

Grooved Mechanical Branch Tee Fig. MT-2 & MT-2A



Mechanical branch connections are used for reducing branch outlets in mechanical systems without welding. The MT-2 & MT-2A are bolted saddle type fittings with grooved 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, alkalis 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:	

Grooved Mechanical Branch Tee Fig. MT-2 & MT-2A

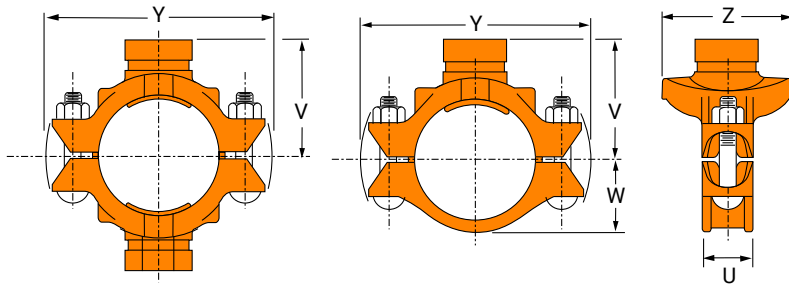


Fig. No.	Nominal Size	O.D.	Hole Dimensions		Max. Working Pressure▲	Dimensions					Bolt Size	Approx. Wt. Ea.
			Min. Diameter	Max. Diameter		U	V	W	Y	Z		
	In./DN(mm)	In./mm	In./mm	In./mm	PSI/bar	In./mm	In./mm	In./mm	In./mm	In./mm	In./mm	Lbs./Kg
MT-2A	2 x 1¼ 50 x 32	2.375 x 1.660 60.3 x 42.4	1¼ 32	1¾ 35	500 34.5	--	2¾ 69.5	1⅞ 39	4⅞ 116	3 76	¾ x 2¼ M10 x 57	1.7 0.8
MT-2A	2 x 1½ 50 x 40	2.375 x 1.900 60.3 x 48.3	1¼ 32	1¾ 35	500 34.5	--	2¾ 69.5	1⅞ 39	4⅞ 116	3 76	¾ x 2¼ M10 x 57	1.7 0.8
MT-2A	2½ x 1¼ 65 x 32	2.875 x 1.660 73.0 x 42.4	2 51	2⅞ 54	500 34.5	--	3⅞ 78	2⅞ 49	4⅞ 137	3⅞ 84.5	½ x 2¾ M12 x 70	3.6 1.6
MT-2A	2½ x 1½ 65 x 40	2.875 x 1.900 73.0 x 48.3	2 51	2⅞ 54	500 34.5	--	3⅞ 78	2⅞ 49	4⅞ 137	3⅞ 84.5	½ x 2¾ M12 x 70	3.6 1.6
MT-2	3 O.D. x 1¼ 76.1 x 32	2.996 x 1.660 76.1 x 42.4	2 51	2⅞ 54	500 34.5	2 51	3⅞ 81	1⅞ 48	5⅞ 145	3⅞ 86	½ x 2¾ M12 x 70	3.6 1.6
MT-2	3 O.D. x 1½ 76.1 x 40	2.996 x 1.900 76.1 x 48.3	2 51	2⅞ 54	500 34.5	2 51	3⅞ 81	1⅞ 48	5⅞ 145	3⅞ 86	½ x 2¾ M12 x 70	3.6 1.6
MT-2A	3 x 1 80 x 25	3.500 x 1.315 88.9 x 33.7	1⅞ 36	1⅞ 40	500 34.5	--	3⅞ 84.5	2¼ 56.5	6 152	2⅞ 72.5	½ x 3 M12 x 76	3.8 1.7
MT-2	3 x 1½ 80 x 40	3.500 x 1.900 88.9 x 48.3	2 51	2⅞ 54	500 34.5	2 51	3⅞ 87	2⅞ 55	6¼ 159	3⅞ 99	½ x 2¾ M12 x 70	3.8 1.7
MT-2	3 x 2 80 x 50	3.500 x 2.375 88.9 x 60.3	2½ 64	2⅞ 67	500 34.5	2 51	3⅞ 87	2⅞ 55	6¼ 159	3⅞ 99	½ x 2¾ M12 x 70	4.4 2.0
MT-2A	4 x 1 100 x 25	4.500 x 1.315 114.3 x 33.7	1⅞ 36	1⅞ 40	500 34.5	--	4 102	2¼ 70	7⅞ 188	3⅞ 78.4	½ x 3 M12 x 76	4.6 2.1
MT-2	4 x 1½ 100 x 40	4.500 x 1.900 114.3 x 48.3	2 51	2⅞ 54	500 34.5	2 51	4 102	2⅞ 67	7¼ 184	3⅞ 97	½ x 2¾ M12 x 70	4.6 2.1
MT-2	4 x 2 100 x 50	4.500 x 2.375 114.3 x 60.3	2½ 64	2⅞ 67	500 34.5	2 51	4 102	2⅞ 67	7¼ 184	4½ 115	½ x 2¾ M12 x 70	4.8 2.2
MT-2	4 x 2½ 100 x 65	4.500 x 2.875 114.3 x 73.0	2¾ 70	2⅞ 73	500 34.5	2 51	4 102	2⅞ 67	7¼ 184	4½ 115	½ x 2¾ M12 x 70	5.4 2.4
MT-2	4 x 3 O.D. 100 x 76.1	4.500 x 2.996 114.3 x 76.1	2¾ 70	2⅞ 73	500 34.5	2 51	4 102	2⅞ 67	7¼ 184	4½ 115	½ x 2¾ M12 x 70	7.6 3.4
MT-2	4 x 3 100 x 80	4.500 x 3.500 114.3 x 88.9	3½ 89	3⅞ 92	500 34.5	2 51	4⅞ 105	2⅞ 67	7¼ 184	5⅞ 130	½ x 2¾ M12 x 70	7.6 3.4
MT-2	5 x 2 125 x 50	5.563 x 2.375 141.3 x 60.3	2½ 64	2⅞ 67	500 34.5	2¼ 57	4¾ 121	3⅞ 81	8⅞ 211	4½ 115	⅝ x 4 M16 x 108	7.9 3.6
MT-2	5 x 2½ 125 x 65	5.563 x 2.875 141.3 x 73.0	2¾ 70	2⅞ 73	500 34.5	2¼ 57	4¾ 121	3⅞ 81	8⅞ 211	4½ 115	⅝ x 4 M16 x 108	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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Grooved Mechanical Branch Tee Fig. MT-2 & MT-2A

