

LUBRICATE CLUTCH LINKAGEMASTER BRAKE CYLINDER

(FLUID LEVEL 1/4 IN.
FROM TOP)

BALL JOINTS
REMOVE PLUGS TO
LUBRICATE

FRONT WHEEL BEARINGS
INSPECT

FILL PLUG

MANUAL TRANSMISSION

FILL TO BOTTOM OF
FILLER HOLE WITH
VEHICLE ON LEVEL
GROUND.

LUBE AUTOMATIC TRANSMISSION LINKAGE

FILL PLUG

← FRONT

PARKING BRAKE LINKAGE

AXLE
(2.3L ENGINE)

FIG. 5 Chassis Lubrication Points—Pinto, Bobcat and Mustang II

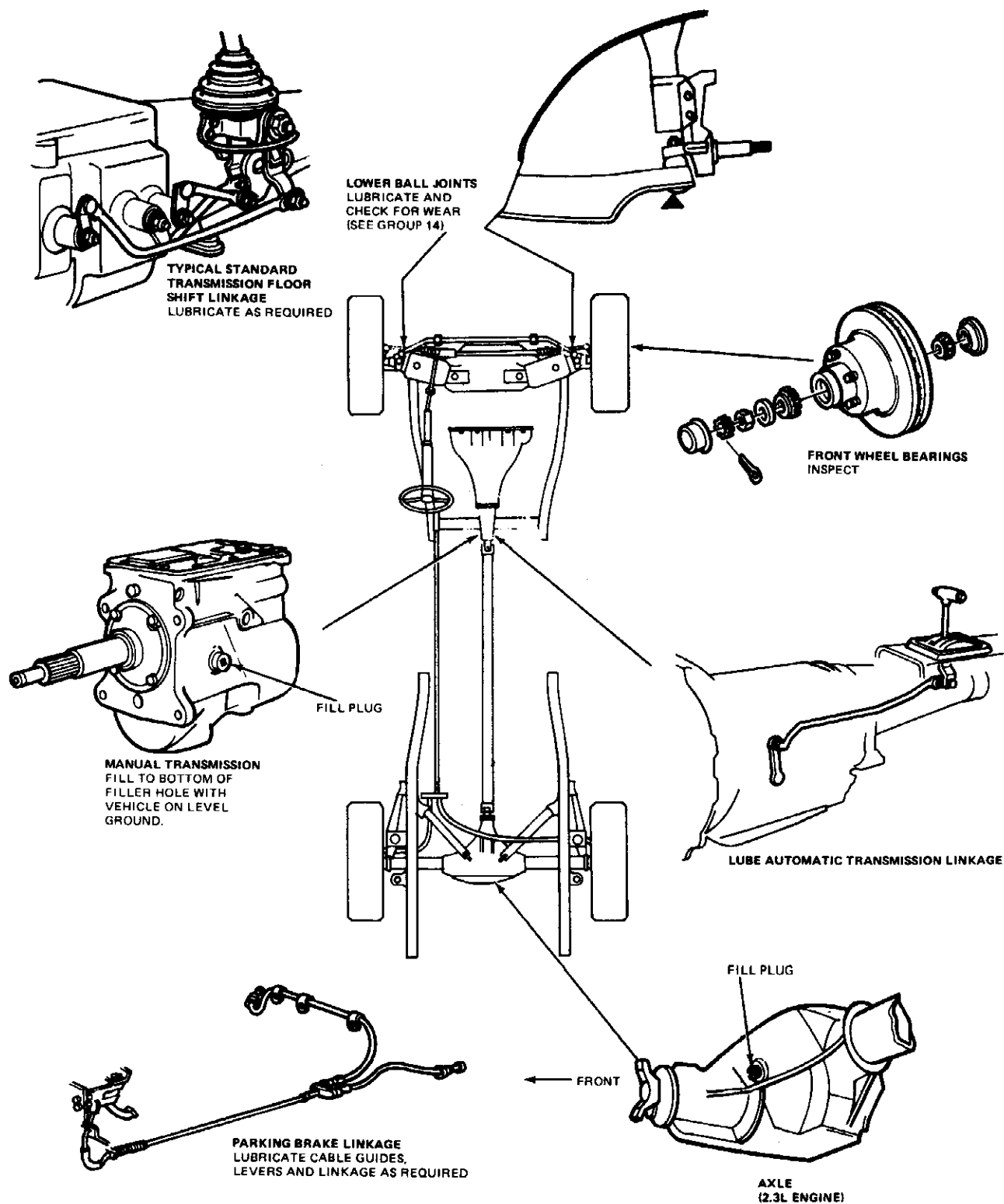
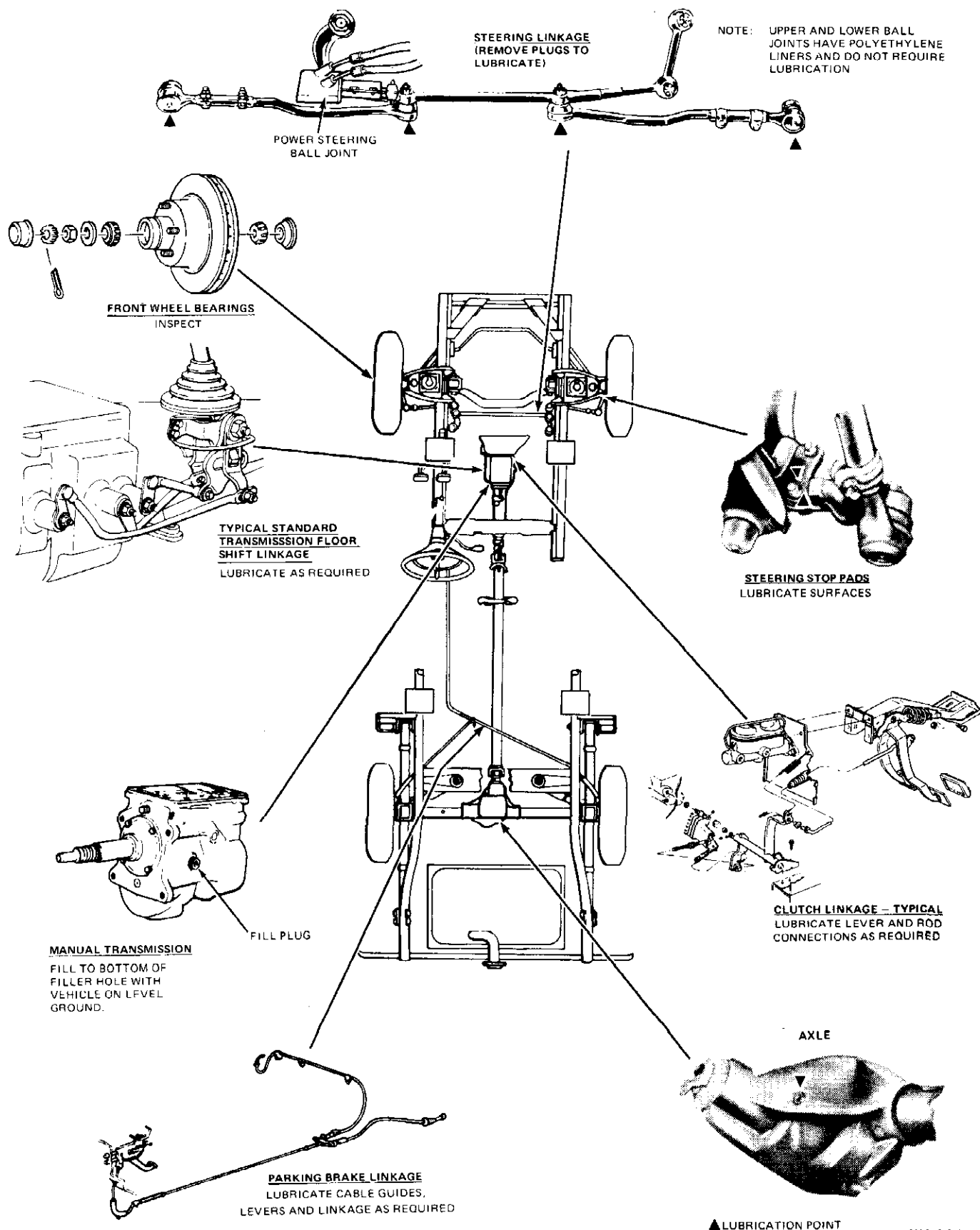


