

Instructions Created by an:

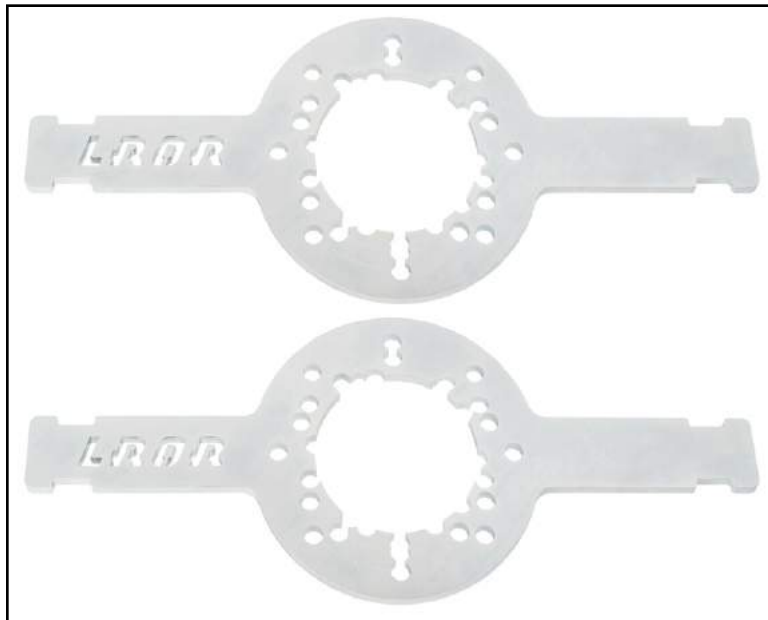


**Automotive  
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Excellence**  
MASTER AUTO TECHNICIAN



## DIY Alignment Toe Set Tool, 5 Patterns (SKU# DIY-TST)

### Installation Instructions



**CAUTION:** Safety glasses should be worn at all times when working with vehicles and related tools and equipment.



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#### Suggested Tools:

- 1/2" Drive Impact Wrench
- Impact Socket: 21mm (or Lug Nut Size)
- Socket: 19mm
- Ratchet
- Combination Wrenches: 28mm
- Measuring Tape
- Torpedo Level (magnetic preferred)
- Angle Gauge (optional)
- Twin Post Lift (or Floor Jack & 2 Jack Stands)
- Pipe Wrench: 18"
- Torque Wrench



**A Note of Explanation and Warning:** Our Toe Set Tool was designed as a fairly accurate way of setting the tow on Off-Road vehicles. It is not intended to take the place of a professional alignment done by an alignment shop. It will assist the “Do-It-Yourself” inclined individual in getting the toe close enough for the trail. Additionally, in the event that you have made modifications and want to get toe close enough to drive to the alignment shop this tool will definitely help you save some of that tire wear, especially if the alignment shop is a long distance away. Also, we have found it helpful in checking and setting camber on IFS (independent Front Suspension) vehicles.

Toe specifications vary widely from vehicle to vehicle. On an off road vehicle, most people have their own preferences as to where they want it set. Some will say 1/8" toe in, some say 1/8" toe out. It will also depend on the size of tires you are running. For simplicity sake we are showing how to set the toe at “0” and that is what these instructions will help you achieve.

This tool and these instructions are intended to get the toe close to where it should be. It is ***not*** intended to be the final toe adjustment. We recommend that your vehicle be professionally aligned to manufacturer recommended specifications as soon as possible after completing these instructions. ***Failure to have your vehicle professionally aligned, could result in improper steering, excessive tire wear and unsafe braking and handling.***

Thanks for choosing Low Range Off-Road. If you have questions about this or any other of our products, please give us a call at 801-805-6644 or email us at sales@lowrangeoffroad.com.





