

FUGITIVE II GENERAL ASSEMBLY INFORMATION

Once your basic Fugitive chassis is welded together there is additional bracketing required. If the car is going to be used for serious off-road competition use then refer to technical data sheet TD26 on how to install a chassis stiffening kit.

It is best to keep the Beetle workshop manual with you to help you with assembly information about the standard parts you will be utilising in the over all build of your Fugitive. UVA have these manuals available at £5.95.

FUEL TANK

The type of fuel tank you wish to use will determine which mount you will need to make. The ideal positioning for the fuel tank is just behind the front suspension. Any of the Bugpack poly gas tanks can be fitted in this position and can be bolted directly to the floor. Alternatively, a standard Beetle tank, preferably of the earlier pre 1966 vintage, can equally be mounted in this position but you will have to make a brace across from each side chassis frame to rest the Beetle tank on to. The reason for using an early Beetle fuel tank is because the filler cap is on top of the tank as opposed to on the side as on the later models. Although, these later tanks can be modified by welding the new filler neck into the centre. This is a dangerous job and should only be tackled by an expert.

GEAR LEVER MOUNTING

You have a degree of flexibility as to where you mount the gear lever box. The usual position is centrally on tube no. 4, although tube no. 3 can be left flexible in it's positioning for the individual who has longer arms. Weld this box into your desired position. Fit the VW white nylon bush into the 1½" hole in the rear. With the transaxle bolted into position, take the standard VW gear shifting shaft, cut it, shorten it and re-weld it so that, when coupled to the VW transaxle, the gear lever socket is central in the top gear lever mounting hole.

HANDBRAKE MOUNTING

The standard VW handbrake lever should be utilised with UF 234-14 handbrake mount. This should be positioned on the inside left hand tube no. 5, forward of the torsion housing by 3¼". You can use UF 234-17 handbrake cables or the standard Beetle cables and shorten them with a B5586 cable shortening kit.

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FRONT BRAKE PIPE MOUNTS

The front flexible brake hoses will require an inboard mount. This can be made from a piece of flat steel measuring $1\frac{1}{2}" \times 1\frac{1}{2}"$ with a 16mm hole drilled in it's centre. You will need 2 of these and they should be welded to the bottom rail just forward of the first vertical upright so that they form a gusset in the corner. (To allow stock VW retaining clip to be used, weld bracket on inner face of tube.) The standard VW flexible brake pipe clip can then be retained and used to affix the flexible brake pipe to this bracket.

MOUNTING THE PEDALS

You have three alternatives in pedal mounting. The first is to use the UVA pedal assemblies UM P125 brake and throttle assembly and UM P135 clutch pedal assembly (coupled to a B5592-11). These can be bolted directly to the floor and plumbed in, in the normal way.

The second alternative is to use the same brake and throttle assembly but retain the cable clutch pedal assembly. Take the standard VW clutch pedal assembly, cut and shorten it so that the clutch pedal and cable hook are a total of 9" in length. Shorten the inner pivot tube to a total of $10\frac{1}{2}"$. Drill a hole through right hand tube no. 2, 26mm and in the left hand tube no. 2, 18mm. The pedals will then pivot in these 2 holes. The pedal position rearward of tube no. 1 is best suited to your comfort level, 8" from centre to centre is a good guide line.

The third alternative is to use the standard Beetle pedal assembly completely, drilling a 26mm hole in the right hand side of tube no. 2 and 8mm hole directly central in the left hand side of that right hand tube. Slide the complete standard VW Beetle pedal assembly so that the clutch hook is on the right hand side and the throttle cable hook is on the left hand side between tubes (no. 2). The rearward position of this pedal assembly is, again, according to what suits you best but a good guide line is 8" centre to centre rearward of tube no. 1.

To mount the master cylinder use bracket B5566 mounting this to $1\frac{1}{2}"$ diameter 14 gauge piece of tubing positioned and welded between each right hand tube no. 2 and the outer bottom side rail or, alternatively, mount the master cylinder bracket to tube no. 1 and lengthen the brake master cylinder push rod to suit. The pedals should be leaning towards the driver at an angle of 30° to the vertical.

