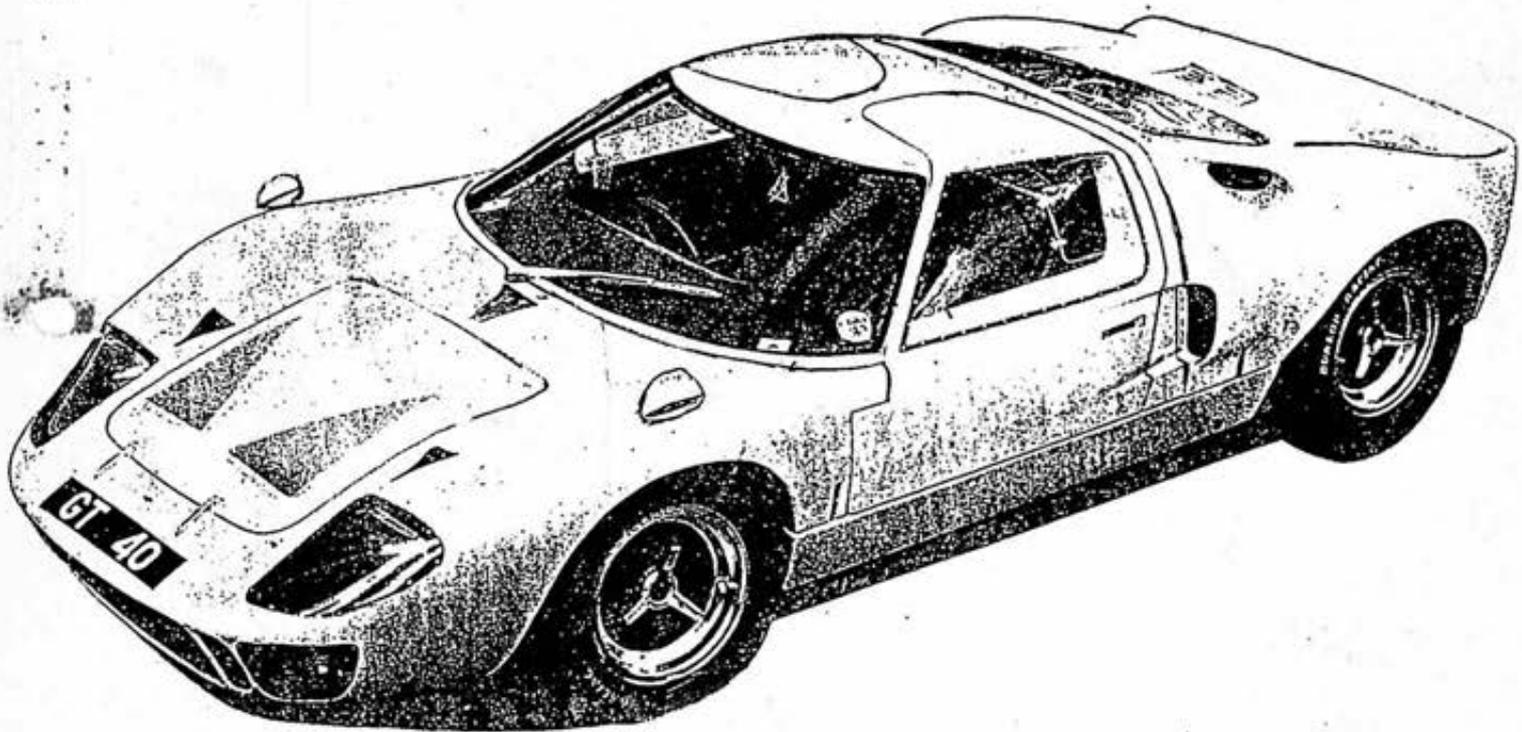


# HCC

# **FORD** **GT40** *Replica*

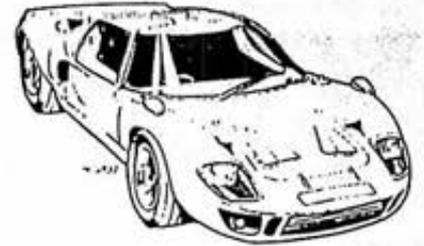


GUIDELINES FOR THE ASSEMBLY OF

THE GT40 REPLICA KIT

**Hot car centre (pty) Ltd**

Hypermo Centre, Rietfontein Rd. Boksburg P.O. Box 2046, Kempton Park 1620 Tel: 826-4216/3825



## INTRODUCTION

Congratulations! You've made an excellent choice in buying the GT 40 Replica Kit. It is a soundly engineered Kit that will bring you hours of enjoyment, starting with the building of it.

The GT 40 Replica is not a project for the faint hearted. However, it is a project that can successfully be completed by anyone with common sense, perseverance, and above all enthusiasm.

Please read the entire Assembly Manual before you start building. Work systematically. Always have a clipboard, pen and paper available. When you think of a part you need to get write it down, and make a point of getting your shopping done regularly. If you are held up with one job, don't down the tools in despair, proceed onto another job! You can only do this though, if you have the necessary parts on hand. The shopping list is very important.

The GT 40 Replica is designed around certain production car parts. If you wish to deviate from the suggested path, you may encounter obstacles which we may not be able to advise you on. We are not saying that the suggested method is the only way or necessarily the best way. However, we strive for cost effective, practical, simplicity, and it is along this approach that we devised our plans. If you find a better way to do a certain job, we'd appreciate you telling us about it.

Please take the necessary time and care to build your car correctly. This will reflect in the final product, and will make the difference between owning an enjoyable car, or it being a "dog".

Last but not least, prepare yourself mentally for the project. (1) See obstacles as a challenge and not as a problem. (2) Seek expert advice when you get stuck. You will be surprised how many people are willing to help with something that is unusual.

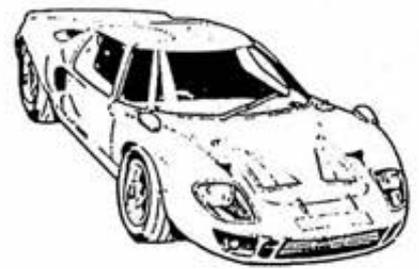
(3) Make sure you have the name and address of a good marriage counsellor!

Finally, PLEASE don't rush the job. If I can be of any help, just give me a phone call or drop me a line. I will help in any way I can.

Best of luck with your project!

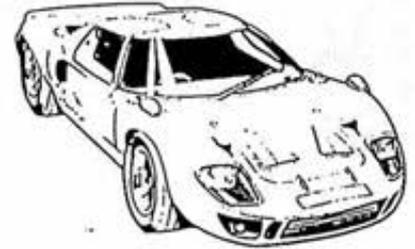
Yours

RUDY MALAN.



## I N D E X

- INTRODUCTION.
1. GENERAL INFORMATION.
  2. PARTS REQUIRED LIST.
  3. MOUNTING THE FRONT SUSPENSION AND BRAKES.
  4. MOUNTING THE REAR SUSPENSION AND BRAKES.
  5. MOUNTING THE ENGINE AND GEARBOX.
  6. DRIVESHAFTS.
  7. PEDAL ASSEMBLY, BRAKE SYSTEM AND HYDRAULIC CLUTCH.
  8. STEERING COLUMN.
  9. GEARSHIFT.
  10. COOLING SYSTEM.
  11. FUEL TANKS.
  12. INTERIOR PANELS - TEMPLATES.
  13. DASHBOARD AND INSTRUMENTATION -
  14. LIGHTING.
  15. ELECTRICAL.
  16. DOOR HANDLES AND LOCKS - DOOR RUBBERS.
  17. WINDSCREEN AND SIDE WINDOWS.
  18. TEST DRIVE.
  19. PREPARING AND PAINTING THE BODY.



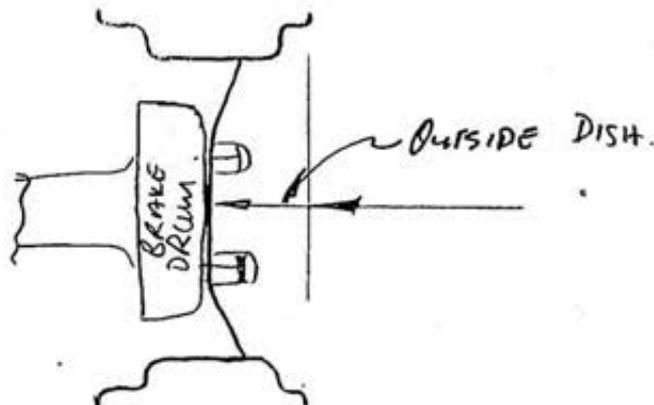
### GENERAL INFORMATION.

ENGINES: The Kit is developed around the use of the Ford small block V8, notably the 289 cu inch (4,7 lit) or the 302 cu inch (5 lit) Windsor engine. Many other engines may work well e.g. Ford V6, Alfa V6, Audi 5E, Rover V8 etc.

GEARBOX: Designed with the Audi 5 speed gearbox in mind. According to informed sources, this gearbox will handle 300 BHP, and the ratios are good! An alternative gearbox is that of the Citroen ID 19, 20, 20/5 and Pallas. These gearboxes are also very strong, and offer inboard disc brake facility. Several other gearboxes could be used, e.g. Porsche 911 turned upside down (to correct the problem of having 5 reverse gears!). VW 412 turned upside down, Porsche 914, Renault 25/30 (like hen's teeth in South Africa), and of course the ultimate would be ZF, or Hewland.

RIMS: Front 7" x 15" with an outside dish (off-set) of no more than 100mm

Rear 8" x 15" with an outside dish of no more than 130mm



Worth knowing here is that Granada, Mercedes Benz and VW Kombi have the same Pitch Circle Diameter (P.C.D.) for the wheel bolt pattern (112 mm).

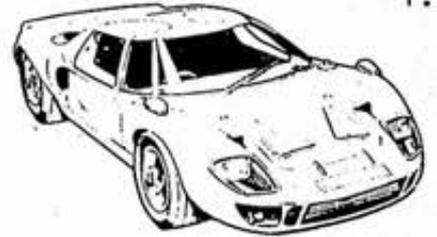
TYRES: Rear: Goodyear NCT Eagle 255/60/15 or similar.  
Alternative 245/60/15.

Front: Goodyear NCT Eagle 205/60/15 or similar.  
Alternative 215/60/15. (May need clearancing of the wheel arches).

Any other make of tyre can obviously be used. We suggest the Goodyear NCT's because they are not nearly as expensive as for instance Yokohama or Michelin, and produce good balance between roadholding and mililage.

GENERAL NOTES:

- a) By religion, I am a devoted coward, I always use high tensile, or cap head bolts everywhere. In addition I use spring washers, self locking nuts, and loctite on Suspension parts. DO NOT overtighten any bolt as it could snap without warning if suddenly stressed.
- b) When using pop rivits, use 4mm long type. Do not use steel especially on fibreglass, as the rivit will pull through before breaking off. Use aluminium rivits and the correct size drill.
- c) Self tapping screws are fine for certain applications where no stress is involved. Use stainless steel, not chromed steel. Although they are much more expensive, they don't rust of course. This makes them easily removed in a few years time. Push a spot of grease through the hole and screw. It will lessen the change of shearing off the screw when fitting.
- d) The rear side vents were normally left open, but look better with expanded metal grills fitted. The grills can be held in place using a small quantity of glass fibre matting and resin around the edge of the expanded metal. It should be done in such a way that the matting is not visible from outside the car.
- e) The exhaust should exit through the rear vents, and should be at least 2" in diameter. Some were up to 3" in diameter as they appeared through the rear cover. This, not only looks more original, but gave a lovely 'Vee' sound.



## Road test information by courtesy car & driver June 1968

**FORD GT 40 MK. III**

Importer: Shelby American Inc.  
6501 West Imperial Highway  
Los Angeles, Calif.

Number of dealers in U.S.: 90

Vehicle type: Mid-engine, rear-wheel-drive, 2-passenger GT car, fiberglass body on a stressed steel hull and roof

Price as tested: \$18,500.00  
(Manufacturer's suggested retail price, plus Federal excise tax, dealer preparation and delivery charges; does not include state and local taxes, license or freight charges)

Options on test car: None

**ENGINE**  
Type: Water-cooled V-8, cast iron block and heads, 5 main bearings  
Bore x stroke 4.00 x 2.87 in., 101.7 x 72.9 mm  
Displacement 289 cu in., 4737 cc  
Compression ratio 10.5 to one  
Carburetion 1 x 4-bbl Holley  
Valve gear Pushrod-operated overhead valves, mechanical lifters  
Power (SAE) 306 bhp @ 6000 rpm  
Torque (SAE) 329 lbs/ft @ 4200 rpm  
Specific power output 1.06 bhp/cu in., 64.6 bhp/liter  
Max. recommended engine speed 6200 rpm

**DRIVE TRAIN**  
Transmission 5-speed, all-synchro  
Clutch diameter 8.5 in. (two-plate)  
Final drive ratio 2.22 to one

Gear	Ratio	Mph/1000 rpm	Max. test speed
I	2.42	7.7	48 mph (6200 rpm)
II	1.47	12.9	80 mph (6200 rpm)
III	1.09	17.6	109 mph (6200 rpm)
IV	0.96	20.0	124 mph (6200 rpm)
V/O	0.85	22.7	136 mph (6000 rpm)

**DIMENSIONS AND CAPACITIES**  
Wheelbase 95.3 in  
Track F: 55.2 in, R: 55.2 in  
Length 169.0 in  
Width 70.0 in  
Height 41.0 in  
Ground clearance 5.25 in  
Curb weight 2340 lbs  
Test weight 2706 lbs  
Weight distribution, F/R 45/55%  
Lbs/bhp (test weight) 8.85  
Battery capacity 12 volts 60 amp/hr  
Alternator capacity 50c watts  
Fuel capacity 27.6 gal  
Oil capacity 9.5 qts

**SUSPENSION**  
F: Ind., unequal length wishbones, coil springs, anti-sway bar  
R: Ind., triangulated lower control arm, single strut upper control arm, two trailing arms, coil springs, anti-sway bar

**STEERING**  
Type Rack and pinion  
Turns lock-to-lock 2.5  
Turning circle 32.0 ft

**BRAKES**  
F: Girling 11.5-in solid discs  
R: Girling 11.2-in solid discs  
Swept area 240 sq in

**WHEELS AND TIRES**  
Wheel size and type  
F: 6 1/2 x 15-in, alloy-rim Borrani knock-off wire wheels  
R: 8L x 15-in, alloy-rim Borrani knock-off wire wheels  
Tire make, size and type  
F: Goodyear 5.00/8.90-15 racing (wet weather)  
R: Goodyear 7.00-15 racing (wet weather)  
Test inflation pressures F: 28 psi, R: 32 psi  
Tire load rating F: 1100 lbs per tire @ 24 psi  
R: 1600 lbs per tire @ 24 psi

**PERFORMANCE**

Zero to	Seconds
30 mph	1.6
40 mph	2.5
50 mph	3.8
60 mph	5.1
70 mph	6.6
80 mph	8.2
90 mph	10.2
100 mph	12.7
Standing 1/4-mile	13.8 sec @ 104.6 mph
80-0 mph	242 ft (.88 G)
Fuel mileage	7-10 mpg on premium fuel
Cruising range	193 276 mi

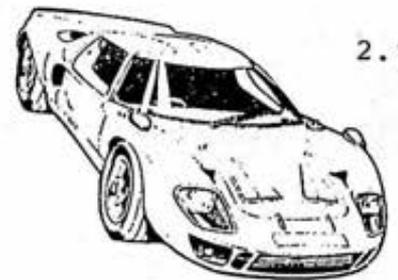
**FORD MARK II**  
Top speed estimated 140 mph  
Temperature 55°F  
Wind velocity 1-2 mph  
Altitude above sea level 83ft  
In 2 runs 0-60 mph times varied between 4.9 and 5.3 seconds



SCRAPYARDS

AUTO SPARES & TYRE REMOULDS.  
 BARNETT USED PARTS.  
 BARNETT USED PARTS.  
 BARNETT USED PARTS.  
 B.M.M. MOTORS.  
 BONERT'S METALS  
 CITY DEEP AUTO SPARES.  
 M. & M. MOTOR SCRAPYARD.  
 POMONA MOTOR SCRAPYARD.  
 RAND MOTOR SPARES.  
 SUPER USED SPARES.  
 WANNENBURG.  
 WILLIAMS AUTO SPARES.

BENONI 422 4510  
 SPRINGS 812 2568  
 JOHANNESBURG 493 5880  
 PRETORIA 012 832207  
 K.PARK 970 2098  
 JOHANNESBURG 618 4848  
 GERMISTON 613 3781  
 BENONI 973 2117/2031  
 K.PARK 979 1717  
 K.PARK 970 3364/1679  
 PRETORIA 012 776392  
 PRETORIA 012 3354415  
 PRIMROSE 58 2415/9304



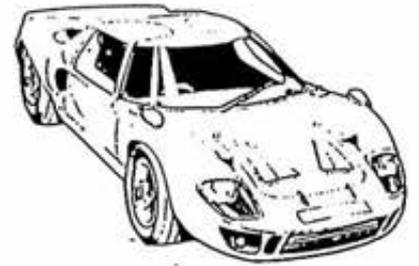
## PARTS REQUIRED LIST

- 1) Kit Parts - Select from KCC Parts List as you require.
- 2) Engine - Try to get the engine as complete as possible, e.g. Carburettor, Distributor, Alternator & Mounting brackets, Crankshaft & Waterpump Pulleys, Exhaust Manifolds, Plug wires, Thermostat housing etc. A bargain engine could become very expensive if you have to get all these parts separately. You will probably not need the flywheel, Clutch & pressure plate.
- 3) Gearbox - Audi 5 E, from 1978 to 1987.
- 4) Adaptor Plate - to marry the engine & gearbox. The system that we supply consists of a steel adaptor plate, fully machined & drilled, a specially fabricated flywheel, counter-balanced for the 302 Ford Engine, to use VW Kombi 228mm clutch and pressure plate. The ringear teeth are correct for the use of the Ford V6 starter motor.
- 5) Starter Motor - Ford Cortina/Granada.
- 6) Front Suspension - from Cortina MK 3, 4 or 5, or the L.D.V. is suitable. You need the entire front suspension with rack & pinion, steering, anti-roll, coil springs and shock absorbers. If the suspension is from a 1600 or 2000 Cortina, the coil springs are o.k. If the suspension is from the V6 L.D.V., the coil springs will be too hard, try to have them swopped. You will also not require the stub axle (or otherwise known as the upright) disc and brake caliper, as we suggest you use the ventilated disc, upright and caliper from the Ford Granada. These will bolt directly onto the Cortina upper and lower baal joints.
- 7) Steering Column - You need steering shaft, complete with the lower part that has the universal joint as well as the steering wheel nut (and steering wheel if you wish). You also need the small needle roller bearing (and it's rubber sheath) at the top end of the column, as well as the plastic bush at the bottom end. You do not need the steeing column tube or the stalk switches.

In addition you will need an extra universal to replace the rubber unit on the Cortina shaft. (Fiat 128 is recommended,)

- 8) Rear suspension - The swingarms are modified Ford Granada units. The coil springs are special units supplied by KCC, shockabsorbers are Gabriel Ajust-o-matics, normally used on the front of the Cortina. The flattened tube parts have to be cut off at the top of the shockabsorbers in order to fit them, by way of a bolt through the tube.
- 9) Drive Shafts - The driveshafts from the Granada are required. These are too long. They need to be shortened at the correct length, and rejoined, see section 6.
- 10) Rubber Engine & Gearbox Mountings - Four engine mountings & cup washers from the V6 Cortina are required. The engine & gearbox mounting steel brackets can be supplied by KCC. See sect 5.
- 11) Radiator - The radiator and electric fan from the Audi 5E is ideal. It needs a small modification - see section 10.
- 12) Pedal Assembly - Purpose made by KCC. Golf brake master cylinder, Datsun or Girling clutch master cylinder, and steel & rubber brake pipes from Granada or Cortina will work fine.
- 13) Instrumentation - The speedometer, revcounter and small gauges from a Series 11 Jaguar XJ6 are ideal. These can usually be found at a bargain price from a Used Parts Yard, however, Smiths, or VDO or similar can be fitted.
- 14) Wiper Motor & mechanism - Mini, Apache, 1100Jag, XJ6 modified. We used the Granada motor with a modified arm. See sect. 15.
- 15) Brakes - Front brakes described under "Front Suspension". Rear brake drums, backing plates, bearing carriers and stub shafts from Ford Granada. Read under "Rear Suspension" for details to convert to rear disc brakes if you're interested. We do not consider this necessary. The hand brake lever mechanism from Cortina or Granada as well as the Granada cable is required.

- 16) Set of Front & Rear Lights - Front Rectangular units from the Cortina XLE, . Rear lights, Hella universal Truck Bus of from early Fiat 128.
- 17) Bonnet hinges - (From early Mini doors) VW Boot latch or Pin type.
- 18) Door Locks & Handles - Outside handle from Jaguar XJ6 or Mini. Door locks from Peugeot 305 or Renault 5.
- 19) Front & Rear Body hold down Latches - Original GT 40 used type similar to Triumph Spitfire/Herald.  
KCC sells a simple but effective latch.
- 20) Hooters.
- 21) Brake, clutch & petrol pipes.
- 22) Battery, Cables & Hold down clamps.
- 23) Seat Belts.
- 24) Side view Mirrors.
- 25) Air cleaner.



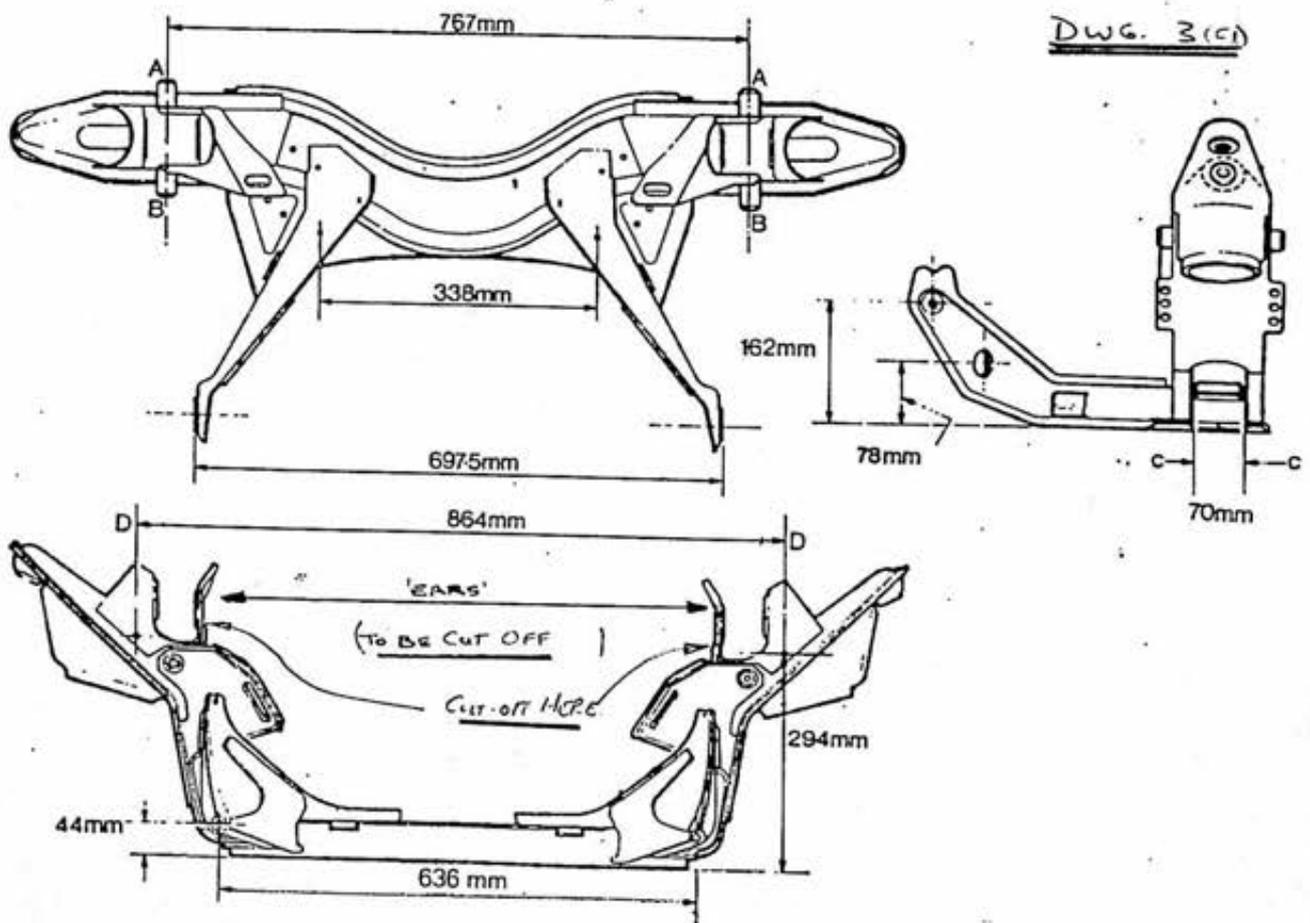
## THE FRONT SUSPENSION

1. Prior to mounting the front suspension to the chassis, check for damage and possible distortion through accident damage: You may remove the engine mounting brackets from the "K" frame if you wish.

