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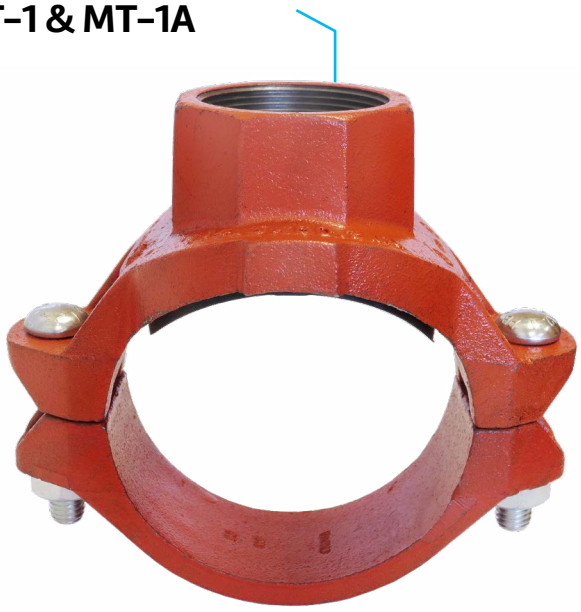
Threaded Mechanical Branch Tee
Fig. MT-1 & MT-1A



Mechanical branch connections are used 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.

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™

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.

GRUVLOK
An ASC Engineered Solution

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

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

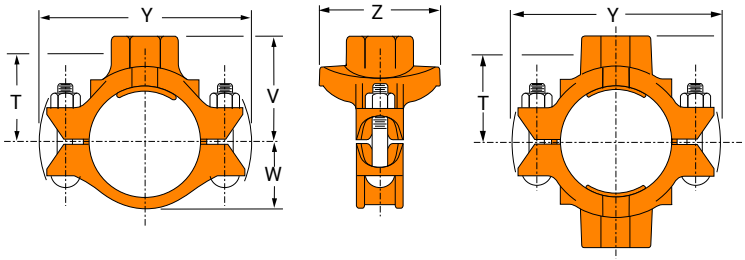

Fig. No.	Nominal Size	O.D.	Hole Dimensions		Max. Working Pressures▲	Dimensions					Bolt Size	Approx. Wt. Ea.
			Min. Diameter	Max. Diameter		U	V Threaded	W	Y	Z		
	In./DN(mm)	In./mm	In./mm	In./mm	PSI/bar	In./mm	In./mm	In./mm	In./mm	In./mm	In./mm	Lbs./Kg
MT-1A	1¼ x ½ 32 x 15	1.660 x 0.840 42.4 x 21.3	1 3/16 30	1¼ 32	500 34.5	--	1¼ 32	1⅛ 29	3¾ 95.5	2¼ 57	⅜ x 1⅜	1.2 0.5
MT-1A	1¼ x ¾ 32 x 20	1.660 x 1.050 42.4 x 26.7	1 3/16 30	1¼ 32	500 34.5	--	1¾ 44	1⅛ 29	3¾ 95.5	2¼ 57	⅜ x 1⅜	1.2 0.5
MT-1A	1¼ x 1 32 x 25	1.660 x 1.315 42.4 x 33.7	1 3/16 30	1¼ 32	500 34.5	--	2 1/16 53	1⅛ 29	3¾ 95.5	2¼ 57	⅜ x 1⅜	1.2 0.5
MT-1A	1½ x ½ 40 x 15	1.900 x 0.840 48.3 x 21.3	1 3/16 30	1¼ 32	500 34.5	--	1⅜ 35.5	1¼ 32.5	4 101.5	2¼ 57	⅜ x 1⅜	1.3 0.6
MT-1A	1½ x ¾ 40 x 20	1.900 x 1.050 48.3 x 26.7	1 3/16 30	1¼ 32	500 34.5	--	1⅞ 47.5	1¼ 32.5	4 101.5	2¼ 57	⅜ x 1⅜	1.3 0.6
MT-1A	1½ x 1 40 x 25	1.900 x 1.315 48.3 x 33.7	1 3/16 30	1¼ 32	500 34.5	--	2 3/16 56	1¼ 32.5	4 101.5	2¼ 57	⅜ 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	500 34.5	2⅛ 53.8	2⅝ 67	1 9/16 40	4⅞ 124	2⅛ 53.8	⅜ 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	500 34.5	2⅛ 53.8	2⅝ 67	1 9/16 40	4⅞ 124	2⅛ 53.8	⅜ 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	500 34.5	1 15/16 50	2⅝ 67	1 9/16 40	4⅝ 117	2½ 63	⅜ 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	1⅞ 48	500 34.5	1 15/16 49	2⅝ 67	1 9/16 40	4⅝ 117	2½ 63	⅜ 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	1⅞ 48	500 34.5	1 15/16 49	2⅝ 67	1 9/16 40	4⅝ 117	2⅞ 73	⅜ 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	500 34.5	2⅜ 60.5	2⅞ 73.2	1 13/16 46	5¼ 133.4	3 1/16 78	⅜ 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	500 34.5	2⅜ 60.5	2⅞ 73.2	1 13/16 46	5¼ 133.4	3 1/16 78	⅜ 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	500 34.5	2 7/16 62	3⅛ 79	1 13/16 46	5 9/16 141	3⅜ 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	2⅛ 54	500 34.5	2 7/16 62	3⅛ 79	1 13/16 46	5 9/16 141	3⅜ 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	2⅛ 54	500 34.5	2 7/16 62	3⅛ 79	1 13/16 46	5 9/16 141	3⅜ 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	500 34.5	2 9/16 65	3 3/16 81	2 3/16 56.1	6⅛ 155.7	3 1/16 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	500 34.5	2 9/16 65	3 3/16 81	2 3/16 56.1	6⅛ 155.7	3 1/16 78	½ x 3	3.8 1.7

