange Adapter)



DIPS
HDPE
Fittings

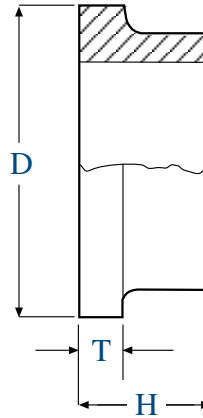


DIPS Backup Ring										
Nominal Pipe Size(in)	Pipe OD(in)	Material	Dimensions OD(in)	T(in)	Bolts(#)	BH(in)	BC(in)	Pressure Rating	Weight (lbs)	Shipping Method
4	4.8	Ductile Iron	9	0.94	8	0.75	7.5	275	5.0 - 5.1	FedEx
		Stainless Steel		0.94	"	"	"	275	5.4	"
6	6.9	Ductile Iron	11	1	8	0.875	9.5	275	7.0 - 8.0	FedEx
		Stainless Steel		1	"	"	"	275	7.5	"
8	9.05	Ductile Iron	13.5	1.12-1.13	8	0.875	11.75	275	10.5 - 11.0	FedEx
		Stainless Steel		1.13	"	"	"	275	12	"
10	11.1	Ductile Iron	16	1.19	12	1	14.25	275	15.3 - 16	FedEx
		Stainless Steel		1.19	"	"	"	275	15	"
12	13.2	Ductile Iron	19	1.5	12	1	17	275	24.4 - 26	FedEx
		Stainless Steel		1.5	"	"	"	275	27	"
14	15.3	Ductile Iron	21	1.63	12	1.125	18.75	200	31 - 36.1	FedEx
		Stainless Steel		1.38	"	"	"	160	30	"
16	17.4	Ductile Iron	23.5	1.84-1.88	16	1.125	21.25	200	42 - 48.3	FedEx
		Stainless Steel		1.63	"	"	"	160	41	"
18	19.5	Ductile Iron	25	1.75 - 2	16	1.25	22.75	200	47.9 - 51	LTL
		Stainless Steel		1.7	"	"	"	160	45	"
20	21.6	Ductile Iron	27.5	2.06-2.23	20	1.25	25	200	60.7 - 61	LTL
		Stainless Steel		1.84	"	"	"	160	57	"
24	25.8	Ductile Iron	32	2.13-2.56	20	1.375	29.5	200	90.4 - 94	LTL
		Stainless Steel		2.16	"	"	"	160	86	"
30	32	Ductile Iron	38.75	2.88	28	1.375	36	200	142	LTL

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DIPS Fittings Stub End

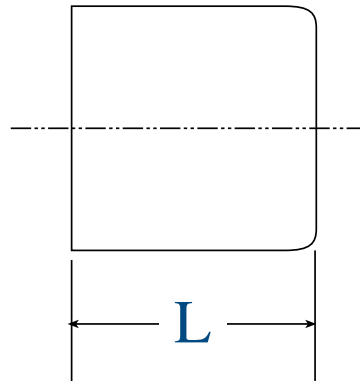


DIPS
HDPE
Fittings

DIPS Fittings Stub End									
Nominal Size(in)	Pipe OD(in)	DR	Pressure Rating	Part #	Dimensions			Weight (lbs)	Shipping Method
					D (in)	T (in)	H (in)		
14	15.3	11	160	ISFFSE1411DIPS	17.5	1.4	3	12	FedEx
		17	100	ISFFSE1417DIPS	"	1	2	10	"
16	17.4	11	160	ISFFSE1611DIPS	20	1.6	3	18	FedEx
		17	100	ISFFSE1617DIPS	"	1.2	2	15	"
18	19.5	11	160	ISFFSE1811DIPS	21.1	2	3	20	FedEx
		17	100	ISFFSE1817DIPS	"	1.5	"	17	"
20	21.6	11	160	ISFFSE2011DIPS	23.5	2.2	3	25	FedEx
		17	100	ISFFSE2017DIPS	"	1.6	"	20	"
24	25.8	11	160	ISFFSE2411DIPS	27.9	2.6	4	50	FedEx
		17	100	ISFFSE2417DIPS	"	1.9	3	35	"
30	32.0	17	100	ISFFSE3017DIPS	34.3	2.4	4	113	LTL



DIPS Fittings Cap



DIPS HDPE Fittings

Pressure Rating of Caps are equal to pipe of same DR.

Caps from 3608 resin:	
DR	Pressure Rating
7	267 psi
9	200 psi
11	128 psi
13.5	128 psi
15.5	110 psi
17	100 psi
21	80 psi
26	64 psi
32.5	51 psi

Caps from 4710 resin:	
DR	Pressure Rating
7	336 psi
9	252 psi
11	202 psi
13.5	161 psi
15.5	139 psi
17	126 psi
21	101 psi
26	81 psi
32.5	64 psi

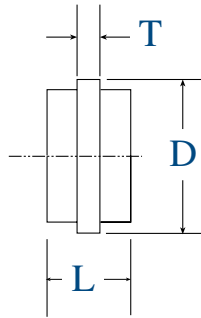
Note: Size/DR listings shown are commonly requested. Many DR options not listed are available. Please consult an ISCO representative for availability.

DIPS Fittings Cap						
Nominal Pipe Size (in)	OD (in)	DR	Part #	Dimensions L (in)	Weight (lbs)	Shipping Method
4	4.8	11	ISMFCP0411DIPS	4	2	FedEx
6	6.9	11	ISMFCP0611DIPS	4	3	FedEx
8	9.05	11	ISMFCP0811DIPS	4	5	FedEx
10	11.1	11	ISMFCP1011DIPS	4	13	FedEx
12	13.1	11	ISMFCP1211DIPS	4	19	FedEx
14	15.3	11	ISFFCP1411DIPS	5	32	FedEx
		11	ISFFCP1411DIPLG	16	58	FedEx
16	17.4	11	ISFFCP1611DIPS	5	41	FedEx
		11	ISFFCP1611DIPLG	16	76	FedEx
18	19.50	11	ISFFCP1811DIPS	6	62	FedEx
		11	ISFFCP1811DIPLG	16	105	FedEx
20	21.60	11	ISFFCP2011DIPS	6	76	FedEx
		11	ISFFCP2011DIPLG	16	129	LTL
24	25.80	11	ISFFCP2411DIPS	6	109	FedEx
		11	ISFFCP2411DIPLG	16	184	LTL

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DIPS Fittings Wall Anchor (Force Transfer / Restraint Fitting)



DIPS Fittings Wall Anchor								
Nominal Size (in)	Pipe OD (in)	DR	Part #	Dimensions			Weight (lbs)	Shipping Method
				D (in)	T (in)	L (in)		
4	4.8	11	ISFFWA0411DIP	6.6	1	12	5	FedEx
		17	ISFFWA0417DIP	"	"	"	4	"
6	6.9	11	ISFFWA0611DIP	8.5	1.1	16	13	FedEx
		17	ISFFWA0617DIP	"	"	"	8	"
8	9.05	11	ISFFWA0811DIP	10.6	1.25	16	22	FedEx
		17	ISFFWA0817DIP	"	"	"	15	"
10	11.1	11	ISFFWA1011DIP	12.75	1.5	18	34	FedEx
		17	ISFFWA1017DIP	"	"	"	23	"
12	13.2	11	ISFFWA1211DIP	15.5	1.5	18	49	FedEx
		17	ISFFWA1217DIP	"	"	"	33	"
14	15.3	11	ISFFWA1411DIP	17.5	1.4	24	80	FedEx
		17	ISFFWA1417DIP	"	1	"	53	"
16	17.4	11	ISFFWA1611DIP	20	1.6	24	103	FedEx
		17	ISFFWA1617DIP	"	1.2	"	69	"
18	19.5	11	ISFFWA1811DIP	21.1	2	24	129	FedEx
		17	ISFFWA1817DIP	"	1.5	"	87	"
20	21.6	11	ISFFWA2011DIP	23.5	2.2	24	159	LTL
		17	ISFFWA2017DIP	"	1.6	"	106	"
24	25.8	11	ISFFWA2411DIP	27.9	2.6	24	226	LTL
		17	ISFFWA2417DIP	"	1.9	"	152	"



DIPS HDPE Fittings

Pressure Rating of Wall Anchors are equal to pipe of same DR.

Wall Anchors from 3608 resin:	
DR	Pressure Rating
7	267 psi
9	200 psi
11	128 psi
13.5	128 psi
15.5	110 psi
17	100 psi
21	80 psi
26	64 psi
32.5	51 psi

Wall Anchors from 4710 resin:	
DR	Pressure Rating
7	336 psi
9	252 psi
11	202 psi
13.5	161 psi
15.5	139 psi
17	126 psi
21	101 psi
26	81 psi
32.5	64 psi

Note: Size/DR listings shown are commonly requested. Many DR options not listed are available. Please consult an ISCO representative for availability.

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FM Pipe
and
Fittings

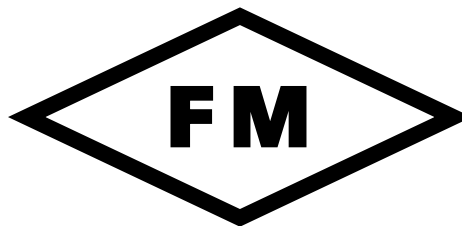
Factory Mutual Pipe and Fittings

Fire Protection Piping Systems

Fire protection systems for industrial plants usually require that all components have Factory Mutual Research Corporation approval. Large insurance companies specializing in insuring large manufacturing plants formed Factory Mutual Research Corporation (FMRC). They found that insurance risk was reduced when the fire protection system and its components met standards set by FMRC.

FMRC is a testing laboratory that is recognized in the U.S. and internationally for its work testing components for fire protection systems. Components for fire protection systems are tested to make sure that the products meet performance, safety, and quality standards. Factory Mutual (FM) approval provides proof that components meet the requirements of a fire protection system now and will continue to meet these requirements in the event of a fire.

The ISCO Industries, LLC HDPE fitting manufacturing facility, in Louisville, KY, has been inspected and approved by FMRC. Our facility is inspected on an on-going basis. Our facility passes scheduled and unscheduled inspections.



APPROVED

ISCO Industries manufactures high-density polyethylene (HDPE) fittings and distributes HDPE pipe manufactured to Factory Mutual standards. Both fittings and pipe are marked with the Factory Mutual diamond indicating approval. ISCO Industries recently started offering our FM products in both IPS (Iron Pipe Size) and DIPS (Ductile Iron Pipe Size) sizing. Using DIPS offers you the ability to increase the inside diameter and flow capacity for the same diameter.

In addition to providing pipe and fittings, ISCO Industries offers butt fusion machines for the joining of HDPE pipe and fittings. Trained and certified butt fusion technicians are available for training and to assist contractors with joining of FM HDPE during installation.

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Material Standards

ISCO Industries fabricates FM approved fittings from HDPE pipe that meets ASTM D 3350-02 with a minimum cell classification of 345464C. HDPE pipe made to this standard is tested specifically for piping requirements.

In order to use the FM diamond, products made in our manufacturing facility must pass Factory Mutual product tests and records of testing and quality control must be maintained. At ISCO, we take pride in the fact that we produce and test products that meet or exceed the requirements of Factory Mutual.

Manufacturing Standards

FMRC has approved fittings fabricated by ISCO. FMRC has been present while fittings have been manufactured and tested.

Fittings are made to American Water Works Association (AWWA) requirements. Fittings for AWWA applications are tested to AWWA standards.

ISCO goes beyond the requirements of FMRC and AWWA. ISCO uses Data Loggers to monitor and record the results of fusion welds made in our shops. This provides constant quality monitoring and traceability of welds.

Service Pressure Ratings

As temperature increases, the pressure rating for HDPE pipe decreases. Table 1 shows the operating pressure at various temperatures for Class 150 and Class 200 Factory Mutual fire protections piping.

	73 F	100 F	120 F	140 F
Class 150	150 psi	121.5 psi	99 psi	80 psi
Class 200	200 psi	162 psi	132 psi	100 psi



FM PIPE
and Fittings

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Factory Mutual Product Properties and Dimensions - IPS

Factory Mutual fire protection piping systems are made to iron pipe sizes (IPS). Table 2 below shows the outside diameter and the wall thickness of Class 150 and Class 200 piping systems.

Table 2. Pipe Sizes and Dimensions - IPS

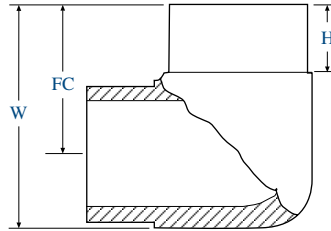
Nominal IPS Size (inches)	Outside Diameter (inches)	Pressure Class					
		Class 150			Class 200		
		Min.Wall (inches)	Average ID (inches)	Weight (lbs./ft)	Min. Wall (inches)	Average ID (inches)	Weight (lbs./ft)
2	2.375	0.216	1.943	0.64	0.264	1.847	.76
3	3.50	0.318	2.864	1.40	0.389	2.722	1.66
4	4.500	0.409	3.633	2.29	0.500	3.460	2.74
6	6.625	0.602	5.348	4.97	0.736	5.094	5.93
8	8.625	0.784	6.963	8.43	0.958	6.632	10.05
10	10.750	0.977	8.678	13.09	1.194	8.266	15.62
12	12.750	1.159	10.293	18.41	1.417	9.803	21.97
14	14.000	1.273	11.302	22.20	1.556	10.764	26.49
16	16.000	1.455	12.916	28.99	1.778	12.302	34.60
18	18.000	1.636	14.531	36.70	2.000	13.840	43.79
20	20.000	1.818	16.145	45.30	2.222	15.378	54.06
22	22.000	2.000	17.760	54.82	2.444	16.819	65.41
24	24.000	2.182	19.375	65.24	2.667	18.453	77.85

FM PIPE
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IPS

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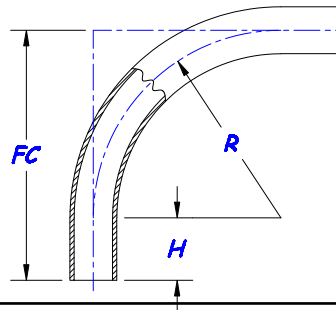
FM Fittings Molded 90 degree Ell 90° – IPS



FM Fittings Molded 90° Elbow – IPS

Nominal Size(in)	Pipe OD(in)	Pressure Class	Part #	Dimensions			Weight (lbs)	Shipping Method
				H (in)	FC (in)	B (in)		
2	2.375	200	ISMF9002C200FM	3	4.5	5.7	0.8	FedEx
		150	ISMF9002C150FM	"	"	"	0.7	"
3	3.5	200	ISMF9003C200FM	3	5.1	6.9	2	FedEx
		150	ISMF9003C150FM	"	"	"	2	"
4	4.5	200	ISMF9004C200FM	3	5.8	8	4.4	FedEx
		150	ISMF9004C150FM	"	"	"	4.3	"
6	6.625	200	ISMF9006C200FM	4.4	9	12.3	12	FedEx
		150	ISMF9006C150FM	"	"	"	11	"

FM Fittings Sweep 90° – IPS



FM Fittings Sweep 90° – IPS

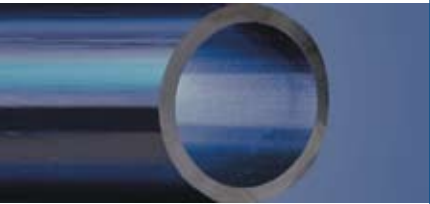
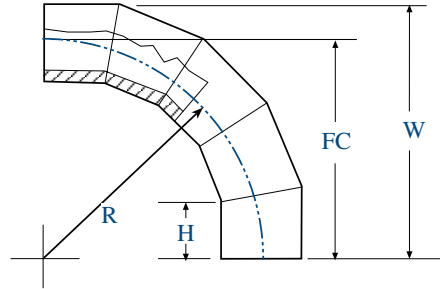
Nominal Size(in)	Pipe OD(in)	Pressure Class	Part #	Dimensions			Shipping Method
				R (in)	L (in)	S (in)	
4	4.5	200	ISSE9004C200FM	13.5	6	19.5	FedEx
		150	ISSE9004C150FM	"	"	"	"
6	6.625	200	ISSE9006C200FM	19.9	7	26.9	FedEx
		150	ISSE9006C150FM	"	"	"	"
8	8.625	200	ISSE9008C200FM	24.5	10	34.5	LTL
		150	ISSE9008C150FM	"	"	"	"
10	10.75	200	ISSE9010C200FM	32.25	11	43.2	FedEx
		150	ISSE9010C150FM	"	"	"	"
12	12.75	200	ISSE9012C200FM	38.3	13	51.3	FedEx
		150	ISSE9012C150FM	"	"	"	"
14	14.00	200	ISSE9014C200FM	38.9	13	51.9	LTL
		150	ISSE9014C150FM	"	"	"	"

FM PIPE
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FM Fittings Fabricated 90° Ell 5 Segment – IPS



FM PIPE
and Fittings
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FM Fittings Fabricated 90° Elbow 5 Segment – IPS

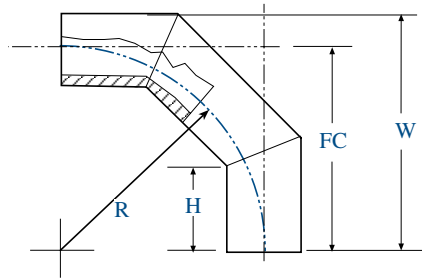
Nominal Size (in)	Pipe OD (in)	Pressure Class	Part #	Dimensions				Weight (lbs)	Shipping Method
				L (in)	H (in)	FC (in)	B (in)		
8	8.625	200	ISFF9008C200FM	19.4	6.5	20.375	24.75	45	FedEx
		150	ISFF9008C150FM	"	"	"	"	37	"
10	10.75	200	ISFF9010C200FM	20.4	6.5	21.5	26.75	75	FedEx
		150	ISFF9010C150FM	"	"	"	"	61	"
12	12.75	200	ISFF9012C200FM	26.5	8.0	24.875	31.25	95	FedEx
		150	ISFF9012C150FM	"	"	"	"	77	"
14	14.00	200	ISFF9014C200FM	27.1	8.0	26.25	33.25	120	LTL
		150	ISFF9014C150FM	"	"	"	"	97	"
16	16.00	200	ISFF9016C200FM	33.1	8.0	28.875	36.875	170	LTL
		150	ISFF9016C150FM	"	"	"	"	139	"
18	18.00	200	ISFF9018C200FM	34.1	8.0	31.25	40.25	235	LTL
		150	ISFF9018C150FM	"	"	"	"	190	"
20	20.00	200	ISFF9020C200FM	30	8.0	34	44	315	LTL
		150	ISFF9020C150FM	"	"	"	"	253	"
22	22.00	200	ISFF9022C200FM	33	8.0	36.625	47.625	400	LTL
		150	ISFF9022C150FM	"	"	"	"	325	"
24	24.00	200	ISFF9024C200FM	36	8.0	39.25	51.25	515	LTL
		150	ISFF9024C150FM	"	"	"	"	415	"



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FM Fittings Fabricated 90° Ell 3 Segment – IPS



FM Fittings Fabricated 90° Elbow 3 Segment – IPS

Nominal Size(in)	Pipe OD(in)	Pressure Class	Part #	Dimensions				Weight (lbs)	Shipping Method
				L (in)	H (in)	FC (in)	B (in)		
8	8.625	200	ISFF9008C20FM3P	12.16	6.5	15.41	19.72	28	FedEx
		150	ISFF9008C15FM3P	"	"	"	"	22	"
10	10.75	200	ISFF9010C20FM3P	12.63	6.5	16.13	21.5	45	FedEx
		150	ISFF9010C15FM3P	"	"	"	"	36	"
12	12.75	200	ISFF9012C20FM3P	13.63	8.5	19.12	25.5	76	FedEx
		150	ISFF9012C15FM3P	"	"	"	"	62	"
14	14.00	200	ISFF9014C20FM3P	14.25	8.5	19.75	26.75	95	LTL
		150	ISFF9014C15FM3P	"	"	"	"	77	"
16	16.00	200	ISFF9016C20FM3P	15.25	8.5	20.75	28.75	130	LTL
		150	ISFF9016C15FM3P	"	"	"	"	105	"
18	18.00	200	ISFF9018C20FM3P	16.25	8.5	21.75	30.75	172	LTL
		150	ISFF9018C15FM3P	"	"	"	"	140	"
20	20.00	200	ISFF9020C20FM3P	17.25	8.5	22.75	32.75	221	LTL
		150	ISFF9020C15FM3P	"	"	"	"	180	"
22	22.00	200	ISFF9022C20FM3P	23.07	8.5	26.57	37.57	302	LTL
		150	ISFF9022C15FM3P	"	"	"	"	247	"
24	24.00	200	ISFF9024C20FM3P	24.07	8.5	27.57	39.57	378	LTL
		150	ISFF9024C15FM3P	"	"	"	"	305	"



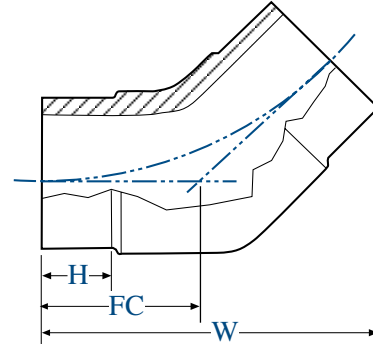
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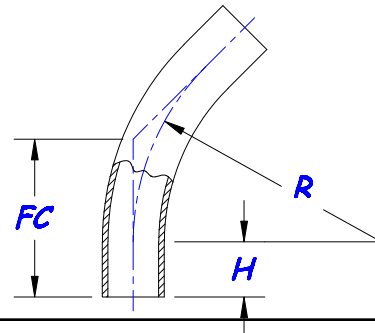
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FM Fittings Molded 45° Ell – IPS



FM Fittings Molded 45° Ell – IPS								
Nominal Size (in)	Pipe OD (in)	Pressure Class	Part #	H (in)	FC (in)	W (in)	Weight (lbs)	Shipping Method
3	3.5	200	ISMF4503C200FM	3	5	9.8	2.8	FedEx
		150	ISMF4503C150FM	"	"	"	2.7	"
4	4.5	200	ISMF4504C200FM	3	5	10.1	2.9	FedEx
		150	ISMF4504C150FM	"	"	"	2.8	"
6	6.625	200	ISMF4506C200FM	4.4	6	12.6	10	FedEx
		150	ISMF4506C150FM	"	"	"	9	"

FM Fittings Sweep 45° Ell – IPS



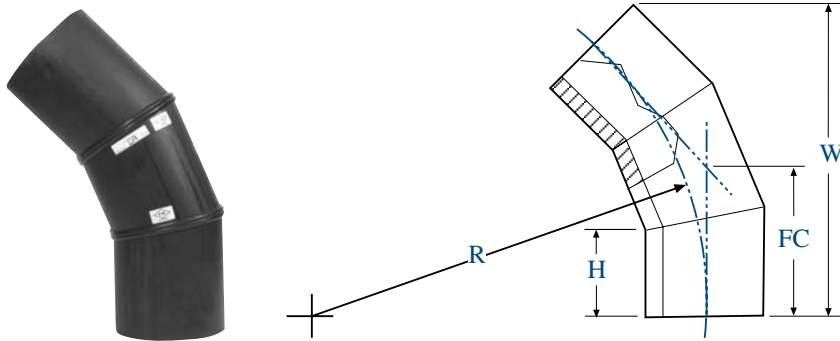
FM Fittings Sweep 45° Ell – IPS								
Nominal Size (in)	Pipe OD (in)	Pressure Class	Part #	Dimensions			Shipping Method	
				R (in)	L (in)	S (in)		
4	4.5	200	ISSE4504C200FM	13.5	6	11.6	FedEx	
		150	ISSE4504C150FM	"	"	"	"	
6	6.625	200	ISSE4506C200FM	19.9	7	15.2	FedEx	
		150	ISSE4506C150FM	"	"	"	"	
8	8.625	200	ISSE4508C200FM	24.5	10	20.1	LTL	
		150	ISSE4508C150FM	"	"	"	"	
10	10.75	200	ISSE4510C200FM	32.25	11	24.3	FedEx	
		150	ISSE4510C150FM	"	"	"	"	
12	12.75	200	ISSE4512C200FM	38.3	13	28.7	FedEx	
		150	ISSE4512C150FM	"	"	"	"	
14	14.00	200	ISSE4514C200FM	38.9	13	29.1	LTL	
		150	ISSE4514C150FM	"	"	"	"	

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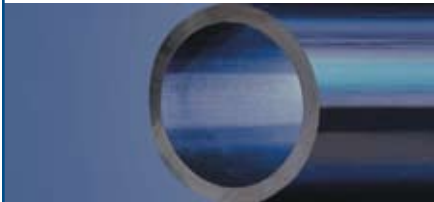
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FM Fittings Fabricated 45° Ell 3 Segment – IPS



FM Fittings Fabricated 45° Elbow 3 Segment – IPS									
Nominal Size(in)	Pipe OD(in)	Pressure Class	Part #	Dimensions				Weight (lbs.)	Shipping Method
				R (in)	H (in)	FC (in)	W (in)		
8	8.625	200	ISFF4508C200FM	19.4	6.5	10.875	21.58	28	FedEx
		150	ISFF9008C150FM	"	"	"	"	23	"
10	10.75	200	ISFF4510C200FM	20.4	6.5	11.25	23.09	42	FedEx
		150	ISFF4510C150FM	"	"	"	"	34	"
12	12.75	200	ISFF4512C200FM	26.5	8.0	13.5	27.52	60	FedEx
		150	ISFF4512C150FM	"	"	"	"	48	"
14	14.00	200	ISFF4514C200FM	27.1	8.0	13.875	28.64	75	FedEx
		150	ISFF4514C150FM	"	"	"	"	60	"
16	16.00	200	ISFF4516C200FM	33.1	8.0	14.875	30.74	103	LTL
		150	ISFF4516C150FM	"	"	"	"	83	"
18	18.00	200	ISFF4518C200FM	34.1	8.0	15.625	33.08	137	LTL
		150	ISFF4518C150FM	"	"	"	"	110	"
20	20.00	200	ISFF4520C200FM	30	8.0	16.4375	35.125	180	LTL
		150	ISFF4520C150FM	"	"	"	"	145	"
22	22.00	200	ISFF4522C200FM	33	8.0	17.3125	37.3125	225	LTL
		150	ISFF4522C150FM	"	"	"	"	183	"
24	24.00	200	ISFF4524C200FM	36	8.0	18.1875	39.5	282	LTL
		150	ISFF4524C150FM	"	"	"	"	229	"



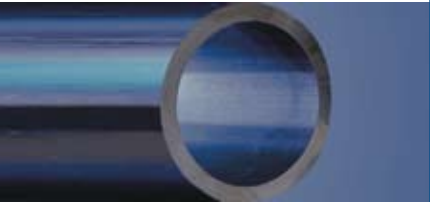
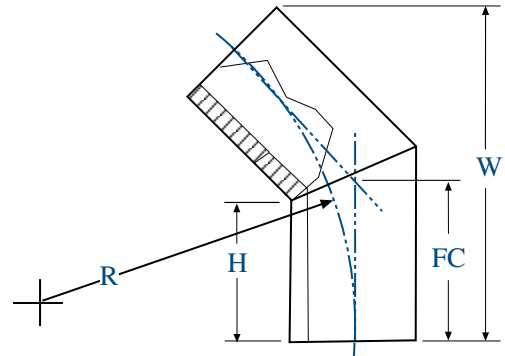
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FM Fittings Fabricated 45° Ell 2 Segment – IPS



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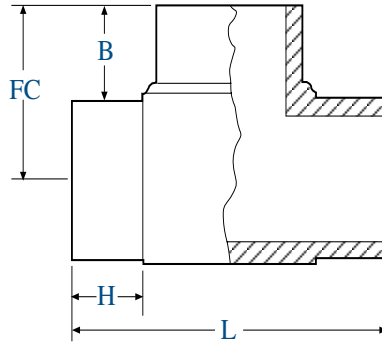
FM Fittings Fabricated 45° Elbow 2 Segment – IPS

Nominal Pipe Size	Pipe OD (in)	Pressure Class	Part #	Dimensions				Weight (lbs)	Shipping Method
				R (in)	H (in)	FC (in)	W (in)		
8	8.625	200	ISFF450820FM2P	12.16	6.5	8.25	17.19	17	FedEx
		150	ISFF450815FM2P	"	"	"	"	14	"
10	10.75	200	ISFF451020FM2P	12.63	6.5	8.73	18.7	28	FedEx
		150	ISFF451015FM2P	"	"	"	"	23	"
12	12.75	200	ISFF451220FM2P	13.63	8.5	11.14	23.53	50	FedEx
		150	ISFF451215FM2P	"	"	"	"	41	"
14	14.00	200	ISFF451420FM2P	14.25	8.5	11.4	24.41	63	LTL
		160	ISFF451415FM2P	"	"	"	"	50	"
16	16.00	200	ISFF451620FM2P	15.25	8.5	11.81	25.82	85	LTL
		150	ISFF451615FM2P	"	"	"	"	68	"
18	18.00	200	ISFF451820FM2P	16.25	8.5	12.23	27.24	110	LTL
		150	ISFF451815FM2P	"	"	"	"	90	"
20	20.00	200	ISFF452020FM2P	17.25	8.5	12.64	28.65	141	LTL
		150	ISFF452015FM2P	"	"	"	"	115	"
22	22.00	200	ISFF452220FM2P	23.1	8.5	13.05	30	175	LTL
		150	ISFF452215FM2P	"	"	"	"	142	"
24	24.00	200	ISFF452420FM2P	24.1	8.5	13.5	31.5	217	LTL
		150	ISFF452415FM2P	"	"	"	"	175	"

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FM Fittings Molded Tee – IPS



FM Fittings Molded Tee – IPS										
Nominal Size	Pipe OD (in)	Pressure Class	Part #	Dimensions				Weight (lbs)	Shipping Method	
				R (in)	H (in)	FC (in)	W (in)			
2	2.375	200	ISMFTE02C200FM	9.625	3.0	4.80	3.61	1	FedEx	
	"	150	ISMFTE02C150FM	"	"	"	"	1	"	
3	3.5	200	ISMFTE03C200FM	10.2	3.0	5.10	3.35	3	FedEx	
	"	150	ISMFTE03C150FM	"	"	"	"	3	"	
4	4.5	200	ISMFTE04C200FM	11.2	3.0	5.60	3.35	5	FedEx	
	"	150	ISMFTE04C150FM	"	"	"	"	4	"	
6	6.625	200	ISMFTE06C200FM	14.9	3.0	7.40	4.09	15	FedEx	
	"	150	ISMFTE06C150FM	"	"	"	"	14	"	



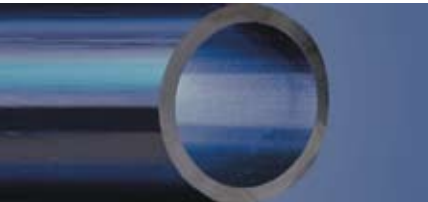
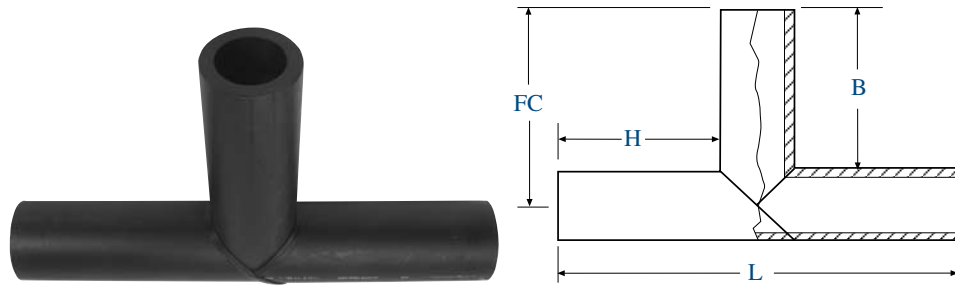
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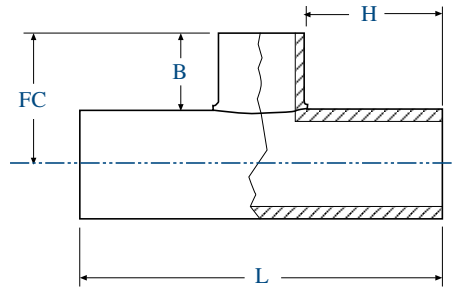
FM Fittings Fabricated Tee – IPS									
Nominal Size (in)	Pipe OD (in)	Pressure Class	Part #	Dimensions				Weight (lbs)	Shipping Method
				L (in)	H (in)	FC (in)	B (in)		
8	8.625	200	ISFFTE08C200FM	48.0	19.69	24.0	19.69	73	FedEx
		150	ISFFTE08C150FM	"	"	"	"	59	"
10	10.75	200	ISFFTE10C200FM	48.0	18.63	24.0	18.63	108	FedEx
		150	ISFFTE10C150FM	"	"	"	"	88	"
12	12.75	200	ISFFTE12C200FM	48.0	17.63	24.0	17.63	153	FedEx
		150	ISFFTE12C150FM	"	"	"	"	124	"
14	14.00	200	ISFFTE14C200FM	48.0	17.0	24.0	17.00	180	LTL
		150	ISFFTE14C150FM	"	"	"	"	146	"
16	16.00	200	ISFFTE16C200FM	48.0	16.00	24.0	16.00	230	LTL
		150	ISFFTE16C150FM	"	"	"	"	186	"
18	18.00	200	ISFFTE18C200FM	48.0	15.00	24.0	15.00	317	LTL
		150	ISFFTE18C150FM	"	"	"	"	257	"
20	20.00	200	ISFFTE20C200FM	48	14.0	24	14	347	LTL
		150	ISFFTE20C150FM	"	"	"	"	280	"
22	22.00	200	ISFFTE22C200FM	48	13.0	24	13	408	LTL
		150	ISFFTE22C150FM	"	"	"	"	333	"
24	24.00	200	ISFFTE24C200FM	48	12.0	24	12	483	LTL
		150	ISFFTE24C150FM	"	"	"	"	391	"



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FM Fittings Branch Saddle Reducing Tee – IPS



FM Fittings Branch Saddle Reducing Tee – IPS									
Nominal Size (in)	Pipe OD (in)	Pressure Class	Part #	Dimensions				Weight (lbs)	Shipping Method
				L (in)	H (in)	FC (in)	B (in)		
3x2	3.5 x 2.375	200	ISFFRT03X02C200	16	6.81	7.25	5.5	5	FedEx
		150	ISFFRT03X02C150	"	"	"	"	4	"
4x2	4.5 x 2.375	200	ISFFRT04X02C200	16	6.81	7.75	5.5	6	FedEx
		150	ISFFRT04X02C150	"	"	"	"	6	"
4x3	4.5 x 3.5	200	ISFFRT04X03C200	24	10.25	6.5	4.25	10	FedEx
		150	ISFFRT04X03C150	"	"	"	"	9	"
6x2	6.625 x 2.375	200	ISFFRT06X02C200	16	6.81	8.75	5.5	10	FedEx
		150	ISFFRT06X02C150	"	"	"	"	9	"
6x3	6.625 x 3.5	200	ISFFRT06X03C200	24	10.25	7.5	4.25	16	FedEx
		150	ISFFRT06X03C150	"	"	"	"	14	"
6x4	6.625 x 4.5	200	ISFFRT06X04C200	24	9.75	9.25	6	19	FedEx
		150	ISFFRT06X04C150	"	"	"	"	17	"
8x2	8.625 x 2.375	200	ISFFRT08X02C200	16	6.81	9.75	5.5	16	FedEx
		150	ISFFRT08X02C150	"	"	"	"	14	"
8x3	8.625 x 3.5	200	ISFFRT08X03C200	24	10.25	8.625	4.25	25	FedEx
		150	ISFFRT08X03C150	"	"	"	"	21	"
8x4	8.625 x 4.5	200	ISFFRT08X04C200	24	9.75	10.25	6	28	FedEx
		150	ISFFRT08X04C150	"	"	"	"	24	"
8x6	8.625 x 6.625	200	ISFFRT08X06C200	28	10.75	12.25	8	38	FedEx
		150	ISFFRT08X06C150	"	"	"	"	33	"
10x2	10.75 x 2.375	200	ISFFRT10X02C200	16	6.81	10.875	5.5	23	FedEx
		150	ISFFRT10X02C150	"	"	"	"	20	"
10x3	10.75 x 3.5	200	ISFFRT10X03C200	24	10.25	9.625	4.25	36	FedEx
		150	ISFFRT10X03C150	"	"	"	"	31	"
10x4	10.75 x 4.5	200	ISFFRT10X04C200	24	9.75	11.375	6	39	FedEx
		150	ISFFRT10X04C150	"	"	"	"	34	"
10x6	10.75 x 6.625	200	ISFFRT10X06C200	28	10.75	13.375	8	51	FedEx
		150	ISFFRT10X06C150	"	"	"	"	44	"
10x8	10.75 x 8.625	200	ISFFRT10X08C200	30	10.75	13.625	8.25	60	FedEx
		150	ISFFRT10X08C150	"	"	"	"	51	"

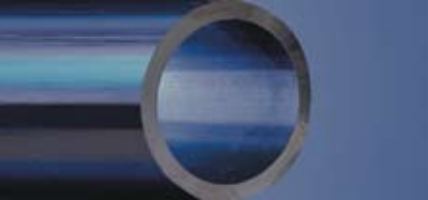


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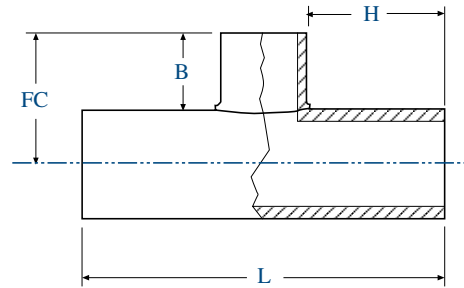
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FM Fittings Branch Saddle Reducing Tee – IPS (continued)



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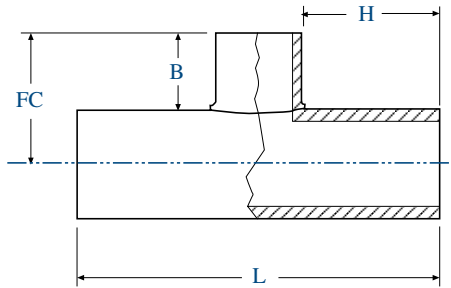
Nominal Size (in)	Pipe OD (in)	Pressure Class	Part #	Dimensions				Weight (lbs)	Shipping Method
				L (in)	H (in)	FC (in)	B (in)		
12x2	12.75 x 2.375	200	ISFFRT12X02C200	16	6.83	11.875	5.5	32	FedEx
		150	ISFFRT12X02C150					27	
12x3	12.75 x 3.5	200	ISFFRT12X03C200	24	10.25	10.625	4.25	48	FedEx
		150	ISFFRT12X03C150					41	
12x4	12.75 x 4.5	200	ISFFRT12X04C200	24	9.75	12.375	6	51	FedEx
		150	ISFFRT12X04C150					44	
12x6	12.75 x 6.625	200	ISFFRT12X06C200	28	10.75	14.375	8	66	LTL
		150	ISFFRT12X06C150					56	
12x8	12.75 x 8.625	200	ISFFRT12X08C200	30	10.75	14.625	8.25	75	LTL
		150	ISFFRT12X08C150					65	
12x10	12.75 x 10.75	200	ISFFRT12X10C200	30	9.625	12.875	6.5	85	LTL
		150	ISFFRT12X10C150					75	
14x2	14 x 2.375	200	ISFFRT14X02C200	16	6.81	12.5	5.5	38	FedEx
		150	ISFFRT14X02C150					32	
14x3	14 x 3.5	200	ISFFRT14X03C200	24	10.25	11.25	4.25	57	FedEx
		150	ISFFRT14X03C150					49	
14x4	14 x 4.5	200	ISFFRT14X04C200	24	9.75	13	6	60	FedEx
		150	ISFFRT14X04C150					52	
14x6	14 x 6.625	200	ISFFRT14X06C200	28	10.75	15	8	76	LTL
		150	ISFFRT14X06C150					65	
14x8	14 x 8.625	200	ISFFRT14X08C200	30	10.75	15.25	8.25	87	LTL
		150	ISFFRT14X08C150					74	
14x10	14 x 10.75	200	ISFFRT14X10C200	30	9.625	13.5	6.5	97	LTL
		150	ISFFRT14X10C150					84	
16x2	16 x 2.375	200	ISFFRT16X02C200	16	6.81	13.5	5.5	49	FedEx
		150	ISFFRT16X02C150					41	
16x3	16 x 3.5	200	ISFFRT16X03C200	24	10.25	12.25	4.25	74	FedEx
		150	ISFFRT16X03C150					62	
16x4	16 x 4.5	200	ISFFRT16X04C200	24	9.75	14	6	77	FedEx
		150	ISFFRT16X04C150					65	
16x6	16 x 6.625	200	ISFFRT16X06C200	28	10.75	16	8	95	LTL
		150	ISFFRT16X06C150					81	
16x8	16 x 8.625	200	ISFFRT16X08C200	30	10.75	16.25	8.25	107	LTL
		150	ISFFRT16X08C150					91	
16x10	16 x 10.75	200	ISFFRT16X10C200	30	9.625	14	6.5	117	LTL
		150	ISFFRT16X10C150					101	
16x12	16 x 12.75	200	ISFFRT16X12C200	32	9.625	16.5	8.5	133	LTL
		150	ISFFRT16X12C150					116	



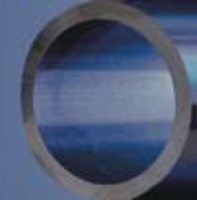
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FM Fittings Branch Saddle Reducing Tee – IPS (continued)



Nominal Size (in)	Pipe OD (in)	Pressure Class	Part #	Dimensions				Weight (lbs)	Shipping Method
				L (in)	H (in)	FC (in)	B (in)		
18x2	18 x 2.375	200	ISFFRT18X02C200	16	6.81	14.5	5.5	61	FedEx
		150	ISFFRT18X02C150	"	"	"	"	41	"
18x3	18 x 3.5	200	ISFFRT18X03C200	24	10.25	13.25	4.25	92	FedEx
		150	ISFFRT18X03C150	"	"	"	"	62	"
18x4	18 x 4.5	200	ISFFRT18X04C200	24	9.75	15	6	95	FedEx
		150	ISFFRT18X04C150	"	"	"	"	65	"
18x6	18 x 6.625	200	ISFFRT18X06C200	28	10.75	17	8	117	LTL
		150	ISFFRT18X06C150	"	"	"	"	81	"
18x8	18 x 8.625	200	ISFFRT18X08C200	30	10.75	17.25	8	130	LTL
		150	ISFFRT18X08C150	"	"	"	"	91	"
18x10	18 x 10.75	200	ISFFRT18X10C200	30	9.625	15.5	6.5	140	LTL
		150	ISFFRT18X10C150	"	"	"	"	101	"
18x12	18 x 12.75	200	ISFFRT18X12C200	32	9.625	17.5	8.5	157	LTL
		150	ISFFRT18X12C150	"	"	"	"	116	"
20x6	20 x 6.625	200	ISFFRT20X06C200	28	10.69	15.625	5.625	171	LTL
		150	ISFFRT20X06C150	"	"	"	"	140	"
20x8	20 x 8.625	200	ISFFRT20X08C200	30	10.69	17	7	188	LTL
		150	ISFFRT20X08C150	"	"	"	"	154	"
20x10	20 x 10.75	200	ISFFRT20X10C200	30	9.625	16.5	6.5	198	LTL
		150	ISFFRT20X10C150	"	"	"	"	164	"
20x12	20 x 12.75	200	ISFFRT20X12C200	32	9.625	17.5	7.5	220	LTL
		150	ISFFRT20X12C150	"	"	"	"	183	"
20x16	20 x 16	200	ISFFRT20X16C200	36	10	25	15	277	LTL
		150	ISFFRT20X16C150	"	"	"	"	228	"
22x6	22 x 6.625	200	ISFFRT22X06C200	28	10.69	16.125	5.125	202	LTL
		150	ISFFRT22X06C150	"	"	"	"	166	"
24x6	24 x 6.625	200	ISFFRT24X06C200	28	10.69	17.125	5.125	240	LTL
		150	ISFFRT24X06C150	"	"	"	"	196	"
24x8	24 x 8.625	200	ISFFRT24X08C200	30	10.69	19	7	262	LTL
		150	ISFFRT24X08C150	"	"	"	"	214	"
24x10	24 x 10.75	200	ISFFRT24X10C200	30	9.625	18.5	6.5	272	LTL
		150	ISFFRT24X10C150	"	"	"	"	224	"
24x12	24 x 12.75	200	ISFFRT24X12C200	32	9.625	19.5	7.5	298	LTL
		150	ISFFRT24X12C150	"	"	"	"	247	"
24x16	24 x 16	200	ISFFRT24X16C200	36	10	27	15	366	LTL
		150	ISFFRT24X16C150	"	"	"	"	300	"

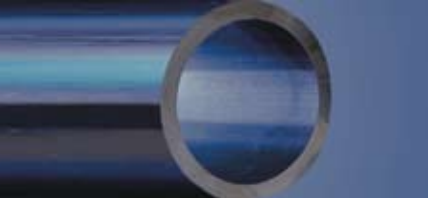
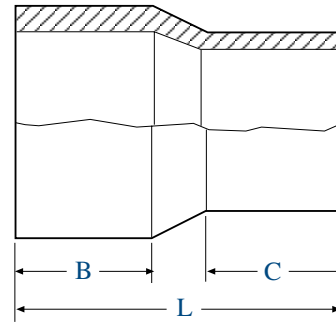


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FM Fittings Concentric Reducer – IPS



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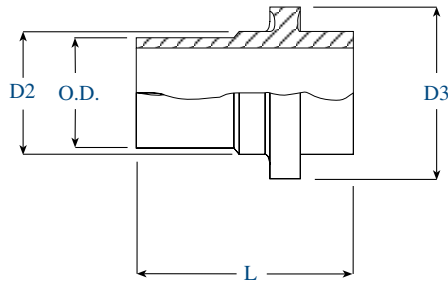
FM Fittings Concentric Reducer – IPS

Nom. Size (in)	Pressure Class	Part Number	L (in)	Dimensions		Weight (lbs.)	Shipping Method
				B (in)	C (in)		
3x2	200	ISMFCR03X02C200	6.5	2.875	2.625	0.8	FedEx
	150	ISMFCR03X02C150	"	"	"	0.7	"
4x3	200	ISMFCR04X03C200	6.375	2.875	2.625	1.5	FedEx
	150	ISMFCR04X03C150	"	"	"	1.4	"
6x4	200	ISMFCR06X04C200	7.5	3.0	2.625	5	FedEx
	150	ISMFCR06X04C150	"	"	"	4.5	"
8x6	200	ISFFCR08X06C200	9.375	4.0	4.0	10.5	FedEx
	150	ISMFCR08X06C150	"	"	"	10	"
10x8	200	ISFFCR10X08C200	16.0	6.0	6.0	19	FedEx
	150	ISFFCR10X08C150	"	"	"	16.5	"
12x10	200	ISFFCR12X10C200	16.0	6.0	6.0	27	FedEx
	150	ISFFCR12X10C150	"	"	"	25	"
14x12	200	ISFFCR14X12C200	18.0	7.0	7.0	39	FedEx
	150	ISFFCR14X12C150	"	"	"	28	"
16x14	200	ISFFCR16X14C200	18.0	7.0	7.0	50	LTL
	150	ISFFCR16X14C150	"	"	"	42	"
18x16	200	ISFFCR18X16C200	18.0	7.0	7.0	65	LTL
	150	ISFFCR18X16C150	"	"	"	55	"
20x18	200	ISFFCR20X18C200	18.00	7.0	7.0	94	LTL
	150	ISFFCR20X18C150	"	"	"	76	"
22x20	200	ISFFCR22X20C200	20.00	8.0	8.0	125	LTL
	150	ISFFCR22X20C150	"	"	"	102	"
24x22	200	ISFFCR24X22C200	22.00	9.0	9.0	160	LTL
	150	ISFFCR24X22C150	"	"	"	127	"

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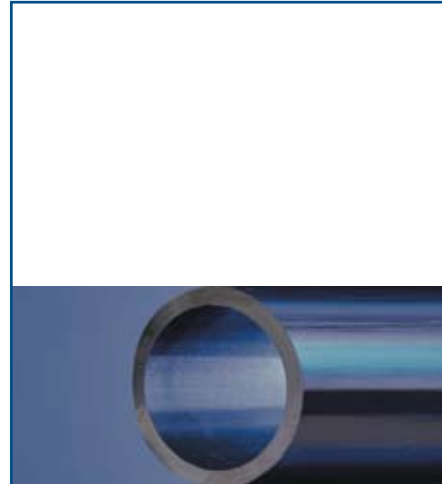
FM Fittings MJ Adapter Kit – IPS



The MJ Adapter Kit consist of: HDPE MJ Adapter with metal insert, Metal Gland, Gasket, and attachment Bolts and Nuts.

