

Victaulic® *Mechanical-T* Bolted Branch Outlets Styles 920 and 920N



STYLES 920 AND 920N

STYLE 920 CROSS

1.0 PRODUCT DESCRIPTION

Available Sizes

- 2 x ½"/DN50 x DN15 through 8 x 4"/DN200 x DN100

Pipe Material

- Carbon steel pipe
- HDPE pipe conforming to ASTM D3035 and ASTM F714 or ISO 4427-2 (SDR 7 – 26)
- Schedules 40 and 80 chlorinated polyvinyl chloride (CPVC) pipe per ASTM F441, 23447 minimum cell classification per ASTM D1784.
- Schedules 40 and 80 polyvinyl chloride (PVC) pipe per ASTM D1785, 12454 minimum cell classification per ASTM D1784.

Maximum Joint Working Pressure

- Up to 500 psi/3447 kPa on carbon steel pipe
- For HDPE applications, meets or exceeds the pressure rating of the HDPE pipe.
- For PVC/CPVC applications, see [Sections 5.1 thru 5.4](#) for pressure ratings and temperature reduction factors.

WARNING

- FOR ONE-TIME FIELD TEST ONLY, the maximum working pressure may be increased to 1 1/2 times the figures shown.

Operating Temperature Range

- Dependent on gasket selection from Section 3.0

Available Branch End Configurations

- Victaulic® Original Groove System (OGS)
- Female Threaded NPT
- Female Threaded ISO 7-Rc

Application

- This product provides a reduced size outlet in place of a reducing tee
- Provides a direct branch connection at any location a hole can be cut in a pipe

NOTES

- Must be installed to keep the main and branch connections are a true 90° angle
- Not approved for use in hot tapping applications. If a solution for tapping a pressurized system is required, reference publication [24.01](#) for the *Vic-Tap II* Hole Cutting Tool
- Style 920 and Style 920N housings cannot be mated to one another to achieve cross connections
- See publication [11.03](#) for *Mechanical-T* cross assemblies

ALWAYS REFER TO ANY NOTIFICATIONS AT THE END OF THIS DOCUMENT REGARDING PRODUCT INSTALLATION, MAINTENANCE OR SUPPORT.

2.0 CERTIFICATIONS/LISTINGS



LPS 1219: Issue 3.1
Cert/LPCB Ref. 104-1a/11
104-1a/26



EN 10311
CPR (EU)
No. 305/2011

NOTE

- For all fire protection agency certified sizes and ratings, reference [publication 10.01](#) Victaulic® Certification Reference Guide.

3.0 SPECIFICATIONS - MATERIAL

Housing: Ductile iron conforming to ASTM A536, grade 65-45-12. Ductile iron conforming to ASTM A-395, grade 65-45-15, is available upon special request

Housing Coating: (specify choice)

- ☐ Orange coating
- ☐ Red coating (standard for EMEA-I and Asia Pacific)
- ☐ 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. 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.

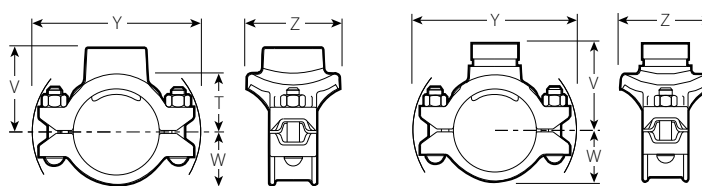
NOTES:

- Reference shall always be made to [publication I-100](#), Victaulic Field Installation Handbook for gasket lubrication instructions.
- Services listed are General Service Guidelines only. It should be noted that there are services for which these gaskets are not compatible. Reference should always be made to [publication 05.01](#), Victaulic Gasket Selection Guide for specific gasket service guidelines and for a listing of services which are not compatible.

Bolts/Nuts:

- ☐ Carbon steel oval neck track bolts meeting the mechanical property requirements of (imperial) ASTM A449 or (metric) ISO 898-1 Class 9.8 (M10-M16) or Class 8.8 (M20 and greater). Carbon steel hex nuts meeting the mechanical property requirements of (imperial heavy hex nuts) ASTM A563 Grade B or (metric hex nuts) ISO 898-2 Class 10 (M12-M16) or Class 8 (M20 and greater). Track bolts and hex nuts are zinc electroplated per ASTM B633 Fe/Zn5 finish (imperial) Type III or (metric) Type II.

