

Inflatable Duct Sealing System

1.0 General Product Information

The TDUX inflatable duct sealing system is a wraparound, inflatable, mastic-lined bladder used to seal empty or filled cable ducts. When inflated to the proper air pressure, the TDUX duct sealing system seals the duct, guaranteeing a reliable water block. TDUX systems seal ducts with or without cables and can be installed even while water is flowing out of the duct.

TDUX duct seals can be installed in cable ducts in manholes, vaults, buildings, cabinets, or anywhere a reliable duct seal is needed. Applications include ducts containing multiple copper, coax, or fiber cables, customer premises cable entrances, and air pipes.

TDUX duct seals can be installed between (-5° to 40°C) (23° to 104°F). It is recommended that the TDUX sealant bag and gas cylinders be kept warm until installation when installed at temperatures below freezing.

2.0 Cautions/Warnings

DANGER: Do not inflate TDUX duct seal unless it is installed in a pipe!

Lubricant

1. Protect TDUX sealing lubricant from freezing. If lubricant gets in eyes, flush eyes with clean water for 15 minutes, holding eyelid open. Wash skin with mild soap and water if skin irritation occurs. Seek medical attention if irritation persists.
2. Use only TDUX sealing lubricant or company-approved lubricant. Use of non-approved lubricants can result in damage to the cable or the TDUX duct seal.

Gas Cylinders

If the carbon dioxide gas cylinders are used to inflate the TDUX duct sealing system, the following safety rules should be considered:

1. The gas pressure in the cylinder is approximately 900 p.s.i. (60 bar) at room temperature. Maximum operational temperature is 122°F (50°C).
2. Keep cylinders cool and dry. Use only as instructed in the operating manual of TDUX-IT-16 inflator. Misuse can be dangerous.
3. Do not handle the cylinder with unprotected hands immediately after filling a TDUX duct seal. Frostbite can result.

TDUX Duct Seal

1. IMPORTANT: TDUX duct seals are not flame retardant. TDUX duct seals can be used with company approved fire stop material.
2. Avoid exposing the installed TDUX duct seal to direct sunlight.

3.0 Kit Components

- 10 TDUX duct seals
- Lubricant
- Installation Instructions

4.0 Additional Required Tools

One of the following inflation tools (available from CommScope) must be used to install the TDUX sealing system:

TDUX-IT-16 inflation tool uses compressed CO2 gas cylinders (to be ordered separately) equipped with a manometer and safety relief valve. (Figure 1)

TDUX-IG-SR-AS inflation gun to be connected to pressurized air bottle, pump, or compressor. The inlet pressure to the inflation gun should be min. 60 p.s.i. and max. 150 p.s.i. (Figure 2)

5.0 Size Selection Chart

To determine the appropriate TDUX sealing system size for the application in question, compute the sum of the cables' outside diameters and add .2" for each clip to be used (2 - 4 cables: 1 clip; 5 - 7 cables: 2 clips). Compare the resulting figure to the Maximum Cable Range column in the chart below to determine the proper TDUX sealing system kit size needed. (Chart A)

