

# FIG. C-1 Flexible Coupling



The C-1 is designed for a broad range of piping applications. It is a flexible style which provides allowance for controlled pipe movement caused by thermal changes, settling or seismic action, as well as dampening noise and vibration.

For the latest UL/ULC listed, LPCB, VdS and FM Approved pressure ratings versus pipe schedule, see [www.anvilintl.com](http://www.anvilintl.com) or contact your local Anvil Representative.



For Listings/Approval Details and Limitations, visit our website at [www.anvilintl.com](http://www.anvilintl.com) or contact an Anvil® Sales Representative.

LPS 1219: Issue 3.1  
Cert/LPCB ref. 519a/01

## MATERIAL SPECIFICATIONS

### HOUSING:

Ductile Iron conforming to ASTM A-536, Grade 65-45-12

### BOLTS:

SAE J429, Grade 5, Zinc Electroplated  
ISO 898-1, Class 8.8, Zinc Electroplated followed by a Yellow Chromate Dip

### HEAVY HEX NUTS:

ASTM A563, Grade A, Zinc Electroplated  
ISO 898-2, Class 8.8, Zinc Electroplated followed by a Yellow Chromate Dip

### COATINGS:

- Rust inhibiting paint Color: ORANGE (standard)
  - Hot Dipped Zinc Galvanized (optional)
  - Other available options: Example: RAL3000 or RAL9000 Series
- For other coating requirements contact an Anvil Representative.

### LUBRICATION:

- Standard Gruvlok
- Gruvlok Xtreme™ required for dry pipe systems and freezer applications.

### GASKETS: Materials

Properties as designated in accordance with ASTM D-2000.

- Pre-Lubricated Grade "E" EPDM, Type A Gasket (Violet color code)  
-40°F to 150°F (Service Temperature Range)(-40°C to 65°C)  
Recommended for wet and dry (oil free air) pipe fire protection sprinkler systems. For dry pipe systems and freezer applications, Gruvlok Xtreme™ Lubricant is required.

### GASKET TYPE:

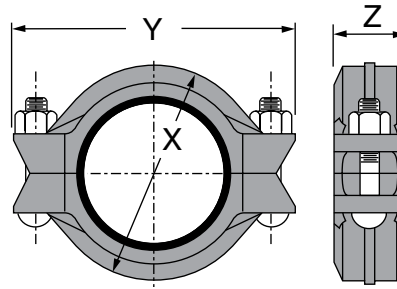
- Standard C Style
- Flush Gap

## PROJECT INFORMATION

## APPROVAL STAMP

Project:	<input type="checkbox"/> Approved
Address:	<input type="checkbox"/> Approved as noted
Contractor:	<input type="checkbox"/> Not approved
Engineer:	Remarks:
Submittal Date:	
Notes 1:	
Notes 2:	

# FIG. C-1 Flexible Coupling



## C-1 FLEXIBLE COUPLING

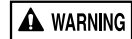
Nominal Size	Pipe O.D.	Max. Working Pressure▲	Max. End Load	Range of Pipe End Separation	Deflection From $\mathcal{C}$		Coupling Dimensions			Coupling Bolts		Specified Torque §		Approx. Wt. Ea.
					Per Coupling	Pipe	X	Y	Z	Qty.	Size	Min.	Max.	
In./DN(mm)	In./mm	PSI/bar	Lbs./kN	In./mm	Degrees	In./ft. - mm/m	In./mm	In./mm	In./mm		In./mm	Ft.-Lbs./N-m	Lbs./Kg	
10 250	10.750 273.1	300 20.7	27,229 121.12	0- $\frac{3}{32}$ 0-2.38	0°-80°	0.11 9	13½ 343	16¼ 413	2¾ 70	2	7/8 x 5½	180 245	220 300	21.5 9.6
12 300	12.750 323.9	300 20.7	38,303 170.38	0- $\frac{3}{32}$ 0-2.38	0°-25°	0.09 7	15½ 394	18¾ 476	2¾ 70	2	7/8 x 5½	180 245	220 300	27.4 12.4

Range of Pipe End Separation and Angular Deflection values are for roll grooved pipe and may be doubled for cut groove pipe.

