

Steering Columns

COLLAPSIBLE STEERING COLUMNS

DESCRIPTION

Under head-on collision conditions, columns are designed to telescope at a controlled rate. If driver is thrown forward into steering wheel, column can telescope further at same controlled rate. Incorporated into columns is a two piece telescoping transmission gear shift tube interconnected by plastic inserts and shear pins, and a two piece telescoping steering shaft with upper and lower sections connected by plastic collars and pins. A mounting bracket connecting steering column and instrument panel, allows column to slide forward on impact, but blocks rearward movement towards driver. On Plymouth Barracuda and Dodge Challenger, a corrugated cylinder is placed between steering wheel and bearing housing to provide for impact absorption.

INSPECTION

Check column support bracket. Damage in this area will be indicated by separation of mounting capsules from bracket. Bracket will have moved forward toward engine compartment, and will usually result in collapsing of mesh or telescoping section of column. Inspect mesh and/or bellows section of column for bulged sections and bends. If steering gear flexible coupling is torn, has excessive angularity, or no pin engagement, it must be replaced and steering column aligned.

REMOVAL & INSTALLATION

CAUTION — When working with collapsible steering columns, do not drop, bump, hammer or lean on shaft. Use only parts and tools made for collapsible steering columns. If column is damaged in any way, its impact absorbing features may be destroyed.

American Motors — 1) Disconnect negative battery cable, then remove flexible coupling to flange bolts and nuts. Note difference in size of bolts and nuts to insure correct assembly. On Matador and Ambassador models, remove snap ring from lower steering shaft universal joint, and remove lower shaft from vehicle. Remove bearing caps and retainer from upper shaft. Disconnect shift linkage from shift lever.

2) Press in locking clip on each end of wire connector and disconnect. Remove column toe board parts. Remove lower instrument panel crash pad trim plate, bracket capsule stud nuts, or bolt at instrument panel. Remove bracket to column bolts and remove bracket. Set bracket aside to protect breakaway capsules, then remove column from vehicle. To install, reverse removal procedure and align column.

Chrysler Corp. — 1) Disconnect negative battery cable, then disconnect linkage from lower end of column. Remove steering shaft lower coupling to wormshaft roll pin. Disconnect wiring connectors at column jacket. Remove center pad assembly, then disconnect horn wires and remove horn switch. Remove steering wheel. On Barracuda and Challenger models remove corrugated cylinder. Remove turn signal lever, then remove floor plate to floor pan attaching screws.

2) Remove finish plate from under instrument panel to expose steering column bracket. On Chrysler, Fury, Polara, and Monaco models, disconnect shift indicator pointer from shift tube bracket. Remove nuts or bolts attaching steering column bracket to instrument panel support. If equipped, save shim pack located between bracket forward leg and support for reassembly. Pry lower coupling from steering gear wormshaft, then remove column assembly. To install reverse removal procedure, then align column assembly.

Ford Motor Co. (Convoluted Type) — Applies to Maverick, Comet, Ford, Lincoln, and Mercury. Remove negative battery terminal, then remove steering wheel. Remove lower instrument panel and trim shroud. Disconnect all electrical connections to steering column. On Ford, Lincoln, and Mercury models, disconnect shift cable. Remove toe plate from dash panel. Disconnect transmission control rods, then remove nuts and/or bolts that attach flexible coupling to steering shaft. Remove nuts and bolts that secure steering column to brake pedal support bracket, then remove column. To install, reverse removal procedure.

Ford Motor Co. (Extruded Type) — 1) On Cougar, Montego, Mustang, Mark IV, Thunderbird, Pinto and Torino models, disconnect negative battery cable, then remove steering wheel. Remove instrument cluster trim cover and steering column trim shrouds. On Thunderbird and Mark IV, remove shift cable from column. Disconnect all electrical connections to steering column. On all models except Mustang and Pinto, remove instrument cluster.

2) Disconnect transmission control rods or cable. Disengage dust boot at base of steering column. On Mustang and Pinto models, remove nuts that attach lower shaft and "U" joint assembly to steering gear input shaft flange. On all others, disconnect flexible coupling. On all models, remove nuts and bolts that attach steering column to brake support bracket, then remove column from vehicle. To install, reverse removal procedure.