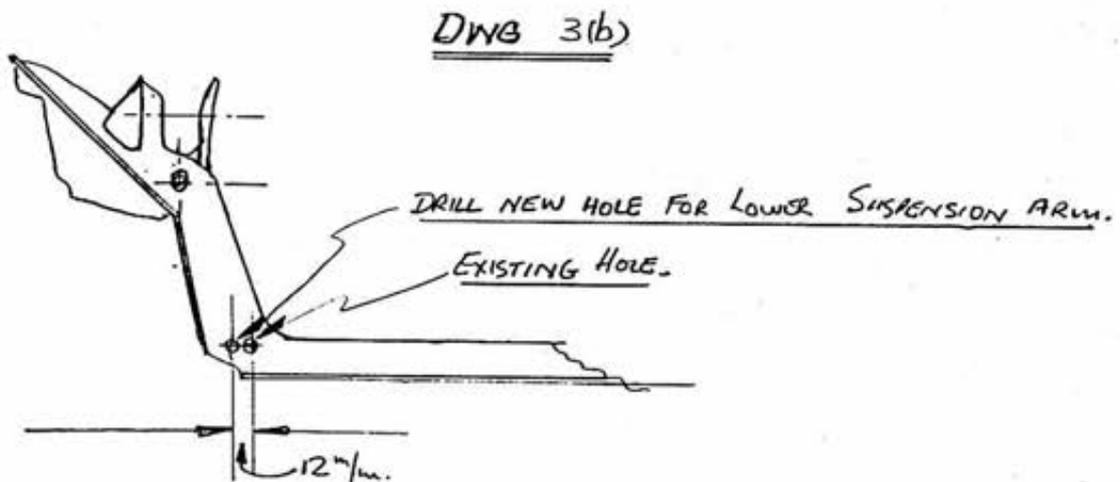
### FRAME DIMENSIONS

Should frame distortion be suspected remove the front suspension unit, dismantle the frame ancillaries and check the dimensions shown in the diagram. A careful check should be made for signs of distortion, cracking or weld failure. Note that the measurement at "BB" is identical to that at "AA". At "CC" the measurement must be taken across the inside face of the tunnel. Also the dimensions at "DD" must be checked at both the front and rear of the member, to ensure that no twisting has occurred.

All dimensions have a tolerance of  $\pm 1.0$  mm (0.04 in) unless otherwise stated.

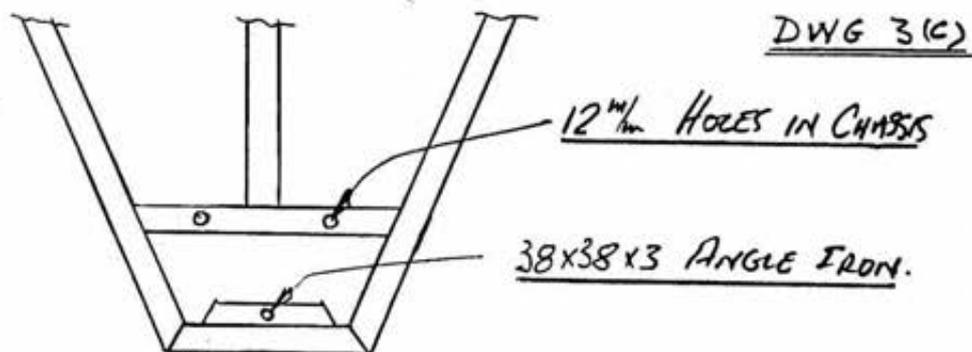


2. Check for Rack & Pinion condition. This is important that there should not be excessive play when the rods are clamped, say with vise-grips, and then turned at the steering shaft, also with a vise-grip, to ascertain condition. Any free play in the rack can be removed by shim adjustment. If there is play in the ball and socket joints, this can be corrected by sliding back the rubber gaiters and drilling out the locking pins. The hexagon nut is screwed in until the track rod ends will just fall with a little assistance. Replace pin. Replace rubber gaiters if they show any sign of damage or leaks. If in any doubt, please refer to a Ford workshop manual, as your life could depend on incorrect procedure.
3. When fitting the Granada uprights you will need to drill two new 12 mm holes in the "K" frame to move the lower control arm pivot point outwards by 12mm per side. This is done to get the correct camber-angle with the Granada uprights. See scetch below. - Be sure to tighten up these bolts until the inner part of the metalistic bush is securely pinched between the walls of the "K" frame, the suspension movement is accomodated in the "winding up" of the rubber, not by pivoting on the bolt! Because of this principle, the holes may also be slotted to provide camber adjustment;

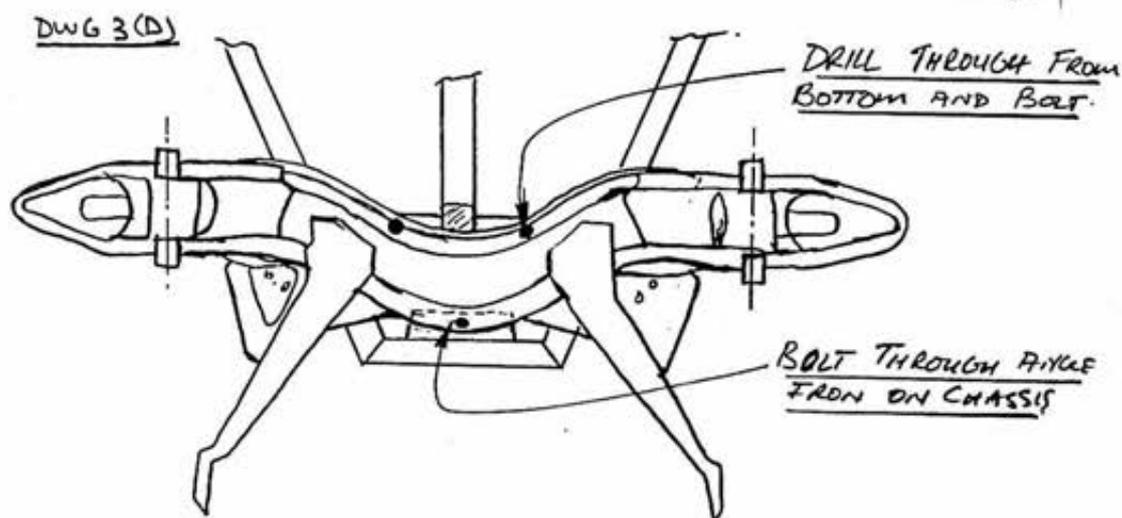


4. MOUNTING TO CHASSIS:

There are two holes pre-drilled (and sleeved) in the chassis to bolt through the spot welded flange of the "A" frame. A third bolt may be used to hold down the bottom of the "K" frame, drilled through the front flange, through a piece of angle iron welded to the chassis.



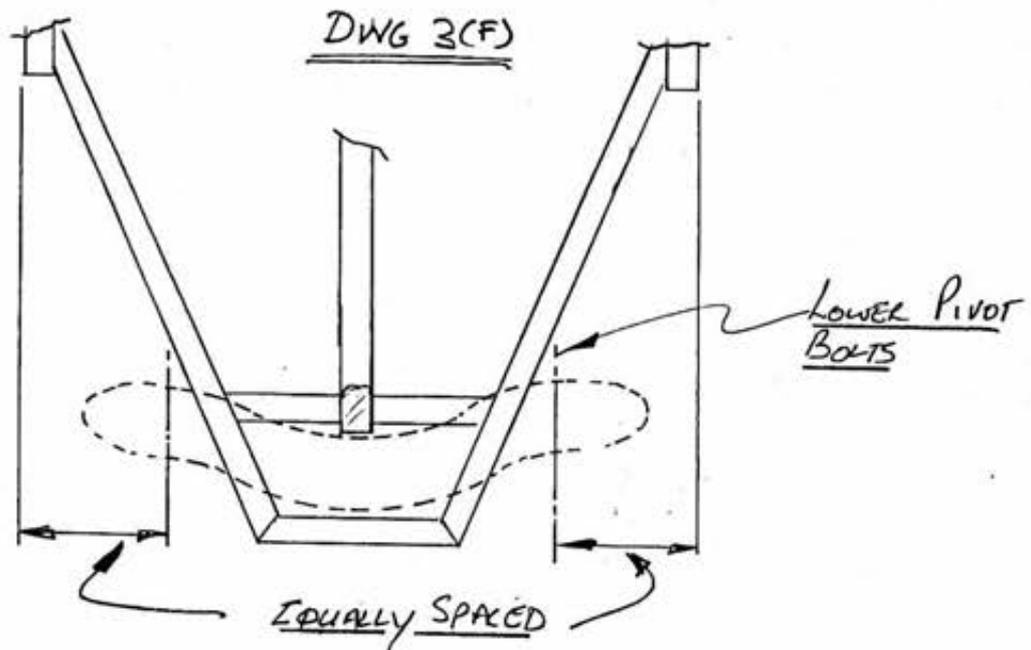
Use carriage bolts with the round bolt head at the bottom. File or grind the square part of the bolt shank away.



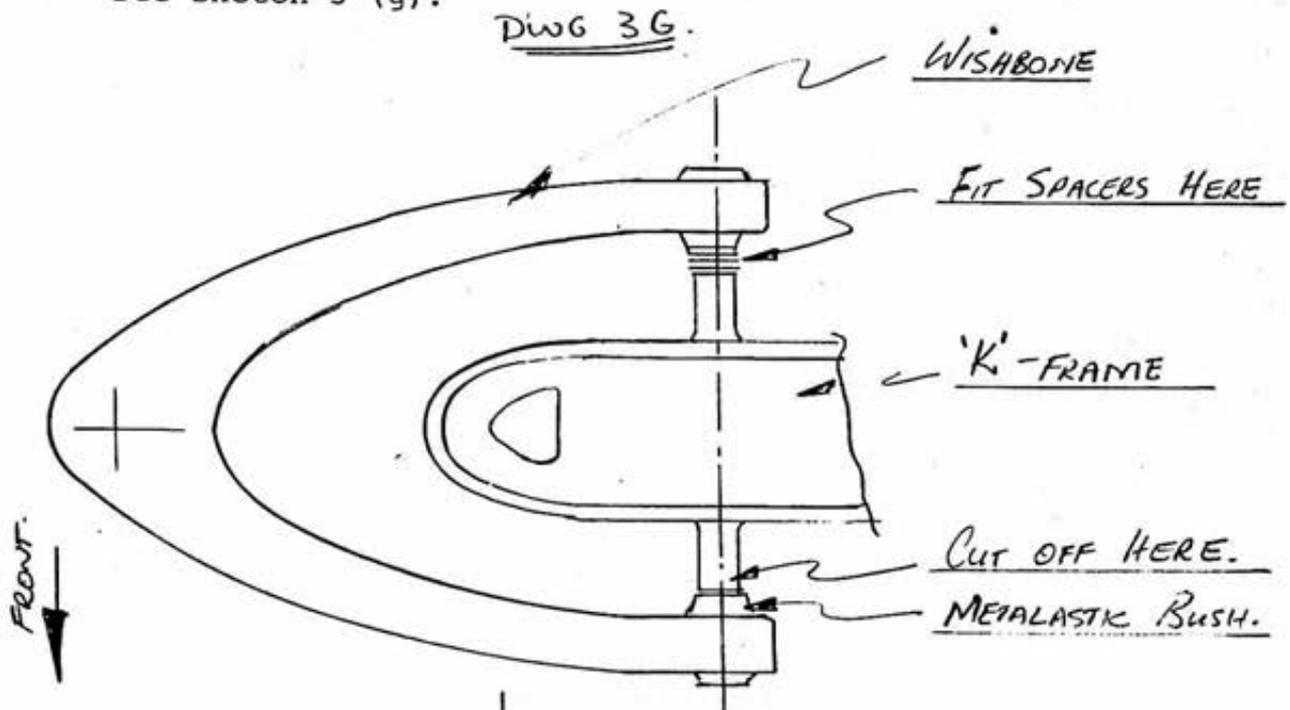
5. ALIGNING THE FRONT SUSPENSION: is done as follows;

- \* Place front suspension on chassis - drop two bolts through and bolt loosely as shown above.
- \* Remove the inner mounting "ear" from the "K" frame by hacksaw.
- \* The important thing is to get the suspension pivot

points symmetrically set up in chassis - see sketch 3 (f).



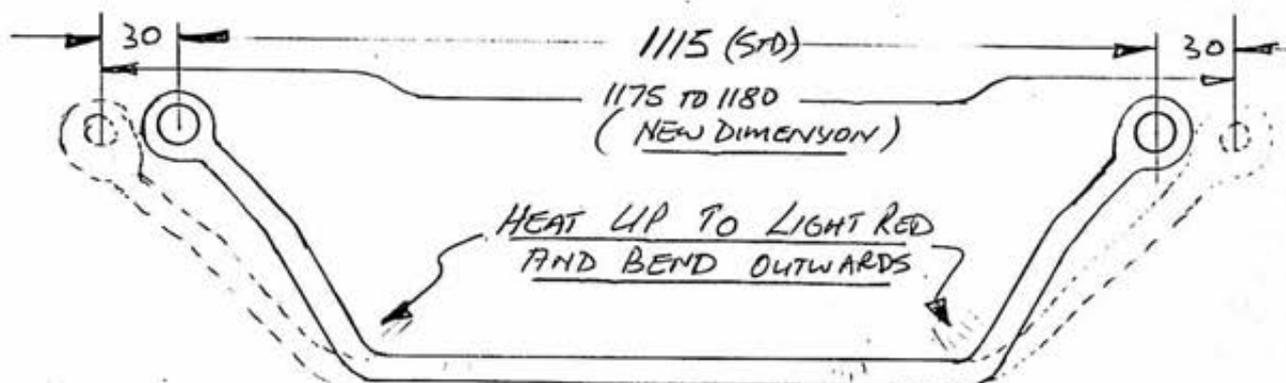
- \* the hole through the top chassis beam may not line up with that in the "K" frame outer mounting "ear". By drilling through the sleeved hole in the chassis, drill a new hole in the ear, below the existing hole.
  - \* More castor angle can be built in by moving the top wishbone backwards. This can be achieved by cutting off a piece of the tube through which the pivot bolt goes. Cut off the front and ass similar thickness spacers at the back.
- See sketch 3 (g).



- \* Again - tighten up to pinch metalistic bushes. - Important!
6. FITTING THE GRANADA STUB-AXLE & BRAKES: This is very straight forward: It fits directy to the upper & lower ball joints of the Cortina suspension.
  7. It is possible to fit the Granāda Vented disc to the Cortina Stub axle. However the Granada Caliper will not fit into the Cortina upright. You can use the Cortina Caliper by making a spacer to fit between the two caliper halves, so that the Cortina caliper will fit around the thicker vented disc. If you go this route, it will not be necessary to redrill the hole in the "K" frame for the lower suspension arm.
  8. We suggest you use new Gabriel (or similar) adjust-o-matic shocks, set to "soft".
  9. The coil springs need to be from a V6 Cortina car. They need to be cut shorter by exactly one coil, at the bottom. Coils from LDV models will be too hard.
  10. When the car is completed with fuel and passengers on board, the ground clearance measured between the underside of the chassis and the ground, should end up at 125mm. Of course, initially this will be much higher.
  11. The anti roll bar may be left in the standard position, and the mounting brackets that contain the rubber bushes can be welded to the forward part of the "K" frame. However, if you wish to carry a spare wheel in front, over the front suspension, it is advantageous to fit the anti-roll bar to pass through below the two forward "horns" of the "K" frame; Proceed as follows: Remove the anti-roll bar from the suspension, disgarding the two very long 10mm bolts and the tube spacers, but keeping the four dome washers per side. Also

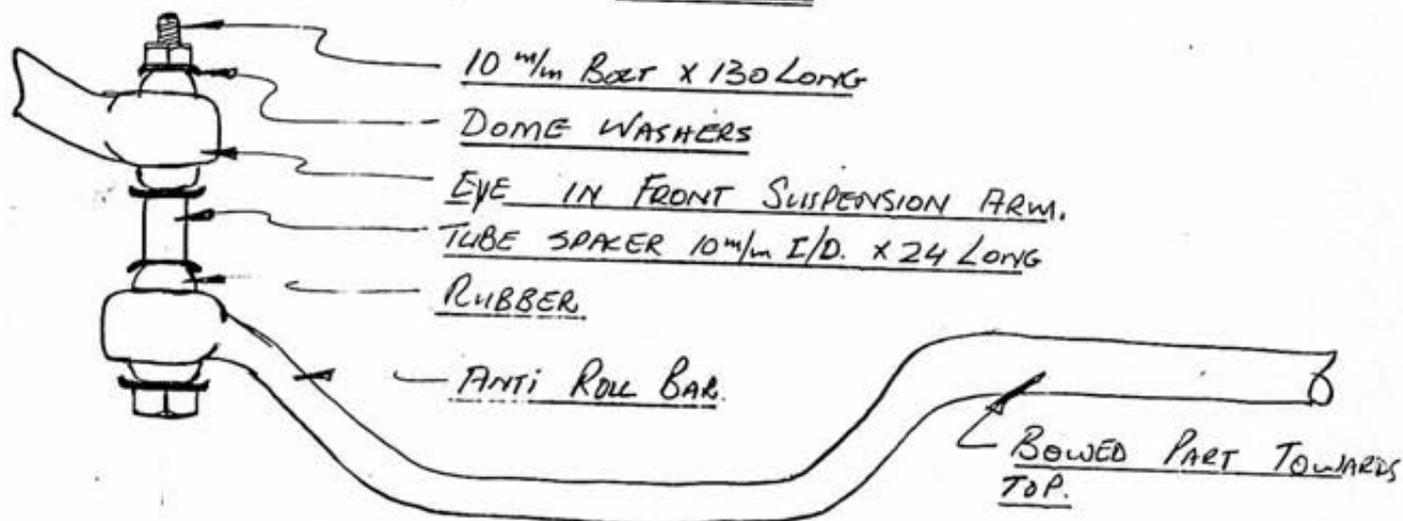
remove the clamps and mounting rubber and saddle clamps. Measuring across from eye to eye you will find approximately 1115mm. By heating up on the bends as shown in Dwg. 3 (h), you can now bend it outward at each end by approximately 30mm, so that the eye to eye dimension will be near enough 1180mm.

DWG 3 (H)



You will need an acetylene welding torch to heat this up. THIS IS IMPORTANT: Heat up one side at a time, bend out as required. Do not quench in water. Then do the other side. DO NOT heat repeatedly at the same place. This will, with no doubt, cause failure in the torsion bar! Now fit the anti-roll bar underneath the two "K" frame horns, and also below the mounting eyes on the lower suspension arms. See Dwg. 3 (i).

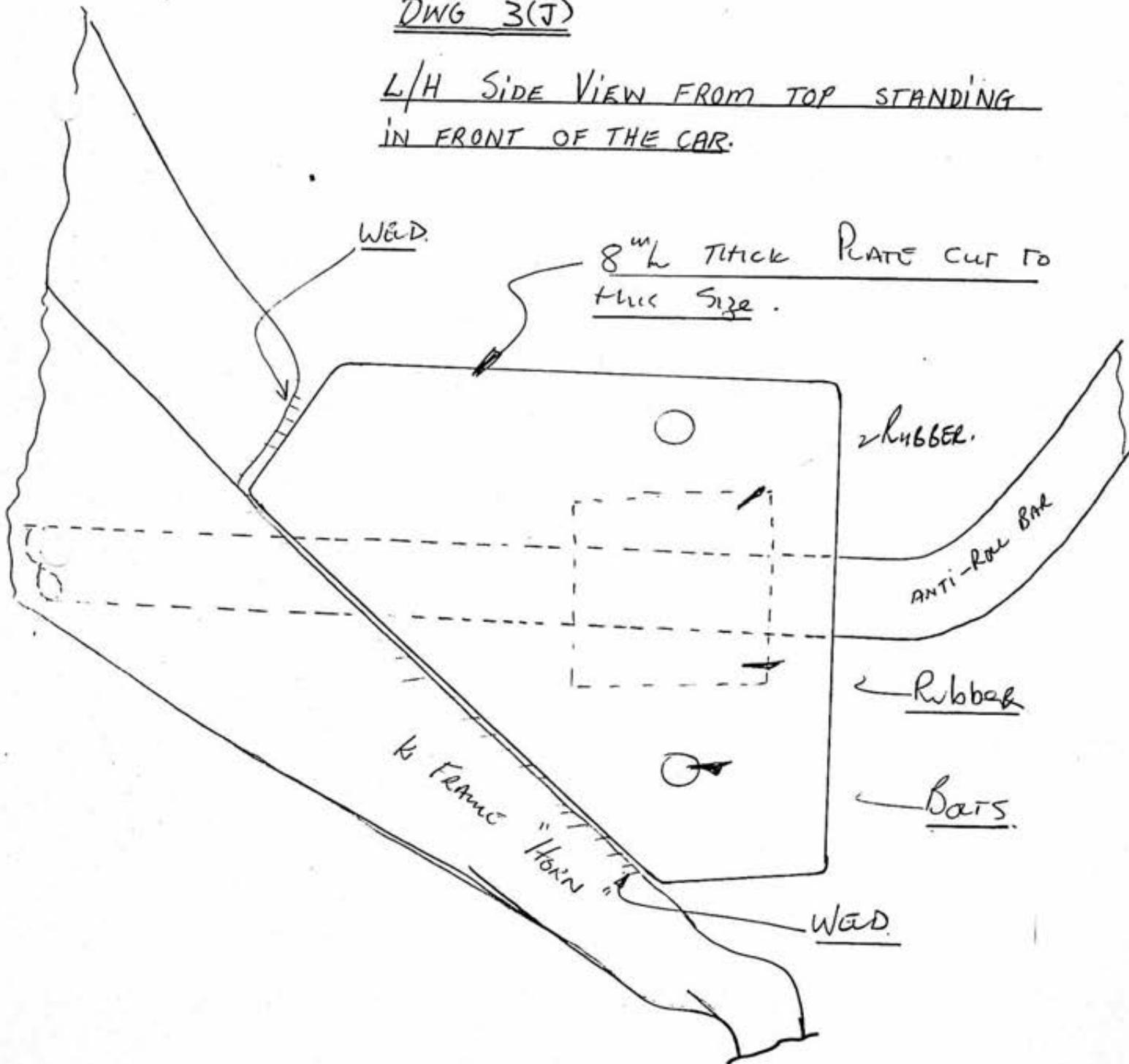
DWG 3 (I)



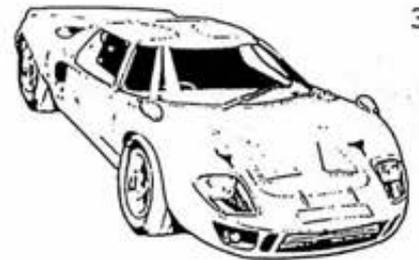
The anti-roll bar can now be mounted onto the "K" frame horns by welding an 8mm thick steel plate onto the "horns" as shown. Dwg.3 (j)

DWG 3(J)

L/H SIDE VIEW FROM TOP STANDING  
IN FRONT OF THE CAR.



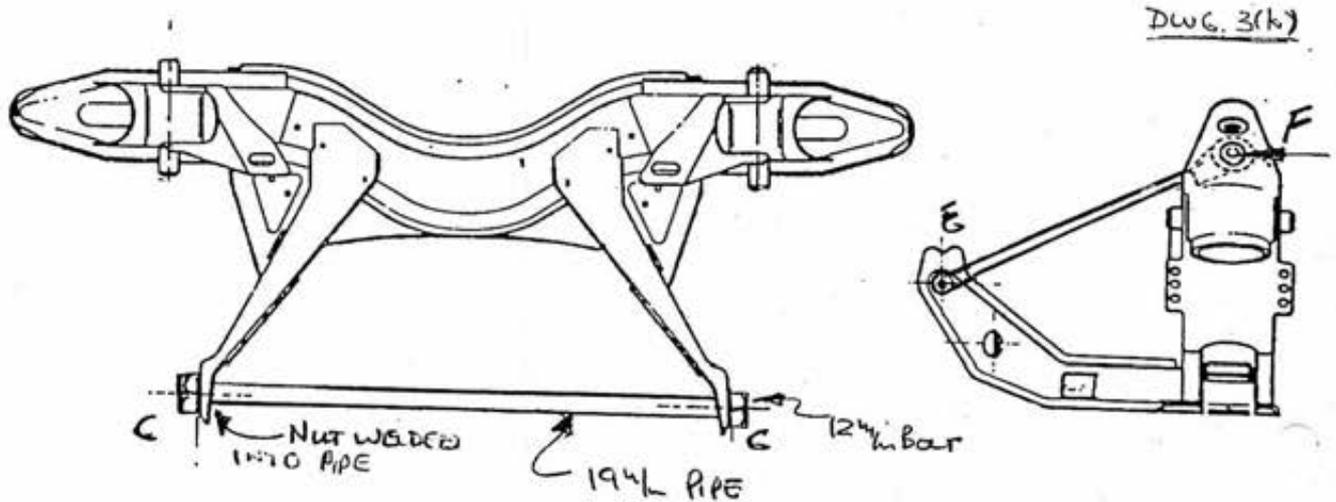
The above is a full size drawing of the suggested bracket. Dwg. 3 (j)



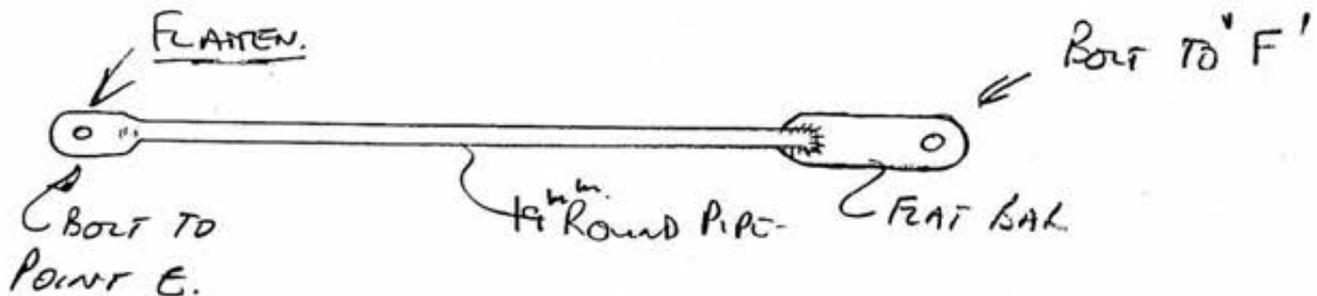
BRACING THE CORTINA K FRAME.

The Cortina 'K' Frame needs to be braced across points 'CC' to prevent them from flexing open on hard braking. (See Dwg.3k)

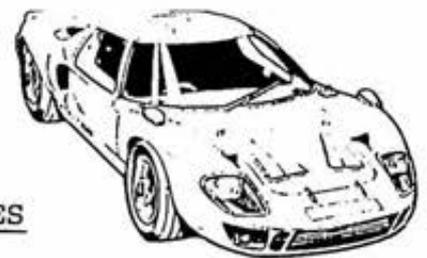
A simple effective way is to use round pipe of  $\pm 19\text{mm}$  O.D., weld a 12mm captive nut into the ends (without damaging the thread), and bolt it between the points CC.



