

Stylus Sports Cars



Stylus and RT *Build* *Manual*

Introduction.

- Read through everything in the build manual whether you are an experienced car builder, or this is your first time. There may be something you may learn.
- If there is something in this build manual that you are not sure of feel free to ring the workshop. 01686413000
- This build manual has been compiled as a guide to building of the Stylus and RT and has been done in good faith and in doing so Stylus Sports Cars cannot be held responsible for the builders work.
- Stylus Sports Cars hope you enjoy the build, and enjoy the driving experience even more.

Axle Weight

- Front 500 Kg
- Rear 500Kg
- Gross 1000Kg

Suspension Settings

- Toe in 0.5deg
- Camber 1-1.5deg (road) 1.5-2.5deg (track)
- Caster Personal Choice

Stylus Sports Cars. Do not accept any liability incurred from the construction or subsequent use of one (or more) of our more of our Stylus Classic or Stylus RT kits. However, all the information given in this manual is done in good faith.

1,Tools Required

- Socket set,
- 8mm, to 19mm, spanners,
- Tin snips,
- Drill,
- Set of drill bits,
- Sand paper, 80 & 120 grit.
- Set of files,
- Rasp,
- Grease gun,
- Set of screwdrivers,
- Centre punch,
- A drift or punch,
- Dividers,
- Masking tape,
- A strait edge,
- Ball joint splitter,
- Pliers,
- Pop rivet gun,
- Electrical crimping pliers,
- Graphite grease,
- Copper grease,
- Standard lithium grease
- Jack,
- Axle stands,
- Pair of trestles,
- Engine hoist,
- Latex gloves,
- Spirit level.
- G cramps.
- Tape measure,
- Scissors,
- A torque wrench,

Tools to make the job easier,

- Black and Decker power file,
- Riv nut or nut surt gun,
- Small blowtorch, for soldering,
- Hot glue gun,

2, Panelling the Chassis.

Panelling the chassis is quite an easy, first job. All the panels are cut to size but will need trimming to fit perfectly; all these panels are fixed with 4mm pop rivets.

The easiest one to start with is the floor panels. **However, do not fully fix in place.**

1. Flip chassis upside down on your trestles, place panel on chassis and you will see it sits over the outside of the chassis by approximately, or 1 ½ INS, this is how it should be.
2. Using 1ins masking tape transfer where the chassis would be onto the panel.
3. Mark out a centre line
4. Divide up for drilling. (For the floor panels and tunnel sides approximately 65mm or 2 ½ INS centres, as these are structural, tunnel tops 100mm or 4ins.
5. Drill one of the corner pop rivet holes and fix, do the same with the opposite corners, (this stops any movement when drilling all the other holes).
6. By leaving the floors in temporary, it gives the tunnel sides to sit on when fitting.
7. Repeat with the other floor panel, and front floor extensions, and then flip chassis back over.
8. Do the same with the tunnel side panels first, then the tops, (Remove these panels after drilling).
9. While the chassis is still the correct way up, scribe around the inside of the floor panel, (This just acts as a guide for rubbing down the aluminium, before sica flexing.
10. Flip chassis back over. Give powder coat on the base of the chassis a light sanding with some 120-grit paper, do the same with the aluminium, and wipe down with a clean cloth (Only where the aluminium panels will sit).
11. Run an even bead of sealer down the centre of the chassis rails around the base of the chassis, place on the panel and pop rivet in place.
12. Final fit tunnel sides and top later in the build.

Tips.

- Warm up tube of sealed in a bucket of hot water before applying.
- Where the aluminium tunnel side and tunnel top meets trim then so they are 1mm from the corner edge of the steel top rail, (this can be done very easily with a pair of dividers) It give a lot better finish and if the car is not being trimmed the edge will not need a rubber strip for SVA. Removal of the aluminium is best done with a rasp, (a very course file.) It is good practice to do this with all aluminium panels, and is shown in photo (1)
- When marking out for pop riveting. On the aluminium panel measure in ½ the thickness of the steel that the panel will be fixed to at both ends. Then divide it up to get the correct howl centre required. (This again makes for a neater and overall better finish.
- Do not use Silicone sealer on the car.

3, Assembling the Front wishbones.

1. Clean the entire suspension boltholes out first with a ½ INS drill bit.
2. It is a good idea to dry assemble the suspension parts first.
3. Start with the bottom wishbone first.
4. This will require shimming, but to start with position it in the centre and shim it equal ether side in the front mounting point.
5. Once you are happy with the fit, remove, grease centre of the bush with **graphite grease**, and reassemble.
6. Fit large lock nut to bottom ball joint QR1174RH, grease both the threads with graphite grease and insert into the wishbone till aproxanetley 6 threads are showing past the lock nut.
7. **Do not fully tighten the bolts until the car is sitting on its wheels with the engine installed. This stops the bush being twisted at ride height.**

Tips.

- When you have tightened up the bolts put a spot of Tip-Ex on the nut and thread to show it has been done up. (And the SVA tester likes it.)
- For a road car use the bottom mounting holes, and for a track day or competition car use the top holes.

4, Assembling the Top Rocking Arms

1. Clean out any powder coat from the centre of the rocker shaft with 120 grit sand paper.
2. Fit grease nipple.
3. Clean off powder coat around large hole edge.
4. QSK213S are the parts required for this task
5. Making sure the righting on the needle bearings is facing outwards, and then **gently** tap in the bearings into position with a block of wood and a hammer.
6. Place on the rubber dust shields onto the out side of the shaft.
7. Offer up the top rocker, and slide in the spindle from the front, place large shin onto the spindle with groves inward, fit split washer and nut finger tight. **Never put a plane washer under a split washer**
8. Fit stepped shin then the cover plate.
9. Use 2, M6 x 20mm to secure plate. Have the bolt head on the inside.
10. Tighten the two 19mm sufficient so the rocker moves freely.
11. Slide on dust covers, and pump with grease. (Use STD grease for this.)
12. Tip-ex bolts to know the job is complete.



Front Suspension



Front Lower wishbone



Front suspension rocking arm

5, Fitting Steering Rack

1. Fit new rubbers, press on clamps and tighten up the 4, M8 x 20mm bolts
2. On the RT, you will require rack extensions.
3. Then fit the trackrod ends QR13848 and lock nuts.



Steering rack in position on a LHD car

6, Fitting Front Spring and Damper.

1. This should need no explaining, except fit the shorter pair to the front
2. Make sure the damper is the right way up, with the adjuster at the bottom.
3. Use 1/2ins unf bolts.

7, Fitting and Assembling Escort Upright.

1. Grease the thread on QSJ1060S, and insert into the top of the upright,
2. Place the upright on bottom ball joint,
3. Put enough spare washers over the thread, so that when you place the nut on the nylock will not bite into the thread, **only do this up finger tight** as it will need to be removed when setting up the suspension.
4. Do the same with the other two ball joints,

Tip.

- Do not put grease on the tapers.
- If unsure look at a Haynes manual

8, (Escort) Assembling Wheel Bearing and Fitting Front Hub.

1. This whole operation must be done in a clean environment.
2. If the bearing faces are still in the hub, they will need removing.
3. This is done with a drift or punch, by tapping around the inner and outer bearing tracks.
(Some are easier than others.)
4. Totally clean, out any old grease and dirt.
5. Gently tap in the new ones in the same manner.
6. Work grease well into the bearings; fully pack the bearing cages and rollers with any standard lithium based grease. Leave the hub and grease seal empty to allow for grease expansion.
7. First, fit the inner bearing then gently tap the grease seal into the back of the hub.
8. Slide the hub onto the upright, place the outer bearing into position, slide on the thrust washer, put the nut on only finger tight fit the nut retainer, push the split pin through the closest hole, and push on the dust cap.