General Motors — 1) **CAUTION** — If equipped with Air Cushion Restraint System, turn ignition switch to "LOCK" position, then disconnect and tape negative battery terminal to prevent accidental deployment of system. Disconnect negative battery cable. Disconnect flexible coupling, then disconnect all shift linkage from shift tube lever at column lower end. Remove toe pan cover. If required, remove lower instrument panel cover. Remove transmission indicator cable, if equipped.

2) Disconnect all electrical wiring to steering column, then disconnect vacuum lines if equipped with automatic parking brake release. Remove all steering column brackets, and record number and exact location of shims used. Remove steering column from vehicle. To install, reverse removal procedure, and align steering column.

OVERHAUL

NOTE — For tilt or tilt and telescoping steering columns, see Movable Steering Columns in this section.

DISASSEMBLY (UPPER END)

Remove steering wheel and cover. Using suitable tool, depress lock plate, remove snap ring, tool and lock plate. Remove upper bearing preload spring and thrust washer. Remove turn signal lever and hazard warning switch. Remove turn signal switch and lock cylinder. Remove shift lever and upper housing assembly. Remove thrust cup, rack and lock bolt, load spring, shift gate and sector, then remove shift bowl and shroud from jacket. Remove lower bowl bearing from top of jacket.

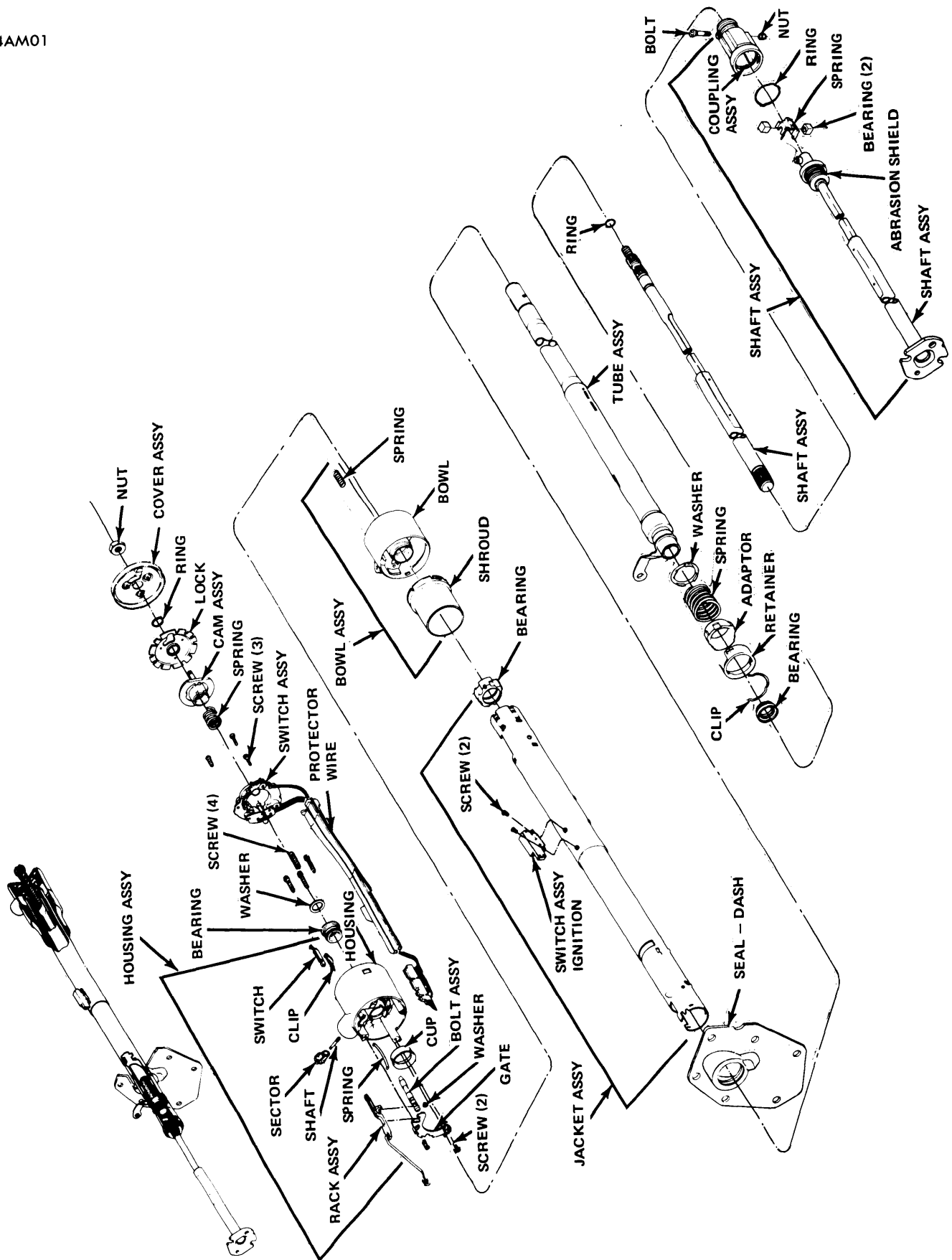
REASSEMBLY (UPPER END)