You also need to brace it across points E - F to stop deflection there. Also use 19mm round tube, simply flatten it in a bench vice, and drill 12mm holes through for bolting at point E. At the other end, cut a slot into the pipe end and weld a piece of 25x5mm Flat Bar approx. 70mm long into the split. (See Dwg.3b)



DWG. 3(b)



## THE REAR SUSPENSION AND BRAKES

The rear suspension swingarms are modified Ford Granada Units. You will need to buy the bearing carrier complete with shaft, bearings and seals, brake drum & backing plate assembly. Make sure you also get the handbrake cable. Bolt these units to the swingarm in exactly the same way as on a Granada. Consult a workshop manual if necessary. The swingarms are mounted in such a way that both toe-in and camber can be adjusted.

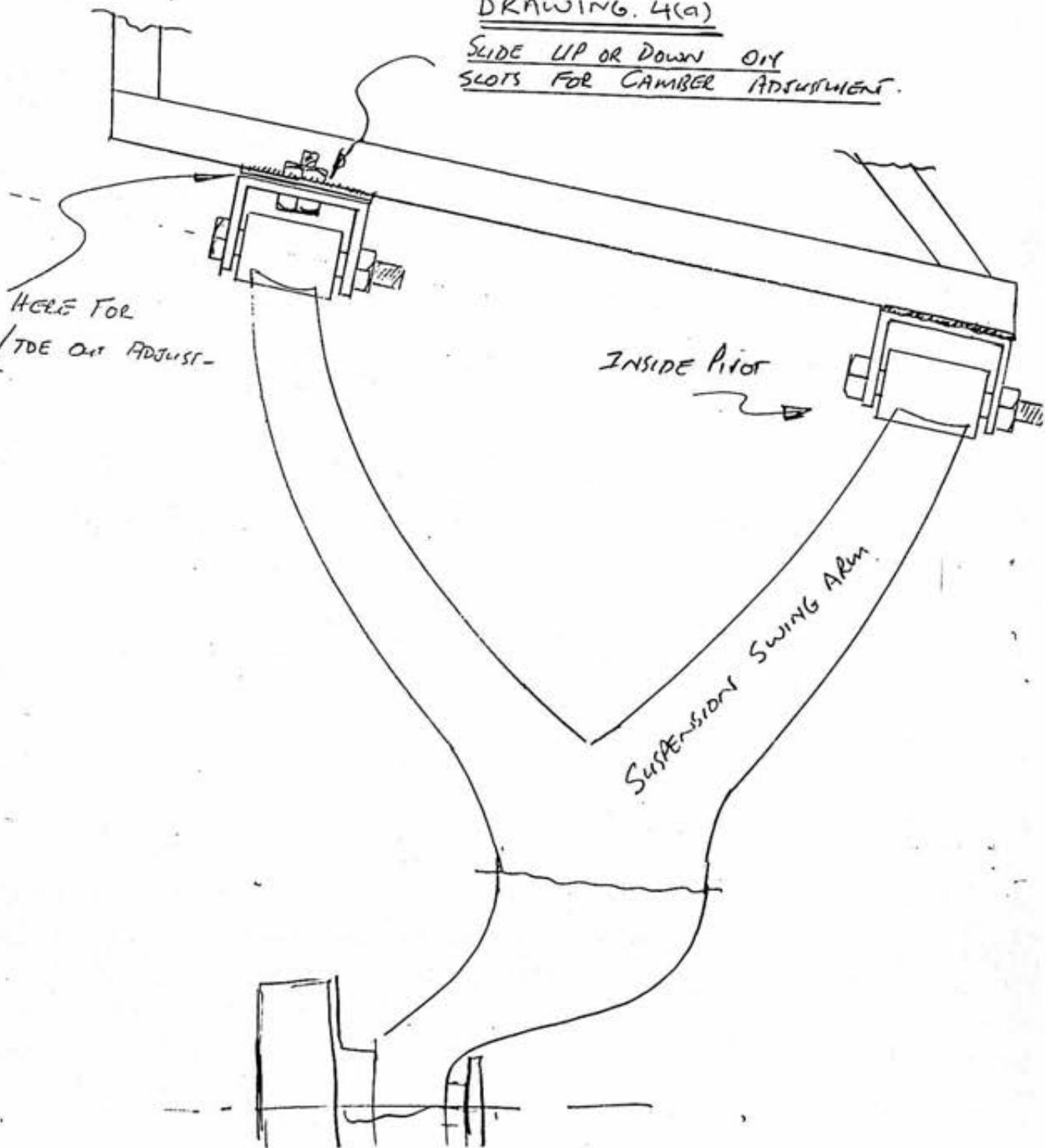
Dwg. 4 (a)

DRAWING. 4(a)  
SLIDE UP OR DOWN ON  
SLOTS FOR CAMBER ADJUSTMENT.

SHIM HERE FOR  
TOE-IN / TOE OUT ADJUST-  
MENT.

INSIDE PIVOT

Suspension Swing Arm



Want to fit disc brakes on the rear? Easy!

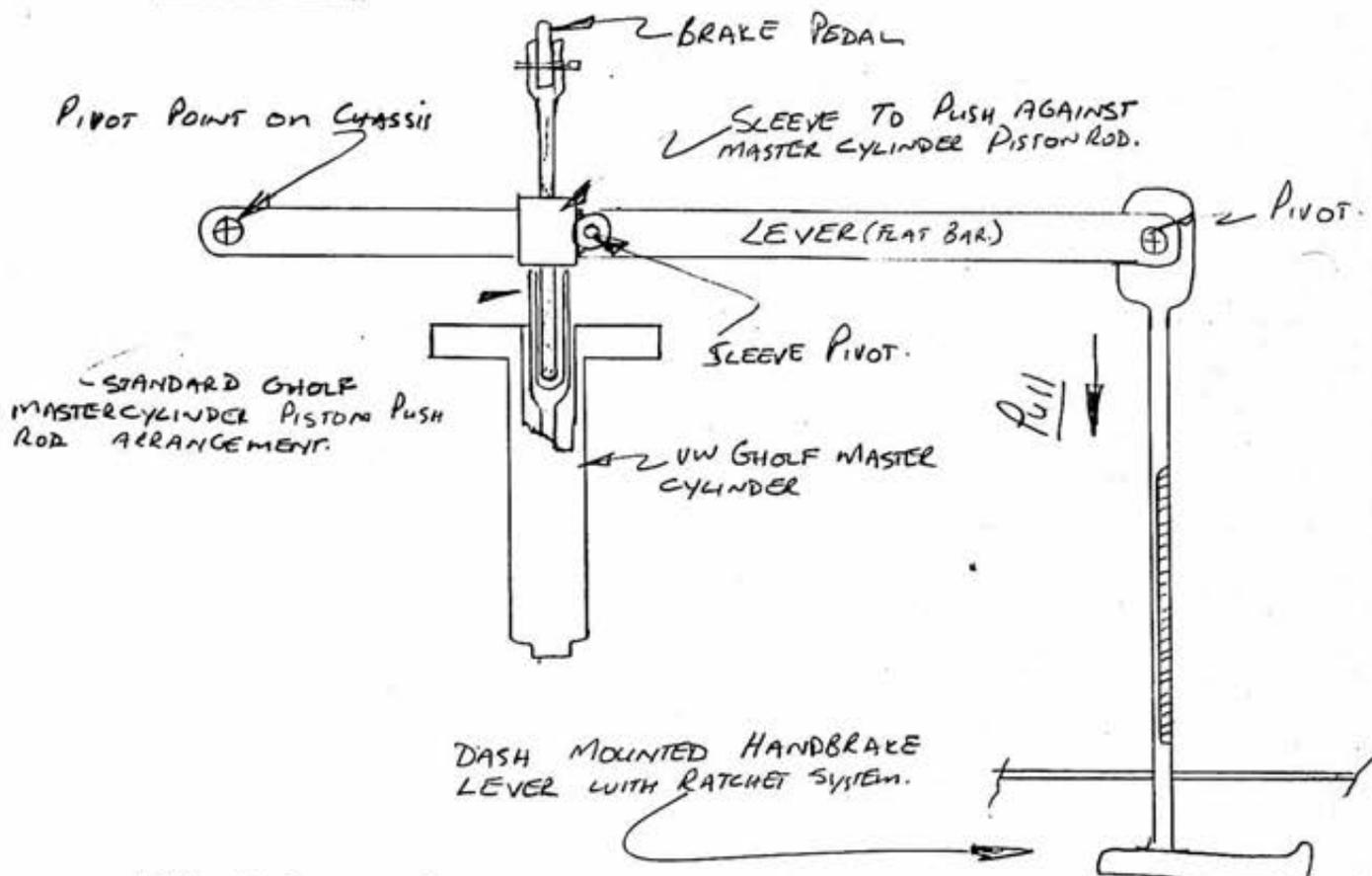
Remove the Ford brake drum and backing plate. Get the disc from the rear of Mercedes (series 114 - 1968 to 1977 or 'S' Class 220SE or 350SE). These will slip straight over the Granada stubs, discs mounted, done!

Now you have to get the callipers from the front of a BMW 5 Series, fabricate a small bracket to hold the calliper correctly, and weld to the swingarm.

Handbrake? - This one we've not actually built yet, but no doubt it can work.

You need to devise a dash mounted pull-out handbrake mechanism, a lever attached to it and to the chassis in such a way that when you pull the handbrake, the lever will push against the master cylinder piston rod, and apply pressure on the system. Dwg. 4 (b).

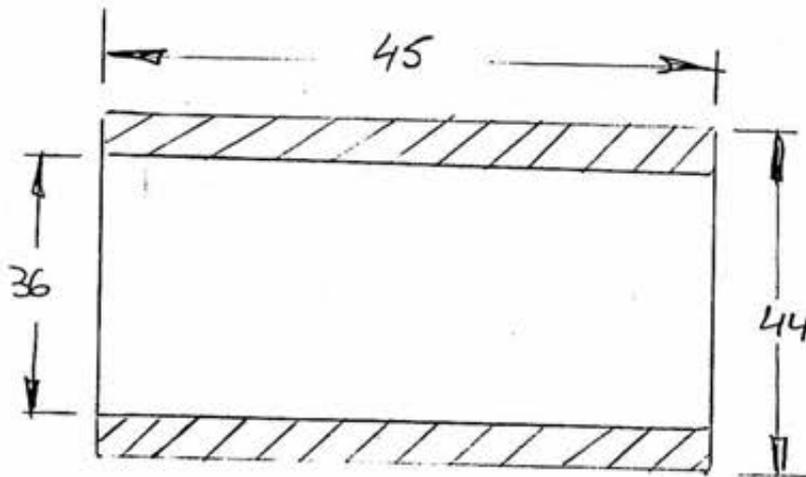
DWG 4(b)



P.S. We have subsequently learnt that the Mercedes (all models) rear disc and the caliper from an Alfa-Sud makes life a lot easier as the Alfa-Sud caliper has provision for handbrake operation.

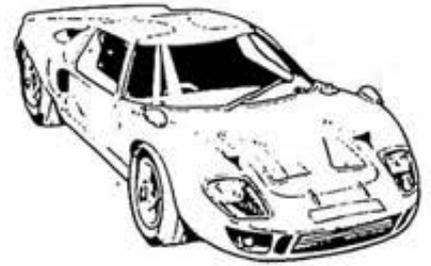
NOTE: We recommend that the outer trailing arm bush be replaced by the solid type that is used on the inner pilot point. This inner bush is of a smaller dia. than the outer, and requires a steel sleeve.

This sleeve is of dimensions as shown in sketch below.



KCC. Keeps these in stock at a current price of R 8,50 each.  
(4/11/87).





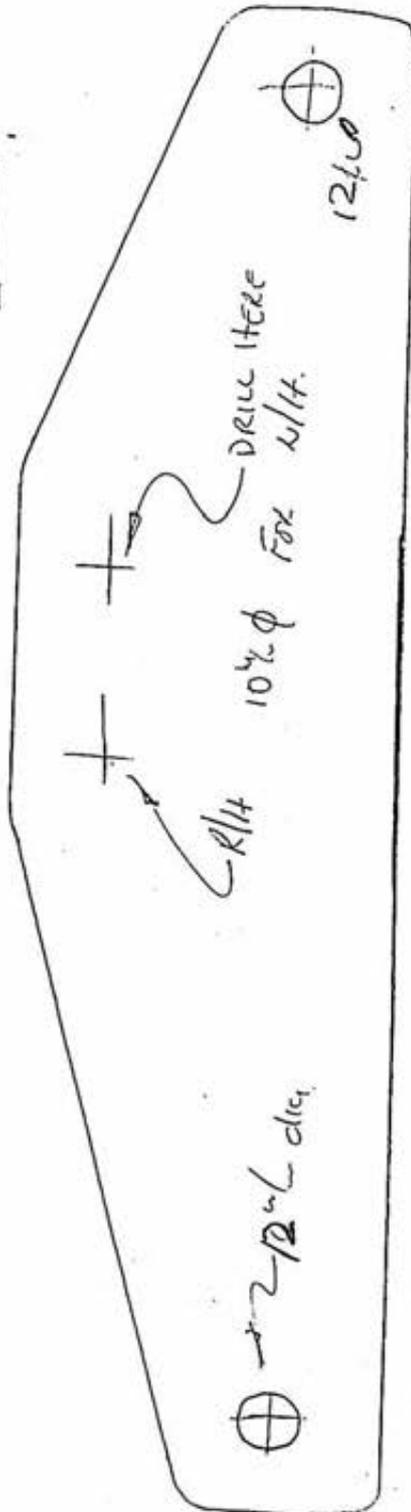
MOUNTING THE ENGINE & GEARBOX.

The engine & gearbox mounting brackets are built into the chassis. Kit Car Centre can provide the necessary steel brackets to bolt onto the 302 Ford engine, and onto the Audi gearbox. You can self fabricate them if you wish: Dwg.5 (a)

Dwg. 5(a)

302 Ford ENGINE MOUNTING BRACKETS

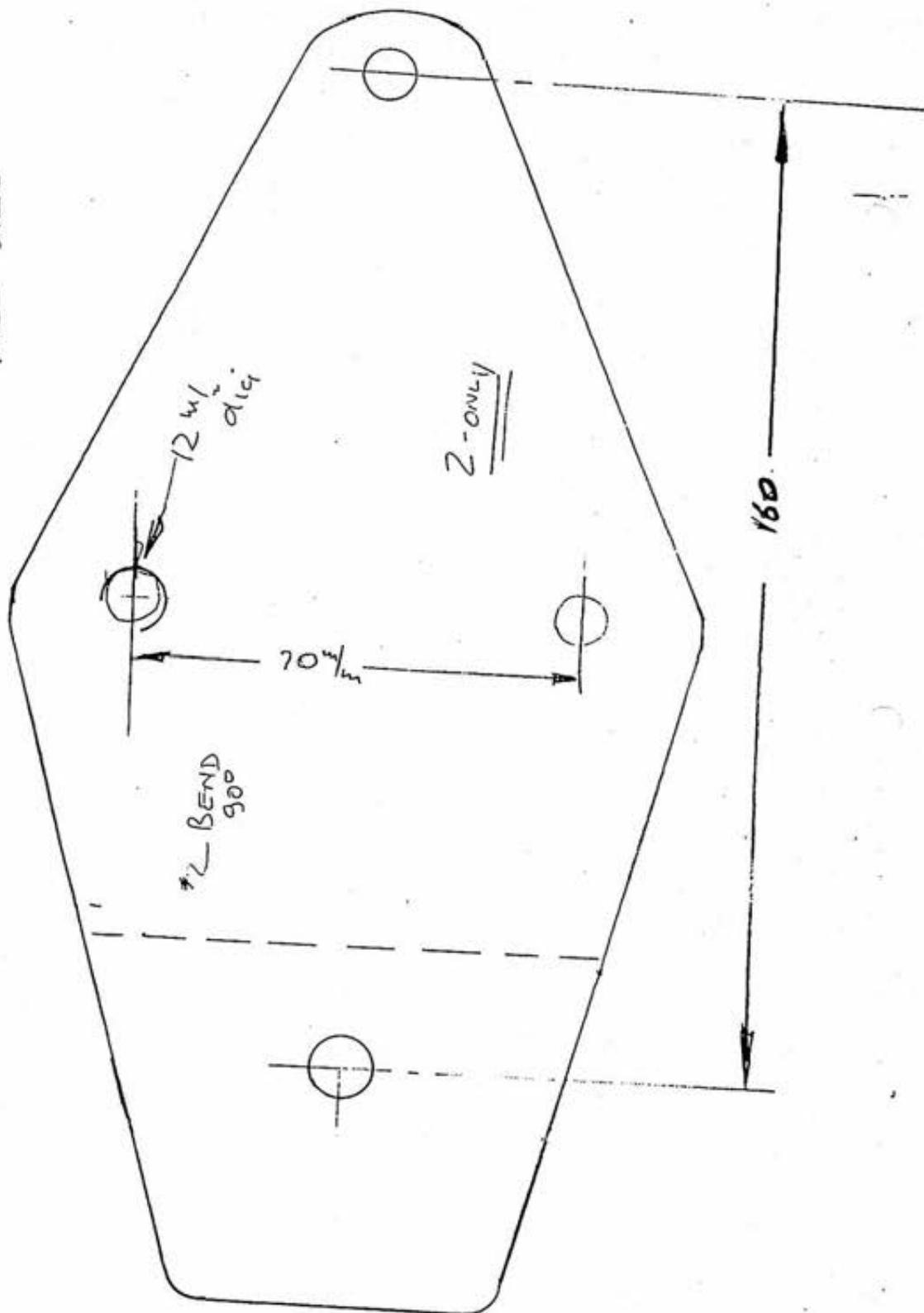
2 - ONLY



MATERIAL: 50 X 10 FLAT BAR — FULL SIZE

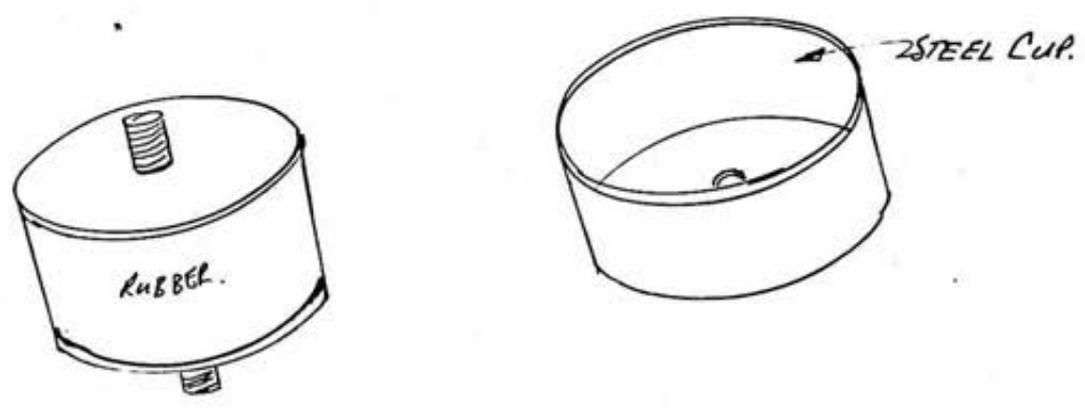
DWG 51b)

MATL. S W<sub>m</sub>  
FULL SIZE



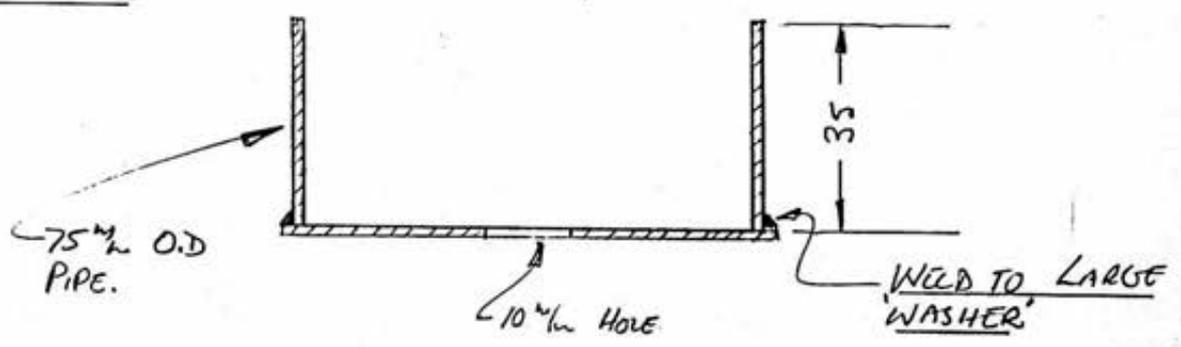
You will require four Cortina V6 engine mountings, as well as four of the steel cups in which the rubbers sit. Dwg.5 (c).

DWG 5(c)



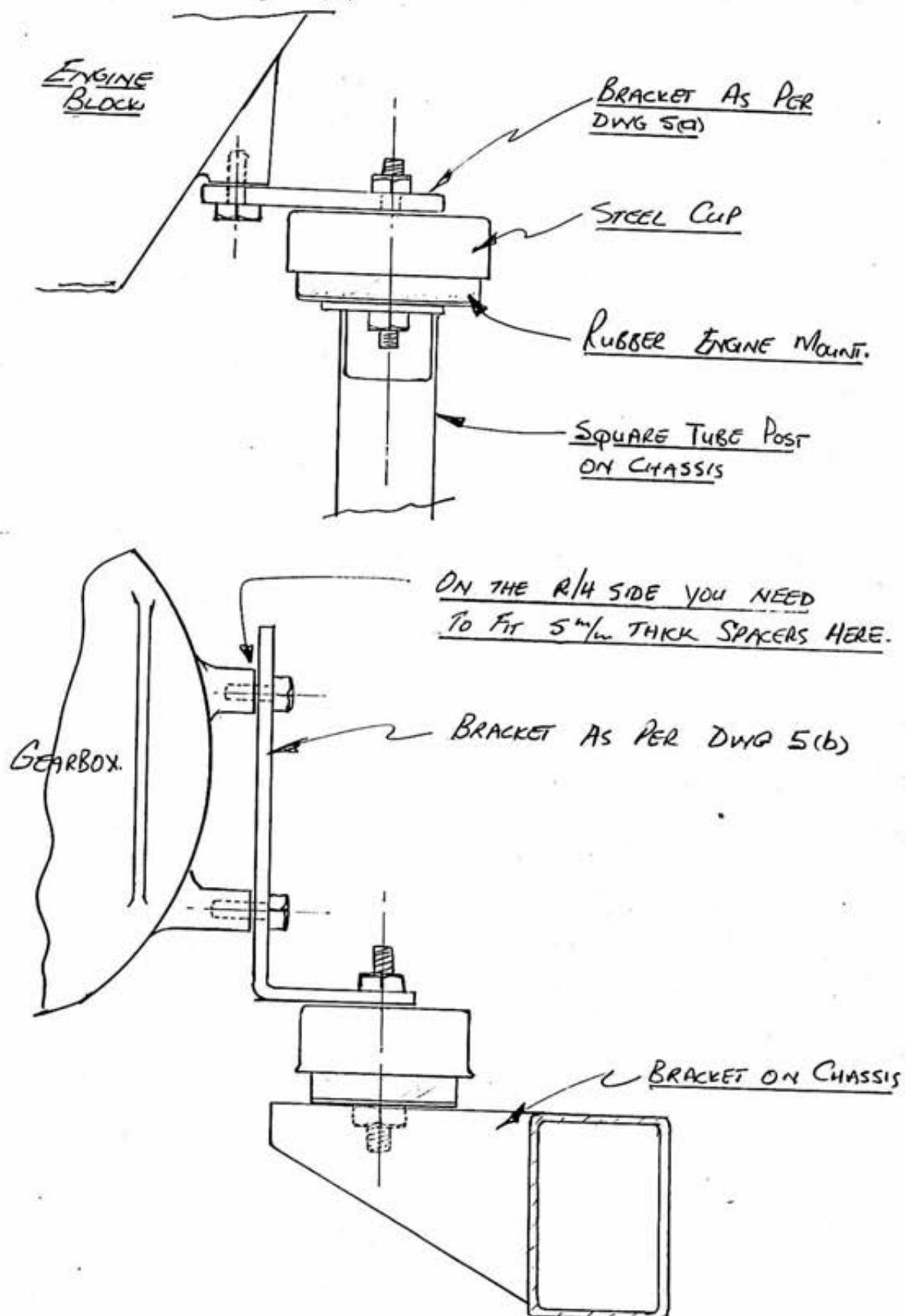
If you have difficulty in finding the steel cups, make them! Dwg.5 (d)

DWG 5(d)



### ENGINE MOUNTING.

The bracket, rubber mounting and cup, fits together as follows: Dwg.5 (e)



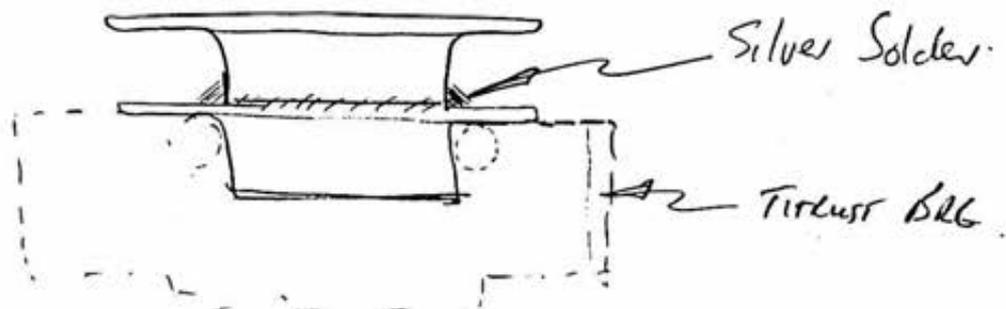
### FITTING THE MOTOR/GEARBOX ADAPTOR

The adaptor supplied by KCC is for the later 289 Motors with 6 bolt Bell housing and 302 Motors.

