GRINNELL Figure 707L Large Diameter Coupling 26 to 42 Inch (DN650 to DN1050)

General Description

GRINNELL Figure 707L Large Diameter Coupling is designed for joining large diameter IPS roll grooved pipes. The coupling castings are a two to eight segment design (Ref. Figure 1) and utilize two bolts at each segment joint to ensure proper connection and seal.

Suitable for use in a variety of applications where there is a need to move large volumes of fluids, the Figure 707L Large Diameter Coupling provides a dependable method of joining pipe.

NOTICE

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 GRINNELL Figure 707L Large Diameter 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.

The owner is responsible for maintaining their mechanical system and devices in proper operating condition. The installing contractor or device manufacturer should be contacted with any questions.

Technical Data

Sizes
26 Inch to 42 Inch (DN650 to DN1050)

Maximum Pressure
Refer to Figure 1.

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

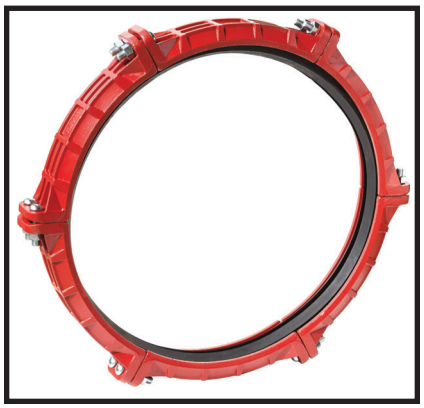
Finish
- Orange non-lead paint (standard)
- Hot-dipped Galvanized conforming to ASTM A 153

Bolts/Nuts
- ANSI:
  Carbon Steel oval neck track head bolts are heat-treated and conform to the physical properties of ASTM A 449 Type 1 with a minimum tensile strength of 120,000 psi.

  Carbon Steel heavy hex nuts conform to the physical properties of ASTM A 563 Grade B. Bolts and nuts are zinc-electroplated conforming to ASTM B 633.

  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 F 568 M with a minimum tensile strength of 760 MPa.

  Carbon Steel heavy hex nuts conform to the physical properties of ASTM A 563 M Class 9. Bolts and nuts are zinc-electroplated conforming to ASTM B 633.

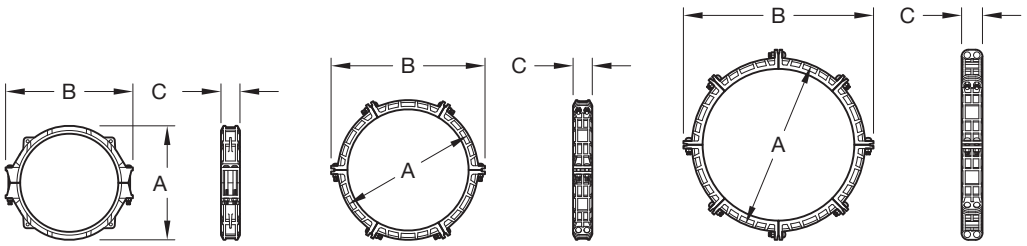


10 YEAR LIMITED WARRANTY

Full warranty terms can be found on www.grinnell.com

Gaskets
- Grade "E" EPDM,
  Green color code,
  -30°F to 230°F (-34°C to 110°C)
- Grade "T" Nitrile,
  Orange color code,
  -20°F to 180°F (-29°C to 82°C)

For proper gasket selection, refer to Technical Data Sheet G610.