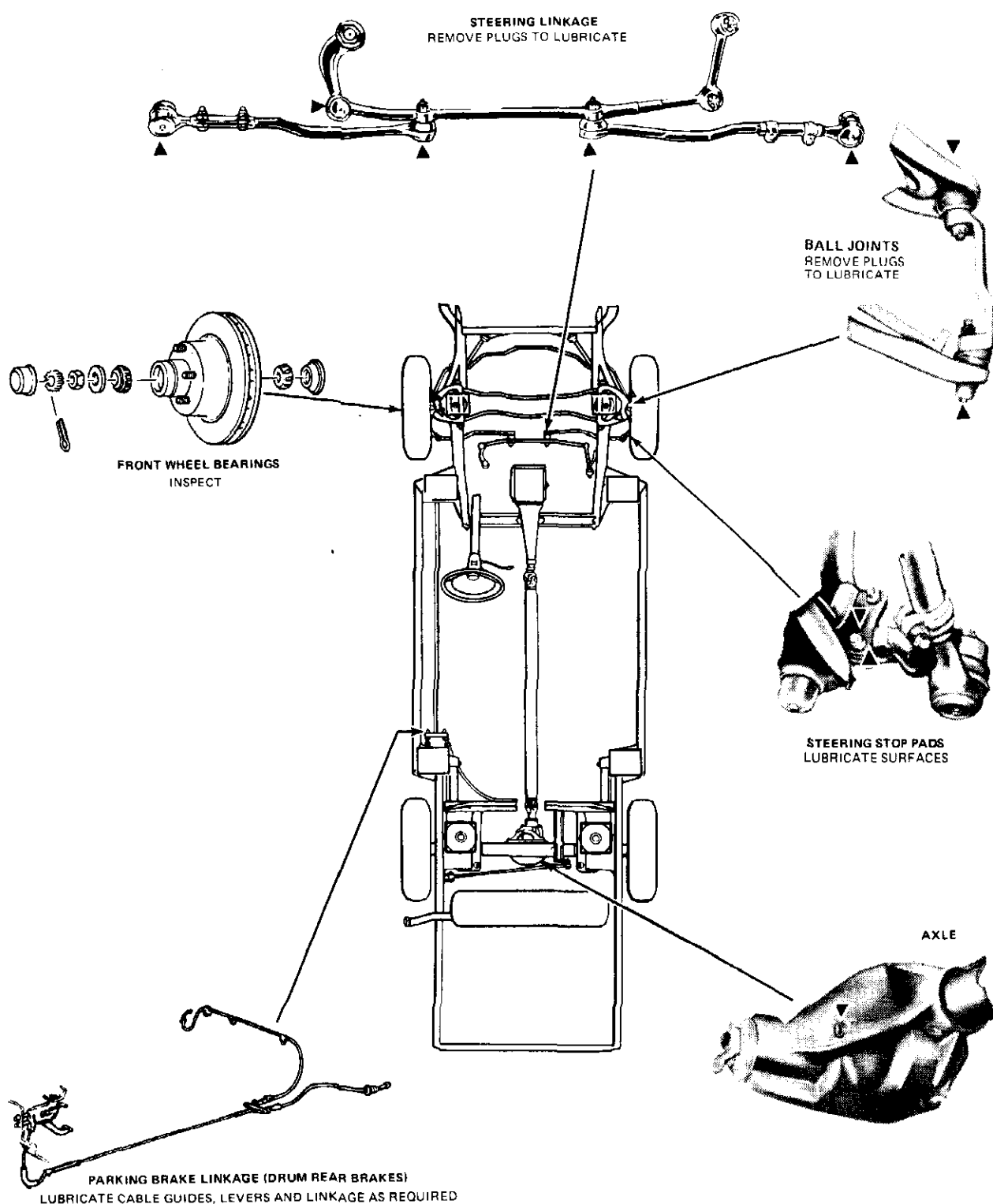
FIG. 6 Typical Chassis Lubrication Points -Fairmont and Zephyr



Y1120-2H

FIG. 7 Typical Chassis Lubrication Points—Granada, Monarch and Versailles

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▲ LUBRICATION POINT

Y1119-2G

FIG. 8 Typical Chassis Lubrication Points—Ford, Mercury and Lincoln Continental

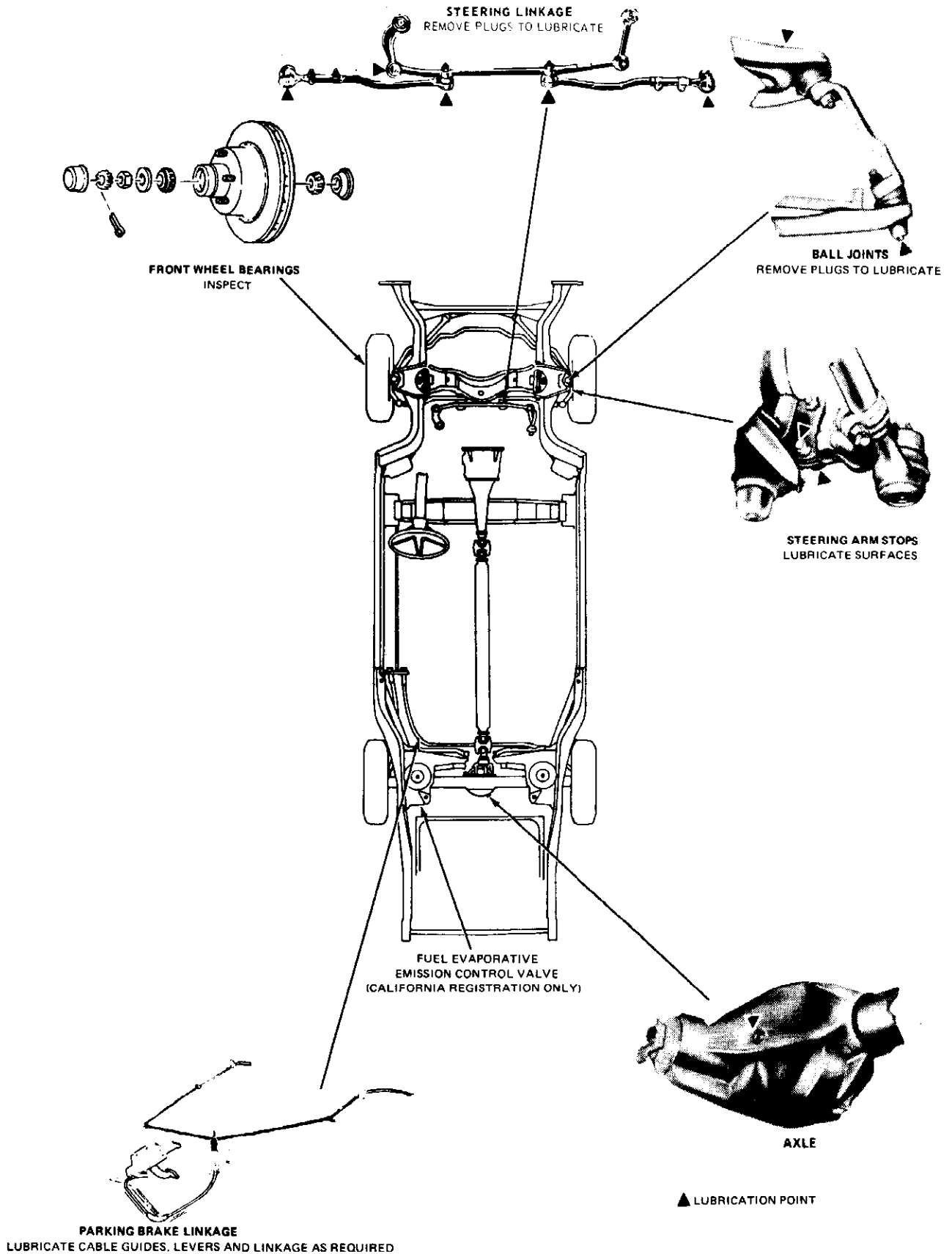


FIG. 9 Chassis Lubrication Points—Continental Mark V, LTD II, Ranchero and Cougar

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SPECIFICATIONS

LUBRICANT SPECIFICATIONS

Item	Part Name	Ford Part No.	Ford Specification
Hinges, Hinge Checks and Pivots	Polyethylene Grease	C4AZ-19584-B	ESB-M1C106-B
Front Suspension Ball Joints	Long Life Lubricant	C1AZ-19590-B	ESA-M1C75-B
Steering Linkage	Steering Linkage Lube	C6AZ-19590-A	ESA-M1C92-A Type II
Power Steering Control Valve Ball Stud	Long Life Lubricant	C1AZ-19590-B	ESA-M1C75-B
Transmission Linkage			
Steering Arm Stops	Steering Arm Stop Lube	C7AZ-19590-A	ESB-M1C25-A
Hood Latch and Auxiliary Catch	Polyethylene Grease	C4AZ-19584-B	ESB-M1C106-B
Lock Cylinders	Lock Lubricant	B4A-19587-A	ESB-M2C20-A
Rear Axle (Conventional)	Hypoid Gear Lube	D2AZ-19580-B	ESW-M2C105-A
Rear Axle (Traction-Lok)		C9AZ-19580-A	ESW-M2C119-A
Steering Gear Housing (Manual)	Steering Gear Grease	C3AZ-19578-A	ESW-M1C87-A
Steering Gear (Rack and Pinion)	Hypoid Gear Lube	D2AZ-19580-B	ESW-M2C105-B
Steering - Power (Pump Reservoir) (Lincoln Continental, Continental Mark V)	Power Steering Fluid	D5AZ-14582-A	ESW-M2C128-A
Steering-Power (Pump Reservoir) (Except Lincoln Continental and Continental Mark V)	Auto. Trans. Fluid	C1AZ-19582-A	ESW-M2C33-F (Type F)
Transmission (Automatic) C3, C4 & FMX	Auto. Trans. Fluid	C1AZ-19582-A	ESW-M2C33-F (Type F)*
Transmission (Automatic) C6 & JATCO	Auto. Trans. Fluid	D7AZ-19582-A	ESP-M2C138-CJ*
Transmission (Manual)	Manual Trans. Lube	C3AZ-19C547-B	ESP-M2C83-C
Engine Oil Filter	Long Life Oil Filter	C1AZ-6731-A	ES-C6AF-6714-A/C
Engine Oil	Long Life Engine Oil	(1)	ESE-M2C144-A
Speedometer Cable	Speedometer Cable Lube	D2AZ-19581-A	ESF-M1C160-A
Engine Coolant	Cooling System Fluid	8A-19549-A or -B	ESE-M97818-C
Front Wheel Bearings and Hubs	Long Life Lubricant	C1AZ-19590-B	ESA-M1C75-B
Front Wheel Bearing Seals			
Brake Master Cylinder	H.D. Brake Fluid	C6AZ-19542-A	ESA-M6C25-A
Brake Master Cylinder Push Rod and Bushing	SAE 10W-30 Engine Oil	(1)	ESE-M2C144-A
Drum Brake Shoe Ledges	High Temp. Grease	C0AZ-19553-A	ESR-M13P4-A
Disc Brake Caliper and Anchor Plate Slides	Disc Brake Caliper and Anchor Plate Slide Lubricant		ESA-M1C167-A
Rear Disc Brake Caliper (Internal)	Silicone Grease		ESA-M1C169-A
Parking Brake Cable	White Waterproof Grease		ESB-M1C31-A
Brake Pedal Pivot Bushing	SAE 10W-30 Engine Oil	(1)	ESE-M2C144-A
Tire Mounting Bead (of Tire)	Synthetic Rubber Lube		ESA-M99C45-A or ESA-M18C-A
Clutch Pedal Pivot Bushing	SAE 10W-30 Engine Oil	(1)	ESE-M2C144-A
Clutch Equalizer Bar Assembly Bore & Pivot (Both Ends)	Long Life Lubricant	C1AZ-19590-B	ESA-M1C75-B
Clutch Cable Connection (Both Ends)			
Clutch Pedal to Idler Lever Rod (Both Ends)			
Clutch Release Rod			
Clutch Release Lever - At Fingers (Both Sides and Fulcrum)			
Swivel Clutch Release Idler Lever			
Clutch Release Bearing Retainer			

(1) Part Number depends on viscosity and container size.

