

## G-FIRE Figure 716 Flexible Reducing Coupling

### General Description

The Figure 716 Flexible Reducing Coupling allows a direct transition between two different pipe sizes, and replaces two couplings and a reducing fitting. It is capable of pressures up to 350 psig (24,1 bar) depending on pipe size and wall thickness.

#### NOTICE

The GRINNELL G-FIRE Figure 716 Flexible Reducing Coupling described herein must be installed and maintained in compliance with this document, as well as with the applicable standards of the Approval agency, in addition to the standards of any other authorities having jurisdiction. Failure to do so may result in serious personal injury or impair the performance of these devices.

Never remove any piping component nor correct or modify any piping deficiencies without first de-pressurizing and draining the system. Failure to do so may result in serious personal injury, property damage, and/or impaired device performance.

It is the designer's responsibility to select products suitable for the intended service and to ensure that pressure ratings and performance data are not exceeded. Material and gasket selection should be verified to be compatible for the specific application. Always read and understand the installation instructions.

The owner is responsible for maintaining their fire protection system and devices in proper operating condition. Contact the installing contractor or product manufacturer with any questions.

#### IMPORTANT

Refer to Technical Data Sheet TFP2300 for warnings pertaining to regulatory and health information.

### Technical Data

#### Approvals

UL and ULC Listed  
FM Approved  
VdS Approved  
LPCB (Cert. Nos. 669a and 673a)

**Note:** The listed approvals apply to all of the reducing couplings except the 5 in. x 4 in. (DN125 x DN100) size.

Refer to Table A for details.

#### Sizes

2 in. x 1-1/2 in. (DN50 x DN40) to  
8 in. x 6 in. (DN200 x DN150)

#### Housing

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

#### Finish

- Orange non-lead paint
- Red non-lead paint
- Hot-dipped, Galvanized conforming to ASTM A153

#### Bolts/Nuts

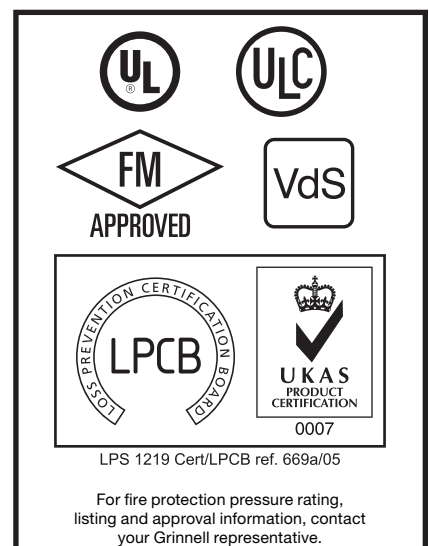
- ANSI:  
Carbon Steel oval neck track head bolts are heat-treated and conform to the physical properties of ASTM A183 Grade 2 and SAE J429 Grade 5 with a minimum tensile strength of 110,000 psi.

Carbon Steel heavy hex nuts conform to the physical properties of ASTM A183 Grade 2 and SAE J995 Grade 5. Bolts and nuts are zinc-electroplated conforming to ASTM B633.

Stainless Steel bolts and nuts are available upon request.

- Metric:  
Carbon Steel oval neck track head bolts (Gold color coded) are heat-treated and conform to the physical properties of ASTM F568M with a minimum tensile strength of 760 MPa.

Carbon Steel heavy hex nuts conform to the physical properties of



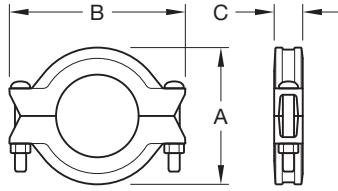
For warranty terms and conditions, visit [www.grinnell.com](http://www.grinnell.com)

ASTM A563M Class 9. Bolts and nuts are zinc-electroplated conforming to ASTM B633.

#### Gaskets

- Grade "E" EPDM,  
Green color code,  
-30°F to 230°F (-34°C to 110°C)

For proper gasket selection, refer to Technical Data Sheet TFP1895.



