

# Styles 920 and 920N Mechanical-T® Bolted Branch Outlets

## PRODUCT DESCRIPTION



Styles 920 and 920N



Style 920 Cross



See Victaulic  
publication 10.01  
for details.

See chart on page 5  
for pressure ratings.

Victaulic Mechanical-T® Outlet provides a direct branch connection at any location a hole can be cut in pipe. The hole is cut oversize to receive a “holefinder” locating collar which secures the outlet in position permanently. A pressure responsive gasket seals on the pipe O.D.

Cross-type connections can be achieved by utilizing two upper housings of the same style and size, with the same or differing branch size connections. NOTE: Style 920 and Style 920N housings **cannot** be mated to achieve a cross connection.

Style 920 and Style 920N Mechanical-T outlets are available with grooved or female threaded outlet. Specify choice on order. Units are supplied painted with plated bolts. Galvanized housings are available, supplied with plated bolts.

All sizes of Style 920 and 920N are rated at 500 psi (3450 kPa) working pressure on Schedule 10 and 40 carbon steel pipe. They may also be used on high density polyethylene or polybutylene (HDPE) pipe. Pressure ratings on HDPE are dependent on the pipe rating. Contact Victaulic for ratings on other pipe.

**Style 920 and 920N are not recommended for use on PVC plastic pipe.**

Standard piping practices dictate that the Mechanical-T Styles 920 and 920N must be installed so that the main and branch connections are a true 90° angle when permanently attached to the pipeline surface.

## MATERIAL SPECIFICATIONS

**Housing/Coating:** Ductile iron conforming to ASTM A-536, grade 65-45-12, with orange enamel coating. Ductile iron conforming to ASTM A-395, grade 65-45-15, is available upon special request.

- **Optional:** Hot dipped galvanized

**Gasket:** (Specify choice\*)

- **Grade “E” EPDM**

EPDM (Green color code). Temperature range –30°F to +230°F (–34°C to +110°C). Recommended for cold and hot water service within the specified temperature range plus a variety of dilute acids, oil-free air and many chemical services. UL Classified in accordance with ANSI/NSF 61 for cold +86°F (+30°C) and hot +180°F (+82°C) NOT RECOMMENDED FOR PETROLEUM SERVICES.

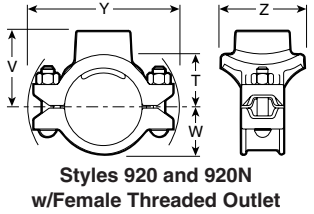
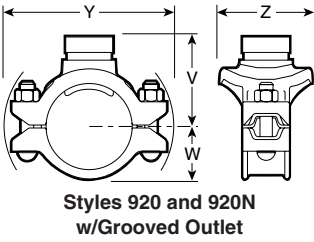
- **Grade “T” nitrile**

Nitrile (Orange color code). Temperature range –20°F to +180°F (–29°C to +82°C). Recommended for petroleum products, air with oil vapors, vegetable and mineral oils within the specified temperature range. Not recommended for hot water services over +150°F (+66°C) or for hot dry air over +140°F (+60°C).

\*Services listed are General Service Recommendations only. It should be noted that there are services for which these gaskets are not recommended. Reference should always be made to the latest Victaulic Gasket Selection Guide for specific gasket service recommendations and for a listing of services which are not recommended.

**Bolts/Nuts:** Heat-treated plated carbon steel, trackhead meeting the physical and chemical requirements of ASTM A-449 and physical requirements of ASTM A-183.

**DIMENSIONS**



**NOTE: Style 920 and Style 920N housings cannot be mated to achieve cross connections.**

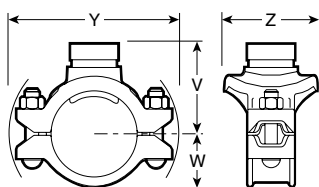
**NEW HOLE SIZE**

These new size Style 920N products require a different hole size than the Style 920 it replaces, for proper installation. Use caution to assure the proper size hole is prepared for the specific size and style used. Failure to use the proper hole size could result in joint leakage and property damage.

