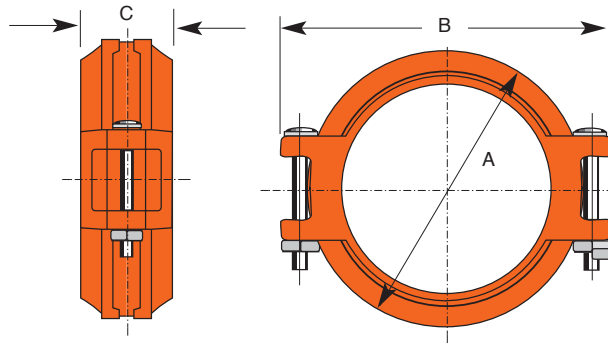


## RIGID COUPLING STYLE 5



UL Listed  
Under File No. EX15592

- Provides joint rigidity, for the support and hanging requirements of ANSI B31.1
- Tongue and groove arrangements in housings do not permit expansion, contraction or deflection
- Available with hot dipped galvanized coating as optional
- Supplied with pre-lubed gasket
- Provided with EPDM Gasket suitable -40 to 230°F
- Listed and Approved for use in Wet and Dry Systems



Pipe		Max. Working Pressure (psi)*	Allow Pipe End Separation (In.)	Dimensions Calc. (In.)			Approx. Weight Each (Lb.)
Nominal Size (In.)	Actual Size (In.)			A	B	C	
1	1.315	300	0.1	2.27	3.84	1.87	1.2
1-1/4	1.66	300	0.1	2.61	4.19	1.87	1.31
1-1/2	1.9	300	0.1	2.84	4.45	1.87	1.26
2	2.375	300	0.1	3.15	5.00	1.89	1.47
2-1/2	2.875	300	0.1	3.83	5.48	1.89	1.76
3	3.5	300	0.1	4.46	6.57	1.89	2.41
4	4.5	300	0.16	5.51	7.64	1.97	2.93
5	5.563	300	0.16	6.75	9.00	1.97	3.55
6	6.625	300	0.16	8.03	10.12	2.01	4.73
8	8.625	300	0.19	9.96	12.6	2.323	8.15
10	10.75	300	0.19	13.2	16.8	2.677	17.08
12	12.75	300	.20	14.96	18.5	2.56	24.5

**NOTES:** Allowable pipe end separation is for cut groove pipe, for roll groove, figures will be one-half of the values listed at time of initial pressurization.  
 ■ Bolts and Nuts are galvanized. \* – Maximum pressure including surges and maximum end loads from all internal and external forces, to which a joint could be subject under normal working conditions. This rating provides a nominal safety factor of 1.5 times working pressure based on standard weight steel pipe. Maximum working pressure may be subjected to a one time field test of 1.5 times the figures indicated. Refer to installations and groove specifications when assembling any grooved product. EPDM gasket is supplied as standard. For other gaskets contact us.

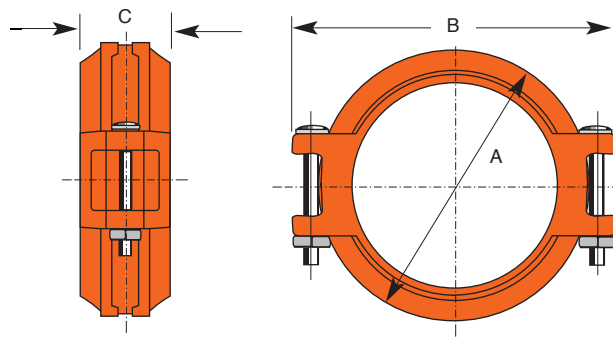
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PROJECT:	<input type="checkbox"/> APPROVED
ADDRESS:	<input type="checkbox"/> APPROVED AS NOTED
ENGINEER:	<input type="checkbox"/> NOT APPROVED
SUBMITTAL DATA:	REMARKS:
NOTES 1:	
NOTES 2:	

## FLEXIBLE COUPLING STYLE 12



UL Listed  
Under File No. EX15592

- Provides joint flexibility required in some piping systems
- Conforms to the requirements of ANSI B31.1 Power Piping Code; ANSI B31.9 Building Service Pipe Code and NFPA 13 Sprinkler Systems
- Available with hot dipped galvanized coating as optional
- Supplied with pre-lubed gasket
- Provided with EPDM Gasket suitable to 230°F
- Listed and Approved for use in Wet and Dry Systems



Pipe		Max. Working Pressure (psi)*	Allow Pipe End Separation (In.)	Max Deflection from Center Line		Dimensions (In.)			Approx. Weight Each (lb.)
Nominal Size (In.)	Actual Size (In.)			Per Coup. Deg.	Pipe (In.)	A	B	C	
1	1.315	300	0.1	5°-26'	1.14	2.36	3.86	1.71	1.2
1-1/4	1.66	300	0.1	4°-19'	0.9	2.63	4.17	1.732	1.30
1-1/2	1.9	300	0.1	3°-46'	0.79	2.87	4.25	1.732	1.27
2	2.375	300	0.1	3°-1'	0.62	3.43	4.84	1.732	1.48
2-1/2	2.875	300	0.1	2°-29'	0.52	3.94	5.43	1.732	1.71
3	3.5	300	0.1	2°-3'	0.43	4.61	6.35	1.77	2.44
4	4.5	300	0.16	3°-11'	0.67	5.47	7.48	1.929	2.89
5	5.563	300	0.16	2°-35'	0.54	6.61	8.58	1.929	3.58
6	6.625	300	0.16	2°-10'	0.46	7.82	9.49	1.929	4.73
8	8.625	300	0.19	1°-40'	0.34	9.96	12.60	2.323	7.91
10	10.75	300	0.19	0°-95'	0.13	12.48	15.79	2.48	16.95
12	12.75	300	.20	0°-23'	0.12	14.76	17.91	2.52	24.0

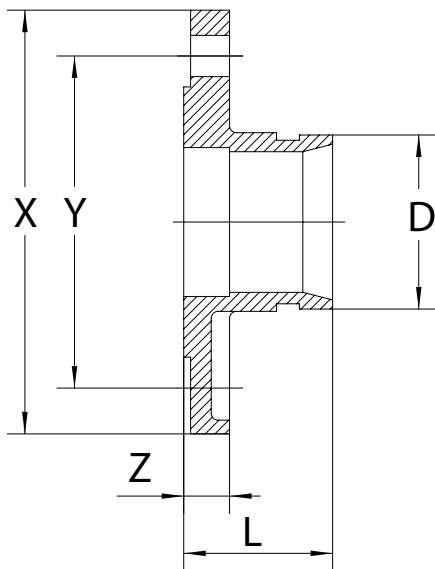
**NOTES:** Allowable pipe end separation is for cut groove pipe, for roll groove, figures will be one-half of the values listed at time of initial pressurization. ■—Bolts and Nuts are galvanized. \* – Maximum pressure including surges and maximum end loads from all internal and external forces, to which a joint could be subject under normal working conditions. This rating provides a nominal safety factor of 1.5 times working pressure based on standard weight steel pipe. Maximum working pressure may be subjected to a one time field test of 1.5 times the figures indicated. Refer to installations and groove specifications when assembling any grooved product. EPDM gasket is supplied as standard. For other gaskets contact us.

