

Build Guide for conversion of Haynes Roadster to Mx-5 Mk1 as donor vehicle

Background

These plans and guide is intended to be used in conjunction with the “Chris Gibbs – Build your own Sports Car on a budget” Haynes manual with the purpose of utilising the Mazda Mx-5 Mk1 as a donor vehicle for running gear as opposed to the Sierra based car outlined in the manual. The guide includes amendments to the chassis rails where required, chassis plates and more so the wishbones in order to keep the running geometry similar to the Sierra based car. One major structural advantage to using the Mx-5 as donor is that the original rear uprights can be re-used from the donor negating the need to fabricate new uprights. The plans are freely available from Saturn Sports Cars website and are being put out to continue and enhance the self build culture built around the Haynes Roadster manual.

As many builders have found the Sierra is now becoming a rare beast and certain items do attract a premium as other suppliers are aware of the demand for parts. There are many Mx-5 cars freely available and will meet the demand of the kit car market for a number of years to come. Unused parts from the donor can also be sold where some builders have recovered most of their outlay for the purchase of the original car.



Figure 1 - Mx-5 being stripped on the ramps

The Mx-5 is available in 2 options with a 1.8i or 1.6i engine with a nice / positive 5 speed gearbox. The car benefits from independent suspension all round along with double wishbones and anti-roll bars making it a very similar car in handling to the roadster. The Mx-5 is a car designed around handling alone with gadgets and gimmicks kept to a minimum. There is also a large following behind the Mx-5 and as a result there are a lot of readily available tuning and upgrades available for the engine.

Haynes are in the process of putting together a new design of car based around the Mx-5 from which a comprehensive build will be available. The car is going to be something “a little different” but the final design is not yet agreed. Due to this we have been asked by Haynes to keep the build guide brief and to only act as an interim guide for builders to use upto the release of the new design.

Donor parts required are similar to that of the Sierra based donor and include: engine, gearbox, prop shaft, differential, drive shafts, front and rear uprights, front and rear brakes, clutch and brake master cylinder, wiring loom, dashboard, handbrake, steering column.

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Chassis

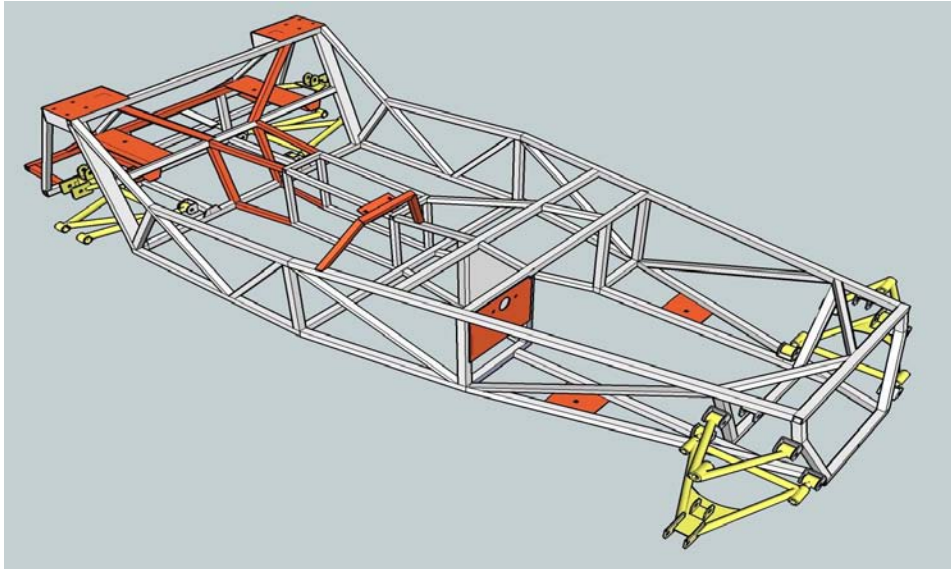


Figure 2 - Overview of Chassis inc Wishbones

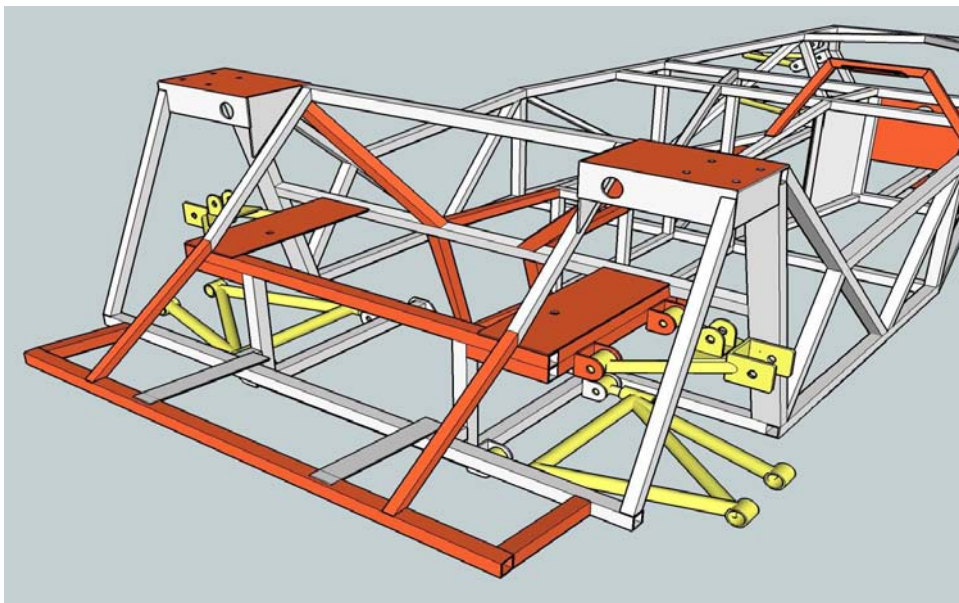


Figure 3 - Chassis Rear

The front of the chassis is very similar to the Sierra based chassis with only changes made to the front lower wishbones for the Mx-5 uprights, the engine mounts, steering column support and the steering wheel support frame. These are outlined further in the guide.

The rear of the chassis has had to be modified quite considerably due to the large upper area of the diff which doesn't fit within the original Sierra diff cage. This requires further modifications to the wishbones and other parts. The top section of the diff cage has been widened to accommodate the diff hanger with the cross bracing removed to allow removal of the diff and replaced with 2 x 3mm plates acting as the hanger and corner bracing.

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Main points of the chassis being:

- Engine mounts, the original mounts are designed to be fixed at a 45deg angle within the engine bay. In order to keep the engine weight and vibration acting through the mounts at the correct angle rather than having the mount in shears we have opted to use aftermarket, land rover, rubbers and manufactured mounts fixed to plates on the underside of BR1 and 8
- The Mx-5 steering column mounting is of a different design to the Sierra and as a result CP16 needs to be modified to take an aftermarket swivel bearing with part of the column brackets removed.
- Transmission tunnel rails require widening at the seat back due to the offset input flange of the differential. This widening will be situated behind the seats and will not inhibit the cockpit area
- Damper brackets attached to CP3 and 4 moved slightly to line up with brackets on upper wishbones
- Upper area of diff cage has been widened to allow the 600mm bolt centres of the diff hanger to be bolted to plates welded to the top of the cage keeping the strength to the cage and also following the design of the Sierra based roadster. With the extra 3mm plates acting as corner bracing to strengthen cage.
- Rear rails have been simplified to take grp bodywork to the rear and maintaining maximum capacity for a fuel tank.
- Wishbones modified to provide the geometry to maintain the excellent handling characteristics of the original car.

Suspension Geometry

Rear wishbones - geometry has had to be modified considerably in order to take into account the large hangers on the Mx-5 differential. The main consideration being due to the additional width of the diff cage the upper wishbones need to be shortened to take this into account. Due to the shortening of the upper wishbones this left no room for the camber adjuster, to alleviate this we have moved the adjuster to the inboard side of the lower wishbones. This also means that edge side can be screwed in or out independently of each other to provide some toe-in / out for the rear wheels. To keep the smooth ride of polybushes we have maintained these so any toe adjustment can only be a small, 1 to 2 deg in each direction.



Figure 4 - Rear Wishbones

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Front wishbones – a lot of work and thought has gone into the front wishbone setup ensuring that the handling and ride quality of the original roadster is maintained. The geometry was calculated using a suspension geometry calculator:

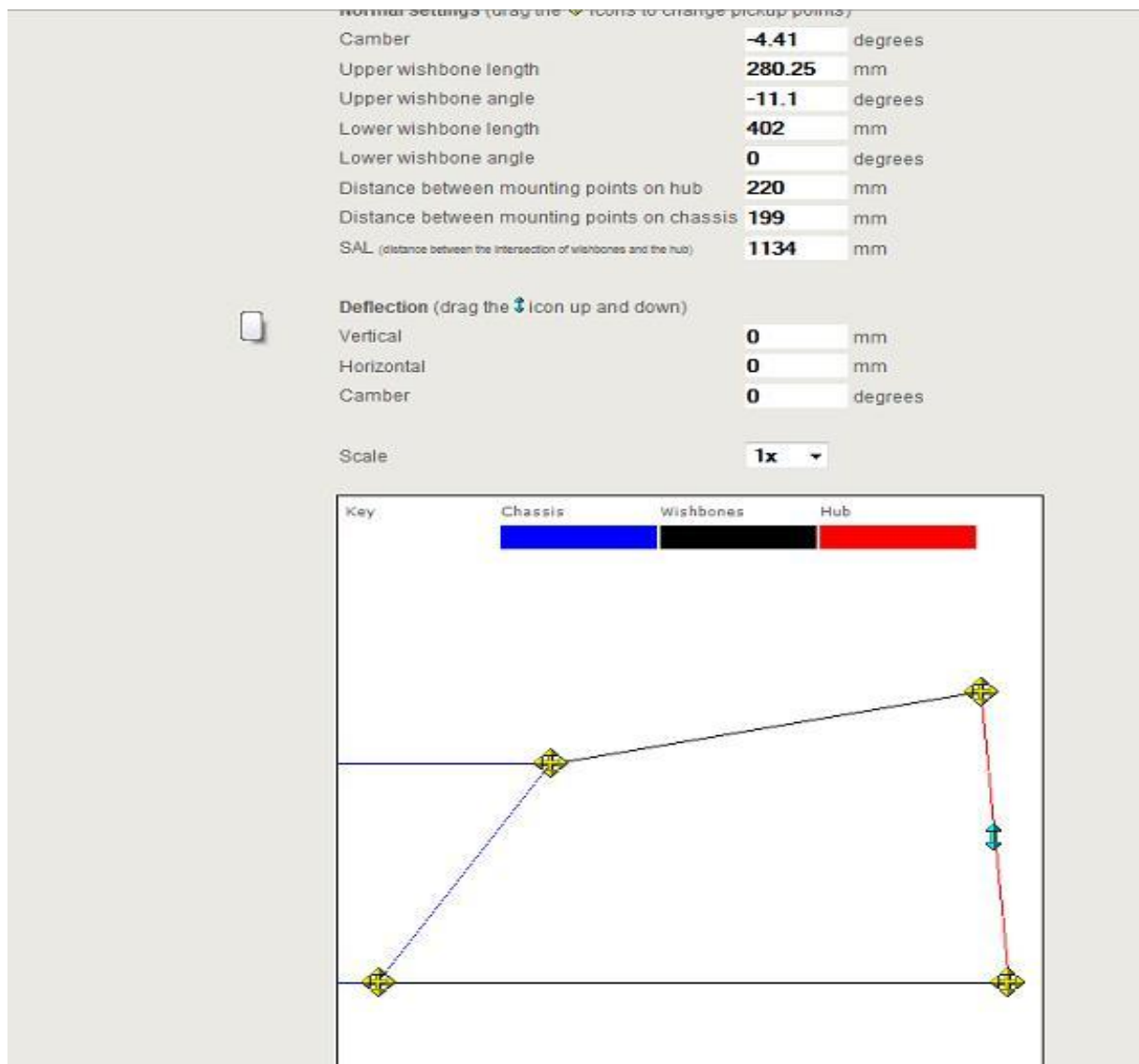


Figure 5 - suspension geometry

With the SAL figure as 1134 giving a good compromise between track and general road use. Front upper wishbones are similar to those of the Sierra based Roadster with the lower wishbones modified to take the standard lower ball joints of the Mx-5. The Mx-5 ball joints are load bearing and are ideally suited to the roadster. As with the rear lower wishbones I have also added adjusters to the inboard side of the wishbones, this is optional and builders may use the same jig dimensions to make these wishbones without the adjusters and remove the cross member. Benefits of the adjusters are since there is no castor adjustment on the uprights for self centring castor can be adjusted with these, also track width can be adjusted in conjunction with the upper adjuster.

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Figure 6 - front suspension geometry

Chassis

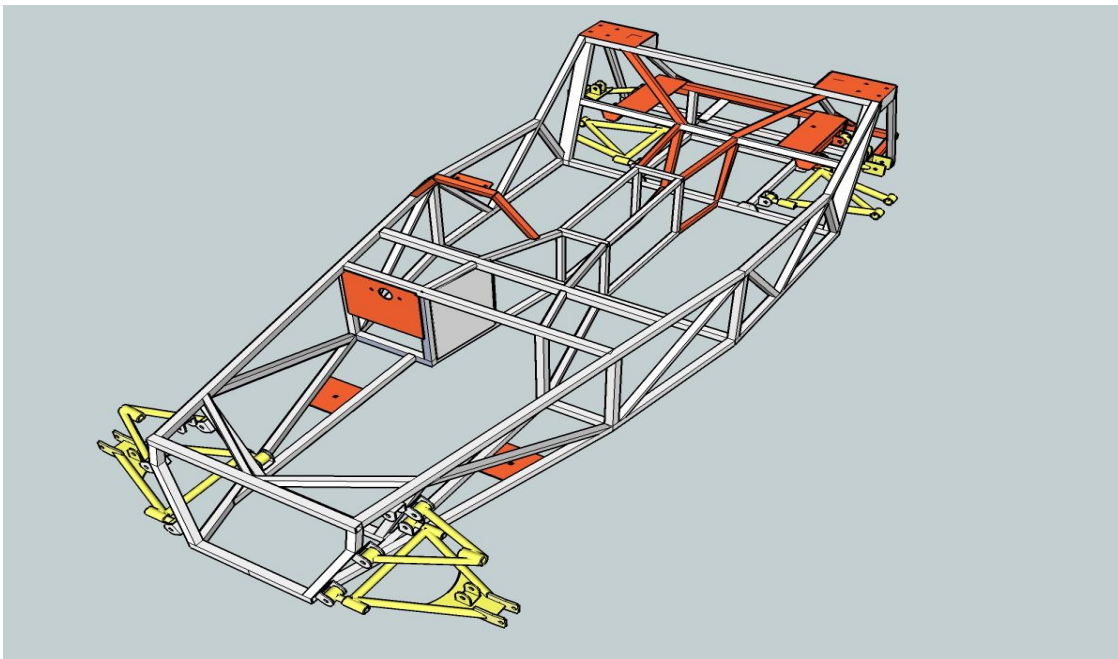


Figure 7 - overview of chassis showing amendments in red

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Following Chapter 4 of the manual I have added amendments and layouts as necessary outlining the modifications to the Mx-5 chassis.

Build Table – this is constructed in the same way and to the same measurements.

Bottom Rails BR1 to BR12 – as manual

Front Frame FF1 to FF4 – as manual

Second stage of chassis – only amendments being SB4,5,6. These are the same length but are moved apart to a separation of 240mm. CP10 plates are not required.

