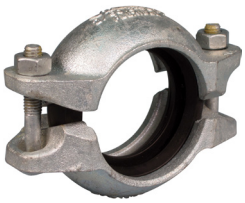
Flexible Coupling for Shouldered Steel Pipe
Style SC77

16.10



1.0 PRODUCT DESCRIPTION

Available Sizes

- 2 – 8"/DN50 – DN200

NOTE

- For sizes 10 – 12"/DN250 – DN300 refer to submittal 16.21: Victaulic Style SC85 coupling.

Maximum Working Pressure

- Up to 580 psi/4000 kPa/40 Bar.
- Pressure rating dependent upon size, weight and material of pipe.

Application

- Utilizes patented Installation-Ready™ technology.
- This product joins shouldered steel pipe, shouldered fittings and/or shouldered valves.
- Provides a flexible pipe joint which allows for some expansion, contraction and deflection.
- Operating temperature dependent upon gasket and/or seal selection (see section 3.0).

Pipe or Tube Materials

- Shouldered steel

Codes and Requirements

- Support and hanging requirements for flexible systems are listed in the I-100 Victaulic Field Installation Handbook (see section 7.0).

2.0 CERTIFICATION/LISTINGS

Product designed and manufactured under the Victaulic Quality Management System, as certified by LPCB in accordance with ISO-9001:2008.

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

System No.		Location	
Submitted By		Date	

Spec Section		Paragraph	
Approved		Date	

3.0 SPECIFICATIONS – MATERIAL

Housing: Ductile iron conforming to ASTM A536, Grade 65-45-12.

Housing Coating: (specify choice)

☐ Standard: Hot dipped galvanized.

☐ Optional: Orange enamel.

☐ Optional: Others, contact Victaulic with your requirements.

Gasket:[1]

☐ **Grade "T" Nitrile**
Nitrile (Orange stripe color code). Temperature range -20°F to +180°F/-29°C to +82°C. May be specified for petroleum products, air with oil vapors, vegetable and mineral oils within the specified temperature range. Not compatible for hot water services over +150°F/+66°C or for hot dry air over +140°F/+60°C.

[1] 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 the latest Victaulic Gasket Selection Guide for specific gasket service guidelines and for a listing of services which are not compatible.

Bolts/Nuts: (specify choice[2,3])

- **Australia Only -**

☐ Standard: Carbon steel oval neck track bolts meeting the mechanical property requirements of ASTM A449. Carbon steel heavy hex nuts meeting the mechanical property requirements of ASTM A563 Grade B. Track bolts and heavy hex nuts are hot-dipped galvanized.

☐ Optional:[2] Zinc-electroplated per ASTM B633 ZN/FE5, finish Type III (clear chromate).

[2] Optional bolts/nuts are available in imperial size only.

- **South Africa Only –**

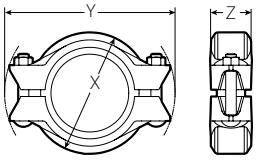
☐ Standard: Carbon steel oval neck track bolts meeting the mechanical property requirements of ISO 898-1 Class 9.8 for sizes M10-M16, and Class 8.8 for sizes M20 and larger. Carbon steel heavy hex nuts meeting the mechanical property requirements of ASTM A563M Class 9. Track bolts and heavy hex nuts are hot-dipped galvanized.

☐ Optional:[3] Zinc-electroplated per ASTM B633 ZN/FE5, finish Type II (yellow chromate).

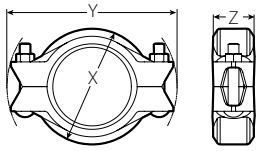
[3] Optional bolts/nuts are available in metric size only.

4.0 DIMENSIONS

Style SC77



Style SC77 Pre-Assembled
(Installation-Ready Condition)

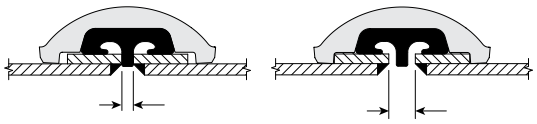


Style SC77 Joint Assembled

Size			Allowable Pipe End Separation		Bolt/Nut		Dimensions					Weight
							Pre-assembled (Installation-Ready™ condition)		Joint Assembled			
Nominal inches mm	Actual Pipe Outside Diameter inches mm	Actual Shoulder Outside Diameter inches mm	Minimum[4] inches mm	Maximum[5] inches mm	Qty.	Size inches mm	X inches mm	Y inches mm	X inches mm	Y inches mm	Z inches mm	Approximate (Each) lb kg
2 DN50	2.375 60.3	2.618 66.5	0.13 3.3	0.30 7.6	2	⅜ x 2 ½ M10 x 64	4.00 102	6.00 152	3.63 90	6.13 156	2.13 52	2.2 1.0
3 DN80	3.500 88.9	3.819 97.0	0.13 3.3	0.30 7.6	2	½ x 3 ¼ M12 x 83	6.25 159	7.75 197	4.75 119	7.88 198	2.13 52	3.3 1.5
4 DN100	4.500 114.3	4.803 122.0	0.13 3.3	0.30 7.6	2	½ x 3 ¼ M12 x 83	6.25 159	8.75 222	5.75 144	8.75 221	2.25 57	4.2 1.9
	6.500 165.1	6.870 174.5	0.13 3.3	0.30 7.6	2	⅝ x 3 ¼ M16 x 83	8.50 216	11.63 294	7.88 200	11.38 289	2.25 57	6.8 3.1
8 DN200	8.625 219.1	9.134 232.0	0.19 4.8	0.46 11.7	2	⅝ x 4 ¼ M20 x 108	11.00 279	14.25 362	10.25 260	14.13 359	2.88 73	12.3 5.6

4 The minimum pipe end separation as required by the gasket center leg. See Illustrations below.

5 Maximum pipe end separation to be used for determining overall piping system growth. For design and installation purposes, the linear movement and angular deflection values shown in the table below should be used. See illustrations below.



