ZK BODYWORK FITMENT

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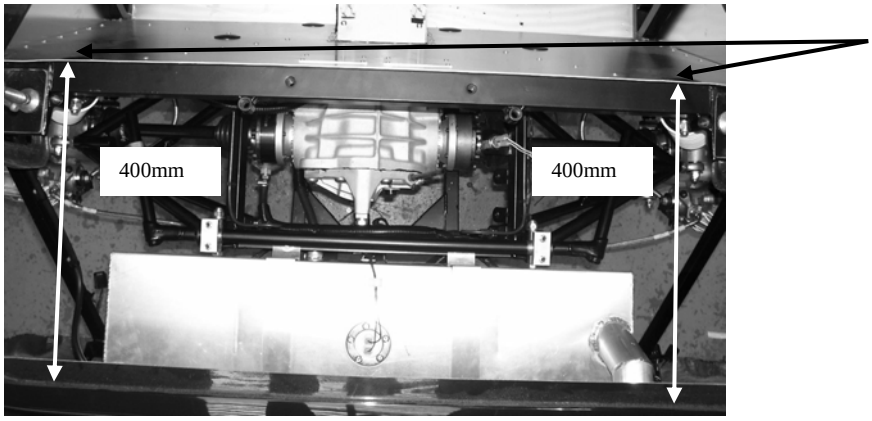
1. Introduction

The ZK bodywork is the standard style supplied with all basic kits up to complete modular kits. The design has been developed over several years and is now fitted with location blocks for ease of assembly.
There are fixed arch versions and also detachable arch versions for ease of replacement should it ever be needed.
The ZK style has two types of bonnet to choose from and three different types of nose. All of which are fitted in the same basic way.

Locating the Rear Section

The procedure for fitting either the fixed or detachable arch ZK rear section is principally the same.

- With the help of an assistant, lift the main body section over the chassis.
- The attitude of the body section during this process needs to be approximately 45 degrees, with the front end being the higher.
- With the body at this angle starting at the rear of the chassis, hook the lower edge under the rear chassis rail below the fuel tank and then lower the front down over the chassis.
- The body sides then clip over the chassis side rails.
- Next with the body resting on the chassis, adjust the body to achieve the 400mm dimension shown below. Clamp the body in position with two "G" clamps on the roll bar plates.
- **Note;** there are slight differences in the 400mm dimension between flat bonnets and V8 bonnets, so make sure you use the correct one.



Distance from datum seat back to vertical edge of boot box recess for;
Flat Bonnet
400mm L/h side
400mm R/H side
V8 Bonnet
400mm L/H side
405mm R/H side

Place the scuttle in position onto its four locating blocks, there are two either side on the side panel return flanges and clamp in position. (The scuttle may need some fine trimming around the chassis dashboard hoop ends and will defiantly need a slot trimming to clear the top steering column on the front face of the scuttle)

- Place the bonnet onto its locating blocks, one each side just in front of the scuttle face.
- Make sure all the panel fit lines and split lines are correct to each other and that the whole body is sitting central on the chassis.
- If they are not then just loosen the clamps and move the set until you are satisfied with its position.
- Finally re-check the 400mm dimensions from the datum.

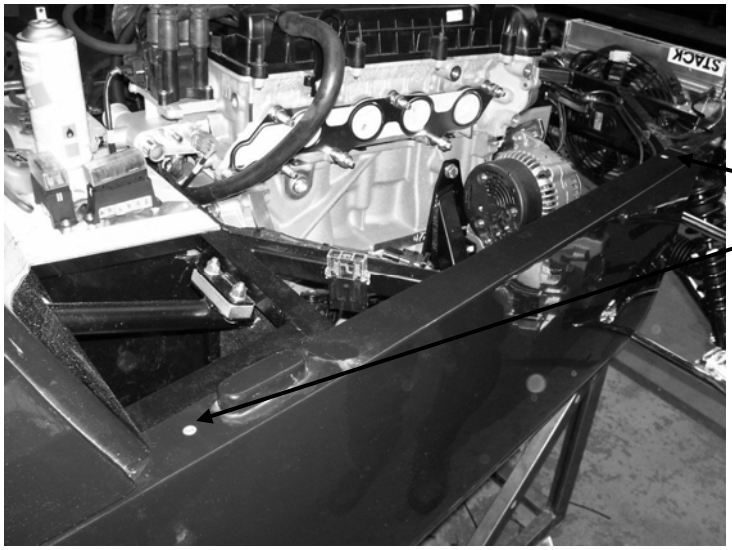
Note; If you are fitting ZK bodywork to a Mazda chassis you will have to do quite a bit of trimming around the dashboard hoop and the inside return on the scuttle. Also the scuttle rivnuts are both fitted between the two mounting blocks not one either side as the normal ZK position due to the dashboard hoop position.

"G" clamps on the two roll bar mounting faces

Scuttle and bonnet in position, checking the fit of the panels and centralising the set on the chassis

When the correct position has been determined for the bodywork the fixing process can begin.

- Remove the bonnet and drill a 4.1mm hole through the pre-drilled hole in the top return at the front of the engine bay side panels.
- Then fit a 4.1mm countersunk rivet in each hole.
- Now do the same at the scuttle end of the engine bay about 25mm forward of the scuttle front face.



Drill and fit two 4.1mm rivet here as shown. The rivet near the scuttle is important because it holds this area firm when you remove the scuttle later.

- Fix the back of the rear section to the chassis
- Check the 400mm dimensions, also checking that this area of the bodywork is still sat centrally on the chassis.
- Fix this area by drilling and fitting a 4.1mm body rivet into each roll bar mounting plate to secure the rear body.

Drill and fit two 4.1mm body rivets here as shown. Place them right in these corners so they are not in the way when you mount your roll bar later in the build.

The final fixings for the main centre body section are to drill and rivet the rest of the engine bay top side panels.

- Drill 4.1mm holes at approximately 230mm centres along the top returns of the engine bay from the front rivet that was fixed earlier, back to the other rivet just in front of the scuttle face.
- Fix using 4.1mm countersunk rivets

Drill and fit 4.1mm countersunk rivets here as shown. Place them approximately 230mm centres

Scuttle Fixings

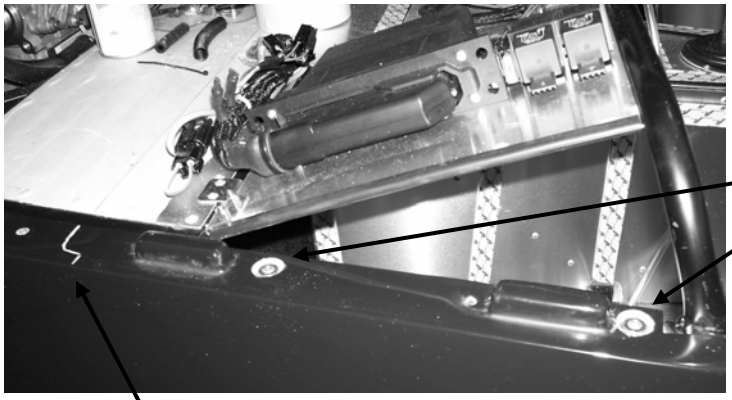
Before removing the scuttle prior to drilling its fixings it is advisable to mark around the two end faces on the side panel top return for reference purposes later.

- Draw onto masking tape or use a china graph pencil.
- Do not use felt or marker pens directly onto the bodywork.
- Now remove the scuttle.

Depending on what level of kit you have taken from Westfield, the chassis may or may not have had its rivnuts pre-fitted. Note: If a Mazda kit is being built the exact position of these rivnuts will not be the same as shown due to the dashboard hoop position.

Pre-fitted rivnuts

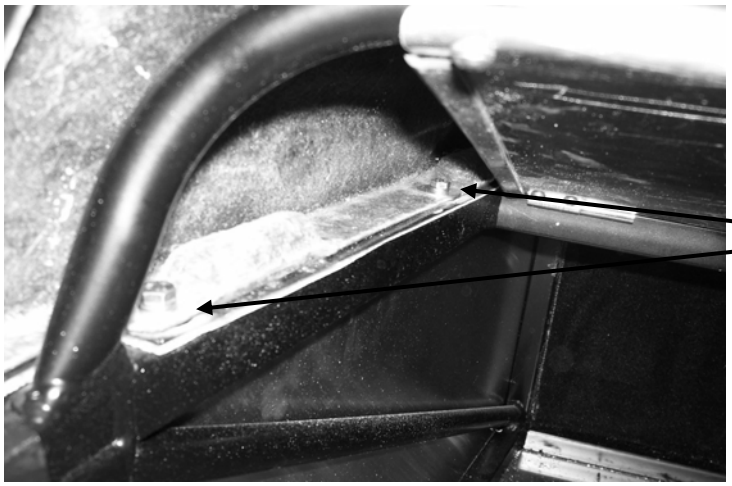
- Create a clearance hole through the top return on the side panels around each rivunt as shown below



Create clearance holes through the fibreglass flange of about 19mm diameter around the rivnut heads.

Marking out the position front and rear of the scuttle on this flange

- Place the scuttle back onto the locating blocks and mark the position of the rivnuts
- Drill a 6.5mm hole in the scuttle flange for the fixing bolts.
- Fixed using M6 x 25mm set screws with 6mm spring and repair washers.



M6 set screws with 6mm spring and repair washers hold the scuttle in position.

