

5 Rear live Axle and Suspension



5.1 Rear suspension construction

What you need:

- Springs x2.
- Spax shocks x2.
- Spring compressors.(can be done without)

Fig 4A

The same shocks are used both front and rear. The Spax shocks are fully adjustable and made solely for tiger and are similar to shocks used on many race and rally cars. The shocks may be set according to the drivers requirements. They have adjustments for the gas damping effect and the spring compression may also be adjusted. It is recommended initially, that the gas damping effect is set seven clicks from its fully closed position (fully anti-clockwise is off and no resistance).

There are two sets of springs with different stiffness. It is recommended that the stiffer, approximately 300lb, springs are used for the front suspension and the softer, approximately 180lb, are used for the rear suspension.

Fitting:

- Pull shock shaft out as far as it will go.
- Place damper within spring.
- Using the spring compressors compress the spring.
- Fit top retainer.(alloy)
- Release spring from compressors, so the spring is locked between the adjustable platform and the top retainer, in its correct position see fig 4A.



5.2 Rear live axle brake lines

There are two brake lines to be fitted along the rear axle. One runs from the flexi brake hose to the near side rear brake and the other the full length of the rear axle, between the rear brakes. Fig 5

brake line

What you need:

Tie wraps
Brake line(ended in kit)

- Place the line on top of the rear axle and bend it so that it sits snugly on the rear axle.
- Screw both ends into the wheel cylinders on the brake drums .
- secure with tie wraps and use also the metal tabs on the axle(with rubber under the tab)

N.B. It may be needed to take a longer route along the axle to use up excess line.

Flexi brake hose to brake line(live axle)

What you need:

Copper line.
Pipe benders.
Bracket.
Jubilee clip.

Fig 5



There is a bracket on the axle which sits between the flexi hose and brake line

- Place one end of flexi hose into bracket on axle ,other end is attached to the brake line running down the transmission tunnel as outlined previously., through the bracket. Fig 5
- Bend brake lines so that they fit the profile of the axle between the hose and backplates.
- Secure flexi hose into bracket by thin nut ,screwing correct end of brake line to it.
- Screw other end of line into the top hole on the near side brake drum.
- there is one brake line that fits wheel cylinder to wheel cylinder.
- Ensure that neither of the rear brake pipes could get squashed between the rear axle and trailing arms by fixing them on the side of the axle.
- also make sure that the flexi hose does not touch any surface or parts in its movement as the axle raises and lowers in its suspension movement.

Fig 5A



5.3 Fitting Bushes

Bushes need to be fitted to the trailing arms and panard rod

What you need:

Washing up liquid.(soap)
Vice.(or press)
Bushes x10 (Live axle)

Trailing arms x4.
Panard rod
Sleeve.(large tube or socket)

The trailing arms and panard rod require bushes to be fitted into them. It is best and easiest to do this using a vice.

N.B. When putting in the bushes put the correct end in first, this is the least knobbly end. (slightly tapered) Nylon bushes are also available from Tiger.

- Coat the outer surface of the bush and inner surface of the trailing arm/panard rod with washing up liquid .(check at this stage for any burrs on the inside of the round section and remove)
- Line up the correct end of the bush with the arm and place both into the vice.
- Tighten vice, thus forcing bush into arm applying more washing up liquid if required.
- When the bush has entered the arm so far it will bottom out onto the vice. To overcome this problem a sleeve with the same internal diameter as the bracket is used or a socket can be used.
- Release the bush and arm from vice and place the sleeve between the bracket and the vice.
- Tighten until bush is completely inserted into arm with the shoulders showing on either side of the tube.
- Take out of vice.
- Do this for all the brackets on the trailing arms and panard rod.
- IT IS RECOMENDED TO PUT AXLE INTO PLACE ON CHASSIS BEFORE FITTING TRAILING ARMS AND PANARD ROD fig 5a-5b-5c

5.4 Trailing arms

The trailing arms sit between the chassis and rear Axle on Super six, and chassis and De-Dion R6/B6

What you need:

Trailing arms x4.
4 x M12 x 90 bolts with nyloc nuts. Fig 5b
4 washers.



- Place the trailing arms into the brackets on the chassis. The correct way around is so the trailing arms point away from the chassis, as in fig. 5b-5c
- Place bolts through chassis brackets and trailing arms but do not put nuts on yet.
- When putting the bolts in make sure the bolt head is on the inside of the car. Grease all bolts before fitting

The position of the trailing arm is shown in figure 5a – 5b 5c-5d

5.5 Rear axle



What you need:

fig 5c

- Rear axle.
- 4 x 0.5 x 2.5" bolts with nyloc nuts.
- 4 x M12 x 90 bolts with nyloc nuts.
- 8 washers.

