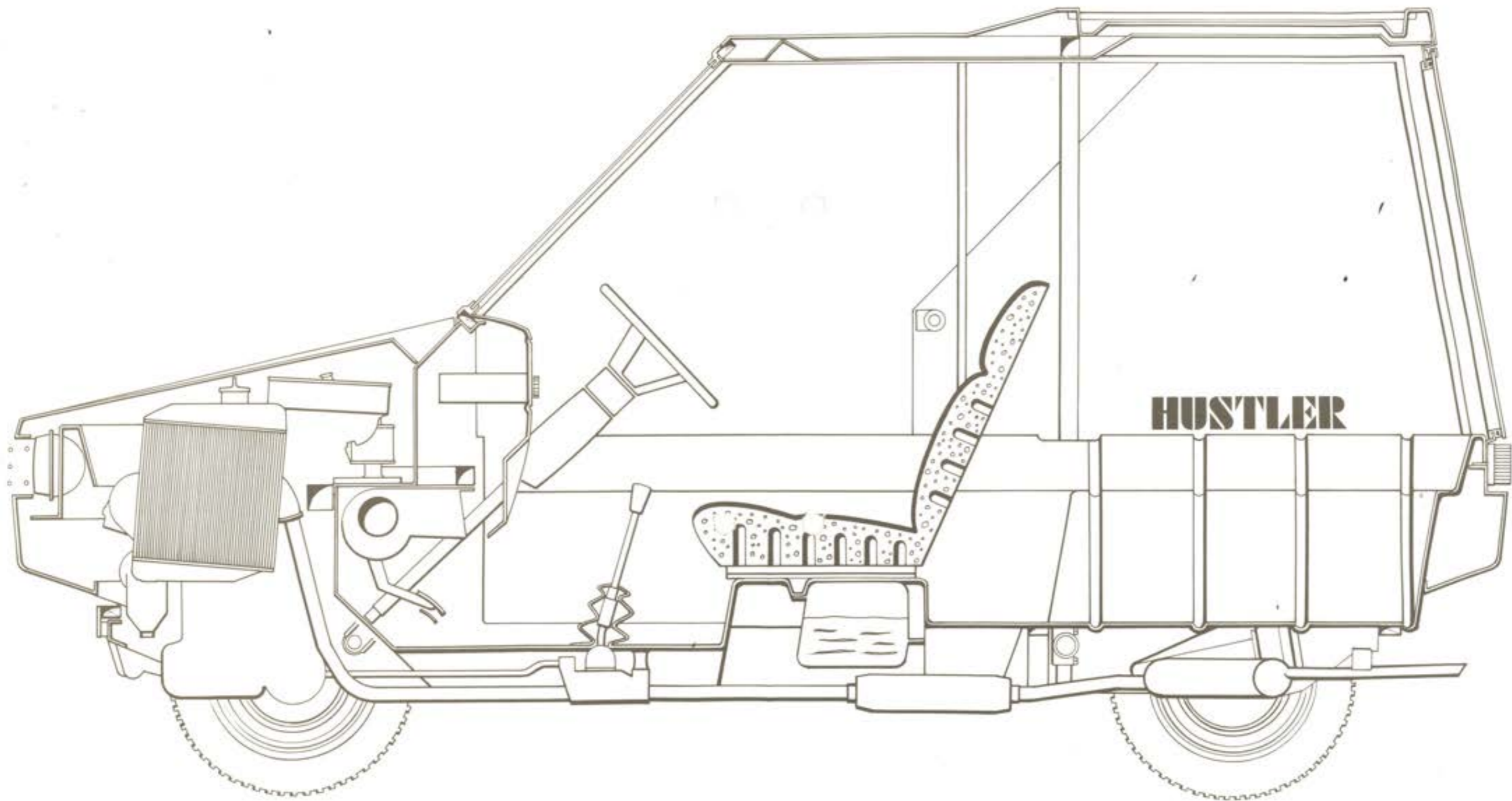


HUSTLER



HUSTLER

When we decided to create a new Hustler - Hellcat, we made it an exercise in single-handed build, timing each stage and recording the details. Although many of you will be building up from separate components, we bought a complete running Mini, the advantage of which is that you can evaluate the quality of engine, steering, suspension, etc. before committing yourself, and also get from a single source all the minor components you will need.

Accordingly, on 30 January, 1982 we acquired KJK 949K, a one lady owner Mini 1000 automatic, 80,000 miles, in fair bodily condition, mechanically reasonable, good tyres, MoT'd and taxed until July, 1982. The price agreed at was £110. To try and establish the realities of kit car building, we asked a man in his fifties, who had never built a kit car but who had a fair mechanical knowledge, to take our Mini to pieces and re-assemble them into Hellcat.

