Speedograph

Darlton Drive, Arnold, Nottingham, England.

Telephone : 0602-264235

MAJOR CHANGE GEAR SHIFT

FITTING INSTRUCTIONS

It is most important to follow these Instructions carefully, and in the sequence in whic they are given. The kit is comprehensive and no other parts are required.

Before fitting the Major Change it is advisable to stiffen the engine mountings by fittin cones to the engine tie rod on all Minis manufactured before February 1963. These cones will b supplied free of charge on request, but the serial number of the unit must be quoted.

Check that there is sufficient clearance between the exhaust pipe and the under side of th floor tunnel as this clearance may vary from one car to another. This should be checked with th BLUE template **(Fig.3)**. If the template will not pass, the exhaust pipe must be bent downwards fraction by applying heat at a point about three feet to the rear of the front fixing bracket. This i best done at a garage on a servicing ramp – it will take only a few minutes and has no advers effect on the car. (It is advisable to check this clearance at your garage in any case to facilitat getting underneath the car). Having ensured that the blue template will pass between the exhaus pipe and the tunnel, proceed with the installation as follows:–

Remove front seats, carpet, underfelt and rubber seal around gear lever. Jack up the fror of the car to a convenient height at which to work underneath, block under front wheels and remov jack so that the front suspension is under normal load. If this is not done it will result in a fals neutral position when the car is let down after the Major Change is fitted.

Assemble the gear lever of the Major Change by removing the (7/16" a.f.) locknut of th fulcrum bolt at the rear end of the mainshaft housing. Withdraw bolt and fit the tongue of th gear lever into the housing. Refit and tighten locknut. Remove the gearstem of the Major Chang from the front links.

Remove securing bolts (1/2" a.f.) of the gear lever retaining plate and remove the gear leve taking care not to damage the gasket. Remove the peg bolt (7/16" a.f.) immediately above th exhaust fixing lug. Check that the plain shank of the peg bolt is a free fit in the groove of the gear stem of the Major Change, relieve if necessary and refit. Check that the securing bolt of the exhaus pipe fixing bracket is tight. In place of the gearlever fit the gearstem of the Major Change reversing the procedure of dismantling. It is important that the gasket be refitted. It should b possible to move the gearstem freely across the gate by hand and if this is not so, check again the fi of the peg bolt in the groove of the gearstem. Check that the clamp bolts of the transfer linkag immediately below the exhaust manifold are tight; if this is not done, incorrect location of gear will result.

Unbolt the front links from the Major Change and fit them to the eye of the gearstem s that they swing freely, and position the gearstem on the 3rd/4th. gear side of the gate. Positio the Pink template over the floor tunnel so that the cut at the rear of the template corresponds t a pencil mark made on the floor cross member 24" away from the **nearside** of the car alon the top forward edge of the member, and the front links embrace the wooden boss at the front c

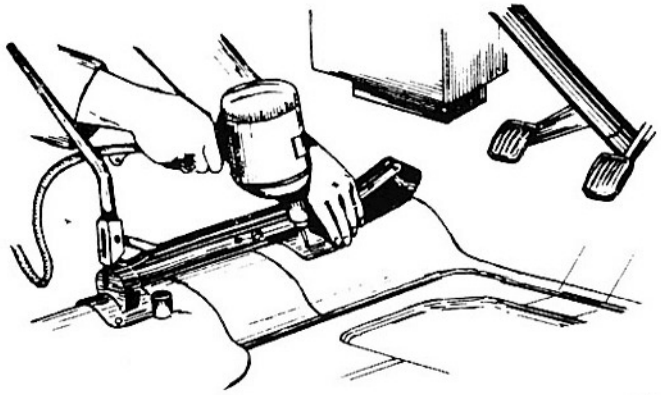


FIG. 5
DRILLING FIXINGS

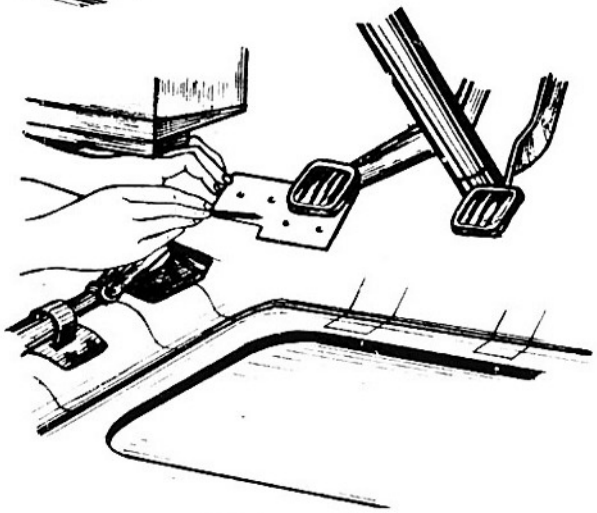


FIG. 6
RE-POSITIONING DIP SWITCH
(Not applicable to L.H. drive)