- Carefully, with pick up the rear axle and slide it through the members into position, as shown in figure 5.51.
 - Attach the trailing arms to their brackets on the rear axle using the bolts provided, but do not put on the nuts.
 - Hang the shocks from the brackets on the chassis using the 4 x 0.5 x 2.5" bolts again do not put the nuts on.
 - Lift the rear axle up and fit the bottom bush on the shocks to the brackets on the rear axle and fit the bolts. Now the rear axle should be suspended by the shocks.
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- Now put all washers and nuts on to the trailing arms and shocks and tighten.

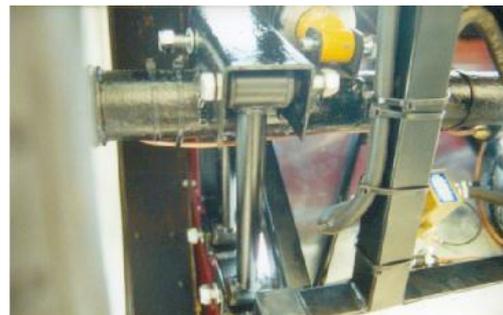
5.6 Panard rod

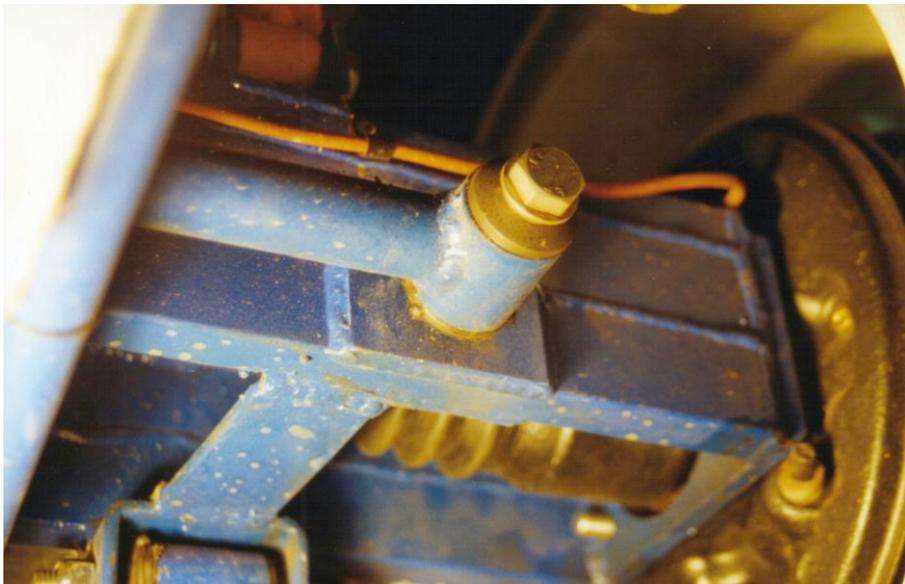
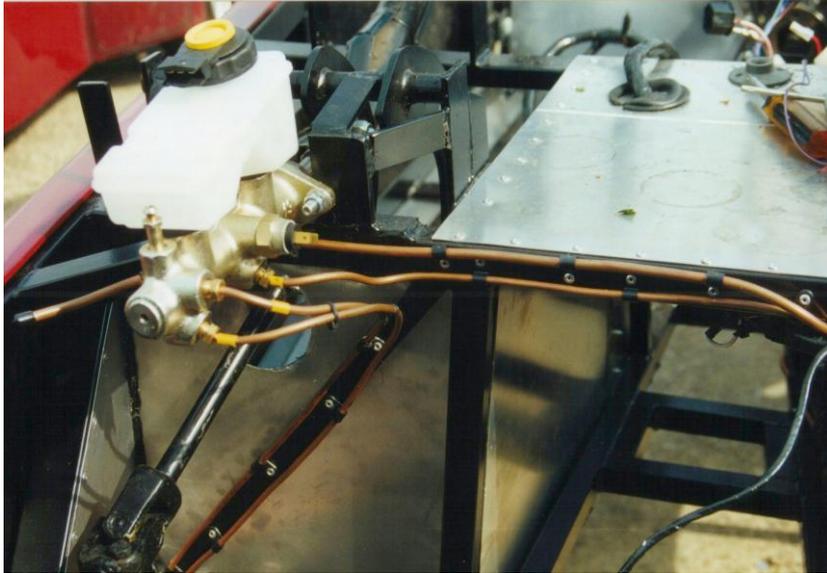
What you need:

- 1 x M12 x 90 bolt. 5 d
- 2 x M12 nyloc nuts.
- 2 x washers.



- Place one end of the panard rod onto the bracket on the near side of the chassis.
- Place the other end over the bolt on the rear axle.
- Secure the chassis end using the M12 x 90 bolt and M12 nut/washer





- Secure the other end to the axle using an M12 nyloc nut and washer.
- The panard rod is handed so turn over on fitting and check for correct or incorrect angle of bushes in the bracket on chassis and axle.