Stage 1 - Stripping.

This operation was achieved entirely single-handedly, starting with the front subframe assembly complete with engine, radiator, gearbox and suspension. First, support the car on stands. Then disconnect the battery, control cables (heater, choke,

accelerator), brake pipes, track rod ends (remove wheels first and then replace), front dampers plus brackets, speedo, starter lead, gearchange, engine earth and positive battery lead, (this is also clipped onto the rear of the subframe). Remove the bonnet (for ease of access), spare wheel, heater air supply hoses, carburettor, exhaust system, engine steady bar, distributor cap, battery, front damper brackets, wiper motor assembly, number plates (if required) and commission plates. Support the front of the front subframe.

Now undo the front subframe mounting bolts, two at the front, four on the bulkhead (two large ones for later type), four at the toeboard. If you have helpers you can save time here by having them lift the body up and wheel it backwards clear of the engine. Our single-handed man built a scaffolding gantry and hoisted the body using a trailer winch, wheeling the engine forward on its own wheels and a trolley jack. A pulley block on a strong beam would do the same job. The time for this stage - 3½ hours, plus one hour for building the gantry.

Next, while the car was raised at the front, off came the steering rack, column, pedal box, accelerator pedal, handbrake, heater pipes and gearchange. The gantry was moved to the rear and, after disconnecting the rear dampers and removing the rear subframe mounting bolts (remove the petrol tank first

for access), the body was raised and the rear subframe wheeled out. Three hours exactly. Then followed the demister vents and hoses, all brake pipes, fuel pipe, interior light, wiring loom complete (supply to rear runs along left hand cantrail - pull carefully forward at base of screen pillar), switch panel, instrument panel and interior mirror. This, plus a bit of tidying up, took a further 5½ hours. Total 12 man hours. When Car Mechanics did the same (May, 1979) it took two men about five hours, an example of the benefits of four hands for some jobs.

Stage 2 - Renovation.

We will not dwell on this, as all cars will differ, but suffice it that we spent 18 man hours cleaning up (for photography), undersealing the subframes, checking brake linings, etc. Remove the speedo cable and fit a longer one. We used Unipart no. GSD 115 40" long for our centre instrument, which will give ample length for even a column mounted pod.

Stage 3 - Build.

First we decided that we would use the original instruments, switches and headlamps to save cost and wiring time. So the first job was (1) to prepare the dash and underbonnet panel

(and roof console if required) by cutting the appropriate holes. If you are using a late-type Mini heater, cut a hole the shape of the control panel with its top edge $2\frac{1}{4}$ " down the recessed console. To fit the speedo (normally rear mounted) we Araldited a couple of wooden blocks each side of the hole to fix with the original brackets (bent through 90°). It is our own view that the finish of black facias is best left as supplied, while coloured panels benefit from having the smooth areas sprayed with a contrasting colour, scuffing the surface first for a good key. (2) Next, mount the rear subframe in the Hustler lower frame. For the forward mounts you will need two $2" \times \frac{5}{16}"$ and two $1" \times \frac{5}{16}"$ UNF bolts, for the rear, two $2\frac{1}{2}"$ and two $4" \times \frac{5}{16}"$ UNF bolts and nuts. A Hustler 6 will require four $2" \times \frac{5}{16}"$, four $1" \times \frac{5}{16}"$ and four $4\frac{1}{2}" \times \frac{5}{16}"$ bolts and stiffnuts to suit. Fix the dampers. (3) Fit steering rack in the moulded space provided on the toeboard. Drill four $\frac{5}{16}"$ holes at 305 (12") x 47 ($1\frac{7}{8}"$) centres, plus column hole. (4) Place lower frame over front subframe package and fix in place at the suspension towers with either the late type large bolts or four $3" \times \frac{3}{8}"$ UNF bolts. For the front fixings, use either the metalastic joints of the later type subframe, or make up a bracket to hold the front bar of the subframe space $1\frac{11}{16}"$ below the crossmember.