PROJECT	APPROVAL STAMP
PROJECT:	<input type="checkbox"/> APPROVED
ADDRESS:	<input type="checkbox"/> APPROVED AS NOTED
ENGINEER:	<input type="checkbox"/> NOT APPROVED
SUBMITTAL DATA:	REMARKS:
NOTES 1:	
NOTES 2:	

## FLANGE ADAPTERS STYLE F190



- Conforms to Class ANSI 125 lb. flange
- Available with an external threaded or grooved end
- Every lot is metallurgically tested for compliance
- Available with hot dipped galvanized coating
- Rated for 300 psi



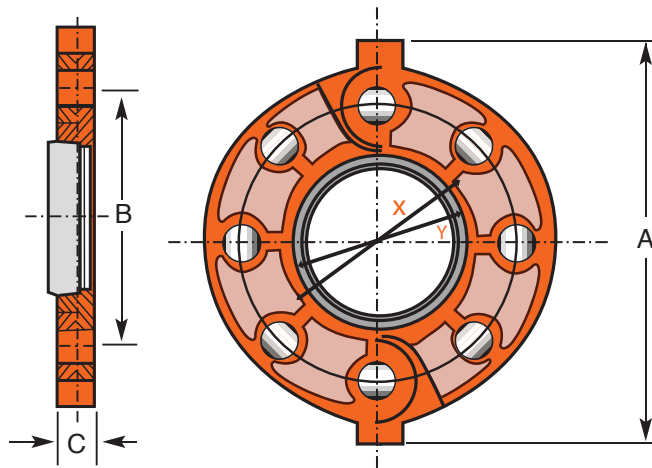
Nominal Size (In.)	Pipe OD D (In.)	Working Pressure (psi)	L (In.)	X (In.)	Y (In.)	Z (In.)	Bolt Size (In.) No. - Size
2	2.375	300	2.56	5.98	4.74	0.63	4-5/8
2-1/2	2.875	300	2.56	7.00	5.69	0.69	4-5/8
3	3.500	300	2.56	7.48	6.00	0.75	4-5/8
4	4.500	300	2.76	9.02	7.50	0.96	8-5/8
5	5.562	300	2.76	10.00	8.50	0.96	8-3/4
6	6.625	300	2.76	10.98	9.50	1.10	8-3/4
8	8.625	300	3.23	13.50	11.75	1.11	8-3/4
10	10.750	300	3.35	15.98	14.25	1.18	12-7/8
12	12.750	300	3.54	19.01	17.00	1.26	12-7/8

PROJECT	APPROVAL STAMP
PROJECT:	<input type="checkbox"/> APPROVED
ADDRESS:	<input type="checkbox"/> APPROVED AS NOTED
ENGINEER:	<input type="checkbox"/> NOT APPROVED
SUBMITTAL DATA:	REMARKS:
NOTES 1:	
NOTES 2:	

## GROOVED FLANGE STYLE 14



- Designed to connect ANSI Class 125 or 150 flanged components to a grooved piping system
- Made of ductile iron conforming to ASTM A-536; every lot is metallurgically examined to insure compliance
- Provided with EPDM rubber gasket as standard, suitable for -30°F to 230°F
- Available with hot dipped galvanized coating



Pipe		Max Working Pressure (psi) *	Sealing Surface (In.)		Dimensions (In.)			Approx. Weight Each (Lb.)
Nominal Size (In.)	Actual Size (In.)		X Min.	Y Max.	A	B	C	
2	2.375	300	3.09	2.42	8.11	4.763	0.866	3.84
2-1/2	2.875	300	3.58	2.92	9.055	5.511	0.866	5.08
3	3.5	300	4.21	3.56	9.527	5.984	0.944	5.17
4	4.5	300	5.26	4.57	11.023	7.519	0.944	6.46
5	5.563	300	6.41	5.65	12.795	8.503	0.964	8.64
6	6.625	300	7.48	6.71	13.583	9.5	0.964	8.49
8	8.625	300	9.58	8.7	16.311	11.751	1.102	13.48
10	10.75	300	11.65	10.85	20	14.25	1.195	24.0
12	12.75	300	13.60	12.90	20.25	17.0	1.25	38.0

PROJECT	APPROVAL STAMP
PROJECT:	<input type="checkbox"/> APPROVED
ADDRESS:	<input type="checkbox"/> APPROVED AS NOTED
ENGINEER:	<input type="checkbox"/> NOT APPROVED
SUBMITTAL DATA:	REMARKS:
NOTES 1:	
NOTES 2:	

## MECHANICAL TEES

### STYLE 15 GROOVED

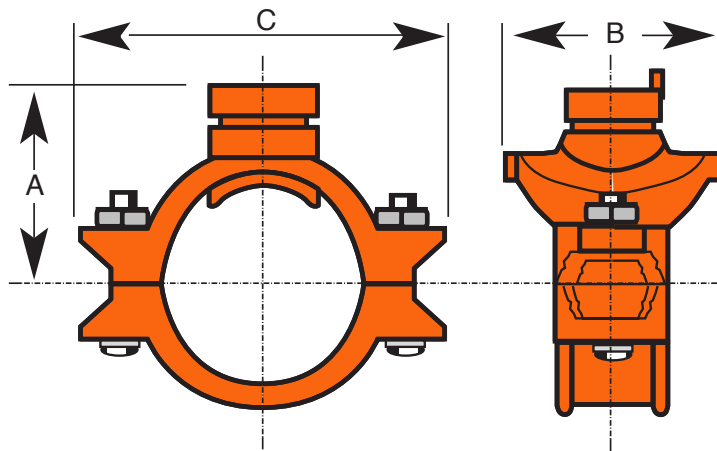


UL Listed  
Under File No. EX15592

Mechanical Branchlet provides a direct branch connection at any location along the pipe run without welding. A hole cut along the center line of pipe will receive the hole locator collar to secure the outlet.

A pressure responsive EPDM gasket molded to suit the run pipe insures leak tight joints. Cross type connections can be made utilizing upper housings only. Available with hot dipped galvanized coating.

Style 15

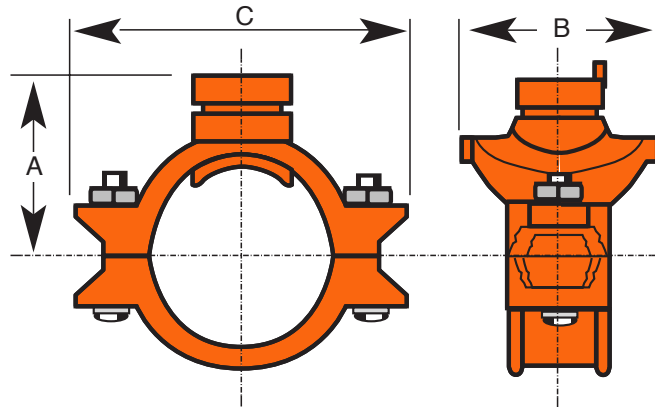


Run Size (In.)	Outlet Size (In.)	Max. Working Pressure (psi)*	Hole Diameter		Grooved Dimensions (In.)			Approx. Weight Ea. Grooved (Lb.)
			Hole Saw (In.)	Max. Perm. (In.)	A	B	C	
2	1-1/4	300	2.0	2.06	2.32	2.72	4.57	2.27
	1-1/2	300	2.0	2.13	2.32	2.72	4.57	2.46
2-1/2	1-1/4	300	2.0	2.06	2.76	3.31	5.67	2.27
	1-1/2	300	2.0	2.13	2.95	3.31	5.67	2.47
3	1-1/4	300	2.0	2.06	2.76	3.23	5.98	2.50
	1-1/2	300	2.0	2.13	2.76	3.58	5.98	2.89
	2	300	2.5	2.63	3.23	3.85	5.98	3.23
4	1-1/4	300	2.0	2.06	3.66	3.27	7.32	3.40
	1-1/2	300	2.0	2.13	3.66	3.27	7.32	3.16
	2	300	2.5	2.63	3.66	3.82	7.40	3.30
	2-1/2	300	3.25	3.35	3.82	4.84	7.40	4.55
	3	300	3.5	3.55	3.82	4.92	7.40	4.56

## MECHANICAL TEE STYLE 15 GROOVED



Style 15



Run Size (In.)	Outlet Size (In.)	Max Working Pressure (psi)*	Hole Diameter		Grooved Dimensions (In.)			Approx. Weight Ea.
			Hole Saw (In.)	Max. Perm. (In.)	A	B	C	Grooved (Lb.)
5	1-1/2	300	2.0	2.13	4.21	3.62	8.66	4.27
	2	300	2.5	2.63	4.21	3.82	8.66	4.47
	2-1/2	300	2.75	2.88	4.21	4.84	8.66	5.27
	3	300	3.5	3.55	4.21	5.35	8.66	6.03
6	1-1/4	300	2.0	2.06	5.04	3.23	9.72	5.50
	1-1/2	300	2.0	2.13	5.04	3.62	9.72	5.55
	2	300	2.5	2.63	5.04	3.86	9.72	6.18
	2-1/2	300	3.25	3.35	5.04	4.84	9.72	5.32
	3	300	3.5	3.55	5.04	5.35	9.72	7.32
	4	300	4.5	4.63	5.04	6.18	9.72	7.60
8	2	300	2.5	2.63	5.98	3.82	12.20	7.50
	2-1/2	300	3.25	3.35	5.98	5.12	12.20	7.71
	3	300	3.5	3.63	5.98	5.40	12.20	8.30
	4	300	4.5	4.63	5.98	6.38	12.20	9.09

**NOTES:** –Bolts and Nuts are galvanized. \* – Maximum pressure including surges and maximum end loads from all internal and external forces, to which a joint could be subject under normal working conditions. This rating provides a nominal safety factor of 1.5 times working pressure based on standard weight steel pipe. Maximum working pressure may be subjected to a one time field test of 1.5 times the figures indicated. Refer to installations and groove specifications when assembling any grooved product. EPDM gasket is supplied as standard. For other gaskets contact us.

