

1963-73 JAGUAR

All Models (1963-73)

DESCRIPTION

The upper and lower steering columns are of the collapsible type, designed to comply with safety regulations. The collapse points are retained by nylon plugs which will shear on impact, allowing steering wheel and columns to move forward. The upper column is composed of two separate sliding shaft, with the column tube on later models being formed with an expanded metal section. The column shaft is supported on two prelubricated roller bearings. The lower column section is also comprised of two sliding portions, which are retained in a fixed length by nylon plugs.

REMOVAL & INSTALLATION

UPPER STEERING COLUMN

Removal, 3.8 'S' Sedan – 1) Disconnect battery cables. Unscrew escutcheon nuts securing remote control cables for speedometer trip and clock to dash casing. Remove screws retaining dash casing. Unscrew nuts attaching steering column tie bar to side fascia panel.

2) Disconnect wires from turn signal/dimmer switch. If equipped with overdrive, detach wiring from overdrive switch. Separate upper switch cover from column tube and withdraw three illuminating bulbs.

3) Unscrew jubilee clip securing bottom of steering column to mounting bracket. Remove pinch bolt securing inner column to socket of lower column and extract spacer located between jaws of universal joint. Remove two nuts securing upper steering column to body. Unbolt upper steering column bottom retaining bracket from body (control rod operating bowden cable should be taken out with column). Remove steering column.

Installation, 3.8 'S' Sedan – 1) Set front wheels in straight ahead position. Lower assembly into position, setting striker plate in between two cancelling arms of turn signal switch. Engage splines of upper column with internal splines of lower column socket. Replace nuts securing upper steering column top mounting bracket to body. Secure splined end of upper steering column in lower column yoke, by means of pinch bolts. Tighten jubilee clip securing upper column to lower mounting bracket.

2) If equipped with automatic transmission, check correct operation of neutral safety switch in the following manner: Slacken neutral safety switch securing bolt. Move gear selector lever to "D" position. Move neutral safety switch until hole in lever is in line with hole in switch base plate. Place a piece of wire through two holes and tighten nut securing switch to upper steering column. Remove the wire.

3) Fit three bulbs in upper switch cover, then replace cover on column. If equipped with overdrive, reconnect overdrive switch wiring. Reconnect turn signal/dimmer switch wiring. Replace steering column tie bar on side fascia panel and secure with two nuts and washers.

4) Replace dash casing and secure with four screws. Attach speedometer trip and clock remote control cables to dash casing with chrome bezels. Screw steering wheel adjusting lock nut into position on column shaft. Position split cone into groove on inner shaft (with tapered end toward top of shaft). Replace steering wheel and horn ring.

Removal, XKE All Models – 1) Detach battery ground cable. Remove parcel tray and column surround casing (V12 only). Disconnect turn signal switch wiring from harness and detach horn wire from connector located at lower end of upper column tube. Disconnect lead to key alarm buzzer, if equipped. Remove ignition key and set wheels in straight ahead position.

2) Remove upper pinch bolt, nut, and washer retaining upper column to universal joint. Unbolt column from lower support bracket. Detach column from upper support. Pull inner column up to clear splines from universal joint, then remove upper column assembly.

Installation, XKE All Models – Replace column in reverse of removal procedures, having first set wheels in straight ahead position.

Removal, Mark 10 All Models – 1) *NOTE* – *With exception of console and parcel tray removal, Steps 1 to 4 apply only to 4.2 models.* Disconnect battery. Remove black plastic button from bottom of ash tray (or radio) enclosure panel and withdraw exposed screw. Detach enclosure panel by pulling away two securing pegs from spring retainers located at top corners of the panel. Disconnect cable from radio (if equipped).

2) On vehicles with manual transmission, remove console from gearbox tunnel after removing two thumb nuts from rear end and two thumb nuts and drive screws beneath parcel tray. Remove gear lever knob and lift console over the gear lever.