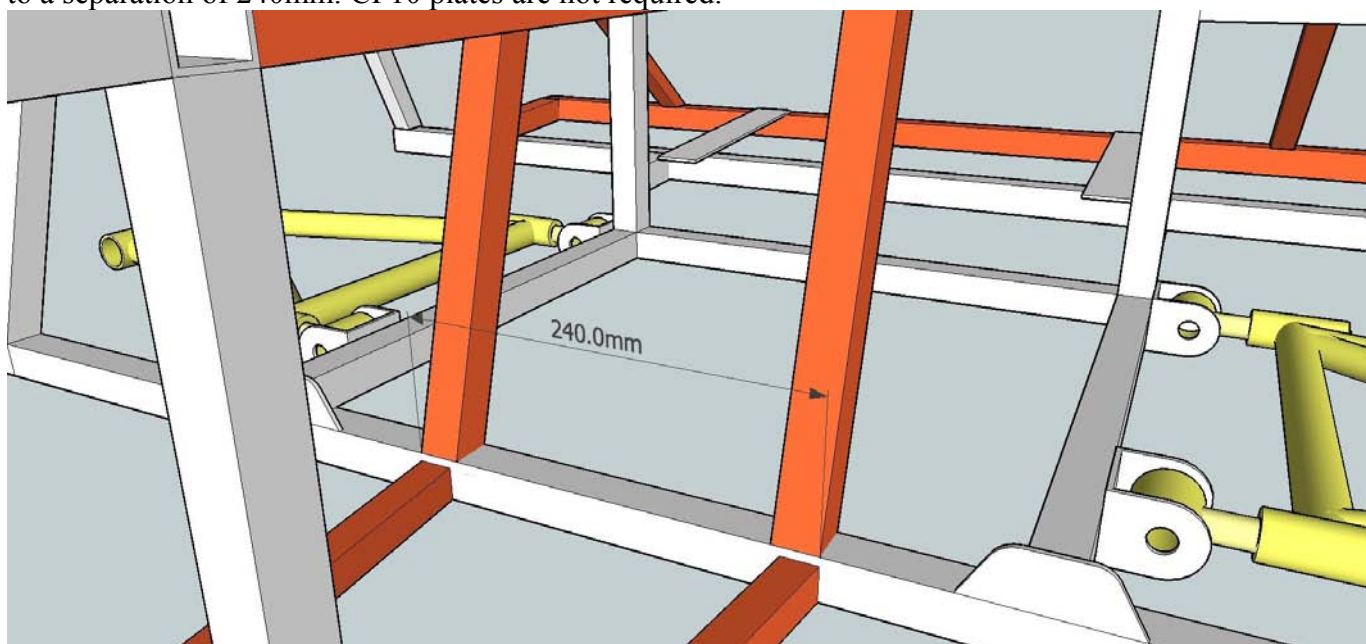


Figure 8 - SB4 separation, 240mm

Rails SB5 and 6 are moved outwards to line with top of the SB4 rails:

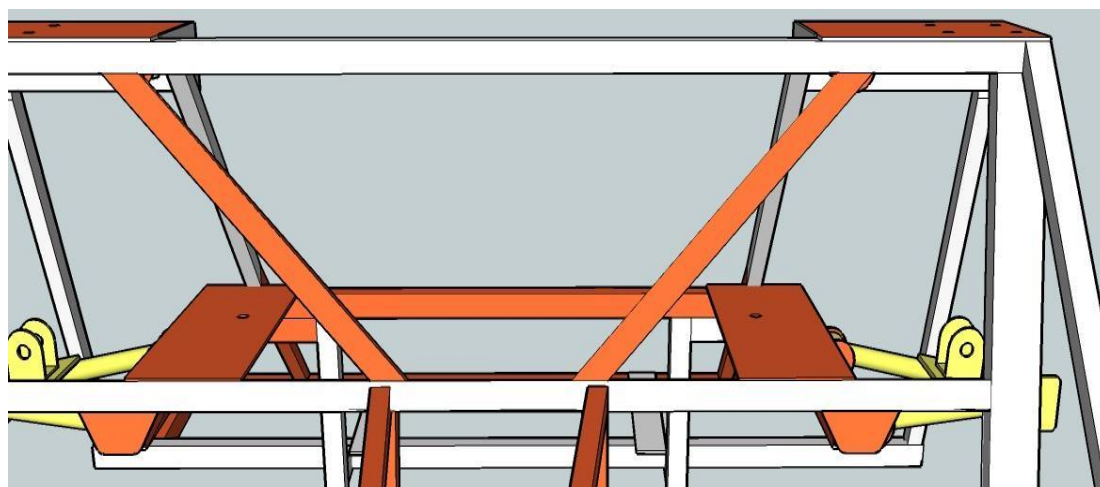


Figure 9 - SB5,6 rails

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Rear Suspension Framework

Construct RS1,2,3 as manual. Cut RS4 to RS9 as the amended lengths. RS10 remain the same. Assemble RS4 to RS9 in the same format as instructed in the manual. The external separation between RS4 and RS5 is amended to 752mm from 627mm.

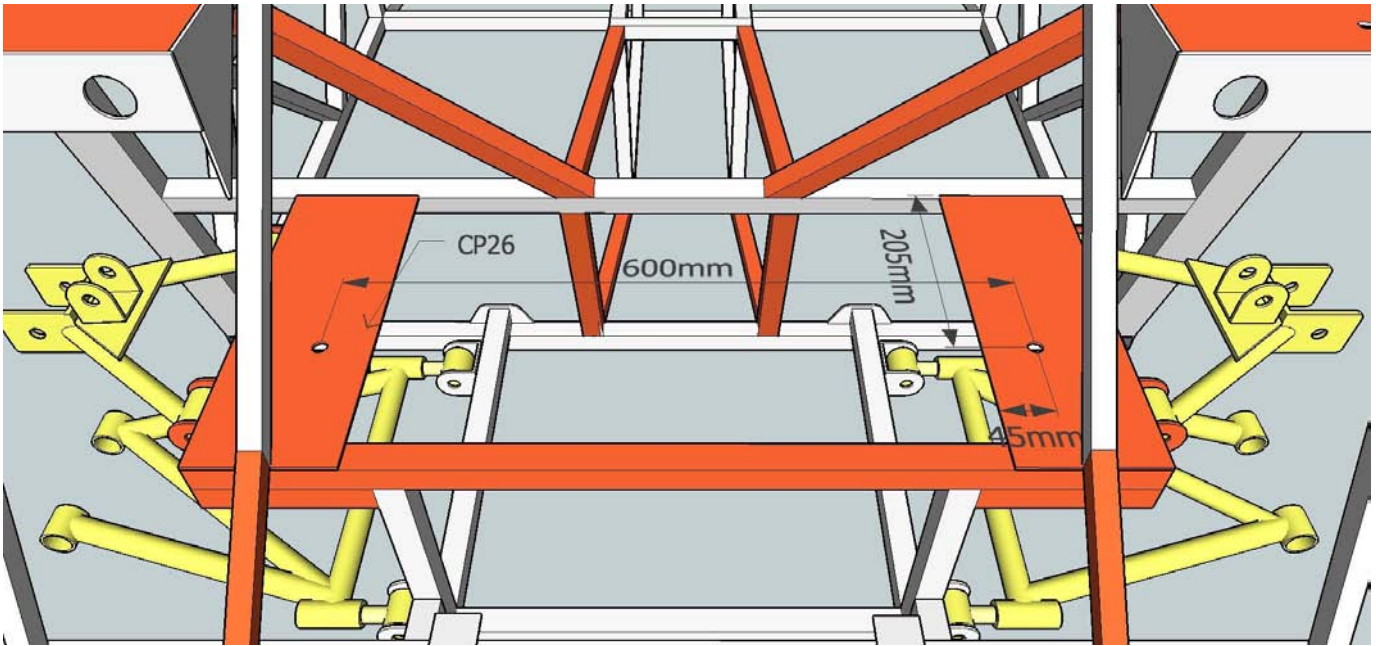


Figure 10: CP26 Dims

D12 are the same rails but sit on the top edge of RS7 rather than run down the side of the rail, D13 is ran from the edge of D12 down to sit on the rear rail RP1. Amended rails are shown in the appendix.

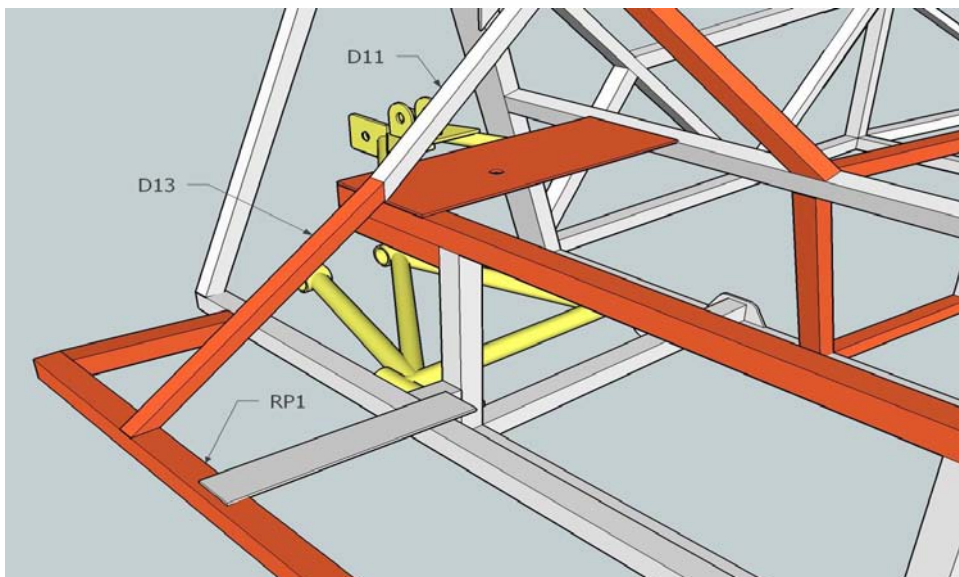


Figure 11: D13 Rails

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Rear Panel, RP, rails replace all the RP rails and also CP9 and CP25 and weld to RS14 making sure that the 5deg angle on RP2 is to RS14 and with the 5deg pointing upwards. The RP1 and 2 rails are used to simplify the rear fabrication as the rear panels are self supporting and need only be fixed to the underside of RP1, D11 and SB1. The RP rails can still be used as per the manual and original design. CP8 plates are still attached to the same point on RS14 and also to RP1 giving maximum area for fuel tank.

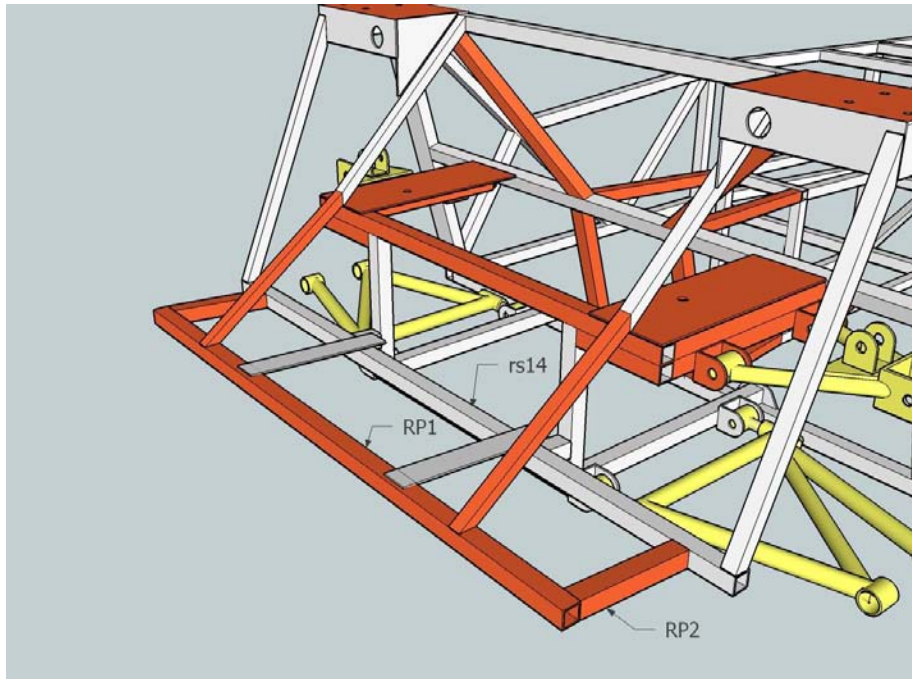


Figure 12: RP Rails

Rear upper damper mount assembly is similar to manual with CP3,4 modified such that the damper bracket is moved 20mm towards the SB2 rail, still allowing sufficient space for bolt and tightening:

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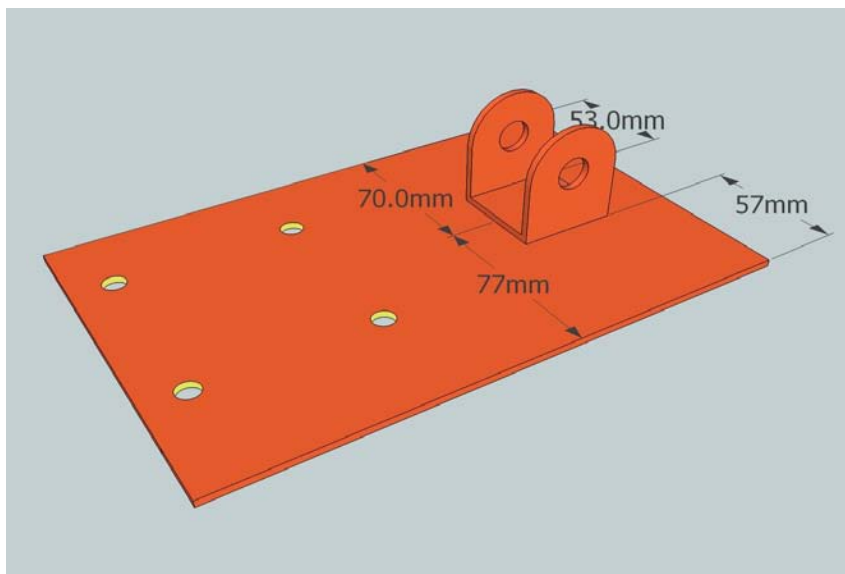


Figure 13: CP3 Plate - CP4 similar but handed

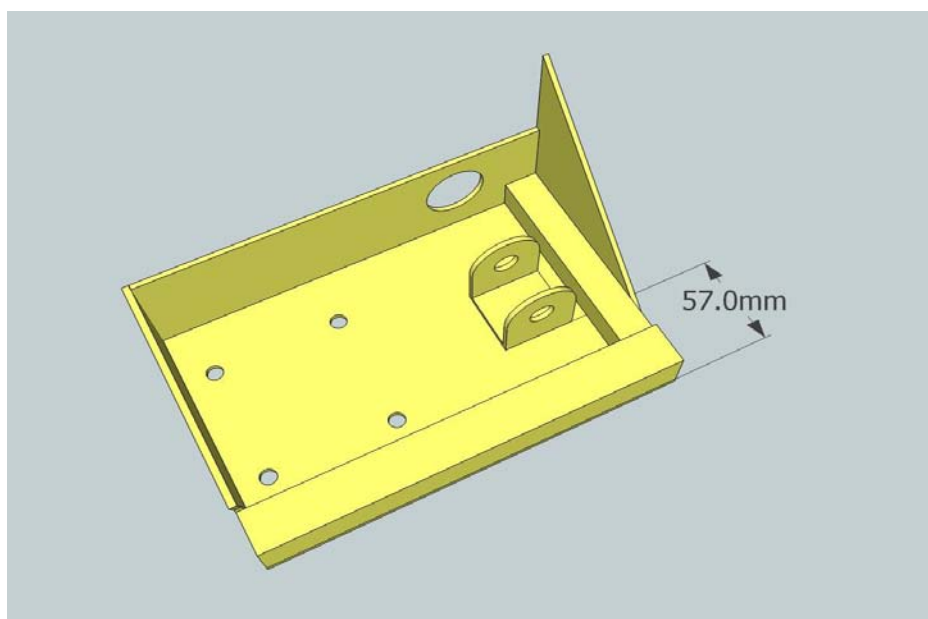


Figure 14: upper damper bracket mount arrangement

Rear Wishbone Brackets – Lower rear brackets are located in the same location and spacing as the manual with the upper brackets placed as shown below facing outwards on rail RS7 and RS7a 90mm from the outer edge to the centre and 203mm centre to centre:

