

FIG. 7045

Clamp-T, FPT Branch



The Gruvlok Clamp-T provides a quick and easy outlet at any location along the pipe. A hole drilled or cut in the pipe to receive the locating collar of the Clamp-T is all that is required. The full, smooth outlet area provides for optimum flow characteristics.

The Clamp-T housing is specially engineered to conform to the pipe O.D. and the Clamp-T gasket providing a leak tight reliable seal in both positive pressure and vacuum conditions. The maximum working pressure for all sizes is 500 PSI (34.5 bar) when assembled on standard wall steel pipe.

The Gruvlok Clamp-T provides for a branch or cross connection in light wall or standard wall steel pipe.

The Fig. 7045 Clamp-T female pipe thread branch is available with NPT or ISO 7/1 connection and the Fig. 7046 Clamp-T has grooved-end branch connection.

Clamp-T cross connections are available in various sizes allowing greater versatility in piping design.

NOTE: Variable End Configurations are Possible —
Thd x Thd and Gr. x Thd.
Sizes — 2" x 1/2" through 8" x 4"

CLAMP-T FLOW DATA (FRICTIONAL RESISTANCE)

Branch Size Inches	Fig. 7045 Threaded Branch	
	C.V. Value	Equiv. Pipe Length Feet
DN/mm		Meters
1/2	22	1.0
15	-	0.3
3/4	25	2.0
20	-	0.6
1	44	2.0
25	-	0.6
1 1/4	76	2.5
32	-	0.8
1 1/2	89	4.0
40	-	1.2
2	164	3.5
50	-	1.1
2 1/2	152	12.5
65	-	3.8
3	318	8.5
80	-	2.6
4	536	8.0
100	-	2.4

MATERIAL SPECIFICATIONS

ANSI BOLTS & HEAVY HEX NUTS:

Heat treated, oval neck track head bolts conforming to ASTM A 183 Grade 2 with a minimum tensile strength of 110,000 psi and heavy hex nuts of carbon steel conforming to ASTM A 563 Grade A or Grade B, or J995 Grade 2. Bolts and nuts are provided zinc electroplated as standard.

METRIC BOLTS & HEAVY HEX NUTS:

Heat treated, zinc electroplated oval-neck track head bolts made of carbon steel with mechanical properties per ISO 898-1 Class 8.8. Hex nuts are zinc electroplated followed by a yellow chromate dip.

U-BOLT:

Cold drawn steel and zinc plated.

HOUSING:

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

COATINGS:

- ☐ Rust inhibiting paint – Color: ORANGE (standard)
 - ☐ Hot Dipped Zinc Galvanized (optional)
 - ☐ Other Colors Available (IE: RAL3000 and RAL9000)
- For other Coating requirements Contact an Anvil Representative for more information.

GASKETS: Materials

Properties as designated in accordance with ASTM D 2000

- ☐ **Grade “E” EPDM** (Green color code)
-40°F to 230°F (Service Temperature Range)(-40°C to 110°C)
Recommended for water service, diluted acids, alkalis solutions, oil-free air and many other chemical services.
NOT FOR USE IN PETROLEUM APPLICATIONS.
- ☐ **Grade “T” Nitrile** (Orange color code)
-20°F to 180°F (Service Temperature Range)(-29°C to 82°C)
Recommended for petroleum applications. air with oil vapors and vegetable and mineral oils.
NOT FOR USE IN HOT WATER OR HOT AIR.

