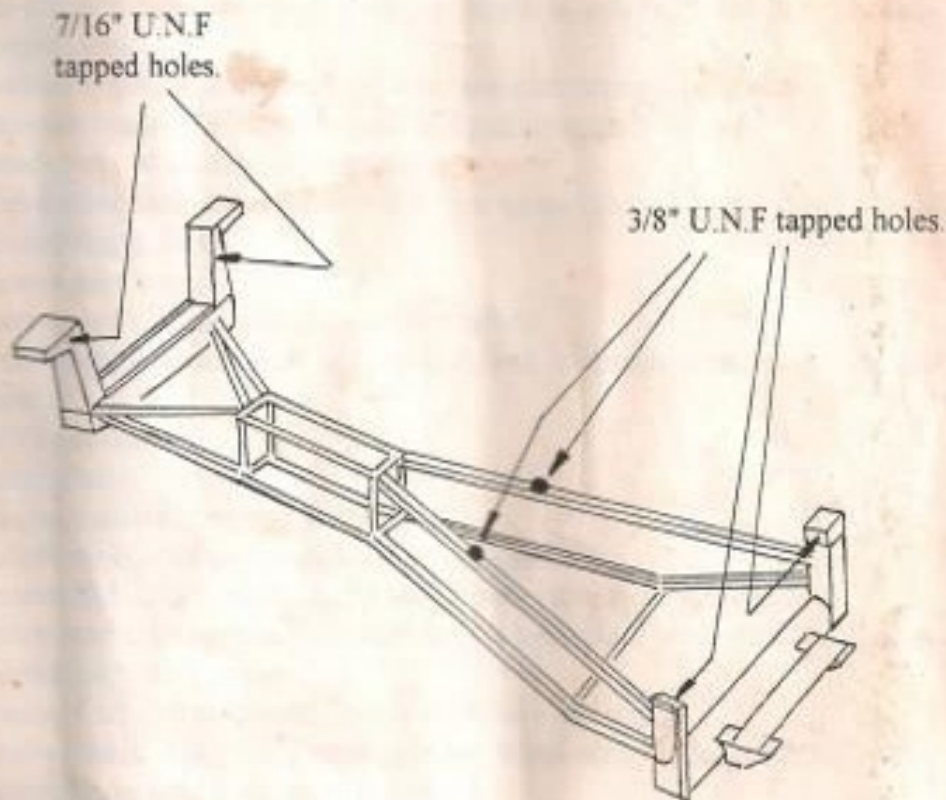


CHASSIS CHANGE INSTRUCTIONS FOR INSTALLING THE
SPYDER SPACEFRAME & STRESSED SKIN CHASSIS
TO THE LOTUS ELAN & PLUS 2.



The Six key body to chassis attachment points shown above are
common to both stressed skin and spaceframe chassis.

7/16" U.N.F tapped holes in rear turrets
-use 9.8 or 9.9 mm or 25/64" drill.

3/8" U.N.F tapped holes in engine bay and front
section - use 8.4 or 8.5 mm or 21/62" drill.

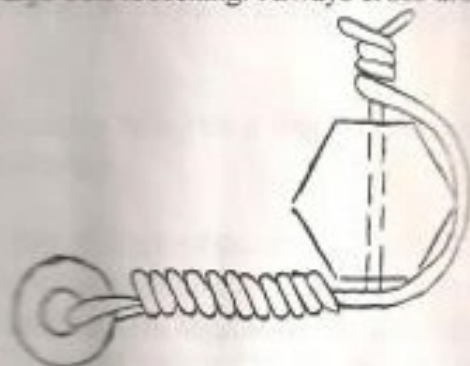
There are a total of 16 body to chassis attachment points including the Six mentioned above.

