

## Clamp-T, FPT Branch Fig. 7045



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"

For Listings/Approval Details and Limitations, visit our website at [www.asc-es.com](http://www.asc-es.com) or contact an ASC Engineered Solutions™ Sales Representative.

### 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

### 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

### 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 ASC Representative for more information.

### Gasket Materials

Properties as designated in accordance with  
ASTM D2000

**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,  
alkalies 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:	

## Clamp-T, FPT Branch Fig. 7045

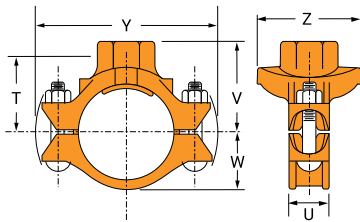


Fig. 7045

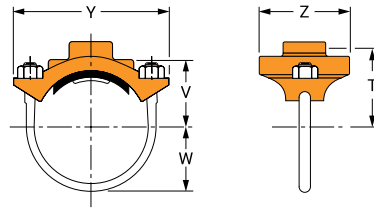


Fig. 7045 (U-Bolt)

Nominal Size	O.D.	Hole Dimensions		▼Max. Working Pressure	Clamp-T Dimensions						Bolt Size	Specified Torque §		Approx. Wt. Each
		Min. Diam.	Max. Diam.		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	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	1/2 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 50 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

**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.

▼ Based on use with standard wall pipe.

§ - For additional Bolt Torque information, see the Technical Data Section of the Gruvlok Catalog. See Installation & Assembly directions on last page.

Not for use with copper systems.

(Additional larger sizes on next page.)



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## Clamp-T, FPT Branch Fig. 7045

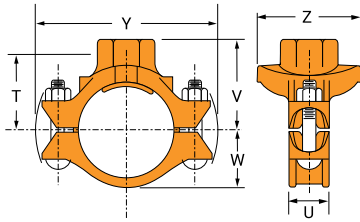


Fig. 7045

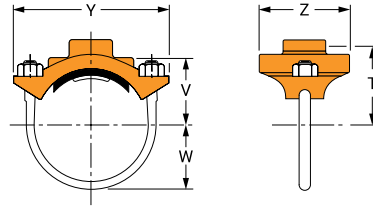


Fig. 7045 (U-Bolt)