Note

- The hub will have to come off again to fit the brake disk. This is best left until later in the build, because some times the project may be put on hold and the discs will rust up.
- If you do decide to fit the brake disks, this is done before offering the hub up to the upright.
- If unsure look at exploded view.

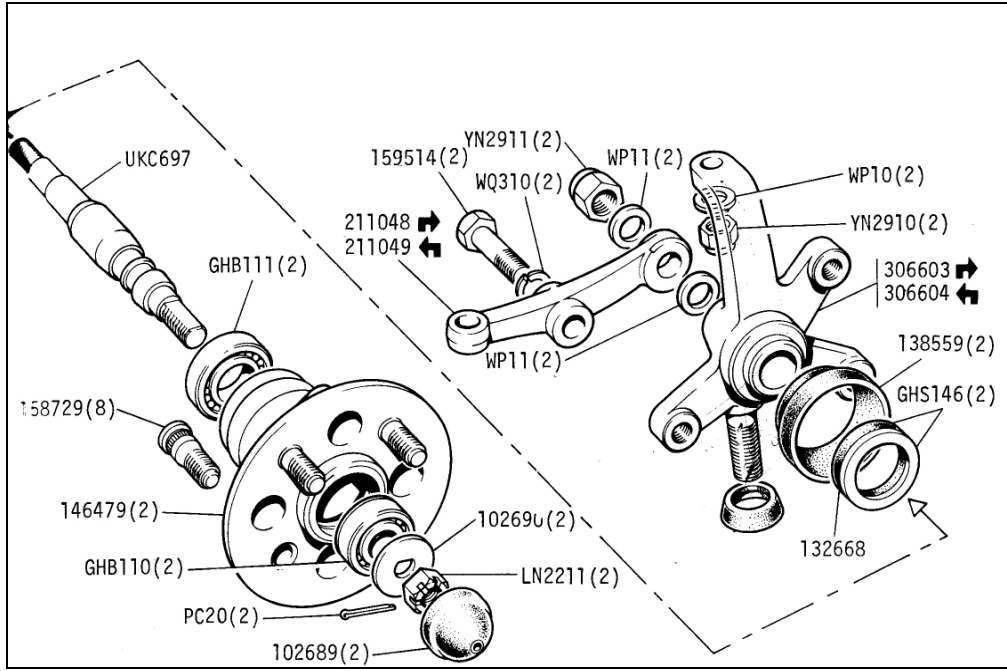
9, (Escort) Fitting front discs.

1. Smear a little **copper grease** on to the face of the disc that will be in contact with the hub.
2. Put a spot thread lock on the four **10.9**, M10 bolts and torque up to 30-34 lbs f ft.
3. Position the hub onto the upright, slide on the outer bearing, then the thrust washer.
4. Tighten down centre adjusting nut to 27 lb f ft, while rotating the hub to ensure free movement, then slacken off the nut 90' and fit the nut retainer and split pin, do not bend the split pin back on its self, then put on the dust cover.

Tip.

Check hub for play after 100 miles.

Exploded view of Triumph hub and upright



10, Fitting Rear Suspension on a Live Axle Car.

1. Clean out the powder coat from suspension mounting points with a ½ INS drill bit. All the bolts used on the rear suspension are ½ INS UNF.
2. Fit the two leading arms first (the ones with the bends in) to the bottom front suspension mounting holes; apply **graphite grease** to the bolt, and in the hole of the metal elastic.
3. Put in the bolt from the out side, **so the nut is in the cockpit.**
4. Do the same with the trailing arms, with the bolt going inwards, in the same direction.
5. Fit the dampers to the leading arms. **Do not crush the brackets.**
6. Lift the back axle into position and bolt up.
7. Attach the adjustable Panhard rod using the long bolt and large washers on the end that attaches to the chassis.
8. Centralizing the back axle is very easy. Simply wind the thread in or out on the Panhard rods, until the axle measures the same distance both sides with the side rails on the chassis.
9. Tighten up all the bolts.

Tips.

- G clamp two lengths of strait timber to the side rails on the chassis, (It makes measuring easier.)
- Dampers will need removing before fitting the body.
- Tip-ex bolts after completing the task.





Lining up back axle.

By fixing a strait edge, to the 1ins x 2ins side chassis rail. Then measure up of the end plate of the axle. Do the same both sides until the measurement is as equal as can be made.

11, Setting the Tracking, Camber and Caster.

1. The caster should be set in the centre when you fitted the wishbones, (If you ever change the caster you will need to reset the tracking).
2. The camber is done with the wheels fitted and sitting on the level ground. Using a spirit level and a tape measure, set the wheel so that it is vertical, by taking an Equal measurements off the top and bottom of the rim, once that is done, wind the bottom ball joint out two full turns. This will be approx 1.5 deg
3. The tracking can be done tempory with a tape measure so they are parallel. And set later at 0.5 deg toe in.

Tips

- These car will need setting up correctly before driving.

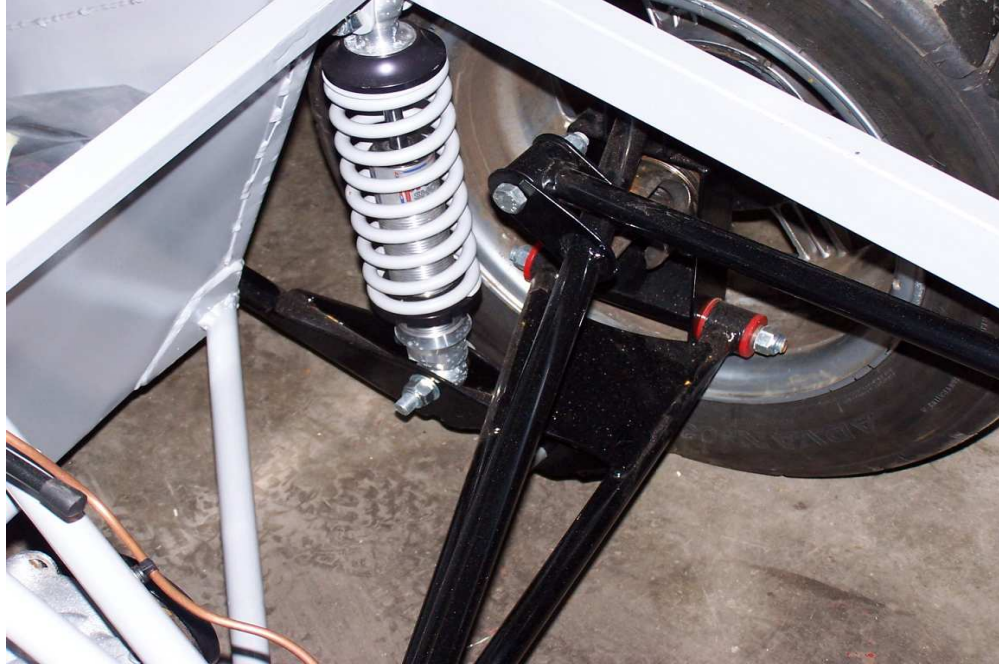
12, Building Up the IRS Rear End.