1. Ensure fuel level of tank is as low as possible.
2. Raise vehicle completely (e.g. 4 off car ramps).
3. Disconnect and remove battery.
4. Remove boot floor and spare wheel.
5. Drain fuel tank and remove tank unit wires. Remove fuel outlet pipe. Remove fuel tank (Elan only).
6. Remove nuts from boot floor (body to chassis attachment) and all earth wires.
7. Remove seats.
8. Disconnect handbrake cable from lever and pull through bulkhead.
9. Disconnect cable from speedo head and pull through bulkhead.
10. Loosen bolts of steering column clamp.
11. Behind dashboard remove 2 no bolts from tapped chassis holes. (key bodysell to chassis fixing points).
12. Remove gear lever.
13. Remove seat belt anchorage bolts from spine.
14. Remove seatbelt anchorage and key bodysell to chassis attachment bolts from rear towers.
15. Remove bonnet.
16. Drain radiator.
17. Remove radiator complete with fan.
18. Remove air box lid and trunking from carburettors.
19. Remove fuel unions, choke cable and throttle cable from carburettors.
20. Remove carburettors complete with air box back plate from manifold. Blank off inlet manifold with cloth or tape.
21. Remove 4 no rear carburettor studs (bodysell clearance).
22. Remove clutch pipe from master cylinder. Blank off cylinder outlet.
23. Remove brake pipe from servo outlet.
24. Remove heater hose and temperature gauge connection from cylinder head.
25. Remove servo vacuum pipe from manifold.
26. Remove alternator or dynamo wires. Disconnect reversing light wires located in loom between bulkhead and rear of inlet manifold.
27. Remove heater hose from rear of front cover.
28. Remove oil pressure gauge pipe from cylinder block (under manifold).
29. Remove steering column clamp bolt from steering rack coupling and disconnect column from coupling by sliding backwards.
30. Remove vacuum pipe from chassis front section (under steering rack mounting brackets) and from manifold.
31. Remove horns if fitted on body to chassis attachment points (located in nose).
32. Remove the 2 no remaining key body to chassis attachment bolts located on the front towers.

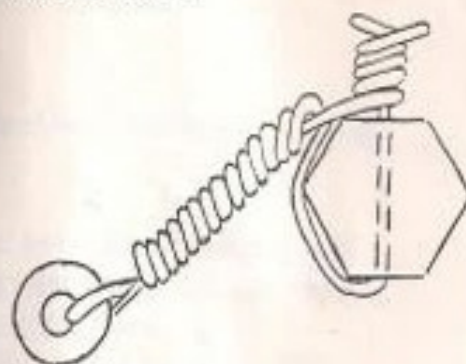
33. Disconnect the exhaust system from the manifold and its mountings and remove completely.
 34. Remove Two body to chassis attachment bolts from the under-side of the boot floor (tapped body bobbins).
 35. Remove Six body to chassis attachment bolts from the under-side of the floorpan (tapped body bobbins) and the two bolts which locate the seat runners to the lower flanges of the chassis.
 36. Remove the two body to chassis bolts which attach the under-side of the nosecone to the steering rack mounting platform (tapped body bobbins).
- A. Due to slight dimensional variations in the bodyshell, the height of the chassis in relationship to it must be checked. Adequate clearance must exist between the cam cover and the bonnet. The drilled and tapped hole centre on each front chassis tower locates the bodyshell. Therefore those hole centres determine the height of the bodyshell to the chassis. Make absolutely sure before drilling and tapping that the bonnet will close without clashing with the cam cover. If, as a result, a gap exists between the nosecone and the chassis install a suitable number of packers.
- B. Fit the original steering rack clamps simultaneously. The hole centres are deliberately spaced slightly apart to improve resistance to lateral movement. Use the shims provided with either the original steering rack clamps, or the Spyder alloy split block clamps. If using block clamps, position the stop flanges on the steering rack equidistant.
- C. Use a tap to clean the threaded bushes on the chassis before commencing your rebuild.
- D. Replace the diff from the left hand side (N.S). The height of the rear cross member on the Spyder chassis has been increased slightly in order to make the installation easier. It follows that additional 2" dia. Spacers may be required between the top face of the diff mounting lugs (or top face of angle iron if fitted) and the rubber mountings. Also, use a 1" diameter washer on top of each rubber mounting. The clearance between the bottom of the diff and chassis is approximately 4mm.

