RTL

Frontline's innovative Rear Traction Control Link

(Quarter elliptic fitting instructions)

The Frontline RTL (rear traction link) does as it says - it gives a lateral link of the rear axle to the car. This results in improved traction, lower roll centre and controlled axle movement.

Previous forms of rear lateral locators have included the Panhard rod and Watts linkage. These work fairly well but have spurious load problems which can get worse as the suspension travel increases. Neither have much effect on lowering the roll centre which is a very important factor with MG handling.

The RTL, shown below, bolts to the axle. The square clamp brackets locate around the axle bump stops while the central part of the bracket bolts to the boot of your car with the long bar on the inside of the boot and the main bracket underneath between the axle and the petrol tank.

The advantages of the RTL are perfect lateral location, lower roll centre (the roll centre is the pivot point which the body rotates about when cornering) and unrestricted vertical suspension travel. Because the axle can only move vertically and rotate about its new roll centre, the car will have better traction, tramp less and ride rough surfaces much better.

FITTING THE RTL

The RTL comes pre-assembled and should not be dismantled as this will affect its performance. The lock nuts on the tie bars are left loose as you will have to adjust these later. The square clamp bracket and boot brace bolts are also loosely assembled as you will have to dismantle these to fit them.

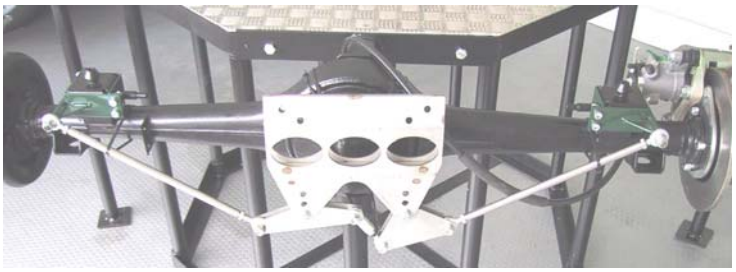
- Jack up the rear of the car and support carefully on axle stands. The jack can now be removed. Remove the rear wheels.

Fig. 1, Left
Square clamp situated around left hand axle bump stop

Fig. 2, Right
View of boot brace position in boot

- The square clamp shown in ***Fig 1*** is not used when fitting to a ¼ elliptic car but the picture does help to show roughly where the outer tie bar fits.
- Now take the long bar (boot brace) and place it centrally on the vertical section in the boot just above the radius of the boot floor to the vertical panel ***see Fig. 2 above.*** When you are happy that it is central, (central positioning is important), drill and bolt one of the outer holes. Repeat with the other outer hole. Then tighten both bolts. Now drill the remaining four holes.
- ***NOTE***: When fitting the RTL we recommend applying some high-strength silicone sealant or a bonding agent such as Tiger seal between the bracket and the boot panel on both sides of the boot panel. This will dampen any road or axle noise transmitted through the link.
- With the aid of an assistant, position the main bracket under the car, lining up with the four holes, and pass the 2" bolts through the boot brace and the main bracket and tighten. Re-tighten these four bolts until they are thoroughly tight. ***NOTE***: The main bracket has Frontline Costello engraved on it. This should be facing towards the front of the car.

- With the main bracket of the RTL bolted to the boot floor offer the rod ends of both tie bars to the uprights on the axle. Position the rod ends on the uprights approximately 20mm above the axle case and towards the in-board side of the uprights. Drill one side using a 3/8" or 9.5mm drill and fix that rod end securely. Repeat the process for the other side, ensuring the hole is drilled in the same position both vertically and horizontally. Accuracy here is necessary for correct operation of the RTL.
- The fixing bolts are supplied with a spacer. Larger spacers can be used to space the rod end away from the axle casing and thus bringing the tie bars more parallel with the axle. If you do space this out further, take car that the outer rod end or bolt cannot foul the body above it on full bump. Also it may be necessary to strengthen the bolt should you use longer ones. This bolt can be welded in place.
- The tie bars are threaded at each end with opposite threads. Holding the loose end of one of the tie bars, rotate the bar to shorten or lengthen until it is the correct length to fit onto axle locating bolt (do not tighten up the lock nuts on the tie bars yet). Fit and tighten the securing nut to hold the rod end onto the axle mounting bolt.
- Now adjust the length of the other tie bar until it can locate on the other axle bolt. Once located on the bolt, the tie bar may need to be extended a little further to allow it to fully seat up against the shoulder of the bolt. Fit the locking nut and secure. ***NOTE*:** When adjusting the tie bars it is very important not to pre load the RTL. Each rod end should have a minimum of 6 full threads in the rod end.



ADJUSTING THE RTL

The RTL is not difficult to set up but should be done carefully. Firstly, with the car back on its wheels, raise and lower the body to its full extent. Check that the central pivot joint of the RTL does not lock up against the main bracket. (If this is going to occur it will be when the axle is in the full droop position or fully extended.) If the pivot joint is touching the main bracket, shorten both rods simultaneously until at least 5mm of clearance is obtained. The end result should be similar to the picture above.

Now carefully adjust the rods to ensure any pre load is removed. The design of the RTL is such that it works in balance and a pre load will wear the rods' ends and restrict its effectiveness. Now tighten the lock nuts on the tie bars. Threadlock should be used.

When fitted, the rear suspension may initially feel a little firmer. This is just the rod ends binding a little. A small amount of oil will help this. The suspension should be smooth and you should have no lateral movement at all between the body and the axle.

When driving you should notice reduced body roll, a more positive location and grip on the road, a smoother ride and less tramping effect. Take a while to get used to the difference. We suggest that trying out the limits of this, and any other product, should be done in a safe place. You may also find adjusting your tracking can improve handling further. Try having a little less and then a little more toe in (not out) and see if this improves the turn in and balance of your car. We recommend around 1/8" to 1/16" (2 to 3mm) toe in.

Should you have any questions about this product or any concerns about it or fitting it, please contact us before fitting.

We hope you enjoy this handling conversion.

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