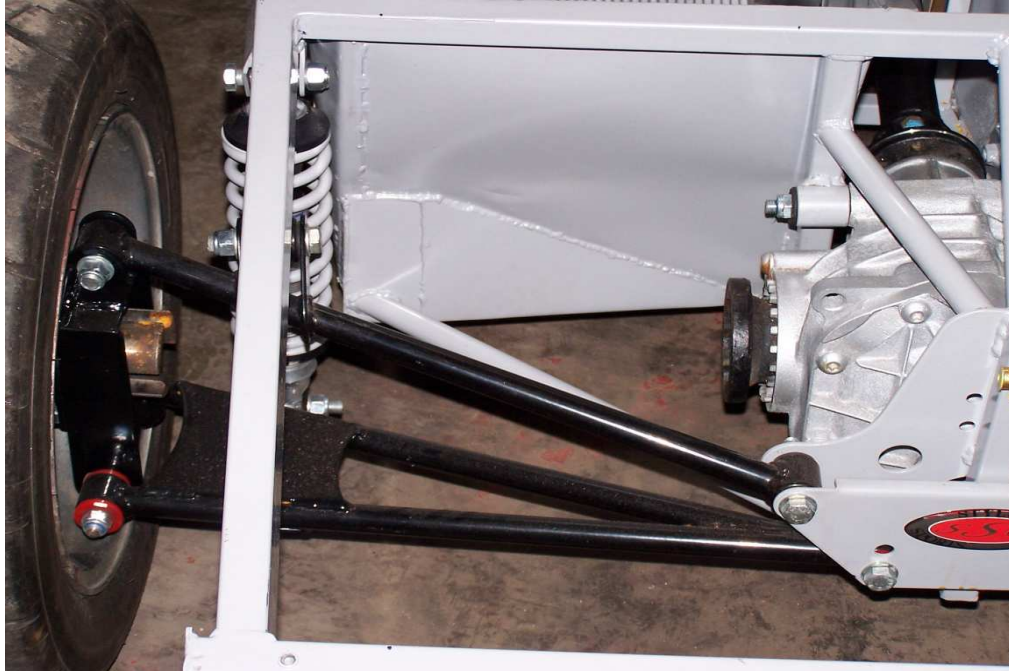
1. Fit the diff, first insert the metal elastic bushes with a G clamp, and then lift diff up into position with a trolley jack and slide in the 12mm threaded bars.
2. Insert the metal elastics to the leading and trailing arms using the same method.
3. Fit the leading and trailing arms using 1/2ins unf bolts, have the nuts in board.
4. Fit the poly bushes and 1/2ins rose joint to the lower wishbones. and connect to the leading arms using 1/2ins unf bolts.
5. Fit metal elastics to the top link using same method as before, and connect to the trailing arms,
6. Fit rear upright.
7. Bolt top link and lower wishbone the centre plate behind the diff.
8. Fit rear dampers.
9. The toeing in can be done using the same method as a live axle car but in reverse, by putting the strait edge on hub and measuring off the chassis, and adjusting using the rose joint.

Tips.

- Use graphite grease on all suspension bushes.
- Do not tighten bush bolts until the car is sitting at ride height.
- When bolts are tight tip-ex the nut.
- Front and rear dampers will need removing before fitting the body.







13, Fitting the steering column.

1. Pre fit before fitting inner tub.
2. A good starting position is the second hole down.
3. Fit through front mount,
4. Then connect to steering shaft then to rack
5. When happy with position, the hole can be made through the bulk of the inner tub after the inner tub has been fully fitted,
6. With the steering in the chosen position, lock in position the front mount, so it will not move when you remove the steering coulomb.
7. Remove the whole coulomb, then remove the inner shaft from the outer part
8. Insert the outer, into the front mount, and then mark out as shown in photo over the page.
9. It can be a good idea, to cut the hole as a sausage shape for later adjustment

Tips:

- Take time to cut a neat hole as it looks very un professional having a gaping hole



Marking out for cutting hole through bulkhead



14, Fitting Radiator.

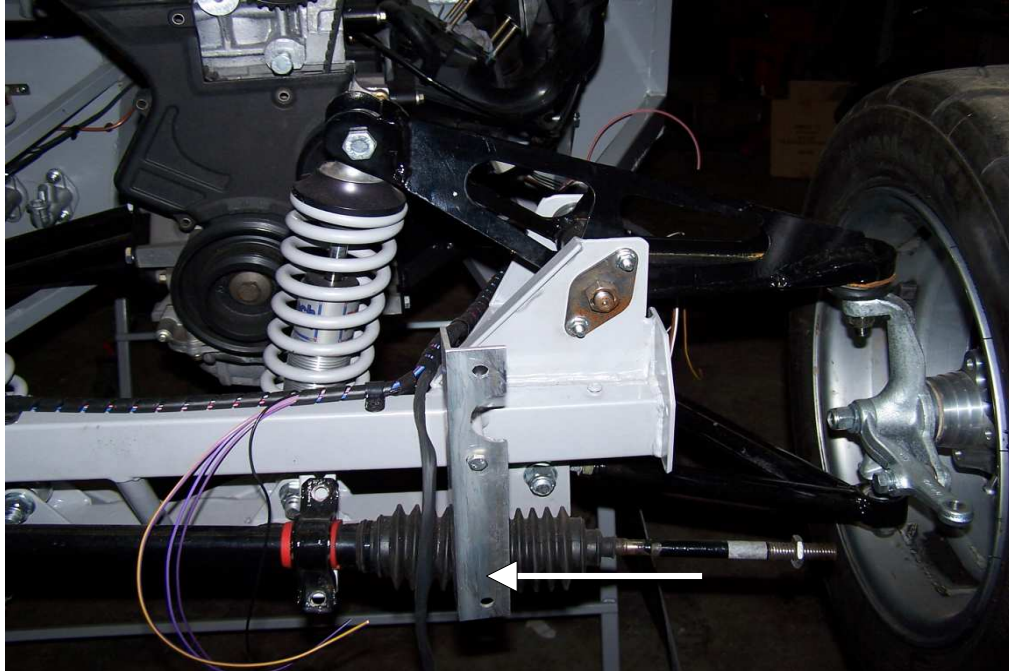
1. Position aluminium angle on the rad drill holes and fit using self-tappers, making sure not to screw into the rad.
2. Cut and file out a section for the sender unit.
3. Drill two 6mm holes in each bracket plate, and offer up the rad with the brackets attached. Position the rad so it is flush with the bottom of the lower chassis rail mark one hole and drill, fix with a 6mm bolt, then mark and drill the others.

Tips.

- Depending on the engine, you fit dictates which side the hoses go.



Rad in position



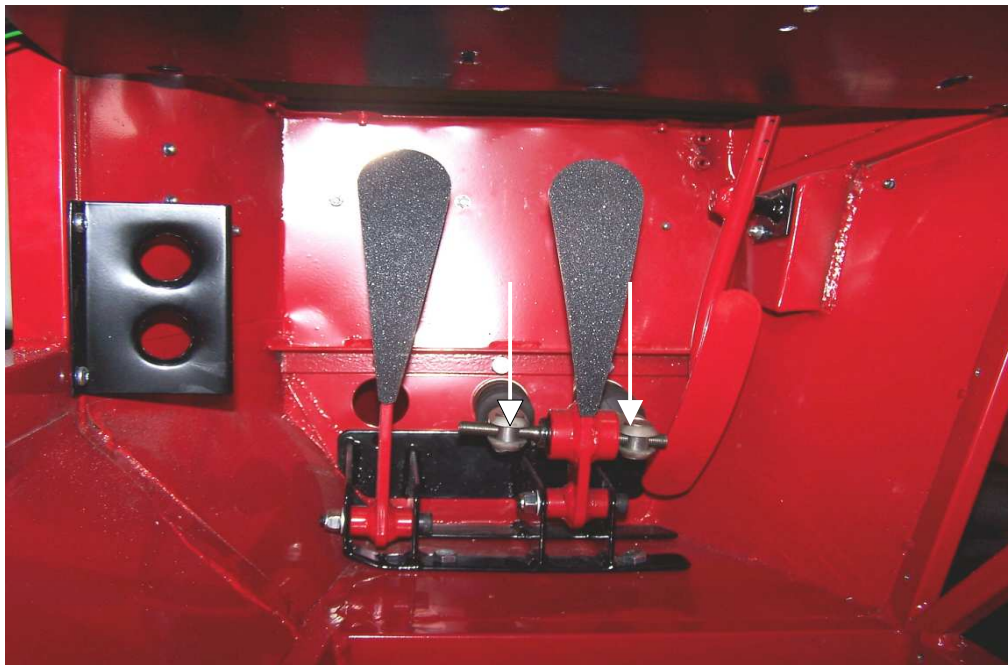
Alloy angle rad bracket before fitting the rad fitted

15, Fitting Pedal Box and Brake Lines.