FM Fittings MJ Adapter Kit – IPS								
Nominal Size(in)	Pipe OD(in)	Pressure Class	Part #	Dimensions			Weight (lbs.)	Shipping Method
				L (in)	D2 (in)	D3 (in)		
2	2.375	200	ISMFMJ02C200FM	8.0	2.375	3.5	10	FedEx
		150	ISMFMJ02C150FM	"	"	"	9	"
3	3.5	200	ISMFMJ03C200FM	8.0	3.96	5.37	11	FedEx
		150	ISMFMJ03C150FM	"	"	"	10	"
4	4.5	200	ISMFMJ04C200FM	8.0	4.8	6.625	13	FedEx
		150	ISMFMJ04C150FM	"	"	"	12	"
6	6.625	200	ISMFMJ06C200FM	9.0	6.9	8.625	23	FedEx
		150	ISMFMJ06C150FM	"	"	"	18	"
8	8.625	200	ISMFMJ08C200FM	11.5	9.05	10.75	36	FedEx
		150	ISMFMJ08C150FM	"	"	"	35	"
10	10.75	200	ISMFMJ10C200FM	11.5	11.1	13.2	48	FedEx
		150	ISMFMJ10C150FM	"	"	"	45	"
12	12.75	200	ISMFMJ12C200FM	11.5	13.2	15.38	62	FedEx
		150	ISMFMJ12C150FM	"	"	"	60	"
14	14.00	200	ISMFMJ14C200FM	12.5	15.3	17.5	87	FedEx
		150	ISMFMJ14C150FM	"	"	"	84	"
16	16.00	200	ISMFMJ16C200FM	12.5	17.4	20	120	LTL
		150	ISMFMJ16C150FM	"	"	"	115	"
18	18.00	200	ISMFMJ18C200FM	12.5	19.5	22	132	LTL
		150	ISMFMJ18C150FM	"	"	"	125	"

*ALL WEIGHTS INCLUDE GLAND PACKS



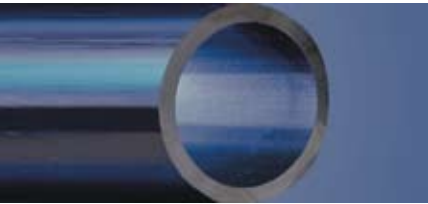
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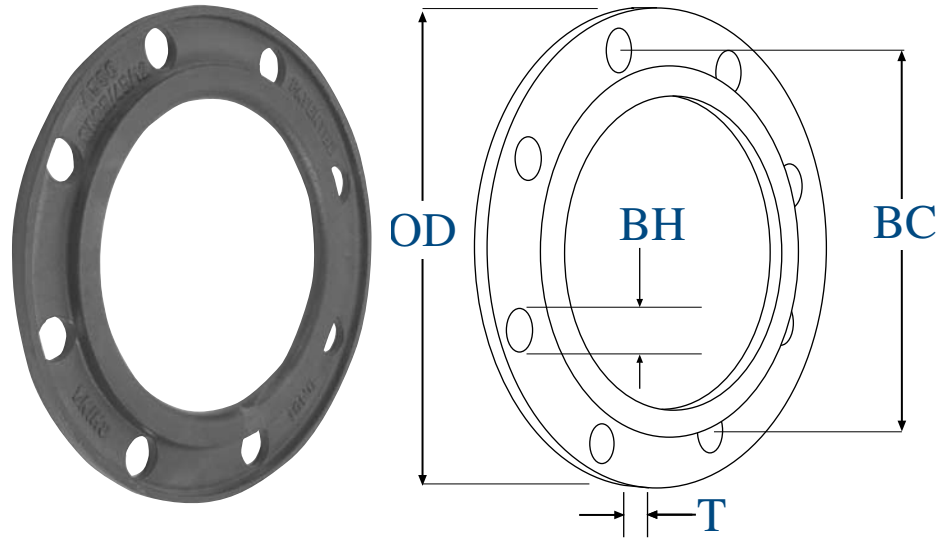
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FM Back-Up Ring – IPS (For use with the Flange Adapter)



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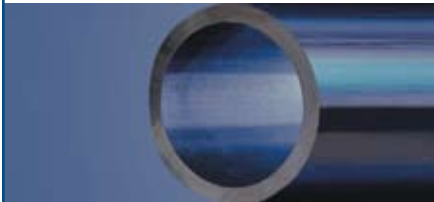
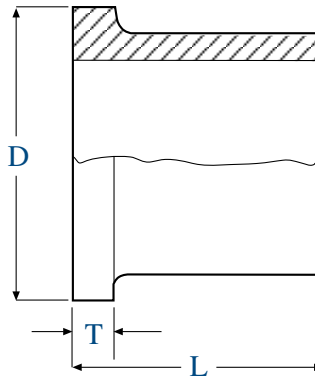
FM Ductile Iron Back-Up Ring – IPS

Nominal Pipe Size	Pipe OD (in)	Part #	Dimensions					Weight (lbs)	Shipping Method
			OD (in)	T(in)	Bolts(#)	BH(in)	BC(in)		
2	2.375	BU02C200FM	6	0.75	4	0.75	4.75	3	FedEx
		BU02C150FM	"	"	"	"	"	"	"
3	3.5	BU03C200FM	7.5	0.94	4	0.75	6	4	FedEx
		BU03C150FM	"	"	"	"	"	"	"
4	4.5	BU04C200FM	9	0.94	8	0.75	7.5	5.5	FedEx
		BU04C150FM	"	"	"	"	"	"	"
6	6.625	BU06C200FM	11	1	8	0.875	9.5	7	FedEx
		BU06C150FM	"	"	"	"	"	"	"
8	8.625	BU08C200FM	13.5	1.12	8	0.875	11.75	11	FedEx
		BU08C150FM	"	"	"	"	"	"	"
10	10.75	BU10C200FM	16	1.19	12	1	14.25	16	FedEx
		BU10C150FM	"	"	"	"	"	"	"
12	12.75	BU12C200FM	19	1.5	12	1	17	25	FedEx
		BU12C150FM	"	1.25	"	"	"	22	"
14	14.00	BU14C200FM	21	1.63	12	1.125	18.75	38	FedEx
		BU14C150FM	"	1.38	"	"	"	30	"
16	16.00	BU16C200FM	23.5	1.88	16	1.125	21.25	54	FedEx
		BU16C150FM	"	1.44	"	"	"	40	"
18	18.00	BU18C200FM	25	1.75	16	1.25	22.75	52	LTL
		BU18C150FM	"	1.56	"	"	"	45	"
20	20.00	BU20C200FM	27.5	1.81	20	1.25	25	61	LTL
		BU20C150FM	"	"	"	"	"	"	"
22	22.00	BU22C200FM	29.5	2	20	1.375	27.25	72	LTL
		BU22C150FM	"	"	"	"	"	"	"
24	24.00	BU24C200FM	32	2.17	20	1.375	29.5	91	LTL
		BU24C150FM	"	"	"	"	"	"	"

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FM Fittings Flange Adapter – IPS

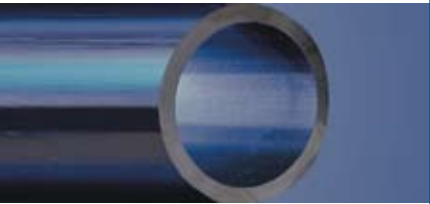
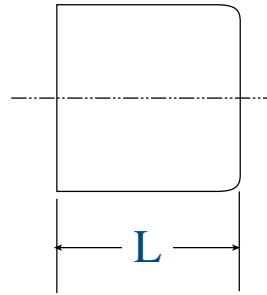


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FM Fittings Flange Adapter – IPS								
Nominal Size (in)	Pipe OD (in)	Pressure Class	Part #	Dimensions			Weight (lbs)	Shipping Method
				T (in)	L (in)	D (in)		
2	2.375	200	ISMFFA02C200FM	0.4	6.0	4.0	0.6	FedEx
		150	ISMFFA02C150FM	"	"	"	0.4	"
3	3.5	200	ISMFFA03C200FM	0.6	6.0	5.0	1.2	FedEx
		150	ISMFFA03C150FM	"	"	"	1.1	"
4	4.5	200	ISMFFA04C200FM	0.8	6.0	6.6	2.1	FedEx
		150	ISMFFA04C150FM	"	"	"	2	"
6	6.625	200	ISMFFA06C200FM	0.8	8.0	8.5	5.3	FedEx
		150	ISMFFA06C150FM	"	"	"	4.7	"
8	8.625	200	ISMFFA08C200FM	1.6	9.0	10.6	10	FedEx
		150	ISMFFA08C150FM	1.0	"	"	9	"
10	10.75	200	ISMFFA10C200FM	1.6	9.0	12.8	20	FedEx
		150	ISMFFA10C150FM	1.3	"	"	18	"
12	12.75	200	ISMFFA12C200FM	2.3	10.8	15.0	25	FedEx
		150	ISMFFA12C150FM	1.5	"	"	24	"
14	14.00	200	ISMFFA14C200FM	2.6	11.0	17.5	38	FedEx
		150	ISMFFA14C150FM	1.7	"	"	34.3	"
16	16.00	200	ISMFFA16C200FM	3.0	12.0	20.0	48.5	FedEx
		150	ISMFFA16C150FM	1.9	"	"	38.1	"
18	18.00	200	ISMFFA18C200FM	3.3	12.0	21.1	59	FedEx
		150	ISMFFA18C150FM	2.1	"	"	48	"
20	20.00	200	ISMFFA20C200FM	2.78	12.0	23.5	79	LTL
		150	ISMFFA20C150FM	2.5	"	"	65	"
22	22.00	200	ISMFFA22C200FM	3.06	12.0	25.6	95	LTL
		150	ISMFFA22C150FM	2.5	"	"	78	"
24	24.00	200	ISMFFA24C200FM	3.33	12.0	23.5	116	LTL
		150	ISMFFA24C150FM	2.7	"	"	94	"



FM Cap – IPS



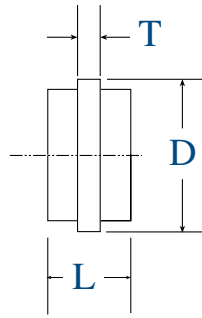
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FM Cap – IPS						
Nominal Size (in)	Pipe OD (in)	Pressure Class	Part #	Dimensions L (in)	Weight (lbs)	Shipping Method
2	2.375	200	ISMFCP02C200FM	4.25	.3	FedEx
		150	ISMFCP02C150FM	"	"	
3	3.5	200	ISMFCP03C200FM	3.94	1	FedEx
		150	ISMFCP03C150FM	4.8	1.2	
4	4.5	200	ISMFCP04C200FM	4.25	2	FedEx
		150	ISMFCP04C150FM	8.5	4	
6	6.625	200	ISMFCP06C200FM	5.2	3	FedEx
		150	ISMFCP06C150FM	9.88	6	
8	8.625	200	ISMFCP08C200FM	5	4.5	FEDEX
		150	ISMFCP08C150FM	"	"	

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FM Wall Anchor – IPS



FM Wall Anchor – IPS							
Nominal Pipe Size (in)	Pipe OD (in)	Pressure Class	Part #	Dimensions			Shipping Method
				L (in)	T (in)	D (in)	
2	2.375	200	ISFFWA02C200FM	12	1.0	3.9	FedEx
		150	ISFFWA02C150FM	"	"	"	
3	3.5	200	ISFFWA03C200FM	12	1.0	5.0	FedEx
		150	ISFFWA03C150FM	"	"	"	
4	4.5	200	ISFFWA04C200FM	12	1.0	6.6	FedEx
		150	ISFFWA04C150FM	"	"	"	
6	6.625	200	ISFFWA06C200FM	16	1.2	8.5	FedEx
		150	ISFFWA06C150FM	"	"	"	
8	8.625	200	ISFFWA08C200FM	16	1.3	10.6	FedEx
		150	ISFFWA08C150FM	"	"	"	
10	10.75	200	ISFFWA10C200FM	18	1.5	12.8	FedEx
		150	ISFFWA10C150FM	"	"	"	
12	12.75	200	ISFFWA12C200FM	18	1.5	15.5	FedEx
		150	ISFFWA12C150FM	"	"	"	
14	14.00	200	ISFFWA14C200FM	24	1.5	17.5	FedEx
		150	ISFFWA14C150FM	"	"	"	
16	16.00	200	ISFFWA16C200FM	24	1.5	20.0	LTL
		150	ISFFWA16C150FM	"	"	"	
18	18.00	200	ISFFWA18C200FM	24	2.0	21.1	LTL
		150	ISFFWA18C150FM	"	"	"	
20	20.00	200	ISFFWA20C200FM	24	2.0	23.5	LTL
		150	ISFFWA20C150FM	"	"	"	
22	22.00	200	ISFFWA22C200FM	24	2.3	25.6	LTL
		150	ISFFWA22C150FM	"	"	"	
24	24.00	200	ISFFWA24C200FM	24	2.5	27.9	LTL
		150	ISFFWA24C150FM	"	"	"	

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Factory Mutual Product Properties and Dimensions

Factory Mutual fire protection piping systems are made to ductile iron pipe sizes (DIPS). Table 3 below shows the outside diameter and the wall thickness of Class 150 and Class 200 piping systems.

Table 3. Pipe Sizes and Dimensions - DIPS

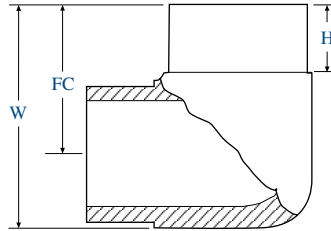
Nominal IPS Size (inches)	Outside Diameter (inches)	Pressure Class					
		Class 150			Class 200		
		Min. Wall (inches)	Average ID (inches)	Weight (lbs./ft.)	Min. Wall (inches)	Average ID (inches)	Weight (lbs./ft.)
4	4.8	0.436	3.876	2.61	0.533	3.670	3.11
6	6.9	0.627	5.571	5.39	0.767	5.274	6.43
8	9.05	0.823	7.305	9.28	1.006	6.917	11.07
10	11.1	1.009	8.961	13.95	1.233	8.486	16.65
12	13.2	1.200	10.656	19.73	1.467	10.090	23.55
14	15.3	1.700	11.696	26.51	1.700	11.696	31.64
16	17.4	1.582	14.046	34.29	1.933	13.302	40.92
18	19.5	1.773	15.741	43.07	2.167	14.906	51.39
20	21.6	1.964	17.436	52.84	2.400	16.512	63.05
24	25.8	2.345	20.829	75.39	2.867	19.722	89.96

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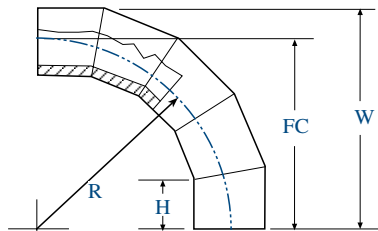
FM Fittings Molded 90 degree Ell 90° – DIPS



FM Fittings Molded 90° Elbow – DIPS

Nominal Size(in)	Pipe OD(in)	Pressure Class	Part #	Dimensions			Weight (lbs)	Shipping Method
				H(in)	FC(in)	B(in)		
4	4.8	200	ISMF9004D200FM	4.1	7.82	10.39	5	FedEx
		150	ISMF9004D150FM	"	"	"	4	"
6	6.9	200	ISMF9006D200FM	5.1	9.67	13.37	13	FedEx
		150	ISMF9006D150FM	"	"	"	12	"

FM Fittings Fabricated 90° Ell 5 Segment – DIPS



FM Fittings Fabricated 90° Elbow 5 Segment – DIPS

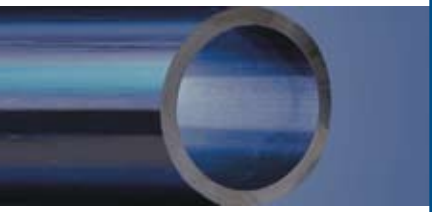
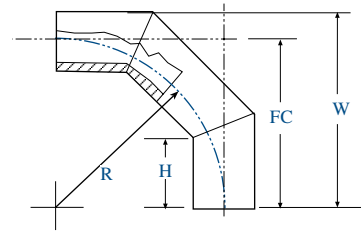
Nominal Size(in)	Pipe OD(in)	Pressure Class	Part #	L(in)	Dimensions			Weight (lbs)	Shipping Method
					H(in)	FC(in)	B(in)		
8	9.05	200	ISFF9008D200FM	22.62	8.0	27	31.55	52	FedEx
		150	ISFF9008D150FM	"	"	"	"	41	"
10	11.10	200	ISFF9010D200FM	22.62	8.0	27.1875	32.8125	78	FedEx
		150	ISFF9010D150FM	"	"	"	"	63	"
12	13.20	200	ISFF9012D200FM	26.39	10.0	32.5	39.0625	131	LTL
		150	ISFF9012D150FM	"	"	"	"	106	"
14	15.30	200	ISFF9014D200FM	27.44	12.0	35.1875	42.875	195	LTL
		150	ISFF9014D150FM	"	"	"	"	158	"
16	17.40	200	ISFF9016D200FM	34.94	12.0	41.6875	50.4375	292	LTL
		150	ISFF9016D150FM	"	"	"	"	325	"
18	19.50	200	ISFF9018D200FM	38.96	12.0	45.125	54.875	395	LTL
		150	ISFF9018D150FM	"	"	"	"	320	"
20	21.60	200	ISFF9020D200FM	43.23	13.0	49.8125	60.625	532	LTL
		150	ISFF9020D150FM	"	"	"	"	430	"
24	25.80	200	ISFF9024D200FM	51.53	13.0	56.8125	69.75	880	LTL
		150	ISFF9024D150FM	"	"	"	"	705	"

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FM Fittings Fabricated 90° Ell 3 Segment – DIPS



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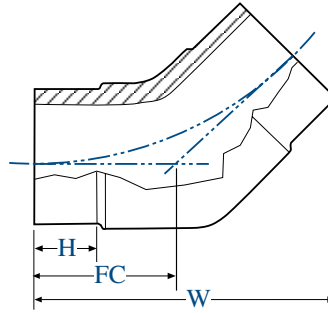
FM Fittings Fabricated 90° Elbow 3 Segment – DIPS

Nominal Pipe Size(in)	OD(in)	Pressure Class	Part #	Dimensions				Weight (lbs)	Shipping Method
				L(in)	H(in)	FC(in)	B(in)		
8	9.05	200	ISFF9008D20FM3P	10.5	6.5	14.5	19.03	30	FedEx
		150	ISFF9008D15FM3P	"	"	"	"	24	"
10	11.10	200	ISFF9010D20FM3P	12.75	6.5	16.29	21.84	48	FedEx
		150	ISFF9010D15FM3P	"	"	"	"	40	"
12	13.20	200	ISFF9012D20FM3P	13.88	8.5	19.38	25.98	82	LTL
		150	ISFF9012D15FM3P	"	"	"	"	67	"
14	15.30	200	ISFF9014D20FM3P	14.88	8.5	20.38	28.03	116	LTL
		160	ISFF9014D15FM3P	"	"	"	"	95	"
16	17.40	200	ISFF9016D20FM3P	16	8.5	21.44	30.14	158	LTL
		150	ISFF9016D15FM3P	"	"	"	"	128	"
18	19.50	200	ISFF9018D20FM3P	17	8.5	22.49	32.24	207	LTL
		150	ISFF9018D15FM3P	"	"	"	"	168	"
20	21.60	200	ISFF9020D20FM3P	27.88	8.5	26.37	37.17	292	LTL
		150	ISFF9020D15FM3P	"	"	"	"	235	"
24	25.80	200	ISFF9024D20FM3P	25	8.5	28.47	41.37	460	LTL
		150	ISFF9024D15FM3P	"	"	"	"	367	"

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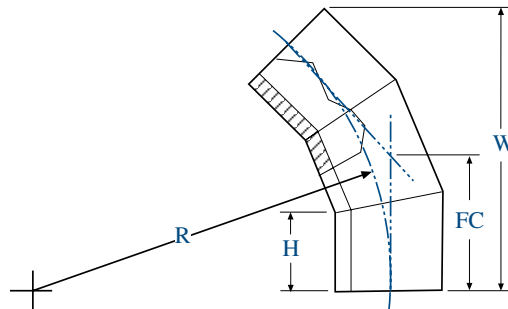
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FM Fittings Molded 45° Ell – DIPS

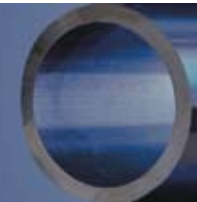


FM Fittings Molded 45° Ell – DIPS								
Nominal Pipe Size	Pipe OD (in)	Pressure Class	Part #	H (in)	FC (in)	W (in)	Weight (lbs)	Shipping Method
4	4.8	200	ISMF4504D200FM	4.1	6.05	12.02	4	FedEx
		150	ISMF4504D150FM	"	"	"	3	"
6	6.9	200	ISMF4506D200FM	5.1	7.16	14.66	11	FedEx
		150	ISMF4506D150FM	"	"	"	10	"

FM Fittings Fabricated 45° Ell 3 Segment – DIPS



FM Fittings Fabricated 45° Elbow 3 Segment – DIPS									
Nominal Size (in)	Pipe OD (in)	Pressure Class	Part #	Dimensions				Weight (lbs)	Shipping Method
				R (in)	H (in)	FC (in)	W (in)		
8	9.05	200	ISFF4508D200FM	22.62	8.0	13.75	26.6875	31	FedEx
		150	ISFF4508D150FM	"	"	"	"	25	"
10	11.10	200	ISFF4510D200FM	22.62	8.0	13.9375	27.75	47	FedEx
		150	ISFF4510D150FM	"	"	"	"	38	"
12	13.20	200	ISFF4512D200FM	26.39	10.0	17	33.6875	80	FedEx
		150	ISFF4512D150FM	"	"	"	"	65	"
14	15.30	200	ISFF4514D200FM	26.39	12.0	19.4375	38.5625	125	LTL
		150	ISFF4514D150FM	"	"	"	"	100	"
16	17.40	200	ISFF4516D200FM	34.94	12.0	21.25	42.4375	175	LTL
		150	ISFF4516D150FM	"	"	"	"	141	"
18	19.50	200	ISFF4518D200FM	38.96	12.0	22.3125	45	230	LTL
		150	ISFF4518D150FM	"	"	"	"	185	"
20	21.60	200	ISFF4520D200FM	43.23	13.0	24.4375	49.375	309	LTL
		150	ISFF4520D150FM	"	"	"	"	250	"
24	25.80	200	ISFF4524D200FM	51.53	13.0	26.6875	54.625	490	LTL
		150	ISFF4524D150FM	"	"	"	"	392	"

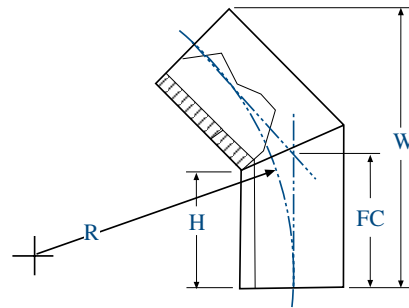


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FM Fittings Fabricated 45° Ell 2 Segment – DIPS



FM Fittings Fabricated 45° Elbow - 2 Segment – DIPS

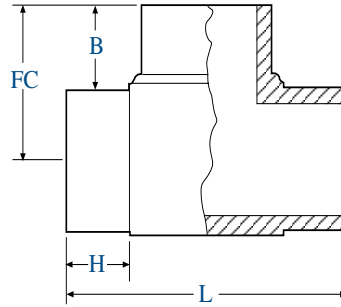
Nominal Pipe Size	Pipe OD (in)	Pressure Class	Part #	Dimensions				Weight (lbs)	Shipping Method
				R(in)	H(in)	FC(in)	W(in)		
8	9.05	200	ISFF4508D20FM2P	10.5	6.5	8.38	17.5	20	FedEx
		150	ISFF4508D15FM2P	"	"	"	"	15	"
10	11.10	200	ISFF4510D20FM2P	12.75	6.5	8.8	18.95	30	FedEx
		150	ISFF4510D15FM2P	"	"	"	"	25	"
12	13.20	200	ISFF4512D20FM2P	13.88	8.5	11.25	23.87	55	LTL
		150	ISFF4512D15FM2P	"	"	"	"	45	"
14	15.30	200	ISFF4514D20FM2P	14.88	8.5	11.67	25.25	76	LTL
		160	ISFF4514D15FM2P	"	"	"	"	62	"
16	17.40	200	ISFF4516D20FM2P	16	8.5	12.1	26.81	102	LTL
		150	ISFF4516D15FM2P	"	"	"	"	83	"
18	19.50	200	ISFF4518D20FM2P	17	8.5	12.54	28.3	133	LTL
		150	ISFF4518D15FM2P	"	"	"	"	107	"
20	21.60	200	ISFF4520D20FM2P	27.88	8.5	12.97	29.78	169	LTL
		150	ISFF4520D15FM2P	"	"	"	"	136	"
24	25.80	200	ISFF4524D20FM2P	25	8.5	13.84	32.75	263	LTL
		150	ISFF4524D15FM2P	"	"	"	"	210	"

FM PIPE
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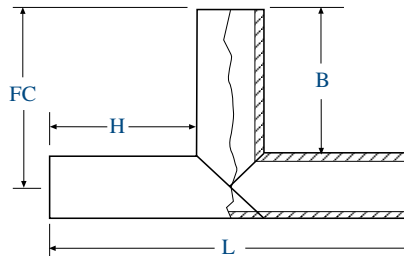
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FM Fittings Molded Tee – DIPS



FM Fittings Molded Tee – DIPS									
Nom. Size(in)	Pipe OD(in)	Pressure Class	Part Number	Dimensions L(in)	H(in)	FC(in)	B(in)	Weight (lbs)	Shipping Method
4	4.8	200	ISMFTE04D200FM	15.63	3.88	7.82	5.42	5	FedEx
		150	ISMFTE04D150FM	"	"	"	"	4	"
6	6.9	200	ISMFTE06D200FM	19.34	4.5	9.67	6.22	16	FedEx
		150	ISMFTE06D150FM	"	"	"	"	15	"

FM Fittings Fabricated Tee – DIPS



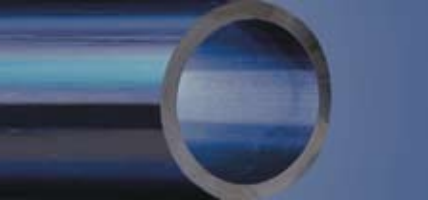
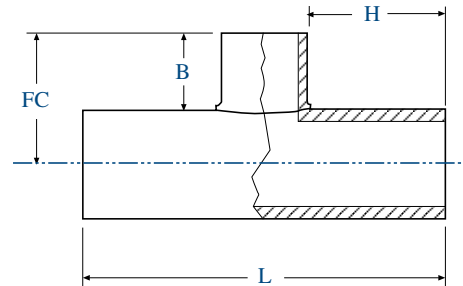
FM Fittings Fabricated Tee – DIPS									
Nom. Size(in)	Pipe OD(in)	Pressure Class	Part Number	Dimensions L(in)	H(in)	FC(in)	B(in)	Weight (lbs)	Shipping Method
8	9.05	200	ISFFTE08D200FM	48	19.5	24	19.5	78	FedEx
		150	ISFFTE08D150FM	"	"	"	"	62	"
10	11.10	200	ISFFTE10D200FM	48	18.4	24	18.4	115	LTL
		150	ISFFTE10D150FM	"	"	"	"	92	"
12	13.20	200	ISFFTE12D200FM	48	17.4	24	17.4	159	LTL
		150	ISFFTE12D150FM	"	"	"	"	128	"
14	15.30	200	ISFFTE14D200FM	48	16.4	24	16.4	210	LTL
		160	ISFFTE14D150FM	"	"	"	"	170	"
16	17.40	200	ISFFTE16D200FM	48	15.3	24	15.3	267	LTL
		150	ISFFTE16D150FM	"	"	"	"	215	"
18	19.50	200	ISFFTE18D200FM	48	14.3	24	14.3	330	LTL
		150	ISFFTE18D150FM	"	"	"	"	267	"
20	21.60	200	ISFFTE20D200FM	48	13.8	24	13.8	402	LTL
		150	ISFFTE20D150FM	"	"	"	"	325	"
24	25.80	200	ISFFTE24D200FM	48	11.1	24	11.1	562	LTL
		150	ISFFTE24D150FM	"	"	"	"	449	"

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FM Fittings Branch Saddle Reducing Tee – DIPS



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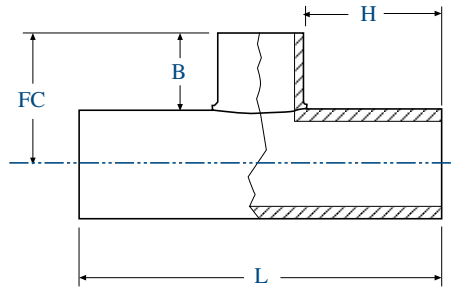
Nominal Size(in)	Pipe OD(in)	Pressure Class	Part #	Dimensions				Shipping Method
				L (in)	H (in)	FC (in)	B (in)	
6x4	6.9 x 4.8	200	ISFFRT6X4D20FM	24	9.6	9.45	6	FedEx
		150	ISFFRT6X4D15FM	"	"	"	"	"
8x4	9.05 x 4.8	200	ISFFRT8X4D20FM	24	9.6	10.525	6	FedEx
		150	ISFFRT8X4D15FM	"	"	"	"	"
8x6	9.05 x 6.9	200	ISFFRT8X6D20FM	28	10.55	11.525	6	FedEx
		150	ISFFRT8X6D15FM	"	"	"	"	"
10x4	11.10 x 4.8	200	ISFFRT10X4D20FM	24	9.6	11.55	6	FedEx
		150	ISFFRT10X4D15FM	"	"	"	"	"
10x6	11.10x 6.9	200	ISFFRT10X6D20FM	28	10.55	12.55	7	FedEx
		150	ISFFRT10X6D15FM	"	"	"	"	"
10x8	11.10 x 9.05	200	ISFFRT10X8D20FM	30	10.48	11.05	5.5	FedEx
		150	ISFFRT10X8D15FM	"	"	"	"	"
12x4	13.2 x 4.8	200	ISFFRT12X4D20FM	24	9.6	12.6	6	FedEx
		150	ISFFRT12X4D15FM	"	"	"	"	"
12x6	13.2 x 6.9	200	ISFFRT12X6D20FM	28	10.55	13.6	7	LTL
		150	ISFFRT12X6D15FM	"	"	"	"	"
12x8	13.2 x 9.05	200	ISFFRT12X8D20FM	30	10.48	12.1	5.5	LTL
		150	ISFFRT12X8D15FM	"	"	"	"	"
12x10	13.2 x 11.10	200	ISFFRT12X10D20FM	30	9.45	14.6	8	LTL
		150	ISFFRT12X10D15FM	"	"	"	"	"
14x4	15.3 x 4.8	200	ISFFRT14X4D20FM	24	9.6	13.65	6	LTL
		150	ISFFRT14X4D15FM	"	"	"	"	"
14x6	15.3 x 6.9	200	ISFFRT14X6D20FM	28	10.55	14.65	7	LTL
		150	ISFFRT14X6D15FM	"	"	"	"	"
14x8	15.3 x 9.05	200	ISFFRT14X8D20FM	30	10.48	13.15	5.5	LTL
		150	ISFFRT14X8D15FM	"	"	"	"	"
14x10	15.3 x 11.10	200	ISFFRT14X10D20FM	30	9.45	15.65	8	LTL
		150	ISFFRT14X10D15FM	"	"	"	"	"



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FM Fittings Branch Saddle Reducing Tee – DIPS (continued)



Nominal Size(in)	Pipe OD(in)	Pressure Class	Part #	Dimensions				Shipping Method
				L (in)	H (in)	FC (in)	B (in)	
16x4	17.4 x 4.8	200	ISFFRT16X4D20FM	24	9.6	14.7	6	LTL
		150	ISFFRT16X4D15FM	"	"	"	"	"
16x6	17.4 x 6.9	200	ISFFRT16X6D20FM	28	10.55	15.7	7	LTL
		150	ISFFRT16X6D15FM	"	"	"	"	"
16x8	17.4 x 9.05	200	ISFFRT16X8D20FM	30	10.48	14.2	5.5	LTL
		150	ISFFRT16X8D15FM	"	"	"	"	"
16x10	17.4 x 11.10	200	ISFFRT16X10D20FM	30	9.45	14.7	6	LTL
		150	ISFFRT16X10D15FM	"	"	"	"	"
16x12	17.4 x 13.2	200	ISFFRT16X12D20FM	32	9.4	18.7	10	LTL
		150	ISFFRT16X12D15FM	"	"	"	"	"
18x4	19.5 x 4.8	200	ISFFRT18X4D20FM	24	9.6	15.75	6	LTL
		150	ISFFRT18X4D15FM	"	"	"	"	"
18x6	19.5x 6.9	200	ISFFRT18X6D20FM	28	10.55	16.75	7	LTL
		150	ISFFRT18X6D15FM	"	"	"	"	"
18x8	19.5 x 9.05	200	ISFFRT18X8D20FM	30	10.48	15.25	5.5	LTL
		150	ISFFRT18X8D15FM	"	"	"	"	"
18x10	19.5 x 11.10	200	ISFFRT18X10D20FM	30	9.45	17.75	8	LTL
		150	ISFFRT18X10D15FM	"	"	"	"	"
18x12	19.5 x 13.2	200	ISFFRT18X12D20FM	32	9.4	19.75	10	LTL
		150	ISFFRT18X12D15FM	"	"	"	"	"
20x6	21.6 x 6.9	200	ISFFRT20X6D20FM	28	10.55	17.8	7	LTL
		150	ISFFRT20X6D15FM	"	"	"	"	"
20x8	21.6 x 9.05	200	ISFFRT20X8D20FM	30	10.48	16.3	5.5	LTL
		150	ISFFRT20X8D15FM	"	"	"	"	"
20x10	21.6 x 11.10	200	ISFFRT20X10D20FM	30	9.45	18.75	8	LTL
		150	ISFFRT20X10D15FM	"	"	"	"	"
20x12	21.6 x 13.2	200	ISFFRT20X12D20FM	32	9.4	20.8	10	LTL
		150	ISFFRT20X12D15FM	"	"	"	"	"
24x6	25.8 x 6.9	200	ISFFRT24X6D20FM	28	10.55	19.9	7	LTL
		150	ISFFRT24X6D15FM	"	"	"	"	"
24x8	25.8 x 9.05	200	ISFFRT24X8D20FM	30	10.48	18.4	5.5	LTL
		150	ISFFRT24X8D15FM	"	"	"	"	"
24x10	25.8 x 11.10	200	ISFFRT24X10D20FM	30	9.45	20.9	8	LTL
		150	ISFFRT24X10D15FM	"	"	"	"	"
24x12	25.8" x 13.2	200	ISFFRT24X12D20FM	32	9.40	22.90	10	LTL
		150	ISFFRT24X12D15FM	"	"	"	"	"

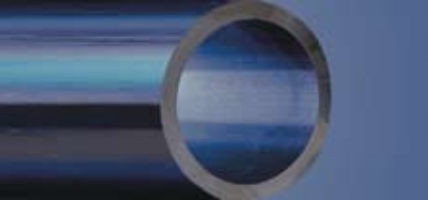
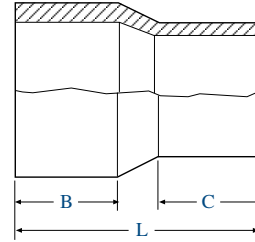


FM PIPE
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DIPS

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FM Fittings Concentric Reducer – DIPS to IPS



**FM PIPE
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DIPS to IPS**

FM Fittings Concentric Reducer – DIPS to IPS

Nom. Size (in)	Pressure		L (in)	Dimensions		Weight Lbs.	Shipping Method
	Class	Part Number		B (in)	C (in)		
4" DIPS X 3" IPS	200	ISMFCR04DX03IC2	8.5	3	3	1.5	FedEx
	150	ISMFCR04DX03IC1	"	"	"	1.5	"

FM Fittings Concentric Reducer – DIPS

FM Fittings Concentric Reducer – DIPS

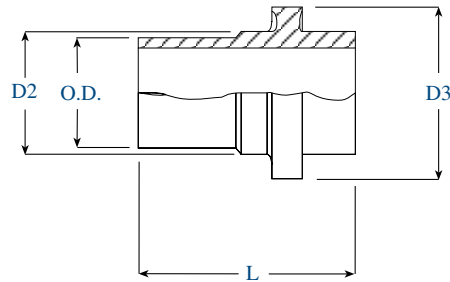
Nom. Size (in)	Pressure		L (in)	Dimensions		Weight (lbs)	Shipping Method
	Class	Part Number		B (in)	C (in)		
6 x 4	200	ISMFCR06X04C20D	6	3	3	5	FedEx
	150	ISMFCR06X04C15D	"	"	"	4.5	"
8 x 6	200	ISMFCR08X06C20D	10	5.0	5	12	FedEx
	150	ISMFCR08X06C15D	"	"	"	11	"
10 x 8	200	ISFFCR10X08C20D	12	6.0	6.0	18	FedEx
	150	ISFFCR10X08C15D	"	"	"	14	"
12 x 10	200	ISFFCR12X10C20D	12.0	6.0	6.0	25	FedEx
	150	ISFFCR12X10S15D	"	"	"	21	"
14 x 12	200	ISFFCR14X12C20D	14.0	7.0	7.0	40	FedEx
	150	ISFFCR14X12C15D	"	"	"	33	"
16 x 14	200	ISFFCR16X14C20D	14.0	7.0	7.0	53	FedEx
	150	ISFFCR16X14C15D	"	"	"	43	"
18 x 16	200	ISFFCR18X16C20D	14.0	7.0	7.0	67	LTL
	150	ISFFCR18X16C15D	"	"	"	54	"
20 x 18	200	ISFFCR20X18C20D	25.0	14.0	11.0	150	LTL
	150	ISFFCR20X18C15D	"	"	"	121	"
24 x 20	200	ISFFCR24X20C20D	25.0	14.0	11.0	205	LTL
	150	ISFFCR24X20C15D	"	"	"	165	"

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FM Fittings MJ Adapter Kit – DIPS



The MJ Adapter Kit consist of: HDPE MJ Adapter with metal insert, Metal Gland, Gasket, and attachment Bolts and Nuts.