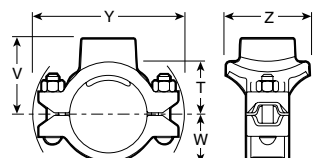
SIZE Run X Branch Nominal Inches mm		Style No.	Max. Work. Press. PSI kPa	Dimensions – Inches/millimeters							Aprx. Wgt. Each Lbs./kg		
				Hole Dia. +0.13 –0.00	T **	Fem. Thd. V ‡ #	Grv. V ‡	W	Y	Z	Fem. Thd.	Grv.	
2 50	X	1/2 (a) 15	920N	500 3450	1.50 38,1	2.00 51	2.53 64	–	1.61 41	5.35 136	2.75 70	3.1 1,5	–
	X	3/4 (a) 20	920N	500 3450	1.50 38,1	1.97 50	2.53 64	–	1.61 41	5.35 136	2.75 70	3.1 1,5	–
	X	1 (a) 25	920N	500 3450	1.50 38,1	1.85 47	2.53 64	–	1.61 41	5.35 136	2.75 70	3.0 1,4	–
	X	1 1/4 (a) † 32	920N	500 3450	1.75 44,5	2.05 52	2.75 70	3.00 76	1.61 41	5.35 136	3.00 76	3.5 1,7	3.2 1,5
	X	1 1/2 (a) † 40	920N	500 3450	1.75 44,5	2.03 52	2.75 70	3.12 79	1.61 41	5.35 136	3.25 83	3.6 1,7	3.2 1,5
	2 1/2 65	X	1/2 (a) 15	920N	500 3450	1.50 38,1	2.21 56	2.74 70	–	1.86 47	5.64 143	2.75 70	3.0 1,4
X		3/4 (a) 20	920N	500 3450	1.50 38,1	2.18 55	2.74 70	–	1.86 47	5.64 143	2.75 70	3.0 1,4	–
X		1 (a) 25	920N	500 3450	1.50 38,1	2.06 52	2.74 70	–	1.86 47	5.64 143	2.75 70	2.9 1,4	–
X		1 1/4 † (a) 32	920N	500 3450	1.75 44,5	2.30 58	3.00 76	3.25 83	1.86 47	6.29 160	3.00 76	3.5 1,7	3.2 1,5
X		1 1/2 † (a) 40	920N	500 3450	2.00 50,8	2.28 58	3.00 76	3.25 83	1.86 47	6.26 159	3.25 83	3.6 1,7	3.3 1,6
76,1 mm		X	1/2 (a) 15	920	300 2065	1.50 38,1	2.22 56	2.75 70	–	1.88 48	6.46 164	3.16 80	3.9 1,8
	X	3/4 (a) 20	920	300 2065	1.50 38,1	2.19 56	2.75 70	–	1.88 48	6.46 164	3.16 80	3.9 1,8	–
	X	1 (a) 25	920	300 2065	1.50 38,1	2.07 53	2.75 70	–	1.88 48	6.46 164	3.16 80	3.8 1,7	–
	X	1 1/4 (a) † 32	920N	500 3450	1.75 44,5	2.30 58	3.00 76	3.31 84	1.92 49	6.29 160	3.00 76	3.5 1,6	3.2 1,5
	X	1 1/2 (a) 40	920N	500 3450	2.00 50,8	2.28 58	3.00 76	3.31 84	1.92 49	6.29 160	3.25 83	3.5 1,6	3.3 1,5
