OPTIONAL EXTRAS

There are a wide range of extras available for the Caterham Seven and the attachment of the most popular items are covered by this section.

14.1. Heater

1.1 The heater kit includes all the items necessary to install a heater to an existing car.

1.2 The heater unit itself is fitted to the horizontal bulkhead above the occupants' feet and operates by recirculating air from above the gearbox and ducting warm air down through slots into both footwells.

It is held down by four self tapping screws and plain washers so the first step is to lay the unit in place and mark the positions for 1/8" holes to be drilled, checking that it does not foul the steering column. You will also need to mark out on the chassis where the outer ducts locate relative to the bulkhead so that the self adhesive foam seals can be correctly located and stuck on the bulkhead. With these in place, the heater can be screwed into position.

1.3 The heater is wired using 3 connections, the black wire to earth, the red wire to the green/purple on the loom and the white wire to the green/yellow on the loom. The earth is connected to one of the self tapping screws locating the unit.

OPTIONAL EXTRAS

It will be necessary to drill a 3/8" hole in the vertical bulkhead behind the heater appoximately 5" up and 15" in from the lefthand side edge of the chassis in order that the wires can be passed through a grommet to connect with the loom.

1.4 With a 5/8" connection on the water pump, attach one end of the 5/8" diameter rubber tubing to it using a jubilee clip and, mounting it as per diagram 10.7, attach its other end duly trimmed to length, to the left hand connection on the heater with another jubilee.

1.5 Attach the shorter length of 5/8" diameter tubing to the 5/8" connector on the inlet manifold and connect it in turn to the connection on the heater using Jubilee clips. Clip the pipes together so that they run in parallel above the engine with the three clips provided.

1.6 In order to get the heater operational it will be necessary to bleed the air out of it first. This can be done by disconnecting the hoses above the inlet manifold and slowly filling the heater with a water/antifreeze mixture, with the radiator cap removed until the water level in the header begins to rise.

14.2. Cibie Halogen Headlights

These fit in the same way as the standard Lucas variety except for the side lights. The standard bulb holder is not fitted and instead you will need to convert the Cibie bulb holder to bullet connections.

14.3. Rear Wing Protectors

3.1 These consist of stainless steel panels which are attached to the lower front of the rear wings with 5/32" pop rivets. These are supplied flat and will need to be gently bent to suit the contour of the wings.

3.2 Cut the rubber wing piping strip to fit around the lower outer and upper edges, cutting darts in its flange in order to take up a smooth curvature.

3.3 With the panels pressed against the wing piping strip between the rear wing and chassis, drill through the existing holes and rivet the panels into place on the wing capturing the beading.

14.4 Oil Cooler

4.1 The oil cooler plumbing connects to the engine using a special adaptor fitted to the oil filter housing. First remove the filter and then screw the aluminium casting containing the oil cooler connections into its place. Ensure that the rubber seal between this and the oil filter housing is lightly greased to both help tightening and prevent leaks.

This should be hand tightened as over tightening can damage the castings.

When fitted the connections taking the pipes to the cooler should ideally face to the right hand side of the car leaving sufficient clearance for the unions.

The oil filter can now be replaced and should be pre-filled with oil to prevent an air lock occuring in the oil pump. Oil filters must not be re-used.

4.2 Chassis manufactured before May 1987 site the oil cooler hanging on a pair of brackets behind the radiator secured with 4, 1/4" x 3/4" UNF cap head bolts.

For competition purposes a 13 row oil cooler is recommended and this will foul the top of the cooling fan motor unless this has its redundant upper mounting flange removed.

4.3 Chassis manufactured after May 1987 locate the oil cooler in front of the radiator. This is held by two special brackets which are attached to the radiator using the existing mountings at the bottom and the spare holes in the radiator flange at the top. Note that these brackets are not handed and the oil cooler is hung underneath them.

4.4 In both cases there are two oil pipes provided in the kit, but these differ between the earlier and later chassis. The ends which attach to the oil pump/filter housing use 90^0 unions, common to both varieties, but at the oil cooler there are differences. Earlier chassis with the cooler mounted behind the radiator have one 90^0 union and one 45^0 union on the pipes whereas on later chassis the right hand union is straight and the left hand a 90^0 one. This allows the pipes to be fitted parallel to each other and for tidyness they can be secured together with tywraps.