You will need two 1" x 3/8" and two 2½" x 5/16" bolts and stiffnuts. Fit the 5/16 bolt facing forward to allow later attachment of panel or nudgebar. Put a pilot hole through the seatbelt lower attachments so that when the interior is in place drilling from below will locate them. (5) Insert the interior moulding, as far forward as possible and centralised. Attach front subframe rear mountings (four 1" x 3/8" bolts and nuts) and connect steering rack. Attach dampers into diagonal tube with one (per side) 3" x 3/8" bolt and nut. Fix engine steady bar into extended tower tube with one 3½" x 5/16" bolt and nut. (6) Fit steering column, drilling cross tube for Mini column bracket. Bolt interior moulding to this tube each side of toebox. (7) Fit underbonnet panel, sealing and bolting to interior moulding in each battery tray and along the bulkhead behind the engine. (8) Fit pedal box assembly, clamping the trailing edge with the steering column bracket to the underside of the crossmember and mounting the fluid reservoir on the flat area provided. Remember to seal well. (9) Fit accelerator pedal adjacent to right hand wheelarch with the bolts ½" above the angled toeboard. (10) Fit heater, first making two angle brackets to support the rear. If these have slots rather than holes it will be possible to slide the heater into place before tightening. (11) Fit gearchange. (12) Fit wiper motor and

wheel box. Cut off the second wheel box 2½" beyond first wheel box. Cut a 9/16" hole 3¼" to the offside of centre-line on the small, slightly raised area under the screen. Bolt the wiper to the bulkhead, using the Mini mounting bracket. (13) Fit demister outlets 500 (20") apart, the tops just below the rearward flange on the scuttle panel. Fix by drivescrew through the fibreglass from engine side into the duct. (14) Pipe up heater water flow and airflow as desired. (15) Place upper frame in position over lower, align and clamp each fixing area separately, and drill 3/8" hole through tubes. This ensures that when all bolts (eight 1" x 3/8", ten for Hustler 6) are in place, side tubes are parallel and in line. (16) Drill a hole in the bulkhead, feed through the wiring loom and make the appropriate connections. Remember to earth to the frame. Mount instruments and switches in dash and connect. Connect speedo cable (see Stage 2). Fix dash to bulkhead with drivescrews or bolts at each end. Clamp choke cable outer at engine side of bulkhead to avoid facia distortion under operation. (17) Fit headlamps. (18) Fit fuel tank of your choice (a tank of up to 140 mm depth can be used without infringing ground clearance, e.g. MGB 130mm). If you bracket to the interior moulding rather than the frame

it will be necessary to earth the tank for correct operation of the sender unit. (19) Fit seats using a load spreading washer on the underside of the fibreglass. If you are fitting Wolfrace or Paddy Hopkirk seats, you may find it necessary to use a subframe about 3 - 4" high. (20) Fit handbrake, bracketing to suit type. (21) Fit side and tail lamps and connect wiring. Remember to earth into the frame. (22) Bolt upper and lower frames, filling the holes with a rubber grommet. If you use a shakeproof washer under the head of the bolt, and a plain washer and stiffnut below, it may subsequently be possible to tighten these without removing the window frames. (23) Mount screenwash bottle to bulkhead and pipe up. (24) Fit bonnet, hinging at base of screen pillar and latching with the bonnet pins on 1100 (43½") centres 95 (3¾") back from the bonnet leading edge (Hellcat), 1315 centres and 50 back for Hustler 4, 6, etc. (25) Prop the headliner in position. The neatest way to fit this, as an alternative to simply rivetting, is to slot the edge into the groove on the inside of the side window frame. Fit the side windows, applying first some silicone sealant around the mounting flange. Drivescrew or rivet in place, filling the slot with the plastic strip supplied. DO NOT STRETCH this as you fit it. It shrinks like mad, and it is best to glue the edges at each corner. (26) Follow suit similarly with the windscreen. (27) Mount the rear window (no sealant needed