Fig. No.	Nominal Size	O.D.	Hole Dimensions		Max. Working Pressure▲	Dimensions					Bolt Size	Approx. Wt. Ea.
			Min. Diameter	Max. Diameter		U	V	W	Y	Z		
			In./mm	In./mm		In./mm	In./mm	In./mm	In./mm	In./mm		
MT-2	5 x 3 125 x 80	5.563 x 3.500 141.3 x 88.9	3½ 89	3⅝ 92	500 34.5	2¼ 57	5 127	3⅜ 81	8⅝ 211	5⅞ 130	⅝ x 4 M16 x 108	7.9 3.6
MT-2	5½ O.D. x 2 139.7 x 50	5.500 x 2.375 139.7 x 60.3	2½ 64	2⅝ 67	500 34.5	2¼ 57	4⅝ 117	3⅜ 81	8⅝ 211	4½ 115	⅝ x 4 M16 x 108	7.9 3.6
MT-2	5½ O.D. x 3 O.D. 139.7 x 76.1	5.500 x 2.996 139.7 x 76.1	2¾ 70	2⅞ 73	500 34.5	2¼ 57	4⅝ 117	3⅜ 81	8⅝ 211	4½ 115	⅝ x 4 M16 x 108	7.9 3.6
MT-2	5½ O.D. x 3 139.7 x 88.9	5.500 x 3.500 139.7 x 88.9	3½ 89	3⅝ 92	500 34.5	2¼ 57	4⅞ 124	3⅜ 81	8⅝ 211	5⅞ 130	⅝ x 4 M16 x 108	7.9 3.6
MT-2	6 x 1¼ 150 x 32	6.625 x 1.660 168.3 x 42.2	2 51	2⅞ 54	500 34.5	2¼ 57	5 127	3⅜ 81	9⅞ 238	3⅞ 98	⅝ x 4 M16 x 108	8.0 3.6
MT-2	6 x 1½ 150 x 40	6.625 x 1.900 168.3 x 48.3	2 51	2⅞ 54	500 34.5	2¼ 57	5⅞ 130	3⅞ 94	9⅞ 238	3⅞ 98	⅝ x 4 M16 x 108	8.0 3.6
MT-2	6 x 2 150 x 50	6.625 x 2.375 168.3 x 60.3	2½ 64	2⅝ 67	500 34.5	2¼ 57	5⅞ 130	3⅞ 94	9⅞ 238	4⅞ 112	⅝ x 4 M16 x 108	8.0 3.6
MT-2	6 x 2½ 150 x 65	6.625 x 2.875 168.3 x 73.0	2¾ 70	2⅞ 73	500 34.5	2¼ 57	5⅞ 130	3⅞ 94	9⅞ 238	4⅞ 112	⅝ x 4 M16 x 108	8.0 3.6
MT-2	6 x 3 O.D. 150 x 76.1	6.625 x 2.996 168.3 x 76.1	2¾ 70	2⅞ 73	500 34.5	2¼ 57	5⅞ 130	3⅞ 94	9⅞ 238	4⅞ 112	⅝ x 4 M16 x 108	9.7 4.4
MT-2	6 x 3 150 x 80	6.625 x 3.500 168.3 x 88.9	3½ 89	3⅝ 92	500 34.5	2¼ 57	5¼ 133	3⅞ 94	9⅞ 238	5⅞ 143	⅝ x 4 M16 x 108	9.7 4.4
MT-2	6 x 4 150 x 100	6.625 x 4.500 168.3 x 114.3	4½ 114	4⅝ 117	500 34.5	2¼ 57	5⅞ 137	3⅞ 94	9⅞ 238	6½ 165	⅝ x 4 M16 x 108	3.6 1.6
MT-2	6½ O.D. x 1¼ 165.1 x 32	6.500 x 1.660 165.1 x 42.2	2 51	2⅞ 54	500 34.5	2¼ 57	5 127	3⅝ 93	9¼ 235	3⅞ 98	⅝ x 4 M16 x 108	3.2 1.5
MT-2	6½ O.D. x 1½ 165.1 x 40	6.500 x 1.900 165.1 x 48.3	2 51	2⅞ 54	500 34.5	2¼ 57	5⅞ 130	3⅝ 93	9¼ 235	3⅞ 98	⅝ x 4 M16 x 108	7.5 3.4
MT-2	6½ O.D. x 2 165.1 x 50	6.500 x 2.375 165.1 x 60.3	2½ 64	2⅝ 67	500 34.5	2¼ 57	5⅞ 130	3⅝ 93	9¼ 235	4⅞ 112	⅝ x 4 M16 x 108	8.0 3.6