The oil pipes should be routed upwards from the cooler, over the radiator on later chassis, and down over the front chassis cruciform to the engine. Take great care that these pipes do not foul the steering mechanism or rub on any sharp edges.

14.5 HEADLAMP STONE GUARD

These are fitted in front of the headlamps and are designed both to protect against flying stones and to enhance the appearance of the Seven. They are attached to the chromed headlamp surrounds with self-tapping screws on each side of the surround and 1/8" holes will need to be drilled to suit. Please note to take care over the positioning of these holes to ensure that the stone guard grilles are positioned horizontally and vertically.

It is important when drilling the surrounds to avoid contacting the glass headlamp with your drill.

14.6 BDR EXHAUST-SYSTEM

The BDR or Competition type stainless steel exhaust system is available for both the Cosworth BDR engine and the Ford 2265E pushrod unit. It differs from the standard system by having a large bore 4 into 1 manifold leading into a larger bore silencer which exits to the side in front of the nearside (LH) rear wheel.

You should be aware that this system is considerably louder than the standard system described in 10.7 but releases more power and is therefore a useful option if any form of competition is envisaged.

6.1 The aperture provided in the body skin is intended to take the standard 4 into 2 into 1 exhaust system and hence is too small for the BDR option. To enlarge it we recommend that you use a small pair of CURVED tinsnips and enlarge the aperture sufficient to allow about 1/4" clearance around the system.

We also suggest that you cover the area around it with masking tape which serves the dual role of protecting the paintwork if appropriate and enabling you to mark clearly where cutting is necessary.

6.2 The aperture is enlarged as follows:

i) Fit the dual pipe serving cylinders 2 and 3 onto the engine and temporarily secure with 5/16" UNC Allen bolts and springwashers,or to studs securing with 5/16" nuts (BDR

engines). This should fit through the existing aperture although trimming at the lower edge will be needed. Mark where the aluminum skin is to be cut and having removed the manifold cut as required.

ii) Replace the dual pipe and now in addition test fit the rear pipe which serves No.4 cylinder. Once again mark where the body skin is to be cut away and remove both parts of the manifold before trimming.

iii) Repeat this exercise with the forward No.1 section.

iv) Finally finish off any sharp edges with a half round or round file and bolt the manifold into place using suitably enlarged gaskets to the cylinder head.

6.3 The manifold pipes can now be fed into the fabricated 4 into 1 piece and secured using the two 1/4" x 3/4" UNF bolts, plain washers and nylocs. We recommend that plenty of Firegum or similar is used to obtain a good seal.

6.4 The silencer mounting bracket and rubber bobbin attaches in the same way as with the standard system (10.7.4). Slide the silencer unit over the end of the 4 into 1 piece, again using Firegum, and secure the rear of the silencer to the bobbin using a plain washer and 5/16" UNF nyloc nut.

Use the clamp provided to secure the silencer to the 4 into 1 piece twisting the silencer to make certain that the side pipe is not too close to the ground.

6.5 Finally attach the exhaust guard using long Jubilee clips in the same way as with the standard system (10.7.8).

14.7 Air Horn

7.1 The air horns should be mounted in the engine bay on the passenger side of the car. Each horn should be bolted to the deflector plate of the heater. This should be done before the heater is fitted into the car. If no heater is fitted, the horn should be bolted to the horizontal engine bulkhead itself. The compressor should be mounted on the vertical part of the bulkhead, again on the passenger side.

7.2 The wiring for the air horns is included in the loom and no additional fuses or relays are required. The two wires (one black, one purple/white) exit from the loom in the area of the fuse box which is located inside the car. These two wires should be passed through holes drilled in the bulkhead (using a rubber grommet to prevent the wires chaffing on the aluminium).

7.3 Terminals should then be fitted to the two wires and connected as follows:

Black wire to negative terminal on compressor.

Purple/white to positive terminal on compressor.

The air horns will now operate using the existing horn switch located on the dash.

14.8 Electronic Ignition

8.1 If you have opted for an electronic ignition kit, you will be supplied with the following:

One main kit (including amplifier and fixing kit).

