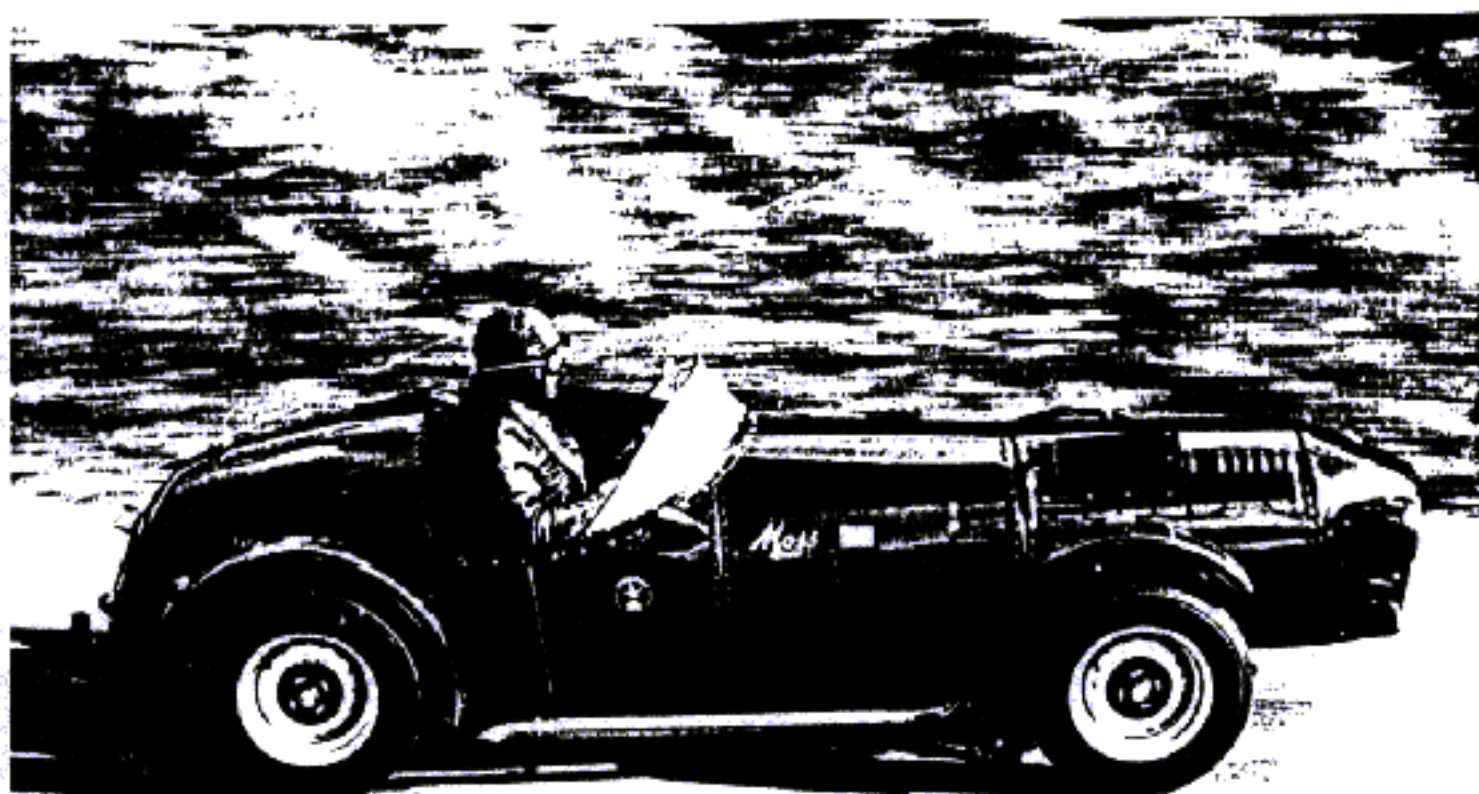


BUILD MANUAL FOR FORD BASED MOSS MONACO



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PARTS REQUIRED FOR FORD BASED MONACO

Other than those supplied with the kit or the Escort donor vehicle

Before commencing any stripdown work we recommend the purchase of the relevant Haines (or similar) Workshop Manual. Unless you are a qualified mechanic this will be a great aid and may prevent any confusion over our instructions.

You may find it useful to have all mechanical components thoroughly cleaned prior to the stripdown and re-assembly, this makes the build a much more pleasant task.

PARTS

Cortina Mk. 3, 4 or 5 front subframe complete with all suspension and brake parts and lower steering column assembly.

Triumph Herald, Spitfire, Vitesse or Hillman Imp front coil over shock absorbers. (Triumph Dolomite or RWD Toledo will also fit).

Escort Mk.2 steering rack.

13" road wheels. Standard Cortina or 13" Escort wheels may be used if the car is built on a budget and can always be replaced with more suitable wheels at a later stage.