**Vehicle Used for Instructions:**

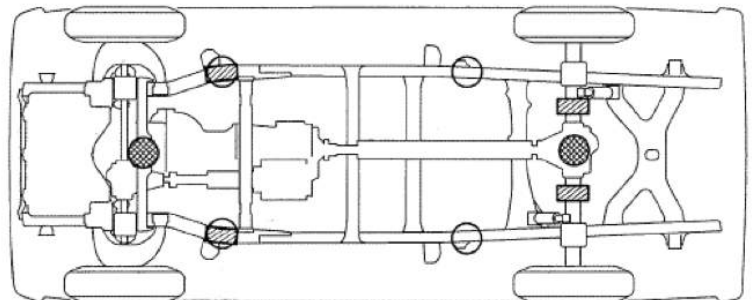
We chose to do our instructions on a 2001 Toyota Tacoma. This rig has a Trail-Gear Rock Assault IFS width (+3inches) with 2006 Toyota Tundra front brakes (rotors and calipers) and IFS wheel hubs, Six-Shooter knuckles and high steer with 1.25" aluminum hex steering rods . Although, these instructions may not directly apply to your vehicle they can be easily adapted to a wide variety of vehicles.

**General Note**

The photographs for these instructions were taken with the vehicle placed on a twin post lift. This allowed for a clearer view and better photographs. However, these instructions can also be used with a floor jack and jack stands to accommodate the majority of our customers. We also used power tools in these instructions but, manual tools can easily be substituted and work very well.



Front ←



● JACK POSITION

■ SUPPORT POSITION

**Step 1**

Lift the front of the vehicle with a floor jack and support it with (2) jack stands. Refer to **Figure 1** for proper floor jack and jack stand support positions.

Note: If you are using a twin post lift, place the lifting pads on the frame or body as per vehicle manufacturer specifications.

**Figure 1**







## Step 2

Remove the driver side wheel assembly using an impact wrench and an appropriate size impact socket. OEM lug nuts are 21mm.



## Step 3

Remove the passenger side wheel as well.



## Step 4

Clean off any rust, dust, mud or debris from the rotor that may exist around the wheel mounting surface area of the rotor.

**Caution:** Failure to do clean this area could prevent the Toe Set Tool from fitting properly which would make the toe readings inaccurate.



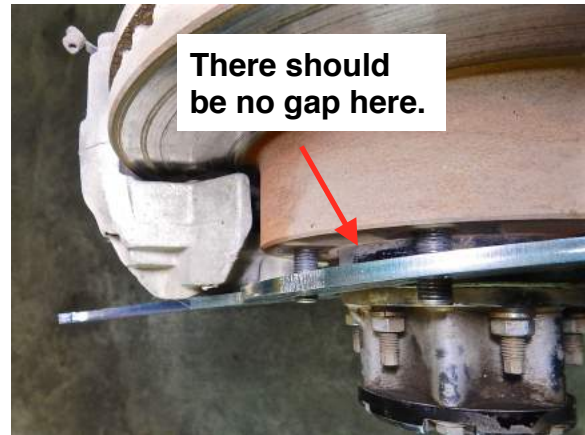
## Tech Tip 4

Clean the area around the wheel mounting surface of the rotor.



## Step 5

Place the Toe Set Gauge on the wheel studs. Be sure the holes align correctly. If the brake caliper prevents the Toe Set Tool from sitting flat against the wheel mounting surface of the brake rotor, the brake caliper will need to be removed. If the brake caliper does not interfere with the Toe Set Gauge fitment, skip to **Step 12**.



## Tech Tip 5

This shows the brake caliper interfering with the Toe Set Gauge.





## Removing the Brake Calipers



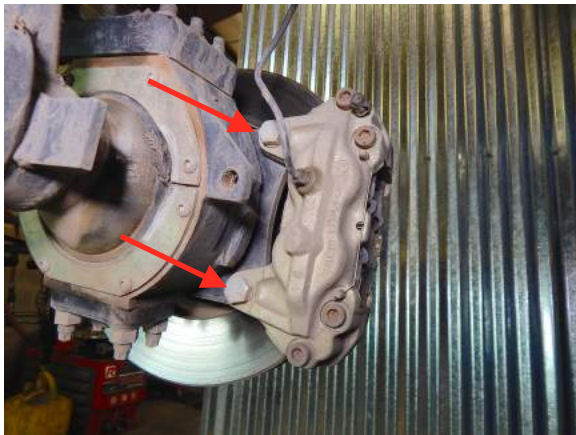
### Step 6

Move the outboard brake pad away from the brake rotor by clamping the metal part of the brake pad and the caliper housing using channel lock pliers. The pad only needs to be moved a little, about 1/8 inch or less.



