

Building connections that last™



Merit®

Outlet Fittings for Fire Protection



BUILDING CONNECTIONS THAT LAST



For over 150 years, Anvil has worked diligently to build a strong, vibrant tradition of making connections — pipe to pipe and people to people.

We pride ourselves in providing the finest-quality pipe products and services with integrity and dedication to superior customer service at all levels.

We provide expertise and product solutions for a wide range of applications, from plumbing, mechanical, HVAC, industrial and fire protection to mining, oil and gas. Our comprehensive line of products includes: grooved pipe couplings, grooved and plain-end fittings, valves, cast and malleable iron fittings, forged steel fittings, steel pipe nipples and couplings, pipe hangers and supports, channel and strut fittings, mining and oil field fittings, along with much more.

As an additional benefit to our customers, Anvil offers a complete and comprehensive Design Services Analysis for mechanical equipment rooms, to help you determine the most effective and cost-efficient piping solutions for your pipe system.

At Anvil, we believe that responsive and accessible customer support is what makes the difference between simply delivering products — and delivering solutions.



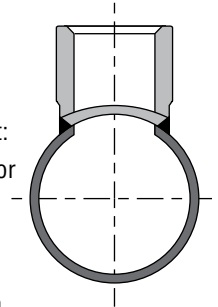
Weld-Miser™ Tee-Let® Welding Outlet Fittings

Unified Design™ Series

Merit's Unified Design Series carries all important design considerations into its entire line of welding branch outlet fittings.

Merit® Weld-Miser™ Tee-Lets® are designed and Manufactured to reduce the amount of weld required to install the Tee-Lets on thin wall or proprietary flow pipe. Typically only one weld-pass completes the installation. Merit Tee-Lets install with less weld volume than any other brand of welding outlet fittings for fire sprinkler applications. To accomplish this:

- The contoured end of the fittings employs a reduced outside diameter. Two major advantages are immediately apparent:
- The thinner wall on the contoured end permits welding temperatures to be matched to the thickness of the branch line or main thereby insuring complete penetration without cold welds, weld roll-off, burn-through or excessive distortion.
- On smaller sizes a heavier section is maintained on the threaded end of the fitting. This protects the threads from damage during shipping and handling prior to installation as well as from weld distortion.
- Each outlet size 1½" and larger, whether male or female threaded, cut grooved or beveled requires the same hole size in the header pipe. This simplifies the installation process.



General Specifications

- Tee-Let welding outlet fittings are manufactured from highly weldable steel which conforms to the chemical and physical requirements of ASTM A-53, Grades A or B, Type E. Ease of installation is assured when automatic welding equipment is used to install Merit Tee-Lets.
- Threads are cut in accordance with the requirements of ANSI B1.20.1, national standard for tapered pipe threads, or ISO-7-1 threads are available.
- Tee-Let threaded and grooved welding outlet fittings are UL/ULC Listed and FM Approved for use in the fire sprinkler systems installed in accordance with the requirements of NFPA Bulletin 13. They are rated for 300 PSI operation in fire sprinkler systems, and higher pressures in other non-critical piping systems.
- Tee-Lets are offered in a wide variety of header sizes. The consolidated header sizes shown in the following charts allow the fittings to be installed on more than one header size, permitting the first size listed to fit the header perfectly, while a small gap along the longitudinal center line of the header will appear for the second size listed.
- Merit® Weld-Miser™ Tee-Lets® are identified by a lot number that provides full traceability per ISO 9000 specifications.

For Your Piping Systems Specify Weld-Miser™ Tee-Let®

Branch Outlet Fittings shall be Merit Weld-Miser Tee-Let, Lightweight forged steel, employing low weld volume profile to provide for full penetration welds with minimum burn through and pipe distortion on Schedule 5 thru 10, proprietary thin wall, and standard wall pipe. Threads are to be ANSI B1.20.1, or ISO-7-1, and the bore of the fittings calculated to improve flow. Welding outlets to be UL Listed, FM Approved for use conforming to NFPA, Bulletin 13 and pressure rated for 300 PSI maximum.

How to Order - Use either of the following methods for ordering Merit® Weld-Miser™ Tee-Let®.

Method No. 1

Specify quantity desired followed by the part number shown in the "dimensions" chart for the type and size of outlet desired.

Method No. 2

Use the following system:

Quantity	Part Number	Quantity	Outlet Size	Header Size	Weight	Type End	Merit Tee-Let	Steel Material
		↓ Always order a few more than actually required for the job.	↓ Column "A" of Chart	↓ Insert size consolidation from Column "B" of chart.	↓ Sch. 10 Standard	↓ A - Female Thread B - Male Thread C - Cut Groove C/R - Roll Groove		



Weld-Miser™ Tee-Let®

Welding Outlet Fittings





 For Listings/Approval Details and Limitations, visit our website at www.anvilint.com or contact an Anvil® Sales Representative.

For Fire Protection & Other Low Pressure Piping Systems

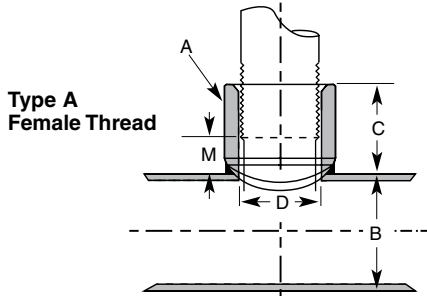
Merit Weld-Miser™ Tee-Let® Welding Branch Outlet Fittings offer the user a high strength, low cost forged threaded and grooved line of fittings specifically designed and manufactured to be installed on Schedules 5 thru 10, proprietary thin wall flow pipe and standard wall pipe.

Merit Tee-Lets are forged steel welding outlet fittings. The material used in manufacture meets the chemical and physical requirements of ASTM A 53, Grades A or B, Type E, A-135, A-795, Tee-Lets employ a low weld volume design to provide for either a partial or full penetration weld employing a single pass with minimum burn-through and pipe distortion. Weld Miser Tee-Lets are recommended for use on proprietary thin wall, Schedules 5, 10 and 40 pipe. Threads comply with ANSI B1.20.1 or ISO7/1. They are UL Listed and FM Approved for use conforming to the requirements of Bulletin 13 1999 of the National Fire Protection Association. When used in fire sprinkler systems, Tee-Lets are rated for 300 psi. When used in mechanical systems, maximum pressures are calculated using criteria developed for ASME B31 piping code.

TEE-LET WELDED OUTLET FITTING (UL VIZU — EX6032, FM APPROVAL GUIDE CHAPTER 1 — PIPE FITTINGS)			
Outlet Model	Outlet Pipe Size (Inch)	Header Pipe Size (Inch)	Rated Pressure (psig)
Tee-Let Type A (F-Threaded End)	1/2, 3/4, 1	1/2 - 8 (Sch. 10, 40)	300
	1 1/4, 1 1/2, 2, 2 1/2, 3, 4	1/2 - 4 (Sch. 5, DynaFlow)	
	2	4 (EZ-Flow)	
	2, 4	6 (EZ-Flow)	
Tee-Let Type C (Grooved End)	1 1/4 - 8	1 1/4 - 8 (Sch. 10, 40)	300
	2 1/2 - 8	1/2 - 4 (Sch. 5, DynaFlow)	
Tee-Let Type C/R (Roll Grooved End)	1 1/4 - 6	1 1/4 - 8 (All Schedules)	300

- 1) Size-on-size (i.e. 2 x 2) Tee-Lets are not FM Approved.
- 2) FM rated working pressure when welded on Sch. 5 or non-threadable lightwall pipe is 175 psi.

