2021 TEO PRO CAR BASELINE SETUP GUIDE

A step by step guide on how to setup your race car

******** The following setup paraments shall be set before the car is placed on the ground ********

Birdcage Settings

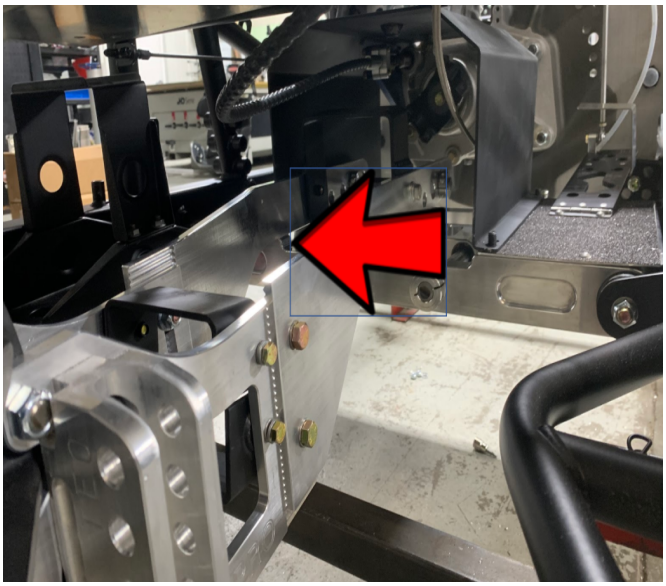
- ***Set the birdcage angle to match the rear-end cover. Birdcage timing can be set in the car or on the bench.***
- ***Measure birdcage angle by placing an angle finder on the machined flat edge on the backside of either the torsion or coil birdcages.***
- ***Use adjustment screws to alter birdcage timing until the birdcage angle matches the rear-end cover angle.***
- ***Coil Birdcage Location***
    - ***LR 7 ¼" l/s end bell to l/s inner birdcage plate***
    - ***RR 13 ¾" r/s end bell to r/s inner birdcage plate***
- ***Position torsion birdcage to center torsion bar arm on roller. Check side to side clearance through the full range of suspension motion with the***

Wheels Size

- ***LF 10x4 / RF 12x5 / LR 13x5 / RR 13x5 or 13x4***
- ***Use 13x5 LR wheel without wheel spacer when using a +2" axle tube***
- ***Use +2 spacer with 13x5 LR wheel and standard length LR axle tube***
- ***Use +2 spacer with 13x5 RR wheel***
- ***Use +1 spacer with 13x4 RR wheel***
- ***RR Axle Length 33 ½"***
- ***LR Axle length 25 ½" w/ standard length tube 27 ½" w/ +2" tube***

Torque Arm Settings

- ***A standard Teo torque arm allows for pinion angle adjustment by adjusting the front and rear torque plate mounting location relative to each other using the serrated notches on plates***
    - ***Big Block = 4 notches showing***
    - ***Small Block = 4 notches showing***
    - ***Crate - 0 notches showing***
- ***Standard torque arm shaft settings is hole 3 (from front) Location is track dependent!***



******CHECK TORQUE ARM CLEARANCE AROUND RUBBER FLOOR BLOCK & FRAME UNDER FULL DROOP******

Shock Extensions

- ***Proper shock extensions are a crucial part of chassis handling***
- ***Shock extensions set the front and rear axles in the proper orientation to ensure the proper shock travels, droop, and center to center measurements***
- ***Shock extensions are measured by having the car fully jacked up so all four shocks are fully extended.***
- ***Please follow the instructions below for setting shock extensions***

<u>Right Rear Shock Extension</u>

1. ***Full shock extension should hold the rear end tube ½" off the subframe under the rear.***
2. ***The easiest way to do this is to put ½" spacer under the tube and tighten the upper shock slider when shock is at full extension.***

<u>Left Rear Shock Extension</u> ***(Suspension Limiter Disconnected)***

1. ***Full shock extension should hold the rear end tube 3/4" Above the bottom of the 2x4.***
2. ***To check this use a straight edge off the bottom of 2x4. The Rear end tube should sit 3/4" above the top of the straight edge.***
3. ***LR Droop Measurement can range from 0" to 1 ½ "***

<u>Left Front Shock Extension</u> (Be sure to measure below the axle not the tie rod) -

1. ***Full shock extension should hold the front axle 1" off the lower subframe.***
2. ***Use a 1" spacer between the subframe and front axle and tighten the upper shock slider when the shock is at full extension.***
3. ***Be sure the shock tipped slightly ahead so spring can not hit the axle.***
4. ***LF Droop can range from 1" to 2.5" above the Subframe***

<u>Right Front Shock Extension</u>

1. ***At full shock extension the upper shock Slider should be 1.5" Higher then LF slider.***
2. ***Be sure to measure up to the bottom of the front shock sliders as a reference in case you have different length bolt in shock towers.***

Rear Panhard

- ***<u>Right Side Panhard</u> - Start in the 2nd hole up on the chassis bracket and one hole down on the rear end panhard mount. Standard Length right side panhard is 15".***
- ***<u>Left Side Panhard</u> - Start in hole 2 on the chassis bracket (outside set of holes) and top hole on the rear end panhard mount.***
    - ***Teo Panhard mounts have the option of both 12 ½" and 11" panhard bar by using the Outer set of holes for the 12 ½" and inner set of holes for the 11"***
    - ***12.5" Is Recommended***
- ***<u>Left Side J Bar -</u> Start in 3rd hole up on chassis bracket (inside set of holes) and the 3rd hole down on rear end bracket***

Front Panhard

- ***The top hole (closest to the axle) on the front axle drop bracket is the front panhard bar starting point***
- ***For all Teo chassis with double shear front panhard bracket start in the bottom Hole on the Bracket***
- ***For all Teo chassis with a slider style front panhard bracket start 1" above the subframe***