Nominal Size	O.D.	Hole Dimensions		▼Max. Working Pressure	Clamp-T Dimensions						Bolt Size	Specified Torque §		Approx. Wt. Each	
		Min. Diam.	Max. Diam.		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	In./mm	Ft.-Lbs/N-m	Ft.-Lbs/N-m	Lbs./kg
3 x 1¼ 80 x 32	3.500 x 1.660 88.9 x 42.4	2 51	2⅞ 54	500 34.5	2⅞ 68	1½ 38	3⅞ 86	2⅞ 54	6⅞ 175	3¾ 95	½ x 2¾ —	80	100	3.4 1.5	
3 x 1½ 80 x 40	3.500 x 1.900 88.9 x 48.3	2 51	2⅞ 54	500 34.5	2⅞ 68	1½ 38	3⅞ 86	2⅞ 54	6⅞ 175	3¾ 95	½ x 2¾ —	80	100	4.4 2.0	
3 x 2 80 x 50	3.500 x 2.375 88.9 x 60.3	2½ 64	2⅞ 67	500 34.5	2⅞ 68	1½ 38	3⅞ 86	2⅞ 54	6⅞ 175	4⅞ 105	½ x 2¾ —	80	100	4.6 2.1	
4 x ½ 100 x 15	4.500 x 0.840 114.3 x 21.3	1½ 38	1⅞ 41	500 34.5	3⅞ 76	¾ 14	3½ 89	2⅞ 67	7¾ 197	3¾ 95	½ U-Bolt —	30	40	2.9 1.3	
4 x ¾ 100 x 20	4.500 x 1.050 114.3 x 26.7	1½ 38	1⅞ 41	500 34.5	3⅞ 78	¾ 14	3½ 89	2⅞ 67	7¾ 197	3¾ 95	½ U-Bolt —	30	40	2.8 1.3	
4 x 1 100 x 25	4.500 x 1.315 114.3 x 33.7	1½ 38	1⅞ 41	500 34.5	2⅞ 73	¾ 14	3½ 89	2⅞ 67	7¾ 197	3¾ 95	½ U-Bolt —	30	40	2.7 1.2	
4 x 1¼ 100 x 32	4.500 x 1.660 114.3 x 42.4	2 51	2⅞ 54	500 34.5	3⅞ 81	1⅞ 48	3⅞ 98	2⅞ 67	7½ 191	3¾ 95	½ x 2¾ —	80	100	4.5 2.0	
4 x 1½ 100 x 40	4.500 x 1.900 114.3 x 48.3	2 51	2⅞ 54	500 34.5	3⅞ 81	1⅞ 48	3⅞ 98	2⅞ 67	7½ 191	3¾ 95	½ x 2¾ —	80	100	4.6 2.1	
4 x 2 100 x 50	4.500 x 2.375 114.3 x 60.3	2½ 64	2⅞ 67	500 34.5	3⅞ 84	1⅞ 48	4 102	2⅞ 67	7½ 191	4⅞ 105	½ x 2¾ —	80	100	7.7 3.5	
4 x 2½ 100 x 65	4.500 x 2.875 114.3 x 73.0	2¾ 70	2⅞ 73	500 34.5	3⅞ 78	1⅞ 48	4 102	2⅞ 67	7½ 191	4⅞ 111	½ x 2¾ —	80	100	5.2 2.4	
4 x 3 O.D. 100 x 80	4.500 x 2.996 114.3 x 76.1	2¾ 70	2⅞ 73	500 34.5	3 76	1⅞ 48	4 102	2⅞ 67	7½ 191	4⅞ 111	½ x 2¾ —	80	100	5.2 2.4	
4 x 3 100 x 80	4.500 x 3.500 114.3 x 88.9	3½ 89	3⅞ 92	500 34.5	3¼ 83	1⅞ 48	4¼ 108	2⅞ 67	7½ 191	5¼ 133	½ x 3½ —	80	100	6.5 2.9	

**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.

▼ Based on use with standard wall pipe.

§ - For additional Bolt Torque information, see the Technical Data Section of the Gruvlok Catalog. See Installation & Assembly directions on last page.

Not for use with copper systems.

(Additional smaller sizes on previous page and larger sizes on next page.)



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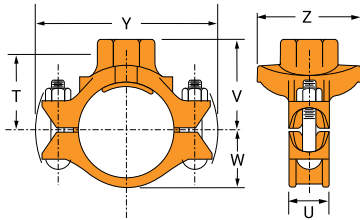


Fig. 7045

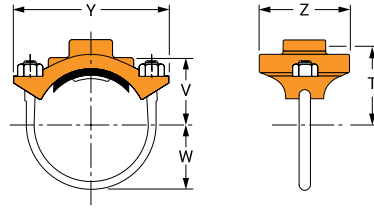


Fig. 7045 (U-Bolt)

