

## Threaded Mechanical Branch Tee Fig. MT-1 & MT-1A



For Listings/Approval Details and Limitations, visit our website at [www.asc-es.com](http://www.asc-es.com) or contact an ASC Engineered Solutions™ Sales Representative.

Mechanical branch connections are used in fire protection systems for reducing branch outlets without welding. The MT-1 & MT-1A are a bolted saddle type fittings with NPT female threaded outlets. Design assures superior sealing, full pipe support, excellent stability and easy installation.

For the latest UL/ULC listed, LPCB, VdS and FM Approved pressure ratings versus pipe schedule, visit our website at [www.asc-es.com](http://www.asc-es.com) or contact an ASC Engineered Solutions™ Sales Representative.

### Material Specifications

#### Housing

Ductile Iron conforming to ASTM A-536, Grade 65-45-12

#### Bolts

SAE J429, Grade 5, Zinc Electroplated  
ISO 898-1, Class 8.8, Zinc Electroplated followed by a Yellow Chromate Dip

#### Heavy Hex Nuts

ASTM A563, Grade A, Zinc Electroplated  
ISO 898-2, Class 8.8, Zinc Electroplated followed by a Yellow Chromate Dip

#### Coatings

Rust inhibiting paint Color: ORANGE (standard)  
Hot Dipped Zinc Galvanized (optional)

#### Lubrication

Standard Gruvlok

Gruvlok Xtreme required for dry pipe systems and freezer applications

#### Gasket Materials

Properties as designated in accordance with ASTM D-2000.

#### Grade "E" EPDM (Green color code)

-40° F to 230° F (Service Temperature Range)  
(-40° C to 110° C)

Recommended for water service, diluted acids, alkalies solutions, oil-free air and many chemical services.

NOT FOR USE IN PETROLEUM APPLICATIONS.



PROJECT INFORMATION	APPROVAL STAMP
Project:	Approved
Address:	Approved as noted
Contractor:	Not approved
Engineer:	Remarks:
Submittal Date:	
Notes 1:	
Notes 2:	

