

Welcome to “***Building a Lamborghini Countach***” these plans show you how you can build a fiberglass Countach body on a VW type 3 chassis with a modified D.R.B Magnum steel sub frame.

You will have to see your local A.D.R approved engineer before constructing this vehicle. As the frame was already approved by the Department of Transport you only need to submit the proposed changes with an engineer. This is what I had to do when I was building this car.

I have also included in this manual two designs for a space frame version of this car. Please note that the space frame is not approved so it will have to be certified by and engineer before hand.

You will have to follow these steps in order to finish the project successfully:

**You will construct the body first**

**Then**

**Make the support frame for the body**

As you are hand making the body it will always differ in size, so once you construct the body you will take measurements from the inside of the car and start on the frame.

The core material to make the body is going to be foam and 600g chop strand fiberglass mat with Polyurethane resin. There are two types of foam you can use:

1. Polyurethane = Cost 2.5m x 1.2m x 20mm = \$50
2. Polystyrene = Cost 2.5m x 1.2m x 20mm = \$6

There are drawbacks with both materials:

1. Polyurethane foam is expensive
2. Polystyrene foam can't be covered with Polyurethane resin and has to be covered with expensive Epoxy resin.

To make the project as cheap as possible we are going to be using Polystyrene. To get around the expensive Epoxy resin we will coat the body after we have shaped it with Plaster (normal wall plaster). This will not only save you money but also allow you to shape the body better before applying the resin and fiberglass.

Like any other projects you may have done in the past it is very important to pay attention to detail. I strongly recommend you study pictures go to a library and hire out some books with **Countach** illustrations and photos. Remember your project will only look as good as you want it to look. When I build the first car I spent weeks looking at photos from different angles to get a feel for the car and you should do the same.

You will need 14 sheets of foam 2.5m x 1.2m x 20mm to make the body formers.

Print out the body formers supplied in this manual, which is the last page. You will have to print it on an overhead projector transparency paper (you can get this from any computer supplier).

Now you will need an Over Head Projector, set it up in front of a wall place the transparency on the projector and move it back so that the from the left hand straight edge to the widest point of the car measures 1 meter. The master template is only for half of the car, as the car is identical on both sides we will just copy the other side, as I will explain in the next step.

Once you have measured 1 meter and the projector is all setup you can begin to stick up large sheets of paper on the wall and trace out the formers one by one. Make sure that you leave enough paper on

the left hand side of each of those sheets so you can fold the sheet in half and trace the other side of the car.

Once you have the 14 formers traced and cut out, place them on the sheets of come and cut tem out.

Using 35mm x 70mm pine studs make a bench frame 1.5m x 3.95m. Draw a line down the front and back of the bench down the length at 750mm from the side, which is the center. This frame will be used to attach the formers too.

The distances between the formers are shown in (refer to body construction diagram). Start by marking the former spacing on each side of the frame. Screw in pieces of timber 30mm x 30mm x (whatever height you think will be enough to hold the formers in place). Attach the formers using wood screws, using some short pieces of foam glue the top of the formers so that they are parallel.

We are now ready to start filling in the gaps between the formers with bits of foam covering the whole frame. You will need to cut the foam in to small sections so that they will fit in between the formers. Make sure the foam sticks out 3-5mm out side the formers. Glue in the sections using contact adhesive glue as used for gluing down vinyl, or leather.

Fill in the gaps (3-5mm) where the formers are with plaster or if you want to cut fine strips of the foam you can glue the pieces in with contact adhesive glue. Remember once you apply the glue to both surfaces and let it dry for a few minutes and you touch the two surfaces together they cannot be moved anymore so make sure you fit the piece in before you apply the glue.

Once you have filled in the gaps with plaster apply a thin layer of plaster to the whole body and let it

dry. Make sure you don't apply too much plaster and get it as smooth as possible. This will make your job easier when you have to shape the body.

Now comes the fun part of shaping the body. Using 80 GRIT sandpaper on a wooden block start smoothing out the body. Take your time refer to photos for all detail. If you make a mistake by taking too much plaster off and you can see the foam just reapply the plaster and start the process again.

Once you are happy with the shape of the body it's time to mark out the wheel arches and start modeling the flairs.

Cut small sections of the foam and glue them to the car where the wheel arches are.

Now you will have to find either some PVC pipe or a round tin can with a diameter, which is close to the contour of the flairs, wrap some 80 GRIT sandpaper on it and start shaping the flairs.

A good tip is to get the flairs as close as possible to the shape you desire then mix up some plaster and apply a topcoat on the foam. Cut a profile of the shape of the flair from some plastic and once the plaster starts to set you can easily shape it to the profile you want.

Also work on the front spoiler and all the air duct openings using foam and plaster keep referring to photos for details take your time the detail in the body is the most important part in making the car look nice. Make sure the lines are straight and curves are even.

At this point in time only work on the flairs and front bumper and spoiler do not make any other parts as they will be fabricated after we have the fiberglass body laid up.

Let's start working on the windscreen area. Most replicas fail in this area they pay a lot of attention to

the detail in the body then end up with a flat windscreen. We are going to be making a curved screen (if you don't want to use an original one). For this you will need a **1981 Toyota Hiace van** windscreen you can pick these up cheap enough at a wrecker or a screen manufacture.

Place 2 pieces of timber 30mm x 20mm between former 4 and 6 to make the screen pillars and 2 more pieces between former 3 and 4. This will give you a good guide to the size of the screen they will be removed later. Now trace the opening on a sheet of paper, transfer the shape to the windscreen place it as close as possible in the top of the screen so the top of the screen doesn't have to be cut. The access glass on the out side of the shape will have to be trimmed. Any windscreen manufacture will be able to trim it for you for about \$80.

You will need to get some cardboard and make a lip all the way around the screen. Using contact cement glue the cardboard on top of the screen so it over hangs 40mm over the edge (refer to the windscreen diagram)

Using silicon now build up a 5mm extra to the size of the screen cut strips of fiberglass cloth 80mm wide enough to go around the windscreen 4 times for 4 layers of laminate. Turn the screen over so it's lying on the outside face. Using masking tape make a 40mm boarder around the screen, now you should have a 40mm boarder on the glass where you put the masking tape and a 40mm cardboard lip over hanging the glass.

Mix up some resin and using a brush apply the resin to the 40mm glass boarder and the cardboard. While the resin is still wet place the fiberglass strips and using the brush press on the cloth to saturated with the resin till it goes transparent. When you have worked your way around the glass and you come to the end start applying the next layer. The same technique is used here you must overlap the fiberglass mat at least 40mm for good strength.

Once the fiberglass has cured and is hard you can pull the frame from the screen. Use a Stanley knife to cut the silicone from the screen, and now place the windscreen on the frame and it should go in with no problem and still have a 5mm gap all around the window. Our window frame is ready to be mounted in to the body now.

Place it on the opening where the windscreen suppose to go on the body and attach the frame to the foam. Using foam strips glue it in and smooth out and joints on the roofline and on the bonnet. Use body filler if need be.

When you are happy with the body shape we are ready for the painting of the body. We will paint the whole body with acrylic paint so we can apply the wax and release agent PVA. This will allow you to remove the foam and plaster easily afterwards.

The cheapest acrylic paint can be obtained from “**Super Cheap**” automotive suppliers just get any colour that’s cheap usually white is the cheapest.

Spray the whole car few times and let it dry for a few days.

Apply the release wax to the body then spray the PVA agent over it and let it dry.

Now we are ready to start applying the fiberglass to the body.

You will need 600g chopped strand matting, cut the mat in to sections and place it on the body covering it all making sure you overlap it about 4cm where the cloth meets the overlapping is done for strength reasons. The windscreen are will not be covered with fiberglass its left open.

Mix up some resin in an old ice-cream container with hardener as per the directions of the

manufacture on the tin. Only make up small portions at a time as it has a very short working time, approximately 15-25min depending on the room temperature. Have a glass jar with acetone ready for clean up. Once you have the hardener added to the resin mix it well then using a short bristle paintbrush start applying the resin to the cloth on the car. You only need to saturate the cloth, apply it using a dabbing motion with the brush this will get any air bubbles out from under the matt. You don't want to put too much resin in to the cloth, as it not only makes the body heavier but also weaker. You can tell when you have put enough resin on the cloth starts to go transparent. As soon as you have finished pore out any excess resin in a waste container before it gets hard and clean your brush out in acetone.

Let the resin harden over night and in the morning go over the body with 80 GRID sand paper removing any bumps or air bubbles. Make sure the body is as smooth as possible.

Repeat the above process until you have 4 layers of fiberglass down.

Rub the body back with the 80 GRID sandpaper again removing any bumps and any fiberglass cloth strands that may be sticking out. You should see the glass weave over the whole body. Now we will work on the top coat layer you have 2 options for this you may fill the body with body filler which is resin based and it bonds very well with fiberglass or you may mix up some resin and paint it on using a soft brush then sand it back using wet and dry sandpaper 100 GRIT.

We recommend using the body filler, mixing up small portions with the hardener and applying it on as thin as possible. Allow the filler to dry for at least one hour before you start sanding, if you don't let it dry properly the filler will clog up your sandpaper very quickly and you will be wasting a lot of paper.

Once you have applied the filler to the whole body its time to sand back the body using 80 – 100 GRIT paper. When you are happy with the result its time to fill in any sandpaper scratches using a two part

polyester based spray body filler. Apply two coats using a spray gun allow 1 hour between coats. After the spray putty has dried you can wet sand the car using 360 GRIT wet and dry sandpaper.

The body is now ready to be removed from the foam frame. Turn the body on to the roof and start removing the foam. You will find that the foam separates from the body very easily because we applied the wax and PVA agent.

You should have your body free standing now, go to the fridge and get a **COKE** you deserve it.

Time for cutting out the doors, start by marking out the shape then using a Electric Jig saw cut out the door skin. Make sure to cut them as straight as possible as these will be your out side door skins.

Using bits of foam make up the inner door ledges (as per the door diagram). Once you are happy with the shape cover the foam with plaster then sand the plaster. Repeat the process as we did in the laying up of the body with the wax and PVA.

You should have your door ledges finished by now. Using the door ledge as your mould we will make up the inner part of the door simply by laying up over the door ledge with fiberglass. This will give you the inner part of the door that will be bonded with the door skin you cut out earlier. Before you bond the skin to the door make up the intrusion bars and glass them in (as per the intrusion bar diagram).

When laying up the inner door ledge make sure that you paint your ledge before you apply the wax and PVA agent. **WARNING** if you do not then the fiberglass will bond with your door ledge and you will not be able to remove it.

The side glass used for the doors and the back window is 6mm flat laminated glass. Any glass supplier will be able to cut the glass for you. In the doors only the bottom half of the window opens up

use standard **FORD** winding mechanism modified to fit in the door as well as the runners for the glass. You can find these at any car wreckers.

The door hinge is a **Bedford 1976** door hinge (refer to the door hinge diagram). Door latch can be a standard **VW** or a early model **Mercedes** like 1973 to 1977 (make sure it's the one with the long guiding pin). The gas struts for the doors can be obtained from a car wrecker or from gas strut supplier. I recommend the gas strut supplier, as they will sell you the right strut for the weight of the door. Also you will receive a data sheet from them showing you the leverage points and angles, which is very important. I remember buying second hand struts and spending days trying to work out the angle and so on. At the end I just rang up and ordered a new set with a data sheet.

The same method is used to cut out and make the bonnet and engine hood.

The front head lights I used were from a **Yamaha 50cc Zumma** scooter with the bulbs replaced. The headlight mechanism for the headlights can be from a **Mazda RX7**. The front parkers combined with the blinker are like the original which were the **Renault 12** (can be found at any European car wreckers).

The little side blinkers on the front guards are from a **GTV Alfa**.

The most frequent question I get asked is about the taillights they are from a **1973 Alfa Alfetta 1800cc**. It's a one piece light with three separate lights on it like the original Countach.

Speedometer is very expensive for a VW what you can use is a early model **BMW 318** 1970's models. The speedometer will attach directly to your existing cable from the VW nice and cheap and looks good as well.

The sub frame is built out square tube 50mm x 50mm x 2mm and 100mm x 50mm x 2mm the roll bar is 60mm x 5mm wall thickness.

Once you have removed the body from the Type 3 VW you can start cutting the length you will need for the frame (refer to the metal supportive frame diagram). The frame bolts to the original mounting points for the VW body which is down the both sides of the car and over the four shocks.

Place the lengths of steel on the chassis and tack weld the structure. Then remove it from the chassis and finish welding.