The adaptor plate bolts up to the engine with the standard Ford spacer plate inbetween (2mm Thick).

The flywheel bolts directly to the Ford crankshaft, but the standard bolts are too short. You will have to get longer bolts.

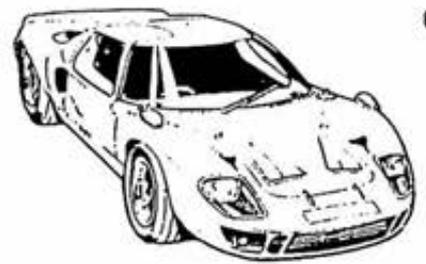
The thrust bearing will not reach the pressure plate fingers. It needs a distance piece, or spacer. This is easily done by acquiring an old Audi, Late Beetle or Kombi thrust bearing. Using a screwdriver, pry-off the thrust face only. Do this carefully on the thrust bearing you are going to use as well. Now place the one spacer carefully on the other as shown, and silver solder right round.



Clean up and replace carefully onto the thrust bearing.

NOTE: If this is not done the clutch slave cylinder piston will be pushed right out of the sleeve when the clutch pedal is depressed.

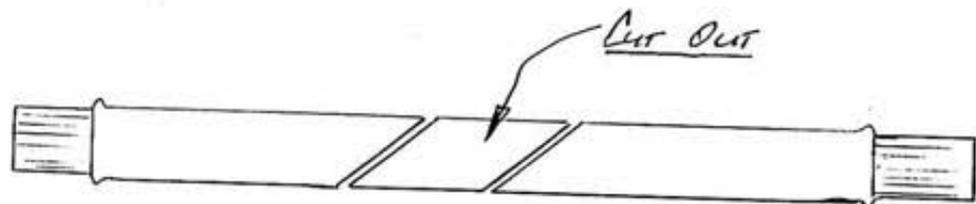


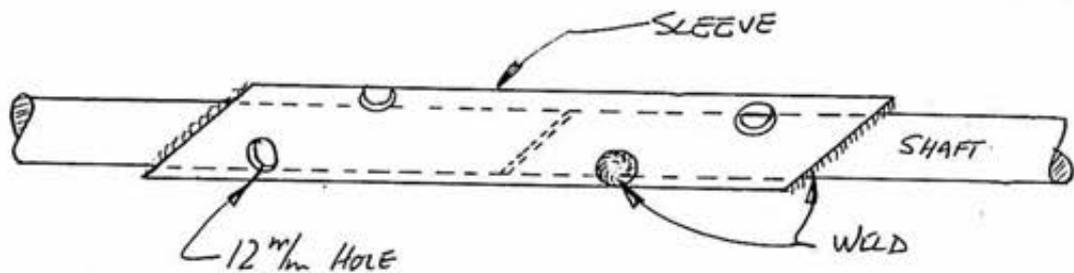


## DRIVE SHAFTS.

1. The drive shafts from the Granada are the ones to use. However, they are too long. You need to shorten the shafts to have an end to end length of 445mm.
2. If you have a pre 1983 Audi gearbox, it will have 100mm C/V joint flanges. If you have the later gearbox it will have 110mm C/V joint flanges.
3. So, if you have the later gearbox, the job is straight forward. You put the same Granada C/V back onto the shaft after you've had the shaft shortened correctly. If you have the earlier gearbox, you will have to get two 100mm C/V joints from Audi. (Also identical to later VW 412 and Kombi's.) The ideal way of shortening is to have the shaft friction welded.
4. If you live in a remote part of the Country where friction welding facilities are not available, you may take the following route: Cut the necessary section from the shaft at as much of an angle as you can, bevel the edges, weld together, dress the welds only sufficiently to slide a thickwall pipe over it. See Dwg. 6 (a). This pipe sleeve needs to be pre-drilled with as large a drill as you have, say 12 to 14mm, and cut at an angle at the ends. See Dwg. 6 (b).

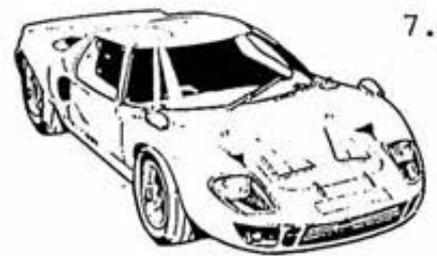
DWG 6(a)



DWG 6(b)

Slide the pipe sleeve over the shaft and weld through the hole, the sleeve onto the shaft, and also at the ends. Be sure to let these cool down slowly - even wrap them if you can.

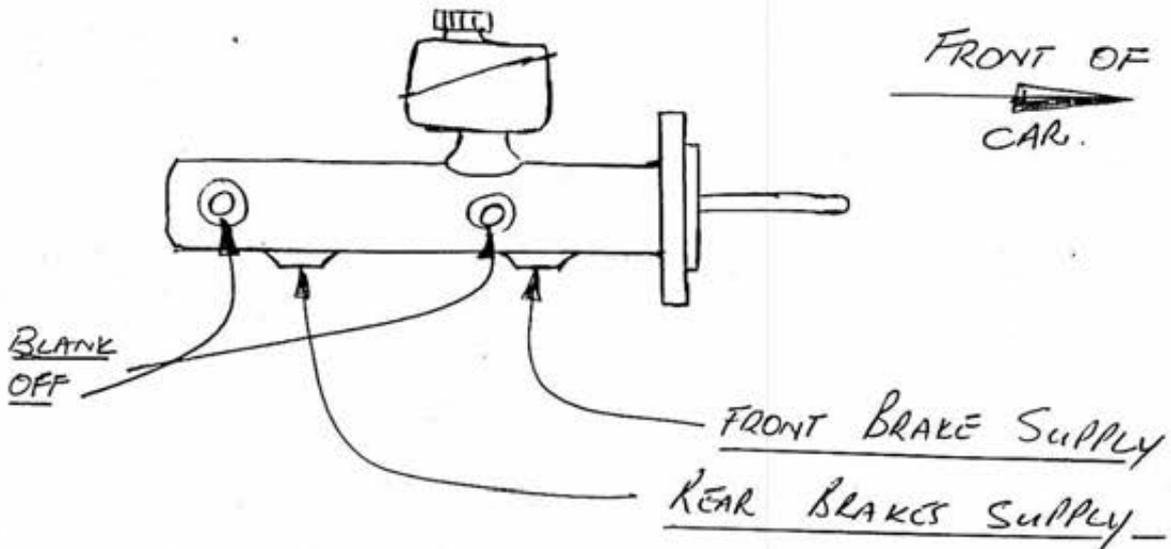
5. If you use method 2, and you have the earlier gearbox with 100mm C/V joints, you need to get only one Granada shaft with it's two 110mm C/V joints, and one VW Kombi shaft with it's two 100mm C/V joints. You then cut both shafts and rejoin them to have a 100mm Kombi C/V on the one, and the 110mm Granada C/V on the other end.
6. We have also learnt that the C/V flanges from the differential of the Granada will bolt straight onto the Kombi box, which means you can have 110mm C/V joints on the earlier Audi gearboxes.



PEDAL ASSEMBLY, BRAKE SYSTEM AND HYDRAULIC CLUTCH.

The master cylinder for the brakes is from a VW Golf (I or II).

The two outlets on the sides are blanked off. DWG. 7(a)



The clutch master cylinder needs to be a 17mm dia. preferably the type that has it's own reservoir. We used a Girling unit that can be found on Cortina Mk. I and II, Anglia's, Mini & Apache, Fairlains, Ranchero, etc.

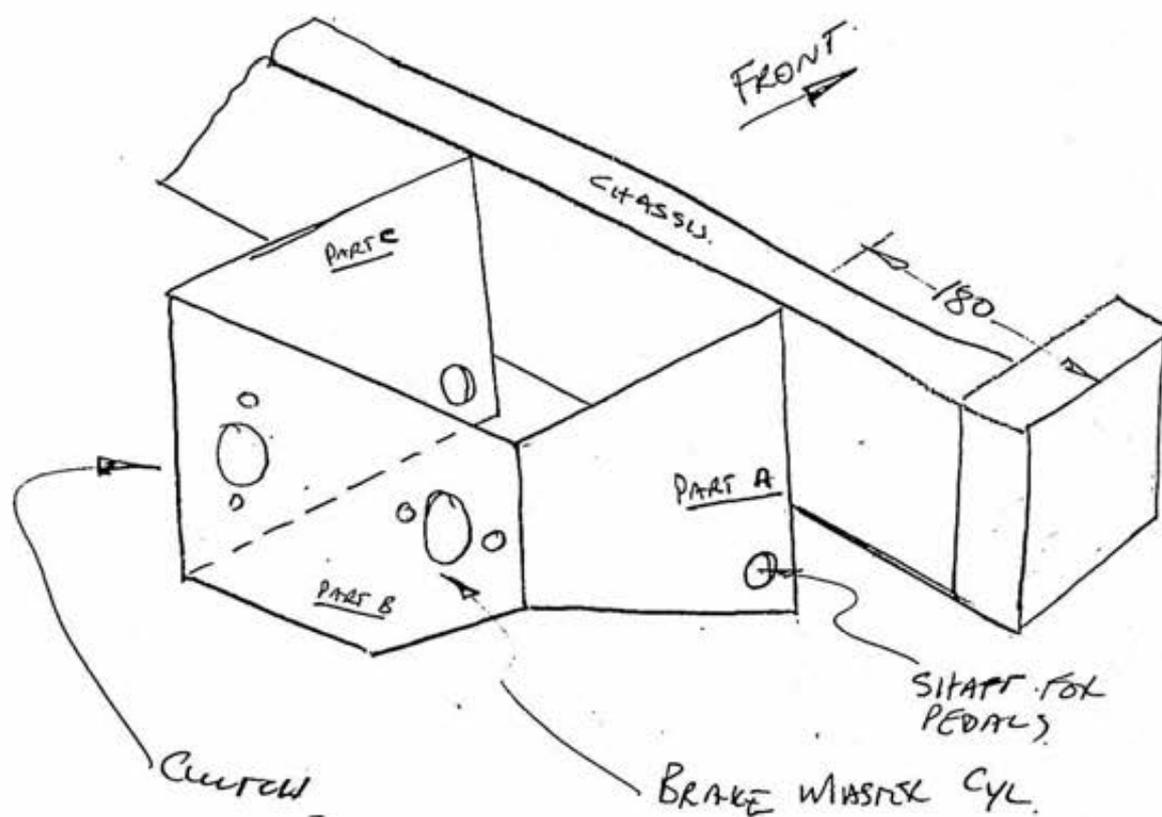
Because of the considerable distance of the brake fluid pipe to the back, a pipe of at least 5mm inside diameter has to be used, or else it will not release quick enough.

Our demonstrator car uses no vacuum booster at all. This makes for very controlled and sensitive braking but it does require a fair amount of pedal pressure.

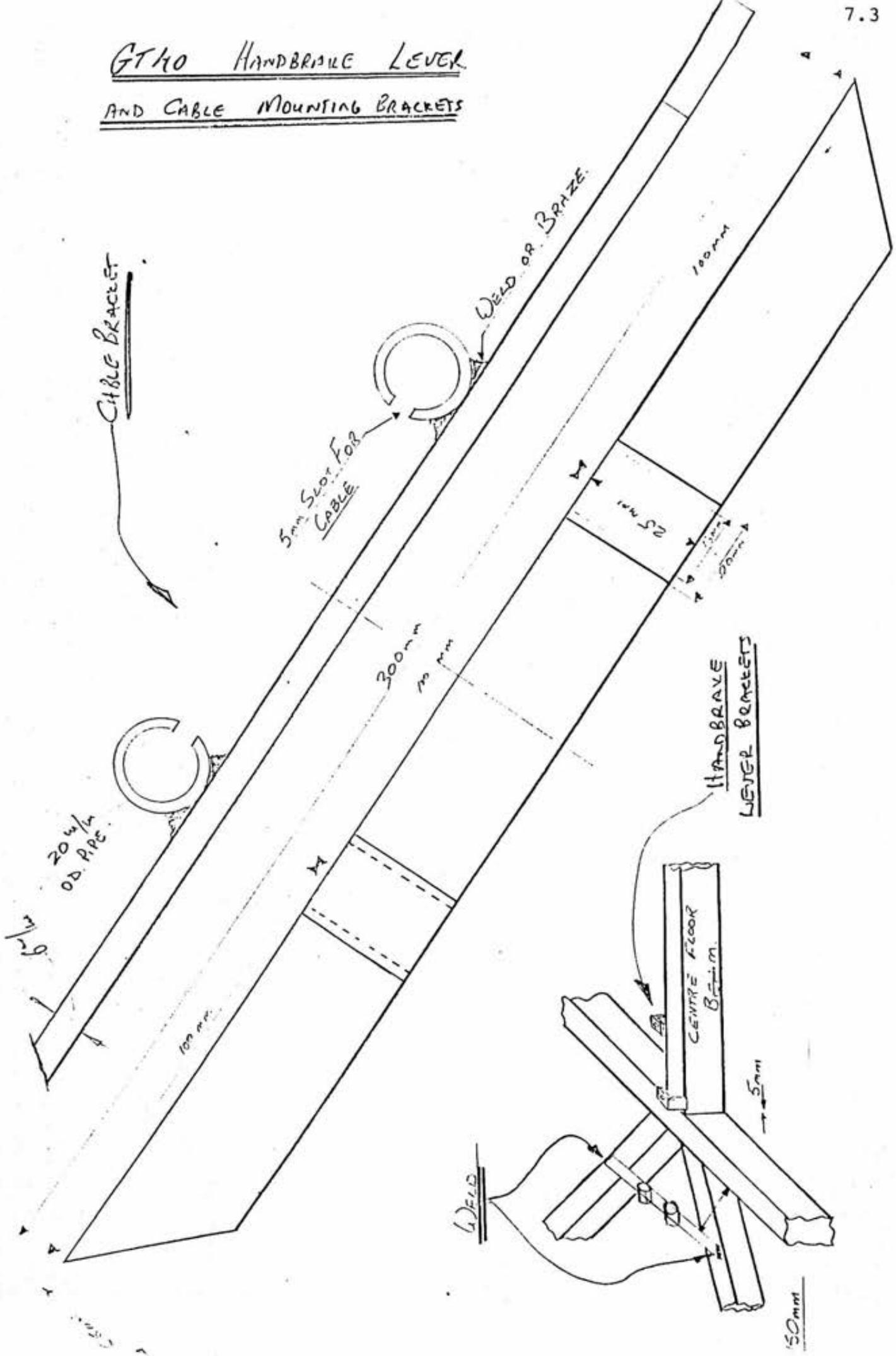
Should you wish to fit boosters, you would need to fit the "in-line" type. That is, it has a place for the hydraulic fluid to go in, another to come out, and a vacuum supply connection - simple, it can be mounted anywhere you like. This type is used on BMW 5 Series, Chrysler Valiants, (does anybody remember those?), Hillman Vogues, Alfa Romeo and many others. - I like the BMW and Alfa ones!

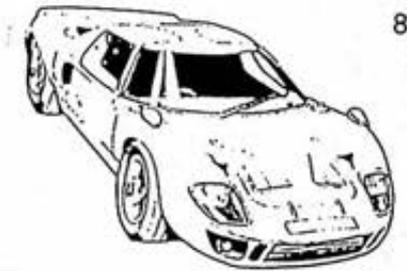
KCC makes a pedal box and pedals to work with the above master cylinders. This has to be welded to the chassis. The exact position is very important as the steering column has to pass through between the accelerator and brake pedals. See Dwg. 7 (b).

DWG 7(b)



# GT40 HANDBRAKE LEVER AND CABLE MOUNTING BRACKETS

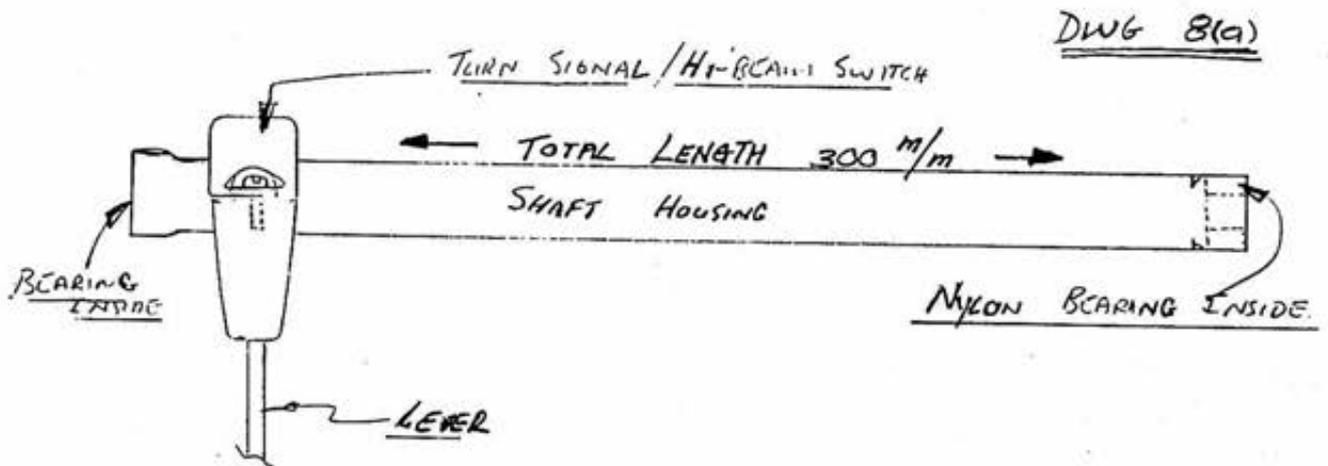




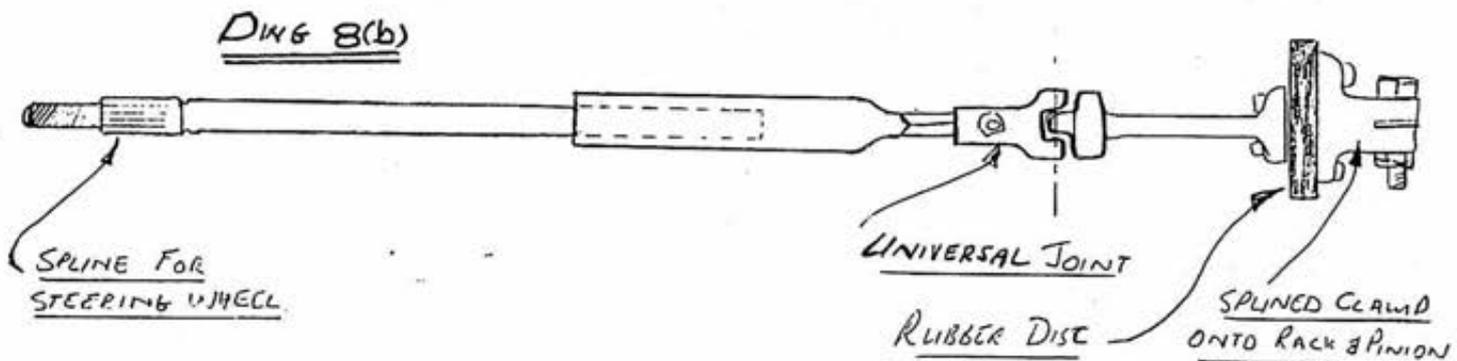
## FITTING THE STEERING COLUMN.

The steering shaft housing made by Kit Car Centre, is made from a suitable diameter pipe to contain a bearing at each end that will accept the steering shaft from a Cortina.

Mk 111, 1V or V. Dwg.8 (a)

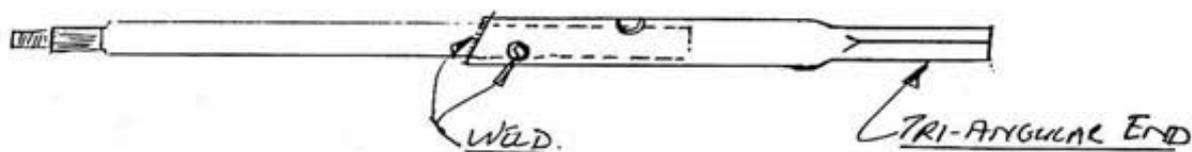


The steering shaft from the Cortina consists of the splined clamp, rubber disc, short shaft with universal, and the main shaft, which has two parts that slide over each other. Make sure you also get the needle roller bearing and the rubber sheath that fits around it, and the nylon bush at the bottom of the column tube. These fit into the tube as shown in Dwg.8 (b). These two shafts slide over each other for quite a distance, it can be shortened and rejoined.



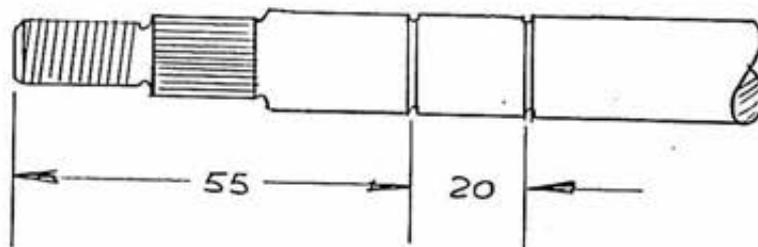
- 1) Shorten the main shaft to an end-to-end length of 500mm. This is done by cutting a piece off each part of the shaft and rejoining it, by sliding the one into the other and welding as shown in Dwg.8 (c). Cut the larger diameter part off at an extreme angle, drill large holes in this part through which you can weld the outer onto the inner part. See Dwg.8 (c).

DWG 8(c)



- 2) Two grooves for circlips are to be made into the steering shaft in front and behind the upper bearing. This is done with a hacksaw while rotating carefully, to a depth of 1mm. See Dwg.8 (d).

DWG 8(d)



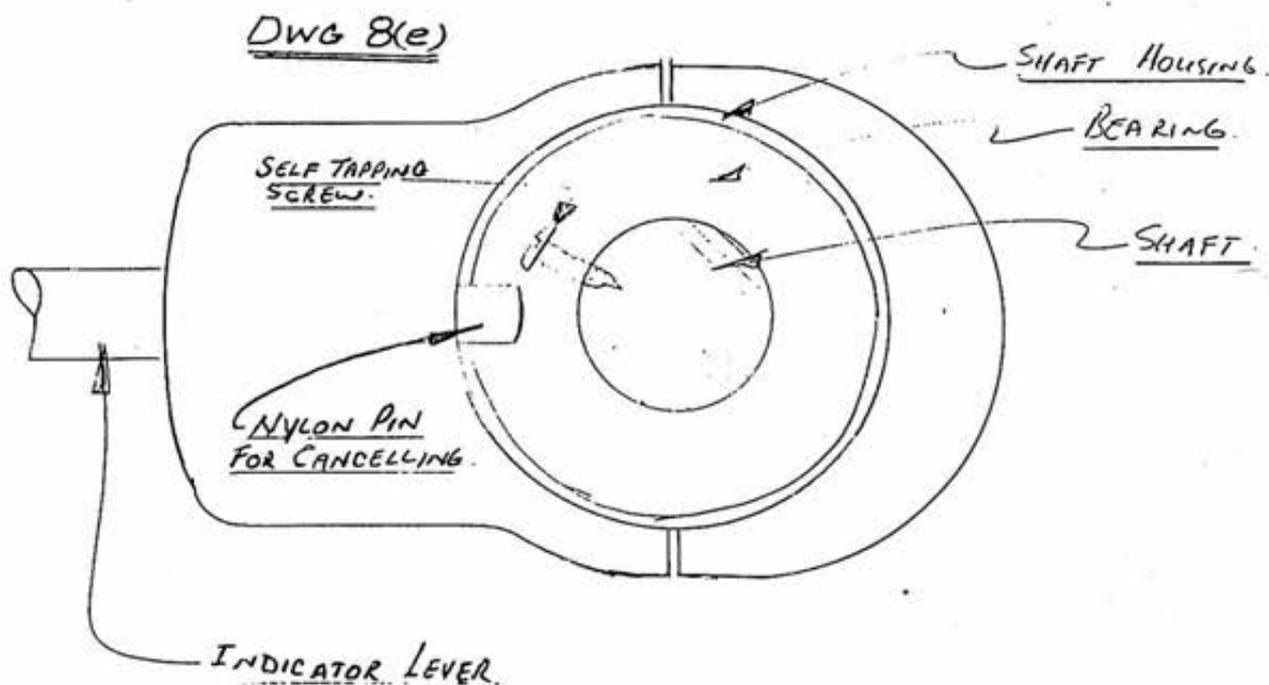
- 3) Fit the bottom circlip in the groove, slide the shaft into the tube through the bottom bearing, through the top bearing, then fit the top circlip.
- 4) Now position the steering column into place and secure by two U-bolts, one behind the dashboard onto the square tube cross brace, and the other on the chassis bracket.

- 5) Make up secondary steering shaft, utilizing standard Cortina shaft and universal, with bottom rubber universal replaced by Fiat 128 steering universal. You may have to pry open the splined part to fit over the Cortina R&P shaft.

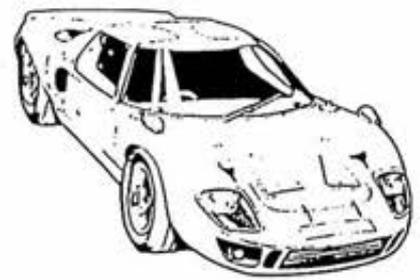
#### INDICATOR SWITCH

If a self cancelling facility is desired, proceed as follows: Activate indicator switch lever, a small white nylon part will extend itself towards the steering shaft.

Mark a position directly opposite it on the steering shaft. Drill carefully into the shaft and screw a small self tapper into the shaft, deep enough so that when the shaft is turned, the screw head will just reach the nylon part far enough to cancel it. See Dwg. 8 (e).



To get the self tapper in the correct position, the splined clamp on the Rack & Pinion can be moved.