Rear Suspension –De- Deon.

The rear diff.unit sits in the rear center of the chassis, there are two long bolts one on top of diff. and one on bottom - two more bolts are fitted to front of diff. Inside tunnel. Fig 6a 6b 6c and see fig 10 (at rear of manual)

- When fitting the alloy diff. Unit it may be required to sand of some of the alloy casing to fit between the chassis diff fixing brackets, the front bolts will need spacer washers.



6a



6g



6h

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- De-Deon unit
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- The de-deon unit has four trailing arms and panard rod similar to live axle super Six, the only difference being each have a one rose joint fitted see fig 5 and fig 22 (rear of manual)- the other ends use the standard rubber bush and are fitted exactly as the live axle bushes. The rose joints bolt to the chassis positions with spacer washers fitted so as to NOT close the chassis brackets. The de-deon has to be set up square to the chassis as a guide
- Fig 6e—6j



fig 6b



fig 6f

- the t/arm center of bush to center of rose joint—270mm and panard 925mm. A straight edge can be clamped to the face of the de-deon and
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- a measurement taken from the side of the chassis upright to square up the rear suspension fig 6d
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- The rear shocks are standard Tiger shocks(spax adjustable) the rear Flexi brake pipe is taken from the bracket on chassis behind the passenger(left) seat back ally—to the top bracket on de-deon unit—brake pipes are equal lengths left and right (1000mm)taken from the back plates to the “T” piece positioned on the top of de-deon unit—a small brake pipe is taken from the bracket with the flexi connected to the “T” piece.



- Fig 6E
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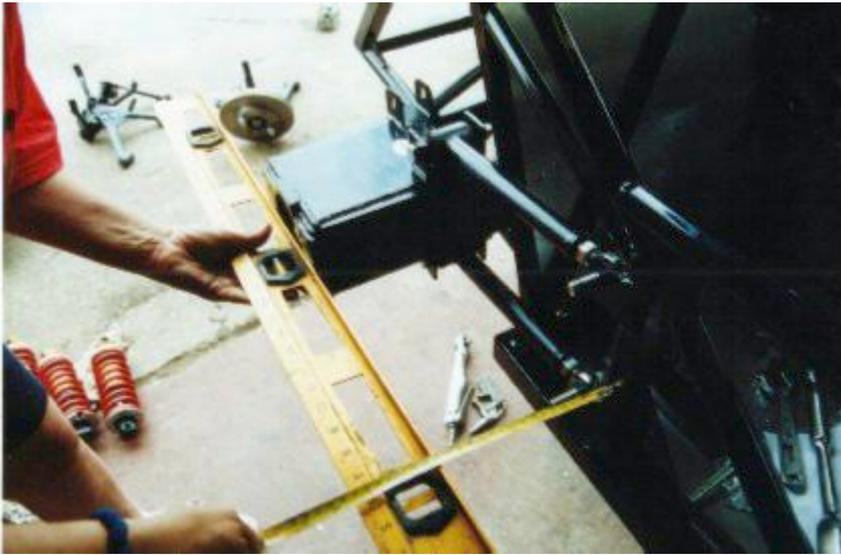


Fig 6D



Fig 6c



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- Picture above is a disc fitted between diff and prop for electronic speedo sensor, a twin magnet system can also be used – this has two magnets opposite each other on the diff. flange with a sensor held by a small bracket on diff.
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- Please note

- The alloy diff will need to be sanded on the top casing and some alloy removed- this is to allow the de-deon unit to sit further down for easier rear shock fitment fig 6H
- For rear brake backplates on de-deon the bottom edge of the de-deon will also need a small amount removed to allow the back plate to sit square. Fig 6g
- The corner of each side of the alloy diff.on bottom will need a very small amount
- Filed or sanded off to allow for the internal weld on the 2 brackets on the chassis
- Before fitted the long bolt through. Fig 6b
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- De Deon – set up info
- The de-deon unit has four trailing arms and panard rod similar to live axle super Six, the only difference being each have a one rose joint fitted at front to chassis the other ends use the standard rubber bush or nylon tiger bushes and are fitted exactly as the live axle bushes. The rose joints bolt to the chassis positions with spacer washers fitted so as to NOT close the chassis brackets. The de-deon is set up square to the chassis - this can be done by clamping on two straight edges onto the drive shaft round flanges at bottom horizontal and measuring to the side of chassis – a measurement between these points across front and rear will give its track – 1 or 2 mm toe in at front is ok when all is central – small VERY thin shims can be used on the rear drive shaft bearing housing to de- deon (between) to adjust track if required – we have tested these with Square track (no toe in or out) on circuit and handle very well – slight toe in we have found good on very high performance Tigers (260 bhp)
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Small bike propshaft with slide fig 7