* Refer to vehicle certification label on left front door pillar for transmission code to determine transmission type.

Hoisting, Jacking and Towing

PART
50-04

SUBJECT	PAGE	SUBJECT	PAGE
DESCRIPTION		DESCRIPTION (Cont'd.)	
General Hoisting Instructions	04-1	Towing	04-2

CN4048-2A

DESCRIPTION

GENERAL HOISTING INSTRUCTIONS

Damage to suspension, exhaust and/or steering linkage components may occur if care is not exercised when positioning the hoist adapters of 2-post hoists prior to lifting the car.

If a 2-post hoist is used to lift the vehicle, place the adapters under the front suspension lower arms. Do not allow the adapters to contact the steering linkage.

On the Lincoln Continental, Continental Mark V, Thunderbird, LTD II, Fairmont, Zephyr and Cougar, place fork lifts under the axle housing inboard of the suspension arm brackets.

Do not position hoist pads under Number 3 crossmember.

Refer to the Owner's Manual when using the jack supplied with the vehicle.

Granada, Monarch, Versailles, Pinto, Bobcat and Mustang II

The unitized body-frame construction requires special precautions and procedures when the vehicle is jacked up or hoisted. In some cases, special hoist adapters must be used as recommended by specific hoist manufacturers.

Drive-On Type Hoist

To prevent possible damage to the underbody, do not drive the vehicle onto the drive-on type hoist without first checking for possible interference between the upright flanges of the hoist rails and the underbody. Should there be interference, the hoist flanges should be modified as necessary and/or the approach ramps built up to provide the needed clearance.

Floor Jack—Pinto, Bobcat, Mustang II, Fairmont and Zephyr

When using a floor jack, the vehicle may be raised at several locations. The front of the car may be lifted by positioning the jack under the center of the number two crossmember. The front, as well as either side of the rear end, may be lifted by positioning the floor jack under the rocker flange at the contact points used for the jack supplied with the vehicle. To lift both sides of the rear at once, position the floor jack under the differential housing.

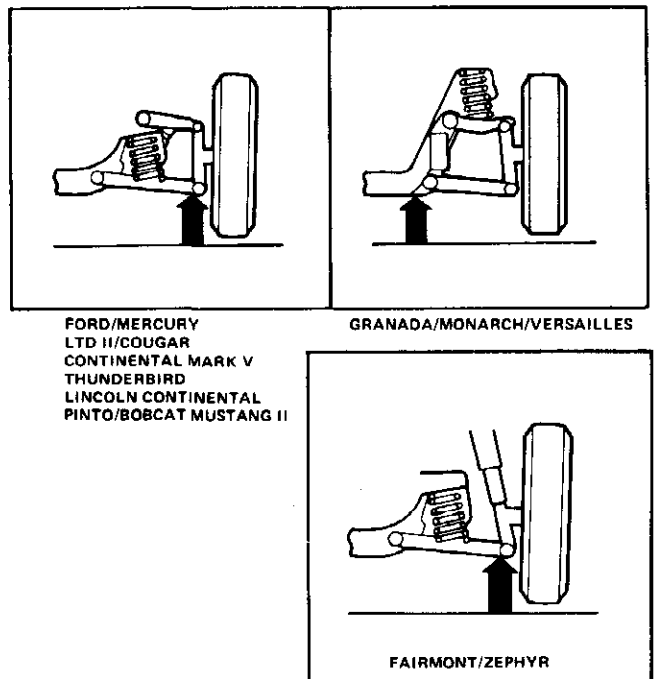
Floor Jack—Others

When a stationary floor jack or a roll jack is to be used, there are several specific recommended points of contact. Either side of the front of the vehicle may be raised by jack contact at the lower arm strut connection, or by jack pressure on the front crossmember, or on the crossmember to which the stabilizer is connected.

Do not attempt to use jack pressure on either front or rear Granada, Monarch, Versailles, Pinto, Bobcat or Mustang II bumpers.

On Fairmont, Zephyr, Ford, Mercury, Lincoln Continental and Continental Mark V, position jacks under the rear axle housing between the suspension arm brackets and the differential housing. Do not place jacks under the suspension arm brackets.

To unload ball joint front suspensions, position jack as shown in Fig. 1.



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FIG. 1 Front Suspension Lift Points for Ball Joint Unloading

Twin Post Hoist

To assure safe hoisting, the front post adapters must be positioned carefully to contact the center of the lower suspension arms (Fig. 2).

To prevent damage to the rear shock absorbers, the rear forks must contact the axle at points no more than one inch outboard from the circumference welds near the differential housing. Carefully raise the rear post and check the position of the fork (Fig. 3).

Rail Type—Free Wheeling Hoist

The front adapters or hoist plates must be carefully positioned in contact with the lower suspension arms to assure safe, accurate lifting.

The rear hoist adapters must be positioned carefully under the rear axle to prevent damage to the shock absorbers when the vehicle is raised. The hoist rails should be raised slowly and the position of the adapters checked.

Frame Contact Hoist

On frame contact hoists, adapters are necessary to lift the vehicle. The adapters must be placed at four contact points as shown in Fig. 4. Position the adapters so that they are centered on the adapter contact area. All four contact points must contact the adapters.

NOTE: Exercise care when hoisting vehicles equipped with catalytic converter(s). On vehicles so equipped, assure necessary clearance between hoist and exhaust system components before energizing hoist.

TOWING

Make sure the parking brakes are released and the transmission is in NEUTRAL. It is important to know that the transmission and rear axle are in proper working

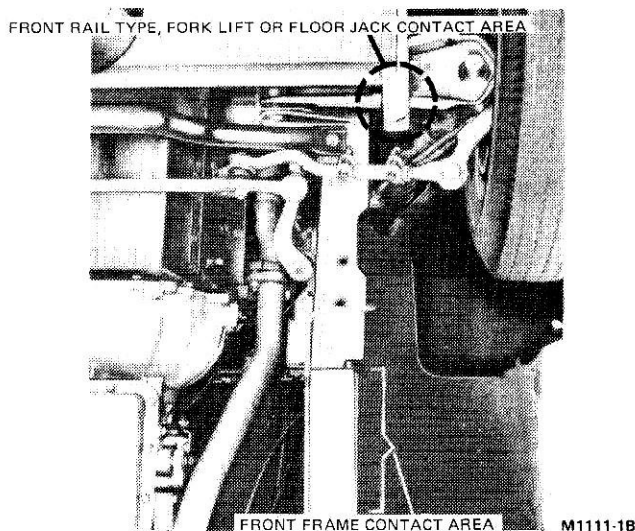


FIG. 2 Front Hoist Contact Areas—Typical

order before towing. To move a vehicle with an inoperative axle, it is necessary to raise the rear wheels. If the transmission is inoperative, the driveshaft must be

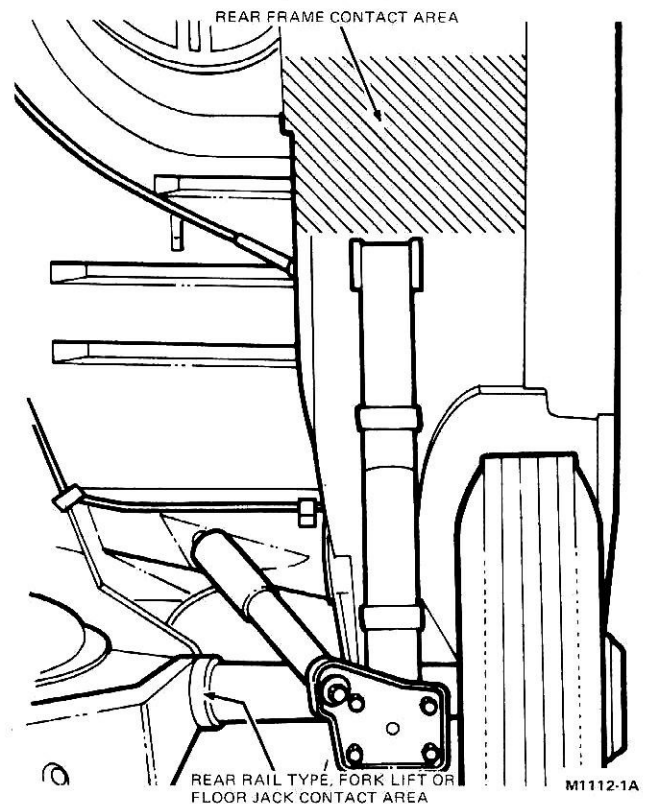
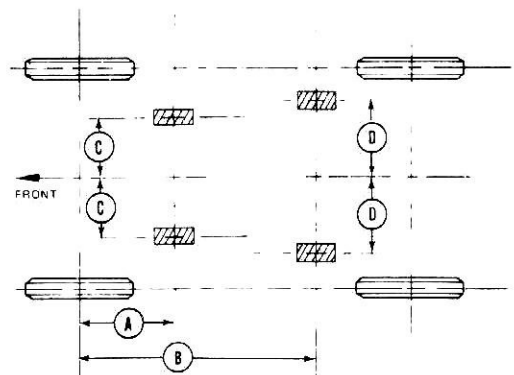


FIG. 3 Rear Hoist Contact Areas—Typical



Car Line										
Dimension (Inches)	Cougar LTD II	Continental Mark V	Ford	Lincoln Continental	Fairmont/Zephyr	Mercury	Mustang	Pinto Bobcat	Thunderbird	Granada Monarch Versailles
A	22.0	24.9	21.5	21.7	*	21.5	17.5	17.5	22.0	21.5
B	83.4 (1) 87.4 (2)	102.9	97.5	103.7	*	100.5	75.0	75.0	83.4	83.5
C	25.0	25.0	23.0	23.5	*	23.0	12.0	12.0	25.0	26.4
D	27.5	26.0	25.0	27.0	*	25.0	24.0	24.0	27.5	26.4

(1) 2-Door (2) 4-Door

* Not available at time of printing.