3) If vehicle is equipped with electric windows, insert a screwdriver under the master switch panel at rear edge and lift clear of spring/stud mounting. Withdraw rearward away from clip retainer and feed through aperture in the console. *CAUTION* – *Care must be taken not to damage the polished fascia when removing or replacing.*

4) Remove picnic tray by withdrawing to full extent and depressing spring retaining clips on back edge. Remove two instrument panel retaining screws (top left and right corners) and lower the panel. Detach flasher unit from parcel tray mounting. Remove six drive screws securing parcel tray mounting. Remove six drive screws securing parcel tray to dash panel.

5) Turn front wheels to straight ahead position. Disconnect wires from turn signal/dimmer switch at the snap connectors. Detach upper switch cover from steering column. Lift off upper switch cover and remove the three bulb holders from the back (note location of bulbs for replacement).

6) On vehicles with automatic transmission, disconnect four cables from neutral safety switch located on bracket attached to steering column, marking them for reinstallation. Disconnect gear selector control cable ball joint from selector lever on steering column.

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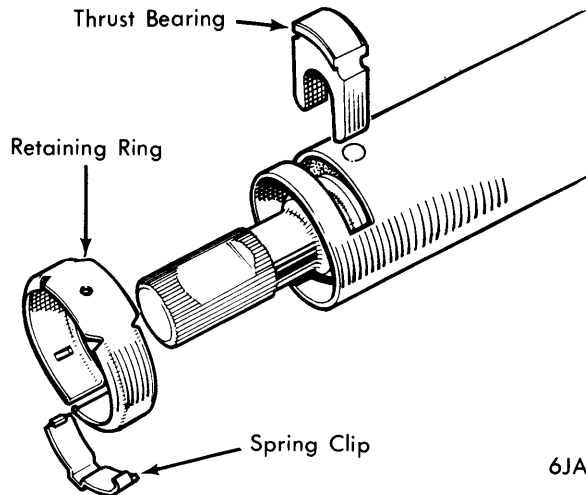
7) Place key in "GARAGE" position (if equipped with column lock type switch) and detach wiring from column lock. **NOTE** — Switch cannot be separated from outer column.

8) Remove pinch bolt securing inner column to top universal joint on lower steering column. Remove spring clip from retaining clamp situated at lower end of upper column. Turn clamp through 90° and slide downward to expose plastic thrust bearing. Withdraw bearing through outer column. Mark location of column splines in relation to universal joint.

9) Unscrew clip securing bottom of steering column to mounting brackets. Remove two bolts, nuts, and washers securing upper steering column to body behind side fascia panel. Withdraw the steering column.

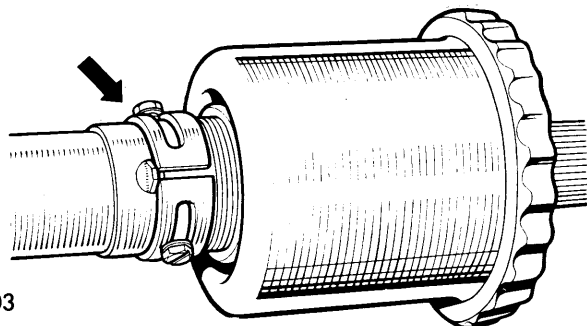
Installation, Mark 10 All Models — 1) Ensure front wheels are in straight ahead position. Feed outer column through bottom mounting bracket and secure to top mounting bracket. Tighten clip securing upper column to lower mounting. Turn inner column and centralize the turn signal switch striker between two arms on signal switch (see illustration).

2) Engage splines of inner column with internal splines of lower column. Replace thrust bearing and retaining clamp on bottom end of upper column section, then fit a new spring clip and tighten securely by pinching raised portion (see illustration).