1. Fit grease bushes and fit into pedals, bolt onto base frame using **12.9**, M8 Allan head bolts.
2. Bolt base frame to the floor loosely.
3. As you look from the front of the car, fit the 0.625 (front) master cylinders on the left and the 0.75 (rear), bolt into position.
4. Dry fit the balance bar (grease later in the build) and attach the master cylinder to it using clevis pins, (the M/cylinders shafts may need cutting down).
5. Fit 4 way connections as shown in photograph. The brake switch has a tapered thread
6. Unroll the entire copper pipe and get it as strait as you can before start bending.
7. Try to have a smooth curve to your bends, without any kinks, clip every 200mm and route as shown in photographs.
8. Put a small spot of copper grease on the threads as they can seize some years down the line.
9. When fitting the flexi lines make sure there are no twists in them, and when the car is on its wheels with the engine fitted, turn the wheels lock to lock and make sure nothing fouls or rubes.

Tips.

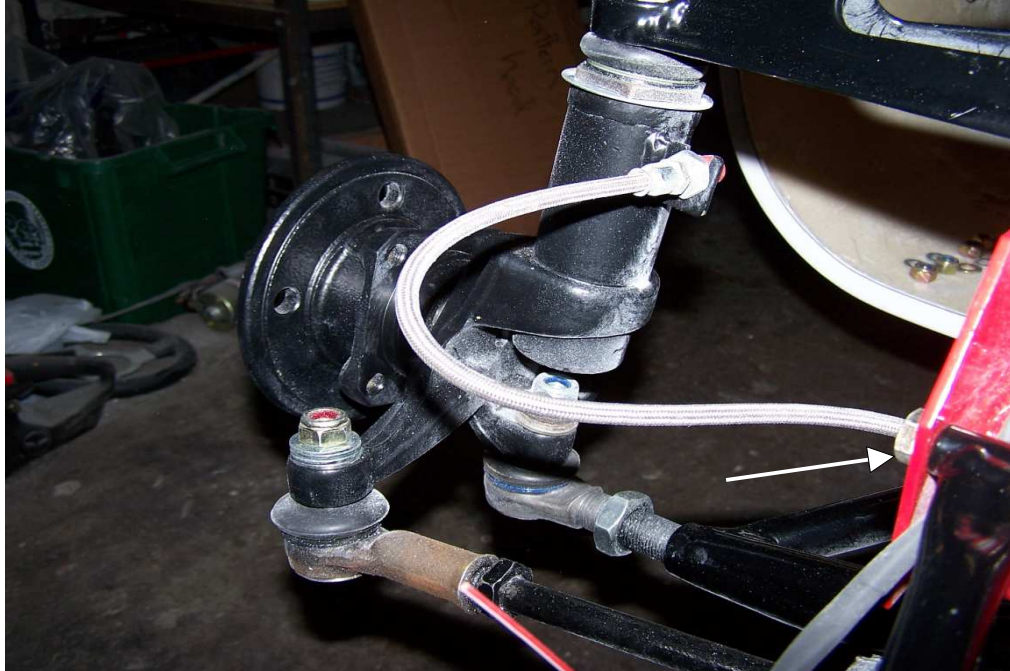
- The pedal balance bar will require drilling, and pinning, with **roll pins** for SVA as in photograph. (Arrows indicate roll pin position)
- Setting up the pedal box is shown in diagram, with more braking going to the front.



LHD car



On the 4way brake pipe joint, the bottom outlet goes to the o/s. the brake switch fits in the one 90deg to the chassis, The n/s fits in the opposite to the feed in, and runs on the lower edge of the 2x1 front chassis rail.
Arrow shows 4way union



Front flexi.
Arrow shows where the flexi is fitted through the chassis end plate.

16, Fitting the Fuel line.

1. The fuel line can run on the same side as the brake line down the prop tunnel.
2. If your car is running on injection, you will require a return from the swirl pot back to the tank.

Tips.

- Make the fuel lines from 10mm copper pipe because when it is crushed it self seals, unlike nylon or rubber.
- Solder olives on the ends of the copper pipe, to prevent a pipe from blowing off.

17, Fitting the loom.

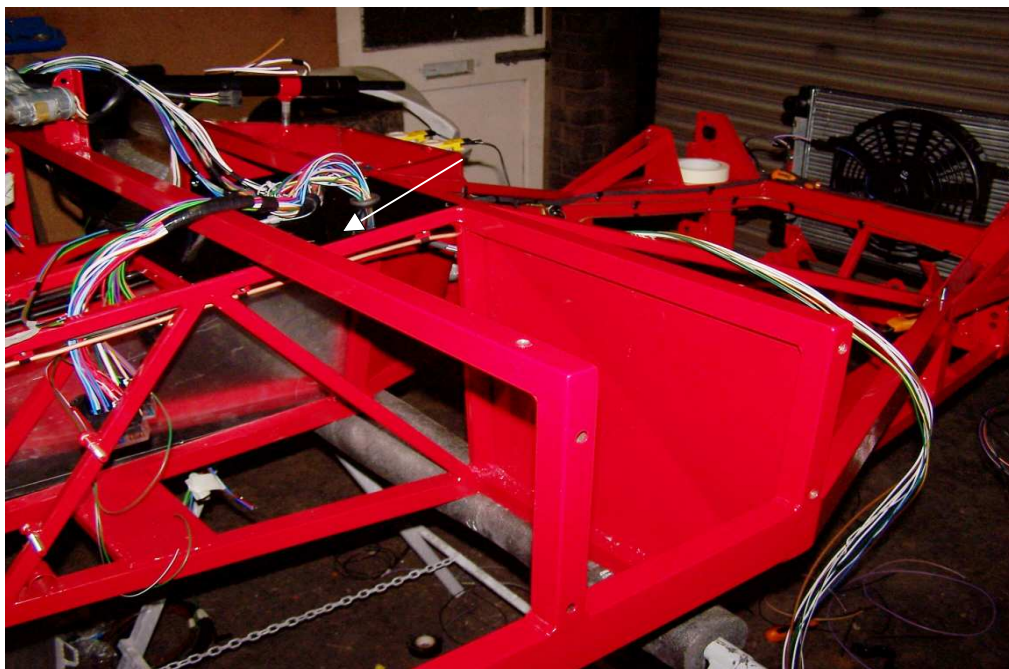
1. The wiring is not that difficult, you just have to sit down and plan your routing and where the sensors are on the engine.
2. The loom comes with sheathing on it, that can be removed and spiral wrap used or shrink-wrap instead, it dose make for a neater job.
3. The loom has colour blocks, indicating what part of the car they go too. (a) Rear. (b) Engine. (c) Instruments. (d) Front.
4. The chassis has a number of earthing points, which can be used, but it is good practice to take earths back to the Neg side of the battery. This is not necessary with the whole car but is a good thing to do with the wiring at the front end of the car, due to the amount of water that can be thrown up
5. Cut two thin flat fibreglass panels and fit to the lower part of the front bulk head top box section with pop rivets. Only fix it at the front, as it will act as a hinge, so the fuses, can be inspected, and put back out of the way.
6. The wiring can take a number of routs. We start by taking it through the top gearbox panel, and then splitting it and working out which side the engine things will fit. No point in running a wire to the starter all the way round the front of the chassis if it is only has to travel 400mm, (and it has been known to be done).
7. Take the same route with the rear loom.

Tips.