Depending on the engine you will be using weld up some engine mounting brackets using some 50mm x 50mm x 2mm box section.

A good engine to use in conjunction with the VW gearbox is a **WRX Subaru** motor or the 2 liter **Nissan V6**. Remember that you can only put in an engine no bigger then 2 liters in to the VW chassis in most states. The adaptor plate can be obtained from **Volkswagen Conversions** on the Gold Coast in QLD. John has most adaptor plates in stock for most engine combinations also he stocks disk brake kits to change the rear drum brakes on the VW.

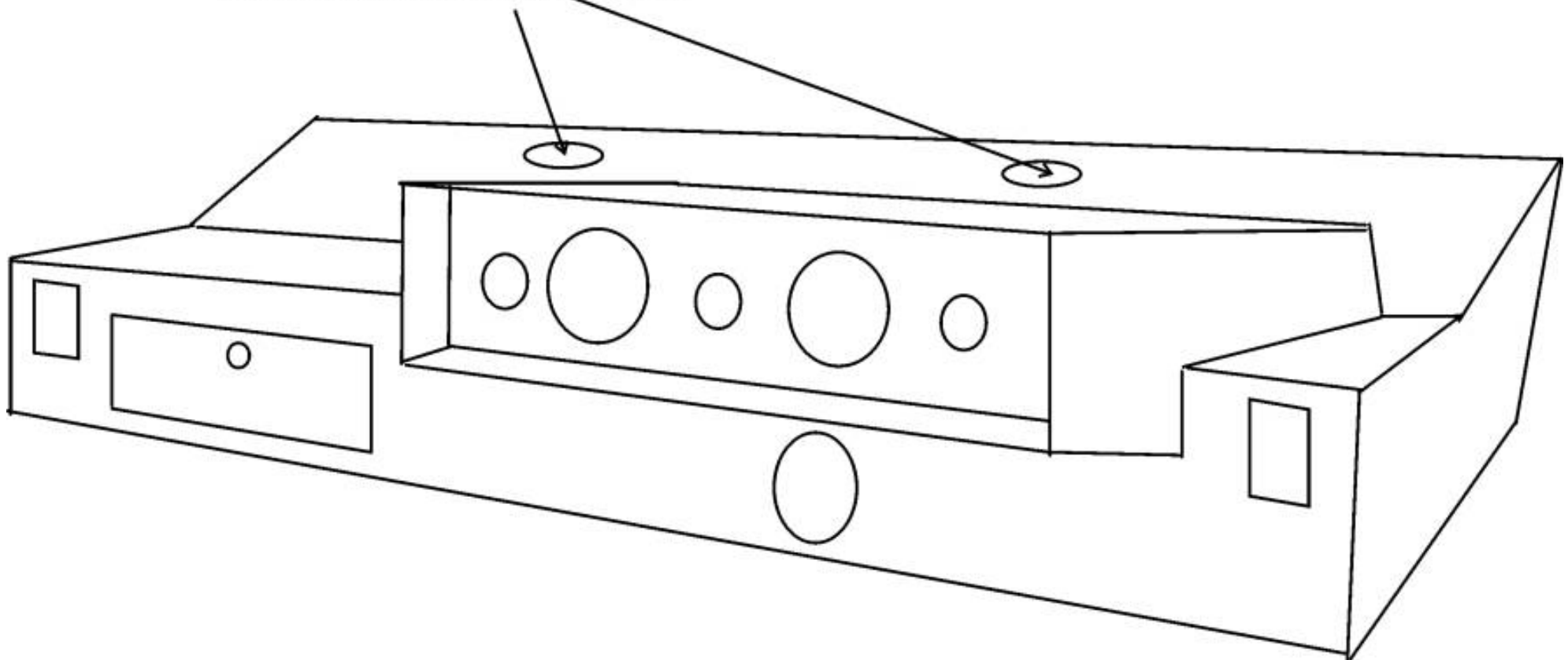
When the steel frame is finished place the body over the frame. At this point you will see that you can glass in the roll bar to the body. Take some measurements from the supportive frame to the body front and back so you can make up some 3 mm plates, which will be welded to the frame. These plates then will be glassed to the body.

Well this brings us to the end of the manual I hope that I have made this building exercise as simple as possible.

All the best with your project, and don't forget to send photos of your project.

## Dashboard

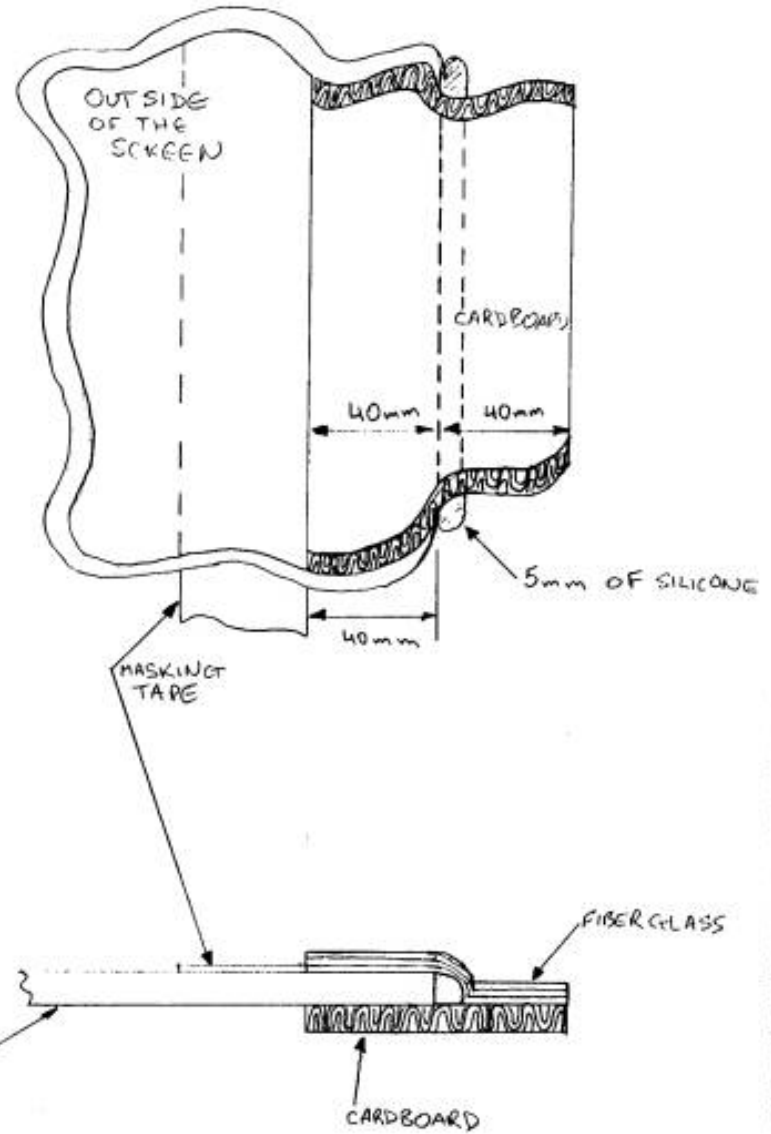
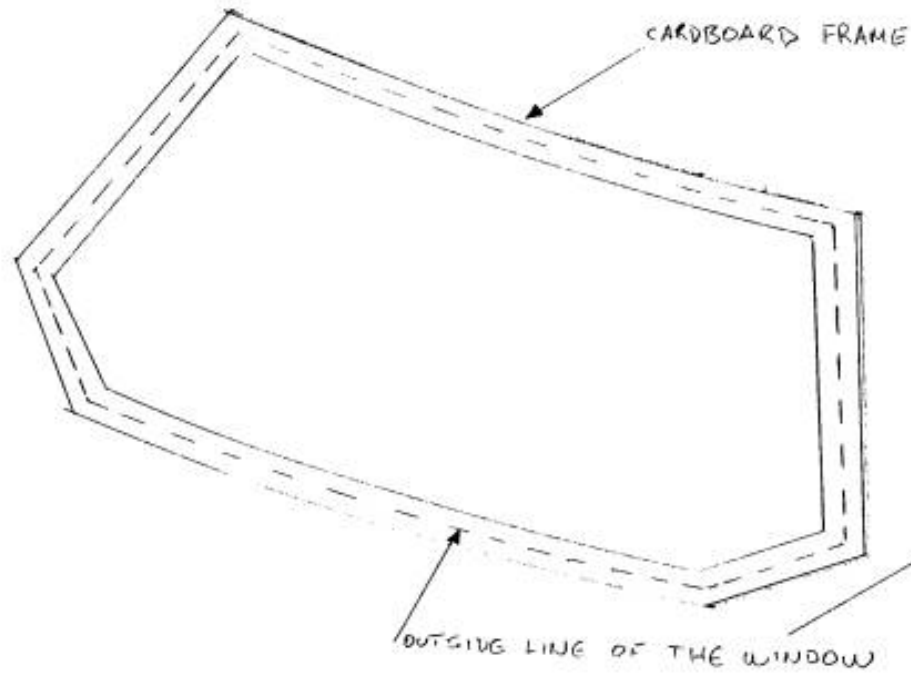
Windscreen demisters, use two 12volt hair dryers.  
You can purchase these from any good Camping supplier.  
This is what I used for my first car.