One distributor kit (including roter for distributor).

8.2 The amplifier (finned aluminium box) should be mounted inside the engine bay on the vertical bulkhead as near to the speedometer cable grommet as possible. The wire and connecter can then be passed through the grommet to the inside of the vehicle and connected up to the terminal block exiting from the loom above the gear box tunnel.

It should be noted that for left hand drive cars, the amplifier box will need to be fitted upside down to allow the wire to exit the box on the correct side.

8.3 To fit the distributor kit, follow the instructions provided with the main kit. The distributor loom can then be connected to the terminal block exiting from the vehicle loom on the right hand upper engine bay diagonal.

14.9 Boot Cover

9.1 The boot cover is designed to attach semi permanently to the top of the bulkhead behind the seats and to clip onto the same fasteners as those provided for the hood at the rear of the vehicle. When not in use, ie. when the hood is erected, it folds away into the boot area.

9.2 The cover is designed to fit around the optional rollover bar, but since there are two types - road and competition - be sure to order the correct cover. Due to the positioning of the competition bar, it will be necessary to remove it before the boot cover can be fitted.

9.3 Two eyelets are provided at the front of the cover which fit over the shock absorber tops and hence roughly align the cover.

Measure carefully the centre point of the car across the rear bulkhead and mark the positions for six 1/8" holes to be drilled in the middle of the tube at $1\frac{1}{4}$", $7\frac{3}{4}$" and $14\frac{1}{4}$" each side of the centre line.

Drill corresponding holes through the front edge of the boot cover aligning the front edge with the front edge of the bulkhead, and secure six popper bases with the small self-tapping screws provided.

9.4 Stretch the boot cover over the luggage area and establish locations for the poppers. We suggest that you fit the outermost poppers on the flat rear panel first since these will hold the cover evenly in position while the others are marked up. We suggest also that masking tape be used to assist with marking and that poppers are fitted in the same way as in the weather equipment section.

9.5 Fit the remaining poppers across the rear and sides of the boot area except for the forward two poppers on each side (see diagram).

If a tonneau cover is also to be fitted the normal popper outer or male part will have to be substituted by a further popper base. The kit includes special bases with small 1/8" centre hole to enable them to be riveted together with the normal popper inner. The rivet should pass from the inside outwards as shown.

14.10 Tonneau Cover

10.1 The tonneau cover can be fitted once the boot cover is in positon since it is attached to the same mountings. Firstly, it should be secured at the front of the cockpit and it is advised that the windscreen is removed for this purpose.

Establish the centre line (the screen washer nozzle helps here) and mark two points each $1\frac{1}{4}$" outboard of this line. Check under the dashboard as to where the main tube supporting the scuttle is located and drill two 5/32" holes down through the scuttle into it. The exact distance forward of the scuttle edge will vary slightly from car to car but will normally be about 1".

10.2 Carefully align the tonneau along the centre line of the car and fit two poppers at the front to correspond with the bases just fitted. Refit the windscreen.

10.3 Similarly fit two poppers to the tonneau so as to attach the rear of the cover to the centre two bases on the rear bulkhead, taking care to ensure that the tonneau is neither sagging nor under excessive tension.

10.4 Mark and drill holes and fit two further popper bases on the scuttle approximately $1\frac{3}{4}$" inward from the lower inner edge of the windscreen support where it joins its triangular base (see diagram). Stretch the tonneau carefully into position and fit poppers.