- Working pressure and/or end load are total allowable, based on standard weight steel pipe, roll or cut grooved.
- One time field test pressure may be increased to 1.5 times the figures listed above.

§ - For additional Bolt Torque information see Technical Data Section.

▲ - Working Pressure Ratings are for reference only and based on Sch. 10 and Sch. 40 pipe. For the latest UL/U/LC, FM, VdS and LPCB pressure ratings versus pipe schedule, please visit [anvilintl.com](http://anvilintl.com) or contact your local Anvil Representative.



**For dry pipe systems and freezer applications lubrication of the gasket is required, Gruvlok® Xtreme™ Lubricant is required.**



The instructions are based on pipe grooved in accordance with SPF® grooving specifications. Check pipe ends for proper groove dimensions and to assure that the pipe ends are free of indentations and projections which would prevent proper sealing.

ALWAYS USE A GRUVLOK® SPF/ANVIL® LUBRICANT FOR PROPER COUPLING ASSEMBLY. Thorough lubrication of the external surface of the gasket is essential to prevent pinching and possible damage to the gasket. For temperatures above 150°F (65°C) and below 32°F (0°C) use Gruvlok® SPF/Anvil® Xtreme Lubricant™ and lubricate all gasket surfaces, internal and external. See Gruvlok SPF/Anvil Lubricants in the Technical Data section of the Anvil SPF catalog for additional important information.



**1 Check and lubricate gasket**  
Check gasket to be sure it is compatible for the intended service. Apply a thin coating of Gruvlok SPF/Anvil Xtreme Lubricant to the outside and sealing lips of the gasket. Be careful that foreign particles do not adhere to lubricated surfaces.



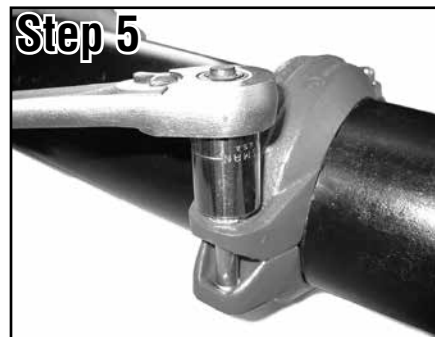
**2 Gasket installation**  
Slip the gasket over the pipe end, making sure the gasket lip does not overhang the pipe end.



**3 Alignment**  
After aligning the two pipe ends together, pull the gasket into position, centering it between the grooves on each pipe. Gasket should not extend into the groove on either pipe.



**4 Housings**  
With one nut unthreaded to the end of the bolt, unthread the other nut completely and swing the coupling housing halves over the gasket, making sure the housing keys engage the grooves. Insert the bolt and turn the nuts finger tight.



**5 Tighten nuts**  
Tighten the nuts alternately and equally to the specified bolt torque. The housing bolt pads must make metal-to-metal contact.

**Caution:** Uneven tightening may cause the gasket to pinch.



**6 Assembly is complete**  
Visually inspect the pipe joint to assure the coupling keys are fully engaged in the pipe grooves and the bolt pads are in firm even metal-to-metal contact on both sides of the coupling.

## Specified Bolt Torque

Specified bolt torque is for the oval neck track bolts used on SPF® couplings. The nuts must be tightened alternately and evenly until fully tightened.

**Caution:** Proper torquing of coupling bolts is required to obtain specified performance. **Over torquing the bolts may result in damage to the bolt and/or casting which could result in pipe joint separation.** Under torquing the bolts may result in lower pressure retention capabilities, lower bend load capabilities, joint leakage and pipe joint separation. Pipe joint separation may result in significant property damage and serious injury.

ANSI Specified Bolt Torque			Metric Specified Bolt Torque		
Bolt Size	Wrench Size	Specified Bolt Torque*	Bolt Size	Wrench Size	Specified Bolt Torque*
In.	In.	Ft.-Lbs	mm	mm	N-M
3/8	11/16	30-45	M10	16	40-60
1/2	7/8	80-100	M12	22	110-150
5/8	1 1/16	100-130	M16	24	135-175
3/4	1 1/4	130-180	M20	30	175-245
7/8	1 7/16	180-220	M22	34	245-300

\* Non-lubricated bolt torque

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