## Threaded Mechanical Branch Tee Fig. MT-1 & MT-1A

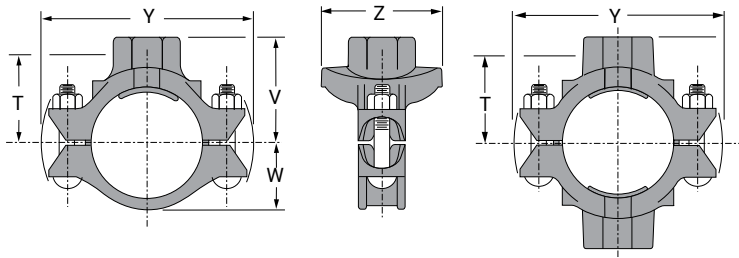


Fig. No.	Nominal Size	O.D.	Hole Dimensions		Max. Working Pressures▲	Dimensions					Bolt Size	Approx. Wt. Ea.	UL	FM
			Min. Diameter	Max. Diameter		U	V Threaded	W	Y	Z				
	In./DN(mm)	In./mm	In./mm	In./mm	PSI/bar	In./mm	In./mm	In./mm	In./mm	In./mm	In./mm	Lbs./Kg		
MT-1A	1¼ x ½ 32 x 15	1.660 x 0.840 42.4 x 21.3	1¾ 30	1¼ 32	300 20.7	--	1¼ 32	1⅝ 29	3¾ 95.5	2¼ 57	¾ x 1⅜	1.2 0.5	*	*
MT-1A	1¼ x ¾ 32 x 20	1.660 x 1.050 42.4 x 26.7	1¾ 30	1¼ 32	300 20.7	--	1¾ 44	1⅝ 29	3¾ 95.5	2¼ 57	¾ x 1⅜	1.2 0.5	*	*
MT-1A	1½ x ½ 40 x 15	1.900 x 0.840 48.3 x 21.3	1¾ 30	1¼ 32	300 20.7	--	1⅝ 35.5	1¼ 32.5	4 101.5	2¼ 57	¾ x 1⅜	1.3 0.6	*	*
MT-1A	1½ x ¾ 40 x 20	1.900 x 1.050 48.3 x 26.7	1¾ 30	1¼ 32	300 20	--	1⅝ 47.5	1¼ 32.5	4 101.5	2¼ 57	¾ x 1⅜	1.3 0.6	*	*
MT-1A	2 x ½ 50 x 15	2.375 x 0.840 60.3 x 21.3	1½ 38	1⅝ 41	300 20.7	2⅝ 53.8	2⅝ 67	1⅞ 40	4⅞ 124	2⅝ 53.8	¾ x 2¼	1.7 0.8	*	*
MT-1A	2 x ¾ 50 x 20	2.375 x 1.050 60.3 x 26.7	1½ 38	1⅝ 41	300 20	2⅝ 53.8	2⅝ 67	1⅞ 40	4⅞ 124	2⅝ 53.8	¾ x 2¼	1.7 0.8	*	*
MT-1	2 x 1 50 x 25	2.375 x 1.315 60.3 x 33.7	1½ 38	1⅝ 41	300 20.7	1⅝ 50	2⅝ 67	1⅞ 40	4⅞ 117	2½ 63	¾ x 2	1.7 0.8	*	*
MT-1	2 x 1¼ 50 x 32	2.375 x 1.660 60.3 x 42.4	1¾ 44	1⅝ 48	300 20.7	1⅝ 49	2⅝ 67	1⅞ 40	4⅞ 117	2½ 63	¾ x 2	1.7 0.8	*	*
MT-1	2 x 1½ 50 x 40	2.375 x 1.900 60.3 x 48.3	1¾ 44	1⅝ 48	300 20.7	1⅝ 49	2⅝ 67	1⅞ 40	4⅞ 117	2⅞ 73	¾ x 2	1.7 0.8	*	*
MT-1A	2½ x ½ 65 x 15	2.875 x 0.840 73.0 x 21.3	1½ 38	1⅝ 41	300 20.7	2⅝ 60.5	2⅝ 73.2	1⅞ 46	5¼ 133.4	3⅞ 78	¾ x 2¼	3.6 1.6	*	*
MT-1A	2½ x ¾ 65 x 20	2.875 x 1.050 73.0 x 26.7	1½ 38	1⅝ 41	300 20.7	2⅝ 60.5	2⅝ 73.2	1⅞ 46	5¼ 133.4	3⅞ 78	¾ x 2¼	3.6 1.6	*	*
MT-1	2½ x 1 65 x 25	2.875 x 1.315 73.0 x 33.7	1½ 38	1⅝ 41	300 20.7	2⅝ 62	3⅝ 79	1⅞ 46	5⅞ 141	3⅝ 86	½ x 2¾	3.6 1.6	*	*
MT-1	2½ x 1¼ 65 x 32	2.875 x 1.660 73.0 x 42.4	2 51	2⅝ 54	300 20.7	2⅝ 62	3⅝ 79	1⅞ 46	5⅞ 141	3⅝ 86	½ x 2¾	3.6 1.6	*	*
MT-1	2½ x 1½ 65 x 40	2.875 x 1.900 73.0 x 48.3	2 51	2⅝ 54	300 20.7	2⅝ 62	3⅝ 79	1⅞ 46	5⅞ 141	3⅝ 86	½ x 2¾	3.6 1.6	*	*
MT-1A	3 x ½ 80 x 15	3.500 x 0.840 88.9 x 21.3	1½ 38	1⅝ 41	300 20.7	2⅝ 65	3⅝ 81	2⅝ 56.1	6⅝ 155.7	3⅞ 78	½ x 3	3.8 1.7	*	*
MT-1A	3 x ¾ 80 x 20	3.500 x 1.050 88.9 x 26.7	1½ 38	1⅝ 41	300 20.7	2⅝ 65	3⅝ 81	2⅝ 56.1	6⅝ 155.7	3⅞ 78	½ x 3	3.8 1.7	*	*

**Note:**

All sizes may be used as mechanical crosses. Threads are NPT per ANSI/ASME B1.20.1

▲ – Working Pressure Ratings are for reference only and based on Sch. 10 and Sch. 40 pipe. For the latest UL/ULC, FM, VdS and LPCB pressure ratings versus pipe schedule, please visit asc-es.com or contact your local ASC Engineered Solutions™ Representative.

**Warning:** For dry pipe systems and freezer applications lubrication of the gasket is required, Gruvlok Xtreme™ Lubricant is required.