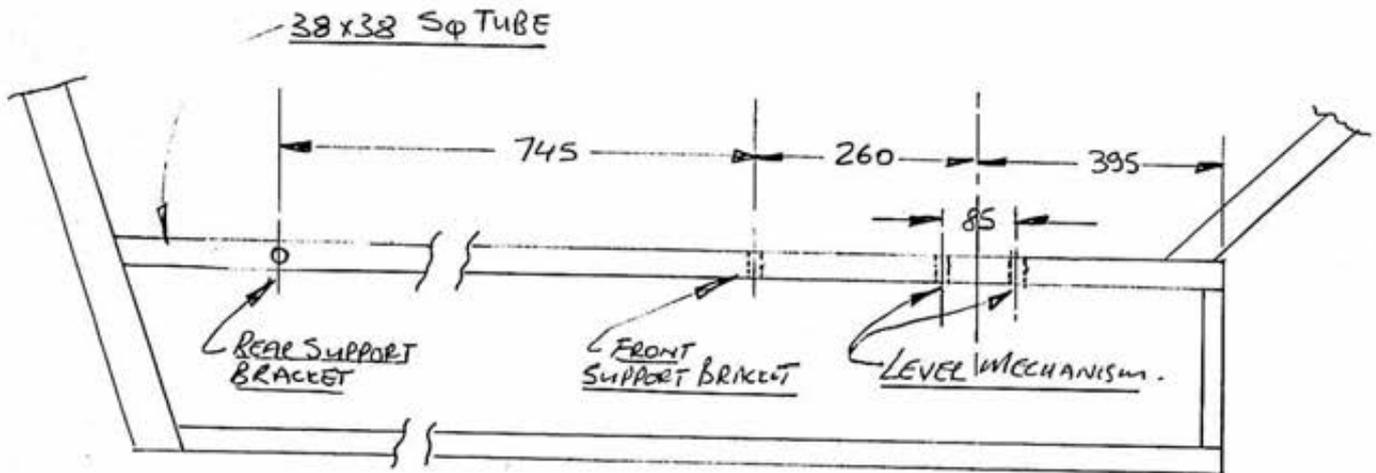


## GEARSHIFT

The gearshift that Kit Car Center makes, is for R/H side mounting as per original GT40 Mk1. It mounts along the upper side chassis beam, (study Dwg.9 (a) on next page).

- 1) Measure 395mm from the front of the upper side chassis square tube and scribe a mark, then further towards the rear as shown.

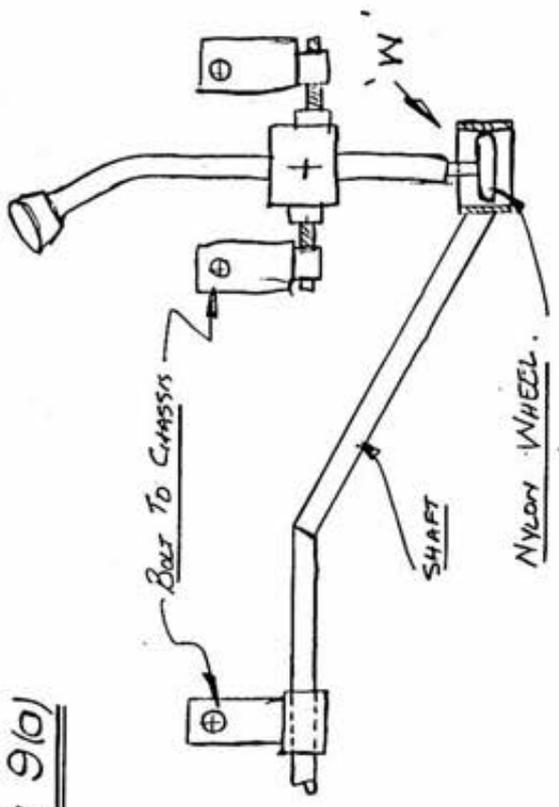
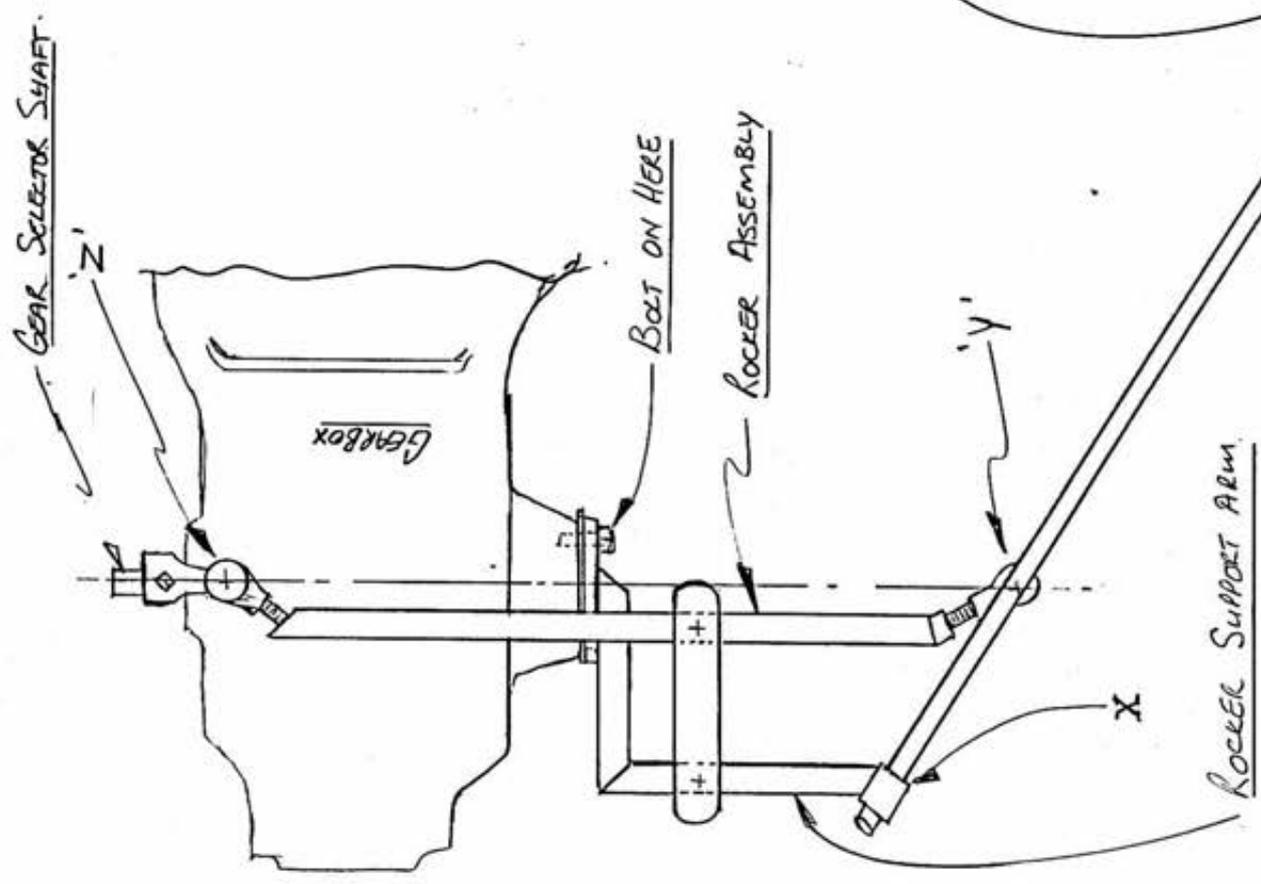
## DWG 9(b)



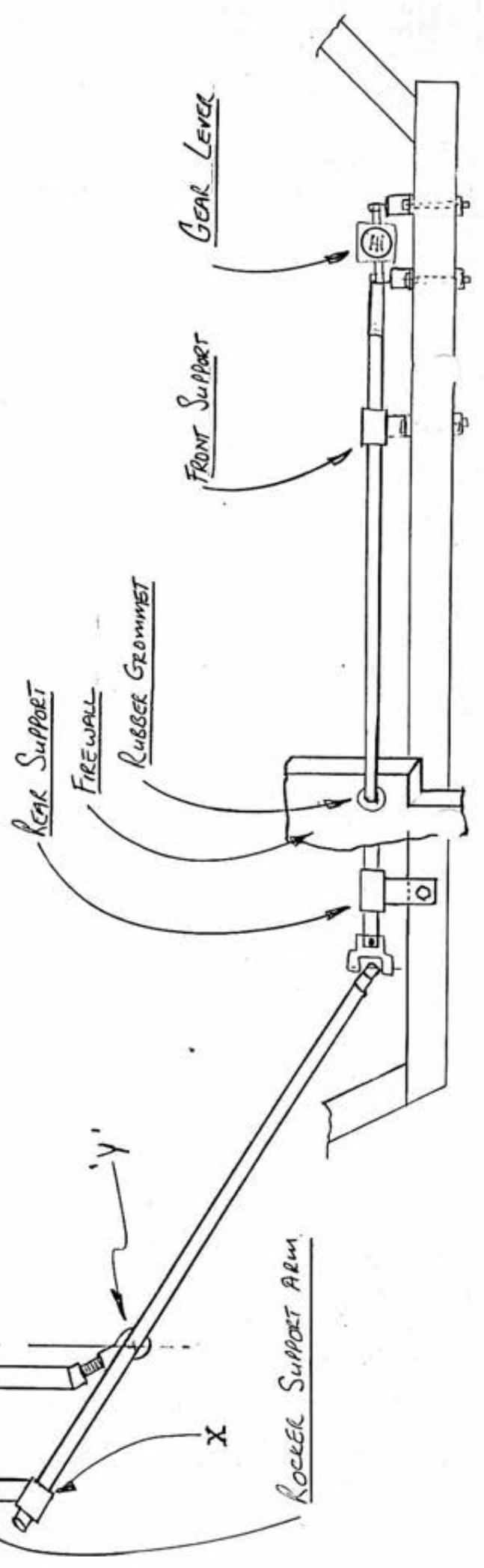
This will be the pivot point for your gearshift lever. Drill two 8mm holes, 85mm apart as shown in Dwg.9 (b). Bolt the shift lever mechanism into position.

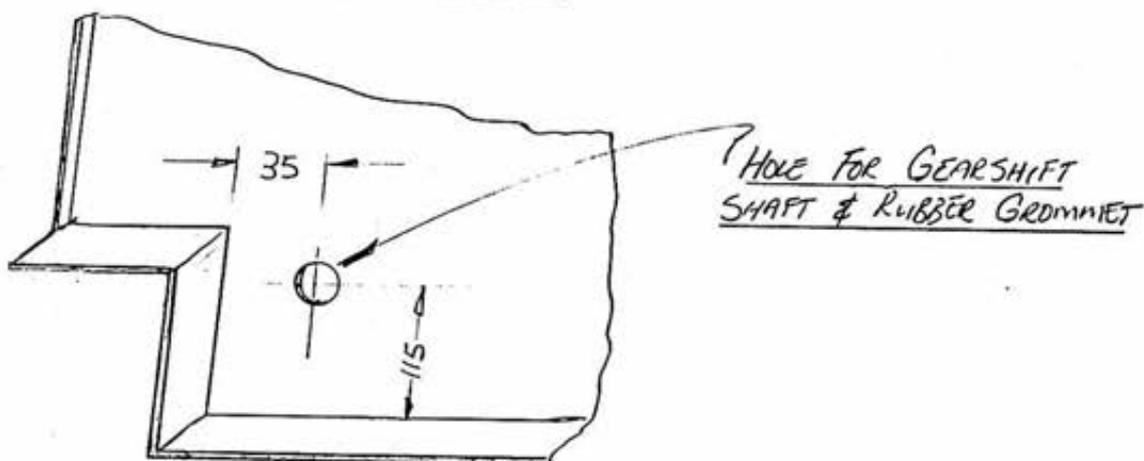
- 2) Measure 260mm towards the rear as shown in Dwg.9 (b), and another 745mm from there towards the back and drill 8mm. The first three holes are drilled horizontally from the inside of the car. The last hole is drilled through from the top. Also drill a hole approximately 40mm in diameter through the glassfibre firewall as shown in Dwg.9 (c) for the gearshift shaft to pass them.

DWG 9(a)



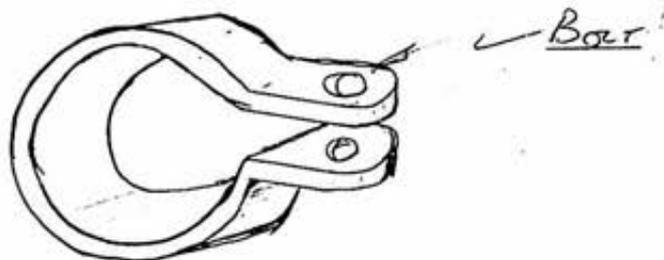
- SIDE VIEW -



DWG 9(c)

- 3) Now slide the forward support bracket onto the shaft, push the shaft through the rubber grommet in the firewall, then slide the rear support bracket onto the shaft. Now engage the shaft eye onto the bottom of the gearlever at 'W'. (Dwg.9 (a)).
- 4) Secure front and rear support brackets by bolting through the appropriate holes.
- 5) Remove the gear selection arm from the selector shaft on the gearbox, by loosening a grub screw. Grind or file the back of the ball where it is swaged into the arm in order to remove the ball by punching it out with a blunt punch. Now re-drill this hole to 8mm and replace this arm onto the selection shaft.
- 6) Ensuring that the knuckle joint is engaged in the 8mm hole you have just drilled ('Z') in the selection arm, bolt the pre-assembled rocker assembly onto the gearbox by removing the three bolts on the selector rod cover plate. (Caution- spring loaded!). Secure the rocker support arm onto the gearbox using the same two bolts, the third needs to be 6mm x 40 long for the rear hole.
- 7) Now slide the rear half of the gearshift rod through the bush at 'X' as shown in Dwg.9 (a), then slide the universal onto the front half of the gearshift shaft, using the pipe clamp, (Dwg.9 (d)). that came off the Audi gear selector mechanism,

do not tighten clamp at this stage.



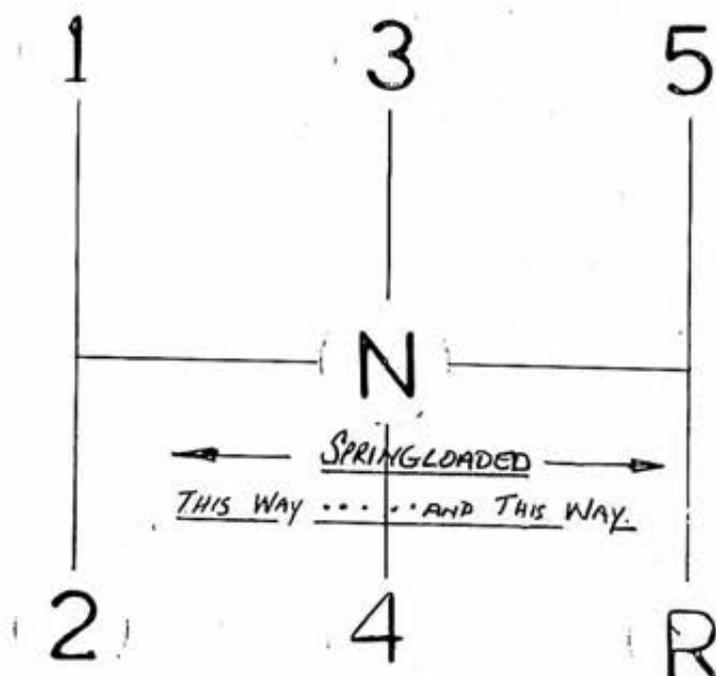
- 8) You can now screw the threaded knuckle end onto the shaft where it has a nut welded to the shaft at point 'Y'.
- 9) Ensure that the gearbox is in neutral, it will be spring-loaded to this position. Place the gearlever in neutral.

Dwg. 9 (e).

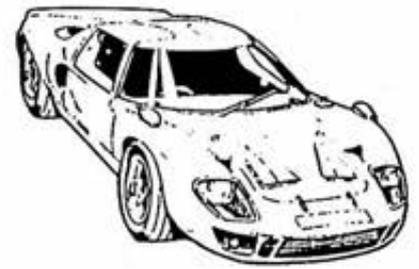
The pipe clamp at the universal can be tightened.

JOB'S DONE!

DWG 9(E)



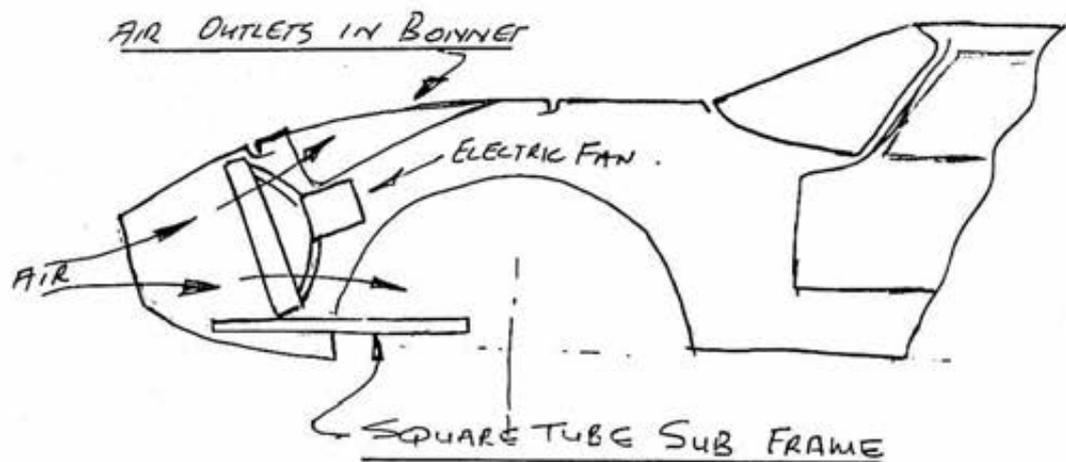
IMPORTANT NOTE: The Rod end Knuckle Joint comes from the Mitsubishi Cantor Truck (gearshift) Part no. MB 486038. If you ever need to replace!



## COOLING SYSTEM

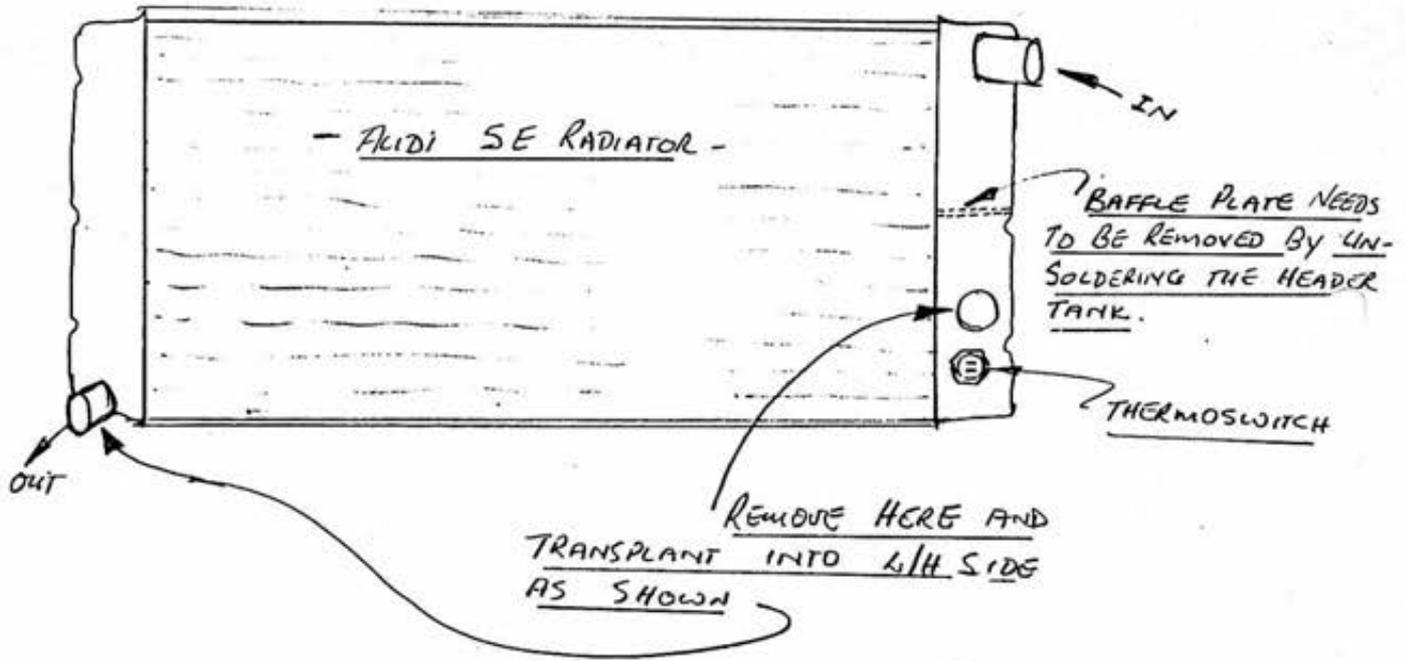
- 1) Though two smaller radiators can be fitted at the sides in the rear to take air from the side scoops, we prefer the single front mounted radiator.
- 2) The radiator has to be mounted about 40mm forward of the air outlets in the bonnet, at a forward slanting angle. See Dwg. 10 (a).

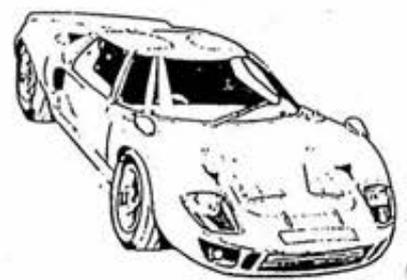
DWG 10(a)



- 3) The larger the radiator, the better, however, purpose made radiators are very costly and there are production car radiators that will do the job:
  - i) The Audi 5E Radiator is ideal. However it needs the following modifications: The Baffle plate in the R/h headertank needs to be removed and the bottom outlet pipe needs to be moved to the L/H side as shown in Dwg. 10 (b).
  - ii) Chev/Opel Comodore and Senator with the 4.1 litre engines, (later 2,8 and 3 L models have smaller radiators). Escort XR3 is also a good alternative.
  - iii) A Company called Tony's Radiators in Johannesburg (Tel. 011 836-5530) will make you a purpose made radiator.

DWG 10(b)

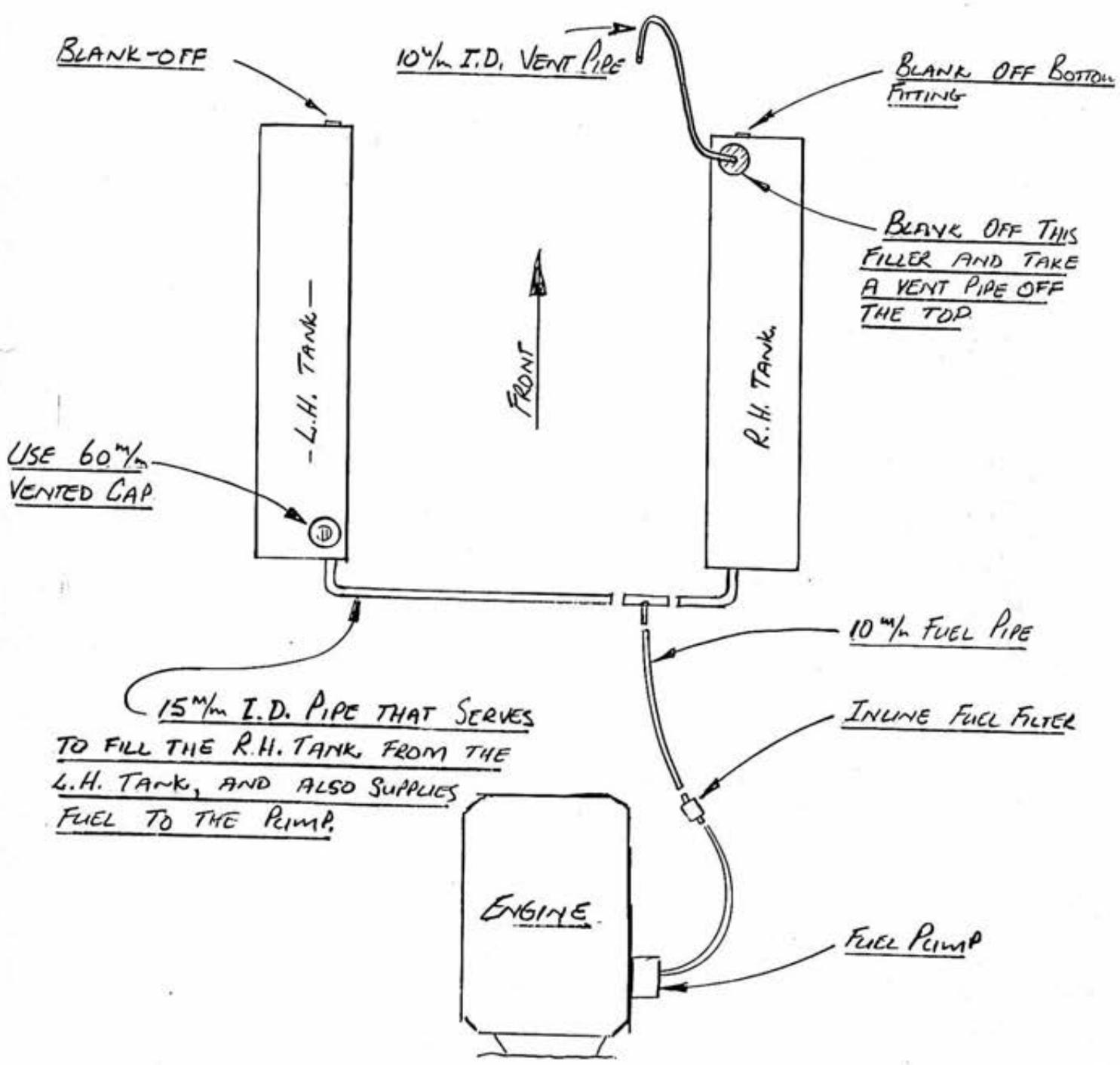




## FUEL TANKS

Like the original Ford GT40 cars, the Kit Car Centre Replica is designed to accommodate two side mounted tanks. To keep cost down the same tank is used for left and right hand sides. See Dwg.11 (a).