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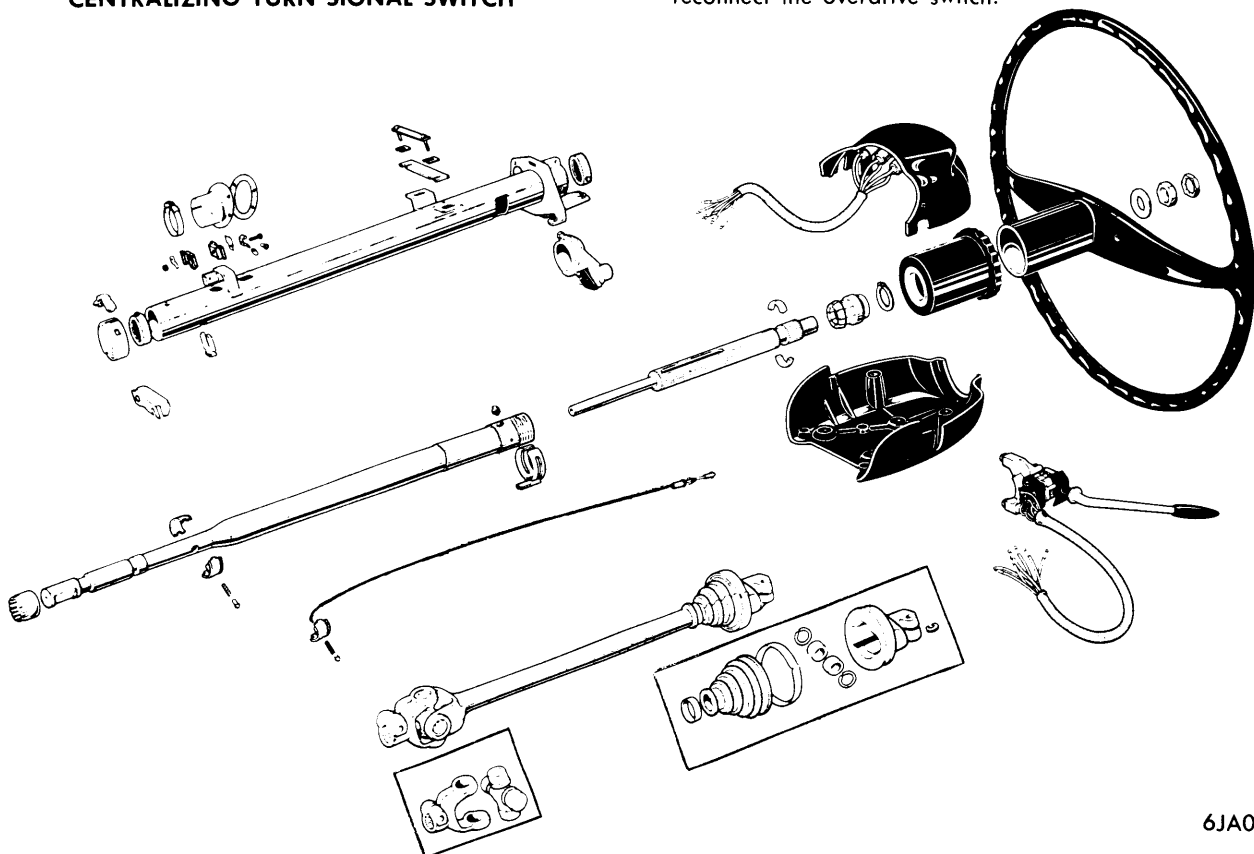
UPPER COLUMN LOWER RETAINING COMPONENTS



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CENTRALIZING TURN SIGNAL SWITCH

3) Depress upper half of top universal joint fully and raise 1/4" (6 mm). Replace pinch bolt. Reconnect turn signal switch wiring. If vehicle is equipped with overdrive transmission, reconnect the overdrive switch.



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STEERING COLUMN COMPONENTS - MARK 10

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4) On automatic transmission equipped vehicles, reconnect wiring to neutral safety switch, then reconnect gear selector control cable ball joint.

5) Replace steering column lock wiring (if equipped). Reinsert warning light bulb holders and replace upper switch cover to steering column. Connect horn switch wire to slip ring contact. Position and attach parcel tray as removed, then replace console and instrument panel.