Weld-Miser™ Tee-Let® Welding Outlet Fittings



WELD-MISER™ TEE-LET® DIMENSIONS & PART NUMBERS							
Part Number	Nominal Outlet A	Nominal Header B	Outlet Length C	Inside Diameter D	Make Up M	Weight Each	
NPT (BSPT)	In (mm)	In (mm)	In (mm)	In (mm)	In (mm)	Lb. (kg)	
1002002	1/4 x 6 x	1/4 - 8 6 - 200				0.080 0.04	
1005012	1/2 x 13 x	1 1/4 - 1 1/2 32 - 40	1.063 27.0	0.700 17.8	0.500 12.7	0.171 0.08	
1005015		1 1/2 - 2 40 - 50	1.063 27.0	0.700 17.8	0.500 12.7	0.171 0.08	
1005020		2 - 2 1/2 50 - 65	1.063 27.0	0.700 17.8	0.500 12.7	0.171 0.08	
1005025		2 1/2 - 8 65 - 200	1.063 27.0	0.700 17.8	0.500 12.7	0.169 0.08	
1007012		3/4 x 19 x	1 1/4 - 1 1/2 32 - 40	1.125 28.6	0.900 22.9	0.500 12.7	0.260 0.12
1007015	1 1/2 - 2 40 - 50		1.125 28.6	0.900 22.9	0.500 12.7	0.260 0.12	
1007020	2 - 2 1/2 50 - 65		1.125 28.6	0.900 22.9	0.500 12.7	0.260 0.12	
1007025	2 1/2 - 8 65 - 200		1.125 28.6	0.900 22.9	0.500 12.7	0.256 0.12	
1010012	1 x 25 x		1 1/4 - 1 1/2 32 - 40	1.250 31.8	1.145 29.1	0.500 12.7	0.331 0.15
1010015		1 1/2 - 2 40 - 50	1.250 31.8	1.145 29.1	0.500 12.7	0.331 0.15	
1010020		2 - 2 1/2 50 - 65	1.250 31.8	1.145 29.1	0.500 12.7	0.320 0.15	
1010025		2 1/2 - 3 65 - 80	1.250 31.8	1.145 29.1	0.500 12.7	0.314 0.14	
1010030		3 - 4 80 - 100	1.250 31.8	1.145 29.1	0.500 12.7	0.309 0.14	
1010050		5 - 8 125 - 200	1.250 31.8	1.145 29.1	0.500 12.7	0.291 0.13	
1012012		1 1/4 x 32 x	1 1/4 32	1.375 34.9	1.490 37.8	0.500 12.7	0.432 0.19
1012015			1 1/2 - 2 40 - 50	1.375 34.9	1.490 37.8	0.500 12.7	0.421 0.19
1012020			2 - 2 1/2 50 - 65	1.375 34.9	1.490 37.8	0.500 12.7	0.421 0.19
1012025			2 1/2 - 3 65 - 80	1.375 34.9	1.490 37.8	0.500 12.7	0.411 0.19
1012030	3 - 4 80 - 100		1.375 34.9	1.490 37.8	0.500 12.7	0.389 0.18	
1012050	5 - 8 125 - 200		1.375 34.9	1.490 37.8	0.500 12.7	0.389 0.18	
1015015	1 1/2 x 40 x		1 1/2 40	1.625 41.3	1.610 40.9	0.875 22.2	0.477 0.22
1015020			2 50	1.625 41.3	1.610 40.9	0.875 22.2	0.477 0.22
1015025			2 1/2 65	1.625 41.3	1.610 40.9	0.875 22.2	0.477 0.22
1015030			3 - 4 80 - 100	1.625 41.3	1.610 40.9	0.875 22.2	0.477 0.22
1015040		4 100	1.625 41.3	1.610 40.9	0.875 22.2	0.477 0.22	
1015050		5 - 8 125 - 200	1.625 41.3	1.610 40.9	0.875 22.2	0.477 0.22	

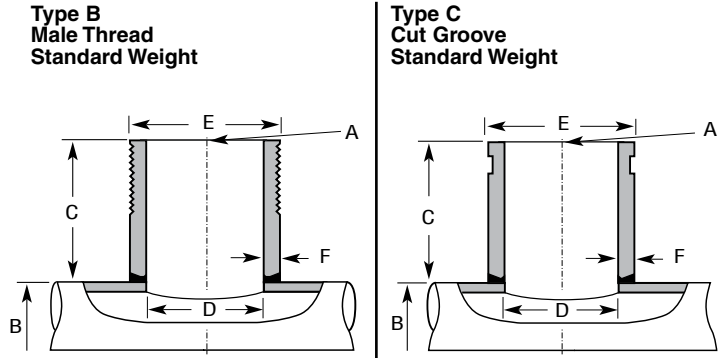
WELD-MISER™ TEE-LET® DIMENSIONS & PART NUMBERS							
Part Number	Nominal Outlet A	Nominal Header B	Outlet Length C	Inside Diameter D	Make Up M	Weight Each	
NPT (BSPT)	In (mm)	In (mm)	In (mm)	In (mm)	In (mm)	Lb. (kg)	
1020020	2 x 50 x	2 50	1.750 44.5	2.067 52.5	0.875 22.2	0.857 0.38	
1020025		2 1/2 65	1.750 44.5	2.067 52.5	0.875 22.2	0.829 0.38	
1020030		3 80	1.750 44.5	2.067 52.5	0.875 22.2	0.829 0.39	
1020040		4 100	1.750 44.5	2.067 52.5	0.875 22.2	0.800 0.36	
1020050		5 125	1.750 44.5	2.067 52.5	0.875 22.2	0.743 0.34	
1020060		6 150	1.750 44.5	2.067 52.5	0.875 22.2	0.743 0.34	
1020080		8 200	1.750 44.5	2.067 52.5	0.875 22.2	0.743 0.34	
1025025		2 1/2 x 65 x	2 1/2 65	2.215 54.0	2.469 62.7	1.125 28.6	1.250 0.55
1025030			3 80	2.215 54.0	2.469 62.7	1.125 28.6	1.200 0.55
1025040			4 100	2.215 54.0	2.469 62.7	1.125 28.6	1.150 0.52
1025050	5 125		2.215 54.0	2.469 62.7	1.125 28.6	1.150 0.52	
1025060	6 150		2.215 54.0	2.469 62.7	1.125 28.6	1.150 0.52	
1025080	8 200		2.215 54.0	2.469 62.7	1.125 28.6	1.150 0.52	
1030030	3 x 80 x		3 80	2.500 63.5	3.068 77.9	1.500 38.1	1.550 0.70
1030040			4 100	2.500 63.5	3.068 77.9	1.500 38.1	1.450 0.66
1030050			5 125	2.500 63.5	3.068 77.9	1.500 38.1	1.450 0.66
1030060			6 150	2.500 63.5	3.068 77.9	1.500 38.1	1.450 0.66
1030080		8 200	2.500 63.5	3.068 77.9	1.500 38.1	1.450 0.66	
1040040	4 x 100 x	4 100	3.000 76.2	4.026 102.3	2.000 50.8	2.850 1.29	
1040050		5 125	3.000 76.2	4.026 102.3	2.000 50.8	2.850 1.29	
1040060		6 150	3.000 76.2	4.026 102.3	2.000 50.8	2.800 1.27	
1040080		8 200	3.000 76.2	4.026 102.3	2.000 50.8	2.800 1.27	

Note:
Part #1002002 is not UL Listed or FM Approved.
Part #1012012 is not FM Approved.
All size-on-size (i.e. 2 x 2) Tee-Lets are not FM Approved.



Weld-Miser™ Tee-Let®

Welding Outlet Fittings



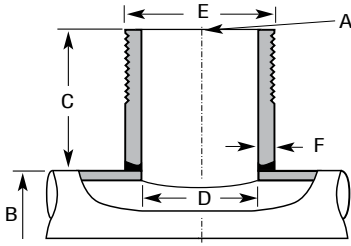
WELD-MISER™ TEE-LET® - DIMENSIONS (NOMINAL SIZES 1" THRU 2")

Male Thread Std. Wt.	Cut Groove Std. Wt.	Nominal Outlet A	Nominal Header B	Outlet Length C	Inside Diameter D	Outside Diameter E	Wall Thickness F
<i>NPT (BSPT)</i>	<i>NPT (BSPT)</i>	<i>In.(mm)</i>	<i>In.(mm)</i>	<i>In.(mm)</i>	<i>In.(mm)</i>	<i>In.(mm)</i>	<i>In.(mm)</i>
1310012	2010012	1 x 25 x	1¼ - 1½ 32 - 40	3 80	1.049 26.6	1.315 33.4	0.133 3.4
1310015	2010015		1½ - 2 40 - 50	3 80	1.049 26.6	1.315 33.4	0.133 3.4
1310020	2010020		2 - 2½ 50 - 65	3 80	1.049 26.6	1.315 33.4	0.133 3.4
1310025	2010025		2½ - 4 65 - 100	3 80	1.049 26.6	1.315 33.4	0.133 3.4
1310050	2010050		5 - 8 125 - 200	3 80	1.049 26.6	1.315 33.4	0.133 3.4
1312012	2012012	1¼ x 32 x	1¼ 32	3 80	1.368 34.7	1.660 42.2	0.140 3.6
1312015	2012015		1½ 40	3 80	1.368 34.7	1.660 42.2	0.140 3.6
1312020	2012020		2 - 2½ 50 - 65	3 80	1.368 34.7	1.660 42.2	0.140 3.6
1312025	2012025		3 - 4 80 - 100	3 80	1.368 34.7	1.660 42.2	0.140 3.6
1312050	2012050		5 - 8 125 - 200	3 80	1.368 34.7	1.660 42.2	0.140 3.6
1315015	2015015	1½ x 40 x	1½ 40	3 80	1.610 40.9	1.900 48.3	0.145 3.7
1315020	2015020		2 50	3 80	1.610 40.9	1.900 48.3	0.145 3.7
1315025	2015025		2½ 65	3 80	1.610 40.9	1.900 48.3	0.145 3.7
1315030	2015030		3 - 4 80 - 100	3 80	1.610 40.9	1.900 48.3	0.145 3.7
1315050	2015050		5 - 8 125 - 200	3 80	1.610 40.9	1.900 48.3	0.145 3.7
1320020	2020020	2 x 50 x	2 50	3 80	2.067 52.5	2.375 60.3	0.154 3.9
1320025	2020025		2½ 65	3 80	2.067 52.5	2.375 60.3	0.154 3.9
1320030	2020030		3 80	3 80	2.067 52.5	2.375 60.3	0.154 3.9
1320035	2020035		4 100	3 80	2.067 52.5	2.375 60.3	0.154 3.9
1320050	2020050		5 125	3 80	2.067 52.5	2.375 60.3	0.154 3.9
1320060	2020060		6 150	3 80	2.067 52.5	2.375 60.3	0.154 3.9
1320080	2020080		8 200	3 80	2.067 52.5	2.375 60.3	0.154 3.9