PROJECT	APPROVAL STAMP
PROJECT:	<input type="checkbox"/> APPROVED
ADDRESS:	<input type="checkbox"/> APPROVED AS NOTED
ENGINEER:	<input type="checkbox"/> NOT APPROVED
SUBMITTAL DATA:	REMARKS:
NOTES 1:	
NOTES 2:	

## MECHANICAL TEES

### STYLE 35 GROOVED

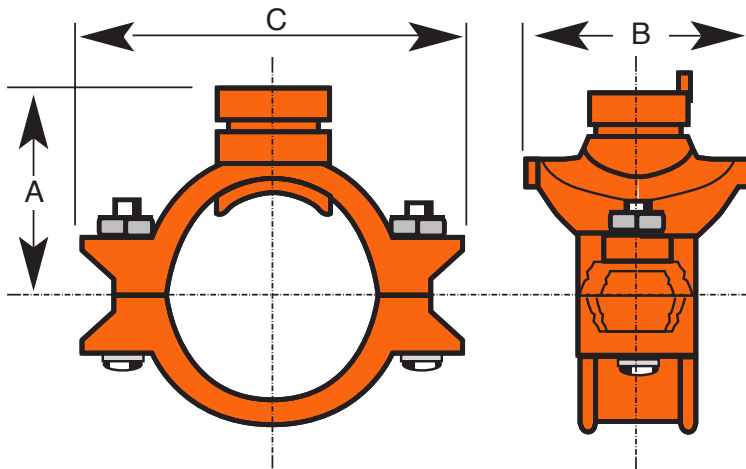
Mechanical Branchlet provides a direct branch connection at any location along the pipe run without welding. A hole cut along the center line of pipe will receive the hole locator collar to secure the outlet.

A pressure responsive EPDM gasket molded to suit the run pipe insures leak tight joints. Cross type connections can be made utilizing upper housings only. Available with hot dipped galvanized coating.



UL Listed  
Under File No. EX15592

Style 35



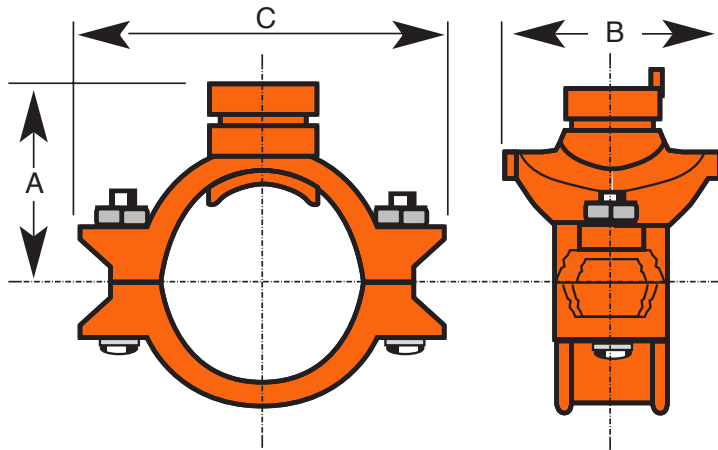
Run Size (In.)	Outlet Size (In.)	Max. Working Pressure (psi)*	Hole Diameter		Grooved Dimensions (In.)			Approx. Weight Ea. Grooved (Lb.)
			Hole Saw (In.)	Max. Perm. (In.)	A	B	C	
2	1-1/4	300	1.75	1.85	2.32	2.72	4.57	2.27
	1-1/2	300	1.75	1.85	2.32	2.72	4.57	2.46
2-1/2	1-1/4	300	2.0	2.06	2.76	3.31	5.67	2.27
	1-1/2	300	2.0	2.13	2.95	3.31	5.67	2.47
3	1-1/4	300	2.0	2.06	2.76	3.23	5.98	2.50
	1-1/2	300	2.0	2.13	2.76	3.58	5.98	2.89
	2	300	2.5	2.63	3.23	3.85	5.98	3.23
4	1-1/4	300	2.0	2.06	3.66	3.27	7.32	3.40
	1-1/2	300	2.0	2.13	3.66	3.27	7.32	3.16
	2	300	2.5	2.63	3.66	3.82	7.40	3.30
	2-1/2	300	2.75	2.88	3.82	4.84	7.40	4.55
	3	300	3.5	3.55	3.82	4.92	7.40	4.56

\* Missing Hole Saw size from chart

## MECHANICAL TEE STYLE 35 GROOVED



Style 35



Run Size (In.)	Outlet Size (In.)	Max Working Pressure (psi)*	Hole Diameter		Grooved Dimensions (In.)			Approx. Weight Ea. Grooved (Lb.)
			Hole Saw (In.)	Max. Perm. (In.)	A	B	C	
5	1-1/2	300	2.0	2.13	4.21	3.62	8.66	4.27
	2	300	2.5	2.63	4.21	3.82	8.66	4.47
	2-1/2	300	2.75	2.88	4.21	4.84	8.66	5.27
	3	300	3.5	3.55	4.21	5.35	8.66	6.03
6	1-1/4	300	2.0	2.06	5.04	3.23	9.72	5.50
	1-1/2	300	2.0	2.13	5.04	3.62	9.72	5.55
	2	300	2.5	2.63	5.04	3.86	9.72	6.18
	2-1/2	300	2.75	2.87	5.04	4.84	9.72	5.32
	3	300	3.5	3.55	5.04	5.35	9.72	7.32
	4	300	4.5	4.63	5.04	6.18	9.72	7.60
8	2	300	2.5	2.63	5.98	3.82	12.20	7.50
	2-1/2	300	3.25	2.87	5.98	5.12	12.20	7.71
	3	300	3.5	3.63	5.98	5.40	12.20	8.30
	4	300	4.5	4.63	5.98	6.38	12.20	9.09

PROJECT	APPROVAL STAMP
PROJECT:	<input type="checkbox"/> APPROVED
ADDRESS:	<input type="checkbox"/> APPROVED AS NOTED
ENGINEER:	<input type="checkbox"/> NOT APPROVED
SUBMITTAL DATA:	REMARKS:
NOTES 1:	
NOTES 2:	



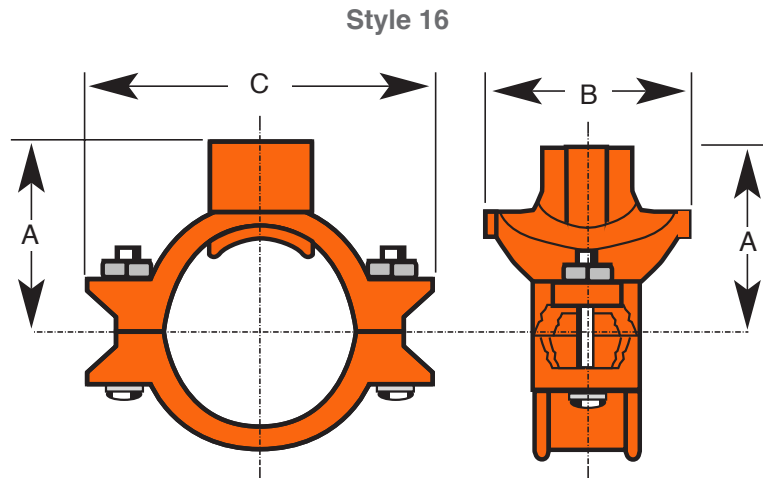
## MECHANICAL TEES STYLE 16 THREADED

Mechanical Branchlet provides a direct branch connection at any location along the pipe run without welding. A hole cut along the center line of pipe will receive the hole locator collar to secure the outlet.