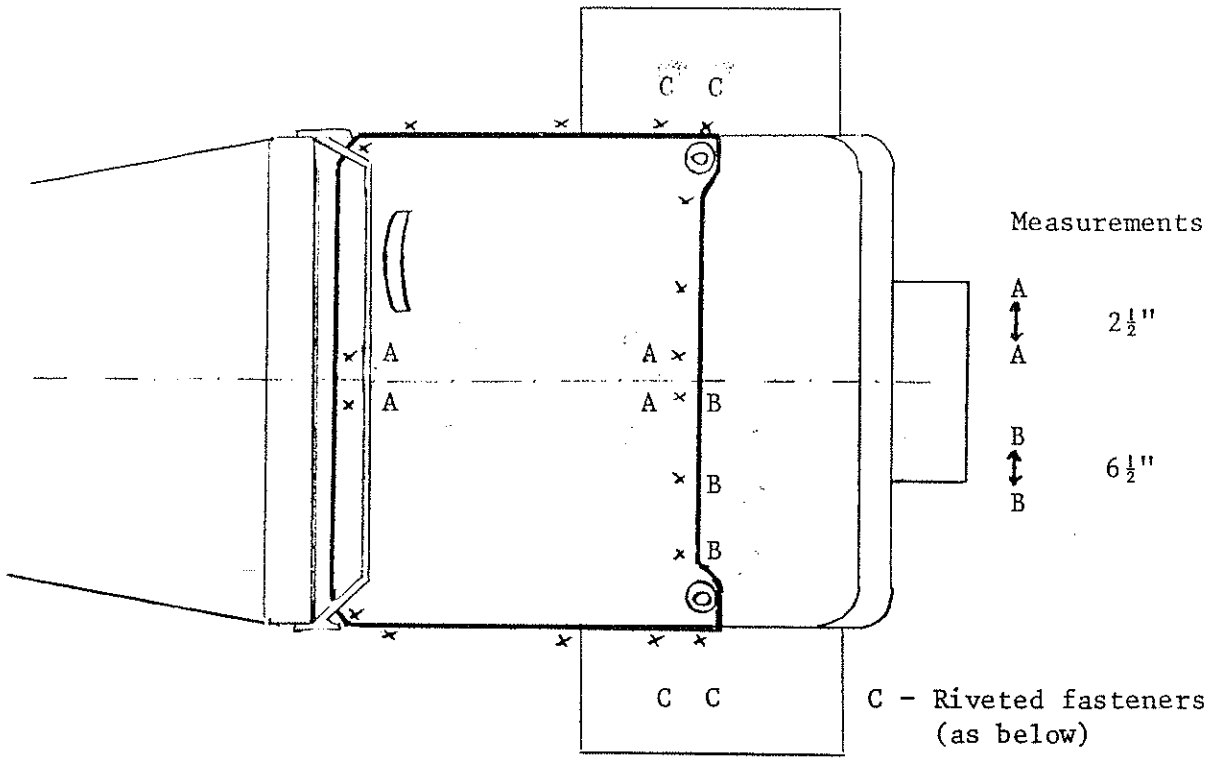
10.5 Mark and drill holes and fit two popper bases 0.6" below the rear lower edge of the scuttle, 1" rearward of the centreline of the large securing rivet. Again stretch and fit the tonneau with poppers.

10.6 Mark and drill holes and fit two popper bases at a point 2" down from the top rear of the doorway and $1\frac{3}{4}$" forward of the rear mudguards.

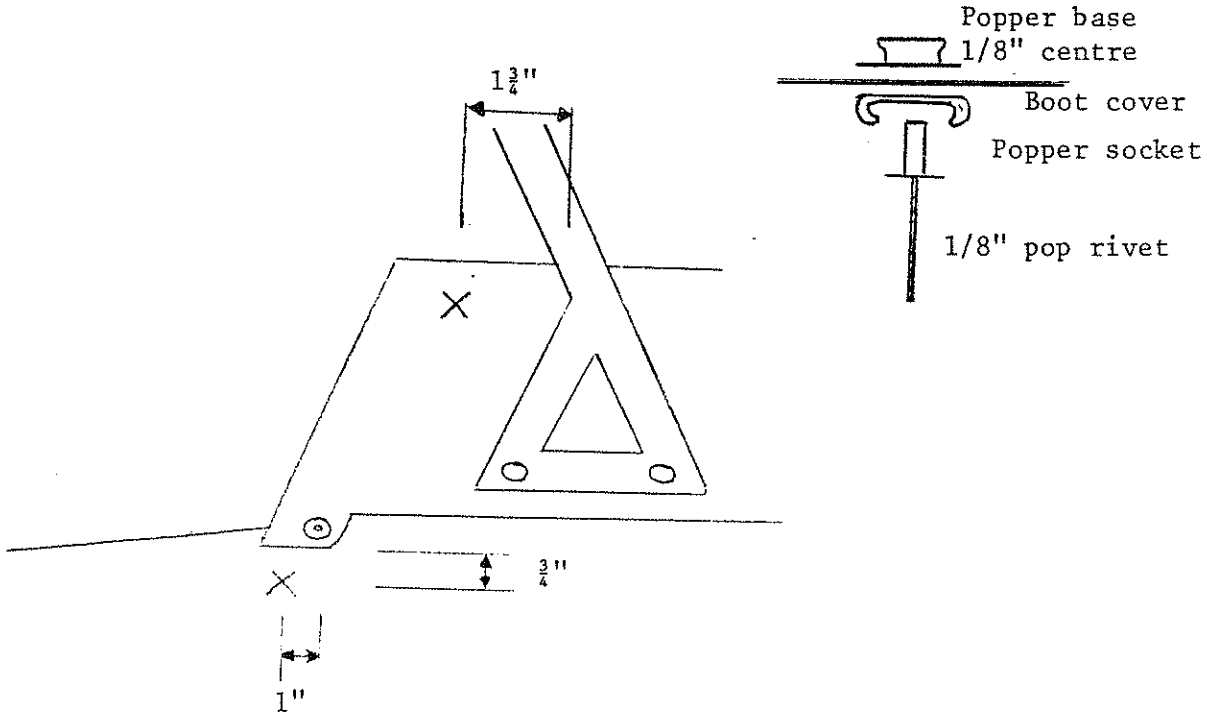
Hook the eyelets in the rear edge of the tonneau over the shock absorber tops and stretch down over these popper bases, fitting poppers as appropriate.