LUBRICATION:

- ☐ Standard Gruvlok
- ☐ Gruvlok Xtreme™ (Do Not use with Grade “L”)

PROJECT INFORMATION		APPROVAL STAMP	
Project:		☐ Approved	
Address:		☐ Approved as noted	
Contractor:		☐ Not approved	
Engineer:		Remarks:	
Submittal Date:			
Notes 1:			
Notes 2:			

FIG. 7045

Clamp-T, FPT Branch

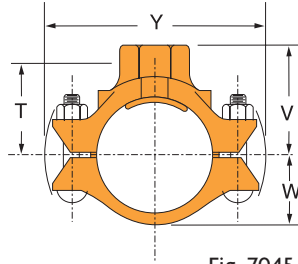


Fig. 7045

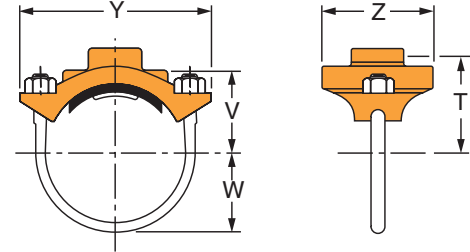


Fig. 7045 (U-Bolt)

FIGURE 7045-FPT BRANCH (TABLE CONTINUES TO NEXT PAGE)