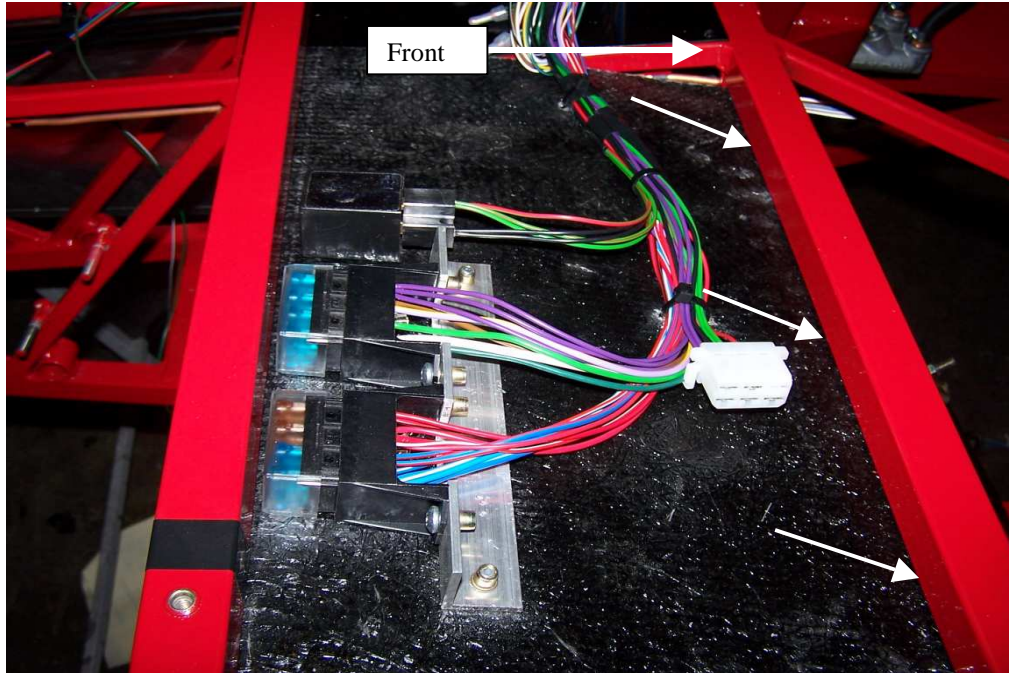
- Clip wires every 200mm.
- Do not join wires by twisting wires and tape up.
- If a wire is not long enough do not extend it with another colour. The best way to join two wires together, is to strip back 15mm on both wires, untwist them slightly twist the both together, solder them together, then slide a length of heat shrink over it and warm gently with a lighter, **don't use tape instead of shrink wrap.**



Alloy bracket for fitting fuse box to.



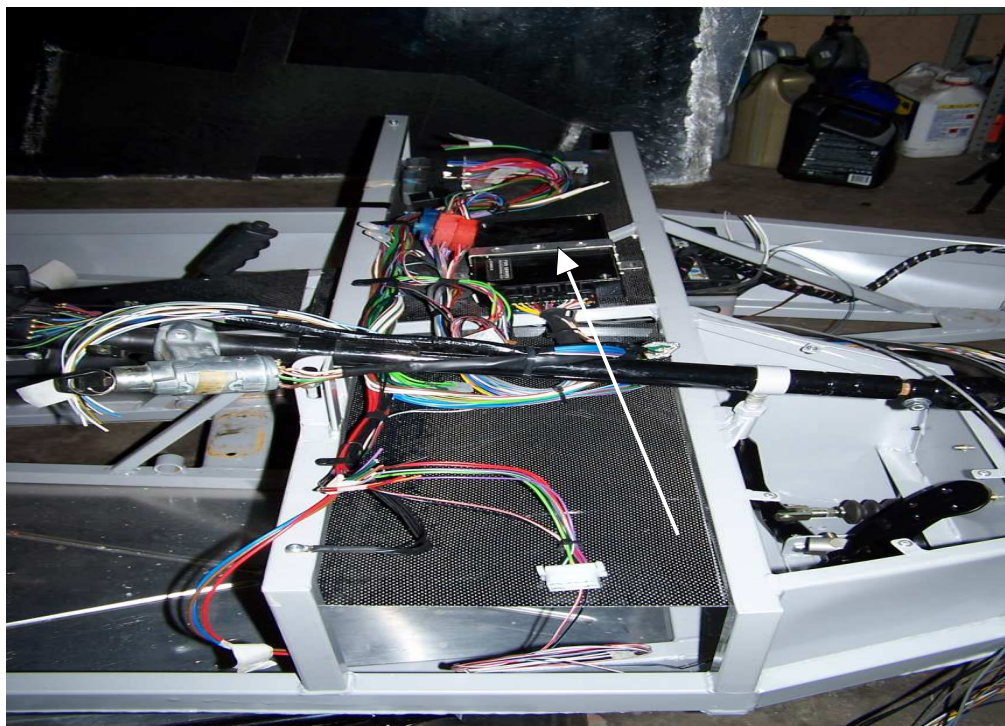
Before dash under tray is fitted, (LHD car)
Arrow shows where the wires go through to engine bay & rear of the car



After dash under tray is fitted. Only pop at the front, as then it can hinge down when the sub dash is fitted.

(Arrows show where to pop rivets)

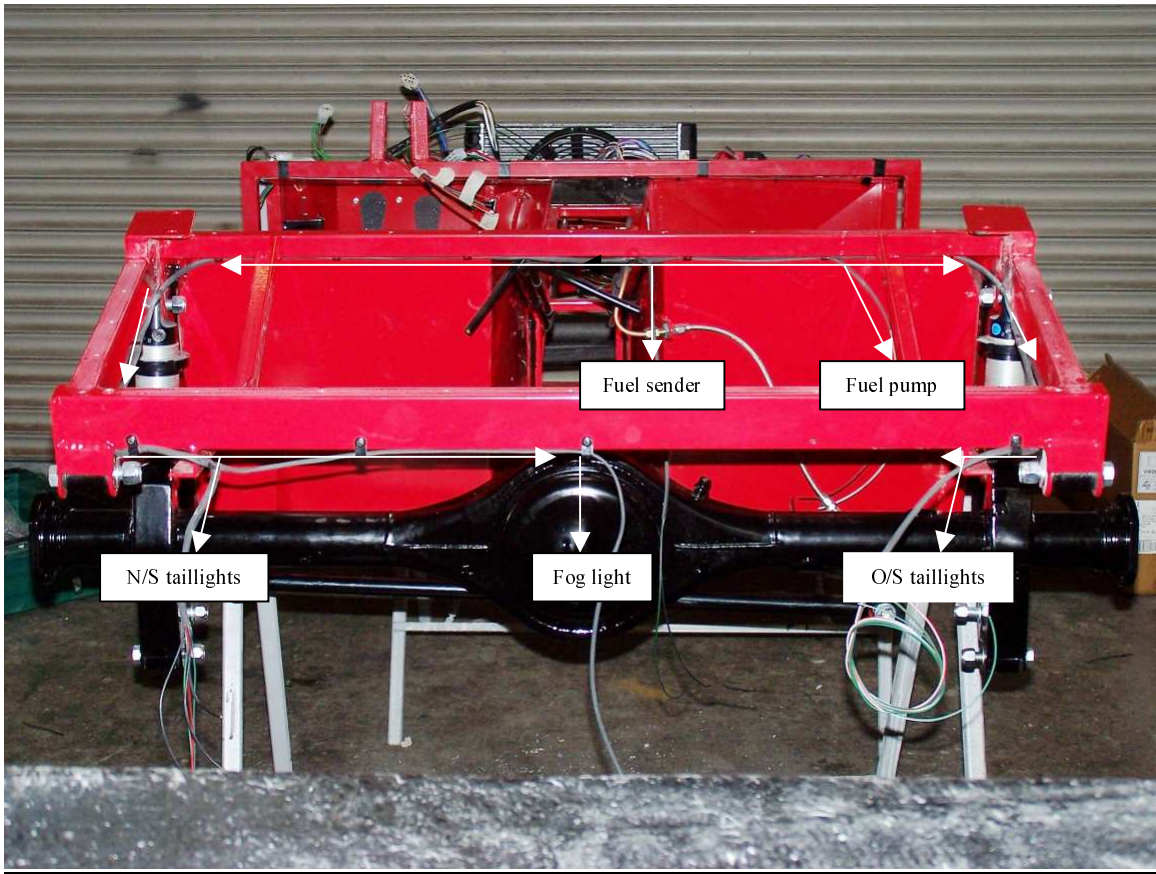
The back edge that hangs down can be fixed later when the sub dash is fitted, using quick release fixings



The ECU is best positioned in the centre on the G/box tunnel in the dry and away from heat.



