## FORD MOTOR CO., ENCLOSED SPRING

**Bobcat & Pinto**
**Cougar, LTD II & Thunderbird**
**Ford & Mercury**
**Lincoln & Mark VI**

### DESCRIPTION

The front suspension is a ball joint type with a coil spring located between the upper and lower control arms. The upper control arm pivots on bushings located on a shaft assembly which is bolted to the frame. The lower arm pivots on a bolt attached to the number 2 crossmember. This suspension is similar to the spring tower suspension used on other models except for the location of the coil spring. On the spring tower models the spring is located above the upper control arm. See *Ford Motor Co., Spring Tower in this Section.*

### ADJUSTMENT

#### CASTER & CAMBER

*See Caster and Camber Adjustments and Specifications in WHEEL ALIGNMENT Section.*

#### RIDING HEIGHT

*See Riding Height Adjustments and Specifications in WHEEL ALIGNMENT Section.*

#### FRONT WHEEL BEARINGS

*See Wheel Bearing Adjustment in WHEEL ALIGNMENT Section.*

#### BALL JOINT CHECKING

*See Ball Joint Checking in WHEEL ALIGNMENT Section.*

### REMOVAL & INSTALLATION

#### BALL JOINTS

NOTE – *Upper and lower control arms must always be replaced as an assembly. Do not install ball joints or other components in used control arm.*

#### STABILIZER BAR BUSHING

**Removal (Bobcat and Pinto)** – Remove nut attaching stabilizer bar to link assembly. Remove bushing at top and bottom of stabilizer bar.

**Removal (All Others)** – Remove nut, washer, and insulator from lower end of stabilizer bar attaching bolt. Remove bolt and remaining washers, insulators, and spacer.

**Installation (All)** – Install stabilizer bar end bushing by reversing removal procedure. Tighten attaching hardware.

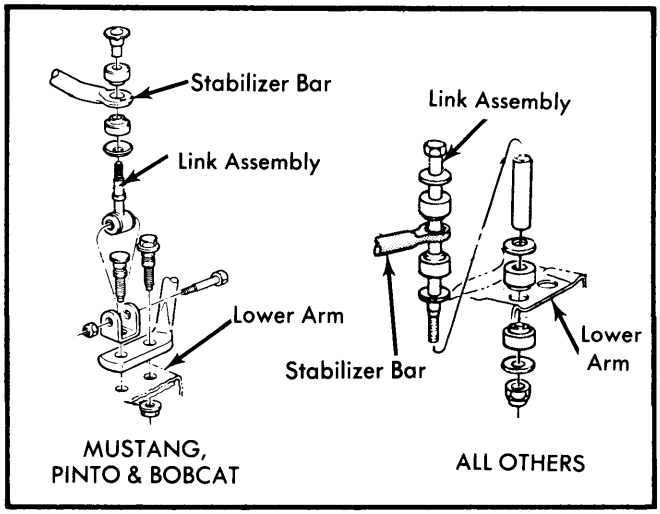


*Fig. 1 Exploded View of Stabilizer Bar Bushings*

#### STABILIZER BAR INSULATOR

**Removal & Installation** – Raise vehicle high enough to provide working space. Place supports under both front wheels. Disconnect stabilizer from each link, disconnect stabilizer attaching brackets, then remove stabilizer. Using a suitable rubber lubricant, replace insulators on stabilizer. To install, reverse removal procedure making sure that stabilizer

