



RACING SHOX

## Instructions

Nitrogen Safety Needle

(For use with special FOX Air Valve)

### 1 Warning

The Safety Label affixed to the Nitrogen Safety Needle is shown below (slightly enlarged). Read this label and use extreme caution when using this product.

DO NOT remove this label from product.

<b>DANGER    DANGER    DANGER</b>
<b>Pressurization NEEDLE WARNING</b> <b>Authorized Personnel Only</b>
<b>WARNING: Read Instructions before using. Misuse of product may cause personal injury or death. Avoid puncturing skin with needle. Pressurized air injected thru the skin may be FATAL. Do not release safety mechanism unless RED NOSE inserted in Air Valve.</b>
For information call Fox Factory, Inc. (831) 768-1100

### 2 Gauge Assembly

See Figure 1. Obtain parts as required and assemble the Safety Needle to a pressure gauge per Fig. 1 or similar. Mating threads in the Brass Housing of the Safety Needle are female 1/8" pipe (1/8 - 27 NPT). Provide a Schrader valve as shown to pressurize and depressurize.

For Safety reasons, DO NOT MAKE A FIXED CONNECTION to the pressure source (nitrogen tank or air pressure line). Directly threading a pressure line into the Gauge Assembly would be an example of a "fixed connection"... DO NOT do this! Pressurize via the Schrader valve only!

### 3 Pressurizing Shock Absorber

1a. If shock is mounted on vehicle, be sure you have clear access to the FOX Air Valve. If not, it will be necessary to remove the shock.

1b. If shock is off vehicle, hold shock (or shock reservoir, if so equipped) securely in a vise with the shock air valve toward the upper end.

Clamp on the shock eyelet (for reservoir, clamp at end of reservoir only). Do not clamp on shock shaft or body (or middle of reservoir body), as this could damage the shock. Be sure unit is securely held so BOTH HANDS are free to operate the Nitrogen Safety Needle Assembly and the pressure line.

2. Clean away any dirt from FOX Air Valve area.

3. Remove small screw from center of FOX Air Valve with Allen wrench.

4. Insert RED NOSE of Safety Needle squarely into FOX Air Valve recess.

5. Continue to hold the Safety Needle square with the FOX Air Valve, and press in Safety Release Detent Pin with a fingernail.

6. While holding in Safety Release Detent Pin, push Gauge Assembly fully forward to fully compress the unit (the Brass Housing portion slides into the Sleeve with the Danger label on it). This fully inserts the needle thru the rubber core inside the FOX Air Valve.

7. Continue to firmly hold Gauge Assembly squarely in this position with one hand. With your other hand, apply pressure thru the Schrader valve via a standard air chuck. Have pressure pre-set at the value you want (usually 200 - 250 psi).

8. Hold the air chuck for several seconds to allow pressure to stabilize. After pressure stabilizes, quickly "pop" the air chuck off the Schrader valve (do it quickly to minimize pressure loss).

9. Still continuing to hold Gauge Assembly square with FOX Air Valve, use both hands and allow the internal spring to slowly extend ("un-compress") the Gauge Assembly. This, of course, withdraws the needle from the FOX Air Valve.

10. Remove Gauge Assembly (RED NOSE) from FOX Air Valve.

11. Install Allen screw back in FOX Air Valve.

## 4 De-Pressurizing Shock Absorber

1. Follow Steps #1 thru #6 per above.
2. Press in core of Schrader valve with fingernail or small tool to release pressure. Hold in for a few seconds to allow pressure to reach zero as indicated by gauge.
3. Follow Steps #9 thru #11 per above.

## 5 Principles of Operation

See Figure 2.

1. The needle is normally completely enclosed for safety.
2. The needle only becomes exposed when the Gauge Assembly is compressed (i.e., when the Brass Housing slides into the Sleeve with the Danger label on it).
3. The Safety Release Detent Pin prevents accidental compression of Gauge Assembly and exposure of the needle.
4. There is another safety feature. The center passage of the Safety Needle is blocked by a press-fit steel ball. This prevents any pressure from directly reaching the needle until the Gauge Assembly is compressed.

Pressure can only reach the needle when the Gauge Assembly is compressed far enough for the Sleeve to contact the 2nd O-ring (the visible one). At this point an annular chamber between the 2 O-rings is sealed, and pressure reaches the needle via the small hole angled at 45° past the steel ball. (Prior to this, any pressure is vented to the atmosphere via the cross-hole in front of the O-ring.)

## 6 Maintenance

1. Keep product clean and away from dirt or grit. Storage in a Zip-Lock plastic bag or similar is recommended. Dirt or grit could interfere with smooth operation and could cause plugging of the needle.

2. Lightly lubricate the visible O-ring occasionally to ensure smooth operation. Actuating the mechanism a few times will transfer lubrication to other O-ring.

## 7 Repairs

1. In the event of problems, DO NOT attempt to take apart or repair the Nitrogen Safety Needle. This unit has NOT been designed to be disassembled.
2. For any service or repair work contact Fox Factory, Inc. (831) 768-1100.