4.0 DIMENSIONS



FEMALE THREADED OUTLET

GROOVED OUTLET

Size Run & Outlet			Style No.	Dimensions						Weight				
Nominal inches DN		Actual Outside Diameter inches mm		920 or 920N	T ¹ inches mm	V ^{3,4} Thd. inches mm	V ⁴ Grv. inches mm	W inches mm	Y inches mm	Z inches mm	Female Thd. Approx. (Each) Lbs. kg	Grv. Approx. (Each) Lbs. kg		
2 DN50	×	½ DN15	2.375 60.3	×	0.840 21.3	920N	2.00 51	2.53 64	—	1.61 41	5.35 136	2.75 70	3.1 1.5	—
						920N	1.97 50	2.53 64	—	1.61 41	5.35 136	2.75 70	3.1 1.5	—
						920N	1.85 47	2.53 64	—	1.61 41	5.35 136	2.75 70	3.0 1.4	—
						920N	1.660 42.4	2.75 70	3.00 76	1.61 41	5.35 136	3.00 76	3.5 1.6	3.2 1.5
						920N	1.900 48.3	2.75 70	3.12 79	1.61 41	5.35 136	3.25 83	3.6 1.6	3.2 1.5
						920N	2.21 56	2.74 70	—	1.82 46	5.64 143	2.75 70	3.0 1.4	—
2½	×	½ DN15	2.875 73	×	0.840 21.3	920N	2.18 55	2.74 70	—	1.82 46	5.64 143	2.75 70	3.0 1.4	—
						920N	2.06 52	2.74 70	—	1.82 46	5.64 143	2.75 70	2.9 1.4	—
						920N	2.30 58	3.00 76	3.25 83	1.82 46	6.29 160	3.00 76	3.5 1.6	3.2 1.5
						920N	2.28 58	3.00 76	3.25 83	1.82 46	6.26 159	3.25 83	3.6 1.6	3.3 1.5
						920N	2.22 56	2.75 70	—	2.25 57	6.46 164	3.18 81	3.9 1.8	—
						920N	2.19 56	2.75 70	—	2.25 57	6.46 164	3.18 81	3.9 1.8	—
DN65	×	½ DN15	3.000 76.1	×	0.840 21.3	920N	2.07 53	2.75 70	—	2.25 57	6.46 164	3.18 81	3.8 1.7	—
						920N	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
						920N	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
						920N	2.22 56	2.75 70	—	2.25 57	6.46 164	3.18 81	3.9 1.8	—
						920N	2.19 56	2.75 70	—	2.25 57	6.46 164	3.18 81	3.9 1.8	—
						920N	2.07 53	2.75 70	—	2.25 57	6.46 164	3.18 81	3.8 1.7	—

¹ Center of run to engaged pipe end, female threaded outlet only (dimensions approximate).

² Available with grooved or female threaded outlet. Specify choice on order.

³ British Standard female pipe threaded outlet is available as listed. Specify "ISO 7-Rc" clearly on order.

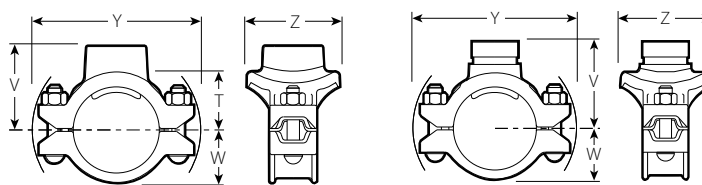
⁴ Center of run to end of fitting.

⁵ For 76.1 mm threaded outlet, specify 2½" ISO 7-Rc clearly on order.

NOTE:

- Always reference [publication I-100](#), Victaulic Field Installation Handbook, for complete pipe preparation, hole size, and installation requirements.