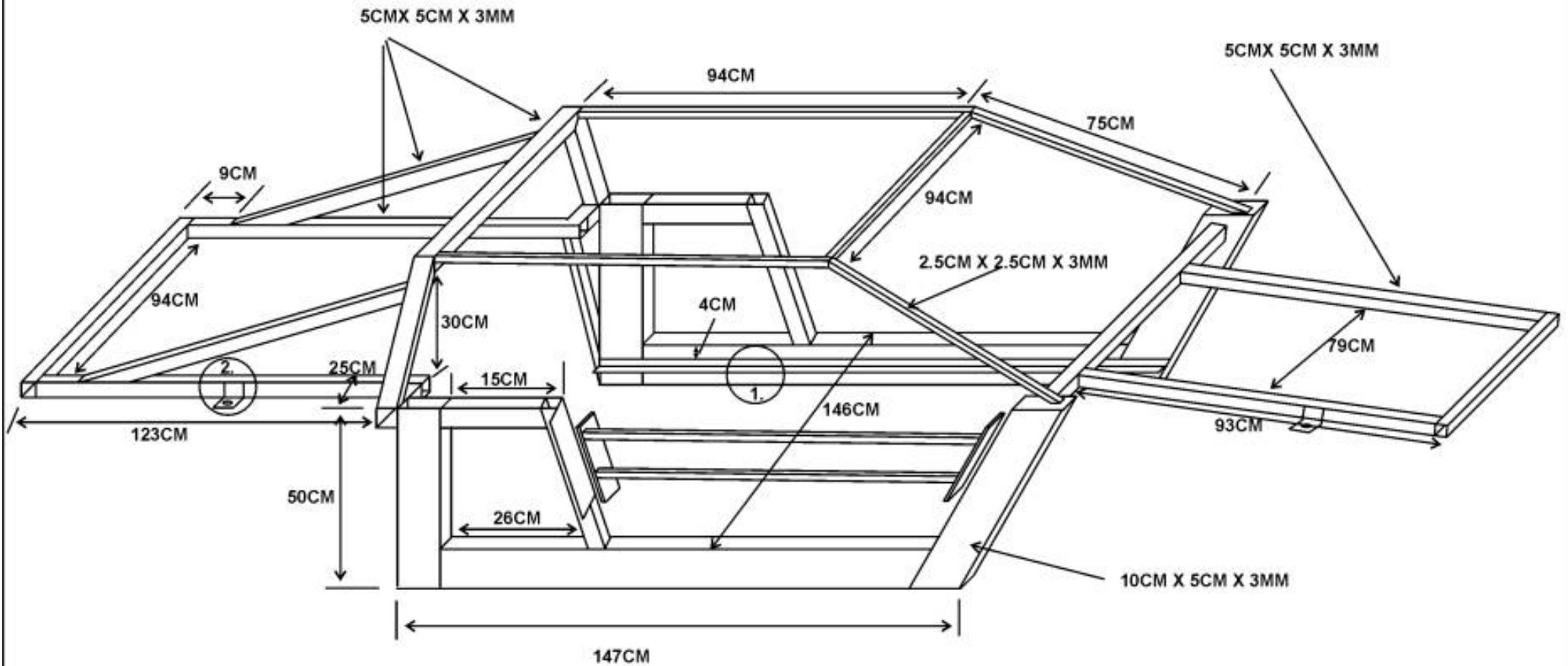
# Windscreen frame construction



1983 Toyota Hiace Van screen trimmed to size.



## METAL SUPPORTIVE FRAME

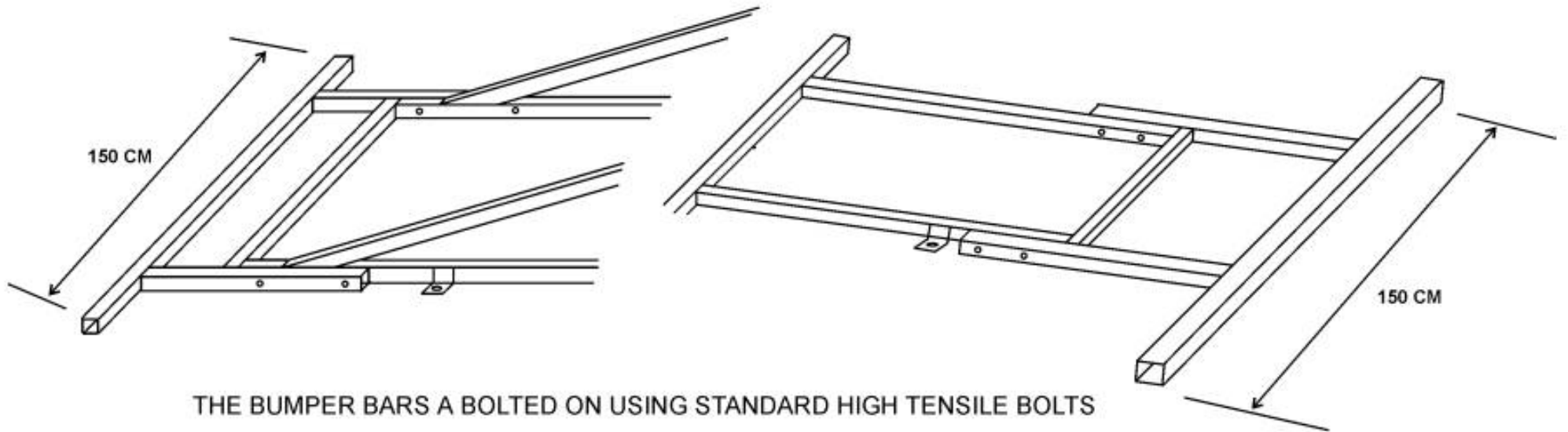


1. 40MM X 40MM RIGHT ANGLE STEEL ORIGINAL BODY MOUNT HOLES

2. 5MM RIGHT ANGLE STEEL SHOCK MOUNTS

SUPPORTIVE FRAME

## STRUCTURAL VIEW OF BUMPERBARS



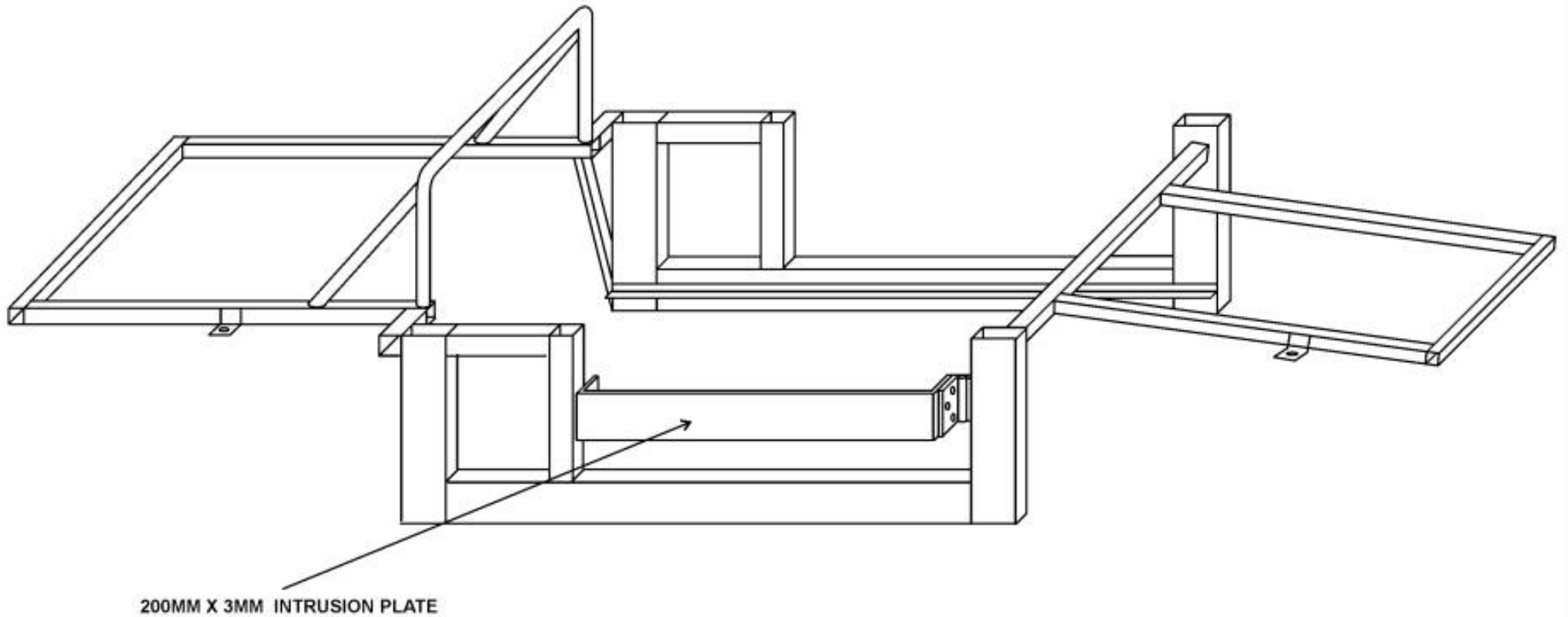
THE BUMPER BARS A BOLTED ON USING STANDARD HIGH TENSILE BOLTS

FIBERGLASS THE BUMPERS IN TO THE FRONT AND BACK OF THE BODY.

