Packing List & Components

QuickTrick® 5th Gen QuickString™ 4-Wheel

COMPONENTS

• CASTER/CAMBER VERTICALS	4
• TOE BARS W/QUICKTRICK STRINGER & STRING	4
• QUICKTRICK DIGITAL GAUGE	2
• GAUGE ATTACHMENT BRACKETS – ATTACHED	2
• ATTACHMENT PINS W/CAPS & Allen Wrench	12
• QUICKTRICK BACKUP BUNGEES	4
• QUICKTRICK CARRYING CASE	1
• INSTRUCTIONS	1

QuickTrick QuickString 4-Wheel Instructions

Prior to Start

Unpack your QuickTrick system and verify all components are present.

- Please empty all case pockets prior to checking parts.
- Test your QuickTrick gauge to ensure a repeatable measurement.
    - Remember the gauge is accurate to within 1/10 degree which makes it very sensitive.
    - If you believe you are not getting repeatable measurements, please go through the steps to recalibrate found at the video link below:
        - http://www.youtube.com/embed/jLHIp_wKdQE
- Attach Pins to toe bars (Pins with 3/8" bolt and washer) by sliding the bolt and washer on the smaller hole to the right and left of center, insert pin through larger hole on other side of toe bar and screw onto inserted 3/8" bolt.
- Loosen bolts holding rulers in place with the enclosed allen wrench. Square the rulers to the toe bar (pictures below) and tighten the bolts to hold the rulers in place.

- Attach 2 remaining Pins to Verticals by **removing top nut** and screwing onto the knob/bolt in the correct hole or slider depending on your system.
- Attach QuickTrick frames to rims and use backup bungees if needed for grip
- Apply pressure on the bumper a few times to make sure your suspension settles.
- Zero out gauge in front of tire you are taking measurement from prior to placing on bracket.
- Ensure Toe bar is level and vertical is at 90 degrees.
- Make sure your vehicle is on a hard surface.
- ***See next page if you have extensions for clearance.

Extension Kit

Components:
6 3/4” Spacers
2 2” Bolts
4 1 3/8” Bolts (Uses your current QuickTrick Allen Wrench)
1 – Allen wrench for use with 2” Bolts

Need extra length between your rim and QuickTrick?

Utilize the extension kit as pictured below. Your spacers may be different lengths based on your QuickTrick kit design. Make sure to use the spacers to keep your lengths consistent.

For toe bar extensions, use this order to ensure proper fit:

1. **Insert shortest bolts through toe bar smallest hole**
2. **Place spacer on bolt (Spacer will slide into toe bar to ensure even distribution between vertical and toe attachment pins**
3. **Screw pin on bolt to align with spacer**
4. **Insert longer bolt (instead of knob) through top of vertical caster/camber bar**
5. **Place spacer on bolt before screwing on attachment pin**

Now you are ready to check your alignment.

Caster, Camber & Toe (In that Order)

Always check tire pressure and settle your suspension prior to getting measurements.

Tips:

1. **The String used is 1/16th inch. Make sure you are always reading measurements from the same perspective to avoid a false measurement.**
2. **After you string one side, check your tires/steering wheel again to ensure everything is straight and centered. If not, take appropriate action and read measurements again.**
3. **QuickTrick's digital gauge is certified and tested by every known authority. The gauge is accurate to within 1/10 degree. That is about the width of a single sheet of paper. Getting exact, repeat, measurements is difficult but they readings should be close if you check caster or camber the second time.**
4. **Make sure to use scotch blue or some protection between your attachment pin and wheel to avoid scratching the rims.**
5. **The caster/camber bars should have long slot at the top of the tire. If you have clearance issues with the fender, you can reverse the slot to the bottom.**
6. **Always remove the nuts from the top of the caster/camber bars for direct attachment to the pin. The nuts are strictly to hold the knob in place during shipping or when the pin is removed.**

CASTER: With and without toe plates, Caster is a lot easier than most people think.