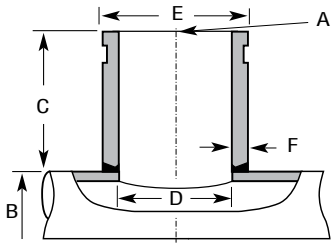
Note: Tee-Lets are manufactured to fit size-on-size, that is the contoured shape on a given Tee-Let is made to fit perfectly on the first listed header size. If installed on the second header size marked on the fitting, a slight gap of approximately 1/32" will appear along the longitudinal centerline of the header. For example, a 1" x 2 - 2½" Tee-Let, is a 1" outlet fitting manufactured to fit perfectly on the 2" header size listed, while leaving a 1/32" gap along the longitudinal centerline of the 2½" size. If a perfect fit is required for a 2½" header pipe, then a 1" x 2½ - 3" Tee-Let would be ordered. Size consolidations are employed to reduce inventory and provide for greater flexibility.

Weld-Miser™ Tee-Let® Welding Outlet Fittings

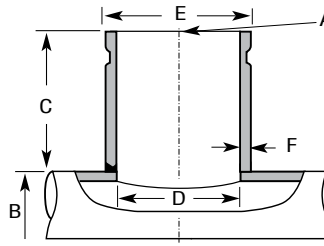
**Type B
Male Thread
Standard Weight**



**Type C
Cut Groove
Standard Weight**



**Type C/R
Roll Groove
Schedule 10**



WELD-MISER™ TEE-LET® - DIMENSIONS (NOMINAL SIZES 2½" THRU 8")

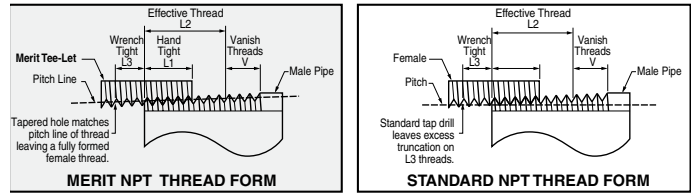
Male Thread Std. Wt.	Cut Groove Std. Wt.	Roll Groove Sch. 10	Nominal Outlet A	Nominal Header B	Outlet Length C	Inside Diameter - D		Outside Diameter E	Wall Thickness - F	
						Standard Weight	Schedule 10		Standard Weight	Schedule 10
<i>NPT (ISO-7-1)</i>	<i>NPT (ISO-7-1)</i>	<i>NPT (ISO-7-1)</i>	<i>In.(mm)</i>	<i>In.(mm)</i>	<i>In.(mm)</i>	<i>In.(mm)</i>	<i>In.(mm)</i>	<i>In.(mm)</i>	<i>In.(mm)</i>	<i>In.(mm)</i>
1325025	2025025 <i>2125025</i>	2225025	2½ x 65 x	2½ 65	3 80	2.469 62.7	2.635 67.0	2.875 76.2	0.203 5.0	0.120 3.0
1325030	2025030 <i>2125030</i>	2225030		3 80	3 80	2.469 62.7	2.635 67.0	2.875 76.2	0.203 5.0	0.120 3.0
1325035	2025035 <i>2125035</i>	2225035		4 100	3 80	2.469 62.7	2.635 67.0	2.875 76.2	0.203 5.0	0.120 3.0
1325050	2025050 <i>2125050</i>	2225050		5 125	3 80	2.469 62.7	2.635 67.0	2.875 76.2	0.203 5.0	0.120 3.0
1325060	2025060 <i>2125060</i>	2225060		6 150	3 80	2.469 62.7	2.635 67.0	2.875 76.2	0.203 5.0	0.120 3.0
1325080	2025080 <i>2125080</i>	2225080		8 200	3 80	2.469 62.7	2.635 67.0	2.875 76.2	0.203 5.0	0.120 3.0
1330030	2030030	2230030	3 x 80 x	3 80	3 80	3.068 78.0	3.260 83.0	3.500 88.0	0.216 5.0	0.120 3.0
1330035	2030035	2230035		3½ 85	3 80	3.068 78.0	3.260 83.0	3.500 88.0	0.216 5.0	0.120 3.0
1330040	2030040	2230040		4 100	3 80	3.068 78.0	3.260 83.0	3.500 88.0	0.216 5.0	0.120 3.0
1330050	2030050	2230050		5 125	3 80	3.068 78.0	3.260 83.0	3.500 88.0	0.216 5.0	0.120 3.0
1330060	2030060	2230060		6 150	3 80	3.068 78.0	3.260 83.0	3.500 88.0	0.216 5.0	0.120 3.0
1330080	2030080	2230080		8 200	3 80	3.068 78.0	3.260 83.0	3.500 88.0	0.216 5.0	0.120 3.0
1340040	2040040	2240040	4 x 100 x	4 100	4 100	4.026 102.0	4.260 108.0	4.500 114.0	0.237 6.0	0.120 3.0
1340050	2040050	2240050		5 125	4 100	4.026 102.0	4.260 108.0	4.500 114.0	0.237 6.0	0.120 3.0
1340060	2040060	2240060		6 150	4 100	4.026 102.0	4.260 108.0	4.500 114.0	0.237 6.0	0.120 3.0
1340080	2040080	2240080		8 200	4 100	4.026 102.0	4.260 108.0	4.500 114.0	0.237 6.0	0.120 3.0
-	2050050	-	5 x 125 x	5 125	4 100	5.047 128.2	-	-	-	-
-	2050060	-		6 150	4 100	5.047 128.2	-	-	-	-
-	2050080	-		8 200	4 100	5.047 128.2	-	-	-	-
-	2060060	2260060	6 x 150 x	6 150	4 100	6.065 155.0	6.357 161.5	6.625 168.3	0.280 7.1	0.134 3.0
-	2060080	2260080		8 200	4 100	6.065 155.0	6.357 161.5	6.625 168.3	0.280 7.1	0.134 3.0
-	2080080	-	8 x 200 x	8 200	4 100	7.981 203.0	8.329 212.0	8.625 213.0	0.322 8.0	0.148 3.0

Note: Tee-Lets are manufactured to fit size-on-size, that is the contoured shape on a given Tee-Let is made to fit perfectly on the first listed header size. If installed on the second header size marked on the fitting, a slight gap of approximately ½" will appear along the longitudinal centerline of the header. For example, a 1" x 2 - 2½" Tee-Let, is a 1" outlet fitting manufactured to fit perfectly on the 2" header size listed, while leaving a ½" gap along the longitudinal centerline of the 2½" size. If a perfect fit is required for a 2½" header pipe, then a 1" x 2½" - 3" Tee-Let would be ordered. Size consolidations are employed to reduce inventory and provide for greater flexibility.



Weld-Miser™ Tee-Let® Installation

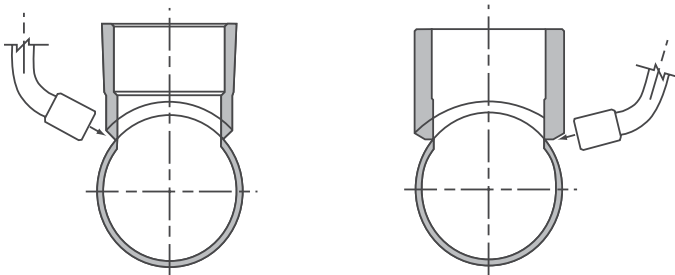
Welding Outlet Fittings



Threading Practice

Tee-Let® thread form is consistent with Aeronautical National Form (ANPT) AS71051. The thread is fully formed over both the L-1 hand tight and L-3 wrench tight threads. NPT tapered threads are typically gauged only over the L-1 threads. This makes Tee-Lets more forgiving of field cut threaded pipe that may only marginally conform to the specification. Fewer leaks translate into lower costs.

Ease of Installation



Merit Manufacturing Tee-Lets are designed to sit higher on the pipe, thereby requiring less weld and eliminating burn through. Tee-Lets sit higher on the header or branch line pipe than competitive fittings. This allows the welding torch to remain in an optimum position for welding. In addition, 1½" and larger Type A female threaded and Type C grooved Tee-Lets require the same hole size for installation. This results in fewer change overs when installed using automatic welders.