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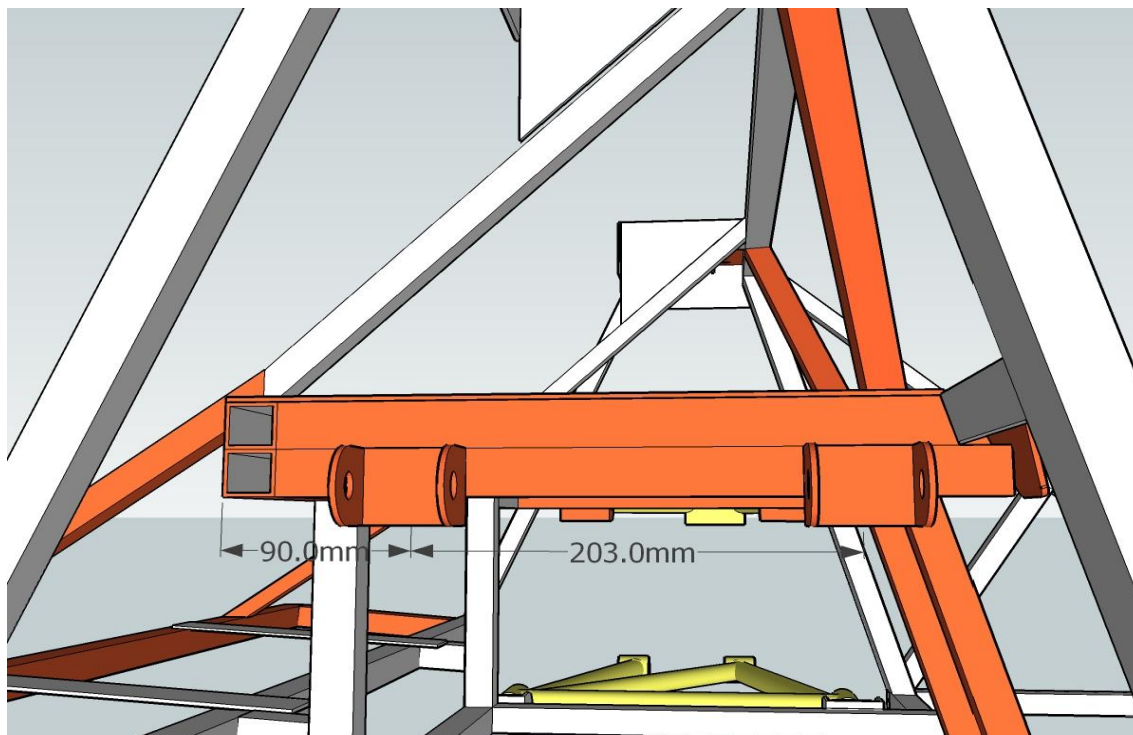


Figure 15: Rear Upper Wishbone bracket spacing

Steering wheel support frame - For the Mx-5 we still use SW1,2,3 but CP15 plates are not use, instead a smaller bracket, CP15a, is used to utilise the existing bracket on the Mx-5 column the larger bracket on the column can be removed where it is replaced with a new swivel bearing on CP16a. Since the Mx-5 steering column is not adjustable, fixed position, a mock-up of the builders driving position needs to be made to allow the placement of the SW rails in the correct location for the preferred driving position.

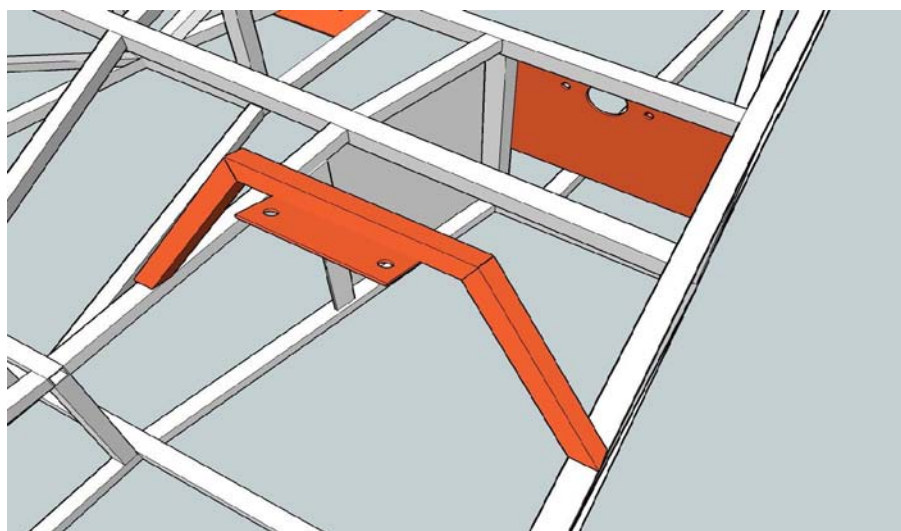


Figure 16: SW and Bracket arrangement

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Figure 177: Mx-5 Steering column arrangement

The revised CP16a is used to mount a swivel bearing onto the column. Bearing is available from budgetbearing.co.uk or other suppliers, item code UCFL.205.14. The bearing has grub screws to lock onto the column. M10 bolts are used to secure the bearing with large washers, due to the larger holes in the bearing this allows some adjustment in the bearing to line the column. CP16 is also upgraded to 3mm for added strength.



Figure 19: Steering support bearing

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Steering column can be extended to meet the Escort Mk2 rack with a length of tube similar to sierra with a Sierra column coupling and Sierra column shaft, RD849, RD850 available from Rally Designs. For the route of the steering column part of the ali support for the carbs will need to be removed as below:



Figure 19: Steering Column Route

Engine Mounts – Revised plates EM1a are used for engine mounts with 13mm drilled hole to mount Land Rover engine mount 275mm from BR10:

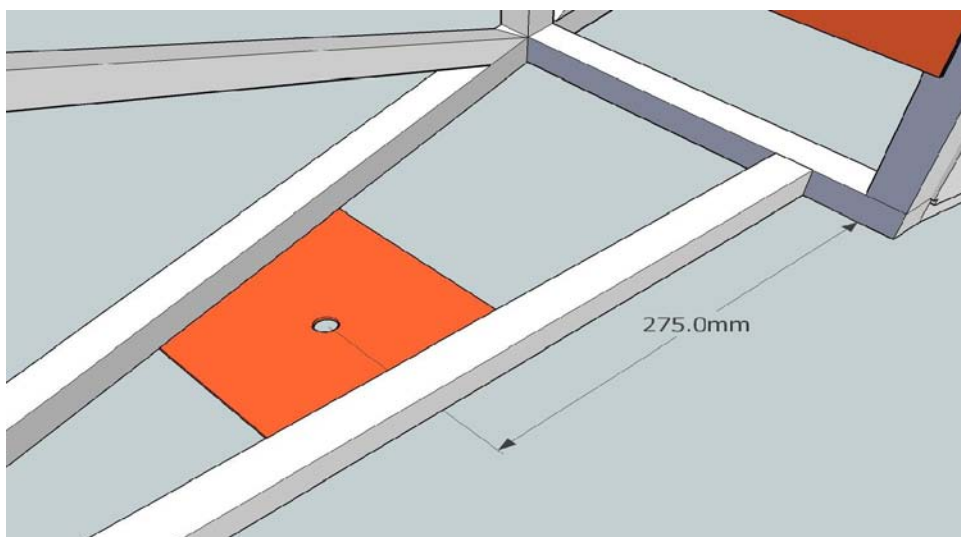


Figure 18: Engine Mount Location

Engine Brackets can be made by cutting a plate to sit on the rubber and onto the engine block. Chock up the engine in the correct location and cut 5mm plate to fit between the two plates to make up mount. On

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the offside of the engine be careful to leave enough clearance for the starter motor. Typical engine mounts shown below.



Figure 21: Engine Mounts

Front Wishbone Brackets – These are located in the same position as Sierra based manual. Front wishbones have been re-designed to maintain the correct geometry while keeping the fixing points in the same location.

CP19 to 21, steering rack supports – These are fitted as the Sierra manual the only recommended modification is to add additional 5mm support plates to the underside of the clamps as the 3mm plate of CP19 and 20 can deform and lead to looseness of the rack.



Figure 22: additional 5mm support plates

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Wishbones

Front Wishbones – Upper wishbones are made similar to the Sierra based car with jig and dimensions shown below. A change in threaded insert is required to M14 x 1.5mm thread to accommodate a change in drag link to a 3 series BMW insert, Motaquip part number – PVTR325. This has the correct taper for the Mx5 upright. The original transit drag link can be used but the upright will need to be reamed out to fit. These are handed as the Sierra with threaded insert point upwards and longer arm to front.

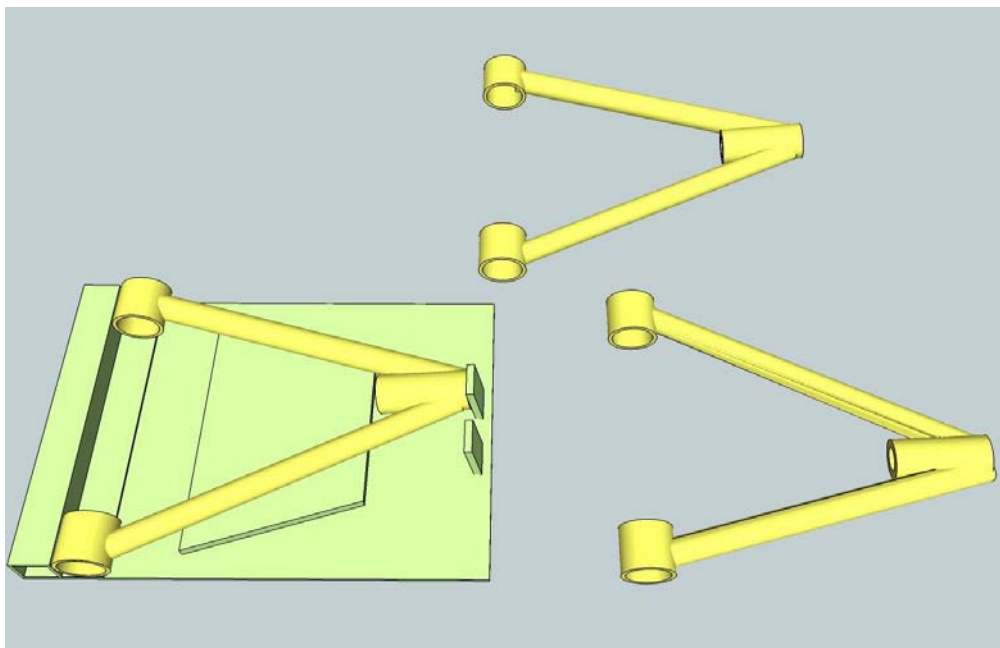


Figure 19: Front upper wishbones and jig placement

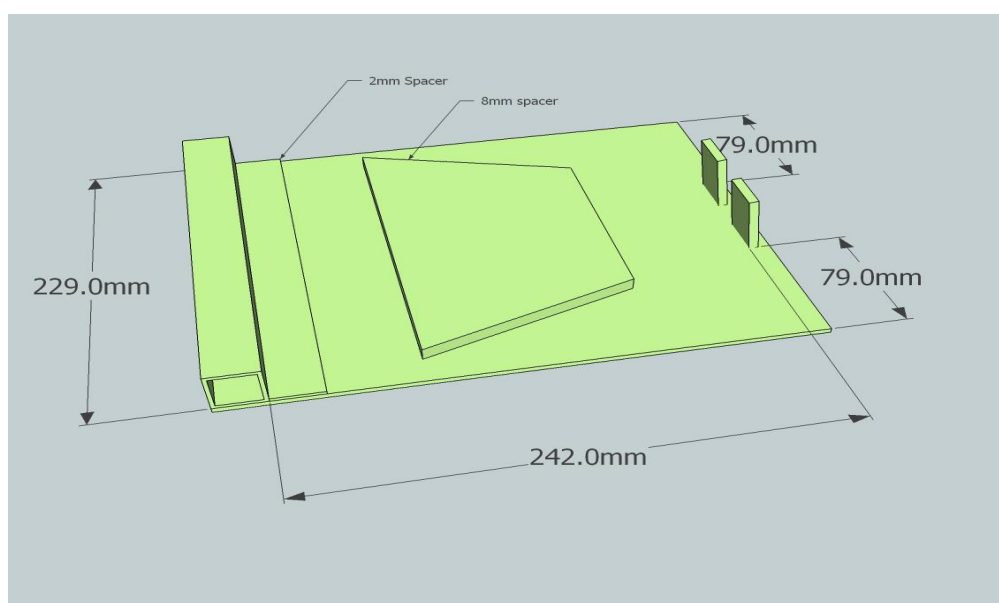


Figure 20: front upper wishbone jig

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Figure 25: front upper wishbone fitting

Front Lower Wishbones – These have been adapted to take the Mx-5 lower ball joint and also had the threaded adjusters built into the inboard end of the wishbones at the connection to the bush tubes, as stated previously these are optional but will assist in setting up the car. They have been fitted so that castor can be adjusted for the front uprights and also, in conjunction with the upper adjusters, front track width can be adjusted. Since these remain as polybushes adjustment is only small but will only be used to alter castor angle by a few degrees to fine tune steering feel. These adjusters are optional and do not need to be fitted should the builder wish. The threaded adjusters are M18 x 2.5mm threaded inserts, jig used below – threaded bar must be welded perpendicular to bush tube. I would also recommend fabricating the bones with the mazda ball joints in place to aid with lining up the holes:



Figure 26: Front lower wishbone ball joint hole spacing

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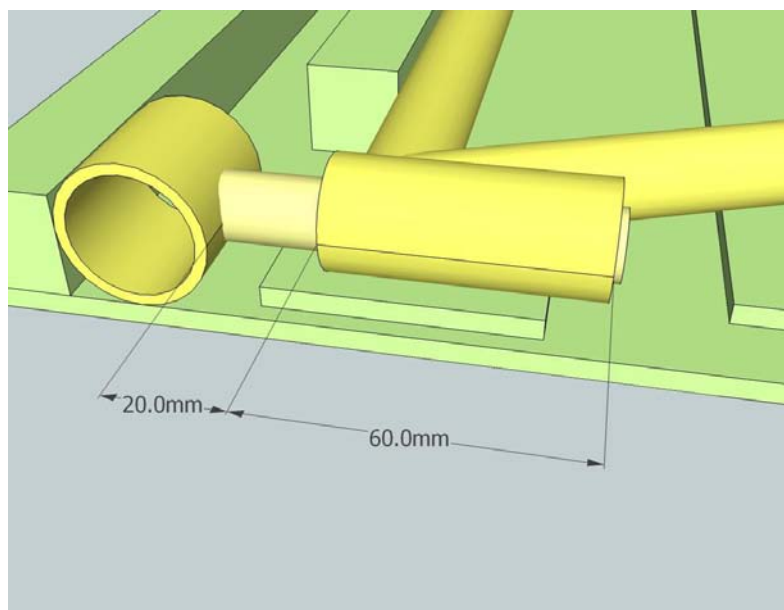