Y1511-1E

FIG. 4 Frame Contact Lift Points

removed or the rear wheels raised, whichever is more convenient.

To tow a vehicle with steering column and transmission locked and no ignition key available, lift vehicle from rear with wheels locked straight. If wheels are locked in a turn position, they **MUST BE SUPPORTED** with a DOLLY suitable for towing.

If the vehicle is being towed with the rear wheels on the ground, do not exceed 30 mph, or a distance of 15 miles. If this is not possible, tow the vehicle with the rear wheels raised off the ground, or with the driveshaft disconnected from the rear axle.

Towing Slings

To avoid metal to metal contact and possible damage to chrome or lower body panels, a special wide-belt sling should be used to lift and tow ALL cars. When attaching towing slings, take care to avoid damage to license plate and frame.

The suggested lifting and towing hook-ups are illustrated in Figs. 5 through 13.

Pinto and Bobcat

• Front (Fig. 5)

1. Attach J-hooks around outboard ends of lower control arms.
2. Position towbar behind front bumper, against body members.
3. Attach safety chains around front bumper energy absorbers.

• Rear (Fig. 6)

1. Attach J-hooks around axle outboard of spring mount.
2. Position towbar under rear bumper.
3. Attach safety chains around rear axle or around bumper energy absorbers. **NOTE:** Make sure chains

are clear of brake lines and sufficient slack is allowed to prevent damage.

Mustang II (Except Cobra II)

• Front (Fig. 7)

1. Attach J-hooks to outboard ends of lower control arms.
2. Position towbar behind lower valence panel.
3. Attach safety chains around front anti-sway bar.

• Rear (Fig. 8)

1. Attach J-hooks around rear axle, outboard of spring mounts.
2. Position towbar behind bumper.
3. Attach safety chains around rear spring hangers.

Mustang Cobra II

• Front

CAUTION: The flexible spoiler should be lifted with the hand as the tow chains tighten to ensure that the sling straps and/or chains bear on the unpainted back side of the spoiler and do not crimp or drastically fold the spoiler.

1. Attach J-hooks to outboard ends of lower control arms.
2. Carefully position towbar behind lower valence panel (see CAUTION).
3. Attach safety chains around front anti-sway bar.

• Rear (See Mustang II).

Fairmont and Zephyr

• Front (Fig. 9)

1. Attach J-hooks to outboard ends of lower control arms.
2. Position towbar under radiator crossmember.

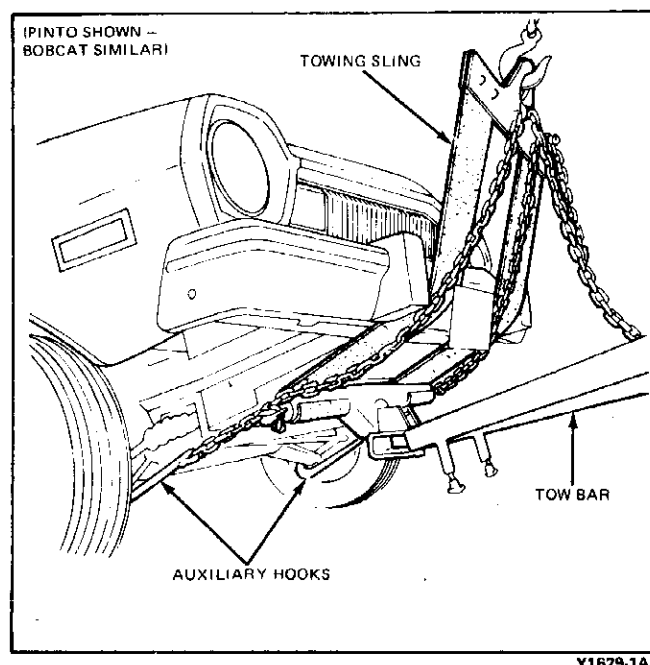


FIG. 5 Pinto and Bobcat Towing—Front

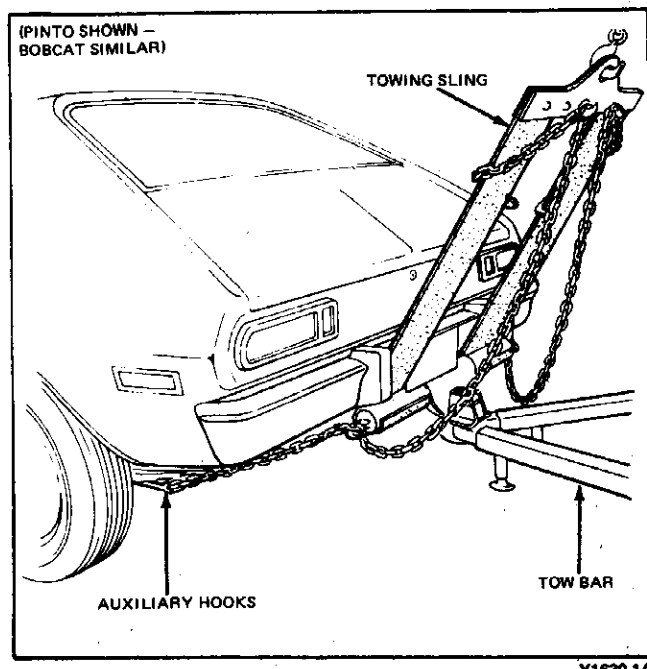


FIG. 6 Pinto and Bobcat Towing—Rear

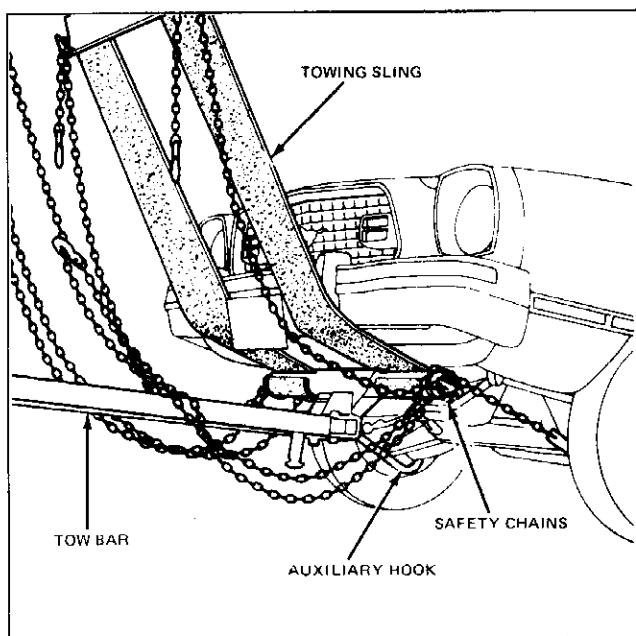
3. Attach safety chains around outer ends of lower control arms.
- Rear (Fig. 10)
 1. Attach J-hooks around outboard ends of axle housing.
 2. Position towbar under and slightly behind rear bumper.
 3. Attach safety chains around outboard ends of axle housing. **NOTE: Make sure chains are clear of brake lines and that sufficient slack is allowed to prevent damage on turns.**

Granada and Monarch

- Front (Fig. 11)
 1. Attach J-hooks to outboard ends of lower control arms.
 2. Position towbar below front bumper. **NOTE: Towbar will deform rubber air dam, but dam will return to acceptable shape.**
- Rear (Fig. 12)
 1. Attach J-hooks around axle housing outboard of spring mounts.
 2. Position towbar below and slightly behind rear bumper.
 3. Attach safety chains around outboard ends of axle housing. **NOTE: Make sure chains are clear of brake lines and that sufficient slack is allowed to prevent damage on turns.**

Versailles

- Front and Rear (Same as Granada and Monarch except position safety chains around bumper energy absorbers—Figs. 13 and 14).

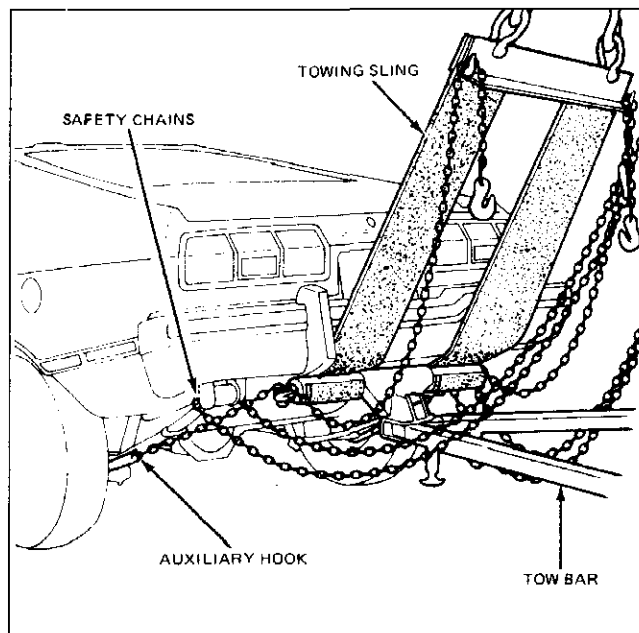


Y1631-1A

FIG. 7 Mustang II Towing—Front (Except Cobra II)

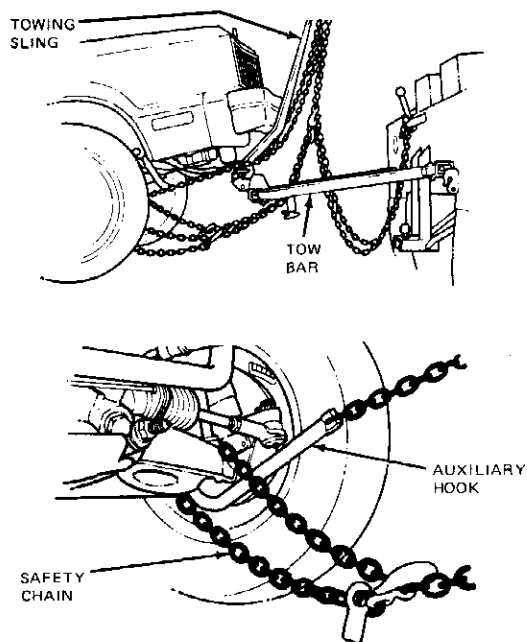
LTD II and Cougar Sedan

- Front (Fig. 15)
 1. Attach J-hooks around lower control arms outboard of spring.
 2. Position towbar behind front bumper (air dam will deform when chains are tightened, but will return to acceptable shape).
 3. Attach safety chains around outboard ends of lower control arms.