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## Threaded Mechanical Branch Tee Fig. MT-1 & MT-1A

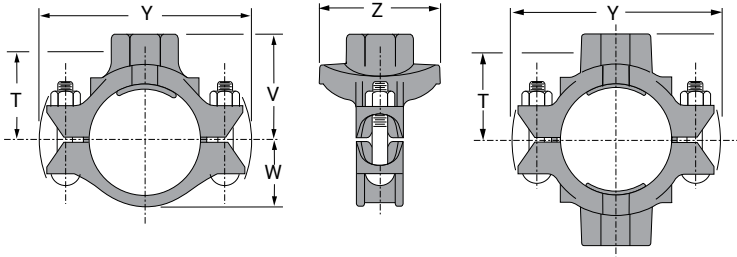


Fig. No.	Nominal Size	O.D.	Hole Dimensions		Max. Working Pressures▲	Dimensions					Bolt Size	Approx. Wt. Ea.	UL	FM
			Min. Diameter	Max. Diameter		U	V Threaded	W	Y	Z				
			In./DN(mm)	In./mm		In./mm	In./mm	PSI/bar	In./mm	In./mm				
MT-1	3 x 1 80 x 25	3.500 x 1.315 88.9 x 33.7	1½ 38	1⅝ 41	300 20.7	2¾ 71	3⅞ 87	2⅝ 55	6¼ 159	3⅝ 99	½ x 2¾	3.8 1.7	*	*
MT-1	3 x 1¼ 80 x 32	3.500 x 1.660 88.9 x 42.4	2 51	2⅝ 54	300 20.7	2¾ 70	3⅞ 87	2⅝ 55	6¼ 159	3⅝ 99	½ x 2¾	3.8 1.7	*	*
MT-1	3 x 1½ 80 x 40	3.500 x 1.900 88.9 x 48.3	2 51	2⅝ 54	300 20.7	2¾ 70	3⅞ 87	2⅝ 55	6¼ 159	3⅝ 99	½ x 2¾	3.8 1.7	*	*
MT-1	3 x 2 80 x 50	3.500 x 2.375 88.9 x 60.3	2½ 64	2⅝ 67	300 20.7	2¾ 70	3⅞ 87	2⅝ 55	6¼ 159	3⅝ 99	½ x 2¾	4.4 2.0	*	*
MT-1A	4 x ½ 100 x 15	4.500 x 0.840 114.3 x 21.3	1½ 38	1⅝ 41	300 20.7	3⅞ 78	3⅞ 93.7	2⅝ 70.6	7⅞ 181.1	3⅞ 78	½ x 3	4.6 2.1	*	*
MT-1A	4 x ¾ 100 x 20	4.500 x 1.050 114.3 x 26.7	1½ 38	1⅝ 41	300 20.7	3⅞ 78	3⅞ 93.7	2⅝ 70.6	7⅞ 181.1	3⅞ 78	½ x 3	4.6 2.1	*	*
MT-1	4 x 1 100 x 25	4.500 x 1.315 114.3 x 33.7	1½ 38	1⅝ 41	300 20.7	3⅞ 85	4 102	2⅝ 67	7¼ 184	3⅞ 97	½ x 2¾	4.6 2.1	*	*
MT-1	4 x 1¼ 100 x 32	4.500 x 1.660 114.3 x 42.4	2 51	2⅝ 54	300 20.7	3⅞ 84	4 102	2⅝ 67	7¼ 184	3⅞ 97	½ x 2¾	4.6 2.1	*	*
MT-1	4 x 1½ 100 x 40	4.500 x 1.900 114.3 x 48.3	2 51	2⅝ 54	300 20.7	3⅞ 84	4 102	2⅝ 67	7¼ 184	3⅞ 97	½ x 2¾	4.6 2.1	*	*
MT-1	4 x 2 100 x 50	4.500 x 2.375 114.3 x 60.3	2½ 64	2⅝ 67	300 20.7	3⅞ 84	4 102	2⅝ 67	7¼ 184	4½ 115	½ x 2¾	4.8 2.2	*	*
MT-1	4 x 2½ 100 x 65	4.500 x 2.875 114.3 x 73.0	2¾ 70	2⅝ 73	300 20.7	3⅞ 78	4 102	2⅝ 67	7¼ 184	4½ 115	½ x 2¾	5.4 2.4	*	*
MT-1	4 x 3 100 x 80	4.500 x 3.500 114.3 x 88.9	3½ 89	3⅝ 92	300 20.7	3 76	4⅞ 105	2⅝ 67	7¼ 184	5⅞ 130	½ x 2¾	5.4 2.4	*	*
MT-1	5 x 1½ 125 x 40	5.563 x 1.900 141.3 x 48.3	2 51	2⅝ 54	300 20.7	4⅞ 103	4¾ 121	3⅞ 81	8⅝ 211	3⅞ 97	⅝ x 4	7.4 3.4	*	*
MT-1	5 x 2 125 x 50	5.563 x 2.375 141.3 x 60.3	2½ 64	2⅝ 67	300 20.7	4⅞ 103	4¾ 121	3⅞ 81	8⅝ 211	3⅞ 97	⅝ x 4	7.9 3.6	*	*
MT-1	5 x 2½ 125 x 65	5.563 x 2.875 141.3 x 73.0	2¾ 70	2⅝ 73	300 20.7	3⅞ 97	4¾ 121	3⅞ 81	8⅝ 211	3⅞ 97	⅝ x 4	7.9 3.6	*	*

