

# Nissan NP300 Double Cab Pick Up (D042) Fitting Instructions

Unwrap the roll cage and unpack the individual fitting kits. At this point it is recommended that all the main components are checked against the assembly drawing provided on page 17 of these instructions. Should any parts or fixings be missing at this stage, or during installation, please contact your stockist.

Throughout the assembly we shall use a variety of different fasteners; the torque setting for each different size is listed below:

M10 - 45Nm M12 - 70Nm M14 - 95Nm 7/16<sup>th</sup> - 55Nm

The assembly process of this roll cage is separated into several different sections, each section having its own fitting kit containing all nuts, bolts, washers and fitting plates required:

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## Section 1 - Front Under-wing Mount installation

- 1.1 Remove front wings, wheel arch liners, wiper panel, front bumper, front lights and interior trim in front foot well (Figure 1) and store safely.
- 1.2 To aid fitment of the under-wing support bracket, it is necessary to trim a section of the under wing in the top door hinge area to match Figure 2.



Figure 1



Figure 2

- 1.3 Make sure the door is fully closed then remove the 4 hinge bolts. Discard these bolts and obtain four M8x25 bolts and four M8 washers per side from the fitting kit.
- 1.4 Place the first under-wing mount into position and ensure all of the holes line up correctly. Bolt into position using four M8x25 bolts and four M8 washers provided. Do not tighten the bolts to the final torque setting but ensure there is no play in the bracket.
- 1.5 With an 11mm drill bit, drill through the top two holes in the under-wing mount (Figure 3) and the two holes at the bottom of the under-wing mount in the arch (Figure 4).

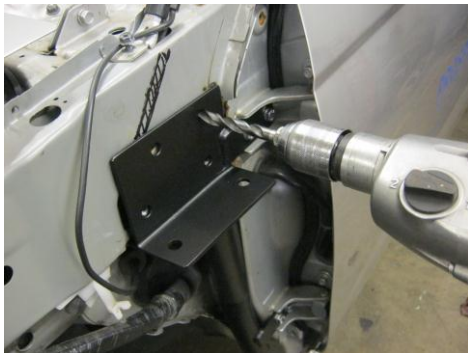


Figure 3



Figure 4

- 1.6 Remove M8x25 door hinge bolts and remove the under-wing mount. Place on something soft to protect powder coat for refitting.
- 1.7 Pass the nut plate inside the inner wing and insert two M10x25 bolts with M10 washers into the holes. Tighten to ensure plate is securely fastened inside the wing.
- 1.8 Drill two 4mm holes in between the two bolts and secure the nut plate to the inner wing with the 4mmx20 pop rivets supplied (Figure 5).
- 1.9 Remove the two bolts, leaving the nut plate riveted to the inner wing. Paint all of the cut areas to protect them and retrieve the under-wing mount.



Figure 5



Figure 6

- 1.10 Place the under-wing mount back into position and insert the M8x25 bolts and M8 washers back into the door hinges and tighten.
- 1.11 Insert the M10x25 bolts and M10 washers back into the top of the under-wing mount and tighten. Fit the arch spacer block in between the lower mounting on the under-wing mount and inner wheel arch. Place the backing plate inside the foot well across the two holes (Figure 6).
- 1.12 Pass an M10x35 bolt through an M10 washer and the lower mounting of the under-wing mount. Inside the vehicle, ensure the bolt passes through the arch backing plate then place another M10 washer and an M10 nyloc nut on the inside.
- 1.13 Once all bolts and nuts are in position, tighten to the torque settings stated at the start of these instructions. Check the operation of the doors and adjust the hinge position if necessary.
- 1.14 Repeat the process for the other side of the vehicle to complete the installation of the under-wing mounts.

## Section 2 - External 'C' Hoop and Backstays installation

- 2.1 Remove the cover caps and eight bolts from the floor near the bulkhead and with an 11mm drill bit, open out the bolt holes in the floor of the buck of the vehicle (Figure 8).
- 2.3 Remove the bolt from behind the wheel arch (Figure 9).