Y1632-1A

FIG. 8 Mustang II Towing—Rear



Y1633-1A

FIG. 9 Fairmont and Zephyr Towing—Front

- Rear (Fig. 16)

1. Attach J-hooks in holes in underside of frame side rails.
2. Position towbar behind rear bumper.
3. Attach safety chains around outboard ends of rear axle housing. **NOTE:** Make sure chains are clear of brake lines, and that sufficient slack is allowed to prevent damage on turns.

Thunderbird and Cougar XR7

- Front (Fig. 17)

1. Attach J-hooks around lower control arms outboard of springs.
2. Position towbar under front bumper (be careful of lower grille).
3. Attach safety chains around front bumper energy absorbers.

- Rear (Same as LTD II and Cougar Sedans—Fig. 16)

LTD II Ranchero

- Front (Same as LTD II sedan—Fig. 15)

- Rear (Fig. 18)

1. Position 4" x 4" spacer behind rear bumper, against frame.
2. Position towbar below rear bumper.
3. Attach towing chains around rear frame members.
4. Attach safety chains around rear frame members.

Ford and Mercury

- Front (Fig. 19)

1. Attach J-hooks around lower control arm between ball joint and spring mount.
2. Position towbar under front bumper. (Rubber air dam will deform, but will return to acceptable shape).

3. Attach safety chains around lower control arms between spring mounts and inner bushing.

- Rear (Fig. 20)

1. Attach J-hooks around rear axle, inboard of coil spring mounts.
2. Position towbar under rear bumper.
3. Attach safety chains around rear axle housing inboard of coil spring mounts. **NOTE:** Make sure chains are clear of brake lines and allow sufficient slack to prevent damage on turns.

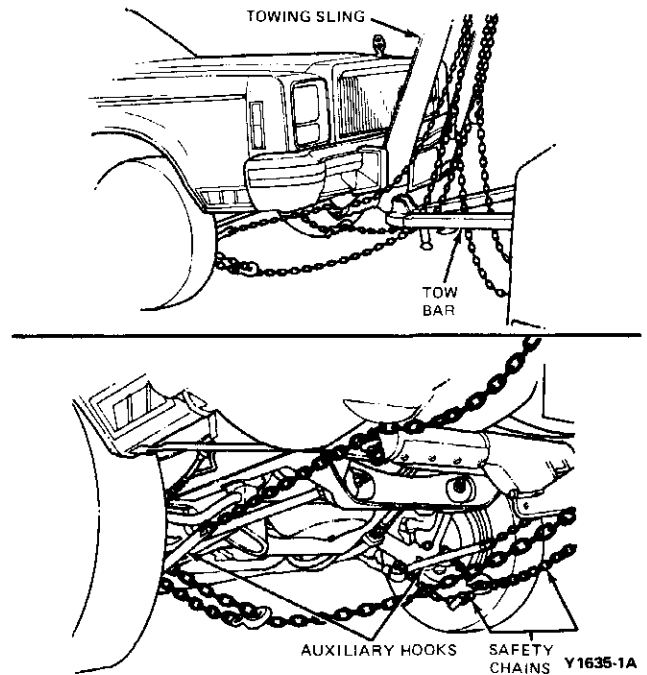
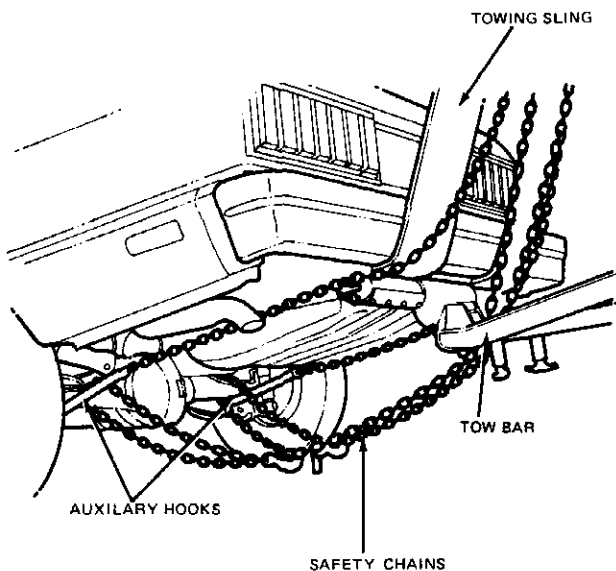
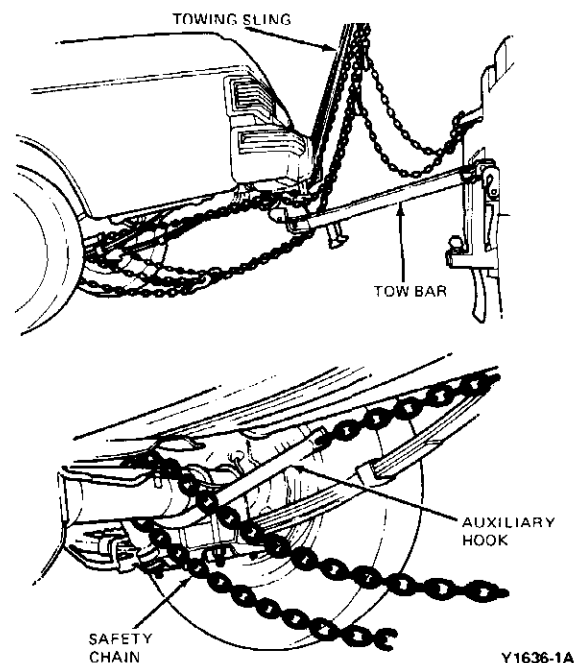


FIG. 11 Granada and Monarch Towing—Front



Y1634-1A

FIG. 10 Fairmont and Zephyr Towing—Rear



Y1636-1A

FIG. 12 Granada and Monarch Towing—Rear

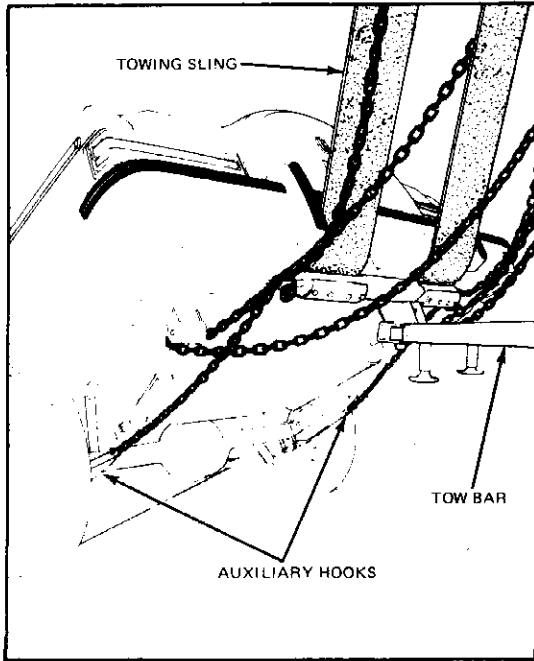
Lincoln Continental

• Front (Fig. 21)

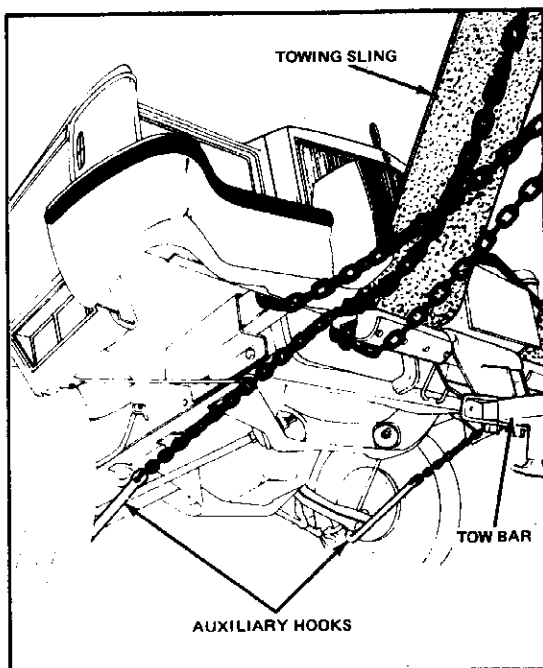
1. Attach J-hooks around outboard ends of lower control arms.
2. Position towbar behind front bumper.
3. Attach safety chains around front bumper energy absorbers.

• Rear (Fig. 22)

1. Attach J-hooks in holes in underside of frame side rail.
2. Position 4" x 4" spacer behind rear bumper.



Y1637-1A

FIG. 13 Versailles Towing—Front

Y1638-1A

FIG. 14 Versailles Towing—Rear

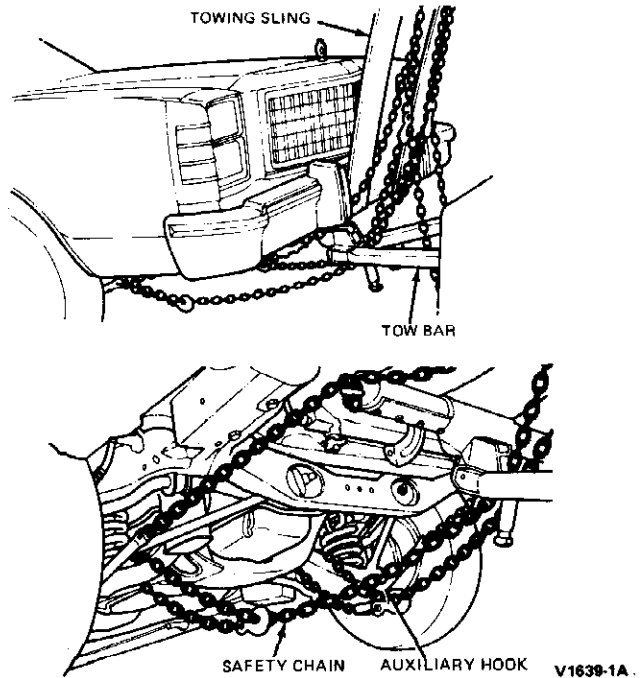
3. Position towbar under rear bumper.