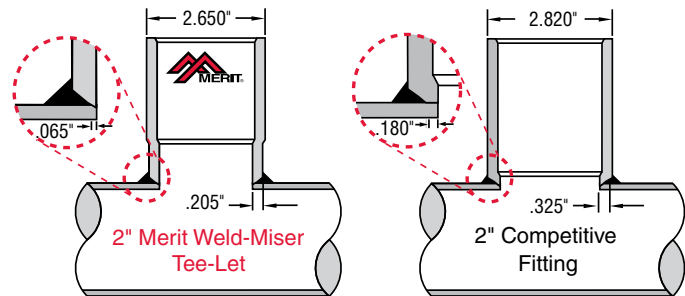
NPT TAPERED PIPE THREADS									
Drop Nipple or Tee-Let Outlet Size	L1 Hand Tight		L3 Wrench Tight		Total L1 - L3 Length		L2 Effective Threads		
In. (mm)	In. (mm)	Threads	In. (mm)	Threads	In. (mm)	Threads	In. (mm)	Threads	
½" 15	0.320 8.1	4.48	0.214 5.4	3.00	0.534 13.6	7.48	0.534 13.6	7.47	
¾" 20	0.339 8.6	4.75	0.214 5.4	3.00	0.553 14.0	7.75	0.546 13.9	7.64	
1" 25	0.400 10.2	4.60	0.261 6.6	3.00	0.661 16.8	7.60	0.683 17.3	7.85	
1¼" 32	0.420 10.7	4.83	0.261 6.6	3.00	0.681 17.3	7.83	0.707 18.0	8.13	
1½" 40	0.420 10.7	4.83	0.261 6.6	3.00	0.697 17.7	7.83	0.724 18.4	8.32	
2" 50	0.436 11.1	5.01	0.261 6.6	3.00	0.706 17.9	8.01	0.757 19.2	8.70	
2½" 65	0.682 17.3	5.46	0.250 6.4	2.00	0.932 23.7	7.46	1.138 28.9	9.10	
3" 80	0.766 19.5	6.13	0.250 6.4	2.00	1.016 25.8	8.13	1.200 30.5	9.60	
4" 100	0.844 21.4	6.75	0.250 6.4	2.00	1.094 27.8	8.75	1.300 33.0	10.40	

Domestic Manufacture

Increasingly, federal, state, municipal, and quasi municipal authorities require domestic content for fire sprinkler systems. Merit® Tee-Lets® meet these requirements. The need to maintain dual inventories; one domestic; one import is eliminated.

Welding Practice

When measured with respect to linear inches of weld required for installation, Tee-Lets require up to 15% less weld than competitive fittings. This reduces time and savings over time are substantial. The diameter of the contoured end of Type A Tee-Lets has been reduced so that the wall thickness more nearly matches the header or branch line pipe wall thickness. Therefore, current and voltage settings required for welding are set to provide for adequate penetration without burn through and cold shutting. Also, weld volume required for installation is lower for Tee-Lets than most other fittings. Typically, Tee-Lets require one-weld pass for attachment.



WELDING PRACTICE

Outlet Size	MERIT WELD-MISER TEE-LET				COMPETITIVE FITTING			
	WELD VOLUME*		LINEAR WELDING		WELD VOLUME*		LINEAR WELDING	
In. (mm)	Cross Sec. Area	%less	In. (mm)	%less	Cross Sec. Area	%more	In. (mm)	%less
1" 25	0.051 sq. in. 32.9 sq mm	12%	2.48 62.9	0%	0.058 sq. in. 37.4 sq mm	12%	2.48 62.9	0%
1¼" 32	0.032" 20.6	48%	2.88 73.1	4%	0.063 40.6	48%	3.01 76.4	4%
1½" 40	0.036" 23.2	40%	3.12 79.2	10%	0.060 38.7	40%	3.46 87.8	10%
2" 50	0.040" 25.8	62%	3.77 95.7	15%	0.106 68.3	62%	4.41 112.0	15%



Weld-Miser™ Tee-Let® Installation (cont.) Welding Outlet Fittings

Recommended Installation Procedures

Merit Weld-Miser Tee-Let Welding Outlet Fittings are designed and manufactured to reduce the cost of installation from both the standpoint of labor required and energy consumed. In addition, by following the recommended installation procedures, many of the problems associated with installing welding outlet fittings on standard weight or light weight pipe are eliminated, including burn through and excessive shrinkage resulting in pipe distortion.

Recommended Hole Sizes

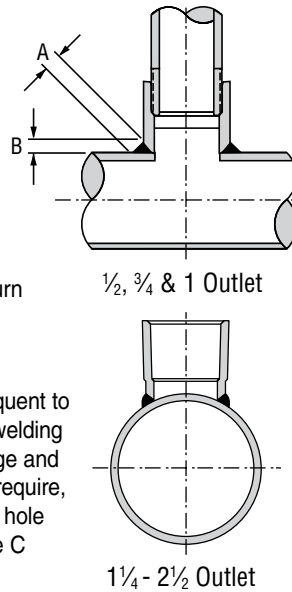
The hole cut in the branch or header pipe can be cut prior or subsequent to attachment of the Tee-Let. One advantage of cutting the hole after welding is that the pipe is left intact during welding thereby reducing shrinkage and possible distortion. If holes are cut prior to welding, as some codes require, then the following hole sizes are recommended. Note that the same hole diameter for a given outlet size is required for both Type A and Type C Tee-Lets 1-1½" larger.

Recommended Welding Procedures

Merit Weld-Miser Tee-Lets are designed to be installed on standard weight or light weight pipe with one weld pass on Type A outlet sizes from ½" through 2½" inclusive, and on Type C outlet sizes through 4". Moreover, the wall thickness at the weld end of the fitting approximately matches standard weight pipe. Accordingly, heat setting can be made to optimize penetration on both the fitting and the pipe which it is being welded. Aside from reducing the likelihood of burn through and distortion resulting from excessive heat, the amount of weld required for adequate penetration is significantly reduced.

Merit Tee-Lets are manufactured from continuous cast aluminum killed steel with a carbon range of from 0.05 to 0.25. Merit specifies that residuals, such as chrome, nickel and other metals resident in the scrap used for production of the steel be reported and kept to a minimum. On the other hand, certain grades of carbon steel pipe are manufactured from skelp whose chemical composition is not specified. When the metal inert gas shield (MIG) welding process is employed, certain residuals may cause excessive porosity, spatter or lack of penetration. Specifically, gases released during the welding process do not escape before the molten puddle sets up. When porosity or lack of penetration occurs, one approach is to slightly increase the heat in order to give the gases time to escape from the puddle. A flux cored wire can also be used. This wire contains scavengers which allow gases in the molten weld puddle to escape before the weld solidifies. The following recommended settings for welding therefore may need to be adjusted slightly higher if any of the above mentioned adverse conditions exist.

As a general rule, the weld should be only as hot as required to allow the weld to penetrate the materials being welded while concomitantly allowing gases developed in the welding process to escape. Every effort must be made to avoid welding too hot or overheating both the pipe and the Tee-Let. **Excessive heat may cause the wrench tight threads (those in the bottom of the Tee-Let near the weld zone) to distort while also causing the branch pipe to bend.** It should be noted that Merit Tee-Lets have been subjected to exhaustive testing and evaluation, and only negligibly distort when subjected to excessive heat. The threads, on the other hand, may not return to their gauged form after cooling if excessive heat causes them to expand. The following is intended only as a guide, and assumes that the welding equipment is properly calibrated and functioning normally and the operator is qualified.



RECOMMENDED AMOUNT OF WELD		
Outlet Size	A	B
<i>In./mm</i>	<i>In./mm</i>	<i>In./mm</i>
½	¼	⅜
13	7	5
¾	¼	⅜
19	7	5
1	¼	⅜
25	7	5
1¼	¼	⅜
31	7	5
1½	⅜	¼
38	8	7
2	⅜	¼
50	8	7
2½	⅜	¼
63	8	7
3	⅝	⅜
75	10	5
4	⅝	⅜
100	10	5

RECOMMENDED TEE-LET HOLE SIZES		
Tee-Let Size	Type	Recommended Hole Size
<i>In./mm</i>		<i>In./mm</i>
½	Type A	⅝
13	Type A	16
¾	Type A	⅞
19	Type A	22
1	Type A	1½
25	Type A	28
1¼	Type A	1½
31	Type A	38
1½	Type C	1¾
31	Type C	35
1½	Type A or C	1¾
38	Type A or C	41
2	Type A or C	2
50	Type A or C	50
2½	Type A or C	2⅞
63	Type A or C	61
3	Type A or C	3
75	Type A or C	75
4	Type A or C	4
100	Type A or C	100

Holes may be cut employing mechanical means—including hole sawing, mechanical flame cutting (oxy-acetylene or propane), and air plasma cutting (constricted tungsten arc) machines. Merit offers a simple approach to cutting the hole. Hand-held templates are sized to match your plasma cutter.