Remove from the Cortina subframe the following parts; upper and lower wishbone, hub assembly complete, tie rods, coil springs and shock absorbers. Keep all the mounting nuts and bolts, you will need them to remount the suspension on to your chassis. Tie rods swop over, side for side and are remounted to the rear of the hubs. You will need to purchase new metal washers that go either side of the rubber chassis bushes on the tie rods, two for each side of the car.

If Cortina 1300 springs are used, remove two loops before fitting. If you use the McPherson strut Escort springs remove one loop only. Do not use springs from the Cortina 1600 or more powerful versions as they are too stiff. Shorten the spacer in the top of the shock absorber by 1/8" at each side. This is to enable it to enter the mounting correctly.

If you use the springs from a Herald/Vitesse, remove the top pan from the coil overs keeping the rubber bushes and metal washers. Remove three loops from each spring.

FORD CHASSIS PREPARATION

Ford chassis preparation consists simply of obtaining the required parts and bolting them onto the replacement chassis supplied by us. We also supply the axle clamps, trailing arms and panhard rod to complete the assembly.

Other parts required are as follows:-

Cortina Mk.3 or 4 wishbones, springs, shock absorbers, hubs, brakes, back plates etc. stripped as complete units from the front cradle. These items simply bolt back onto our chassis at a more narrow track. This necessitates the use of an Escort Mk. 2 steering rack as the Cortina rack is now too wide. Some racks are fitted with a short Cortina track rod end which will not allow sufficient track to be gained by adjustment alone. We can supply a rack adjuster if required. Discard the Cortina anti-roll bar but save the tie bars. These should be swapped over 'side to side' to form trailing compression struts. Save also the collared rubber mounting bushes from the body end of these tie bars. These rubbers are re-located into our chassis. Adjusting the arms to push the suspension forward increases the caster angle and hence the feel or feedback to the steering. Trial and error adjustment is required on the finished car to give the right 'feel'.

The axle is mounted and located by means of four trailing arms and a panhard rod which bolt to the chassis with high tensile bolts and also bolt to the axle by means of 'axle clamps' which require welding onto the axle casing. This is mild steel tube and is not a casting, so welding of these items is straightforward. The correct positioning of these is as follows:- The clamp should be mounted equi-distant of the centre line at the same distance apart as the trailing arm mounting points on the chassis itself. Pack the chassis up on 8" blocks at all four corners. This indicates the eventual neutral ride height. Cut the front springs to suit the gap between their upper and lower mounting points and add about 1" for settlement.

Roll the rear axle complete (on its wheels), under the chassis and hang the axle clamps loosely in place on the trailing arms and around the axle case. Rotate the neck of the differential to 'point' at the gearbox neck and having established that the axle is centrally positioned, chalk the axle clamp mounting positions onto the axle case and weld up. This method ensures that the propshaft line of drive is kept straight and not stepped. Upon replacement, the rear springs which are either Herald/Vitesse or Hillman Imp front coils and shock absorbers should be held in position and some shortening may be required as per the front suspension to give the correct ride height.

The Imp springs give the hardest ride. If Herald are preferred for softness then heavy duty shock absorbers are recommended. Shortening the Triumph springs removes a lot of preload which softens them even further. Remember to take this into account when shortening them. The Cortina 1300 saloon front springs are recommended but these will need shortening by about two loops depending on age and condition, to give the correct ride height. The spring may be burned through or cut with a grinder. Put the newly formed spiral end downward onto the spring pan (lower arm) which has a slight spiral formed seat, don't forget to allow for compression under load as this will reduce ride height by about another 1"

If the suspension proves too hard for your liking, some customers report that they have successfully used Escort springs. The overall diameter of these is the same and they should be fitted unshortened, they are much softer and 'squash up' to the required length. If Escort springs are used, heavy duty shock absorbers are recommended.

Although the Escort steering column (Mk.1 or 2) is used, this needs to be lengthened by an extension with universal joints. This is required so as to reach the rack and route around the offside engine mount and oil filter. It is best provided for via the Cortina lower steering link. The triangular end of the Cortina column should be sawn off and grafted onto the lower Escort column section and the lower Cortina link complete with the universal joint will now connect the column to the rack.

Any crossflow engine and gearbox is suitable, all are interchangeable. N.B. Only use the Escort engine mountings.

The propshaft should be single piece straight shaft from an Escort van or Estate or a Mk. 2 Cortina; this will need shortening to suit.

After engine installation, measure between the gearbox tail and the differential to find the correct propshaft length. No fixed measurement can be provided as the engine mountings and the gearbox lengths vary from model to model. Any Escort Mk.1 or 2 rear axle will fit although one from a van is not considered suitable due to the lower ratio.

The handbrake linkage may be modified from the Ford cable system. A tall lever type handbrake i.e. Rover or MGB GT is suggested for best appearance although the Escort/Cortina handbrake lever can be used bolted through the passenger floor adjacent to the tunnel.