FM PIPE
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FM Fittings MJ Adapter Kit – DIPS

Nominal Size (in)	Pipe OD (in)	Pressure Class	Part #	Dimensions			Weight (lbs.)	Shipping Method
				L (in)	D2 (in)	D3 (in)		
4	4.8	200	ISMFMJ04D200FM	8	4.8	6.625	13	FedEx
		160	ISMFMJ04D150FM	"	"	"	12	"
6	6.9	200	ISMFMJ06D200FM	9.5	6.9	8.625	23	FedEx
		160	ISMFMJ06D150FM	"	"	"	18	"
8	9.05	200	ISMFMJ08D200FM	11.5	9.05	10.75	36	FedEx
		160	ISMFMJ08D150FM	"	"	"	35	"
10	11.1	200	ISMFMJ10D200FM	13	11.1	12.75	48	FedEx
		160	ISMFMJ10D150FM	"	"	"	45	"
12	13.2	200	ISMFMJ12D200FM	13.5	13.2	15.25	62	FedEx
		160	ISMFMJ12D150FM	"	"	"	60	"
14	15.30	200	ISMFMJ14D200FM	13.5	15.3	17.5	87	FedEx
		160	ISMFMJ14D150FM	"	"	"	84	"
16	17.40	200	ISMFMJ16D200FM	14.5	17.4	20	120	LTL
		160	ISMFMJ16D150FM	"	"	"	115	"
18	19.50	200	ISMFMJ18D200FM	16	19.5	22	132	LTL
		160	ISMFMJ18D150FM	"	"	"	125	"

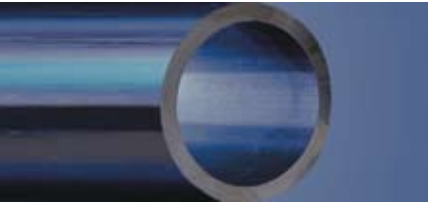
*ALL WEIGHTS INCLUDE GLAND PACKS



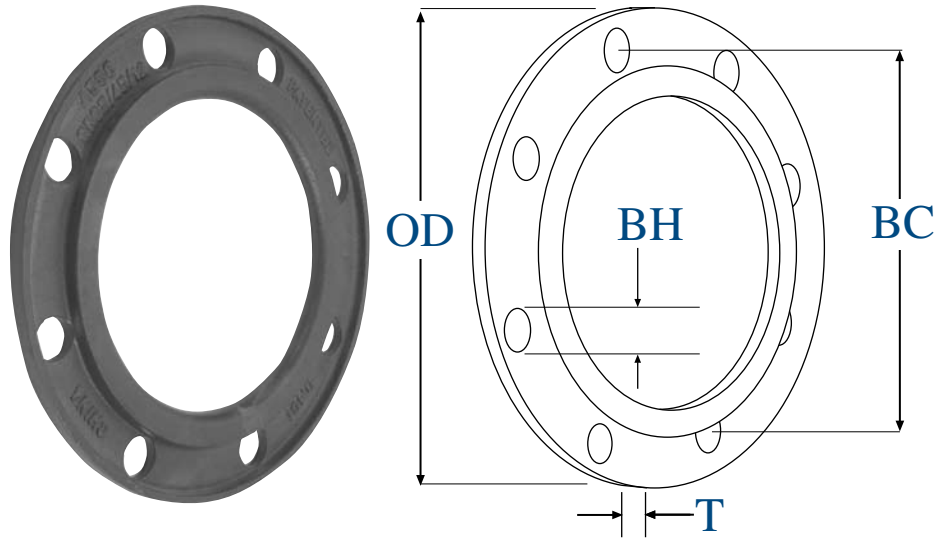
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FM Back Up Ring – DIPS (For use with the Flange Adapter)



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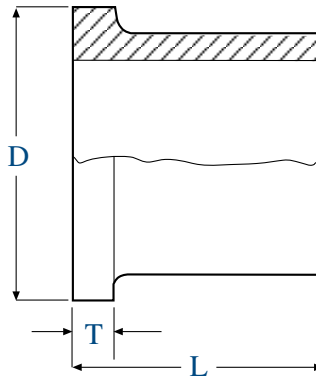


Nominal Pipe Size (in)	Pipe OD (in)	Part #	Dimensions					Weights (lbs)	Shipping Method
			OD(in)	T(in)	Bolts(#)	BH(in)	BC(in)		
4	4.8	BU04D200FM	9	0.94	8	0.75	7.5	5	FedEx
		BU04D150FM	"	"	"	"	"	"	"
6	6.9	BU06D200FM	11	1	8	0.875	9.5	7	FedEx
		BU06D150FM	"	"	"	"	"	"	"
8	9.05	BU08D200FM	13.5	1.12	8	0.875	11.75	11	FedEx
		BU08D150FM	"	"	"	"	"	"	"
10	11.1	BU10D200FM	16	1.19	12	1	14.25	15	FedEx
		BU10D150FM	"	"	"	"	"	"	"
12	13.2	BU12D200FM	19	1.5	12	1	17	25	FedEx
		BU12D150FM	"	"	"	"	"	"	"
14	15.30	BU14D200FM	21	1.63	12	1.125	18.75	36	FedEx
		BU14D150FM	"	"	"	"	"	"	"
16	17.40	BU16D200FM	23.5	1.88	16	1.125	21.25	48	FedEx
		BU16D150FM	"	"	"	"	"	"	"
18	19.50	BU18D200FM	25	1.75	16	1.25	22.75	48	FedEx
		BU18D150FM	"	"	"	"	"	"	"
20	21.60	BU20D200FM	27.5	2	20	1.25	25	61	LTL
		BU20D150FM	"	"	"	"	"	"	"
24	25.80	BU24D200FM	32	2.125	20	1.375	29.5	91	LTL
		BU24D150FM	"	"	"	"	"	"	"

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FM Fittings Flange Adapter – DIPS

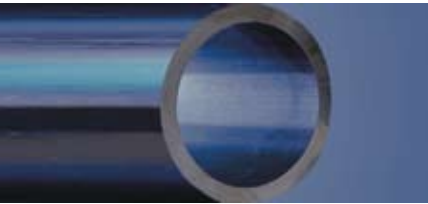
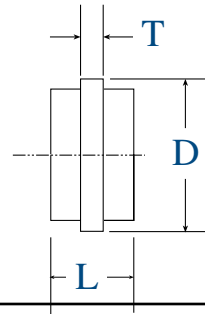


FM PIPE
and Fittings
DIPS

Nominal Size (in)	Pipe OD (in)	Pressure Class	Part #	Dimensions			Weight (lbs)	Shipping Method
				T (in)	L (in)	D (in)		
4	4.8	200	ISMFFA04D200FM	1	6.0	6.6	2.1	FedEx
		150	ISMFFA04D150FM	1	"	"	1.9	"
6	6.9	200	ISMFFA06D200FM	1.1	8.0	8.6	5.1	FedEx
		150	ISMFFA06D150FM	1.1	"	"	4.4	"
8	9.05	200	ISMFFA08D200FM	1.35	9.0	10.7	9.6	FedEx
		150	ISMFFA08D150FM	1.4	"	"	8.3	"
10	11.1	200	ISMFFA10D200FM	2	9.0	13.2	16	FedEx
		150	ISMFFA10D150FM	1.25	"	"	13	"
12	13.2	200	ISMFFA12D200FM	2.3	11.0	16.0	27	FedEx
		150	ISMFFA12D150FM	1.5	"	"	22	"
14	15.30	200	ISMFFA14D200FM	2.21	12.0	17.4	36	FedEx
		150	ISMFFA14D150FM	1.74	"	"	30	"
16	17.40	200	ISMFFA16D200FM	2.4	11.5	19.9	57	FedEx
		150	ISMFFA16D150FM	1.6	"	"	46	"
18	19.50	200	ISMFFA18D200FM	2.71	12.0	21.4	70	LTL
		150	ISMFFA18D150FM	2.22	"	"	56	"
20	21.60	200	ISMFFA20D200FM	3	11.5	23.7	86	LTL
		150	ISMFFA20D150FM	2.46	"	"	70	"
24	25.80	200	ISMFFA24D200FM	3.58	11.5	27.9	125	LTL
		150	ISMFFA24D150FM	2.93	"	"	100	"



FM Wall Anchor – DIPS



FM PIPE
and Fittings
DIPS

FM Wall Anchor – DIPS

Nominal Pipe Size (in)	Pipe OD (in)	Pressure Class	Part #	Dimensions			Shipping Method
				L (in)	T (in)	D (in)	
4	4.8	200	ISFFWA04DC200FM	12	1.0	6.6	FedEx
		150	ISFFWA04DC150FM	"	"	"	"
6	6.9	200	ISFFWA06DC200FM	12	1.1	8.5	FedEx
		150	ISFFWA06DC150FM	"	"	"	"
8	9.05	200	ISFFWA08DC200FM	16	1.3	10.6	FedEx
		150	ISFFWA08DC150FM	"	"	"	"
10	11.1	200	ISFFWA10DC200FM	18	1.5	12.8	FedEx
		150	ISFFWA10DC150FM	"	"	"	"
12	13.2	200	ISFFWA12DC200FM	18	1.5	15.5	FedEx
		150	ISFFWA12DC150FM	"	"	"	"
14	15.30	200	ISFFWA14DC200FM	24	1.4	17.5	FedEx
		150	ISFFWA14DC150FM	"	"	"	"
16	17.40	200	ISFFWA16DC200FM	24	1.6	20.0	FedEx
		150	ISFFWA16DC150FM	"	"	"	"
18	19.50	200	ISFFWA18DC200FM	24	2.0	21.1	LTL
		150	ISFFWA18DC150FM	"	"	"	"
20	21.60	200	ISFFWA20DC200FM	24	2.2	23.5	LTL
		150	ISFFWA20DC150FM	"	"	"	"
24	25.80	200	ISFFWA24DC200FM	24	2.6	27.9	LTL
		150	ISFFWA24DC150FM	"	"	"	"

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Municipal Products

Grinder Pump Connection Assemblies

In many locations the cost of installing a gravity flow sewer is very high. Often homes were built before sewers were available and connecting an existing sewer line means deep sewer lines to get to the elevation needed for gravity flow to work.

When homes are built below the level of the roadway, sewage must be pumped to the level of the street to flow in sewer lines. This is usually less expensive than installing very deep sewer lines. The grinder pump sewer systems makes it possible to pump sewage from a home to the sewer system at a reasonable price.

The sewage from the home is collected in a tank normally located just outside of the home. A grinder pump is located in the collection tank (see collection tank in drawing on next page). The pump grinds the waste, paper, food and other solids from the home as it is pumped from the tank to the force main.

A check valve is located between the force main and the home. The check valve prevents sewage from the force main from flowing towards the home when the grinder pump is turned off. The design of this check valve is very important. The CEPEX swing check PVC valve works well in this applications. *Do not use a Ball Check Valve in this application.*

A curb stop valve is also inserted into the pipeline from the grinder pump to the force main. The purpose of this valve is to permit maintenance of the grinder pump and the tank, Flow can be stopped to or from the home with this valve. The curb stop is located in a curb box located near the force main which is normally in the street or next to the street.

While the grinder pump reduces solids to smaller particle sizes, the velocity of the slurry is important. As with all systems in which solids are pumped from one area to another, the velocity must be high enough to keep the solids in solution and moving towards the force main. Most grinder pump systems use 1.25" HDPE pipe rated at 160 psi (DR 11). Some systems use 1.5" DR 11 HDPE pipe. Velocity is important for good design and low maintenance.

The lateral lines (1.25" or 1.5" HDPE) are attached to the grinder pump using a threaded mechanical adapter. The lateral line is attached to the force main by using a strap on stainless steel saddle, an electrofusion saddle or with a side wall fused saddle.

Which saddle should be used? In wet areas, strap on stainless steel saddles will be easy to installed. In other areas, electrofusion saddle may be the best for the application. Installation conditions often determine the best saddle for the application.

The drawing on the next page shows the typical layout of a grinder pump system. Pictures of the components are provided for easy identification.

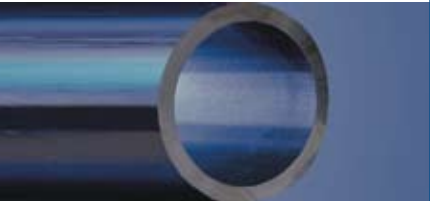


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Products

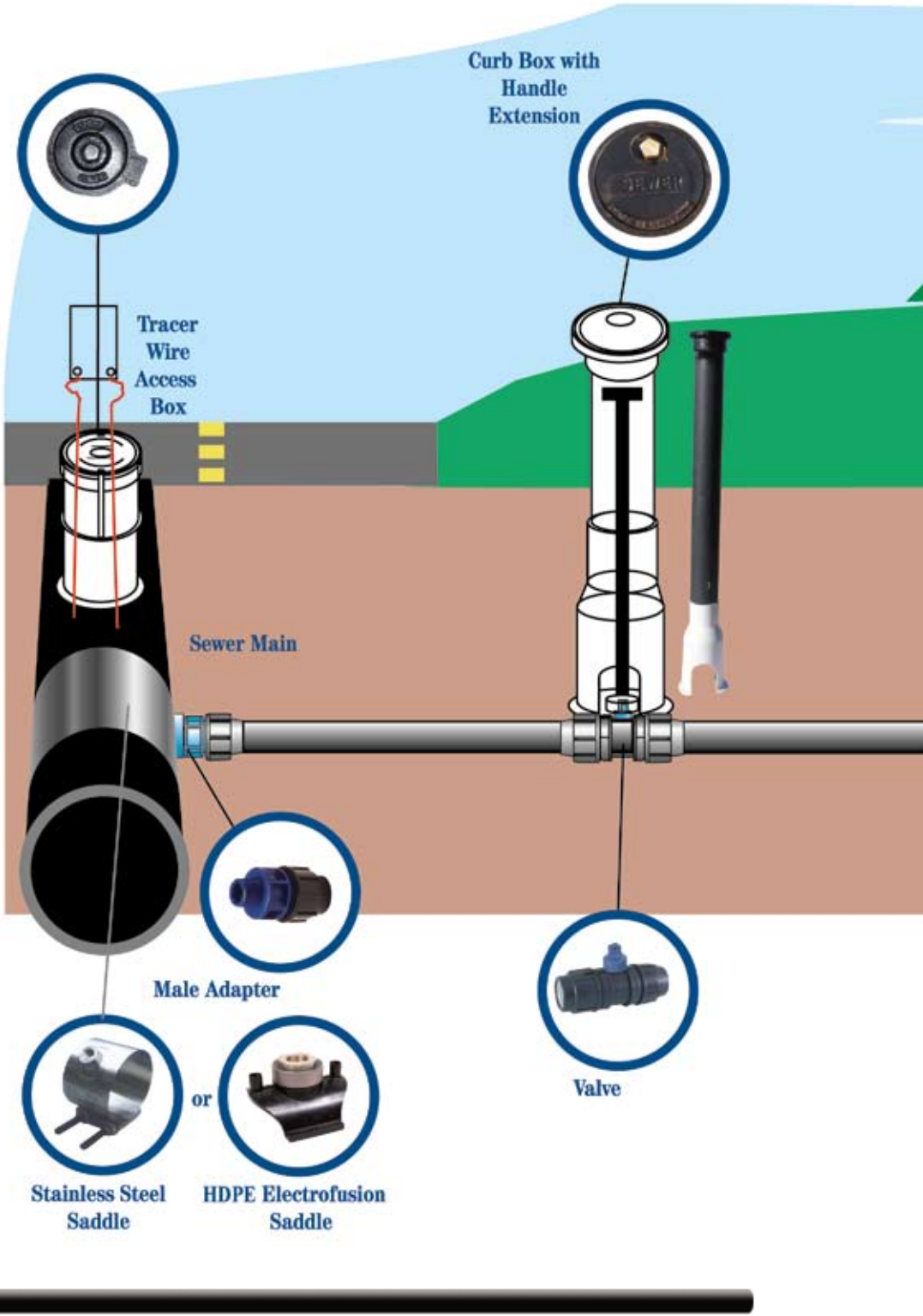
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Grinder Pump Sewer Force Main



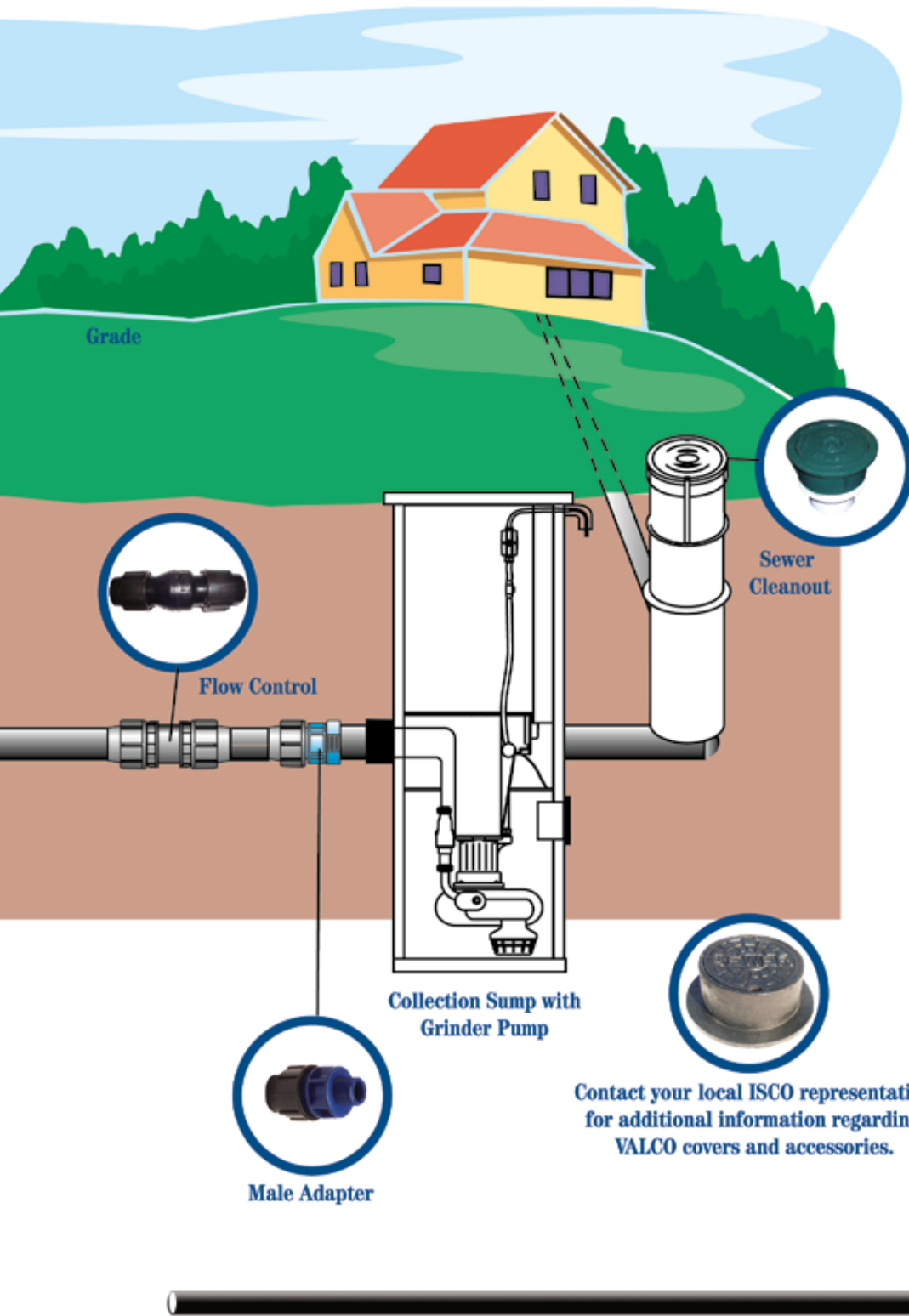
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Grinder Pump Sewer Force Main



Contact your local ISCO representative for additional information regarding VALCO covers and accessories.



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Stainless Steel Saddles for Grinder Pump Force Mains

Model SC-2 Tap Sizes: 3/4", 1", 1-1/4", 1-1/2" & 2" FIPT
 3/4", 1", 1-1/4", 1-1/2" & 2" AWWA

Nominal Size	OD Range
3	3.45 - 3.65
4	4.45 - 4.85
6	6.54 - 7.00
8	8.60 - 9.08
10	10.70 - 11.16
12	12.74 - 13.21

* Note 3" saddle not available with 1-1/2" & 2" AWWA or 2" NPT.
 For other nominal sizes please contact our office.

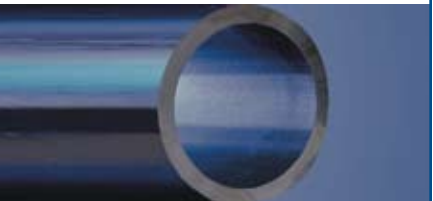
Material Specifications - SS Tapping Saddles

- Bolts 18-8 stainless steel, 5/8" roll NC tread
- Bolt and receiver bars 304 stainless steel, TIG welded to shell to form a strong fusion, and fully passivated.
- Shell 304 stainless steel
- Locking washer plate 304 stainless steel, locks into position for easy tightening of nuts
- Nuts 18-8 stainless steel & fluorokote coated
- Washer Nylon and stainless steel washers used to reduce wear on washer plate
- Gasket SBR Rubber - ASTM D 2000 AA4
 15 rubber is specially formulated for water service.



Stainless Steel Saddle

All stainless material fully passivated. Torque bolts to 65 ft. Lbs.

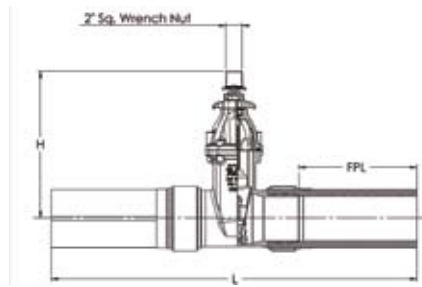


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**American AVK Resilient Seated Gate Valve, 250 PSI
DIPS & IPS Polyethylene Pipe Ends Series 66/05**



Standard Materials	
Body, Gland Flange	Ductile iron ASTM A536
Bonnet	Cast iron ASTM A126 class B
Coating	Electrostatically applied fusion bonded epoxy-resin meets or exceeds AWWA C550.
Wrench Nut	Ductile iron ASTM A536-painted black for clockwise closing, red for counter clockwise closing.
Stem	Standard: Stainless Steel AISI 430F ASTM A582.
Wedge	Ductile iron ASTM A536 vulcanized with EPDM-rubber compound
Stem Seal Box, Wedge Nut	Bronze
Bonnet Bolts	Stainless Steel-A2-Grade 304 Sealed with hot melt.
Gland Bolts	Stainless Steel-A2-Grade 304 Hexagon bolt.
Bonnet Gasket, Wiper Ring, O-ring Stem Seals, O-ring Gland Seal	ASTM D2000 Buna "N" nitrile rubber

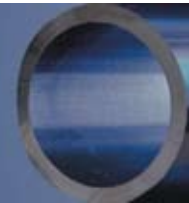
Optional Materials	
Pipe	Pipe 3408 Pipe Stubs: To AWWA C906 DR 9, DR 11, DR 13.5. DIPS or IPS suitable for butt fusion or electrofusion joining.
Bolting	Optional A4, 316 bolts on Wrench Nut, Bonnet and Gland Flange
Stem	Optional Bronze C99500 or C86500

Ref. Nos.	Size	H	L	FPL Free pipe Length	Turns to open
IPS					
66-114-05X	4"	13.50"	41.93"	14.92"	14
66-168-05X	6"	17.50"	43.35"	14.00"	21
66-219-05X	8"	21.50"	44.06"	13.04"	26
66-273-05X	10"	24.75"	44.96"	11.25"	32
66-323-05X	12"	27.625"	47.09"	11.14"	38
DIPS					
66-121-05X	4"	13.50"	41.93"	14.92"	14
66-175-05X	6"	17.50"	43.35"	14.00"	21
66-229-05X	8"	21.50"	44.06"	13.04"	26
66-281-05X	10"	24.75"	44.96"	11.25"	32
66-335-05X	12"	27.625"	47.09"	11.14"	38

X: 0 = Open Left 1 = Open Right

Tests: *Valve only
Shell Test: 500 PSI
Seat Test: 250 PSI
Operating torque test

Utilization: For water and neutral liquids to max. 160 F



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American AVK Series 2780 High Pressure Dry Barrel Hydrant 6" DIPS & IPS Polyethylene Pipe End Base

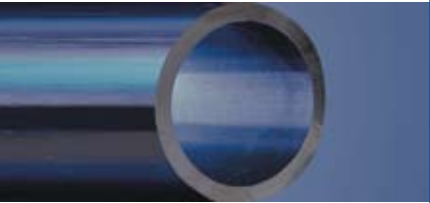
Meets or exceeds AWWA C502 (latest)

Working Pressure - 250 PSI

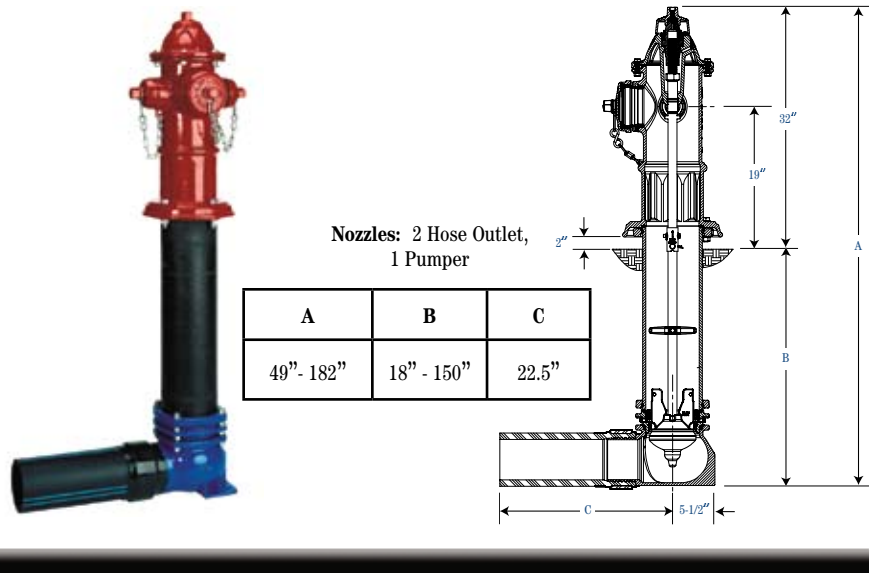
Inlet Base: Pipe: PE 3408-Pipe Stubs meet or exceed AWWA C906. DR 9, DR 11, DR 13.5

DIPS or IPS suitable for butt fusion or electrofusion joining.

Standard Materials	
Components	Standard
Barrel Gasket, Cap Gasket, O-Rings	NBR
Lubrication Hole Seal	Oil Resistant Rubber
Bonnet, Nozzle Section, Barrels, Standpipe Flanges, Breakable Flange, Main Valve Flange, Base	Ductile Iron ASTM A536
Caps, Weathershield	Cast Iron ASTM A126 Class "B"
Nozzles, Valve Seat Ring, Drain Ring, Brass Fittings, Brass Plugs, Operating Nut, Thrust Nut, Stem Bushing	Bronze/Brass
Anti Friction Washer	Polymide
Coating	Above ground-Fusion bonded Epoxy inside and out. Below ground-Bitumen/Fusion bonded Epoxy. Epoxy meets or exceeds AWWA C550 (latest)
Main Valve	Ductile Iron core fully encapsulated with EPDM Rubber
Stem Rod Couplings, Lock Rings, Nozzle Retaining Screw, Lock Plate, Lock Plate Screw, Spider Bolt, Stop Pins, Coupler Pins, Main Valve Retaining Pin, Spring Pins	Stainless Steel
Stop Nut, Chain Set	Zinc Plated Steel
Base Configuration	6" HDPE
Hardware	Zinc Plated Steel (Optional 304 or 316 Stainless)
Upper and Lower Stem Rods	304 Stainless Steel
Opening Direction	Open Left (Optional Open Right)



Municipal
Products



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Star® Pipe Products (Allgrip™)

Mechanical Joint 360 Ring Type Restraint System Designed for IPS and DIPS HDPE Pipe

This innovative 360° grip-ring restraint provides uniform restraining pressure around the circumference of the pipe, thus avoiding pipe distortion and point loading. Its unique independent restraining and sealing features allows it to be used for Push-On and Mechanical Joint fittings, Valves and Fire Hydrants. It can be used with most DR's of HDPE Pipe in conjunction with an internal stiffener.



Features and Advantages:

- No washers or spacers to remove when used on other pipe materials.
- The universal application on various types of pipe simplifies inventory requirements and reduces the carry cost.
- Double headed torque off nuts are the same wrench size.
- Break off bolt is designed with collars so that a wrench won't slip off the bottom for easier installation.
- Sizes 4" -12" are listed with Underwriters Laboratories and are Factory Mutual Research Approved.
- All parts are made from high strength ductile iron per ASTM A536, grade 65-45-12 and are compatible with all mechanical joints conforming to ANSI/AWWA C111/A21.11.



After cleaning contact surfaces, and installing stiffener in HDPE pipe, slide the Allgrip™ over the plain end followed by the MJ gasket.



After insertion of the pipe into the bell of the fitting/sleeve, firmly press the gasket into the gasket recess.



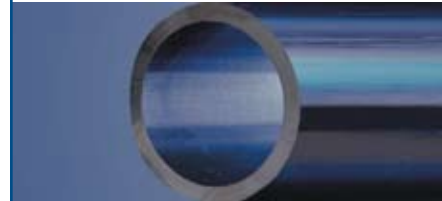
After inserting T-bolts and hand tightening, retighten with wrench evenly around pipe until reaching recommended torque values.



Tighten each twist off bolt by turning alternate heads up to 180°. Never turn a single head more than 180° without changing to another bolt.



Alternate bolts until the break-away heads twist off, completing the installation.



Municipal
Products

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Golf
Irrigation

Golf Irrigation

No Joints. No Leaks. No Breaks.

The weakest point of any golf course irrigation system is found within the main piping itself. Leaky joints caused by water hammer- the sudden water and air surge inside the system- and early spring turn-ons can mean costly, disruptive repairs.

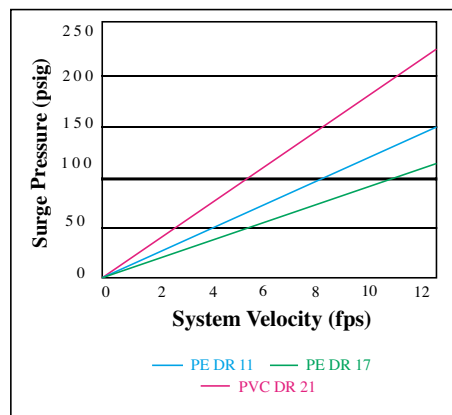
No joints. No leaks.

Durable, flexible ISCO HDPE pipe sections are actually butt-fused together to become one continuous pipe, with the fused area becoming even stronger than the piping itself. Conventional irrigation pipe contains joints, proven to be the weakest spots in the entire system.

The culprit: Water Hammer

The most common cause of breaks and leaks in conventional golf course piping is water hammer. ISCO HDPE pipe, because of its elasticity and other durable properties, effectively reduces the surge pressure caused by the constant stop and go flow of air and water through the pipe. And, since fused ISCO HDPE pipe is "jointless" there are no weak spots to fail.

Water Hammer



HDPE is ideal for:

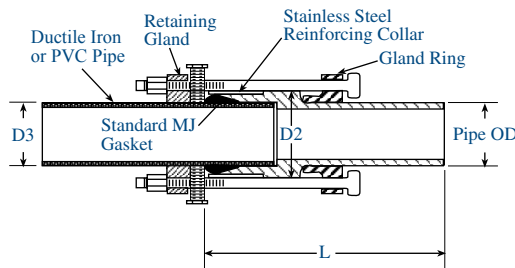
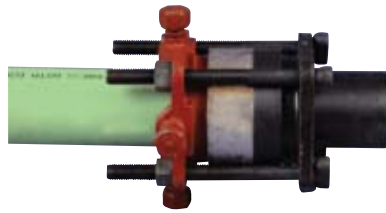
- Main line piping
- Lateral piping
- Pump station wet wells
- Pump intake piping & floats
- Pump discharge piping
- Wetland piping
- Creek crossings
- Bridge crossings
- Road crossings
- Lake / Pond trickle tube

Please refer to HDPE Pipe Section (Page 10) for additional information related to pipe sizes and materials. Also refer to the IPS HDPE Fittings Section (Page 24) for fitting selection and dimensions.

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IPS Bell MJ Adapter with Kit



Kit Contains:

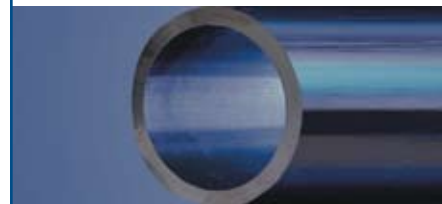
- HDPE Bell MJ Fitting with stainless, reinforced support ring
- Ductile iron, C110, heavy body gland ring
- Gasket
- Special Extra Long T-bolts
- Mechanical Joint Restraint for PVC

Note: Also available for connecting to Ductile Iron pipe.

For connecting to PVC Pipe

IPS Bell MJ Adapter with Kit for PVC Pipe										
Nominal Pipe Size(in)	DR OD(in)	DR	Pressure Rating	Part #	Dimensions			Weight (lbs)	Shipping Method	
					L (in)	D2 (in)	D3 (in)			
2	2.38	11	160	ISMFMJ02IPSBELL	8	3.5	2.61	15	FedEx	
3	3.5	11	160	ISMFMJ03IPSBELL	8	5.37	3.97	20	FedEx	
4	4.5	11	160	ISMFMJ04IPSBELL	8	6.63	4.81	25	FedEx	
6	6.63	11	160	ISMFMJ06IPSBELL	10	8.63	6.92	35	FedEx	
8	8.63	11	160	ISMFMJ08IPSBELL	11	10.75	9.05	55	FedEx	
10	10.75	11	160	ISMFMJ10IPSBELL	11	12.75	11.13	70	FedEx	
12	12.75	11	160	ISMFMJ12IPSBELL	13	15.35	13.24	95	FedEx	

* ALL WEIGHTS INCLUDE GLAND PACKS AND MJ RESTRAINT



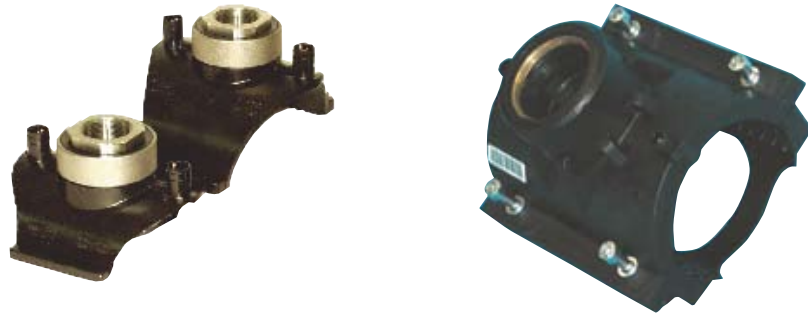
Golf Irrigation



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Electrofusion Saddles



An electrofusion saddle is an excellent way to connect threaded saddle valves to ISCO HDPE pipe. The saddle requires a small number of tools to install. Saddles are available with a female threaded outlet 3/4"- 2" sizes. Tools needed to install the saddle are the electrofusion processor, hole cutter, and manufacturers' clamping assembly (when not integral with the saddle).

Electrofusion Saddles		
Saddle Size	Item No.	Ship
4" x 1"	ELEFSA04X01IP	FedEx
4" x 1-1/2"	ELEFSA04X015IP	FedEx
4" x 2"	ELEFSA04X02IP	FedEx
6" x 1"	ELEFSA06X01IP	FedEx
6" x 1-1/2"	ELEFSA06X015IP	FedEx
6" x 2"	ELEFSA06X02IP	FedEx
8" x 1"	ELEFSA08X01IP	FedEx
8" x 1-1/2"	ELEFSA08X015IP	FedEx
8" x 2"	ELEFSA08X02IP	FedEx
10" x 1"	ELEFSA10X01IP	FedEx
10" x 1-1/2"	ELEFSA10X015IP	FedEx
10" x 2"	ELEFSA10X02IP	FedEx
12" x 1"	ELEFSA12X01IP	FedEx
12" x 1-1/2"	ELEFSA12X015IP	FedEx
12" x 2"	ELEFSA12X02IP	FedEx

Golf Irrigation

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JCM 404 Service Saddle with Double Stainless Steel Straps



- Heavy duty double strap saddle body
- Extra Wide stainless steel straps
- Gasket seal
- Available with corrosion resistant shop coat primer or heavy resilient plastic coating

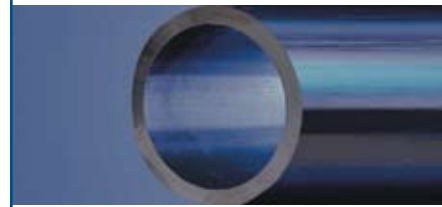
JCM 404 Service Saddle with Double Stainless Steel Straps		
Saddle Size	Item No.	Ship Method
4" x 1"	JCM404-0450X08	FedEx
4" x 2"	JCM404-0450X14	FedEx
4" x 2 1/2"	JCM404-0450X16	FedEx
6" x 1"	JCM404-0663X08	FedEx
6" x 2"	JCM404-0663X14	FedEx
6" x 2 1/2"	JCM404-0663X16	FedEx
8" x 1"	JCM404-0863X08	FedEx
8" x 2"	JCM404-0863X14	FedEx
8" x 2 1/2"	JCM404-0863X16	FedEx
10" x 1"	JCM404-1075X08	FedEx
10" x 2"	JCM404-1075X14	FedEx
10" x 2 1/2"	JCM404-1075X16	FedEx
12" x 1"	JCM404-1320X08	FedEx
12" x 2"	JCM404-1320X14	FedEx
12" x 2 1/2"	JCM404-1320X16	FedEx

Swing Joint Saddle to HDPE Pipe Systems



- Pressure rating at 235 psi
- 316 Stainless Steel hardware is captured or retained no loose piece to drop
- Molded Seal to compensate for burrs and misaligned holes.
- Uses Standard 1 1/2" hole saw for HDPE pipe.
- Use swing joints with "P" inlet connection.

Swing Joint Saddle		
Saddle Size	Part No.	Ship Method
2" x 1-1/2"	SWJSA02X015IP	FedEx
3" x 1-1/2"	SWJSA03X015IP	FedEx
4" x 1-1/2"	SWJSA04X015IP	FedEx



Golf Irrigation

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Landfill
HDPE
Pipe and
Fittings

Landfill HDPE Pipe and Fittings

Successful landfill management requires the skill and technology of experts in the business. ISCO Industries is geared to work with landfills. HDPE & PVC pipe, fittings, valves, and custom fabrications. ISCO Industries can even find you the custom items you require for your complex projects. We carry hose, quick disconnects, sample ports, Fernco couplings, gauges, and many other items. There are many advantages to using ISCO for your landfill materials and service needs:

- Largest inventory of pipe, fittings, valves, and other items.
- Fusion equipment available for rental or purchase.
- Quality and expedient custom fabrications.
- Drawings for quality assurance on submittals
- Field technicians for fusion services; pipe fusion or liner repairs
- Knowledgeable sale representatives in your area

Special fabrication is required in most landfill projects. Our plants have the most modern pipe perforation equipment in the industry. We can make manholes up to 120 inches in diameter. Our plants make fittings and all types of special fabrications. With multiple locations, we can provide more of what you want, when you want it.

Below and on the following pages are pictures of various types of HDPE fabricated products. Please keep in mind, "If you can design it, ISCO can fabricate it." Our HDPE fabrication capabilities are endless. We have been a leader in this industry since 1976.



Figure 1: Prefabricated Perforated and Slotted Pipe

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Figure 2: Dual Containment Pump Station



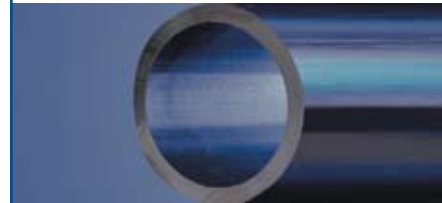
Figure 3: Condensate Sump Trap



Figure 4: Assorted Fittings



Figure 5: Gas Well Head



Landfill
HDPE
Pipe and
Fittings



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Landfill
HDPE
Pipe and
Fittings



Figure 6: Side Slope Riser

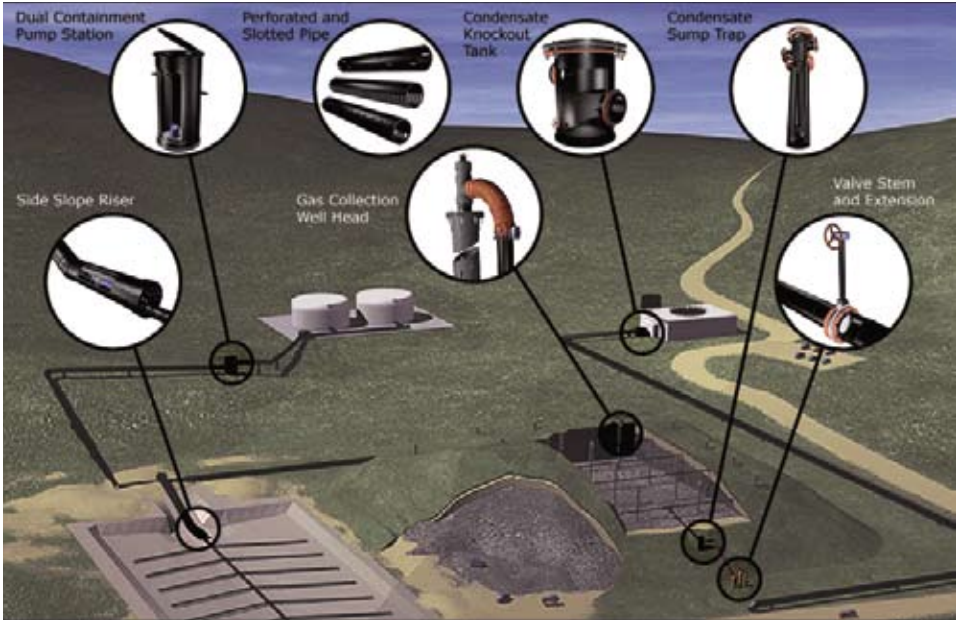


Figure 7: Complete Landfill Supplies



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HDPE Dual Containment Piping

In today's world, we must do all that is possible to prevent environmental contamination. HDPE dual containment piping from ISCO Industries reduces the chance of environmental problems.