$\frac{1}{4}"$ OD steel or copper tubing can be strapped to the chassis rails to carry the cable from the pedal assembly rearward to the clutch and throttle. Weld a cable stop approx. 4" from each cable hook on the pedal assembly and pass the cable through these stops before entering the tubes. These stops offer positive cable torsion.

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MAKING THE FLOOR

Refer to the diagram enclosed for the measurement of the floor. The floor can be made from a flat sheet of $\frac{3}{8}$ " marine ply or $\frac{3}{32}$ " aluminium sheet. The chassis frame should be inverted and the floor positioned and relieved around the torsion housing ends so that it is a snug fit flat against the underside of the chassis tubes. Fix the floor to the chassis by first 'G' clamping in position. The fitting of the floor should be done in 2 stages and it can be riveted or screwed to the underside of the chassis tubes. Firstly, affix it to the inside of chassis tubes no. 2 and 5 leaving the outer edges unattached at this stage. The final outer fixing can be made at a later stage when you are ready to fit the side panels. The final assembly will sandwich the side panels between the chassis rail and the floor section.

FRONT SUSPENSION

The UVA Fugitive is designed to accept the ball joint front torsion beam suspension fitted to Beetles from 1967 onwards. The front suspension is bolted in place by use of the 4 clamps provided. When assembling the front beam on to the chassis make sure you centralise it using the lower 2 clamps as a guide. On certain models it may be necessary to remove the grease nipples, so make sure the beam is fully greased before bolting it into the chassis.

If the vehicle is going to be used for off-road then the front suspension leaves should be left as standard. Alternatively, if only highway use is envisaged, then it is preferable to remove the 6 small leaves from the top beam and the 6 small leaves from the bottom beam (i.e. 12 in total). This has the effect of softening the front suspension making it comfortable for highway use. Front height adjusters can be installed into your beam to raise or lower the suspension according to your requirements, see technical data sheet TD 23. The general front suspension assembly procedure is exactly as per standard VW. It is recommended you fit adjustable shock absorbers, US 616, so that the ride comfort can be adjusted to suit your purpose. Don't forget to set the front toe in between $\frac{1}{16}$ " and $\frac{1}{8}$ ". Leave the standard VW anti roll bar off the front. (UVA can modify chassis to accept the earlier VW link pin suspension for off-road racing.)

REAR SUSPENSION

The rear suspension, like the front, should be assembled in the standard way. Change only the ride height to suit your particular needs. This can be best accomplished by using UVA's adjustable spring plates, B6552 or B6549. If performance handling is required then refer to UVA technical data sheet TD 24 for the full "low down".

BRAKES

Assuming you are using the standard VW drum brakes, the assembly of both front and rear is standard assembly procedure with the exception of swapping the front hydraulic cylinders to the rear, and the rear to the front. The reason for doing this is to increase the rear brake ratio because of the Fugitive's lightly loaded front end. UVA stock high quality copper brake lines with brass fittings to couple up your brakes. There are various models according to the pedal assembly you are using.

TD 34

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BATTERY BOX MOUNTING

Battery box part no. B5555 can be bolted into position on to the rear torsion housing on swing axle models only. An alternative mounting position, especially with IRS models, is to bolt the battery box to the floor immediately behind the front suspension allowing clearance for the suspension steering arms.

STEERING COLUMN

For competition use, use the B5578 steering column with a UN 23V steering wheel. Weld a bracket to screen tube no. 11 passing the column through a B5505 steering column bearing mount, position the column to your desired location, drill and bolt the column bearing to your welded mount. The column should be cut to your desired length and welded to the standard VW steering coupler.

For highway use it is preferable to use the standard VW steering column and have this lengthened by UVA. Using the standard VW column offers the advantage of having the indicator/headlamp/horn all located on the column. Mount the standard VW column on to a bracket and weld that bracket to the screen tube no. 11 in your desired position.

FITTING THE BONNET

The position of the bonnet is self evident and is best accomplished by first trial fitting the 2 front side panels on to the chassis and temporarily holding these in position with a suitable 'G' clamp. Now position the bonnet. Weld 2 brackets, one each side, to the forward lower position of tube no. 11. These brackets should measure $1\frac{1}{2}$ " x $1\frac{1}{2}$ " with a $\frac{1}{2}$ " hole in the centre. Drill directly upwards through these brackets into the inside of the bonnet, bolting B6041 hood pins or B6040 locking hood pins into position. These pins act as a mount location point for the bonnet. The front is held down by welding 2 (1 each side) Dzus clips and tabs B5518-12 to each of the rails rearward of the front beam by $9\frac{1}{2}$ " and drilling corresponding holes through each side of the bonnet fitting Dzus self ejecting studs B5518-10.