CHASSIS PREPARATION

It will be found considerably easier for working if the chassis is supported firmly at approximately * 8" from the floor. This is the correct ride height.

Please refer to diagram overleaf for mounting points numbered below.

1. Mount Escort Mk. 2 steering rack, attach track rod extension to offside track rod.
- 2 & 3. Mount Cortina front suspension units. They mount exactly as they came off the subframe.
4. Escort 1100/1300/1600 D.H.V. engine mountings. Engine may not need to sit at the bottom of the channel. Also channel may need lengthening to suit.
5. Front body mountings.
6. Gearbox mounting pan. Drill and bolt to suit.
7. Tie rod chassis mounting. New washers will be required.
8. Rear spring pan. Threaded stud of shock absorber passes through the hole in the centre, rubber bush either side of metal washer on top and nut to secure, spring fits underneath pan.
9. Chassis mounting for panhard rod.
10. Mounting brackets for trailing arms.
11. Axle clamp. (Offside showing panhard rod mounting) Axle clamps to be welded onto axle casing 5mm in from old rear spring pan (11A) on Mk.1 Escort and 10mm in on Mk.2 Escort. Ensure that clamps are in a vertical position and axle is in correct rolling position.
12. Rear body mountings/seat belt anchorage points.
13. Bracket for flexible brake hose.

* 8"

With all suspension in place and wheels attached sit engine and gearbox in situ. Drill gearbox mounting and bolt up. Measure distance between gearbox output shaft casing shoulder and differential flange and get propshaft shortened and balanced to suit.

Pipe brake lines as necessary and clip securely to new chassis.

When fitting the Escort steering column, the universal coupling may foul the engine oil filter. This is easily overcome by fitting the longer unit which is standard to the Triumph 2000 and has the same splines as the Ford Escort.

Modifying the steering column - Bottom half

The steering column will need lengthening by a total of 15". This is best done by cutting the solid bar that makes up the lower column and extending it by sleeving same with a piece of close fitting steel tube. This should overlap at each end by two or three inches and be professionally welded in position. Take care to mark the column before cutting so that it can be re-aligned before welding, otherwise the self-cancelling indicator mechanism will be affected.

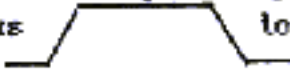
Body fitting

Having built your rolling chassis the time has come to fit the main bodyshell of your car. This can be the most traumatic for the kit car builder as it means moving around the expensive piece and care should be taken not to damage it. It may be wise to make up two long strips of hardboard, (about 14 feet long) mark and cut it to the axles and then mark where the wheels will be positioned. These hardboard strips can then be used as a template for the body. The best position for the body will vary slightly, depending on which engine option you have chosen (four or six cylinder). You will want to reach most of the engine and the radiator through the bonnet opening and this should be borne in mind when positioning the body and prior to removing any of the G.R.P. for the wheel cutouts. It should also be noted that the body is quite wide at the seat back point and if placed too far rearwards the back wheels could touch the body. Additional brackets may be required to give sufficient rigidity to the front of the car body.

Petrol tank

It may be bolted down lightly at this stage using four bolts (see sketch 6) to check for space to fit the petrol tank. Many types of tank may be fitted but by experience we have found the the most acceptable are those from the Herald, Viva or Datsun 160. Do make the petrol tank very secure because when full it could weigh as much as 100lbs. and it would be very unpleasant to have that swinging around behind you!

Handbrake

The handbrake mounting plates are supplied in two parts and bolts down to form a sandwich of the G.R.P. as far backwards as possible. It is very simple to fit following sketch 4. Slotting the holes in the G.R.P. would enable the whole handbrake mechanism to be moved forward if necessary, thus providing a further method of compensating for cable length. Some of the more macho builders may feel the need to fit a strengthening bracket between the bottom plate and the floor, shaped thus  to resist any upward movement.

Brake and clutch pedals

When fitting the brake and clutch pedal assemblies refer to sketch 2 and 3 which makes the method of fitting self-evident. Some builders have found that when the pedals and their associated brackets are mounted, they may be closer to the floor than would be comfortable. If this is the case in your car it can be easily remedied by altering the shape of the pedals themselves. By cutting V shaped slots into the arms they can be bent and then welded to lift them higher. See sketch 4B. The best (and easiest) type of accelerator pedal is the floor mounted flap type.

Dashboard Cowl

When fitting the dashboard cowl, starting from the centre, drill and bolt sequentially round to the sides (bolting left and right alternately) about every five inches for a careful pull down to shape. Use mastic sealer between cowl and body.