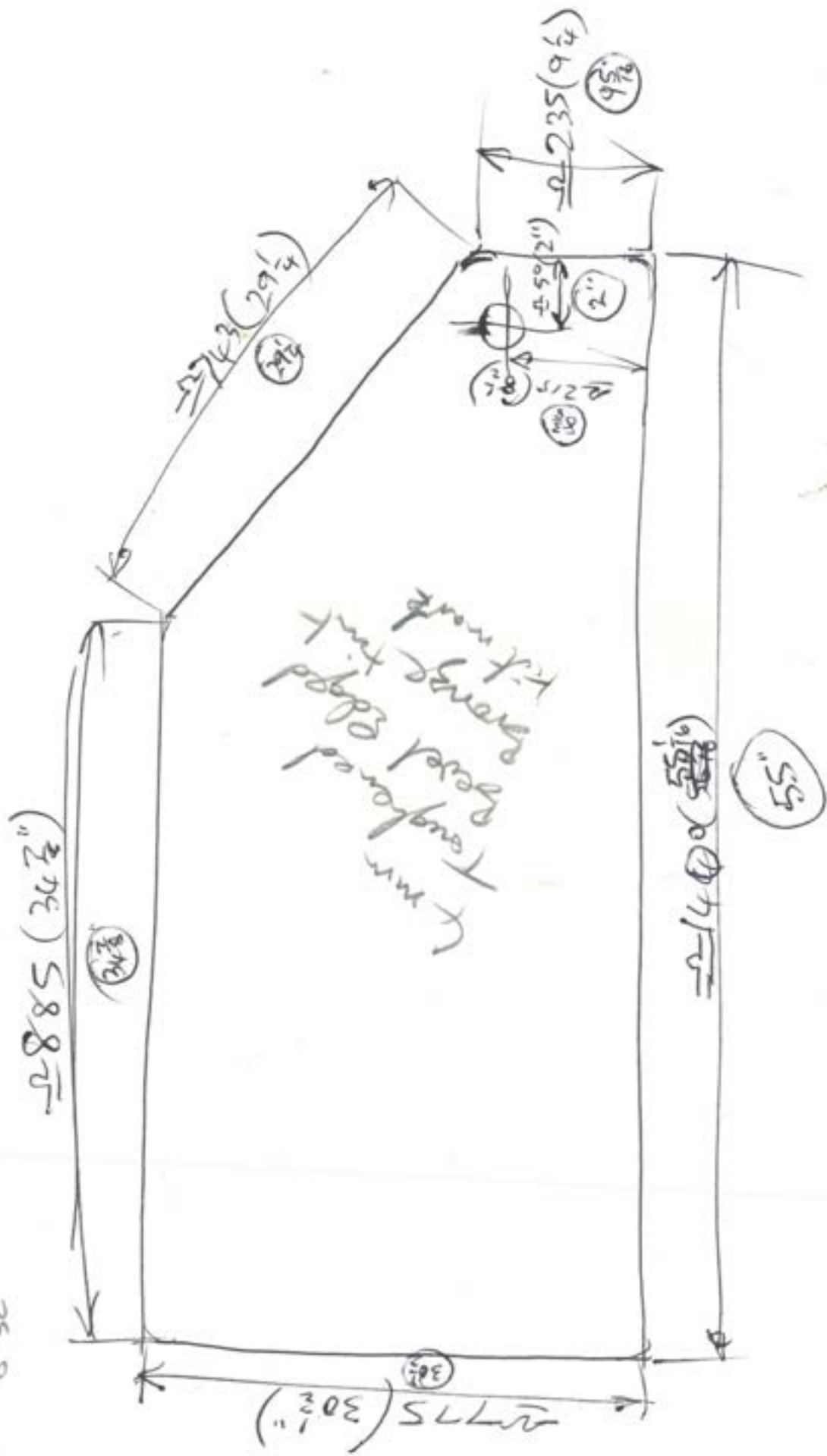
here), first fitting the rubber seal supplied to the rear window aperture flange. Attach the lock, placing the plastic ring from the inside and the aluminium plate with its gasket curling under the glass from the outside. Tighten the nut firmly but carefully. Attach the support stays to the plastic moulding provided, either cutting and redrilling the bracket on 28 centres, or making an adaptor piece from a block of hardwood. Attach the other end of the stays to the brackets, mounted 170 (6 $\frac{3}{4}$ ") down from the top frame flange. (28) Fit door catches. Here the plastic ring is fitted from the outside, the gasket and aluminium catchplate on the inside, the plate flange facing inwards. This butts to the glass frame to resist the lock's rotating, which is further assisted by a smear of adhesive or double sided tape between plate and gasket, and gasket and glass. Make up a small plate to attach to the glass frame for the lock tab, bent or notched as you prefer, to lock into. (29) Apply sealer along the top screen rail and place the roof in position, fixing along the sides. We have not found it necessary to seal along the sides. (30) The side panels are attached by two drivescrews or rivets through the forward tab into the crosstube from within the front wheelarch, and one fix into the rear subframe forward downtube. (31) If you wish the front and rear panels to be detachable, rivet a piece of angle (20 x 20) to the underside of the lower frame tube and fix into this through the side

flange. (32) Apply the name stickers, peeling off the backing paper slowly. Place a black one on the bonnet with its lower edge 40 from the bonnet leading edge and the 'H' 15 from the bonnet swage. At the rear, a black one with the upper edge 10 down from the edge and the 'H' by the inside edge of the tail lamps. The two white names go on the side glasses centred over the rear wheels with the lower edge 25 above the frame.