A pressure responsive EPDM gasket molded to suit the run pipe insures leak tight joints. Cross type connections can be made utilizing upper housings only. Available with hot dipped galvanized coating.

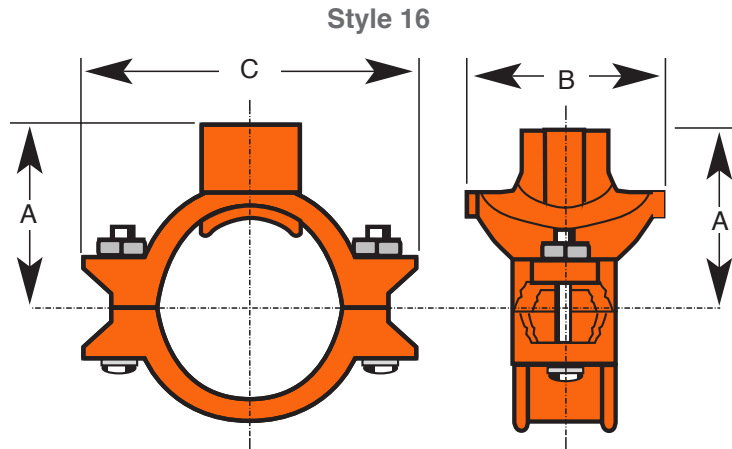


UL Listed  
Under File No. EX15592



Run Size (In.)	Outlet Size (In.)	Max. Working Pressure (psi)*	Hole Diameter		Threaded Dimensions (In.)			Approx. Weight Ea. Thrd. (Lb.)
			Hole Saw (In.)	Max. Perm. (In.)	A	B	C	
1-1/2	1	300	1.5	1.63	2.20	2.40	4.41	1.95
2	1	300	1.5	1.63	2.36	2.72	4.57	1.53
	1-1/4	300	2.0	2.06	2.36	2.72	4.57	1.66
	1-1/2	300	2.0	2.06	2.36	2.72	4.57	1.88
2-1/2	1	300	1.5	1.63	2.60	3.07	5.70	1.98
	1-1/4	300	2	2.13	2.76	3.27	5.67	2.36
	1-1/2	300	2	2.13	2.36	3.27	5.67	2.33
3	1	300	1.5	1.63	3.23	3.03	5.98	2.48
	1-1/4	300	2	2.13	3.23	3.27	5.98	2.47
	1-1/2	300	2	2.13	3.23	3.62	5.98	2.60
	2	300	2.5	2.63	3.23	3.90	5.98	2.96
4	1	300	1.5	1.63	3.66	3.03	7.40	2.86
	1-1/4	300	2	2.13	3.66	3.27	7.40	3.261
	1-1/2	300	2	2.13	3.66	3.62	7.40	3.25
	2	300	2.5	2.63	3.66	3.82	7.40	3.55
	2-1/2	300	3.0	3.10	3.66	4.41	7.40	3.59
	3	300	3.5	3.63	3.66	4.92	7.40	4.84

## MECHANICAL TEES STYLE 16 THREADED



Run Size (In.)	Outlet Size (In.)	Max Working Pressure (psi)*	Hole Diameter		Threaded Dimensions (In.)			Approx. Weight Ea.
			Hole Saw (In.)	Max. Perm. (In.)	A	B	C	Thrd. (Lb.)
5	1-1/2	300	2	2.13	3.94	3.62	8.66	3.65
	2	300	2.5	2.63	4.21	3.82	8.66	3.89
	2-1/2	300	3.25	3.35	4.21	4.84	8.66	4.95
	3	300	3.5	3.63	4.21	5.35	8.66	6.04
6	1-1/4	300	2	2.13	4.72	3.23	9.72	5.32
	1-1/2	300	2	2.13	4.72	3.62	9.72	5.80
	2	300	2.5	2.63	4.72	3.86	9.72	5.96
	2-1/2	300	3.25	3.35	4.72	4.84	9.72	5.325
	3	300	3.5	3.55	4.72	5.35	9.72	7.32
	4	300	4.5	4.63	4.72	6.18	9.72	7.6
8	2	300	2.5	2.63	5.75	3.82	12.21	7.50
	2-1/2	300	3.25	3.35	5.75	5.12	12.21	7.71
	3	300	3.5	3.63	5.75	5.40	12.21	8.3
	4	300	4.5	4.63	5.75	6.38	12.21	10.17

**NOTES:** –Bolts and Nuts are galvanized. \* – Maximum pressure including surges and maximum end loads from all internal and external forces, to which a joint could be subject under normal working conditions. This rating provides a nominal safety factor of 1.5 times working pressure based on standard weight steel pipe. Maximum working pressure may be subjected to a one time field test of 1.5 times the figures indicated. Refer to installations and groove specifications when assembling any grooved product. EPDM gasket is supplied as standard. For other gaskets contact us.

PROJECT	APPROVAL STAMP
PROJECT:	<input type="checkbox"/> APPROVED
ADDRESS:	<input type="checkbox"/> APPROVED AS NOTED
ENGINEER:	<input type="checkbox"/> NOT APPROVED
SUBMITTAL DATA:	REMARKS:
NOTES 1:	
NOTES 2:	

## MECHANICAL TEES

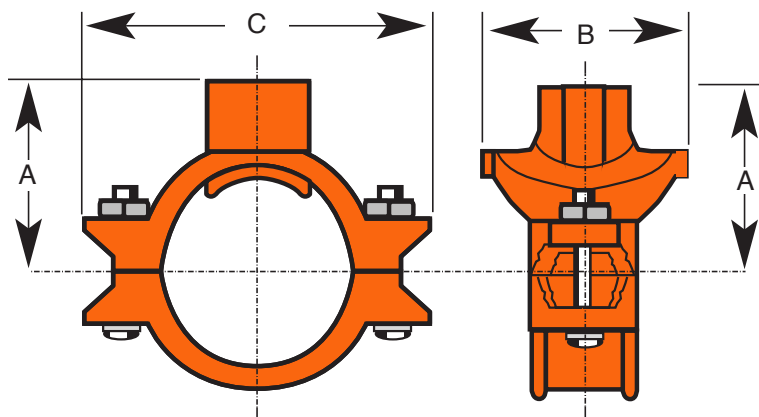
### STYLE 36 THREADED

Mechanical Branchlet provides a direct branch connection at any location along the pipe run without welding. A hole cut along the center line of pipe will receive the hole locator collar to secure the outlet.

A pressure responsive EPDM gasket molded to suit the run pipe insures leak tight joints. Cross type connections can be made utilizing upper housings only. Available with hot dipped galvanized coating.



Style 36



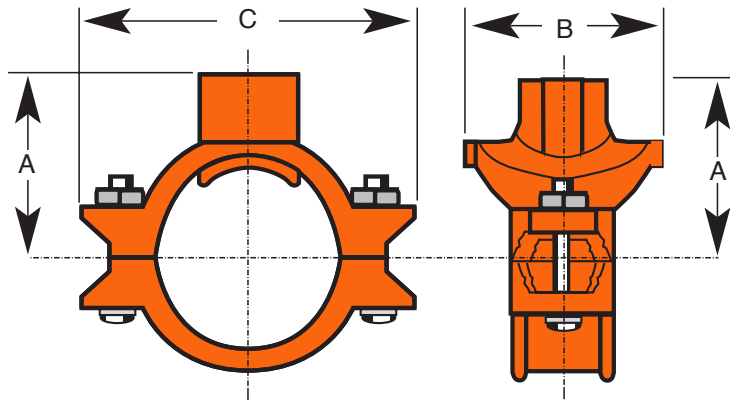
Run Size (In.)	Outlet Size (In.)	Max. Working Pressure (psi)*	Hole Diameter		Threaded Dimensions (In.)			Approx. Weight Ea. Thrd. (Lb.)
			Hole Saw (In.)	Max. Perm. (In.)	A	B	C	
2	1	300	1.5	1.63	2.36	2.72	4.57	1.53
	1-1/4	300	1.75	1.85	2.36	2.72	4.57	1.66
	1-1/2	300	1.75	1.85	2.36	2.72	4.57	1.88
2-1/2	1	300	1.5	1.63	2.60	3.07	5.70	1.98
	1-1/4	300	2.0	2.13	2.76	3.27	5.67	2.36
	1-1/2	300	2.0	2.13	2.36	3.27	5.67	2.33
3	1	300	1.5	1.63	3.23	3.03	5.98	2.48
	1-1/4	300	2.0	2.13	3.23	3.27	5.98	2.47
	1-1/2	300	2.0	2.13	3.23	3.62	5.98	2.60
	2	300	2.5	2.63	3.23	3.90	5.98	2.96
4	1	300	1.5	1.63	3.66	3.03	7.40	2.86
	1-1/4	300	2.0	2.13	3.66	3.27	7.40	3.261
	1-1/2	300	2.0	2.13	3.66	3.62	7.40	3.25
	2	300	2.5	2.63	3.66	3.82	7.40	3.55
	2-1/2	300	2.75	2.87	3.66	4.41	7.40	3.59
	3	300	3.5	3.63	3.66	4.92	7.40	4.84