Figure 8



Figure 9

- 2.4 Using an air saw, trim the sides of the ladder rack to make room at the sides of the vehicle for the C Hoop (Figure 10).
- 2.5 Stand the C hoop in the vehicle, insert bolts through the holes in the two base plates and into the holes that were previously drilled out in the floor of the buck.



Figure 10



Figure 11

- 2.6 Mark the position of the holes for the two centre mounting points.
- 2.7 Remove the hoop and drill holes for the centre mountings. Drill a 11mm hole through the floor surface and lower surface followed by opening the hole in the floor surface out to 19mm (Figure 11).
- 2.8 Insert spacer tubes into these opened out holes (Figure 12) and place the floor packers into position, ensuring that all holes are lined up correctly (Figure 13).



Figure 12



Figure 13

- 2.9 Bring the hoop back into the vehicle and align with all of the necessary holes in the base of the vehicle.
- 2.10 Place the slipper tube over the end of the backstay carefully to ensure the powder coat does not get damaged. Slide the backstay into position and pull the slipper tube up over the end of the backstay stub on the C hoop.
- 2.11 Insert an M10x80 bolt through a washer and through one of the holes in the slipper tube, ensuring it is aligned with the holes in the backstay. Place an M10 washer and an M10 Nyloc nut on the other side.

- 2.12 Put another three M10x80 bolts into the slipper tube and tighten all four equally until the backstay is unable to move but not to the final torque setting.
- 2.13 Repeat for the other side until both backstays are located in position. The hoop can now be bolted down loosely using the M10x35 bolts and M10 washers through from the top and the nut plates on the underside of the vehicle member (Figure 14).



Figure 14



Figure 15

- 2.14 Mark through the two holes on each backstay foot. Unbolt backstays from slipper tubes and remove from the vehicle and place in a safe location. Drill through the marked holes with an 11mm drill bit through all of the surfaces.
- 2.15 Refit the backstays into the vehicle in the same method, bolting them through the slipper tube first. Ensure that the holes in the backstay foot are in line with the drilled holes in the floor of the vehicle. The front edge of the plate should be about 180mm from the existing fastener in the buck (Figure 15).
- 2.16 Put an M10x30 bolt through an M10 flat washer and then through one of the holes in the backstay foot plate. On the underside of the vehicle, place a backstay backing plate over the bolt, followed by another M10 washer and finally an M10 nyloc nut. Tighten to secure but not to the torque setting.
- 2.17 Repeat for the other end of the backstay plate you are working on and then for the two holes on the other side of the vehicle also to secure the backstays to the buck of the vehicle. Ensure all bolts are correctly located, including washers and nyloc nuts and that all backing plates in the backstay fit kit are installed.

### Section 3 - Legs and Roof Assembly installation

- 3.1 Before positioning any of the ROPS parts on the roof it is recommended to lay some cardboard over the entire roof surface to prevent any damage from scratches.
- 3.2 Fit the poly bush with the metal bush inside into the housing at the end of the first leg, ensuring that there is a coating of copper grease on all bearing surfaces of the joint.

- 3.3 Fit this leg onto the vehicle, ensuring that the rubber joint fits securely into the housing on the C hoop and that the front mounting lines up with the under wing mount and that all necessary holes are aligned.
- 3.4 Pass an M14x110 cap head bolt through an M14 washer and then through the joint and housing on the C hoop. The leg may need to be raised and lowered slightly to ensure the bolt slides through fully. Loosely place another M14 washer and an M14 nyloc nut onto the end of the thread but do not tighten.
- 3.5 Moving to the front of the vehicle, pass two M10x25 bolts through M10 washers and into the welded nuts in the under wing mount. In the two holes on the base of the leg foot plate, place an M10x25 bolt through an M10 washer, through the two plates and out the other side of each hole. Put another M10 washer and a nyloc nut on the end of the thread on the under-wing mount bracket side of the joint. Ensure that all bolts are not tightened but are securely on the threads.
- 3.6 Bring the rear roof section of the ROPS onto the vehicle and align the hole in the squashed end of the tube with the hole in the single ear bracket and the two halves of the saddle bracket together.
- 3.7 Pass an M12x30 bolt through an M12 flat washer and through the single ear bracket with the squashed end inside. Place another M12 flat washer on the underside followed by an M12 nyloc nut and secure on the thread but do not tighten (Figure 16 and 17).