Modifying the steering column

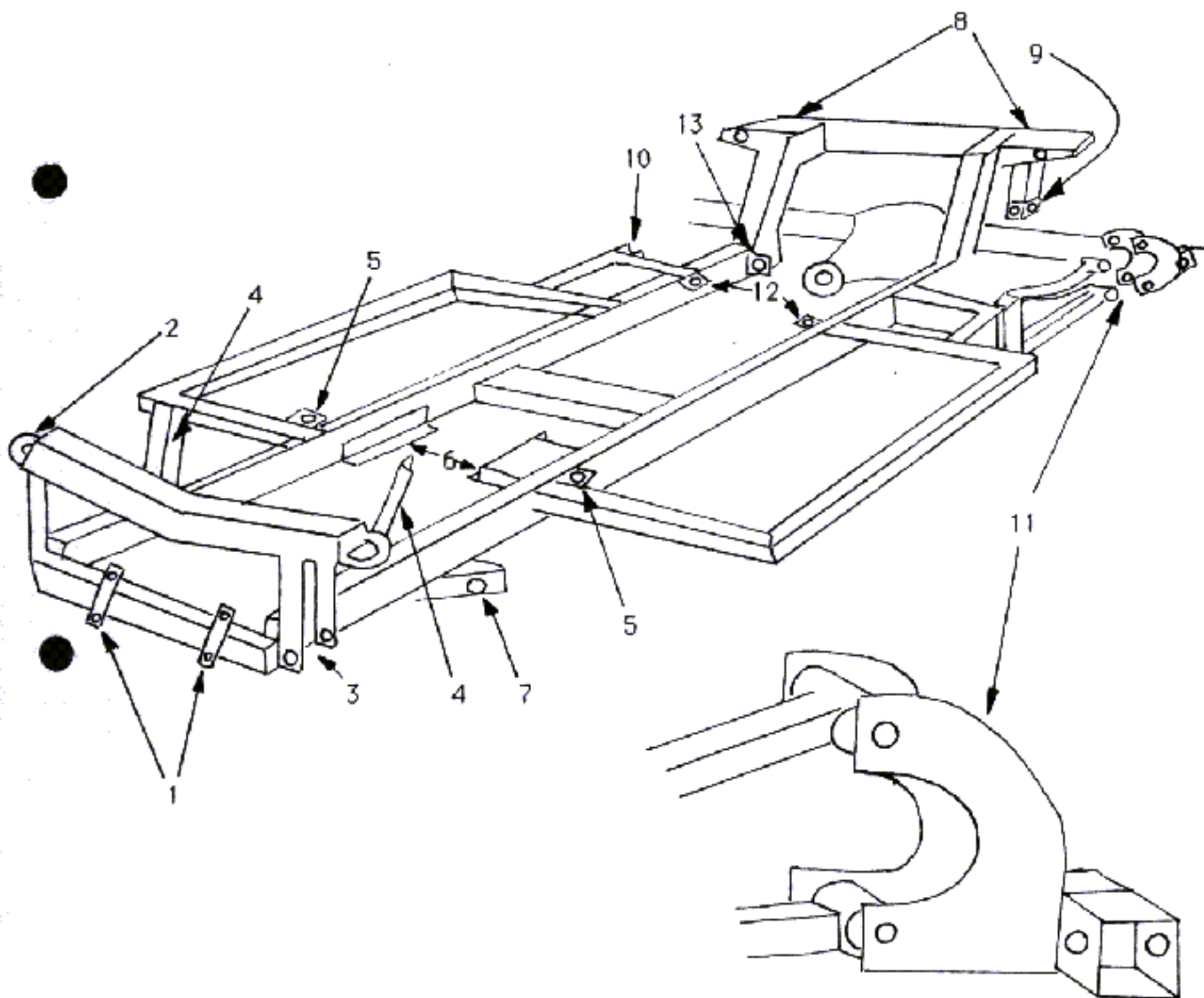
The steering column will need lengthening by between 10" and 15" depending on the positioning of the body and the needs of the builder. This is best done by cutting the solid bar that makes up the lower column and extending it by sleeving same with a piece of close fitting steel tube or a solid bar drilled to suit. This should overlap by two or three inches and be professionally welded in position. Take care to mark the column before cutting so that it can be re-aligned before welding, otherwise the self-cancelling mechanism will be affected. Bracket outer column tube to dashboard and pedal assembly for rigidity.

Mudguards

When fitting the mudguards they must be securely fitted using brackets because of the substantial weight and quality of the moulding and the inherent lack of aerodynamics.