USE BOX STEEL 50MM X 50MM TO MAKE THE BUMPERS

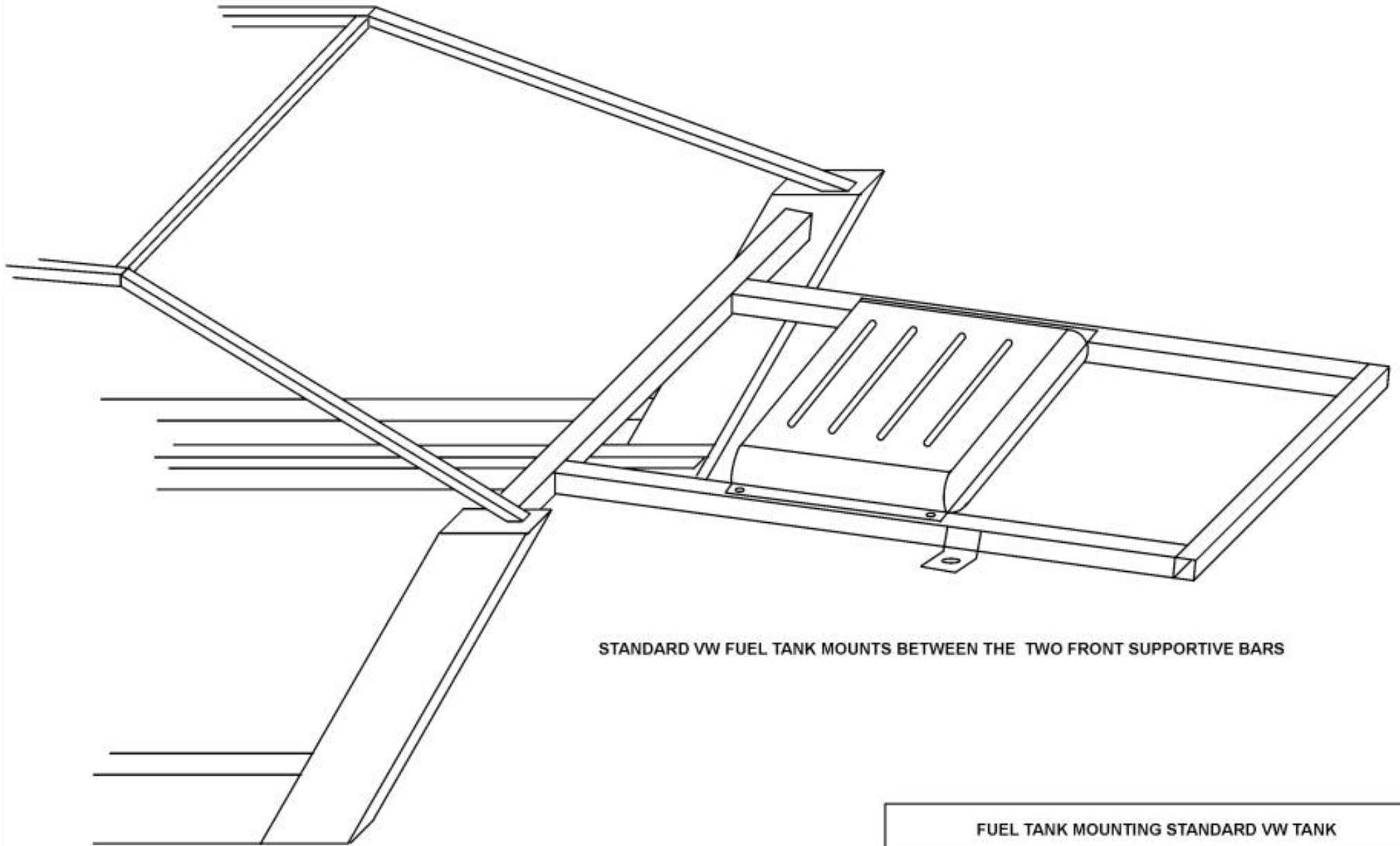
BUMPER BARS

# STRUCTURAL VIEW D.R.B MAGNUM METAL SUPPORTIVE FRAME



D.R.B. MAGNUM SUPPORTIVE FRAME ORIGINAL

## FUEL TANK MOUNTING

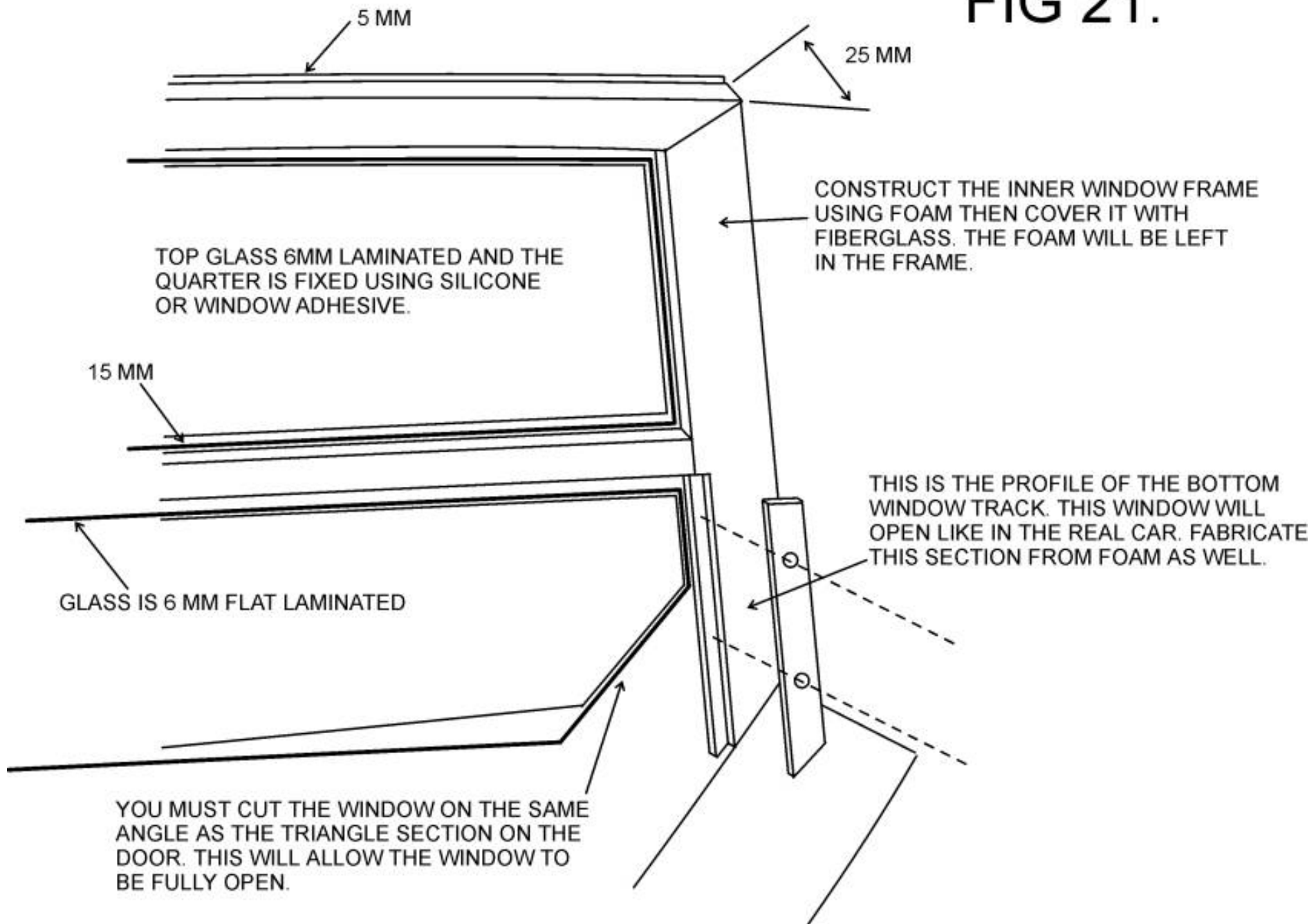


STANDARD VW FUEL TANK MOUNTS BETWEEN THE TWO FRONT SUPPORTIVE BARS

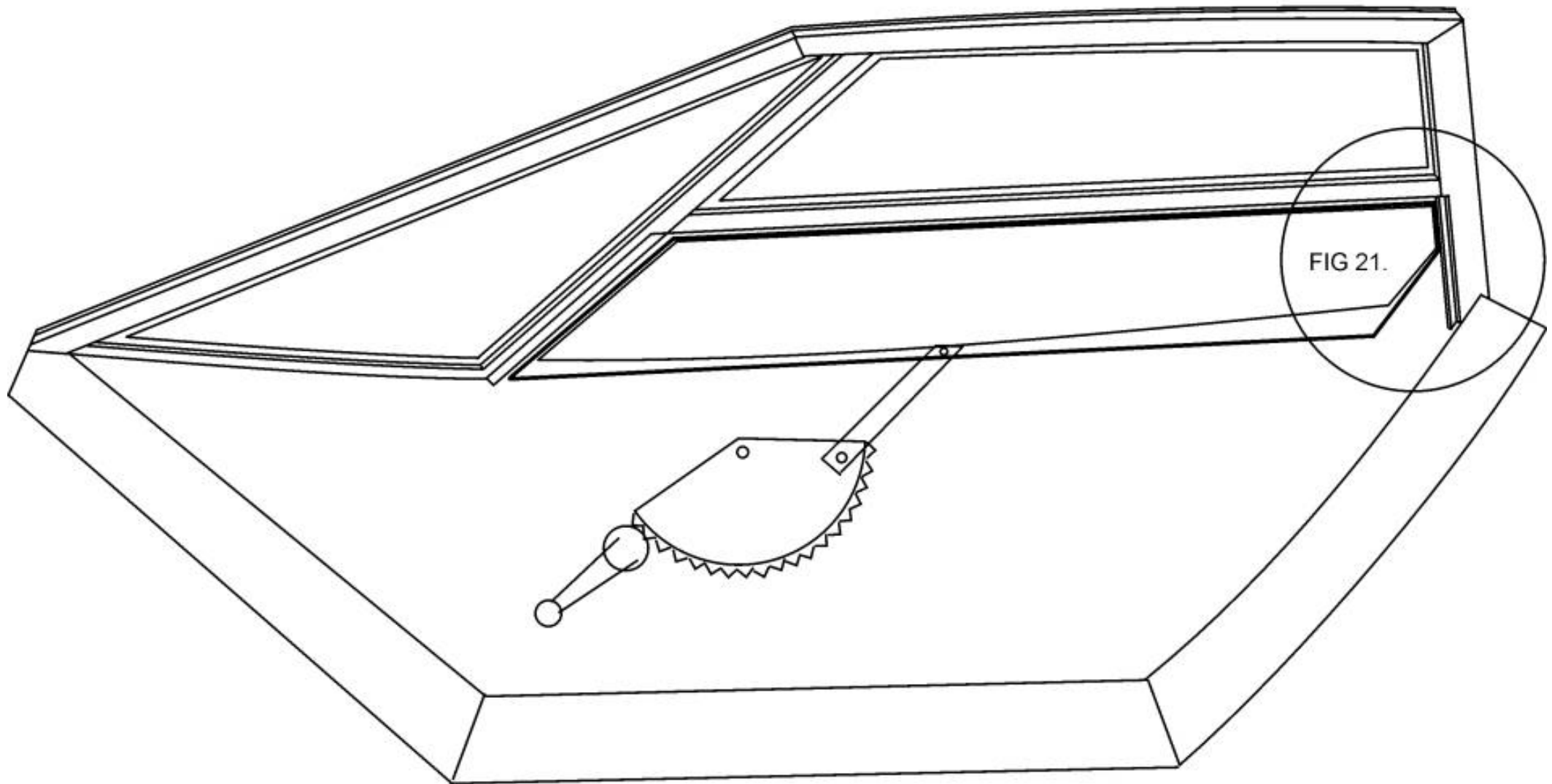
FUEL TANK MOUNTING STANDARD VW TANK

# DOOR WINDOW FRAME

## FIG 21.

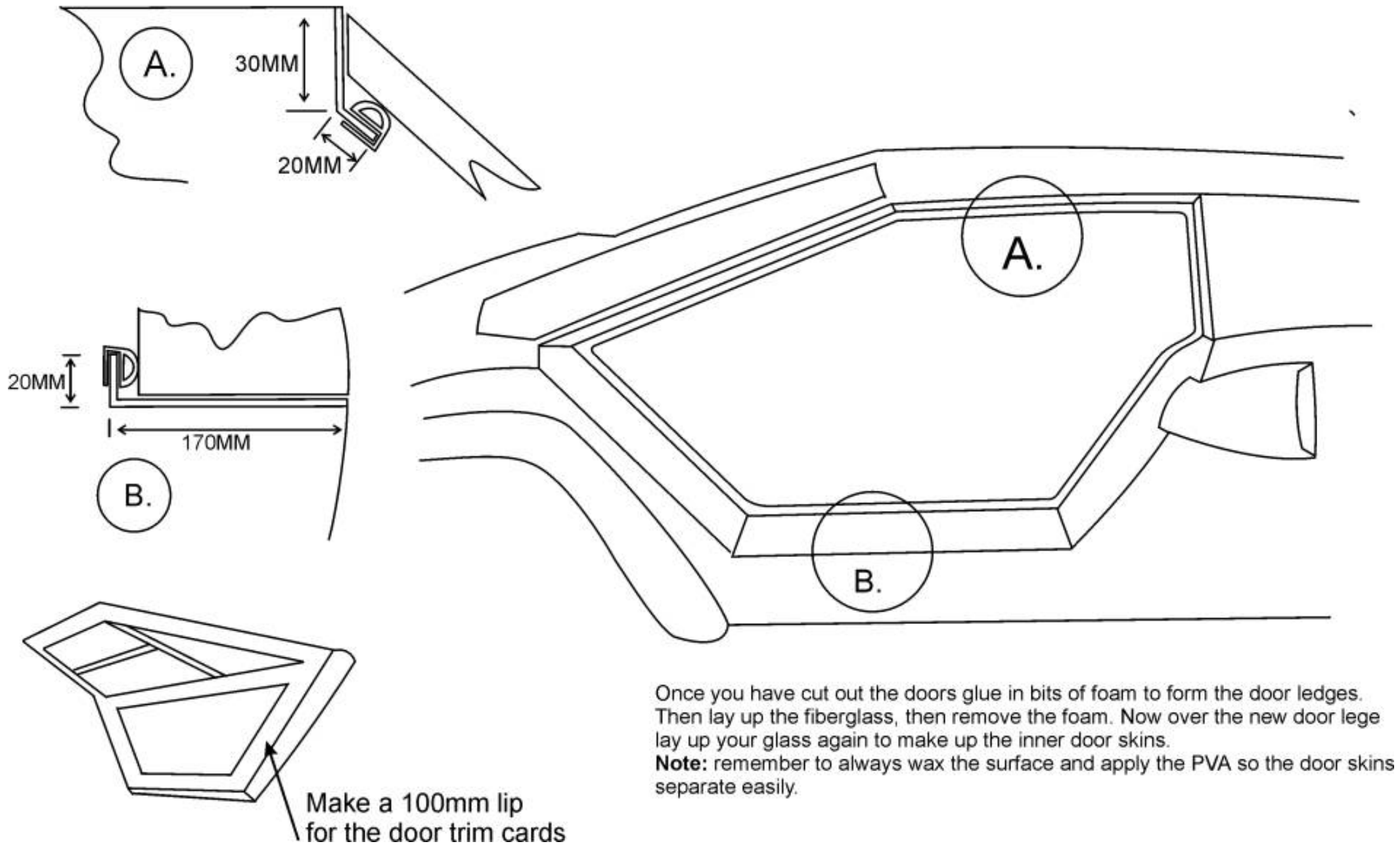


DOOR WINDOW FRAME



WINDOW MECHANISM IS FROM AN 70'S FOR FALCON.  
YOU CAN USE ANY STANDARD CAR WINDOW OPENING  
MECHANISM. IF YOU WISH YOU CAN REPLACE THIS  
WITH AN ELECTRIC SET UP.

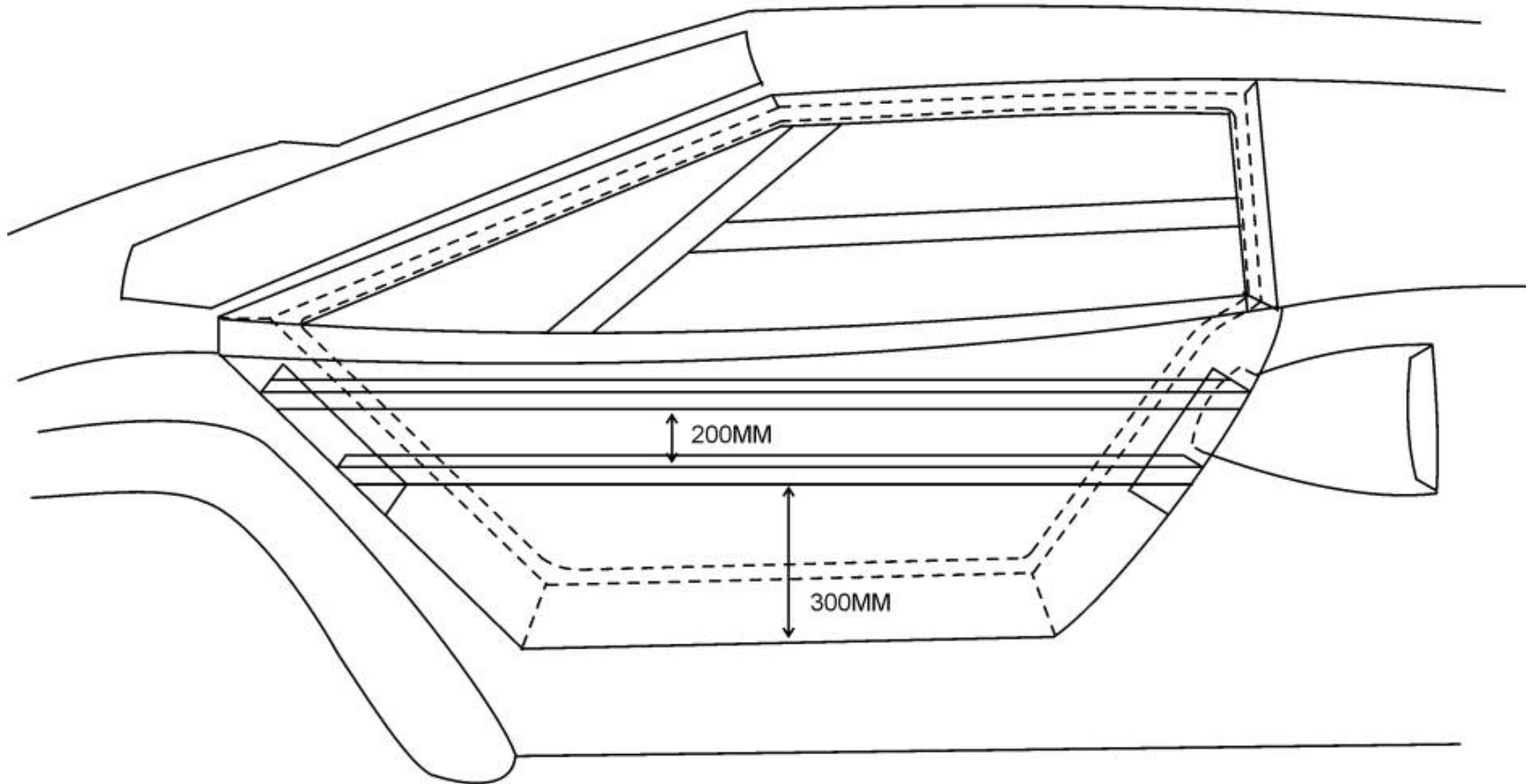
## DOOR CONSTRUCTION



Once you have cut out the doors glue in bits of foam to form the door ledges. Then lay up the fiberglass, then remove the foam. Now over the new door ledge lay up your glass again to make up the inner door skins.