Nominal Size	O.D.	Hole Dimensions		▼Max. Working Pressure	Clamp-T Dimensions						Bolt Size	Specified Torque §		Approx. Wt. Each	
		Min. Diam.	Max. Diam.		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	In./mm	Ft.-Lbs/N-m	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	3 11/16 94	1 7/8 48	4 3/8 111	3 1/4 83	9 1/8 232	3 3/4 95	5/8 x 3 1/4 -	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	3 11/16 94	1 7/8 48	4 3/8 111	3 1/4 83	9 1/8 232	3 3/4 95	5/8 x 3 1/4 -	100	130	5.5 2.5	
5 x 2 125 x 50	5.563 x 2.375 141.3 x 60.3	2½ 64	2 5/8 67	500 34.5	3 19/16 97	1 7/8 48	4 1/2 114	3 1/4 83	9 1/8 232	4 1/8 105	5/8 x 3 1/4 -	100	130	5.7 2.6	
5 x 2½ 125 x 65	5.563 x 2.875 141.3 x 73.0	2¾ 70	2 7/8 73	500 34.5	3 9/16 97	1 7/8 48	4 3/4 121	3 1/4 83	9 1/8 232	4 3/8 111	5/8 x 3 1/4 -	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	2 7/8 73	500 34.5	3 3/4 95	7/8 48	4 3/4 121	3 1/4 83	9 1/8 232	4 3/8 111	5/8 x 3 1/4 -	130	180	7.0 3.2	
5 x 3 125 x 80	5.563 x 3.500 141.3 x 88.9	3½ 89	3 5/8 92	500 34.5	4 102	1 7/8 48	5 127	3 1/4 83	9 1/8 232	5 1/4 133	5/8 x 3 1/4 -	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	4 3/16 106	2 51	4 7/8 124	3 7/8 98	10 1/8 257	3 3/4 95	5/8 x 4 1/4 -	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	4 3/16 106	2 51	4 7/8 124	3 7/8 98	10 1/8 257	3 3/4 95	5/8 x 4 1/4 -	100	130	7.8 3.5	
6 x 2 150 x 50	6.625 x 2.375 168.3 x 60.3	2½ 64	2 5/8 67	500 34.5	4 3/16 106	2 51	4 7/8 124	3 7/8 98	10 1/8 257	4 1/8 105	5/8 x 4 1/4 -	100	130	7.8 3.5	
6 x 2½ 150 x 65	6.625 x 2.875 168.3 x 73.0	2¾ 70	2 7/8 73	500 34.5	4 3/16 106	2 51	5 1/8 130	3 7/8 98	10 1/8 257	4 3/8 111	5/8 x 4 1/4 -	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	2 7/8 73	500 34.5	4 1/8 105	2 51	5 1/8 130	3 7/8 98	10 1/8 257	4 3/8 111	5/8 x 4 1/4 -	100	130	8.4 3.8	
6 x 3 150 x 80	6.625 x 3.500 168.3 x 88.9	3½ 89	3 5/8 92	500 34.5	4 3/8 111	2 51	5 5/8 137	3 7/8 98	10 1/8 257	5 1/4 133	5/8 x 4 1/4 -	100	130	9.6 4.4	
6 x 4 150 x 100	6.625 x 4.500 168.3 x 114.3	4½ 114	4 5/8 117	500 34.5	4 3/8 111	2 51	5 1/2 140	3 7/8 98	10 1/8 257	6 1/2 165	5/8 x 4 1/4 -	100	130	10.5 4.8	
8 x 2 200 x 50	8.625 x 2.750 219.1 x 70.0	2½ 64	2 5/8 67	500 34.5	5 3/16 132	2 1/4 57	5 7/8 149	5 127	12 3/4 324	4 1/8 105	¾ x 4 1/4 -	130	180	11.3 5.1	
8 x 2½ 200 x 65	8.625 x 2.875 219.1 x 73.0	2¾ 70	2 7/8 73	500 34.5	5 5/16 134	2 1/4 57	6 1/4 159	5 127	12 3/4 324	4 3/8 111	¾ x 4 1/2 -	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	2 7/8 73	500 34.5	5 1/4 133	2 1/4 57	6 1/4 159	5 127	12 3/4 324	4 3/8 111	¾ x 4 1/2 -	130	180	11.1 5.0	
8 x 3 200 x 80	8.625 x 3.500 219.1 x 88.9	3½ 89	3 5/8 92	500 34.5	5 3/8 137	2 1/4 57	6 3/8 162	5 127	12 3/4 324	5 1/4 133	¾ x 4 1/2 -	130	180	13.0 5.9	
8 x 4 200 x 100	8.625 x 4.500 219.1 x 114.3	4½ 114	4 5/8 117	500 34.5	5 3/8 137	2 1/4 57	6 1/2 165	5 127	12 3/4 324	6 1/2 165	¾ x 4 1/2 -	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.

▼ Based on use with standard wall pipe.

§ - For additional Bolt Torque information, see the Technical Data Section of the Gruvlok Catalog.

See Installation & Assembly directions on last page.

Not for use with copper systems.

(Additional smaller sizes on previous page.)



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## Fig. 7045 & Fig. 7046 Clamp-T Branch Outlets

### 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	Hole Saw Size
In.	In./(+ $\frac{1}{8}$ , -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 Gruvlok® 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 Complete



### 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.

### Figs. 7045 & 7046 Specified Bolt Torque

**Specified bolt torque is for the oval neck track bolts and U-bolts** used on the Gruvlok 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



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