4.0 DIMENSIONS (CONTINUED)



FEMALE THREADED OUTLET

GROOVED OUTLET

Size Run & Outlet			Style No.	Dimensions						Weight	
Nominal inches DN		Actual Outside Diameter inches mm	920 or 920N	T ¹ inches mm	V ^{3,4} Thd. inches mm	V ⁴ Grv. inches mm	W inches mm	Y inches mm	Z inches mm	Female Thd. Approx. (Each) Lbs. kg	Grv. Approx. (Each) Lbs. kg
3 DN80	× ½ DN15	3.500 88.9	920N	2.52 64	3.05 77	—	2.28 58	6.15 156	2.75 70	3.4 1.5	—
	× ¾ DN20		920N	2.49 63	3.05 77	—	2.28 58	6.15 156	2.75 70	3.4 1.5	—
	× 1 DN25		920N	2.38 60	3.06 78	—	2.28 58	6.15 156	2.75 70	3.3 1.5	—
	× 1¼ ² DN32		920N	2.55 65	3.25 83	3.56 90	2.28 58	6.15 156	3.00 76	3.8 1.7	3.7 1.7
	× 1½ ² DN40		920N	2.78 71	3.50 89	3.56 90	2.28 58	6.15 156	3.25 83	4.1 1.9	3.8 1.7
	× 2 ² DN50		920N	2.75 70	3.50 89	3.56 90	2.28 58	6.75 171	3.88 99	4.9 2.2	4.6 2.1
	× 3½ DN90		4.000 101.6	920N	—	—	3.75 95	2.44 62	6.72 171	3.88 99	—
4 DN100	× ½ DN15	4.500 114.3	920N	3.03 77	3.56 90	—	2.69 68	7.01 178	2.75 70	3.7 1.7	—
	× ¾ DN20		920N	3.00 76	3.56 90	—	2.69 68	7.01 178	2.75 70	3.7 1.7	—
	× 1 DN25		920N	2.88 73	3.56 90	—	2.69 68	7.01 178	2.75 70	3.6 1.6	—
	× 1¼ ² DN32		920N	3.08 78	3.78 96	4.00 102	2.69 68	7.01 178	3.00 76	4.0 1.8	3.6 1.6
	× 1½ ² DN40		920N	3.28 83	4.00 102	4.00 102	2.69 68	7.01 178	3.25 83	4.2 1.9	3.9 1.8
	× 2 ² DN50		920N	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
	× 2½ ²		920	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
	DN65 ²		920	2.88 73	4.00 102	4.00 102	2.69 68	7.34 186	4.63 118	5.8 2.6	6.4 2.9
			× 3 ² DN80	920	3.31 84	4.50 114	4.12 105	2.69 68	7.73 196	5.12 130	8.4 3.8

¹ Center of run to engaged pipe end, female threaded outlet only (dimensions approximate).

² Available with grooved or female threaded outlet. Specify choice on order.

³ British Standard female pipe threaded outlet is available as listed. Specify "ISO 7-Rc" clearly on order.

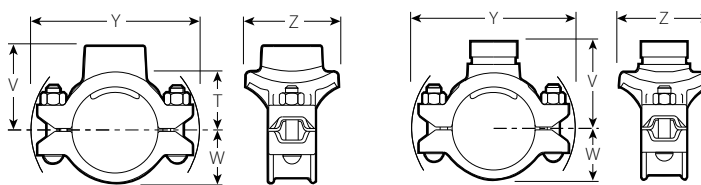
⁴ Center of run to end of fitting.

⁵ For 76.1 mm threaded outlet, specify 2½" ISO 7-Rc clearly on order.

NOTE:

- Always reference [publication I-100](#), Victaulic Field Installation Handbook, for complete pipe preparation, hole size, and installation requirements.