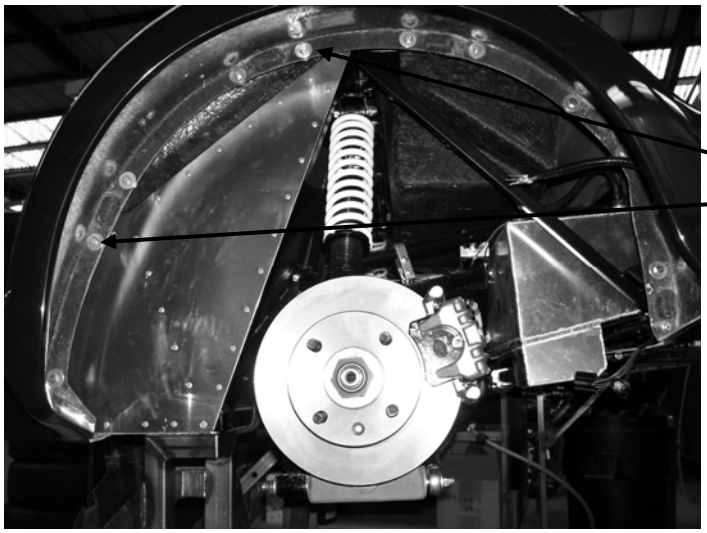
Non-rivnuted chassis

- Place the scuttle in position on the location blocks and clamp.
- Choose two places on either side of the scuttle, one behind each locating block.
- Drill four 6.5mm holes through both fibreglass flanges, and then through the top face of the chassis tube.
- Remove the scuttle and open up the holes in the side panel flanges to 19mm clearance and then drill the chassis tube out to the correct size for your rivnuts.
- Fit the rivunts and then replace the scuttle and just make sure all the fixings locate correctly.
- Fixings are M6 x 25mm long set screws with 6mm spring and repair washers. (see previous picture)

Fit Detachable Rear Arches

The rear arches are self positioning on the rear section with the use of locating blocks and sockets.

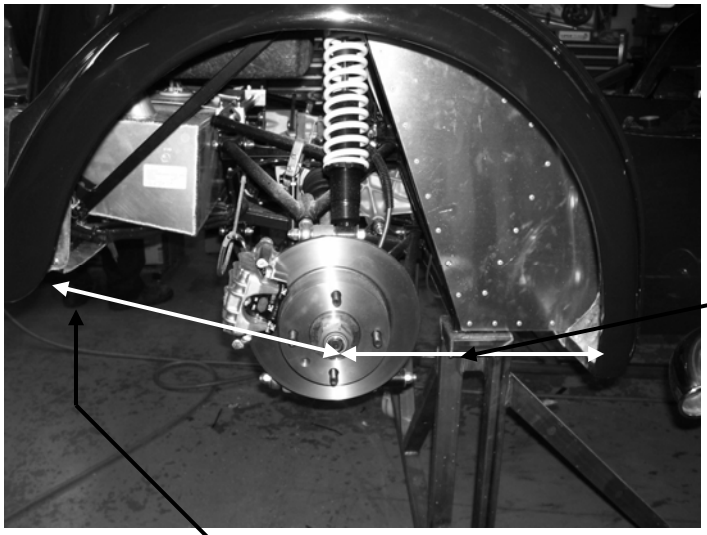
- Place each arch against the rear section locating it on the blocks
- Clamp in position and drill twelve 6mm holes around the flanges, one each side of the locating blocks
- Fix the arches to the body with M6 x 20 set screws with repair washers each side.



Drill and fit M6 x 20 set screws with repair washers either side of each locating block.

Finally secure the rear fibreglass under-body panel to the 19mm square chassis mounting brackets at the rear of the chassis.

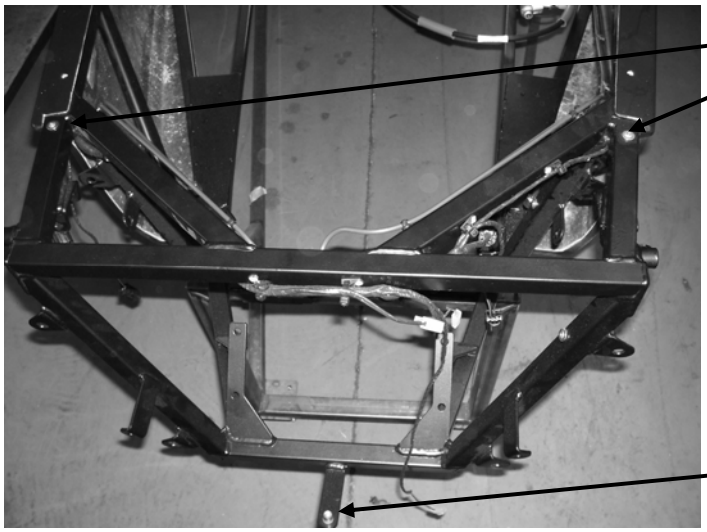
- Before drilling any holes equalise the wheel arch aperture each side from the wheel mounting face on the rear uprights
- Lift the back of the rear section upwards until it touches the chassis tube and then clamp in position (this may need to be lifted as much as 25mm, but the flex in the body will do this)
- Wheel hub centreline to rear arch should be between 10mm to 20mm difference, front to rear.
- Westfield recommends the fitting of a wheel and tyre to give a proper perspective of the wheel to wheel arch fit.



- Drill six 4.1mm diameter holes through the fibreglass and the lower rear chassis tube.
- Secure the body panel to the chassis using six 4mm diameter x 16mm long large head body rivets

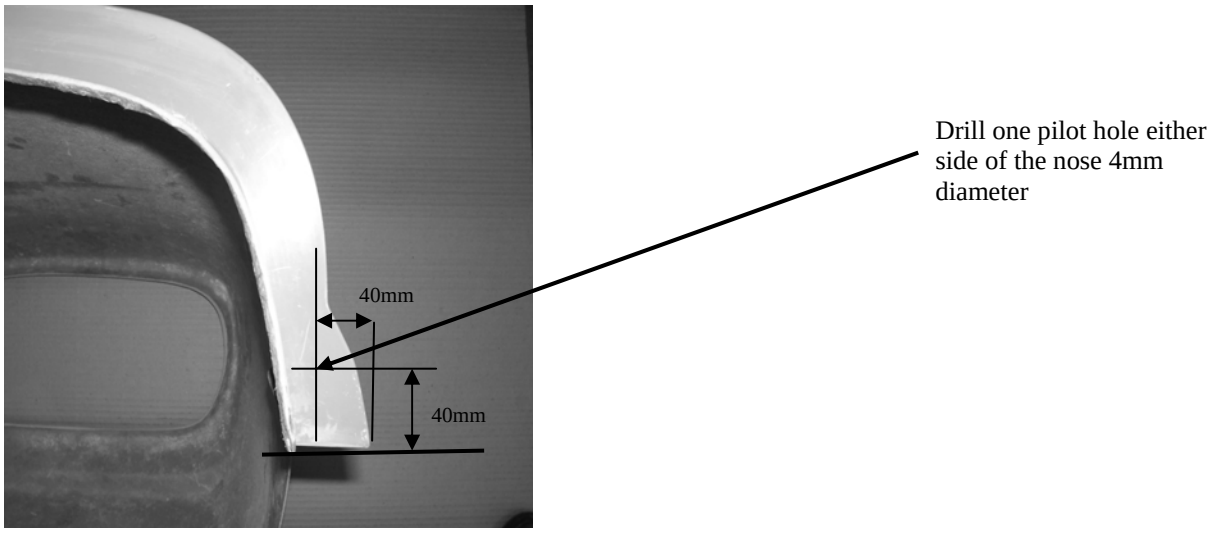
Nose and Bonnet Fitting

Westfield will have fitted the rivnuts to the front of your chassis to mount the nose cone. There will be two M6 rivnuts on the top side chassis rails and one M8 rivnut on the mounting strap from the front lower chassis rail.



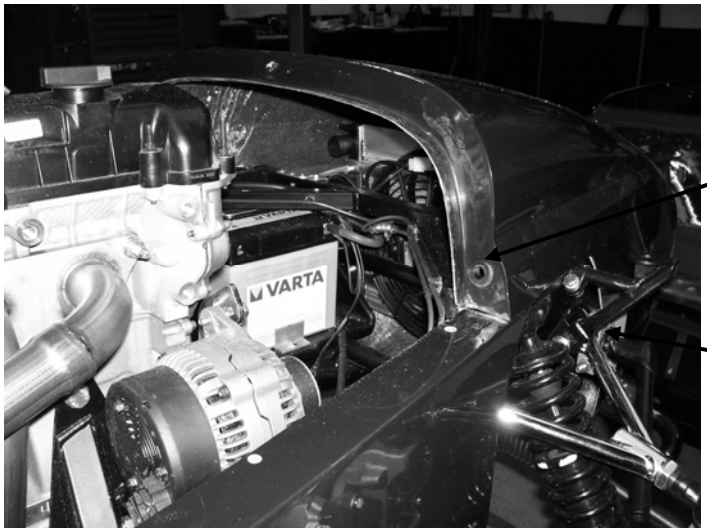
If you are using the optional Ducted nose arrangement then use the nose panel without the radiator or ducting for alignment purposes. The radiator and ducting will be fitted later. The nose to bonnet location is by two alloy locating pins which will be hidden from view.

- Mark the position of the location pin hole and pilot drill 4mm as shown



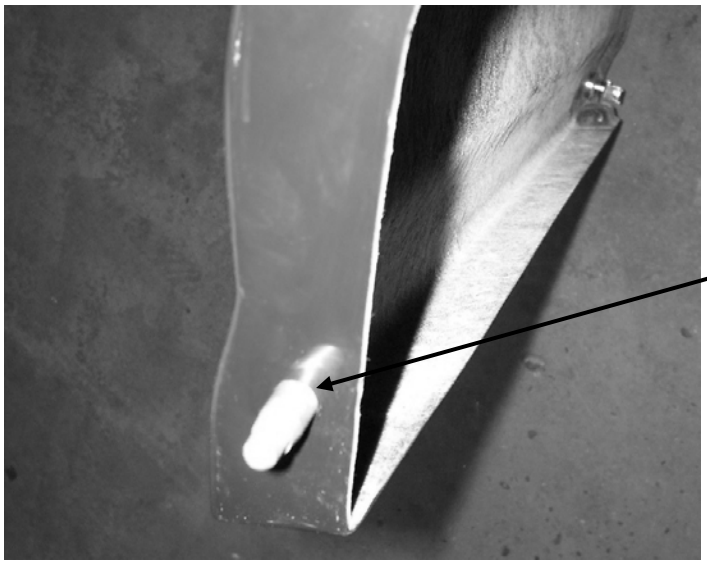
- Place the bonnet in position onto its locating blocks and then place the nose return flange into the front of the bonnet
- Clamp the two panels together and onto the chassis side rails
- Make sure you achieve a Best fit condition for the nose and bonnet to the scuttle and side panels
- Drill pilot holes through the M8 and M6 rivnuts