Nominal Size	O.D.	Hole Dimensions		▼ Max. Working Pressure	Clamp-T Dimensions						Bolt Size	Specified Torque \$		Approx . Wt. Each
		Min. Diameter	Max. Diameter		T	U	V Threaded	W	Y	Z		Min.	Max.	
In./DN(mm)	In./mm	In./mm	In./mm	PSI/bar	In./mm	In./mm	In./mm	In./mm	In./mm	In./mm	In./mm	Ft.-Lbs/N-m		Lbs./Kg
2 x 1/2 50 x 15	2.375 x 0.840 60.3 x 21.3	1 1/2 38	1 5/8 41	500 34.5	2 3/16 56	9/16 14	2 5/8 67	1 1/2 12	5 1/2 140	3 76	1/2 U-Bolt -	30	40	2.3 1.0
2 x 3/4 50 x 20	2.375 x 1.050 60.3 x 26.7	1 1/2 38	1 5/8 41	500 34.5	2 1/16 52	9/16 14	2 5/8 67	1 1/2 38	5 1/2 140	3 76	1/2 U-Bolt -	30	40	2.3 1.0
2 x 1 50 x 25	2.375 x 1.315 60.3 x 33.7	1 1/2 38	1 5/8 41	500 34.5	1 15/16 51	9/16 14	2 5/8 67	1 1/2 38	5 1/2 140	3 76	1/2 U-Bolt -	30	40	2.6 1.2
2 x 1 1/4 50 x 32	2.375 x 1.660 60.3 x 42.4	2 51	2 1/8 54	500 34.5	2 3/16 55	9/16 14	2 7/8 73	1 1/2 38	5 1/2 140	3 1/2 89	1/2 U-Bolt -	30	40	2.7 1.2
2 x 1 1/2 65 x 40	2.375 x 1.900 60.3 x 48.3	2 51	2 1/8 54	500 34.5	2 3/16 55	9/16 14	2 7/8 73	1 1/2 38	7 178	3 1/2 89	1/2 U-Bolt -	30	40	2.5 1.1
2 1/2 x 1/2 65 x 15	2.875 x 0.840 73.0 x 21.3	1 1/2 38	1 5/8 41	500 34.5	2 7/16 62	9/16 14	2 7/8 73	1 3/4 44	5 1/2 140	3 76	1/2 U-Bolt -	30	40	3.0 1.4
2 1/2 x 3/4 65 x 20	2.875 x 1.050 73.0 x 26.7	1 1/2 38	1 5/8 41	500 34.5	2 5/16 59	9/16 14	2 7/8 73	1 3/4 44	5 1/2 140	3 76	1/2 U-Bolt -	30	40	2.9 1.3
2 1/2 x 1 65 x 25	2.875 x 1.315 73.0 x 33.7	1 1/2 38	1 5/8 41	500 34.5	2 3/16 55	9/16 14	2 7/8 73	1 3/4 44	6 1/8 156	3 76	1/2 U-Bolt -	30	40	2.9 1.3
2 1/2 x 1 1/4 65 x 32	2.875 x 1.660 73.0 x 42.4	2 51	2 1/8 54	500 34.5	2 7/16 62	9/16 14	3 1/8 79	1 3/4 44	6 1/8 156	3 3/8 86	1/2 U-Bolt -	30	40	3.4 1.5
2 1/2 x 1 1/2 65 x 40	2.875 x 1.900 73.0 x 48.3	2 51	2 1/8 54	500 34.5	2 7/16 62	9/16 14	3 1/8 79	1 3/4 44	6 1/8 156	3 3/8 86	1/2 U-Bolt -	30	40	3.4 1.5
3 x 1/2 80 x 15	3.500 x 0.840 88.9 x 21.3	1 1/2 38	1 5/8 41	500 34.5	2 9/16 65	9/16 14	3 76	2 1/8 54	7 178	3 3/4 95	1/2 U-Bolt -	30	40	2.8 1.2
3 x 3/4 80 x 20	3.500 x 1.050 88.9 x 26.7	1 1/2 38	1 5/8 41	500 34.5	2 7/16 62	9/16 14	3 76	2 1/8 54	7 178	3 3/4 95	1/2 U-Bolt -	30	40	2.7 1.2
3 x 1 80 x 25	3.500 x 1.315 88.9 x 33.7	1 1/2 38	1 5/8 41	500 34.5	2 5/16 59	9/16 14	3 76	2 1/8 54	7 178	3 3/4 95	1/2 U-Bolt -	30	40	2.7 1.2
3 x 1 1/4 80 x 32	3.500 x 1.660 88.9 x 42.4	2 51	2 1/8 54	500 34.5	2 11/16 68	1 1/2 38	3 3/8 86	2 1/8 54	6 7/8 175	3 3/4 95	1/2 x 2 3/4 -	80	100	3.4 1.5
3 x 1 1/2 80 x 40	3.500 x 1.900 88.9 x 48.3	2 51	2 1/8 54	500 34.5	2 11/16 68	1 1/2 38	3 3/8 86	2 1/8 54	6 7/8 175	3 3/4 95	1/2 x 2 3/4 -	80	100	4.4 2.0
3 x 2 80 x 50	3.500 x 2.375 88.9 x 60.3	2 1/2 64	2 5/8 67	500 34.5	2 11/16 68	1 1/2 38	3 3/8 86	2 1/8 54	6 7/8 175	4 1/8 105	1/2 x 2 3/4 -	80	100	4.6 2.1
4 x 1/2 100 x 15	4.500 x 0.840 114.3 x 21.3	1 1/2 38	1 5/8 41	500 34.5	3 1/16 76	9/16 14	3 1/2 89	2 5/8 67	7 3/4 197	3 3/4 95	1/2 U-Bolt -	30	40	2.9 1.3
4 x 3/4 100 x 20	4.500 x 1.050 114.3 x 26.7	1 1/2 38	1 5/8 41	500 34.5	3 1/16 78	9/16 14	3 1/2 89	2 5/8 67	7 3/4 197	3 3/4 95	1/2 U-Bolt -	30	40	2.8 1.3
4 x 1 100 x 25	4.500 x 1.315 114.3 x 33.7	1 1/2 38	1 5/8 41	500 34.5	2 13/16 73	9/16 14	3 1/2 89	2 5/8 67	7 3/4 197	3 3/4 95	1/2 U-Bolt -	30	40	2.7 1.2
4 x 1 1/4 100 x 32	4.500 x 1.660 114.3 x 42.4	2 51	2 1/8 54	500 34.5	3 3/16 81	1 1/8 48	3 7/8 98	2 5/8 67	7 1/2 191	3 3/4 95	1/2 x 2 3/4 -	80	100	4.5 2.0
4 x 1 1/2 100 x 40	4.500 x 1.900 114.3 x 48.3	2 51	2 1/8 54	500 34.5	3 3/16 81	1 1/8 48	3 7/8 98	2 5/8 67	7 1/2 191	3 3/4 95	1/2 x 2 3/4 -	80	100	4.6 2.1
4 x 2 100 x 50	4.500 x 2.375 114.3 x 60.3	2 1/2 64	2 5/8 67	500 34.5	3 5/16 84	1 1/8 48	4 102	2 5/8 67	7 1/2 191	4 1/8 105	1/2 x 2 3/4 -	80	100	7.7 3.5
4 x 2 1/2 100 x 65	4.500 x 2.875 114.3 x 73.0	2 3/4 70	2 7/8 73	500 34.5	3 11/16 78	1 1/8 48	4 102	2 5/8 67	7 1/2 191	4 3/8 111	1/2 x 2 3/4 -	80	100	5.2 2.4
4 x 3 O.D. 100 x 80	4.500 x 2.996 114.3 x 76.1	2 3/4 70	2 7/8 73	500 34.5	3 76	1 7/8 48	4 102	2 5/8 67	7 1/2 191	4 3/8 111	1/2 x 2 3/4 -	80	100	5.2 2.4
4 x 3 100 x 80	4.500 x 3.500 114.3 x 88.9	3 1/2 89	3 5/8 92	500 34.5	3 1/4 83	1 7/8 48	4 1/4 108	2 5/8 67	7 1/2 191	5 1/4 133	1/2 x 3 1/2 -	80	100	6.5 2.9

