

7721 MECHANICAL TEE, FEMALE THREADED OUTLET



For pressure rating, listing, and approval information, refer to data sheet or visit SHURJOINT website www.shurjoint.com for details or contact your SHURJOINT representatives.

The Model 7721 Mechanical Tee when mounted on hole cut pipe provides a fast and easy mid-pipe threaded branch outlet. By utilizing the Model 7721 you eliminate the need for welding or the use of multiple fittings. The Mechanical Tee is comprised of upper and lower ductile iron housing segments, a grade "E" EPDM rubber molded gasket and plated track bolts and nuts. Mechanical tees are supplied with our standard painted finishes, i.e. orange or RAL3000 red. Optional finishes such as hot dipped zinc galvanized and custom epoxy coatings are also available.

material specification

- **Housing:**
Ductile Iron to ASTM A536, Gr. 65-45-12, min. tensile strength 65,000 psi (448 MPa).
- **Surface Finish:**
Orange color painted or red RAL3000 color painted.
 - Hot dip galvanized (Option).
 - Epoxy coated in red RAL3000 or other colors (Option).

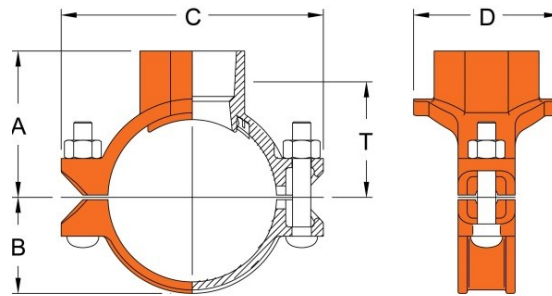
- **Rubber Gasket:**
Grade "E" EPDM (Color code: Green stripe) Good for cold & hot water up to +230°F (+110°C). Also good for services for water with acid, water with chlorine or chloramines, deionized water, seawater and wastewater, dilute acids, oil-free air and many chemicals. Not recommended for petroleum oils, minerals oils, solvents and aromatic hydrocarbons.

Maximum Temperature Range: -30°F (-34°C) to +230°F (+110°C)*.

*EPDM gaskets for water services are not recommended for steam services unless couplings or components are accessible for frequent gasket replacement.

- Other options: Grade "T" Nitrile
Grade "O" Fluoro-Elastomer
Grade "L" Silicone.

- **Bolts & Nuts:**
Heat treated carbon manganese steel track bolts to ASTM A449-83a (or A183 Gr. 2), minimum tensile strength 110,000 psi (758 MPa), Zinc electroplated, with heavy-duty hexagonal nuts to ASTM A563.



Model 7721 Mechanical Tee, Female Threaded Outlet

Nominal Size Run x Branch	Max. Working Pressure (CWP)*	Hole Dia. $\mp$ +0.13, -0 / +3.2, -0	Dimensions					Bolt Size	Weight
			T $\mp$	A	B	C	D		
in	psi	in	in	in	in	in	in	in	lbs
mm	bar	mm	mm	mm	mm	mm	mm	mm	kg
2 x ½	300	1.50	1.97	2.50	1.57	5.04	2.87	¾ x 2½	2.4
50 x 15	20	38	50	64	40	128	73	M10 x 55	1.1
2 x ¾	300	1.50	1.97	2.50	1.57	5.04	2.87	¾ x 2½	2.4
50 x 20	20	38	50	64	40	128	73	M10 x 55	1.1
2 x 1	300	1.50	2.00	2.68	1.57	5.04	2.87	¾ x 2½	2.6
50 x 25	20	38	51	68	40	128	73	M10 x 55	1.2
2 x 1¼	300	1.75	2.08	2.80	1.57	5.04	3.22	¾ x 2½	2.9
50 x 32	20	45	53	71	40	128	82	M10 x 55	1.3
2 x 1½	300	1.75	2.08	2.80	1.57	5.04	3.22	¾ x 2½	2.9
50 x 40	20	45	53	71	40	128	82	M10 x 55	1.3
2½ x ½	300	1.50	2.25	2.80	1.89	5.75	2.87	½ x 3	3.1
65 x 15	20	38	57	71	48	146	73	M12 x 75	1.4
2½ x ¾	300	1.50	2.32	2.88	1.89	5.75	2.87	½ x 3	3.1
65 x 20	20	38	59	73	48	146	73	M12 x 75	1.4
2½ x 1	300	1.50	2.28	2.95	1.89	5.75	2.87	½ x 3	3.3
65 x 25	20	38	58	75	48	146	73	M12 x 75	1.5
2½ x 1¼	300	2.00	2.40	3.11	1.89	5.75	3.22	½ x 3	3.5
65 x 32	20	51	61	79	48	146	82	M12 x 75	1.6
2½ x 1½	300	2.00	2.40	3.11	1.89	5.75	3.22	½ x 3	3.5
65 x 40	20	51	61	79	48	146	82	M12 x 75	1.6
3 x ½	300	1.50	2.47	3.19	2.20	6.39	2.63	½ x 3	3.5
80 x 15	20	38	63	81	56	160	67	M12 x 75	1.6
3 x ¾	300	1.50	2.44	3.07	2.09	6.30	2.76	½ x 3	3.5
80 x 20	20	38	62	78	53	160	70	M12 x 75	1.6
3 x 1	300	1.50	2.50	3.19	2.20	6.39	2.63	½ x 3	3.7
80 x 25	20	38	64	81	56	160	67	M12 x 75	1.7