Radius Rod Location

Short Rear Radius Rods

- ***18" radius for left and right side***
- ***Left Side - 3rd hole from bottom***
- ***Right Side - 2nd hole from bottom***

Standard Length Rear Radius Rods

- ***27.5" radius rod for left and right side***
- ***Left Side - 3rd Hole from bottom***
- ***Right Side - 2nd Hole from Bottom***

******** The following setup paraments shall be set with the car on the ground at baseline ride heights: 5 1/4" front and 6½" ********

Ride Heights

- ***All tire pressure should be set prior to adjusting ride heights***
- ***Recommended Tire pressures***
  - ***Hoosier:***
    - ***8 LF 9 RF***
    - ***7 LR 10 RR***
  - ***American Racer:***
    - ***8 LF 9 RF***
    - ***7 LR 11 RR***

- ***Front and rear ride heights must be set before measuring and adjusting other setup parameters***
  - ***Front ride heights 5 ¼" & rear ride heights 6 ½"***

Rear Shock Angle

- ***Rear shocks should be tipped inward toward the center of car at ride height***
  - ***RR shock angle 12 degrees***
  - ***LR shock angle 10 degrees***

Front End Alignment & Setup

Front Castor

- ***Before aligning your front end make sure the castor is 11 degrees***
- ***Castor is measured off the bottom of the front steering arm (machined flat surface) using a digital angle finder.***
- ***Be sure the wheel is straight when checking!***

******THIS SHOULD BE DONE ON THE GROUND WITH TIRES ON!******

Squaring Front Axle

- ***To square the front axle front to back measure from the back of the shock towers to the front edge of the front axle. 1 ½" is the standard axle square measurement.***
- ***Use a 1 ½" spacer for a precise measurement***
- ***If using an ABS rod, break the rear jam nut free and adjust the rod length until the scribe mark on the rod is even with the ABS rod housing. This step should be completed after the camber & castor has been set.***

********THIS SHOULD BE DONE ON THE GROUND WITH TIRES ON !********

Centering the Front Axle

- ***To center the front axle from side to side measure from the inside of the left front axle bracket to the frame***
  - ***½” 2015 & older chassis and 2021***
  - ***1½” 2016 -2020 Chassis***

********THIS SHOULD BE DONE ON THE GROUND WITH TIRES ON!********

Measuring Front Camber

- ***Camber is measured off the front brake rotors using a digital angle finder***
- ***Standard front axle camber***
  - ***LF -1.0 degree & RF -2.5 degree***
- ***High camber front axle***
  - ***LF -3 degree & RF -6 degree***

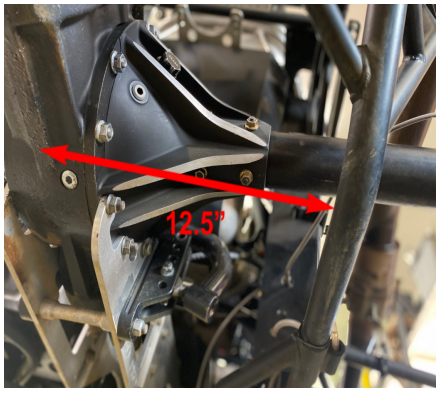
IT IS IMPORTANT TO CHECK CAMBER WEEKLY TO MAKE SURE FRONT AXLE IS NOT BENT

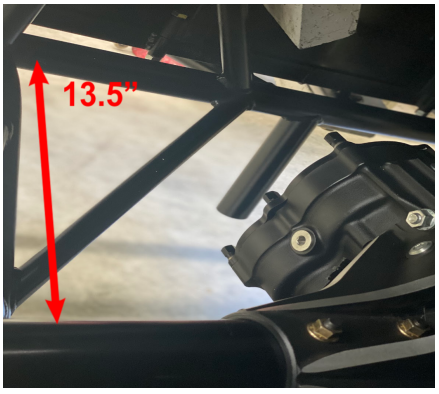
***** THIS SHOULD BE DONE ON THE GROUND W/ TIRES ON!*****

Rear End Alignment

Squaring the Rear End

- For all coil chassis (without rack), chassis rear square is measured from the cross member behind the rear to the back of the rear end tube and mostly accurately measured using a framing square or plumb bob
- 2021 (coil chassis) rear square is 14” from the rear cross member to the back of the rear end tube
- 2020 & older (coil chassis)rear square is 13.5” from the rear cross member to the back of the rear end tube
- Standard rear square for a torsion bar car is 13.5” and 12” on the left and right side respectively





THIS SHOULD BE DONE ON THE GROUND WITH TIRES ON

Centering Rear End

- To center the rear end measure from the inside of the lower right subframe to the rib located on the bottom of the rear between the center section and rear cover.
- Standard rear end center is 12.5" between these points.
- Do not center the rear end using the torque arms!

THIS SHOULD BE DONE ON THE GROUND WITH TIRES ON

SpringRod

- Spring Rods should only be used on slick tracks
  - Heavy/ Medium grip: 3¾" @ 150 psi
  - Slick: Open spring rod and decrease gas pressure as necessary based on track condition, full open 4-¼" @ 90 psi

Loaded Spring Height & Shock Center to Center

- Note loaded spring height and shock center to center once ride heights and wheel loads (wedge, left side percentage, rear percentage) and all other setup parameters have been set
- Loaded spring height is measured from the bottom of the coil over nut to the top of the bottom coil-over cup.
- Shock center to center is measured from the center of the top mounting bolt to the center of the bottom mounting bolt
  *****THIS SHOULD BE DONE ON THE GROUND WITH TIRES ON AT RIDE HEIGHT!****