NOTE:

2 1/2", 5" and 6" Nom. Run pipe size Clamp-T may be used on 3" O.D., 5 1/2" O.D. and 6 1/2" O.D. pipe.

(Additional larger sizes on next page.)

▼ Based on use with standard wall pipe.

\$ - For additional Bolt Torque information, see page 190.

See Installation & Assembly directions on page 168.

Not for use with copper systems.

FIG. 7045

Clamp-T, FPT Branch

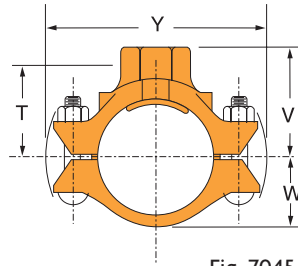


Fig. 7045

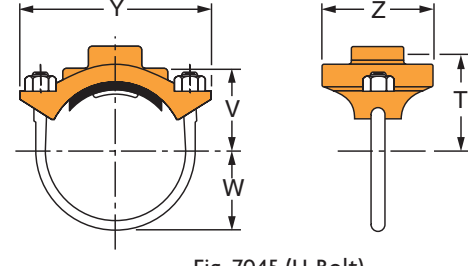


Fig. 7045 (U-Bolt)

FIGURE 7045-FPT BRANCH (CONTINUED FROM PREVIOUS PAGE)