Nominal Pipe Size		Max. <sup>b</sup> Pressure psi (bar)	Max. <sup>b</sup> End Load Lbs. (kN)	Max. <sup>a,c</sup> End Gap Inches (mm)	Deflection <sup>c</sup>		Nominal Dimensions			Coupling Bolts		Approx. Weight Lbs. (kg)
ANSI Inches (DN)	O.D. Inches (mm)				Degrees per Coupling	Inches/ Foot (mm/m)	A Inches (mm)	B Inches (mm)	C Inches (mm)	Qty.	Size <sup>d</sup> Inches (mm)	
2 x 1-1/2 (50 x 40)	2.375 x 1.900 (60,3 x 48,3)	350 (24,1)	992 (4,412)	0.13 (3,3)	1°53'	0.39 (32,5)	3.50 (88,9)	5.06 (128,5)	1.88 (47,8)	2	3/8 x 2-1/4 (M10 x 57)	2.0 (0,9)
2-1/2 x 2 (65 x 50)	2.875 x 2.375 (73,0 x 60,3)	350 (24,1)	1,550 (6,894)	0.13 (3,3)	1°33'	0.32 (26,7)	4.00 (101,6)	5.50 (139,7)	1.88 (47,8)	2	3/8 x 2-1/4 (M120 x 57)	2.5 (1,1)
76.1 x 2 (65 x 50)	3.000 x 2.375 (76,1 x 60,3)	350 (24,1)	1,550 (6,894)	0.13 (3,3)	1°34'	0.32 (26,7)	4.19 (106,4)	5.88 (149,4)	1.88 (47,8)	2	(M12 x 76)	3.1 (1,4)
3 x 2 (80 x 50)	3.500 x 2.375 (88,9 x 60,3)	350 (24,1)	1,550 (6,894)	0.13 (3,3)	1°17'	0.27 (22,5)	4.69 (119,1)	6.50 (165,1)	1.88 (47,8)	2	1/2 x 3 (M12 x 76)	4.1 (1,9)
3 x 2-1/2 (80 x 65)	3.500 x 2.875 (88,9 x 73,0)	350 (24,1)	2,272 (10,106)	0.13 (3,3)	1°17'	0.27 (22,5)	4.69 (119,1)	6.50 (165,1)	1.88 (47,8)	2	1/2 x 3 (M12 x 76)	4.3 (2,0)
3 x 76.1 (80 x 65)	3.500 x 3.000 (88,9 x 76,1)	350 (24,1)	2,474 (11,004)	0.13 (3,3)	1°17'	0.27 (22,5)	4.69 (119,1)	6.50 (165,1)	1.88 (47,8)	2	(M12 x 76)	4.2 (1,9)
4 x 2 (100 x 50)	4.500 x 2.375 (114,3 x 60,3)	350 (24,1)	1,550 (6,894)	0.19 (4,8)	2°38'	0.55 (45,8)	6.00 (152,4)	8.13 (206,5)	2.00 (50,8)	2	5/8 x 3-1/4 (M16 x 83)	5.5 (2,5)
4 x 2-1/2 (100 x 65)	4.500 x 2.875 (114,3 x 73,0)	350 (24,1)	2,271 (10,101)	0.19 (4,8)	2°38'	0.55 (45,8)	6.00 (152,4)	8.13 (206,5)	2.00 (50,8)	2	5/8 x 3-1/4 (M16 x 83)	6.4 (2,9)
4 x 76.1 (100 x 65)	4.500 x 3.000 (114,3 x 76,1)	350 (24,1)	2,474 (11,004)	0.19 (4,8)	2°38'	0.55 (45,8)	6.00 (152,4)	8.13 (206,5)	2.00 (50,8)	2	(M16 x 83)	6.3 (2,9)
4 x 3 (100 x 80)	4.500 x 3.500 (114,3 x 88,9)	350 (24,1)	3,367 (14,977)	0.19 (4,8)	2°38'	0.55 (45,8)	6.00 (152,4)	8.13 (206,5)	2.00 (50,8)	2	5/8 x 3-1/4 (M16 x 83)	6.2 (2,8)
139.7 x 4 (125 x 100)	5.500 x 4.500 (139,7 x 114,3)	350 (24,1)	5,564 (24,749)	0.25 (6,4)	2°38'	0.55 (45,8)	7.06 (179,3)	9.50 (241,3)	2.06 (52,3)	2	(M20 x 121)	9.6 (4,3)
5 x 4 (125 x 100)	5.563 x 4.500 (141,3 x 114,3)	350 (24,1)	5,566 (24,759)	0.25 (6,4)	2°5'	0.44 (36,7)	7.13 (181,1)	9.56 (242,8)	2.06 (52,3)	2	3/4 x 4-3/4 (M20 x 121)	9.8 (4,4)
165.1 x 4 (150 x 100)	6.500 x 4.500 (165,1 x 114,3)	300 (20,6)	4,771 (21,222)	0.25 (6,4)	1°50'	0.38 (31,7)	8.18 (207,8)	10.81 (274,6)	2.06 (52,3)	2	(M20 x 121)	12.5 (5,7)
6 x 4 (150 x 100)	6.625 x 4.500 (168,3 x 114,3)	300 (20,6)	4,771 (21,222)	0.25 (6,4)	1°44'	0.36 (30,0)	8.38 (212,9)	10.88 (276,4)	2.06 (52,3)	2	3/4 x 4-3/4 (M20 x 121)	12.5 (5,7)
6 x 5 (150 x 125)	6.625 x 5.563 (168,3 x 141,3)	300 (20,6)	7,292 (32,436)	0.25 (6,4)	1°44'	0.36 (30,0)	8.38 (212,9)	10.88 (276,4)	2.06 (52,3)	2	3/4 x 4-3/4 (M20 x 121)	11.5 (5,2)
8 x 6 (200 x 150)	8.625 x 6.625 (219,1 x 168,3)	300 (20,6)	10,341 (45,999)	0.25 (6,4)	1°15'	0.26 (21,7)	10.69 (271,5)	13.75 (349,3)	2.25 (57,2)	2	7/8 x 6-1/2 (M22 x 165)	20.7 (9,4)

- a. Maximum available gap between pipe ends. Minimum gap = 0.  
b. Maximum pressure and end load are total from all loads based on standard weight steel pipe. Pressure ratings and end loads may differ on other pipe materials and/or wall thickness. Contact your Tyco representative for details.  
c. Max. End Gap and Deflection is for cut grooved standard weight pipe.  
d. Gold color coded metric bolt sizes are available upon request.