1

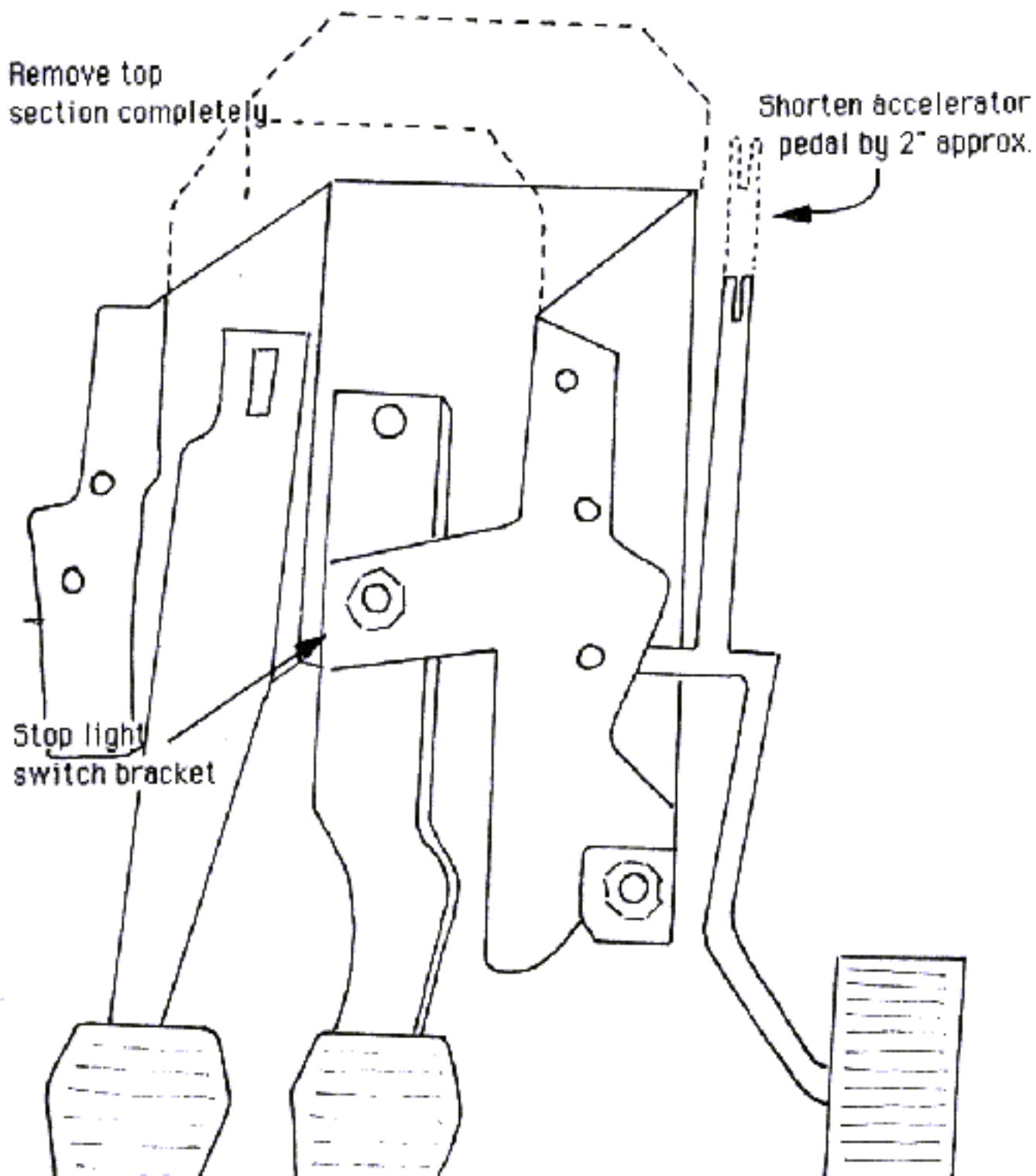
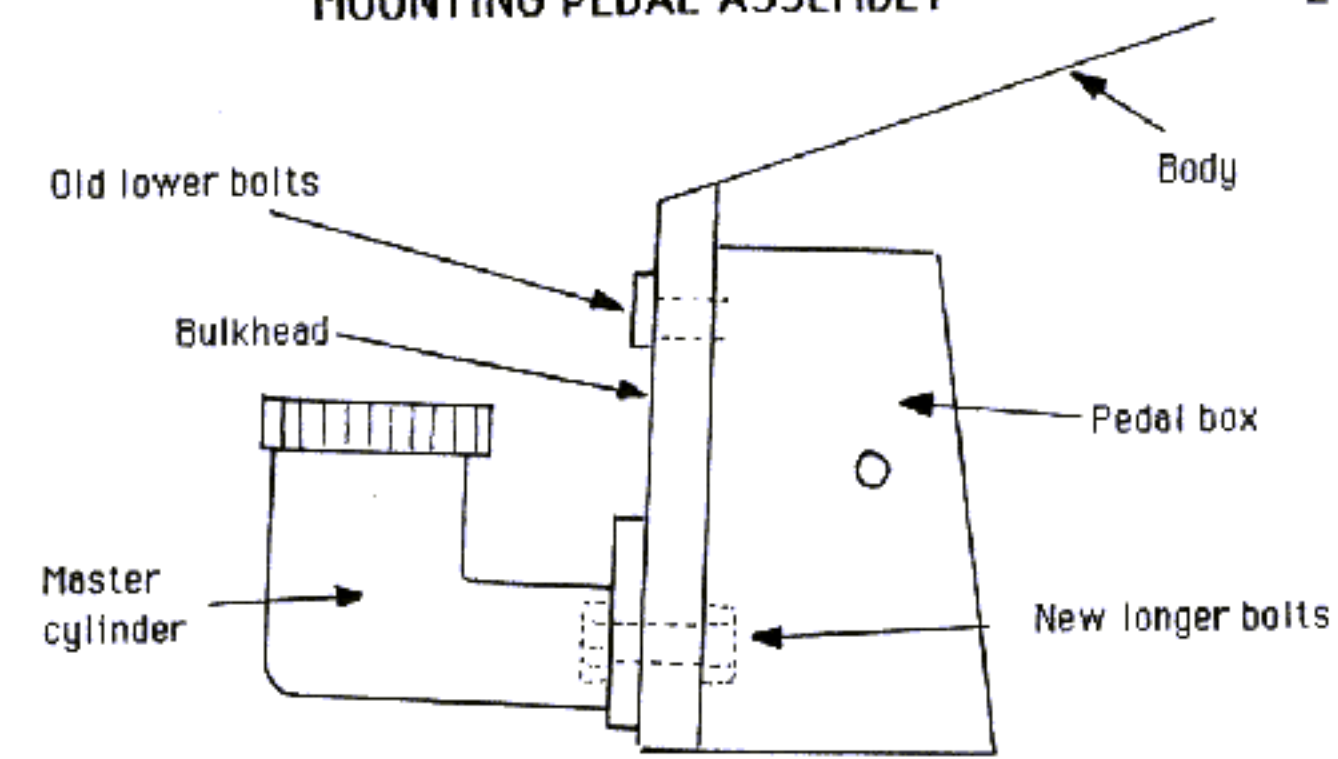
CHASSIS FOR FORD BASED MOSS MALVERN/ROADSTER/MONACO