**Note:**

All sizes may be used as mechanical crosses. Threads are NPT per ANSI/ASME B1.20.1

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## Threaded Mechanical Branch Tee Fig. MT-1 & MT-1A

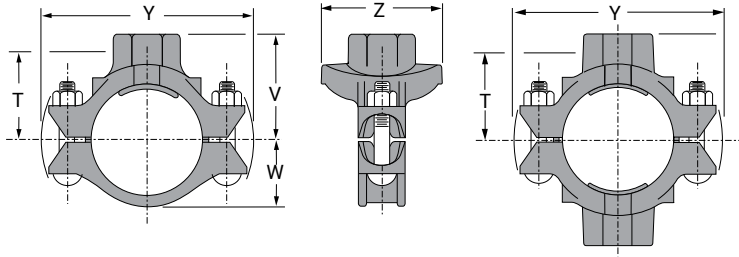


Fig. No.	Nominal Size	O.D.	Hole Dimensions		Max. Working Pressures▲	Dimensions					Bolt Size	Approx. Wt. Ea.	UL	FM
			Min. Diameter	Max. Diameter		U	V Threaded	W	Y	Z				
			In./DN(mm)	In./mm		In./mm	In./mm	PSI/bar	In./mm	In./mm				
MT-1	6 x 1¼ 150 x 32	6.625 x 1.660 168.3 x 42.2	2 51	2⅛ 54	300 20.7	3 <sup>13</sup> / <sub>16</sub> 97	4 <sup>15</sup> / <sub>16</sub> 126	3 <sup>11</sup> / <sub>16</sub> 94	9 <sup>3</sup> / <sub>8</sub> 238	3 <sup>7</sup> / <sub>8</sub> 98	5/8 x 4	8.0 3.6	*	*
MT-1	6 x 1½ 150 x 40	6.625 x 1.900 168.3 x 48.3	2 51	2⅛ 54	300 20.7	4 <sup>7</sup> / <sub>16</sub> 113	5 <sup>1</sup> / <sub>8</sub> 130	3 <sup>11</sup> / <sub>16</sub> 94	9 <sup>3</sup> / <sub>8</sub> 238	3 <sup>7</sup> / <sub>8</sub> 98	5/8 x 4	7.5 3.4	*	*
MT-1	6 x 2 150 x 50	6.625 x 2.375 168.3 x 60.3	2½ 64	2 <sup>5</sup> / <sub>8</sub> 67	300 20.7	4 <sup>7</sup> / <sub>16</sub> 112	5 <sup>1</sup> / <sub>8</sub> 130	3 <sup>11</sup> / <sub>16</sub> 94	9 <sup>3</sup> / <sub>8</sub> 238	4 <sup>7</sup> / <sub>16</sub> 112	5/8 x 4	8.0 3.6	*	*
MT-1	6 x 2½ 150 x 65	6.625 x 2.875 168.3 x 73.0	2¾ 70	2 <sup>7</sup> / <sub>8</sub> 73	300 20.7	4 <sup>3</sup> / <sub>16</sub> 106	5 <sup>1</sup> / <sub>8</sub> 130	3 <sup>11</sup> / <sub>16</sub> 94	9 <sup>3</sup> / <sub>8</sub> 238	4 <sup>7</sup> / <sub>16</sub> 112	5/8 x 4	8.0 3.6	*	*
MT-1	6 x 3 150 x 80	6.625 x 3.500 168.3 x 88.9	3½ 89	3 <sup>5</sup> / <sub>8</sub> 92	300 20.7	4 <sup>1</sup> / <sub>8</sub> 105	5 <sup>1</sup> / <sub>4</sub> 133	3 <sup>11</sup> / <sub>16</sub> 94	9 <sup>3</sup> / <sub>8</sub> 238	5 <sup>5</sup> / <sub>8</sub> 143	5/8 x 4	9.7 4.4	*	*
MT-1A	6 x 4 150 x 100	6.625 x 4.500 168.3 x 114.3	4½ 114.3	4 <sup>5</sup> / <sub>8</sub> 117.5	300 20.7	4 <sup>9</sup> / <sub>16</sub> 115.8	5 <sup>3</sup> / <sub>8</sub> 136.7	3 <sup>7</sup> / <sub>8</sub> 99.1	9 <sup>1</sup> / <sub>4</sub> 235	6 <sup>1</sup> / <sub>8</sub> 155.7	5/8 x 4¾	9.7 4.4	*	*
MT-1	8 x 2 200 x 50	8.625 x 2.375 219.1 x 60.3	2½ 64	2 <sup>5</sup> / <sub>8</sub> 67	300 20.7	5 <sup>7</sup> / <sub>16</sub> 138	6 <sup>1</sup> / <sub>4</sub> 159	4 <sup>7</sup> / <sub>8</sub> 123	10 <sup>5</sup> / <sub>16</sub> 313	4 <sup>7</sup> / <sub>16</sub> 112	¾ x 4¼	10.2 4.6	*	*