4. Attach safety chains around rear bumper energy absorbers.

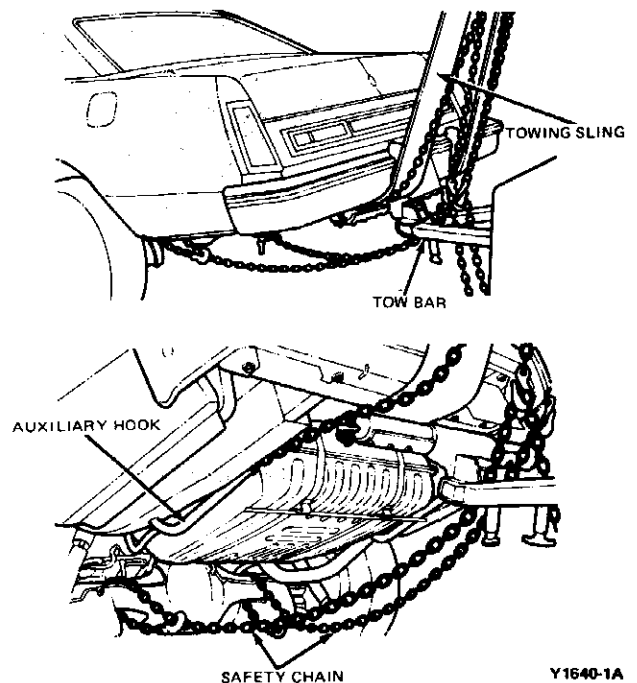
Continental Mark V

• Front (Fig. 23)

1. Attach J-hooks around outboard ends of lower control arms.
2. Position towbar under front bumper.
3. Attach safety chains around front bumper energy absorbers.



V1639-1A

FIG. 15 LTD II and Cougar Sedan Towing—Front

Y1640-1A

FIG. 16 LTD II and Cougar Sedan Towing—Rear

• Rear (Fig. 24)

1. Attach J-hooks in holes in underside of frame side rail.

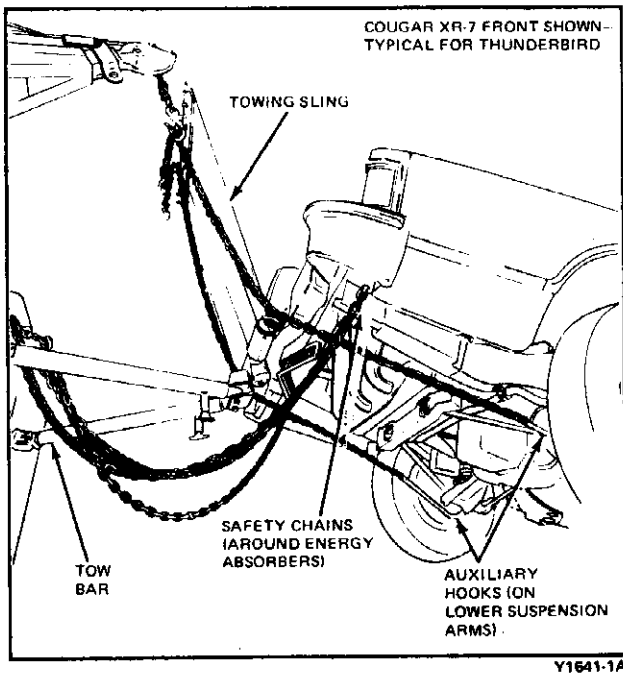


FIG. 17 Thunderbird and Cougar XR7 Towing—Front

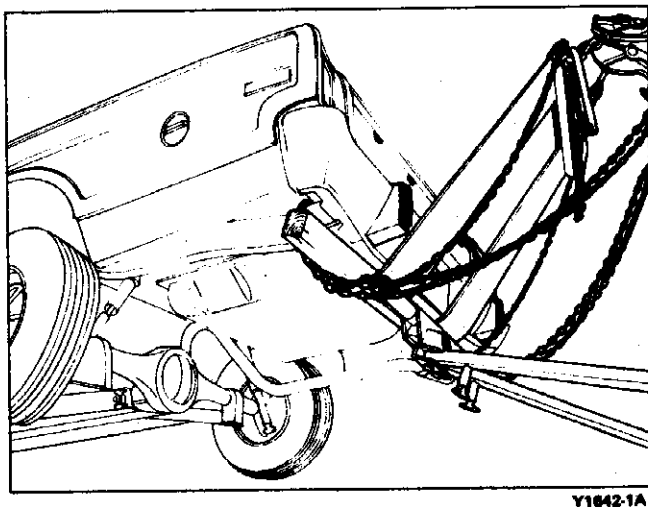


FIG. 18 LTD II Ranchero Towing—Rear

2. Position towbar under rear bumper.
3. Attach safety chains around rear bumper energy absorbers.

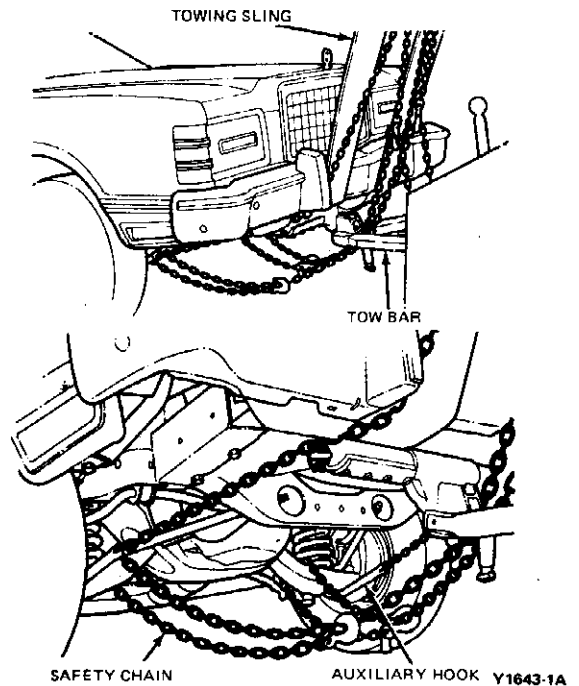


FIG. 19 Ford and Mercury Towing—Front

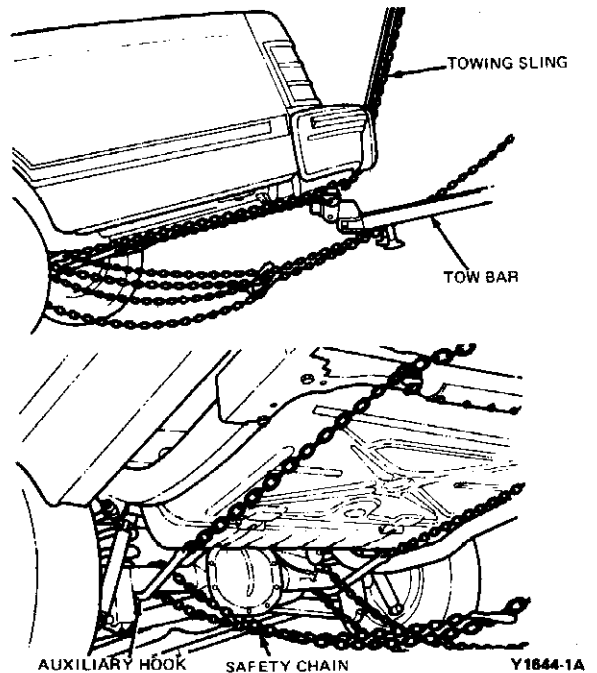
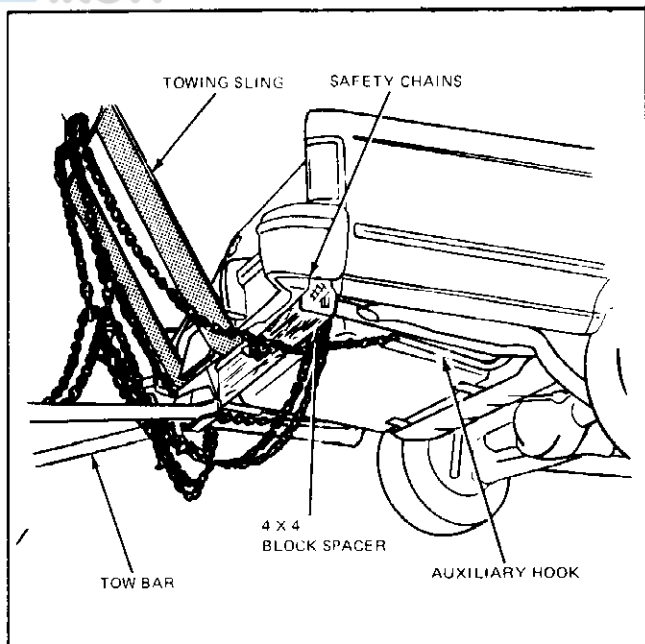
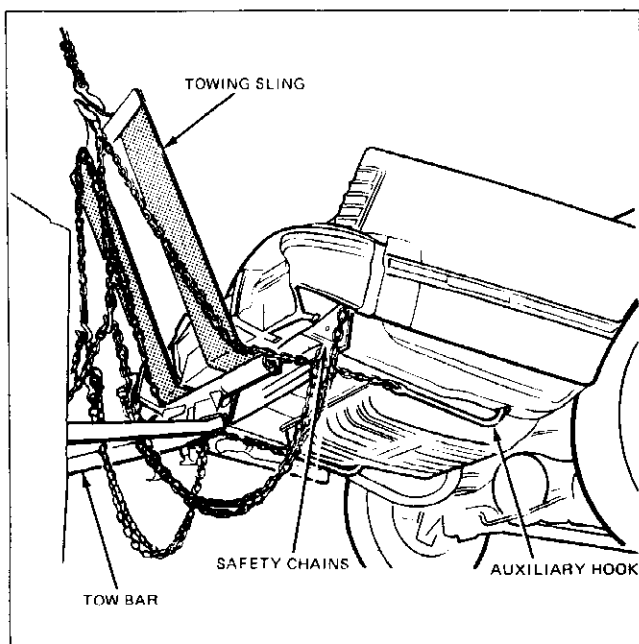