- Drill a 4mm pilot hole through the bonnet flange using your two holes in the rear flange of the nose ready for the locating pins
- Remove nose and bonnet
- Open up the M8 and M6 rivnut holes in the nose, to be clearance for the bolts
- Open up the two rear nose flange holes to 19mm to accept the bonnet pin grommets (as shown below)
- Open up the two mating bonnet holes to 5mm and fix the locating pins with M5 x 20 dome set screws and repair washers. (as shown below)



Drill out pilot hole to 19mm in nose only to accept bonnet pin grommet

Note; If an outboard front anti roll is fitted to the vehicle the sides of the nose cone will need some extra trimming to clear the aluminium mounting blocks



Drill out pilot hole to 5mm in bonnet only and bolt pin into position with M5 x20 dome set screw and repair washer

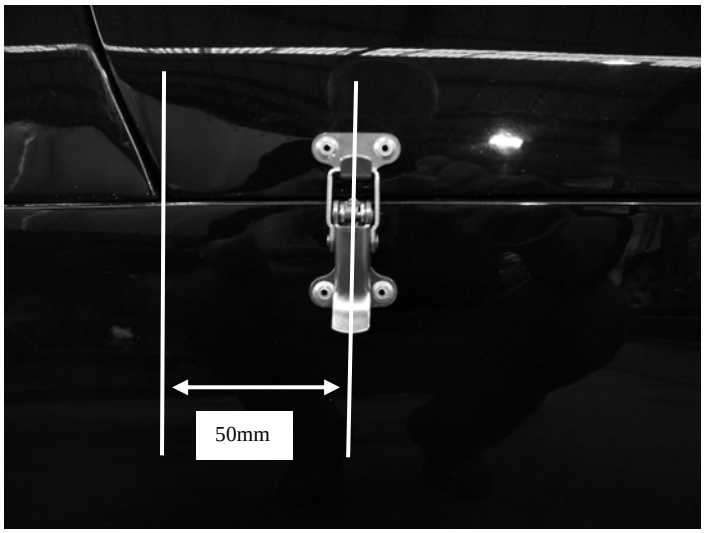
Bonnet Lock and Catch Fitting

There are two different types of bonnet fixings that Westfield supply. The basic one is a pair of over centre catches and latches. The optional upgrade is a pair of key operated bonnet locks.

Over Centre Catches

Position the bonnet and nose cone onto the chassis and make sure all the panels are correctly aligned with each other.

- Cover the area on the side panel and bonnet with masking tape so as not to damage the fibreglass
- Using the catch assembly as a template mark the five holes through the catch and latch. (the top hole of the catch unit is covered by the lever)
- The position of the catch should be set 50mm in front of the scuttle split line



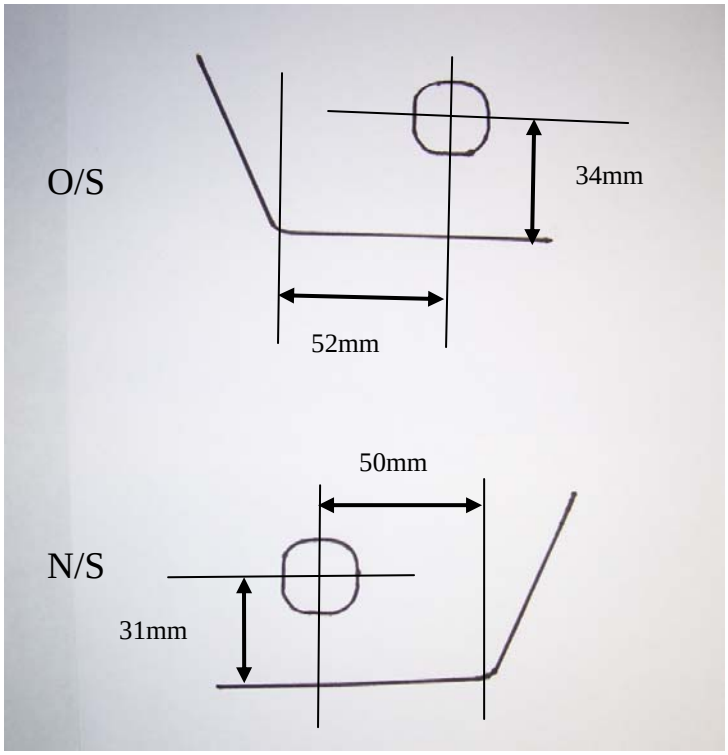
- The top of the catch unit needs to be level with the top edge of the side panels
- **Note;** make sure you allow enough tension on the catch when marking the hole positions
- Drill the two sets of five holes 4.1mm
- Fix both halves of the catch using 4.1mm x 16mm long body rivets

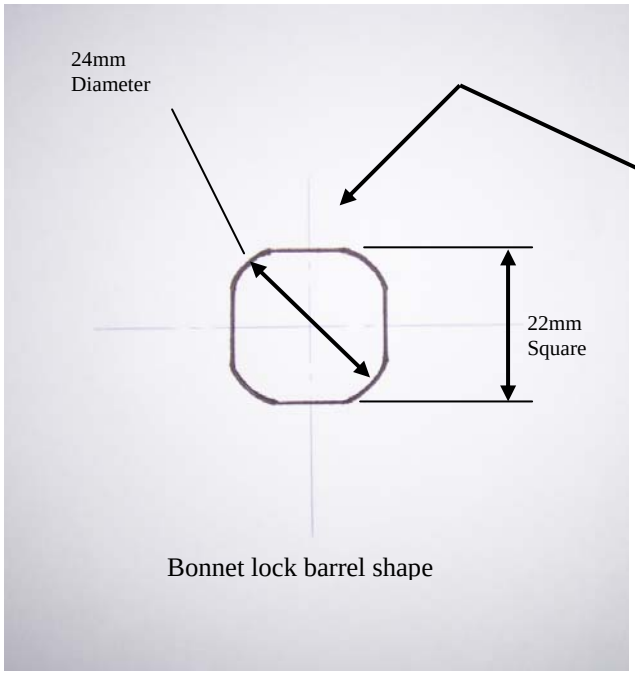
Bonnet Locks (upgrade)

The bonnet lock arrangement is a two piece component, comprising of a barrel type lock fitted to the bonnet and a catch fitted to the upper chassis rail. The fitting of these locks is easiest done with the scuttle removed from the chassis. This allows you easy access into the bonnet for positioning of the components.

- Using masking tape, cover the outside of the bonnet in the area where the lock is going to be fitted.
- Cover the area on the top of the chassis where the catch is going to fit with masking tape.

- Mark the position of the lock barrel onto the tape. (note: the position is slightly different from side to side



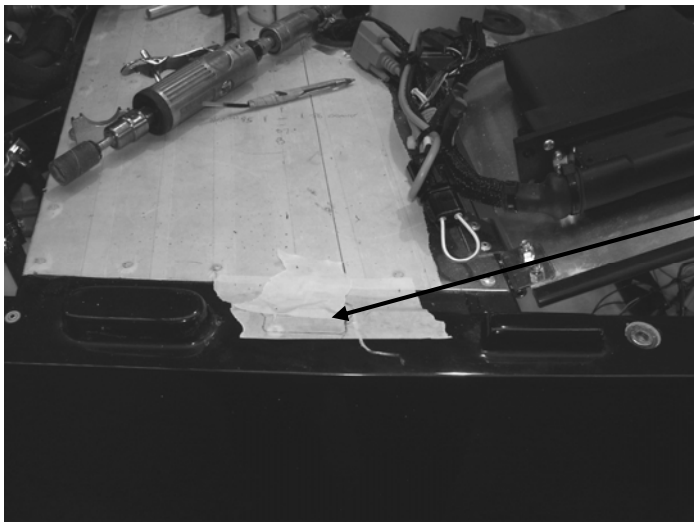


Drill out the marked area with a 20mm core drill first and then carefully open out to the correct profile with fine hand files

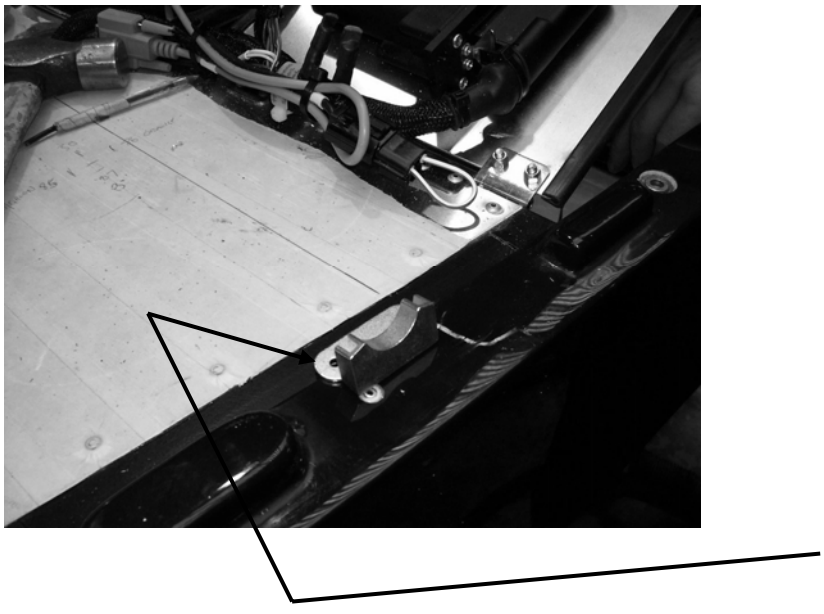
Fit the barrels into the bonnet and then tighten the locknut making sure the lock arms in there shut position, are facing downwards towards the chassis rail.

With the bonnet lock barrels fitted, now remove the scuttle from the chassis. This will allow you to see the bonnet lock arms from inside the bonnet.

- Cover the panelled chassis scuttle top with masking tape
- Locate the bonnet catch in position on the bonnet lock arm
- Mark the position of the bonnet catch onto the chassis rail (as below)



- Remove the bonnet and mark through the two holes in the brackets
- Drill the holes 4.1mm for either body rivets or better, tap the hole out M5 and use button head screws
- Depending on where the catch actually sits on the bodywork return, you may need to place a washer under the bracket to stop it from tipping out of square when the screws are tightened.



