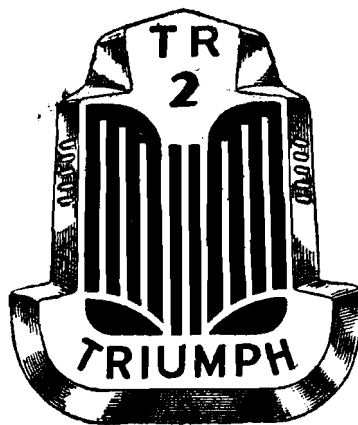


LAYCOCK DE NORMANVILLE OVERDRIVE

SUPPLEMENTARY INSTRUCTIONS
FOR INCORPORATION OF
OVERDRIVE ON 2nd AND 3rd GEARS



TRIUMPH SPORTS CAR

PUBLICATION PART No. 502123/SI

THE STANDARD MOTOR CO. LTD.
SPARE DIVISION
FLETCHER ROAD HIGHWAY
COVENTRY ENGLAND

SUPPLEMENTARY INSTRUCTIONS FOR INCORPORATING OVERDRIVE ON "SECOND" AND "THIRD" GEARS

1. The incorporation of Overdrive on "Second" and "Third" gears has necessitated the following engineering alterations :—

- (a) Increasing the diameter of the clutch operation pistons in the overdrive unit from $1\frac{1}{8}$ " to $1\frac{3}{8}$ ".
- (b) Re-designing the gearbox top cover assembly to permit the selection of overdrive in other gears.

2. OVERDRIVE UNIT

To enable the unit to transmit the maximum available torque in the lower gears, it is necessary to use larger clutch operating pistons than those fitted previously.

From Chassis No. TS.5980 onwards, all Triumph Sports Cars, which have been equipped with overdrive, have been fitted with the re-designed unit, Part No. 301991 : Serial No. 22 1374 — incorporating the larger pistons.

NOTE. A small number of cars with chassis numbers prior to TS.5980 have been fitted with the re-designed overdrive unit.

To establish whether or not a re-designed unit has been fitted, remove the gearbox floor covering and a brass plate can be seen bearing a serial number. The old unit number is 22 1275 —, and the re-designed unit number is 22 1374 —.

Unit Exchange

The Spares Department of The Standard Motor Company Ltd., in conjunction with Messrs. Laycocks, operate an exchange system whereby the old unit can be exchanged for the later type at a cost fixed by the Spares Division of The Standard Motor Company Ltd.

3. GEARBOX TOP COVER ASSEMBLY Fig. 2

To permit the selection of overdrive in "Second" and "Third" as well as "Top" a new top cover assembly has been designed and the Part No. is 502411.

The new cover assembly has been fitted to Chassis No. TS.6280 and all subsequent Sports Cars.

NOTE. A limited number of cars prior to Chassis No. TS.6280 were fitted with the new cover assembly and can be recognised by the two isolator switch bosses, Fig. 2.

Modification of Top Cover Assembly. To modify the old top cover assembly, thus permitting the selection of overdrive in 2nd, 3rd and top gears necessitates the fitting of certain new parts. The new parts required are detailed under "Top Cover Conversion Pack" on page 4.

Top Cover Assembly—Fig. 1—Dismantling. Proceed as follows :—

- (a) Remove the dipstick and ensure that the selector mechanism is in the "Neutral" position.
- (b) Disconnect the wires from the isolator switch, where fitted, and remove the top cover assembly from the gearbox.
- (c) Remove the change speed lever by :—
 - (i) Unscrewing and removing the $\frac{1}{4}$ " UNF setscrew (1) which secures the retaining cap to the top cover casting.
 - (ii) Unscrewing the nyloc nut (2) from the pivot bolt.