Minimum Pipe Separation Maximum Pipe Separation

Exaggerated for clarity

4.1 DIMENSIONS

Design and Installation

The amount of linear movement and angular deflection to be used for design and installation consideration for each coupling is shown in the table below.

Size			Expansion Allowance inches mm	Deflection from Centerline Per Coupling Degrees	Deflection from Centerline Pipe inches per ft. mm per m
Nominal inches mm	Actual Pipe Outside Diameter inches mm	Actual Shoulder Outside Diameter inches mm			
2 DN50	2.375 60.3	2.618 66.5	0.09 2.3	2°15'	0.45 38
3 DN80	3.500 88.9	3.819 97.0	0.09 2.3	1°85'	0.38 32
4 DN100	4.500 114.3	4.803 122.0	0.13 3.3	1°75'	0.37 31
	6.500 165.1	6.870 174.5	0.13 3.3	1°15'	0.24 20
8 DN200	8.625 219.1	9.134 232.0	0.20 5.1	0°85'	0.17 15

5.0 PERFORMANCE

Style SC77

Size			Wall Thickness	Maximum Working Pressure[6,7]	Maximum End Load[6]
Nominal inches mm	Actual Pipe Outside Diameter inches mm	Actual Shoulder Outside Diameter inches mm	inches mm	psi Bar	lb N
2 DN50	2.375 60.3	2.618 66.5	0.154 3.91	580 40	3125 13900
3 DN80	3.500 88.9	3.819 97.0	0.216 5.49	580 40	6650 29580
4 DN100	4.500 114.3	4.803 122.0	0.237 6.02	580 40	10510 46750
	6.500 165.1	6.870 174.5	0.280 7.11	580 40	21500 95630
8 DN200	8.625 219.1	9.134 232.0	0.320 8.10	580 40	38000 169000

6 The above ratings represent the maximum allowable working pressure and permissible end load of the coupling on Sch 40 carbon steel pipe. Contact Victaulic for details.

7 It is the responsibility of the engineering specifier to verify the pressure rating of all other system components.

NOTE

- WARNING: Depressurize and drain the piping system before attempting to install, remove or adjust any Victaulic piping products.
- WARNING: FOR ONE TIME FIELD TEST ONLY, the Maximum Joint Working Pressure may be increased to 1½ times the figures shown.

6.0 NOTIFICATIONS

WARNING

This product must be used with shouldered end pipe. Failure to use shouldered end pipe when installing this product may cause joint failure, resulting in serious personal injury and/or property damage.

WARNING

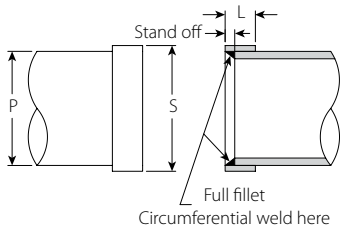
Depressurize and drain the piping system before attempting to install, remove or adjust any Victaulic piping products.

WARNING

When assembling Style SC77 flexible couplings onto end caps, take additional care to make certain the end cap is fully seated against the gasket center leg. Victaulic recommends the use of Victaulic shouldered fittings with the Style SC77 flexible coupling.

7.0 REFERENCE MATERIALS

Shouldered End Preparation



Nominal inches **Actual** mm	P **Diameter** inches mm	S **Diameter** inches mm	L inches mm	**Stand off** inches mm
2 DN50	2.375 60.3	2.618±0.031 66.5±0.8	0.630±0.031 16±0.8	0.20 5.0
3 DN80	3.500 88.9	3.819±0.031 97.0±0.8	0.630±0.031 16±0.8	0.20 5.0
4 DN100	4.500 114.3	4.803±0.031 122.0±0.8	0.689±0.031 17.5±0.8	0.25 6.5
	6.500 165.1	6.870±0.031 174.5±0.8	0.689±0.031 17.5±0.8	0.25 6.5
8 DN200	8.625 219.1	9.134±0.031 232.0±0.8	0.807±0.031 20.5±0.8	0.25 6.5

NOTE

- Welded-on shoulder rings must be a near tight fit to the pipe. Care is required when fitting shoulder rings to ensure that ring distortion does not occur. It is equally important that the distance between the edge of the steel shoulder ring and the end of the pipe be accurately consistent with the figures published above. If the pipe "stand off" is exceeded distortion will occur.
- For shouldered pipe end preparation guidelines for sizes 10 – 12"/DN250 – DN300, refer to submittal 16.21: Victaulic Style SC85 Coupling

I-SC77: Victaulic Style SC77 Installation Instructions

05.01: Seal Selection Guide

07.06: Victaulic Shouldered Fittings Submittal

08.31: Victaulic Shouldered Butterfly Valve Submittal

08.44: Victaulic Shouldered Gate Valve Submittal

16.21: Victaulic Style SC85 Coupling Submittal

I-100: Field Installation Handbook