- Finally replace scuttle and check bonnet fit to all other panels

Lower Body Panel Fit

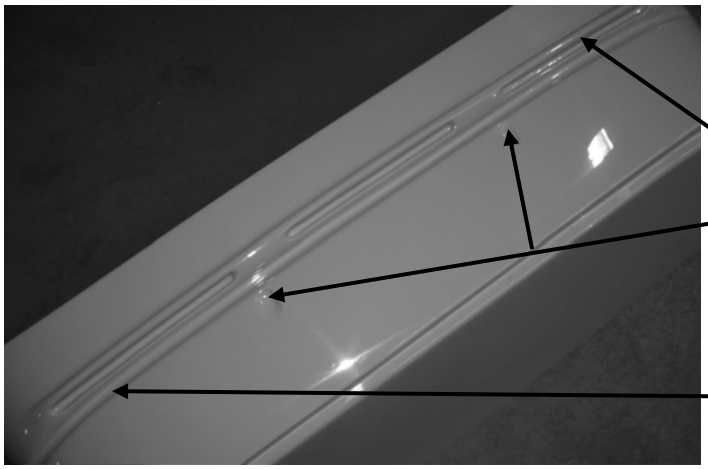
Re-check the alignment of the front body panels

- When the alignment of the scuttle, bonnet and nose cone panels is satisfactory, then the lower edges of the main body section can be secured to the lower chassis rail.
- Drill twenty 4mm diameter holes, ten on each side, of the lower edge of the main body section, these holes should be at 200mm intervals
- Make sure when drilling these holes that the fibreglass panel and the chassis are drilled through at the same time
- Secure the lower flange with twenty 4mm x 16mm long large head body rivets
- Note; a small amount of distortion will possibly occur on the lower flange due to this operation, this is normal.

Scuttle Preparation and Fittings

Before the windscreen and pillars are fitted there may be some body preparation required. If the optional heater kit is to be fitted, the screen demister slots will need to be cut out at this stage. **Note**; this operation may have already been undertaken at Westfield. However if it has not, proceed as follows.

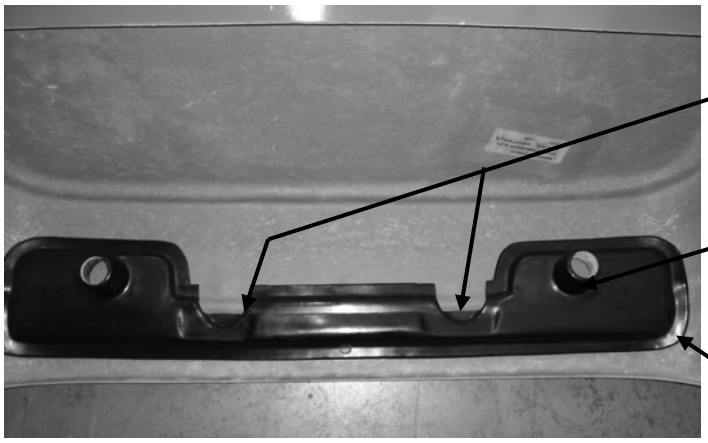
- The top face of the scuttle has three recesses across it to show where the trimming operation needs to take place
- Drill a 4mm hole at either end of the three vent recesses
- Very carefully using a file or a de-burr tool trim out these slots about 4mm wide, and to their full length
- Open up the two oval shaped dimples for the windscreen wiper wheel boxes ready for the wiper fitting.



Trim these three recessed slots straight through the fibreglass, about 4mm wide to their full length. Also trim the two wiper wheel box dimples ready for wiper fitting later

Windscreen recess (this is the recess that the lower edge of the windscreen sits into)

The standard modular kit is supplied with an electrically heated windscreen. If you have this, you do not need to fit this ducting. If you have the heater option, the ducting needs to be fixed inside the scuttle. It fits naturally in position but should be equally spaced around the two windscreen wiper wheel box dimples in the top surface of the scuttle. (As shown, this is to be fixed in position with fibreglass or other similar adhesive around the outside edge)



The heater ducting now in position placed equally around the wiper wheel box dimples

Windscreen Heater de-mister hose fittings

The heater ducting needs fixing in position with fibreglass or similar adhesive around this flange

Scuttle Preparation for Mazda SDV

The Mazda Single Donor Vehicle kits can only be fitted with a heated windscreen and not an interior heater. The process for fitting the windscreen is as described in the following section.
Before fitting the windscreen to the scuttle on a Mazda car you need to pre-fit the dashboard because it needs an area of the top face removing to allow the Mazda speedometer and clock cluster to fit behind the dashboard.

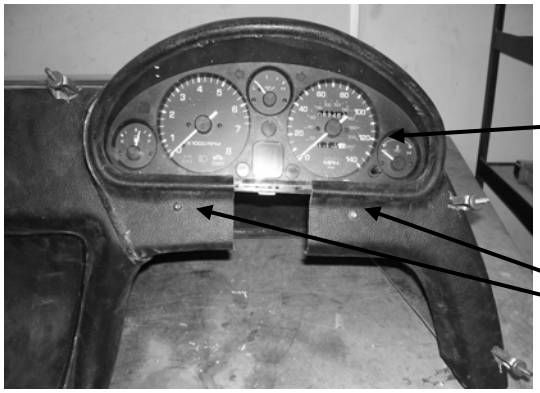
- Using masking tape, mask the top face of the scuttle in the area above where the steering wheel will fit
- Place the scuttle onto the location blocks on the side panels
- Place the dashboard into its correct position and mark around the domed section that is on top of the scuttle

Mark around the back of the dashboard bulge for the clock cluster

The dashboard in position on the scuttle

Trim about 8mm inside the line to allow some fine trimming later

- Trim to 8mm inside this line making the piece you remove smaller not larger than the line.
- This may need some fine trimming at a later stage when the dashboard is finally fitted but it puts the cut out in the correct position to enable the windscreen to be fitted.



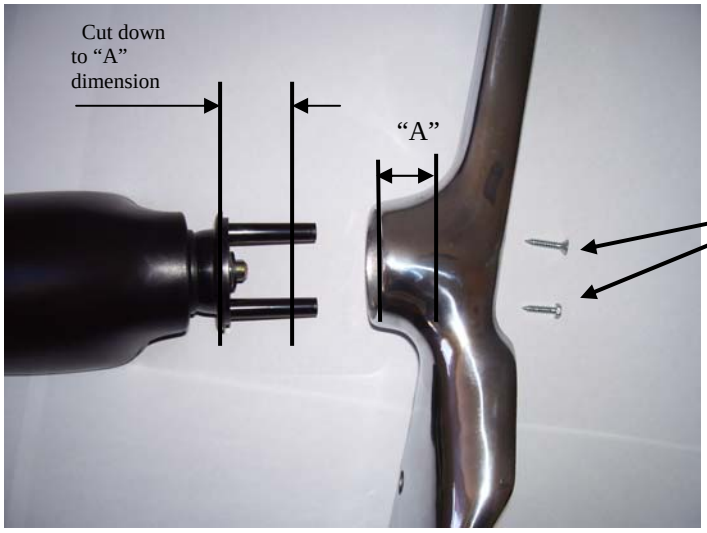
Dashboard clocks in position

Dashboard clock fixings drilled through two tags on the bottom of the dash cluster and fixed with M5 x 20 button head screws and Nylocs

Windscreen Pillars and Mirrors

The rear view mirrors must be attached to the windscreen pillars before the windscreen can be fitted to the scuttle. The mirrors need to be modified before they will fit the pillars.

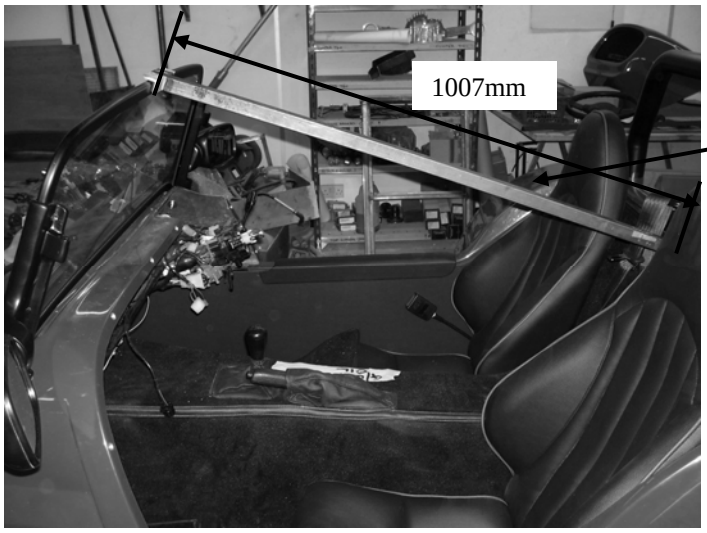
- The two mounting bosses on each mirror need reducing in length so they are the same as the depth of the sockets on the windscreen pillar. (Dimension "A")



When the mirror has been modified, it is retained to the windscreen pillar with a countersunk self taping screw in the top mounting and a hexagon headed self taping screw in the bottom hole

The Windscreen and pillars must not be fitted before the scuttle has been properly positioned and bolted down to the chassis.

- Cover the outside of the scuttle in the area that the pillars mount with masking tape to protect the bodywork from damage
- It is advisable before you start to fit the windscreen to make a support for the windscreen 1007mm long to go from the top rear seatback chassis tube up to the top edge of the windscreen



Windscreen support for setting the correct screen angle. Set to 1007mm from the inside face of the windscreen down to the top corner of the seatback chassis rail

- Using your support, position the lower edge of the windscreen into the formed groove that is across the top face of the scuttle. Rest the top of the screen into your support. It is advisable to tape the lower edge of the windscreen to the scuttle. If you have the electrically heated windscreen, mark the two positions in the windscreen groove for the heater wires to go through the scuttle.
- Make sure the windscreen is fitted the correct way round with the two press studs on the frame facing the front of the vehicle
- Now position the two windscreen pillars onto the outside of the windscreen and lightly hold them in place with the top grub screws at the top of the pillars

These are approximate dimensions for the screen pillar positions, you will find that they will fit naturally in one position on the radius of the scuttle and give you a best fit condition.