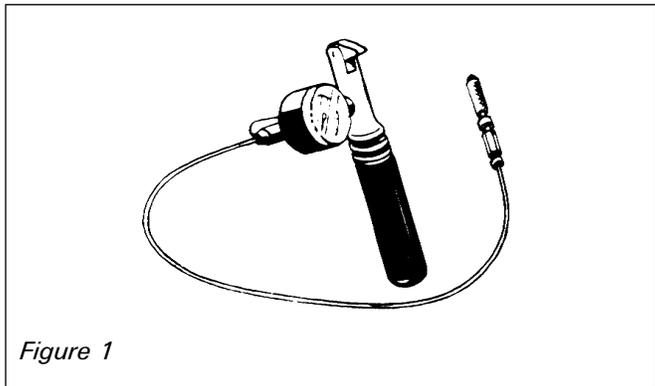


Figure 1

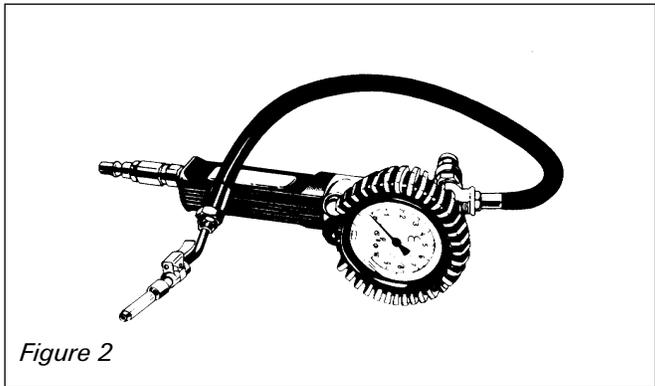


Figure 2

Chart A

Kit Size	Duct Size Inside Diameter (inches)	Maximum Cable O.D.*** (inches)	TDUX-CL With three or more cables
T-DUX-35	1.0	.88	TDUX-CL-20
T-DUX-45	1.5	1	TDUX-CL-20
T-DUX-60	2.0	1.25	TDUX-CL-40
T-DUX-75	3.0	2.2	TDUX-CL-40
T-DUX-90	3.5	2.5	TDUX-CL-60
T-DUX-90S*	3.5		TDUX-CL-60
T-DUX-100	4.0	3	TDUX-CL-60
T-DUX-100S*	4.0		TDUX-CL-60
T-DUX-125	5.0	4	TDUX-CL-80
T-DUX-150**	6.0	4.5	TDUX-CL-80

* T-DUX-90X and 100-S sizes are only used when a maximum size cable makes use of a regular TDUX duct seal difficult.
 ** Sealing a 6" duct that is empty or contains a cable less than 2.4" in diameter is not recommended. Please contact customer service for application recommendations.
 ***Maximum cable range is the diameters of all cables in the duct plus 0.2" for each TDUX-CL if used.

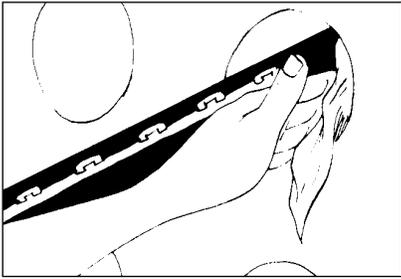


Figure 3

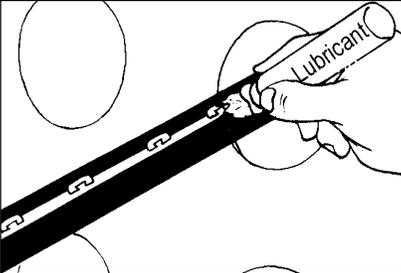


Figure 4

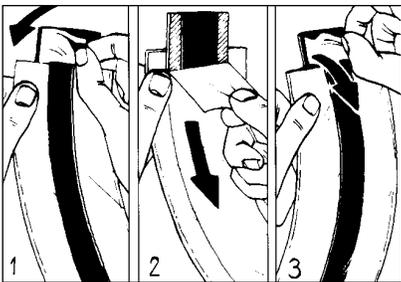


Figure 5

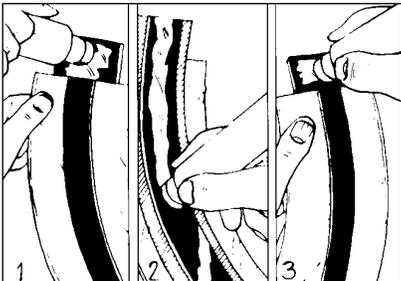


Figure 6

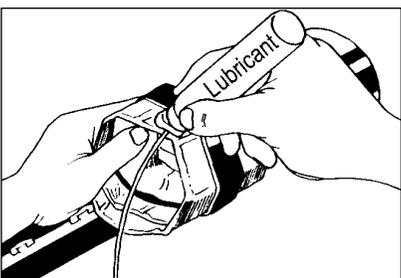


Figure 7

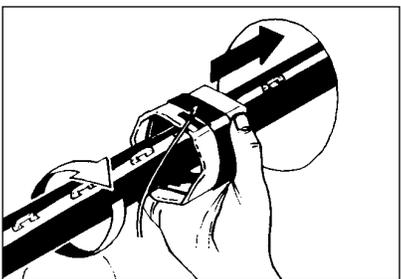


Figure 8

6.0 Installation Procedures

6.1 One Cable in Duct

1. Clean 4" of duct and the cable sheath with a wet cloth. *(Figure 3)*
2. For ease of installation, lubricate at least 6" of cable sheath with supplied lubricant or company approved lubricant. *(Figure 4)*
3. Remove the protective paper from the sealing strip on the outside surface of the TDUX duct seal and lubricate the strip abundantly. If the ducts are made of concrete or polyethylene, lubricate the outside surface of the TDUX seal as well. *(Figure 5)*
4. Remove the protective paper from the sealing strip on the inside surface of the TDUX duct seal and lubricate the strip abundantly. *(Figure 6)*
5. Lubricate the filling tube on the TDUX duct seal. *(Figure 7)*
6. Wrap the TDUX duct seal around the cable and slide completely into the duct. Be sure that filling tube faces out of the duct and center cable in duct prior to inflation, if possible. *(Figure 8)*