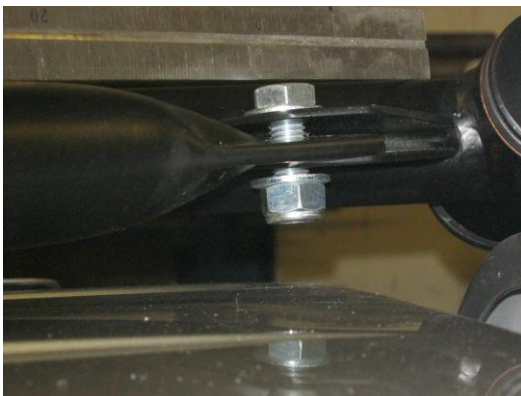


Figure 16



Figure 17

- 3.8 Ensure that the holes in the saddle bracket are aligned, and then place an M10x25 through an M10 flat washer and through both halves of the saddle bracket. On the underside of the saddle bracket, place another M10 flat washer onto the thread followed by loosely applying an M10 nyloc nut, again not tightening. Repeat for the other hole in the saddle bracket with another M10 bolt sequence.
- 3.9 Bring the front section of the ROPS onto the vehicle and align the holes in the two squashed ends of the tubes with the double ear bracket on the front of the cross rail and the two halves of the saddle bracket together.

- 3.10 Pass an M12x30 bolt through an M12 flat washer and through one side of the double ear bracket with the squashed end inside. Place another M12 flat washer on the underside followed by an M12 nyloc nut and secure on the thread but do not tighten. Repeat for the other side so that both squashed ends are loosely secured in the double ear bracket (Figures 18 and 19).

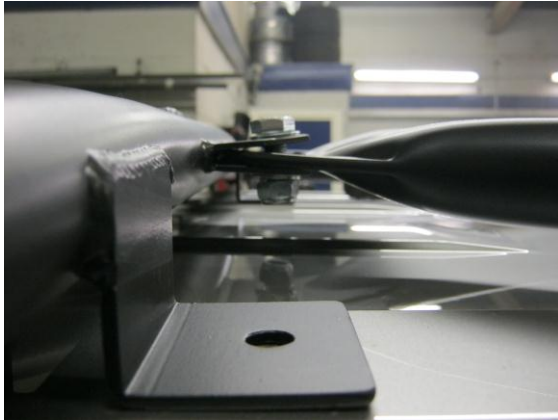


Figure 18



Figure 19

- 3.11 Ensure that the holes in the saddle bracket are aligned, and then place an M10x25 through an M10 flat washer and through both halves of the saddle bracket. On the underside of the saddle bracket, place another M10 flat washer onto the thread followed by loosely applying an M10 nyloc nut, again not tightening. Repeat for the other hole in the saddle bracket with another M10 bolt sequence.
- 3.12 Fit the poly bush with the metal bush inside into the housing at the end of the second leg, ensuring that there is a coating of copper grease on all bearing surfaces of the joint.
- 3.13 Fit this leg onto the vehicle, ensuring that the rubber joint fits securely into the housing on the C hoop and that the front mounting lines up with the under wing mount and that all necessary holes are aligned.
- 3.14 Pass an M14x110 cap head bolt through an M14 washer and then through the joint and housing on the C hoop. The leg may need to be raised and lowered slightly to ensure the bolt slides through fully. Loosely place another M14 washer and an M14 nyloc nut onto the end of the thread but do not tighten.
- 3.15 Moving to the front of the vehicle, pass two M10x25 bolts through M10 washers and into the welded nuts in the under wing mount. In the two holes on the base of the leg foot plate, place an M10x25 bolt through an M10 washer, through the two plates and out the other side. Put another M10 washer and a nyloc nut on the end of the thread on the under-wing mount bracket side of the joint. Ensure that all bolts are not tightened but are securely on the threads.
- 3.16 On the rear section of the ROPS, Pass an M12x30 bolt through an M12 flat washer and through the single ear bracket with the squashed end inside. Place another M12 flat

washer on the underside followed by an M12 nyloc nut and secure on the thread but do not tighten.