1. Center your steering wheel (use a small piece of tape for reference as you measure)
2. Place the QuickTrick frame on the wheel you are measuring.
3. Use the gauge to determine the vertical is at 90 degrees (Make sure it is on the mode for degrees and not inches)
4. Make sure your tires are straight and center the steering wheel.
5. Affix the gauge onto 2" bracket on vertical bar
6. Turn the wheel inward until the tire you are measuring is at 20 degrees. Zero the gauge
7. Turn the steering wheel 20 degrees in the opposite direction
8. Read the gauge. Multiply the reading by 1.5 and this is your caster measurement. (Additional information on Caster listed on additional pages)

CAMBER:

1. Level the camber gauge in front of the tire. This is accomplished by placing the gauge in front of the tire and wheel you are checking. Turn the gauge on and the first reading you will see is the level of the surface you are working on. Example: If the reading on the gauge is 1.0 followed by the ^ arrow, this indicates the surface you're working on is 1.0 degrees positive, the opposite would show on the gauge as 1.0 v or negative. Simply hit the zero button and the gauge will recalibrate and show on the screen as 0.00 and will hold this recalibrated number until it is reset.
2. Adjust vertical for wheel height and size and attach the QuickTrick frame to either side. Make sure you are working on a totally flat surface against the wheel and the vertical is at 90 degrees prior to placing your gauge on the 2" gauge bracket.
3. Checking Camber. Place the gauge on the gauge bracket and record your camber. Example: 0.7 v indicates this wheel has less than 1 degree of negative camber. The only thing you really need to remember when using the gauge is ^ is positive, v is negative for camber.
4. Repeat on opposite side of vehicle.

TOE & Thrust Angle (Squaring the car):

Centering your steering wheel and keeping it centered is critical to accurate measurements. We highly recommend a steering wheel holder. You can use one you have, make one or grab a QuickTrick Steering Wheel Holder. This will eliminate a lot of frustration and help you be successful in your goals.

You can square your vehicle and check for dog tracking with one side at a time (rear and front) or a 4-Wheel set up all at once.

1. Make sure your slotted rulers are on the back of the rear tire toe bar and the front of the front tire toe bar.
2. Always ensure your frames are still squared after checking/adjusting caster and camber
3. Ensure your steering wheel is straight and all tires are pointing forwards as straight as possible.

Now you are ready to check toe and thrust angle

1. Readings are taken from the non-slotted rulers which should be positioned on the rear of the toe bar for front tires and on the front of the toe bar for rear tires. (As shown below)
    a. Your actual measurements should always be read from the same location to avoid a skewed angle.

Checking thrust angle with a variable track width

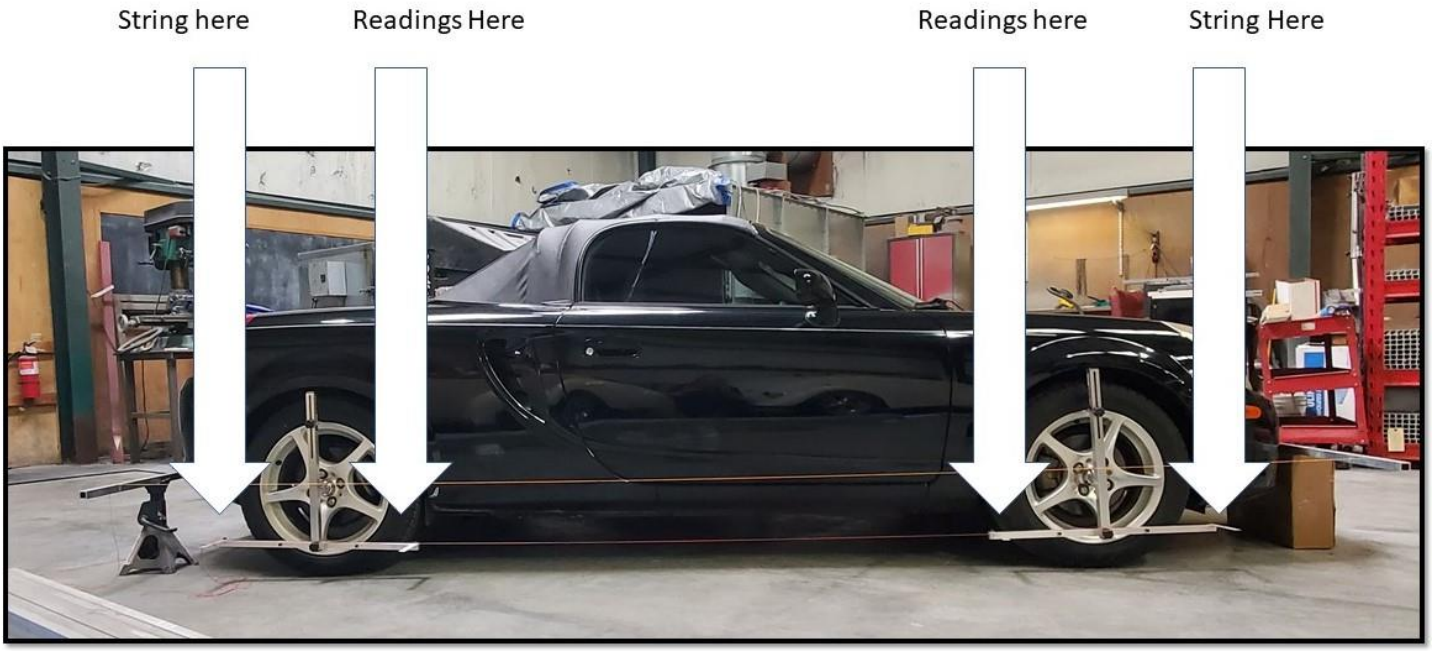
What if I have off-set tires?