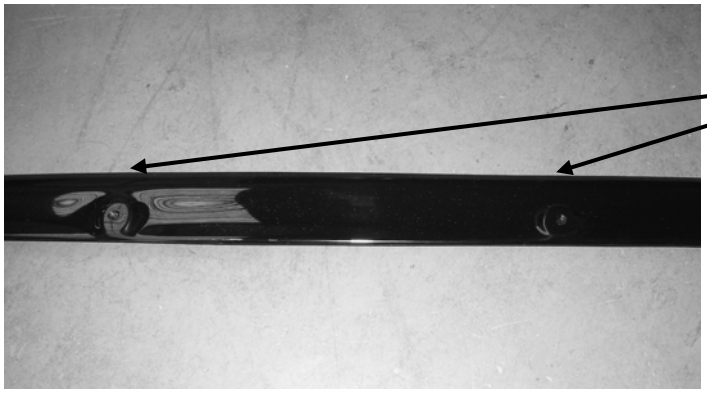
- Mark the position of the bottom mounting hole of the left hand screen pillar and also around the outside of the form of the pillar for alignment purposes later.
- Remove the wind screen and windscreen pillar and drill a 6mm diameter hole though the mark on the scuttle
- Re-position the windscreen pillar and windscreen on the scuttle, temporarily secure the pillar to the scuttle with one M6 x 35mm long countersunk bolt, repair washer and Nyloc nut. The washer and nut inside the scuttle.
- Do not over tighten, because adjustments to the rake of the windscreen will be required later
- Repeat the procedure with the right hand windscreen pillar to the dimensions above. Also now drill out the two holes for the heated screen wires.
- Before drilling the top hole for each screen pillars it is time to adjust the rake if it is required. If you are fitting side screens, it is advisable to place them in position on the hinge pins to achieve the correct fit to the rear wheel arches.
- When you are happy with this and have checked all the dimensions above drill the final 6mm holes and secure with two more M6 x 35mm long countersunk bolts, repair washers and Nylocs.

- Secure the windscreen to the windscreen pillars with four M6 x 10mm long grub screws (two per side) into the pre-tapped holes in the pillars. When tightening these screws hold the tops of the pillars in towards the windscreen.
- DO NOT OVER-TIGHTEN as this could cause the windscreen to fracture.

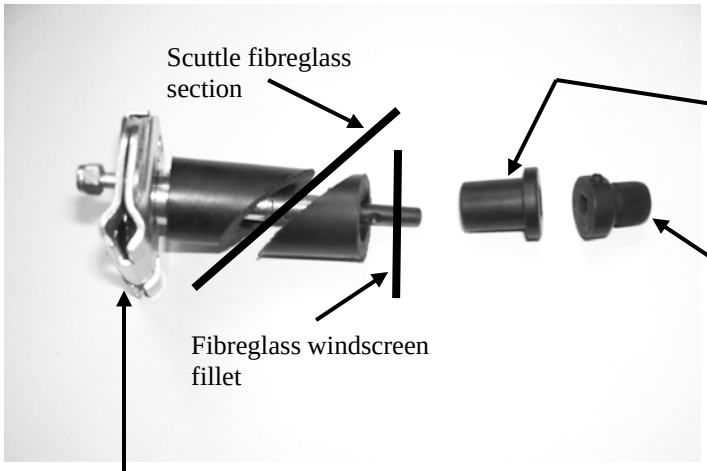
Windscreen Fillet and Wiper Wheel Boxes

The fibreglass windscreen fillet is supplied with the bodywork set and is gelcoat coloured to match the main body colour and is used as a finisher to cover the base of the windscreen and windscreen wiper wheel boxes.

- The two positions for the windscreen wiper wheel boxes are clearly marked on the windscreen fillet by two dimples about 5mm in diameter and a raised boss about 20mm diameter.
- Open the 5mm holes up and then continue to open these out until the small diameter of the internally threaded top hat bush off the windscreen wiper wheel goes through the hole. (see picture below)



Two clearly marked areas to be opened up to take the 16mm diameter section of the internally threaded top hat bush (see bush below)



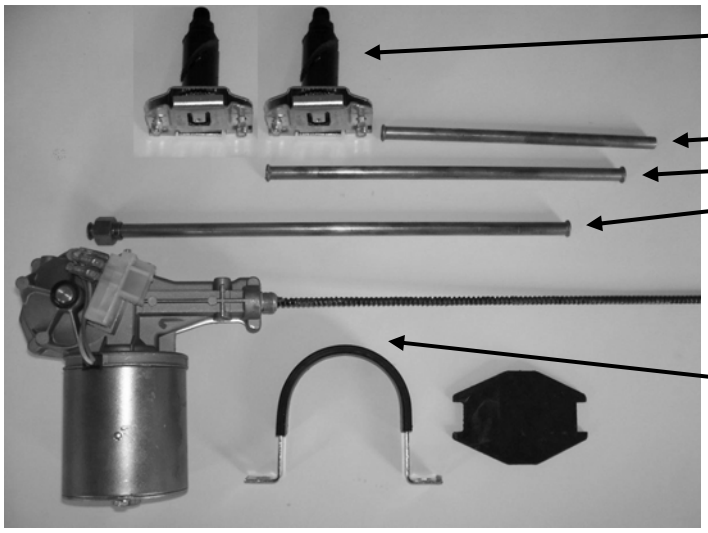
The two ends of the windscreen fillet may need lightly trimming so that they fit correctly behind the lower front edge of the windscreen pillars. This will cover the gap that is between the windscreen and the scuttle and the lower windscreen frame. To fit this in position you will have to carefully flex the fillet in the centre so as to get the ends fitted behind the windscreen pillars, making sure the two wheel box holes are in line with the holes in the scuttle. When the correct fit has been achieved, pre-fit the windscreen wiper wheel boxes as follows

- Fit the larger of the two pre-cut rubber sections to the wiper wheel box assembly
- Feed the wheel box and the large rubber section up through the scuttle from the underside
- Next fit the smaller rubber section on the outside of the scuttle over the threaded section of the wheel box
- Fit the windscreen fillet over all this and then loosely fit the threaded bushes to the wheel boxes
- Once the correct fit has been achieved you are ready to fit the windscreen wiper motor

Windscreen Wiper Motor and Rack Tubes

The windscreen wiper wheel box units must be removed before the windscreen wiper motor, operating rack and protective tubing can be fitted.

1. Remove the windscreen wiper wheel boxes from the scuttle
    - Identify the individual outer rack tubes



- Assemble the outer rack tubes to each windscreen wiper wheel box
- The outer rack tubing has pre-flared ends, this provides location security to the wheel boxes
- The longest outer rack tube “A” has a special nut fitted which connects between the left hand wheel box and the windscreen wiper motor.
- Tube “B” is flared at both and this fits between the two wiper wheel boxes
- Tube “C” is flared one end only and fits from the right hand wheel box.
- **Note**; the tube must remain open to enable the inner rack to operate correctly

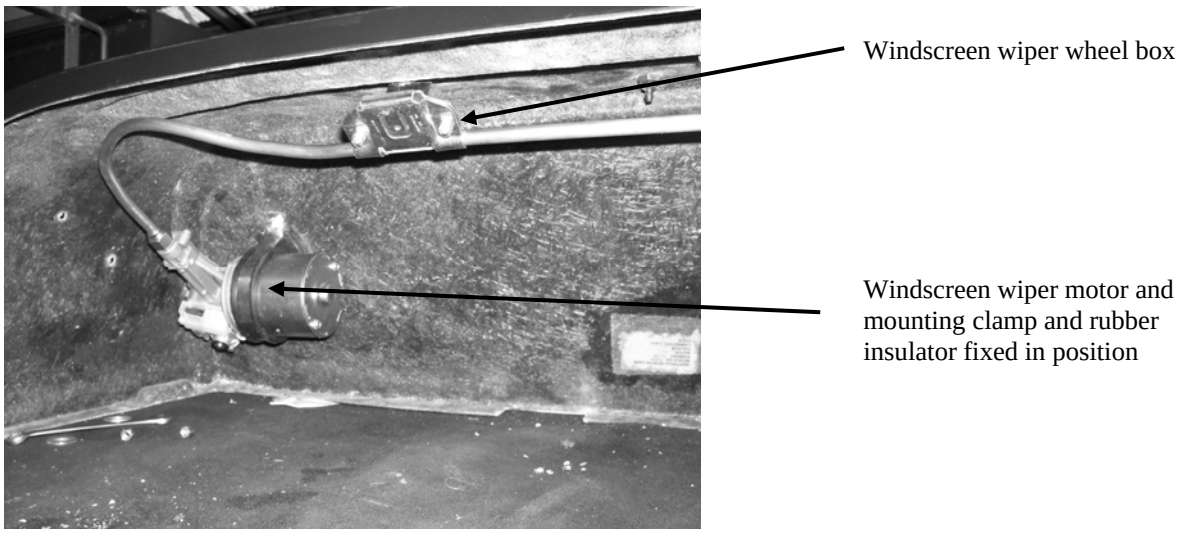
2. Secure the outer rack tubing to each windscreen wiper wheel box using the tube clamp, clamping studs and nuts provided. (do not fully tighten at this stage)

- It will be necessary to bend the pre-formed outer rack tubing at the motor end to enable the assembly to fit within the confines of the scuttle
- Make sure you do not kink the tubing

3. Feed the inner operating cable /rack into the outer tubing "A" towards the first wiper wheel box, then continue along through the second wheel box until through the whole tube

- It will be necessary to rotate the spindle of each wheel box as the cable / rack engages with the internal gear within each wheel box assembly

4. Once the inner operating cable has been fully inserted, the windscreen wiper motor unit can be secured to the outer tube "A" by the special threaded coupling nut. (Do not fully tighten at this stage)

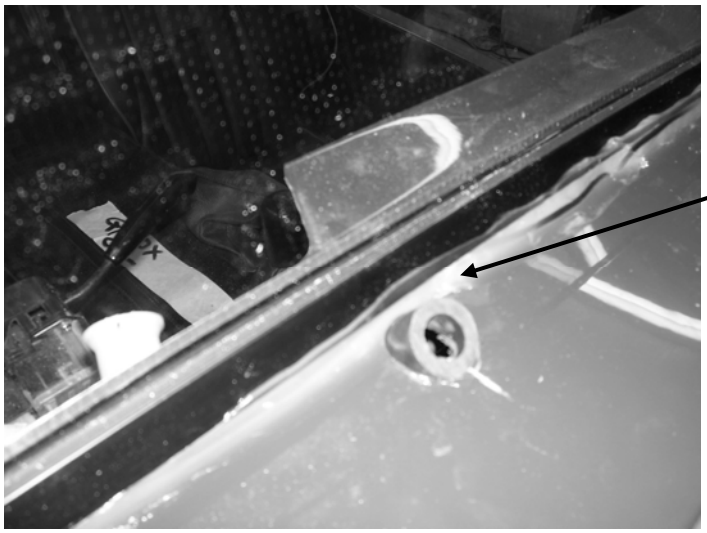


5. Re-fit the completed wiper assembly including outer rack tubes and windscreen wiper wheel boxes, to the underside of the scuttle making sure the rubber spacers are positioned correctly.

