



INSTALLATION INSTRUCTIONS For SAFE-T-PLUS STEERING CONTROL

PARTS NEEDED:

Rev. 10-2012

41-230 **SAFE-T-PLUS Unit (Blue)**
V-917K3 **Mounting Hardware Kit consists of:**
55-116-6 Anchor Bracket
55-208 Tie Rod Bracket
3/8 x 1 3/4" U-Bolt Kit

1. Anchor Bracket. Remove nuts from front axle spring rear U-bolt, install bracket, replace and tighten nuts securely, (Bracket should clear above or below the tie rod at all times during steering rotation.)
2. Using U-bolts and nuts provided, install Tie Rod Bracket on opposite end of tie rod with 3/4" mounting holes extending from the side of tie rod to which unit will be mounted. Leave bracket slightly loose on tie rod for final positioning later. Thoroughly clean this section of tie rod before attaching bracket.
3. Set front wheels of vehicle to a straight-ahead position. This is important. Later adjustment of the Tie Rod Bracket may be avoided if front wheels are set perfectly straight.
4. Select the best unit to bracket installation position based on the following procedure:
 - (A) Unit should be installed to provide maximum protection by front axle.
 - (B) Small diameter end of unit should be 1/2" to 1" lower than large end of unit when installation is complete.
 - (C) Unit may be attached either above or below both Anchor and/or Tie Rod Bracket.
 - (D) It is preferable to install unit with large diameter end attached to Anchor Bracket; however, it may be installed in the opposite direction to obtain desired angle.
5.
 - (A) After selecting best installation position install Anchor Bracket end of unit first. Align holes and insert one of the 3/4" bolts provided, using a large flat washer on the opposite side of unit mounting eye from bracket.
 - (B) Install 3/4" lock nut to mounting bolt and tighten with a wrench to 80-92 pounds of torque.
6.
 - (A) Next attach unit to tie rod by sliding Tie Rod Bracket to align the nearest 3/4" hole in bracket with unit mounting eye. Drop 3/4" bolt provided through aligned holes. Using a flat washer on opposite side of unit mounting eye from bracket, fasten a locknut and tighten with a wrench just enough to allow the unit eyelet to still easily rotate around the mounting bolt.
 - (B) Adjust the Tie Rod Bracket by rotating around tie rod to the point necessary to bring small diameter end of unit to a point 1/2" to 1" lower than large end of unit. When positioned tighten the four U-bolt nuts to 20/30 pounds of torque.
 - (C) Tighten 3/4-16 locknut to 80-90 pounds of torque.
7. Check to be sure installed unit clears all other parts of vehicle by turning steering wheel to both extreme positions. If unit scrapes or binds at any point, review these instructions and make necessary corrections.

ROAD TEST & ADJUSTMENT PROCEDURES

To ensure proper alignment and installation of the SAFE-T-PLUS unit, the vehicle should be road tested. Take along a 9/16" deep well socket wrench to fit the U-bolts on the tie rod. While driving on a straight stretch of road, vehicle should easily follow a straight course, if not, adjustment is necessary.

To adjust, hold steering wheel in a straightforward position, stop vehicle, and set brakes. Loosen nuts on tie rod U-bolts and allow unit to self-center. (Frequently this movement is not noticeable). Retighten nuts and test drive again. Repeat this step if necessary until vehicle will hold a straight line.

Note: Continue to hold the steering wheel in a straightforward position until the adjustment has been completed. Get assistance if necessary, otherwise the wheels will return to the pulling position instead of the straight-ahead position desired.

If you need additional assistance, please call us toll-free at (800) 872-7233 or email our tech support team at support@safe-t-plus.com. We are here to help.

SAFE-T-PLUS INSTALLATIONS BASIC TRUCK APPLICATION – I BEAM FRONT AXLES GENERAL INSTRUCTIONS

1. The Safe-T-Plus Unit is installed behind the front axle, either (1) between the tie rod and front axle (preferred, see sketch # 1, or #2 directly behind the tie rod (acceptable, see sketch #2).

The proper position is determined by selecting the location having adequate clearance for the unit to operate throughout both extremes of the steering radius without touching other parts of the vehicle.

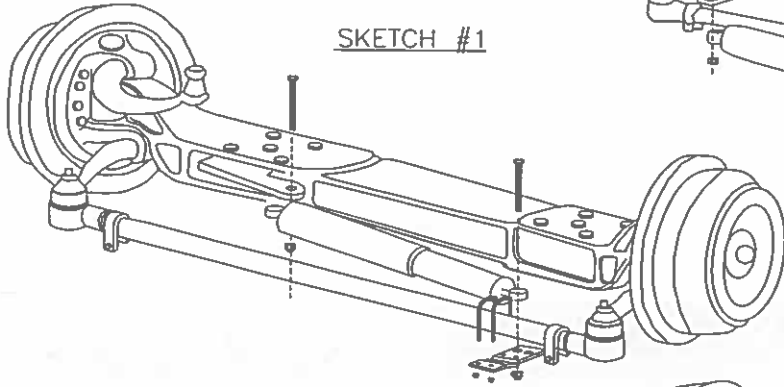
2. The Safe-T-Plus Unit is a positive centering device. It is shipped from the factory in a centered condition and should be installed as is without any extension or compression of the unit at installation.