4.0 DIMENSIONS (CONTINUED)



FEMALE THREADED OUTLET

GROOVED OUTLET

Size Run & Outlet			Style No.	Dimensions						Weight		
Nominal inches DN		Actual Outside Diameter inches mm		920 or 920N	T ¹ inches mm	V ^{3,4} Thd. inches mm	V ⁴ Grv. inches mm	W inches mm	Y inches mm	Z inches mm	Female Thd. Approx. (Each) Lbs. kg	Grv. Approx. (Each) Lbs. kg
108.0 ×	1 ¼ DN32	4.250 × 108.0	1.660 42.4	920N	3.08 78	3.78 96	—	2.63 67	7.64 194	3.05 77	5.0 2.3	—
	1 ½ DN40		1.900 48.3	920N	3.28 83	4.00 102	—	2.63 67	7.64 194	3.25 83	5.0 2.3	—
	2 DN50		2.375 60.3	920N	3.25 83	4.00 102	—	2.63 67	7.64 194	4.00 102	4.0 1.8	—
	DN65 ²		3.000 76.1	920	2.88 73	4.00 102	4.00 102	2.63 67	7.64 194	4.29 109	8.0 3.6	7.8 3.5
	3 ² DN80		3.500 88.9	920	3.31 84	4.50 114	4.50 114	2.63 67	7.63 194	4.88 124	6.8 3.1	6.5 2.9
5 ×	1 ½ ² DN40	5.563 × 141.3	1.900 48.3	920	4.03 102	4.75 121	4.75 121	3.16 80	9.70 246	3.69 94	7.4 3.4	7.6 3.4
	2 ² DN50		2.375 60.3	920	4.00 102	4.75 121	4.75 121	3.16 80	9.70 246	4.38 111	8.2 3.7	8.0 3.6
	2 ½ ²		2.875 73	920	3.63 92	4.75 121	4.75 121	3.16 80	9.70 246	4.63 118	8.3 3.8	7.9 3.6
	DN65 ²		3.000 76.1	920	3.63 92	4.75 121	4.75 121	3.16 80	9.70 246	4.63 118	8.3 3.8	8.0 3.6
	3 ² DN80		3.500 88.9	920	3.81 97	5.00 127	4.63 118	3.16 80	9.70 246	5.31 135	8.4 3.8	8.8 4.0
133.0 ×	2 DN50	5.250 × 133.0	2.375 60.3	920N	3.75 95	4.50 114	—	3.17 81	8.00 203	3.88 99	8.0 3.6	—
DN125 ×	1 ½ DN40	5.500 × 139.7	1.900 48.3	920N	3.78 96	4.50 114	—	3.30 84	8.23 209	3.25 83	7.0 3.2	—
	2 DN50		2.375 60.3	920N	3.75 95	4.50 114	—	3.30 84	8.23 209	3.88 99	9.0 4.1	—
	DN65 ²		3.000 76.1	920	3.61 92	4.75 121	4.62 117	3.13 80	9.18 233	4.75 121	12.0 5.4	12.0 5.4

¹ Center of run to engaged pipe end, female threaded outlet only (dimensions approximate).

² Available with grooved or female threaded outlet. Specify choice on order.

³ British Standard female pipe threaded outlet is available as listed. Specify "ISO 7-Rc" clearly on order.

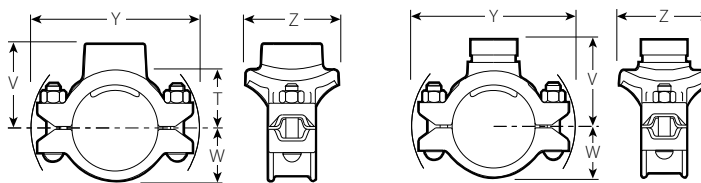
⁴ Center of run to end of fitting.

⁵ For 76.1 mm threaded outlet, specify 2½" ISO 7-Rc clearly on order.

NOTE:

- Always reference [publication I-100](#), Victaulic Field Installation Handbook, for complete pipe preparation, hole size, and installation requirements.

4.0 DIMENSIONS (CONTINUED)



FEMALE THREADED OUTLET

GROOVED OUTLET

Size Run & Outlet			Style No.	Dimensions						Weight			
Nominal inches DN		Actual Outside Diameter inches mm	920 or 920N	T ¹ inches mm	V ^{3,4} Thd. inches mm	V ⁴ Grv. inches mm	W inches mm	Y inches mm	Z inches mm	Female Thd. Approx. (Each) Lbs. kg	Grv. Approx. (Each) Lbs. kg		
6 DN150	× 1 ¼ DN32	6.625 168.3	× 1.660 42.4	920N	—	—	5.13 130	3.79 96	9.15 232	3.28 83	—	4.8 2.2	
				920N	4.00 102	5.13 130	5.13 130	3.79 96	9.15 232	3.25 83	5.4 2.4	5.1 2.3	
	2 ² DN50	2.375 60.3	920N	4.38 111	5.13 130	5.13 130	3.79 96	9.15 232	3.88 99	6.0 2.7	5.6 2.5		
			920	2.875 73.0	4.01 102	5.13 130	5.12 130	3.69 94	10.51 267	4.63 118	8.3 3.8	7.6 3.4	
	2 ½ ²	2.875 73.0	920	4.01 102	5.13 130	5.21 132	3.69 94	10.51 267	4.63 118	8.3 3.8	8.4 3.8		
			920	3.500 88.9	4.31 109	5.50 140	5.13 130	3.69 94	10.51 267	5.31 135	9.9 4.5	8.4 3.8	
	DN65 ²	3.000 76.1	920	4.01 102	5.13 130	5.21 132	3.69 94	10.51 267	4.63 118	8.3 3.8	8.4 3.8		
			920	4.500 114.3	3.81 97	5.75 146	5.38 137	3.69 94	10.51 267	6.25 159	10.1 4.6	10.1 4.6	
	159.0	× 1 ½ DN40	6.250 159.0	× 1.900 48.3	920N	4.41 112	5.13 130	—	3.63 92	9.40 239	3.25 83	7.8 3.5	—
					920N	4.38 111	5.13 130	—	3.63 92	9.40 239	3.88 99	8.0 3.6	—
		2 DN50	2.375 60.3	920	4.38 111	5.50 140	5.13 130	3.63 92	9.40 239	4.63 118	9.5 4.3	9.5 4.3	
				920	3.500 88.9	4.31 109	5.50 140	5.13 130	3.63 92	9.40 239	5.31 135	8.1 3.7	14.0 6.4
3 ² DN80		3.500 88.9	920	4.250 108.0	—	—	5.38 137	3.63 92	9.40 239	6.12 155	—	10.0 4.5	
			920	4.500 114.3	3.81 97	5.75 146	—	3.63 92	9.40 239	6.25 159	18.0 8.2	—	