6) Place split cone into groove on steering shaft with tapered end toward top. Replace steering wheel with two holes on wheel center boss toward top. Torque retaining nut and lock nut. Secure horn ring, check position of horn contact rod, then position horn ring contact cover and insert retaining screws.

Removal, 420 & 420G Sedan — 1) Disconnect battery. Turn front wheels to straight ahead position. Disconnect cables from turn signal switch at wiring harness. If equipped with overdrive, detach overdrive switch wiring. Remove screws securing upper and lower steering column covers. Lift off upper cover and remove three bulb holders.

2) If equipped with automatic transmission, disconnect wiring from neutral safety switch (on column bracket), then disconnect gear selector control cable ball joint from selector lever on steering column.

3) Remove four cap nuts and detach trim panels covering column above parcel tray. Release clip securing bottom of outer tube to mounting bracket. Remove horn switch cable from contact at bottom of steering column. Remove pinch bolt securing inner column to top universal joint. Mark spline location for reassembly. Unbolt steering column from upper bracket and collect any shims which may be in this location.

Installation, 420 & 420G Sedan — 1) Check front wheels to be sure they are in straight ahead position. Feed outer tube through bottom mounting bracket and secure to top mounting bracket. Tighten clip securing tube at bottom mounting.

2) Turn inner column and centralize turn signal striker between two arms of indicator switch. Engage splines of inner column upward until lower edge of indicator switch striker is even with bottom of slot in nylon trip ring. Reconnect turn signal switch wiring.

3) If vehicle is equipped with automatic transmission, reconnect wiring to neutral safety switch and gear selector control cable ball joint. Reconnect steering column lock wiring (if equipped).

4) Replace plastic sleeve and spring to horn wire and secure with circlip. Reinsert bulb holders into upper switch cover. Replace steering wheel adjusting lock nut to inner column. Replace column covers, steering wheel, and trim panels.

Removal, XJ6 & XJ12 — 1) Disconnect battery. Remove steering wheel, see *Jaguar under STEERING WHEEL & COLUMN SWITCHES* in this section. Remove speedometer as follows: Remove instrument panel casing. Behind speedometer, unscrew knurled nut from right-angle gear box and disconnect speedometer drive cable. Disconnect trip recorder reset control cable by unscrewing knurled nut. Apply pressure to instrument bezel, rotate speedometer counterclockwise until it releases, and withdraw from panel. Withdraw headlamp warning light and illuminator lights. Disconnect ground lead.

2) Remove tachometer as follows: Apply pressure to instrument bezel and rotate counterclockwise until tachometer releases.

Disconnect electrical plug and socket. Remove ground lead. Withdraw illumination light holder.

3) Disconnect turn signal switch and ignition switch at harness. Remove horn switch cable from contact on steering column. Remove screws securing panel above outer package shelf. Withdraw two press studs securing cowl below column (to shelf). Withdraw cowl.

4) Detach pinch bolt securing universal joint to upper column. From inside vehicle, remove bolts securing column at lower mounting. Collect any packing washers that may be inserted. Support lower end of column until removal is completed.

5) Working through speedometer and tachometer openings, remove two nuts securing upper column bracket to instrument panel. Remove bolts, rubber washers, and any packing washers. Withdraw upper column from splines in universal joint. *NOTE* — Do not use heavy force during this operation if nylon shear pins have not been damaged by collision.

Installation, XJ6 & XJ12 — To install, reverse removal procedure, ensuring upper column and front wheels are centralized before reconnecting splines at universal joint.

LOWER STEERING COLUMN

Removal, 3.8 'S' — Turn front wheels to straight ahead position and note position of slot in lower column top universal joint. Remove pinch bolt securing lower column universal joint to upper column. Withdraw circlip, retainer, and thrust bearing. Pull up on upper column until splines clear universal joint. Detach lower universal joint from steering gear and remove lower column.

Installation, 3.8 'S' — Replace lower column in reverse of removal procedure.

