

# Fitting Instructions

Ford Ranger PX3

91003 and 92002 F4R Shock Absorbers

**F4R**  
**FORMULA 4X4**

## Description of Shock

The F4R Formula 4x4 kit for PX3 is a 3-way adjustable remote reservoir coil-over system in the front and a 2-way adjustable remote reservoir shock in the rear, specifically designed to suit your vehicle. The damper uses Fulcrums own high flow digressive piston with carefully chosen shim stacks to create the best damping characteristics for each vehicle.

The front damper is 3-way adjustable, spring pre-load, compression bypass and rebound bypass.

The rear damper is 2-way adjustable, compression bypass and rebound bypass.

The adjustment clickers allow the user to carefully control how much oil is allowed to bypass the shim stacks in each direction. Opening the clickers allows more oil to bypass, reducing the damping effort in either compression or rebound.

This allows tuning for different load scenarios and road conditions.

## Use of adjustments

Please note that before making any adjustments you should always make a note of what settings you have and what you change them too. This will ensure you keep track of the positions and don't get lost. If you are ever unsure wind the clickers all the way clockwise and count back out to the desired position.

Fulcrum recommends the following damping settings as a starting point. (Note that this number of clicks anti-clockwise from the fully closed position.)

Front Compression: 15 clicks

Front Rebound: 10 clicks

Rear Compression: 20 clicks

Rear Rebound: 14 clicks

Due to the heavy-duty design of the damper, it may be required to turn the adjusters one or two more clicks anticlockwise in compression and rebound for the first couple of thousand km, to reduce the stiffness and account for a running in period. Please make is full adjustment range on clickers before install as they may be stiff from assembly.

Spring height can be adjusted using the spanners provided to raise or lower the spring seat. Raising spring seat will increase ride height and lowering will decrease. Each vehicle will differ in how much you need to adjust the spring seat as shock motion ratio differs. Motion ratio is the amount of travel the wheel moves compared to the shock.

Motion Ratio Adjustment Example:

Is you change spring seat height 25mm and gain 50mm ride height, the motion ratio is 2. Is you change spring seat height 30mm and gain 50mm ride height, the motion ratio is 1.67

## How to tune the damping settings

It is important to remember whenever tuning a passive damper, every adjustment is a compromise. An improvement in one area of ride and handling will detract somewhere else. The aim is to create the best compromise for your driving style and scenario.

Problem	Damper Adjustment
Car easily bottoms out.	More compression.
Car feels lazy or unresponsive.	More compression.
Car feels too harsh over bumps.	Less compression.
Car Kicks off bumps.	More rebound.
Car feels floaty.	More rebound.
Car is harsh over cracks or potholes.	Less rebound.
Front is too high.	Reduce front spring pre-load.
Front is too low.	Increase front spring pre-load.

## Installation

### Check spring preload

Initial captured spring length should be 300mm. This will be a suitable spring length for vehicle with bull bars/winches for a 50mm lift. If your vehicle has no bull bar and or winch, adjust the captured spring length to 310mm for a 50mm lift. This vehicle has an approximate motion ratio of 1.86, so to increase the vehicle 25mm in ride height, the spring length will need to reduce 13mm. To adjust, ensure that the spring is compressed off the adjustable spring seat. Losing the clamping bolt and adjust using the provided spanner to required length. Tighten the bolt before releasing the spring. The maximum captured length of this spring is 335mm.

Please note these are suggested spring length values and still may differ depending on the set up and weight of your and vehicle and desired ride height. It is highly recommended that this be completed by your local Fulcrum workshop.

### Install the strut assembly - Front

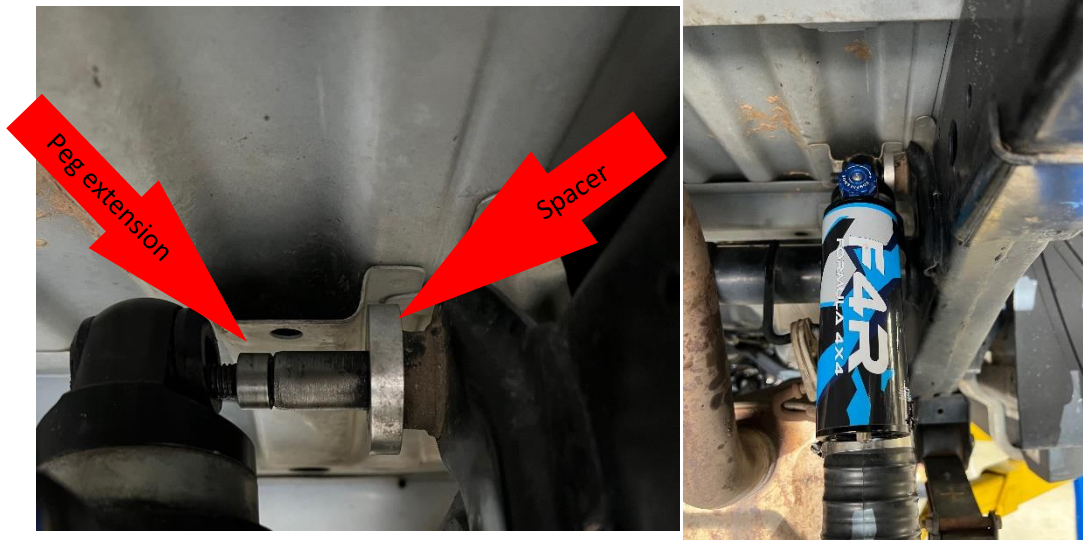
Insert strut assembly into the car. The alignment of strut should be with the bottom mount in place, the top plate mount will have bolt holes in a triangle layout with the point of the triangle away from the engine. Insert and tighten top three strut bolts. Insert lower bolt but do not tighten. This bolt will need to be tightened once the car is on the ground at ride height. The nut used with this bolt also has a plate lock to hold in position to help in tightening this bolt. Refer to images below



Once this stage is complete, other parts that were disassembled to removed existing shock can now be reinstalled and tightened. Once the car is back on the ground, the lower strut bolt can now be tightened

### Install the shock assembly - Rear

Then new shock will mount onto the existing mount points. The shaft end will be mounted to the lower point with the canister mounted above. The spacer kit TRC9010 will need to be used on upper peg. The spacer will slide onto peg and sit up against chassis boss. The peg extension will slide over thread and sit up against end of peg as per image below



### Canister bracket

Make sure you have undone the hose clamps completely and have them placed onto the bracket before installing onto the car.



To instal canister bracket, a supplied socket drive button head screw and nylock nut will be used to attached bracket through and existing hole on the side of the strut tower as shown below. The bracket will be mounted on the side that is towards the front of the vehicle.



Once in place the Canister can be mounted into the bracket as viewed and hose clamps tightened