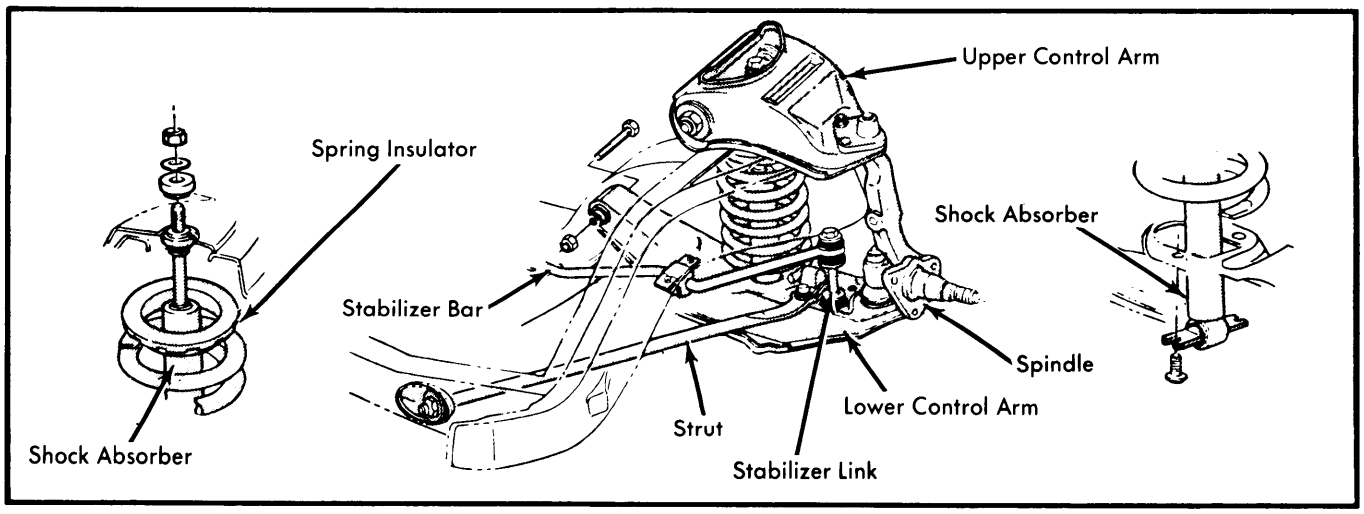


*Fig. 2 Exploded View of Ford Enclosed Spring Type Front Suspension*

## FORD MOTOR CO., ENCLOSED SPRING (Cont.)

link does not interfere with brake hoses. NOTE – *New stabilizer bar-to-lower control arm nuts and bolts should be installed each time bar is removed.*

### LOWER ARM STRUT AND/OR BUSHING

**Removal and Installation** – Remove nut from lower arm strut at frame, then remove washer and bushing from the strut. Remove nuts, washers and bolts attaching strut and rubber bumper (if present) to lower arm. Pull strut from frame. Remove rear side bushing and washer from strut. Install strut by reversing removal procedure. Check wheel alignment and adjust as necessary.

