

## Operating manual

Inflator TDUX-IT-16 together with the special gas cylinder E7512-0160 is specifically designed for inflating TDUX duct seals.

The inflator and cylinder are not to be used for any other purpose

Manufactured for CommScope by  
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## Section 1 - Description of equipment

The equipment has 7 main sections. The numbers in brackets refer to the drawing on the back side of this manual..

### 1.1 Gas cylinder holder (1).

Material - High performance plastic.

The plastic material thermally insulates the operator from the surface of the gas cylinder which cools rapidly during discharge.

### 1.2 Basic regulator (2) with "ON/OFF" control lever (3).

Material - Anodised aluminium body with metal, plastic and rubber components.

The regulator ensures that the pressure of the gas entering the flow controller (4) is maintained at the correct level.

### 1.3 Flow controller (4) with non-return valve (not shown on drawing) connects the basic regulator (2) to the pressure controller (5).

Material - Anodised aluminium body with metal, plastic and rubber components.

The device controls the flow rate of the gas entering the pressure controller (5) so as to achieve filling within the specified time limits.

### 1.4 Pressure controller (5) incorporating a relief valve (not shown on drawing) and with a pressure gauge (6).

Material - Anodised aluminium body with metal, plastic and rubber components. Pressure gauge body - plastic with rubber shock resistant cover.

This device ensures that the pressure in the TDUX duct seal on completion of filling is within the specified limits at all temperatures within the specified range.

The pressure gauge pointer moves around when filling is taking place, approximately 30 seconds at normal temperatures, and stops within the green sector when filling is complete. Failure of the pointer to reach the green sector serves as an indicator that the gas cylinder needs replacing.

This whole section is pivotally mounted on the flow controller and may be freely rotated in either direction to enable the operator to face the pressure gauge to suit himself.

### 1.5 Delivery pipe (7).

Material - Polyurethane tubing.

This flexible delivery pipe enables the operator to work in confined or awkward situations.

### 1.6 Tube-snap assembly (9).

Material - Brass and nickel plated brass

This device enables the TDUX filling tube (12) to be securely held, gas tight, without restricting the flow of gas. The tube is firmly held to enable it to be removed from the TDUX duct seal on completion of filling.

### 1.7 Gas cylinder E7512-0160 (8).

Material - Steel cylinder filled with carbon dioxide under pressure.

The gas cylinder contains a minimum of 15 grams of CO<sub>2</sub>.

The gas is sealed in the cylinder by a special valve incorporated in the cylinder neck. This valve is only opened when the cylinder is connected to the inflator.

## Section 2 - Safety and good practice

### 2.1 Gas cylinder - E7512-0160

#### SAFETY

The gas pressure in the cylinder is approx. 60 Bar (900 lbf/in<sup>2</sup>) at room temperature.

- MAX. OPERATIONAL TEMPERATURE 50°C
- KEEP COOL AND DRY
- USE ONLY AS INSTRUCTED
- MISUSE CAN BE DANGEROUS
- DO NOT HANDLE THE CYLINDER WITH UNPROTECTED HANDS IMMEDIATELY AFTER FILLING A TDUX DUCT SEAL IN COLD WEATHER - FROSTBITE CAN RESULT.

#### Good practice

- I Cylinder E7512-0160 should only be used with inflator TDUX-IT-16.
- II To check if a gas cylinder is empty, shake the cylinder. If a rattle is heard the cylinder is empty or has been previously used.
- III Always wipe the cylinder clean, particularly the neck and sealing stem. Check if the cylinder sealing stem is not distorted, bent or damaged, before inserting it into the inflator.
- IV In cold weather, before each inflation, warm the cylinder in the gloved hand only.

### 2.2 Inflator TDUX-IT-16

#### SAFETY

- I USE ONLY AS INSTRUCTED
- II Do not attempt to make adjustments to the regulator, controller or relief valve. These have been correctly set at our factory.

#### Good practice

- I When removing or replacing a gas cylinder (8) put the "ON/OFF" lever (3) in the "OFF" position. Failure to do this will, however, not impair function.
- II Always replace the gas cylinder holder (1) when the inflator is not in use.
- III Do not store for extended periods with a gas cylinder (8) installed in the inflator.
- IV Do not knock, drop or otherwise maltreat the inflator, taking particular care of the pressure gauge which is a sensitive instrument.
- V During inflation hold the inflator so that the gas cylinder is between vertical and horizontal, neck uppermost. Do not operate the inflator with the gas cylinder pointing downwards.
- VI When removing the TDUX filling tube (12) from the tube snap assembly (9), unscrew the clamping screw (10) just sufficiently to release the tube - generally 1/2 a turn. Do not completely open the clamping screw (10) as this may allow the sealing "O"-Ring (11) to fall out.