Model 7721 Mechanical Tee, Female Threaded Outlet

Nominal Size Run x Branch	Max. Working Pressure (CWP)*	Hole Dia. T +0.13, -0 / +3.2, -0	Dimensions					Bolt Size	Weight
			T†	A	B	C	D		
in	psi	in	in	in	in	in	in	in	lbs
mm	bar	mm	mm	mm	mm	mm	mm	mm	kg
3 x 1¼	300	2.00	2.80	3.50	2.20	6.39	3.46	½ x 3	4.2
80 x 32	20	51	71	89	56	160	88	M12 x 75	1.9
3 x 1½	300	2.00	2.80	3.50	2.20	6.39	3.46	½ x 3	4.4
80 x 40	20	51	71	89	56	160	88	M12 x 75	2.0
3 x 2	300	2.50	2.83	3.58	2.20	6.39	3.98	½ x 3	5.1
80 x 50	20	64	72	91	56	160	101	M12 x 75	2.3
4 x ½	300	1.50	3.00	3.70	2.83	7.48	2.63	½ x 3	4.2
100 x 15	20	38	76	94	72	190	67	M12 x 75	1.9
4 x ¾	300	1.50	2.95	3.58	2.68	7.48	2.91	½ x 3	4.2
100 x 20	20	38	75	91	68	190	74	M12 x 75	1.9
4 x 1	300	1.50	3.03	3.70	2.83	7.48	2.63	½ x 3	4.4
100 x 25	20	38	77	94	72	190	67	M12 x 75	2.0
4 x 1¼	300	2.00	3.19	3.89	2.83	7.48	3.35	½ x 3	4.8
100 x 32	20	51	81	99	72	190	85	M12 x 75	2.2
4 x 1½	300	2.00	3.19	3.89	2.83	7.48	3.35	½ x 3	5.1
100 x 40	20	51	81	99	72	190	85	M12 x 75	2.3
4 x 2	300	2.50	3.38	4.13	2.83	7.48	3.98	½ x 3	5.9
100 x 50	20	64	86	105	72	190	101	M12 x 75	2.7
4 x 2½	300	2.75	3.23	4.37	2.83	7.48	4.40	½ x 3	7.3
100 x 65	20	70	82	111	72	190	112	M12 x 75	3.3
4 x 3	300	3.50	3.23	4.40	2.83	7.48	5.35	¾ x 3½	12.3
100 x 80	20	89	82	112	72	190	136	M16 x 90	5.6
5 x 2	300	2.50	4.13	4.88	3.39	9.29	4.00	¾ x 3½	9.2
125 x 50	20	64	105	124	86	236	102	M16 x 90	4.2
5 x 2½	300	2.75	3.89	5.00	3.39	9.29	4.65	¾ x 3½	9.9
125 x 65	20	70	99	127	86	236	118	M16 x 90	4.5
6 x ½	300	2.00	4.48	4.96	3.78	10.24	3.54	¾ x 5 5/16	9.7
150 x 15	20	51	114	126	96	260	90	M16 x 135	4.4
6 x 1	300	2.00	4.33	5.00	3.86	10.07	3.50	¾ x 5 5/16	9.7
150 x 25	20	51	110	127	98	256	89	M16 x 135	4.4
6 x 1¼	300	2.00	4.29	5.00	3.86	10.07	3.66	¾ x 5 5/16	9.7
150 x 32	20	51	109	127	98	256	93	M16 x 135	4.4
6 x 1½	300	2.00	4.29	5.00	3.86	10.07	3.66	¾ x 5 5/16	9.7
150 x 40	20	51	109	127	98	256	93	M16 x 135	4.4