To make it easier to reach the fuel tank filler if you have positioned it in the front it is a good idea at this stage to fit a removable gas cap part no. B6032 (black) or B6032-10 (chrome) directly over the filler tank cap.

MOUNTING OF THE MUDGUARDS

UVA have mudguard mounting brackets available. These mount the front mudguards to the front hubs allowing the mudguards to raise, lower and steer with the front suspension. The rear mudguards weld and attach to the rear frame right by the roll over bar support tube. It is advisable to trial fit the rear suspension and rear wheels/tyres so that the correct position of the mudguards can be agreed. The lower edge of the rear mudguard should be bolted through it's side flange to the side of the body using at least 1" diameter washers to spread the load.

Now that all the basic welding on your chassis has been undertaken, it is a good idea to prepare it and paint it.

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TECHNICAL DATA-TECHNICAL DATA-

ENGINE AND TRANSMISSION

Bolt the transmission in position using either new standard rubber mounts or urethane mounts, part no. B6519. Bolt the engine to the transaxle. It is best, at this stage, to fit 2 safety items to the engine. Firstly, a fan belt guqrd, B4528 or B4529, and an air intake screen, B5432.

Your exhaust system choice should be limited to the Bugpack ranges as follows: Baja exhausts, sidewinder exhausts, upswept exhausts or the dual exhausts. If you require heating in your Fugitive, then it is important to choose an exhaust that couples up to the VW heat exchangers plumbing these heat exchangers into the car with the use of B2516 heater hose trunking. Now refit the rear bumper cage.

FUEL LINE

You should always use a metal fuel line between tank and carburettors as this is obviously stronger than rubber etc. UVA stock coils $\frac{1}{4}$ " OD copper tubing for this plumbing operation. Also make sure you use good quality hose clamps to connect the flexible tubes from tank to pipe and from pipe to carb.

DASHBOARD AND INSTRUMENTATION

The best place for a dashboard is in the middle between the 2 seats being mounted at an angle of 25° from the vertical between chassis tubes no. 1 and no. 11. This can be made from a piece of 16 gauge aluminium measuring 20" x 17 $\frac{1}{2}$ " folding it into a 'U' shape along the 17" length with the base of the 'U' measuring 7 $\frac{1}{2}$ " wide. This can be riveted to the tubes no. 11 and no. 2 and should give you enough room to install the instruments and switches of your choice. See the wiring diagram, TD40 to help you wire up the vehicle.

Incidentally, don't forget you must legally have a "hooter". The standard Beetle horn will suffice and it can be bolted to the floor near the front suspension.

If you are changing your front wheel and tyre size then you will be effecting the speedo calibration. UVA stock a range of 80mm calibrated VDO speedos, just advise the front tyre size.

LIGHTING

The front head lamps, part no. UL 68-02S, should be bolted to brackets attached to the shock absorber towers. The front face of this bracket should measure at least 1 $\frac{1}{2}$ " x 1 $\frac{1}{2}$ " allowing the quick look indicators, B3522, to be screwed to them in a vertical position. Check the enclosed technical data sheet to make sure you mount the lights within the correct legal dimensions. The rear stop, tail and indicator assembly bolt directly to each rear wing, part no. UL 56918, for the right hand and UL 56917 for the left hand. Also, don't forget to stick the UL 7061 rear reflectors to the wings to make sure you are fully legal.

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TECHNICAL DATA-TECHNICAL DATA

The number plate and it's corresponding illumination can be best made from a piece of 16 guage aluminium measuring 15" wide x 12" high and fitted to the rear bumper cage. Use B3528 number plate light to illuminate this rear assembly.