## 8 Do's and Do-Not's

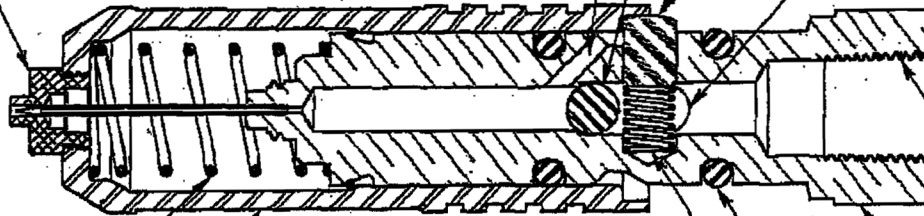
1. DO use extreme caution when using this product.
2. DO keep product out of reach of children and other unauthorized personnel.
3. DO read and understand these Instructions before using product.
4. DO NOT puncture skin with needle. **ABSOLUTELY AVOID accidental injection of pressure thru the skin.**
5. DO NOT make fixed (permanent or semi-permanent) connection to any pressure source. Pressurize only thru temporary connection to Schrader valve with air chuck.
6. DO NOT press in Safety Release Detent Pin and compress Gauge Assembly unless product is inserted in Air Valve and you are ready to use it.
7. DO NOT remove or damage DANGER label on product. If label comes off or becomes illegible, contact Fox Factory for FREE replacement label (831) 768-1100).
8. DO NOT tamper with mechanism.
9. DO NOT allow unauthorized persons to use.
10. DO NOT lose these Instructions. Keep with product. Pass Instructions on to any future users.



Fox Factory, Inc. (831) 768-1100  
www.FOXRACINGSHOX.com



**RED NOSE**  
(Centers in FOX Air Valve counter-bore)



**Pressure Flow Path**  
(Flow thru this orifice only when Sleeve slid back to form sealed chamber between 2 O-rings)

Steel Ball

Safety Release Detent Pin

Cross-Hole (vent)

1/8 - 27 NPT Thds

Brass Housing

O-ring (2 plcs)

Detent Spring

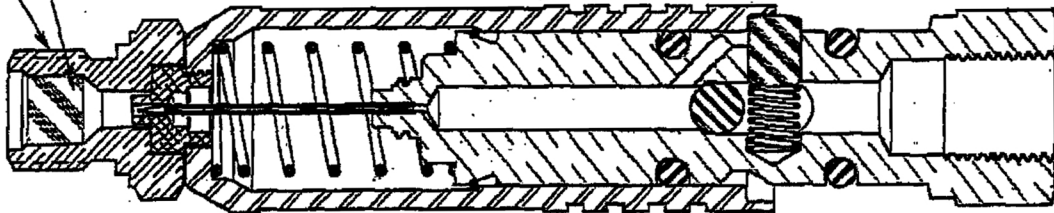
Sleeve

Sleeve Extension Spring

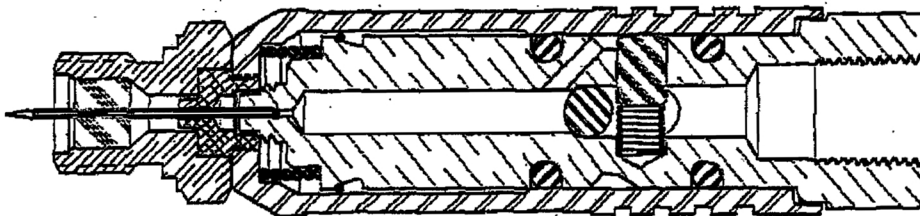
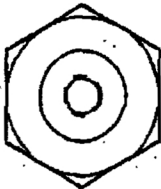
Nitrogen Safety Needle

**FOX Air Valve**  
(in shock absorber)

Rubber Pellet (Ref)



A. Positioned in FOX Air Valve counter-bore



B. At full insertion

Figure 2

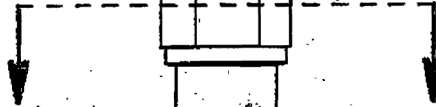


**Safety Release Detent Pin**  
(DO NOT press until RED NOSE  
is inserted in FOX Air Valve.)

**Schrader Valve**  
DO NOT make fixed connection  
to pressure source (for safety).

**Pressure Gauge**  
U.S. Gauge P/N #P500-49611 or equiv.

**FOX Air Valve**  
(In stock absorber)

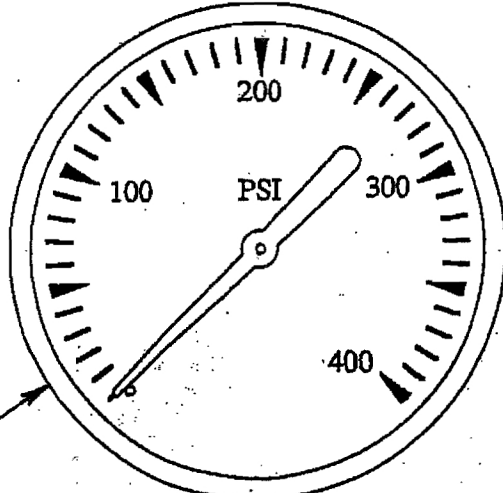


While pressing Safety Release Detent Pin,  
push Gauge Assembly forward into  
Sleeve to insert needle in FOX Air Valve.

**Sleeve**

**RED NOSE**

(Insert in FOX Air Valve counter-bore before  
pressing Safety Release Detent Pin.)



**1/4" to 1/8" NPT Reducer Adaptor**  
Cajon Co. P/N #4-RA-2 or equiv.

**Street Tee, 1/8" Pipe**  
(Female/Female/Male)  
Cajon Co. P/N #2-ST or equiv.

**Recommended Gauge Configuration, Nitrogen Safety Needle**

**Figure 1**