Weld-Miser™ Tee-Let®

Installation (cont.)

Welding Outlet Fittings

RECOMMENDED SETTINGS FOR MICROWIRE WELDING PROCESS, CONTINUED ON NEXT PAGE

Header Size	Pipe Wall Thickness	Tee-Let Types A, B, C	Electrode Size	Welding Current	Arc. Volts	Wire Feed	Travel Speed
<i>In./mm</i>	<i>In./mm</i>	<i>In./mm</i>		<i>AMPS-DC</i>	<i>POS.</i>	<i>IPM</i>	<i>IPM</i>
1¼ - 2 31-50	0.065 2	½ - 2 13-50	0.035	100-130	16-20	210	25-30
		2½ - 4 63-100	0.035	115-150	17-21	270	20-25
	0.109 3	½ - 2 13-50	0.035	110-140	18-22	220	25-30
		2½ - 4 63-100	0.035	120-160	19-22	290	20-25
2½ - 4 63-100	0.083 2.5	½ - 2 13-50	0.035	110-140	17-20	210	20-25
		2½ - 4 63-100	0.035	120-150	17-20	270	20-25
	0.120 3	½ - 2 13-50	0.035	120-160	19-22	290	20-25
		2½ - 4 63-100	0.035	130-160	19-22	240	20-25
5-6 125-150	0.109 3	½ - 2 13-50	0.035	120-150	17-20	210	20-25
		2½ - 4 63-100	0.035	130-150	18-20	270	15-20
	0.134 3.5	½ - 2 13-50	0.035	130-160	19-22	290	20-25
		2½ - 4 63-100	0.035	140-160	20-22	270	15-20
8 200	0.109 3	½ - 2 13-50	0.035	120-150	17-20	240	20-25
		2½ - 4 63-100	0.035	130-150	18-20	260	15-20
		2½ - 4 63-100	0.045	170-220	18-22	290	12-18
	0.148 3.5	½ - 2 13-50	0.035	130-160	19-22	240	20-25
		2½ - 4 63-100	0.035	140-160	20-22	260	15-20
		2½ - 4 63-100	0.045	180-225	20-24	290	12-18

Shielding Gas Flow (FOR ALL SIZES) 20-25 CFH

- 1.) Co₂ - Deeper penetration, faster welding, low cost.
- 2.) 25% - Argon, 75% - Co₂, Recommended for .134 wall and lighter, high welding speeds without melt through, minimum distortion and spatter, good penetration.

Merit assumes no liability for any consequential damages resulting from the improper use of its Tee-Let Welding Outlet Fittings, nor for any recommendations made with respect to installation procedures.





Weld-Miser™ Tee-Let® Installation (cont.) Welding Outlet Fittings

I) WELDING PROCEDURES

Please refer to www.Anvilintl.com or latest catalog for recommended hole size and welding practice.

II) THREAD MAKE-UP AND INSTALLATION

A) For use in systems installed in accordance with all applicable standards or codes. (See Section III, Item C)

B) Before starting the job of making nipples or sprinklers into steel threads of the above fittings, insure that no dirt or weld spatter is in the threads and no burn-through damaged the threads. Then count the number of fully developed male threads on the nipple or sprinkler to be installed into the fittings. Compare number of threads counted to the number of required fully developed threads as shown in the thread chart located on the back of this sheet. If thread count is correct, proceed with installation (Step C), if thread count does not match, check nipple or sprinkler for proper thread gage measurement and discard if not to ANSI B1.20.1 / ISO-7R/RC specification.

C) The use of an anaerobic pipe thread sealant is preferred for thread make up when connecting to another pipe fitting or nipple. If attaching a sprinkler head, please refer to the manufacturer's installation instructions and apply pipe thread sealant only to male threads of the sprinkler.

D) If either of the above fails to allow the sprinkler or nipple to make-up to a minimum of full threads, do not over tighten. Instead back the sprinkler or nipple out of the fitting. Clean any debris and/or pipe sealant from both the male and female threads. Gauge both the male threads of the sprinkler or nipple and the female threads of the Tee-Let with ANSI B1.20.1 / ISO-7R/RC. Specification for Tapered Pipe Threads. The same procedure would apply if a leak has been detected.

If within tolerance, reapply the anaerobic pipe sealant or Teflon™ tape and make-on to the required length. Refer to the pipe chart on page 8 for correct make-up lengths. Allow twenty-four hours for setting.

III) GENERAL INFORMATION

A) APPROVALS AND STANDARDS

Merit Manufacturing Tee-Lets are listed by the Underwriters Laboratories, Inc. and approved by the Factory Mutual Research Corporation (FM).

B) TECHNICAL DATA

Merit Manufacturing Tee-Lets are rated for use at a maximum service pressure of 300 psi.

The threads conform to ANSI B1.20.1 / ISO-7R/RC.

C) WARNING

Merit Manufacturing Tee-Lets described herein must be installed and maintained in compliance with this document as well as the applicable standards of the National Fire Protection Association in addition to the standards for any other authorities having jurisdiction.

D) DIMENSIONAL DATA See pages 5 - 8.

E) WARRANTY AND DISCLAIMER

Seller warrants for one year from the date of shipment Seller's manufactured products to the extent that Seller will replace those having defects in material or workmanship when used for the

purpose and in the manner which Seller recommends. If Seller examination shall disclose to its satisfaction that the products are defective, and an adjustment is required, the amount of such adjustment shall not exceed the net sales price of the defective products only and no allowance will be made for labor or expense of repairing or replacing defective products or workmanship of damage resulting from the same. Seller warrants the products which it sells of other manufacturers to the extent of the warranties of their respective makers. Where engineering design or fabrication work is supplied. Buyer's acceptance of Seller's design or of delivery of work shall relieve Seller of all further obligation, other than expressed in Seller's product warranty. THIS IS SELLER'S SOLE WARRANTY. SELLER MAKES NO OTHER WARRANTY OF ANY KIND, EXPRESSED OR IMPLIED AND ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FOR A PARTICULAR PURPOSE WHICH EXCEED SELLER'S AFORESTATED OBLIGATION ARE HEREBY DISCLAIMED BY SELLER AND EXCLUDED FROM THIS WARRANTY. Seller neither assumes, nor authorizes any person to assume for it, any other obligation in connection with the sale of its engineering designs or products. This warranty shall not apply to any products or parts of products which (a) have been repaired or altered outside of Seller's factory, in any manner; (b) have been subjected to misuse, negligence or accidents; (c) have been used in a manner contrary to Seller's instructions or recommendations. Seller shall not be responsible for design errors due to inaccurate or incomplete information supplied by Buyer or its representatives.

F) SELLER'S LIABILITY:

Seller will not be liable for any loss, damage, cost of repairs, incidental or consequential damages of any kind, whether based upon warranty (except for the obligation accepted by Seller under "Warranty" above), contract or negligence, arising in connection with the design, manufacture, sale, use or repair of the products or of the engineering designs supplied to Buyer.

G) RETURNS:

Seller cannot accept return of any products unless its written permission has been first obtained, in which case same will be credited subject to the following (a) All material returned must, on its arrival at Seller's Plant, be found to be in first-class condition; if not, cost of putting in saleable condition will be deducted from credit memoranda; (b) A handling charge deduction of twenty percent (20%) will be made from all credit memoranda issued for material returned; (c) Transportation charges, if not prepaid will be deducted from credit memoranda.

H) RETURN OF MATERIAL

No Products sold by Merit may be returned without Merit's written consent. All products returned are subject to a handling charge plus freight in both directions and charges for any required reconditioning, unless otherwise specified in writing by Merit.

I) COMPLETE TERMS AND CONDITIONS CAN BE FOUND AT www.anvilintl.com



Eliminator

Adjustable Drop Nipples



For Listings/Approval Details and Limitations, visit our website at www.anvilintl.com or contact an Anvil® Sales Representative.

PRODUCT APPROVALS

Eliminator Adjustable Drop Nipple :
(UL VGSQ – EX3829, FM Approval Guide Chapter 1 - Adjustable Sprinkler Fittings VdS Certificate #G4930033 BSA: 886-86-SA)

Adjustable Drop Model	Inlet x Outlet Size	Adjustment	Equivalent Length	Rated Pressure	Max. Ceiling Ambient Temperature
<i>NPT</i>	<i>In. (mm)</i>	<i>In. (mm)</i>	<i>Ft. (M)</i>	<i>psig</i>	<i>F (C)</i>
M1.150	1 x 1/2 25 x 13	1 25.4	1 0.3	300	300° 148°
M3.150	1 x 1/2 25 x 13	3 76.2	1 0.3		
ME3.150	1 x 1/2 25 x 13	3 76.2	1 0.3		
F1.150	1 x 1/2 25 x 13	1 25.4	4.2 1.3		
F2.150	1 x 1/2 25 x 13	2 50.8	1.3 0.4		
F3.150	1 x 1/2 25 x 13	3 76.2	1.5 0.5		
F3.175	1 x 3/4 25 x 19	3 76.2	2.9 0.9		

Merit Eliminator Adjustable Drop Nipples provide the user with the ability to adjust fire sprinkler assemblies (concealed, recessed, or pendent) to fit flush to the finished ceiling without having to cut a drop nipple or drain the system.

