

Flexible Coupling for Shouldered Steel Pipe

Style SC85



1.0 PRODUCT DESCRIPTION

Available Sizes

- 2 – 18"/DN50 – DN450

Maximum Working Pressure

- Up to 610 psi /4200 kPa/42 Bar dependent on size of pipe.

Application

- 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: (specify choice^{1,2})

Grade “T” Nitrile

(Orange stripe color code). Temperature range -20°F to +180°F/-29°C to +82°C. May be specified for oil related services, including air with oil vapor up to +180°F/+82°C. For water related services, this gasket may be specified for temperatures rated up to +150°F/+66°C. For oil free, dry air services, this gasket may be specified for temperatures rated up to +140°F/+60°C. Not compatible for use with hot water services or steam services.

Grade “E2” EPDM

(Double green stripe color code). Temperature range 0°F to +180°F/-18°C to +82°C. May be specified for wet and dry (oil-free air) services only within specified temperature range. Not compatible for use with petroleum services or steam services.

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.

² Grade "E2" EPDM gasket compound available 2 – 8"/DN50 – DN200 only.

Bolts/Nuts: (specify choice^{3,4})

• **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 zinc electroplated per ASTM B633 Fe/Zn 5, finish Type III (clear chromate).

Optional:³ Hot-dipped galvanized meeting the mechanical property requirements of ASTM A449 for bolts and ASTM A563 for heavy hex nuts.

³ Optional bolts/nuts are available in imperial size only.

• **South Africa Only –**

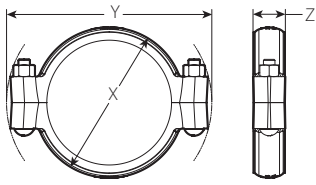
Standard: Carbon steel oval neck track bolts meeting the mechanical property requirements of ISO 898-1 Class 9.8 for sizes M10-M16, and Class 8.8 for sizes M20 and larger. Carbon steel heavy hex nuts meeting the mechanical property requirements of ASTM A563M Class 9. Track bolts and heavy hex nuts are zinc electroplated per ASTM B633 FE/ZN 5, finish Type II (yellow chromate).

Optional:⁴ Hot-dipped galvanized meeting the mechanical property requirements of ISO 898-1 for bolts and ASTM 563M for heavy hex nuts.

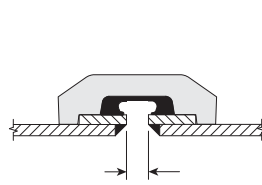
⁴ Optional bolts/nuts are available in metric size only.

4.0 DIMENSIONS

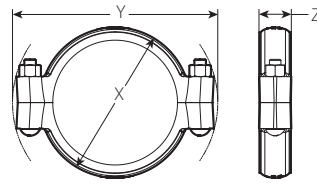
Style SC85



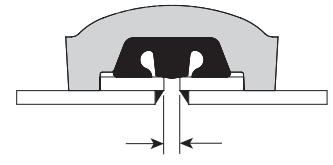
Style SC85 Joint Assembled
2 – 8"/DN50 – DN200



0.19"/4.8 mm
2 – 8"/DN50 – DN200
Exaggerated for clarity



Style SC85 Joint Assembled
10 – 18"/DN250 – DN450



0.25"/6.4 mm
10 – 18"/DN250 – DN450
Exaggerated for clarity

Size			Pipe End Separation ⁵	Bolt/Nut		Dimensions			Weight
Nominal inches mm	Actual Pipe Outside Diameter inches mm	Actual Shoulder Outside Diameter inches mm	Maximum Allowable inches mm	Qty.	Size inches mm	X inches mm	Y inches mm	Z inches mm	Approximate (Each) lb kg
2 DN50	2.375 60.3	2.638 67.0	0.19 4.8	2	3/8 x 2 1/2 M10 x 64	3.63 92	5.63 143	1.88 48	2.5 1.1
3 DN80	3.500 88.9	3.818 97.0	0.19 4.8	2	3/8 x 2 1/2 M10 x 64	5.00 127	7.13 181	1.88 48	3.5 1.6
4 DN100	4.500 114.3	4.818 122.4	0.19 4.8	2	1/2 x 2 3/4 M12 x 70	6.00 152	8.50 216	2.00 51	4.8 2.2
	6.500 165.1	6.885 174.9	0.19 4.8	2	5/8 x 3 1/4 M16 x 83	8.13 207	11.25 286	2.00 51	7.7 3.5
8 DN200	8.625 219.1	9.134 232.0	0.19 4.8	2	3/4 x 4 1/4 M20 x 108	10.75 273	14.75 375	2.38 61	14.4 6.5
10 DN250	10.750 273.0	11.260 286.0	0.25 6.4	2	1 x 6 M24 x 152	13.00 330	17.88 452	2.88 71	26.5 12.0
12 DN300	12.750 323.9	13.248 336.5	0.25 6.4	2	1 x 6 1/2 M24 x 165	15.00 381	19.75 502	2.88 71	30.9 14.0
14 DN350	14.000 355.6	14.508 368.5	0.25 6.4	2	1 x 6 M24 x 152	16.25 413	20.88 530	3.00 76	38.1 17.3
18 DN450	18.000 457.0	18.504 470.0	0.25 6.4	2	1 x 5 1/2 M24 x 140	21.13 537	25.25 641	3.38 86	58.6 26.6

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 should be used. See illustration above the table.