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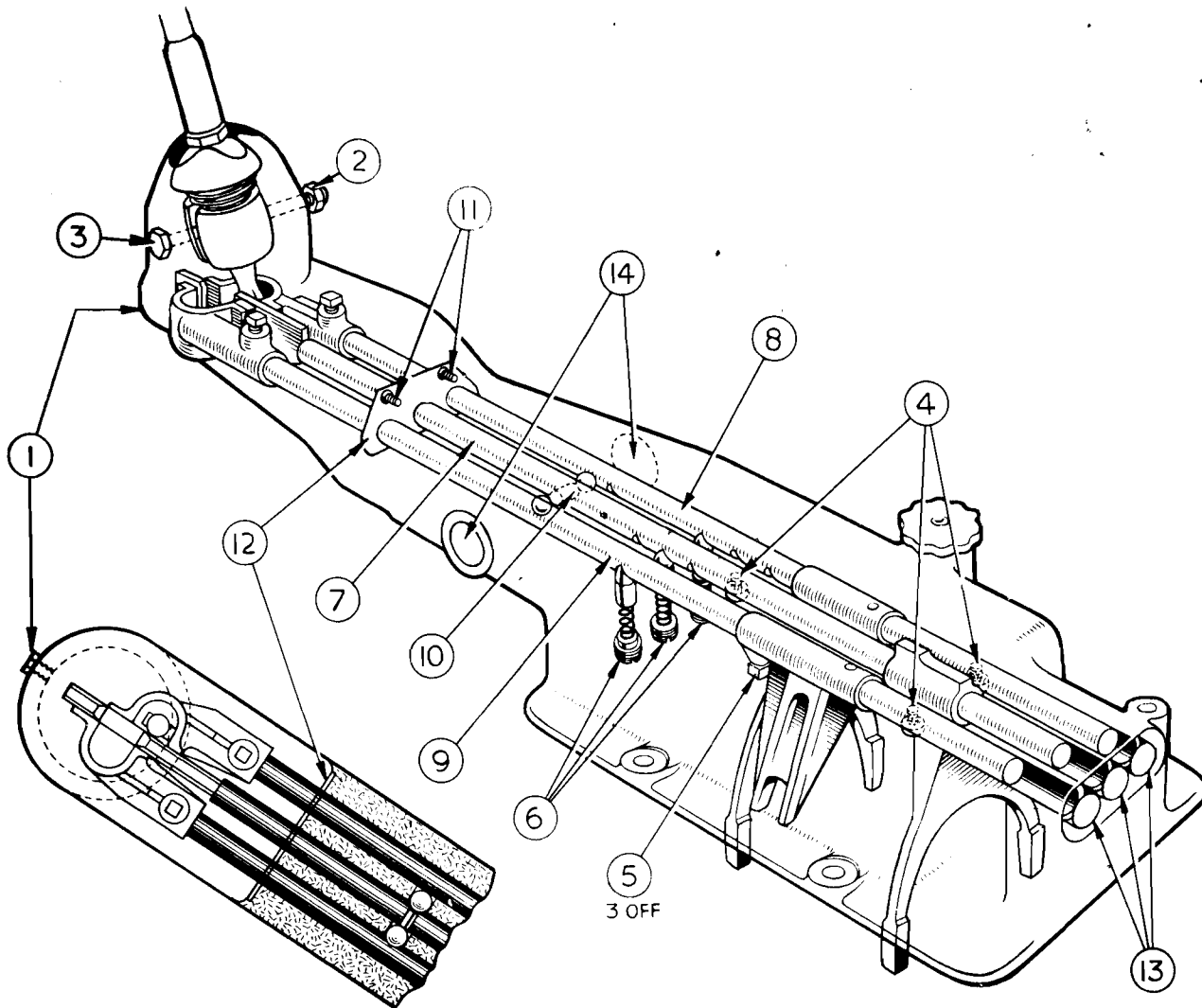


FIG.1

(iii) Withdrawing the pivot bolt (3) to enable the change speed lever assembly to be withdrawn.

Caution. When withdrawing the change speed lever assembly, ensure that the anti-rattle spring and retainer, which is located on the spherical part of the lever, is retained for re-assembling.

- (d) Remove the three wire locked stop screws (4).
- (e) Unscrew and remove the three wire locked screwed taper pins (5) securing the forks to the selector shafts.

- (f) Remove 1st and 2nd speed selector shaft retaining screw (6), spring and $\frac{3}{8}$ " locking ball and slide this selector shaft rearwards clear of the casting to enable the removal of the selector fork.
- (g) Remove "Reverse" selector fork and shaft (9) carrying out the procedure as in (f) above, excepting that the shaft is positioned by a plunger, spring, distance piece and retaining screw instead of the ball, spring, and retaining screw.
- (h) Remove 3rd and "Top" speed selector shaft (7) and fork, carrying out the procedure used in (f) above.

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NOTE. It is important that no attempt is made to move more than one selector shaft at a time otherwise damage will be caused to the bores of the top cover and difficulty will be experienced in removing the shafts.

- (i) Finally shake out the interlock balls from the casing.
- (j) Remove the existing isolator switch.
- (k) Remove the two $\frac{1}{4}$ " UNF setscrews (11) from the oil sealing ring cover plate (12), enabling the plate and three rubber sealing rings to be removed.
- (l) It being very difficult to remove the welch plugs (13 and 14) without damaging them, it is desirable to replace the old plugs with new ones when re-assembling the new top cover.

Top Cover Assembly—Fig. 1—To Assemble. Assemble the new selector forks into the new top cover by reversing the dismantling procedure, observing the following :—

- (a) Ensure before fitting the centre selector shaft that the interlock pin is positioned in the end of the shaft. (See 10).
- (b) After fitting and moving the centre shaft to the "Neutral" position, feed the two interlock balls into position from either side. (See 10).