- 3.17 Ensure that the holes in the saddle bracket are aligned, and then place an M10x25 through an M10 flat washer and through both halves of the saddle bracket. On the underside of the saddle bracket, place another M10 flat washer onto the thread followed by loosely applying an M10 nyloc nut, again not tightening. Repeat for the other hole in the saddle bracket with another M10 bolt sequence.
- 3.18 Moving once again to the front section of the ROPS, pass an M12x30 bolt through an M12 flat washer and through one side of the double ear bracket with the squashed end inside. Place another M12 flat washer on the underside followed by an M12 nyloc nut and secure on the thread but do not tighten. Repeat for the other side so that both squashed ends are loosely secured in the double ear bracket.
- 3.19 Ensure that the holes in the saddle bracket are aligned, and then place an M10x25 through an M10 flat washer and through both halves of the saddle bracket. On the underside of the saddle bracket, place another M10 flat washer onto the thread followed by loosely applying an M10 nyloc nut, again not tightening. Repeat for the other hole in the saddle bracket with another M10 bolt sequence.

#### Section 4 - Internal 'B' Hoop and Vee-Brace installation

- 4.1 Remove seats, interior light, upper and lower front seat belt mounting bolts, the lower B pillar trim and lift the carpet and fold over centre console.
- 4.2 Place the hoop into the vehicle and insert the top seat belt bolts through the brackets on the hoop to secure it but do not fully tighten.
- 4.3 Push the bases of the hoop back to the shoulder on the floor (Figure 20) and mark the positions of the hole centres in the base plate (Figure 21).



Figure 20



Figure 21



- 4.4 Now the internal B hoop is secure inside the vehicle, move to the outside. Remove the cardboard from the roof and mark the centre of one of the roof bracket holes.
- 4.5 Using a 5mm drill bit, drill a pilot hole through the centre of the bracket, through the roof, the headlining and finally through the centre of the slotted bracket.
- 4.6 Move to the inside of the vehicle and check the alignment of the hole from the external ROPS to the slotted bracket on the internal hoop. Adjust the hoop if there are any discrepancies in the centres of the drilled hole to the brackets.
- 4.8 Move back to the outside of the vehicle and pilot drill the seven remaining roof bracket holes with the 5mm pilot drill bit.
- 4.9 Back inside the vehicle, remove the seat belt bolts from the hoop and remove the hoop totally from the vehicle and store safely. Using the 5mm drill bit, pilot drill the 3 holes which were marked on each side through the B hoop base plates.
- 4.10 Using a  $\frac{3}{4}$ " holesaw from inside the vehicle, open out the holes in the headlining and any metal work under the headlining until only the roof skin remains. Use the  $\frac{3}{4}$ " holesaw to open out the top surface of the forward most hole where the pilot hole was drilled.
- 4.12 Changing to an 11mm drill bit, drill all of the way through the rear two holes which were pilot drilled for the back of the B hoop base plates. In the forward most hole of the three, drill the lower surface out through the centre of the hole already cut in the higher surface.
- 4.13 Working from the outside of the vehicle, carefully open out the holes in the roof skin to 11mm (Figure 22).
- 4.14 Insert the small angled spacer tube into the forward most holes on both sides of the vehicle (Figure 23) and push the roof spacer plates provided into the holes in the headlining ensuring they are pushed right up against the roof skin. Bring the internal hoop back into position. Insert the top seat belt mounting bolt back into position.



Figure 22



Figure 23

- 4.15 Place an M10x30 bolt through an M10 washer and through each one of the holes of the B hoop base plates. On the underside of the vehicle, place another M10 washer and an M10 nyloc nut onto the end of each of the threads but do not tighten.
- 4.16 Moving to the floor of the vehicle, remove the smaller bolt to one side of the centre (Figure 24) and make sure the bolt for the seat mounting is able to pass through the plate and into its original location (Figure 25).