Routing of the wires dose depend on what engine is being fitted



18, Fitting the Inner Tub.

1. Drop onto the chassis.
2. On the IRS chassis, the boot fitting now. Simply mark round with a scribe from the underside and cut out, the new boot bin will need trimming before glassing in position. This is best done, from the underside for a neater job. (Rough up both faces before glassing.
3. The inner tub does not need any real lining up.
4. Drill the pop rivet holes first every 80mm in the same way as you did with the alloy panels.
5. Put a bead of sealer on the chassis where the tub touches, and fix down using the large rivets.
6. Trim to the scribe lines.
7. Cut out the four holes each side for the door hinge holes.
8. Rub down around rear wheel arch, on the out side of the of the tub. And around the inside lip of the bulkhead area, as well as across the rear of the tub.

19, Fitting outer body shell,

1. The first job to do is to line up the rear axle, by fixing a straight edge to the side of the 1ins x 2ins chassis rail with G cramps, then measure up of the end plate of the axle, to the straight edge, do the same both sides, until they are the same. This job should have been done when first fixing the back axle
2. Remove steering wheel, front frame, rad, and roll bar if fitted,
3. Put car on axle stands, and remove wheels. And get the chassis level, both ways (across the chassis & front to back)
4. On the Stylus body shell it will need to be hooked over the chassis, this is not the case on the RT version.
5. **The IRS chassis cars will require the fuel tank fitting first, before the body is fitted.**
6. On the Stylus, the body will sit on the alloy floor extensions
7. On the RT, there are alloy sill extensions that are fitted after the body has been bonded in position. Then with the splay or banana pop rivets the extensions are fixed to the body.
8. Lining up of the body is one of the most important things to get right in the build of the car
9. The fore and aft lining up of the body is done by one measurement, of 28 and $\frac{3}{4}$ ins, from the front edge of the 1ins box section at the top of the seat pan, back to the, outer edge of the body shell. (This measurement may change a little from car to car but only by a small amount.)
10. The side to side to side, lining up is done by dropping two plum bobs down of the rear arch, so they both line up with each other, and the centre of the axle. Then move the body from side to side until the measurements are the same both sides, taking the measurements of the side of the axle. Its best to **lift** the body rather than knocking it from side to side.
11. Do the same at the front end.
12. The next measurement to take is right at the back of the car. From the back part of the inner tub to the boot opening lip. This should read 8ins,
13. The next measurement to take should be from the front top chassis rail to the bottom front edge of the bonnet opening and this should measure 10ins,
14. With these last two measurements the body will need propping up, to hold this measurement until the body will be bonded on
15. The places the body will need bonding to the inner tub are, **1**, across the back of the boot, **2**, up inside the rear wheel arches, **3**, across the inside of the bulkhead,
16. When bonding up in the rear wheel arch it's a good idea to cover the chassis parts,
17. Cut out the D sections in the flat sheet, these are positioned, in the nose of the body, and attach to the front frame these are then bonded in position, best to hot glue them in position first before bonding in.
18. Make sure that you have pre fitted the door hinges to the chassis before fitting the body.

Tips,

- Resin mix 1lbs of resin to 3cc of activator, this will change depending on the weather, if cold add a 6to 8cc.
- Before fibreglassing, rub down both surfaces very well, if this is not done the fibreglass will not form a good key,
- When you think you have got the side to side measurements correct bond in a small piece of fibreglass (3ins x 6ins) to the rear of the of the boot section and the same to the inside of the bulk head, this will stop the body from moving if knocked,
- Put two layers of matting everywhere, and overlap the joints,
- Cut matting into workable lengths (4ins x 8ins)
- Use a stippling action to work the resin into the matting, and to remove air bubbles,
- If the body doesn't seem to moving right when positioning it at the rear, the inner tub may need a small amount of trimming at the lower part of the door may be only 5mm.
- Check and recheck the measurements before you start fibreglassing.



Drop plumb of rear arch and measure to axle end.
Do the same at the front end.
Set plumb bob to centre of axle



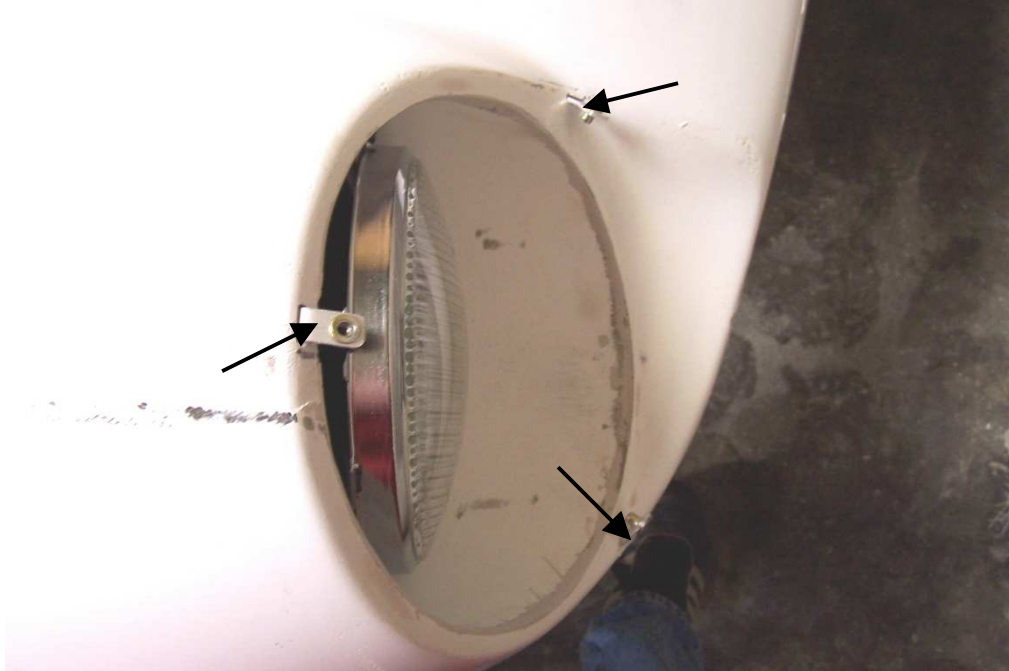
Measure aproxanetley 28 and $\frac{3}{4}$ INS from chassis at the back of the seat pan rail, to boot edge.
Check wheel alignment after to make sure nothing catches or rubs.



Cover up chassis before fibreglassing. Do the same at the front end



Headlight insert for the Stylus mini headlight unit



Top view, showing headlight unit position.
Arrows indicate fairing brackets these are glassed id from the rear. There position is not critical.