Note:

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

▲ – Working Pressure Ratings are for reference only and based on Sch. 40 pipe.

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

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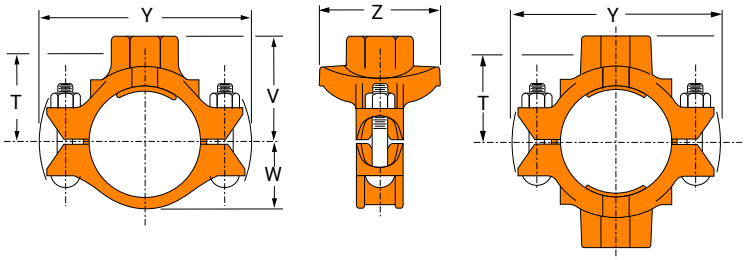

Fig. No.	Nominal Size	O.D.	Hole Dimensions		Max. Working Pressures▲	Dimensions					Bolt Size	Approx. Wt. Ea.
			Min. Diameter	Max. Diameter		U	V Threaded	W	Y	Z		
	In./DN(mm)	In./mm	In./mm	In./mm	PSI/bar	In./mm	In./mm	In./mm	In./mm	In./mm	In./mm	Lbs./Kg
MT-1	3 x 1 80 x 25	3.500 x 1.315 88.9 x 33.7	1½ 38	1⅝ 41	500 34.5	2¾ 71	3 7/16 87	2⅛ 55	6¼ 159	3 15/16 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	2⅛ 54	500 34.5	2¾ 70	3 7/16 87	2⅛ 55	6¼ 159	3 15/16 99	½x 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	2⅛ 54	500 34.5	2¾ 70	3 7/16 87	2⅛ 55	6¼ 159	3 15/16 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	500 34.5	2¾ 70	3 7/16 87	2⅛ 55	6¼ 159	3 15/16 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	500 34.5	3 1/16 78	3 11/16 93.7	2⅞ 70.6	7⅛ 181.1	3 1/16 78	½x 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	500 34.5	3 1/16 78	3 11/16 93.7	2⅞ 70.6	7⅛ 181.1	3 1/16 78	½x 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	500 34.5	3 5/16 85	4 102	2⅝ 67	7¼ 184	3 13/16 97	½x 2 ¾	4.6 2.1
MT-1	4 x 1¼ 100 x 32	4.500 x 1.660 114.3 x 42.4	2 51	2⅛ 54	500 34.5	3 5/16 84	4 102	2⅝ 67	7¼ 184	3 13/16 97	½x 2 ¾	4.6 2.1
MT-1	4 x 1½ 100 x 40	4.500 x 1.900 114.3 x 48.3	2 51	2⅛ 54	500 34.5	3 5/16 84	4 102	2⅝ 67	7¼ 184	3 13/16 97	½x 2 ¾	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	500 34.5	3 5/16 84	4 102	2⅝ 67	7¼ 184	4½ 115	½x 2 ¾	4.8 2.2
MT-1	4 x 2½ 100 x 65	4.500 x 2.875 114.3 x 73.0	2 ¾ 70	2⅞ 73	500 34.5	3 1/16 78	4 102	2⅝ 67	7¼ 184	4½ 115	½x 2 ¾	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	500 34.5	3 76	4⅛ 105	2⅝ 67	7¼ 184	5⅛ 130	½x 2 ¾	5.4 2.4
MT-1	5 x 1½ 125 x 40	5.563 x 1.900 141.3 x 48.3	2 51	2⅛ 54	500 34.5	4 1/16 103	4¾ 121	3 3/16 81	8 5/16 211	3 13/16 97	⅝x 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	500 34.5	4 1/16 103	4¾ 121	3 3/16 81	8 5/16 211	3 13/16 97	⅝x 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	2⅞ 73	500 34.5	3 13/16 97	4¾ 121	3 3/16 81	8 5/16 211	3 13/16 97	⅝x 4	7.9 3.6

Note:

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

▲ – Working Pressure Ratings are for reference only and based on Sch. 40 pipe.