### DWG 11(a) FUEL TANK PLUMBING LAYOUT



By using a large diameter pipe to connect the Left and Right hand tanks, and a large diameter breather on the Right hand tank, only one filler is required, and as the level in both tanks will always be equal, only one gauge and sender unit is required.

The cut out at the bottom of the tank is for the radiator pipes to pass through.

The material of the tanks is sufficiently thick to be able to drill and use self tappers to install the gauge sender unit.

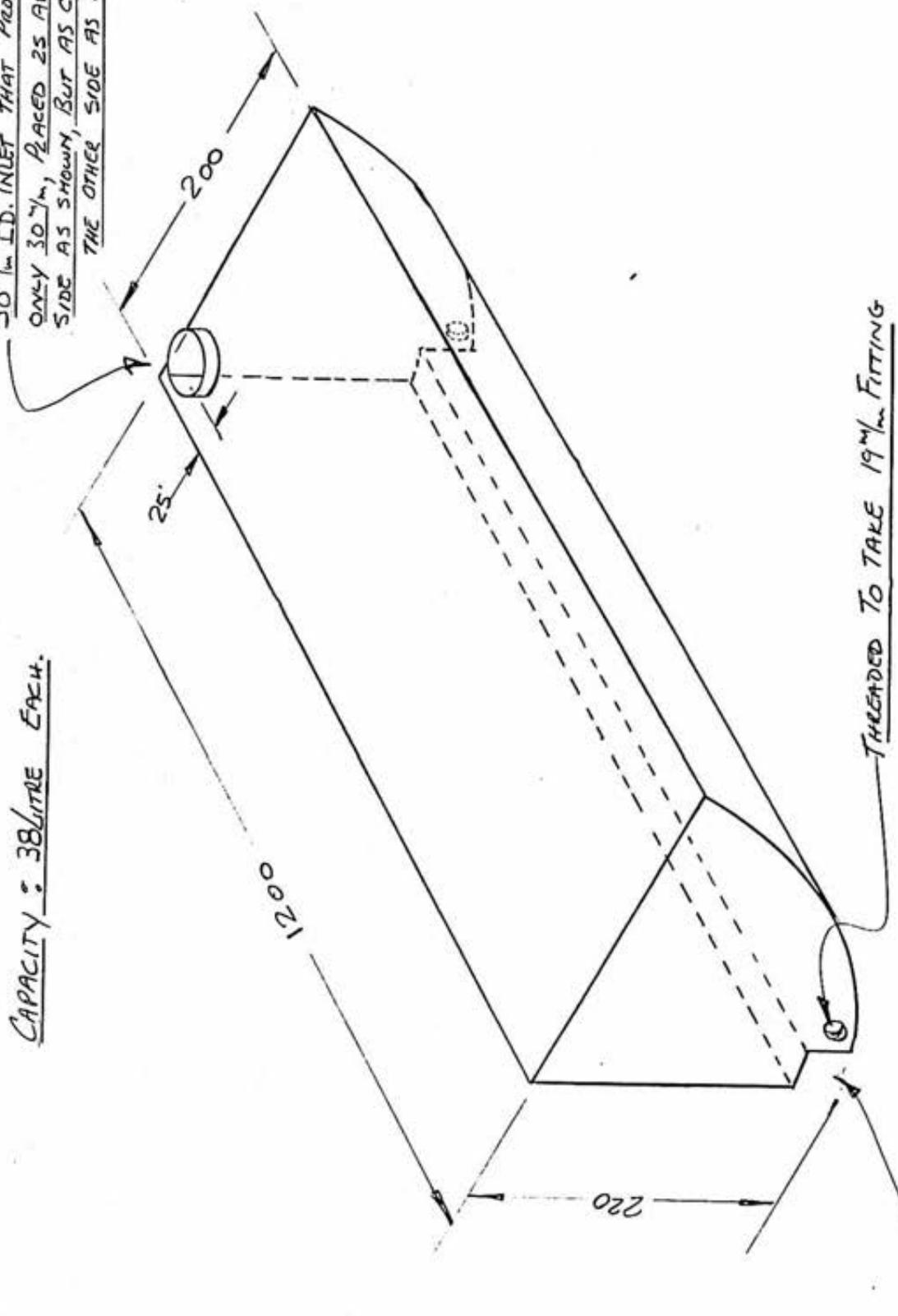
This system has one pitfall; If you park the car with the one side much lower than the other, all the fuel will drain to the one side if the tanks are near empty, and the pump will suck air! This means you'll have to start and pull-off before the float bowl is emptied! - You may never ever park at such an angle, but just remember this!

DWG 11(b)

FUEL TANK L & R HAND

CAPACITY : 38 Litre EACH.

50mm ID. INLET THAT PROTRUDES ONLY 30mm, PLACED 25 AWAY FROM SIDE AS SHOWN, BUT AS CLOSE TO THE OTHER SIDE AS POSSIBLE.



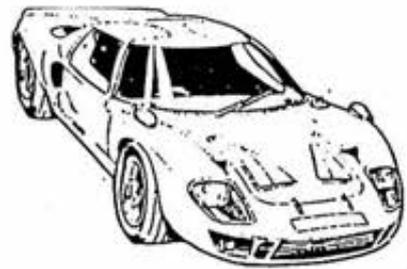
Cut-out 50x50mm.

THREADED TO TAKE 19mm FITTING

8  
40  
↓

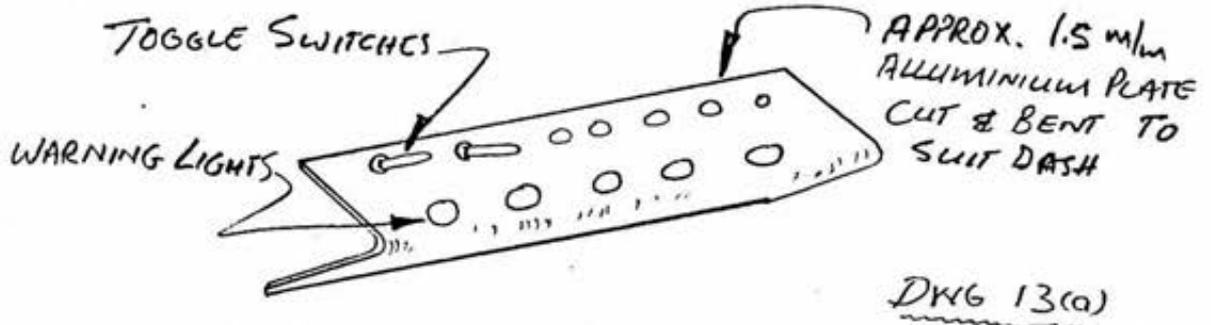
INTERIOR PANELS

To follow



## DASH BOARD & INSTRUMENTATION

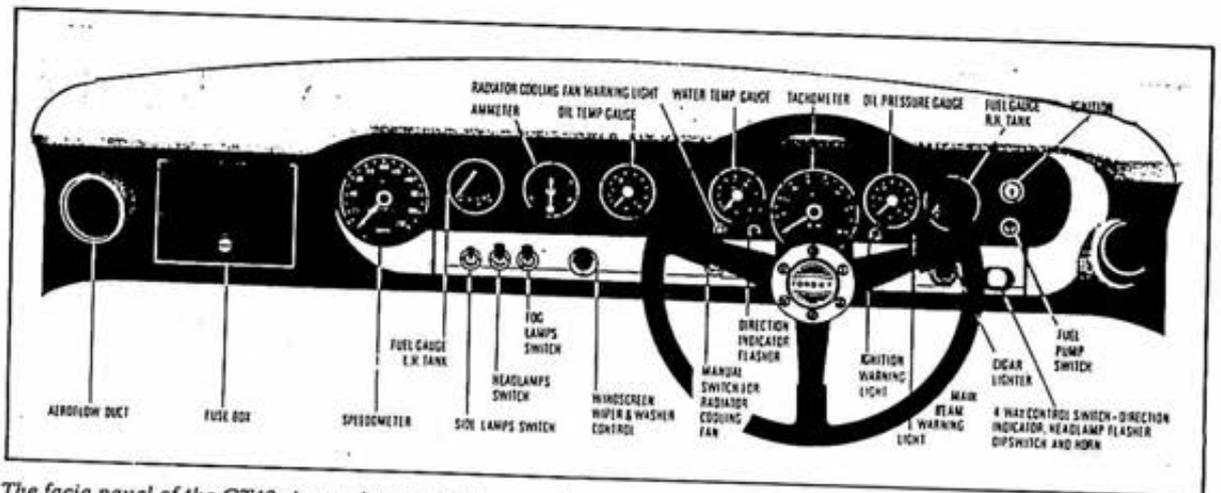
The original GT40 cars had only the top part covered with simulated leather. The part facing the driver was simply painted, usually black. The rectangular openings needs an aluminium plate bent, is shown in Dwg. 13 (a). These contained about a million toggle switches!



This plate may be vinyl covered before putting in the gauges. The eyeball vents were from the Cortina. Later models also work well.

The grille on top of the dashboard is from a 1965 Zephyr Mk3. The diagram below shows the dashboard and instrument layout on the original GT40 Mk3.

Dwg 13 (b)



The fascia panel of the GT40. As can be seen in the preceding pictures, the speedometer was angled towards the driver and therefore was not so far outside the arc of a normal instrument scan as its position might suggest.

The top part of the glassfibre dashboard can easily be covered by glueing Vinyl of your choice onto it. We prefer the type that has no grain to it because it is easier to clean.

Cut a piece of vinyl a fair bit larger than actually required. Apply contact adhesive evenly over the entire surface and leave in the sun for about five or eight minutes. Now paint the dash top with contact and allow drying time.

This job requires at least 2 helpers to hold the ends up to keep it from touching and sticking to the dash.

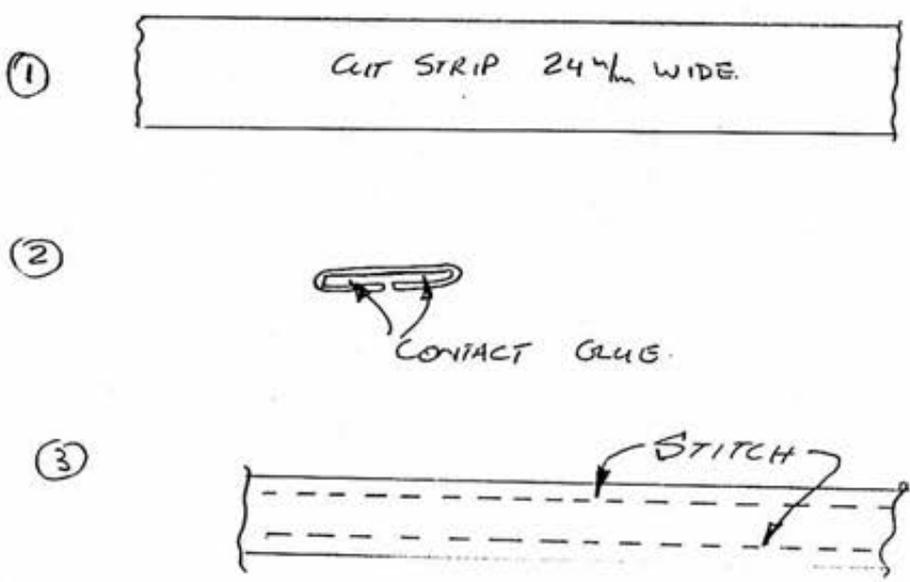
Start in the middle and work towards the sides, ironing out air bubbles and creases. A hot air gun or household hairdryer helps to heat and stretch.

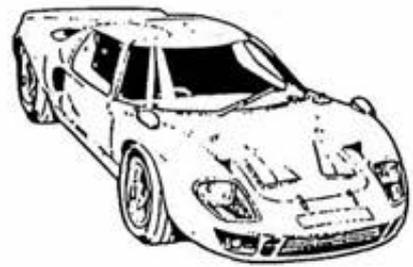
Cut of the excess with a stanley knife.

From the same material have an upholsterer stitch a strip as shown in Dwg. 13(c). This is used to glue along the edge on the dashboard face to cover the cut edge. Use superglue.

Cut this 24mm wide, fold and glue as shown to stitch so that the strip is 12mm wide.

DWG 13 (c)



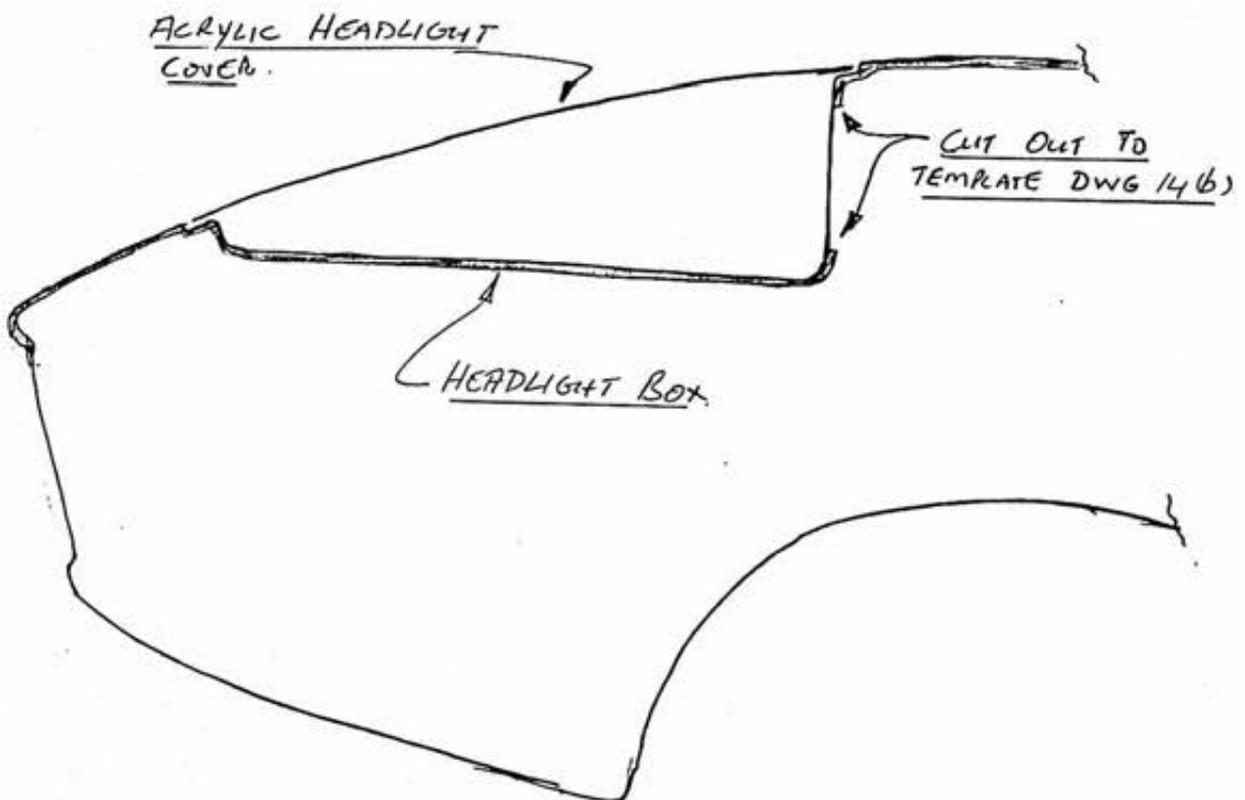


## LIGHTING

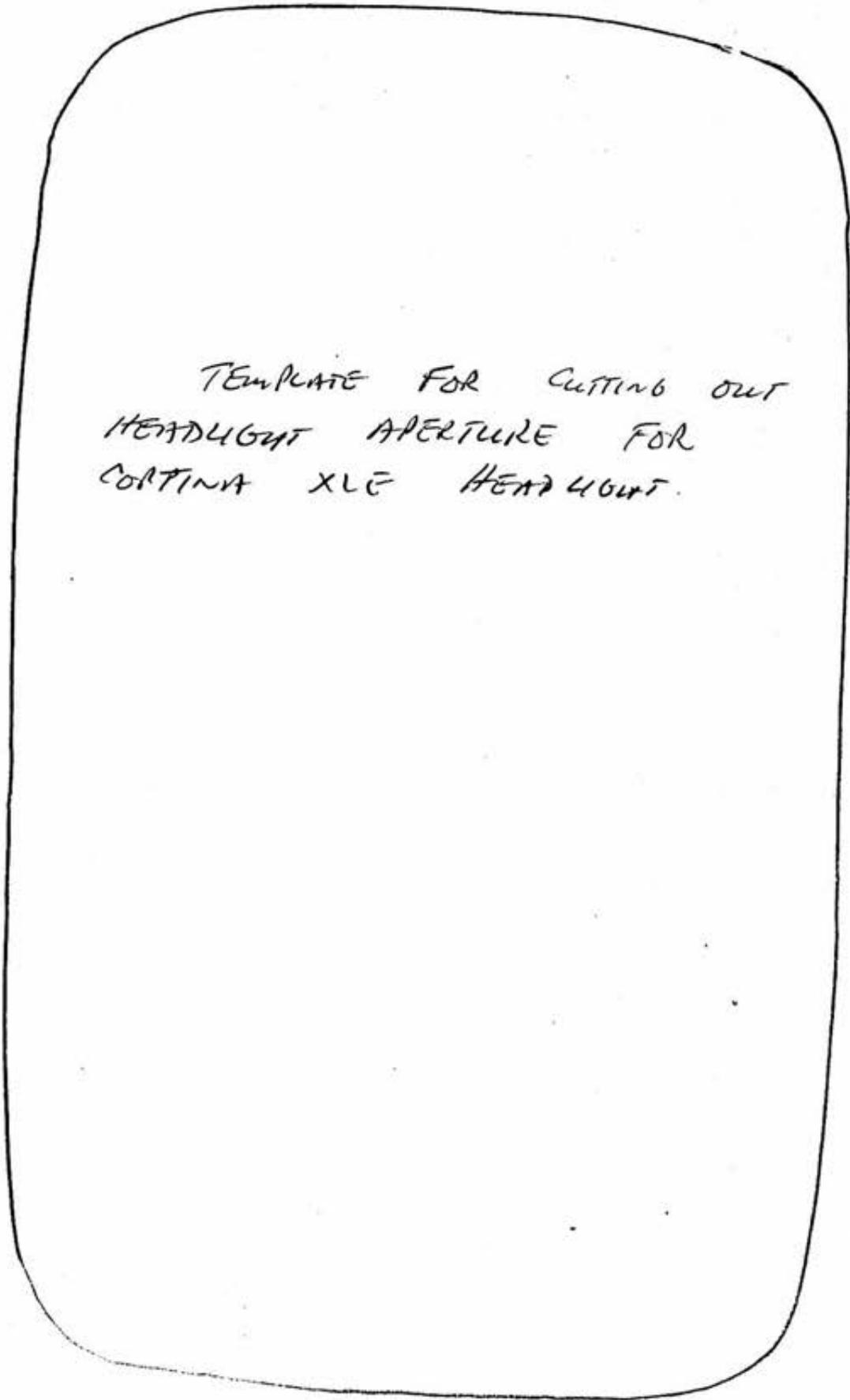
- 1) The rectangular headlights are from Cortina XLE and has a parklight facility. See Dwg. 14 (c) for mounting suggestions.
- 2) The spotlights that will fit into the space provided needs to be mm x mm.  
This will leave enough space to fit an indicator inside as well. We suggest the indicator from a Nissa EXA, as well as the very small side mounted indicator unit, to mount on the outside of the GT40.
- 3) The rear stop/indicator lights from an early Fiat 128 or alternatively the Truck/bus units available from KCC (Hella).

### MOUNTING THE HEADLIGHTS

#### DWG 14 (c)

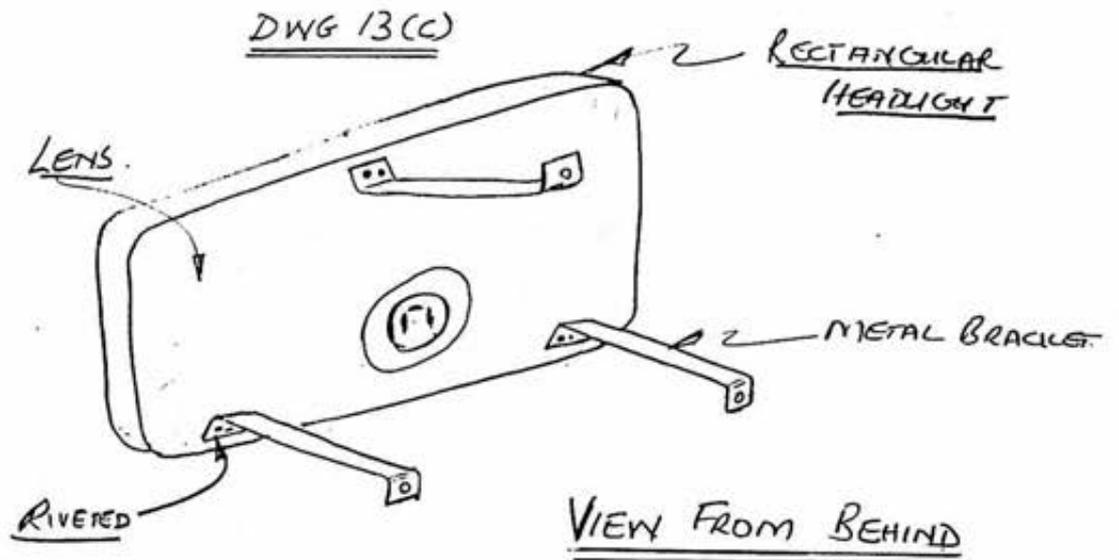


Dwg 14(b)



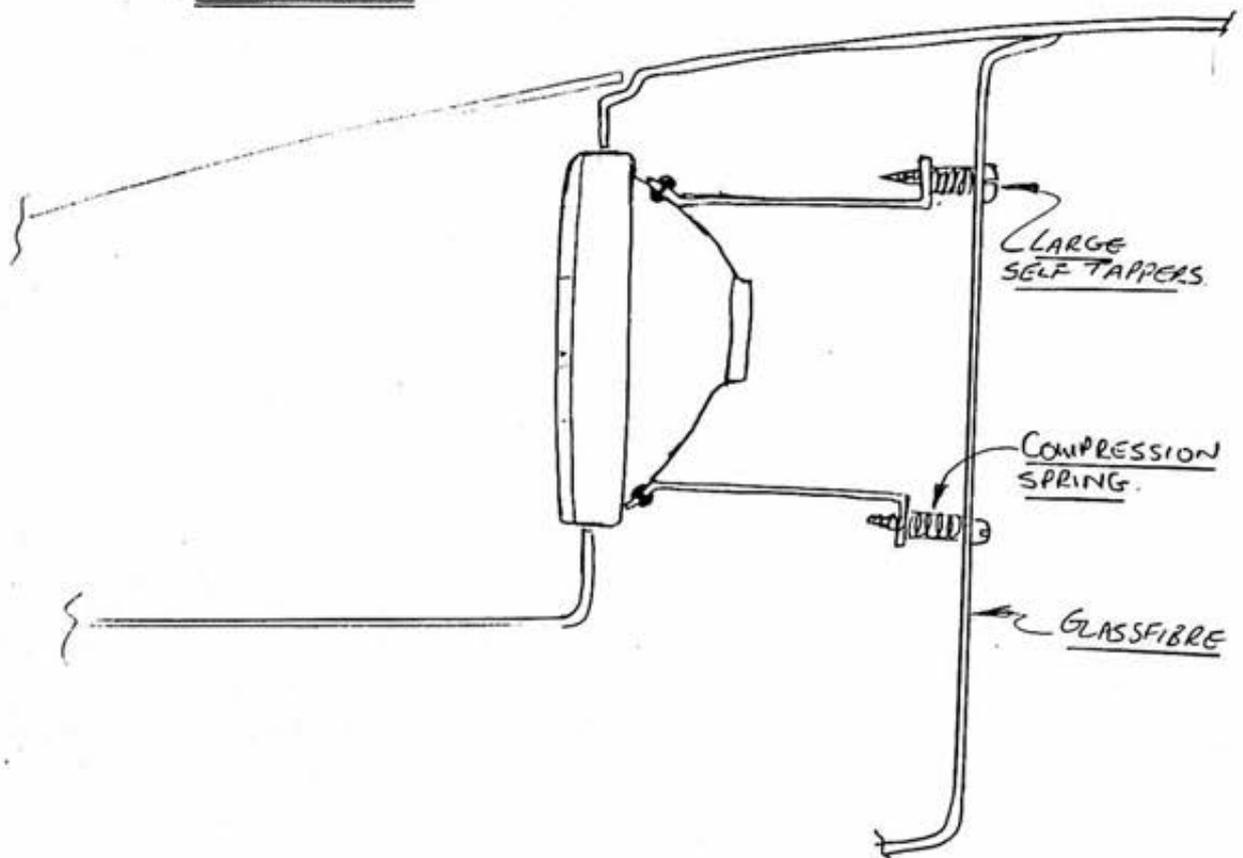
TEMPLATE FOR CUTTING OUT  
HEADLIGHT APERTURE FOR  
CORTINA XLE HEADLIGHT.

The mounting and adjustment brackets has to be riveted onto the reflector, one in the middle at the top, two at the bottom corners.



Fairly large self tapping screws are now put thru the fibreglass headlight box back wall, not tapped in the fibreglass but tapped into the metal brackets, with a spring between the bracket and glassfibre, See Dwg 14(d). By turning these, the headlights can be adjusted.

DWG. 14(d)



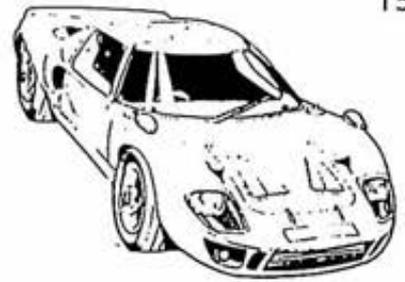
WIRING IDENTIFICATION ON THE KOMBI INDICATOR DIPPER SWITCH.