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	Deflection from Centerline Per Coupling	Deflection from Centerline Pipe
Nominal	Actual Pipe Outside Diameter	Actual Shoulder Outside Diameter			
inches mm	inches mm	inches mm	inches mm	Degrees	inches per ft. mm per m
2 DN50	2.375 60.3	2.638 67.0	0.09 2.3	2.25	0.45 38
3 DN80	3.500 88.9	3.818 97.0	0.09 2.3	2.42	0.38 32
4 DN100	4.500 114.3	4.818 122.4	0.13 3.3	2.25	0.37 31
	6.500 165.1	6.885 174.9	0.13 3.3	1.25	0.24 20
8 DN200	8.625 219.1	9.134 232.0	0.20 5.1	1.42	0.17 15
10 DN250	10.750 273.0	11.260 286.0	0.18 4.6	1.08	0.14 12
12 DN300	12.750 323.9	13.248 336.5	0.18 4.6	0.92	0.11 9
14 DN350	14.000 355.6	14.508 368.5	0.25 6.4	0.98	0.21 17
18 DN450	18.000 457.0	18.504 470.0	0.25 6.4	0.77	0.16 13

5.0 PERFORMANCE

Style SC85

Size			Maximum Working Pressure ^{6,7}	Maximum End Load ⁶
Nominal	Actual Pipe Outside Diameter	Actual Shoulder Outside Diameter		
inches mm	inches mm	inches mm	psi Bar	lb N
2 DN50	2.375 60.3	2.638 67.0	610 42	3334 14830
3 DN80	3.500 88.9	3.818 97.0	610 42	6983 31060
4 DN100	4.500 114.3	4.818 122.4	610 42	11121 49470
	6.500 165.1	6.885 174.9	500 35	18615 82800
8 DN200	8.625 219.1	9.134 232.0	500 35	32762 145730
10 DN250	10.750 273.0	11.260 286.0	500 35	49700 221076
12 DN300	12.750 323.9	13.248 336.5	450 31	62030 275924
14 DN350	14.000 355.6	14.508 368.5	305 21	50395 224168
18 DN450	18.000 457.0	18.504 470.0	406 28	103262 459332

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**



- Read and understand all instructions before attempting to install, remove, adjust, or maintain any Victaulic piping products.
- Depressurize and drain the piping system before attempting to install, remove, adjust, or maintain any Victaulic piping products.
- Wear safety glasses, hardhat, and foot protection.

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

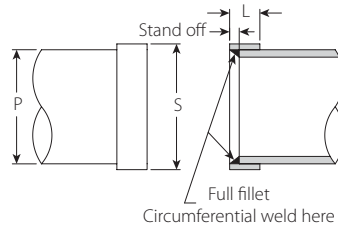
- **THIS PRODUCT SHALL BE USED ONLY WITH SHOULDERED-END PIPE, AS SPECIFIED WITHIN THIS SUBMITTAL.**

Failure to follow this instruction will cause joint failure, resulting in death or serious personal injury and property damage.

7.0 REFERENCE MATERIALS

- [I-SC85: Victaulic Style SC85 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](#)
- [16.10: Victaulic Style SC77 Installation-Ready™ Coupling for Shouldered Pipe](#)
- [I-100: Field Installation Handbook](#)

Shouldered End Preparation



Nominal inches 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
10 DN250	10.750 273.0	11.260±0.031 286.0±0.8	0.807±0.031 20.5±0.8	0.25 6.5
12 DN300	12.750 323.9	13.248±0.031 336.5±0.8	0.807±0.031 20.5±0.8	0.25 6.5
14 DN350	14.000 355.6	14.508±0.031 368.5±0.8	0.945±0.031 24.0±0.8	0.25 6.5
18 DN450	18.000 457.0	18.504±0.031 470.0±0.8	1.004±0.031 25.5±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.

User Responsibility for Product Selection and Suitability

Each user bears final responsibility for making a determination as to the suitability of Victaulic products for a particular end-use application, in accordance with industry standards and project specifications, and the applicable building codes and related regulations as well as Victaulic performance, maintenance, safety, and warning 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, installation guide, or this disclaimer.

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Note

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.

Installation

Reference should always be made to the Victaulic installation handbook or installation instructions of 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 www.victaulic.com.

Warranty

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

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