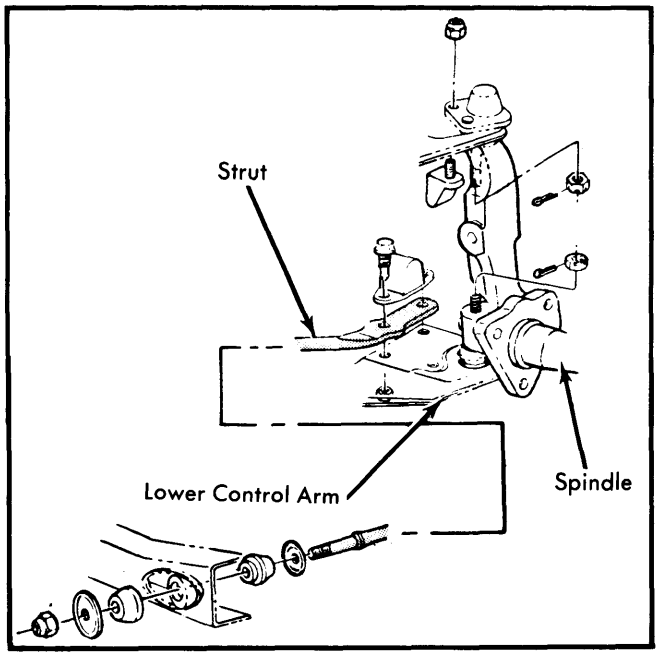


***Fig. 3 Exploded View of Ford and Mercury Strut and Bushing Assembly***

### COIL SPRING

**Removal** – Raise vehicle and support on safety stands. Disconnect lower end of shock absorber. It may be necessary to use a pry bar to loosen lower end. On Bobcat and Pinto, remove shock absorber. Place a jack under lower arm then remove bolts that attach strut and rubber bumper to lower arm. If equipped with sway bar, disconnect lower end of sway bar or link from lower control arm. Disconnect inner end of lower control arm from crossmember. Carefully and slowly lower the control arm to release spring tension. Remove spring.

**Installation** – To install, reverse removal procedure while noting the following: Coil spring must be positioned on lower arm so that end of spring is no more than ½" from end of depression in arm. Do not torque lower arm-to-crossmember bolt until car is resting at curb height.

### LOWER CONTROL ARM

**Removal** – 1) Raise front of vehicle and position safety stands under both sides of frame just back of lower arms, then remove wheel and tire. Disconnect lower end of shock absorber, and push it up to retracted position. If equipped with sway bar, disconnect lower end of link from lower control arm. Remove cotter pins from upper and lower ball joint stud nuts. Remove bolts and nuts attaching strut to lower arm.

2) Loosen lower ball joint stud nut one or two turns. DO NOT remove nut from stud at this time. Install suitable tool (T74P-3006A for Bobcat and Pinto, T57P-3006B for all others) between upper and lower ball joint studs. Tool must be firmly seated against ends of both studs and NOT against stud nuts.

3) Turn tool with a wrench until stud is under tension. Tap spindle near lower stud with a hammer to loosen stud in spindle. DO NOT loosen stud from spindle using tool pressure only. Position floor jack under lower arm. Remove ball joint nut and use jack to lower arm from spindle. Remove spring and insulator. Remove nut and bolt attaching lower arm to crossmember and remove arm.

**Installation** – To install, reverse removal procedure noting the following: Do not torque lower arm-to-crossmember bolt until vehicle is resting at curb height. Coil spring must be positioned on lower arm so that end of spring is no more than ½" from end of depression in arm.

### UPPER CONTROL ARM

**Removal** – 1) Raise front of vehicle and position safety stands under both sides of frame just back of lower arms. Remove wheel and tire from hub, then loosen stud nut on upper ball joint one or two turns. DO NOT remove nut from stud at this time. Install suitable tool (T57P-3006-B) between upper and lower ball joint studs with adapter screw on top. Tool must be firmly seated against ends of both studs and NOT against stud nuts.

2) Turn adapter screw with wrench until tool places stud under tension. Tap spindle near upper stud with hammer to loosen stud in spindle. DO NOT loosen stud from spindle using tool pressure only. Remove tool from between ball joint studs and place floor jack under lower arm. Raise floor jack to relieve pressure from upper ball joint stud nut and remove nut. Remove upper arm inner shaft attaching bolts. Remove upper arm and innner shaft as an assembly. Remove bumper from upper arm.

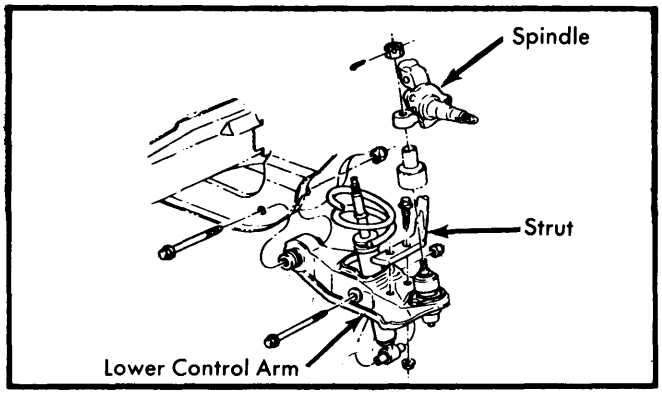


***Fig. 4 Exploded View of Pinto & Bobcat Lower Control Arm Assembly***

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**Installation** – To install, reverse removal procedure noting the following: Be sure wheel bearings are properly adjusted, and wheels properly aligned before operating vehicle.