Black/Green/White	: Bring wire from flasher unit into switch.
Black/White	: Flasher R/H side.
Black/Green	: Flasher L/H side.
Brown	: Power into switch for H/Light.
Brown/White	: Power from switch into Headlight relay.
Grey	: Left Park. (front & back).
Grey/Black	: Right Park. (front & back).

NOTE: We suggest you ignore the last two wires - cut them off if you wish.

If you wish, their function is to provide a parklight on Front and Rear on one side at a time, for parking on the roadside at night. This is done by putting the indicator switch on to required side, with ignition off. This of course calls for extra wiring into the harness.

This switch is to be used in conjunction with a VW (Beetle, Golf, Kombi, Passat, etc) headlight relay. Whilst the headlights are not on, you will only flash the mainbeams when you pull this stalk lever towards you. When the headlights are switched on, it will alternate between bright and dim everytime the stalk is pulled.



### ELECTRICAL

This the part that scares most people, but is really quite simple if tackled in stages, making notes as you go along.

Just a few pointers again when carrying out the wiring. Some are very important, as bad wiring or poor insulation is the main cause of nearly all car fires. It would be a shame to see all your work go up in smoke.

- 1) Instal a battery isolator switch as close to you as possible. Say, between the seats. This will also keep the supply lead from the battery as short as possible. If anything major occurs a flick of the switch will shut off everything.
- 2) Connect the power to all the circuits except the Dynamo/ Alternator starter & through one main fuse. 'An industrial 50 amp fuse is ideal.
- 3) Split the supply through the terminal block so that each individual supply passes through its own fuse. A minimum of ten fuses will be required. On the original car, the fuses were mounted on the dash panel.
- 4) Whenever a wire has to pass through a hole in the panel, drill the hole large enough to accept a rubber grommet to avoid chafing.
- 5) Make notes as you progress & allow plenty of excess wire as it can always be shortened later.
- 6) A wiring diagram can be drawn up later from your notes. You will probably find that trouble shooting is quicker and easier using your own notes than a wiring diagram anyway.
- 7) One golden rule:- Over size the wire, under size the fuse. To calculate fuse size is simple, just divide the watts by 12 to give the amps.

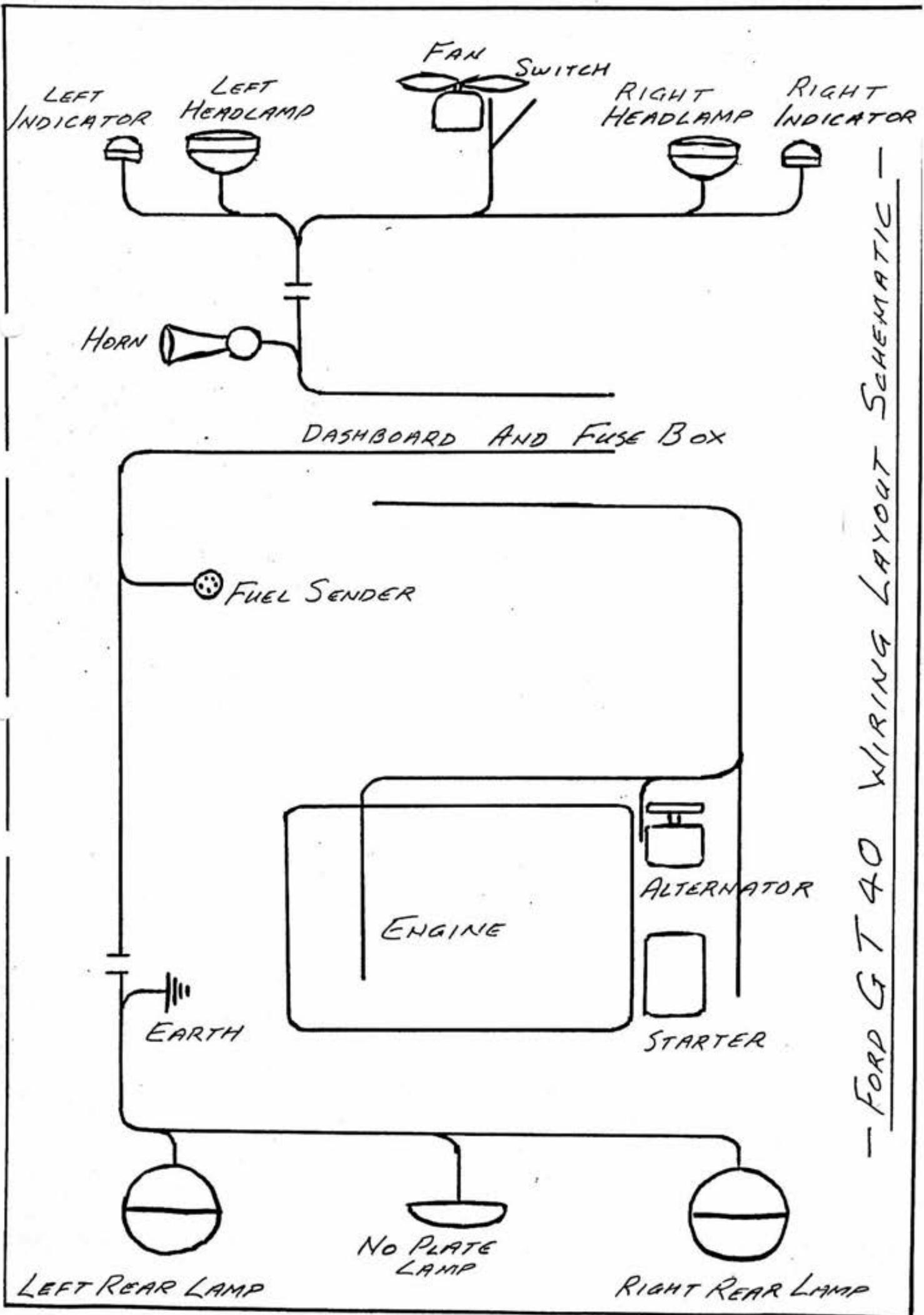
For example:-

2 headlights	= 70 watt each = 140 watts
4 sidelights	= 6 watt each = 24 watts
2 number plate lights	= 6 watt each = 12 watts
Panel lights, say	= 12 watt each = 12 watts
	Total 188 watts

$$\frac{188}{12} = 15,5 \text{ amps approx.}$$

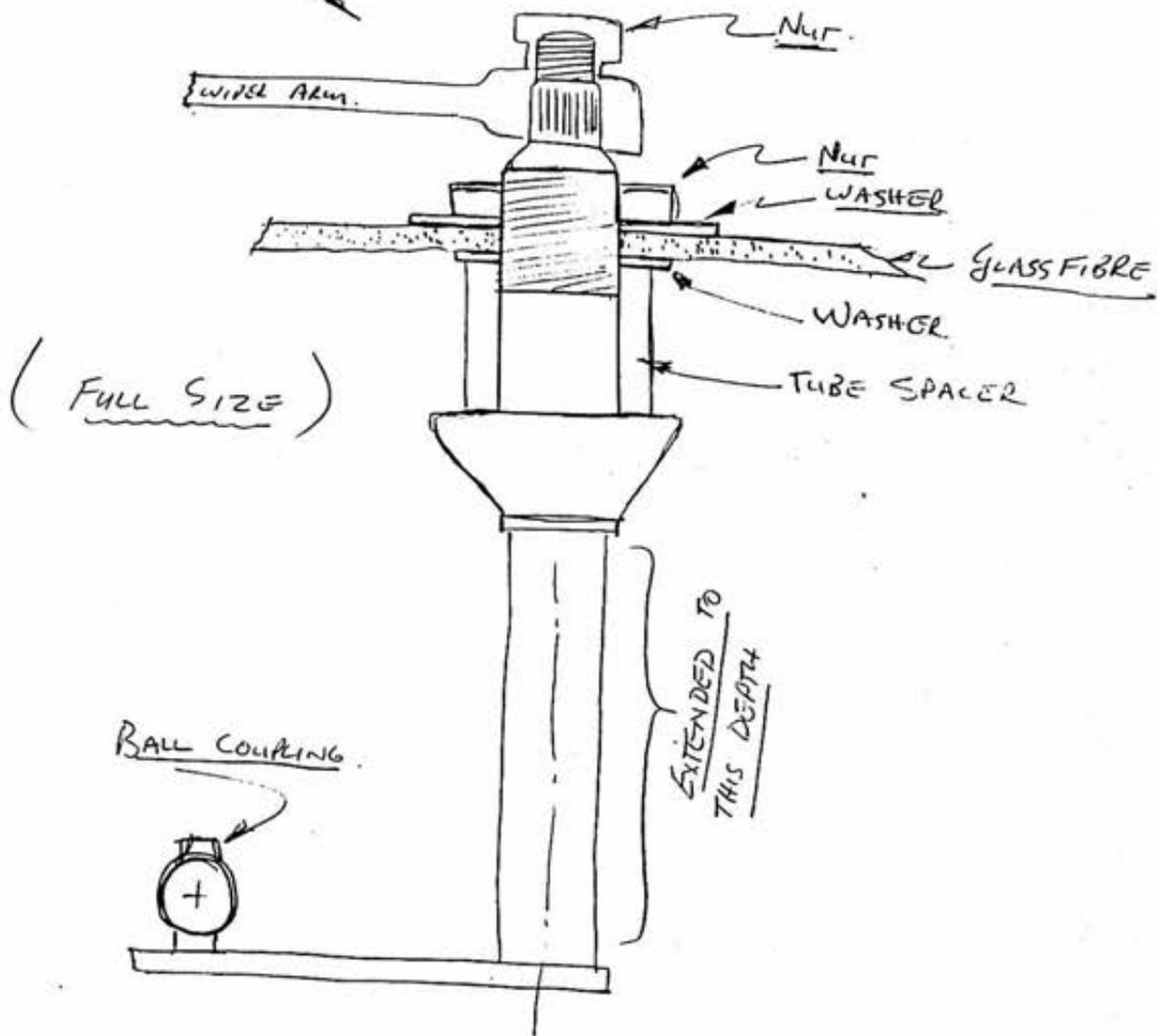
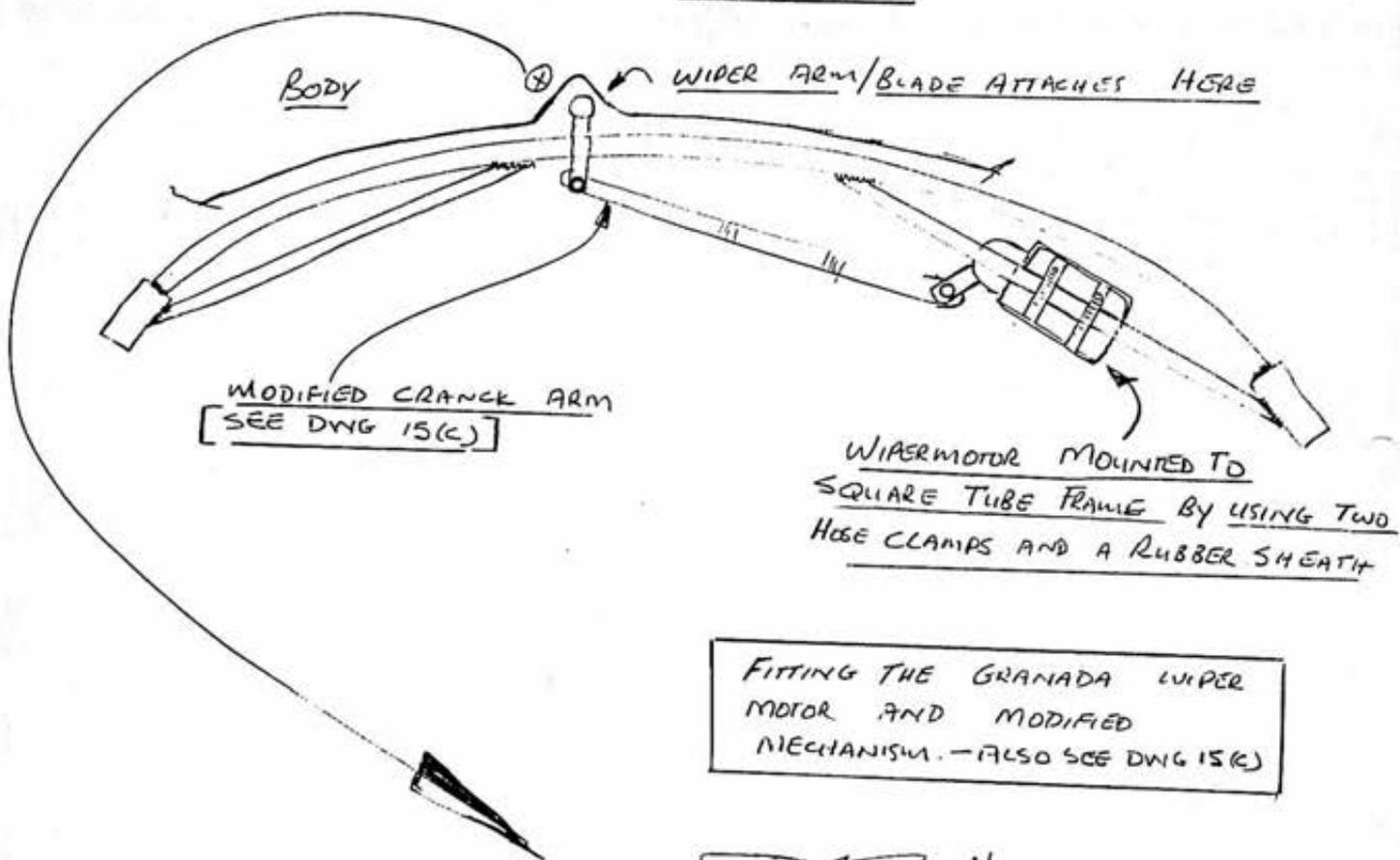
However you should not have too many itens off one fuse.

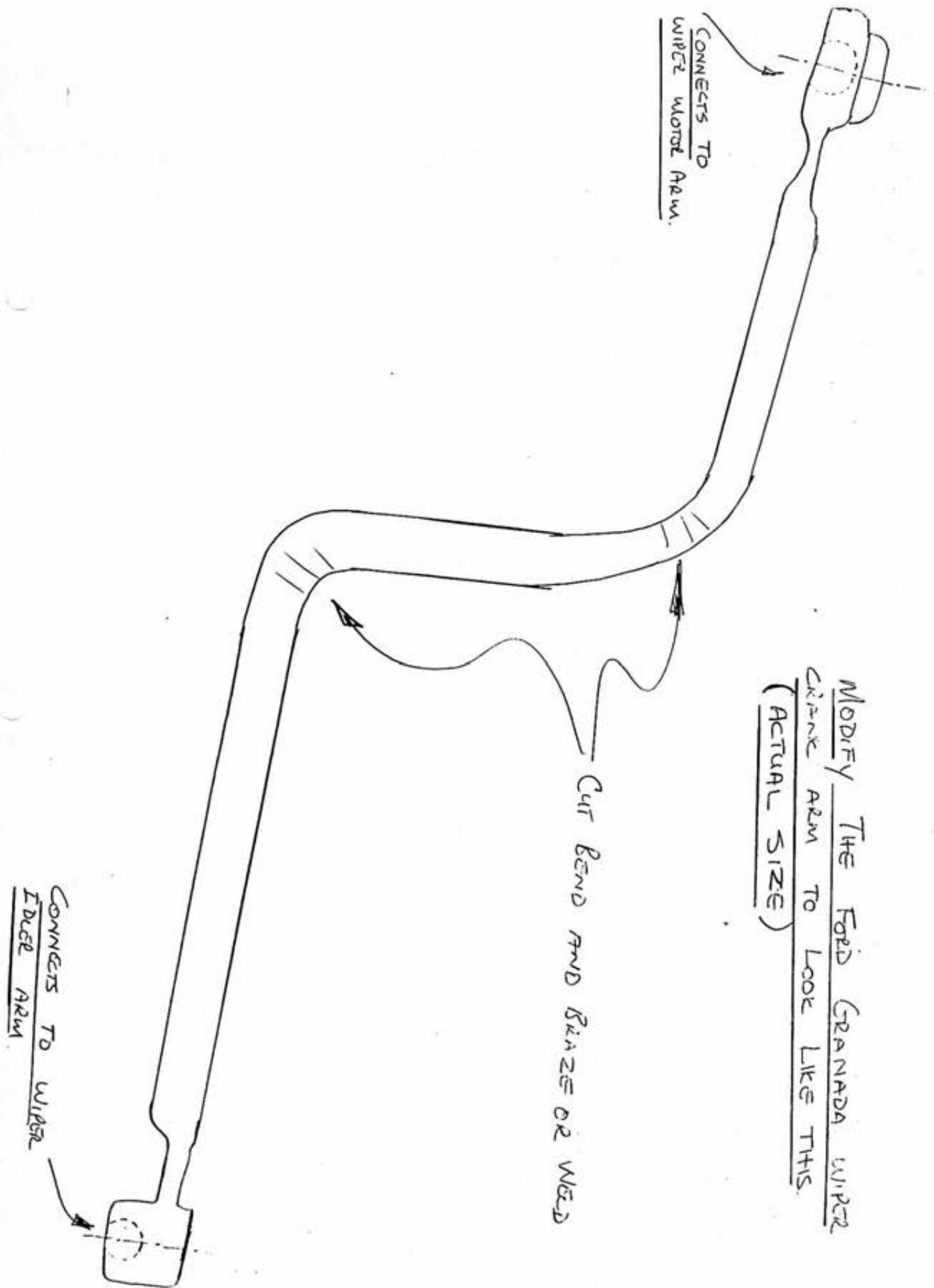
- 8) Use good quality fittings and switches, some modern switches sold at approx. R1,50 each are not much use except on very low amperages. People such as Lucas make good quality switches. It would be better to go to your local main dealer for switches instead of one of the "go-faster-goodies" shops for such items.
- 9) If all the above notes still make you feel a little frightened, then by all means call in the expert. But remember, it could be very expensive.
- 10) Kit Car Centre offers a basic wiring harness made up to correct lengths, using a different colour wire for each different function. - No connectors on the ends. It comes with a layout diagram and colour code diagram.



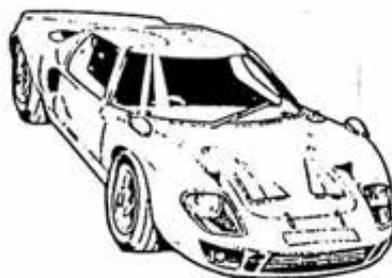
— FORD GT 40 WIRING LAYOUT SCHEMATIC —

DWG 15(b)









### DOORS & DOOR LOCKS

The doors will be already mounted when you receive the unit. However, door locks etc. will have to be fitted. The flange around the door opening will have to be fitted with a rubber seal. The B.L. 1100 or mini seal is adequate. KCC keeps the correct rubber as well. The door adjustment will be made after you have fitted the locks and rubber seals. Door adjustment can be a very frustrating job, and can take a couple of hours per door. Half an hour if you are lucky. So be prepared for using a lot of patience. I find the easiest way is to slacken the adjustment bolts just enough to hold the door in position, then using a piece of mild steel bar or tube & hammer, gently tap the adjustment plate in the direction you want, then without moving the door, nip up the bolts. You may find it easier to adjust one plate at a time, the bottom one first.

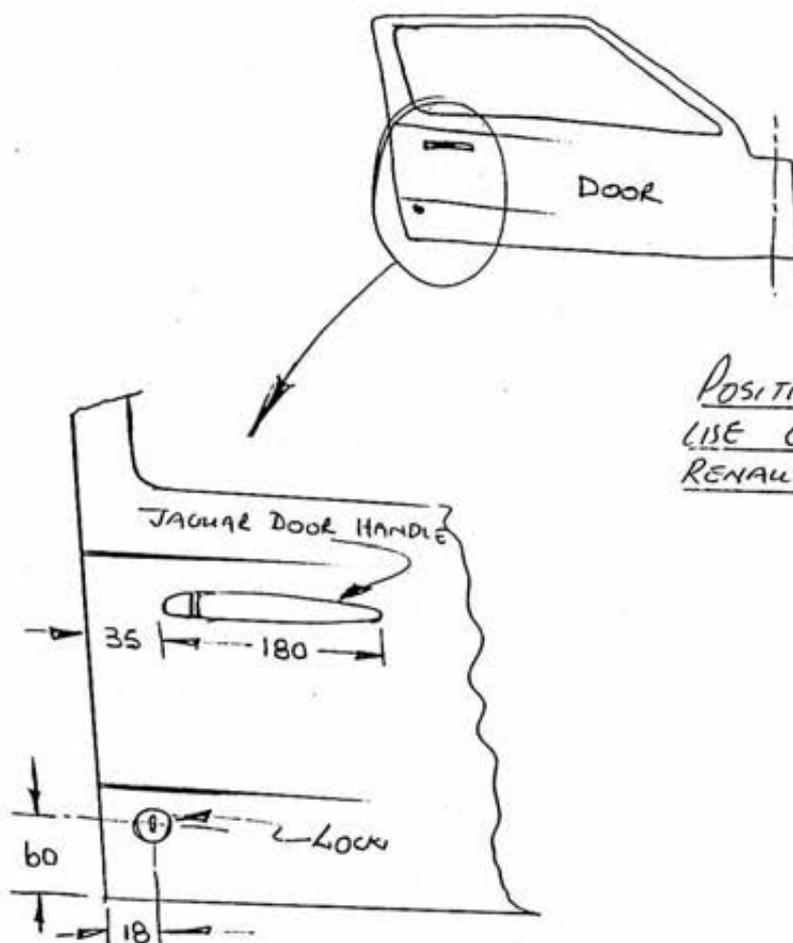
The internal and external door lock mechanism is as per parts list. Fitting is simple once you have made notes and sketches of the donor car method of fitting.

Flow of air up and over the screen and roof induces a low pressure area above the doors. This can cause the top of the doors to flex upwards by as much as  $\frac{1}{2}$ " (12mm) at a speed in excess of 160 k/h. On the original cars this was cured by pop rivetting an aluminium plate onto the roof to hold the door down. It looks awful and plays havoc with the paintwork. An equally effective and tidier method is to pop rivet the plate under the top of the door. This engages under the car roof and holds the door down at all speeds. The original cars were notorious for water pouring in except when on the move. In some pit stops it was normal to see someone holding out the umbrella. The slipstream effect caused rain to pass over the top without entering the car. It could have been a fiendish plot by the manufacturers to ensure that the drivers kept moving as fast as possible. (Some cars had no rubber seals at all). Don't be dependant. The car can be made waterproof provided you are thorough, especially with fitting the door-seals.

Look inside whilst a friend or wife gently sprays a garden hose over the car. It is essential that this is done before fitting the seats and carpets. Nothing irritates more than wet carpets.

POSITION OF DOOR HANDLE AND LOCK.

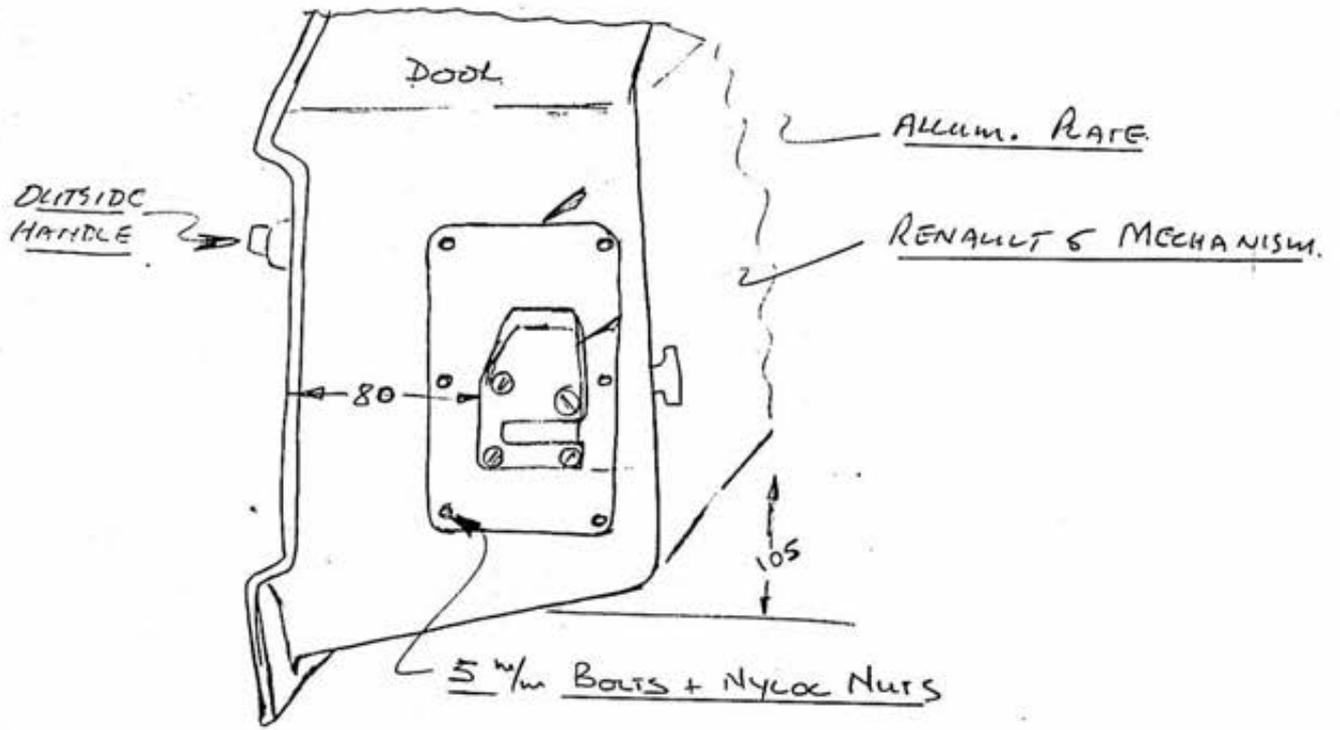
DWG 16(a)



POSITIONS SHOWN ARE FOR USE OF JAGUAR HANDLE AND RENAULT 5 LOCK MECHANISM.