Removal, XKE 3.8, 4.2, 2+2 — 1) Disconnect battery ground lead. Drain and remove radiator. Remove hood. Turn steering wheel until lower pinch bolt on universal joint between columns is accessible. Remove pinch bolt. Turn steering wheel further until Allen screw on lower universal joint is accessible. Remove Allen screw.

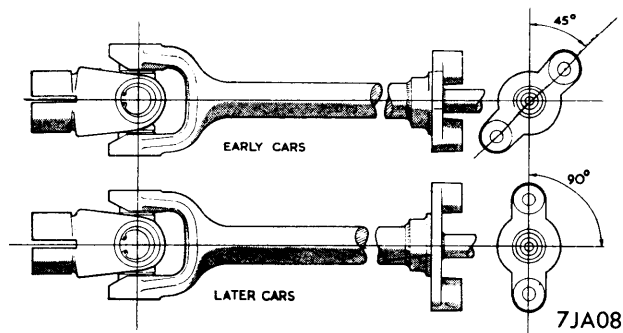
2) Disconnect turn signal switch cables from harness. Detach horn cable from slip ring connector. Remove upper column supports and spacer tube. Pull upper column until shaft splines are free of universal joint. Pull lower shaft upward to free it from pinion splines. Withdraw lower column through front crossmembers, above anti-roll bar.

Installation, XKE 3.8, 4.2, 2+2 — To install, reverse removal procedure.

Removal, 420 & 420G Sedan — Turn road wheels until pinch bolt of lower column is accessible. Mark relative position of coupling flange and remove pinch bolt. Reset front wheels in straight ahead position. Disconnect upper column as previously described. Withdraw lower column and detach rubber coupling.

Installation, 420 & 420G Sedan — Set front wheels in straight ahead position. Refit lower column joint to steering gear pinion shaft and tighten pinch bolt. Replace rubber coupling and upper column by reversing removal procedure. *NOTE* — Early models have lower column with rubber coupling flange phased at 45° angle to lower universal joint pinch bolt, while later models have flange phased at 90° to pinch bolt. Replace in proper position (see illustration).

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RUBBER COUPLING FLANGE POSITIONS

Removal, XKE Series 3 V12 - Remove pinch bolts securing upper and lower column universal joints. Remove ignition key and lock steering in straight ahead position. Withdraw upper column mounting pieces and pull column to limit of travel in upper mounting. Push lower column to limit of downward movement and free from universal joint splines. Withdraw column toward interior of vehicle.

Installation, XKE Series 3 V12 - Reverse removal procedures, after ensuring front wheels are centralized.

Removal, Mark 10 4.2 - 1) Turn front wheels to straight ahead position. Remove spring clip from retaining clamp situated at lower end of upper steering column. Turn clamp through 90° and slide downward to expose plastic thrust bearing. Withdraw bearing through tube.

2) Note relative position of inner column splines to universal joint, for reference when replacing. Remove pinch bolt securing upper steering shaft to top universal joint. Note relation of lower steering column to steering gear shaft spline, for replacement reference, then remove pinch bolt and detach universal joint.

Installation, Mark 10 4.2 - 1) Check front wheels in straight ahead position. Refit lower universal joint to steering gear splines, in original position, and secure with pinch bolt. Set steering wheel so that spokes are horizontal and motif is upright. Push steering shaft down and connect to universal joint. *NOTE* - Care must be taken to ensure that horn contact does not catch slip ring on inner column. Contact may be lifted slightly with screwdriver while column is brought into position.

2) Replace plastic thrust bearings and secure with retaining clamp. Fit a new spring clip and tighten securely by pinching raised portion. Depress upper half of universal joint fully and raise 1/4" (6 mm). Replace and torque pinch bolt.

Removal, XJ6 - Turn steering wheel until lower pinch bolt is accessible. Remove the pinch bolt. Reset wheels to straight ahead position. Remove upper steering column as previously described. Withdraw the lower column.

Installation, XJ6 - Reverse removal procedure, noting that at no time during this operation should excessive force be used.

