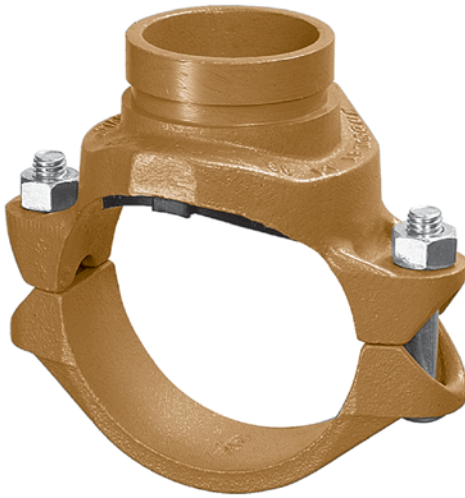


## FIG. 7046

### Clamp-T, Grooved 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.

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

#### CLAMP-T FLOW DATA (FRICTIONAL RESISTANCE)

Branch Size	Fig. 7046 Grooved Branch	
	C.V. Value	Equiv. Pipe Length
In./DN/mm		Ft./Meters
1 1/4 32	5.4	5.0 1.5
1 1/2 40	95	3.5 1.1
2 50	148	4.5 1.4
2 1/2 65	205	7.0 2.1
3 80	294	9.5 2.9
4 100	571	7.0 2.1

## 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:		<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. 7046

### Clamp-T, Grooved Branch

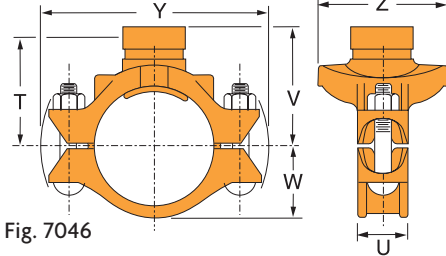


Fig. 7046

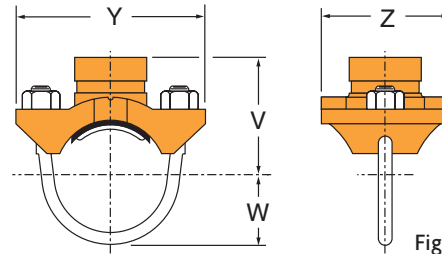


Fig. 7046 (U-Bolt)