Dual containment piping decreases the chance of pollution by having one pipe inside of another. The carrier pipe is the inside pipe. The containment pipe is the outside pipe. Having this system made of high-density polyethylene (HDPE) pipe improves reliability.

The space between the containment pipe and the carrier pipe is called the annular space. When there is an end-termination to seal the annular space, leaks in the carrier pipe can be quickly detected and contained before there is a pollution problem.

Federal and State regulations will influence your choice of piping systems. Federal regulations require the ability to detect leaks when transporting hazardous chemicals in a buried piping system.

Why Dual Containment?

The Environmental Protection Agency (EPA) lists four major causes of piping failure:

- Corrosion
- Poor workmanship and installation
- Accidents
- Natural events

By using high-density polyethylene pipe, corrosion is not a problem. Use our chemical resistance charts to make sure that the chemicals in the pipeline are compatible with HDPE pipe. For chemical resistance information go to www.isco-pipe.com to find the latest information provided by the Plastic Pipe Institute.

Bell and spigot pipes will leak if not properly assembled. If the pipe is properly assembled and the soil around the pipe settles, this may cause a leak. This would be a failure by natural event.

In HDPE pipe systems, pipe is joined by butt fusion. The butt fusion joint is as strong as the pipe. If there is differential soil settlement, the joints will not separate. Dual containment pipe is joined by simultaneous butt fusion or stagger welded individual pipes. These joints are as strong as single wall butt fused joints.

When a contractor digs in the wrong place, he may accidentally cause a leak in a single wall pipe. When dual contained pipe is used, often only the outside containment pipe is punctured. This can be quickly repaired. If both the containment and carrier pipes are damaged, both can be repaired.



HDPE Dual
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Systems Design

Leak monitoring is critical in locating of leaks and quick response to leaks. Leak monitoring can also minimize the impact of a release event and the corresponding clean-up costs. The containment pipe is the means of minimizing a leak's impact.

As indicated, the outer pipe is the containment pipe; the inner pipe is the carrier pipe. Centralizers support the carrier pipe. See Figure 1 below. The annular space between the carrier pipe and the containment pipe is sealed at the ends with end terminations

The space between the centralizers determines the deflection or "bow" in the carrier pipe. Systems with more than 1/4" of deflection between centralizers may increase the resistance to flow. When flow is critical, use centralizer spacing that provides 1/4" of deflection. In gravity systems, this is important. In pressurized systems, this is of less importance.

The design of the centralizer is important. If a leak detection cable is used, there must be a cut-out in the bottom of the centralizer to allow flow from a leak and the leak detection cable to be pulled.

Hydrostatic testing is used to test the carrier pipe. The standard test of 1.5 times the design operating pressure is used to ensure the reliability of the welds. The containment piping is usually tested with 5-psi air pressure. Use extreme care when testing with air.

Underground Installation

Underground Installation of HDPE dual-containment piping is the same as most plastic pipe. Figure 2 below shows a typical trench with backfill. To prevent dual-containment piping from floating during installation, hold it in place with crushed stone or soil with good bridging properties. Good compaction will provide the soil-pipe interaction desired with plastic piping systems.



HDPE Dual Containment Piping

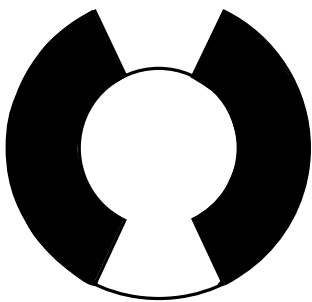


Figure 1 Centralizer

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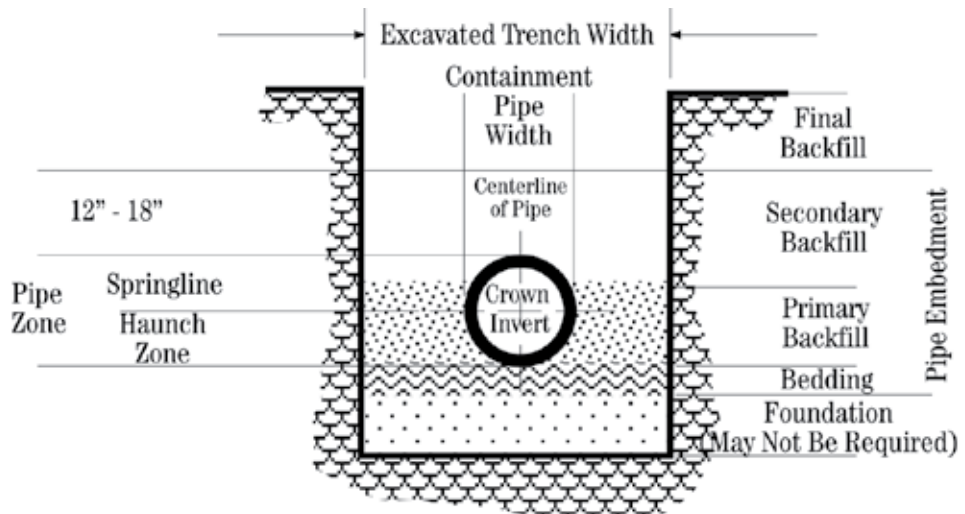


Figure 2 Typical Trench Detail with Backfill

Leak Monitoring for Dual Containment Piping

Leak monitoring can be any method of determining that a leak has occurred. Low point drains are frequently the easiest method of leak monitoring. When a leak occurs, liquid flows to the low point in the pipeline. Liquid in the low point will cause a sensor to set off an alarm or can be manually detected.

Figure 3, below shows a typical end termination with a low point drain. The purpose of the low point drain is for the removal of liquid in case of a leak and for the installation of leak detection point sensors, float switches or leak detection cables.

If leak detection cables are used, care must be taken during installation of the cable or false alarms will occur. The following is a partial list of items to check or avoid:

- Prevent water from getting in the annular space
- Check centralizer spacing to prevent carrier pipe contact with cable
- Centralizer openings must be carefully machined to prevent the cable from getting caught on the centralizer during installation.

Visual leak monitoring systems are used with above ground dual containment piping systems. A clear tube is installed at the low point to show liquid if a leak occurs. Visual leak monitoring systems are not practical for underground pipelines in most cases.

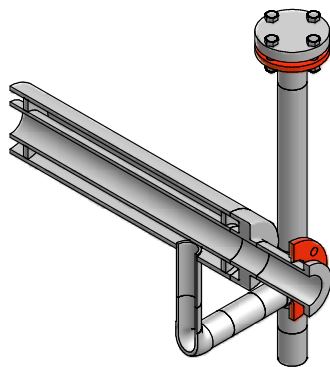


Figure 3. End Termination with Low Point Drain.

HDPE Dual
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Table 1: Common Size Combinations of Dual Containment Piping

Nominal Size	Carrier DR	Containment DR	Carrier Pipe		Containment Pipe		Weight lbs/ft
			OD (in)	I.D (in)	OD (in)	I.D (in)	
1"x 3"	11	11	1.315	1.047	3.5	2.826	1.6
1" x 4"	11	11	1.315	1.047	4.5	3.633	2.5
		17	"	"	"	3.938	1.8
1-1/2" x 4"	11	11	1.9	1.533	4.5	3.633	2.7
		17	"	"	"	3.938	2.0
2" x 4"	11	11	2.375	1.917	4.5	3.633	2.9
		17	"	"	"	3.938	2.2
2" x 6"	11	11	2.375	1.917	6.625	5.349	5.6
		17	"	"	"	5.798	4.0
3" x 6"	11	11	3.5	2.826	6.625	5.349	6.4
		17	"	"	"	5.798	4.7
4" x 8"	11	11	4.5	3.633	8.625	6.963	10.7
		17	"	"	"	7.55	7.9
		26	"	"	"	7.921	6.1
	17	17	"	3.938	"	7.55	7.2
		26	"	"	"	7.921	5.3
		26	"	"	"	7.921	5.3
6" x 10"	11	11	6.625	5.349	10.75	8.679	18.1
		17	"	"	"	9.41	13.8
		26	"	"	"	9.875	10.8
	17	17	"	5.798	"	9.41	12.1
		26	"	"	"	9.874	9.2
		26	"	"	"	9.874	9.2
8" x 12"	11	11	8.625	6.963	12.75	10.293	26.8
		17	"	"	"	11.16	20.8
		26	"	"	"	11.711	16.7
	17	17	"	7.55	"	11.16	18.0
		26	"	"	"	11.711	14.0
		32.5	"	"	"	11.919	12.3
	26	26	"	7.921	"	11.711	12.1
		32.5	"	"	"	11.919	10.5

Pressure ranges from gravity flow to more than 200 psi
 Carrier pipe sizes from 3/4" - 54" OD.
 Containment pipe sizes from 3" - 63" OD.

Additional combinations available as:

Nominal Size	Carrier DR	Containment DR	Carrier Pipe		Containment Pipe		Weight lbs/ft
			OD (in)	I.D (in)	OD (in)	I.D (in)	
10" x 14"	11,17,26	26,32.5	10.75	varies	14.0	varies	varies
10" x 16"	11,17,26	17,32.5	10.75	varies	16.0	varies	varies
12" x 16"	11,17,26	26,32.5	12.75	varies	16.0	varies	varies
12" x 18"	11,17,26	17,32.5	12.75	varies	18.0	varies	varies
14" x 20"	11,17,26	17,32.5	14.0	varies	20.0	varies	varies
16" x 22"	11,17,26	17,32.5	16.0	varies	22.0	varies	varies
18" x 24"	11,17,26	17,32.5	18.0	varies	24.0	varies	varies
24" x 30"	17,32.5	32.5	24.0	varies	30.0	varies	varies
30" x 36"	17,32.5	32.5	30.0	varies	36.0	varies	varies
36" x 42"	17,32.5	32.5	36.0	varies	42.0	varies	varies
42" x 48"	26,32.5	32.5	42.0	varies	48.0	varies	varies
48" x 54"	26,32.5	32.5	48.0	varies	54.0	varies	varies
54" x 63"	26,32.5	32.5	54.0	varies	63.0	varies	varies

Non-standard sizes range from 3/4" - 54" (Carrier) and 3" - 63" (Containment). Pressure ranges from Gravity flow to more than 250 psi (<18")



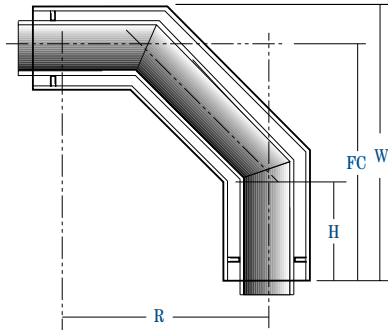
HDPE Dual Containment Piping

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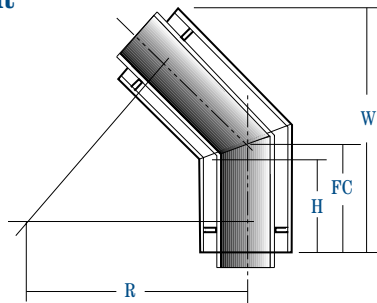


Dual Containment 90° Ell 3-Segment



Nominal Size	Carrier DR	Containment DR	Dimensions				Weight (lbs)	Shipping Method
			R (in.)	H (in.)	FC (in.)	W (in.)		
1"x3"	11	11	6.04	4.28	8.54	10.29	2	FedEx
1"x4"	11	11,17	6.04	4.07	8.54	10.79	2	FedEx
1.5"x4"	11	11,17	6.04	4.07	8.54	10.79	3	FedEx
2"x4"	11	11,17	6.04	4.07	8.54	10.79	3	FedEx
2"x6"	11	11,17	8.45	5.63	11.95	15.26	8	FedEx
3"x6"	11	11,17	8.45	5.63	11.95	15.26	10	FedEx
4"x8"	11,17	11,17,26	9.96	6.21	13.83	18.15	19	FedEx
6"x10"	11,17	11,17,26	14.49	7.27	18	23.36	42	FedEx
8"x12"	11,17,26	11,17,26,32.5	16.9	7.36	19.9	26.27	70	FedEx

Dual Containment 45° Ell 2-Segment



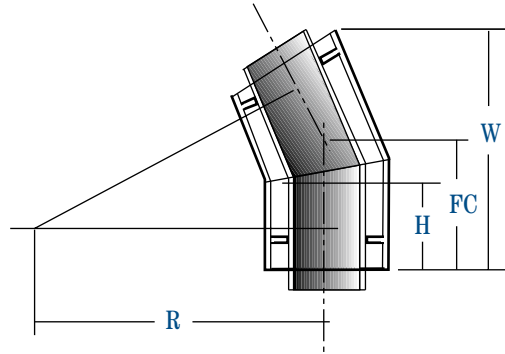
Nominal Size	Carrier DR	Containment DR	Dimensions				Weight (lbs)	Shipping Method
			R (in.)	H (in.)	FC (in.)	W (in.)		
1"x3"	11	11	6.04	4.28	5	9.772	2	FedEx
1"x4"	11	11,17	6.04	4.07	5	10.125	2	FedEx
1.5"x4"	11	11,17	6.04	4.07	5	10.125	2	FedEx
2"x4"	11	11,17	6.04	4.07	5	10.125	2	FedEx
2"x6"	11	11,17	8.45	5.63	7	14.29	6	FedEx
3"x6"	11	11,17	8.45	5.63	7	14.29	7	FedEx
4"x8"	11,17	11,17,26	9.96	6.21	8	16.704	12	FedEx
6"x10"	11,17	11,17,26	14.49	7.27	9.5	19.265	25	FedEx
8"x12"	11,17,26	11,17,26,32.5	16.9	7.36	10	20.118	42	FedEx

HDPE Dual Containment Piping

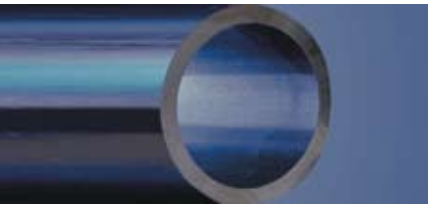
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Dual Containment 22.5° Ell

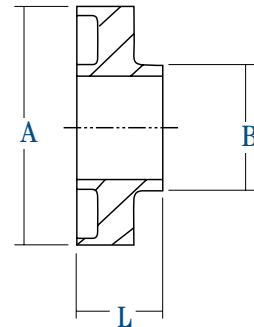
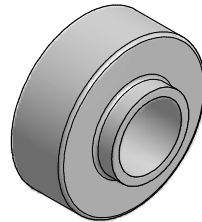
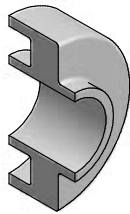


Dual Containment 22.5 Elbow								
Nominal Size	Carrier DR	Containment DR	Dimensions			Weight (lbs)	Shipping Method	
			R (in.)	H (in.)	FC (in.)			W (in.)
1"x3"	11	11	13.625	4	4.375	9.03	1	FedEx
1"x4"	11	11,17	14.25	5	5.5	11.34	2	FedEx
1.5"x4"	11	11,17	14.25	5	5.5	11.34	2	FedEx
2"x4"	11	11,17	14.25	5	5.5	11.34	3	FedEx
2"x6"	11	11,17	15.25	6	6.625	14.08	5	FedEx
3"x6"	11	11,17	15.25	6	6.625	14.08	6	FedEx
4"x8"	11,17	11,17,26	16.15	6.5	7.375	15.81	10	FedEx
6"x10"	11,17	11,17,26	17.25	6.5	7.625	16.62	17	FedEx
8"x12"	11,17,26	11,17,26,32.5	19.5	8	9.25	20.27	35	FedEx



HDPE Dual Containment Piping

Dual Containment End Termination



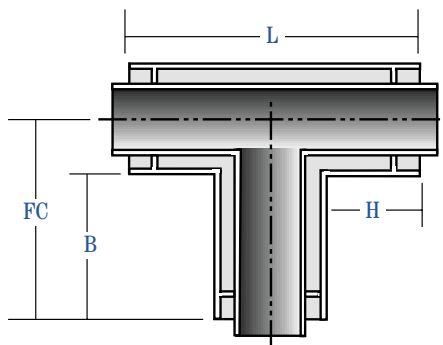
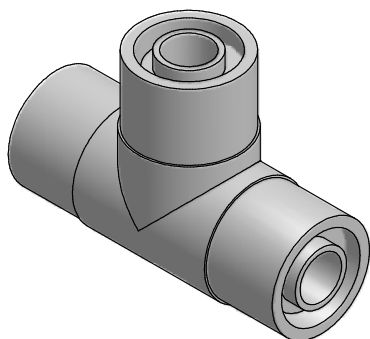
Dual Containment End Termination							
Nominal Size	Carrier DR	Containment DR	Dimensions			Weight (lbs)	Shipping Method
			L (in.)	A (in.)	B (in.)		
1"x3"	11	11	3	3.5	1.315	1	FedEx
1"x4"	11	11,17	3	4.5	1.315	1	FedEx
1.5"x4"	11	11,17	3	4.5	1.9	1	FedEx
2"x4"	11	11,17	3	4.5	2.375	1	FedEx
2"x6"	11	11,17	3	6.625	2.375	2	FedEx
3"x6"	11	11,17	3	6.625	3.5	2	FedEx
4"x8"	11,17	11,17,26	4	8.625	4.5	3	FedEx
6"x10"	11,17	11,17,26	4	10.75	6.625	5	FedEx
8"x12"	11,17,26	11,17,26,32.5	4	12.75	8.62	8	FedEx

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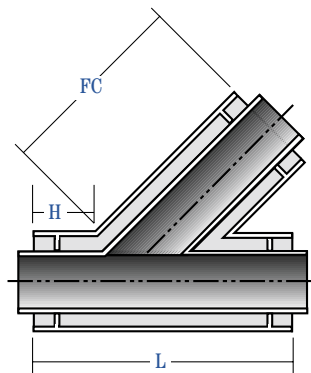
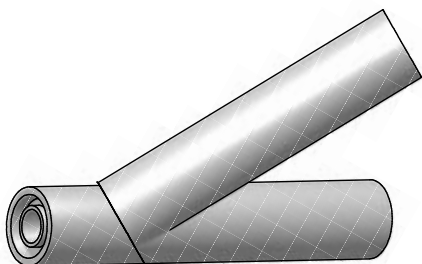


Dual Containment Tees



Dual Containment Tee								
Nominal Size	Carrier DR	Containment DR	Dimensions				Weight (lbs)	Shipping Method
			L (in.)	H (in.)	FC (in.)	B (in.)		
1"x3"	11	11	11.8	3	5.1	3.35	3	FedEx
1"x4"	11	11,17	13.4	3	5.6	3.35	4	FedEx
2"x4"	"	"	"	"	"	"	"	"
2"x6"	11	11,17	17.8	3.75	7.4	4.09	10	FedEx
3"x6"	"	"	"	"	"	"	10.5	"
4"x8"	11,17	11,17,26	23.6	4	9.5	5.19	24	FedEx
6"x10"	11,17	11,17,26	27.5	8.1	16	10.5	51	FedEx
8"x12"	11,17,26	11,17,26,32.5	48	17.6	24	17.5	125	LTL

Dual Containment 45° Lateral Wye



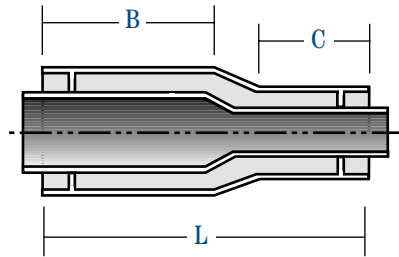
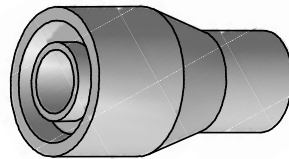
Dual Containment Wye							
Nominal Size	Carrier DR	Containment DR	Dimensions			Weight (lbs)	Shipping Method
			L (in.)	H (in.)	FC (in.)		
2"x4"	11	11,17	26.5	5.89	19.5	9	FedEx
2"x6"	11	11,17	35.5	6.38	27.9	20	FedEx
3"x6"	11	11,17	35.5	6.38	27.9	26	FedEx
4"x8"	11,17	11,17,26	40.2	7.9	30.4	46	FedEx
6"x10"	11,17	11,17,26	50.5	7.9	35	82	LTL
8"x12"	11,17,26	11,17,26,32.5	54.6	7.9	35.4	165	LTL

HDPE Dual Containment Piping

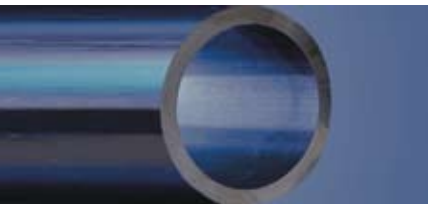
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Dual Containment Reducers

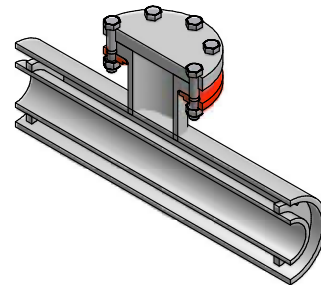
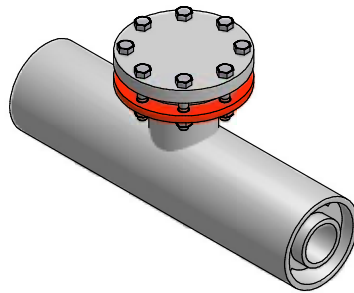


Dual Containment Reducer								
Large Side	Small Side	Carrier DR	Containment DR	Dimensions			Weight	Shipping Method
				L (in.)	B (in.)	C (in.)	(lbs)	
1"x4"	1" x 3"	11	11,17	7.25	2.75	2.75	2	FedEx
1.5"x4"	1" x 3"	11	11,17	7.25	2.75	2.75	2	FedEx
2"x4"	1" x 3"	11	11,17	7.25	2.75	2.75	2	FedEx
2"x6"	1" x 3"	11	11,17	11.42	5.12	3.94	4	FedEx
3"x6"	"	"	" "	"	"	4.5	"	"
2"x6"	1"x4"	11	11,17	11	4.5	3.5	5	FedEx
3"x6"	1.5"x4"	"	" "	"	"	"	5.5	"
3"x6"	2"x4"	"	" "	"	"	"	6	"
4"x8"	2"x6"	11	11,17	12	4.5	4	10	FedEx
	3"x6"	"	" "	"	"	"	"	"
6"x10"	4" x 8"	11,17	11,17,26	16	6	6	16	FedEx
8"x12"	4" x 8"	11,17	11,17,26	16	6	6	25	FedEx
8"x12"	6" x 10"	11,17,26	11,17,26	16	6	6	25	FedEx



HDPE Dual Containment Piping

Dual Containment Access Ports



Carrier / Containment (inches)	Access Port Diameter
1/3	3.5
1/4	4.5
2/4	4.5
3/6	4.5
4/8	4.5
6/10	4.5
8/12	4.5

Made to Order



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McElroy Fusion Equipment



McElroy
Fusion
Equipment

ISCO Industries LLC., is the world's largest McElroy Distributor and offers a complete line of fusion accessories and special tooling.

Fusion Equipment for rent or sale:

- Butt Fusion Machines
- Sidewall Fusion Machines
- Socket Fusion Equipment
- Limited Access Fusion Machines
- FastFusion Track Equipment
- Coiled Pipe Trailers
- Electrofusion Equipment
- Extrusion Welders
- Hot Air Guns
- PitBull® Fusion Machines

Rental & Sales Locations:

- Sales and rental locations nationwide, which features the new McElroy TracStar line of self propelled and self contained units.
- Multiple McElroy Authorized Service and Repair Centers to support you and your equipment.

Field Fusion Technicians

Experienced, Factory Trained, OSHA and Confined Space Certified

Accessories & Special Tooling:

- PolyHorse™
- Hot Tap Tooling
- PolyPorter™
- Squeeze Off Tools
- Split Ring Heaters
- DataLoggers™
- Pipe Cutting Tools
- Test Caps
- Pyrometers
- Internal and External Bead Removers
- Pipe Straightening Equipment
- And Many Others
- Low Profile Rollers
- Stub End Holders
- Pipe Pullers

Fusion Manual:

- Step-by-Step Fusion Instructions
- Sections on Safety and Tips for Success
- Order your free copy at www.isco-pipe.com



We conduct fusion academies throughout the year across the U.S.A., featuring presentations, manufacturing-sponsored displays, and hands-on instruction to teach HDPE fusion techniques on the latest fusion equipment. Many key manufacturers endorse and participate in the academy, and Fusion Academy students earn certificates acknowledging their completion of the fusion course. Call 1-800-345-ISCO for the next session scheduled for your area.

Have a Problem in the Field and Need Help?
-Give us a Call-



Fusion Troubleshooting Hotline

1-800-345-4726 Ext. 4790

www.isco-pipe.com



Theory of Heat Fusion

The principle of heat fusion is to heat two surfaces to a designated temperature, and then fuse them together by applying pressure. The pressure causes flow of the melted materials, which causes mixing of both part's molecules and thus fusion. When the polyethylene pipe is heated, the molecular structure is transformed from a crystalline state into an amorphous condition. When fusion pressure is applied, the molecules from each pipe end mix. As the joint cools, the molecules return to their crystalline form, the original interfaces are gone, and the two pipes have become one homogeneous pipe.

Butt Fusion Equipment

Butt fusion machines are the best way to join HDPE pipe in most applications. The welds are as strong or stronger than the pipe itself and leak-free when the proper fusion procedures are followed.

McElroy fusion machines are reliable and easy to operate. ISCO Industries has hundreds of rental machines plus new machines for sale. Machines to fuse from 1/2" to 65" HDPE pipe are readily available. Below are various size and application specific fusion machines.

Manual Equipment

Sidewinder, No. 2LC, No. 2CU,
No. 14 Pitbull and Socket

Standard 4-wheel Equipment

No.28, No.28CU,
No.412 and No.618

McElroy MegaMc Series

No.824, No.1236, No.1648
and No.2065, and No.1600

McElroy PitBull® Series

No.28, No.412, No.618, 500,
630, and 900

McElroy TracStar Series

T-28, T-28CU, T-412, T-618,
T-500 Series II, T-630, and T-900

McElroy DynaMc™ Hand Pump Series

No.28 2-Jaw & 4-Jaw
No.412 2-Jaw & 4-Jaw

Productivity Accessories



McElroy
Fusion
Equipment



1-800-345-ISCO

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McElroy Jaw Clamp and Chain Clamp Sidewinders



The Jaw Clamp Sidewinder fuses 3" IPS and smaller branch saddles, tapping tees and service saddle fittings onto 1-1/4" IPS to 4" IPS mains. An optional chain clamp kit is available for 6" and larger mains.

The Chain Clamp Sidewinder is a manually operated saddle fusion machine for fusing 4" IPS and smaller branch saddles, tapping tees and service saddle fittings onto 1-1/4" IPS and larger mains. The chains shipped with the machine will fit up to 8" IPS pipe main. Longer chains are available for larger pipe sizes.



McElroy Sidewinder™
manually operated saddle fusion
machine for fusing
4" IPS and smaller branch
saddles, tapping tees and service
saddle fittings onto 1-1/4" IPS
and larger main sizes.

L 8" (203 mm)
W 11" (279 mm)
H 27" (686 mm)
WEIGHT
28 lbs.
(12.7 Kg)

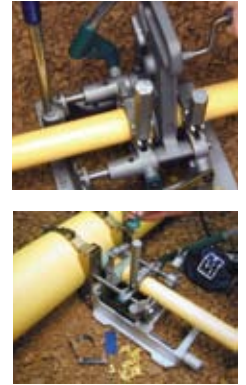
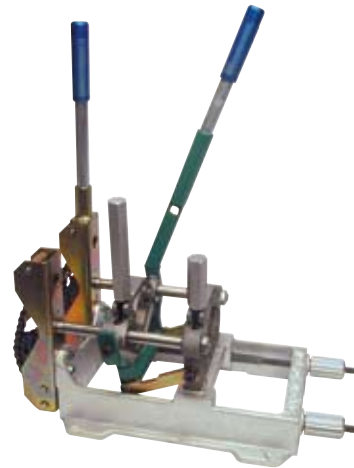


McElroy
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McElroy No.2LC and No.2CU



McElroy
Fusion
Equipment

The No. 2LC (Locking Cam) is designed to butt fuse tees, ells, and other fittings with consistent high quality results. The machine's semi-automatic locking cam system maintains force during the cooling cycle. The machine is primarily made of surface hardened aluminum for light weight and durability. The jaws and inserts have multiple serrations for maximum grip on the pipe.

The No.2CU (Combination Unit) incorporates McElroy's patented combination side-wall feature. The No. 2CU's narrow clamp design provides for butt fusion of tees, ells and other fittings. Additional sidewall clamps with chain vise allows the unit to be attached on the centerline of a pipe main for saddle fusion of service saddles, branch saddles and small tapping tees. The machine incorporates surface hardened aluminum and stainless steel for light weight and durability.

**McElroy No.2 LC,
No.2 CU**
Fusion capability for
1/2" CTS - 2" IPS Pipe
(20 mm - 60 mm) saddle fusion
for fusing 2" and smaller branch
saddles, tapping tees and service saddle
fittings onto 1-1/4" IPS and
larger main sizes.

2LC		2CU	
L	13" (330 mm)	L	20" (508 mm)
W	14" (356 mm)	W	11" (279 mm)
H	15" (381 mm)	H	27" (686 mm)
WEIGHT		WEIGHT	
23 lbs.		28 lbs.	
(10.4 Kg)		(12.7 Kg)	

1-800-345-ISCO

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McElroy No.14 PitBull



The No.14 PitBull is designed to butt fuse tees, ells, and other fittings with consistent high quality results. The machine's semi-automatic locking cam system maintains force during the cooling cycle. The machine is primarily made of surface hardened aluminum for light weight and durability. The jaws and inserts have multiple serrations for maximum grip on the pipe. A four-wheel cart with outrigger pipe supports and lightweight heater/facer caddy is also available.

McElroy No.14 PitBull®
fusion capability for
1" IPS - 4" DIPS Pipe
(32mm - 110mm).

***Max. DIPS Capability 4" DIPS**



L 15.5" (394 mm)
W 16.5" (419 mm)
H 16" (406 mm)
WEIGHT
35 lbs.
(15.9 Kg)



McElroy
Fusion
Equipment

1-800-345-ISCO

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McElroy Socket Fusion Tooling



Socket Fusion tooling includes a heater, heater adapters, depth gauge/chamfer tool, cold ring tool and a socket fitting holder for 2" and larger fittings. Socket heater adapters are available for 1/2" CTS – 4" IPS. Multiple socket heater adapters from 1/2" CTS – 1" IPS sizes can be fastened to the sides of the heater. This enables saddle fusion heater adapters to be fastened to the heater face independent from the socket adapters. 1-1/4" – 4" IPS socket heater adapters fasten to the heater faces.

Socket Fusion Tooling
Fusion capability for
1/2" CTS - 4" IPS Pipe
(20m - 110mm).



McElroy
Fusion
Equipment

1-800-345-ISCO

www.isco-pipe.com

McElroy No.28 Standard and No.28 Combination



The No.28 hydraulic fusion machine allows for butt fusion of most fittings without special holders or removal of the outer jaw. The carriage can be easily removed from the chassis for in-ditch use.

The No.28CU (Combination Unit) adds saddle fusion capability of up to an 8" IPS (200 mm) branch on any size main.

The two above No.28 machines also incorporate McElroy's patented Centerline Guidance System, and is DataLogger™ compatible.

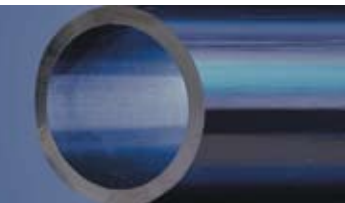
McElroy No.28 Standard, No.28 Combination

Fusion capabilities for
2" IPS - 8" DIPS Pipe
(63 mm - 225 mm).

The No.28 CU (Combination Unit) adds saddle fusion capability of up to an 8" Branch Saddle on any size main.
***Max. DIPS Capability 8" DIPS**



Both Units
L 64.5" (1,638 mm)
W 37" (940 mm)
H 50.5" (1,283 mm)
WEIGHT
575 lbs.
(260.8 Kg)



McElroy Fusion Equipment

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McElroy No.412 Fusion Machine



The No.412 is a self contained or electric hydraulic fusion machine. The No.412 allows for butt fusion of most fittings without special holders or removal of outer jaw. The carriage can be easily removed from the chassis for in-ditch use. A built-in hydraulic pipe lift aids in the handling of pipe. It incorporates McElroy's Patented Centerline Guidance System and is DataLogger™ compatible.

Optional hydraulic clamping available for this unit

McElroy No.412
Fusion capability for
4" IPS - 12" DIPS Pipe
(110 mm - 340 mm).

**Max. DIPS Capability 12" DIPS*



L 85" (2,159 mm)
W 49" (1,245 mm)
H 46" (1,168 mm)
WEIGHT
1,225 lbs.
(556 Kg)

McElroy
Fusion
Equipment

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www.isco-pipe.com



McElroy No.618 Fusion Machine



Optional hydraulic clamping
available for this unit

The No.618 is a self contained or electric hydraulic fusion machine. The No.618 allows for butt fusion of most fittings without special holders or removal of outer jaw. The carriage can be easily removed from the chassis for in-ditch use. A built-in hydraulic pipe lift aids in the handling of pipe. It incorporates McElroy's Patented Centerline Guidance System and is DataLogger™ compatible.

McElroy No.618
Fusion capability for
6" IPS - 18" OD Pipe
(180 mm - 450 mm).

*Max. DIPS Capability 16" DIPS



L 85" (2,159 mm)

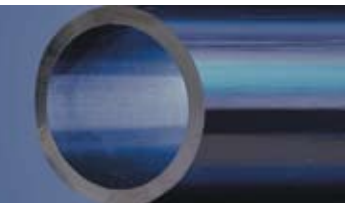
W 50" (1,270 mm)

H 55" (1,397 mm)

WEIGHT

1,335 lbs.

(606 Kg)



McElroy
Fusion
Equipment

1-800-345-ISCO

www.isco-pipe.com

McElroy MegaMc® No.824 Fusion Machine



The No.824 MegaMc is an electric hydraulic fusion machine. The machine allows for butt fusion of most fittings without special holders or removal of outer jaw. McElroy's unique semi-automatic control system requires only one operator. Hydraulic power assists all fusion functions including the complete operation of the jaws, pipe lifts, heater, and facer. It incorporates McElroy's Patented Centerline Guidance System and is DataLogger™ compatible.

McElroy MegaMc® No.824

will butt fuse all pipe sizes from
8" IPS - 24" OD Pipe
(225 mm - 630 mm).

***Max. DIPS Capability 20" DIPS**



L 131" (3,327 mm)

W 83" (2,108 mm)

H 69" (1,753 mm)

WEIGHT

5,710 lbs.

(1,225 Kg)

McElroy
Fusion
Equipment

1-800-345-ISCO

www.isco-pipe.com



McElroy MegaMc® No.1236 Fusion Machine



The No.1236 MegaMc is an electric hydraulic fusion machine. The machine allows for butt fusion of most fittings without special holders or removal of the outer jaw. McElroy's unique semi-automatic control system requires only one operator. Hydraulic power assists all fusion functions including the complete operation of the jaws, pipe lifts, heater, and facer. It incorporates McElroy's Patented Centerline Guidance System and is DataLogger™ compatible.



McElroy MegaMc® No.1236

will butt fuse all pipe sizes from
12" IPS - 36" OD Pipe
(340 mm - 900 mm).

***Max. DIPS Capability 30" DIPS**

L 131" (3,327 mm)

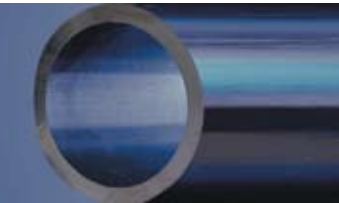
W 83" (2,108 mm)

H 78" (1,981 mm)

WEIGHT

5,980 lbs.

(2,712 Kg)



McElroy
Fusion
Equipment

1-800-345-ISCO

www.isco-pipe.com

McElroy MegaMc® No.1648 Fusion Machine



The No.1648 MegaMc is an electric hydraulic fusion machine. The machine allows for butt fusion of most fittings without special holders or removal of the outer jaw. McElroy's unique semi-automatic control system requires only one operator. Hydraulic power assists all fusion functions including the complete operation of the jaws, pipe lifts, heater, and facer. It incorporates McElroy's Patented Centerline Guidance System and is DataLogger™ compatible.

**McElroy MegaMc®
No.1648**

will butt fuse all pipe sizes from
16" OD - 48" OD Pipe
(450 mm - 1200 mm).

*Max. DIPS Capability 42" DIPS



L 151" (3,835 mm)

W 95" (2,413 mm)

H 86" (2,184 mm)

WEIGHT

8,800 lbs.

(3,992 Kg)

McElroy
Fusion
Equipment

1-800-345-ISCO

www.isco-pipe.com

McElroy MegaMc® No.2065 & 1600 Fusion Machine



The No.2065 & 1600 MegaMc's are electric hydraulic fusion machines. The machines allow for the butt fusion of most fittings without special holders. McElroy's unique semi-automatic control system requires only one operator. Hydraulic power assists all fusion functions including the complete operation of the jaws, pipe lifts, heater, and facer. It incorporates McElroy's Patented Centerline Guidance System and is DataLogger™ compatible.

McElroy MegaMc® No.2065 (2-Jaw) & 1600 (4-Jaw)

will butt fuse all pipe sizes from
20" OD - 65" OD Pipe
(500 mm - 1600 mm).

*Max. DIPS Capability 60" DIPS

No. 2065 (2-Jaw)

L 186.3" (4,732 mm)

W 108" (2,743 mm)

H 106" (2,692 mm)

WEIGHT

14,000 lbs.

(6,350 Kg)

No. 1600 (4-Jaw)

L 204" (5,181 mm)

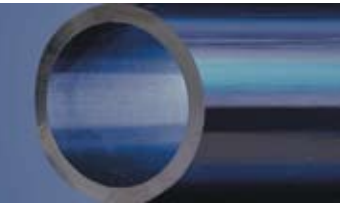
W 101.8" (2,586 mm)

H 116" (2,946 mm)

WEIGHT

22,000 lbs.

(9,525 Kg)



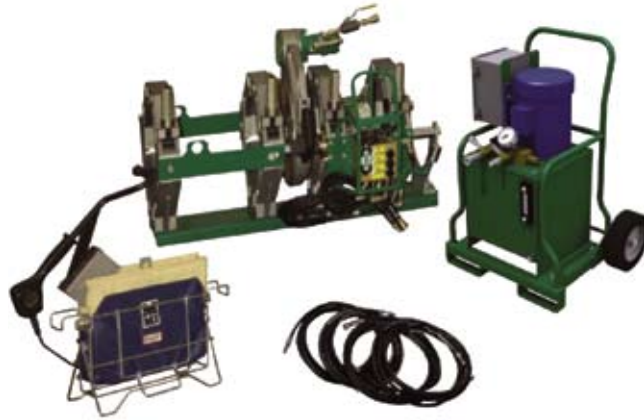
McElroy
Fusion
Equipment

1-800-345-ISCO

www.isco-pipe.com

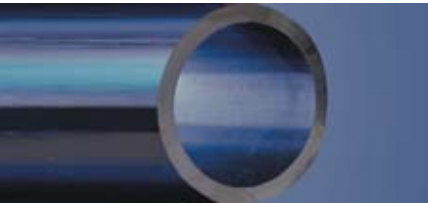


McElroy PitBull® Fusion Machines



The McElroy Pitbull® Family of compact hydraulic fusion machines butt fuse a range of pipe sizes from 2" IPS - 20" OD (63mm - 500mm) above or in the trench. The robust machines have two fixed and movable clamping jaws resulting in perfect pipe alignment for faster fusions and greater quality. The Pitbull machines have Centerline Guidance and the other features found in all McElroy machines, which result in increased productivity, joint reliability, machine durability and long life with minimal maintenance.

Each of the four different sized machines is modularized for portability and ease of use in the trench. The same hydraulic power unit (HPU) is used with all of the machines affording greater flexibility. Attach an optional McElroy Datalogger™ to record critical joining parameters.

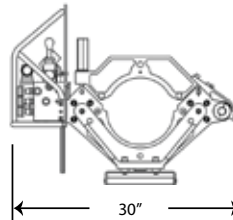
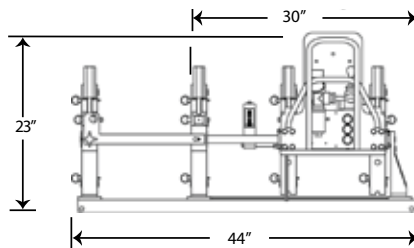


McElroy Fusion Equipment



PitBull No.28 Fusion Machine

Fusion Capability for 2" IPS - 8" DIPS pipe (63mm - 225mm) Package includes: fusion carriage, facer, 240VAC heater, butt fusion heater adapter set, insulated heater stand, 8" IPS butt fusion inserts, lifting assembly, and operator's manual. HPU sold separately. Combination machines add sidewall capability.



WEIGHT	
Heater	17 lbs. (7.7 Kg)
Carriage	165 lbs. (74.8 Kg)
Facer	38 lbs. (17.2 Kg)



1-800-345-ISCO

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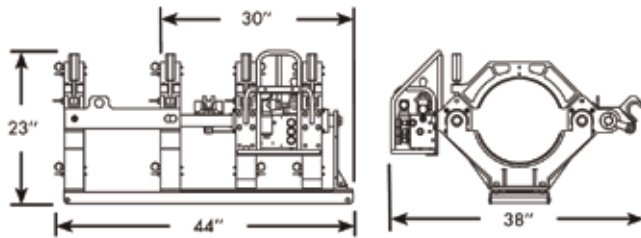


McElroy PitBull® Fusion Machines



PitBull No.412 Fusion Machine

Fusion capability for 4" IPS - 12" DIPS pipe (110mm - 340mm) Package includes: fusion carriage, facer, 240VAC heater, butt fusion heater adapter set, insulated heater stand, 12" IPS butt fusion inserts, lifting assembly, and operator's manual. HPU sold separately.