Removal, XJ12 - 1) Place vehicle on ramp and raise ramp. Remove pinch bolt securing lower universal joint to pinion shaft. Lower ramp. Detach lower parcel shelf.

2) Remove both pinch bolts securing upper universal joint to upper and lower steering columns. Release two lower mounting screws of upper column. Detach lower column from upper universal joint.

3) Raise ramp. Remove lower universal joint from pinion shaft and withdraw lower column from vehicle. Lower ramp.

Installation, XJ12 - To install, reverse removal procedure, noting the following: Ensure front wheels are in straight-ahead position before reconnecting splines. Ensure a gap of 3/8" (10 mm) exists between sections of lower universal joint.

STEERING COLUMN ADJUSTING CLAMP

Removal, XJ12 - Remove and disassemble steering wheel. See Jaguar under *STEERING WHEEL & COLUMN SWITCHES* in this section. Remove circlip from split collet. Withdraw adjuster lock nut toward steering wheel end of column. Slacken grub screw locating split collet: withdraw collet.

Installation, XJ12 - To install, reverse removal procedure, ensuring that grub screw is not binding on base of keyway in inner column.

OVERHAUL

NOTE - If the steering column has suffered impact and has collapsed, manufacturer does not recommend overhaul. Entire unit must be replaced.

UPPER STEERING COLUMN

Disassembly, All Models - 1) Withdraw steering wheel and horn button components as described for each vehicle. Remove lower switch cover. Unscrew steering wheel adjusting lock nut and withdraw from steering shaft splines. Pull out inner column. Remove horn switch contact rod, spring, and insulating bushing. Unscrew and detach turn signal switch striker ring. Remove stop button and extract steering shaft from inner column.

2) Slide off horn pickup ring and remove top and bottom half of rubber rotor assembly. Remove two set screws and detach turn signal switch from outer column. *NOTE* - On some models, the steering column upper bearing can be adjusted for clearance by means of the indicator switch clamp. To remove the switch, release lock nut and top securing screw, withdraw both screws and extract spacer from bottom retaining screw.

3) If vehicle is equipped with overdrive transmission, remove overdrive switch after withdrawing two set screws, nuts, and lock washer.

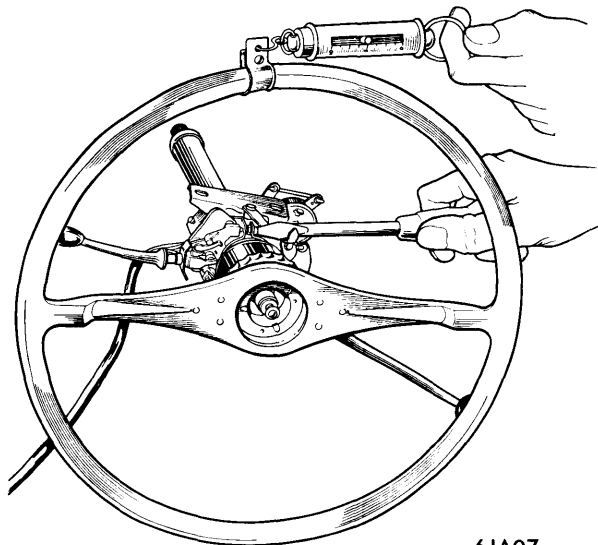
4) If equipped with automatic transmission, remove gear selector mechanism as follows: Remove neutral safety switch from operating link. Remove lower selector lever from selector shaft. Detach gear indicator arm bearing from bracket on outer column. From underside of shaft upper bearing, detach and withdraw lever and shaft. Drive out hollow pivot pin from selector lever pivot bracket, then withdraw lever and return spring shims. Depress retaining lugs and withdraw bearing bushings from top and bottom of outer tube. Remove nut and bolt securing two rubber contact holders, fiber insulating strip, and horn contact blade. Remove selector quadrant and spacers.

Reassembly, All Models - 1) Replace two bearing bushings, ensuring bushing lugs engage holes in outer column. Replace two rubber contact holders, fiber insulating strip, and horn contact blade. Engage ground contact blade.