### UPPER CONTROL ARM BUSHINGS

**Removal (Bobcat and Pinto)** – With control arm removed from vehicle, remove nuts and washers from both ends of control arm. Install tool T65P-3044-A1, (or equivalent) on the inner shaft and place tool T65P-3044-A4 (or equivalent) inside the upper arm around inner shaft. Position the upper arm in an arbor press on tool T65P-3044-A4 and press lower bushing out of upper arm. Repeat procedure for other side.

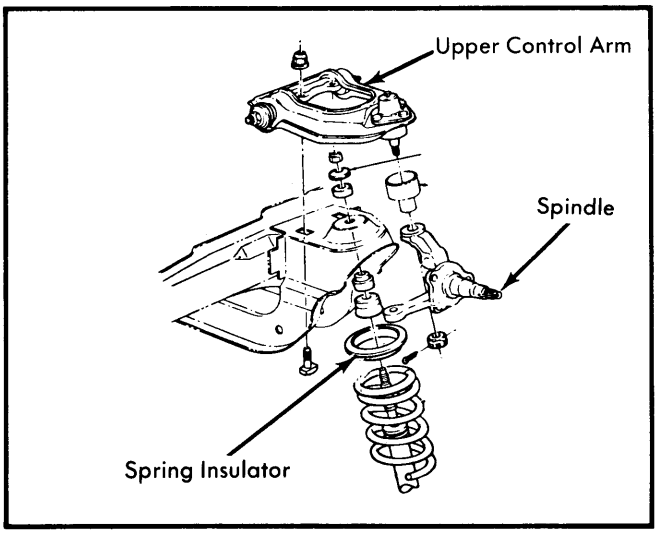


*Fig. 5 Exploded View of Pinto & Bobcat Upper Control Arm Assembly*

**Installation (Bobcat and Pinto)** – Slide shaft into upper control arm. Install shaft locator on shaft to keep shaft from turning. Position replacer adapter, "C" frame assembly, and bushing on end of shaft and install the bushing. Repeat procedure for other bushing.

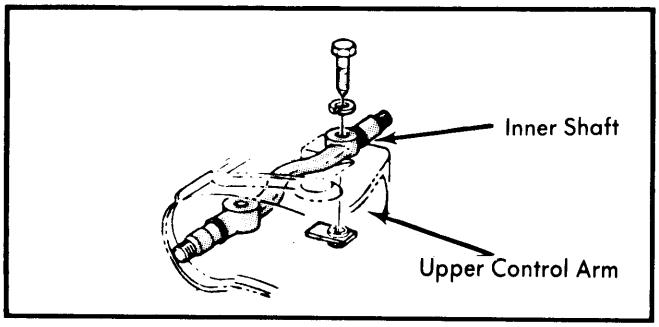


*Fig. 6 Exploded View of Upper Control Arm Inner Shaft*

**Removal (All Others)** – Remove nuts and washers from both ends of upper control arm shaft. Using suitable tool (T74P-3044-A1), remove bushings from control arm. Repeat procedure for other side.

**Installation (All Others)** – Position shaft and new bushings in upper control arm. Using same tool used for bushing removal, press bushings into upper control arm.