10.7 Finally, fit the remaining poppers necessary to secure the rear sides and rear edge of the tonneau onto the boot cover and rear bulkhead respectively.

TOP ELEVATION



TONNEAU COVER SHOWING LOCATION OF FASTENERS



SIDE ELEVATION

Fig. 14.10

14.11 Rear Anti-Roll Bar

11.1 The rear anti-roll bar is available for De-Dion cars only and it should be noted that the kit includes alternative rear radius arm to locate the De-Dion tube which include mounting holes to take the drop links to the anti-roll bar.

If these have not already been fitted during the rear suspension stage, refer to and substitute for the standard items.

11.2 The anti-roll bar itself is held by two aluminium clamps to brackets incorporated on the inside edge of the chassis frame behind the bottom cross member immediately behind the De-Dion tube.

Establish approximately where the anti-roll bar will locate and then carefully remove the paint from it where it passes through the clamps in the same way as with the front anti-roll bar.

Bolt the bar into place with the 1" x $^{5}/_{16}$" bolts, plain washers and nylocs, noting that the holes provided on the clamps for grease nipples should be downward. Slide a small jubilee clip over each end of the bar down as far as the clamp and tighten to prevent side to side movement.

Fit the grease nipple and fill with grease using a grease gun.

11.3 Refering to diagram 14.11.3, slide onto each end of the anti-roll bar the bottom clamps which should be left slack for the time being.

With the 1/4" bolts, washers and nylocs provided attach the drop links onto these clamps so that they point upwards. The drop links consist of a short piece of threaded tube with a "rose" joint screwed into each end. You should check that these are of equal length before fitting, adjustment being a straightforward matter of screwing or unsrewing the rose joints into or out of the tubes.

Swing the anti-roll bar upwards until a 1/4" bolt can be passed through the upper rose joint into the mounting provided in the rear radius arm. If one side appears not to line up slide the clamps along the bar until they line up on both sides. Do not attempt to connect the bar by stretching either end up or down since this will have the effect of pre-loading the rear suspension with detrimental handling effects.

11.4 The drop link clamps can be slid along the bar in order to adjust its anti-roll effect. We suggest initially that the bar is set in the forward (softest) position, and locked by tightening the 1/4" clamping bolts, taking care that the drop links do not foul any part of the rear suspension

The car will prove quite sensitive to anti-roll bar settings so small adjustments will give noticeable effects.

14.12 Wind Deflectors

12.1 The Wind Deflectors available from Caterham Cars locate onto the mountings fitted to the sides of the windscreen used for the sidescreens.

12.2 These are manufactured from ICI cast acrylic sheet of high quality and are 10 times more impact resistant than glass.