## Section 3 - Operating instructions

### 3.1 Getting ready

- I Check "ON/OFF" lever (3) is in the "OFF" position.
- II Unscrew and remove gas cylinder holder (1).
- III Insert cylinder (8) neck uppermost, into gas cylinder holder (1).
- IV Screw gas cylinder holder (1), hand tight, on to the inflator.

### 3.2 Inflator checking procedure (to be carried out at the commencement of each filling session or every 50 or so TDUX duct seal fillings).

- I Observe the pointer on the pressure gauge (6). This should be resting on the low stop-peg. If the pointer is clear of the stop-peg, the gauge must be replaced (see section 6 - replacement parts).
- II Confirm that a used TDUX filling tube (12) is attached to tube-snap assembly (9) and the clamping screw (10) is tight. If not, insert a sealing bag inlet tube as described in steps 3.3. (I) - 3.3. (III) below.
- III Fold the TDUX filling tube (12) over itself (to close off the tube and prevent gas from escaping) and press the fold tightly between finger and thumb, or use a pair of pliers to close the tube.
- IV Rotate the pressure controller housing (5), if necessary, so that the pressure gauge dial is clearly visible.
- V Push the "ON/OFF" lever to the "ON" position.
- VI The pointer on the pressure gauge (6) will move round the dial. When it reaches the green sector push the "ON/OFF" lever (3) to the "OFF" position. The pointer should remain in the green sector indicating the inflator is working satisfactorily.
- VII If the pointer fails to reach the green sector, push the "ON/OFF" lever (3) to the "OFF" position, replace the gas cylinder (8) and repeat the procedure.
- VIII If the pointer reaches the green sector, but drops back when the lever is pushed to the "OFF" position, check the TDUX filling tube connections at the tube-snap assembly for leaks, refold the TDUX filling tube more securely and repeat the procedure.
- IX Unscrew clamping screw (10) 1/2 turn only and remove used TDUX filling tube.

### 3.3 Inflation of TDUX duct seal

With the TDUX duct seal already in place and the last used TDUX filling tube attached to the inflator.

- I Unscrew clamping screw (10) 1/2 turn only and remove filling tube.
- II Insert filling tube (12) (of the TDUX duct seal to be filled) into forward opening in tube-snap assembly (9) as far as it will go. Note: a slight resistance will be felt as the tube pushes through the seal (11).
- III Tighten the clamping screw (10), finger tight only.
- IV Push the "ON/OFF" lever (3) to the "ON". It will stay in this position. Filling of the TDUX duct seal now starts.
- V Observe the pressure gauge (6). During filling, the pointer will gradually move round the dial until it reaches the green sector when filling is complete. Leave inflator in "ON" position for a further 30 seconds.
- VI Push the "ON/OFF" lever (3) to the "OFF" position.
- VII Observe the pressure gauge pointer for a further few seconds. This will remain stationary within the green sector indicating no gas loss from the TDUX duct seal and inflator system.
- VIII Remove the TDUX filling tube (12) from the TDUX seal by holding the tube-snap assembly (9) and pulling firmly.
- IX Leave the TDUX filling tube (12) attached to the tube-snap assembly (9). If the checking procedure is to be carried out, proceed to step 3.2. (I). If the next TDUX duct seal is to be filled return to step 3.3. (I) above. If no further TDUX duct seals are to be immediately filled, leave the filling tube attached to the inflator, and store away safely.

## Section 4 - Trouble shooting

In each case, carry out the checks given. If, on completion of the checks, the fault still persists, and is not cured by replacement of the tube-snap assembly, see section (III) (c) below; or delivery pipe, see section (III) (d) below; or pressure gauge, see section (VI) (a) below; return the inflator to CommScope.

### (I) Problem

Cannot engage threads on gas cylinder holder with threads on inflator.

#### Check

- (a) Gas cylinder (8) is inserted into cylinder holder (1), neck upper most.
- (b) No debris is in the bottom of the cylinder holder.

### (II) Problem

When cylinder is inserted correctly and holder screwed on to inflator sound of escaping gas is heard.

#### Check

- (a) "ON/OFF" lever (3) is in "OFF" position.
- (b) Cylinder holder (1) is screwed firmly on to the inflator.
- (c) Remove cylinder holder (1) and cylinder (8) and check if cylinder sealing stem is not damaged or bent.
- (d) If checks (a) - (c) OK, discard cylinder (8) and try again with a fresh cylinder, making sure to wipe clean the neck and sealing stem.

### (III) Problem

When connected to the TDUX duct seal and the "ON/OFF" lever (3) is put in the "ON" position, sound of escaping gas is heard.