- E1. Assembling the rear suspension:- with differential and lotocones (upper rear suspension mountings) installed take the alloy hub carrier assemblies c/w intermediate driveshafts and inboard rubber drive couplings attached to connect to the diff output shafts. Use 2no hose clips joined together to align the inboard rubber drive couplings with the diff output shaft.
- Compress the rear springs with suitable spring compressors, extend the piston rods upwards and fit rear springs and upper abutment plates to struts. Push each strut downward against the resistance of the distorting rubber drive coupling and carefully enter each extended piston rod through its respective lotocone.
- Connect inboard ends of the rear wishbones to the chassis and leave nuts and bolts loose until settlement. Make sure that the leading bolts are entered with the bolt heads facing rearwards otherwise removal at a latter stage will be difficult.
- E2. To compress an unbanded rubber drive coupling, join 2no 70mm diameter hoseclips together and shrink the drive coupling by turning each hose clip screw alternately until the correct diameter is reached. Ensure the hoseclip is positioned exactly in the middle of the rubber drive coupling. Stainless steel hose clips are best.
- E3. To prevent premature failure of the rubber drive couplings never leave them connected for long periods during the chassis rebuild as (without the weight of the bodyshell) the rear suspension systems will assume full droop and the couplings will distort far beyond their maximum designed angles of deflection.
- F1. Transfere the felt matting from the original chassis to the spaceframe and secure in place.
- F2. Use shakeproof washers at all body to chassis attachment points. Ensure all loose fasteners around the suspension systems are tightened after settlement. Check all fasteners again after 500 miles and retighten where necessary.
- F3. It is good practice, when rechassising the Elan or Plus 2, to fit the bodyshell to the chassis twice. The first fitting is for marking off purposes. With the engine and gearbox installed in the rolling chassis, fit the bodyshell, making sure that its hard down onto the frame at the rear, that the rear wheel-arch openings are equidistant from each rear tyre and that sufficient clearance exists between the cam cover and bonnet (see note A on previous page). Then, using a sharp scribe, mark out 16 circles on the chassis through the existing body mounting holes. Remove the bodyshell, mark the centre of each scribed circle with a centre punch and drill through all the holes. See information on front cover detailing those holes that require tapping. Remove all drilling swarf and refit bodyshell.

- G. Good vehicle handling depends on all relevant components being in good working order. If a new rear wishbones have not been fitted please check rear toe. Under no circumstances should either rear wheel toe out.
- H. Many of these delightful cars came to a fiery premature end due to the carburettor banjo bolt loosening. Always cross drill and lace the heads as shown.



DOUBLE TWIST METHOD - CORRECT

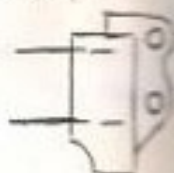


DOUBLE TWIST METHOD - INCORRECT

I. APPLIES TO SPACEFRAME ONLY


The engine mounting layout of the Spyder spaceframe chassis has been redesigned to make removal and replacement of motor and gearbox easier. On both sides use the standard rubber engine mounting and attach these by their four mounting holes to the engine bay and NOT THE MOTOR. To retain the failsafe facility of the mounting it must now be fitted in the inverted position.

i.e



Observe L.H (N.S.) and R.H (O.S) stamping on engine mounting brackets and attach these to each side of the block using the original spacers on the exhaust side.

- J. As the top diff mountings locate on the spaceframe chassis at a slightly different angle to those on a stressed skin frame, it is convenient during the first fitting of the bodyshell to the chassis to mark and reshape this aperture thus making the renewal of the rubber mounting much easier if found necessary in the future.
- K. Fit the gearbox rubber mounting directly to the Spyder gearbox crossmember as the original spacers between mounting and bracket are not required.
- L.H. When installing motor and gearbox leave the bolts and nuts loose in the slotted holes of the crossmember until settlement and then tighten.
- L. An improved position for the drop links of the front antiroll bar can be achieved on the spaceframe chassis by attaching them to the outside of the frame and not the inside. These pick up points are located just beneath the engine mountings.

- M. The purpose of these two brackets found on the rear arms of the Elan chassis is to accomodate the fitment of a rear antiroll bar.
- N. Alter large washers on top diff mountings thus  to avoid possibility of metal to metal contact in service.
- ** Please use 2 no 3/8" unf x 3" bolts provided.

A chassis fitting kit is included with every spaceframe chassis. The box contains the following:-

1 pair of engine mounting brackets. These are handed and stamped L/H and R/H (nearside and offside respectively). Remember, when using the spaceframe chassis, these brackets are attached to the engine block and not the chassis.

The rubber isolation mountings are fitted directly to the chassis and the engine mounting brackets attach to the leading faces of the rubber mountings. On the L/H side use the original 1.125" long spacers and on the R/H side, mount the Spyder bracket directly onto the engine block.

1 no. Gearbox mounting bracket.

4 no. Front wishbone spindles, each fitted with:

1 x 1/2" unf nyloc nut

2 x 1/2" unf half nuts

2 x Flat thrust washers

To make the removal of the spindles easier, a nyloc nut is used at one end and two lock nuts (half nuts) at the other. The spindles can be installed either way around - the nyloc to the fore or aft.

2 no 5/16" unf x 2" long hex headed high tensile bolts c/w cone bushes, washers and nyloc nuts (diff tie rod to chassis).

2 no 3/8" x 3" long hex headed high tensile bolts each with two washers and a nyloc nut (antiroll bar drop links to chassis).