SIDE PANELS

Position the 2 front side panels first. The shape of the panels will determine their exact place on the chassis. Then slot in the rear panels to suit. Trimming with a file may be necessary to obtain a snug fit. Rivet or screw the top of each panel in 3 places per panel along it's top edge, riveting it to it's top tube. Push the underside of the panels into position and locate them with a single rivet per panel. Now rivet or screw the remaining floor section to the chassis sandwiching the side panels between the underside of the chassis rail and the floor. The floor should be riveted or screwed every 3" and should be attached to all the tubes that it touches. From UVA's experience, 3/16" rivets have proven to be the most satisfactory.

BULKHEAD

The front bulkhead, just forward of the pedal assembly, can be made from either marine ply or 16 gauge aluminium and should be attached to the floor and side panels preferably with fibreglass. This will ensure a watertight and draft proof seal. Likewise, the rear bulkhead, behind the driver and passenger seat traversing the full width of the car in between the body panels, will further make the vehicle wind and watertight. This panel should be affixed in the same manner as the forward bulkhead.

SEATS

Seats UU 7525 and seat cover B8018 should be used for a Fugitive as these are specially designed to fit into the vehicle. Position the seat shell to your desired position and bolt it through the four corners of the seat well to the floor. Make sure the bolts face downwards otherwise you may get a surprise when you first sit in the seat. If the seat is required to be adjustable for fore and aft location, elongate the holes in the floor to facilitate this adjustment. The B8018 padded seat covers slide straight over the seats and finish the professional job.

FLY SCREEN

The UF 234-18 tinted and laminated fly screen attaches directly to the frame rails with self tapping screws.

WEATHER EQUIPMENT

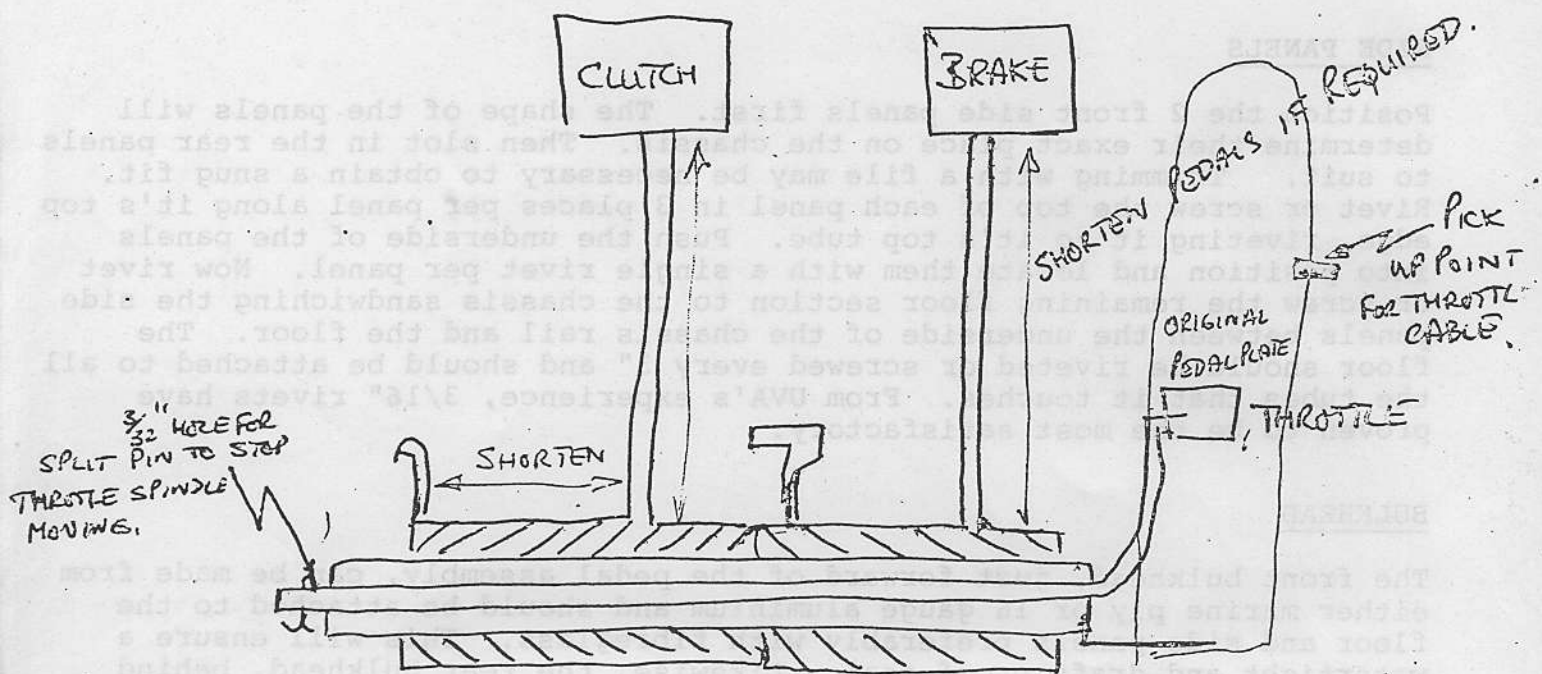
The full hard top is available from UVA and the corresponding fitting instructions are supplied with this hard top.