#### Check (with "ON/OFF" lever in "OFF" position)

- (a) TDUX filling tube (12) is correctly fitted to the tube-snap assembly (9) and clamping screw (10) is tight.
- (b) Remove TDUX filling tube (12) and check that surface of the tube which enters the clamping device is not damaged, distorted or scored. If this is so, cut off the damaged length with a sharp knife, so that the cut end face is approximately square (but not more than 45° to the plane of the diameter).
- (c) If on completion of checks (a) - (b) above, the sound of escaping gas is heard at the tube-snap assembly (9), fit new tube-snap assembly to the delivery pipe (7).
- (d) Check that locking nuts at both ends of delivery pipe are tight and delivery pipe is undamaged. If damaged, fit new delivery pipe.

#### (IV) Problem

When connected to the TDUX duct seal and the "ON/OFF" lever (3) is in the "ON" position, the pointer on the pressure gauge (6) moves to the green sector, but the TDUX duct seal does not inflate, or inflates very slowly.

Check (with "ON/OFF" lever (3) in "OFF" position)

- (a) TDUX filling tube (12) is not closed off along its length due to sharp kinks or flattening.
- (b) Remove TDUX filling tube (12) from clamping device (9) and check if entry diameter is clear. Before replacing the TDUX filling tube (12), briefly put the "ON/OFF" lever (3) to "ON" position to clear any obstruction.

#### (V) Problem

Pointer on pressure gauge does not reach green sector when filling the sealing bag.

Check (with "ON/OFF" lever (3) in the "OFF" position)

- (a) Remove gas cylinder (8) and shake it. If a rattle is heard, the cylinder is not full or empty. Replace with fresh gas cylinder.
- (b) In freezing weather, it may be necessary to warm the gas cylinder in a gloved hand after each filling.

#### CAUTION

When filling the TDUX duct seal, the temperature of gas cylinder falls considerably. In very cold weather, the surface temperature after filling can be low enough to cause frostbite if handled without gloves.

#### (VI) Problem

Pointer on pressure gauge goes past the green sector when filling the sealing bag.

Check (with the "ON/OFF" lever (3) in "OFF" position)

- (a) Unscrew the clamping screw (10) 1/2 turn only and remove the TDUX filling tube from the tube-snap assembly (9). Check that the pointer on the pressure gauge (6) rests on the low stop peg. If not, fit new pressure gauge.



## Section 5 - Performance data

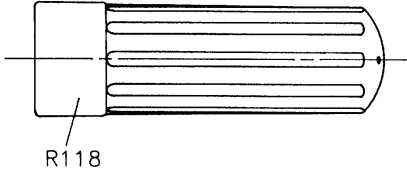
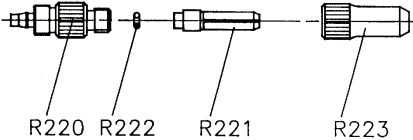
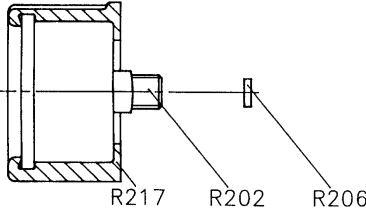
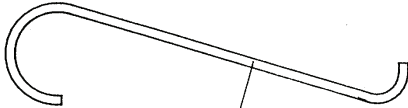
Time to inflate 700 ml TDUX at room temperature	40-60 seconds
TDUX pressure on completion of filling	2.8 - 3.2 bar (40 - 46,5 lbf/in <sup>2</sup> )
Working temperature	-5°C to 30°C (23 F to 86 F)
Recommended interval between successive fillings	2 minutes at normal temperature (in cold weather, this interval will be considerably longer)
Minimum net CO <sub>2</sub> weight in E7512-0160 gas cylinder	15 g
Weight of carbon dioxide gas per filling	5 g approximately
Number of bags filled per E7512-0160 gas cylinder	3 approximately
Relief valve opens at	3.2 + 0,2/-0 bar (46,5 - 48,5 lbf/in <sup>2</sup> )
Pressure gauge accuracy	1.6 % of full scale deflection
Weight of inflator TDUX-IT-16 complete with gas cylinder E7512-0160	400 g approximately