- The windscreen wiper motor can now be fitted and secured to the inside of the scuttle
- Position the fixing clamp assembly over the wiper motor unit
- During the wiper motor fitting procedure the motor must remain attached to the outer tube "A"
- Position the wiper motor and clamp
- The motor wants to be as close to the aluminium chassis top panel as possible so as to make the bend in the outer tube "A" as shallow as possible.
- **Note**; make sure you leave enough clearance for the ECU mounting plate and ECU to fit below the wiper motor
- Mark the two clamp fixing holes onto the scuttle
- Drill two 6.5mm holes through the scuttle
- Secure in position using two M6 x 30 button head screws, washers and Nyloc nuts making sure the insulating pad is fitted correctly
- Finally tighten all the outer tube clamp nuts and the motor coupling nut securely

7. Before finally fitting the windscreen fillet you must seal the windscreen to the scuttle and seal around the windscreen wiper wheel box mounting rubbers to stop water ingress when operating the windscreen washers and in bad weather.

- Place a bead of clear silicone along the bottom of the windscreen where it meets the scuttle, also running it down inside the front edges of the windscreen pillars where the fillet is going to fit
- Also run a small bead around the outer wheel box rubber spacer
- Fit the windscreen fillet for the final time, securing it with the two threaded bushes onto the wiper wheel boxes
- **Note;** Do not over tighten these bushes as it could cause damage to the windscreen fillet



Large bead of silicone run along the bottom edge of the windscreen and under the wiper wheel box rubbers

Wiper wheel box fitted through the screen fillet and tightened, **Note;** do not over tighten or the screen fillet may crack.

Place the splined wiper arm bush onto the spindle, ready to accept the wiper arms and blades. **Note;** do not fit arms and blades until the electrical connection has been fitted and the motor run so you know it is in the correct park position.

Windscreen Washer Jet

1. Identify the small indentation in the centre of the top face of the scuttle
   - This indentation marks the position of the windscreen washer jet
   - Drill one 4.1mm diameter hole through the indentation
   - Using the pilot hole as a guide, increase the hole to 8.5mm
   - Fit the windscreen washer jet through the hole and secure under the scuttle with the single nut and shakeproof washer provided.
   - Do not over tighten the locknut as the washer jet may fracture
   - Make sure that the nozzles face the windscreen
   - The windscreen washer jet pipe that links between the washer bottle and the jet will be fitted at a later stage

Heater Unit Fitting

The heater unit is an option on a complete Westfield kit, but cannot be fitted to a Mazda S.D.V. kit due to restrictions caused by the dashboard. If this option has been chosen then follow this procedure to fit the heater to the inside of the scuttle.
The heater ducting needs to have been fitted prior to this operation as described previously.

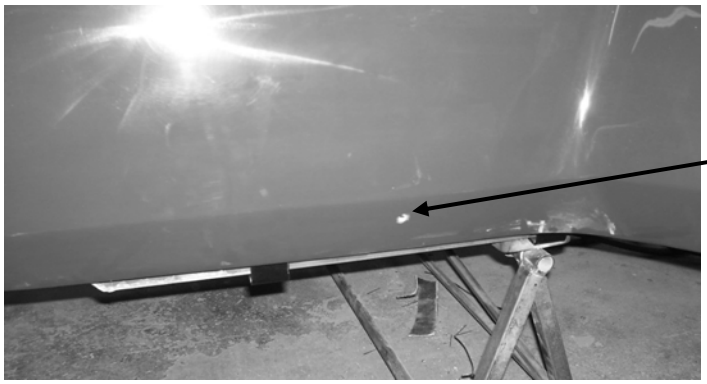
- Find the centre of the scuttle on the inside of the front face
- Find the centre of the heater and then hold the heater in position on the centreline of the scuttle and as high as possible with the mounting flanges up against the bonnet line recess, and facing the front of the car.
- Mark the position of the four mounting holes onto the inside face of the scuttle
- Remove the heater and drill the four holes through the scuttle 6.5mm
- **Note;** when fitting the heater to the scuttle, the fixed heater vents must be face downwards
- Secure the heater with M6 x 20 button head screws from the outside of the scuttle with washers and Nylocs
- Secure the two floor vents to the heater with the four large hose clips provided
- Cut the flexible hose to the correct length for each side windscreen de-mister vent and secure at each end with cable ties
- **Note**; the electrical connection will be made later.

INSIDE SCUTTLE WITH HEATER IN CORRECT POSITION

Interior Panel Fitting, Optional

The optional interior panels supplied are pre-cut and trimmed. The right hand side panel is shorter in length than the left hand side panel, this is specifically designed to allow more footwell space
The interior panels are easiest fitted before the scuttle is finally fitted.

- Before fitting either panel identify which side of the vehicle the exhaust system runs
- The position of the M10 threaded boss on the chassis needs to be marked through the body side panel for the silencer mounting bracket to be fitted at a later time.
- Drill a 3mm pilot hole through the exhaust pipe mounting boss, through the fibreglass body side panel
- Take care so as not to damage the threads inside the boss with the drill
- Now position the interior panels into the cockpit area
- Drill 3.3mm holes into the chassis rails at approximately 150mm intervals and fix in position with 3mm peel rivets



Pilot hole for the exhaust mounting bracket drilled from inside through the M10 bush on the chassis. **Note;** Make sure you drill the M10 bush and not one of the 7/16 seatbelt bushes

Fixing the Scuttle down to the Body

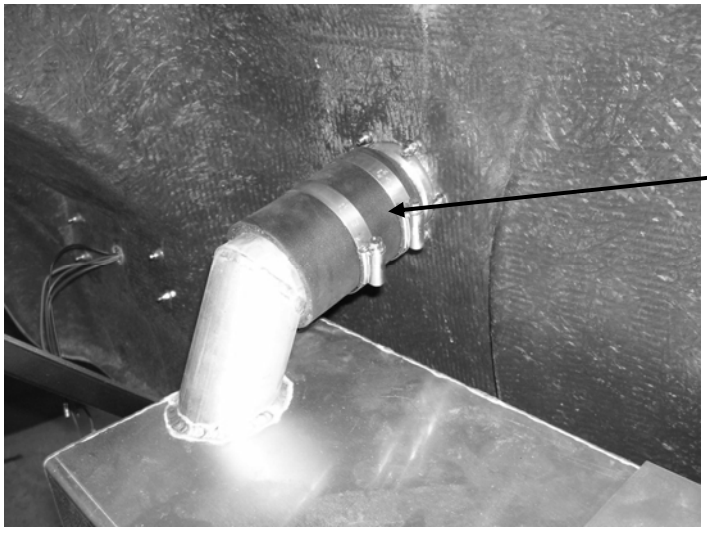
Note; Make sure you have sufficient assistance when re-fitting the scuttle to the chassis because it has had considerable weight added to it.

- Trial fit the scuttle to the body / chassis before making any final adjustments
- Temporarily fit and secure the scuttle into the correct position
- Check the panel fit
- Make sure that the heater and windscreen wiper assemblies do not foul or obstruct in the final fitting process
- Using masking tape, mask along all seams between the scuttle and body / chassis. (this will be used to protect the bodywork from excess sealant
- Remove the scuttle
- Place an even bead of silicone around the body section using the masking tape as a guide
- Refit the scuttle onto the body / chassis and secure using M6 x 25mm long bolts, repair and spring washers.
- Clean off, and smooth out, any excess silicone sealant
- Finally remove the masking tape from the scuttle area and allow the silicone to dry

Fuel Tank Filler Cap Assembly

The main body section and the fuel tank must be fitted and secured in their final and permanent position before fitting the fuel filler neck and cap. The fuel filler neck and cap assembly will be fitted through the rear panel of the main bodywork section.

- Using masking tape, tape over the open fuel tank filler neck
- Again using masking tape, mask the area of the rear section, inside and out, which the filler neck hole will need to be cut
- Using the position of the filler neck of the installed fuel tank, mark the position of the 65mm diameter hole onto the masking tape
- The 65mm hole must be cut in line with the fuel tank filler neck
- Cut the 65mm diameter hole in the body panel and finish the edge with smooth 320 grade wet and dry paper, use wet.
- Use the filler neck assembly as a template, mark the six fixing holes onto the masking tape.
- Remove the fuel filler cap assembly and drill through the six 5mm diameter fixing holes.
- Remove the masking tape and make sure the 5mm holes are free from debris
- Fit the 57mm fuel hose onto the fuel tank neck and then check the length of this hose and modify if required.
- Feed the filler cap into the hose making sure you have the two 50 to70mm hose clips and the fuel cap securing ring in position first. Push the cap firmly into the connecting hose and make sure the filler cap is against the outside of the bodywork
- Secure the filler cap using the six fixing screws provided. It is advisable to locate all six screws before tightening them.
- Finally secure the hose at both ends with the large hose clips.



Fuel cap installed and fitted to the fuel tank with the special 57mm I/D fuel hose and fixed with two 50 to 70mm hose clips. Set the clips well apart so as to clamp both fittings correctly.

Spare Wheel Bracket

Before the spare wheel carrier bracket can be fitted to the chassis, two holes will have to be drilled into the rear body section. These holes are adjacent to the chassis support brackets.