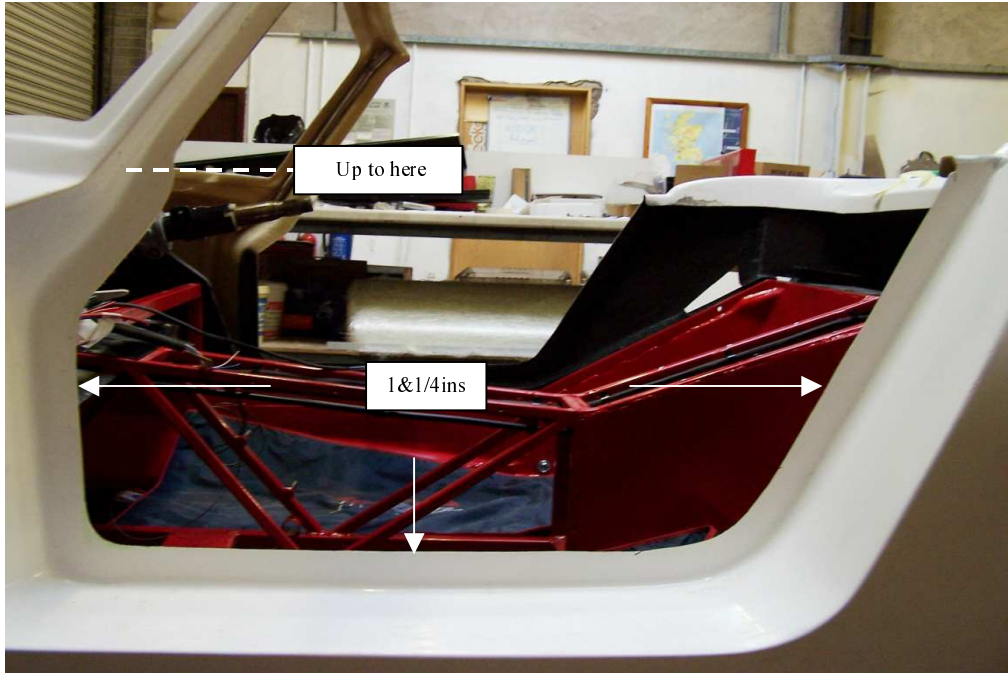
Light close up with carbon effect adjuster cover fitted

20, Fitting of the Doors

1. Cut out the door opening leaving a 1ins return.
2. Cut two holes through the body shell so the hinge arms can go through and open and close with out catching.
3. Fit door closing rubber seal.
4. Cut two holes in the inner door panel, so the hinge arms can go through.
5. Drill holes in the inner door and fix with bolts.
6. Some packing will be needed between the hinge and the inner door skin the ensure the door meets the seal all the way round,
7. Cut a strip of aluminium 1cm x 200 (approximately) Make this into a S shape, clamp the tail end of the S to the door hinge, on the inside of the inner skin. The bend the other end so it replicates where the front shut line of the door would be when shut. Then open the door and see if the end of the aluminium catches the outer bodywork. If it dose move the door so it dose not. If this is not checked the front edge of the door will damage your paintwork.
8. Fit door handle and locks.
9. When the inner door is locked mark where the inner skin protrudes past the outer body shell and trim off excess. (More trimming will be required)
10. Offer up the outer skin. Ignore the shut line around the outside of the door; this can be made up afterwards. Line up the outer skin using the bodylines towards the top of the door, and the lines at the bottom of the windscreen and the line at the back of the door opening.
11. Trim of more of the inner skin so the outer skim sits flush with the outer body
12. Tape and cover up the lock mechanism, and put some plastic covering on the door sill, so that when you will be bonding the two shells together the resin dose not make a mess of the sill.
13. Using aluminium and hot glue hold the outer skin in place.
14. Bond the inner skin to the outer skin with two layers of fibreglass matting.
15. The doors are different from side to side. (They always have been right from the 1st car)



Photo show's door hinge



Door cut out 1 & 1/4ins. This is done first before fitting the inner door



Packing door hinge to inner skin



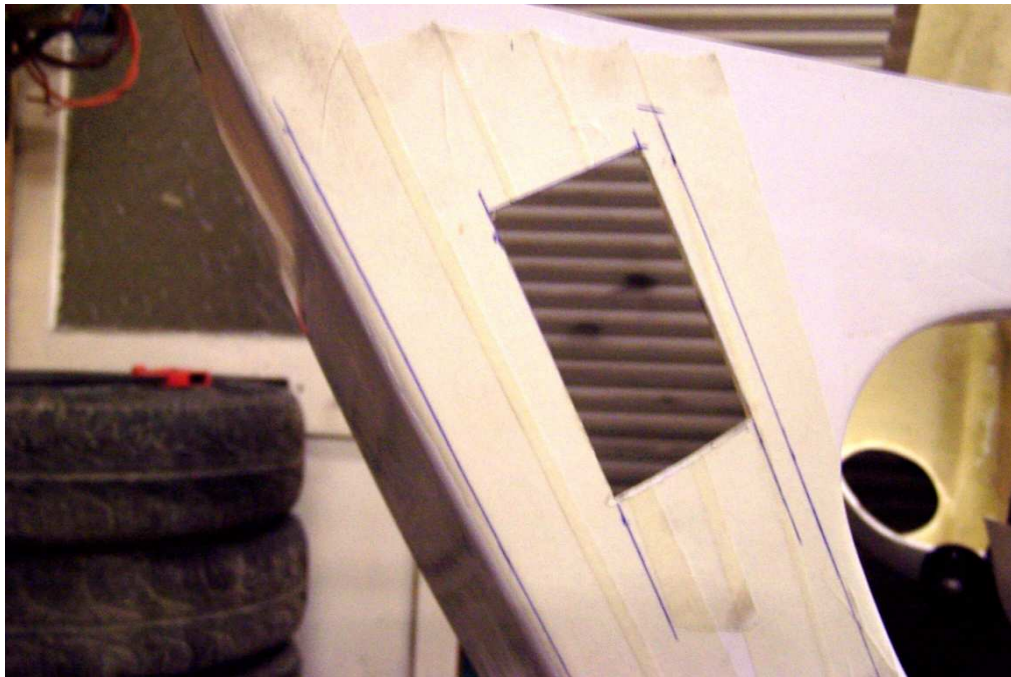
This shows the alloy strips that are replicating the front door shut line. It is important to do this, to make sure the front of the door doesn't dig into the body



The measurement from the sill to the bottom of the inner door skin



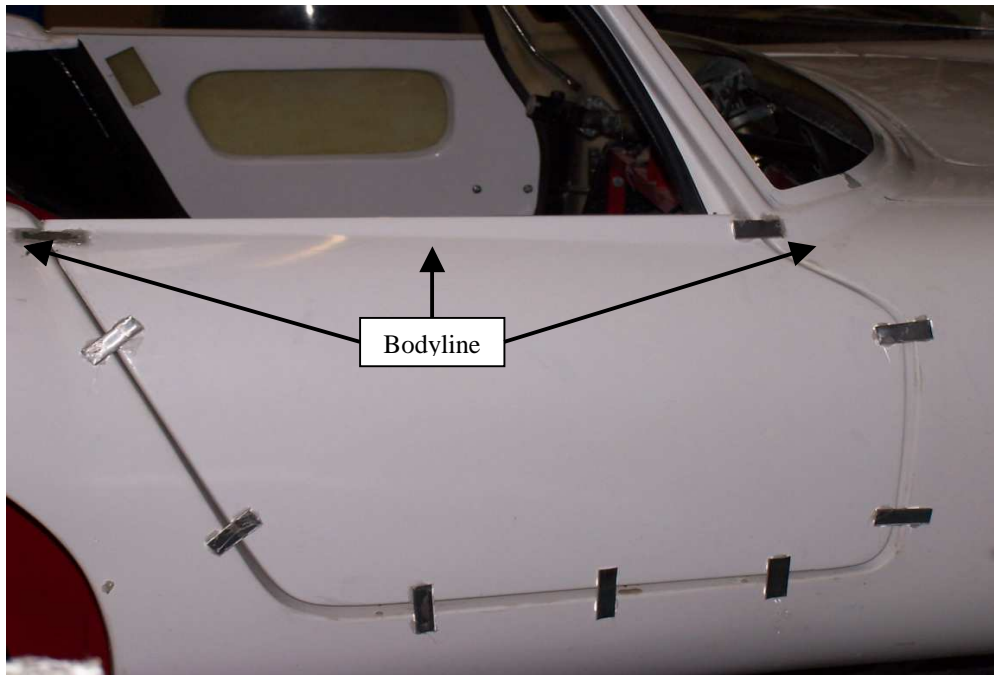
The gap at the back of the door between inner door skin and body shell
About 20mm. (Its not the same all the way down)



Door handle cut out



Door Handle in position.