Reverse removal procedure and note following: Make sure tangs on lock plate are aligned with slots in jacket. Wiring must be pulled flat against jacket and wire protectors must be reinstalled without pinching wires. Snap rings must be completely seated. Reinstall original size bolts and nuts or specified replacements. Tightening specifications must be followed exactly.

Steering Columns

COLLAPSIBLE STEERING COLUMNS (Cont.)

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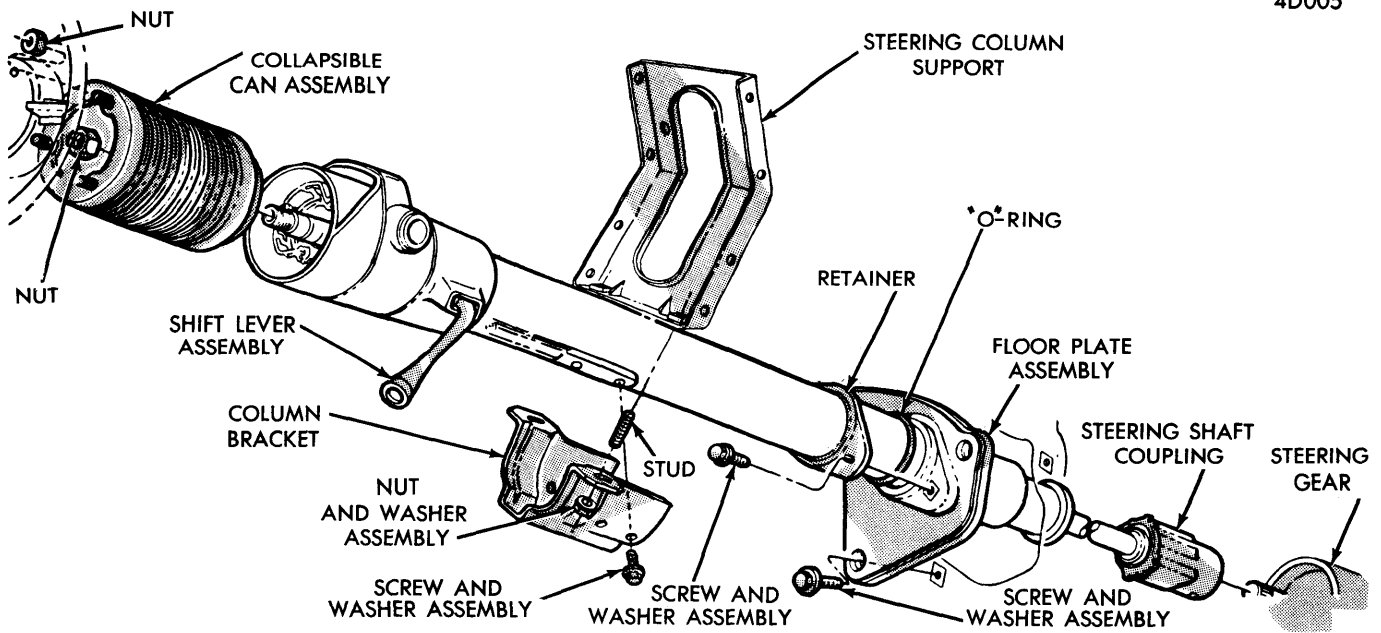