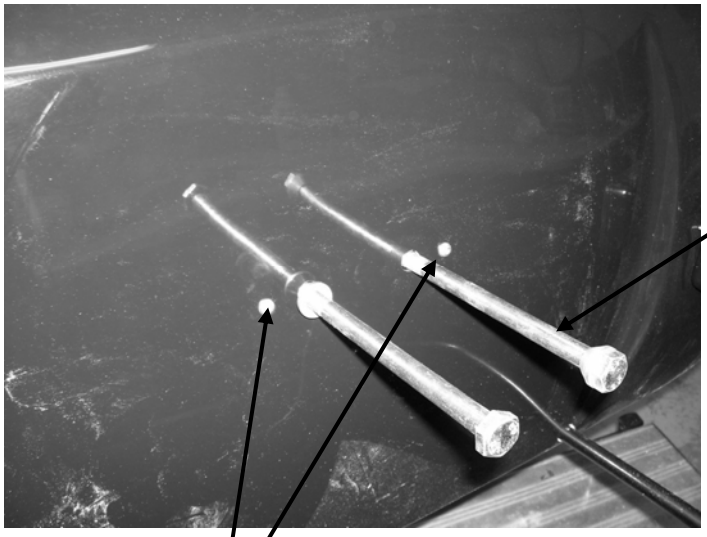
- Using the centre of each of the two chassis support brackets as a guide, mark the position of the holes onto the body
- Drill through the body with a 3mm diameter drill
- Check the alignment of each pilot hole with the chassis support bracket
- Open the pilot holes out to 12mm diameter
- Using a round file, open out both holes to 19mm diameter, this will allow the spare wheel carrier bracket to pass through the bodywork and slide into the chassis support brackets
- Fit the spare wheel carrier bracket into the chassis support clamps
- Slide the spare wheel carrier bracket in or out to suit the width of the spare wheel / tyre and check that it sits in the carrier correctly
- Carefully remove the spare wheel from the carrier so as not to move the carrier
- Secure the carrier in position with two M8 x 35mm long bolts, washers and Nyloc nuts through the pinch clamps on the chassis
- Refit the spare wheel and re-check its final position

Spare wheel carrier in position in chassis support clamps. Secured with M8 x 35mm bolts, washers and Nylocs (Note; the picture shown has no bodywork in position to show the correct fitment)

Spare Wheel Retainer and Fixing Bolts

The spare wheel is held in position on the back of the bodywork with this retainer and fixing bolts

- Using masking tape, mask the area of the rear bodywork where the spare wheel will be mounted
- Position the spare wheel / tyre onto the spare wheel carrier. Note; the four wheel retaining holes must be horizontal and / or vertical to the chassis.
- The two upper wheel retaining bolt holes will align with the holes in the retaining bracket, these will be used to secure the spare wheel / tyre to the bodywork.
- Mark the two positions of the top wheel retaining holes onto the masking tape
- Remove the spare wheel / tyre and then measure the centres of the two 12mm tapped holes in the retaining bracket and transfer this to the rear bodywork.
- Carefully drill two 13mm holes through the rear bodywork. Note; do not allow the drill to pass freely, or to deep through the body because the fuel tank is very close inside the body.
- Using the spare wheel retaining bracket and bolts together, locate them into the two13mm holes and then mark the position of the two 5.5mm holes. These hold the bracket to the bodywork.
- Drill the two5.5mm holes through the rear bodywork. Note; again do not allow the drill to go through to far.
- Before finally securing the bracket to the bodywork, run a small bead of silicone along the flat surface of the bracket that will be mounted on the bodywork face.
- Secure the bracket with two M5 x 16 stainless button head screws with washers and Nyloc nuts.



Lamp Unit Fitting

Important Note; The incorrect positioning of all lighting units including the rear stop, tail and indicator lamps is subject to legal and legislative requirements.

Note; RHD layout

Stop, tail and indicator lamp unit. (Indicator to the outside of the vehicle)

Fog lamp

Number plate lamp

Reversing lamp (if motorcycle engined, this unit can be a second fog lamp)

Rear Stop, Tail and Indicator Lamp Unit Fitting

All lamps must be fitted in the correct position and be connected to the wiring loom so that they function in the prescribed manner. The rear stop, tail and indicator lamps must be fitted with the amber indicator lamp lens to the outer side of the body. The mounting position of the rear lamp units is pre-determined by the mounting platform moulded into each rear arch.

- Take one of the rear lamp units, remove the lens retaining screws and lens to expose the four lamp fixing holes
- Using masking tape, mask off the lamp mounting faces on the rear wheel arches
- Hold the lamp body in the correct position on the rear wheel arch as a template, mark the four mounting holes.
- Remove the lamp and drill the four holes 5.5mm through.
- Next drill a 6mm hole in the centre of the area covered by the lamp body, this hole is to allow the cables to pass through the bodywork.
- Remove the masking tape from the bodywork
- Fit the rear lamp unit to the arch, feeding the cables through the centre hole and securing the unit in position with four M5 x 16mm long button head screws, repair washers and Nyloc nuts
- Re-fit the lens cover and secure with the two screws removed earlier
- Seal the 6mm hole through the rear arch for cable access with silicone sealant.
- Repeat the above procedure for the opposite side

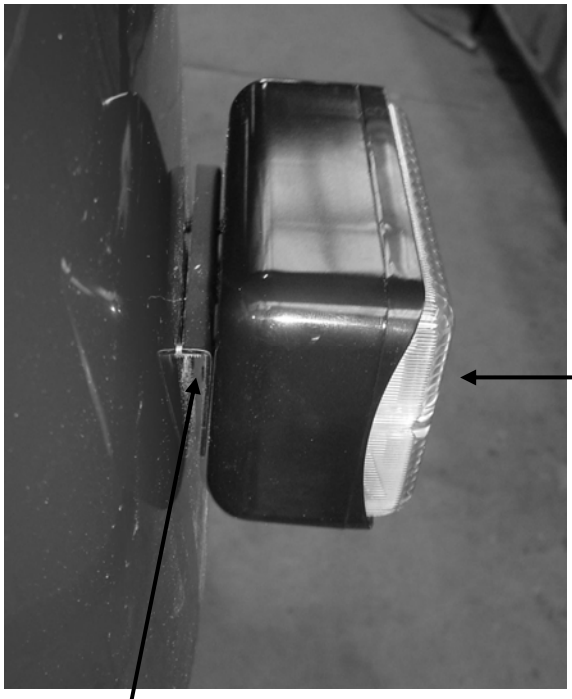
Rear Fog and Reversing Lamp

As previously stated, the correct positioning of all light units including rear fog and reversing lamps is subject to legal and legislative requirements.

Rear Fog Lamp

For right hand drive vehicles, the rear fog lamp must be fitted to the right hand side of the vehicle and the reversing lamp to the left hand side.
For reasons of appearance only, the horizontal alignment of both the fog and reversing lamps should be in line with both the stop, tail and indicator units.

- Using masking tape, mask off the area on the right hand side of the spare wheel recess.
- The rear fog lamp is complete with integral M5 stud fastenings.
- Mark a horizontal line across the rear of the car at the height of the lens fixing screws of the stop, tail and indicator units. (This will give the centre height of the fog and reverse lamp.
- Mark off and drill two 5.3mm holes at 58mm centres with the inside edge of the unit approximately 40mm from the spare wheel recess.
- Drill one 6mm hole in the centre of these two 5.3mm holes to take the feed cables
- On final assembly of the fog lamp you need to fit a levelling bracket fitting to the back of this unit. This is supplied in the S.V.A. kit and is a piece of aluminium plate with three holes in and a small 90 degree return. This has to be fitted to bring the lamp lens face vertical to the ground.
- Fit the lamp to the rear panel, securing it with repair washers and Nyloc nuts
- Wiring connections to the main loom are detailed later



Reversing lamp shown, also rear fog lamp is the same

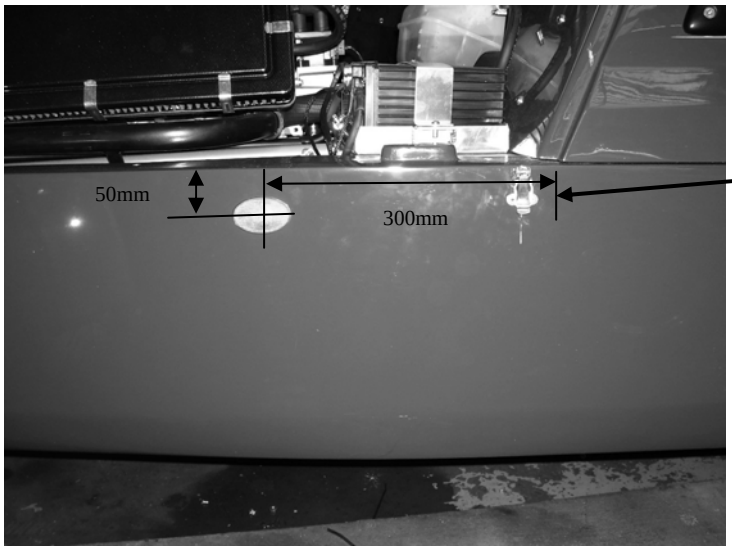
Levelling bracket supplied in S.V.A kit to bring the lens face vertical

Reversing Lamp

- Using masking tape, mask off the rear left hand side of the spare wheel recess.
- The reversing lamp is complete with integral M5 stud fastenings
- Mark the lamp unit centre line again as above from the two lens screws on the stop, tail and indicator lamps
- Mark off and drill two 5.3mm holes at 58mm centres with the inside edge approximately 40mm from the spare wheel recess
- Drill one 6mm diameter hole in the centre of these two 5.5mm holes to take the feed cables.
- On final assembly the reversing lamp needs a levelling bracket fitting to the back of its unit. This is supplied in the S.V.A. kit and is a piece of aluminium plate with three holes in it and a small 90 degree return. This has to be fitted to bring the lamp lens face vertical to the ground.
- Fit the reversing lamp with repair washers and Nyloc nuts
- The wiring connections to the main loom are detailed later

Side Repeater position

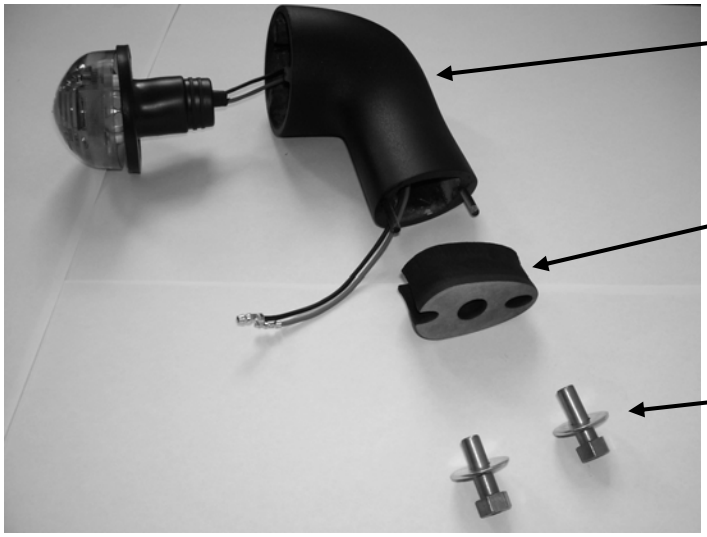
The position of the side repeaters is very important because it is one of the requirements for the S.V.A. test. They should be positioned on either side of the vehicle in the position shown below.