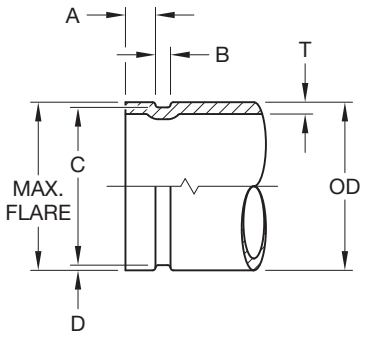


26" (DN650) **28" (DN700) - 36" (DN900)** **40" (DN1000) - 42" (DN1050)**

Pipe Size		Max.[b] Pressures psi (bar)	Max.[b] End Load Lbs. (kN)	Max[a,c] End Gap Inches (mm)	Nominal Dimensions			Coupling Bolts		Bolt [d] Torque Range Ft.-Lbs (Nm)	Approx. Weight Lbs. (kg)
Nominal ANSI Inches DN	O.D. Inches (mm)				A Inches (mm)	B Inches (mm)	C Inches (mm)	Qty.	Size Inches (mm)		
26 (650)	26.00 (660,4)	300 (20)	159,279 (708)	.34 (8,6)	29.68 (754,0)	33.15 (842,0)	4.94 (125,6)	4	7/8 x 9-5/8	175-225 (245-300)	147.0 (67,0)
28 (700)	28.00 (711,2)	175 (12)	107,757k (479)	.34 (8,6)	32.00 (813,0)	36.30 (920,0)	5.00 (127,0)	12	7/8 x 4	175-225 (245-300)	180.0 (82,0)
30 (750)	30.00 (762,0)	175 (12)	123,700 (550)	.34 (8,6)	34.00 (864,0)	38.30 (972,0)	5.00 (127,0)	12	7/8 x 4	175-225 (245-300)	209.0 (95,0)
32 (800)	32.00 (812,8)	175 (12)	140,743 (626)	.34 (8,6)	36.00 (914,0)	40.30 (1022,0)	5.00 (127,0)	12	7/8 x 4	175-225 (245-300)	207.0 (94,0)
36 (900)	36.00 (914,4)	175 (12)	178,128 (792)	.34 (8,6)	40.00 (1016,0)	44.30 (1124,0)	5.00 (127,0)	12	7/8 x 4	175-225 (245-300)	212.0 (96,0)
40 (1000)	40.00 (1016,0)	175 (12)	219,911 (978)	.34 (8,6)	43.50 (1105,0)	49.00 (1245,0)	5.50 (140,0)	16	1 x 3-1/2	200-250 (270-340)	271.0 (123,0)
42 (1050)	42.00 (1066,8)	175 (12)	242,452 (1078)	.34 (8,6)	45.50 (1156,0)	51.50 (1295,0)	5.50 (140,0)	16	1 x 3-1/2	200-250 (270-340)	367.5 (166,7)

[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 for other pipe materials and/or wall thickness. Contact your GRINNELL Representative for details.
[c] Max End Gap is for rolled grooved standard weight pipe.
[d] Torque values are supplied as a guideline and may be used when setting the torque on power impact wrenches. Always refer to the power impact wrench manufacturer's instructions for settings.

FIGURE 1
FIGURE 707L LARGE DIAMETER COUPLING
NOMINAL DIMENSIONS



Nominal Pipe Size ANSI Inches (DN)	Pipe O.D. Inches (mm)			A ±0.03 (±0.8) Inches (mm)	B ±0.03 (±0.8) Inches (mm)	C +0, -0.063 (+0, -1.6) Inches (mm)	D Nominal Groove Depth Inches (mm)	T Pipe Wall Thickness Roll Grooved Inches (mm)	T Minimum Pipe Wall Thick-ness Cut Grooved Inches (mm)	Maximum Allow Flare Diameter Inches (mm)
	O.D. Inches (mm)	Tolerance +	Tolerance -							
26 (650)	26.0 (660,4)	0.093 (2,36)	0.031 (0,79)	1.75 (44,5)	0.625 (15,9)	25.500 (647,7)	0.250 (6,4)	0.375 (9,5)	0.625 (15,9)	26.2 (665,5)
28 (700)	28.0 (711,2)	0.093 (2,36)	0.031 (0,79)	1.75 (44,5)	0.625 (15,9)	27.500 (698,5)	0.250 (6,4)	0.375 (9,5)	0.625 (15,9)	28.2 (716,3)
30 (750)	30.0 (762,0)	0.093 (2,36)	0.031 (0,79)	1.75 (44,5)	0.625 (15,9)	29.500 (749,3)	0.250 (6,4)	0.375 (9,5)	0.625 (15,9)	30.2 (767,1)
32 (800)	32.0 (812,8)	0.093 (2,36)	0.031 (0,79)	1.75 (44,5)	0.625 (15,9)	31.500 (800,1)	0.250 (6,4)	0.375 (9,5)	0.625 (15,9)	32.2 (817,9)
36 (900)	36.0 (914,4)	0.093 (2,36)	0.031 (0,79)	1.75 (44,5)	0.625 (15,9)	35.500 (901,7)	0.250 (6,4)	0.375 (9,5)	0.625 (15,9)	36.2 (919.5)
40 (1000)	40.0 (1016,0)	0.093 (2,36)	0.031 (0,79)	1.75 (44,5)	0.625 (15,9)	39.500 (1003,3)	0.250 (6,4)	0.375 (9,5)	0.625 (15,9)	40.4 (1026,2)
42 (1050)	42.0 (1066,8)	0.093 (2,36)	0.031 (0,79)	2.00 (50,8)	0.625 (15,9)	41.500 (1054,1)	0.250 (6,4)	0.375 (9,5)	0.625 (15,9)	42.2 (1071,9)