\*Missing Hole Saw size from chart

## MECHANICAL TEES STYLE 36 THREADED



Style 36



Run Size (In.)	Outlet Size (In.)	Max Working Pressure (psi)*	Hole Diameter		Threaded Dimensions (In.)			Approx. Weight Ea.
			Hole Saw (In.)	Max. Perm. (In.)	A	B	C	Thrd. (Lb.)
5	1-1/2	300	2.0	2.13	3.94	3.62	8.66	3.65
	2	300	2.5	2.63	4.21	3.82	8.66	3.89
	2-1/2	300	2.75	2.87	4.21	4.84	8.66	4.95
	3	300	3.5	3.63	4.21	5.35	8.66	6.04
6	1-1/4	300	2.0	2.13	4.72	3.23	9.72	5.32
	1-1/2	300	2.0	2.13	4.72	3.62	9.72	5.80
	2	300	2.5	2.63	4.72	3.86	9.72	5.96
	2-1/2	300	2.75	2.87	4.72	4.84	9.72	5.325
	3	300	3.5	3.55	4.72	5.35	9.72	7.32
	4	300	4.5	4.63	4.72	6.18	9.72	7.6
8	2	300	2.5	2.63	5.75	3.82	12.21	7.50
	2-1/2	300	2.75	2.87	5.75	5.12	12.21	7.71
	3	300	3.5	3.63	5.75	5.40	12.21	8.3
	4	300	4.5	4.63	5.75	6.38	12.21	10.17

\*Missing Hole Saw size from chart

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PROJECT	APPROVAL STAMP
PROJECT:	<input type="checkbox"/> APPROVED
ADDRESS:	<input type="checkbox"/> APPROVED AS NOTED
ENGINEER:	<input type="checkbox"/> NOT APPROVED
SUBMITTAL DATA:	REMARKS:
NOTES 1:	
NOTES 2:	

## GROOVED FITTINGS - SHORT PATTERN

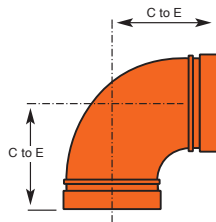
### STYLES F105, F106, F107, F135 & F155



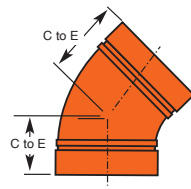
- Sized to improve flow
- Designed to Fire Protection Industry Standards for short pattern fittings
- Lighter and more cost effective than standard fittings
- Rated for 300 psi
- Made of durable, high-strength ductile iron conforming to ASTM A536; every lot is metallurgically tested for compliance
- Available with hot dipped galvanized coating

FLOW DATA								
Frictional Resistance (Expressed as equivalent Straight Pipe in Ft.)								
Nominal Size (In)	90° Elbow		45° Elbow		Tee			
	STD	F105	STD	F106	Branch		Run	
					STD	F107	STD	F107
1	1.7	1.4	0.9	0.9	4.4	4.0	1.7	1.4
1-1/4	2.3	1.8	1.2	1.0	5.8	4.2	2.3	1.8
1-1/2	2.7	2.5	1.3	1.3	6.7	5.5	2.7	2.5
2	3.4	3.2	1.7	1.6	8.6	8.2	3.4	2.5
2-1/2	4.1	3.9	2.1	2.0	10.3	10.1	4.1	3.9
3	5.1	4.8	2.6	2.4	12.8	12.5	5.1	4.8
4	6.7	6.5	3.4	3.2	16.8	16.0	6.7	6.5

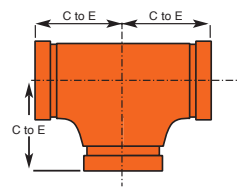
Flow data is based upon the pressure drop of Sch. 40 pipe



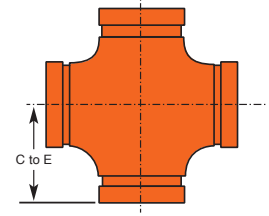
Style F105



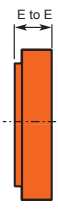
Style F106



Style F107



Style F135



Style F155

Pipe		90° Elbow No. F105		45° Elbow No. F106		Equal Tee No. F107		Cross No. F135		End Cap No. F155	
Nominal Size (In.)	Actual Size (In.)	C to E (In.)	Approx. Wgt. Ea. (Lb.)	C to E (In.)	Approx. Wgt. Ea. (Lb.)	C to E (In.)	Approx. Wgt. Ea. (Lb.)	C to E (In.)	Approx. Wgt. Ea. (Lb.)	E to E (In.)	Approx. Wgt. Ea. (Lb.)
1	1.315	2.24	0.80	1.50	.70	2.24	1.10	—	—	0.96	.33
1-1/4	1.66	2.36	0.96	1.73	0.88	2.36	1.18	—	—	0.96	0.40
1-1/2	1.9	2.362	1.01	1.73	.78	2.362	1.34	2.75	2.5	0.96	0.44
2	2.375	2.755	1.24	2.00	1.20	2.755	1.98	2.75	2.49	0.96	0.61
2-1/2	2.875	2.992	2.03	2.24	1.63	2.992	2.82	2.99	3.19	0.96	0.85
3	3.5	3.368	2.53	2.52	2.38	3.386	3.90	3.38	5.09	0.99	1.01
4	4.5	3.996	3.74	3.00	3.84	3.996	5.72	3.99	7.22	0.99	1.42
5	5.563	4.803	7.20	3.28	5.74	4.803	9.52	4.80	7.23	0.99	2.80
6	6.625	5.61	9.06	3.51	8.11	5.5	14.13	5.5	15.97	0.99	4.40
8	8.625	6.889	20.52	4.25	14.27	6.889	27.07	6.88	28.66	1.181	9.30

PROJECT	APPROVAL STAMP
PROJECT:	<input type="checkbox"/> APPROVED
ADDRESS:	<input type="checkbox"/> APPROVED AS NOTED
ENGINEER:	<input type="checkbox"/> NOT APPROVED
SUBMITTAL DATA:	REMARKS:
NOTES 1:	
NOTES 2:	

## STANDARD GROOVED FITTINGS STYLES 100, 101, 102, 103, 110 & 150

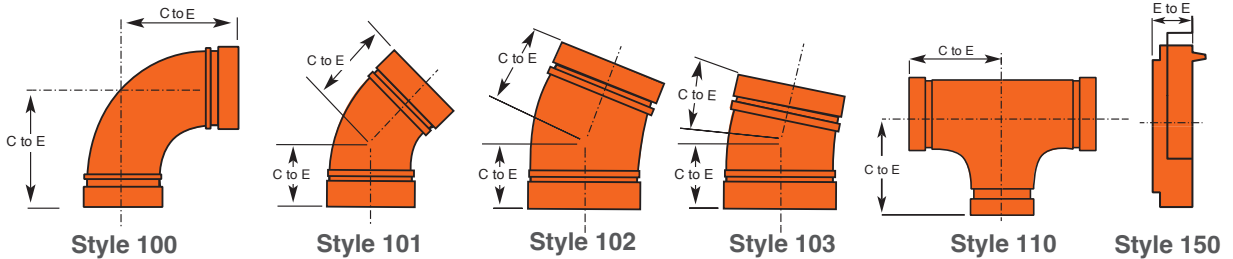


UL Listed  
Under File No. EX15591

- All fittings are full flow design
- Made of durable, high-strength ductile iron conforming to ASTM A536; every lot is metallurgically tested for compliance
- Available with hot dipped galvanized coating
- Suitable for HVAC, plumbing, & fire protection systems
- Rated for 300 psi