¹ Center of run to engaged pipe end, female threaded outlet only (dimensions approximate).

² Available with grooved or female threaded outlet. Specify choice on order.

³ British Standard female pipe threaded outlet is available as listed. Specify "ISO 7-Rc" clearly on order.

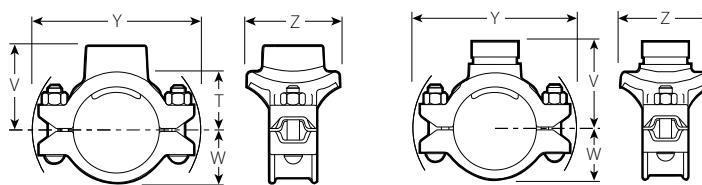
⁴ Center of run to end of fitting.

⁵ For 76.1 mm threaded outlet, specify 2 1/2" ISO 7-Rc clearly on order.

NOTE:

- Always reference [publication I-100](#), Victaulic Field Installation Handbook, for complete pipe preparation, hole size, and installation requirements.

4.0 DIMENSIONS (CONTINUED)



FEMALE THREADED OUTLET

GROOVED OUTLET

Size Run & Outlet			Style No.	Dimensions						Weight				
Nominal inches DN		Actual Outside Diameter inches mm	920 or 920N	T ¹ inches mm	V ^{3,4} Thd. inches mm	V ⁴ Grv. inches mm	W inches mm	Y inches mm	Z inches mm	Female Thd. Approx. (Each) Lbs. kg	Grv. Approx. (Each) Lbs. kg			
6.500 165.1	×	1 DN25	6.500	×	1.315 33.7	920N	3.88 99	4.56 116	—	3.79 96	9.34 237	2.75 70	8.0 3.6	—
		1 ¼ DN32			920N	4.43 113	5.13 130	—	3.79 96	9.34 237	3.25 83	8.4 3.8	—	
		1 ½ ² DN40	920N	4.41 112	5.13 130	5.13 130	3.79 96	9.34 237	3.25 83	8.4 3.8	5.4 2.4			
		2 ² DN50	920N	4.38 111	5.13 130	5.13 130	3.79 96	9.34 237	3.88 99	8.5 3.9	6.0 2.7			
		DN65 ²	920	4.01 102	5.13 130	5.21 132	3.63 92	10.51 267	4.63 118	8.6 3.9	7.6 3.4			
		3 ² DN80	920	4.31 109	5.50 140	5.13 130	3.63 92	10.51 267	5.31 135	10.2 4.6	8.4 3.8			
		4 ² DN100	920	4.500 114.3	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 DN200	×	2 ² DN50	8.625 219.1	×	2.375 60.3	920	5.44 138	6.19 157	6.25 159	4.81 122	12.42 315	4.50 114
2 ½ ²	920			2.875 73.0			5.07 129		6.19 157	6.19 157	4.81 122	12.42 315	4.50 114	11.6 5.3
DN65 ²	920			3.000 76.1	5.07 129	6.19 157	6.25 159	4.81 122	12.42 315	4.50 114	11.6 5.3	11.6 5.3		
3 ² DN80	920			3.000 76.1	5.31 135	6.50 165	6.50 165	4.81 122	12.42 315	5.31 135	12.6 5.7	11.6 5.3		
4 ² DN100	920			4.500 114.3	4.81 122	6.75 171	6.38 162	4.81 122	12.42 315	6.25 159	15.3 6.9	12.5 5.7		

¹ Center of run to engaged pipe end, female threaded outlet only (dimensions approximate).