	3 80	X	1/2 (a) 15	920N	500 3450	1.50 38,1	2.52 64	3.05 78	–	2.28 58	6.15 156	2.75 70	3.4 1,6
X		3/4 (a) 20	920N	500 3450	1.50 38,1	2.49 63	3.05 78	–	2.28 58	6.15 156	2.75 70	3.4 1,6	–
X		1 (a) 25	920N	500 3450	1.50 38,1	2.38 61	3.06 78	–	2.28 58	6.15 156	2.75 70	3.3 1,6	–
X		1 1/4 (a) † 32 (b)	920N	500 3450	1.75 44,5	2.55 65	3.25 83	3.56 90	2.28 58	6.15 156	3.00 76	3.8 1,8	3.7 1,8
X		1 1/2 (a) † 40 (b)	920N	500 3450	2.00 50,8	2.78 71	3.50 89	3.56 90	2.28 58	6.15 156	3.25 83	4.1 1,9	3.8 1,8
X		2 (a) 50	920N	500 3450	2.50 63,5	2.75 70	3.50 89	3.56 90	2.28 58	6.75 172	3.88 99	4.9 2,3	4.6 2,1
3 1/2 90	X	2	920N	500 3450	2.50 63,5	–	–	3.75 95	2.44 62	6.72 171	3.88 99	–	3.8 1,8
	X	50	920N	500 3450	2.50 63,5	–	–	–	–	–	–	–	–
4 100	X	1/2 (a) 15	920N	500 3450	1.50 38,1	3.03 77	3.56 90	–	2.69 68	7.01 178	2.75 70	3.7 1,8	–
	X	3/4 (a) 20	920N	500 3450	1.50 38,1	3.00 76	3.56 90	–	2.69 68	7.01 178	2.75 70	3.7 1,8	–
	X	1 (a) 25	920N	500 3450	1.50 38,1	2.88 73	3.56 90	–	2.69 68	7.01 178	2.75 70	3.6 1,8	–
	X	1 1/4 (a) † 32 (b)	920N	500 3450	1.75 44,5	3.08 78	3.78 96	4.00 102	2.69 68	7.01 178	3.00 76	4.0 1,9	3.6 1,8
	X	1 1/2 (a) † 40 (b)	920N	500 3450	2.00 50,8	3.28 83	4.00 102	4.00 102	2.69 68	7.01 178	3.25 83	4.2 2,0	3.9 1,9
	X	2 (a) † 50	920N	500 3450	2.50 63,5	3.25 83	4.00 102	4.00 102	2.69 68	7.01 178	3.88 99	5.0 2,3	4.6 2,1
X	X	2 1/2 (a) † 65	920	500 3450	2.75 69,9	2.88 73	4.00 102	4.00 102	2.69 68	7.34 186	4.63 118	5.8 2,6	5.0 2,3
	X	76,1 mm	920	500 3450	2.75 69,9	–	–	4.00 102	2.69 68	7.34 186	4.63 118	–	6.4 2,9
	X	3 (a) † 80	920	500 3450	3.50 88,9	3.31 84	4.50 114	4.12 105	2.69 68	7.73 196	5.12 130	8.4 3,8	6.4 2,9