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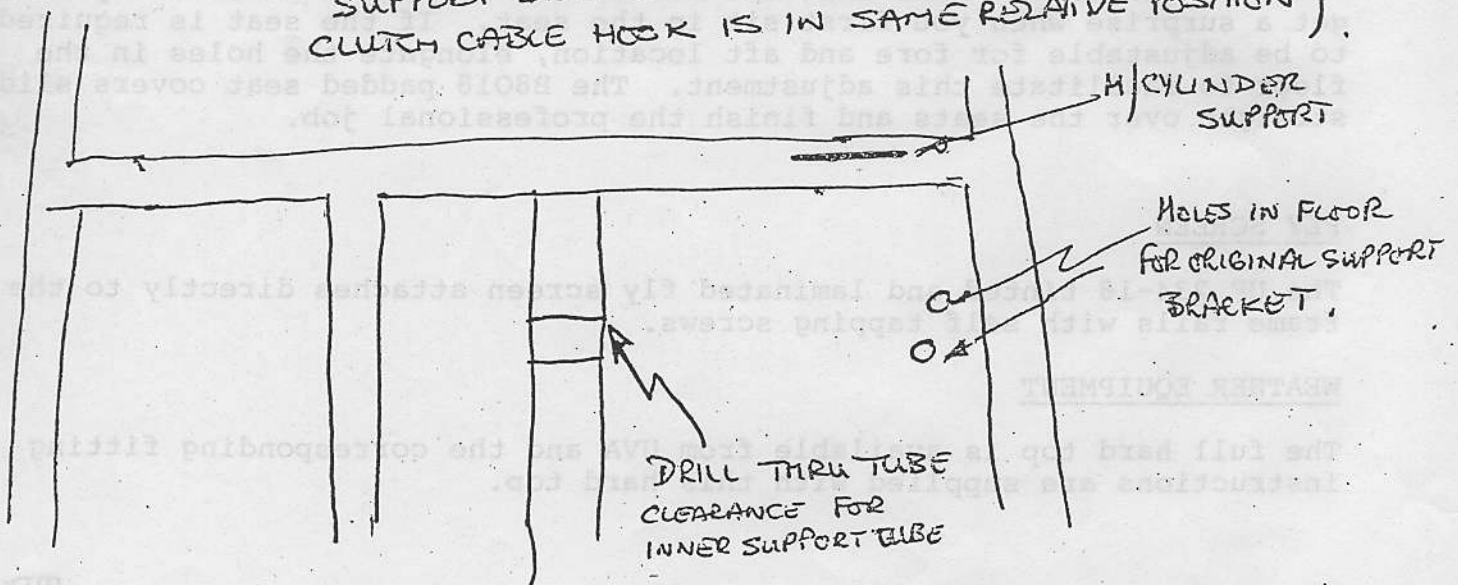


How TO MODIFY STANDARD VW PEDAL ASSY TO SUIT FUGITIVE RANGE.