- The key to offset tires or a varied track width is to know the difference between front and back.
- The easiest way to determine set up for these situations is to set up your QuickTrick frames on the rims. Then run a tape measure from the rear of the front driver's side to the rear of the front passenger side and get the total measurement and then repeat this on the back tires.

Example on a smaller sports car:

- Tires are 7″ wide on front and 8.5″ wide on the rear.
- *Track width when measuring as defined above is: 58" front track width and 60" rear track width*
- This gives you the difference without having to calculate the tire offset in addition to track width.
- With this example, your rear is 2″ wider than your front. That will be equal to 1″ on each side. So, you will start your string at the 3″ mark in the back and you know it should be at the 4″ mark in the front to allow for the extra inch from the rear offset.

***Side note: You will see a string across the middle of the tire (in the picture below) as well as the QuickTrick set up. We have repeatedly measured from both points with the same results.



Adjust as needed based on your specs and your vehicle set up requirements.

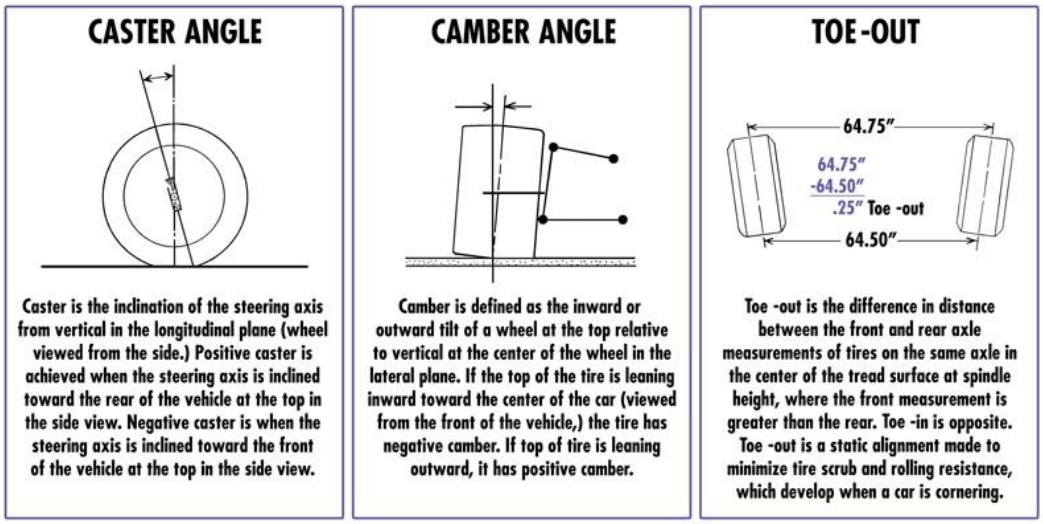
If you have questions, call us, email us or chat with us live on the website.

Team QuickTrick **info@quicktrickalignment.com**

205-475-2419 **https://quicktrickalignment.com**

ADDITIONAL ALIGNMENT INFORMATION AND TIPS

Caster, Camber & Toe (In that Order)



CASTER: With and without toe plates, Caster is a lot easier than most people think.