Figure 24



Figure 25

- 4.17 Using an 11mm drill bit, drill through the third hole (Figure 26) and remove the sound proofing from the back of the carpet (Figure 27) in the base plate area. Lay the carpet back down again as the Vee-Brace fits over the top of the carpet.



Figure 26



Figure 27

- 4.18 Put the Vee-Brace into position and insert the shoulder bolts into the lap joints to connect it to the hoop. Tighten these bolts to ensure there is no movement in the Vee-Brace at all.
- 4.19 Using a pointed object, poke through the front hole of the Vee-Brace bases to find the previously drilled holes through the carpet and pierce a hole through each.
- 4.20 Insert an M10x35 bolt with an M10 flat washer on into each of the front holes. On the underside of the vehicle, place another M10 washer and an M10 nyloc nut onto the end of each of the two threads.

- 4.21 Using an 11mm drill bit, drill all of the way through the back two holes of each Vee-Brace base plate so that the hole passes through the carpet and through the floor of the vehicle.
- 4.22 Insert an M10x35 bolt with an M10 flat washer on into each of the four holes on the rear of the Vee-Brace base plate. On the underside of the vehicle, place the necessary nut plate up to the base of the vehicle and tighten the bolts into it.

## Section 5 - Completing the installation

- 5.1 Moving to the front of the vehicle, release all of the bolts connecting the leg and roof assembly to the under-wing mounts.
- 5.2 Lift the front end of the assembly up, rotating it around the rear poly bushes and place suitable packers (Figure 28) between the base plates on the legs and the under-wing mounts to support the roll over protection system in the elevated position (Figure 29).



Figure 28



Figure 29

- 5.3 Apply polyurethane sealant around the roof holes then carefully lower the roll over protection system back into position.
- 5.4 Replace all of the bolts removed when releasing the leg and roof sections. This should be four M10x25 bolts, six M10 washers and two M10 nyloc nuts in each side of the vehicle.
- 5.5 Apply another layer of polyurethane sealant around the hole in the roof brackets on top of the vehicle (Figure 30).
- 5.6 Apply polyurethane sealant underneath the head an M10x45 bolt it through an M10 flat washer (Figure 31). Apply another layer of sealant underneath the washer to ensure a good seal.
- 5.7 Pass the bolt through the roof of the vehicle ensuring that the bolt goes through the roof spacer tube and then through the slotted bracket on the inside of the vehicle.



Figure 30



Figure 31

- 5.8 On the inside of the vehicle, place another M10 flat washer onto the end of the thread followed by an M10 nyloc nut but do not tighten.
- 5.9 Repeat the process for all of the bolts going through the roof, ensuring there is polyurethane sealant on all of the roof brackets and bolts.
- 5.10 Go round the whole vehicle and check that all of the bolts have now been installed into the vehicle. With a torque wrench set to 10Nm, tighten every bolt on the vehicle to ensure they are all started. It is critical that the saddle brackets are tightened evenly on both sides so that the gap between the two is the same (Figure 32).