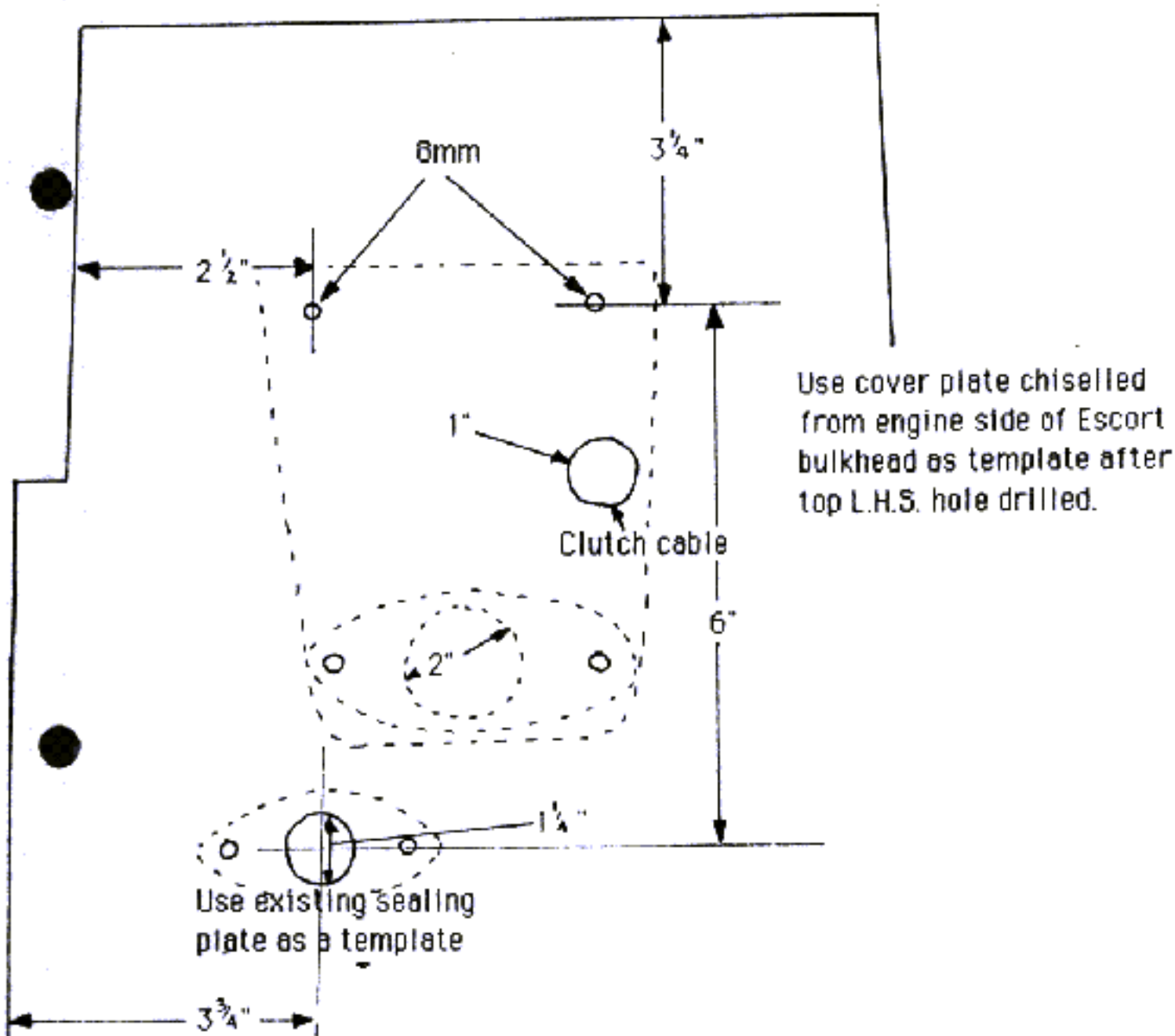
CHASSIS ILLUSTRATED IS FOR MOSS MALVERN/ROADSTER
CHASSIS FOR MONACO DIFFERS IN DETAIL ONLY (Narrow side rails)