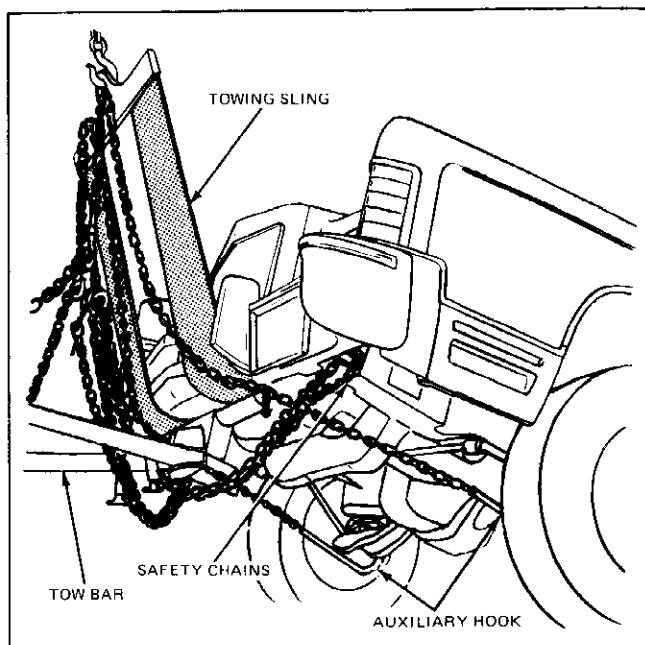
FIG. 20 Ford and Mercury Towing—Rear



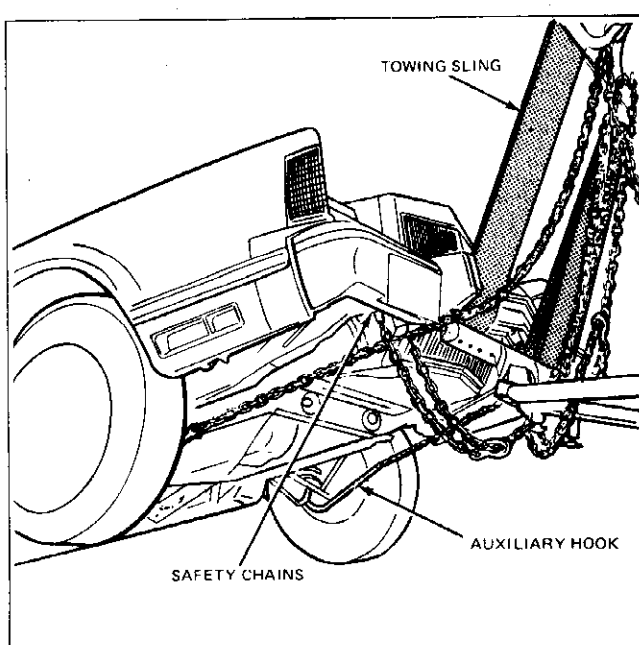
Y1645-1A

FIG. 21 Lincoln Continental Towing—Front

Y1647-1A

FIG. 23 Continental Mark V Towing—Front

Y1646-1A

FIG. 22 Lincoln Continental Towing—Rear

Y1648-1A

FIG. 24 Continental Mark V Towing—Rear

Wheels, Tires, Wheel Hubs and Bearings

**PART
50-11**

All Models

SUBJECT	PAGE	SUBJECT	PAGE
MAINTENANCE		LUBRICATION/INSPECTION	
Front Wheel Bearing Adjustment	11-2	Front Wheel Bearings, Brake Lines and Linings – Inspect	11-2
Tires and Air Pressures	11-1	SPECIFICATIONS	11-3
Tire Rotation	11-1		
Wheel Balancing	11-1		

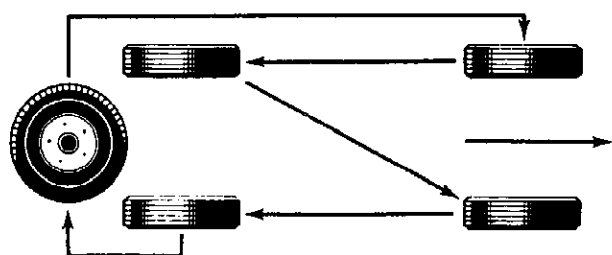
CA4242-2A

MAINTENANCE

TIRE ROTATION

Tires should not be rotated until the cause of unusual or uneven wear is located and corrected. Bias and bias-belted tires may be cross-switched as shown in Fig. 1. If vehicle is equipped with radial ply tires, they may be rotated from front to rear as shown in Fig. 2. (Cross-switching is not recommended for radial ply tires.)

Note: If the car is equipped with the optional deflated storage spare tire, do not include it during rotation of the other four tires.

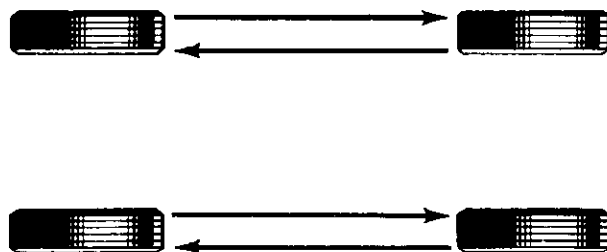


F1893-1A

FIG. 1 Tire Cross-Switching Diagram For Bias and Bias-Belted Tires

TIRES AND AIR PRESSURES

Inspect the tire treads, and remove all stones, nails, glass, or other objects that may be wedged in the tread. Check for holes or cuts that may permit air leakage from the tire, and make necessary repairs.



F1894-1C

FIG. 2 Tire Rotation Patterns for Radial Ply Tires

Inspect the tire side walls for cuts and other damage. If internal damage is suspected, remove tire from wheel for further inspection and repair or replace.

Check the tire valve for air leaks, and replace valve if necessary. Replace any missing valve caps.

The tires should be checked frequently to be sure that air pressures agree with those specified for the tires and vehicle model.

Inspect tires for uneven wear that might indicate the need for front end alignment or rotation.

WHEEL BALANCING

See the instructions provided with the wheel balancer.

Make certain that the brakes are not dragging before attempting to spin the wheels. On vehicles

equipped with disc brakes, push the brake pads into the caliper to free the rotor.

FRONT WHEEL BEARING ADJUSTMENT

The front wheel bearings should be adjusted if the wheel is loose on the spindle or if the wheel does not rotate freely. The following procedure will bring the bearing adjustment to specification.

Disc Brakes

1. Raise the vehicle until the tire clears the floor.
2. Remove the wheel cover. Remove the grease cap from the hub.
3. Wipe the excess grease from the end of the spindle. Remove the cotter pin and nut lock.
4. Loosen the adjusting nut three turns and rock the wheel, hub and rotor assembly in and out several times to push the shoe and linings away from the rotor.
5. While rotating the wheel, hub, and rotor assembly, torque the adjusting nut to 17 to 25 ft-lb, to seat the bearings. (Fig. 3)
6. Loosen the adjusting nut one-half turn, then retighten to 10 to 15 in-lb, using a torque wrench.
7. Place the nut lock on the adjusting nut so the castellations on the lock are in line with the cotter pin hole in the spindle.
8. Install a new cotter pin and bend the ends around the castellated flange of the nut lock.
9. Check front wheel rotation. If the wheel rotates properly, reinstall the grease cap and wheel cover.

If rotation is noisy or rough, disassemble and inspect as outlined in this Part.

10. Before driving the vehicle, pump the brake pedal several times to restore normal brake pedal travel.

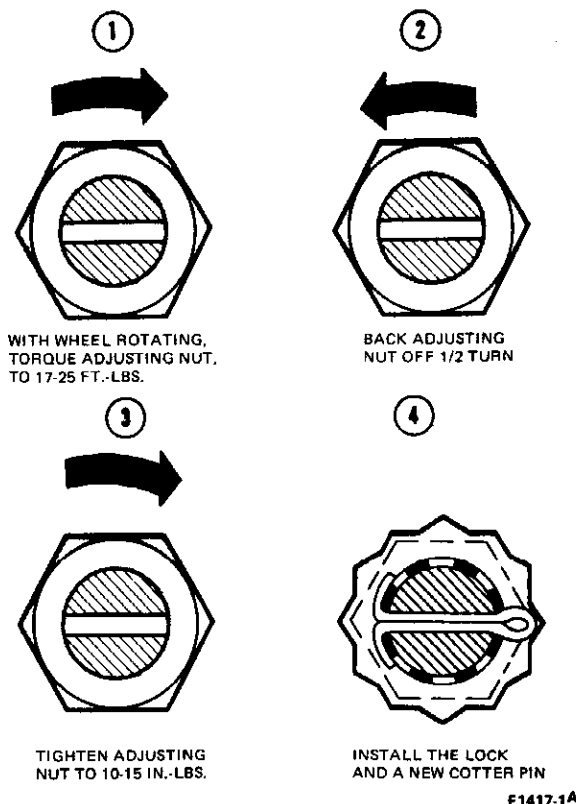


FIG. 3 Front Wheel Bearing Adjustment

LUBRICATION/INSPECTION

INSPECT BRAKE LINES, LININGS AND FRONT WHEEL BEARING LUBRICATION

It is recommended that brake lines, linings and front wheel bearing lubrication be inspected every 25,000 miles on all Ford-build passenger cars.

For information on brake line inspection refer to Part 50-12.

For information and specifications on brake lining wear, also refer to Part 50-12.

Inspect Front Wheel Bearing Lubrication

Disc Brakes

1. Raise the vehicle and remove the front wheel and tire.
2. Remove the brake caliper from the anchor plate, following the procedure and specifications given in Volume 1, Part 11-10. **Wire the brake caliper to the vehicle underbody to help prevent damage to the brake hose.**
3. Inspect the brake linings for wear, following the procedure and specifications given in Part 50-12. Replace the linings if necessary.
4. Inspect the area around the inner bearing seal for evidence of leakage. If leakage is not excessive,

proceed to Step 5. If excessive leakage is found, replace both bearings and the grease seal. Inspect the bearing races; replace if necessary. Lubricate, re-assemble and reset bearing end play following the procedures under Front Wheel Bearing Adjustment in this Part and procedures described in Volume 1, Part 11-10. Proceed to Step 8.