Center your steering wheel (use a small piece of tape for reference as you measure)
Place the QuickTrick frame on the wheel you are measuring
Use the gauge to determine the vertical is at 90 degrees (Make sure it is on the mode for degrees and not inches)
Make sure your tires are straight and center the steering wheel
Place the gauge on the 2" bracket on the vertical
Turn the wheel until the tire you are measuring is at 20 degrees and zero out the gauge.
Turn the steering wheel back to the center.. then 20 degrees in the opposite direction
Read the gauge
Multiply the reading by 1.5 and this is your caster measurement. In most cases, your caster will be positive. (The 1.5 is the closest calculation possible to actual caster as confirmed by MIT Engineers)

*****IMPORTANT NOTE: The digital gauge arrows for caster readings are irrelevant in modern cars. If you have a bias ply set up (older vehicles) rather than radial, the arrows are correct. On radial tires, you can safely assume the caster reading is always positive.**

CAMBER:

Level the camber gauge. This is accomplished by placing the gauge in front of the tire and wheel you are checking. Turn the gauge on and the first reading you will see is the level of the surface you are working on. Example: If the reading on the gauge is 1.0 followed by the ^ arrow, this indicates the surface you're working on is 1.0 degrees positive, the opposite would show on the gauge as 1.0 v or negative. Simply hit the zero button and the gauge will recalibrate and show on the screen as 0.00 and will hold this recalibrated number until the zero button is pushed again.

Adjust for wheel height and size and attach the QuickTrick verticals to wheels. Make sure you are working on a hard surface against the wheel and the vertical is at 90 degrees prior to placing your gauge on the horizontal gauge bracket.

Checking Camber. Place the gauge on the gauge bracket and record your camber. Example: The only thing you need to remember when using the gauge is ^ is positive, v is negative.

Repeat on opposite side

Suspension adjustment	**Effect on vehicle balance,** ***extreme useable adjustment limit***	**Symptom of TOO MUCH adjustment**

Front spring rate increase	More understeer	Terminal understeer, front of car hops in corners, excess wheel spin in FWD car
Front spring rate decrease	Less understeer	Too much oversteer, oversteer then understeer if spring is so soft that the car bottoms under lean, car bottom excessively with a jolting ride
Rear spring rate increase.	More oversteer	Too much oversteer, hop in corners, twitchy
Rear spring rate decrease	Less oversteer	Car understeers, if way to soft car understeers then oversteers as car bottoms out under lean, car bottoms out excessively with a jolting ride
Front antisway bar stiffer	More understeer	Terminal understeer, Lifts inside front tire off the ground which can cause massive wheel spin, also not good for most effective tire usage as inside wheel is now doing nothing

Front antisway bar softer	Less understeer	Oversteer
Rear antisway bar stiffer	More oversteer	Big time oversteer, Can cause the inside rear tie to lift off the ground which is not too bad on a FWD car. On Classics, if this happens while trail braking into a turn, the abs can shut the brakes down which can be a bit scary

Rear antisway bar softer	Less oversteer	understeer
Front tire pressure higher	Less understeer Except with BFG R-1 tires. They will grip less and understeer more if the pressures are increased within a reasonable amount.	No traction as tire is crowned so more understeer, bad wheel spin, jarring ride, center of tires wear out
Front tire pressure lower	More understeer Except with BFG R-1 tires. They will grip more and understeer less if the pressures are decreased within a reasonable amount.	Edges of tires wear quickly because tire is folding over, feels mushy, tires chunk because low pressure means more heat build up
Rear tire pressures higher	Less oversteer Except with BFG R-1 tires. They will grip less and oversteer more if the pressures are increased within a reasonable amount.	No traction as tire is crowned so more oversteer, bad wheel spin on RWD cars, jarring ride, center of tire wears out
Rear tire pressures lower	More oversteer Except with BFG R-1 tires. They will grip more and oversteer less if the pressures are decreased within a reasonable amount.	Edges of tires wear quickly because tire is folding over and cupping upward, feels loose in back, tires chunk because low pressure means more heat build up
More negative camber on front wheels	Less understeer/ *-3 degrees*	Poor braking, car is road crown sensitive, twitchy, tires wear out on the inside edge
Positive camber on front wheels	More understeer, a little can make the tires last a little longer	Poor braking, car is road crown sensitive, twitchy, tires wear out on the outside edge You almost never want to have positive camber