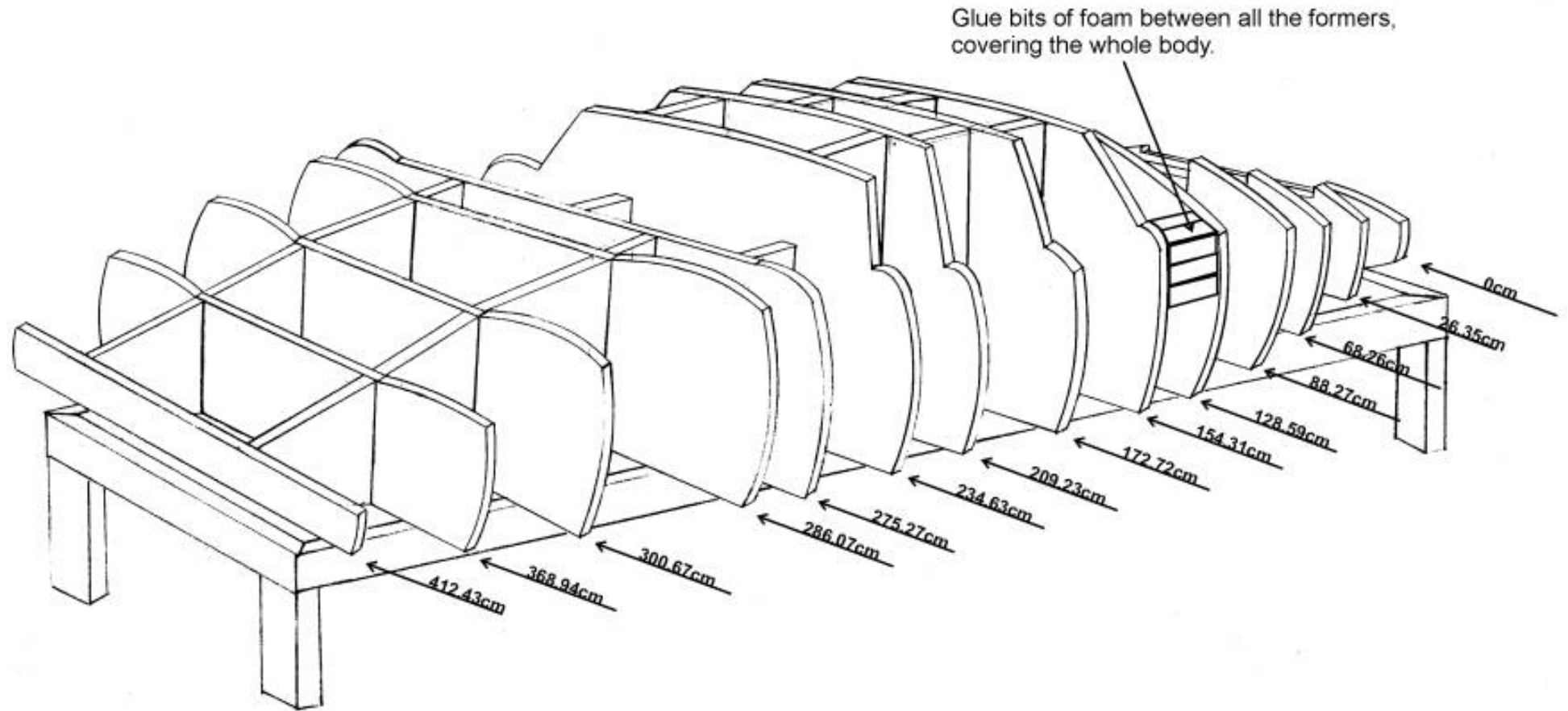
**Note:** remember to always wax the surface and apply the PVA so the door skins separate easily.

# DOOR CONSTRUCTION INTRUSION BARS



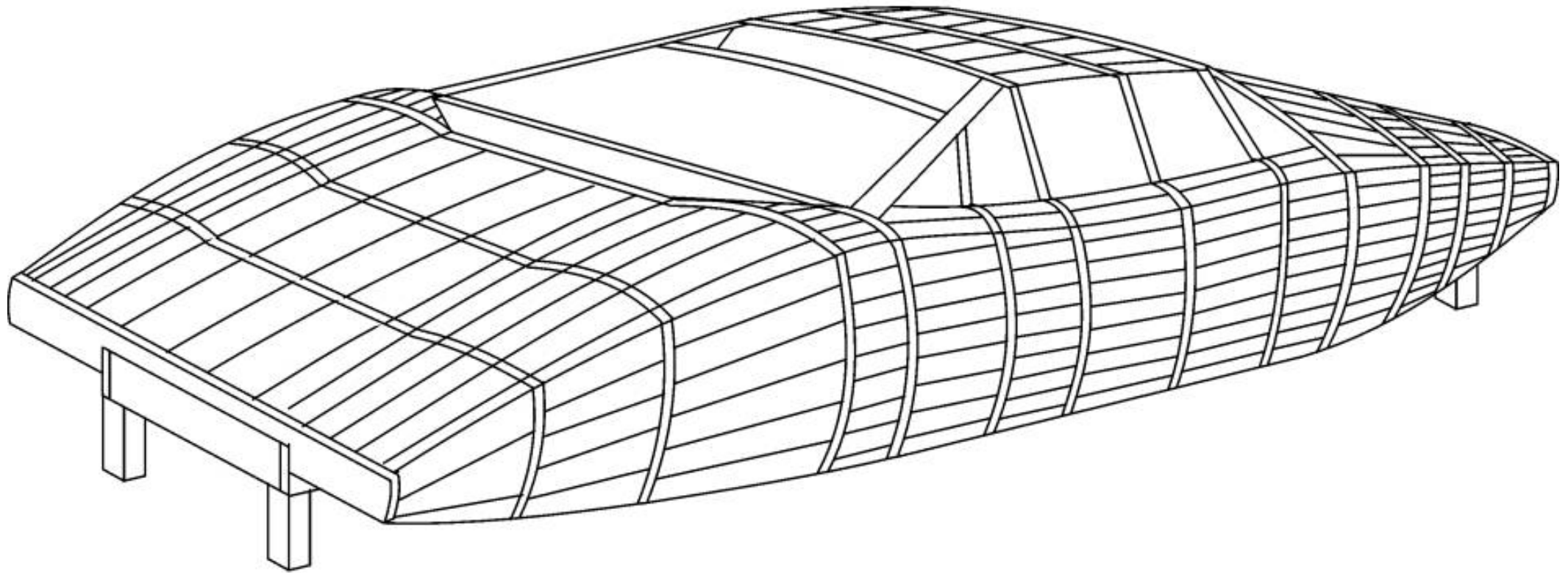
THE INTRUSION BARS ARE BONDED TO THE DOOR SKINS WITH FIBERGLASS

## Body construction & former layout

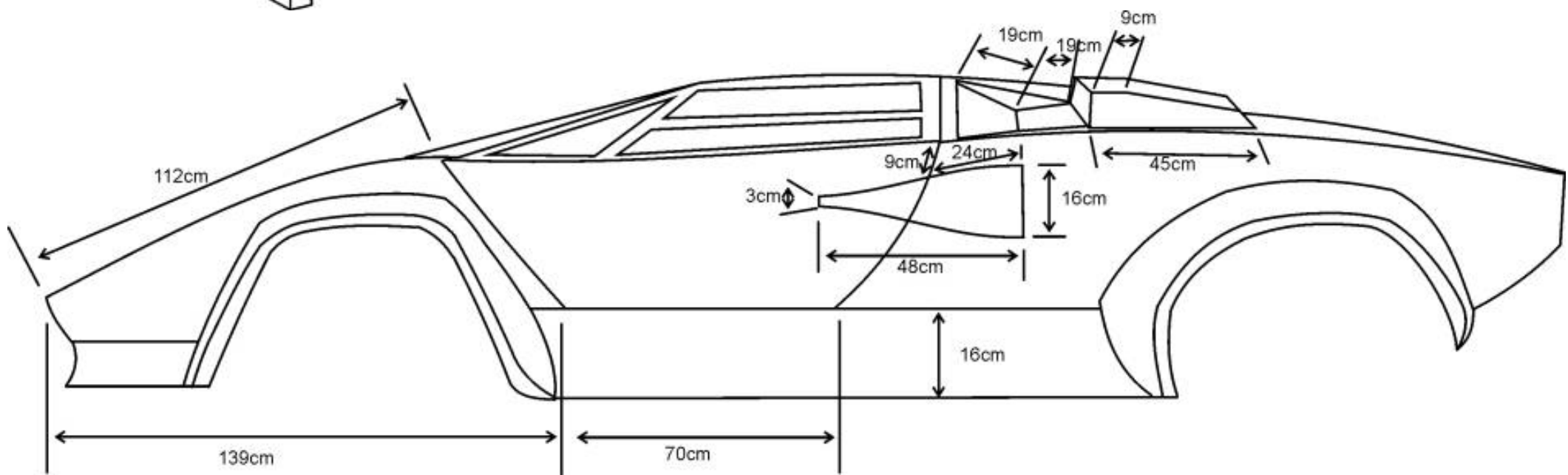
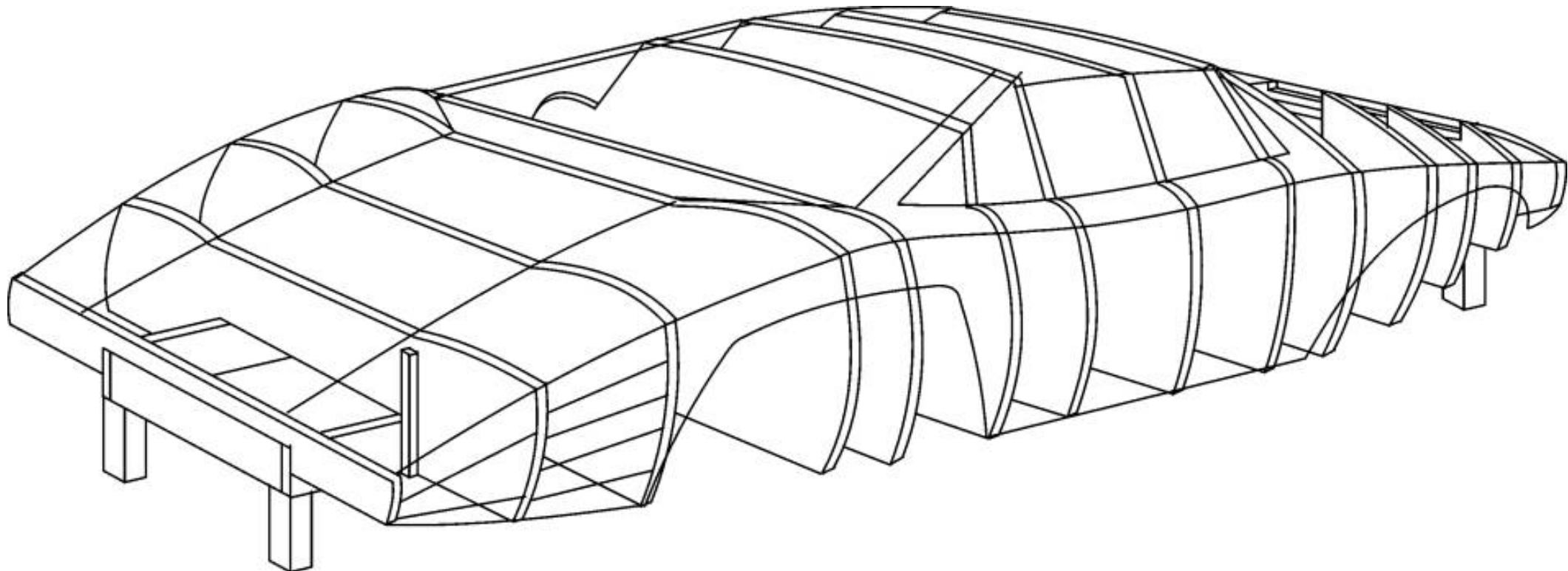