- Available in two models, female or male thread inlet, with three standard lengths with adjustment up to 3" (7.62 cm)
- UL Listed, FM Approved, and BSA-NYC Approved for installation to NFPA Bulletin 13 requirements. VdS Approved for the European market.
- Cold formed from steel conforming to ASTM Grade.
- Inner nipples employ two (2) "O-Rings" to provide added assurance of sealing. The "F" Model is designed to keep "O-Rings" from impinging upon the one inch (1") inlet threads when fully retracted.
- The bore of the outer nipple is precision formed to a close tolerance while held to a microfinish of 50 to provide for positive sealing of the "O-Rings".
- Each unit is hydrostatically tested to insure "O-Ring" integrity prior to shipment.
- Each unit is marked with a lot number to insure full traceability.
- Qualifying tests on all models are performed at 1500 PSI, while the various models are rated for 300 PSI operation.
- Threads are cut to be better than or equal to the requirements of ANSI B1.20.1, NPT or ISO-7-1 threads.

Model Number	Part #	Inlet	Outlet	Minimum Length	Maximum Length	Maximum Adjustment	Maximum Sprinkler Orifice	Weight
	<i>NPT/ISO</i>	<i>NPT/ISO</i>	<i>NPT/ISO</i>	<i>In. (mm)</i>	<i>In. (mm)</i>	<i>In. (mm)</i>	<i>In. (mm)</i>	<i>Lbs. (kg)</i>
M1.150*	531150 551150	1" Male 25mm Male	1/2" Female 13mm Female	4.125 104.8	5.125 130.2	1.00 25.4	0.531 13.5	1.00 0.45
M3.150	533150 553150	1" Male 25mm Male	1/2" Female 13mm Female	6.125 155.6	9.125 231.8	3.00 76.2	0.531 13.5	1.25 0.57
ME3.150*	543150 563150	1" Male 25mm Male	1/2" Female 13mm Female	7.875 200.0	10.875 276.2	3.00 76.2	0.531 13.5	1.50 0.68
F1.150	501150 511150	1" Female 25mm Female	1/2" Female 13mm Female	3.500 88.9	4.500 114.3	1.00 25.4	0.625 15.9	0.80 0.36
F2.150*	502150 512150	1" Female 25mm Female	1/2" Female 13mm Female	4.500 114.3	6.500 165.1	2.00 50.8	0.625 15.9	1.00 0.45
F3.150	503150 513150	1" Female 25mm Female	1/2" Female 13mm Female	5.500 139.7	8.500 215.9	3.00 76.2	0.531 13.5	1.25 0.57
F3.175	503175 513175	1" Female 25mm Female	3/4" Female 19mm Female	7.350 186.7	10.350 262.9	3.00 76.2	0.625 15.9	1.20 0.54

* Special Order
 Length Tolerance ± 1/4"



Eliminator Adjustable Drop Nipples

1) GENERAL DESCRIPTION

Merit Eliminator Adjustable Drop Nipples Models "M" and "F" are the screw type consisting of an outer case which has one (1) inch N.P.T. or ISO-7 male or female thread on the inlet, and an inner case which has either a one-half inch ($\frac{1}{2}$ ") or a three-quarter inch ($\frac{3}{4}$ ") N.P.T. sprinkler connection. The inner case employs O-Ring Seals and adjusts either in or out over the range of the adjustment.

Merit Eliminator Adjustable Drop Nipples are designed for use in automatic fire sprinkler systems installed in accordance with all applicable standards or codes. (See item 4).

The purpose of these fittings is to allow for the final adjustment of the drop nipple between a branch line and a pendant sprinkler by eliminating the need to re-cut the existing drop nipple in order to fit-up flush to the ceiling. Merit Eliminator Adjustable Drop Nipples do not require any secondary locking following final adjustment and they will not extend as a result of vibrations or pressure surges in the system.

2) APPROVALS AND STANDARDS

Merit Eliminator Adjustable Drop Nipples are listed by the Underwriters Laboratories, Inc. (UL Listing Number 57SO) and approved by the Factory Mutual Research Corporation (FM). In addition, Model "M" and "F" Adjustable Drop Nipples are approved by the New York Board of Materials and Equipment Standard (BSA-886-86-5A) and verband der Schadenversicherer e.V., (Vds).

3) TECHNICAL DATA

Merit Adjustable Drop Nipples are rated for use at a maximum temperature of 300° F, and a maximum service pressure of 300 psi.

The approximate friction loss based on the Hazen and Williams Formula expressed in equivalent length of one (1) inch, schedule 40 pipe (where C= 120) is 1' for $\frac{1}{2}$ " outlet Model "M", 2.6' for $\frac{3}{4}$ " outlet Model "M", 4.2' for F1, 1.3' for F2, 1.5' for F3.150, and 2.9' for F3.175.

Merit Eliminator Drop nipples maximum sprinkler orifice size for Models M3.150, ME3.150, M1.150, and F3.150 is $\frac{1}{32}$ " and Models F1.150, F2.150 and F3.175 is $\frac{5}{8}$ ".

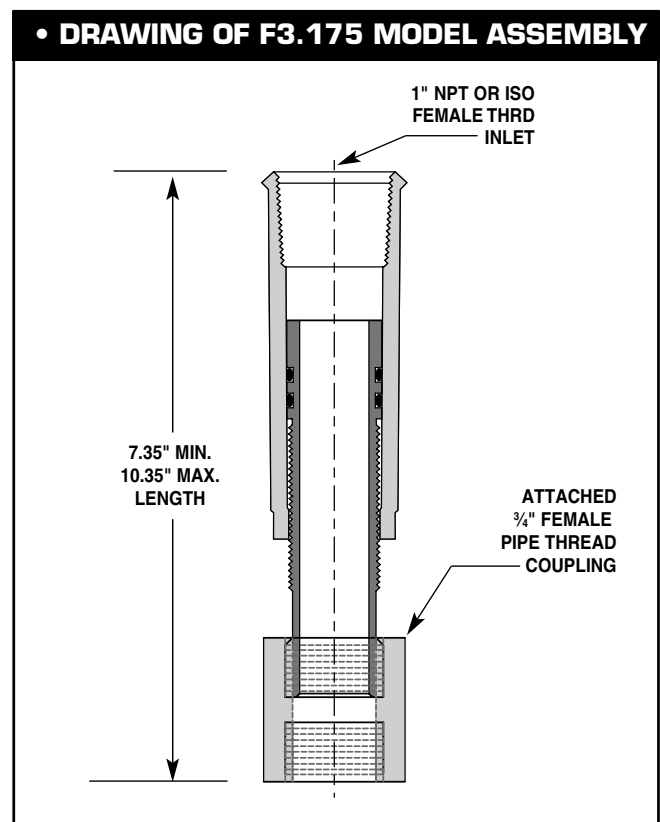
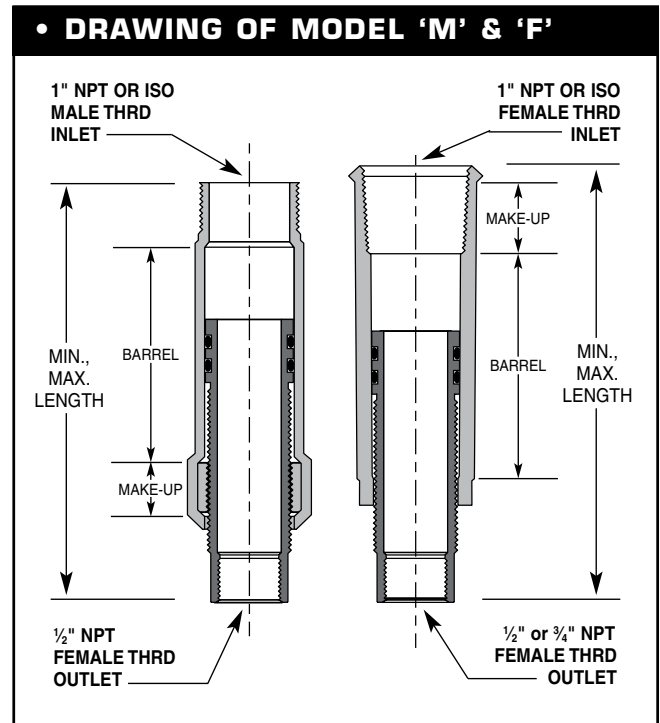
The inlet and outlet threads conform to ANSI B1.20.1 / ISO-7R/RC.