2) If equipped with automatic transmission, replace selector control as follows: Attach quadrant and spacers. Insert shims and lightly greased return spring in pivot bracket. Refit selector lever and secure with hollow pivot pin. Pass selector shaft

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through top bearing, slide plain washer and circlip over shaft and feed shaft through bottom bearing. Secure with washer and circlip. Replace lower selector lever to shaft and secure with locking screw. Check for free movement of shaft in bearings. Position and attach gear indicator arm bearing to bracket on outer column. Reconnect neutral safety switch to operating link and secure to mounting bracket, but do not tighten set screws. Attach turn signal switch. Lightly coat switch moving parts with suitable grease (petroleum jelly).



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SETTING ADJUSTABLE UPPER BEARING

3) If column incorporates an adjustable upper bearing, adjustment must be made when fitting turn signal switch; adjust as follows: Pass attaching screws through switch clamp and attach spring washer and lock nut to upper screw and spacer, and flat washer to bottom screw. Feed screws through column brackets and attach indicator switch. Tighten bottom screw fully. Fit inner column and temporarily attach steering wheel. Attach a pull scale to steering wheel rim. Tighten top screw until wheel will just turn with a pull of 5 oz. (see illustration). Secure screw with lock nut. *NOTE* — Two thicknesses of spacers are available to compensate for any variation in bore of outer tube: Grade A, 0.188" (4.7 mm); Grade B, 0.166" (4.06 mm).

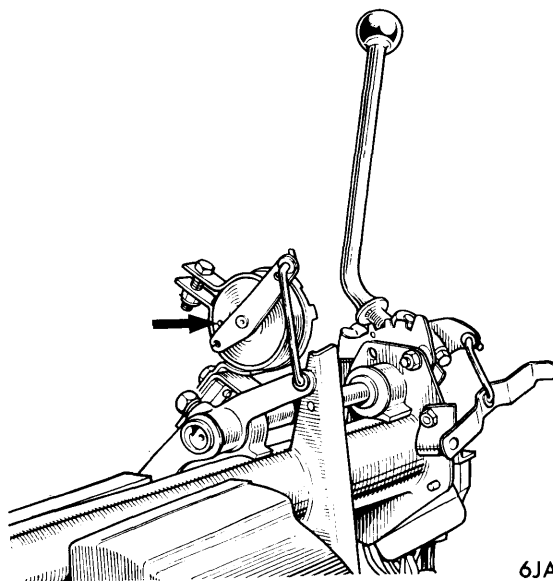
4) If equipped with overdrive transmission, attach overdrive switch to its proper position on outer column. Install spring and horn contact to upper half of rubber rotor. Refit top and bottom halves of rotor to inner column and slide horn slip ring over both halves with serration toward bottom of column. Gently tap serrations into groove of rotor until slip ring is secure.

5) Slide inner shaft into inner column so that slot in shaft serrations aligns with stop button hole in inner column. Screw stop button into place until shaft binds on button, then slacken button until shaft moves freely.

6) Reattach turn signal switch striker plate and adjust position of stop button to allow edge of plate to align with squared portion (see illustration). Turn inner column until striker retaining bolts are in vertical position and set striker peg so that it is just below horizontal axis position.

7) Slide inner column into column tube. *NOTE* — Ensure ground contact is not damaged during this operation. Also check that horn contact does not catch slip ring on inner column: Lift contact slightly with screwdriver while inserting column. Mount lower switch cover on outer tube.

8) If vehicle is equipped with automatic transmission, adjust neutral safety switch as follows: Select "N" position, rotate switch in clamp ring and move bracket in elongated holes until small hole in lever registers with indent in back of safety switch. Tighten clamp ring and bracket set screws (see illustration).



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SETTING NEUTRAL SAFETY SWITCH

LOWER STEERING COLUMN

All Models — Remove four socket screws and detach top cover from universal joint. Examine nylon roller, retained by circlips, and replace if necessary. Repack socket with suitable grease. Replace cover and secure with socket screws.