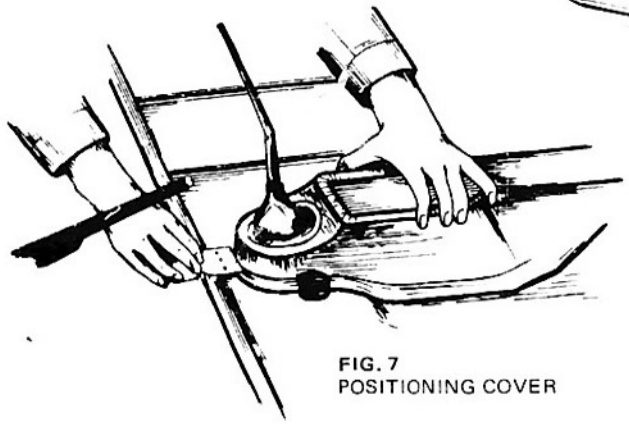


FIG. 7
POSITIONING COVER

SERVICING INSTRUCTIONS

Lubrication:– One pump with a HAND grease gun at the grease nipple behind the blanking plug on the offside of the gear cover every 1000 miles. Remove cover every 6000 miles for general lubrication and check adjustment of the fulcrum bolts.

In the event of engine removal, withdraw gearstem from the gearbox leaving the gearshift mechanism complete. If readjustment is necessary on refitting engine, remove the hinge box fixing bolts, set gearstem in neutral on the 3rd/4th. gear side of the gate, and with the Major Change in the neutral position, enlarge the fixing holes to allow free re-entry of the fixing bolts. Secure to the floor in this position.

the template. Fit the fulcrum bolt through the links and the hole in the wooden boss. In this position mark off the apertures to be cut in the floor trunking **(Fig. 4)**. Remove the template and cut out the apertures by drilling a series of small holes within the scribed lines, breaking away the encircled metal, and filing the rough edges smooth and clean.

Remove the front links from the eye of the gearstem and refit the rubber seal. Refit the front links to the mainshaft of the Major Change with the (1/2" a.f.) fulcrum bolt. Tighten bolt and release so that the links move freely but with no "end float". Lock in this position.

Position mechanism in the holes cut in the floor, ensuring that the gear lever is in the neutral position. This can best be done by pulling the gear lever rearwards and then pushing forward until the gear lever snaps into position with the base of the gear lever in an upright position. Connect the front links to the eye of the gearstem allowing a slight "end float" lock in this position. (In this case the bolt should not be tightened and then released as this may compress the self lubricating bush). Tap down the edges of the hinge boxes with a hammer to ensure that they conform to the contours of the floor, particularly in the region of the starter button. Move the gearstem several times across the gate by hand to ensure a true neutral position, leave on the 3rd/4th gear side of the gate. It is important that the neutral position of the Major Change should align with the neutral of the gearbox. In this position drill the fixing holes for the hinge boxes **(Fig. 5)**. Before securing the boxes to the floor ensure that no swarf from the drilling is trapped in the boxes. If any swarf is trapped it will be necessary to remove the mechanism and clear it. Fix the mechanism to the floor by means of the eight (7/16" a.f.) fixing bolts, heads of the bolts inside the car and the plain washers and lock nuts beneath the floor. Half fill the boxes with engine oil, and seal around the edges of the boxes with the compound provided. It is important that the boxes are bolted directly to the floor (metal to metal) and only the edges of the boxes sealed with compound.

** Remove the dip switch and by means of the RED template **(Fig. 6)** drill the holes to fit the switch in the new position. In the case of cars fitted with fresh air heaters, the standard dip switch fixing holes are blanked off with self tap screws. Remove these screws and use the holes to position the template. Replace blanking screws. Fit the dip switch in the new position and check headlights to ensure that the wiring has not become disconnected.