### Step 7

Repeat the previous step on the inboard brake pad



### Step 8

Remove the (2) caliper mounting bolts using a 19mm socket.



### Step 9

Remove the brake caliper and . . . .



## Step 10

... secure the caliper out of the way.

Note: The caliper could be suspended by a bungee cord or wire. We used zip ties. It is best to avoid suspending the caliper by the hose as hose damage could result, causing the hose to fail prematurely.



## Step 11

Remove the driver side caliper and secure it back out of the way.

## Installing the Toe Setting Tools



## Step 12

Position one of the Toe Set Tools on the driver side wheel studs.

Note: The Toe Set Tools are not side specific. They will work on either side of the vehicle.



## Step 13

Install:

- 3 lug nuts on a 5 and 6 lug vehicle
- 4 lug nuts on an 8 lug vehicle





### Step 14

. . . tighten them down an estimated 25 ft. lbs. Just snug, is enough.



### Step 15

Level the Toe Set Tool using a torpedo level.



### Tech Tip 15

An angle gauge could be used to level the Toe Set Tool if that is what you have available.

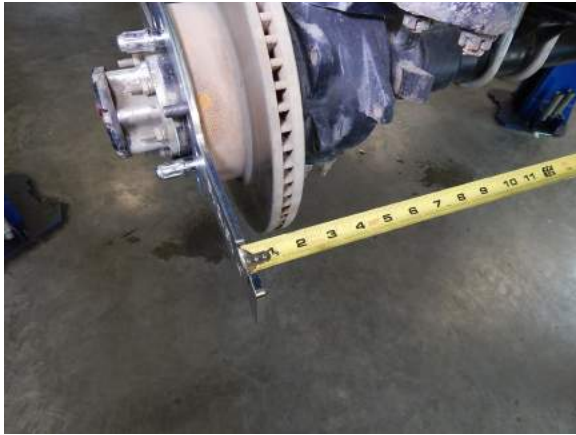


### Step 16

Install and level the other Toe Set Tool on the passenger side.

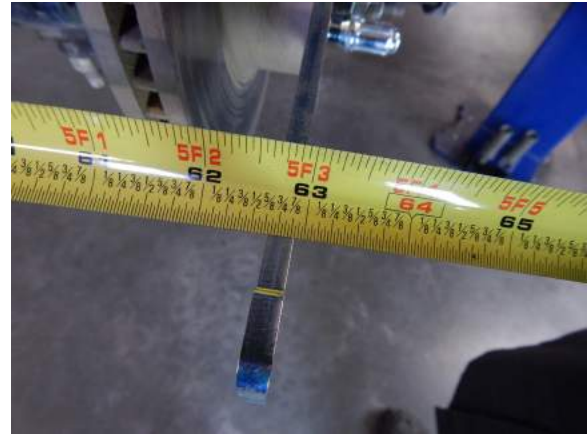


## Taking the Toe Measurements



### Step 17

Hook the measuring tape on the front of the passenger side Toe Set Tool as shown.



### Step 18

Measure to the outside of the driver side Toe Set Tool and record the measurement.



### Step 19

Notice our front measurement is about 62 - 7/8" (+ or - 1/16")



### Step 20

Now hook the measuring tape on the back of the passenger side Toe Set Tool as shown.





## Tech Tip 20

If anything interferes with the measuring tape being straight (such as the differential as shown here) it may be necessary to measure at the bottom of the Toe Set Tool.



## Step 21

This shows the measuring tape placed on the bottom of the Toe Set Tool to avoid obstacles.