The O-Ring seals used in the manufacture are an ethylene propylene elastomer (EPDM). The outer and inner casings are manufactured from high strength carbon Steel.

All Model "M" and "F" Adjustable Drop Nipples are hydrostatically tested for O-ring integrity prior to shipment.

4) WARNING

Adjustable Drop Nipples described herein must be installed and maintained in compliance with this document as well as the applicable standards of the National Fire Protection Association in addition to the standards for any other authorities having jurisdiction. **DO NOT USE ANY PETROLEUM BASED LUBRICANTS ON THE O-RING SEALS.** Petroleum based lubricants are incompatible with EPDM and will impair serviceability of the unit.

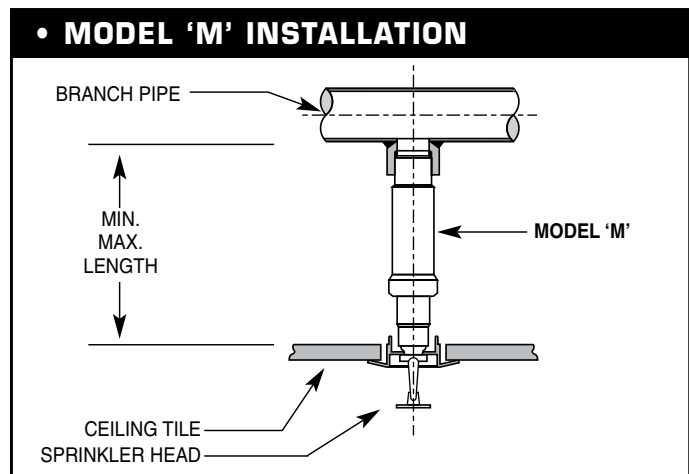
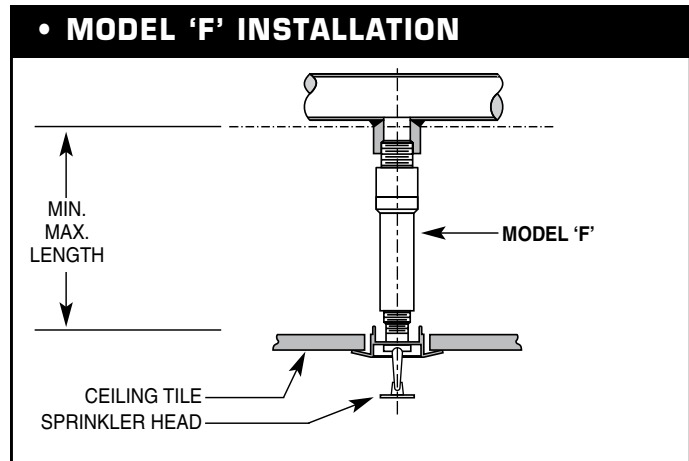


Eliminator

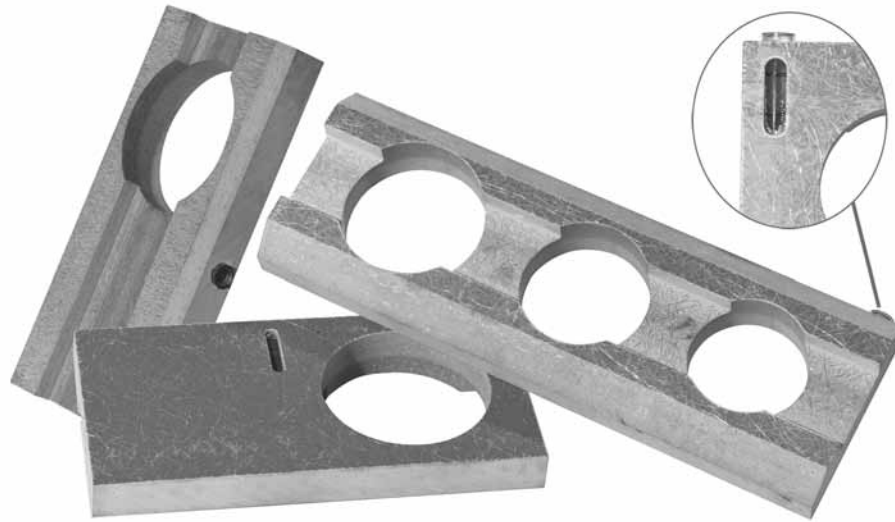
Adjustable Drop Nipples

Installation

- A) For use in wet and dry pipe automatic sprinkler systems installed in accordance with all applicable standards or codes. (See item 4 on page 13)
- B) Before starting the job of making sprinklers into steel threads of the above fittings, count the number of fully developed male threads on the brand of sprinkler to be installed into the fittings. If seven (7) perfect threads are counted, the sprinkler should thread into the $\frac{1}{2}$ " or $\frac{3}{4}$ " thread from three (3) to four (4) threads hand tight. If five (5) to six (6) threads are counted, the sprinkler should thread into the $\frac{1}{2}$ " or $\frac{3}{4}$ " thread from two (2) to three (3) threads hand tight.
- C) The use of an anaerobic pipe thread sealant is preferred for thread make up when connecting to another pipe fitting or nipple. If attaching a sprinkler head, please refer to the manufacturer's installation instructions and apply pipe thread sealant only to male threads of the sprinkler.
- D) If either of the above fails to allow the sprinkler to make-up to a minimum of from five (5) to six (6) full threads, do not overtighten the sprinkler. Instead back the sprinkler out of the fitting. Clean any debris and/or pipe sealant from both the male and female threads. Gauge both the male threads of the sprinkler and the female threads of the Adjustable Drop Nipple for compliance with ANSI B1.2.1. Specification for Tapered Pipe Threads. The same procedure would apply if a leak has been detected. If within tolerance, reapply the anaerobic pipe sealant and make-on to the required length. Allow twenty-four hours for setting.
- E) Connect the Adjustable Drop Nipple assembly to the sprinkler system by wrenching on the make-up area on the Drop Nipple. **DO NOT WRENCH ON THE BARREL PORTION OF THE UNIT OR SPRINKLER.** Damage to the Adjustable Drop Nipple or Sprinkler may result.
- F) After the ceiling has been installed adjust the sprinkler to its final position by using the sprinkler wrench and assemble the escutcheon plate to the inner support ring. It is recommended that the system pressure be relieved when adjusting, however it is not necessary to drain the system.



Hand-Held Hole Templates



Merit® Hand-Held Hole Templates are sized to be used with air plasma cutting systems with standard torch cups measuring 1.1" (28mm) in diameter. If used with other torches, slight variations in the hole diameter required for Merit® Tee-Lets® may occur.

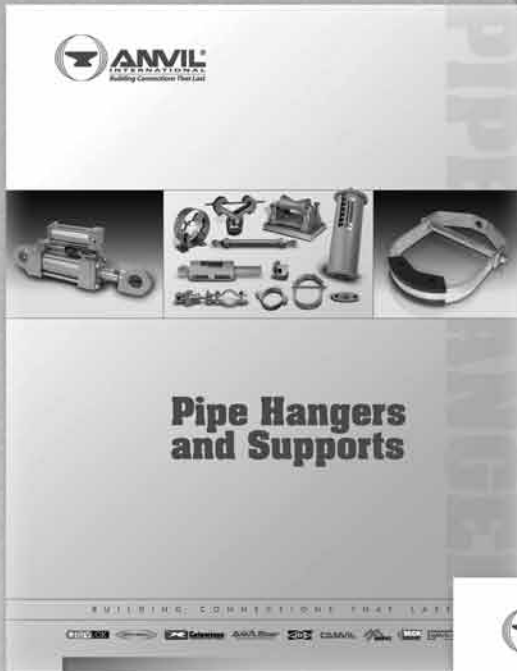
- Low cost hand-held hole templates fit on a range of branch or header pipes.
- Templates are sized for Merit Type A Threaded and Type C Grooved Tee-Lets.
- Unit includes bubble-type level and "V"-Block Mounting.
- Manufactured from non-conductive NEMA C Rated, glass impregnated, impact resistant plastic.