3. Parts used in installation and included in this package are:
1 - SAFE-T-PLUS Unit 2 - 3/4" Flat Washers
2 - 3-1/2" X 3/4" Mounting Bolts 2 - 3/4" Lock nuts

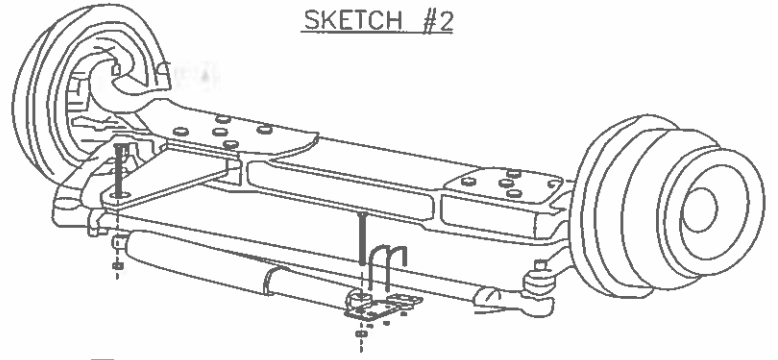
4. Other parts needed for installation include:

5.
 - 1 - Anchor Bracket, selected based on spring U-bolt size and tie rod location.
 - 1 - Tie Rod Bracket, selected based on tie rod diameter
 - 1 - Tie Rod Mounting Kit, consisting of U-bolts and 4, 3/8" lock nuts.
 - Some applications allow the unit or the anchor bracket to be flipped around for proper installation or clearance issues.

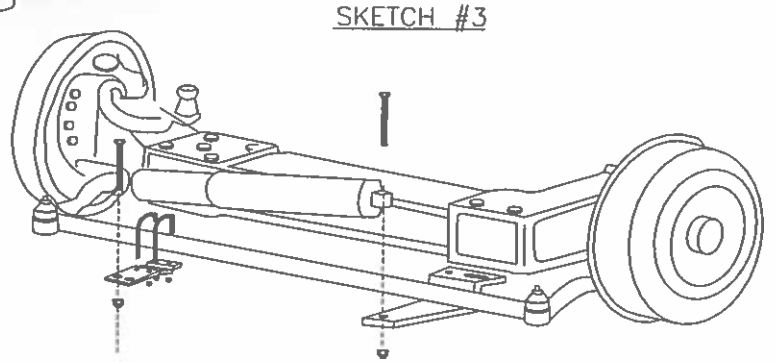




SKETCH #1



SKETCH #2



SKETCH #3



Road Test & Centering/Adjustment Procedures

To ensure proper alignment and installation of the SAFE-T-PLUS unit, the vehicle should be road tested. Take along a **9/16" deep well socket wrench** to fit the U-bolts on the tie rod. While driving on a straight stretch of road, vehicle should easily follow a straight course, if not, adjustment is necessary.

To adjust Safe-T-Plus Steering Control follow the below instructions:

1. After installation, test drive the vehicle
2. Try to test with the most perfect conditions: straight road, no crown, limited wind (if possible), freeways seem to work best or large parking lots.
3. Hold steering wheel in a **straightforward** position to determine if the vehicle is tracking straight or pulling to the left or the right.
4. Stop vehicle, and set brakes.
5. Take note of where the steering wheel ***must be held*** to track straight down the road, and mark it accordingly. Pull in somewhere, and with the motor, steering pumps, all running. Have someone hold that steering wheel firmly in exactly the proper position.*
6. Underneath the vehicle, slightly loosen nuts on tie rod U-bolts and allow unit to self-center. tap the Safe-T-Plus unit a few times with your fist, or a rubber mallet, and let the internal spring push / pull the tie rod bracket into a neutral position. (Frequently this slight movement is not noticeable)
7. At this point, take a moment to square-up the U-bolts as they lay up and across the tie rod. If you've left them askew, they may pull the bracket out of position as they tighten.
8. **Retighten the U-bolt nuts (only 25-30lbs. of torque)**
9. Now test drive again.
10. Repeat this step if necessary until vehicle will hold a straight line**

Note:

*Be mindful that if you are holding 2 to 3 inches of steering wheel against the spring to track straight, it's only 1/16 to 1/8 of an inch down below on the tie rod bracket.

**Repeat if necessary, until you're satisfied. Once completed you should be able to achieve holding your lane position for a 1/2 mile or so at freeway speeds, with hand gently resting on the steering wheel without correcting.

Extra Detail on Final Adjustments (Tips)

- Using tape, you can stick a ruler or pencil to the dash to act like a centering indicator for more accuracy.
- Another trick is marking the left and right limits of any inherent slop in the center of the steering wheel operation. At the shop, line up the center marks, and do the install.
- Be patient, be precise when moving the tie rod bracket, as just a 1/16 of an inch will make the difference in drifting off half a lane in 100 yards or less.

When making very small adjustments, (1 ½ inches of steering wheel displacement or less) it may be necessary to hold the steering wheel in the direction of correction just a little beyond the required (¼ to ½ inch more) in order to "load up" the internal spring just a little and let the unit help with the relocation of the tie rod bracket. There really isn't any other way to move the tie rod bracket without having some assistance holding the steering wheel while adjustments are being made down below.

If overshooting the desired results, mark a line a set distance from the tie rod bracket so that they can measure in what direction, and how far each adjustment was made.

A "how-to" properly center/adjust Safe-T-Plus Steering Control video is available on our website to help guide you through the adjustment procedures. Feel free to check out video at www.safe-t-plus.com (bottom right).



If you need additional assistance, please call us toll-free (800) 872-7233 or email us at support@safe-t-plus.com and technical support will be happy to assist.