## Step 22

Measure to the outside of the driver side Toe Set Tool. Notice our measurement is about 62 - 3/4"

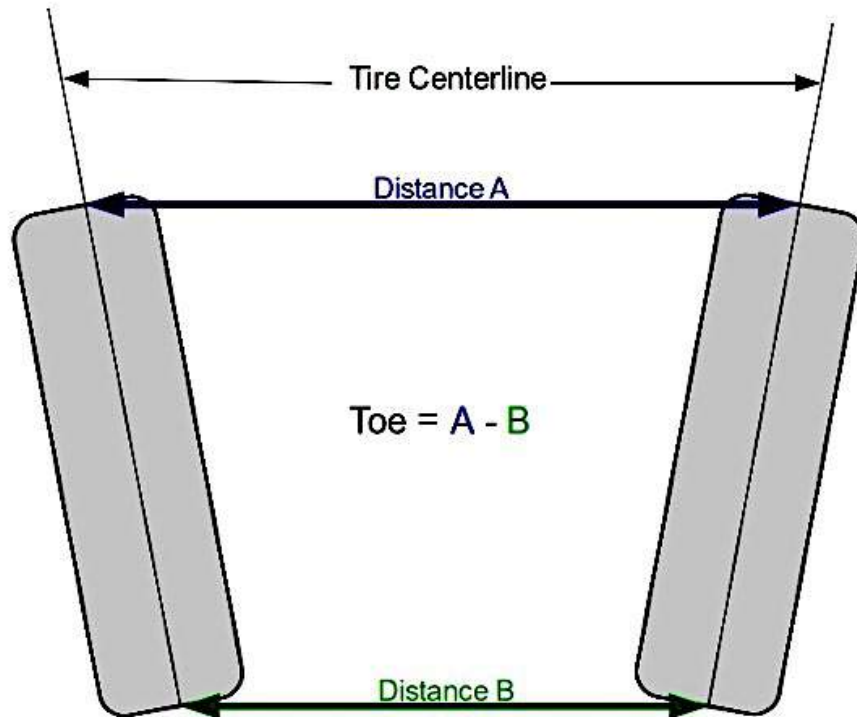


## Tech Tip 23

Closer view of the reading.

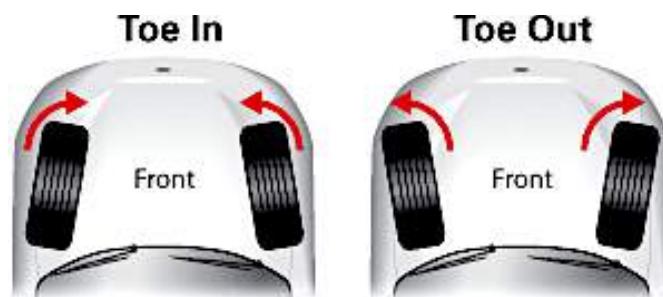


## Analyzing the Measurements



## Toe

Toe means the difference in measurement from the forward most part of the tire, compared to the rear most part of the tire, measured in inches (or mm).

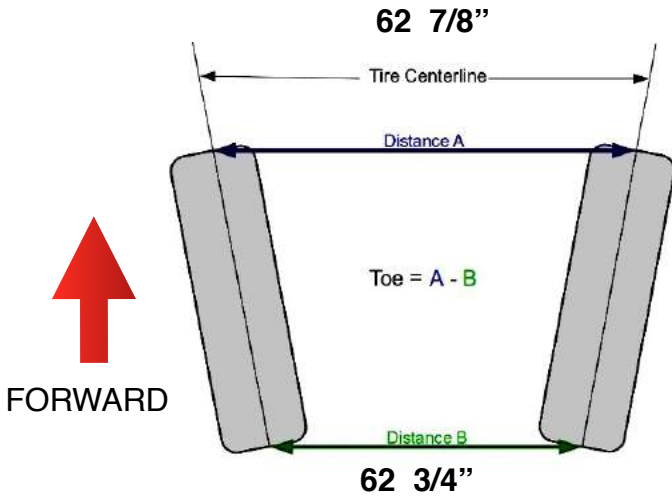


## Toe-In or Toe-Out?

If the front of the tires are closer together than the rear, the tires are said to be **TOWED IN** (or sometimes referred to as positive toe). If the tires are closer together in the rear, the tires are said to be **TOWED OUT** (or negative Toe). If the tires are equal, front and rear, the toe is said to be **ZERO TOE**.