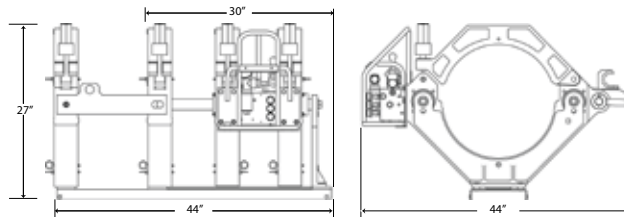


WEIGHT
 Heater 29 lbs. (13.2 Kg)
 Carriage 343 lbs. (155.6 Kg)
 Facer 57 lbs. (25.9 Kg)

WEIGHT
 Heater(s)
 6"-12" 20 lbs. (9.1 Kg)
 12"-18" 29 lbs. (13.2 Kg)
 Carriage
 441 lbs. (200.0 Kg)
 Facer
 89 lbs. (40.3 Kg)

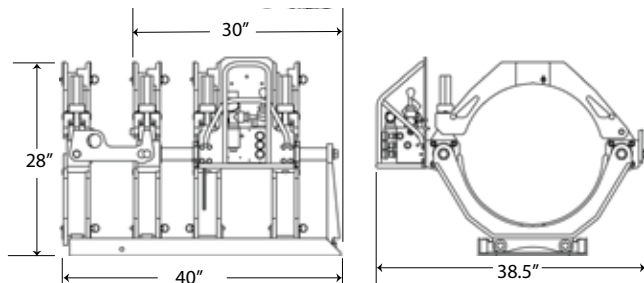
PitBull No.618 Fusion Machine

Fusion Capability for 6" IPS - 18" OD pipe (180mm -450mm) Package includes: fusion carriage, facer, 240VAC, 12" IPS - 18" OD heater, butt fusion heater adapter set, insulated heater stand, lifting assembly, and operator's manual. HPU sold separately.

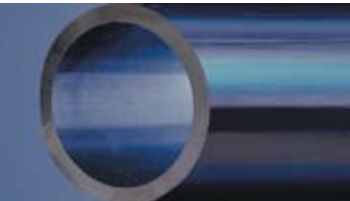


PitBull 500 Fusion Machine

Fusion capability for 6" IPS - 20" OD pipe (180mm - 500mm) Package includes: fusion carriage, facer, 240VAC, 12" IPS - 20" OD heater, butt fusion heater adapter set, insulated heater stand, lifting assembly, and operator's manual. HPU sold separately.



WEIGHT
 Heater 40 lbs. (18 Kg)
 Carriage 390 lbs. (177.0 Kg)
 Facer 76 lbs. (34.5 Kg)



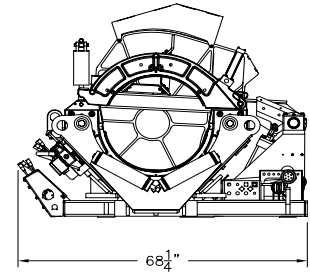
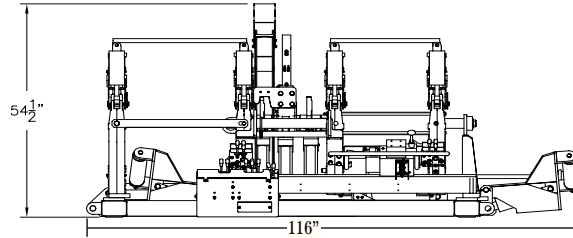
McElroy
 Fusion
 Equipment

McElroy PitBull® Fusion Machines

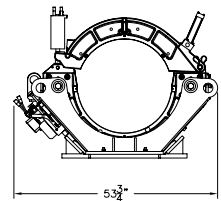
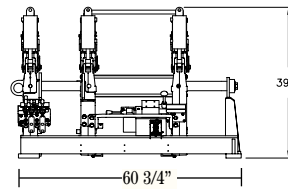


PITBULL No. 630 FUSION MACHINE

Fusion Capability for 8" IPS to 24" OD pipe (225mm-630mm) Package includes: fusion carriage, facer, heater with butt fusion heater adapter set. HPU sold separately.

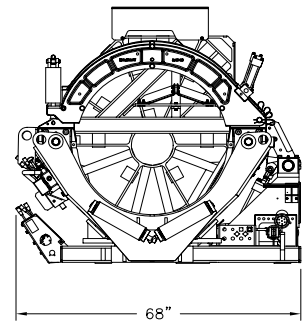
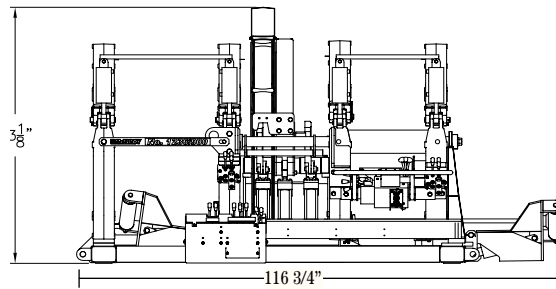


WEIGHT
 Heater 240 lbs. (109 Kg)
 Carriage (4-jaw) 3,750 lbs. (1,701 Kg)
 Carriage (3-jaw) 1,060 lbs. (481 Kg)
 Facer 390 lbs. (177 Kg)

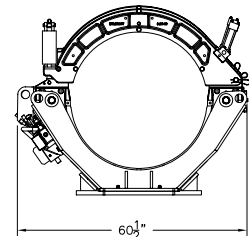
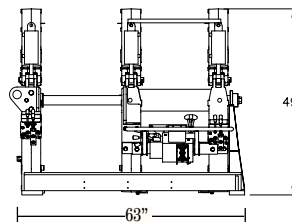


PITBULL No. 900

Fusion Capability for 12" IPS to 36" OD pipe (340mm-900mm) Package includes: fusion carriage, facer, heater with butt fusion heater adapter set. HPU sold separately.



WEIGHT
 Heater 445 lbs. (202 Kg)
 Carriage (4-jaw) 4,140 lbs. (1,878 Kg)
 Carriage (3-jaw) 1,403 lbs. (636 Kg)
 Facer 410 lbs. (186 Kg)



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 Fusion
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McElroy TracStar® No.28 and No.28 Combination



The TracStar® No.28 is a self-contained, self-propelled, all-terrain hydraulic fusion machine. The machine allows for butt fusion of most fittings without special holders or removal of the outer jaw. It fits in a standard long box truck bed for easy transport. The carriage may be easily removed for in-ditch use.

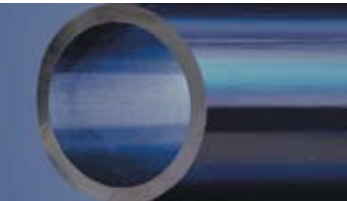
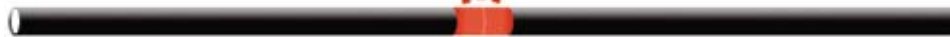
The TracStar® No.28CU (Combination Unit) is a self-contained, self-propelled, all-terrain hydraulic fusion machine that will butt fuse all pipe sizes from 2" IPS to 8" DIPS (63 mm - 225 mm). The TracStar® No.28 CU adds saddle fusion capability of up to an 8" IPS (200mm) branch saddle on any size main.

The above No.28 machines also incorporate McElroy's Patented Centerline Guidance System and are DataLogger™ compatible.

L 94.5" (2,400 mm)
W 42.5" (1,080 mm)
H 50" (1,270 mm)
WEIGHT 1,320 lbs. (598.7 Kg)

**McElroy TracStar®
No.28 and No.28CU***
Fusion capability for
**2" IPS - 8" DIPS Pipe
(63 mm - 225mm).**

*Fusion capability of up to 8" IPS
Branch Saddle on any size main.
*Max. DIPS Capability 8" DIPS



McElroy
Fusion
Equipment

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www.isco-pipe.com

McElroy TracStar® No.412 Fusion Machine



Optional hydraulic clamping available for this unit

The TracStar® No.412 is a self-contained, self-propelled, all-terrain hydraulic fusion machine. The machine allows for butt fusion of most fittings without special holders or removal of the outer jaw. It fits in a standard long box truck bed for easy transport. The carriage may be easily removed for in-ditch use. It also incorporates McElroy's patent-pending Centerline Guidance System and is DataLogger™ Compatible.

McElroy TracStar® No.412

will butt fuse all pipe sizes from **4" IPS - 12" DIPS Pipe (110 mm - 340 mm).**

*Max. DIPS Capability 12" DIPS



L 99" (2,515 mm)

W 53" (1,346 mm)

H 53" (1,346 mm)

WEIGHT

1,500 lbs.

(680.3 Kg)

McElroy Fusion Equipment

1-800-345-ISCO

www.isco-pipe.com



**McElroy TracStar® No.618
Fusion Machine**



The TracStar® No.618 is a self-contained, self-propelled, all-terrain hydraulic fusion machine. The machine allows for butt fusion of most fittings without special holders or removal of the outer jaw. It fits in a standard long box truck bed for easy transport. The carriage may be easily removed for in-ditch use. It incorporates McElroy's Patented Centerline Guidance System and is DataLogger™ compatible.



**Optional hydraulic clamping
available for this unit**

**McElroy TracStar®
No.618**

**will butt fuse all pipe sizes from
6" IPS - 18" OD Pipe
(180 mm - 450 mm).**

***Max. DIPS Capability 16" DIPS**

L 99" (2,515 mm)

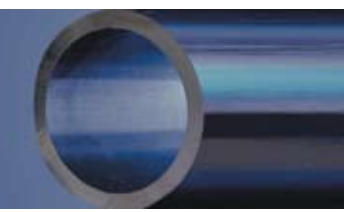
W 56" (1,422 mm)

H 57" (1,448 mm)

WEIGHT

2,000 lbs.

(907.1 Kg)



**McElroy
Fusion
Equipment**

1-800-345-ISCO

www.isco-pipe.com

**McElroy TracStar® 500
Series II Fusion Machine**



**Coming
Soon!**

**Optional hydraulic clamping
available for this unit**

The TracStar 500 Series II brings added versatility to the original TracStar. It is a hydraulic fusion machine that is self-contained, self-propelled and mobile in all-terrain. It will butt fuse all pipe sizes from 6" IPS - 20" OD (180mm – 500mm). The unit is available with either the Coach™ fusion control system, or conventional McElroy hydraulic controls with DataLogger™ capabilities. The machine also incorporates McElroy's patented Centerline Guidance System. It fits in a standard long box truck bed for easy transport. The carriage may be easily removed for in-ditch use. It is powered by a quiet, liquid cooled diesel engine.



**McElroy TracStar®
500 Series II**

**will butt fuse all pipe sizes from
6" IPS - 20" OD Pipe
(180 mm - 500 mm).**

***Max. DIPS Capability 18" DIPS**

L 95" (2,413 mm)

W 63" (1,600 mm)

H 53" (1,346 mm)

WEIGHT

2,700 lbs.

(1,225 Kg)

**McElroy
Fusion
Equipment**

1-800-345-ISCO

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McElroy TracStar® 630 & 900 Fusion Machine



The TracStar 630 and 900 are self-contained, self-propelled, all-terrain hydraulic fusion machines. The units are available with either the Coach™ Fusion Control system or conventional McElroy controls with Datalogger™ capabilities. The rubber tracked - unit is powered by a quiet, liquid cooled diesel engine. Wireless remotes provide full control of the TracStar® 630 and 900 for precision placement, and optimum visibility on the job site.

McElroy TracStar® 630
will butt fuse all pipe sizes from
8" IPS - 24" OD Pipe
(225 mm - 630mm).

***Max. DIPS Capability 20" DIPS**

L 142" (3,607 mm)

W 102" (2,591 mm)

H 79" (2,159 mm)

WEIGHT

8,600 lbs.

(3,900 Kg)

McElroy TracStar® 900
will butt fuse all pipe sizes from
12" IPS - 36" OD Pipe
(340 mm - 900mm).

***Max. DIPS Capability 30" DIPS**

L 142" (3,607 mm)

W 98" (2,489 mm)

H 82" (2,083 mm)

WEIGHT

9,300 lbs.

(4,218 Kg)



McElroy
Fusion
Equipment

1-800-345-ISCO

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McElroy 2-Jaw & 4-Jaw DynaMc™ 28 HP

DynaMc™



**McElroy 2-Jaw
DynaMc™ 28 HP**

will butt fuse all pipe sizes from
2" IPS - 8" DIPS
(63mm - 225mm)
L 25.8" (656 mm)
W 25.9" (658mm)
H 23.4" (595 mm)

WEIGHT

108 lbs (49 Kg) with cradle
97 lbs (44 Kg) without cradle

**McElroy 4-Jaw
DynaMc™ 28 HP**

will butt fuse all pipe sizes from
2" IPS - 8" DIPS
(63mm - 225mm)
L 34.3" (872 mm)
W 25.9" (658mm)
H 23.4" (595 mm)

WEIGHT

155 lbs (70 Kg) with cradle
142 lbs (64 Kg) without cradle

The new DynaMc™ 28 HP (Hand Pump) machine butt fuses pipe from 2" IPS – 8" DIPS (63mm-225mm) with a hand-powered pump. The 28 HP is available in 2- and 4-Jaw models. Worthy of the DynaMc™ name, the 28 HP is a true dynamo, giving the operator a powerful fusion unit in a small package. With a detachable easy-lift cradle, the 28 HP machine is easily maneuvered into tight spaces. The 28 HP's electric facer is sturdy and powerful, with the option of being loaded from either side of the machine for improved convenience.

- Double-action hand pump and high-velocity cylinders create fast carriage speed for opens and closes during fusion processes.
- On four-jaw units, the full-length guide rod and unique moveable third jaw allow work in close proximity to ells and tees without the removal of the outer jaw.
- Patented Centerline Guidance System
- Serrated jaws and inserts to keep pipe from slipping during fusion process
- 1500 psi pressure capability
- ISO-compliant industrial Teflon-coated heater plates
- Powerful electric facer that can be loaded from either side
- DataLogger compatible
- Detachable easy-lift cradle for improved maneuverability to and from worksite

McElroy
Fusion
Equipment

1-800-345-ISCO

www.isco-pipe.com





McElroy 2-Jaw & 4-Jaw DynaMc™ 412 HP

DynaMc™



McElroy 2-Jaw DynaMc™ 412 HP

will butt fuse all pipe sizes from
4" IPS - 12" DIPS
(100mm - 340mm)
L 27.7" (704 mm)
W 31.7" (805 mm)
H 26.5" (673 mm)

WEIGHT

200 lbs (90 Kg) with cradle
186 lbs (84 Kg) without cradle

McElroy 4-Jaw DynaMc™ 412 HP

will butt fuse all pipe sizes from
4" IPS - 12" DIPS
(100mm - 340mm)
L 34.7" (882 mm)
W 31.7" (805 mm)
H 26.5" (673 mm)

WEIGHT

293 lbs (132 Kg) with cradle
277 lbs (125 Kg) without cradle

The new DynaMc™ 412 HP (Hand Pump) machine butt fuses pipe from 4" IPS to 12" DIPS (110 mm-340mm) with a hand-powered pump. The 412 HP is available in 2- and 4-Jaw models. Just like a stick of dynamite, the 412 HP is a lot of power in a small package. The unit's easy-lift cradle can be removed for easier maneuvering in tight in-ditch worksites. The 412 HP's electric facer is sturdy and powerful, with the option of being loaded from either side of the machine for improved convenience.

- Double-action hand pump and high-velocity cylinders create fast carriage speed for opens and closes during fusion process
 - On four-jaw units, the full-length guide rod and unique moveable third jaw allow work in close proximity to ells and tees without the removal of the outer jaw
 - Patented Centerline Guidance System
 - Serrated jaws and inserts to keep pipe from slipping during fusion process
 - 1500 psi pressure capability
 - ISO-compliant industrial Teflon-coated heater plates
 - Powerful electric facer that can be loaded from either side
 - DataLogger compatible
- Detachable easy-lift cradle from improved maneuverability to and from workplace



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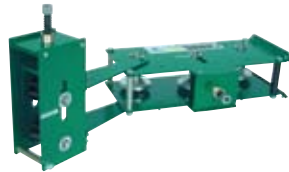
Accessories



DataLogger™ (2005)

Is used to record and document the key parameters of the fusion process.

It consists of a Pocket PC as the recording device wirelessly connected to a data collection device. All data is recorded and transmitted to the Pocket PC where the report can be stored, viewed, printed out directly or transferred to a desktop computer for archiving.



2" LineTamer™

is used for the safe handling of coiled pipe, conduit, or duct.



LineTamer™

is used for the safe handling of coiled pipe, conduit, or duct.

**3" IPS - 6" IPS
(90 mm - 180mm).**



Coiled Pipe Trailers

Road ready offered with and without LineTamer™



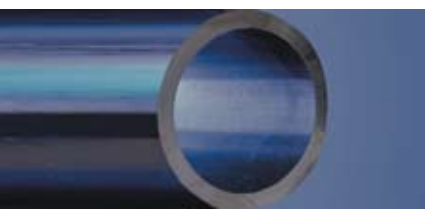
Hot Tap

The most economical way to tap through 2", 3", 4", or 6" branch saddles.



Water Tap Tool

is designed to be used with a 2" IPS PhilMac valve and to make taps through a 2" branch saddle into water mains.



Fusion Accessories

1-800-345-ISCO

www.isco-pipe.com

Accessories



PolyHorse™

*Motorized power feed roller optional
3" IPS - 20" OD (90mm-500mm)

PolyPorter™

pipe portability for 2" IPS - 8" DIPS
pipe (63mm - 250mm)

Low Profile Roller

4" IPS -20" OD (110mm - 500mm)
40 per case
*Supports approx. 1,000' of pipe

Stub End Holder

8" = 2" IPS-8" IPS (63 mm-200mm)
12" = 6" IPS-12" IPS (160mm-315mm)
18" = 10" IPS-18" OD (250mm-450mm)

Split Heaters

are used for fusion of the outer pipe
of a dual containment system.

Pyrometers

is used for checking surface
temperatures of heaters.



Fusion
Accessories

1-800-345-ISCO

www.isco-pipe.com

Accessories



Service Line Test Caps

are designed for safe, quick, and easy air pressure testing of polyethylene pipe.

1/2" CTS to 2" IPS
(20 mm - 60 mm)



External Bead Remover

used for removing the external bead caused by the fusion process at the joint.

1 1/4" IPS-18" OD (40mm-450mm)



Internal Bead Remover

used for removing the internal bead caused by the fusion process at the joint.

3" IPS-24" OD (90mm-630mm)



Shears

for plastic pipe.
1.7" OD Capacity
2.4" OD Capacity



Guillotine Cutters

for plastic pipe.
2" to 4" IPS (63 mm - 125 mm)
3" to 8" IPS (90 mm - 225 mm)

Fusion
Accessories

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Accessories



Squeeze Tools
for plastic pipe.
Manual 1/2" CTS - 8" IPS
Hydraulic 3" IPS - 12" IPS



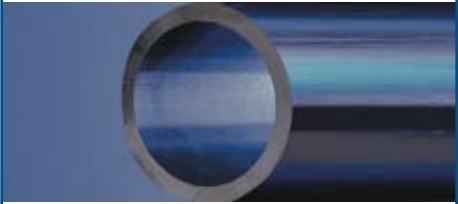
Pipe Puller
3/4" CTS - 16" IPS Range
for DR 9 - DR 17
Gripping power increases with
pulling load. Pipe yield point is
reached before puller will release.



Hole Saws
available in 1-1/4" to 7" sizes for
removing pipe coupon after branch
saddle weld.



Pi Tapes
used for measuring pipe in the field
for verification of pipe diameter.



**Fusion
Accessories**

1-800-345-ISCO
www.isco-pipe.com



FastFusion

FastFusion

ISCO Industries, LLC, is the Master Distributor for FastFusion track equipment. Using FastFusion's patented advancements in fusion mobility, automation and fusion weld cooling, MobileFusion Trac technology dramatically increases the production capability and number of fusion welds produced compared to any other machine offered in the industry. Fast Fusion's enclosed cab provides a comfortable, controlled, safe environment where an operator can fuse pipe ranging in diameter from 2 to 20 inches. The Fast Fusion line is also backed by a three-year manufacturer's factory warranty.



MobileFusion Trac20
2" - 20"
18,750 lbs
Steel or Rubber Tracks
39' 3" operating length



MobileFusion Trac12
2" - 12"
12,000 lbs
Rubber Tracks
25' operating length



1-800-345-ISCO

www.isco-pipe.com



Inside the Fast Fusion unit.

Select from different options that allow you to fuse different size ranges of pipe:

Unit	Size Range
No.28	2" IPS to 8" DIPS
No.412	4" IPS to 12" DIPS
No.618	6" IPS to 18" OD
500	6" IPS to 20" OD

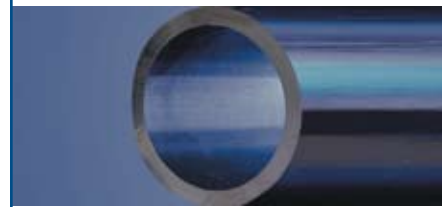


Standard Features of the MobileFusion Trac Machine:

- Self-propelled, with a manned operator safe work-space
- Standard-Caterpillar turbocharged & after cooled, diesel fuel efficient engine.
- Dual path hydrostatic driven with joystick controls.
- Travel speed up to 6.5 mph.
- 6 kW generator
- Climate controlled
- Cab profiled for operator safety and efficiency, along with higher quality welds.
- FastFusion's patented fusion weld cooling
- Programmable Logic Controller sets parameters for fusion operation and stores data.
- "Quick-Change" technology allows for any manufacturer's fusion equipment.
- Built to be friendly and safe to the environment.

Fast Fusion patented cooling process of the fusion weld has increased production of installed above ground HDPE in an eight-hour day dramatically using 40 and 50 ft. straight lengths of pipe. Depending on pipe DR, typical fusion rates are:

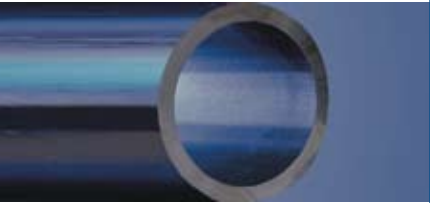
- 4-in pipe - 4,500 to 7,000 ft.
- 6-in pipe - 3,800 to 6,100 ft.
- 12-in pipe - 2,000 to 3,600 ft.
- 18-in pipe - 1,500 to 2,600 ft.
- 20-in pipe - 800 to 1,600 ft.



FastFusion



Climate controlled cab provides a safe comfortable and efficient workstation, one of MobileFusion Trac's keys to productivity, efficiency and profitability.



FastFusion

1-800-345-ISCO

www.isco-pipe.com





Fast Fusion Cool Pack

A self-contained, mobile fusion mounted compressor that utilizes the patented weld cooling technology to substantially increase the daily weld production up to 150% of a conventional fusion machine.

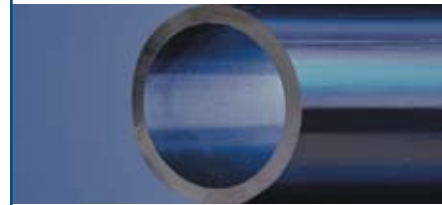
CoolPack 36 – works with 824, T630, 1236, T900
CoolPack 48 – works with 1648
CoolPack 65 – works with 2065

Weld Cool Times

Without CoolPack	With CoolPack
12" – 17 minutes	5 minutes
18" – 25 minutes	6 minutes
24" – 34 minutes	8 minutes
36" – 50 minutes	12 minutes
48" – 60 minutes	13 minutes
63" – 76 minutes	16 minutes



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FastFusion

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Friatec
Electrofusion
Products

Friatec Electrofusion Products



When you need to make a repair and the pipe is buried, electrofusion couplings provide an ideal method to make a fusion weld. These couplings do not require that the pipe move to make a weld.

Repairs and tie-in connections can easily be made with these couplings. When you have limited space or deep trenches, electrofusion couplings save time, money and effort.

To make an electrofusion weld, you need a power source (5,000 watts continuous), an electrofusion processor, the electrofusion couplings, and a scraper tool. The power source can be a generator or wall plug. The electrofusion processor adjusts the voltage and monitors the current draw during the fusion cycle. If the pipe has been “short stabbed” and is not in contact with heater wires in the electrofusion coupling, the controller senses that the current draw is too great and stops the fusion process. Figure 1 below shows a Friamat® II Universal Electrofusion Processor.



Figure 1: Friamat® II Universal Electrofusion Processor

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The Friamat® II is equipped with many exciting upgrade features shown below:

- Light and streamlined design which is easier to transport
- Assembled and serviced in the USA
- 24-month warranty
- Electrically double insulated for increased user safety
- Stronger frame for increased stability
- Brightly colored casing for job site safety
- Accessories for original FRIAMAT® are compatible with FRIAMAT® II
- Future options for remote control
- User friendly software to support fusion documentation

Frialen® Universal Fusion Processors	
Part Number	Description
613112	Friamat® II Universal Electrofusion Processor Includes: readerwand, manual input, documentation feature, hand scraper with 5 spare blades and user manual.

Frialen® Accessories for Fusion Processors	
Part Number	Description
115001	Marinco Adapter Plug
613069	Frialen® Pipe Markers (Box of 10)
613230	Complete FriaTool® Software Includes: 613231, 613233, 613234
613231	FriaTool® Software only
613233	FriaTool® Memory Box only
328173	Connection Cable: PC to Friamat®
613234	Connection Cable PC - Memory Box
613237	Uponor/New Style Central Connectors - Pair 4.7mm
613239	Central Connectors - Pair 2.3mm
624435	Reader Wand Replacement
613235	FriaFit® Adapter - Pair
328143	Silver Fusion Unit Case
328119	Fusion Lead End / Contact 4 (Each)



Friatec
Electrofusion
Products

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Frialen® Safety Electrofusion Couplings



IPEX Friatec Products is a world leader in electrofusion technology. The fittings are made of polyethylene with heating coils located at the surface. This design allows direct heating of the interface between the pipe and the fitting. This feature works with the flexibility of the universal bar code fusion unit, Friamat® to provide unique advantages.

The Frialen® design offers excellent heat transfer to the pipe, gap closing capabilities, shorter cooling times and the fastest, most secure connections.

Couplings work with HDPE Pipe in DRs 9.33 to 17 at full pressure rating up to 20" pipe. Pipe larger than 20" may have reduced pressure rating, see each coupling chart for DR equivalent rating.

The unique features of Frialen® couplers:

- Economical
- Suitable for tough building site conditions
- No alignment or clamping tools necessary
- Generous pipe guidance
- Bar code labeled for automatic fusion
- Can be re-fused up to three times in case of electrical power interruption
- Pop-up melt indicator provides visual fusion verification

IPEX Friatec Products offers in-house, hands-on training seminars, on-site training and technical support to meet your training needs.

Contact ISCO to schedule your Friatec training.

1-800-345-ISCO

www.isco-pipe.com

FRIALEN® IPS Electrofusion Couplings

Small Sizes

Nominal Pipe OD & DR	ID Min.	ID Max.	OD	B	L	t	z	h	x	Fusion Time/Sec @ 73°F	Cooling Time/Min. * / ** / ❖
1/2" CTS DR 11	0.622	0.634	1.102	1.732	2.283	1.142	0.079	0.591	0.23	27	05/08/10
3/4" IPS DR 11	1.047	1.059	1.575	2.165	2.598	1.260	0.079	0.728	.027	28	05/08/10
1" CTS DR 11	1.122	1.134	1.654	2.244	3.071	1.535	0.079	0.787	0.31	28	05/08/10
1" IPS DR 11	1.311	1.323	1.850	2.460	3.071	1.496	0.079	0.787	0.31	28	05/08/10
1-1/4" IPS DR 11	1.654	1.679	2.244	2.835	3.346	1.634	0.079	0.945	0.39	34	10/15/25
1-1/2" IPS DR 11	1.902	1.917	2.480	3.130	3.858	1.870	0.079	1.060	0.46	34	10/15/25
2" IPS DR 11	2.374	2.390	3.142	3.657	4.449	2.205	0.079	1.205	0.51	54	10/15/25
3" IPS DR 11	3.496	3.516	4.606	4.980	5.472	2.717	0.079	1.417	0.59	100	10/30/40
4" IPS DR 11	4.492	4.516	5.827	6.173	6.260	3.110	0.079	1.689	0.67	151	10/30/40
6" IPS DR 11	6.610	6.634	8.543	8.740	7.992	3.976	0.079	2.295	0.79	440	20/60/75

Standard Sizes

Nominal Pipe OD & DR	ID Min.	ID Max.	OD	L	t	h	x	Fusion Time/Sec @ 73°F	Cooling Time/Min. * / ** / ❖
8" IPS DR 11	8.626	8.665	11.029	9.448	4.724	2.953	1.063	540	20/60/75
10" IPS DR 11	10.748	10.787	13.975	11.811	5.275	3.149	1.063	500 ea. side	30/75/100
12" IPS DR 11	12.748	12.787	15.746	11.219	5.610	2.679	1.142	550 ea. side	30/75/100
14" IPS DR 11	13.976	14.016	17.716	11.811	5.905	3.500	1.260	580 ea. side	30/75/100

Large IPS - Special Training Required

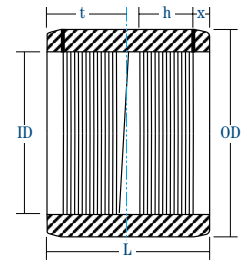
Nominal Pipe OD & DR	ID Min.	ID Max.	OD	L	t	h	x	Fusion Time/Sec @ 73°F	Cooling Time/Min. * / ** / ❖
**16" IPS DR 11	15.969	16.008	19.685	12.598	6.299	3.748	1.260	870/730 ea. side	45/95/120
**18" IPS DR 11	17.969	18.008	22.047	13.386	6.693	3.346	1.260	870/870 ea. side	45/95/120
**20" IPS DR 11	19.961	20.016	24.803	14.173	7.086	3.622	1.260	870/720 ea. side	45/95/120
**22" IPS DR 17	21.961	22.016	24.803	14.566	7.283	3.291	1.260	870/720 ea. side	45/95/120
**24" IPS DR 13.5	24.000	24.039	27.952	15.748	7.874	4.095	1.420	870/850 ea. side	45/95/120
**28" IPS DR 17	27.992	28.031	31.496	15.748	7.874	6.062	1.614	850/850 ea. side	99/120/160

****16" - 28" IPS Couplings have pre-warm cycle and require special training.**

FRIALEN® Safety fittings can be fused to all PE pipes within Melt Index Groups 003-050 and Pipe DR ranges 9.33 through 17.6. For Pipe DR 21 and up, contact the ISCO Fusion Hotline at 1-800-345-ISCO ext. 4790 for reduced fusion times. PE Pipes of different Melt Index Groups can be joined.

Legend:

- * Pipe can be moved after indicated cooling time (handling).
- ** Pipe can be pressurized after indicated cooling time (pressure < 90 PSI).
- ❖ Pipe can be pressurized after indicated cooling time (pressure > 90 PSI).



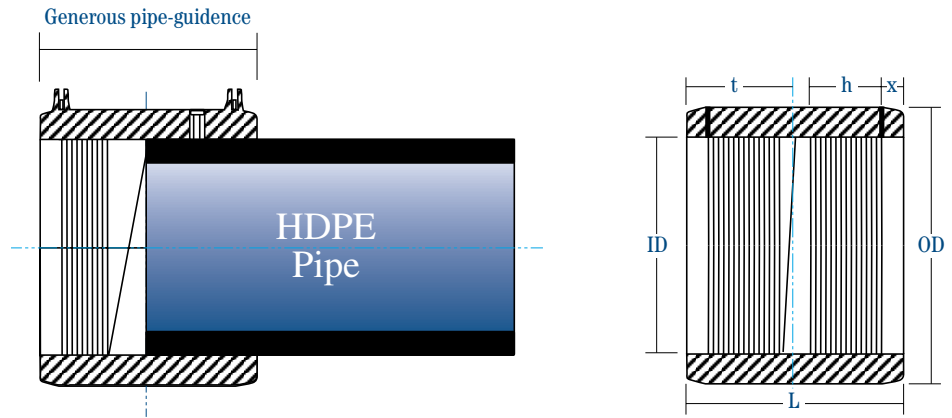
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Products

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FRIALEN® DIPS Electrofusion Couplings



Nominal Pipe OD & DR	ID Min.	ID Max.	OD	L	t	h	x	Fusion Time/Sec @ 73°F	Cooling Time/Min. * / ** / ***
4" DIPS DR 11	4.799	4.819	5.669	6.354	3.177	1.765	0.827	100	15/20/30
6" DIPS DR 11	6.889	6.929	8.825	8.268	4.134	2.535	0.827	486	20/60/75
8" DIPS DR 11	9.039	9.078	11.022	9.448	4.724	2.953	0.827	540	30/75/100
10" DIPS DR 11	11.082	11.122	13.976	11.023	5.511	3.291	0.827	550 each side	30/75/100
12" DIPS DR 11	13.182	13.224	15.746	11.023	5.511	2.582	0.827	550 each side	30/75/100
14" DIPS DR 11	15.272	15.311	18.000	11.417	5.708	3.500	0.827	730 each side	40/95/120
16" DIPS DR 11	17.385	17.444	22.047	11.417	5.708	3.392	0.827	870/720 each side	40/95/120
18" DIPS DR 13.5	19.472	19.531	22.047	11.417	5.708	3.3925	0.827	870/720 each side	40/95/120
20" DIPS DR 13.5	21.582	21.641	24.803	11.417	5.708	2.406	0.827	870/720 each side	40/95/120

FRIALEN® SafeFRIALEN® Safety fittings can be fused to all PE pipes within Melt Index Groups 003-050 and pipe DR ranges 9.33 through 17.6 For pipe DR 21 and up, contact the ISCO Fusion Hotline at 1-800-345-ISCO ext. 4790 for reduced fusion times. PE pipes of different melt index groups can be joined.

Legend:

- * Pipe can be moved after indicated cooling time (handling).
 - ** Pipe can be pressurized after indicated cooling time (pressure < 90 PSI).
 - *** Pipe can be pressurized after indicated cooling time (pressure > 90 PSI)
- Please note 18" and 20" DIPS are rated DR13.5 and can be pressurized up to 150 psi.



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Factory Mutual and NSF Rated Electrofusion Couplings

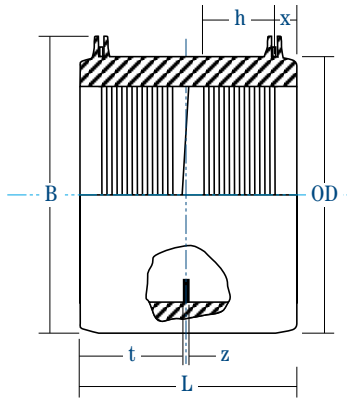


Figure 1

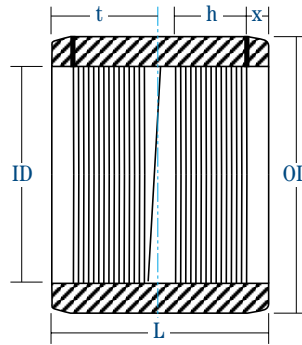


Figure 2

Nominal Pipe OD	ID Min.	ID Max.	OD	B	L	t	z	h	x	Fusion Time/Sec @ 73°F	Cooling Time/Min. * / * / ❖
4" IPS	4.492	4.516	5.827	6.173	6.620	3.110	0.079	1.689	0.67	151	10/30/40
6" IPS	6.610	6.634	8.543	8.740	7.992	3.976	0.079	2.295	0.79	440	20/60/75
8" IPS	8.62	8.665	11.022	--	9.448	4.724	--	2.953	1.063	540	20/60/75
10" IPS	10.748	10.787	13.975	--	11.811	5.275	--	3.149	1.063	500 each side	37/75/100
12" IPS	12.748	12.787	15.746	--	11.219	5.610	--	2.679	1.142	550 each side	37/75/100
14" IPS	13.976	14.016	17.716	--	11.811	5.905	--	3.500	1.26	580 each side	37/75/100
*16" IPS	15.969	16.008	19.685	--	12.598	6.299	--	3.758	1.26	730 each side	45/95/120
*18" IPS	17.969	18.008	22.047	--	13.386	6.693	--	3.346	1.26	870 each side	45/95/120
*20" IPS	19.961	20.016	24.803	--	14.173	7.086	--	3.622	1.26	870/720 each side	45/95/120

**16" - 20" IPS Couplings have pre-warm cycle and require special training.

FRIALEN® Safety fittings can be fused to all PE pipes within Melt Index Groups 003-050 and can fuse Class 150 & Class 200 Pipe and Fittings. PE Pipes of different Melt Index Groups can be joined.

Legend:

- * Pipe can be moved after indicated cooling time (handling).
- * Pipe can be pressurized after indicated cooling time (pressure < 90 PSI).
- ❖ Pipe can be pressurized after indicated cooling time (pressure > 90 PSI).



APPROVED

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FRIALEN® Electrofusion Thinwall Couplings

Things worth knowing about the FriaFit® Thinwall Safety Coupling

Quality Certification

FriaFit® - Thinwall Safety Coupling are subject to constant quality checks under stringent inspection regulations, which are part of our comprehensive Quality Management System which is certified to DIN EN ISO 9002.

The FriaFit® - Thinwall Safety Coupling and the operation of the FriaFit® - fusion unit are matched to each other. All modifications and additions occurring in the course of continuing technical development are taken into account. Our continuous monitoring of production as part of the FriaFit® - Quality Assurance system includes the FriaFit® - Thinwall Safety Coupling, the FriaFit® - fusion unit and the quality of the fused joint as a result of the combination of these two components. The expansion of the scope of FriaFit® products is not only due to new developments, but also due to the reworking of components in our product range. The operation and functional safety of fusion units from other manufacturers are not subject to our specifications and checks. When installing fittings please proceed in accordance with our assembly instructions from the manufacturer for the equipment in question.

The FriaFit® - Thinwall coupling can be fused to pipes of SDR stages 11 to 32 in accordance with ASTM F1055.

Pipes made of raw material types PE2406 and PE3408, PE63, PE80, and P100 in melt index groups 005 to 050 can be fused.

It is possible to work with the FriaFit® - Thinwall Safety Couplings at ambient temperatures of between -14° and 113°F. It is always necessary to use an adapter ADFIT for the fusion.

The FriaFit® - Thinwall Safety Couplings (AM) is made of PE3408 can be pressurized up to a maximum of 80-psi if the pipe is of suitable design.

Static

The static calculation for the PE sewer pipe must in each individual case be carried out by the relevant pipe manufacturer or engineering office depending on the ambient conditions which prevail.

The annual rigidity of the pipe joint fused with FriaFit® - Thinwall Safety Coupling will in all cases be higher than the annular rigidity of the pipe used.

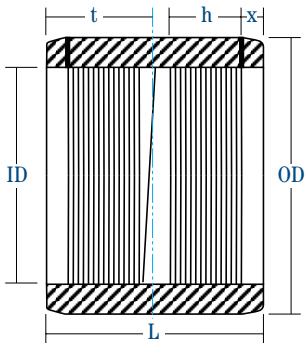
Cooling Times

FriaFit® - Thinwall Safety Couplings

The cooling times given in the bar codes and identified by additional letters(C.T.) are the times during which the fused joint should not be moved.

You can get further details from our assembly instructions through IPEX Friatec Products.

With exposed heating coils for optimal heat transfer, large insertion depth, extra wide fusion zones plus cold zones at the end and in the middle to prevent the flow of molten material for use without a holding device.



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Nominal Pipe OD & DR	ID Minimum	ID Maximum	OD	L	t	h	x	Fusion Time/Sec @ 73°F	Cooling Time/Min. * / *
8" IPS FRIAFIT® DR 21	8.626	8.665	10.75	7.874	3.937	2.100	0.827	370	30/60
10" IPS FRIAFIT® DR 21	10.748	10.787	12.75	8.268	4.134	2.500	0.827	350	30/75
12" IPS FRIAFIT® DR 21	12.748	12.787	14.00	8.661	4.330	2.500	0.827	450	30/75
16" IPS FRIAFIT® DR 21	15.977	16.016	18.00	8.661	4.330	2.500	0.827	580	40/95

FRIALEN® Safety fittings can be fused to all PE pipes within Melt Index Groups 003-050 and Pipe DR ranges 9.33 through 32.5 W/O fusion time reduction. PE Pipes of different Melt Index Groups can be joined. Special FRIAFIT® adapters (ADFIT) for fusion lead ends are needed for installation.

Legend:

* Pipe can be moved after indicated cooling time (handling).

* Pipe can be pressurized after indicated cooling time (pressure < or = 80 PSI).

FRIALEN® DAA High Pressure Tapping Tees

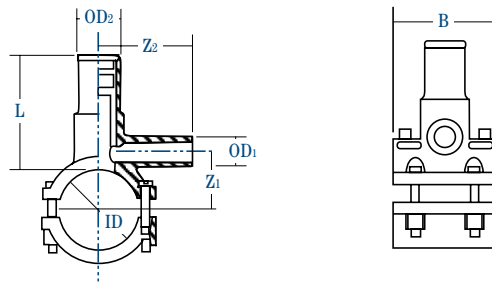


Frialen Accessories for DAA High Pressure Tapping Tees	
Part Number	Description
228050	10 mm Hex Wrench for 1-1/4" Main DAA Tees
228051	17 mm Hex Wrench for 2" Main DAA Tees
228052	19 mm Hex Wrench for 3" to 16" Main DAA Tees
228024	Pressure Test Cap Adapter for DAA Style 1-1/4" Tees
228055	Pressure Test Cap Adapter for DAA Style 2" to 16" Tees

FRIALEN® Safety fittings can be fused to all PE pipes within Melt Index Groups 003-050 and Pipe SDR ranges 9.33 through 17.6. For Pipe SDR 21 and up, contact the ISCO Fusion Hotline at 1-800-345-ISCO ext. 4790 for reduced fusion times. Allow electrofusion joints to cool prior to handling, pressurizing or tapping.