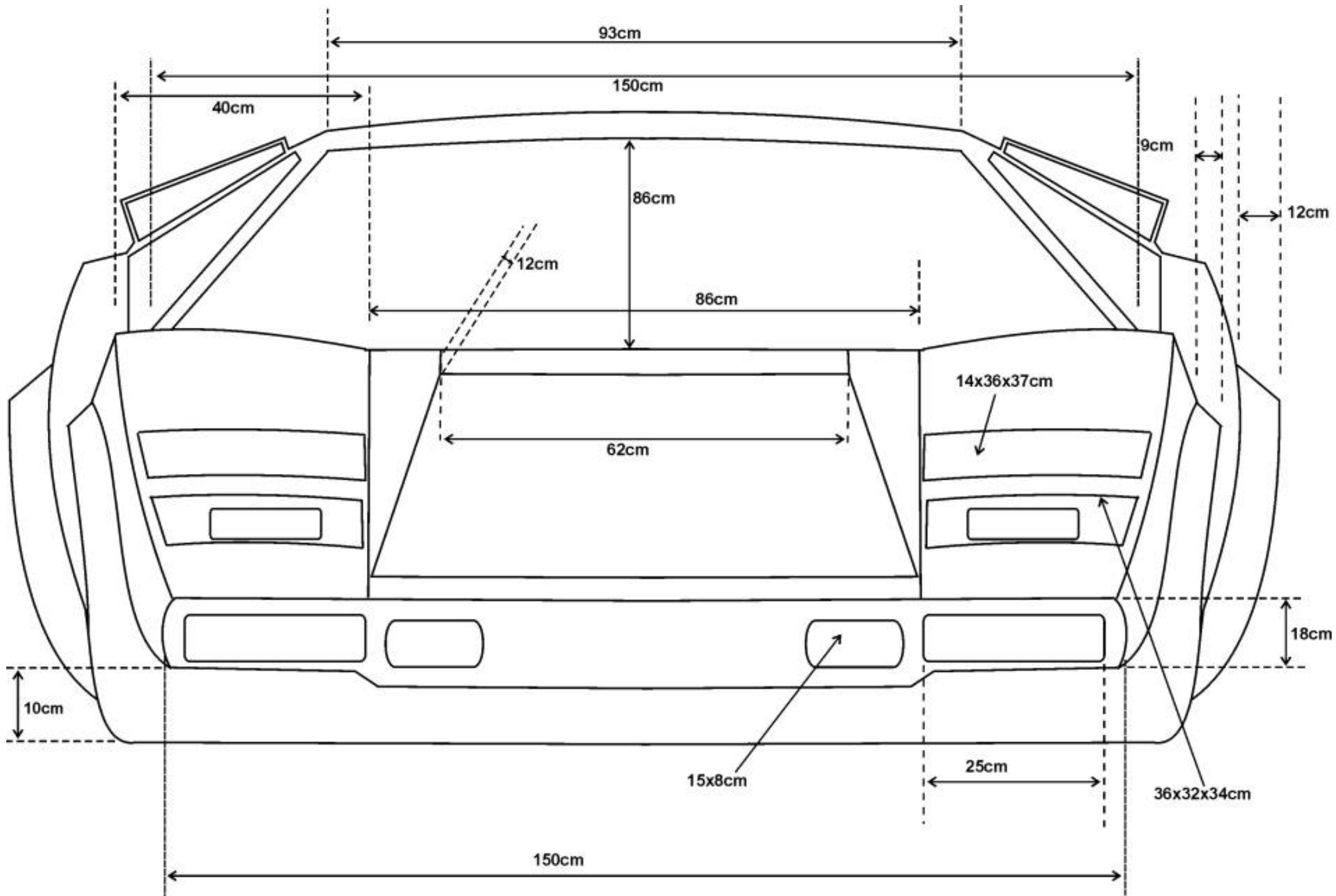
Place your formers out of foam or plywood as per the diagram above. Fill in the gaps between the formers with bits of foam letting them stick past the formers about 3-5mm. Shape the foam till you get the shape right. **Note:** take you time this is the most important part getting the shape as straight as possible.

## FORMING THE BODY

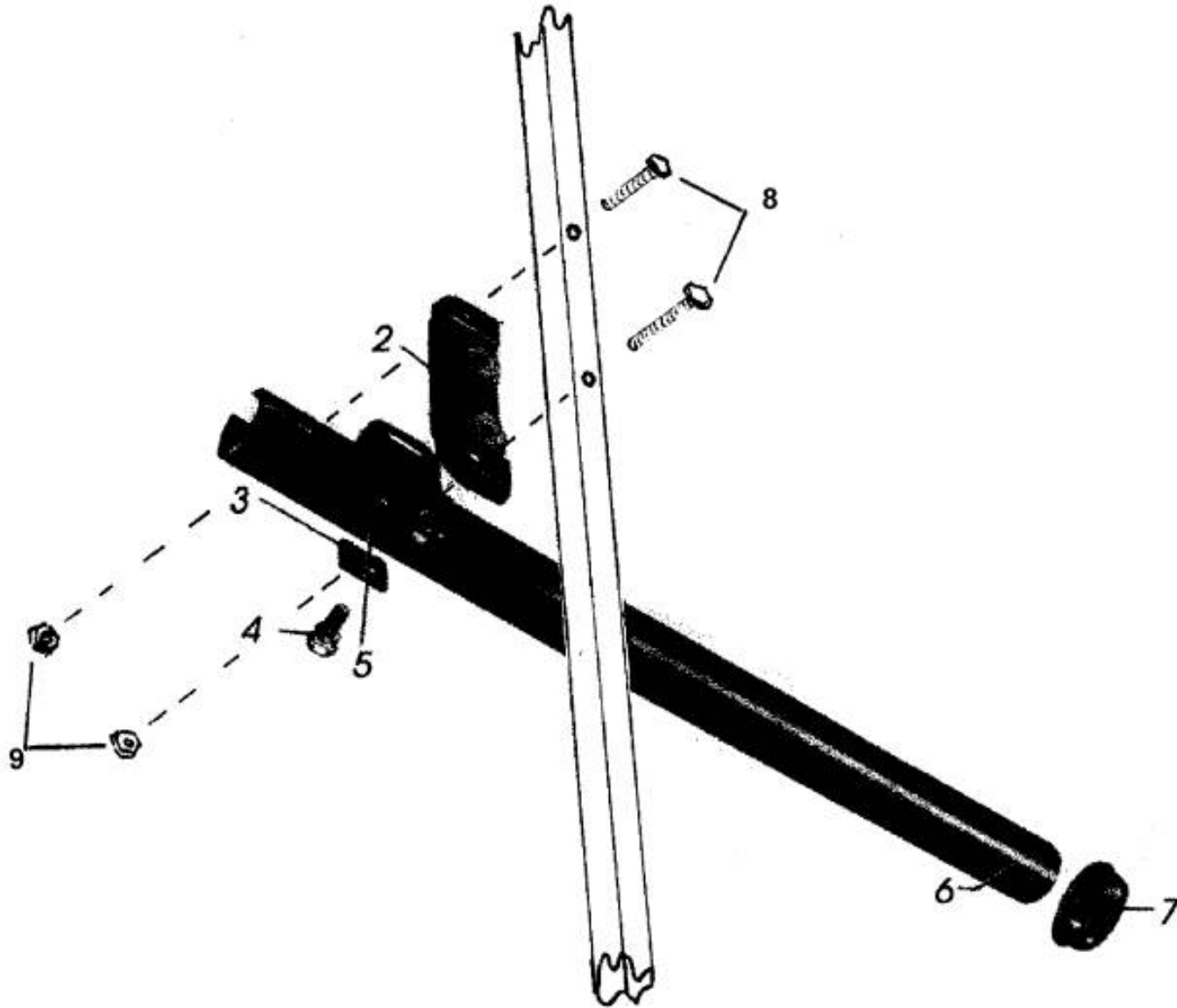


AFTER GLUING IN ALL THE FOAM BITS IN BETWEEN THE FORMERS ITS TIME TO START SHAPING THE BODY. USING SAND PAPER AND A WOODEN BLOCK START SHAPING THE BODY.



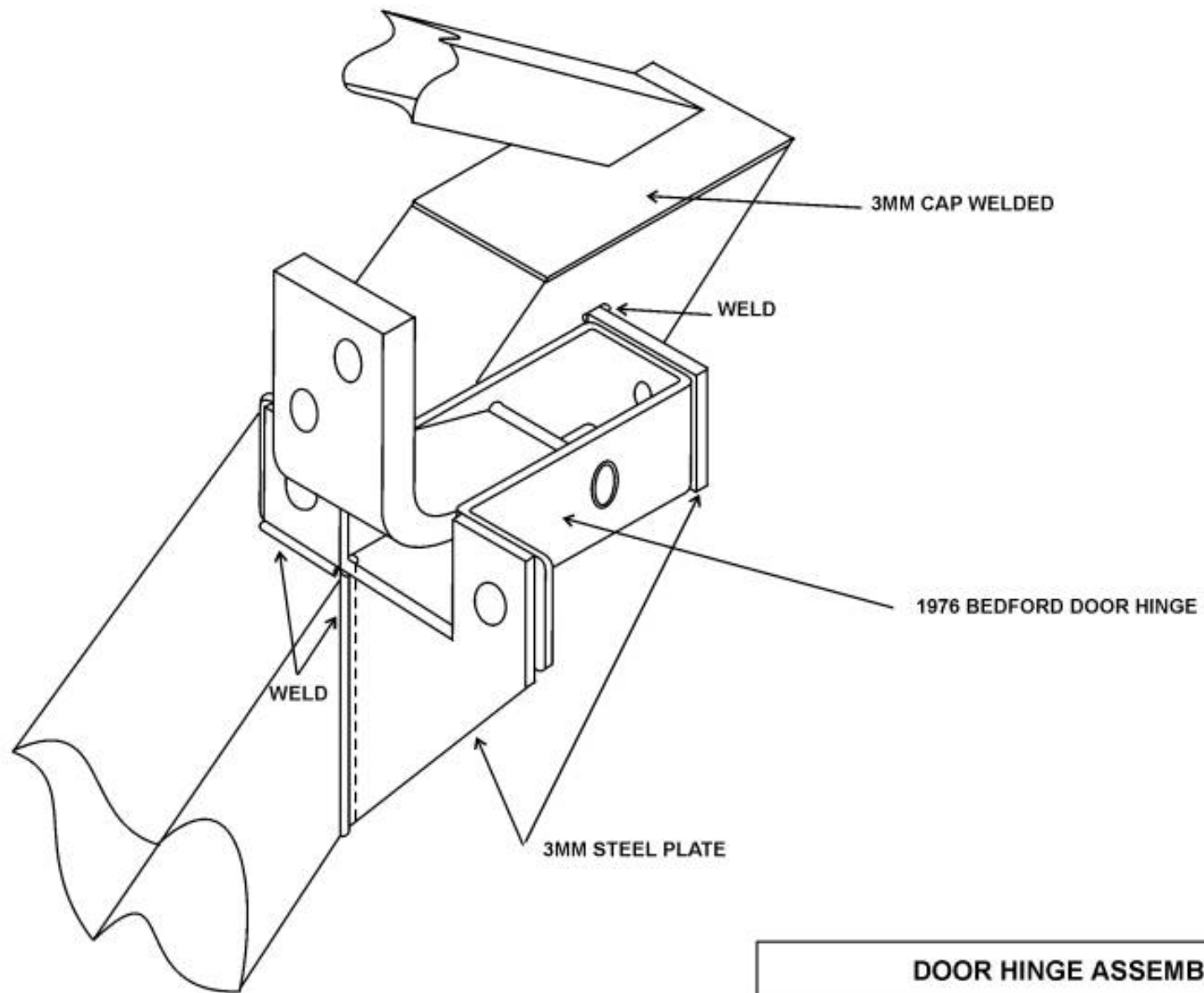


## Steering column mounting



- 2- Column mounti
- 3- Packing
- 4- Shear bolt
- 5- Shear bolt
- 6- Column tube
- 7- Bush
- 8- Shear bolts
- 9- Shear nuts

**STRUCTURAL VIEW OF DOOR HINGE ASSEMBLY FIG3.**



**DOOR HINGE ASSEMBLY**

# POP-UP LIGHTS

LIGHT OPENING  
THAT WAS CUT  
OUT FROM THE  
BODY IS USED  
HERE FOR THE  
LIGHT LID.