$$\begin{array}{r}
 62 \frac{7}{8}'' \text{ or } 62 \frac{14}{16} \\
 -62 \frac{3}{4}'' \text{ or } 62 \frac{12}{16} \\
 \hline
 2/16 \div 2 = 1/16 \\
 \\
 62 \frac{12}{16} \\
 + \quad 1/16 \\
 \hline
 62 \frac{13}{16}
 \end{array}$$

### Step 24

In our example the front measured 62 - 7/8" and the rear measured 62 - 3/4". When you subtract these two numbers you get a difference of 1/8"; and since the tires are closer in the rear than in the front, this vehicle is TOWED OUT 1/8".

### Objective

Since our objective is to accomplish "0" toe the toe will need to be adjusted to where the reading is equal front to rear. And since the difference between front and rear is 1/8", we will need to adjust the tow about half that amount or 1/16". That means we will need to adjust the toe until both measurements (front and rear) are 62 - 13/16".



### Step 25

This is our measurement after adjusting the toe.

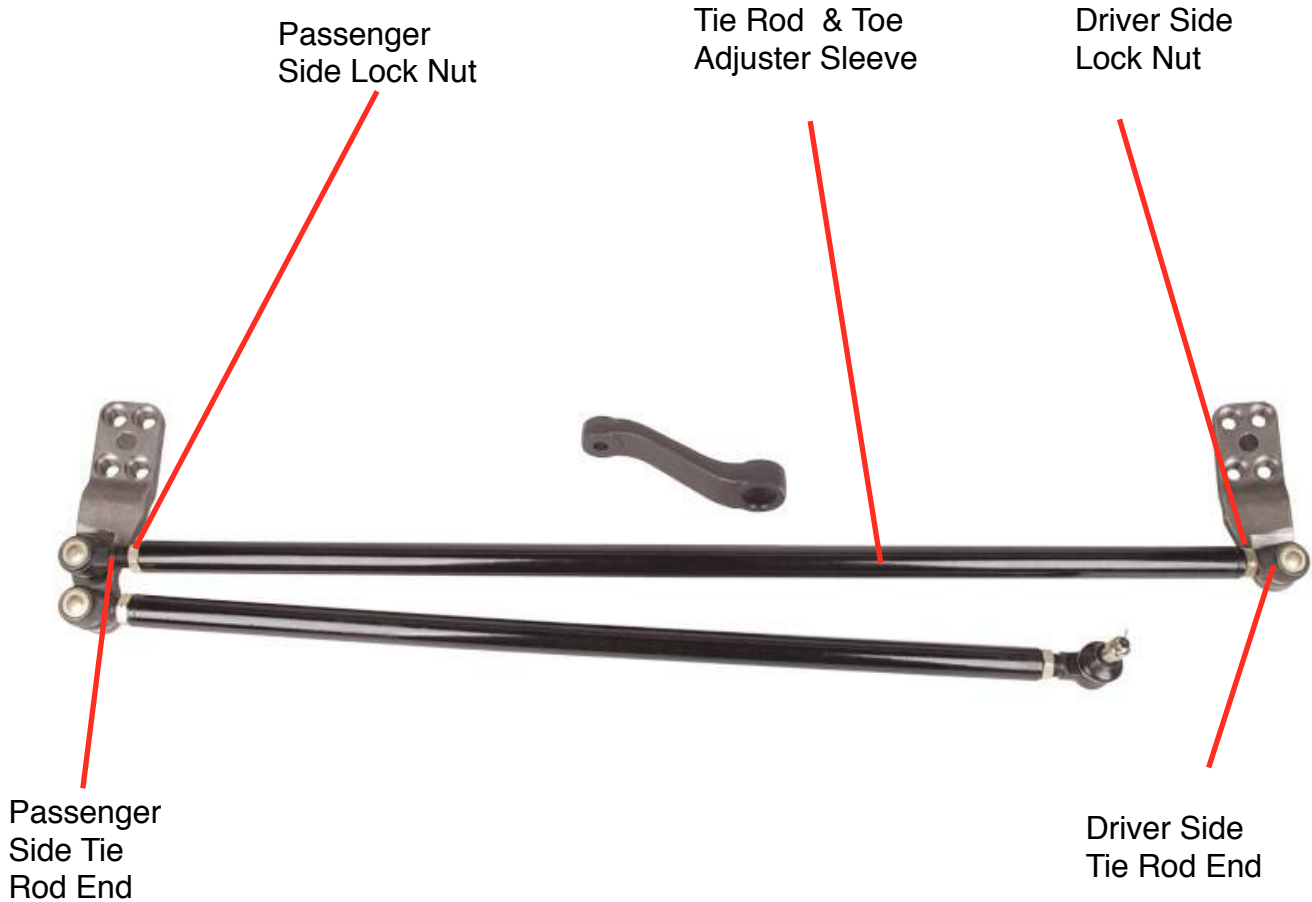


### Step 26

Closer View of the measurement. It is about 62 - 13/16".



## Steering Parts Identification



## Adjusting the Toe on a Solid Front Axle Vehicle



### Step 27

Place the steering wheel in the level (or straight ahead) position and place the ignition key in the “Lock” position.



### Step 28

While holding the tie rod and toe adjuster sleeve with a pipe wrench, loosen the driver side lock nut. The lock nut on the vehicle we worked with was a 28mm wrench size. Yours may be



### Step 29

While holding the tie rod and toe adjuster sleeve with a pipe wrench, loosen the passenger side lock nut.

**Caution:** This lock nut is reverse threaded.



### Step 30

Rotate the tie rod and toe adjuster until the correct measurement is obtained.





### Step 31

Once the correct measurement is obtained, tighten both (driver and passenger side) lock nuts.



### Step 32

Recheck the toe measurement. If it is still good 0" (+ or - 1/6") the toe is set. If not, repeat Steps 28 through 31 until accurate toe measurement is attained.



### Step 33

Remove both (driver and passenger side) Toe Set Tools.



### Step 34

Reinstall both (driver and passenger side) brake calipers.



### Step 35

Torque the caliper bolts to 80 ft. lbs.