Figure 27: Front and Rear adjuster dims

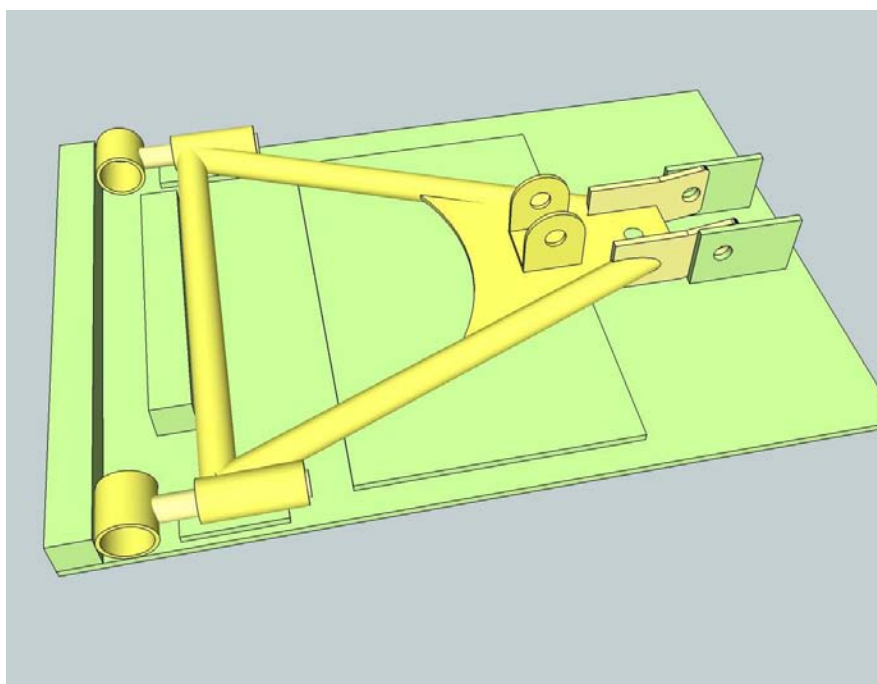


Figure 28: Front lower wishbone and jig

Front lower jig dimensions similar to Sierra based but modified to take Mx-5 ball joint:

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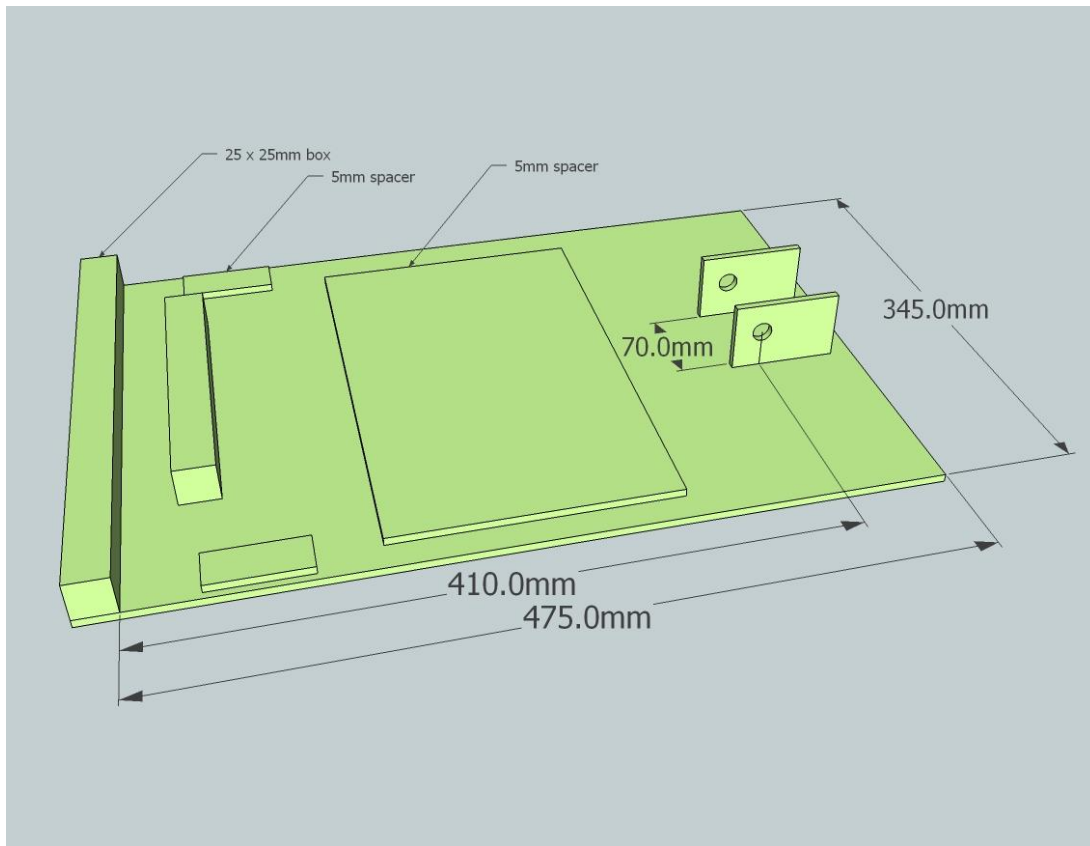


Figure 28: Front Lower jig

Spacing for front plates shown below:

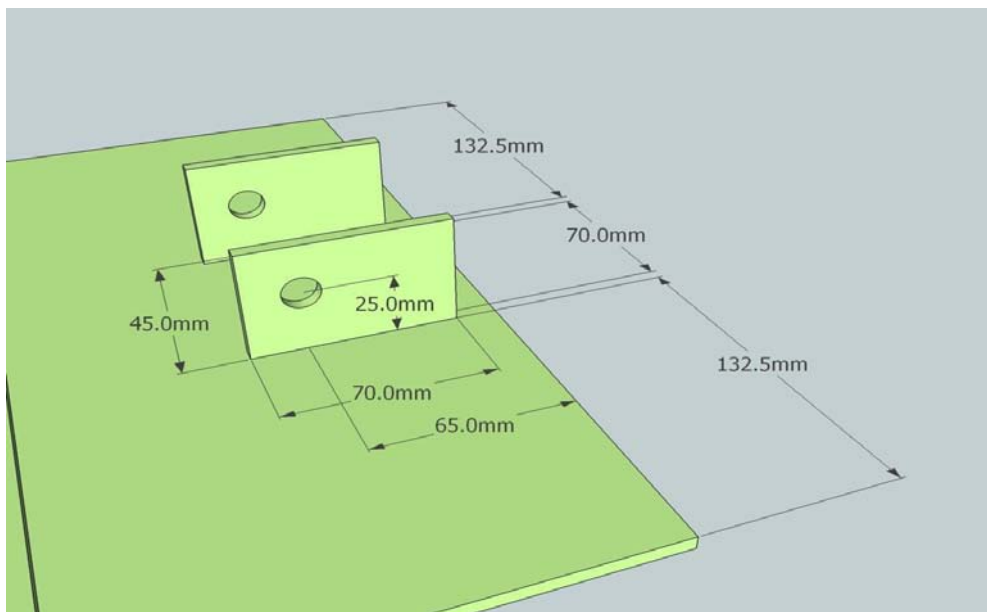


Figure 21: front plate mounting dimensions

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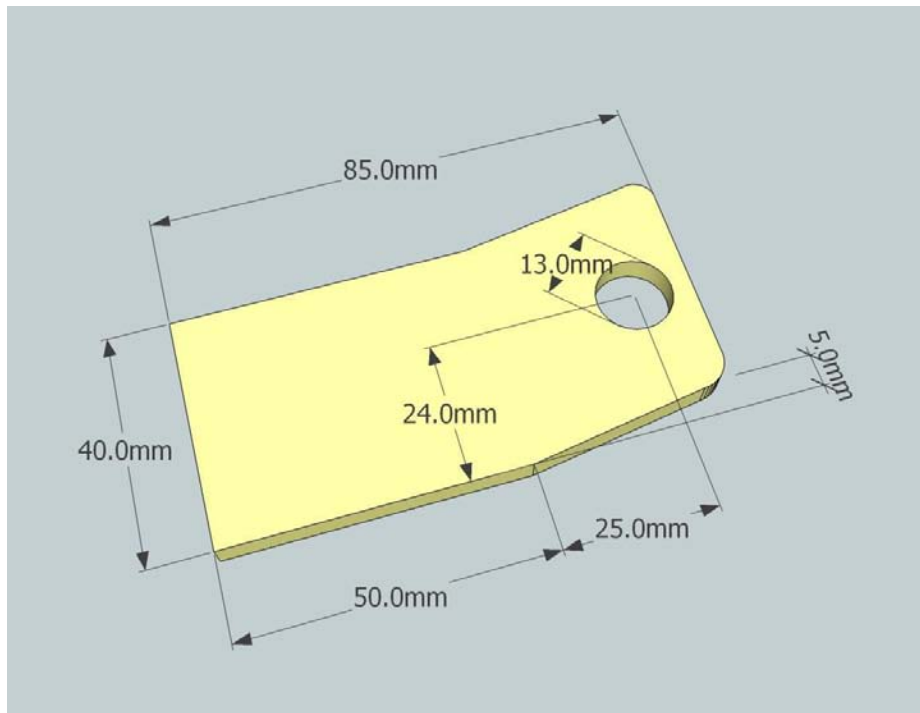


Figure 29: front lower wishbone side plates

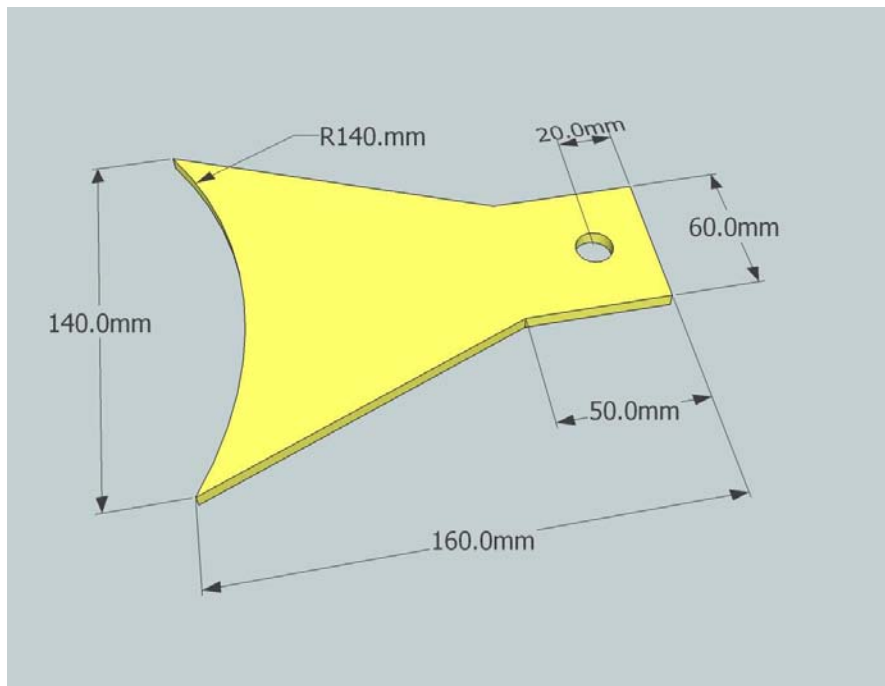


Figure 30: Front lower plate dims

Front lower wishbone plates will require trimming to the sides to fit in between wishbone tubes, this is normal as it is awkward to always place tubes exactly.

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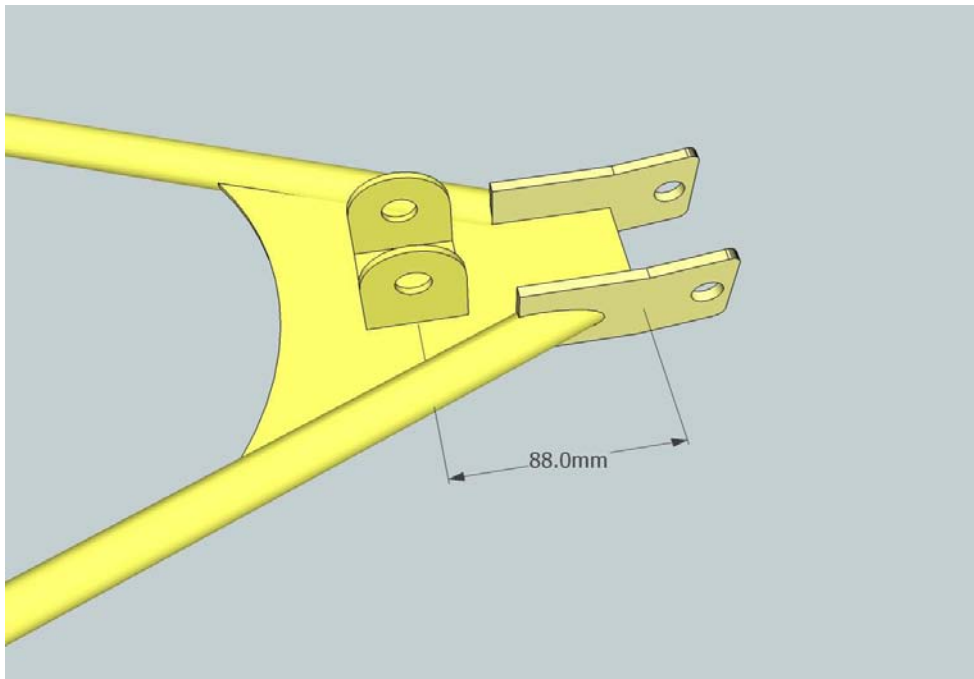


Figure 22: Front Lower Wishbone damper bracket dims



Figure 32: Front lower wishbone fitting

Inboard Adjusters – these are made as threaded adjusters with 33.7mm x 2.6mm bush tube, 25mm mild steel rod and M18 x 2.5mm threaded bar with locking half nuts. They are made as the jig below:

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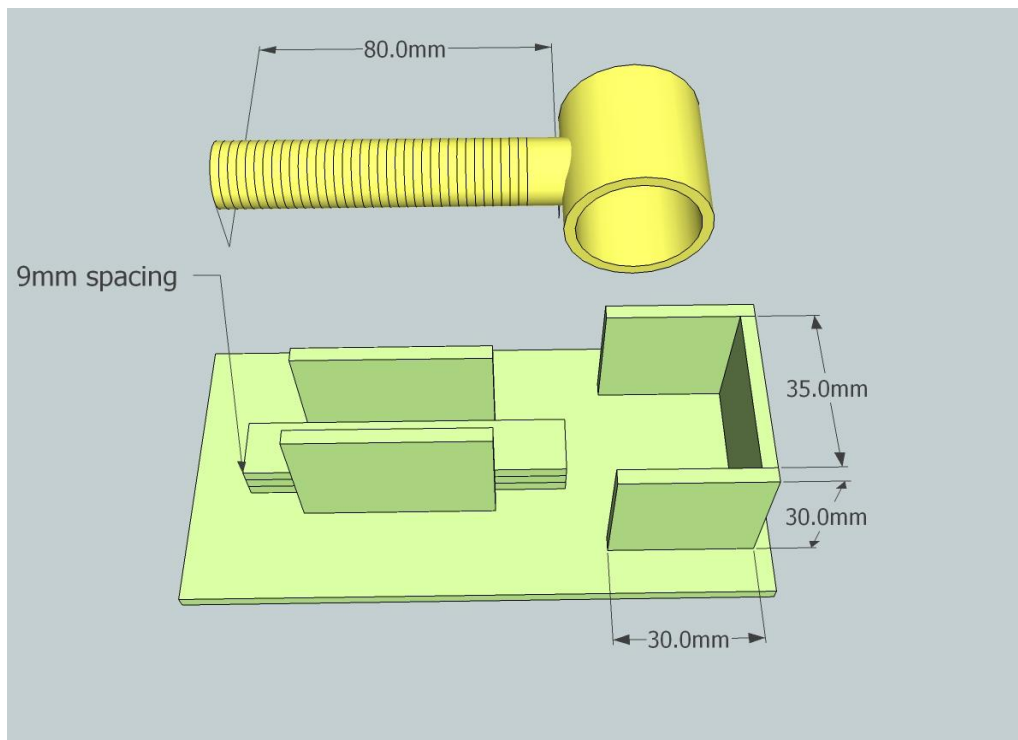