It is extremely important however that they are not cleaned with any solvents as it is likely that the surface will be damaged. Use soap and water and rinse off, or use "Mr Sheen" or similar polish. The occasional use of "T" Cut will remove any polish built up, and any small scratches but do not use a power tool buffer.

Rear Anti-Roll Bar Assembly

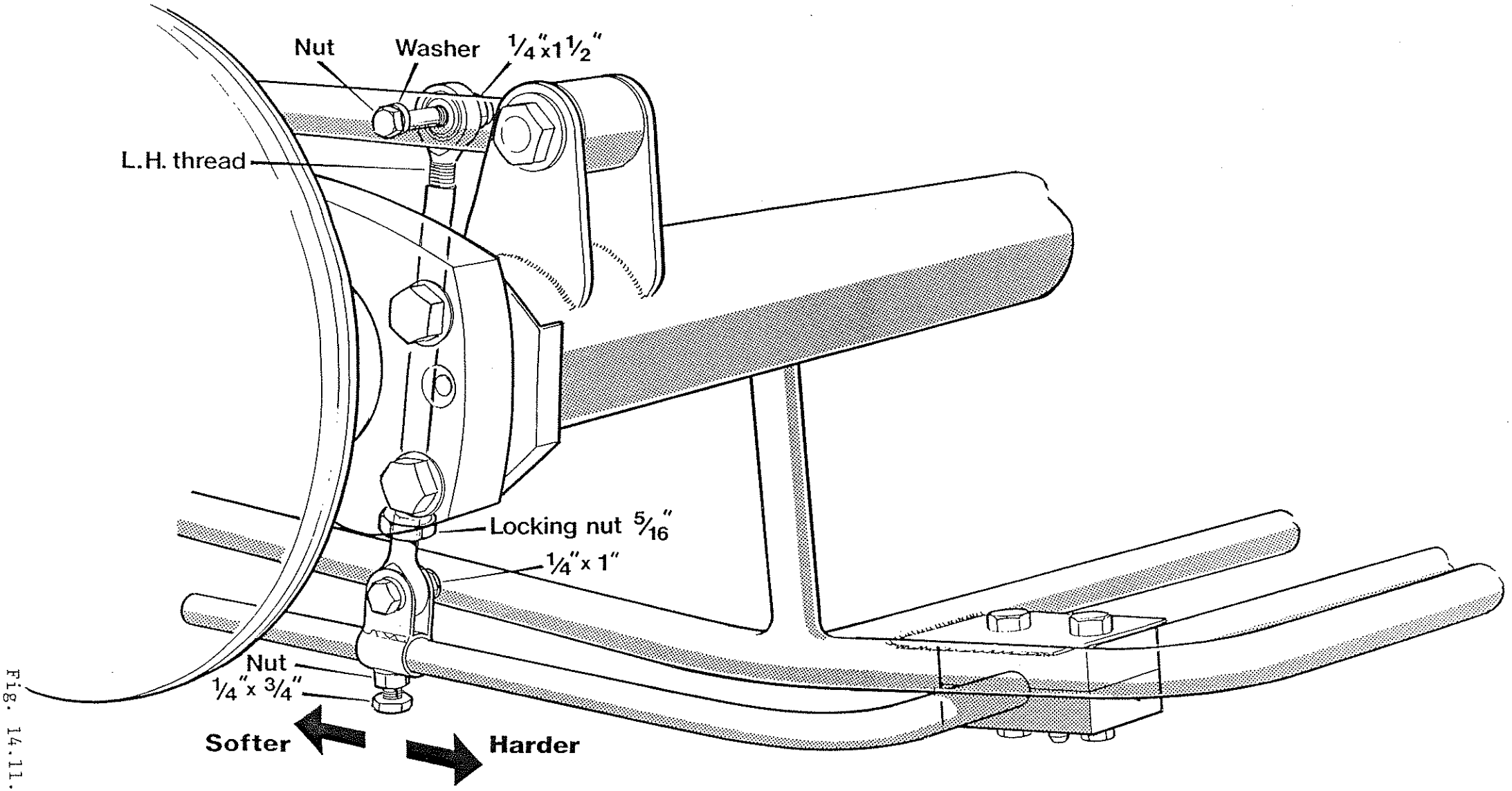


Fig. 14.11.3