## Section 6 - Replacement parts

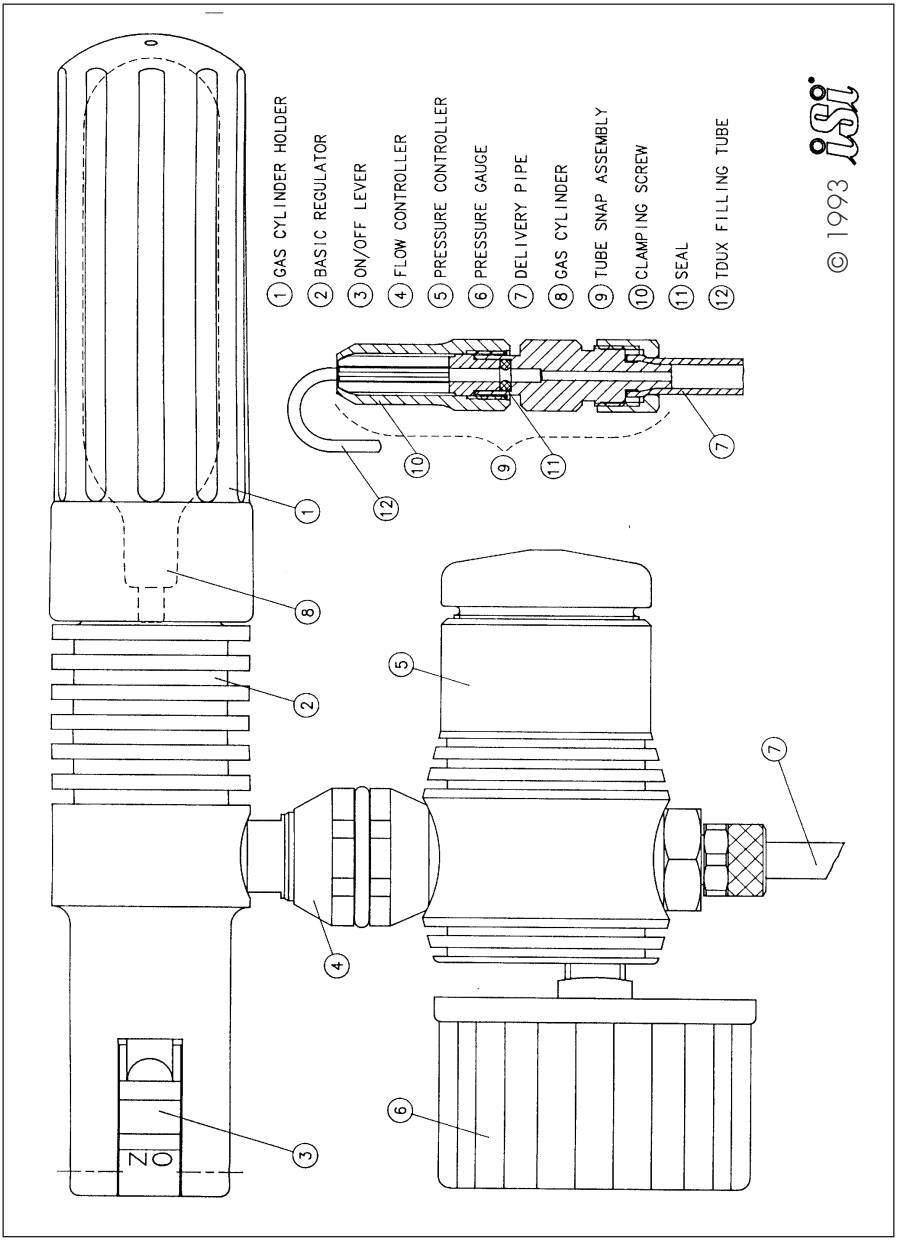
Please refer to the drawing on the back side of this manual.

The following replacement parts are available.

Gas cylinder holder (8)	E7512-0200
Tube-snap assembly (9)	E7512-0220
Pressure gauge assembly (6)	E7512-0240
Delivery pipe (7)	E7512-0260
Sealing "o" ring (11) (R222)	E7000-1131

REPLACEMENT PARTS	DESCRIPTION	ORDERING REFERENCE
 <p>R118</p>	<p>GAS CYLINDER HOLDER</p>	<p>ARTICLE No: E7512-0200</p>
 <p>R220 R222 R221 R223</p>	<p>TUBE SNAP ASSEMBLY (COMPRISING R220, R222, R221, R223)</p>	<p>ARTICLE No: E7512-0220 E7000-1131 ("o" ring: R222)</p>
 <p>R217 R202 R206</p>	<p>PRESSURE GAUGE ASSEMBLY (COMPRISING R206, R217, R202)</p>	<p>ARTICLE No: E7512-0240</p>
 <p>R219</p>	<p>DELIVERY PIPE</p>	<p>ARTICLE No: E7512-0260</p>

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- ① GAS CYLINDER HOLDER
- ② BASIC REGULATOR
- ③ ON/OFF LEVER
- ④ FLOW CONTROLLER
- ⑤ PRESSURE CONTROLLER
- ⑥ PRESSURE GAUGE
- ⑦ DELIVERY PIPE
- ⑧ GAS CYLINDER
- ⑨ TUBE SNAP ASSEMBLY
- ⑩ CLAMPING SCREW
- ⑪ SEAL
- ⑫ TDUX FILLING TUBE



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