NOTES:

(a) Square cut: Max. allowable tolerances from square cut are 0.060 inches (1.6 mm).
(b) The gasket seating surface “A” must be free from deep scores, marks, or ridges that would prevent a positive seal.
(c) The “C” dimensions are average values. The groove must be of uniform depth around the entire circumference.
(d) The “T” is the maximum allowable wall thickness that may be roll-grooved, and the minimum allowable wall thickness that may be cut grooved.
(e) The “D” is for reference use only. The groove depth must be determined by the groove diameter “C”.
(f) Flare Diameter: The pipe end that may flare when the groove is rolled must be within this limit when measured at the extreme end of the pipe.
(g) Dimensions A, B, C, and D are the same for cut and rolled grooved pipe.

FIGURE 2
STANDARD ROLL GROOVE
STEEL PIPE SPECIFICATIONS

Installation

The following instructions apply to the GRINNELL Figure 707L Large Diameter Coupling and must be installed in accordance with this section. The installation is based on pipe grooved in accordance with Standard Cut Groove or Roll Grooved Specifications. Refer to Technical Data Sheet G710 for Steel Pipe.

Step 1. Inspect exterior groove and ends of the pipe to verify all burrs, loose debris, dirt, chips, paint and any other foreign material such as grease are removed. Pipe end sealing surfaces must be free from sharp edges, projections, indentations, and/or other defects.

Step 2. Verify that the coupling and gasket grade are correct for the applications intended. Refer to Technical Data Sheet G610 for additional gasket information.

Step 3. Roll the gasket inside-out and cover the gasket with a fine layer of lubricant. To prevent deterioration of the gasket material, a petroleum lubricant should never be used on Grade "E" "EPDM. For assembly below 40°F (4°C), a petroleum-free silicone lubricant must be used to prevent freezing of the lubricant.

Step 4. Install the gasket by placing it over the end of the first pipe section. Ensure that the gasket is aligned with the outer edge of the groove (closet to the end of the pipe).

Step 5. Bring both pipes together, ensure proper alignment, and roll the gasket over into position. Ensure the gasket is centered between the grooved portions of each pipe. The gasket should not protrude into the grooves on either pipe segment or extend beyond the pipe ends.

Step 6. Set the first segment of the coupling over the gasket and ensure the coupling keys align with the grooves on both pipes.

Step 7. Slide the coupling segment so that the coupling segment end is centered on the pipe and attach a second coupling segment to the first using two bolts and nuts. Loosely tighten the nuts.

Note: *Do not torque the nuts until all the segments of the coupling have been attached.*

Step 8. Slide the assembled coupling segments so that the newly installed segment is centered to the pipe. This allows the pipe to support the coupling weight as it is being assembled. Attach a third coupling segment using two bolts and nuts. Loosely tighten the nuts.

CAUTION

Extra personnel must hold the assembled coupling in place to ensure that the coupling does not fall from the pipe. Failure to do so may result in equipment damage and/or personel injury.

Step 9. Attached three more coupling segments using two bolts and nuts for each connection between the segments. Loosely tighten the nuts.

Step 10. When all coupling segments have been attached, rotate the assembled coupling until the coupling on the opposite end is visible and accessible at the bottom of the pipe. Connect the remaining ends of the assembled coupling using two bolts and nuts.

CAUTION

Always tighten nuts evenly by alternating sides. Uneven tightening can cause the gasket to pinch or bind. If a gasket becomes pinched, replace it immediately.

Exceeding the suggested torque values may cause damage to the coupling and/or result in pipe-joint failure. Minimum bolt torque is required for the coupling to meet the published performance parameters.

Step 11. Tighten all nuts uniformly to the recommended bolt torque. (Refer to Figure 1.) Ensure that the coupling key aligns with the grooves on both pipes when tightening the nuts.

CAUTION

Failure to ensure proper alignment of the coupling keys with the pipe grooves may result in equipment failure and/or personal injury.

Ordering Procedure

GRINNELL Products are available globally through a network of distribution centers. For the nearest distributor, visit www.grinnell.com. When placing an order, indicate the full product name.

Specify Figure 707L Large Diameter Coupling, quantity, pipe size (nominal ANSI or O.D.), finish (Orange or Galvanized), and type of gasket:

- Grade “E” EPDM
- Grade “T” Nitrile