FLOW DATA Frictional Resistance (Expressed as equivalent Straight Pipe In Ft.)									
Nominal Size (In)	Elbow		Tee		Nominal Size (In)	Elbow		Tee	
	90° Elbow	45° Elbow	Branch	Run		90° Elbow	45° Elbow	Branch	Run
1-1/4	2.3	1.2	5.8	2.3	5	8.4	4.2	21.0	8.4
1-1/2	2.7	1.3	6.7	2.7	6	10.1	5.1	25.3	10.1
2	3.4	1.7	8.6	3.4	8	13.3	6.7	33.3	13.3
2-1/2	4.1	2.1	10.3	4.1	10	16.7	8.4	41.8	16.7
3	5.1	2.6	12.8	5.2					
4	6.7	3.4	16.8	6.7					

Flow data is based upon the pressure drop of Sch. 40 pipe

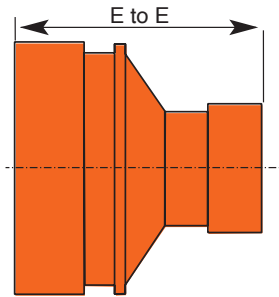


Pipe		90° Elbow No. 100		45° Elbow No. 101		22-1/2 Elbow No. 102		11-1/4 Elbow No. 103		Equal Tee No. 110		End Cap No. 150	
Nominal Size (In.)	Actual Size (In.)	C to E (In.)	Approx. Wgt. Ea. (Lb.)	C to E (In.)	Approx. Wgt. Ea. (Lb.)	C to E (In.)	Approx. Wgt. Ea. (Lb.)	C to E (In.)	Approx. Wgt. Ea. (Lb.)	C to E (In.)	Approx. Wgt. Ea. (Lb.)	E to E (In.)	Approx. Wgt. Ea. (Lb.)
1	1.315	2.24	.85	1.496	.65	1.61	.45	1.38	.42	2.24	1.45	0.96	.25
1-1/4	1.66	2.755	1.17	1.73	.70	1.732	.80	1.38	0.55	2.755	1.52	0.96	.33
1-1/2	1.9	2.755	1.17	1.73	.78	1.732	.84	1.38	0.63	2.755	1.74	0.96	0.44
2	2.375	3.257	2.25	2.0	1.20	2.0	1.14	1.38	0.82	3.267	2.5	0.96	0.61
2-1/2	2.875	3.74	2.76	2.24	1.63	2.0	1.50	1.5	1.22	3.74	3.73	0.96	0.85
3	3.5	4.251	3.44	2.52	2.38	2.24	2.53	1.5	1.62	4.251	6.24	0.96	1.01
4	4.5	5.0	5.32	3.0	3.84	2.87	3.91	1.89	2.63	5.0	8.70	0.99	1.42
5	5.563	5.51	8.0	3.28	5.74	2.87	5.10	2.0	3.90	5.51	12.44	0.99	2.80
6	6.625	6.496	14.31	3.51	8.11	3.11	7.16	2.0	4.78	6.496	18.21	0.99	4.40
8	8.625	7.755	21.63	4.25	14.27	3.86	11.88	2.0	7.10	7.755	33.25	1.181	9.30
10	10.75	8.464	37.04	4.76	22.0	4.37	14.0	2.13	14.5	8.464	46.35	1.26	9.33
12	12.75	9.645	57.25	5.24	33	4.88	22.0	2.25	25.5	9.645	59.50	1.26	13.25

PROJECT	APPROVAL STAMP
PROJECT:	<input type="checkbox"/> APPROVED
ADDRESS:	<input type="checkbox"/> APPROVED AS NOTED
ENGINEER:	<input type="checkbox"/> NOT APPROVED
SUBMITTAL DATA:	REMARKS:
NOTES 1:	
NOTES 2:	

## STANDARD CONCENTRIC REDUCER STYLE 140

- Made of durable, high-strength ductile iron conforming to ASTM A536
- Every lot is metallurgically tested for compliance
- Available with hot dipped galvanized coating
- Rated for 300 psi



See Style 140TM and 140TF for threaded outlet

CONCENTRIC REDUCER - NO.140			CONCENTRIC REDUCER - NO.140		
Nominal Size (In.)	E to E (In.)	Approx. Wgt. Ea. (Lb.)	Nominal Size	E to E (In.)	Approx. Wgt. Ea. (Lb.)
1-1/4 x 1	2.52	.49	5 x 2-1/2	3.5	2.57
1-1/2 x 1	2.52	.60	5 x 3	3.5	2.73
2 x 1	2.52	.72	5 x 4	3.5	2.95
2 x 1-1/4	2.52	.69	6 x 2	4.02	4.36
2 x 1-1/2	2.52	.72	6 x 2-1/2	4.02	4.10
2-1/2 x 1	2.52	.86	6 x 3	4.02	4.12
2-1/2 x 1-1/4	2.52	.91	6 x 4	4.02	4.63
2-1/2 x 1-1/2	2.52	.92	6 x 5	4.02	4.35
2-1/2 x 2	2.52	1.02	8 x 3	5	7.71
3 x 1	2.52	1.10	8 x 4	5	6.76
3 x 1-1/4	2.52	1.15	8 x 5	5	7.71
3 x 1-1/2	2.52	1.16	8 x 6	5	8.15
3 x 2-1/2	2.52	1.25	10 x 4	5.98	20.0
4 x 1	3.00	2.2	10 x 5	5.98	20.0
4 x 1-1/4	3.00	2.2	10 x 6	5.98	14.48
4 x 1-1/2	3.00	2.3	10 x 8	5.98	14.16
4 x 2	3.00	2.4	—	—	—
4 x 2-1/2	3.00	2.7	—	—	—
4 x 3	3.00	2.8	—	—	—
5 x 2	3.5	3.8	—	—	—



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Under File No. EX15591

## ECCENTRIC REDUCER STYLE 145

\* Fabricated

ECCENTRIC REDUCER - NO.145		
Add TF after part number for Internal or TM for External threaded outlet.		
Nominal Size (In.)	E to E (In.)	Approx. Wgt. Ea. (Lb.)
2 x 1-1/4*	9	4.6
2 x 1-1/2*	9	4.6
2-1/2 x 2*	9.5	1.4
3 x 1-1/4*	9.5	4.8
3 x 1-1/2*	9.5	5.0
3 x 2	2.52	1.8
3 x 2-1/2	2.52	1.6
4 x 2	3.00	2.6
4 x 2-1/2	3.00	2.8
4 x 3	3.00	3.3
5 x 2	3.50	5.2
5 x 2-1/2	3.50	10.8
5 x 3	3.50	11
5 x 4	3.50	5.1
6 x 2	4.02	14.5
6 x 2-1/2	4.02	14.1
6 x 3	4.02	14.9
6 x 4	4.02	6.6
6 x 5	4.02	9.4
8 x 3	5.00	22.0
8 x 4	5.00	22.9
8 x 5	5.00	26.5
8 x 6	5.00	30.8
10 x 6	5.98	36.5
10 x 8	5.98	38

PROJECT	APPROVAL STAMP
PROJECT:	<input type="checkbox"/> APPROVED
ADDRESS:	<input type="checkbox"/> APPROVED AS NOTED
ENGINEER:	<input type="checkbox"/> NOT APPROVED
SUBMITTAL DATA:	REMARKS:
NOTES 1:	
NOTES 2:	

## STANDARD DRAIN ELBOW STYLE F100D & F105D

- Provides 1" NPT drain required on some fire protection stand pipes
- Smoother flow than fabricated segmented steel elbows
- Made of ductile iron conforming to ASTM A536
- Every lot is metallurgically tested to insure compliance
- Available with hot dipped galvanized coating
- Pressure rating of 300 psi