The centre of the side repeater should be set 300mm forward of the scuttle to bonnet split line and 50mm down from the bonnet to side panel split line

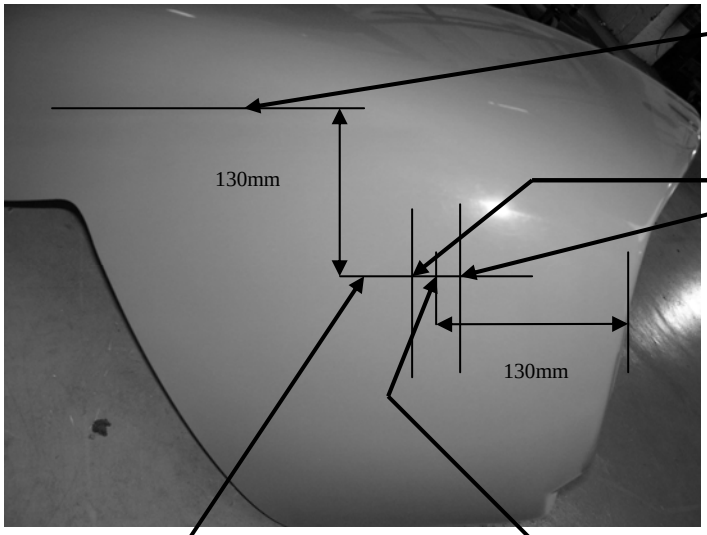
Front Indicator pods

Before starting to mark out the positions of the indicator pods you must have the bonnet and nose placed onto the car correctly on its location blocks. **Note**; There are differences with the wishbone lengths on the Sierra S.D.V. cars and cars with the semi wide track front wishbones. This means when fitting the pods to either of these set ups you need to fit an extension block to each side to achieve the correct distance from the outside of the vehicle for the S.V.A test.



The nose cone must be fitted to the chassis before attempting to position the indicator pod assemblies.

- Using masking tape, mask both sides of the nose cone
- Mark a vertical centre line 130mm from the front of the nose cone on both sides
- Mark a horizontal centre line 130mm below the lower “styling line” on both sides
- Measure the distance between the two threaded studs in the base of the pod
- Transfer that onto the horizontal centre line, equally about centre of the vertical centre line
- There should be three marked centre lines crossing the horizontal centre line
- The two outer holes need to be drilled 5.5mm if the extension blocks are not required, and 8.5mm if the extensions are fitted.
- The centre hole needs to be drilled 8.0mm through for the indicator wiring to pass.
- Remove the masking tape, then feed the wiring through the centre hole and secure the pod in position using M5 Nylocs and repair washers. If the extensions are being fitted the use the sleeve nuts provided.
- See diagram bellow.



This line is the lower of the two styling lines down the nose

Two holes drilled 5.5mm for the indicator pods only and 8mm for the sleeve nuts with extension block

This line must be drawn parallel to the ground

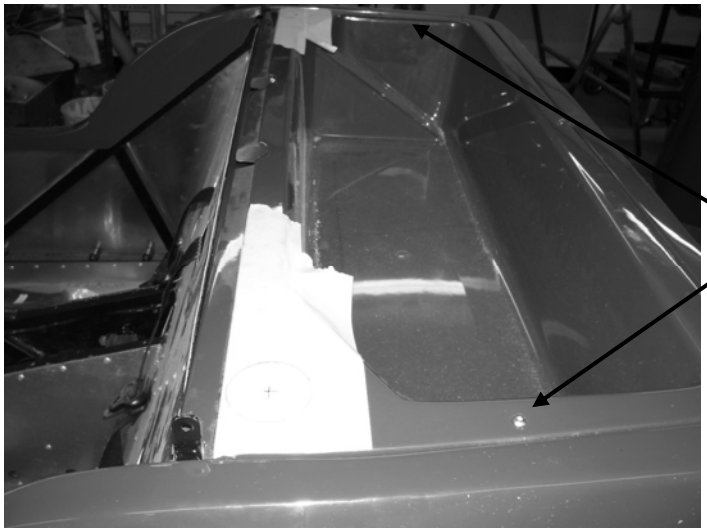
One hole drilled 10mm, clearance for the indicator wiring to pass through

Indicator pod and lamp fitted in position

Boot Box Fitting and 50mm Roll Bar

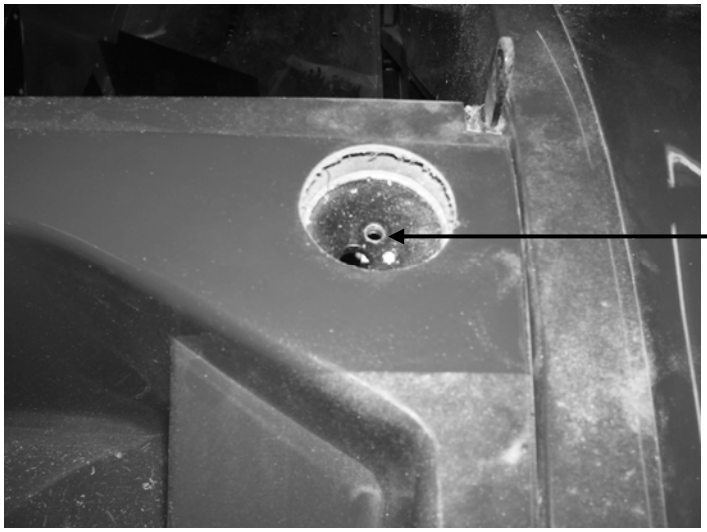
The boot box is supplied with a moulded return flange, this flange ensures that the boot box is self aligning.

- Place the boot box in position in the recess in the rear section of the bodywork
- Using masking tape, mask the two areas where the roll bar is going to fit
- Place the roll bar in position on top of the boot box, making sure it is central to the body and square across the seatback
- Mark around the base of each end ready to cut the hole through the bodywork down to the chassis
- Drill two 5.5mm holes, one either side of the boot box to retain the box in position. Fit M5 rivnuts to the main body section and secure with M5 x 30 button headed screws.



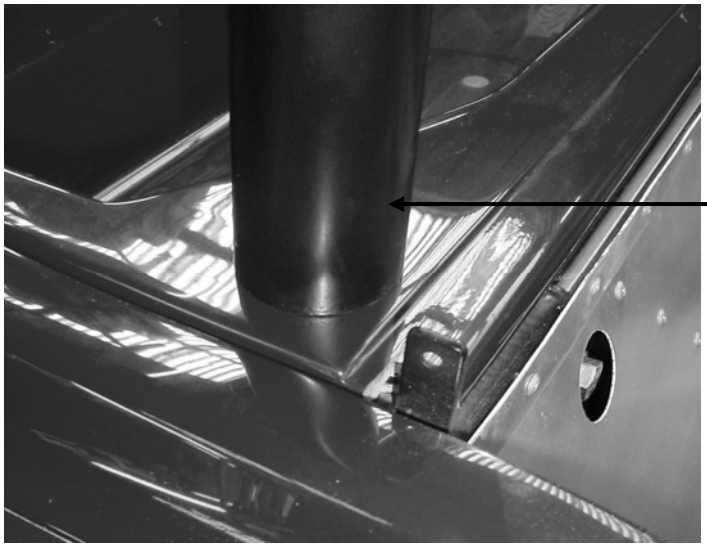
Two M5 button headed screws into rinuts to retain the boot box in position

- Find the centre of the circle and drill a pilot hole 5mm diameter through both layers of fibreglass and then through the roll bar mounting plate on the chassis.
- Using a 50mm hole cutter, cut the holes through the boot box and then through the fibreglass section that covers the roll bar mounting plate on the chassis.



5mm pilot hole, opened up to 50mm through both layers of fibreglass as far as the chassis roll bar mounting plate

- Drill the two 5mm holes out to 12.5mm and then secure the roll bar in position with two M12 x 40mm long set screws, plain and spring washers.



Roll bar placed through the hole in the boot box and finally bolted to the chassis roll bar mounting plate using M12 x 40mm long bolt, plain and spring washers

R.A.C. Roll Bar

The fitting process for the boot box is the same as the 50mm roll bar until the marking out for the 50mm diameter holes. The R.A.C roll bar has a base plate welded on the foot of each tube with mounting holes the same as the chassis mounting plate below.

- Fit the boot box into the recess in the top of the rear section as previously described
- Fix the boot box with the two M5 button head screws as for the 50mm roll bar
- Pilot drill the six holes in the chassis plate (three per side), from underneath the bodywork through the fibreglass
- Now open them out to 12mm diameter.
- Place the roll bar on top of the masking tape and put the six fixing bolts in position
- Mark around the base plate of the roll bar
- Remove the boot box
- Cut the corners off the boot box to the marked line
- Replace the boot box and fit the roll bar using M10 x 30 cap screws, washers and Nyloc nuts provided with the R.A.C. roll bar kit

The rear stays need fitting now, so a slot has to be trimmed in either side of the boot box sides to allow the stay to pass from the roll bar mounting to the lower chassis mounting.

Cycle Wing Fitting

The cycle wing brackets must be fitted to the front uprights before any cycle wing fitting can begin. There are four different types of bracket that Westfield produce, one for the Westfield Aluminium upright, one for the Cortina upright and one for the Mazda S.D.V. upright. These three are handed and must be fitted on the correct side of the car. The final type is the Sierra S.D.V upright which is not handed and will fit either side of the car.

- Attach the two cycle wings to the front uprights
- Fit the wheels and tyres to give you the correct position of wheel offset for fitting the cycle wing
- Make sure the cycle wing bracket does not foul the wheel or tyre
- Adjust the bracket if required
-