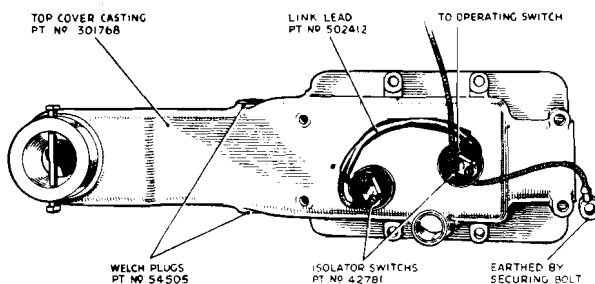


FIG. 2

Isolator Switches. The isolator switches, Fig. 2 (Part No. 42781), are not included in the top cover assembly (Part No. 502411) and will therefore be required.

Switch Adjustment. Fig. 3. It is important when moving the gear lever to an engaged position, that the switch contacts close at a precise point during the lever's movement.

The correct time for contact closure is when :—

- (a) Synchronisation is complete.

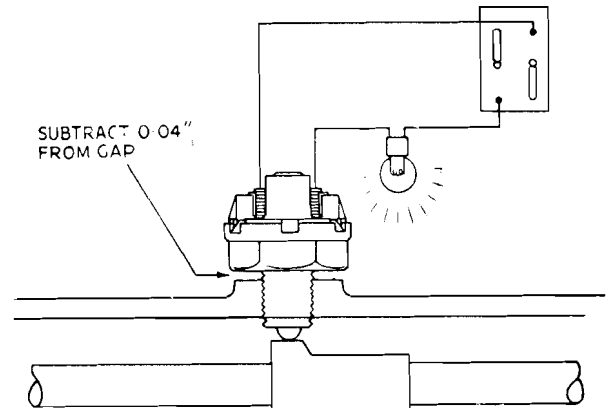


FIG. 3

- (b) The synchro sleeve begins to cover the dog teeth of the driving gear.

NOTE. Failure to obtain these conditions will result in noisy and difficult gear changing.

To obtain correct switch adjustment proceed as follows :—

- (a) Move the gear lever until "Second" gear is fully engaged.
- (b) Wire a bulb in series with the switch contacts and connect to a battery. (Fig. 3).
- (c) Screw the switch into the rear switch boss (Fig. 3), until the contacts close. (Indicated by the bulb lighting.)

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- (d) Measure with feeler gauges the gap between the switch and boss, that is, the amount the switch would have to be screwed down to be fully home.
- (e) From this dimension subtract .040" and make up the remainder with paper packing washers, Part No. 502146.

Example. If the gap measured .090" the subtraction of the .040" would leave .050". By selection (the washers vary in thickness) obtain a pack which measures .050".

- (f) Disconnect the switch and remove it from the top cover.
- (g) After installing the washer-pack over the screwed portion of the switch, screw the switch securely into the top cover.
Repeat the procedure with the "Third" and "Top" isolator switch.

Wiring. The switches are wired in parallel (Fig. 4) and the necessary link lead from switch to switch is obtainable under Part No. 502412.

One of the link wires is connected to earth (Fig. 2). The remaining link wire is connected through a snap connector to one side of the operating switch.

Top Cover Conversion Pack—Part No. 503219. The following is a list of the parts included in the pack to convert the old type cover assembly, part No. 502078 to 502411.

1 Top Cover Casting	301768
1 1st and 2nd Selector Fork	110753
1 Top and 3rd Selector Fork	110754
2 Welch Plugs	54505
1 Isolator Switch	42781
6 Packing Washers	502146
1 Link Lead	502412
3 Welch Plugs	104449

Overdrive Kit—Part No. 501803 for R.H.
Part No. 502104 for L.H.

These kits may be used either :

- (a) Where a car is to be fitted with overdrive on all gears and is already fitted with a top cover, Part No. 502411.
- (b) To convert cars fitted with the old type overdrive unit, Serial No. 221275—, in which case either :—
 - (i) A complete new top cover assembly, Part No. 502411, may also be required, or
 - (ii) A top cover conversion Pack, No. 503219.

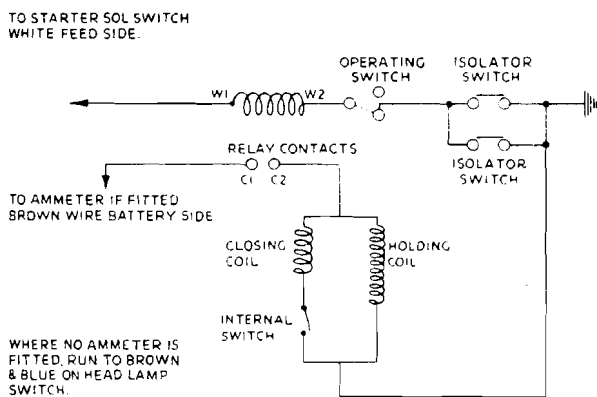


FIG. 4