HOLE TEMPLATES		
Part Number	Outlet	Header
<i>NPT</i>	<i>In. (mm)</i>	<i>In. (mm)</i>
61050710	1/2 - 1 <i>13 - 25</i>	ALL <i>All</i>
611215	1 1/4 <i>32</i>	1 1/2 - 2 <i>40 - 50</i>
611225	1 1/4 <i>32</i>	2 1/2 - 4 <i>65 - 100</i>
611520	1 1/2 <i>40</i>	2 - 2 1/2 <i>50 - 65</i>
611530	1 1/2 <i>40</i>	3 - 4 <i>80 - 100</i>
612025	2 <i>50</i>	2 1/2 - 3 <i>65 - 80</i>
612040	2 <i>50</i>	4 - 8 <i>100 - 200</i>
612530	2 1/2 <i>65</i>	3 - 4 <i>80 - 100</i>
612560	2 1/2 <i>65</i>	6 - 8 <i>150 - 200</i>



Building Connections That Last

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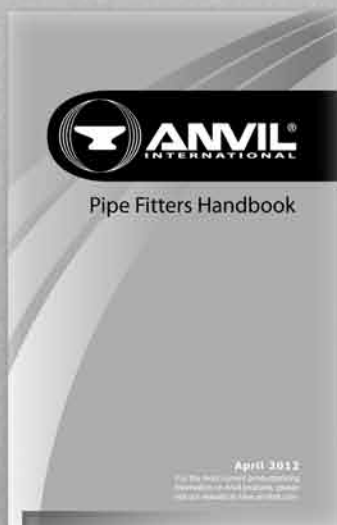
PIPE HANGERS & SUPPORT CATALOG
ORDER DOCUMENT #165



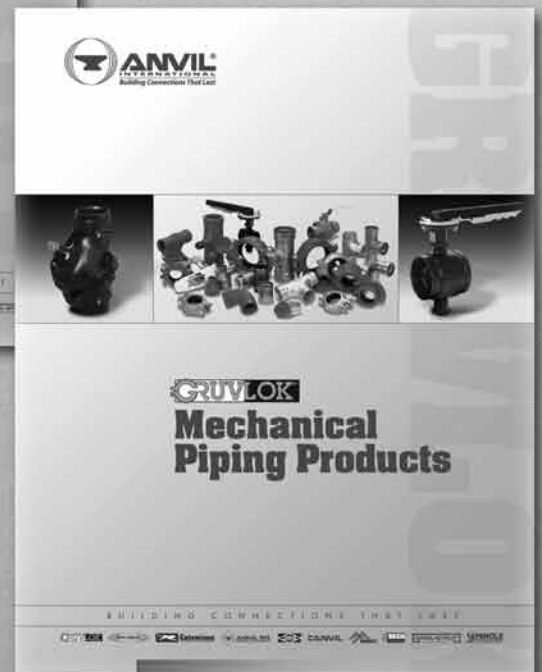
PIPE FITTINGS CATALOG
ORDER DOCUMENT #010



**ANVIL-STRUT METAL FRAMING
PRODUCT & ENGINEERING CATALOG**
ORDER DOCUMENT #125



PIPE FITTERS HANDBOOK
ORDER DOCUMENT #030



**GRUVLOK MECHANICAL
PIPING PRODUCTS CATALOG**
ORDER DOCUMENT #040

Today Anvil® International is the largest and most complete fitting and hanger manufacturer in the world.

2004 Anvil® International acquires Star Pipe Products, Building and Construction Divisions (SPF) and forms AnvilStar™ Fire Products Division.

2001 Anvil® International acquires Merit® Manufacturing and Beck Manufacturing.

2000 The industry's trusted manufacturer of pipe fittings, hangers and grooved fittings is renamed Anvil® International, Inc.

1999 Tyco sells the distribution and manufacturing operations known up to this point as "Grinnell Supply Sales", but keeps the Grinnell® trademark.

1994 J.B. Smith™ and Catawissa™ join the Grinnell Supply Sales and Manufacturing division.

1969 Grinnell Co. acquired by International Telephone and Telegraph. Two years later, ITT divests the Fire Protection Division, but keeps the manufacturing and sales divisions that will become known as Anvil® International.

1960 Gruvlok® line of grooved fittings is introduced.

1919 General Fire Extinguisher Co. becomes Grinnell Co.

1909 Frederick Grinnell opens a foundry in Cranston, RI. Companies express interest in buying its piping products, laying the groundwork for what would become the Grinnell Supply Sales Division. It would be these manufacturing and sales operations that eventually become Anvil® International.

1850 Providence Steam & Gas Pipe Co. is formed, and Frederick Grinnell purchases a controlling interest.

Grinnell® is a registered trademark of Grinnell Corporation, a Tyco International Ltd. company.

TRUSTED FOR 150 YEARS

We built our reputation from the ground up.

Anvil's history stretches back to the mid 1800s, when a company named Grinnell® began providing its customers with the finest quality pipe products. Since 2000, those quality products and services—and the people who provide them—have been known as Anvil® International. Anvil® customers receive the quality and integrity that have been building strong connections in both products and business relationships for over 150 years.

Focused Product Line:

Anvil® Malleable and Cast Iron Fittings

Anvil® Hangers, Supports and Struts

Beck Welded Pipe Nipples

Anvil® Seamless Pipe Nipples

Anvil® Steel Pipe Couplings and Small Steel Fittings

Merit® Tee-Lets and Drop Nipples

Gruvlok® Couplings, Fittings and Valves

SPF™ Malleable and Cast and Ductile Iron Fittings

SPF™ Grooved Fittings and O'Lets

J.B. Smith Swage Nipples and Bull Plugs

Catawissa® Wing Unions and Check Valves



BUILDING CONNECTIONS THAT LAST



ANVIL BRANDS:



BRANDS OF ANVIL INTERNATIONAL



Anvil® product lines include malleable and cast iron fittings, unions and flanges; seamless steel pipe nipples; steel pipe couplings; universal anvilets; forged steel fittings and unions; pipe hangers and supports; threaded rod; and engineered hangers.



The Gruvlok® product line consists of couplings for grooved and plain-end fittings, butterfly valves and check valves; flanges; pump protection components; pipe grooving tools; as well as copper and stainless steel system components.



Anvil-Strut™ products include a complete line of channel in stock lengths of 10 and 20 feet, with custom lengths available upon request. A variety of fittings and accessories are also offered. All products can be ordered in an assortment of finishes and material choices including SupR-Green™, Zinc Trivalent Chromium, pre-galvanized, hot-dipped galvanized, electro-galvanized, aluminum, plain, and stainless steel.



JB Smith™ is the leading manufacturer of oil country tubular fittings, swages and bull plugs – all meeting API specifications. Offering tubing nipples, casing nipples as well as a full line of traditional line pipe and oil country threads in every schedule, JB Smith is the resource for all your oilfield needs.



Catawissa™ NACE and API approved wing unions for Standard Service are offered in non-pressure seal ends as well as threaded and butt weld, and are interchangeable with most leading union manufacturers. Fully traceable and available with complete mill certifications, Catawissa's oilfield wing union product line includes the standard ball-and-cone design plus our unique Figure 300 Flat Face design, where space and pipe line separation are a consideration.



The SPF/Anvil™ product line includes a variety of internationally sourced products such as grooved couplings, fittings and flanges, cast iron, malleable iron and ductile iron threaded fittings, steel pipe nipples, as well as o'lets.



The Merit® product line includes a variety of tee-lets, drop nipples, and steel welding flanges for fire protection applications. Most Merit products are UL/ULC Listed, FM Approved, and rated from 175 to 300 psi.



Steel pipe nipples and steel pipe couplings are manufactured in accordance with the ASTM A733 Standard Specification for Welded and Seamless Carbon Steel and Stainless Steel Pipe Nipples. Steel pipe couplings are manufactured in accordance with the ASTM A865 Standard Specification for Threaded Couplings, Steel, Black or Zinc-Coated (Galvanized) Welded or Seamless, for Use in Steel Pipe Joints. API couplings are manufactured in accordance with the API Specification for line pipe.



Canvil® manufactures low pressure hexagon reducer bushings, as well as plugs and hex caps up to 1" in diameter in various finishes including Oil Treat, Phosphate and Electro Galvanized. In addition, Canvil manufactures A105 hex or round material in class 3000 and 6000 pound, forged steel couplings and bar stock products offered as either as normalized (A105N) or non-normalized (A105) that are fully traceable for mechanicals and chemistry through our MTR program.



Anvil EPS-Engineered Pipe Supports are products used to support piping systems under thermal, seismic, and other dynamic loading conditions. The product line encompasses variable spring hangers, constant supports, sway struts and snubbers as well as standard and special design clamps. Anvil EPS brings the highest quality products and innovative engineering solutions to common and uncommon piping system problems.

About ASC Engineered Solutions

ASC Engineered Solutions is defined by quality—in its products, services and support. With more than 1,400 employees, the company’s portfolio of precision-engineered piping support, valves and connections provides products to more than 4,000 customers across industries, such as mechanical, industrial, fire protection, oil and gas, and commercial and residential construction. Its portfolio of leading brands includes ABZ Valve®, AFCON®, Anvil®, Anvil EPS, Anvil Services, Basic-PSA, Beck®, Catawissa, Cooplet®, FlexHead®, FPPI®, Gruvlok®, J.B. Smith, Merit®, North Alabama Pipe, Quadrant®, SCI®, Sharpe®, SlideLOK®, SPF® and SprinkFLEX®. With headquarters in Commerce, CA, and Exeter, NH, ASC also has ISO 9001:2015 certified production facilities in PA, TN, IL, TX, AL, LA, KS, and RI.



asc-es.com

Building connections that last™