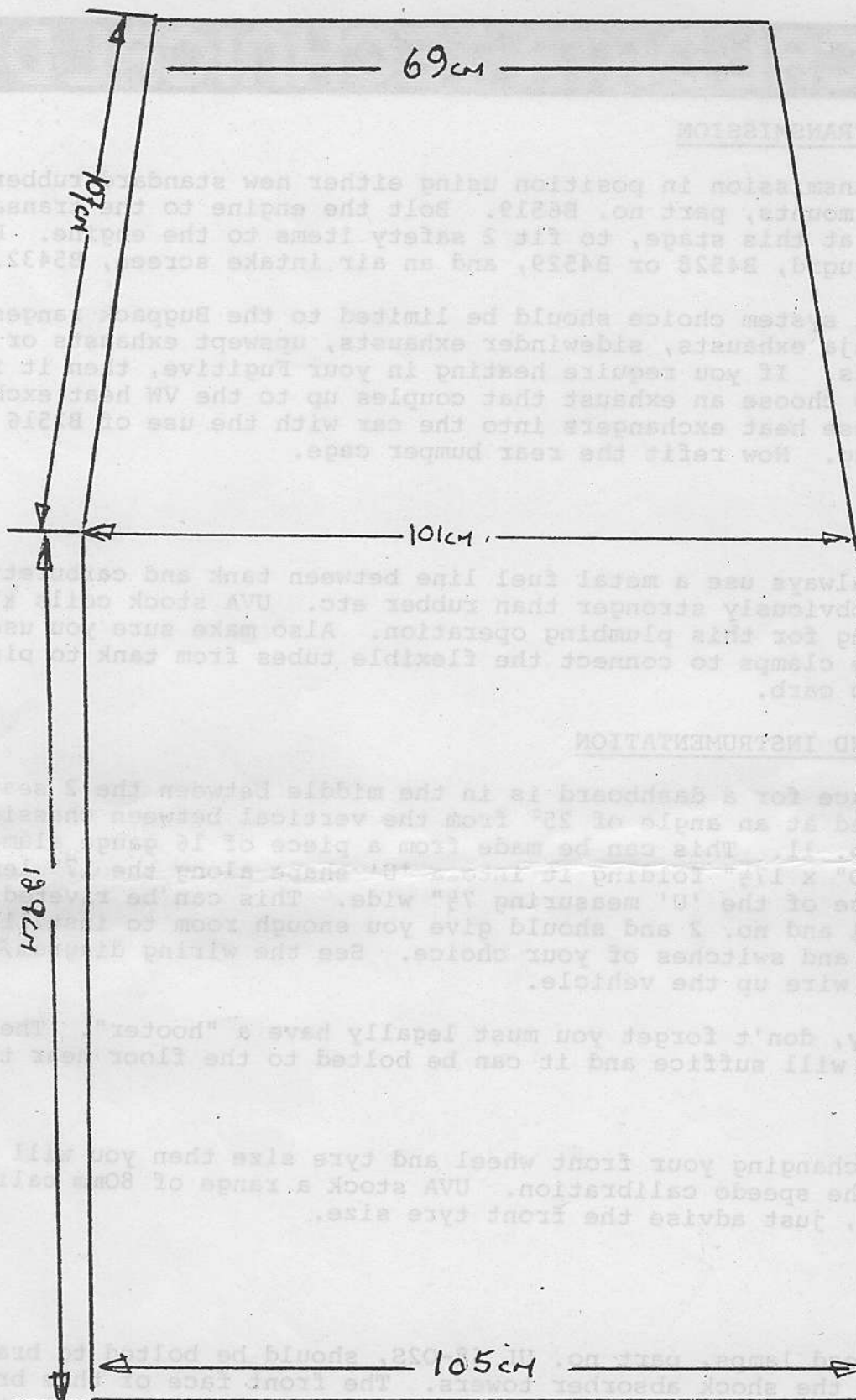


- 1) SHORTEN THROTTLE SPINDLE BY $1\frac{1}{2}$ "
- 2) SHORTEN INNER SUPPORT TUBE BY $1\frac{1}{2}$ "
- 3) SHORTEN CLUTCH PEDAL TUBE BY $2\frac{1}{4}$ "

(REMOVE METAL FROM MIDDLE OF TUBE, RETAINING SUPPORT BUSH AT EITHER END. MAKE SURE THAT CLUTCH CABLE HOOK IS IN SAME RELATIVE POSITION)



THE STANDARD BEETLE PEDAL ASSY CAN BE MOUNTED ANY WHERE ALONG THE CHASSIS TUBE, THE MASTER CYLINDER PUSH ROD MAY NEED EXTENDING.



FUGITIVE FLOOR PAN MEASUREMENTS



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