-oOo-

NOTES

$$\begin{array}{r}
 7\frac{5}{8} \\
 9\frac{1}{16} \\
 \hline
 16\frac{11}{16} \\
 8\frac{11}{32}
 \end{array}$$



$34 \frac{7}{8}$
~~34875~~

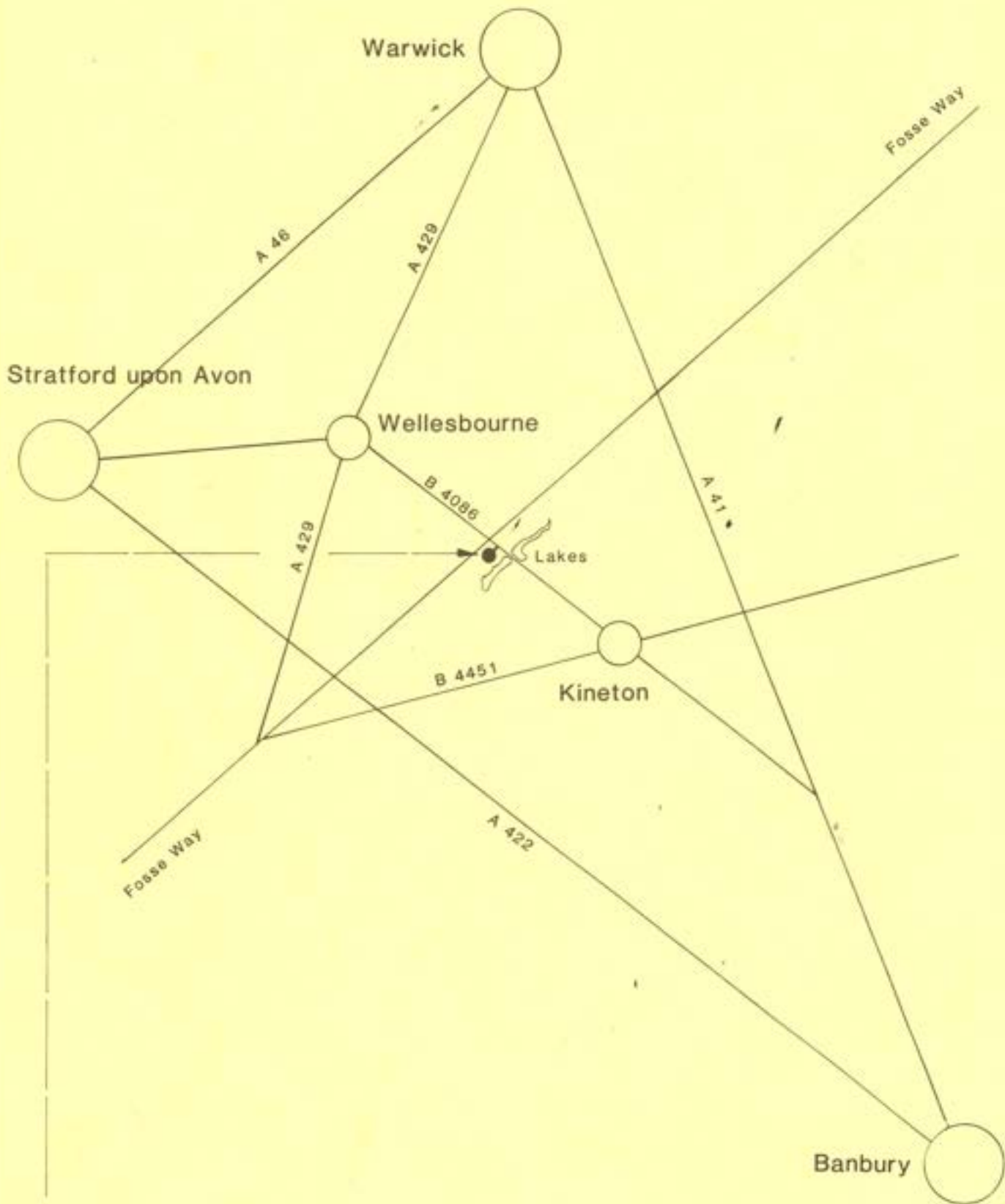


$30 \frac{1}{4}$

$30 \frac{1}{4}$

~~55~~
 55

7318



Interstyl

Park Farm Compton Verney Warwick CV 35 9HJ

0926 640241