² Available with grooved or female threaded outlet. Specify choice on order.

³ British Standard female pipe threaded outlet is available as listed. Specify "ISO 7-Rc" clearly on order.

⁴ Center of run to end of fitting.

⁵ For 76.1 mm threaded outlet, specify 2 1/2" ISO 7-Rc clearly on order.

NOTE:

- Always reference [publication I-100](#), Victaulic Field Installation Handbook, for complete pipe preparation, hole size, and installation requirements.

5.0 PERFORMANCE

Flow Data (Carbon Steel Pipe)

Head loss values per UL 213, Section 17 “Pipe Outlet Flow Characteristics Test” are shown in the table below for Style 920 and 920N mechanical T fitting. The head loss values are expressed in equivalent length of outlet pipe and represent the total head loss between points 1 and 2.

C_v/K_v values for flow of water at +60°F/+16°C are shown in the table.

Formulas for C_v values:

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

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

Where:

Q = Flow (GPM)

ΔP = Pressure Drop (psi)

C_v = Flow Coefficient

Formulas for K_v values:

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

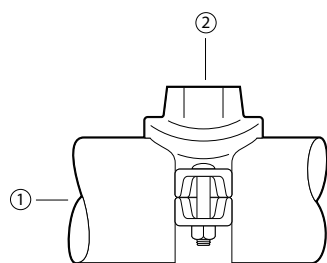
$$Q = K_v \times \sqrt{\Delta P}$$

Where:

Q = Flow (m³/hr)

ΔP = Pressure Drop (Bar)

K_v = Flow Coefficient



Exaggerated for clarity

Size Outlet		Performance			
Nominal	Actual Outside Diameter	Equivalent Length of Outlet Size Schedule 40 Carbon Steel Pipe (per UL 213, Sec. 17) (C = 120) ⁶		Flow Characteristics C_v K_v	
inches DN	inches mm	Grooved	Threaded	Grooved	Threaded
1/2 DN15	0.840 21.3	–	–	–	11 10
3/4 DN20	1.050 26.9	–	–	–	16 14
1 DN25	1.315 33.7	–	5	–	19 16
1 1/4 DN32	1.660 42.4	6	3	35 30	42 36
1 1/2 DN40	1.900 48.3	7	6	46 40	48 42
2 DN50	2.375 60.3	2	3	101 87	97 84
2 1/2 DN65	2.875 73.0	5	5	121 105	136 118
3 DN80	3.500 88.9	6 ⁷	–	161 139	–
4 DN100	4.500 114.3	10	7	189 163	198 171
				343 297	391 338

⁶ Hazen-Williams coefficient of friction is 120.

⁷ Pipe with a wall thickness of 0.165"/4.2 mm.

5.1 PERFORMANCE

Maximum Joint Working Pressure (PVC/CPVC)

Size Run & Outlet		Style No.	Maximum Joint Working Pressures ⁸			
			Threaded		Grooved	
Nominal inches DN	Actual Outside Diameter inches mm	920 or 920N	Schedule 40 PVC/CPVC Run psi kPa	Schedule 80 PVC/CPVC Run psi kPa	Schedule 40 PVC Run/Branch psi kPa	Schedule 80 PVC Run/Branch psi kPa
2 DN50 × ½ DN15	2.375 60.3 × 0.840 21.3	920N	280 1931	400 2758	–	–
		920N	280 1931	340 2344	–	–
		920N	280 1931	320 2206	–	–
		920N	260 1793	260 1793	–	–
		920N	240 1655	240 1655	–	–
		920N	240 1655	240 1655	–	–
2 ½ × ½ DN15	2.875 73 × 0.840 21.3	920N	300 2068	420 2896	–	–
		920N	300 2068	340 2344	–	–
		920N	300 2068	320 2206	–	–
		920N	260 1793	260 1793	–	–
		920N	240 1655	240 1655	–	–
		920N	240 1655	240 1655	–	–
3 DN80 × ½ DN15	3.500 88.9 × 0.840 21.3	920N	260 1793	420 2896	–	–
		920N	260 1793	340 2344	–	–
		920N	260 1793	320 2206	–	–
		920N	260 1793	260 1793	–	–
		920N	240 1655	240 1655	–	–
		920N	240 1655	240 1655	–	–
		920N	200 1379	200 1379	230 1586	310 2137
		920N	200 1379	200 1379	230 1586	310 2137

⁸ All threaded outlets Schedule 80 or thicker.