** Not applicable to left hand drive models.

The three self tapping screws in the YELLOW template are for securing the fibre glass cover to the floor. The template is used to position the cover in the following manner. Place the template on the floor cross member with the end containing the screws touching the rear end of the gearshift mechanism. Pencil a line along the rear edge of the template on the floor cross member. Remove the template and position the cover over the gearshift, taking care that the gear lever slides through the collar of the flexible plastic gaiter. Position the cover so that the front of the YELLOW template touches the rear end of the cover, and the pencil line on the floor cross member shows in the centre of the V's in the template **(Fig. 7)**. Secure the cover to the floor in this position with the self tap screws, making sure that the plain washers provided are under the heads of the screws. When fitting and securing the fibre glass cover to the floor tunnel, no undue downward pressure must be exerted as this will lead to splaying out of the sides and leave insufficient clearance for the front links of the mechanism to operate. The top of the cover should be parallel to the line of the floor.

Fit the underfelt and carpet. Care taken with the trimming of the carpet will ensure that the Major Change will enhance the interior of your car. The following suggestion may prove useful:— Remove cover, cut as little as possible of the underfelt and carpet to allow it to pass over the gearshift and sit evenly on the floor, using the press studs of the carpet to ensure correct positioning. Place the cover in position and mark around the edges of the cover with tailors chalk. Remove cover, carpet and underfelt. Cut the carpet at least one inch within the chalked line and using the carpet as a template, cut the underfelt. Refit seats and jack car down.

The Major Change should select all gears easily and without undue effort making gear changing the pleasure it was designed to give. In case of difficulty write or telephone to:— Speedograph Ltd., Darlton Drive, Arnold, Nottingham, England NG5 7JR. Telephone 0602-26435.