**Note:**

All sizes may be used as mechanical crosses. Threads are NPT per ANSI/ASME B1.20.1

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## Fig. MT-1, MT-1A & MT-8 Threaded Mechanical Branch

**ALWAYS USE A GRUVLOK® SPF/ANVIL® LUBRICANT FOR PROPER COUPLING ASSEMBLY.**

Thorough lubrication of the gasket is essential to assist the gasket into the proper sealing position.

### 1 Pipe preparation

Cut the appropriate size hole in the pipe and remove any burrs. Be sure to remove the slug from inside the pipe. Clean the gasket sealing surface within 5/8" (16mm) of the hole and visually inspect the sealing surface for defects that may prevent proper sealing of the gasket.

Branch Size	Hole Saw Size	Flow Data	
		MT-1/MT-1A	MT-8
Inches (mm)	Inches +1/8, -0 (mm +3, -0)	(see note)	
1 25	1½ 38	2 0.61	2 0.61
1¼(2"run) 32 (50mm run)	1¾ 44	4 1.22	4 1.22
1¼(2½-6" run) 32 (65-150mm run)	2 51	4 1.22	4 1.22
1½(2"run) 40 (50mm run)	1¾ 44	8 2.44	4 1.22
1½(2½-6" run) 40 (65-150mm run)	2 51	8 2.44	4 1.22
2 50	2½ 64	9 2.74	9 2.74
2½ 65	2¾ 70	10 3.05	10 3.05
3 O.D. 76.1	2¾ 70	7 2.13	7 2.13
3 80.4	3½ 89	8 2.44	8 2.44

**Note:** Flow Data is expressed as Feet/Meters of Schedule 40 steel outlet pipe with a "Hazen-Williams coefficient of friction value of 120".

### 2 Check and lubricate gasket

Check the gasket to be sure it is compatible for the intended service. Apply a thin layer of Gruvlok SPF/Anvil lubricant to the back surface of the gasket. Be careful that foreign particles do not adhere to the lubricated surfaces. Insert the gasket back into the outlet housing making sure the tabs in the gasket line up with the tab recesses in the housing.

### 3 Gasket installation

Lubricate the exposed surface of the gasket. Align the outlet housing over the pipe hole making sure that the locating collar is in the pipe hole.

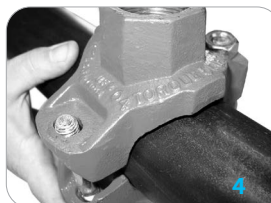
### 4 Alignment

Align the strap around the pipe, insert the bolts and tighten the nuts finger tight.

### 5 Tighten nuts

Alternately and evenly tighten the nuts to the specified bolt torque.

### 6 Assembly is complete



## Specified Bolt Torque

Specified bolt torque is for the oval neck track bolts used on SPF threaded mechanical branches. The nuts must be tightened alternately and evenly until fully tightened.

**Caution:** Proper torquing of mechanical branch bolts is required to obtain specified performance. **Over torquing the bolts may result in damage to the bolt and/or casting which could result in pipe joint separation.** Under torquing the bolts may result in lower pressure retention capabilities, lower bend load capabilities, joint leakage and pipe joint separation. Pipe joint separation may result in significant property damage and serious injury.

### ANSI Specified Bolt Torque

Bolt Size	Wrench Size	Specified Bolt Torque*
In.	In.	Ft.-Lbs
3/8	11/16	30-45
1/2	7/8	80-100
5/8	1 1/16	100-130
3/4	1 1/4	130-180

\* Non-lubricated bolt torque

### Metric Specified Bolt Torque

Bolt Size	Wrench Size	Specified Bolt Torque*
mm	mm	N-M
M10	16	40-60
M12	22	110-150
M16	24	135-175
M20	30	175-245

\* Non-lubricated bolt torque



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