NOTE:

- Always reference [publication I-100](#), Victaulic Field Installation Handbook, for complete pipe preparation, hole size, and installation requirements.

5.1 PERFORMANCE (CONTINUED)

Maximum Joint Working Pressure (PVC/CPVC)

Size Run & Outlet		Style No.	Maximum Joint Working Pressures ⁸			
			Threaded		Grooved	
Nominal inches DN	Actual Outside Diameter inches mm	920 or 920N	Schedule 40 PVC/CPVC Run psi kPa	Schedule 80 PVC/CPVC Run psi kPa	Schedule 40 PVC Run/Branch psi kPa	Schedule 80 PVC Run/Branch psi kPa
3 1/2 DN90 × 2 DN50	4.000 × 2.375 101.6 × 60.3	920N	200 1379	200 1379	220 1517	320 2206
4 DN100 × 1/2 DN15	4.500 × 0.840 114.3 × 21.3	920N	220 1517	320 2206	–	–
		920N	220 1517	320 2206	–	–
		920N	220 1517	320 2206	–	–
		920N	220 1517	260 1793	–	–
		920N	220 1517	240 1655	–	–
		920N	200 1379	200 1379	220 1517	320 2206
6 DN150 × 1 1/4 DN15	6.625 × 1.660 168.3 × 42.4	920N	180 1241	260 1793	–	–
		920N	180 1241	240 1655	–	–
		920N	180 1241	200 1379	180 1241	260 1793
		920N	180 1241	200 1379	180 1241	260 1793

⁸ All threaded outlets Schedule 80 or thicker.

NOTE:

- Always reference [publication I-100](#), Victaulic Field Installation Handbook, for complete pipe preparation, hole size, and installation requirements.

5.2 PERFORMANCE

Flow Data (PVC/CPVC)

Head loss values per UL 213, Section 17 “Pipe Outlet Flow Characteristics Test” are shown in the table below for Style 920 and 920N mechanical T fitting. The head loss values are expressed in equivalent length of outlet pipe and represent the total head loss between points 1 and 2.

C_v/K_v values for flow of water at +60°F/+16°C are shown in the table.

Formulas for C_v values:

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

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

Where:

Q = Flow (GPM)

ΔP = Pressure Drop (psi)

C_v = Flow Coefficient

Formulas for K_v values:

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

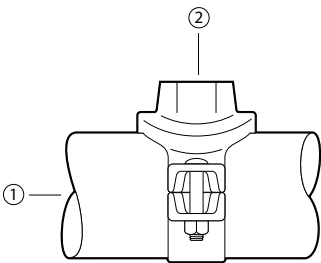
$$Q = K_v \times \sqrt{\Delta P}$$

Where:

Q = Flow (m³/hr)

ΔP = Pressure Drop (Bar)

K_v = Flow Coefficient



Exaggerated for clarity

Size Outlet		Performance							
Nominal	Actual Outside Diameter	Equivalent Length of Outlet Size Schedule 40 PVC/CPVC Pipe (per UL 213, Sec. 17) (C = 150) ⁹		Equivalent Length of Outlet Size Schedule 80 PVC/CPVC Pipe (per UL 213, Sec. 17) (C = 150) ⁹		Flow Characteristics Schedule 40 PVC/CPVC Pipe C _v K _v		Flow Characteristics Schedule 80 PVC/CPVC Pipe C _v K _v	
		Grooved	Threaded	Grooved	Threaded	Grooved	Threaded	Grooved	Threaded
1/2 DN15	0.840 21.3	–	NR	–	–	–	NR	–	6 5
3/4 DN20	1.050 26.9	–	NR	–	–	–	NR	–	11 10
1 DN25	1.315 33.7	–	NR	–	4	–	NR	–	14 12
1 1/4 DN32	1.660 42.4	–	NR	–	2	–	NR	–	33 29
1 1/2 DN40	1.900 48.3	–	NR	–	5	–	NR	–	39 34
2 DN50	2.375 60.3	2	NR	2	3	101 87	NR	87 75	79 68

⁹ Hazen-Williams coefficient of friction is 150.

NOTE:

- Always reference [publication I-100](#), Victaulic Field Installation Handbook, for complete pipe preparation, hole size, and installation requirements.