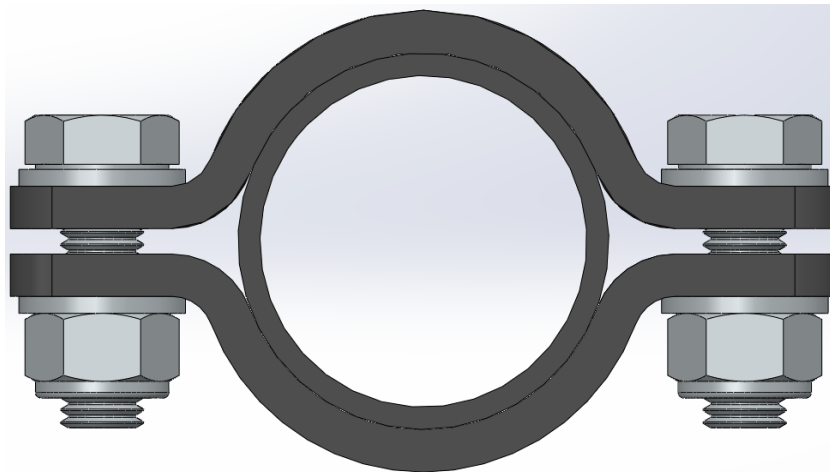


Figure 32

- 5.11 Once all of the nut and bolt assemblies around the vehicle are tightened to 10Nm, refer to the torque settings at the beginning of these fitting instructions and evenly tighten the all of the bolts up to their final specific torque values.
- 5.12 Within each fitting kit, there will be nut caps. Go round the vehicle and where there is a nut and/or bolt exposed, place a nut cap over the end, black nut caps on the outside of the vehicle and grey on the inside of the vehicle. Nut caps do not go underneath the vehicle.
- 5.13 Place the front wing template onto the first front wing ensuring all edges are aligned and mark the shape to be cut out onto the wing (Figure 33). On the inner edge of the wing, take a line down from the template cut to the front of the mount (Figure 34).

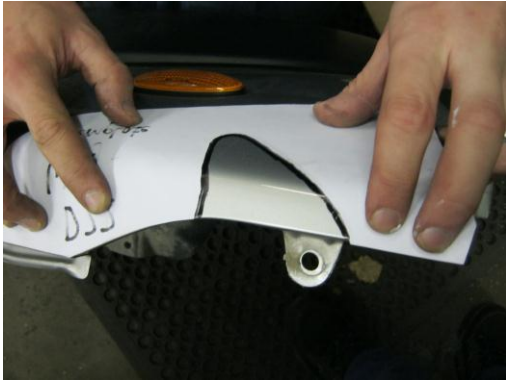


Figure 33



Figure 34

- 5.14 Using a pair of tin snips, carefully cut inside the marked shape. Do not cut all the way to the edges of the shape in one go to begin with as there may be slight variance in the wing between vehicles (Figure 35).
- 5.15 Apply a layer of masking tape to the roll over protection system to avoid damaging the finish when the wing is offered up to the vehicle (Figure 36).



Figure 35

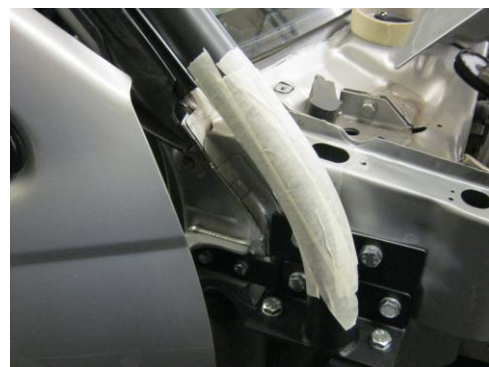


Figure 36

- 5.16 Offer the wing up to the vehicle to check fitment of first cut (Figure 37). Ideally there should be a 2-3mm gap all of the way around between the cut edge and the roll over protection system (Figure 38).



Figure 37



Figure 38

- 5.17 Remove the wing again and take away all of the masking tape placed on the roll over protection system. Primer and paint the edge of the cut wing before applying the edging material onto the cut edges (Figure 39).
- 5.18 Repeat for the wing on the other side, turning the template over for the other side of the vehicle and refit the front wings to the vehicle.
- 5.19 Place a layer of masking tape onto the end of the wiper panel and position the wiper panel template onto one end of the wiper panel. Again, mark the area inside the template to be cut away (Figure 40).



Figure 39

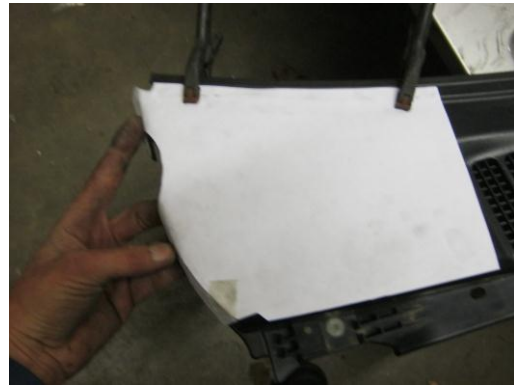


Figure 40

- 5.20 Carefully trim inside the marked area. Again, do not cut away the full amount straight away as vehicles do vary and as little trim should be cut away as possible (Figure 41).
- 5.21 Turn the template over and mark and trim the opposite end. Again, cut inside the marked area (Figure 42) as there may be slight variation in each vehicle.



