

RATCO INC.
INSTALLATION INSTRUCTIONS FOR TUBE SHOCK
CONVERSION KIT
MODEL TCBK-01/02/03
TRIUMPH MODELS TR4A (IRS)/250/5/6

NOTES TO INSTALLERS: Before installing this kit, check the camber of the vehicle to specification tolerance. These brackets extend into the wheel well of the vehicle and could rub against the tire under extreme load conditions. If the vehicle has more than 2 degrees of negative camber prior to installation, it is recommended that the camber be corrected before these brackets are installed. The possibility of rubbing is minimal but under extreme loads in cornering with the use of wider than stock tires complicated by negative camber, rubbing is a possibility. To check the camber you will need a straight edge and a device to measure an angle from vertical. With the vehicle on the ground place the straight edge across the tire vertically at the 12 and 6 o'clock positions. While holding the straight edge in position place the angle measurement device on the straight edge and measure the angle to vertical. Negative camber is when the tire tilts into the wheel well at the top. In this case a negative camber of more than 2 degrees should be corrected before installation especially if wider tires and extreme cornering are the norm.

See photo "A" for details.

Also, in the design stage of these brackets, prototypes were fit to different vehicles of different years and a pattern became apparent. The vehicles were a general cross section of the models this kit is made for and it was found that the centering of the body on the frame was different for each vehicle tested. When the brackets were attached to mounting points they extended into the wheel wells different distances of up to ½ inch. It was noted that each car had its own set of dimensions and in that the brackets are all the same size and none of the cars had frame damage, it was concluded that the body is centered on the frame differently for each car. Therefore we designed the bracket to pivot on the lower bolt point with ½ inch of travel either in or out. In this way the bracket can be moved either towards the inner fender or away from it as required. This allows the installer to compensate for the different centering dimensions described earlier. The directions later on describe how this is accomplished. In field use, we found that this procedure works well and we have never had a situation in which the brackets moved from its set point once the bolts were tightened properly.



PHOTO "A" ON THE LEFT SHOWS THE PROCEDURE TO ROUGHLY GET THE DEGREE OF CAMBER ON YOUR REAR WHEEL THE MEASURING METER IS AN INCLINOMETER OR SLOPE METER WHICH CAN BE PURCHASED IN A HARDWARE STORE FOR ABOUT \$10.00. THIS MEASUREMENT IS NOT EXACT BUT IS GOOD ENOUGH FOR THIS PURPOSE.

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THE PHOTO BELOW SHOWS THE MATERIALS THAT SHOULD BE INCLUDED IN YOUR KIT. IF YOU BOUGHT THE TCBK-01 WITHOUT SHOCKS YOU WILL JUST RECEIVE THE BRACKETS AND THE MOUNTING HARDWARE.



INSTALLATION INSTRUCTIONS



1. On a level surface, raise up the car with a floor jack and place jack stands on the frame member at the outboard swingarm mounting point. This is the most stable position for the stands. Once the car is level and secure, remove the floor jack and then remove the rear wheels.

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2. Place the floor jack under the brake drum of what ever side you decide to do first. Put a piece of wood between the jack plate and the drum and make sure that the emergency brake is applied. Pump up the floor jack until the tension is taken off the shock absorber lever and the spring is slightly compressed. About 1 to 1.5 inch of compression is all that is necessary.

3. Remove the lever shock by removing the end-link nut and lifting the lever and end link away from the swingarm and then the two large bolts securing the body of the shock to the frame rail.



4. Clean the surface of the frame rail of rust and dirt and also the threads in the mount. Install the new bracket to the frame rail using the two bolts, flat washers and lock washers supplied. Just hand tighten the bolts (It is advised to use anti seize compound to the threads of the bolts). Adjust the position of the bracket in relation to the inner fender wall so that the bracket sits about $\frac{1}{4}$ inches from it. You can use a $\frac{1}{4}$ inch thick piece of wood to secure the distance while you tighten the bolts to 50 foot pounds or just very tight if you don't have a torque wrench.



5. Place a cup washer and rubber spacer on the lower end of a shock absorber. Be sure to position the rubber spacer so that the side with the .875 inch shoulder is facing down. Fit the shoulder of the spacer into the hole of the swingarm bracket and now place the lower rubber spacer and the cup washer in place and secure with the nut supplied. Do not tighten at this point. See photo at left.

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6. Next place a cup washer and a rubber spacer on the upper piston rod and compress the rod downwards (takes some effort) while guiding the rod under the bracket and into the mounting hole. Make sure that the rubbers .875 inch shoulder is seated in the hole. See the photo at left.
7. Once seated, place the final rubber spacer and the cup washer on the protruding stem and hand tighten

8. The final assembly should now look like the photo at left. Make sure that the shoulders of the rubber spacers are properly seated and tighten the nuts until resistance is felt against the compressed rubber. It is hard to determine how much compression is required. It used to be that when the rubber spacer reached the diameter of the cup washer then that was the compression necessary. In this case, that seems way too much. We have successfully compressed the rubber to such a degree that about 3/4 to 7/8 inch of rod extended beyond it. This is what we recommend at this point.



9. The installation is now complete for this side. Repeat the procedure for the other side and when finished, replace your wheels. Set the car on the grounds and roll it back and forth about ten feet. This will set the camber to normal ride position. Now reach in above the tire and feel for the forward bracket edge and determine with your finger how much clearance remains between your tires inside wall and the bracket. It should be no less than 1/2 inch. If it is less than that and the installation is correct, then you should consider having your rear suspension checked by a professional.

**PROBLEMS/QUESTIONS- CALL 631-205-2426
MONDAY TO FRIDAY 9 TO 5 PM**