5.3 PERFORMANCE

Derating Factors (CPVC)

Pressure capacity derating factors for operating temperatures above 73°F/23°C		
At 80°F/27°C	Multiply By	1.00
At 90°F/32°C	Multiply By	0.91
At 100°F/37°C	Multiply By	0.82
At 110°F/43°C	Multiply By	0.72
At 120°F/49°C	Multiply By	0.65
At 130°F/54°C	Multiply By	0.57
At 140°F/60°C	Multiply By	0.50
At 150°F/66°C	Multiply By	0.42
At 160°F/71°C	Multiply By	0.40
At 170°F/77°C	Multiply By	0.29
At 180°F/82°C	Multiply By	0.25
At 200°F/93°C	Multiply By	0.20

5.4 PERFORMANCE

Derating Factors (PVC)

Pressure capacity derating factors for operating temperatures above 73°F/23°C		
At 80°F/27°C	Multiply By	0.88
At 90°F/32°C	Multiply By	0.75
At 100°F/37°C	Multiply By	0.62
At 110°F/43°C	Multiply By	0.51
At 120°F/49°C	Multiply By	0.40
At 130°F/54°C	Multiply By	0.31
At 140°F/60°C	Multiply By	0.22

6.0 NOTIFICATIONS

⚠ WARNING



- Read and understand all instructions before attempting to install any Victaulic products.
- Always verify that the piping system has been completely depressurized and drained immediately prior to installation, removal, adjustment, or maintenance of any Victaulic products.
- Confirm that any equipment, branch lines, or sections of piping that may have been isolated for/during testing or due to valve closures/positioning are identified, depressurized, and drained immediately prior to installation, removal, adjustment, or maintenance of any Victaulic products.
- Wear safety glasses, hardhat, foot protection, and hearing protection.

Failure to follow these instructions could result in death or serious personal injury and property damage.

7.0 REFERENCE MATERIALS

Pipe Preparation Dimensions

Nominal Outlet Size inches mm	Hole Dimensions	
	Minimum Hole Diameter/ Hole Saw Size inches mm	Maximum Allowable Diameter inches mm
All ½-inch/ 21.3 Outlets	1 ½ 38	1 ⅝ 41
All ¾-inch/ 26.9 Outlets	1 ½ 38	1 ⅝ 41
All 1-inch/ 33.7 Outlets	1 ½ 38	1 ⅝ 41
All 1 ¼-inch/ 42.4 Outlets	1 ¾ 44	1 ⅞ 48
All 1 ½-inch/ 48.3 Outlets	2 51	2 ⅞ 54
Except for 920N 2 x 1 ½-inch/ 60.3 x 48.3 Outlets	1 ¾ 44	1 ⅞ 48
All 2-inch/ 60.3 Outlets	2 ½ 64	2 ⅝ 67
Except for 920 8 x 2-inch/ 219.1 x 60.3 Outlets	2 ¾ 70	2 ⅞ 73
All 2 ½-inch/ 73.0 Outlets	2 ¾ 70	2 ⅞ 73
All 76.1-mm/ Outlets	2 ¾ 70	2 ⅞ 73
All 3-inch/ 88.9 Outlets	3 ½ 89	3 ⅝ 92
All 4-inch/ 114.3 Outlets	4 ½ 114	4 ⅝ 118
All 108.0-mm/ Outlets	4 ½ 114	4 ⅝ 117

7.1 REFERENCE MATERIALS

- [05.01: Victaulic® Seal Selection Guide](#)
- [29.01: Victaulic® Terms and Conditions of Sale](#)
- [I-IMPACT: Impact Tool Usage Guidelines](#)
- [I-100: Victaulic Field Installation Handbook](#)
- [I-920/920N: Installation instruction *Mechanical-T* branch outlet](#)
- [10.01: Victaulic® Certification Reference Guide](#)

User Responsibility for Product Selection and Suitability

Each user bears final responsibility for determining the suitability of Victaulic products for their end-use application, in accordance with industry standards, project specifications, and Victaulic's published performance, maintenance, and safety data, as well as all warnings and installation instructions. Nothing in this or any other document, nor any verbal recommendation, advice, or opinion from any Victaulic employee, shall be deemed to alter, vary, supersede, or waive any provision of Victaulic Company's standard conditions of sale, warranty, installation instructions, or this disclaimer.

Installation

Always refer to and follow the [Victaulic Installation Handbook](#) or installation instructions for the product you are installing. Handbooks are included with each shipment of Victaulic products, providing complete installation and assembly data, and are available in PDF format on our website at victaulic.com.

Warranty

Refer to the Warranty section of the current Price List or contact Victaulic for details.

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Note

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