2 MM STEEL PLATE

3 CM

10 CM

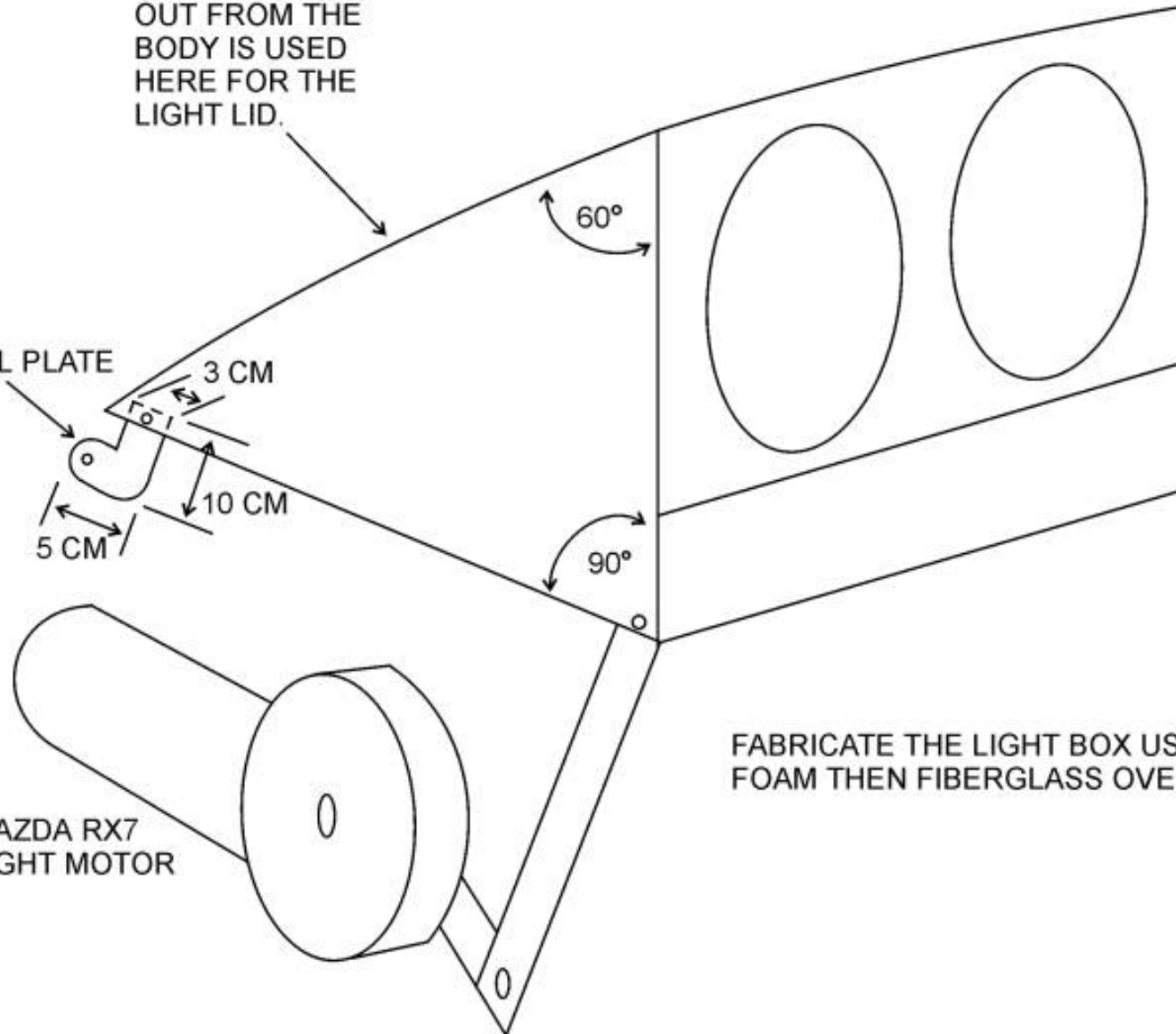
5 CM

60°

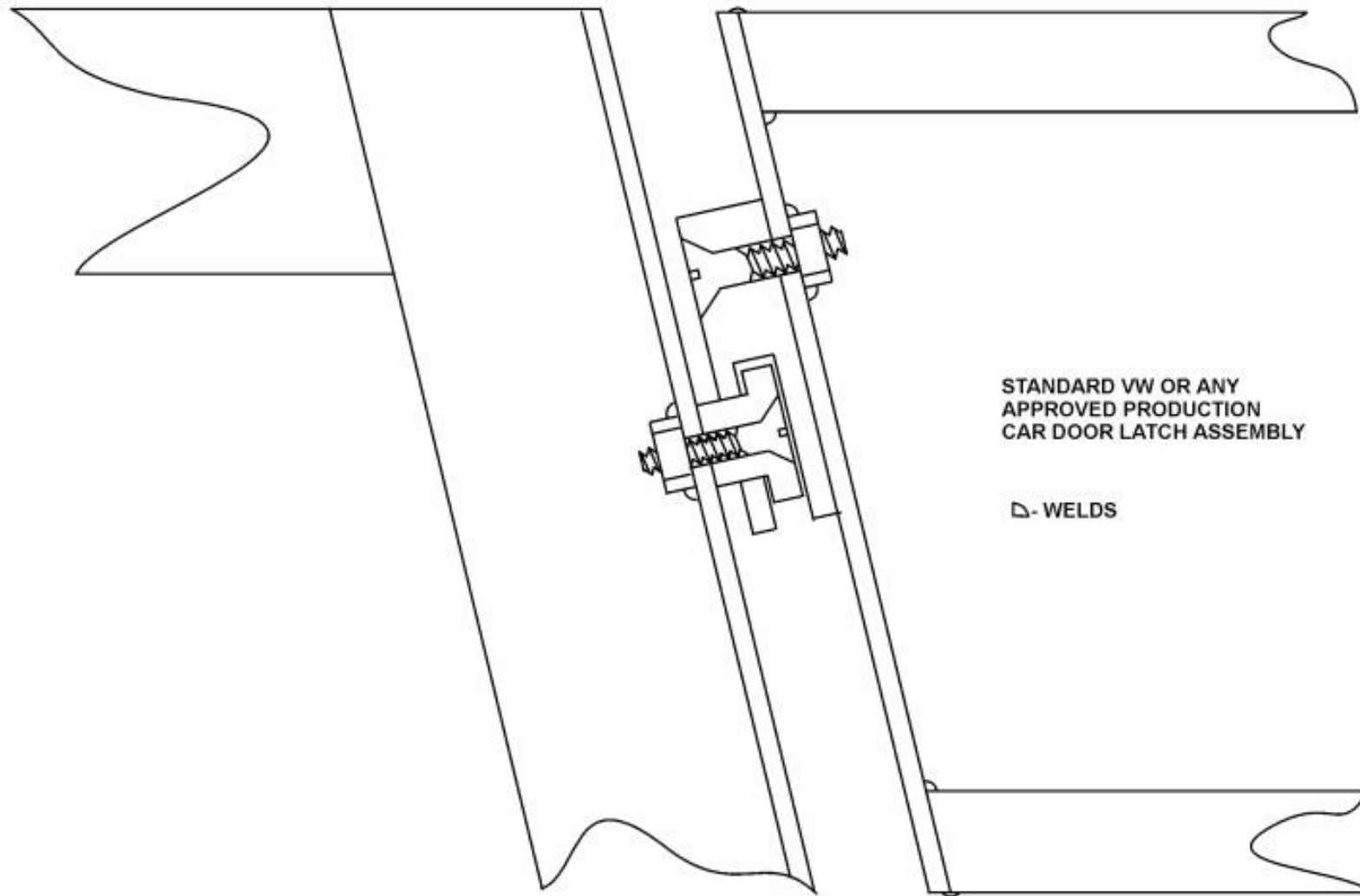
90°

MAZDA RX7  
LIGHT MOTOR

FABRICATE THE LIGHT BOX USING  
FOAM THEN FIBERGLASS OVER IT



**STRUCTURAL VIEW OF DOOR LATCH & STRIKER PLATE FIG2.**



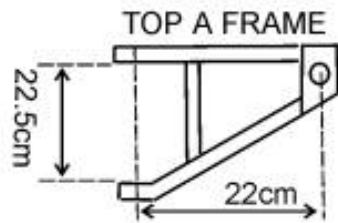
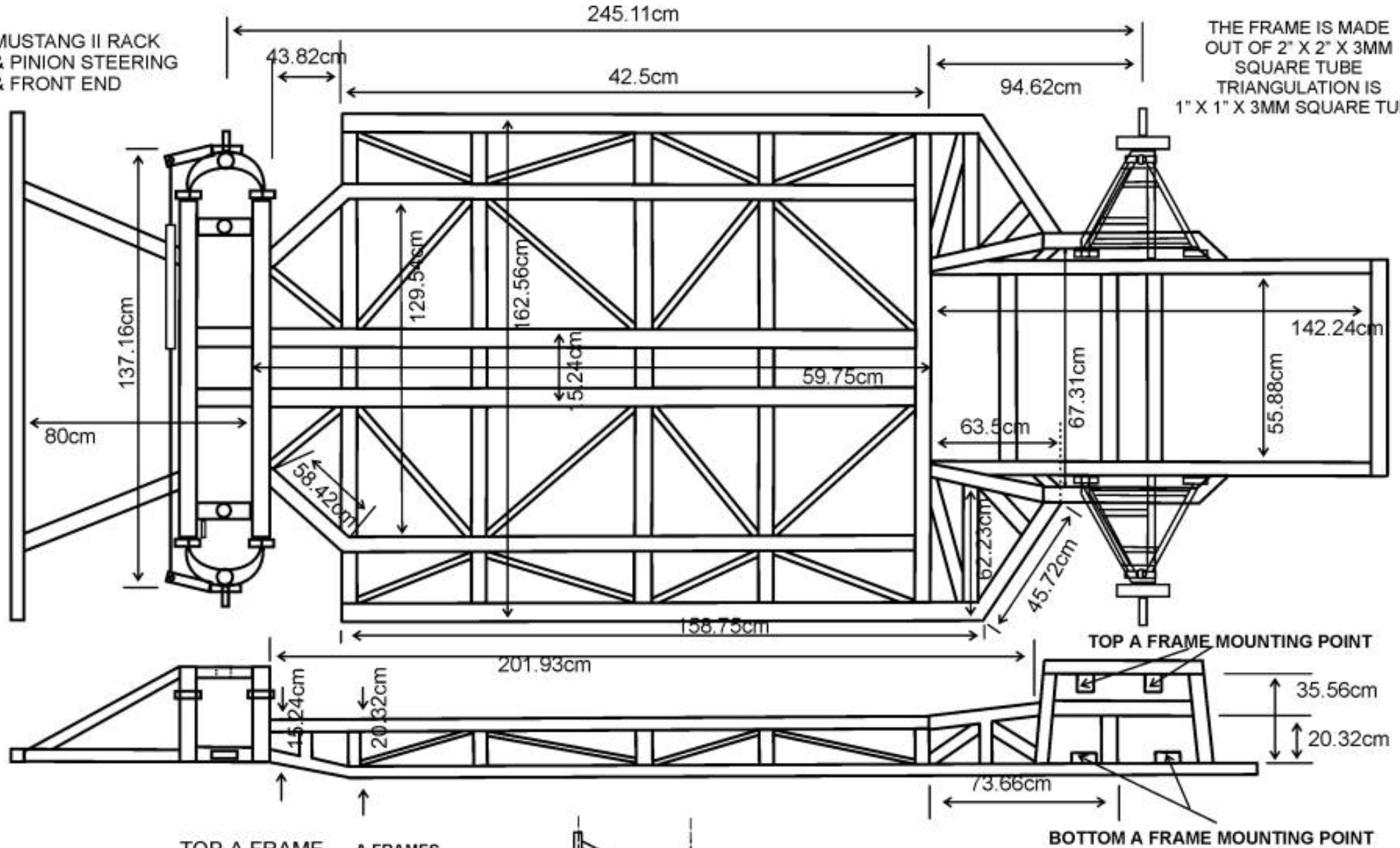
STANDARD VW OR ANY  
APPROVED PRODUCTION  
CAR DOOR LATCH ASSEMBLY