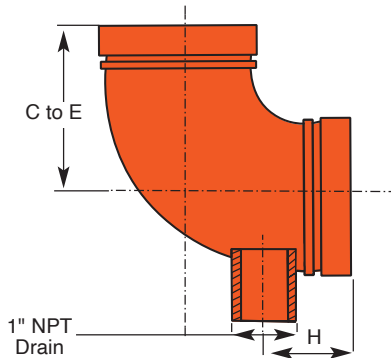


UL Listed  
Under File No. EX15591

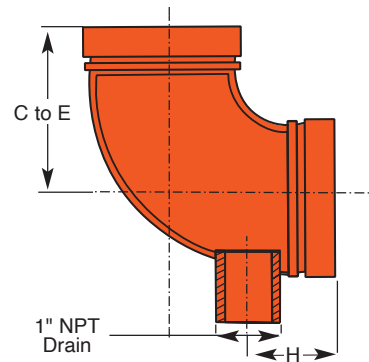
FLOW DATA Equivalent Feet of Straight Pipe		
Nominal Size (In.)	90° Elbow	
	STD	Short Pattern
2	3.5	3.2
2-1/2	4.3	3.9
3	5.0	4.8
4	6.8	6.5
6	10.0	10.0

Flow data is based upon the pressure drop of Sch. 40 pipe

Drain Elbow-Standard Style F100D



Drain Elbow-Short Pattern Style F105D



DRAIN ELBOW - STANDARD - STYLE F100D				
Pipe		Dimensions (In.)		Approx. Wgt. Ea. (Lb.)
Nominal Size (In.)	Actual Size (In.)	C to E	H	
2	2.375	3.27	2.75	3.8
2-1/2	2.875	3.75	2.75	5.2
3	3.500	4.25	2.75	5.3
4	4.500	5.00	2.75	8.8
6	6.625	6.50	2.75	18.7

DRAIN ELBOW - SHORT PATTERN - STYLE F105D				
Pipe		Dimensions (In.)		Approx. Wgt. Ea. (Lb.)
Nominal Size (In.)	Actual Size (In.)	C to E	H	
2	2.375	2.75	2.00	1.0
2-1/2	2.875	3.00	2.00	1.7
3	3.500	3.39	2.00	2.5
4	4.500	4.00	2.00	5.3
6	6.625	5.50	2.00	13.9

PROJECT	APPROVAL STAMP
PROJECT:	<input type="checkbox"/> APPROVED
ADDRESS:	<input type="checkbox"/> APPROVED AS NOTED
ENGINEER:	<input type="checkbox"/> NOT APPROVED
SUBMITTAL DATA:	REMARKS:
NOTES 1:	
NOTES 2:	



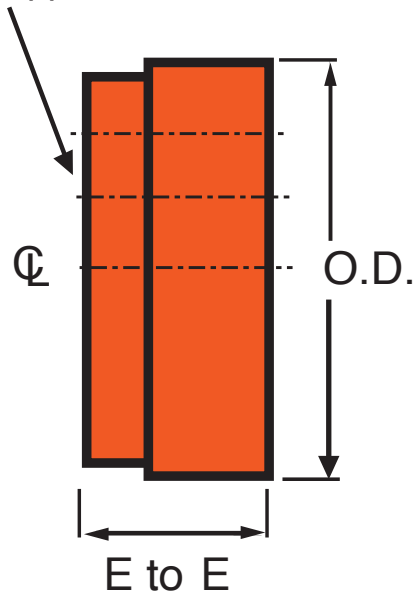
## GROOVED DRAIN CAP STYLE F155D

- GemLock Style F155D End Cap with NPT Tapped Hole
- Rated to 300 psi
- Available hot dipped galvanized coating
- Made from Ductile Iron conforming to ASTM A536



UL Listed  
Under File No. EX15591

Tapped Hole w/NPT Threads



**FIGURE F155D CAP**

Nominal Size	O.D.	End to End	Outlet Size	Approx. Wt. Ea.
In./DN	In.	In.	In.	Lbs.
1-1/4	1.660	1-1/4	1	0.4
1-1/2	1.900	1-1/4	1	0.5
2	2.375	1	1	0.5
2-1/2	2.875	1	1	0.7
3	3.500	1	1	1.1
4	4.500	1-1/8	1	2.8
5	5.563	1-1/8	1	4.0
6	6.625	1-5/16	1	6.0
8	8.625	1-1/2	2	12.5

PROJECT	APPROVAL STAMP
PROJECT:	<input type="checkbox"/> APPROVED
ADDRESS:	<input type="checkbox"/> APPROVED AS NOTED
ENGINEER:	<input type="checkbox"/> NOT APPROVED
SUBMITTAL DATA:	REMARKS:
NOTES 1:	
NOTES 2:	

## REDUCER TEE - SHORT PATTERN STYLE 115

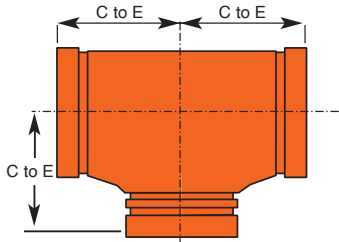


UL Listed  
Under File No. EX15591

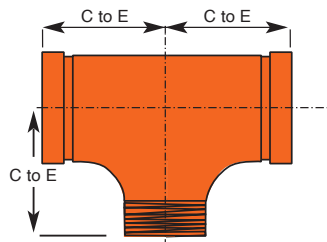
Made of durable, high-strength ductile iron conforming to ASTM A536

- Every lot is metallurgically tested for compliance
- Available with hot dipped galvanized coating
- Rated for 300 psi

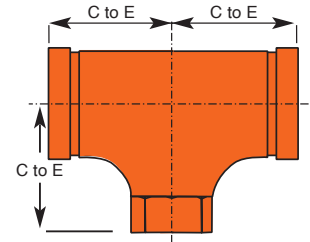
Style 115TM and 115TF are available up to 8" run size and 2-1/2" outlet size



Style 115



Style 115TM



Style 115TF

FLOW DATA Frictional Resistance (Expressed as Equivalent Straight Pipe in Ft.)					
Nominal Size (In.)	Reducer Tee		Nominal Size (In.)	Reducer Tee	
	Branch	Run		Branch	Run
1-1/4	5.8	2.3	5	21.0	8.4
1-1/2	6.7	2.7	6	25.3	10.1
2	8.6	3.4	8	33.3	13.3
2-1/2	10.3	4.1	10	41.8	16.7
3	12.8	5.1			
4	16.8	6.7			

Flow data is based upon the pressure of drop of Sch. 40 pipe

REDUCER TEE - NO. 115 Add after part number the letters TF for internal or TM for external threaded outlet					
Nominal Size (In.)	C to E (In.)	Approx. Wgt. Ea. (Lb.)	Nominal Size (In.)	C to E (In.)	Approx. Wgt. Ea. (Lb.)
2 x 2 x 1 1/4	2.76	2.7	6 x 6 x 1 1/2	5.51	24.0
2 x 2 x 1 1/2	2.76	2.7	6 x 6 x 2	5.51	26.4
2 1/2 x 2 1/2 x 1	3.00	4.8	6 x 6 x 2 1/2	5.51	26.5
2 1/2 x 2 1/2 x 1 1/4	3.00	4.8	6 x 6 x 3	5.51	26.5
2 1/2 x 2 1/2 x 1 1/2	3.00	5.1	6 x 6 x 4	5.51	29.3
2 1/2 x 2 1/2 x 2	3.00	5.1	6 x 6 x 5	5.51	30.9
3 x 3 x 1	3.39	5.8	8 x 8 x 1 1/2	6.90	33.0
3 x 3 x 1 1/4	3.39	6.4	8 x 8 x 2	6.90	33.5
3 x 3 x 1 1/2	3.39	7.5	8 x 8 x 2 1/2	6.90	39.0
3 x 3 x 2	3.39	8.4	8 x 8 x 3	6.90	33.6
3 x 3 x 2 1/2	3.39	8.6	8 x 8 x 4	6.90	47.4
4 x 4 x 1	4.00	7.8	8 x 8 x 5	6.90	48.3
4 x 4 x 1 1/4	4.00	9.6	8 x 8 x 6	6.90	49.8
4 x 4 x 1 1/2	4.00	10.2	8 x 8 x 6 1/2	6.90	50.5
4 x 4 x 2	4.00	10.4	10 x 10 x 2	8.46	84.9
4 x 4 x 2 1/2	4.00	11.4	10 x 10 x 2 1/2	9.0	83.8
4 x 4 x 3	4.00	11.6	10 x 10 x 3	9.0	82.7
5 x 5 x 1 1/2	4.80	14.3	10 x 10 x 4	9.0	79.4
5 x 5 x 2	4.80	14.5	10 x 10 x 5	9.0	78.9
5 x 5 x 2 1/2	4.80	15.2	10 x 10 x 6	9.0	78.3
5 x 5 x 3	4.80	15.4	10 x 10 x 8	9.0	77.2
5 x 5 x 4	4.80	16.1			