Figure 33: Inboard adjuster jig

Rear Lower Wishbones – These are similar to the Sierra based wishbones but adapted at the outboard end to fit around the Mx-5 uprights. The inboard adjusters are necessary to modify camber of the uprights as the upper wishbones do not have the room for the adjusters. They can also be used to make small changes in toe-in to the rear uprights. Suspension brackets are in the same location as the Sierra based chassis. They are fabricated to the jigs below:

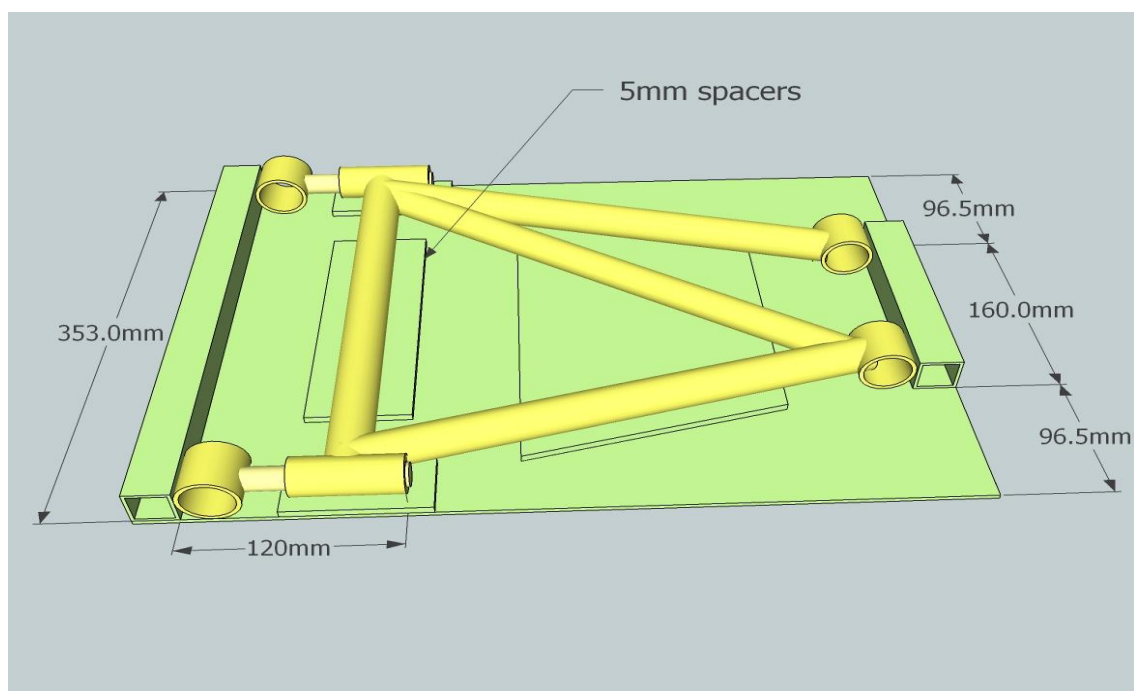


Figure 34: Rear Lower Wishbone Jig

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Rear Upper Wishbones -

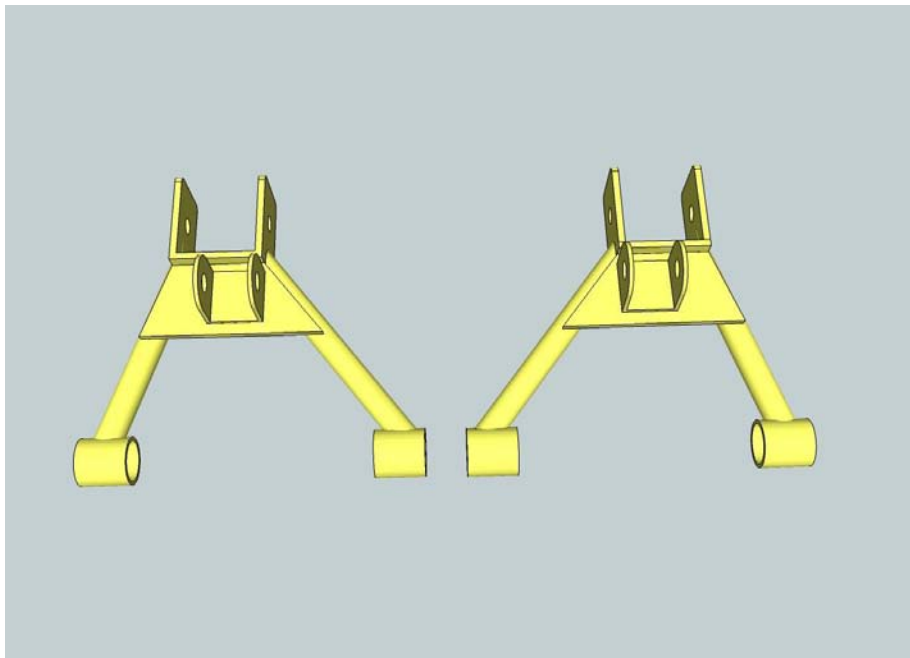


Figure 35: Rear Upper Wishbones – handed with the longer arm to the rear

The upper wishbones have been amended to take into consideration the large width of the top of the diff cage. They replace the damper mount from the fabricated upright on the Sierra to the wishbone of the Mx5 enabling the re-use of the Mx5 rear uprights. Re-siting the adjusters to the lower wishbones allows the same suspension travel as for the Sierra. The bracket below is used on the wishbone to clamp to the top of the upright from the Mx-5. These can be replaced by after market polybush and crush tube inserts to match the roadster but is not necessary:

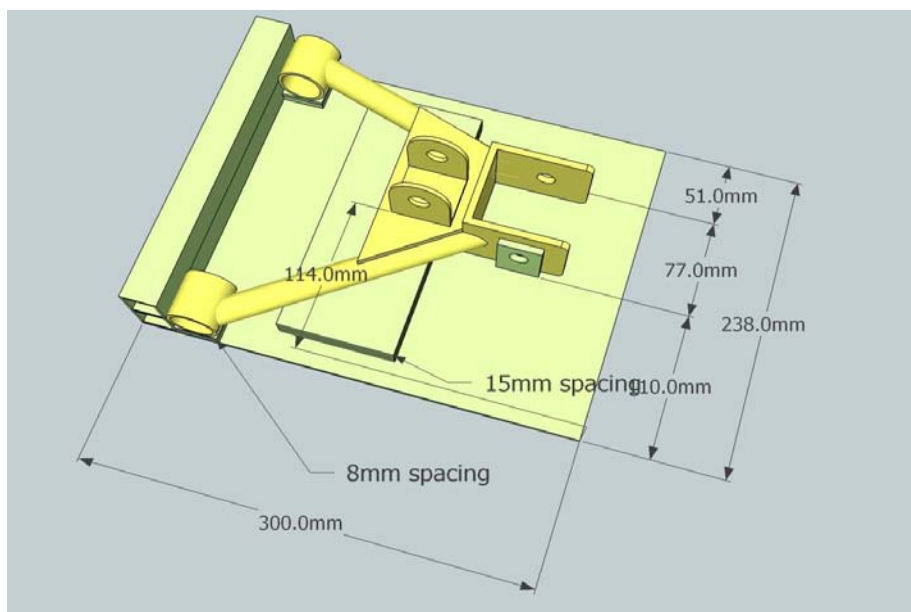


Figure 36: rear upper wishbone jig

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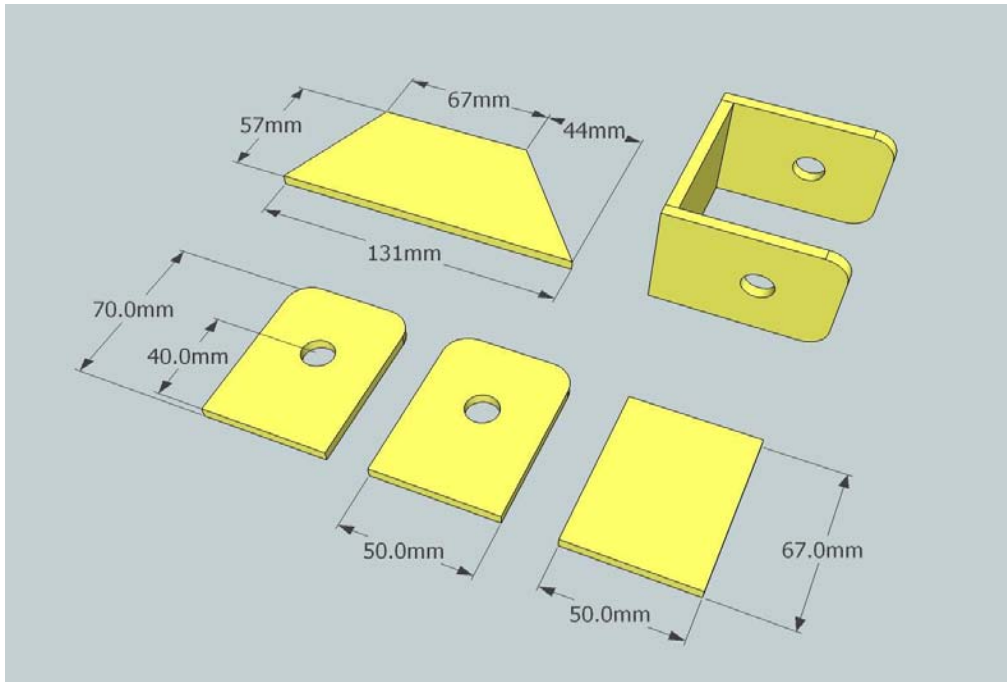


Figure 37: Rear Upper Wishbone - Upright Bracket and plates

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Gearbox Fitting and support

The Mx-5 gearbox is similar to that of the Type 9 with the bellhousing and box fitting within the same space dimensions provided for the type 9 box. Clutch is hydraulic with the pedal adapted to take a push rod rather than cable connection with the master cylinder fixed to the rear of the pedal box.

Gearbox Mount:

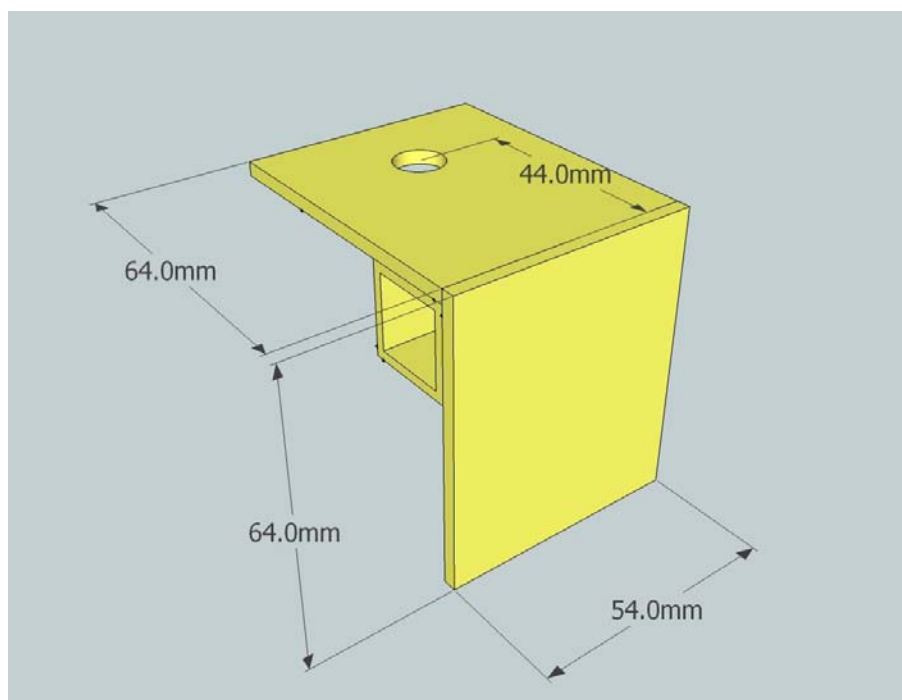


Figure 38: Gearbox Mount Bracket

The original Mx-5 engine mounts are re-used for the gearbox and differential mount by welding to BR11 in the transmission tunnel, as below:

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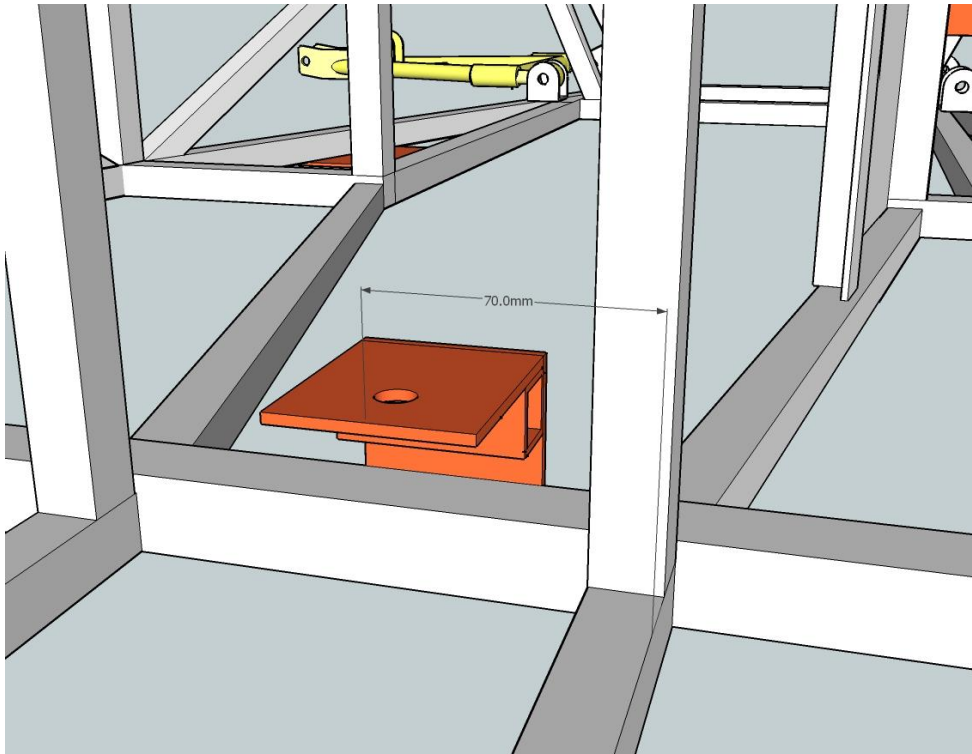


Figure 39: gearbox mount position



Figure 40: Gearbox Mount

Differential

Differential can be bolted to the CP26 plates which have been added to the top of the diff cage with a bracket and rubber mount fixing to mounting bolts on the underside of the differential – these will be added to the guide shortly. An additional length of 19 x 19mm RHS can be fixed between BR12 and RS3