FRIALEN® DAA High Pressure Tapping Tees (232 psi)



Nominal Pipe	Main Size	Nominal Outlet	ID	OD 1	OD 2	Cutter	L	Z1	Z2	B
1-1/4"	IPS	1/2" CTS	1.575	0.626	1.259	0.630	2.913	1.102	9.624	2.756
1-1/4"	IPS	3/4" IPS	1.575	1.051	1.259	0.630	2.913	1.102	9.624	2.756
1-1/4"	IPS	1" CTS	1.575	1.126	1.259	0.630	2.913	1.1027	9.624	2.756
1-1/4"	IPS	1" IPS	1.575	1.315	1.259	0.630	2.913	1.102	9.624	2.756
2"	IPS	1/2" CTS	2.378	0.626	1.575	0.846	3.937	1.780	3.701	4.094
2"	IPS	3/4" IPS	2.378	1.051	1.575	0.846	3.937	1.780	3.701	4.094
2"	IPS	1" CTS	2.378	1.126	1.575	0.846	3.937	1.780	3.701	4.094
2"	IPS	1" IPS	2.378	1.315	1.575	0.846	3.937	1.780	3.701	4.094
3"	IPS	1/2" CTS	3.504	0.626	1.969	1.201	4.724	2.343	3.740	4.724
3"	IPS	3/4" IPS	3.504	1.051	1.969	1.201	4.724	2.343	3.937	4.724
3"	IPS	1" CTS	3.504	1.126	1.969	1.201	4.724	2.343	4.134	4.724
3"	IPS	1" IPS	3.504	1.315	1.969	1.201	4.724	2.343	4.134	4.724
3"	IPS	2" IPS	3.504	2.378	1.969	1.201	4.724	2.343	5.250	4.724
4"	IPS	1/2" CTS	4.512	0.626	1.969	1.201	4.724	2.846	3.740	4.764
4"	IPS	3/4" IPS	4.512	1.051	1.969	1.201	4.724	2.846	4.409	4.764
4"	IPS	1" CTS	4.512	1.126	1.969	1.201	4.724	2.846	4.409	4.764
4"	IPS	1" IPS	4.512	1.315	1.969	1.201	4.724	2.846	4.409	4.764
4"	IPS	2" CTS	4.512	2.378	1.969	1.201	4.724	2.846	5.250	4.764
6"	IPS	1/2" CTS	6.638	0.626	1.969	1.201	6.575	4.500	3.740	7.677
6"	IPS	3/4" IPS	6.638	1.051	1.969	1.201	6.575	4.500	4.331	7.677
6"	IPS	1" CTS	6.638	1.126	1.969	1.201	6.575	4.500	4.331	7.677
6"	IPS	1" IPS	6.638	1.315	1.969	1.201	6.575	4.500	4.331	7.677
6"	IPS	2" CTS	6.638	2.378	1.969	1.201	6.575	4.500	4.331	7.677
8"	IPS	1/2" CTS	8.605	0.626	1.969	1.201	6.575	5.598	3.740	7.677
8"	IPS	3/4" IPS	8.605	1.051	1.969	1.201	6.575	5.598	4.331	7.677
8"	IPS	1" CTS	8.605	1.126	1.969	1.201	6.575	5.598	4.331	7.677
8"	IPS	1" IPS	8.605	1.315	1.969	1.201	6.575	5.598	4.331	7.677
8"	IPS	2" IPS	8.605	2.378	1.969	1.201	6.575	5.598	5.500	7.677
10 - 16" *	IPS	2" IPS	Varies	-----	1.750	1.201	6.575	-----	6.575	7.677

* Friatop® Top Loading Tool required.

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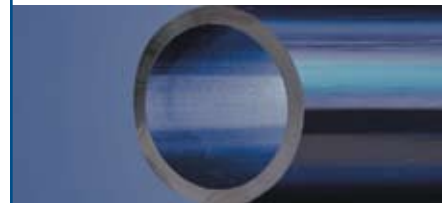
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FRIALEN® DAS II Top-Loading Tapping Tees



Frialen® DAS Top Loading Tapping Tee Accessories	
Part Number	Description
228067	Complete Set Top Loading Tool and Tapping Tools
228075	Top Loading Tool Only
228072	25mm Top Loading Cap Adapter Only
228073	33mm Top Loading Cap Adapter Only
228074	50mm Top Loading Cap Adapter Only
228065	15mm DAS II Tap Tool Only
228066	24mm DAS II Tap Tool Only
228077	DAS Lock Pin
228078	DAS Short Strap
228079	DAS Long Strap
228080	DAS Standard Case
Optional	Description
228057	25mm Aluminum Test Cap
228058	33mm Aluminum Test Cap
228059	50mm Aluminum Test Cap
228188	Yellow Plano Tool Box 26" w/Foam

FRIALEN® Safety fittings can be fused to all PE pipes within Melt Index Groups 003-050 and Pipe DR ranges 9.33 through 17.6. For Pipe DR 21 and up, contact the ISCO Fusion Hotline at 1-800-345-ISCO ext. 4790 for reduced heating times. Allow joints to cool prior to handling, pressurizing or tapping.

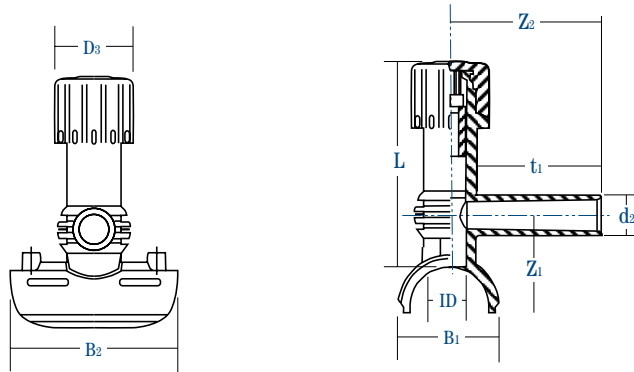


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FRIALEN® DAS II Top-Loading Tapping Tees (160 psi)



Nominal Pipe	Main Size	Nominal Outlet	D3	L	z1	z2	t1	B1	B2	ID
2" *	IPS	1/2" CTS	2.165	5.748	2.559	3.449	2.717	2.795	4.724	0.984
2" *	IPS	3/4" IPS	2.165	5.748	2.559	3.843	3.110	2.795	4.724	0.984
2" *	IPS	1" CTS	2.165	5.748	2.559	4.236	3.504	2.795	4.724	0.984
2" *	IPS	1 1/4" IPS	2.402	5.000	2.157	4.677	3.740	2.795	4.724	1.299
2" *	IPS	2" IPS	2.402	5.000	2.319	6.496	5.559	2.795	4.724	1.299
4" *	IPS	1/2" CTS	2.165	5.827	3.524	3.449	2.717	4.528	5.906	0.984
4" *	IPS	3/4" IPS	2.165	5.827	3.524	3.843	3.110	4.528	5.906	0.984
4" *	IPS	1" CTS	2.165	5.827	3.524	4.239	3.504	4.528	5.906	0.984
4" *	IPS	1 1/4" IPS	3.268	8.386	4.114	5.512	4.114	4.528	5.906	1.969
4" *	IPS	2" IPS	3.268	8.386	4.114	6.299	4.902	4.528	5.906	1.969
6" *	IPS	1/2" CTS	2.165	5.827	4.449	3.449	2.717	5.039	5.906	0.984
6" *	IPS	3/4" IPS	2.165	5.827	4.449	3.843	3.110	5.039	5.906	0.984
6" *	IPS	1" CTS	2.165	5.827	4.449	4.239	3.110	5.039	5.906	0.984
6" *	IPS	1 1/4" IPS	3.268	8.386	4.449	5.512	4.114	5.039	5.906	1.969
6" *	IPS	2" CTS	3.268	8.386	4.449	6.299	4.902	5.039	5.906	1.969
8" *	IPS	1/2" CTS	2.165	6.457	4.921	3.449	2.717	5.827	5.906	0.984
8" *	IPS	3/4" IPS	2.165	6.457	4.921	3.843	3.10	5.827	5.906	0.984
8" *	IPS	1" CTS	2.165	6.457	4.921	4.236	3.504	5.827	5.906	0.984
8" *	IPS	1 1/4" IPS	3.268	8.976	4.921	5.512	4.114	5.827	5.906	1.969
8" *	IPS	2" IPS	3.268	8.976	4.921	6.299	4.902	5.827	5.906	1.969

* DAS Top Loading Tool Required



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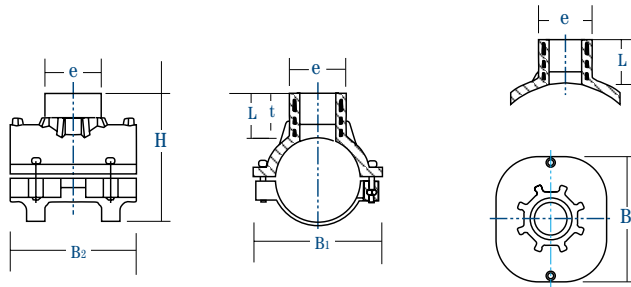
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FRIALEN® VA and VA-TL Service Saddle:



The Friatec VA saddle is an excellent way to tap water lines. The VA saddle requires a small number of tools to install. Shown above left are two corp stops, the saddle with bolts and a corp stop with adapter attached to the saddle. The VA saddle, above right, comes with a standard 2" outlet. The same saddle can be used on 3/4", 1", 1 1/2" and 2" service lines by using adapter bushings. Tools needed to install the saddle are the electrofusion processor, hole cutter, and wrench to tighten bolts from saddle base to saddle.



			B ₁	B ₂	H	L	t	e
3"	IPS	2" IPS (SSPT)	6.102	5.906	7.835	3.740	1.063	3.189
4"	IPS/DIPS	2" IPS (SSPT)	6.890	7.087	8.228	3.740	1.063	3.189
6"	IPS/DIPS	2" IPS (SSPT)	8.858	7.677	10.197	3.740	1.063	3.189
8" - TL*	IPS	2" IPS (SSPT)	9.843	7.677	11.636	3.740	1.063	3.189
8" - TL*	DIPS	2" IPS (SSPT)	10.039	7.677	12.283	3.740	1.063	3.189
10" - 28" TL*	IPS	2" IPS (SSPT)	7.874	-----	-----	3.543	1.063	3.189
10" - 20" TL*	DIPS	2" IPS (SSPT)	7.874	-----	-----	3.543	1.063	3.189

FRIALEN® Safety fittings can be fused to all PE pipes within Melt Index Groups 003-050 and Pipe DR ranges 9.33 through 17.6. For Pipe DR 21 and up, contact the ISCO Fusion Hotline at 1-800-345-ISCO ext. 4790 for reduced heating times.

***Very important: FRIATOP Pneumatic Top-Loading Tool Required.**

**Assemble Nipple, Bushing or Corporation Stop into Saddle using RED Loctite #262.

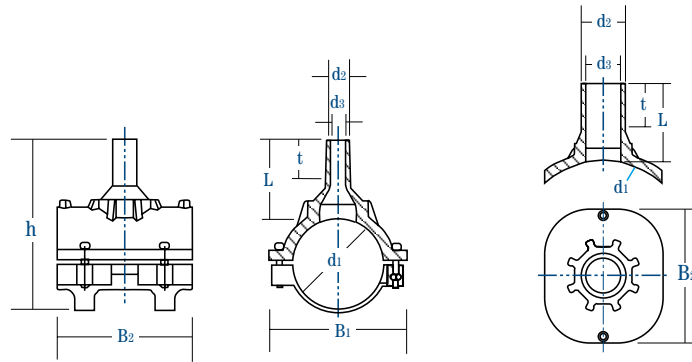
*** (SSPT) Straight Standard Pipe Thread. The use of tapered fitting for the outlet is not permitted.

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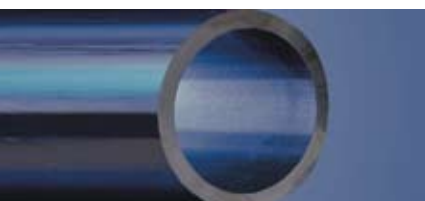
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FRIALEN® Electrofusion Branch Saddles



Nominal (d1) Pipe	Main Size	Nominal (d2) Outlet	d3	L	h	t	B1	B2
3"	IPS	2" IPS	1.969	4.055	8.150	2.756	6.102	5.906
4"	IPS/DIPS	2" IPS	1.969	4.291	9.173	2.2050	6.890	7.087
4"	IPS/DIPS	3" IPS	2.756	4.528	8.976	3.543	6.496	7.480
6"	IPS/DIPS	2" IPS	1.850	4.291	11.142	2.205	8.858	7.677
6"	IPS/DIPS	3" IPS	2.717	5.079	11.496	3.937	8.543	9.646
8" - TL*	IPS	2" IPS	1.850	4.291	12.244	2.205	9.843	7.677
8" - TL*	DIPS	2" IPS	1.850	4.291	13.228	2.205	10.039	7.677
8" - TL*	DIPS	3" IPS	2.402	4.567	13.780	3.150	10.039	7.677
10" - 24" - TL*	IPS	2" IPS	1.850	4.291	-----	2.205	-----	7.874
10" - 24" - TL*	DIPS	2" IPS	1.850	4.291	-----	2.205	-----	7.874
10" - 24" - TL*	IPS	3" IPS	2.402	4.567	-----	3.150	-----	7.874
10" - 24" - TL*	DIPS	3" IPS	2.402	4.567	-----	3.150	-----	7.874



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FRIALEN® Electrofusion Repair Saddles



Friatop Pneumatic Top-Loading Tool
and Carrying Case



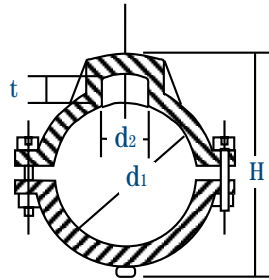
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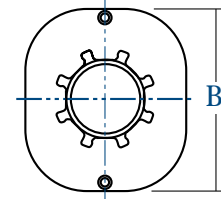
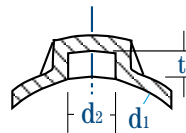
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FRIALEN® Electrofusion Repair Saddles

Short Designation **VVS / VSC-TL d...**
 Field of Application Repair of small damage leakage,
 Reinforcement of “squeeze off” areas
 and areas with surface damage
 Range of Application Gas up to 145 PSI and Water up to 232 PSI



Nominal Pipe	Main Size	d1	d2	H	t	Cold Zone Diameter
3"	IPS	3.500	1.969	5.827	0.827	2.953
4"	IPS	4.500	1.969	6.614	0.827	3.071
6"	IPS	6.625	1.969	8.583	0.827	3.346
8"	IPS	8.625	1.969	10.157	0.827	3.268
8"	DIPS	9.050	1.969	11.124	0.827	3.268



Nominal Pipe	Main Size	d1	d2	t	B	Cold Zone Diameter
10" - 28"*	IPS	10.750 - 28.000	1.969	0.787	7.874	3.307
10" - 20"*	DIPS	11.100 - 21.600	1.969	0.787	7.874	3.307

FRIALEN® Safety fittings can be fused to all PE pipes within Melt Index Groups 003-050 and Pipe DR ranges 9.33 through 17.6. For Pipe DR 21 and up, contact the ISCO Fusion Hotline at 1-800-345-ISCO ext. 4790 for reduced heating times.

**Very important: FRIATOP Pneumatic Top-Loading Tool Required.*



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FRIALEN® Scraper Tools

Pocket Scraper
1/2" CTS - 1-1/4" CTS



FWSG 63
1/2" IPS - 2" IPS



FWSG 315
3" IPS - 8" IPS



FWSG 710
6" IPS - 28" IPS
6" DIPS - 24" DIPS



Note: Warranty is void on electrofusion fitting if proper scraper tool is not used.

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FRIALEN® scraper tools are designed to assist the installer in producing a quality electrofusion joint. Rotating the tool by hand easily removes the oxide skin which will inevitably form on the surface of pipes and fittings.

- The scrapers are now equipped with hard metal blades to accommodate the greater amount of exposure to wear and tear due to longer operating times.
- The pocket scraper has been redesigned to allow for greater ease of scraping on the smaller pipe size.
- The 315 and 63 are available separate or may be shipped as a set.

Further details on scraper tools are available through ISCO Industries, LLC.

Part Number	Scraper Tools	Pipe size compatibility	Accessories
613300	Hand Scraper	All	613270 - Spare Blades (set of 5 blades)
135001	Pocket Scraper	1/2" CTS - 1 1/4" CTS	613323 - Spare Blades (3 green blades, 2 screws, 1 driver)
613305	FWSG 63	1/2" IPS - 2" IPS	613323 - Spare Blades (3 green blades, 2 screws, 1 driver)
613310	FWSG 315	3" IPS - 8" IPS	613322 - Spare Blades (3 red blades, 2 screws, 1 driver)
123190	FWSG 710	6" IPS - 28" IPS 6" DIPS - 24" DIPS	613324 - Spare Blades (3 blue blades, 2 screws, 1 driver)

Training Videos

Part Number	Description
291016	Basic Features of the Friamat® Video 101
291017	Advanced Features of the Friamat® Video 102
291018	Frialen® Coupling Installation Instructions: 1/2" to 14" Video 103
291019	Frialen® Coupling Installation Instructions: 16" to 24" Video 104
291020	Frialen® Top Loading Tapping Tee Installation Instructions Video 105
291021	Frialen® Undersaddle Service Tee Installation Instructions Video 106
291022	Friatop® Installation Tool Operation Instructions Video 107

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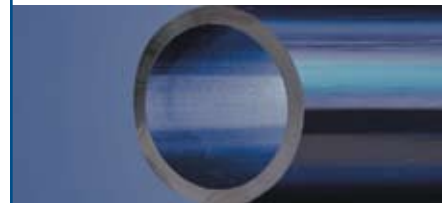
FRIALEN® Re-Round Clamps



Part Number	Description
613452	8" DIPS Master Re-round Clamp
613491	8" DIPS Re-round Insert
613463	12" DIPS Master Re-round Clamp
613492	12" DIPS Re-round Insert
613465	16" DIPS Master Re-round Clamp
613493	16" DIPS Re-round Insert
613478	18" DIPS Master Re-round Clamp
613494	20" DIPS Re-round Insert *Requires 228156 22" - 24" IPS Master Re-round Clamp
613462	14" IPS Master Re-round Clamp
613472	12" IPS Re-round Insert
613464	18" Master IPS Re-round Clamp
613474	16" IPS Re-round Insert
613478	20" IPS Master Re-round Clamp
613466	22" - 24" IPS Large Master Re-round Clamp
613477	24" IPS Re-round Insert
613476	22" IPS Re-round Insert
613648	28" IPS Master Re-round Clamp

Electrofusion Clamp Kits

Part Number	Description
CPECC02	2" Alignment Clamp Kit
CPECC03	3" Alignment Clamp Kit
CPECC04	4" Alignment Clamp Kit
CPECC06	6" Alignment Clamp Kit
CPECC08	8" Alignment Clamp Kit



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Central Electrofusion Products



A pioneer in electrofusion technology, Central Plastics continues to break new ground in the field. Today, Central is a leading manufacturer of electrofusion fittings and equipment. Central offers a large assortment of sizes and fitting types to meet many applications and a variety of electrofusion processors designed for different customer requirements. Central also offers a line of complimentary accessories.

Central is committed to customer satisfaction, offering extensive field services and technical support to end-users. Working hand-in-hand with the industry has made Central a leader in solving PE piping problems.

To assure the highest quality product, Central is vertically integrated, with most manufacturing processes in-house. Much of their manufacturing equipment is of proprietary design. Their in-house, state-of-the-art tool and die designs provide consistent precision through all production stages.

Worldwide standards and testing requirements are met on all products, and Central is ISO 9001 certified. Central Electrofusion Fittings meet worldwide standards including ASTM, AWWA, J.I.S., K.S., B.G. and ISO. Strict and precise quality control tests are performed on all molded fittings throughout production runs.

Central maintains a complete testing laboratory on-site. They utilize state-of-the-art equipment and highly trained personnel. Hot bath testing allows Central to test fittings and connections in accordance with industry standards. Tensile pull and quick burst are other common tests performed on PE products.

1-800-345-ISCO

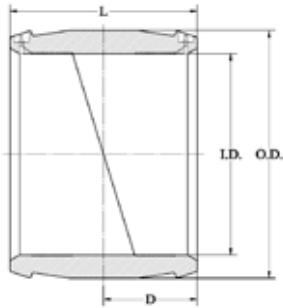
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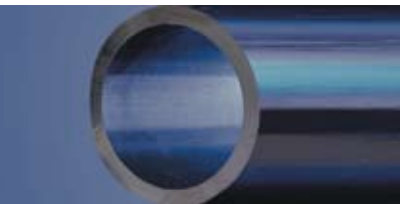
3408 Electrofusion Couplings - 1/2" to 12" IPS/ DIPS



Part Number	Nominal Size	Pin	Fusion Time Setting	Weight Lbs.	I.D. Max.	I.D. Min.	O.D. Nom.	Stab Depth Nom.	Height Nom.	Length Nom.
5760019	1/2" CTS	4.7mmR	A	0.12	0.633	0.615	1.13	1.36	2.01	3.15
5757546	1/2" IPS AWWA	4.7mmR	A	0.138	0.854	0.834	1.38	1.42	2.15	2.98
5757515	3/4" CTS AWWA	4.7mmR	A	0.15	0.89	0.87	1.38	1.42	2.15	2.98
5760022	3/4" IPS AWWA	4.7mmR	A	0.18	1.073	1.065	1.72	1.36	2.48	3.46
5760023	1" CTS AWWA	4.7mmR	A	0.2	1.142	1.132	1.72	1.36	2.52	3.46
5750639	1" IPS AWWA	4.7mmR	A	0.2	1.331	1.321	1.88	1.57	2.63	3.46
5760026	1 1/4" IPS AWWA	4.7mmR	A	0.3	1.69	1.675	2.27	1.82	3.04	3.86
5754049	1 1/4" SIDR	3.0mm	A	0.331	1.595	1.62	2.27	1.82	3.0	3.7
5754075	1 1/4" Duct	3.0mm	A	0.324	1.520	1.490	2.27	1.82	3.0	3.7
5760028	1 1/2" IPS AWWA	4.7mmR	A	0.395	1.917	1.907	2.6	1.89	3.36	4.33
5756611*	2" CTS AWWA	Solid/4.7	M	0.305	2.145	2.13	2.80	2.125	3.59	4.37
5760030	2" IPS AWWA	4.7mmR	A	0.582	2.42	2.395	3.16	2.09	3.78	4.72
5756062	2" IPS Conduit	3.0mm	A	0.305	2.42	2.4	2.82	2.09	3.55	4.31
5754047	2 1/2" Conduit	3.0mm	A	0.552	2.956	2.894	3.5	2.06	4.17	4.25
10000358	3" IPS AWWA	4.7mmR	A	1.263	3.56	3.545	4.54	2.72	5.18	5.59
10000360	4" IPS FM (CL 200) AWWA	4.7mmR	A	2.547	4.545	4.51	5.57	3.0	6.51	6.14
5751970	4 DIPS AWWA	Solid/4.7	M	2.673	4.846	4.810	6.06	3.46	6.06	6.93
5750661*	5" IPS (140 mm)	Solid/4.7	A	3.08	5.547	5.524	6.93	3.54	7.56	7.17
10000359	6" IPS FM (CL 200) AWWA	4.7mmR	A	4.94	6.69	6.655	8.17	4.1	8.7	8.35
5751971*	6" DIPS AWWA	Solid/4.7	M	6.513	6.94	6.91	8.74	4.09	8.74	8.19
5750867	7" IPS	3.0mm	A	4.85	7.145	7.105	8.74	4.09	8.94	7.19
10000361	8" IPS FM (CL 200) AWWA	4.7mmR	A	7.125	8.7	8.67	10.63	4.7	11.2	9.48
5751972*	8" DIPS AWWA	Solid/4.7	M	11.875	9.105	9.075	11.14	5.08	11.14	10.16
5757544	10 IPS FM (CL 150) AWWA	4.7mmR	A	16.8	10.801	10.766	13.25	5.0	13.41	10.5
10000362	10 IPS FM (CL 200) AWWA	Solid/4.7	M	16.8	10.801	10.766	13.25	5.0	13.41	10.5
5751973*	10" DIPS AWWA	Solid/4.7	M	19	11.071	11.031	13.7	5.5	13.7	11.0
5757545	12" IPS FM (CL 150) AWWA	4.7mmR	A	25.2	12.795	12.74	15.7	5.5	15.84	11.5
10000363	12" IPS FM (CL 200) AWWA	Solid/4.7	M	25.5	12.795	12.74	15.7	5.5	15.84	11.5
5751974*	12 DIPS AWWA	Solid/4.7	M	31.5	13.162	13.122	16.2	6.5	16.2	13.1

A=Automatic Identification for Fusion Time. M=Manual Setting or Bar Code Setting.

* Special Lead Requirements.

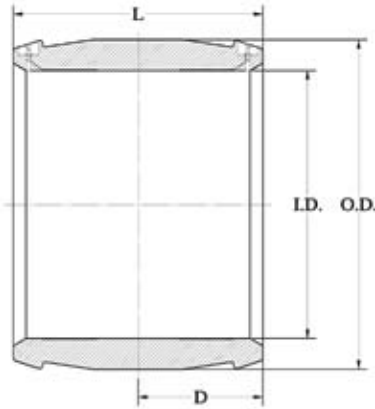


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3408 Electrofusion Couplings - 14" to 24" IPS/ DIPS



Part Number	Nominal Size	Pin	Fusion Time Setting	I.D. Max.	I.D. Min.	O.D. Nom.	Stab Depth Nom.	Length Nom.	Coil Type
5758373	14 IPS DR 11	Solid/4.7	M	14.01	13.98	17.24	6.06	12.13	Single
10000202	14 IPS FM (CL 200)	Solid/4.7	M	14.01	13.98	17.24	6.06	12.13	Single
5758458	14 IPS DR 17	Solid/4.7	M	14.01	13.98	16.22	6.42	12.84	Single
5758361	14 DIPS DR 11	Solid/4.7	M	15.31	15.28	19.65	6.77	13.54	Dual
5758364	16 IPS DR 11	Solid/4.7	M	16.01	15.98	19.65	6.77	13.54	Dual
10000204	16 IPS FM (CL 200)	Solid/4.7	M	16.01	15.98	19.65	6.77	13.54	Dual
5751975	16 DIPS DR 11	Solid/4.7	M	17.41	17.38	22.13	7.48	14.96	Dual
5758365	18 IPS DR 11	Solid/4.7	M	18.01	17.98	22.13	7.48	14.96	Dual
10000207	18 IPS FM (CL 200)	Solid/4.7	M	18.01	17.98	22.13	7.48	14.96	Dual
5751976	18 DIPS DR 11	Solid/4.7	M	19.51	19.48	24.57	8.23	16.46	Dual
5758369	20 IPS DR 11	Solid/4.7	M	20.01	19.98	24.57	8.23	16.46	Dual
10000210	20 IPS FM (CL 200)	Solid/4.7	M	20.01	19.98	24.57	8.23	16.46	Dual
5751977	20 DIPS DR 11	Solid/4.7	M	21.51	21.48	27.21	8.98	17.95	Dual
5758368	22 IPS DR 11	Solid/4.7	M	22.01	21.98	27.21	8.98	17.95	Dual
5758370	24 IPS DR 11	Solid/4.7	M	24.01	23.98	30.59	9.75	19.5	Dual
10000216	24 IPS FM (CL 200)	Solid/4.7	M	24.01	23.98	30.59	9.75	19.5	Dual
5751978	24 DIPS DR 11	Solid/4.7	M	25.81	25.78	31.69	9.75	19.5	Dual

A=Automatic Identification for Fusion Time. M=Manual Setting or Bar Code Setting.

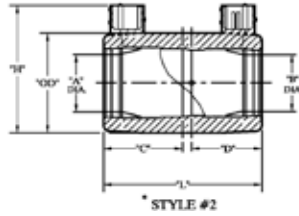
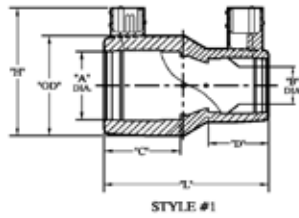
* Special Lead Requirements.

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Reducer Couplings: ASTM F1055 IPS & CTS

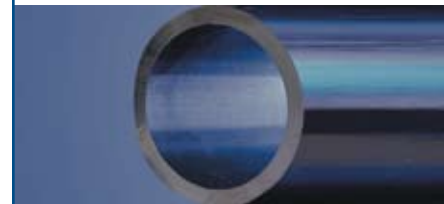


Nominal Size	Inside Dia. Max. "A"	Inside Dia. Min. "A"	Stab Depth Nom. "C"	Inside Dia. Max. "B"	Inside Dia. Min. "B"	Stab Depth Nom. "D"	Outside Dia. Nom. "OD"	Overall Ht. Nom. "H"	Overall Length. (Nom.) "L"
3/4" IPS x 1/2" CTS	1.052	1.038	1.25	.645	.629	1.47	1.69	2.50	3.28
1" IPS x 1/2" CTS	1.016	1.300	1.46	.640	.625	1.46	1.88	2.60	3.28
1" IPS x 1/2" IPS	1.316	1.300	1.46	.865	.860	1.53	1.88	2.60	3.28
1" IPS x 3/4" IPS	1.325	1.310	1.42	1.070	1.055	1.43	1.88	2.63	3.28
1" IPS x 1" CTS	1.325	1.315	1.42	1.130	1.115	1.43	1.88	2.63	3.28
*1-1/4" CTS x 1" IPS	1.390	1.375	1.55	1.330	1.315	1.55	1.88	2.56	3.30
*1-1/4" IPS x 1" IPS	1.675	1.655	1.88	1.322	1.315	1.57	2.27	3.00	3.70
*3" IPS x 2-1/2" IPS	3.570	3.535	2.74	2.890	2.890	2.34	4.54	5.18	5.59

Part Number	Size	Pin	Fusion Time Setting	Weight
5757553	3/4" IPS x 1/2" CTS AWWA	4.7mmR	A	N/A
5757547	1" IPS x 1/2" CTS AWWA	4.7mmR	A	N/A
5756578*	1" IPS x 1/2" IPS AWWA	Solid/4.7mm	M	N/A
5757548	1" IPS x 1/2" IPS AWWA	4.7mmR	A	N/A
5757549	1" IPS x 3/4" IPS AWWA	4.7mmR	A	N/A
5751200	1" IPS x 3/4" IPS AWWA	3.0mm	A	0.190
5757550	1" IPS x 1" CTS AWWA	4.7mmR	A	N/A
5751178	1" IPS x 1" CTS AWWA	3.0mm	A	0.186
5757551	1 1/4" CTS x 1" IPS AWWA	4.7mmR	A	N/A
5756558*	1 1/4" CTS x 1" IPS	Solid/4.7mm	M	N/A
5751182	1 1/4" CTS x 1" IPS AWWA	3.0mm	A	0.230
5757522	1 1/4" IPS x 1" IPS AWWA	4.7mmR	A	N/A

A=Automatic Identification for Fusion Time. M=Manual Setting or Bar Code Setting.

* Special Lead Requirements.



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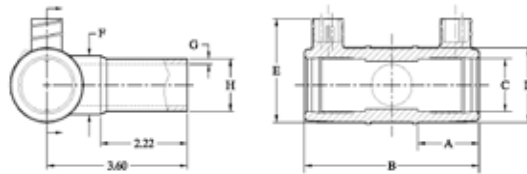
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End Cap Assembly

Part Number	Description	Size	Fusion Time Setting	Weight
5753070*	1/2 CTS	Solid/4.7mm	M	N/A
5753074*	3/4 IPS	Solid/4.7mm	M	N/A
5753076*	1 CTS	Solid/4.7mm	M	N/A
5753086*	1-1/4 CTS	Solid/4.7mm	M	N/A
5753080*	1-1/4 IPS	Solid/4.7mm	M	N/A
5753084*	2 IPS	Solid/4.7mm	M	N/A
5753245*	12 IPS	Solid/4.7mm	M	N/A

Tees: CTS & IPS



Nominal Pipe Outlet Size	Dimension "A" Stab Depth	Dimension "B" OAL	Diameter "C" Body I.D.	Diameter "D" Body I.D.	Dimension "E"	Diameter "F"	Diameter "G" Wall	Diameter "H" Outlet O.D.
1/2" CTS	1.360	3.425	0.625 ±.010	1.125	1.86	0.71	0.090	0.625 +.010
1/2" IPS	1.420	3.904	0.850 ±.010	1.375	2.10	1.10	0.090 +.018	0.840 +.008
3/4" IPS	1.360	3.904	1.052 ±.010	1.720	2.45	1.25	0.113 +.023	1.050 +.008
1" IPS	1.570	4.477	1.300 ±.010	1.875	2.60	1.48	0.120 +.024	1.315 +.010
1-1/4" IPS	1.820	5.241	1.660 ±.010	2.270	3.00	1.84	0.166 +.033	1.660 +.010

Part Number	Description	Size	Fusion Time Setting	Pin	Weight
5751209	Equal Tee	3/4 IPS	A	3.0 mm	N/A
5756519*	Equal Tee	3/4 IPS	M	Solid / 4.7 mm	N/A
5751589*	Equal Tee	1 IPS	M	3.0 mm	0.210
5751588*	Equal Tee	1-1/4 IPS	M	Solid / 4.7 mm	0.380
5751587*	Equal Tee	2 IPS	M	3.0 mm	0.990
5751120*	Elbow 90	1 IPS	M	SPR 4.7 mm	0.182
5751590*	Elbow 90	2 IPS	M	SPR 4.7 mm	0.780

A=Automatic Identification for Fusion Time. M=Manual Setting or Bar Code Setting.

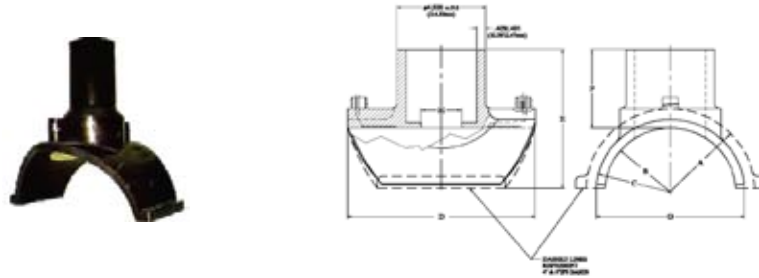
* Special Lead Requirements. **SPR= Single Pin with Resistor**

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Branch Saddle: 2" DR 11 Outlet



Nom. Pipe Saddle Size	Radius R	Dimension A	Dimension B	Dimension C	Dimension D
2 IPS	1.187 ±.012	3.59	6.65	.348	1.50
3 IPS	1.750 ±.012	4.60	6.66	.346	1.81
4 IPS	2.250 ±.012	6.26	7.27	.365	1.81
4 DIPS	2.400 ±.012	6.26	7.27	.365	1.81
6 IPS	3.312 ±.012	8.68	8.43	.375	1.81
6 DIPS	3.450 ±.012	8.68	8.43	.375	1.81

Nominal Pipe Saddle Size	Outlet Size	Part #	Fusion Time Setting	Pin	Clamp Style See Page 207	Weight
2 IPS	2 IPS x 2 IPS AWWA	5751598	A	3.0mm	B	.0880
	2 IPS x 2 IPS	5756587*	M	4.7mm	B	.925
3 IPS	3 IPS x 2 IPS	5751599	A	3.0mm	C	.944
4 IPS/DIPS	4 IPS/DIPS x 2 IPS AWWA	5751600	A	3.0mm	D	1.080
	4 IPS/DIPS x 2 IPS FM (CL 150)	5754083	A	3.0mm	D	1.080
6 IPS/DIPS	6 IPS/DIPS x 2 IPS	5751601	A	3.0mm	E	1.275
	6 IPS/DIPS x 2 IPS FM (CL 150)	5754084	A	3.0mm	E	1.275
8 IPS	8 IPS x 2 IPS FM	5758330	A	3.0mm	H/I	0.925
	8 IPS x 2 IPS FM (CL 150)	5754085	A	3.0mm	H/I	0.925
8 DIPS	8 DIPS x 2 IPS	5758673*	M	4.7mm	H/I	N/A
10 DIPS	10 DIPS x 2 IPS	5758674*	M	4.7mm	H/I	N/A
12 DIPS	12 DIPS x 2 IPS	5758645*	M	4.7mm	H/I	N/A

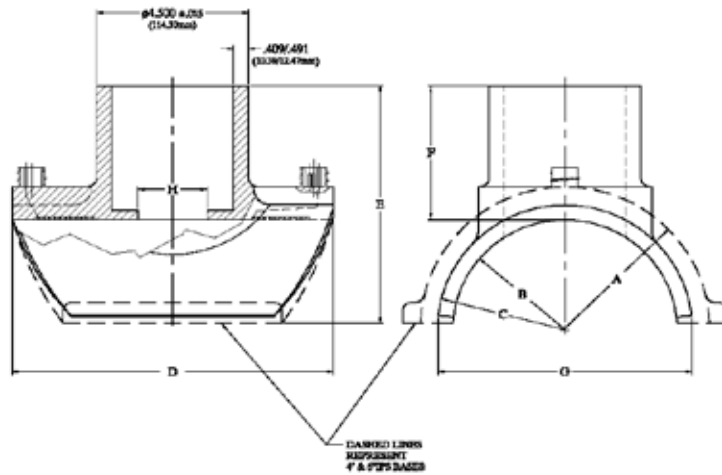
A=Automatic Identification for Fusion Time. M=Manual Setting or Bar Code Setting.
* Special Lead Requirements.

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Branch Saddle: 4" IPS Butt Outlet



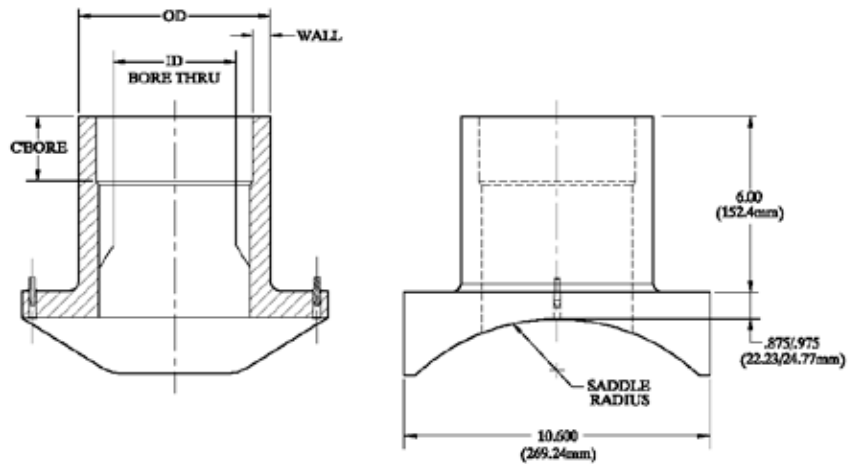
Nom. Pipe Saddle Size	Radius A	Radius B	Radius C	Dim. D	Dim. E	Dim. F	Dim. G	Dim. H
4" IPS X 4" IPS	2.92	2.26	N/A	8.38	6.00	3.85	7.00	2.16
6" IPS X 4" IPS	4.29	3.33	N/A	9.13	7.20	4.14	9.63	2.19
Multiple Base X 4" IPS	N/A	3.33	3.78	9.13	7.00	4.14	7.56	N/A

Outlet Size	Part #	Fusion Time Setting	Pin	Clamp Style See Page 207	Weight
4x4 IPS AWWA	5750806	A	3.0mm	F	2.531
4x4 IPS FM (CL 150)	5754086	A	3.0mm	F	2.531
6x4 IPS DR 9 AWWA	5757777	A	4.7mm	G	N/A
6x4 IPS DR 11 AWWA	5750807	A	3.0mm	G	3.816
6x4 IPS FM (CL 150)	5754087	A	3.0mm	G	3.186
Multi Saddle x 4 IPS	5750808	A	3.0mm	J	2.450

A=Automatic Identification for Fusion Time. M=Manual Setting or Bar Code Setting.
* Special Lead Requirements.



Branch Saddle: 6" IPS Butt Outlet



Nominal Size Outlet	O.D.	I.D.	Wall	C'Bore
6" IPS DR 17	6.625 ±0.018	5.750 ±0.062	0.390 ±0.078	2.25 ±0.06

Outlet Size	Part #	Fusion Time Setting	Pin	Clamp Style See Page 207	Weight
8x6 IPS DR 17	5758407*	M	4.7mm	K	7.500
8" U-Liner x 6 IPS DR 17	5758439*	M	4.7mm	N	6.462
10X6 IPS DR 17	5758408*	M	4.7mm	K	8.000
12X6 IPS DR 17	5758408*	M	4.7mm	K	6.370
14X6 IPS DR 17	5758410*	M	4.7mm	K	6.000
16X6 IPS DR 17	5758411*	M	4.7mm	K	6.000
16" DIPS x 6 IPS DR 17	5758471*	M	4.7mm	K	6.000
18X6 IPS DR 17	5758412*	M	4.7mm	K	6.140
20X6 IPS DR 17	5758413*	M	4.7mm	K	5.975
24X6 IPS DR 17	5758414*	M	4.7mm	K	5.710
30X6 IPS DR 17	5758415*	M	4.7mm	K	5.595
32X6 IPS DR 17	5758416*	M	4.7mm	K	5.575
34X6 IPS DR 17	5758417*	M	4.7mm	K	5.535
36X6 IPS DR 17	5758418*	M	4.7mm	K	5.501
42X6 IPS DR 17	5758419*	M	4.7mm	K	6.525
48X6 IPS DR 17	5758420*	M	4.7mm	K	6.525

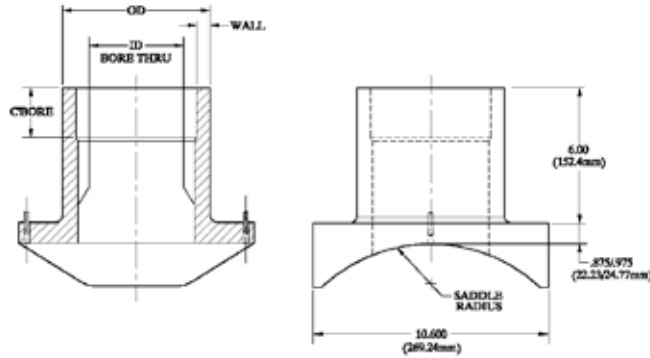
A=Automatic Identification for Fusion Time. M=Manual Setting or Bar Code Setting.

* Special Lead Requirements.

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Branch Saddle: 8" IPS Butt Outlet



Nominal Outlet Size	O.D.	I.D.	Wall	C'BoRE
8" IPS DR 17	8.625±0.025	5.570±0.030	0.785±0.157	2.88±0.06



Outlet Size	Part #	Fusion Time Setting	Pin	Clamp Style See Page 207	Weight
8x8 IPS	5758390*	M	4.7mm	K	6.505
10x8 IPS	5758393*	M	4.7mm	K	9.500
12x8 IPS	5758394*	M	4.7mm	K	9.070
14x8 IPS	5758395*	M	4.7mm	K	10.130
16x8 IPS	5758396*	M	4.7mm	K	8.000
18x8 IPS	5758397*	M	4.7mm	K	8.740
20x8 IPS	5758398*	M	4.7mm	K	9.640
24x8 IPS	5758399*	M	4.7mm	K	9.000
24 DIPS x 8 IPS	5758440*	M	4.7mm	K	9.000
26x8 IPS	5758487*	M	4.7mm	K	7.980
30x8 IPS	5758400*	M	4.7mm	K	9.151
32x8 IPS	5758401*	M	4.7mm	K	8.728
34x8 IPS	5758402*	M	4.7mm	K	8.690
36x8 IPS	5758403*	M	4.7mm	K	8.918
42x8 IPS	5758404*	M	4.7mm	K	8.368
48x8 IPS	5758405*	M	4.7mm	K	8.710

A=Automatic Identification for Fusion Time. M=Manual Setting or Bar Code Setting.
* Special Lead Requirements.