### Step 36

Replace both front wheels.



### Step 37

Torque the lug nuts in an increasingly tighter criss cross pattern until 81 ft. lbs. is reached.

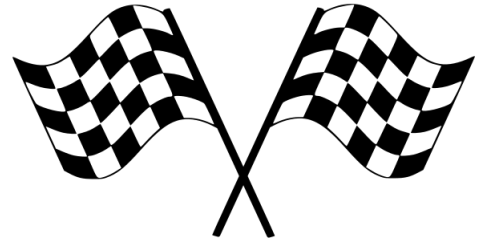
Note: This can be done with either a torque stick (as shown here) or a torque wrench and socket.



### Caution

**If the brake calipers were removed during this procedure, be sure to pump the brake pedal until it feels normal (stops about half way to the floor and becomes solid) before moving the vehicle. Failure to perform this step could result in having no brakes the first time brakes are applied.**





## Warning!

This tool and these instructions are intended to get the toe close to where it should be. It is not intended to be the final toe adjustment. We recommend that your vehicle be professionally aligned to manufacturer recommended specifications as soon as possible after completing these instructions. **Failure to have your vehicle professionally aligned, could result in improper steering, excessive tire wear and unsafe braking and handling.**

## Congratulations!

You have successfully adjusted the toe.

We hope these instructions have been helpful. If you have suggestions on how to make these instructions (or products) better, please email us at: [sales@lowrangeoffroad.com](mailto:sales@lowrangeoffroad.com)





As always, If you experience any difficulty during the installation of this product please contact Low Range Off-Road Technical Support at 801-805-6644 M-F during regular store hours. Thank you for purchasing from Low Range Off-Road.



These instructions are designed as a general installation guide. Installation of many Low Range Off-Road products require specialized skills such as metal fabrication, welding and mechanical trouble shooting. If you have any questions or are unsure about how to proceed, please contact our shop at 801-805-6644 or seek help from a competent fabricator. Using fabrication tools such as welders, torches and grinders can cause serious bodily harm and death. Please operate equipment carefully and observe proper safety procedures.

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