- In case of 2 cables, wrap the TDUX duct seal around the cables as shown, starting with the largest cable. (Figure 9)

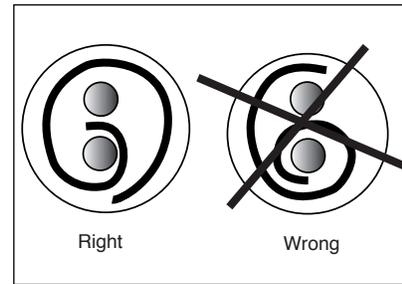


Figure 9

- Connect the filling tube to the tube-snap of the inflation tool, making sure that the filling tube bottoms out inside the inflation tool connector. (Figure 10)

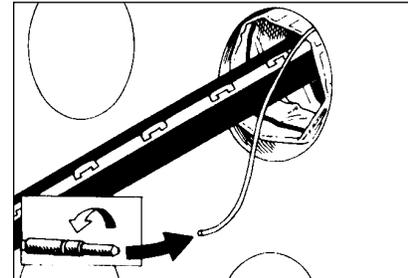


Figure 10

- Inflate the TDUX duct seal until the needle on the inflation tool's gauge reaches the green or yellow area (45 p.s.i.). Keep the pressure in the green or yellow area for 30 seconds, then shut the tool off. (Figure 11)

Note: Please refer to the operating manual for the specific inflation tool being used.

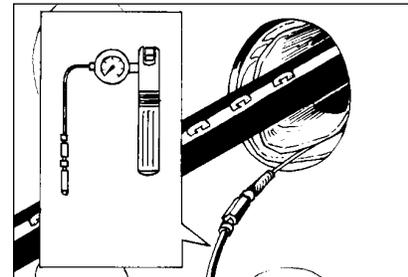


Figure 11

- Gently pull the filling tube out in the direction of the cable. (Figure 12)

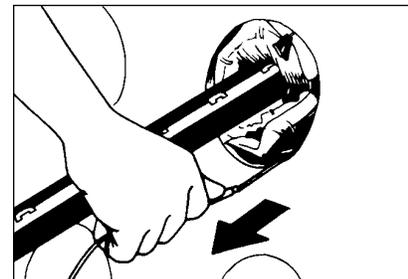


Figure 12

6.2 Multiple Cables in Duct

Installing a TDUX duct seal on three or more cables in one duct requires the use of TDUX duct CL sealing clips. These clips are ordered as a separate item and are available in several sizes. For sizing information, refer to the size selection chart. One TDUX duct seal CL clip can seal up to four cables. For five to seven cables, use two clips. (Refer to Chart A, page 2.)