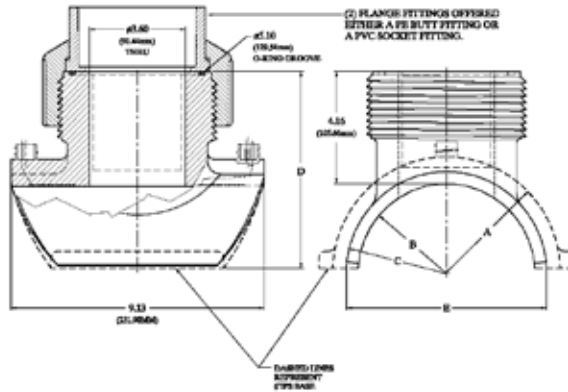


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Branch Union Saddle: 4" IPS Outlet



Size	Radius A	Radius B	Radius C	Dimension D	Dimension E
6" IPS X 4" IPS	4.29	3.33	N/A	7.38	9.63
MULTI-BASE x 4"IPS	N/A	3.33	3.78	7.38	7.56



6 IPS PE x 4 IPS PE



Multi-Base x 4 IPS

Outlet Size	Part #	Fusion Time Setting	Pin	Clamp Style See Page 207	Weight
6 IPS PE x 4 IPS Socket PVC	5750909	A	3.0mm	G	7.104
6 IPS PE x 4 IPS PE	5751236	A	3.0mm	G	8.847
Multi-Base x 4 IPS PE	5751237	A	3.0mm	J	7.190

A=Automatic Identification for Fusion Time. M=Manual Setting or Bar Code Setting.
* Special Lead Requirements.

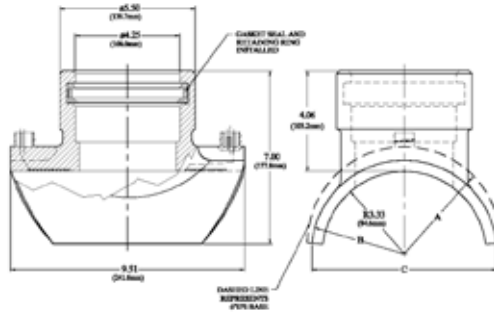


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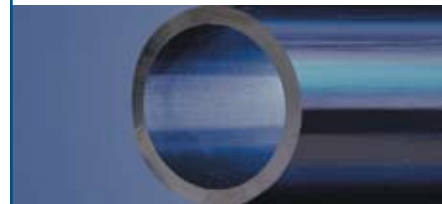
Branch Saddle: 4" PSM Gasket Outlet



Size	Radius A	Radius B	Dimension C
6" IPS Base x 4" PSM	4.29	N/A	7.88
Multi-Base x 4" PSM	N/A	3.78	7.56

Outlet Size	Part #	Fusion Time Setting	Pin	Clamp Style See Page 207	Weight
6 IPS x 4 PSM DR 35	5750952	A	3.0mm	J	3.300
Multi-Base x 4 PSM DR 35	570819	A	3.0mm	J	4.00

A=Automatic Identification for Fusion Time. M=Manual Setting or Bar Code Setting.
* Special Lead Requirements.

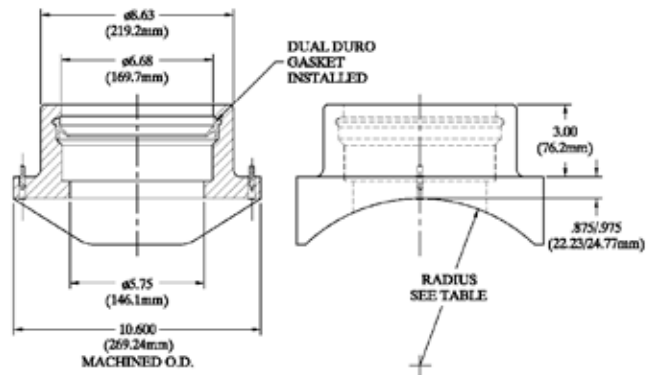


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Branch Saddle: 6" PSM Gasket Outlet



Outlet Size	Part #	Pin	Fusion Time Setting	Clamp Style See Page 207	Weight
7.125 IPS x 6 PSM DR 35	5758421*	4.7 mm	M	K	9.665
8 IPS x 6 PSM DR 35	5758378*	4.7 mm	M	K	8.500
8" U-Liner x 6 PSM DR 35	5758437*	4.7 mm	M	N	9.000
9.05 DIPS x 6 PSM DR 35	5758406*	4.7 mm	M	K	7.590
10 IPS x 6 PSM DR 35	5758379*	4.7 mm	M	K	8.000
12 IPS x 6 PSM DR 35	57588380*	4.7 mm	M	K	7.870
14 IPS x 6 PSM DR 35	5758391*	4.7 mm	M	K	7.000
16 IPS x 6 PSM DR 35	5758381*	4.7 mm	M	K	6.140
18 IPS x 6 PSM DR 35	5758392*	4.7 mm	M	K	7.090
20 IPS x 6 PSM DR 35	5758382*	4.7 mm	M	K	6.110
22 IPS x 6 PSM DR 35	10002474*	4.7 mm	M	K	
24 IPS x 6 PSM DR 35	5758383*	4.7 mm	M	K	7.000
30 IPS x 6 PSM DR 35	5758384*	4.7 mm	M	K	7.000
32 IPS x 6 PSM DR 35	5758385*	4.7 mm	M	K	7.000
34 IPS x 6 PSM DR 35	5758386*	4.7 mm	M	K	7.000
36 IPS x 6 PSM DR 35	5758387*	4.7 mm	M	K	7.000
42 IPS x 6 PSM DR 35	5758388*	4.7 mm	M	K	7.000
48 IPS x 6 PSM DR 35	5758389*	4.7 mm	M	K	7.000

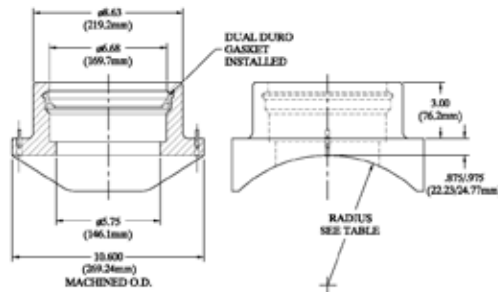
A=Automatic Identification for Fusion Time. M=Manual Setting or Bar Code Setting.
* Special Lead Requirements.

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Branch Saddle: 4" IPS Gasket Outlet



Size	Radius A	Radius B	Dimension C
6" IPS Base x 4" IPS	4.29	N/A	N/A
Multi-Base x 4" IPS	N/A	3.78	7.56

Outlet Size	Part #	Fusion Time Setting	Pin	Clamp Style See Page 207	Weight
6 IPS x 4 IPS SCH40	5751882	A	3.0mm	J	6.316
Multi-Base x 4 IPS SCH40	5751881	A	3.0mm	J	3.140

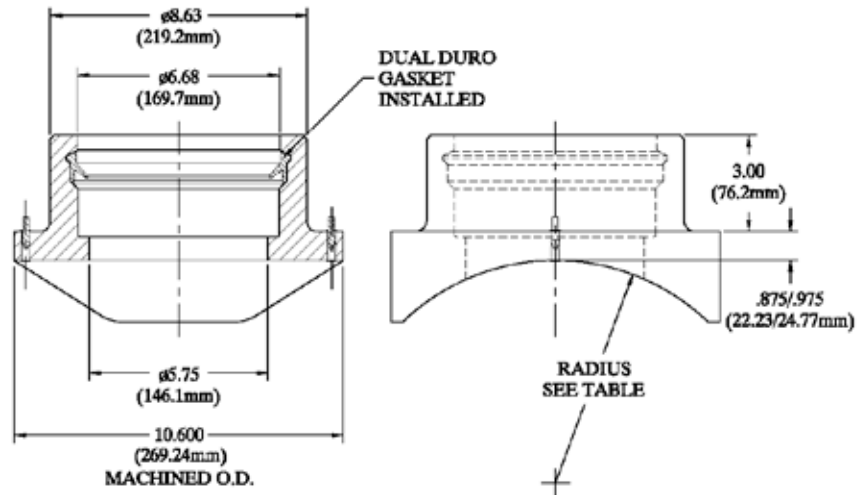
A=Automatic Identification for Fusion Time. M=Manual Setting or Bar Code Setting.
 * Special Lead Requirements.

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Branch Saddle: 6" IPS Gasket Outlet



Outlet Size	Part #	Pin	Fusion Time Setting	Clamp Style See Page 207	Weight
7.125 IPS x 6 IPS SCH40	5758422*	4.7mm	M	K	8.370
8 IPS X 6 IPS SCH40	5758423*	4.7mm	M	K	8.370
8" U-Liner x 6 IPS SCH40	5758438*	4.7mm	M	N	9.080
9.05 DIPS x 6 IPS SCH40	5758424*	4.7mm	M	K	8.400
10 IPS x 6 IPS SCH40	5758425*	4.7mm	M	K	7.630
12 IPS x 6 IPS SCH40	5758426*	4.7mm	M	K	7.245
14 IPS x 6 IPS SCH40	5758427*	4.7mm	M	K	7.245
16 IPS x 6 IPS SCH40	5758428*	4.7mm	M	K	7.245
18 IPS x 6 IPS SCH40	5758429*	4.7mm	M	K	7.245
20 IPS x 6 IPS SCH40	5758441*	4.7mm	M	K	7.245
22 IPS x 6 IPS SCH40	10002584*	4.7mm	M	K	7.245
24 IPS x 6 IPS SCH40	5758430*	4.7mm	M	K	7.245
30 IPS x 6 IPS SCH40	5758431*	4.7mm	M	K	7.245
32 IPS x 6 IPS SCH40	5758432*	4.7mm	M	K	7.245
34 IPS x 6 IPS SCH40	5758433*	4.7mm	M	K	7.245
36 IPS x 6 IPS SCH40	5758434*	4.7mm	M	K	7.245
42 IPS x 6 IPS SCH40	5758435*	4.7mm	M	K	7.245
48 IPS x 6 IPS SCH40	5758436	4.7mm	M	K	7.245

A = Automatic Identification for Fusion Time.

M = Manual Setting or Bar Code Setting.

*Special Lead Requirements

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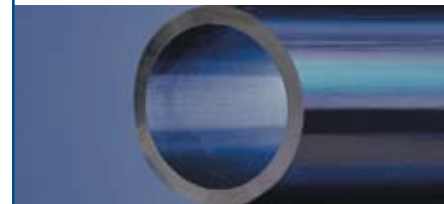
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3408 Electrofusion Fittings - Tapping Tees



Base	Outlet	Cutter	Pin	Clamp Style See Page 207	Part #	Drawing No. See Page 193	
1-1/4" IPS	1/2 cts(butt)	0.5	3.0mm	A	5751543	1	
	3/4 cts(butt)	0.5	3.0mm	A	5757505	1	
	1 cts(butt)	0.5	4.7mmR	A	5757681	1	
	1 ips(butt) AWWA	0.5	4.7mmR	A	5757670	1	
	1 ips(butt)	0.8	3.0mm	A	5751906	1	
	With Constab Outlets						
	1/2 cts .090w	0.8	3.0mm	A	5751664	3	
	1/2 ips dr 9.3	0.8	3.0mm	A	5751670	3	
	3/4 ips dr 11	0.8	3.0mm	A	5751672	3	
	1 cts .090w	0.8	3.0mm	A	5751666	3	
	1 cts 0.99w	0.8	3.0mm	A	5751668	3	
	1 ips dr 11	0.8	3.0mm	A	5751674	3	
	2" CTS	1 cts (butt) AWWA	0.8	Solid/4.7mm	AB	6756612	1
	2" IPS	1/2 cts (butt)	0.5	3.0mm	B	5751542	1
1/2 cts (butt)		0.8	Solid/4.7mm	B	5756565*	1	
3/4 cts(butt) AWWA		0.8	4.7mmR	B	5757757	1	
1 cts (butt) dr 11 AWWA		0.8	4.7mmR	B	5757758	1	
1 ips (butt)		0.5	3.0mm	B	5751901	1	
1 ips (butt) AWWA		0.8	4.7mmR	B	5757671	1	
1/2 cts (butt) trainer		0.8	Solid/4.7mm	B	5758597*	1	
1 ips(butt) trainer		0.8	3.0mm	B	5751743	1	
With Constab Outlets							
1/2 cts		0.8	3.0mm	B	5751530	3	
1/2 cts .090w		0.8	3.0mm	B	5751676	3	
1/2 ips dr 9.3		0.8	3.0mm	B	5751678	3	
3/4 ips dr 11		0.8	3.0mm	B	5751680	3	
1 cts		0.8	3.0mm	B	5751532	3	
1 ips dr 11		0.8	3.0mm	B	5751682	3	
3" IPS		1/2 ips	0.8	Solid/4.7mm	C	5756619	1
		3/4 cts(butt)	0.8	3.0mm	C	5751278	1
	3/4 ips (butt) dr 11	0.8	Solid/4.7mm	C	5756623	1	
	1 cts (butt)	0.8	4.7mmR	C	5751267	1	
	1 ips(butt)	0.5	3.0mm	C	5751902	1	
	1 ips (butt) AWWA	0.8	4.7mmR	C	5757672	1	
	With Constab Outlets						
	1/2 cts .090w	0.8	3.0mm	C	5751684	3	
	1/2 ips dr 9.3	0.8	3.0mm	C	5751690	3	
	3/4 ips dr 11	0.8	3.0mm	C	5751592	3	
	1 cts .90w	0.8	3.0mm	C	5751686	3	
	1 cts .099w	0.8	3.0mm	C	5751688	3	
	1 ips dr 11	0.8	3.0mm	C	5751694	3	

*Special Lead Requirements



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3408 Electrofusion Fittings - Tapping Tees

Base	Outlet	Cutter	Pin	Clamp Style See Page 207	Part #	Drawing No. See Page 193
4" IPS/DIPS	1/2 cts(butt) Brass AWWA	0.8	4.7mmR	D/L	5757664	1
	1/2 ips	0.8	Solid/4.7mm	D/L	5756620	1
	3/4 cts (butt) Brass	0.8	3.0mm	D/L	5751279	1
	3/4 ips (butt) Brass	0.8	4.7mmR	D/L	5757755	1
	1 cts (butt) .101W Brass AWWA	0.8	4.7mmR	D/L	5757730	1
	1 ips (butt) Brass	0.5	4.7mmR	D/L	5757750	1
	1 ips (butt) Brass AWWA	0.8	4.7mmR	D/L	5757673	1
	1 ips (butt)	0.8	Solid/4.7mm	D/L	5756578	1
4" IPS	1/2 cts	0.8	3.0mm	D	5751534	3
	1/2 ips dr 9.3	0.8	3.0mm	D	5751700	3
	3/4 ips dr 11	0.8	3.0mm	D	5751702	3
	1 cts .090w	0.8	3.0mm	D	5751696	3
	1 cts .099w	0.8	3.0mm	D	5751698	3
	1 ips dr 11	0.8	3.0mm	D	5751704	3
6" IPS/DIPS	1/2 cts (butt) Brass AWWA	0.8	4.7 mmR	E/M	5757665*	1
	3/4 cts (butt) Brass AWWA	0.8	4.7mmR	E/M	5757759	1
	3/4 cts (butt) Brass AWWA	0.8	Solid / 4.7 mm	E/M	5756639	1
	3/4 ips (butt) Brass	0.8	4.7mmR	E/M	5757754	1
	1 cts (butt) Brass AWWA	0.8	Solid / 4.7 mm	E/M	5756616	1
	1 cts (butt) Brass AWWA	0.8	4.7mmR	E/M	5757760	1
	1/2 ips (butt) Brass	0.5	4.7mmR	E/M	5757751	1
	1 ips (butt) Brass AWWA	0.8	4.7mmR	E/M	5757674	1
1 ips (butt)	0.8	Solid / 4.7 mm	E/M	5756579*	1	
6" IPS	With Constab Outlets					
	1/2 cts .090w	0.8	3.0 mm	E	5751706	3
	1/2 ips dr 9.3	0.8	3.0 mm	E	5751712	3
	3/4 ips dr 11	0.8	3.0 mm	E	5751714	3
	1 cts .090w	0.8	3.0 mm	E	5751708	3
	1 cts .099w	0.8	3.0mm	E	5751710	3
1 ips dr 11	0.8	3.0mm	E	5751716	3	
8"-10" IPS/DIPS	1/2 cts (butt) Brass AWWA	0.5	4.7mmR	H	5757687	2
	1/2 cts (butt)	0.8	Solid / 4.7 mm	H	5756566*	2
	1/2 ips(butt) Brass AWWA	0.8	4.7mmR	H	5757688	2
	3/4 cts(butt) Brass AWWA	0.8	4.7mmR	H	5757513	2
	3/4 cts(butt) Brass AWWA	0.8	Solid / 4.7 mm	H	5756640	2
	3/4 ips(butt) Brass AWWA	0.8	4.7mmR	H	5757689	2
	1 cts(butt) Brass AWWA	0.8	4.7mmR	H	5757514	2
	1 cts(butt) Brass AWWA	0.8	Solid / 4.7 mm	H	5756617	2
	1 ips(butt) Brass	0.5	4.7mmR	H	5757752	2
	1 ips(butt)	0.8	Solid / 4.7 mm	H	5756581*	2
1 ips (butt) Brass AWWA	0.8	4.7mmR	H	5757675	2	
8"-10" IPS	With Constab Outlets					
	1/2 cts .090w	0.8	3.0 mm	H	5751718	3
	1/2 ips dr 9.3	0.8	3.0mm	H	5751724	3
	3/4 ips dr11	0.8	3.0 mm	H	5751726	3
	1 cts .090w	0.8	3.0mm	H	5751720	3
	1 cts .099w	0.8	3.0 mm	H	5751722	3
1 ips dr 11	0.8	3.0 mm	H	5751728	3	

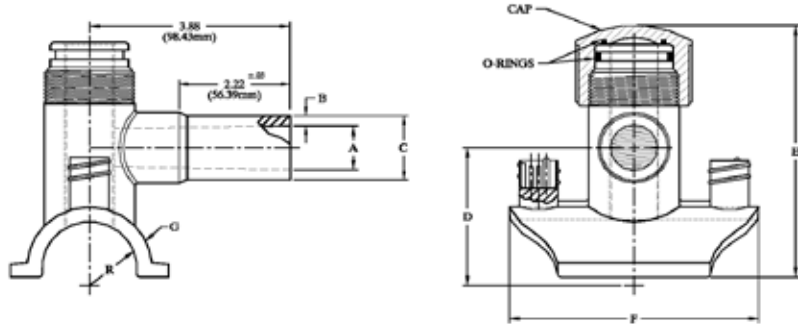
*Special Lead Requirements

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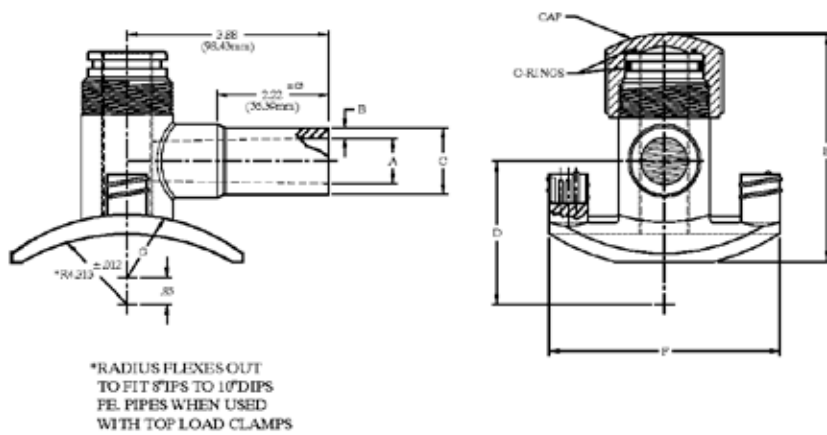
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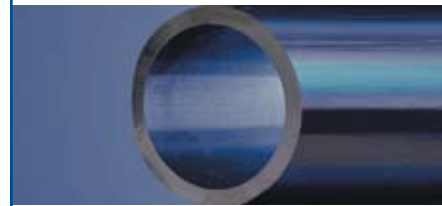
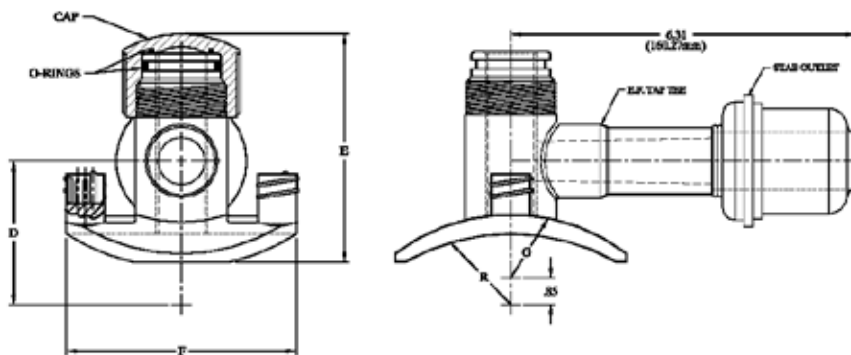
Drawing 1: Butt Outlet (Bases through 6")



Drawing 2: Butt Outlet (Bases 8" & larger)



Drawing 3: IPS & CTS Constab Outlet



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Electrofusion Fittings High Volume Tapping Tee



Base	Outlet	Cutter	Pin	Clamp Style See Page 207	Part #	Drawing No. See Pages 195 & 196
2" IPS	1-1/4" IPS WB Gas 5/8 Hex	1.5	3.0mm	B	5758117	1
	1-1/4" IPS WB Gas 5/8 Hex	1.5	Solid/4.7 mm	B	5756567*	1
	2" IPS WB Gas 5/8 Hex	1.5	3.0mm	B	5758125	1
	2" IPS WB Gas 5/8 Hex	1.5	Solid/4.7 mm	B	5756583*	1
	2" CTS 5/8 Hex AWWA (fab)	1.5	4.7mmR	B	5757690	1
	1-1/4" IPS WB SS 5/8 Hex AWWA	1.5	4.7mmR	B	5757676	1
	2" IPS WB SS 5/8 Hex AWWA	1.5	3.0mm	B	5758101	1
3" IPS	1-1/4" IPS WB Gas 5/8 Hex	1.5	3.0mm	C	5758119	1
	2" IPS WB Gas 5/8 Hex	1.8	3.0mm	C	5758127	1
	1-1/4" IPS WB SS 5/8 Hex AWWA	1.5	4.7mmR	C	5757677	1
	2" IPS WB SS 5/8 Hex AWWA	1.8	4.7mmR	C	5757691	1
4" IPS/ DIPS	1-1/4" IPS WB Gas 5/8 Hex	1.5	3.0mm	D	5758121	1
	1-1/4" IPS WB Gas 5/8 Hex	1.5	Solid/4.7mm	D	5756569*	1
	2" IPS WB Gas 5/8 Hex	1.8	3.0mm	D	5758129	1
	2" IPS WB Gas 5/8 Hex	1.5	Solid/4.7mm	D	5756586*	1
	1-1/4" IPS WB SS 5/8 Hex AWWA	1.5	4.7mmR	D	5757678	1
	2" IPS WB SS 5/8 Hex AWWA	1.8	4.7mmR	D	5757692	1
6" IPS/ DIPS	1-1/4" IPS WB Gas 5/8 Hex	1.5	3.0mm	E	5758123	1
	1-1/4" IPS WB Gas 5/8 Hex	1.5	Solid/4.7mm	E	5756570*	1
	2" IPS WB Gas 5/8 Hex	1.8	3.0mm	E	5758131	1
	2" IPS WB Gas 5/8 Hex	1.5	Solid/4.7mm	E	5756584*	1
	1-1/4" IPS WB SS 5/8 Hex AWWA	1.5	4.7mmR	E	5757679	1
	2" IPS WB SS 5/8 Hex AWWA	1.8	4.7mmR.7	E	5757693	1
8" IPS	1-1/4" IPS WB Gas 5/8 Hex	1.5	3.0mm	H	5758332	2
	1-1/4" IPS WB Gas 5/8 Hex	1.5	Solid/4.7mm	H	5756572*	2
	2" IPS WB Gas 5/8 Hex	1.8	3.0mm	H	5758334	2
	2" IPS WB Gas 5/8 Hex	1.5	Solid/4.7mm	H	5756585*	2
	2" CTS 5/8 Hex AWWA (fab)	1.5	Solid/4.7mm	H	5754108	2
	1-1/4" IPS WB SS 5/8 Hex AWWA	1.5	4.7mmR	H	5757680	2
	2" IPS WB SS 5/8 Hex AWWA	1.8	4.7mmR	H	5757694	2
12" IPS	2" IPS WB SS 5/8 Hex AWWA	1.8	Solid/4.7mm	H	5758730*	2

*Special Lead Requirements



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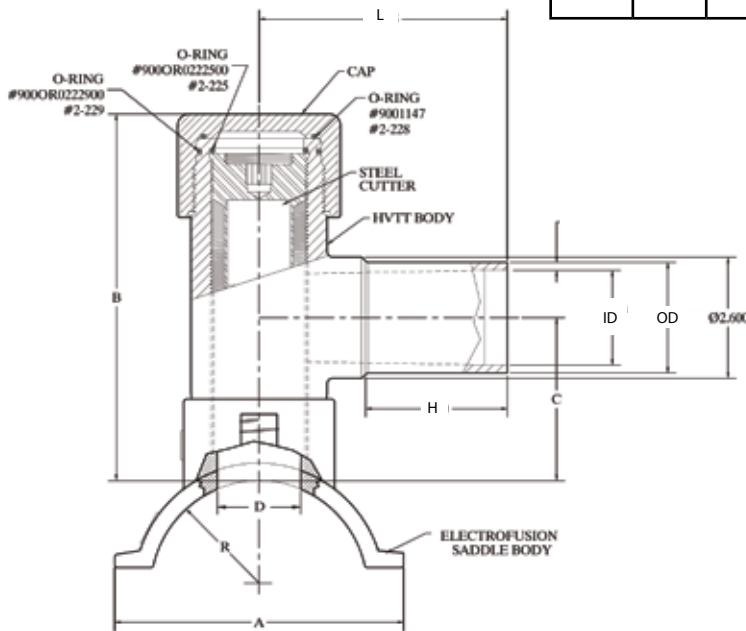
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Electrofusion Fittings High Volume Tapping Tee

Drawing 1. (Under Clamp Type) Widebody

Outlet Size	OD	ID	L	H
1 1/4" IPS	1.66	1.328	5.375	2.68
2" IPS	2.375	1.943	5.375	3.0
2" CTS	2.125	1.74	11.35	3.0



Nominal Pipe Saddle Size	Radius R	Dimension A	Dimension B	Dimension C	Dimension D
2" IPS	1.187 ± .012	3.59	6.65	3.60	1.50
3" IPS	1.750 ± .012	4.60	6.66	3.50	1.81
4" IPS	2.250 ± .012	6.26	7.27	3.50	1.81
4" DIPS	2.400 ± .012	6.26	7.27	3.50	1.81
6" IPS	3.312 ± .012	8.68	8.43	3.50	1.81
6" DIPS	3.450 ± .012	8.68	8.43	3.50	1.81

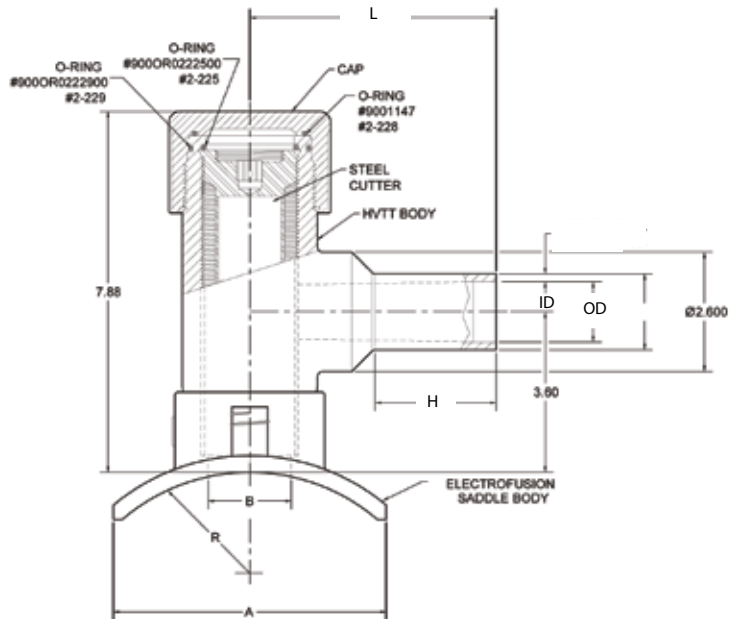
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Electrofusion Fittings High Volume Tapping Tee Drawing 2. (Top Clamp Type) Wide Body

Outlet Size	OD	ID	L	H
1 1/4" IPS	1.66	1.328	5.375	2.68
2" IPS	2.375	1.943	5.375	3.0
2" CTS	2.125	1.74	11.35	3.0



Base	Radius R	Dimension A	Dimension B
8" IPS	4.312 ± .012	5.92	1.81
8" DIPS	4.525 ± .012	6.10	1.84
10" IPS	5.375 ± .012	6.10	1.83
10" DIPS	5.550 ± .012	6.10	1.84
12" IPS	6.375 ± .012	6.10	1.83
12" DIPS	6.600 ± .012	6.10	1.90

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Transition Saddles - Brass AWWA

See the corresponding drawings on pages 214 & 215



Part #	Base x Outlet Size	Fusion Setting	Pin	Clamp Style See Page 207	Drawing Number
5757612	2" IPS x 3/4" (Fem Corp) AWWA	A	4.7mmR	B	1
5757614	3" IPS x 3/4" (Fem Corp) AWWA	A	4.7mmR	C	1
5757616	4" IPS/DIPS x 3/4" (Fem Corp) AWWA	A	4.7mmR	D/L	1
5757618	6" IPS/DIPS x 3/4" (Fem Corp) AWWA	A	4.7mmR	E/M	1
5757620	8" IPS x 3/4" (Fem Corp) AWWA	A	4.7mmR	H	1
5758725	8" DIPS x 3/4" (Fem Corp) AWWA	M	4.7mm	H	1
5758713*	10" IPS x 3/4" (Fem Corp) AWWA	M	4.7mm	H	1
5758702*	12" DIPS x 3/4" (Fem Corp) AWWA	M	4.7mm	H	1
5757622	2" IPS x 1" (Fem Corp) AWWA	A	4.7mmR	B	1
5757624	3" IPS x 1" (Fem Corp) AWWA	A	4.7mmR	C	1
5757626	4" IPS/DIPS x 1" (Fem Corp) AWWA	A	4.7mmR	D/L	1
5757528	6" IPS/DIPS x 1" (Fem Corp) AWWA	A	4.7mmR	E/M	1
5757630	8" IPS x 1" (Fem Corp) AWWA	A	4.7mmR	H	1
5758706*	8" DIPS x 1" (Fem Corp) AWWA	M	4.7mm	H	1
5758723*	10" DIPS x 1" (Fem Corp) AWWA	M	4.7mm	H	1
5758703*	12" DIPS x 1" (Fem Corp) AWWA	M	4.7mm	H	1
10001329	2" IPS x 1 1/4" (Fem Corp) AWWA	A	4.7mmR	B	1
10001330	3" IPS x 1 1/4" (Fem Corp) AWWA	A	4.7mmR	C	1
5758290	4" IPS/DIPS x 1-1/4" (Fem Corp) AWWA	A	4.7mmR	D/L	1
10001331	6" IPS/DIPS x 1 1/4" (Fem Corp) AWWA	A	4.7mmR	E/M	1
5758293	2" IPS x 1-1/2" (Fem Corp) AWWA	A	4.7mmR	B	1
5758294	3" IPS x 1-1/2" (Fem Corp) AWWA	A	4.7mmR	C	1
5758295	4" IPS/DIPS x 1-1/2" (Fem Corp) AWWA	A	4.7mmR	D/L	1
5758296	6" IPS/DIPS x 1-1/2" (Fem Corp) AWWA	A	4.7mmR	E/M	1
5758297	8" IPS x 1-1/2" (Fem Corp) AWWA	A	4.7mmR	H	1
5758704*	12" IPS/DIPS x 1-1/2" (Fem Corp) AWWA	M	4.7mm	H	1
5758715	4" IPS/DIPS x 2" (Fem Corp) AWWA	A	3.0mm	D/L	2
5758727	6" IPS/DIPS x 2" (Fem Corp) AWWA	A	4.7mmR	E/M	2
5758717*	8" DIPS x 2" (Fem Corp) AWWA	M	4.7mm	H	2
5758729	8" IPS x 2" (Fem Corp) AWWA	A	4.7mmR	H	2
5758711*	10" IPS x 2" (Fem Corp) AWWA	M	4.7mm	H	2
5758705*	12" DIPS x 2" (Fem Corp) AWWA	M	4.7mm	H	2

A=Automatic Identification for Fusion Time. M=Manual Setting or Bar Code Setting.

* Special Lead Requirements.



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Transition Saddles - Brass ANSI

See the corresponding drawings
on pages 214 & 215



Part #	Base x Outlet Size	Pin	Fusion Time Setting	Clamp Style	Drawing Number
5757572	2" IPS x 3/4" (FPT) AWWA	4.7mmR	A	B	1
5757574	3" IPS x 3/4" (FPT) AWWA	4.7mmR	A	C	1
5757576	4" IPS x 3/4" (FPT) AWWA	4.7mmR	A	D/L	1
5757578	6" IPS x 3/4" (FPT) AWWA	4.7mmR	A	E/M	1
5757580	8" IPS x 3/4" (FPT) AWWA	4.7mmR	A	H	1
5758725	8" DIPS x 3/4" (FPT) AWWA	4.7mm	M	H	1
5758716*	10" IPS x 3/4" (FPT) AWWA	4.7mm	M	H	1
5757582	2" IPS x 1" (FPT) AWWA	4.7mmR	A	B	1
5757584	3" IPS x 1" (FPT) AWWA	4.7mmR	A	C	1
5757586	4" IPS/DIPS x 1" (FPT) AWWA	4.7mmR	A	D/L	1
5757588	6" IPS/DIPS x 1" (FPT) AWWA	4.7mmR	A	E/M	1
5757590	8" IPS x 1" (FPT) AWWA	4.7mmR	A	H	1
5758718	8" DIPS x 1" (FPT) AWWA	4.7mm	M	H	1
5758714*	10" IPS x 1" (FPT) AWWA	4.7mm	M	H	1
5758722*	10" DIPS x 1" (FPT) AWWA	4.7mm	M	H	1
5758721*	12" IPS x 1" (FPT) AWWA	4.7mm	M	H	1
5757592	2" IPS x 1-1/4" (FPT) AWWA	4.7mmR	A	B	1
5757594	3" IPS x 1-1/4" (FPT) AWWA	4.7mmR	A	C	1
5757596	4" IPS/DIPS x 1-1/4" (FPT) AWWA	4.7mmR	A	D/L	1
5757598	6" IPS/DIPS x 1-1/4" (FPT) AWWA	4.7mmR	A	E/M	1
5757600	8" IPS x 1-1/4" (FPT) AWWA	4.7mmR	A	H	1
5757602	2" IPS x 1-1/2" (FPT) AWWA	4.7mmR	A	B	1
5757604	3" IPS x 1-1/2" (FPT) AWWA	4.7mmR	A	C	1
5757606	4" IPS/DIPS x 1-1/2" (FPT) AWWA	4.7mmR	A	D/L	1
5757608	6" IPS/DIPS x 1-1/2" (FPT) AWWA	4.7mmR	A	E/M	1
5757610	8" IPS x 1-1/2" (FPT) AWWA	4.7mmR	A	H	1
5758719	8" DIPS x 1-1/2" (FPT) AWWA	4.7mm	M	H	1
5758712*	10" IPS x 1-1/2" (FPT) AWWA	4.7mm	M	H	1
5758708*	10" DIPS x 1-1/2" (FPT) AWWA	4.7mm	M	H	1
5758697	4" IPS x 2" (FPT) AWWA	3.0mm	A	D/L	2
5758726	6" IPS/DIPS x 2" (FPT) AWWA	4.7mmR	A	E/M	2
5758720	8" IPS x 2" (FPT) AWWA	4.7mm	M	H	2
5758725	8" IPS x 2" (FPT) AWWA	4.7mmR	A	H	2
5758698*	12" IPS x 2" (FPT) AWWA	4.7mm	M	H	2

A=Automatic Identification for Fusion Time. M=Manual Setting or Bar Code Setting.
* Special Lead Requirements.

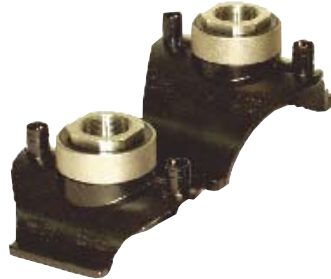
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Transition Saddles Stainless Steel ANSI

See the corresponding drawings on pages 214 & 215



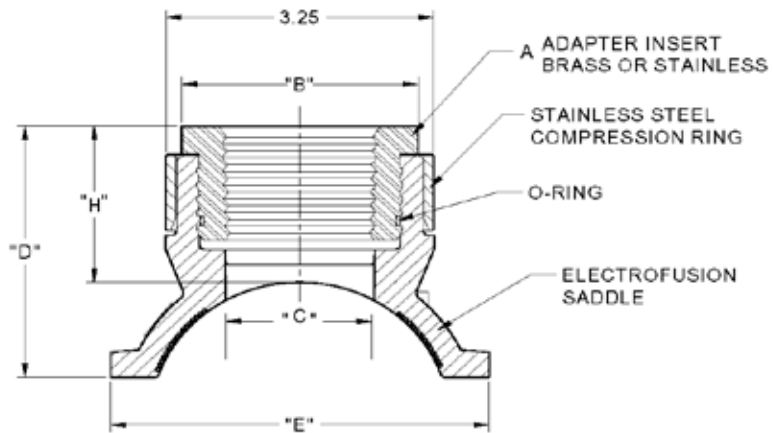
Base x Outlet Size	Part #	Fusion Setting	Pin	Clamp Style See Page 207	Drawing Number
2" IPS x 3/4" (FPT)	5757571	A	4.7mmR	B	1
3" IPS x 3/4" (FPT)	5757573	A	4.7mmR	C	1
4" IPS/DIPS x 3/4" (FPT)	5757575	A	4.7mmR	D/L	1
6" IPS/DIPS x 3/4" (FPT)	5757577	A	4.7mmR	E/M	1
8" IPS x 3/4" (FPT)	5757579	A	4.7mmR	H	1
8" DIPS x 3/4" (FPT)	5758699*	M	4.7mm	H	1
10" IPS x 3/4" (FPT)	5758701*	M	4.7mm	H	1
2" IPS x 1" (FPT)	5757581	A	4.7mmR	B	1
3" IPS x 1" (FPT)	5757583	A	4.7mmR	C	1
4" IPS/DIPS x 1" (FPT)	5757585	A	4.7mmR	D/L	1
6" IPS/DIPS x 1" (FPT)	5757586	A	4.7mmR	E/M	1
8" IPS x 1" (FPT)	5757589	A	4.7mmR	H	1
2" IPS x 1-1/4" (FPT)	5757591	A	4.7mmR	B	1
3" IPS x 1-1/4" (FPT)	5757593	A	4.7mmR	C	1
4" IPS/DIPS x 1-1/4" (FPT)	5757595	A	4.7mmR	D/L	1
6" IPS/DIPS x 1-1/4" (FPT)	5757597	A	4.7mmR	E/M	1
8" IPS x 1-1/4" (FPT)	5757599	A	4.7mmR	H	1
2" IPS x 1-1/2" (FPT)	5757601	A	4.7mmR	B	1
3" IPS x 1-1/2" (FPT)	5757603	A	4.7mmR	C	1
4" IPS/DIPS x 1-1/2" (FPT)	5757605	A	4.7mmR	D/L	1
6" IPS/DIPS x 1-1/2" (FPT)	5757607	A	4.7mmR	E/M	1
8" IPS x 1-1/2" (FPT)	5757609	A	4.7mmR	H	1

A=Automatic Identification for Fusion Time. M=Manual Setting or Bar Code Setting.

* Special Lead Requirements.