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**

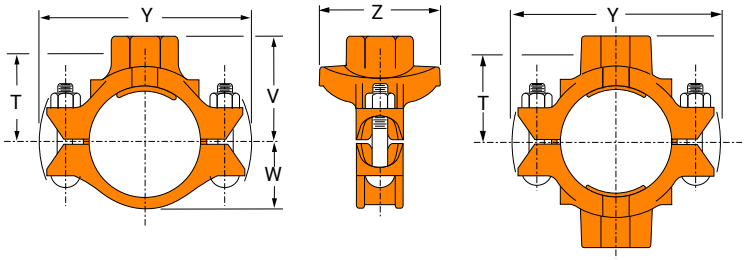

Fig. No.	Nominal Size	O.D.	Hole Dimensions		Max. Working Pressures▲	Dimensions					Bolt Size	Approx. Wt. Ea.
			Min. Diameter	Max. Diameter		U	V Threaded	W	Y	Z		
	In./DN(mm)	In./mm	In./mm	In./mm	PSI/bar	In./mm	In./mm	In./mm	In./mm	In./mm	In./mm	Lbs./Kg
MT-1	6 x 1¼ 150 x 32	6.625 x 1.660 168.3 x 42.2	2 51	2⅛ 54	500 34.5	3 13/16 97	4 15/16 126	3 11/16 94	9⅜ 238	3⅞ 98	⅝ 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	500 34.5	4 7/16 113	5⅛ 130	3 11/16 94	9⅜ 238	3⅞ 98	⅝ 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	2⅝ 67	500 34.5	4 7/16 112	5⅛ 130	3 11/16 94	9⅜ 238	4 7/16 112	⅝ 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	2⅞ 73	500 34.5	4 3/16 106	5⅛ 130	3 11/16 94	9⅜ 238	4 7/16 112	⅝ 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	3⅝ 92	500 34.5	4⅛ 105	5¼ 133	3 11/16 94	9⅜ 238	5⅝ 143	⅝ 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	4⅝ 117.5	500 34.5	4 9/16 115.8	5⅜ 136.7	3⅞ 99.1	9¼ 235	6⅛ 155.7	⅝ x 4 ¾	9.7 4.4
MT-1	8 x 2 200 x 50	8.625 x 2.375 219.1 x 60.3	2½ 64	2⅝ 67	500 34.5	5 7/16 138	6¼ 159	4⅞ 123	10 5/16 313	4 7/16 112	¾ x 4¼	10.2 4.6

Note:

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

▲ – Working Pressure Ratings are for reference only and based on Sch. 40 pipe.

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

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

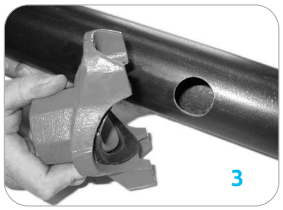
ALWAYS USE A GRUVLOK® SPF/ANVIL® LUBRICANT FOR PROPER COUPLING ASSEMBLY. Thorough lubrication of the gasket is essential to assist the gasket into the proper sealing position.

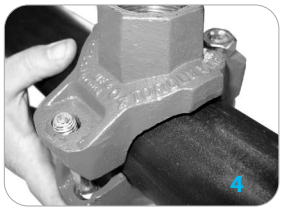
1 Pipe preparation

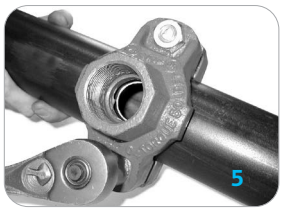
Cut the appropriate size hole in the pipe and remove any burrs. Be sure to remove the slug from inside the pipe. Clean the gasket sealing surface within 5/8" (16mm) of the hole and visually inspect the sealing surface for defects that may prevent proper sealing of the gasket.

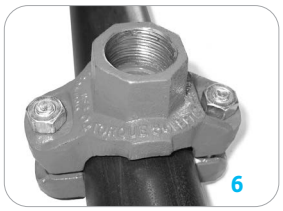
Branch Size	Hole Saw Size	Flow Data MT-1/MT-1A
Inches (mm)	IInches +1/8, -0 (mm +3, -0)	(see note)
1 25	1½ 38	2 0.61
1¼(2"run) 32 (50mm run)	1¾ 44	4 1.22
1¼ (2½"-6" run) 32 (65-150mm run)	2 51	4 1.22
1½ (2"run) 40 (50mm run)	1¾ 44	8 2.44
1½ (2½-6" run) 40 (65-150mm run)	2 51	8 2.44
2 50	2½ 64	9 2.74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

5 Tighten nuts

Alternately and evenly tighten thenuts 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 bolt is required to obtain specified performance. **Over torquing the bolt may result in damage to the bolt and/or casting which could result in pipe joint separation.** Under torquing the bolt 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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