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with a 5mm packer welding between RS3. The 2nd engine mount rubber can then be used to secure the front of the diff as below:

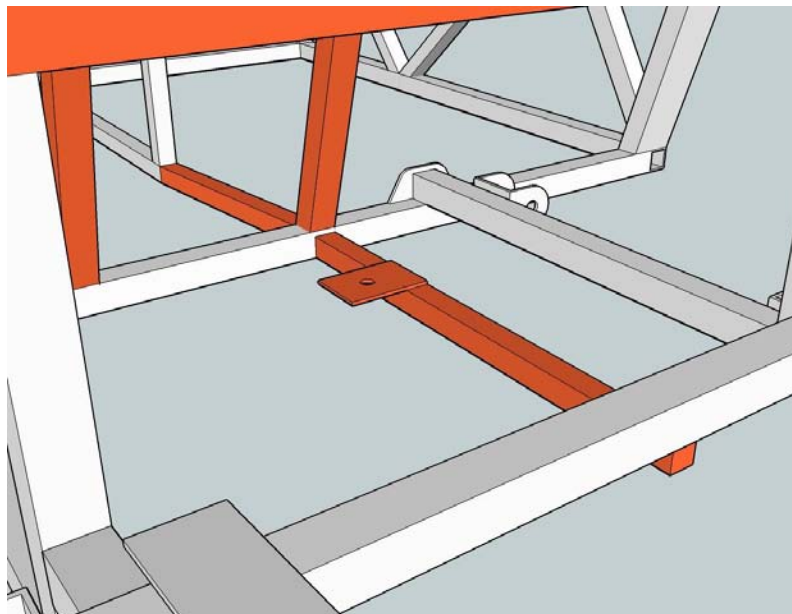


Figure 41: Front lower diff mount position

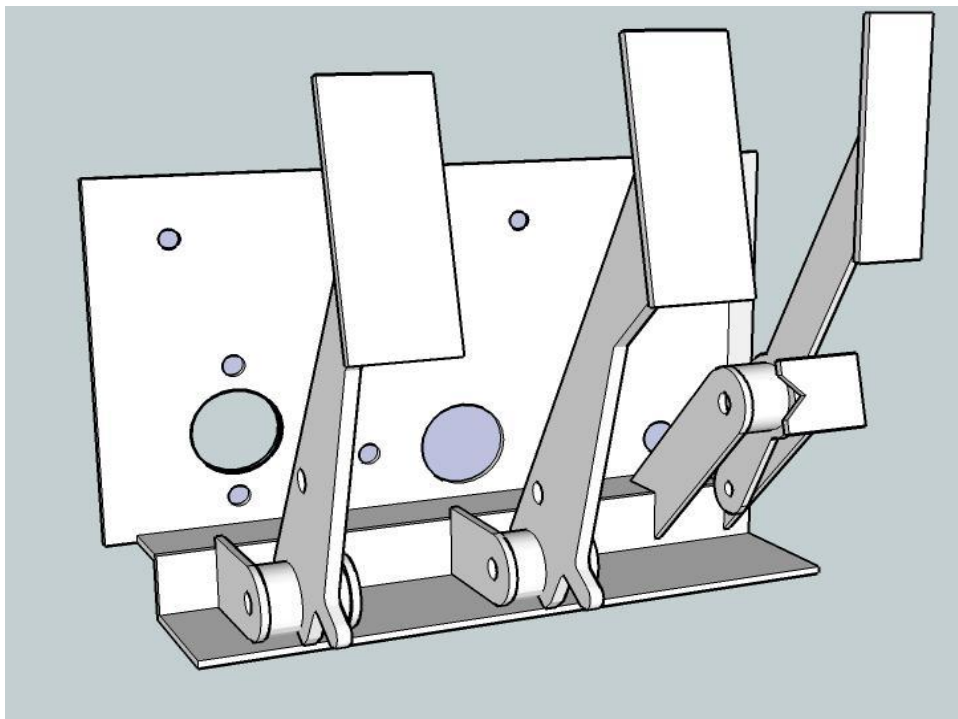
Handbrake

The Mx-5 handbrake is fitted in a similar way to the Sierra based car with the mounting points changed as below. The handbrake operates on a balance bar with the cable sheathing fixed at SB3:



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Pedal Box



The pedal box for the Mx-5 car is similar to the Sierra based roadster but adapted to accommodate the hydraulic clutch on the Mx5 rather than the cable clutch. The original brake master cylinder can be re-used but the design of the clutch cylinder causes it to foul the clutch release arm on the bell housing of the gearbox. A new 0.7 cylinder can be purchased from Rally Designs for around £28 which is suitable for the purpose, pictured below with the pushrod removed. A part threaded M8 bolt, with the head removed and rounded, can be used for the pushrod and screwed into the M8 clevis pins used for the pedal side. The pushrod rod can also be screwed in or out of the clevis pin to adjust pedal travel and bite point:

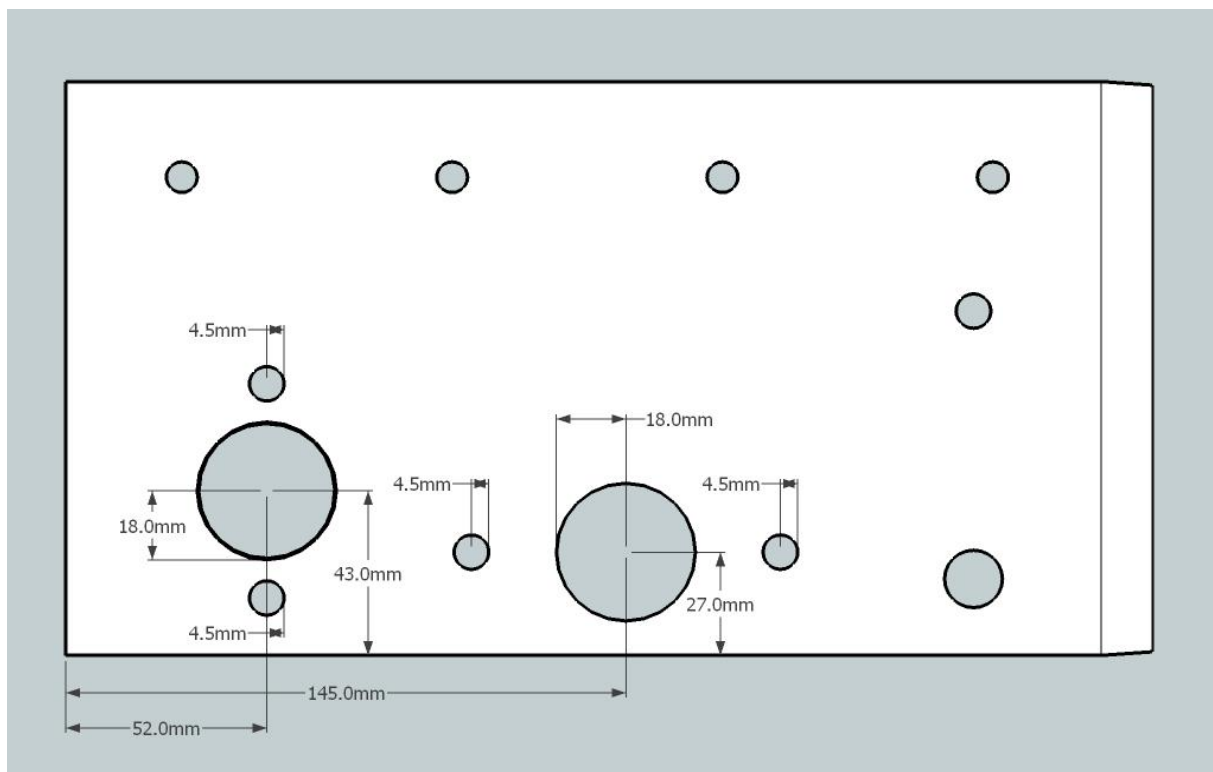


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The pushrod can be removed by taking off the rubber housing and removing the circlip holding the back plate in place, the rubber gaiter can then be replaced if required. The existing brake master cylinder can be re-used but will need some of the bottom of the lower flange removing to fit in position:



The dimensions for the backplate is shown below with the only variation being the hole positions for the extra cylinder:

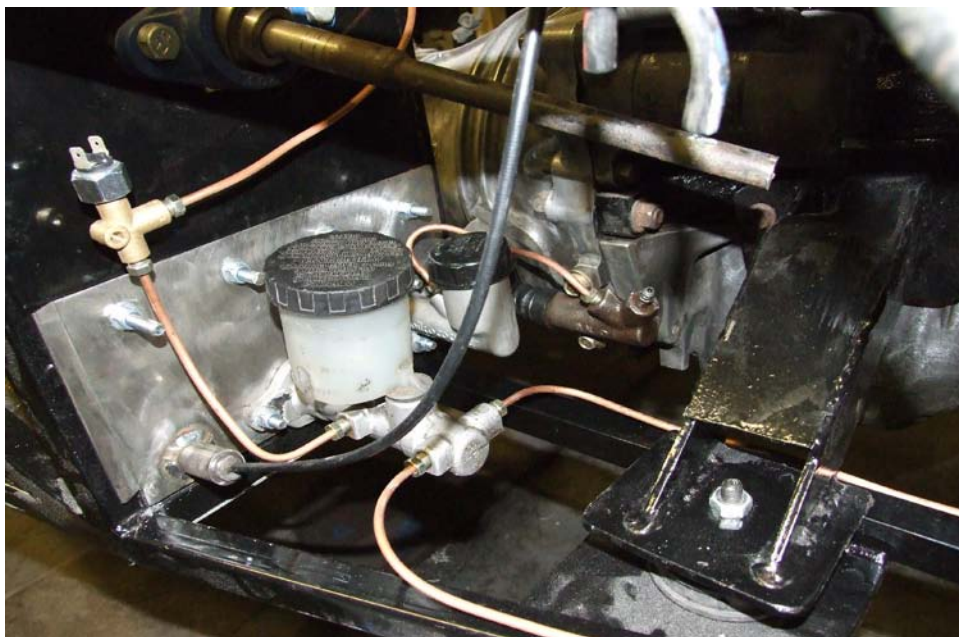


The same throttle and brake pedals are used as the Sierra box with the same brake pedal used for the clutch which has been shortened from the top by 20mm and the 9mm hole for the clevis pin raising by

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20mm. This clutch arrangement gives a slightly stiffer clutch than normal but does give a good feel to the clutch. The Mx-5 car has a switch located on the clutch which is used to inject fuel into the engine when the car is idling or on over run as the clutch is pressed. This is due to the Mx5 ecu cutting fuel to the engine, to save fuel, on over run or idling. The clutch switch bypasses this, more info available by googling, and does not need to be refitted but will need to be bypassed on the loom.

The pedal box is fitted as normal to the floor and backplate of the car, with an extra stop (M8 bolt) fixed to the floor for the clutch pedal. Pics installed below:



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Brake Lines

Brake lines can be fitted similar to the Sierra Roadster, the master cylinder is a 3 outlet cylinder with the front 2 outlets each feeding a front calliper and the rear outlet feeding the hydraulic brake switch, a single line along the transmission tunnel into a T and each leg feeding a rear calliper. The arrangement and larger front discs to rear will maintain the correct front and rear brake balance required for testing.

Front pipes are fixed to the bottom rails, no more than 300mm apart, and up U1 and U2 to a simple bracket mounted at the top of the uprights. Flexi pipes used, originals being too short, are Motaquip part number VBH740. Since the front callipers normally take a banjo fitting the end of the flexi coupling needs to be cut short and sealed with a copper washer against the calliper. Some pics below:



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Rear pipes are routed along the transmission tunnel, needs to be clipped at 150mm intervals for the tunnel also noting that cables and fuel pipe need to be separated in the tunnel. It's normally best to route fuel and brake lines together and cables on other side of tunnel. Due to the diff arrangement there is plenty of room for the brake lines and other lines to exit the tunnel. The rear brake line is then routed upto a T piece on the top of the diff cage and each leg to a simple bracket fixed to the side rails SB1. Flexis are similar in fixing to the front but a shorter hose, Motaquip part number VBH381. Pics below:



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Air Manifold

The manifold can be fitted back to the engine as is with only the airbox needing to be removed from the inlet and replaced with a cone filter. The air flow sensor needs to be removed from the airbox and fitted between the filter and inlet pipe. The air flow meter has 2 bosses which can be used to mount onto a bracket made and fitted to the top rail, the filter needs to be fixed up and away from the exhaust manifold to the top of the bonnet. The filter will draw cold air from the bonnet scoop and an additional scoop can be fitted to the side of the bonnet if required for an extra cold air feed if required.

Some pics:

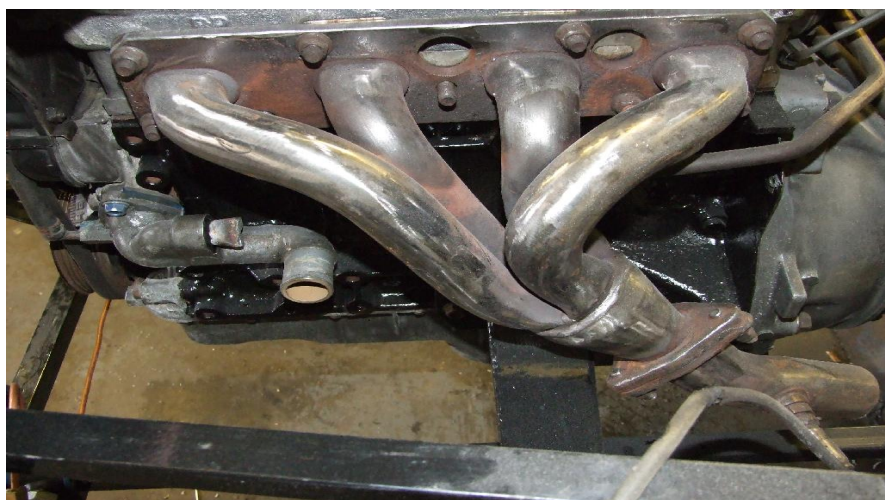


Bracket has not been added to air flow meter yet, will be done when the bodywork is fixed.

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Exhaust

The exhaust is also quite straight forward to modify and adapt for the roadster. Firstly the existing manifold needs to have the fixing brackets removed from the manifold along with the heat shield plates, the manifold can also be cleaned up with a wire brush. The manifold and 4 into 1 can then be bolted back onto the engine using the existing gasket. The header pipe then needs to be cut just after the lambda sensor, there is also a second lambda sensor downstream of the cat which will also needed to be fitted after the cat. The header pipe can then be cut at the main flange and turned 180deg and re welded, this will allow the outlet pipe to exit quite easily through the bottom of the side panel and the exhaust routed along the side of the car with a cat and back box fitted, separate or combined. Some pics below, full exhaust has not been made up yet:



Bodywork

Bodywork designed to fit the original Sierra roadster chassis will still fit over the revised chassis with the same fixing points.

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This appendix shows the cutting dimensions for all tubes, plates and jigs required during the building of the Haynes Roadster. The component codes, eg, U1 & U2, refer to the codes shown in the illustrations and text in the main chapters.

NOTE: Precise dimensions are provided for all components, but in practice allowance must be made for welded joints and distortion. It is advisable to cut tubes – and check and trim as necessary – as the chassis is built up, rather than cutting all tubes before work starts.