Model 7721 Mechanical Tee, Female Threaded Outlet

Nominal Size Run x Branch	Max. Working Pressure (CWP)*	Hole Dia. † +0.13, -0 / +3.2, -0	Dimensions					Bolt Size	Weight
			T†	A	B	C	D		
in	psi	in	in	in	in	in	in	in	lbs
mm	bar	mm	mm	mm	mm	mm	mm	mm	kg
6 x 2	300	2.50	4.45	5.29	3.86	10.07	3.98	5/8 x 5 5/16	10.6
150 x 50	20	64	113	132	98	256	101	M16 x 135	4.8
6 x 2½	300	2.75	4.37	5.50	3.86	10.07	4.65	5/8 x 5 5/16	11.9
150 x 65	20	70	111	140	98	256	118	M16 x 135	5.4
6 x 3	300	3.50	4.33	5.50	3.86	10.07	5.39	5/8 x 5 5/16	13.2
150 x 80	20	89	110	140	98	256	137	M16 x 135	6.0
6 x 4	300	4.50	4.21	5.50	3.86	10.07	6.46	5/8 x 5 5/16	14.5
150 x 100	20	114	107	140	98	256	164	M16 x 135	6.6
8 x ½	300	2.75	5.31	5.82	4.72	12.87	4.4	¾ x 4¾	12.5
200 x 15	20	70	135	148	120	327	112	M20 x 120	5.7
8 x 1	300	2.75	5.31	5.98	4.72	12.87	4.4	¾ x 4¾	12.5
200 x 25	20	70	135	152	120	327	112	M20 x 120	5.7
8 x 1¼	300	2.75	5.31	5.98	4.72	12.87	3.98	¾ x 4¾	12.5
200 x 32	20	70	135	152	120	327	101	M20 x 120	5.7
8 x 1½	300	2.75	5.31	5.98	4.72	12.87	3.98	¾ x 4¾	12.5
200 x 40	20	70	135	152	120	327	101	M20 x 120	5.7
8 x 2	300	2.75	5.31	6.54	4.72	12.87	3.98	¾ x 4¾	13.6
200 x 50	20	70	135	166	120	327	101	M20 x 120	6.2
8 x 2½	300	2.75	5.39	6.54	4.72	12.87	4.09	¾ x 4¾	13.9
200 x 65	20	70	137	166	120	327	104	M20 x 120	6.3
8 x 3	300	3.50	5.35	6.54	4.72	12.87	5.04	¾ x 4¾	15.6
200 x 80	20	89	136	166	120	327	128	M20 x 120	7.1
8 x 4	300	4.50	5.24	6.54	4.72	12.87	6.46	¾ x 4¾	17.6
200 x 100	20	114	133	166	120	327	164	M20 x 120	8.0

1. † Hole diameters listed are suggested hole diameters.
2. † T: Take-Out (Center of run to end of pipe to be engaged.)
3. *Working pressure is based on standard wall carbon steel pipe.

Flow Data - Cv Values

Values for flow of water at +60°F (+16°C).

$$C_v = \frac{Q}{\sqrt{\Delta P}}$$

Where: Cv = Flow coefficient

Q = Flow (GPM)

ΔP = Pressure drop (psi)

Model 7721 Mechanical Tee, Female Threaded Outlet Cv Values			
Nominal Size	Cv Value	Nominal Size	Cv Value
in		in	
mm		mm	
½	15	2	100
15		50	
¾	20	2½	125
20		65	
1	25	3	200
25		80	
1¼	45	4	350
32		100	
1½	60		
40			

Flow Characteristics

Model 7721 Mechanical Tee, Female Threaded Outlet Flow Characteristics			
Nominal Size	Equivalent Length of pipe	Nominal Size	Equivalent Length of pipe
in	feet	in	feet
mm	meter	mm	meter
½	2	2	10
15	0.6	50	3.2
¾	4	2½	20
20	1.2	65	6
1	5	3	27
25	1.5	80	8.1
1¼	6	4	35
32	1.8	100	10.5
1½	8		
40	2.4		

General note

- Maximum Working Pressure (CWP) listed is the maximum cold water pressure for general piping services tested to ASTM F1476 and or AWWA C606 methods. Figures listed are based on roll- or cut-grooved standard wall carbon steel pipe. For other pipe schedules or pipe materials, contact Shurjoint for additional information.
- Listed and or Approved Pressures are pressure ratings for fire protection systems, tested and approved by various approval bodies. Please always refer to the latest approval data posted on the Shurjoint website.
- Field Joint Test: For one time only, the system may be tested hydrostatically at 1½ times the maximum working pressure listed (AWWA C606 5.2.3).
- Warning: Piping systems must always be depressurized and drained before attempting disassembly and or removal of any components.
- The 10 Year Limited Warranty applies to manufacturing defects only and does not cover severe service/temperature applications or wear parts.
- Shurjoint reserves the right to change specifications, designs and or standard without notice and without incurring any obligations.