Table continued on page 3. See notes on page 4.

## DIMENSIONS



Styles 920 and 920N  
w/Grooved Outlet



Styles 920 and 920N  
w/Female Threaded Outlet

**NOTE: Style 920 and Style 920N housings cannot be mated to achieve cross connections.**

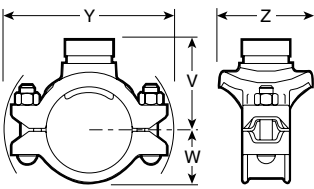
**NEW HOLE SIZE**

These new size Style 920N products require a different hole size than the Style 920 it replaces, for proper installation. Use caution to assure the proper size hole is prepared for the specific size and style used. Failure to use the proper hole size could result in joint leakage and property damage.

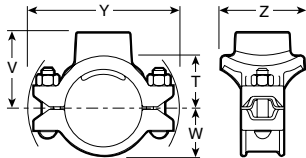
SIZE	Run X Branch	Nominal Inches	mm	Style No.	Max. Work. Press. PSI/kPa	Hole Dia. +0.13 -0.00	Dimensions - Inches/millimeters					Aprx. Wgt. Ea. Lbs./kg	
							T **	Fem. Thd. V ‡ #	Grv. V ‡	W	Y	Z	Fem. Thd.
108,0 mm	X	1 1/4 (a)	920N	500	1.75	3.08	3.78	-	2.63	7.64	3.05	5.0	-
	X	32		3450	44,5	78	96	-	67	194	78	2,3	-
	X	1 1/2 (a)	920N	500	2.00	3.28	4.00	-	2.63	7.64	3.25	5.0	-
	X	40		3450	50,8	83	102	-	67	194	83	2,3	-
	X	2 (a)	920N	500	2.50	3.25	4.00	-	2.63	7.64	4.00	4.0	-
	X	50		3450	63,5	83	102	-	67	194	102	1,9	-
	X	76,1 mm	920	500	2.75	2.88	4.00	4.00	2.63	7.64	4.29	8.0	-
	X	3 (a)	920	500	3.50	3.31	4.50	-	2.63	7.63	4.88	6.8	6.5
	X	80		3450	88,9	84	114	-	67	194	124	3,1	3,0
	5 125	X	1 1/2 (a) †	920	500	2.00	4.03	4.75	4.75	3.16	9.70	3.69	7.4
X		40		3450	50,8	102	121	121	80	246	94	3,4	3,4
X		2 (a) †	920	500	2.50	4.00	4.75	4.75	3.16	9.70	4.38	8.2	8.0
X		50		3450	63,5	102	121	121	80	246	111	3,7	3,6
X		2 1/2 (a) †	920	500	2.75	3.63	4.75	4.75	3.16	9.70	4.63	8.3	7.9
X		65		3450	69,9	92	121	121	80	246	118	3,8	3,6
133,0 mm	X	2	920N	500	2.50	3.75	4.50	-	3.17	8.00	3.88	8.0	-
	X	50		3450	63,5	95	114	-	81	203	99	3,6	-
	X	3	920	500	3.50	3.81	5.00	-	3.00	9.46	5.31	8.0	-
	X	80		3450	88,9	97	127	-	76	240	135	3,6	-
139,7 mm	X	1 1/2 †	920N	500	2.00	3.78	4.50	-	3.30	8.23	3.25	7.0	-
	X	40		3450	50,8	96	114	-	84	209	83	3,2	-
	X	2 †	920N	500	2.50	3.75	4.50	-	3.30	8.23	3.88	9.0	-
	X	50		3450	63,5	95	114	-	84	209	99	4,1	-
	X	76,1 mm (a)(b)	920	500	2.75	3.63	4.75	-	3.13	9.85	4.63	8.8	-
	X	3	920	500	3.50	3.81	5.00	4.63	3.16	9.70	5.31	11.0	-
6 150	X	1 1/4	920N	500	1.75	4.43	5.13	-	3.79	9.15	3.25	-	4.8
	X	32 (b)		3450	44,5	112	130	-	96	232	83	-	2,2
	X	1 1/2 (a) †	920N	500	2.00	4.40	5.12	5.13	3.79	9.15	3.25	5.4	5.1
	X	40 (b)		3450	50,8	112	130	130	96	232	83	2,4	2,3
	X	2 (a) †	920N	500	2.50	4.38	5.13	5.13	3.79	9.15	3.88	6.0	5.6
	X	50		3450	63,5	111	130	130	96	232	99	2,7	2,5
	X	2 1/2 (a) †	920	500	2.75	4.01	5.13	5.12	3.69	10.51	4.63	8.3	7.6
	X	65		3450	69,9	110	130	130	94	267	118	3,8	3,4
	X	76,1 mm (a)(b)	920	500	2.75	-	-	5.21	3.69	10.51	4.63	-	8.4
	X	3 (a) †	920	500	3.50	4.31	5.50	5.13	3.69	10.51	5.31	9.9	8.4
159,0 mm	X	1 1/4	920N	500	1.75	4.43	5.13	-	3.63	9.40	3.25	9.0	8.7
	X	32		3450	44,5	113	130	-	92	239	83	4,1	4,0
	X	1 1/2 (a)	920N	500	2.00	4.41	5.13	-	3.63	9.40	3.25	7.8	-
	X	40		3450	50,8	112	130	-	92	239	83	3,5	-
	X	2 (a)	920N	500	2.50	4.38	5.13	-	3.63	9.40	3.88	8.0	-
	X	50		3450	63,5	111	130	-	92	239	99	3,6	-
	X	76,1 mm	920	500	2.75	4.38	5.50	5.13	3.63	9.40	4.63	9.5	9.5
	X	3	920	500	3.50	4.31	5.50	5.13	3.63	9.40	5.31	8.1	14.0
	X	80		3450	88,9	110	140	130	92	239	135	3,7	6,4
	X	108,0 mm	920	500	4.50	-	-	5.38	3.63	9.40	6.12	-	10.0
X	4	920	500	4.50	3.81	5.75	-	3.63	9.40	6.25	18.0	-	
X	100		3450	114,3	96,80	146	-	92	239	159	8,2	-	

Table continued on page 4. See notes on page 4.