FIGURE 7046-GR BRANCH

Nominal Size	O.D.	Hole Dimensions		▼ Max. Working Pressure	Clamp-T Dimensions					Bolt Size	Specified Torque §		Approx. Wt. Each
		Min. Diameter	Max. Diameter		U	V Grooved	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	Ft.-Lbs/N-m		Lbs./Kg
2½ x 1¼• 65 x 32	2.875 x 1.660 73.0 x 42.4	2 51	2½ 54	500 34.5	⅞ 14	3⅞ 79	1¼ 44	6⅞ 156	3½ 89	½ U-Bolt -	30	40	3.4 1.5
2½ x 1½ 65 x 40	2.875 x 1.900 73.0 x 48.3	2 51	2½ 54	500 34.5	⅞ 14	3⅞ 79	1¼ 44	6⅞ 156	3½ 89	½ U-Bolt -	30	40	3.4 1.5
3 x 1¼ 80 x 32	3.500 x 1.660 88.9 x 42.4	2 51	2½ 54	500 34.5	1½ 38	3½ 89	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	2½ 54	500 34.5	1½ 38	3½ 89	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	1½ 38	3½ 89	2⅞ 54	6⅞ 175	4⅞ 105	½ x 2¾ -	80	100	4.6 2.1
4 x 1¼ 100 x 32	4.500 x 1.660 114.3 x 42.4	2 51	2½ 54	500 34.5	1⅞ 48	4 102	2⅞ 67	7½ 191	3¾ 95	½ x 2¾ -	80	100	4.2 1.9
4 x 1½ 100 x 40	4.500 x 1.900 114.3 x 48.3	2 51	2½ 54	500 34.5	1⅞ 48	4 102	2⅞ 67	7½ 191	3¾ 95	½ x 2¾ -	80	100	4.3 2.0
4 x 2 100 x 50	4.500 x 2.375 114.3 x 60.3	2½ 64	2⅞ 67	500 34.5	1⅞ 48	4 102	2⅞ 67	7½ 191	4⅞ 105	½ x 2¾ -	80	100	4.6 2.1
4 x 2½ 100 x 65	4.500 x 2.875 114.3 x 73.0	2¾ 70	2⅞ 73	500 34.5	1⅞ 48	4 102	2⅞ 67	7½ 191	4⅞ 111	½ x 2¾ -	80	100	5.0 2.3
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	1⅞ 48	4 102	2⅞ 67	7½ 191	4⅞ 111	½ x 2¾ -	80	100	5.0 2.3
4 x 3 100 x 80	4.500 x 3.500 114.3 x 88.9	3½ 89	3⅞ 92	500 34.5	1⅞ 48	4 102	2⅞ 67	7½ 191	5¼ 133	½ x 3½ -	80	100	5.6 2.5
5 x 1¼ 125 x 32	5.563 x 1.660 141.3 x 42.4	2 51	2½ 54	500 34.5	1⅞ 48	4¼ 108	3¼ 83	9⅞ 232	3¾ 95	½ x 2¾ -	80	100	5.6 2.5
5 x 1½ 125 x 40	5.563 x 1.900 141.3 x 48.3	2 51	2½ 54	500 34.5	1⅞ 48	4¼ 108	3¼ 83	9⅞ 232	3¾ 95	½ x 2¾ -	80	100	5.6 2.5
5 x 2 125 x 50	5.563 x 2.375 141.3 x 60.3	2½ 64	2⅞ 67	500 34.5	1⅞ 48	4¼ 108	3¼ 83	9⅞ 232	4⅞ 105	½ x 3¼ -	100	130	5.5 2.5
5 x 2½ 125 x 65	5.563 x 2.875 141.3 x 73.0	2¾ 70	2⅞ 73	500 34.5	1⅞ 48	4¼ 108	3¼ 83	9⅞ 232	4⅞ 111	½ x 3¼ -	100	130	5.8 2.6
5 x 3 125 x 80	5.563 x 3.500 141.3 x 88.9	3½ 89	3⅞ 92	500 34.5	1⅞ 48	4⅞ 117	3¼ 83	9⅞ 232	5¼ 133	½ x 3¼ -	100	130	7.1 3.2
6 x 1½ 150 x 40	6.625 x 1.900 168.3 x 48.3	2 51	2½ 54	500 34.5	2 51	5 127	3⅞ 98	10⅞ 257	3¾ 95	⅝ x 4¼ *	100	130	7.2 3.3
6 x 2 150 x 50	6.625 x 2.375 168.3 x 60.3	2½ 64	2⅞ 67	500 34.5	2 51	5 127	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	2 51	5⅞ 130	3⅞ 98	10⅞ 257	4⅞ 111	⅝ x 4¼ *	100	130	7.6 3.4
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	2 51	5⅞ 130	3⅞ 98	10⅞ 257	4⅞ 111	⅝ x 4¼ *	100	130	7.6 3.4
6 x 3 150 x 80	6.625 x 3.500 168.3 x 88.9	3½ 89	3⅞ 92	500 34.5	2 51	5⅞ 130	3⅞ 98	10⅞ 257	5¼ 133	⅝ x 4¼ *	100	130	8.0 3.6
6 x 4 150 x 100	6.625 x 4.500 168.3 x 114.3	4½ 114	4⅞ 117	500 34.5	2 51	5¼ 133	3⅞ 98	10⅞ 257	6½ 165	⅝ x 4¼ *	100	130	10.4 4.7
8 x 2 200 x 50	8.625 x 2.375 219.1 x 60.3	2½ 64	2⅞ 67	500 34.5	2¼ 57	6⅞ 156	5 127	12¾ 324	4¼ 108	¾ x 4½ -	130	180	10.4 4.7
8 x 2½ 200 x 65	8.625 x 2.875 219.1 x 73.0	2¾ 70	2⅞ 73	500 34.5	2¼ 57	6⅞ 156	5 127	12¾ 324	4⅞ 111	¾ x 4½ M20 x 110	130 175	180 245	10.6 4.8
8 x 3 200 x 80	8.625 x 3.500 219.1 x 88.9	3½ 89	3⅞ 92	500 34.5	2¼ 57	6⅞ 156	5 127	12¾ 324	5¼ 133	¾ x 4½ M20 x 110	130 175	180 245	11.5 5.2
8 x 4 200 x 100	8.625 x 4.500 219.1 x 114.3	4½ 114	4⅞ 117	500 34.5	2¼ 57	6¼ 159	5 127	12¾ 324	6½ 165	¾ x 4½ M20 x 110	130 175	180 245	16.2 7.3

**NOTES:**

- 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.
- Cannot be used in cross configuration.

▼ 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 & FIG. 7046

### Clamp-T® Branch Outlets

ALWAYS USE A GRUVLOK LUBRICANT FOR PROPER COUPLING ASSEMBLY.

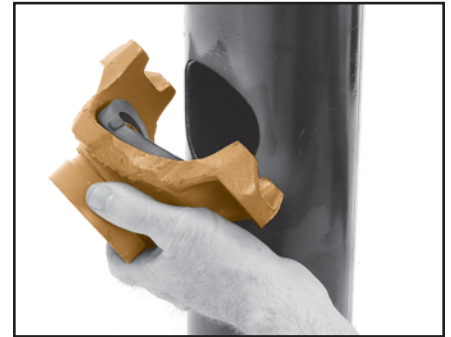
Thorough lubrication of the gasket is essential to assist the gasket into the proper sealing position.

**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