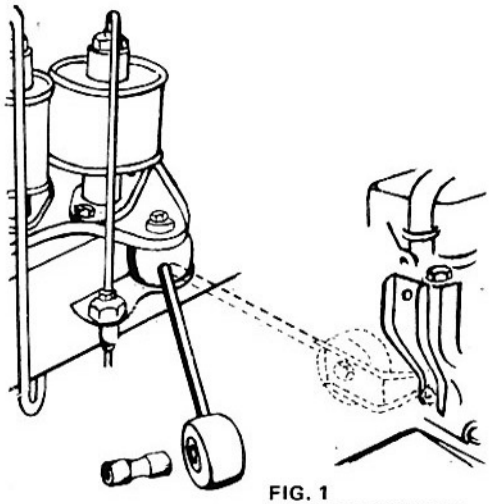


FIG. 1
SLEEVE REMOVED

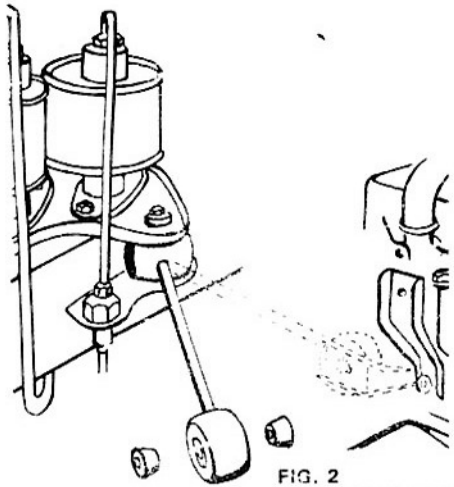


FIG. 2
POSITIONING CC

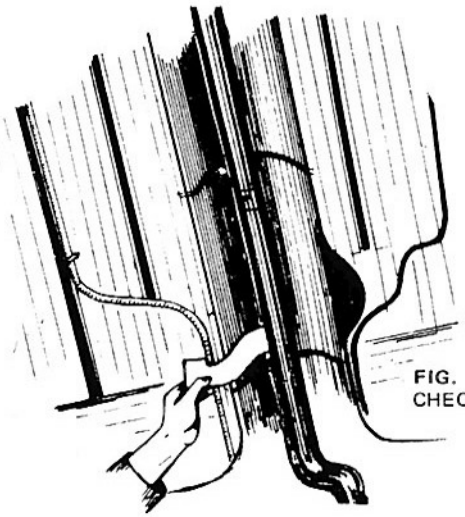
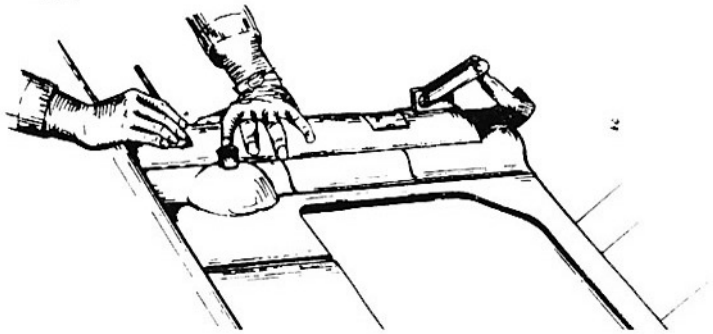
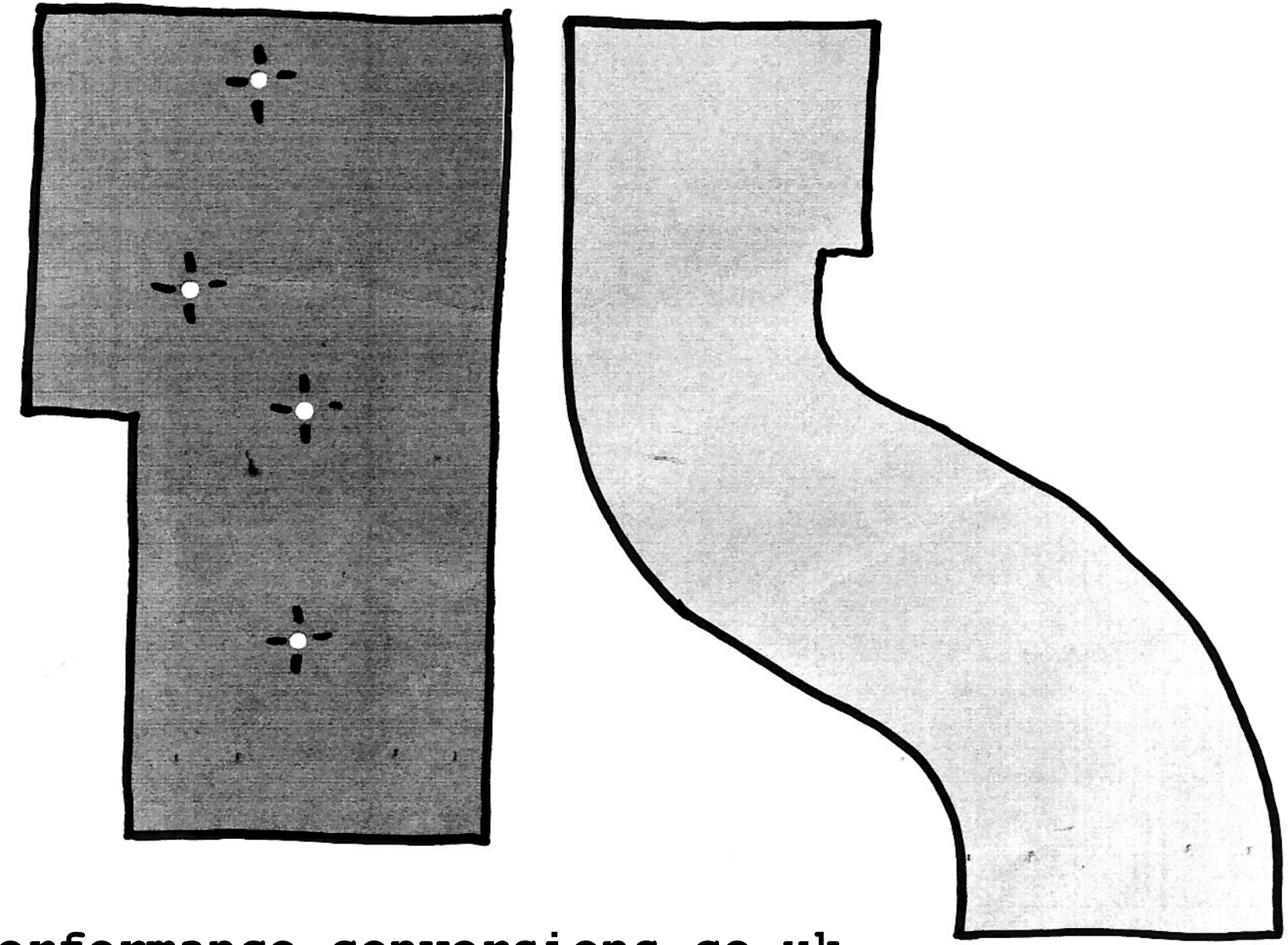


FIG. 3
CHECKING EXHAUST





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