**DIMENSIONS**



**Styles 920 and 920N  
w/Grooved Outlet**



**Styles 920 and 920N  
w/Female Threaded Outlet**

SIZE Run X Branch Nominal Inches mm	Style No.	Max. Work. Press. PSI/kPa	Hole Dia. +0.13 -0.00	Dimensions – Inches/millimeters							Aprx. Wgt. Ea. Lbs./kg			
				T **	Fem. Thd. V ‡ #	Grv. V ‡	W	Y	Z					
165,1 mm	X	1 25	920	500 3450	1.50 38,1	99	116	-	96	237	70	8.0 3,6	-	
	X	1 1/4 32	920	500 3450	1.75 44,5	4.43 113	5.13 130	-	3.79 96	9.34 237	3.25 83	8.4 3,8	-	
	X	1 1/2 (a) † 40	920	500 3450	2.00 50,8	4.41 112	5.13 130	-	3.79 96	9.34 237	3.25 83	8.4 3,8	-	
	X	2 (a) † 50	920	500 3450	2.50 63,5	4.38 111	5.13 130	-	3.79 96	9.34 237	3.88 99	8.5 3,9	-	
	X	2 1/2 † 65	920	500 3450	2.75 69,9	4.01 110	5.13 130	-	3.63 92	10.51 267	4.63 118	8.6 3,9	7.6 3,4	
	X	76,1 mm (a)(b)	920	500 3450	2.75 69,9	4.01 110	5.13 130	5.21 132	3.63 92	10.51 267	4.63 118	8.6 3,9	7.6 3,4	
	X	3 (a) † 80	920	500 3450	3.50 88,9	4.31 110	5.50 140	5.13 130	3.63 92	10.51 267	5.31 135	10.2 4,6	8.4 3,8	
	X	4 (a) † 100	920	500 3450	4.50 114,3	3.81 97	5.75 146	5.38 137	3.63 92	10.51 267	6.25 159	10.5 4,8	8.4 3,8	
	8 200	X	2 (a) 50	920	500 3450	2.75 69,9	5.44 138	6.19 157	-	4.81 122	12.42 316	4.50 114	11.6 5,3	-
		X	2 1/2 (a) † 65	920	500 3450	2.75 69,9	5.07 129	6.19 157	6.19 157	4.81 122	12.42 316	4.50 114	11.6 5,3	11.6 5,3
		X	3 (a) † 80	920	500 3450	3.50 88,9	5.31 135	6.50 165	6.50 165	4.81 122	12.42 316	5.31 135	12.6 5,7	11.6 5,3
		X	4 (a) † 100	920	500 3450	4.50 114,3	4.81 122	6.75 171	6.38 162	4.81 122	12.42 316	6.25 159	15.3 6,9	12.5 5,7

**NOTE: Style 920 and Style 920N housings cannot be mated to achieve cross connections.**

**NEW  
HOLE SIZE**

These new size Style 920N products require a different hole size than the Style 920 it replaces, for proper installation. Use caution to assure the proper size hole is prepared for the specific size and style used. Failure to use the proper hole size could result in joint leakage and property damage.

**NOTES**

\*\*Center of run to engaged pipe end, female threaded outlet only (Dimensions approximate).

† Available with grooved or female threaded outlet. Specify choice on order.

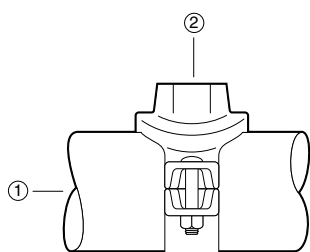
‡ Center of run to end of fitting.

# Female threaded outlets are available to NPT and BSPT specifications.

(a) British Standard female pipe threaded outlet is available as listed. Specify "BSPT" clearly on order.

(b) For 76,1 mm threaded outlet, specify 2 1/2" BSPT clearly on order.

## FLOW DATA



Exaggerated for Clarity

Flow test data has shown that the total head loss between point (1) and (2) for the Style 920, 900N and 929

Mechanical-T® fittings can best be expressed in terms of the pressure difference across the inlet and branch. The pressure difference can be obtained from the relationship to the right.