Nominal Size	O.D.	Hole Dimensions		▼ Max. Working Pressure	Clamp-T Dimensions						Bolt Size	Specified Torque §		Approx . Wt. Each
		Min. Diameter	Max. Diameter		T	U	V Threaded	W	Y	Z		Min.	Max.	
In./DN(mm)	In./mm	In./mm	In./mm	PSI/bar	In./mm	In./mm	In./mm	In./mm	In./mm	In./mm	In./mm	Ft.-Lbs/N-m		Lbs./Kg
5 x 1¼ 125 x 32	5.563 x 1.660 141.3 x 42.4	2 51	2½ 54	500 34.5	3⅛ 94	1⅞ 48	4⅜ 111	3¼ 83	9⅞ 232	3¾ 95	⅝ x 3¼ -	100	130	5.4 2.4
5 x 1½ 125 x 40	5.563 x 1.900 141.3 x 48.3	2 51	2½ 54	500 34.5	3⅛ 94	1⅞ 48	4⅜ 111	3¼ 83	9⅞ 232	3¾ 95	⅝ x 3¼ -	100	130	5.5 2.5
5 x 2 125 x 50	5.563 x 2.375 141.3 x 60.3	2½ 64	2⅝ 67	500 34.5	3⅛ 97	1⅞ 48	4½ 114	3¼ 83	9⅞ 232	4⅞ 105	⅝ x 3¼ -	100	130	5.7 2.6
5 x 2½ 125 x 65	5.563 x 2.875 141.3 x 73.0	2¾ 70	2⅞ 73	500 34.5	3⅛ 97	1⅞ 48	4¾ 121	3¼ 83	9⅞ 232	4⅞ 111	⅝ x 3¼ -	100	130	7.0 3.2
5 x 3 O.D. 125 x 80	5.563 x 2.996 141.3 x 76.1	2¾ 70	2⅞ 73	500 34.5	3¼ 95	1⅞ 48	4¾ 121	3¼ 83	9⅞ 232	4⅞ 111	⅝ x 3¼ -	130	180	7.0 3.2
5 x 3 125 x 80	5.563 x 3.500 141.3 x 88.9	3½ 89	3⅝ 92	500 34.5	4 102	1⅞ 48	5 127	3¼ 83	9⅞ 232	5¼ 133	⅝ x 3¼ -	100	130	8.7 3.9
6 x 1¼ 150 x 32	6.625 x 1.660 168.3 x 42.4	2 51	2½ 54	500 34.5	4⅞ 106	2 51	4⅞ 124	3⅞ 98	10⅞ 257	3¾ 95	⅝ x 4¼ -	100	130	7.8 3.5
6 x 1½ 150 x 40	6.625 x 1.900 168.3 x 48.3	2 51	2½ 54	500 34.5	4⅞ 106	2 51	4⅞ 124	3⅞ 98	10⅞ 257	3¾ 95	⅝ x 4¼ -	100	130	7.8 3.5
6 x 2 150 x 50	6.625 x 2.375 168.3 x 60.3	2½ 64	2⅝ 67	500 34.5	4⅞ 106	2 51	4⅞ 124	3⅞ 98	10⅞ 257	4⅞ 105	⅝ x 4¼ -	100	130	7.8 3.5
6 x 2½ 150 x 65	6.625 x 2.875 168.3 x 73.0	2¾ 70	2⅞ 73	500 34.5	4⅞ 106	2 51	5⅞ 130	3⅞ 98	10⅞ 257	4⅞ 111	⅝ x 4¼ -	100	130	8.4 3.8
6 x 3 O.D. 150 x 80	6.625 x 2.996 168.3 x 76.1	2¾ 70	2⅞ 73	500 34.5	4⅞ 105	2 51	5⅞ 130	3⅞ 98	10⅞ 257	4⅞ 111	⅝ x 4¼ -	100	130	8.4 3.8
6 x 3 150 x 80	6.625 x 3.500 168.3 x 88.9	3½ 89	3⅝ 92	500 34.5	4⅞ 111	2 51	5⅞ 137	3⅞ 98	10⅞ 257	5¼ 133	⅝ x 4¼ -	100	130	9.6 4.4
6 x 4 150 x 100	6.625 x 4.500 168.3 x 114.3	4½ 114	4⅝ 117	500 34.5	4⅞ 111	2 51	5½ 140	3⅞ 98	10⅞ 257	6½ 165	⅝ x 4¼ -	100	130	10.5 4.8
8 x 2 200 x 50	8.625 x 2.750 219.1 x 70.0	2½ 64	2⅝ 67	500 34.5	5⅞ 132	2¼ 57	5⅞ 149	5 127	12¾ 324	4⅞ 105	¾ x 4¼ -	130	180	11.3 5.1
8 x 2½ 200 x 65	8.625 x 2.875 219.1 x 73.0	2¾ 70	2⅞ 73	500 34.5	5⅞ 134	2¼ 57	6¼ 159	5 127	12¾ 324	4⅞ 111	¾ x 4½ -	130	180	11.1 5.0
8 x 3 O.D. 200 x 80	8.625 x 2.996 219.1 x 76.1	2¾ 70	2⅞ 73	500 34.5	5¼ 133	2¼ 57	6¼ 159	5 127	12¾ 324	4⅞ 111	¾ x 4½ -	130	180	11.1 5.0
8 x 3 200 x 80	8.625 x 3.500 219.1 x 88.9	3½ 89	3⅝ 92	500 34.5	5⅞ 137	2¼ 57	6⅜ 162	5 127	12¾ 324	5¼ 133	¾ x 4½ -	130	180	13.0 5.9
8 x 4 200 x 100	8.625 x 4.500 219.1 x 114.3	4½ 114	4⅝ 117	500 34.5	5⅞ 137	2¼ 57	6½ 165	5 127	12¾ 324	6½ 165	¾ x 4½ -	130	180	16.2 7.3