Figure 41



Figure 42

- 5.22 Offer the wiper panel up to the vehicle to check fitment around the roll over protection system, trim inside the marked area until the wiper panel fits around the tube with a 2-3mm gap (Figure 43 and 44).



Figure 43



Figure 44

- 5.23 The rest of the front of the vehicle can now be re-assembled in the same way it was removed. When re-fitting the wheel arch liners, there will be a slight bulge in the plastic. Use a heat gun to warm the area to relieve the excess tension and leave to set back into position.
- 5.24 Inside the vehicle, remove a section of sound proofing from the back of the carpet around the hoop base plate on both sides of the vehicle (Figure 45).
- 5.25 Remembering this is a visible part, trim the carpet carefully to fit around the hoop, a little at a time until it fits neatly in place (Figure 46).



Figure 45

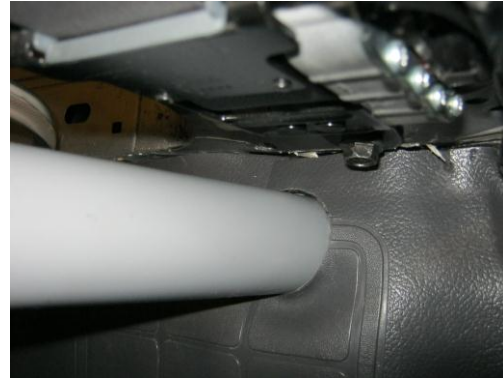


Figure 46

- 5.26 The rest of the interior can now be re-assembled, apart from the interior light. A small amount of the inner seat mounting covers must be trimmed to allow them to be refitted over the internal cross base.
- 5.27 To fit the new interior light, firstly connect two short wires to the terminals (Figure 47). On the trailing end of one wire, attach a male spade terminal and on the trailing end of the other, attach a female terminal.
- 5.28 Attach the new light to the mounting plate using machine screws (Figure 48).
- 5.29 Connect the wiring to the existing wiring in the headlining then secure the mounted light into the recess in the headlining with the original light mounting screws (Figure 49 and 50).