MT-2	6½ O.D. x 3 O.D. 165.1 x 76.1	6.500 x 2.996 165.1 x 76.1	2¾ 70	2⅞ 73	500 34.5	2¼ 57	5⅞ 130	3⅝ 93	9¼ 235	4⅞ 112	⅝ x 4 M16 x 108	8.0 3.6
MT-2	6½ O.D. x 3 165.1 x 80	6.500 x 3.500 165.1 x 88.9	3½ 89	3⅝ 92	500 34.5	2¼ 57	5¼ 133	3⅝ 93	9¼ 235	5⅞ 143	⅝ x 4 M16 x 108	9.7 4.4
MT-2	6½ O.D. x 4 165.1 x 100	6.500 x 4.500 165.1 x 114.3	4½ 114	4⅝ 117	500 34.5	2¼ 57	5⅞ 137	3⅝ 93	9⅞ 238	6½ 165	⅝ x 4 M16 x 108	13.6 6.2
MT-2	8 x 2 200 x 50	8.625 x 2.375 219.1 x 60.3	2¾ 70	2⅞ 73	500 34.5	2½ 64	6⅞ 156	4⅞ 124	12⅜ 314	4⅞ 111	¾ x 4¼	10.2 4.6
MT-2	8 x 2½ 200 x 65	8.625 x 2.875 219.1 x 73.0	2¾ 70	2⅞ 73	500 34.5	2½ 64	6⅞ 156	4⅞ 124	12⅜ 314	4⅞ 111	¾ x 4¼	10.4 4.7
MT-2	8 x 3 O.D. 200 x 76.1	8.625 x 2.996 219.1 x 76.1	2¾ 70	2⅞ 73	500 34.5	2½ 64	6⅞ 156	4⅞ 124	12⅜ 314	5¼ 146	¾ x 4¼	10.6 4.8
MT-2	8 x 3 200 x 80	8.625 x 3.500 219.1 x 88.9	3½ 89	3⅝ 92	500 34.5	2½ 64	6⅞ 162	4⅞ 124	12⅜ 314	5¼ 146	¾ x 4¼	11.1 5.0
MT-2	8 x 4 200 x 100	8.625 x 4.500 219.1 x 114.3	4½ 114	4⅝ 117	500 34.5	2½ 64	6¼ 159	4⅞ 124	12⅜ 314	6⅞ 168	¾ x 4¼	15.5 7.0

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-2 & MT-2A Grooved Mechanical Branch Tee

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

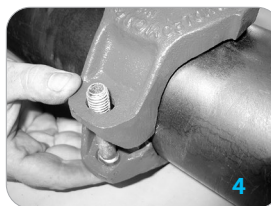
Thorough lubrication of the gasket is essential to assist the gasket into the proper sealing position.

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.

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

Branch Size	Hole Saw Size	Flow Data
Inches (mm)	Inches +1/8, -0 (mm +3, -0)	(See Note)
1 1/4, 1 1/2 32, 40	2 51	4 1.22
2 50	2 1/2 64	9 2.74
2 1/2 65	2 3/4 70	10 3.05
3 OD 76.1	2 3/4 70	7 2.13
3 80	3 1/2 89	13 3.96
4 100	4 1/2 114	13 3.96



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 bolt used on Gruvlok grooved 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
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
M12	22	110-150
M16	24	135-175
M20	30	175-245

* Non-lubricated bolt torque



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