NOTE:

2½", 5" and 6" Nom. Run pipe size Clamp-T may be used on 3" O.D., 5½" O.D. and 6½" O.D. pipe.

(Additional smaller sizes on previous page.)

▼ Based on use with standard wall pipe.

§ - For additional Bolt Torque information, see page 190.

See Installation & Assembly directions on page 166.

Not for use with copper systems.

FIG. 7045 & FIG. 7046

Clamp-T® Branch Outlets

ALWAYS USE A GRUVLOK LUBRICANT FOR PROPER COUPLING ASSEMBLY.

Thorough lubrication of the gasket is essential to assist the gasket into the proper sealing position.

1 PIPE PREPARATION—Cut the appropriate size hole in the pipe and remove any burrs. Be sure to remove any debris from inside the pipe. Clean the gasket sealing surface within $\frac{5}{8}$ " of the hole and visually inspect the sealing surface for defects that may prevent proper sealing of the gasket.

BRANCH SIZE (Inches)	HOLE SAW SIZE (Inches) (+1/8, -0)
$\frac{1}{2}$, $\frac{3}{4}$, 1	$1\frac{1}{2}$
$1\frac{1}{4}$, $1\frac{1}{2}$	2
2	$2\frac{1}{2}$
$2\frac{1}{2}$	$2\frac{3}{4}$
3	$3\frac{1}{2}$
4	$4\frac{1}{2}$



2 CHECK & LUBRICATE GASKET—Check the gasket to be sure it is compatible for the intended service. Apply a thin layer of GUVLOK lubricant to the back surface of the gasket. Be careful that foreign particles do not adhere to the lubricated surfaces. Insert the gasket back into the outlet housing making sure the tabs in the gasket line up with the tab recesses in the housing.



3 GASKET INSTALLATION—Lubricate the exposed surface of the gasket. Align the outlet housing over the pipe hole making sure that the locating collar is in the pipe hole.



4 ALIGNMENT—Align the strap around the pipe, insert the bolts and tighten the nuts finger tight. Some sizes use a U-bolt design.



5 TIGHTEN NUTS—Alternately and evenly tighten the nuts to the specified bolt torque.



6 ASSEMBLY IS COMPLETE

FIGS. 7045 & 7046—SPECIFIED BOLT TORQUE

Specified bolt torque is for the oval neck track bolts and U-bolts used on the GUVLOK® Clamp-T's. The nuts must be tightened alternately and evenly until fully tightened. Caution: Use of an impact wrench is not recommended because the torque output can vary significantly due to many variables including air pressure, battery strength and operational variations.

CAUTION: Proper torquing of the bolts or U-bolts is required to obtain the specified performance. Overtorquing the bolts or U-bolts may result in damage to the bolt, U-bolt and/or casting which could result in lower pressure retention capabilities, lower bend load capabilities, pipe joint leakage and pipe joint separation.

ANSI SPECIFIED BOLT TORQUE		
Bolt Size	Wrench Size	Specified Bolt Torque *
In.	In.	Ft.-Lbs.
U-Bolt	$\frac{7}{8}$	30-40
$\frac{1}{2}$	$\frac{7}{8}$	60-80
$\frac{5}{8}$	$1\frac{1}{16}$	100-130
$\frac{3}{4}$	$1\frac{1}{4}$	130-180

* Non-lubricated bolt torques