**FIGURE 1**  
**FIGURE 716 FLEXIBLE REDUCING COUPLING**  
**NOMINAL DIMENSIONS**

Pipe Sizes Nominal ANSI Inches (O.D. mm)	Pipe Schedule <sup>b</sup>	Pressure Rating psi (bar)		
		UL	ULC	FM
2 x 1-1/2 (60,3 x 48,3); 2-1/2 x 2 (73,0 x 60,3); 3 x 2 (88,9 x 60,3); 3 x 2-1/2 (88,9 x 73,0); 4 x 2 (114,3 x 60,3); 4 x 2-1/2 (114,3 x 73,0); 4 x 3 (114,3 x 88,9); 5 x 4 (141,3 x 114,3); 6 x 4 (168,3 x 114,3); 6 x 5 (168,3 x 141,3); 8 <sup>a</sup> x 6 (219,1 x 168,3)	10	300 (20,7)	300 (20,7)	300 (20,7)
	40	350 (24,1)	350 (24,1)	350 (24,1)

Pipe O.D. mm <sup>d</sup>	Pipe Specification <sup>b</sup>	Pressure Rating psi (bar)	
		UL	FM
76,1 x 2 3 x 76,1 4 x 76,1 139,7 x 4 165,1 x 4	ISO 4200 Type D and E	300 (20,7)	300 (20,7)
	EN 10255 Heavy	—	300 (20,7)
	EN 10255 Medium	—	300 (20,7)

Pipe Sizes Nominal ANSI Inches (O.D. mm)	Pipe Specification <sup>c</sup>	Pressure Rating psi (bar)	
		LPCB	VdS
76,1 x 2 (60,3); 3 (88,9) x 76,1; 4 (114,3) x 76,1; 165,1 x 4 (114,3)	ISO 65 Medium	290 (20)	—
2 x 1-1/2 (60,3 x 48,3); 76,1 x 2 (60,3); 3 x 2 (88,9 x 60,3); 4 x 2 (114,3 x 60,3); 4 x 76,1 (114,3 x 76,1); 4 x 3 (114,3 x 88,9); 139,7 x 4 (114,3); 6 x 4 (168,3 x 114,3); 8 x 6 (219,1 x 168,3)	DIN 2448 or 2548	—	232 (16)

a. For 8 in. size, minimum allowed pipe wall thickness is 0.188 inches.

b. See Agency website for Listing/Approvals of other pipe specifications:

UL website - see Online Certificate Directory, [www.ul.com](http://www.ul.com)

FM Global website - [www.approvalguide.com](http://www.approvalguide.com)

c. See Agency website for Listing/Approvals of other pipe specifications:

LPCB website - see Search Our Listings - Automatic Sprinklers, Water Spray and Deluge Systems, [www.redbooklive.com](http://www.redbooklive.com)

VdS website - see certifications, [www.vds.de](http://www.vds.de)

d. Values are a mixture of true O.D. in mm and nominal ANSI inches.

**TABLE A**  
**LISTED/APPROVED PRESSURE RATINGS**

## **Care and Maintenance**

The GRINNELL G-FIRE Figure 716 Flexible Reducing Coupling must be maintained in accordance with this section.

Before closing a fire protection system main control valve for maintenance work on the fire protection system that it controls, obtain permission to shut down the affected fire protection system from the proper authorities and notify all personnel who may be affected by this decision.

After placing a fire protection system in service, notify the proper authorities and advise those responsible for monitoring proprietary and/or central station alarms.

The owner is responsible for the inspection, testing, and maintenance of their fire protection system and devices in compliance with this document, as well as with the applicable standards of the NATIONAL FIRE PROTECTION ASSOCIATION (e.g., NFPA 25), in addition to the standards of any authority having jurisdiction. Contact the installing contractor or product manufacturer with any questions. Any impairments must be immediately corrected.

Automatic sprinkler systems are recommended to be inspected, tested, and maintained by a qualified Inspection Service in accordance with local requirements and/or national codes.

## **Limited Warranty**

For warranty terms and conditions, visit [www.tyco-fire.com](http://www.tyco-fire.com).

## **Ordering Procedure**

GRINNELL Products are available globally through a network of distribution centers. For the nearest distributor, visit [www.tyco-fire.com](http://www.tyco-fire.com). When placing an order, indicate the full product name.

Specify: G-FIRE Figure 716 Flexible Reducing Coupling, quantity, pipe size (Nominal ANSI or O.D.), finish (Orange, Red, or Galvanized), and Grade "E" EPDM gasket