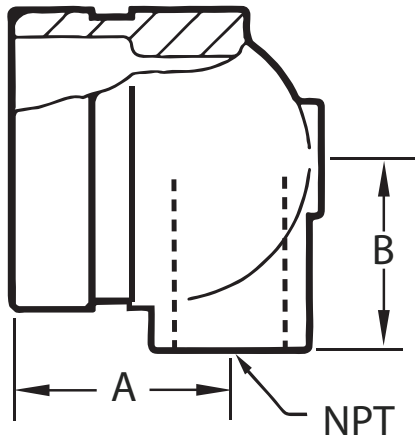
**NOTES:** Allowable pipe end separation is for cut groove pipe for roll groove, figures will be one-half of the valves listed at time of initial pressurization. –Bolts and Nuts are galvanized.  
\* - Maximum pressure including surges and maximum end loads from all internal and external forces, to which a joint could be subject under normal working conditions. This rating provides a nominal safety factor of 1.5 times working pressure based on standard weight steel pipe. Maximum working pressure may be subjected to a one time field test of 1.5 times the figures indicated. Refer to installations and groove specifications when assembling any grooved product.

PROJECT	APPROVAL STAMP
PROJECT:	<input type="checkbox"/> APPROVED
ADDRESS:	<input type="checkbox"/> APPROVED AS NOTED
ENGINEER:	<input type="checkbox"/> NOT APPROVED
SUBMITTAL DATA:	REMARKS:
NOTES 1:	
NOTES 2:	

## 90° ADAPTER ELL STYLE 105TL



- Transitions from grooved to threaded connection
- Direct connection to sprinkler heads
- Available in rust inhibitive black paint & galvanized finish
- UL/FM rated for 500 psi
- Made of ductile iron conforming to ASTM A536

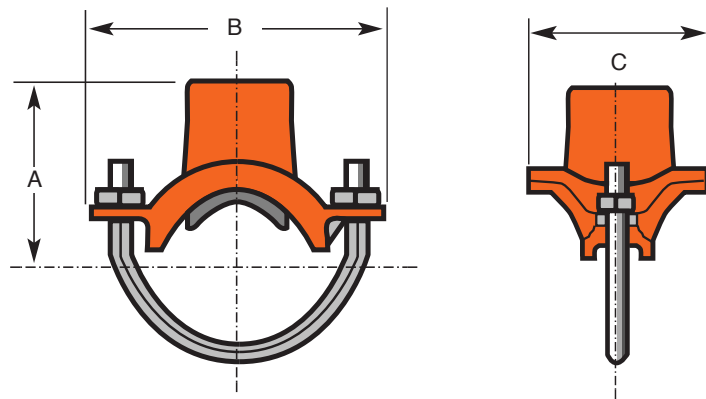


Nominal Size (In.)	Max. Work Press. (psi)	Dimensions (In.)	
		A	B
1-1/4 x 1/2	500	1.77	1.20
1-1/4 x 3/4	500	1.77	1.20
1-1/4 x 1	500	1.91	1.24
1-1/2 x 1/2	500	1.77	1.32
1-1/2 x 3/4	500	1.77	1.32
1-1/2 x 1	500	1.91	1.32
2 x 1/2	500	1.75	1.57
2 x 3/4	500	1.77	1.57
2 x 1	500	1.91	1.63
2-1/2 x 1/2	500	1.75	1.75
2-1/2 x 3/4	500	1.75	1.75
2-1/2 x 1	500	1.91	1.81

PROJECT	APPROVAL STAMP
PROJECT:	<input type="checkbox"/> APPROVED
ADDRESS:	<input type="checkbox"/> APPROVED AS NOTED
ENGINEER:	<input type="checkbox"/> NOT APPROVED
SUBMITTAL DATA:	REMARKS:
NOTES 1:	
NOTES 2:	

## TEE LOCK STYLE 13

- Molded gasket for each header size is made to insure a leak-tight connection
- Rated for 300 psi. UL Listed and FM Approved
- Manufactured from ductile iron, per ASTM A536
- EPDM gasket rated for -30°F to 230°F\*
- Available with hot dipped galvanized coating

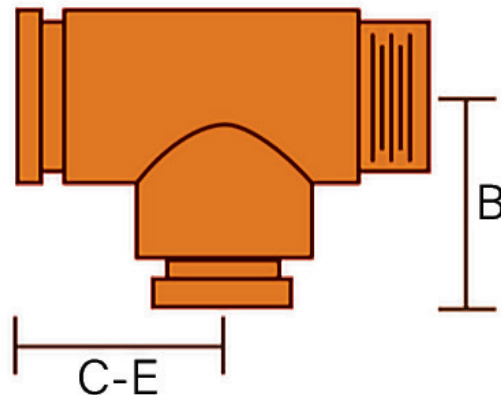


Nominal Size (In.)	Max. Working Pressure (psi)	Hole Saw (In.)	Dimensions Inches			Weight
			A	B	C	
1-1/4 x 1/2	300	1-3/16	1.693	3.543	2.205	0.78
1-1/4 x 3/4	300	1-3/16	1.772	3.543	2.205	0.85
1-1/4 x 1	300	1-3/16	1.969	3.543	2.20	0.95
1-1/2 x 1/2	300	1-3/16	1.693	3.661	2.323	0.78
1-1/2 x 3/4	300	1-3/16	2.126	3.661	2.323	0.89
1-1/2 x 1	300	1-3/16	2.283	3.661	2.323	0.98
2 x 1/2	300	1-3/16	2.126	3.780	2.323	0.82
2 x 3/4	300	1-3/16	2.205	3.780	2.323	0.90
2 x 1	300	1-3/16	2.598	3.780	2.323	1.02
2-1/2 x -1/2	300	1-3/16	2.362	4.331	2.323	0.90
2-1/2 x 3/4	300	1-3/16	2.480	4.331	2.323	0.93
2-1/2 x 1	300	1-3/16	2.756	4.331	2.323	0.95

PROJECT		APPROVAL STAMP
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ADDRESS:		<input type="checkbox"/> APPROVED AS NOTED
ENGINEER:		<input type="checkbox"/> NOT APPROVED
SUBMITTAL DATA:		REMARKS:
NOTES 1:		
NOTES 2:		

## DRAIN TEE STYLE 115D

- Fabricated from ASTM A53 SCH 40 pipe
- Standard grooves to AWWA C606
- Threads are MNPT
- Available with hot dipped galvanized coating
- Pressure rating of 300 psi



DRAIN TEE - STYLE 115D				
Nominal Size (In.)	Dimensions		Weight (Lbs.)	Available Outlet Sizes (In.)
	C-E	B		
1-1/4	2-3/4	2-3/4	1.4	1/4, 1/2, 3/4, 1
1-1/2	2-3/4	2-3/4	1.6	1/4, 1/2, 3/4, 1, 1-1/4

PROJECT	APPROVAL STAMP
PROJECT:	<input type="checkbox"/> APPROVED
ADDRESS:	<input type="checkbox"/> APPROVED AS NOTED
ENGINEER:	<input type="checkbox"/> NOT APPROVED
SUBMITTAL DATA:	REMARKS:
NOTES 1:	
NOTES 2:	