MOUNTING PEDAL ASSEMBLY

2



Due to increased thickness of bulkhead, brake rod will be $3/4$ " shorter which will bring it into best position. Accelerator pedal may be brought into line with rod welded onto pedal arm to line up with adjustable stop. A bracket tacked onto brake pedal arm will operate stop light switch. Clutch pedal positioned by cable adjuster.

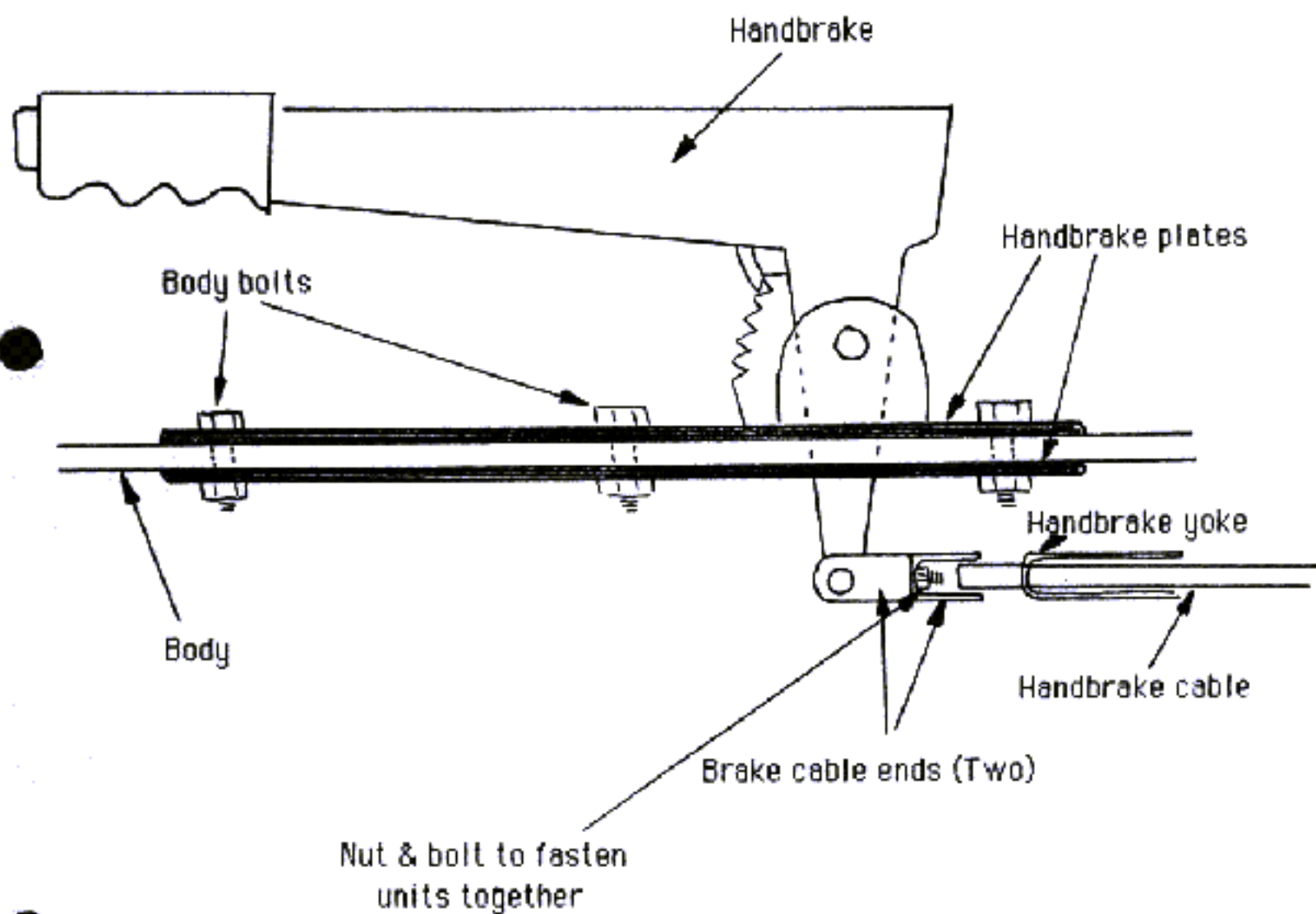


Tap out bottom bolts (spline fit) and press into top holes (after removing and discarding top hole bolts). Longer bolts will be required for bottom holes.