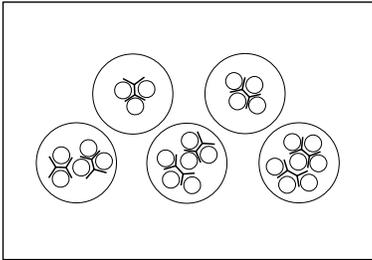


Figure 13

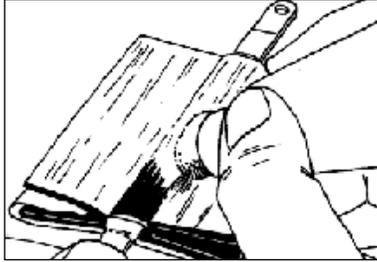


Figure 14

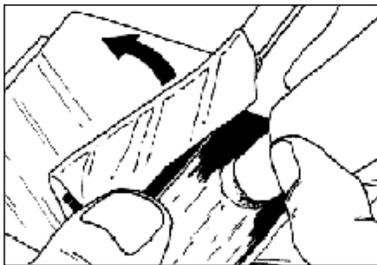


Figure 15

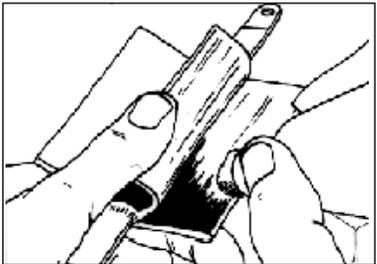


Figure 16

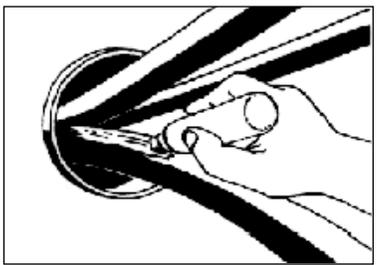


Figure 17

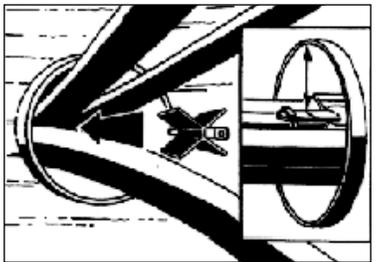


Figure 18

Figure 13 illustrates several different multiple cable configurations and branch clip locations .

1. Clean cables and lubricate duct as in 6.1, Steps 1 and 2.
2. Open clip wings on one side. Lubricate the wings abundantly to ensure that they do not stick together. (Figure 14)
3. Remove one protection paper and lubricate the larger surface of the clip wing. (Figure 15)
4. Repeat steps 2 and 3 for the other clip wings. Remove protection paper only after lubricating at least one wing side. (Figure 16)
5. Lubricate the cables generously where the cables come together. (Figure 17)
6. Insert the clip between the cables, making sure that there is only one cable between each clip wing (see figure 13). Make sure that the central part of the clip is positioned where the cables come together (mark flush with duct entrance). (Figure 18)

7. If necessary, use a tie wrap to hold the clip in place. Cut off excess tie wrap and position the head between the cables. Tape all cables together near the duct. (Figure 19)

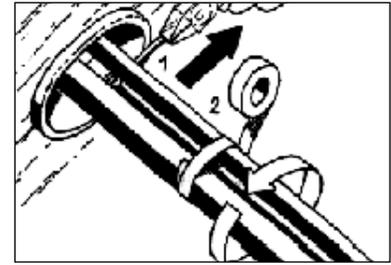


Figure 19

8. Complete steps 3-10 in section 6.1.

6.3 Square Duct

Sealing cables in a square duct requires the use of a TDUX square duct kit in addition to the standard TDUX duct sealing system. Mastic components and instructions for their use are included in that kit. For sealing more than one cable in a square duct, a TDUX CL sealing clip kit will also be required (see section 6.2).

6.4 Empty Duct

Clean and lubricate the duct, then lubricate and install the appropriate size TDUX duct seal inside the empty duct. Inflate the TDUX duct seal as in step 7-10 of section 6.1.

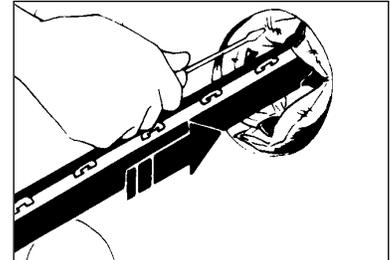


Figure 20

7.0 Removal

1. Deflate the TDUX duct seal by piercing with a screwdriver. **Note: Be careful not to damage the cable.** (Figure 20)

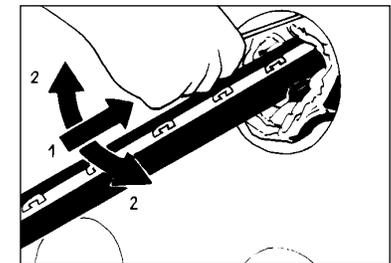


Figure 21

2. Pry the TDUX duct seal away from the duct and from the cable sheath with a blunt tool. Spray lubricant into the released areas so that the TDUX duct seal does not stick to the duct during removal. (Figure 21)



Figure 22

3. Pull the TDUX duct seal out of the duct with a pair of pliers. (Figure 22)

4. If necessary, remove tape (and tie wrap) from the cable bundle. Spread cables and apply lubricant where the cables come together. Remove as much clip core and sealant as possible with a pair of pliers. (Figure 23)

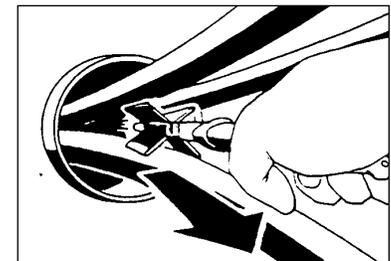


Figure 23

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