Outer door hot glued in place with alloy strips before bonding to the inner door.

21, Fitting Bonnet and Boot

1. Cut down 25x3mm aluminium strips,
2. Bond two strips to the under side of the boot
3. Mark there position on the body, cut two slots for them to slide into,
4. A lock kit can be had from SSC.
5. The same is done with the bonnet.

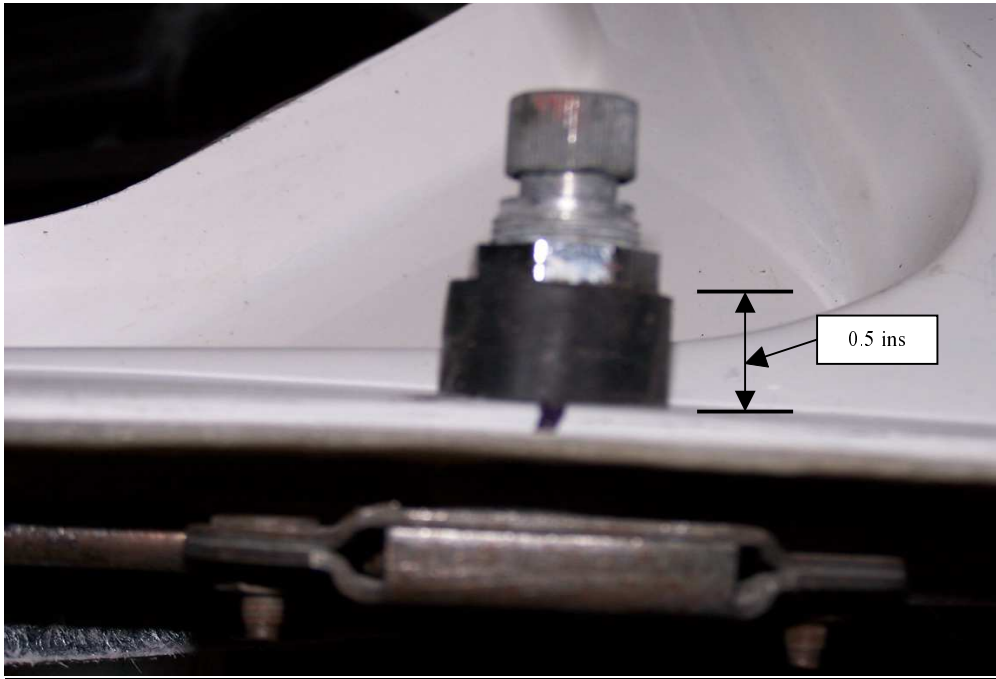


Under side of boot

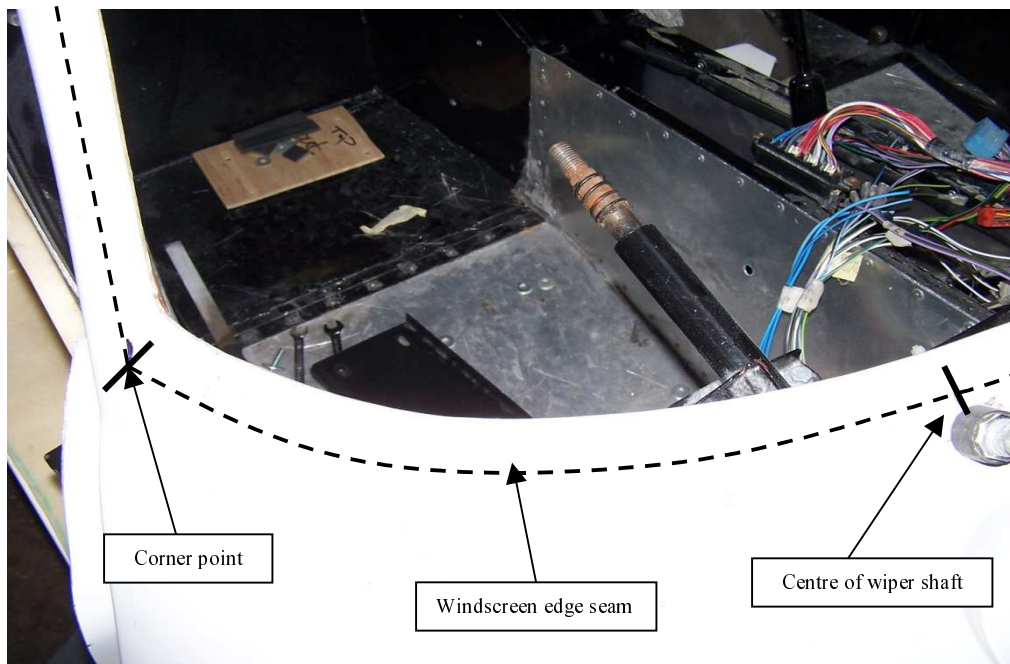


Boot hinge location.

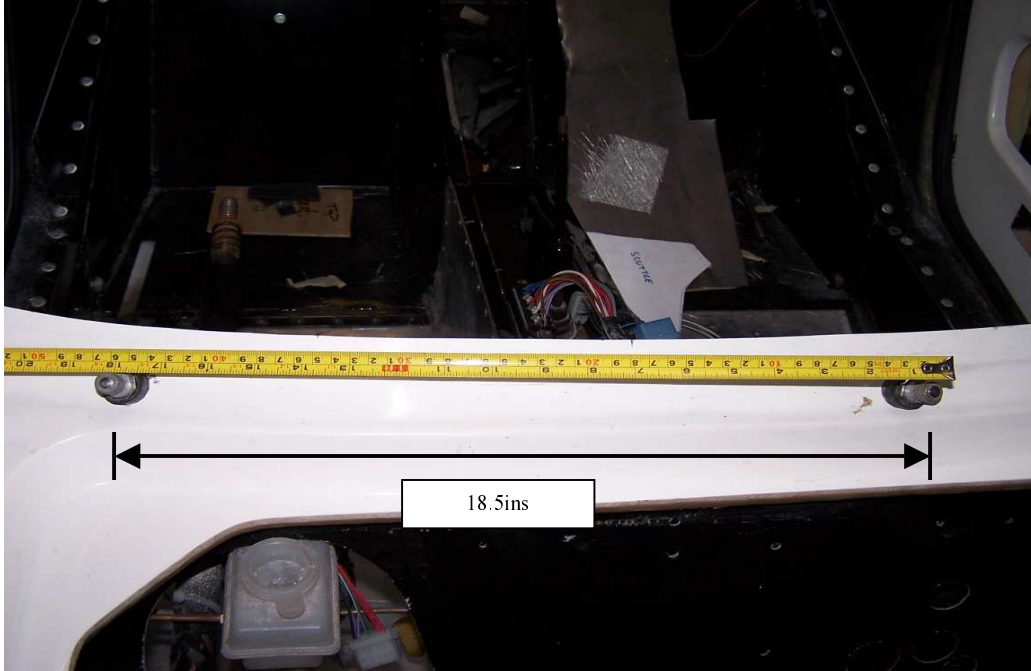
22. Fitting the wiper motor



Cut down some water hose to 0.5 of an ins and use this as a spacer.



14.5ins measuring around the curve from the corner to the centre of the wiper shaft.



The measurement from centre to centre is 18.5 ins



Keep the bottom of the wiper motor above the chassis cross member
The motor is located through the bulkhead,