Transition Saddle Drawing 1: 3/4" to 1-1/2" Outlet



Nom. Pipe Saddle Size	Diameter C	Dimension D	Dimension E	Dimension H
2 IPS	1.50	3.18	3.59	2.06
3 IPS	1.81	3.18	4.60	2.06
4 IPS/DIPS	1.81	3.80	6.26	2.06
6 IPS	1.81	4.96	8.68	2.06
6 DIPS	1.81	4.96	8.68	2.06
8 IPS	1.81	N/A	5.92	1.94
8 DIPS	1.84	N/A	6.10	1.94
10 IPS	1.83	N/A	6.10	2.44
10 DIPS	1.84	N/A	6.10	2.21
12 IPS	1.83	N/A	6.10	2.39
12 DIPS	1.90	N/A	6.10	2.38

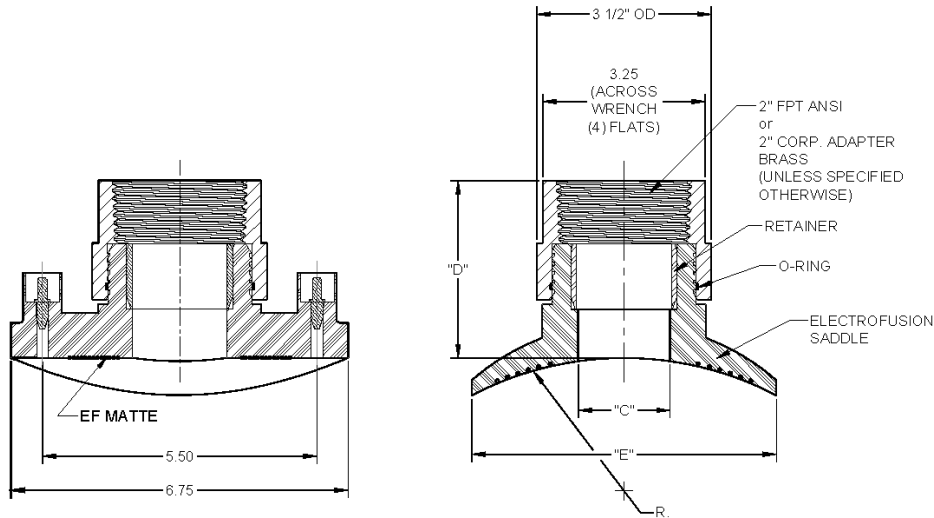
A Threaded Insert	B Diameter	Quality Standard
3/4" FPT	2.50	ANSI B1.20.1
1" FPT	2.50	ANSI B1.20.1
1-1/2" FPT	2.88	ANSI B1.20.1
3/4" Corp. Thd.	2.50	AWWA C800
1" Corp. Thd.	2.50	AWWA C800
1-1/4" Corp. Thd.	2.63	AWWA C800
1-1/2" Corp. Thd.	2.88	AWWA C800

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Transition Saddle Drawing 2: 2" Outlets



Nom. Pipe Saddle Size	Radius R	Diameter C	Dimension D	Dimension E
2 IPS	N/A	1.50	3.0	3.59
3 IPS	N/A	1.81	3.0	4.60
4 IPS/DIPS	N/A	1.81	3.0	6.26
6 IPS/DIPS	N/A	1.81	3.0	8.68
8 IPS	4.312 ±.012	1.81	2.96	5.92
8 DIPS	4.525 ±.012	1.84	3.10	6.10
10 IPS	5.375 ±.012	1.83	3.34	6.10
10 DIPS	5.550 ±.012	1.84	3.38	6.10
12 IPS	6.375 ±.012	1.83	3.52	6.10
12 DIPS	6.600 ±.012	1.90	3.54	6.10

A Threaded Insert	Quality Standard
2" FPT	ANSI B.1.201
2" Corp. Thd.	AWWA C800

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Bar Code Processor



The Central Bar Code Processor is available with roll cage (as shown above) or in suitcase. The dimensions and weight are provided below:

Roll Cage, weight	46.5 lbs
Dimensions	9.8" x 14.2" x 17.7"
Suitcase Model, weight	56.5 lbs
Dimensions	11.5" x 21.0" x 24.5"

Primary Voltage	115/230 +/- 15% (220 VAC unit available)
Frequency	50-60 Hertz
Second Voltage	8 - 48 VRMS
Voltage Accuracy	+/- 1.5%
Current Accuracy	+/- 3%
Ohmic Accuracy	+/- 5%
Ambient Temperature	+ 5.4 degrees Fahrenheit
Generator Requirements	5.0 KVA preferred
Inverts	can be used
Operating Temperatures	-10 degrees Fahrenheit to 120 degrees Fahrenheit
Extension Cord Lengths	25 ft. use #10/3 , 50 ft. use #8/3

Part Number	Description
5900037	Bar Code Processor with 15" Barcode Leads-No Tips/ No CP Dedicated Leads (Roll Cage)
5900061	Bar Code Processor with 14" Barcode Leads and molded case - no tips
5900010	Model U "Universal Processor" w/25' leads (not shown)

Features

- Three fusion modes: Barcode, Manual, Dedicated
- Four modes of operator fusion data traceability
- Two download capabilities available
- Bayonet style tips allows you to use other manufacturers fittings quickly and simply.

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“Boss” Electrofusion (Battery Operated Service System)



Make electrofusion welds in remote areas without a generator!

Features:

- No additional power supply required
- Recharges in less than 8 hours
- Makes over 250 1/2” CTS fusions per charge
- Makes two 4” welds per charge
- Two modes of operation
 - Central plastic mode
 - manual mode
- Back-lit 20 character display
- One year warranty

Size	18.5” x 14.6” x 7.5”
Weight	Approx. 45 lbs.
Operating Temperature Range	0 degrees F to 120 F
Output Cable Length (3-pin)	12 feet
Battery Life	2 yrs. typ. (300-600 cycles)
Power Source	Internal Batteries (*8-AH)
Recharge Time	Less than 8 hr. full; 40% Charge in 1 hr.
Maximum Out Current	30 amps
Output Voltage	10 to 40 V. +1.5% not more than +2%
Operation Modes	Central Mode, Manual Mode
Environmental Protection	IP54 Splash-proof
Calibration Interval	1 Year

Part Number	Description
5900088	BOSS Battery Processor w/12” 3 Pin Leads



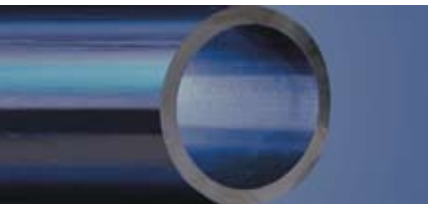
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Estimated Fusions Per Charge Cycle

Fitting Type	Description	Fusion Time, second	Number of welds
HVTT	2x2	90	36
	4x2	60	33
	8x2	100	40
Br. Saddle	2x2	90	36
	3x2	60	33
	4x2	60	33
	6x2	60	33
	8x2	100	40
TT	1.25"x .5" CTS	45	171
	1.25"x 1" CTS	45	156
	1.5"x 1" IPS	50	55
	2"x 1" IPS	90	36
	8"x 1" IPS	60	35
Couplings	.5"CTS	20	273
	.5" IPS	20	176
	.75" IPS	30	75
	1" CTS	25	83
	1" IPS	45	73
	1.25" IPS	45	41
	2" IPS	45	11
	3" IPS	180	3
Reducers	1" x .75" IPS	230	77
	1" IPS x .5" CTS	25	73
	1" IPS x 1" CTS	30	76
	1.25" IPS x 1" CTS	30	75



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Electrofusion Accessories

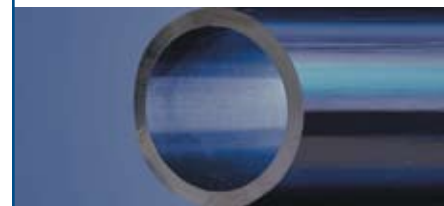
Part Number	Description
9000643	Power Adapter (Pigtail)
5750375	CP Download Software and Cables
5751579	Sauron Download Software (GETRS)
5900072	WINCPF Software 3 1/2" Disks (3 Disk Set) w/ Documentation
5751036	External Memory Reader (EMR)
5751035	"Galet" External Memory Device For Bar Code Unit
5751528	Printer Serial For Sauron Processor
5750363	Interface Cable For Downloading Models C and U
5900102	Charging Power Cord for BOSS Processor

Leads

Part Number	Description
5750324	25" CP Dedicated Leads (New)
5900004	Universal Leads w/o Tips
5900003	Universal Leads w/ Universal Tip Kit (3.0mm, 4.0mm and 4.7mm)
5900034	14' Bar Code Leads w/Reader
5900035	25' Bar Code Leads w/Reader
5900019	Bar Code Reader (Wand)
5900098	12" BOSS Dedicated 3.0mm Pin Leads

Tips

Part Number	Description	Tip Size
5900005	Universal Tip Kit	3.0mm, 4.0mm, and 4.7mm Pin
5900007	Innogaz and Friatec	4.0mm(Pair)
5751016	Innogaz and Friatec	4.0mm(Singles)
5900096	Central and Uponor	4.7mm(Pair)
5900095	Central and Uponor	4.7mm(Singles)
5900008	George Fisher	(Pair)
5751017	George Fisher	(Singles)
5900009	Friatec	Bifilar Cable (Pair)
5751018	Friatec	Bifilar Cable (Singles)
5900028	Central Plastics	3.0mm(Pair)
5751012	Central Plastics	3.0mm (Singles)
5900093	Connector Tip Set	Friatec 4.0mm to Central 4.7mm Pin
5900101	Connector Tip Set	Set - CP 3 Pin to 4.7mm Pin
5751078	Fusion Cable Adapter Kit	Connects CP Dedicated Leads to 4.7mm Pin
5900099	Single Connector	Single Tip - CP 3 Pin to 4.7mm Single Pin
5900100	Single Connector	Single Tip - CP 1 Pin 3.0mm to 4.7mm Single Pin
5751078	Fusion Cable Adapter Kit	Connects CP Dedicated Leads to 4.7mm Pin



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Scrapers



Molded



Pencil

Part Number	Size	Type
5752159	1/2" CTS	Pencil
5752124	1/2" IPS	Pencil
5752249	3/4" CTS (Use w/2406 Pipe Only)	Pencil
5752241	3/4" CTS (Use w/3406 Pipe Only)	Pencil
5752125	3/4" IPS	Pencil
5752126	1" CTS	Pencil
5752127	1" IPS	Pencil
5752128	1-1/4" CTS	Pencil
5752143	1-1/4" IPS	Pencil
5752139	1-1/2" IPS	Pencil
5752092	2" CTS	Pencil
5752270	2" CTS	Aluminum
572142	2" IPS(Use w/molded ftgs only)	Pencil
5752120	1-1/4" IPS	Molded
5752118	2" IPS	Molded
5752122	3" IPS	Molded
5752119	4" IPS	Molded
5750127	6" IPS	Aluminum
5750012	3"-8"	Universal
5752278	2"-6" IPS/DIPS (50mm - 160mm)	Ritmo
5752206	3"-12" IPS/DIPS	Ritmo
5752252	12"-24" IPS/DIPS	Friatec
5752150	Red Devil #3050 or Equal	Knife

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Electrofusion Clamping Device



T-Clamp



Top Load Clamp

Part Number	Size	Type	Letter
5750014	1-1/4" IPS	Under Clamp	A
5750019	1-1/2" IPS	Under Clamp	AA
5752093	2" CTS	Under Clamp	AB
5750862	2" IPS	Under Clamp	B
5750863	3" IPS	Under Clamp	C
5750864	4" IPS	Under Clamp	D
5751656	4" DIPS	Under Clamp	L
5750865	6" IPS	Under Clamp	E
5751644	6" DIPS	Under Clamp	M
5001063	4" x 4"	Under Clamp	F
5001080	6" x 4"	Under Clamp	G
5752078	8" - 12" IPS & Larger	Top Load Clamp	H
5752277	8" IPS thru 12" DIPS	Top Load Clamp	
5750666	Tap Tee Service Adapter	Top Load Clamp	
5750667	HVTT Fitting Adapter	Top Load Clamp	
5750667	Branch Saddle Adapter	Top Load Clamp	
5758320	WBHVT Fitting Adapter	Top Load Clamp	
5758320	Corp Saddle Fitting Adapter	Top Load Clamp	
5750924	2" IPS Outlets	T-Clamp	I
5750925	4" PSM & 4" IPS Outlets	T-Clamp	J
5750926	6" IPS, 6" PSM, 8" IPS Outlets	T-Clamp	K
9001287	For Use With Sewer Saddle/Flex Restraint Fittings	Ratchet Strap	N



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Reducer Clamps

Part Number	Size	Type
5752011	3/4" IPS x 1/2" CTS	Reducer Clamp
5752010	1" IPS x 1/2" CTS	Reducer Clamp
5752009	1" IPS x 1/2" CTS	Reducer Clamp
5752008	1" IPS x 3/4" CTS	Reducer Clamp
5752007	1" IPS x 1" CTS	Reducer Clamp
5752040	1-1/4" CTS x 1"IPS	Reducer Clamp
5752043	1-1/4" IPS x 1"IPS	Reducer Clamp
5752052	1/2" CTS, 1/2"IPS, 3/4" IPS, 1" CTS, 1" IPS	Multi-Mini
5752053	1" IPS, 1-1/4" IPS, 1-1/2"IPS, 2"IPS	Multi-Mini
5750350	2" IPS, 3" IPS, 4" IPS	Multi-Clamp Kit

Accessories



Part Number	Description
5750007	Standard punch tool for tapping tees
5750202	High volume punch tool old style HVTT
5758000	WBHVTT punch tool 5/8" hex blow-by restricter
5751907	WBHVTT punch tool 5/8" hex heavy duty w/ 18" handle
5758111*	WBHVTT punch tool 3/4" sq. ratchet drive x 5/8" hex blow-by restricter
9001304*	Ratchet wrench with 3/4" square female open end socket
6920338	Standard tapping tee test cap
6920980	Standard tapping tee test cap with 1/8 NPT male "new style"
5750320	High volume test cap FMT 1/4"
5758595	Wide body high volume tapping tees test cap with 1/8 NPT male "new style"



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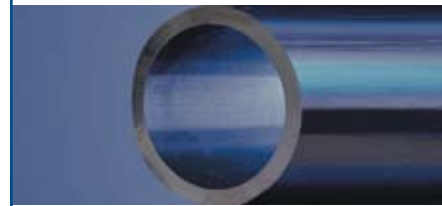
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Coupling Clamps



Part Number	Size	Type
5752006	1/2" CTS	Mini
5752005	1/2" IPS	Mini
5752244	3/4" CTS	Mini
5752004	3/4" IPS	Mini
5752003	1" CTS	Mini
5752002	1" IPS	Mini
5752273	1-1/4" CTS	Locking Plier Style
5752001	1-1/4" IPS	Locking Plier Style
5752097	1-1/2" IPS Wide Body Style	Locking Plier Style
5752098	2" IPS Wide Body Style	Locking Plier Style



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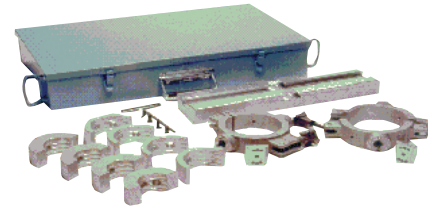
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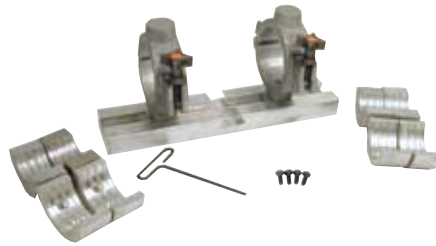
Clamp Kits & Liners



Multi-Mini



Multi-Clamp Kit Liner



Multi-Clamp



Mega Clamp Kit

Part Number	Size	Type
5752052	1/2" CTS, 1/2" IPS, 3/4" IPS, 1" CTS, 1" IPS	Multi-Mini
5752053	1" IPS, 1-1/4" IPS, 1-1/2" IPS, 2" IPS	Multi-Mini
5750350	2" IPS, 3" IPS, 4" IPS	Multi-Clamp Kit
5752080	6" IPS - 14" IPS	Mega Clamp Kit
5750048	8" IPS	Pipe Clamp Kit
5750263	4" IPS x 1-1/4" IPS	Multi-Clamp Kit Liner
5750297	4" IPS x 1-1/2" IPS	Multi-Clamp Kit Liner
5750371	4" IPS x 2-1/2" IPS	Multi-Clamp Kit Liner
5750066	"6" IPS (Set of 2 Clamps Only)	Pipe Clamp Kit
5752081	"4" DIPS (Set of 2 Clamps Only)	Pipe Clamp Kit
5752082	"6" DIPS (Set of 2 Clamps Only)	Pipe Clamp Kit
5750066	"6" IPS (Set of 2 Clamps Only)	Pipe Clamp Kit
5750262	*Dovetail Connecting Bar Kit	Pipe Clamp Kit
5750309	*Dovetail Tee Bar Set	Pipe Clamp Kit
5750348	Dovetail Slide Base (Multi Clamp Base)	Pipe Clamp Kit
5750049	Dovetail Slide Base (4 ft. Long)	Pipe Clamp Kit

*Does not include base. Items can be used with Multi Clamp Base or Part Number 5750348.

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Mechanical Couplings for HDPE Pipe

In situations requiring HDPE connections to other materials, there are many mechanical “couplings” available, some of which also connect HDPE to HDPE pipe. Care must be taken in selecting mechanical couplings that work well with HDPE pipe in each application. Pipe size, pressure, temperature, and type of mating material influence the mechanical fitting selection. Also, the requirements of a buried system are different from those of above ground piping systems.

Many manufacturers of mechanical connection fittings state that fusion joining is the preferred connection method and recommend mechanical fittings only when fusion options are not available. Not all couplings in the marketplace work well with polyethylene pipe. Couplings designed for rigid piping materials may not properly seal since HDPE is a flexible material. When stress is applied to HDPE pipe, HDPE “creeps” away (cold flow of material) from the applied force as a stress relieving method, a property that works against standard coupling design. Another related issue is toe-in, where the end of HDPE may neck down after cutting. Consequently, many coupling manufacturers require internal stiffeners (shown on next page), typically made of stainless steel, at cut pipe ends to prevent creep and toe-in. Additionally, HDPE has a lower coefficient of friction which makes gripping the outside of pipe more difficult than other materials.

Those properties would not be as critical if the rate of expansion/contraction of HDPE was not larger than most piping materials. When HDPE is exposed to large thermal variations, it is prone to expand and contract greater than some mechanical fittings can handle. (Expansion joints are not capable of withstanding the range of motion that is expected and are hardly effective in an HDPE system with or without mechanical fittings). Some couplings must be restrained so as not to pull, slide, or twist from the mechanical fitting, or the operating temperature of the pipe/coupling system must be limited. At times, both are factored in the design and/or the coupling is limited to below ground use since temperatures are steady and soil provides some restraint.

Mechanical couplings and repair clamps should be considered as differently functioning piping components. As with other materials, a mechanical coupling is better suited to join two separate pipe ends. A repair clamp is typically designed for repair of holes, cracks, splits, or punctures in a joined piping system. Since HDPE is superior to other materials in resisting stress crack propagation, clamps are successfully used to stop leaks. Often repair clamps are used in a temporary setting until it is convenient to make a fusion repair or replacement of the damaged section of pipe.

Mechanical fittings designed to use set screws or drive bolts into the wall of the pipe, such as Megalug or similar, are not intended for HDPE pipe. While they may be used on the mating end of a dissimilar pipe material, HDPE does not resist the point loading that these couplings are designed to apply. Couplings or clamps that compress equally around the circumference of HDPE pipe are preferred.

To make a HDPE fusion connection (butt, socket, sidewall, or electrofusion), you must have a clean, dry environment. Mechanical couplings are used to make repairs on HDPE pipes in wet areas, where electrical power is unavailable or access is restricted, volatile, or otherwise impossible. Keep in mind that since HDPE pipe is flexible, it might be raised enough from



Mechanical Connectors

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Internal Stiffener being installed.

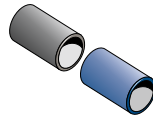
the trench bottom to fuse a flange on the end of the HDPE pipe. After flanges are attached to the two HDPE pipe ends, a spool with flange ends is made to the proper length to connect the pipes in the trench.

When joining HDPE pipe or fittings to other materials, fusion of flanges, mechanical joint adapters or transition fittings to the HDPE end is often an overlooked option. The mating material's flange can then be connected with a mechanical coupling, if required, to the plain-end of the other material. This may be a more reliable connection in some cases. Mechanical end connectors are available in a limited size range for use with HDPE pipe. These flange faces(or threaded adapters) are designed to compress around the pipe end. This provides another means of making repairs or connections to existing pipelines when fusion is not an option.

A procedure for selecting the proper coupling per the application is outlined below. It is designed toward selecting the best fitting available for your application. They are listed by function or style.

For connections of plain end HDPE pipe to itself or another piping material:

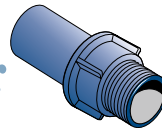
Coupling



HDPE	Page 228, 229
PVC	Page 229
Ductile Iron / Cast Iron	Page 230
Steel / Stainless Steel	Page 231
Concrete / Asbestos Cement / Clay	Page 232
Corrugated PE	Page 233

For adding a boltable or threaded end to HDPE for connection to another pipe, fitting or valve:

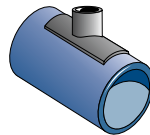
End Connector



Threaded End	Page 234
Flange End	Page 234
MJ End	Page 234
Cap End	Page 234

For mechanically adding a connection means for a new branch (service) line to an existing HDPE Pipe:

Service Saddle Tapping Sleeve



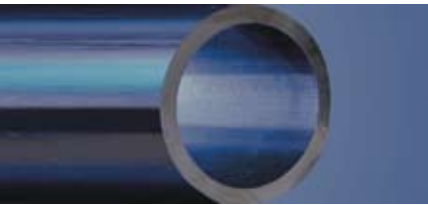
Threaded Outlet	Page 235
Flanged Outlet	Page 235
MJ Outlet	Page 235
Plain End Outlet	Page 235

For repairing a damaged or leaking pipe:

Repair Clamp



Repair Clamp	Page 236
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Mechanical Connectors

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HDPE To HDPE Couplings - IPS



- 1. Corrosion resistant plastic coupling for small diameter.
- 2. Standard Coupling: requires no restraint, no internal stiffeners
flow contacts EDPM / Nitrile Gasket
external: enamel standard (galvanized & zinc electroplated optional)above and below ground use
- 3. Restricted Use Coupling: requires pipe restraint, internal stiffeners
temperature range limited(35-80 degrees fahrenheit)
below ground use only
external: steel and ductile parts standard(SS optional)
flow contacts gasket Nitrile (Buna N) or SBR(Buna S) Standard
- 4. Flexible Pipe Connectors for gravity and DWV applications
- 5. Engineered Coupling: designed per application
- 6. Snap-Tite®/Buttress LOK: Gravity Relining applications

Pipe Size	Style					
	1	2	3	4	5	6
3/4"	X		X	X		
1"	X		X	X		
1.5"	X		X	X		
2"	X	X	X	X		
3"	X	X	X	X		X
4"		X	X	X		X
6"		X	X	X		X
8"		X	X	X		X
10"		X	X	X		X
12"		X	X	X		X
14"		X	X	X		X
16"		X	X	X	X	X
18"		X	X	X	X	X
20"		X	X	X	X	X
22"			X	X	X	X
24"			X	X	X	X
26"			X		X	X
28"			X		X	X
30"			X		X	X
32"			X		X	X
34"			X		X	X
36"			X		X	X
40"					X	X
42"					X	X
48"					X	X
54"					X	X
63"					X	X

Mechanical Connectors

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HDPE To HDPE Couplings - DIPS



3.



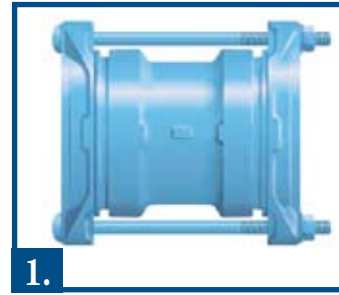
4.



5.



2.



1.

- 1. Standard Coupling: requires no restraint, no internal stiffeners
above and below ground use
DR 9 to DR 17 for full pressure rating
ductile body-flow contacts Buna N gasket
- 2. Restricted Use Coupling: requires pipe restraint, internal stiffeners
temperature range limited(35-80 degrees Fahrenheit)
below ground use only
external: steel and ductile parts standard(SS optional)
flow contacts gasket Nitrile (Buna N) or SBR(Buna S) Standard
- 3. Flexible Pipe Connectors for gravity and DWV applications
- 4. Engineered Coupling: designed per application
- 5. Snap-Tite/Buttress-Loc®: Gravity relining applications

Pipe Size	Style				
	1	2	3	4	5
4"	X	X	X		X
6"	X	X	X		X
8"	X	X	X		X
10"	X	X	X		X
12"	X	X	X		X
14"		X	X	X	X
16"		X	X	X	X
18"		X	X	X	X
20"		X	X	X	X
24"		X		X	X
30"		X		X	X

Mechanical Connectors

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ISCO HDPE Product Catalog

HDPE To PVC Couplings



1.

1. Standard Coupling to IPS PVC:
 IPS is DR 26,21,17,13.5,12.4 and schedule 40 or 80

Requires no restraint, no internal stiffeners
 Flow contracts nitrile gasket
 External Enamel Coating
 above and below ground use

2. Standard Couplings to C900 PVC:

Requires no restraint, no internal stiffeners for HDPE above and below ground use
 DR 9 to DR17 for full pressure rating
 ductile body-flow contacts Buna N gasket

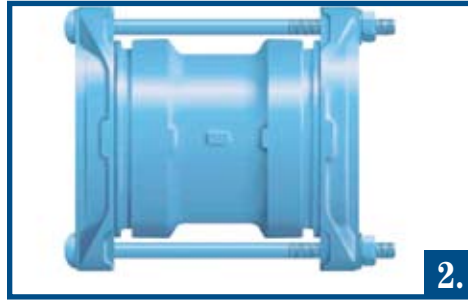
3. Restricted Use Couplings:
 A= IPS Sizes Only
 B= IPS & C900 Sizes Avail.
 C= C905 Sizes Only

Requires pipe restraint, internal stiffeners for HDPE
 temperature range limited(35-80 degrees Fahrenheit)
 below ground use only
 external options: steel and ductile parts standard/ss
 flow contacts gasket Nitrile (Buna N) or SBR(Buna S) Standard
 For gravity and DWV applications

4. Flexible Pipe Connectors for IPS, C900, and Sewer & Drain (DR 41, 35 &26) OD

Designed Per Application

5. Engineered Coupling:



2.



3.



4.



5.

IPS

Pipe Size	Style				
	1	2	3	4	5
3/4"			A	X	
1"			A	X	
1.5"			A	X	
2"	X		B	X	
3"	X		B	X	
4"	X		B	X	
6"	X		B	X	
8"	X		B	X	
10"			B	X	
12"			B	X	
14"			A	X	
16"			A	X	
18"			A	X	X
20"			A	X	X
22"			A	X	X
24"			A	X	X
26"			A		X
28"			A		X
30"			A		X
32"			A		X
34"			A		X
36"			A		X

DIPS

Pipe Size	Style				
	1	2	3	4	5
4"		X	B	X	
6"		X	B	X	
8"		X	B	X	
10"		X	B	X	
12"		X	B	X	
14"			C	X	X
16"			C	X	X
18"			C	X	X
20"			C	X	X
24"			C	X	X
30"					X



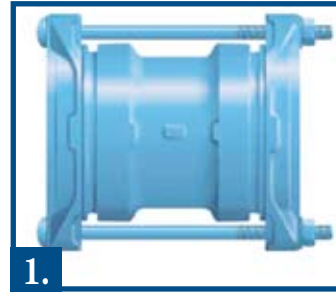
Mechanical Connectors

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HDPE To Ductile / Cast Iron Coupling



1. Standard Coupling:

Requires no restraint, no internal stiffeners above and below ground use
DR 9 to DR 17 for full pressure rating

2. Restricted use coupling:

Ductile Body-Flow Contacts Buna N Gasket
requires pipe restraint, internal stiffeners for HDPE
temperature range limited(35-80 degree fahrenheit)
below ground use only

3. Flexible Pipe Connectors:

External: Steel and Ductile Parts Standard (SS Optional)

4. Engineered Coupling:

Flow Contacts Gasket: Nitrile(Buna N) or SBR(Buna S) Standard
For gravity and DWV applications
designed per application

IPS

Pipe Size	Style			
	1	2	3	4
3/4"				
1"				
1.5"				
2"	X	X	X	
3"		X	X	
4"	X	X	X	
6"	X	X	X	
8"		X	X	
10"		X	X	
12"		X	X	
14"			X	X
16"			X	X
18"			X	X
20"			X	X
22"			X	X
24"			X	X
26"				X
28"				X
30"				X
32"				X
34"				X
36"				X

DIPS

Pipe Size	Style			
	1	2	3	4
4"	X	X	X	
6"	X	X	X	
8"	X	X	X	
10"	X	X	X	
12"	X	X	X	
14"		X	X	X
16"		X	X	X
18"		X	X	X
20"		X	X	X
24"		X		X
30"		X		X

**Chart applies to Class 100-250 AWWA Cast Iron Pipe

Mechanical Connectors

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HDPE To Steel / Stainless Steel Couplings



1. Standard Coupling
to cut groove end steel:

2. Restricted use coupling
to standard pipe:

3. Flexible Pipe Connectors
4. Engineered Coupling:

Requires no restraint, no internal stiffeners
flow contacts gasket (EPDM/Nitrile)
external: enamel standard (galvanized & zinc electroplated optional)
Above and below ground use
requires pipe restraint, internal stiffeners for HDPE
temperature range limited (35-80 degree fahrenheit)
below ground use only
external: steel and ductile parts standard (SS optional)
flow contacts gasket Nitrile (Buna N) or SBR (Buna S) Standard
for gravity and DWV applications
designed per application

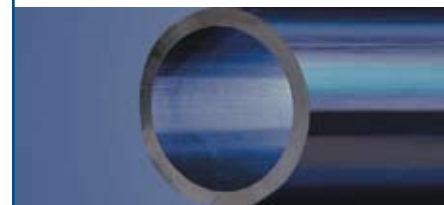
IPS

Pipe Size	Style			
	1	2	3	4
3/4"			X	
1"			X	
1.5"		X	X	
2"	X	X	X	
3"	X	X	X	
4"	X	X	X	
6"	X	X	X	
8"	X	X	X	
10"	X	X	X	
12"	X	X	X	
14"		X	X	X
16"		X	X	X
18"		X	X	X
20"		X	X	X
22"		X	X	X
24"		X	X	X
26"		X		X
28"		X		X
30"		X		X
32"		X		X
34"		X		X
36"		X		X

DIPS

Pipe Size	Style			
	1	2	3	4
4"		X	X	
6"		X	X	
8"		X	X	
10"		X	X	
12"		X	X	
14"			X	X
16"			X	X
18"			X	X
20"			X	X
24"			X	X
30"			X	X

**Engineered Couplings Available larger than 36" if required.

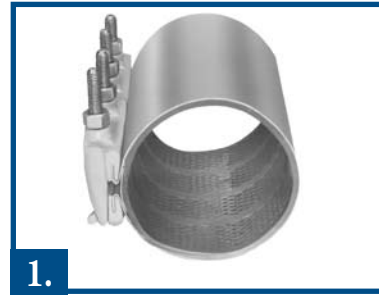


Mechanical Connectors

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HDPE To Concrete / Asbestos Cement / Clay Couplings



1. Restricted Use Couplings:

Requires pipe restraint, internal stiffeners for HDPE
 temperature range limited(35-80 degree fahrenheit)
 below ground use only
 external:steel and ductile parts standard(SS optional)
 flow contacts gasket Nitrile(Buna N) or SBR(Buna S) Standard
 For gravity and DWV applications
 designed per application

2. Flexible Pipe Connectors

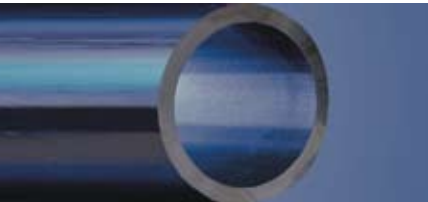
3. Engineered Coupling:

IPS

Pipe Size	Style		
	1	2	3
3/4"			
1"			
1.5"			
2"			
3"	X	X	
4"	X	X	
6"	X	X	
8"	X	X	
10"	X	X	
12"	X	X	X
14"		X	X
16"		X	X
18"		X	X
20"		X	X
22"		X	X
24"		X	X
26"			X
28"			X
30"			X
32"			X
34"			X
36"			X
40"			X
42"			X
48"			X
54"			X
63"			X

DIPS

Pipe Size	Style		
	1	2	3
4"	X	X	
6"	X	X	
8"	X	X	
10"	X	X	
12"	X	X	X
14"		X	X
16"		X	X
18"		X	X
20"		X	X
24"		X	X
30"		X	X



Mechanical Connectors

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HDPE To Corrugated PE Coupling



1. Flexible Pipe Connectors:

For Gravity and DWV Applications

2. Fabricated Coupling:

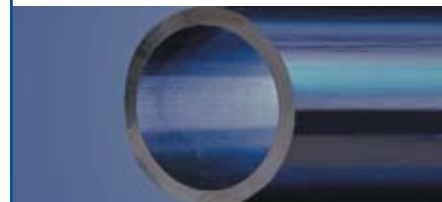
Designed per application requires fusion or mechanical connections to HDPE side

IPS

Pipe Size	Style	
	1	2
3/4"		
1"		
1.5"		
2"		
3"		
4"	X	X
6"	X	X
8"	X	X
10"	X	X
12"	X	X
14"	X	X
16"	X	X
18"	X	X
20"	X	X
22"	X	X
24"	X	X
26"		
28"		
30"		
32"		
34"		
36"		

DIPS

Pipe Size	Style	
	1	2
4"	X	X
6"	X	X
8"	X	X
10"	X	X
12"	X	X
14"	X	X
16"	X	X
18"	X	X
20"	X	X
24"	X	X
30"		



Mechanical Connectors

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HDPE End Connectors



3.



4.



5.



2.



1.

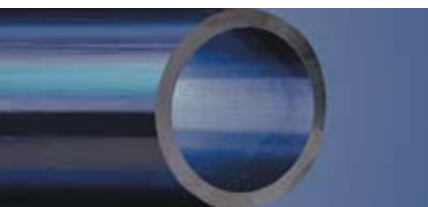
- 1. Corrosion Resistant Plastic Connector: Male or female threaded
Ductile Iron body
Requires Internal Stiffener
See page 113 for installation details
- 2. Mechanical Joint Restraint:
Requires Pipe Restraint, Internal Stiffener
Temperature Range Limited(35-80 Degrees fahrenheit)
Below Ground Use Only
External Ductile Body and Alloy Parts
Flow Contacts Gasket (EDPM/Nitrile)
- 3. Restricted Use Flange Connector:
Ductile iron body
Ext. treatments may be available
- 4. Standard Flange Connector:
Ductile iron body
Ext. treatments may be available
- 5. Corrosion Resistant Plastic End Cap

IPS

Pipe Size	Style				
	1	2	3	4	5
3/4"	X				X
1"	X				X
1.5"	X				X
2"	X		X		X
3"	X		X	X	
4"		X	X	X	
6"		X	X	X	
8"		X	X	X	
10"		X	X		
12"		X	X		
14"			X		
16"			X		
18"			X		
20"			X		
22"					
24"			X		
26"					
28"					
30"					
32"					
34"					
36"					

DIPS

Pipe Size	Style				
	1	2	3	4	5
4"		X	X	X	
6"		X	X	X	
8"		X	X	X	
10"		X	X	X	
12"		X	X	X	
14"			X		
16"			X		
18"			X		



Mechanical Connectors

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HDPE Service Saddles/ Tapping Sleeves



1.

- 1. Corrosion Resistant Plastic Connector:
- 2. Threaded Service Saddle/Tapping Sleeve

Male or female threaded
 May Require Pipe Restraint to Guarantee Leak-Free
 Temperature Range Could Be Limited
 Below Ground Use Recommended
 External: Coated Steel/Ductile Parts or Stainless Steel Optional
 Flow Contacts Gasket (EDPM/Nitrile)

- 3. Flanged Service Saddle/Tapping Sleeve:

May Require Pipe Restraint to Guarantee Leak-Free
 Temperature Range Could Be Limited
 Below Ground Use Recommended
 External: Coated Steel/Ductile Parts or Stainless Steel Optional
 Flow Contacts Gasket (Buna S/ Nitrile)

- 4. MJ Branch Tapping Sleeve:

Below Ground Use Recommended
 Nitrile Gasket

- 5. SS Plain End Sewer Saddle:

Below Ground Use Recommended
 Buna-S Gasket



3.



4.



5.

IPS

Main Size	Outlet Size Available				
	1	2	3	4	5
3/4"	1/2"-3/4"				
1"	1/2"-1"				
1.5"	1.5"				
2"	2"	1/2"-1 1/2"			
3"	3"	1/2"- 2"			
4"		1/2"- 4"	2"- 4"	2"- 4"	
6"		1/2"- 4"	2"- 6"	2"- 6"	4"
8"		1/2"- 4"	2"- 8"	2"- 8"	4"- 6"
10"		1/2"- 4"	2"- 10"	2"- 10"	4"- 6"
12"		1/2"- 4"	2"- 12"	2"- 12"	4"- 6"
14"		3/4"-4"	2"- 12"	2"- 12"	
16"		3/4"-4"	2"- 12"	2"- 16"	
18"		3/4"-4"	2"- 16"	2"- 16"	
20"		3/4"-4"	2"- 16"	2"- 16"	
22"		3/4"-4"	2"- 16"	2"- 16"	
24"		3/4"-4"	3"- 12"	3"- 16"	
26"		3/4"-2"	2"- 16"	2"- 16"	
28"					
30"		3/4"-4"	2"- 12"	2"- 12"	
32"		3/4"-4"	2"- 12"	2"- 12"	
34"					
36"		3/4"-4"	2"- 12"	2"- 12"	
40"					
42"		3/4"-4"	2"- 12"	2"- 12"	
48"		3/4"-4"	2"- 12"	2"- 12"	
54"		3/4"-4"	2"- 12"	2"- 12"	

DIPS

Main Size	Outlet Size Available				
	1	2	3	4	5
4"		1/2"- 4"	2"- 4"	2"- 4"	
6"		1/2"- 4"	2"- 6"	2"- 6"	4"
8"		1/2"- 4"	2"- 8"	2"- 8"	4"- 6"
10"		1/2"- 4"	2"- 10"	2"- 10"	4"- 6"
12"		1/2"- 4"	2"- 12"	2"- 12"	4"- 6"
14"		1/2"- 4"	2"- 12"	2"- 12"	
16"		1/2"- 4"	2"- 12"	2"- 16"	
18"		1/2"- 4"	2"- 12"	2"- 16"	
20"		1/2"- 4"	2"- 12"	2"- 16"	
24"		1/2"- 4"	2"- 12"	2"- 16"	
30"		3/4"- 4"	2"- 12"	2"- 16"	

Mechanical Connectors

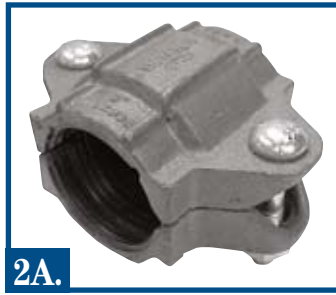
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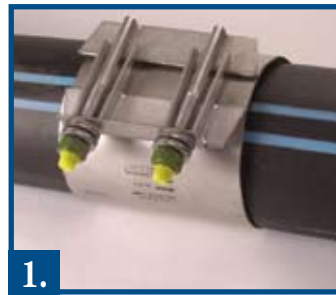




2B



2A.

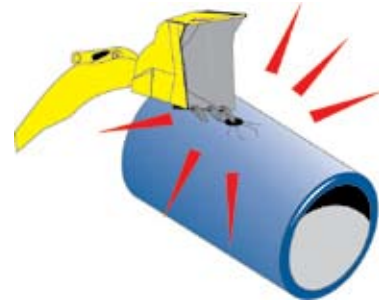


1.

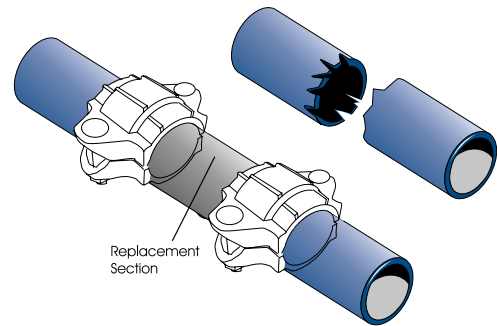


3.

1. Small holes from backhoe bucket can be repaired using a repair clamp as shown in picture 1. Coupling must have good coverages over the damaged area. Typically couplings are in length equal to one to one and half diameters of the pipe. Holes larger than 2" to 3" are treated like a separate pipe for pressure systems. In gravity systems, holes can be no larger than 1/3 the pipe diameter. The coupling must extend at least 1/2 the pipe diameter beyond the hole on each side.



2. If the IPS HDPE pipe is damaged and is in two parts, then extra pipe must be added and two couplings as shown in picture 2A (IPS) or 2B (DIPS) must be used.



3. When a saddle on HDPE pipe is damaged or is leaking, then a repair saddle is used as is shown in picture 3.



Mechanical Connectors

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Terms and Conditions

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Acceptance: All sales are subject to the approval and acceptance by an authorized representative of ISCO.

Cancellation: Any sale that is in the process of production or shipment is not subject to cancellation, deferment of delivery, or change of specification without the approval of an authorized representative of ISCO.

Freight: Unless specifically stated that freight is allowed, all orders shall be F.O.B shipping point. When freight is allowed, the prices are F.O.B. from the shipment point, with freight allowed to specified destination. The point or origin of the shipment, the method of transportation, and the routing of shipments are at the discretion of ISCO.

Returned Goods: Buyer shall not return any goods without obtaining authorization from ISCO. Goods returned for credit must be in new condition and will be subjected to a minimum twenty-five (25) percent restocking charge, F.O.B ISCO shipping location. Only standard stocking items with a standard part number are eligible for return. Non-standard, items shipped direct from a manufacturer, or specialty-made goods will not be accepted for return. Any items/structures/goods that require an ISCO-furnished Work Order and/or a Computer Automated Drawing, will not be accepted for return.

Performance: All promises as to the date of shipment are made in good faith. ISCO will attempt to keep such promises by taking every reasonable precaution in the placing of its orders and obligating its manufacturers to insure that they carry out their agreements. Since all manufacturers accepting orders specifically deny any liability for consequential damages this proposal is made with the distinct understanding that ISCO will not be held liable for damages of any kind.

Limited Warranty: Products manufactured by ISCO are warranted only to the extent that ISCO will furnish replacement parts, free of charge, F.O.B. shipping location; or at ISCO's option, will refund the purchase price of any product which, when installed and used was recommended by ISCO and in accordance with the best installation and operating practices and techniques, is proven to be defective in material or workmanship within one (1) year from the date of shipment. ISCO must receive immediate notice of the defect and the opportunity to inspect the same at the place of installation. Products sold by ISCO which are manufactured by others are warranted only to the extent of, and are limited to, the warranty of the manufacturer.

The warranties set forth above are in lieu of all other warranties, express or implied, including the warranties of merchantability and fitness for a particular purpose. ISCO shall not be liable to the buyer or any other party for negligence, strict liability, or any other delay, act, or error, for losses of any kind. ISCO shall not be liable to the buyer or any other party for direct, indirect, special, or consequential damages.

Without limitation of the foregoing, ISCO's liability to any other product whether by warranty or otherwise, shall in no event exceed the original purchase price.

The above stated limitations may be waived or modified only by writing signed by an executive officer of ISCO.

Payment Terms: All credit is subject to the approval of ISCO's credit department. Unless otherwise noted in the terms of the sale, all sales are on Net 30 terms. A service charge in the amount of one-and-one half percent (1-1/2%) per month or eighteen percent (18%) per year or at the greatest amount permitted by law, will be added to any account ninety (90) days past due. ISCO reserves the right to require full or partial payment in advance of shipment when the financial condition of the buyer does not justify continuance of shipment on the terms of payment specified. Order from buyers with approved credit may be shipped C.O.D. after buyer's approval.

Taxes: Prices do not include any present or future federal, state, or local taxes unless specifically stated. It is the responsibility of the buyer to assume all taxes. When applicable, taxes may be added to the purchase price and be paid by the buyer unless the buyer furnishes a tax-exemption certificate in a form agreeable to the respective authority.

Waiver, Modification: Waiver of ISCO of any breach of these terms and conditions shall not be constructed as a waiver of any other breach. These terms and conditions represent the complete agreement between the buyer and ISCO. No terms or conditions in any way adding to or modifying the provisions herein shall bind ISCO; without written consent from a duly authorized representative of ISCO.

Terms and
Conditions

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Valve Vault

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Valve Boxes



54-inch Anchored Diffuser



Condensate Pots



River Crossing with Weights



48-inch Diffuser

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