All dimensions in mm

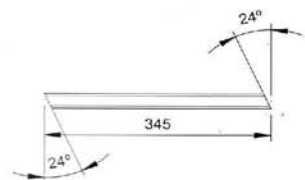
R Radius

∅ Diameter

=X= Dimension equal about centreline

(x) Nominal check (resultant) dimension

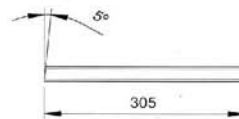
Upright chassis rail U1 & U2
25 x 25 RHS



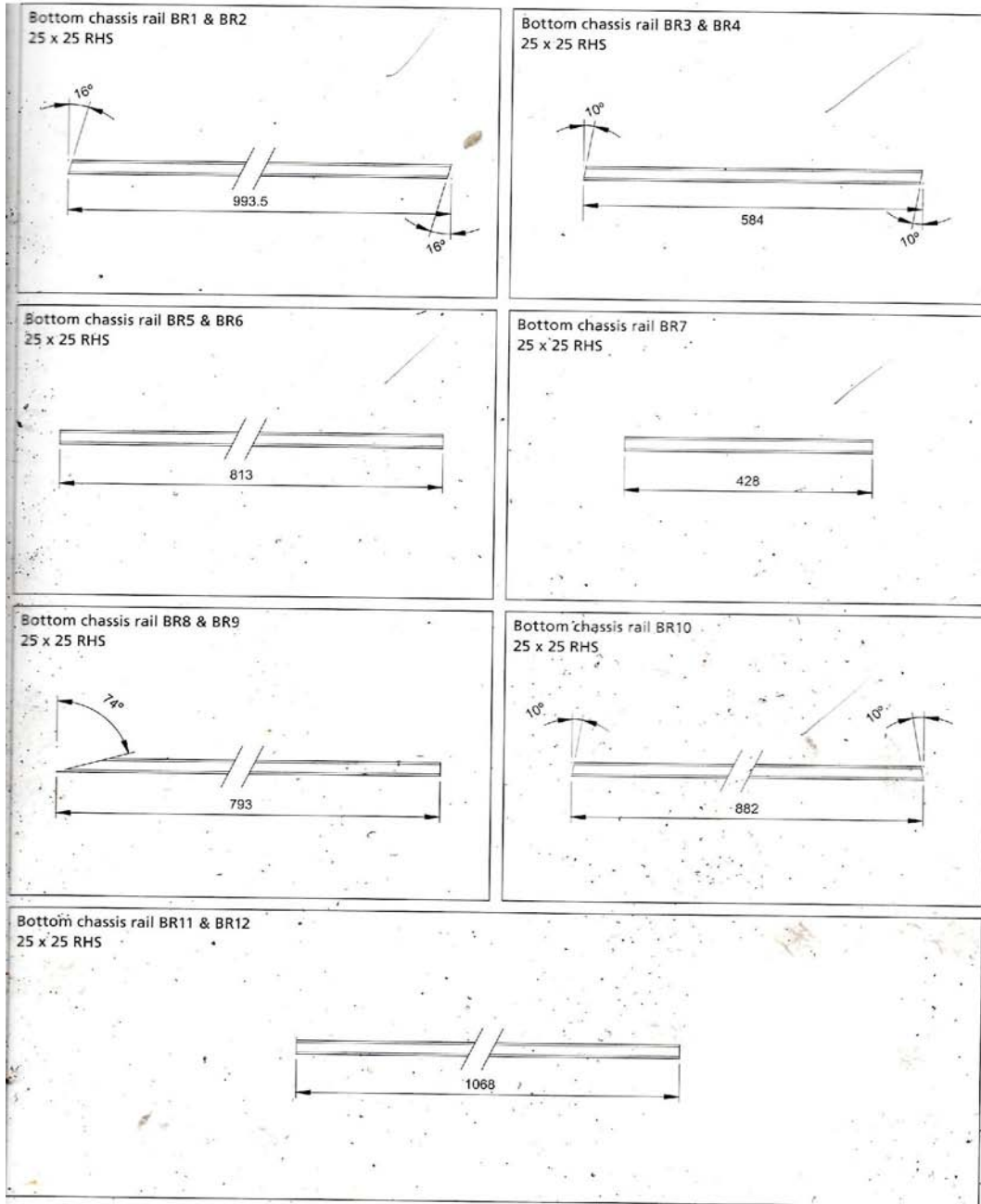
Upright chassis rail U3, U6, U7 & U8
25 x 25 RHS



Upright chassis rail U4 & U5
25 x 25 RHS



Build Guide for conversion of Haynes Roadster to Mx-5 Mk1 as donor vehicle

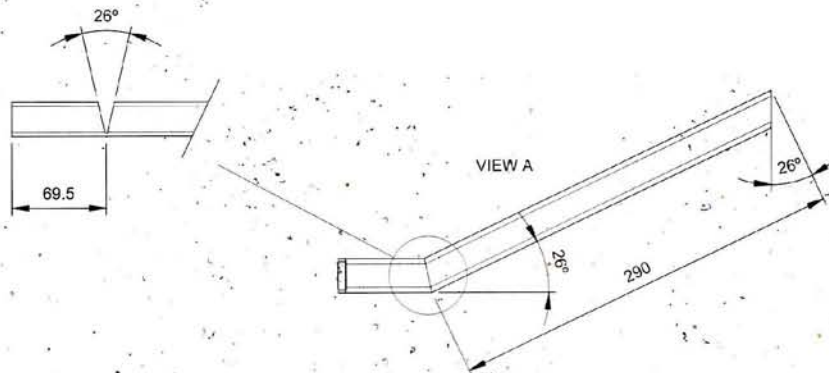


Build Guide for conversion of Haynes Roadster to Mx-5 Mk1 as donor vehicle

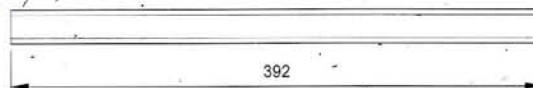
FRONT FRAME

Front frame rail FF2 as drawn
Front frame rail FF3 opp. hand
25 x 25 RHS.

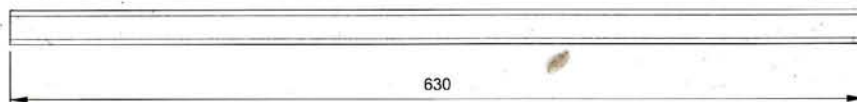
Note this is a true plan – the
overall length of FF2 and FF3
is 359.5mm



Front frame rail FF1
25 x 25 RHS



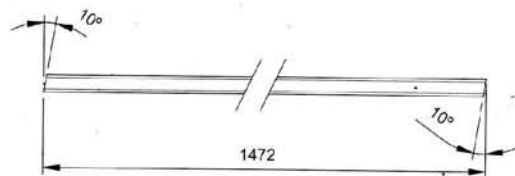
Front frame rail FF4
25 x 25 RHS



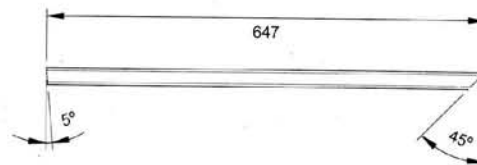
Build Guide for conversion of Haynes Roadster to Mx-5 Mk1 as donor vehicle

TOP CHASSIS RAILS

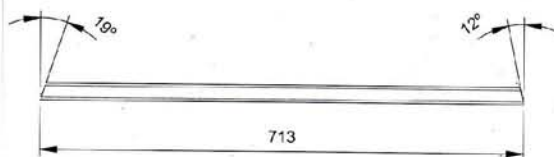
Top chassis rail TR1 & TR2
25 x 25 RHS



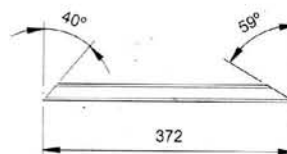
Top chassis rail TR3 & TR4
25 x 25 RHS



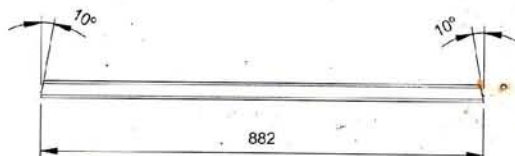
Top chassis rail TR5
25 x 25 RHS



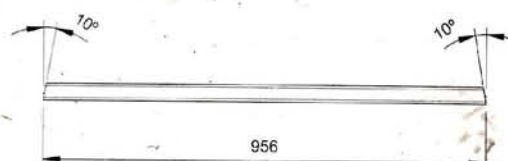
Top chassis rail TR6 & TR7
25 x 25 RHS



Top chassis rail TR8
25 x 25 RHS



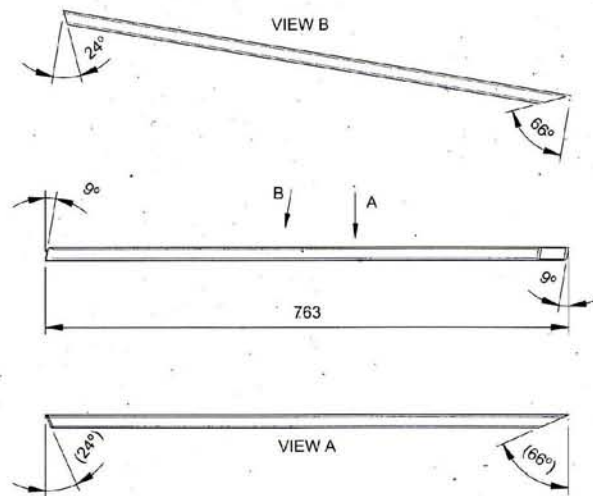
Top chassis rail TR9
25 x 25 RHS



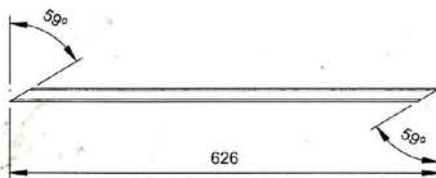
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DIAGONAL CHASSIS RAILS

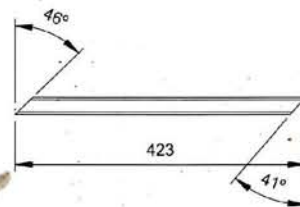
Diagonal chassis rail D1 as drawn
Diagonal chassis rail D2 as opp. hand
19 x 19 RHS



Diagonal chassis rail D3 & D4
19 x 19 RHS



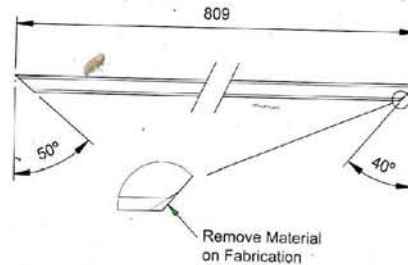
Diagonal chassis rail D5 & D6
25 x 25 RHS



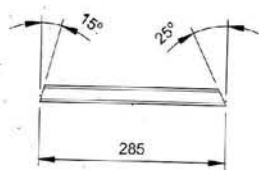
Build Guide for conversion of Haynes Roadster to Mx-5 Mk1 as donor vehicle

DIAGONAL CHASSIS RAILS CONTINUED

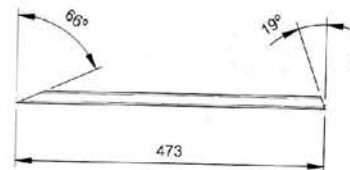
Diagonal chassis rail D7 & D8
25 x 25 RHS



Diagonal chassis rail D9 & D10
25 x 25 RHS



Diagonal chassis rail D11
19 x 19 RHS



D12 - 19mm x 19mm box



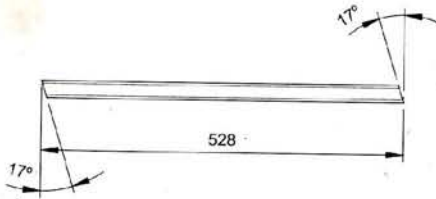
D13 - 19mm x 19mm box



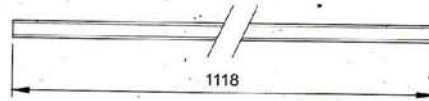
Build Guide for conversion of Haynes Roadster to Mx-5 Mk1 as donor vehicle

SEAT BACK RAILS

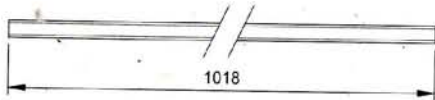
Seat back rail SB1
25 x 25 RHS



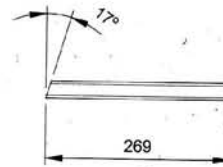
Seat back rail SB2
25 x 25 RHS



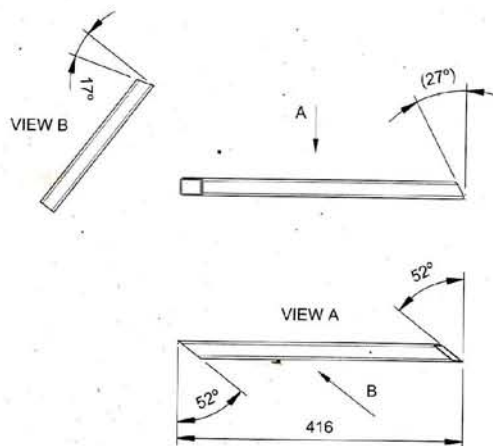
Seat back rail SB3
25 x 25 RHS



Seat back rail SB4
25 x 25 RHS



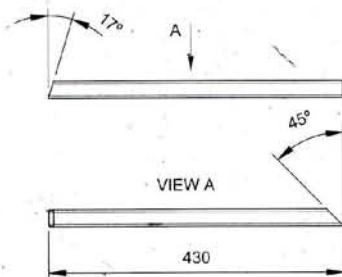
Seat back rail SB5 & SB6
25 x 25 RHS



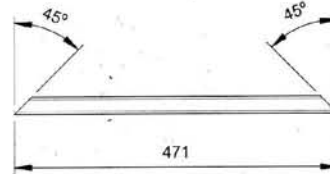
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REAR SUSPENSION AREA

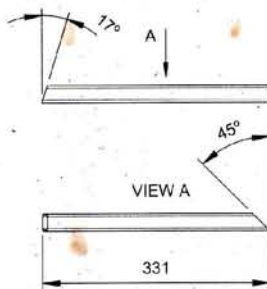
Rear suspension area rail RS1 as drawn
Rear suspension area rail RS2 opp. hand
25 x 25 RHS



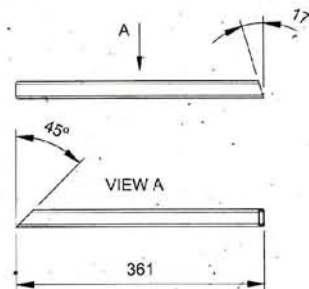
Rear suspension area rail RS3
25 x 25 RHS



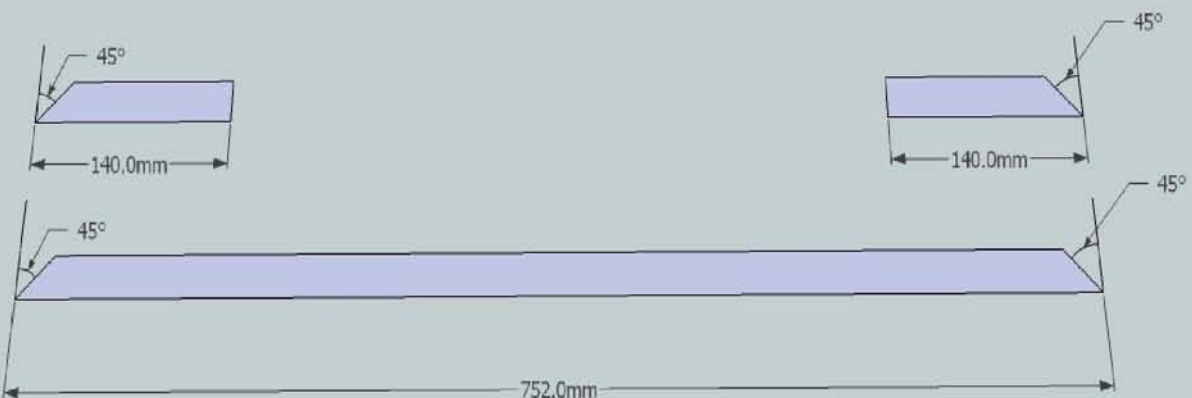
Rear suspension area rail RS4 & RS5
25 x 25 RHS