D- WELDS

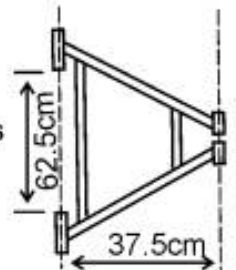
**DOOR LATCH & STRIKER PLATE ASSEMBLY**

MUSTANG II RACK & PINION STEERING & FRONT END

THE FRAME IS MADE OUT OF 2" X 2" X 3MM SQUARE TUBE  
TRIANGULATION IS 1" X 1" X 3MM SQUARE TUBE



A FRAMES MADE FROM 1" ROUND TUBE 3MM WALL THICKNESS  
MUSTANG II SPRINGS & SHOCKS



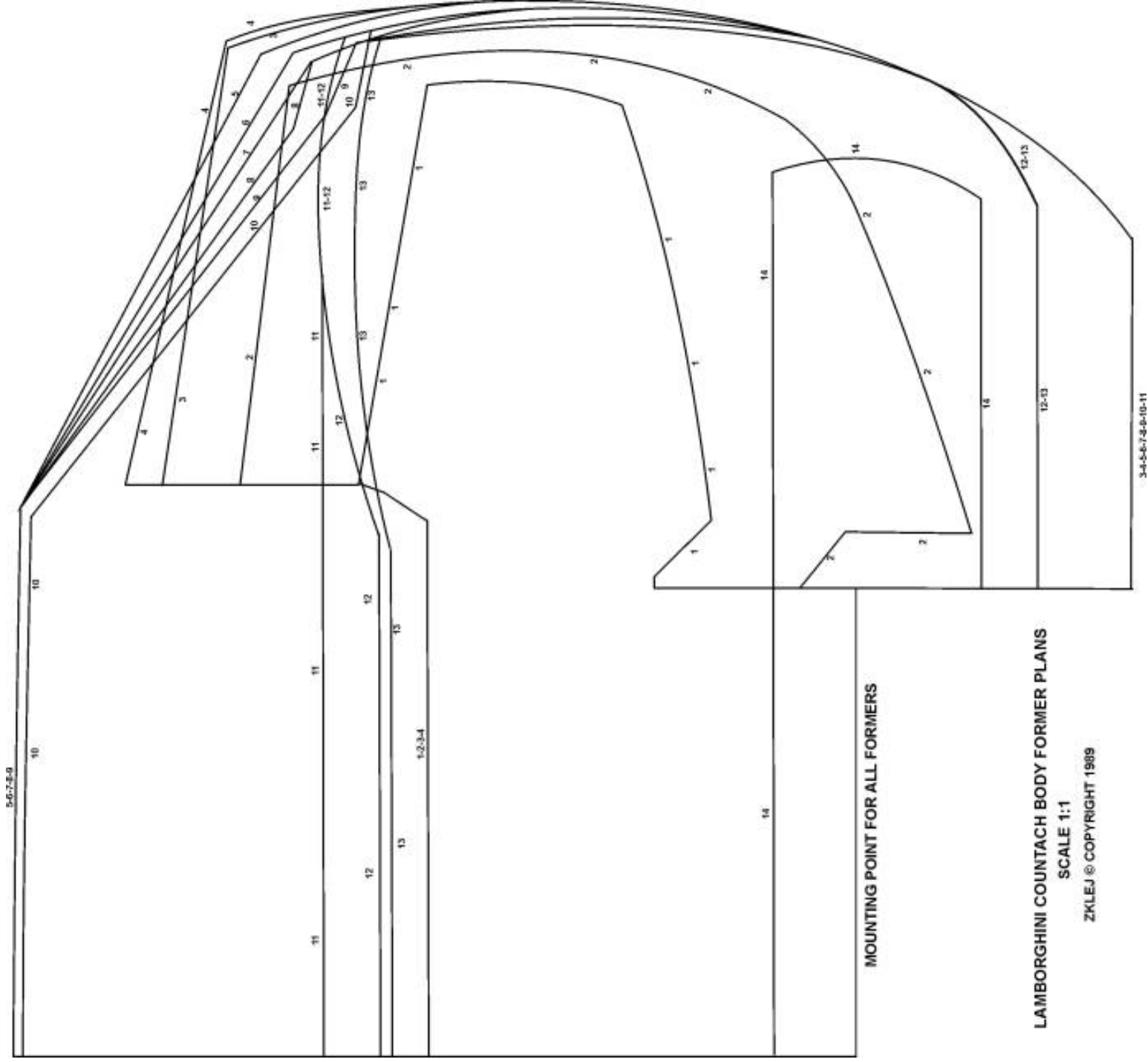
BOTTOM A FRAME

**DESIGN1.**

**LAMBORGHINI COUNTACH**

SPACE FRAME CHASSIS TO ACCEPT RENAULT 30 TRANS V6 OR V8 ENGINE

ZKLEJ © COPYRIGHT 1989



5-5-7-8-9

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MOUNTING POINT FOR ALL FORMERS

LAMBORGHINI COUNTACH BODY FORMER PLANS

SCALE 1:1

ZKLEJ © COPYRIGHT 1989

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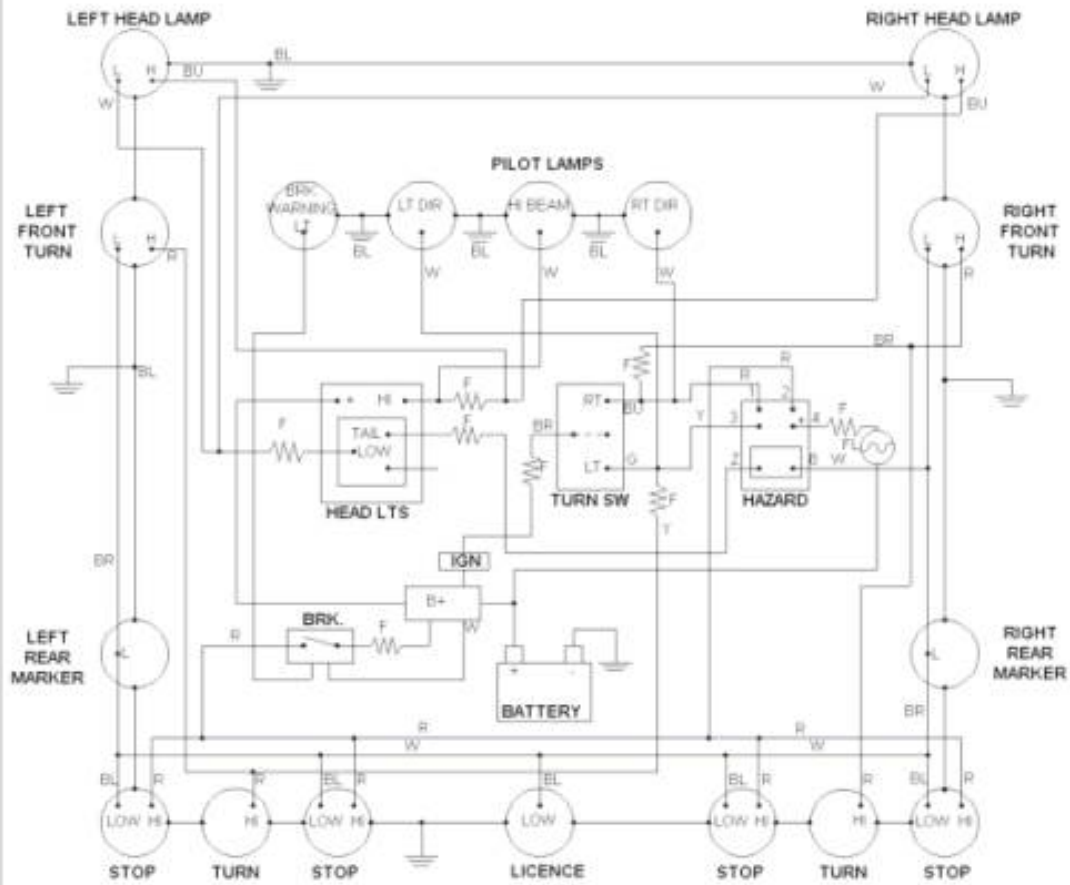
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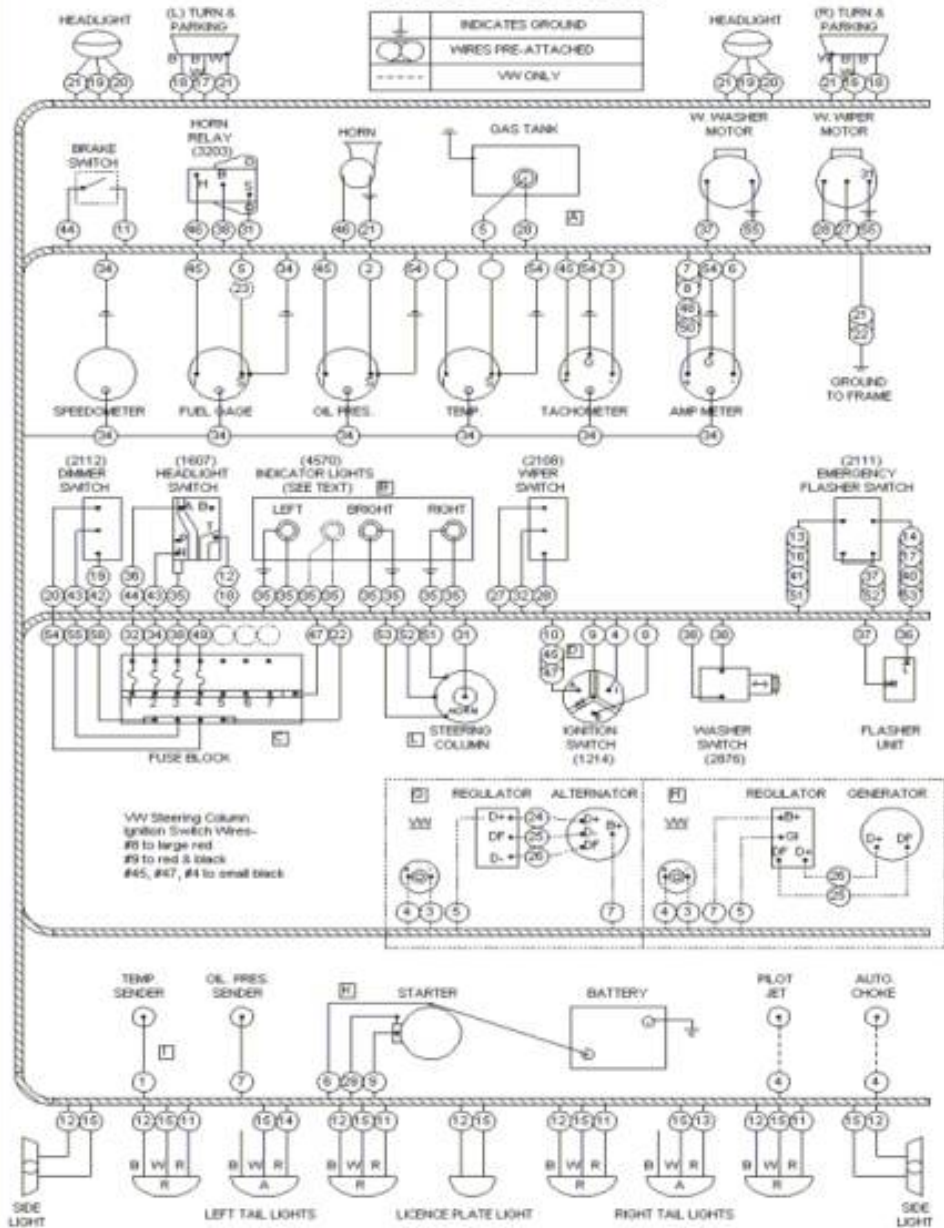
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# LIGHTING SCHEMATIC ONLY



**LIGHT WIRING**  
ZKLEJ © Copyright 1988

# WIRING DIAGRAM



# WIRING DIAGRAM

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