NOTE – *Front bushing is larger than the rear, use adapter T79P-3044-A2 or equivalent to install rear bushing.*

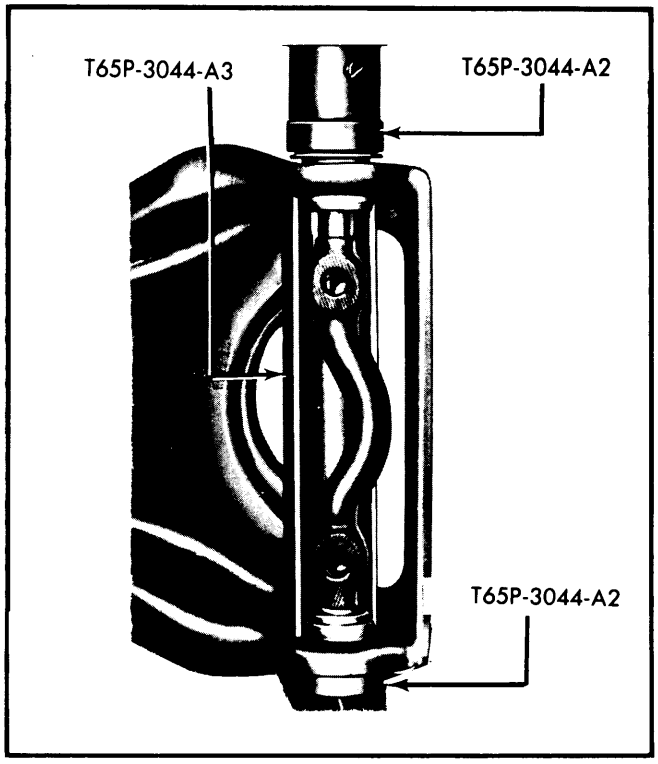


*Fig. 7 Installing Upper Control Arm Bushing (Bobcat & Pinto Only)*

### FRONT WHEEL SPINDLE

**Removal** – 1) Raise vehicle and position on safety stands. Remove wheel, brake assembly and hub. Remove caliper shield and disconnect spindle connecting rod end from spindle arm using a suitable tool (3290-C).

2) Remove cotter pins from both ball joint stud nuts. Loosen nuts one or two turns, but DO NOT remove nuts at this time. Position ball joint remover tool between upper and lower ball joint studs. Tool should seat firmly on ball joint studs and NOT on stud nuts.

3) Turn tool with a wrench until tool places studs under considerable pressure. With a hammer hit the spindle near studs to break them loose in spindle. DO NOT attempt to loosen studs with tool pressure only. Position a floor jack under the lower arm. Remove upper and lower ball joint stud nuts, lower jack and remove spindle.

**Installation** – To install, reverse removal procedure. If spindle is being replaced because of accident damage, check wheel alignment.

## FORD MOTOR CO., ENCLOSED SPRING (Cont.)

### TIGHTENING SPECIFICATIONS

**Pinto & Bobcat**

| Application | Ft. Lbs. |
|---|---|
| Lower Arm-to-Crossmember | 129-149 |
| Upper Arm-to-Frame | 163-189 |
| Stabilizer Bar-to-Lower Arm | 9-16 |
| Ball Joint-to-Spindle | |
| Upper | 102-122 |
| Lower | 143-162 |
| Stabilizer Bar-to-Frame | 19-35 |
| Shock Absorber | |
| Upper | 30-40 |
| Lower | 17-24 |
| Brake Backing Plate-to-Spindle | 33-61 |
| Strut-to-Frame | 129-142 |

**All Other Models**

| Application | Ft. Lbs. |
|---|---|
| Lower Arm-to-Crossmember | 120-140 |
| Upper Arm-to-Frame | 120-140 |
| Lower Arm-to-Bumper | 29-35 |
| Stabilizer Bar-to-Lower Arm | 9-12 |
| Ball Joint-to-Spindle | |
| Upper | 75-90 |
| Lower | 100-120 |
| Stabilizer Bar-to-Frame | 14-26 |
| Shock Absorber | |
| Upper | 26-30 |
| Lower | 15-18 |