AMERICAN MOTORS & GENERAL MOTORS COLLAPSIBLE COLUMN

Steering Columns

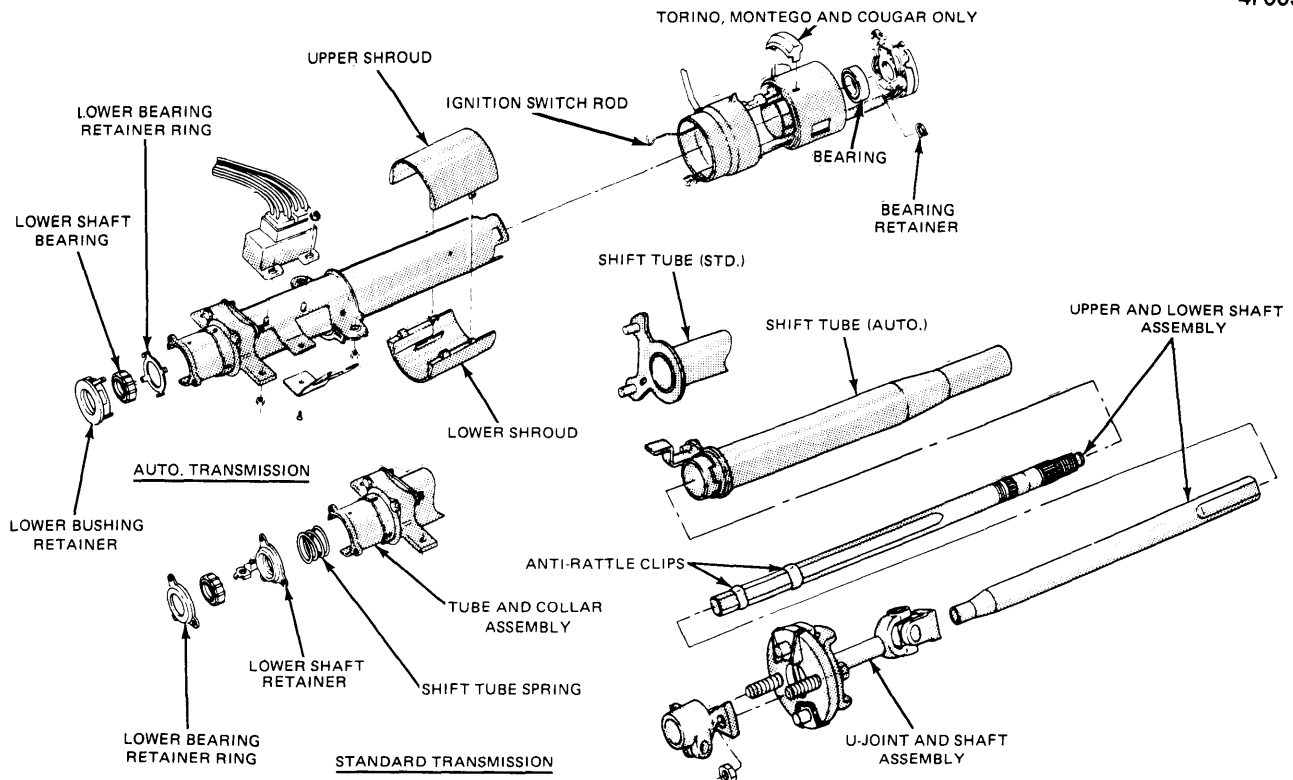
COLLAPSIBLE STEERING COLUMNS (Cont.)

4D005



BARRACUDA & CHALLENGER IMPACT ABSORBING CANISTER

4F003



FORD MOTOR CO. EXTRUDED TYPE STEERING COLUMN