Use entire door lock mechanism from the Peugeot 305 or Renault 5 and the exterior door handle from a Jaguar XJ6 or a Mini, or from Hillman Vogue. We suggest that you fit the actual door lock to an aluminium plate of about 170 x 85 x 2.5mm thick, in turn then, mount the plate to the door. This will spread the load considerably. — SEE DWG 16(b)

DWG 16 (b)



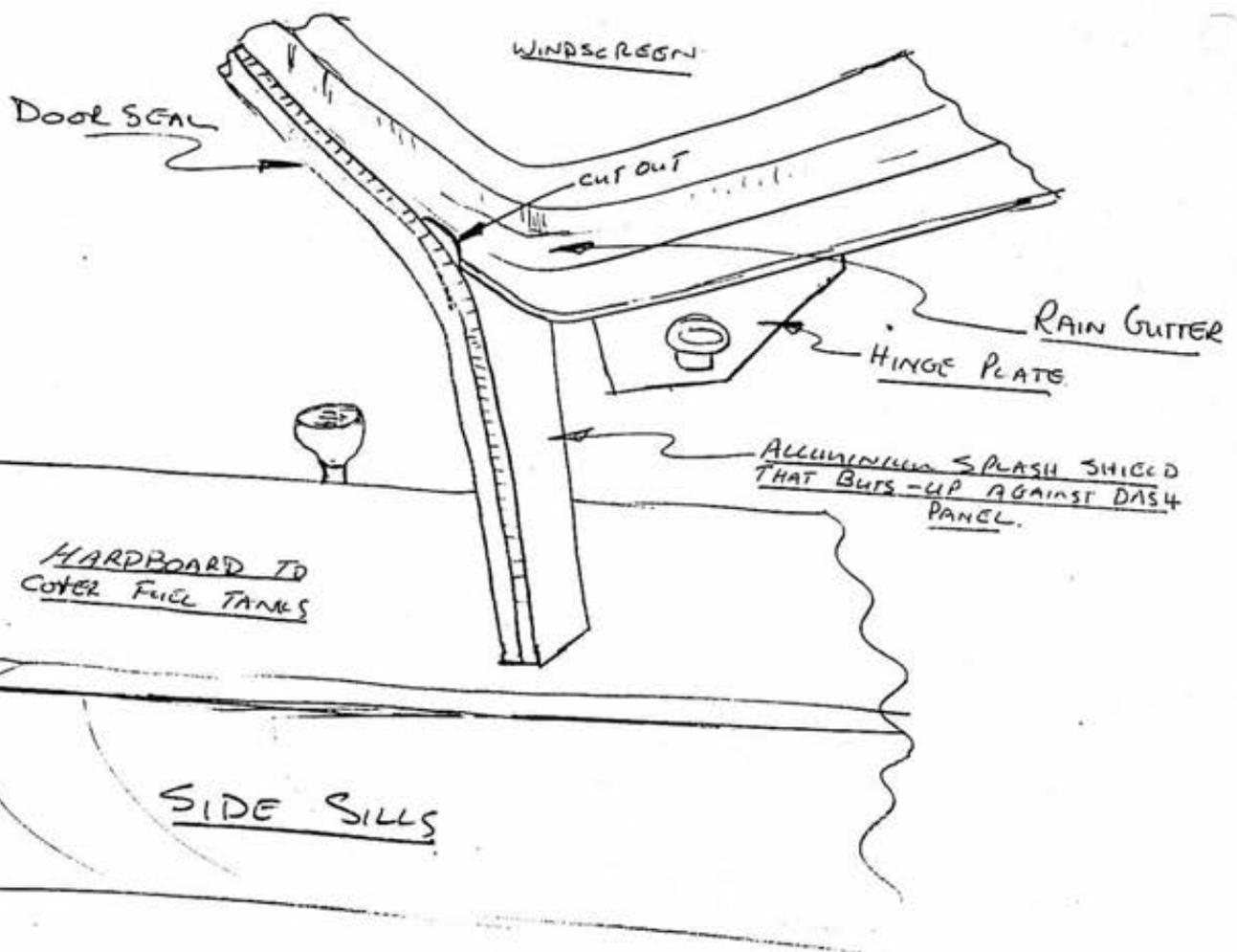
### FRONT AND REAR BODY SECTIONS

Again these are fitted to the unit when supplied but will have to be adjusted after fitting the wheels and latches etc. The method is simple, just slacken the clamps or bolts and move to final position. The latches are Triumph Heralds or Spitfire. (See sketch). "Dzus" fasteners were used on some cars, and or Rally pins on others. Choice is up to you, but keep it looking as original as possible.

#### GENERAL NOTES

- a) Fit soft seals around the doors and seal with gum type waterproof sealant after fitting.
- b) Make up splash shield in front of leading edge of the doors using 16 or 18g aluminium according to sketch, so that the door seal can be continued down towards the sill. You will need to make a small cut-out in the door gutter section as shown in Dwg. 16 (d).

DWG 16(d)

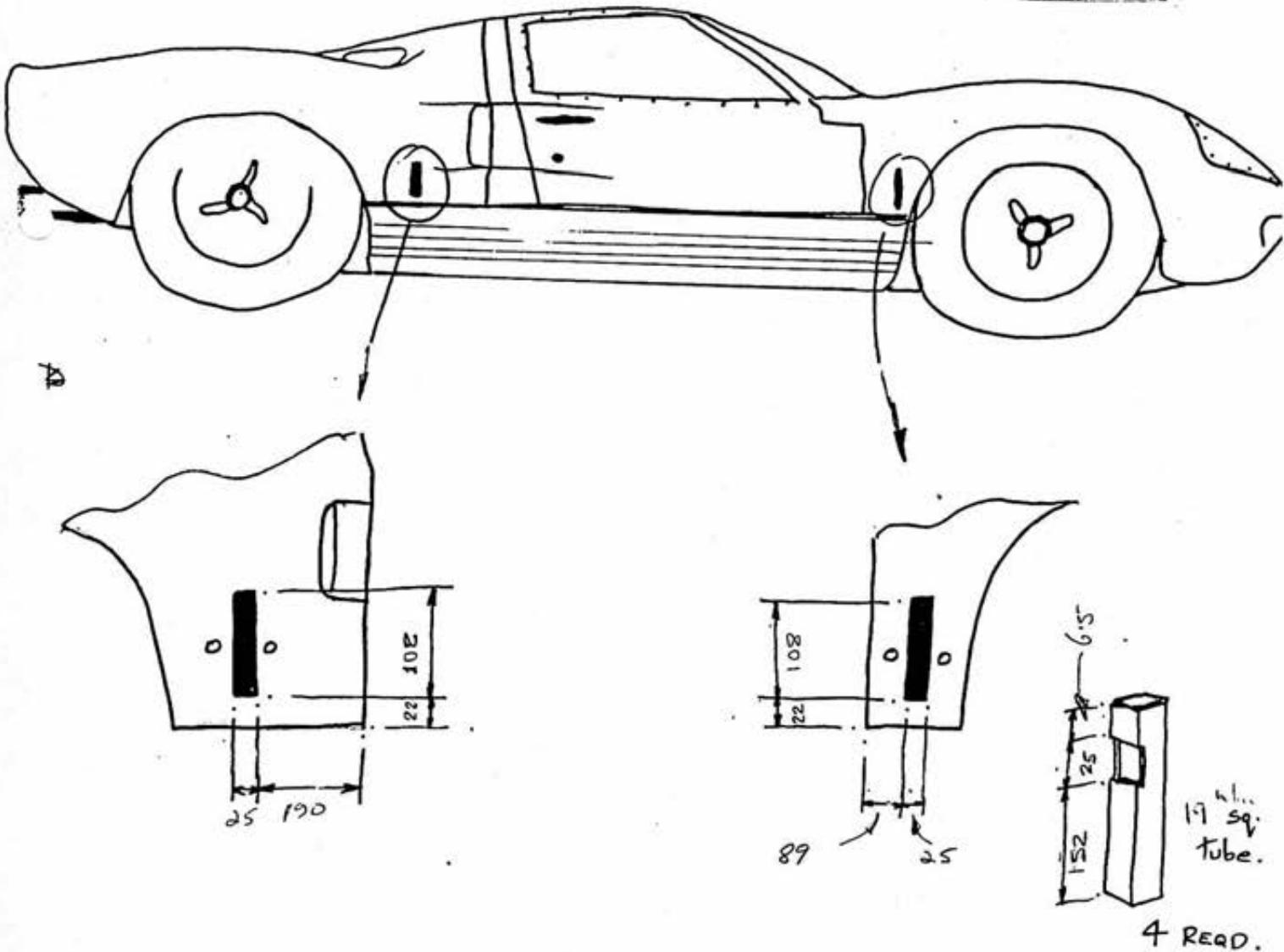


POSITION OF BONNET LATCHES

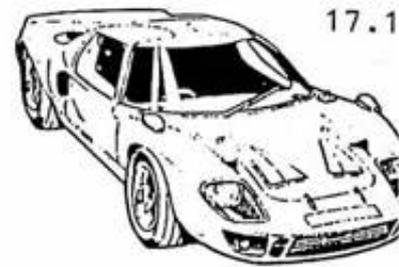
(If you wish to use the original type)

- a) Position and size of outcuts for triumph Herald or Spitfire bonnet latches. (The rear is  $6\frac{1}{2}$ mm smaller due to body curve).
- b) Drill holes in the fibreglass after final position of latches.
- c) Saw and file hole in 4 pieces of sq. tube and weld to 38mm sq. chassis member for latch location.

DWG. 16(c)







### FITTING OF WINDSCREEN & SIDE & REAR WINDOWS

The headlight, spotlight, side-screens and carburettor cover are formed in acrylic which offers excellent optics but does require care whilst fitting. It is strongly recommended that you read and adhere to the following procedures.

#### DRILLING HOLES

##### DO NOT USE AN ELECTRIC DRILL

USE only a hand drill, because it allows one to feel if the drill begins to tighten.

When drilling, use a slightly blunt drill-bit and use VERY LIGHT pressure, allowing the drill to work it's own way through, do not attempt to speed drilling rate by increasing pressure. Always use firm backing under the hole and support the part being drilled so that it is not under tension. Cracking is most likely to occur as the drill exits the hole, so as the bit is about to break through, reduce speed and pressure. If you feel the bit starts to grab, reverse direction of rotation for a few turns and using very light pressure ease the drill through. Repeat if necessary, any time the bit grabs. If a crack should occur stop drilling immediately. Stop the crack by drilling a hole at the end of the crack, using a drill-bit smaller than the thickness of the material. When countersinking holes the bit should be sharpened to the same angle as the screws' countersink angle. Use equal care on all holes as causing a crack on the last hole is just as catastrophic as the first.

#### FASTENING

When fitting screws:-

Press the cover firmly against the mounting face and only tighten the screw to a point where the screw head just contacts the cover and no more. NB: Overtightening will cause stress cracks to form, if not immediately, then after a short time. The use of pop rivets will cause cracking, therefore the use of machine or self tapping screws is recommended. The side screens may be fitted and attached with silicon sealant, or black double

sided tape of 12mm width. Before fitting the screens, spray a black paint frame of approximately 16mm wide on the inside of the glass. This serves as a ultra violet screen against the sun attacking the silicon and it also makes for a very neat appearance. Run a bead of sealant around the mounting face in the door, and insert the cover top first, gently adjust the cover until it is flush with the door. Wipe off the excess sealant. Once the sealant has cured the residue can be removed using a rag lightly dampened with petrol. If desired, screws may be fitted.

#### TRIMMING

If it is necessary to trim the covers, a small angle grinder fitted with a cutting disc works well. Avoid judder at all costs and make a series of shallow cuts. The workpiece must be fully supported to avoid setting up any localised stresses. Rough edges can be smoothed using a sanding block with successively finer grades of sandpaper and finally buffed with Brasso metal polish.

#### CUTTING AIR VENTS

Scribe the shape of the vent on the inside of the side screen and drill a 1.5, hole near centre of the rear face. Pass a fret-saw blade through the hole and attach it to the saw frame. Use a work table covered with a towell of cloth to prevent scratching. Place the cover hollow side up and saw around one half of the vent and remove the saw. Tape the cut on both sides for support. Insert the saw at the hole and cut around the other half. Use light pressure and allow the saw to cut at it's own rate. Drill the holes and fit the hinges and latch before fitting to the car. Removable hinge pins will allow easy removal of the vents if necessary.

#### CARE

Dust deposits should be flushed off before cleaning with clean soapy water and soft rag. Light scratching can be removed by

gentle buffing with a soft cloth and brasso. Taking care not to rub continuously in one direction after cleaning. Polish with any good quality car polish. As mentioned; stop drill cracks immediately observed. Run some super glue into the crack, this will help to disguise it.

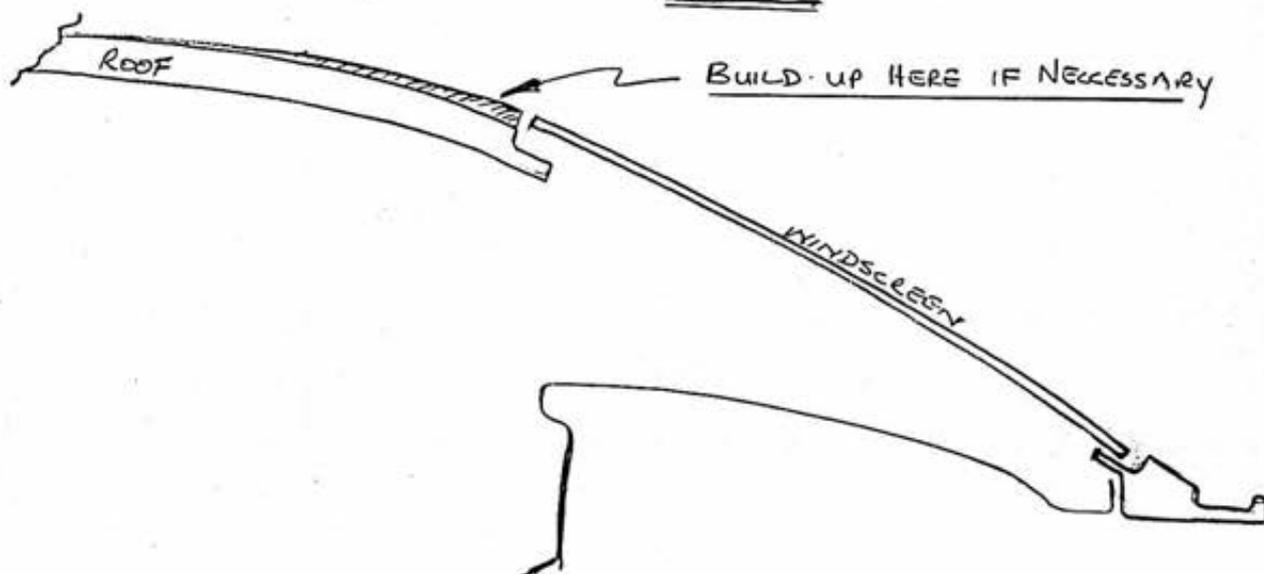
#### NOTES:

To make cleaning up of the silicon easier; it is wise to use masking tape around the edge of the body, as well as on the plastic glass when the glass is pressed down and the excess silicon is expelled outward, it can be wiped very neatly by using Lux Liquid soap liberally on the finger. The excess will go onto the masking tape. When the silicon has dried properly, the masking tape can be peeled off, leaving a neat, narrow bead of black silicon. Should you be left with an uneven edge, use a razor blade (again, lubricated by Lux Liquid) and cut through the silicon in the desired line, then roll-off the undesired silicon with the thumb.

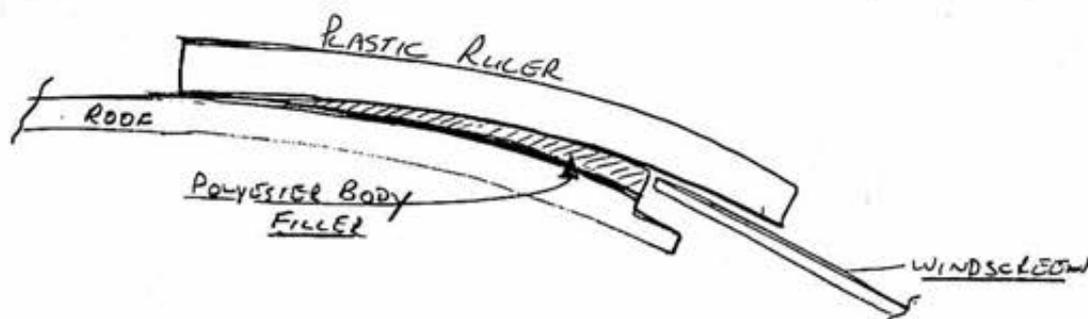
#### FITTING THE LAMINATED GLASS WINDSCREEN

The windscreen should be trial fitted to the car before the car is painted. Lay the glass into the body aperture, keeping it away from the body by approximately 3 to 4 mm, using bits of rubber, presstick, chewing gum or whatever. Now see to it that you have a minimum gap of 2mm right around between the glass and the body. This is to provide for expansion of the glass in the sun. Grind away fibreglass where necessary. You may find that you need to build up the roof surface to come level with the glass.

DWG 17a)



Should you need to build up the roof, proceed as follows; The area where filling has to be done, needs to be sanded to ensure proper grip of the polyester body filler. Tape the windscreen to prevent the filler sticking to the glass. Now plaster the filler liberally onto the roof surface. Using a flexible long plastic straight edge (ruler). You can scrape the filler into the correct curvature to meet up with the windscreen.



Watchfully wait for the filler to start hardening and as it starts to harden, trim the gap between the filler and the windscreen with a knife. Now is also the time to clean up all waste and access filler before it hardens.

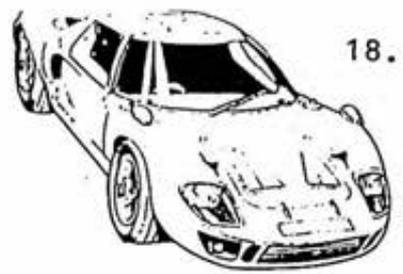
The glassfibre part of the body along the bottom of the windscreen can also be forced up or down to meet the windscreen shape.

The windscreen should be fitted with a special quick drying silicon adhesive commonly used lately to fit windscreens on cars like Sierra, Audi, Mazda 626, etc. A silicon adhesive gun is required for this job (an inexpensive hardware store item). The inside of the windscreen should be painted black, to provide an ultra violet protective screen for the silicon and to achieve a neat installation. This width should be about 28mm wide. (PRODUCT: SIKA - PRIMER 206J - 30mm).

Again, the body and the glass should be masked to the edge where you think the silicon needs to end, that is on the outside of the car as well as on the inside.

The adhesive silicon (SIKAFLEX - 255FC) will dry within 3 hours. Be sure to clean up as it goes hard, this is easier than what it would be days later.

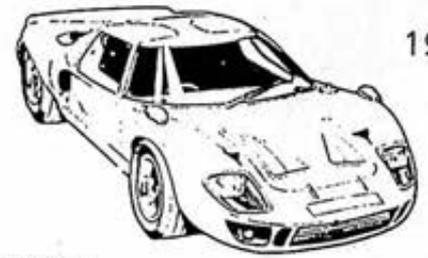
GOOD ADVICE! Don't be rushed when you do this job, and leave the BEER DRINKING for later!



## TEST DRIVE

Before taking your GT40 for its first run, check all major functions, especially the following;

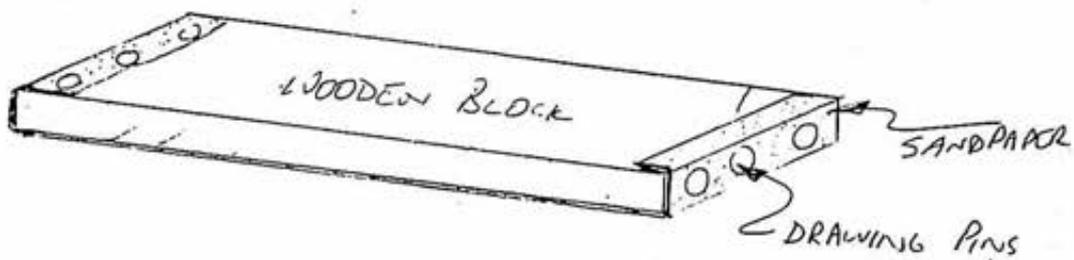
- 1) Brakes for even adjustment, pedal height and free operation, handbrake and fuel level.
- 2) All wheel bearings and nuts secured and properly adjusted.
- 3) All wheel bolts for tightness.
- 4) All steering gear bolts and adjustment.
- 5) Clutch adjustment and free play, and hydraulic fluid level.
- 6) Accelerator pedal movement, return and smooth operation.
- 7) Wheel allignment.
- 8) Tyre pressures.
- 9) Correct functioning of all lights.
- 10) Correct functioning of hooter.
- 11) Check that your vehicle complies with the ordinance of the province you live in.
- 12) Take a Fire Extinguisher with you, rather be safe than sorry.



## PREPARING THE BODY FOR PAINTING

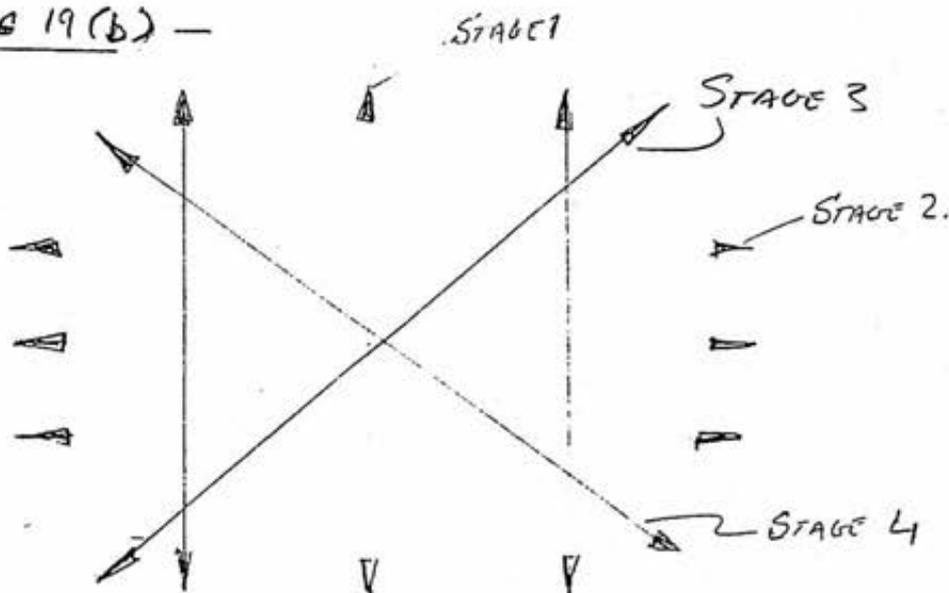
- 1) Clean off the entire body with wax and grease remover.
- 2) Make yourself a sanding block from a piece of wood 20mm thick. 200mm x 100mm. This will allow you to fold a standard sheet of sandpaper in half and attach it to the block with 4 drawing pins per side. Dwg.19 (a).

Dwg 19(a)



- Do not use a rubber sanding block for this purpose, as it will only follow the profile of small imperfections in the fibreglass.
- 3) Using a water/liquid soap solution and 220 sandpaper, sand in straight lines then again 90° across in the other direction. This will soon show imperfections you were not even aware of. When sanding in hollow areas, for instance, between mudguards, and the bonnet, be very careful not to sand a groove into the hollow. In these areas sand in four stages; straight, across, then diagonally across, then diagonally across in the opposite direction, holding the block with both hands.

-Dwg 19(b) -



- Should you find that in places you're sanding right through the colour gelcoat, do not worry - no harm done.
- 4) Finish off all the rough edges in the bonnet opening, door apertures, and door edges where inner and outer panels are bonded together. Use polyester filler to fill small air cavities.
  - 5) Once the entire body is sanded as described in paragraph 3 above, then apply a coat of primer paint. Now use 400 sandpaper and a block and repeat procedure, until all imperfections have been eliminated. Do not worry about deep sandpaper marks, file marks, etc. these will be dealt with in another method. At this stage concentrate on removing surface ripples, etc.
  - 6) To eliminate file and sandpaper marks, two methods can be used:
    - (i) Commercially available spray filler (which is a two-part mix) can be sprayed on. Follow application instructions on tin. This is sprayed on very thick and leaves a bad orange peel surface, often tear drop runs. Do not worry about this as it is sanded off very quickly and easily.
    - (ii) Our experience has shown that using a black spot-putty, thined down with thinners, until it is sprayable, applied in two coats, gives better results. It dries quicker, a little bit harder and does not crack after a few months. Preferably let the car stand in the sun for a day before you start sanding. Use a block and 400 paper.
  - 7) Once happy that your body is now smooth, then apply primer again, thickly in the places you have sanded right through to the glass fibre.
  - 8) Flat off the primer - You are now ready to apply the paint.
  - 9) Modern two-part paints are available, but these require a long drying period, and runs very easily. The novice is best advised to work with Duco 300. It dries quickly and small teardrop run can be afterwards sanded smooth with 800 or 1000 waterpaper.
  - 10) Apply two coats of paint, let dry, using soapy water and with 800 paper flat the entire body using the palm of your hand, (not the block). Remove all sanding dust, dry off properly and apply another two or three coats of paint.

- 11) Allow to dry at least one day. Fold a sheet of 1000 Or 1200 waterpaper double, abrasive faces onto each other, rub these faces together, making it "blunt".

Using a hot soapy solution, the palm of the hand, and very little pressure, sand the entire body in small circular motions. This will remove all dust particles that may have settled on the surface, as well as "orange peel" finish..

- 12) Using a fine burnishing compound, rub the paintwork, in straight forward and backward motions.
- 13) Using a 50/50 mixture of Brasso and "Johnsons Car Nu" polish, polishing in straight line rub actions.
- 14) Finally use a good quality polish and finish off - This time in small circular motions.

If you've done this properly without rushing it, you will now have a car with a finish equal to any expensive factory painted car! You can also pat yourself on the back and rest for two weeks, you accomplished a job that so called professionals often fail in.