Rear suspension area rail RS7 & RS7a
25 x 25 RHS

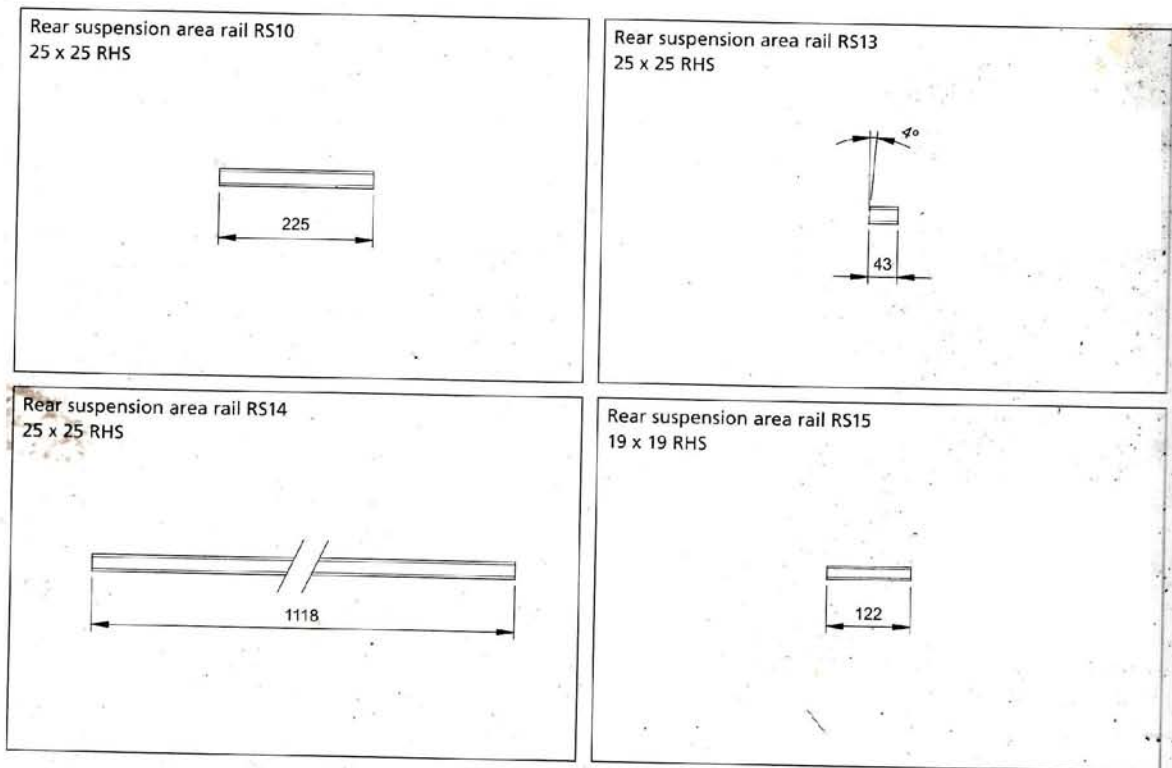


RS6,8,9 - 25mm x 25mm RHS



Build Guide for conversion of Haynes Roadster to Mx-5 Mk1 as donor vehicle

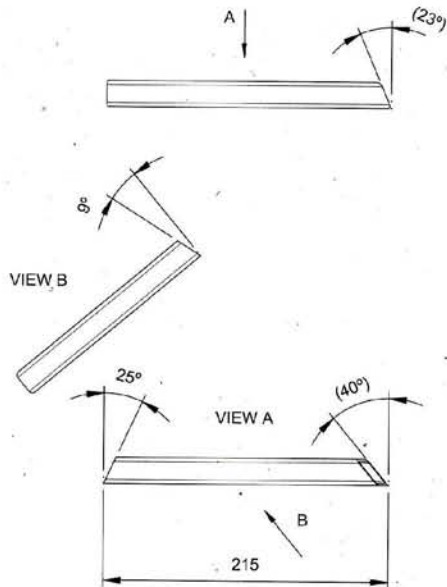
REAR SUSPENSION AREA CONTINUED



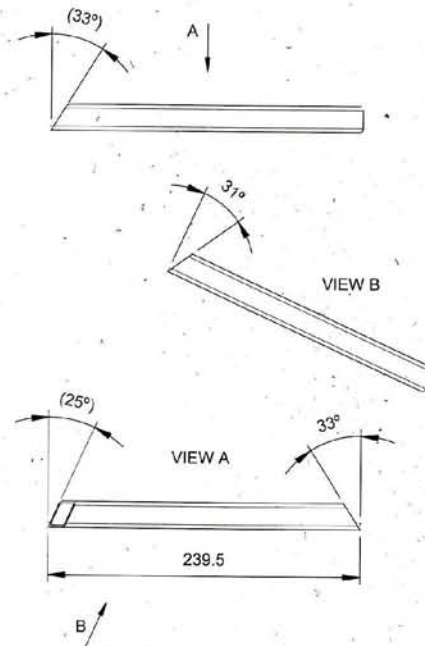
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STEERING WHEEL SUPPORT FRAME

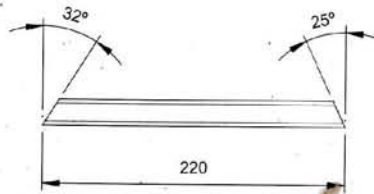
Steering wheel support frame SW1
19 x 19 RHS



Steering wheel support frame SW3
19 x 19 RHS

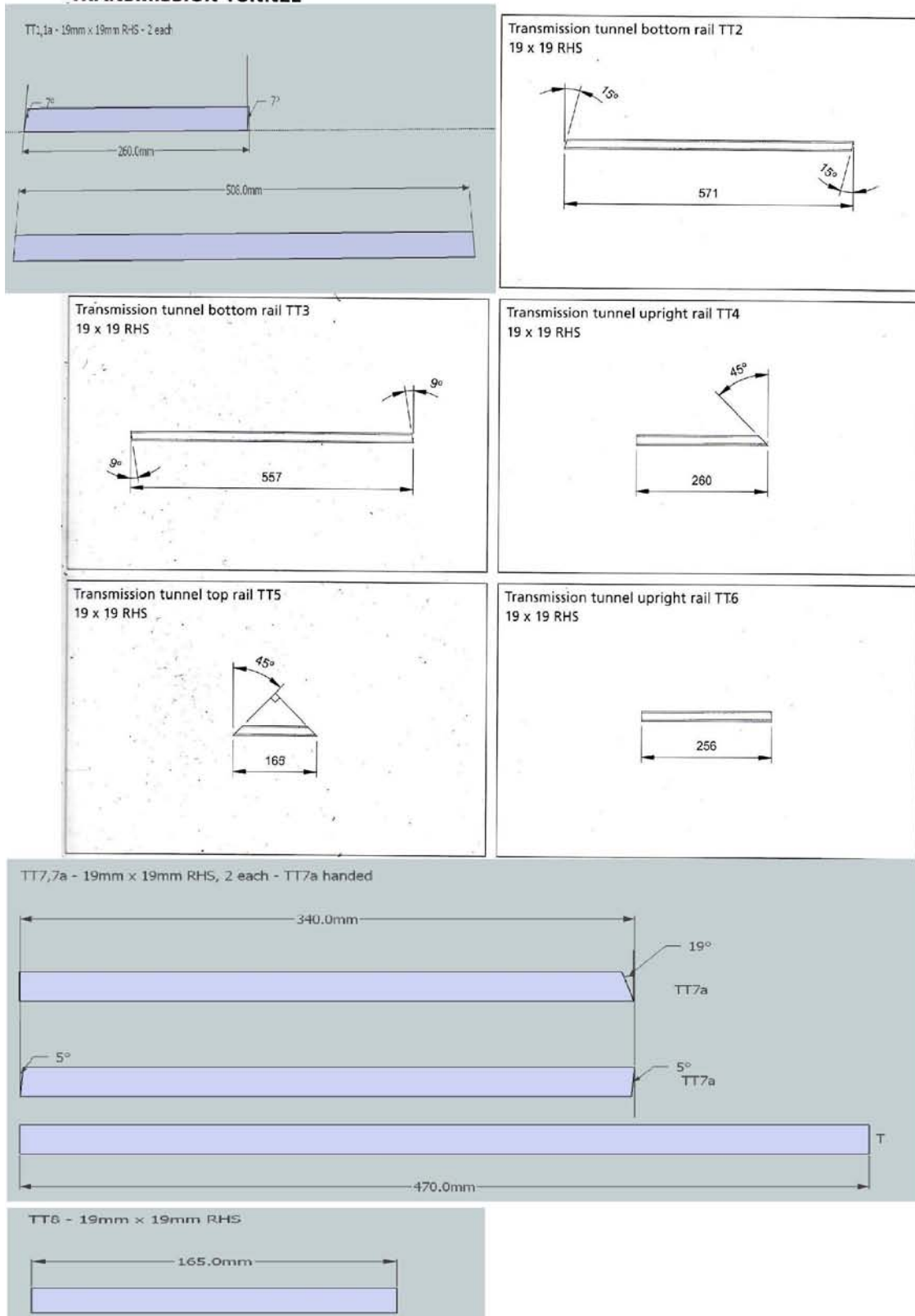


Steering wheel support frame SW2
19 x 19 RHS



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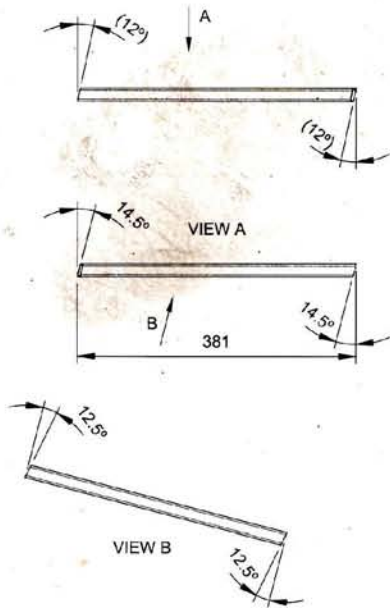
TRANSMISSION TUNNEL



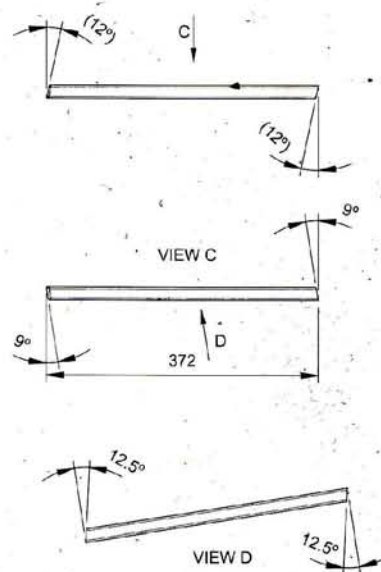
Build Guide for conversion of Haynes Roadster to Mx-5 Mk1 as donor vehicle

TRANSMISSION TUNNEL CONTINUED

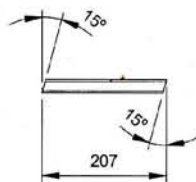
Transmission tunnel top rail TT9
19 x 19 RHS



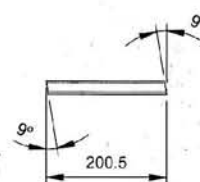
Transmission tunnel top rail TT11
19 x 19 RHS



Transmission tunnel top rail TT10
19 x 19 RHS



Transmission tunnel top rail TT12
19 x 19 RHS



Build Guide for conversion of Haynes Roadster to Mx-5 Mk1 as donor vehicle



Mx-5 Flatpack Chassis Kit - Parts Checklist and Quality Control

Customer: _____

Date: _____

Checked By: _____

Signed: _____

Rail No	Size	No.	Total Length	1st cut	2nd cut	✓
U1, U2	25mm	1	345mm	24°	24°	
U3, U6, U7, U8	25mm	1	305mm	90°	90°	
U4, U5	25mm	1	305mm	5°	90°	
BR1, BR2	25mm	1	993mm	16°	16°	
BR3, BR4	25mm	1	584mm	10°	10°	
BR5, BR6	25mm	1	813mm	90°	90°	
BR7	25mm	1	428mm	90°	90°	
BR8, BR9	25mm	1	793mm	74°	74°	
BR10	25mm	1	882mm	10°	10°	
BR11, BR12	25mm	1	1068mm	90°	90°	
FF2, FF3	25mm	1	360mm	14°	14° 26°	
FF1	25mm	1	392mm	90°	90°	
FF4	25mm	1	630mm	90°	90°	
TR1, TR2	25mm	1	1472mm	10°	10°	
TR3, TR4	25mm	1	647mm	45°	5°	
TR5	25mm	1	713mm	12°	19°	
TR6, TR7	25mm	1	372mm	40°	59°	
TR8	25mm	1	882mm	10°	10°	
TR9	25mm	1	956mm	10°	10°	
D1, D2	20mm	1	763mm	24° 9°	66° 9°	
D3, D4	20mm	1	626mm	59°	59°	
D5, D6	25mm	1	423mm	46°	41°	
D7, D8	25mm	1	809mm	50°	40°	
D9, D10	25mm	1	285mm	25°	15°	
D11	20mm	2	473mm	66°	19°	
D12	20mm	2	348mm	44°	46°	
D13	20mm	2	304mm	41°	31°	
SB1	25mm	4	528mm	17°	17°	
SB2	25mm	1	1118mm	90°	90°	
SB3	25mm	1	1018mm	90°	90°	
SB4	25mm	2	269mm	17°	90°	
SB5, SB6	25mm	1	416mm	52°	52° 27°	

Rail No	Size	No.	Total Length	1st cut	2nd cut	✓
RS1, RS2	25mm	1	430mm	17°	45°	
RS3	25mm	1	471mm	45°	45°	
RS4, RS5	25mm	1	331mm	17°	45°	
RS6	25mm	1	752mm	45°	45°	
RS7	25mm	1	361mm	45°	17°	
RS7a	25mm	1	361mm	45°	17°	
RS8, RS9	25mm	1	140mm	45°	90°	
RS10	25mm	2	225mm	90°	90°	
RS13	25mm	2	46mm	4°	90°	
RS14	25mm	1	1118mm	90°	90°	
RS15	20mm	2	122mm	90°	90°	
SW1	20mm	1	215mm	25°	40° 23°	
SW2	20mm	1	220mm	32°	25°	
SW3	20mm	1	240mm	25°	33°	
TT1	20mm	2	508mm	90°	90°	
TT1a	20mm	2	260mm	7°	7°	
TT2	20mm	1	571mm	15°	15°	
TT3	20mm	1	557mm	9°	9°	
TT4	20mm	2	260mm	45°	90°	
TT5	20mm	1	165mm	45°	45°	
TT6	20mm	2	256mm	90°	90°	
TT7	20mm	2	470mm	90°	90°	
TT7a	20mm	2	340mm	5°	19° 5°	
TT8	20mm	1	165mm	90°	90°	
TT9	20mm	1	381mm	14°	12° 14° 12°	
TT11	20mm	1	372mm	9°	12° 9° 12°	
TT10	20mm	1	207mm	15°	15°	
TT12	20mm	1	200mm	9°	9°	
grp1	25mm	1	990mm	90°	90°	
grp2	25mm	2	176mm	90°	5°	