### C<sub>v</sub> Values

Values for flow of water at +60°F (+16°C) are shown in the table at right.

OUTLET SIZE		Equivalent Length Feet/meter of Pipe		OUTLET SIZE		Equivalent Length Feet/meter of Pipe	
Nominal Diameter In./mm	Actual Out. Dia. In./mm	Grooved	Female Threaded	Nominal Diameter In./mm	Actual Out. Dia. In./mm	Grooved	Female Threaded
1/2 15	0.840 21,3	-	2.0 0,6	2 50	2.375 60,3	9.0 2,7	10.5 3,2
3/4 20	1.050 26,7	-	4.0 1,2	2 1/2 65	2.875 73,0	11.0 3,4	12.5 3,8
1 25	1.315 33,7	-	5.0 1,5	3 80	3.500 88,9	13.5 4,1	15.5 4,7
1 1/4 32	1.660 42,4	5.5 1,7	6.0 1,8	4 100	4.500 114,3	20.0 6,1	22.0 6,7
1 1/2 40	1.900 48,3	7.0 2,1	8.0 2,4				

### Formulas for C<sub>v</sub> Values:

$$\Delta P = \frac{Q^2}{C_v^2}$$

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

### Where:

Q = Flow (GPM)

C<sub>v</sub> = Flow Coefficient

ΔP = Pressure Drop (psi)

Pipe Size			Pipe Size			Pipe Size		
Nominal Diameter Inches/mm	Actual Outside Diameter Inches/mm	C <sub>v</sub> Values	Nominal Diameter Inches/mm	Actual Outside Diameter Inches/mm	C <sub>v</sub> Values	Nominal Diameter Inches/mm	Actual Outside Diameter Inches/mm	C <sub>v</sub> Values
1/2 15	0.840 21,3	17	1 1/4 32	1.660 42,4	45	2 1/2 65	2.875 73,0	135
3/4 20	1.050 26,7	21	1 1/2 40	1.900 48,3	60	3 80	3.500 88,9	200
1 25	1.315 33,7	25	2 50	2.375 60,3	100	4 100	4.500 114,3	400

## APPROVED PRESSURE RATINGS

The information provided below is based on the latest listing and approval data at the time of publication. Listings/Approvals are subject to change and/or additions by the approvals agencies. Contact Victaulic for performance on other pipe and the latest listings and approvals.

Run Size		Outlet Size Inches/mm	Pipe Schedule	Rated Working Pressures PSI/kPa		
Nominal Diameter Inches/mm	Actual Outside Diameter Inches/mm			UL	ULC	FM
2 1/2 - 6 65 - 150	2.875 - 6.625 73,0 - 168,3	All	10, 40	400 2755	400 2755	400 2755
2 1/2 - 4 65 - 100	2.875 - 4.500 73,0 - 114,3	All	DF	300 2065	300 2065	300 2065
2 1/2 - 4 65 - 100	2.875 - 4.500 73,0 - 114,3	All	SF	300 2065	300 2065	300 2065
6 150	6.625 168,3	3, 4	10	300 2065	300 2065	250 1724
6 150	6.625 168,3	3, 4	30, 40	300 2065	300 2065	300 2065
8 200	8.625 219,1	2 1/2	10, 40	400 2755	-	-
8 200	8.625 219,1	3, 4	10	300 2065	-	250 1724
8 200	8.625 219,1	3, 4	30, 40	300 2065	-	300 2065

NOTES: 10 refers to Listed/Approved Schedule 10 steel sprinkler pipe.  
 40 refers to Listed/Approved Schedule 40 steel sprinkler pipe.  
 DF refers to Listed/Approved Dyna-Flow steel sprinkler pipe manufactured by American Tube Company.  
 SF refers to Listed/Approved Super-Flo steel sprinkler pipe manufactured by Allied Tube and Conduit Corporation.

This product shall be manufactured by Victaulic or to Victaulic specifications. All products to be installed in accordance with current Victaulic installation/assembly instructions. Victaulic reserves the right to change product specifications, designs and standard equipment without notice and without incurring obligations.