N.B. POSITIONS ARE QUITE CRITICAL

Steering column should pass between accelerator and brake pedal as high up as possible.

MONACO HANDBRAKE



4 B

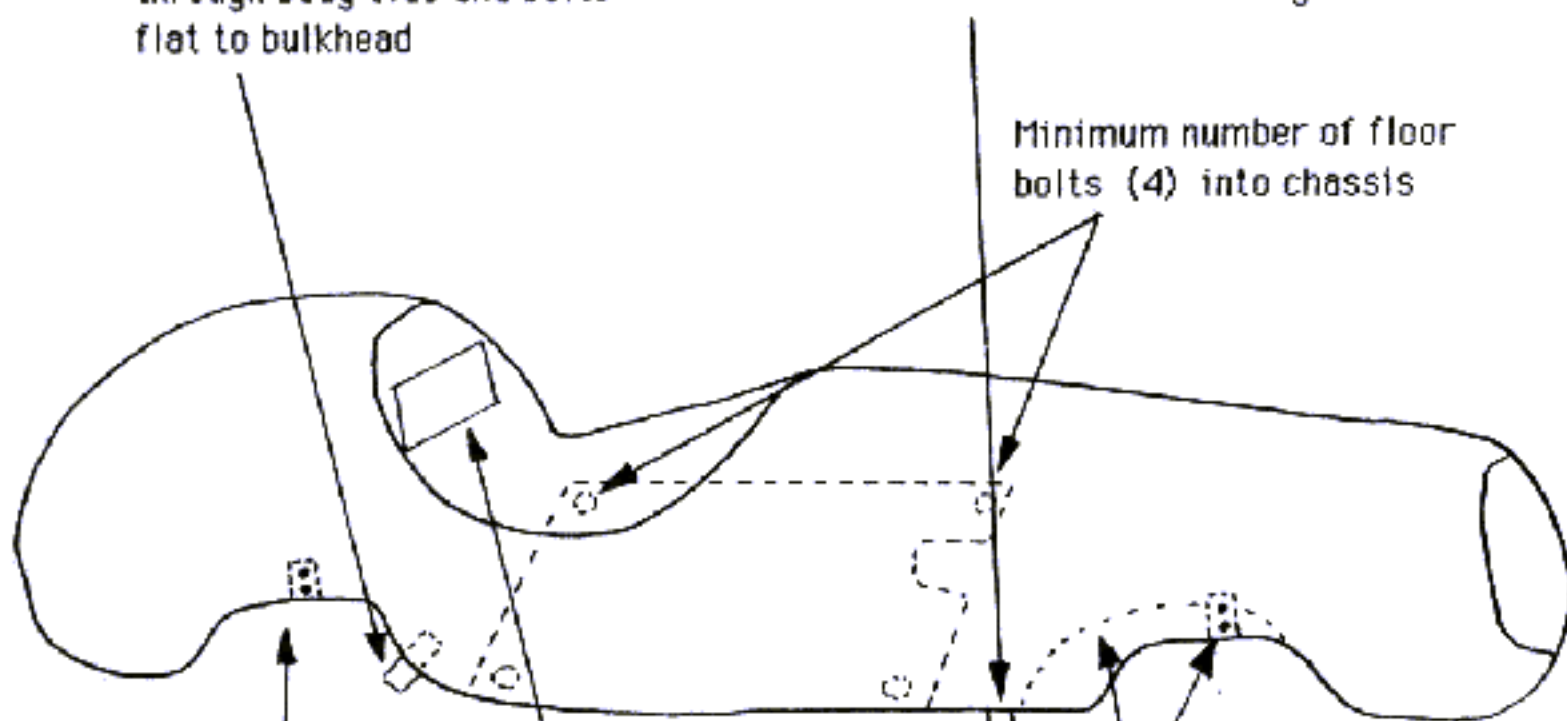


MOUNTING BODY TO CHASSIS

Rear lower wing stay passes through body side and bolts flat to bulkhead

Front lower wing stay bolts to front chassis leg here

Minimum number of floor bolts (4) into chassis



Cut away for suspension as required

If no lock stops fitted further shaping of body required

Cut hole in bulkhead to mount spare wheel. Also allows access to rear spring, handbrake, luggage etc.

Make four brackets to secure body above suspension all round