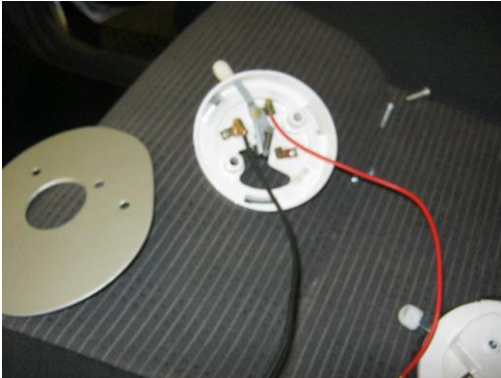


Figure 47



Figure 48



Figure 49



Figure 50

## Section 6 – Roll Cage maintenance

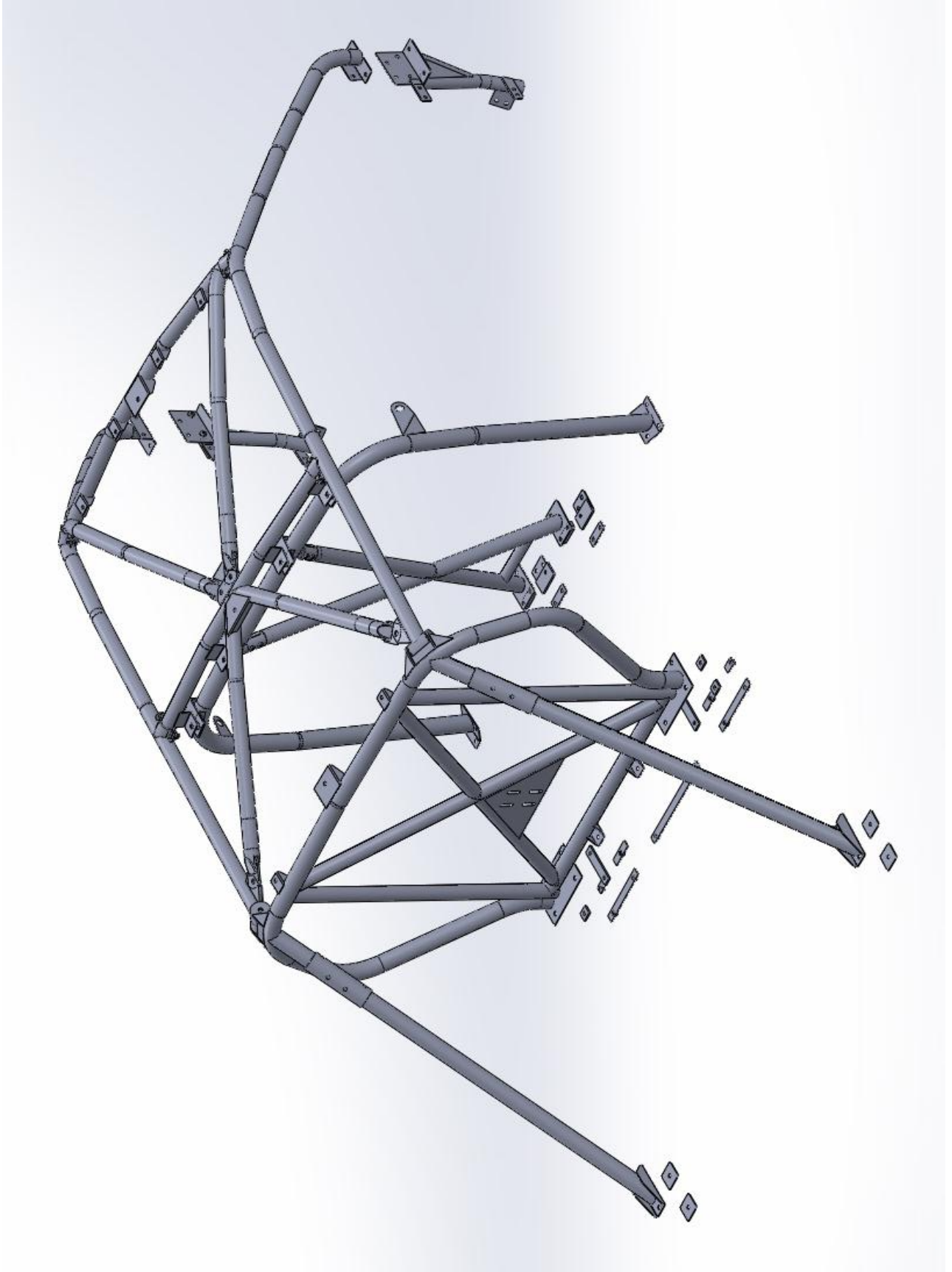
The roll cage should be kept clean and the fasteners checked regularly - if this is not carried out then you may find it difficult to remove the roll cage from the vehicle if required at some point. The roll cage should also be inspected for damage if in regular use.

Industrial coatings are no different to the paint on your car – they need cleaning and maintaining. Accumulated dirt may affect the design life of the system, and any mechanical damage almost certainly will. Therefore regular inspections should take place and minor damage must be touched up. The roll cage is powder coated with zinc primer followed by a topcoat so does provide a hardwearing surface. Should you damage the surface and expose bare metal this needs to be repaired to prevent rust spreading under the powder coat.

Damaged areas must be clean and free of grease or rust. Dry sand the area with 600-grade paper until the metal is exposed. The area must be completely free of dust and cleaned with a non-aggressive solvent before proceeding. Spray zinc based primer onto the area and allow it to dry fully. An acrylic or polyurethane topcoat of matching colour (RAL9005 Black Satin) should then be applied and allowed to dry.

The installation of your Safety Devices roll cage is now complete.





**Front Wing Template**

**Ensure 100mm is correct**

**Scale up/down if incorrect**



**100mm**

**Wiper Panel Template**

**Ensure 100mm is correct**

**Scale up/down if incorrect**



**100mm**