5. Remove grease cap, cotter pin, retainer, nut and washer, and inspect for evidence of rust, water, metal particles or other contaminants in the lubricant. If these conditions are satisfactory, add lubricant as required, reassemble and proceed to Step 6. If any of the above conditions are found, replace both bearings and the grease seal. Inspect bearing races and replace if necessary. Lubricate, reassemble and reset end play. (See Volume 1, Part 11-10.) Proceed to Step 8.
6. Reassemble and reset end play.
7. Rotate rotor and check for grating noise. If noise does not exist, install grease cap. If noise exists, replace both bearings and the grease seal. Inspect bearing races and replace if necessary. Lubricate, reassemble and reset end play.
8. Clean and lubricate caliper slides (except Fairmont and Zephyr). (Refer to Volume 1, Part 12-20.)
9. Install caliper.
10. Install wheel and tire.

SPECIFICATIONS

Refer to Volume One for the Wheel and Tire Specifications.

SPECIAL SERVICE TOOLS

Tool No.	Description	Tool No.	Description
Tool-1175-AC T69L-1102-A T60K-1217-A	Grease Seal Remover Front Wheel Bearing Remover Front Wheel Bearing Cup (Outer) Installer-Disc	Tool-1217-K Tool-1175-AH	*Front Wheel Bearing Cup (Inner) Installer-Disc Grease Seal Installer-Disc

*Pinto, Bobcat, Mustang II, Fairmont, Zephyr, Granada, Monarch and Versailles only.

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Brakes

PART 50-12

All Models

SUBJECT	PAGE	SUBJECT	PAGE
MAINTENANCE		MAINTENANCE (Cont'd.)	
Brake Hose	12-1	Brake Tubing	12-1
Brake Hydraulic Lines Inspection	12-1	Parking Brake Adjustment	12-2
Brake Lining Inspection	12-1	SPECIFICATIONS	12-4

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MAINTENANCE

NOTE: It is recommended that brake lines, linings and front wheel bearing lubrication be inspected every 25,000 miles on all Ford-built passenger cars. Bearing information is in Part 50-11.

BRAKE HYDRAULIC LINES—INSPECTION

Steel tubing is used throughout the brake system, with the exception of the flexible hoses at the front wheels, the rear axle housing brake tube connection, and rear disc brake calipers (if equipped).

Always bleed the applicable primary or secondary brake system after primary or secondary brake system hose or line replacement. Centralize the pressure differential valve after bleeding the system.

BRAKE TUBING

If a section of the brake tubing becomes damaged, the entire section should be replaced with appropriate replacement tubing. **Copper tubing should not be used in a hydraulic system.** When bending brake tubing to fit underbody or rear axle contours, be careful not to kink or crack the tube.

All brake tubing should be double flared properly to provide good leak-proof connections. Clean the brake tubing by flushing with clean brake fluid before installing.

When connecting a tube to a hose, tube connector, or brake cylinder, tighten the tube fitting nut to specified torque with Milbar Tool 1112-144 or equivalent.

BRAKE HOSE

A flexible brake hose should be replaced if it shows signs of softening, cracking, or other damage.

When installing a new front brake hose, position the hose to avoid contact with other chassis parts. On all models except Fairmont and Zephyr, place a new copper gasket over the hose fitting and thread the hose assembly into the front wheel cylinder (the Fairmont and Zephyr front hoses are reusable and do not require a

copper gasket). Engage the opposite end of the hose to the bracket on the frame. Install the horseshoe-type retaining clip, and connect the tube to the hose with the tube fitting nut.

A rear brake hose should be installed so that it does not touch the muffler outlet pipe or shock absorber. Thread the hose into the rear brake tube connector. Engage the front end of the hose to the bracket on the frame. Install the horseshoe-type retaining clip, and connect the tube to the hose with the tube fitting nut.

BRAKE LINING—INSPECTION

Rear Drum Brakes

1. Raise the vehicle until the tire clears the floor. Install safety stands under the vehicle.
2. Remove the wheel cover or hub cap. Remove the wheel lug nuts and the wheel. Remove the drum.
3. If the wheel does not come off easily, remove the rubber plug and insert a narrow screwdriver through brake shoe adjusting hole at the back side of brake backing plate, and disengage the adjusting lever from the adjusting screw. While holding the adjusting lever away from the screw, back off the screw with the brake adjusting tool (Fig. 1). **Use care not to burr, chip, or damage the notches in the adjusting screw; otherwise, the self adjusting mechanism will not function properly.**
4. Inspect the drum and the linings. If the linings are worn to within 1/32-inch of the rivet heads, replace or reline both sets (primary and secondary) on the rear wheels. Under no circumstances replace only one lining or one wheel set. Both rear wheel sets should be replaced whenever one is worn or damaged. If the drum braking surface is excessively scored, refinish it. Do not machine drums so that I.D. exceeds maximum diameter shown cast on the outside of the drum.
5. If relining is required, refer to Part 12-02 for complete procedure.

Disc Brakes

1. Raise the vehicle until the wheel and tire clear the floor.

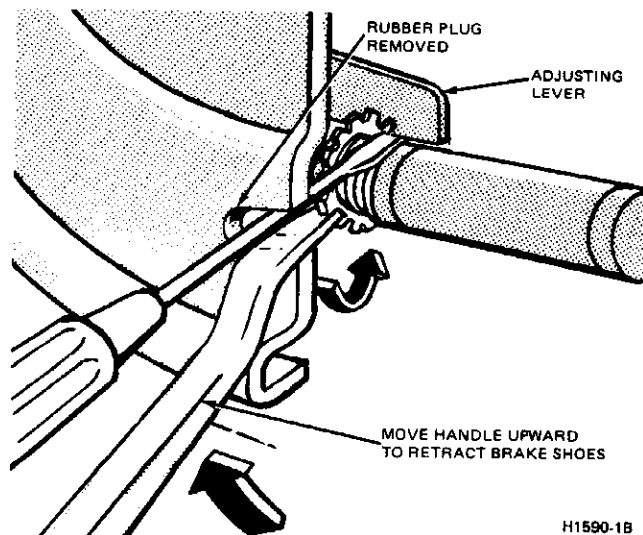


FIG. 1 Backing Off Brake Adjustment

2. Remove the wheel cover or hub cap from the wheel.
3. Remove the wheel and tire from the hub and rotor.
4. Inspect the brake shoes and lining for wear. If the lining is worn to within 1/8 inch of the shoe or if there is more than 0.125 inch (1/8 inch) taper from end to end or if lining shows evidence of brake fluid contamination, replace all (4) shoe and lining assemblies on both front or rear wheels.
5. Visually check the caliper. If the caliper housing is leaking, it should be replaced. If a seal is leaking, the caliper must be disassembled and new seals installed. If a piston is seized in the bore, a new caliper housing is required.

Check the brake hoses for signs of cracking, leaks or abrasion. Replace them if necessary.

6. Install the wheel and tire assembly.

PARKING BRAKE ADJUSTMENT

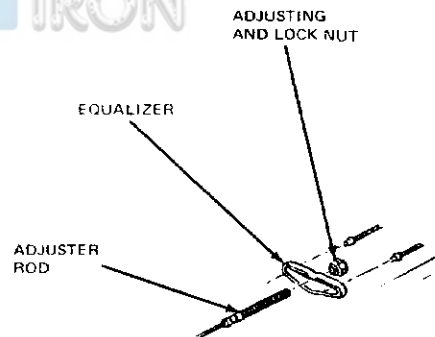
All Models Except Pinto, Bobcat and Mustang II

1. Make sure that the parking brake is fully released.
2. Place the transmission in neutral. Raise the vehicle on an axle-type hoist.
3. Rear Drum Brakes Only:
 - a. Tighten the adjusting nut against the cable equalizer or cable adjusting rod (Fig. 2) to cause rear wheel brake drag. Then, loosen the adjusting nut until the rear brakes are fully released. There should be no brake drag. Torque the lock nut (when used) to 7 to 10 ft-lbs.
 - b. Lower the vehicle and check operation of the parking brake.
4. Rear Disc Brakes Only:
 - a. Tighten adjusting nuts until levers on calipers just begin to move. Loosen nut just enough to obtain full return to stop position of both levers.
 - b. Apply and release parking brake control inside vehicle. Check if parking brake levers (on calipers) are fully returned to stops by attempting to pull levers rearward. If lever(s) move rearward, adjustment is too tight. Repeat adjustment procedure.

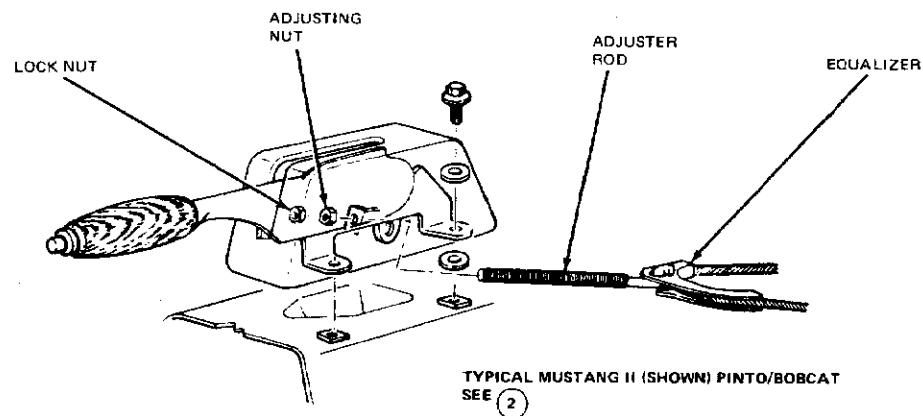
NOTE: If levers do not return to stops, parking and service brake function will be affected as mileage is accumulated.

Pinto, Bobcat and Mustang II

1. Make sure the parking brake is fully released. Place transmission in **NEUTRAL** and raise the rear wheels.
2. Tighten the adjusting nut on the equalizer rod at the control assembly to cause rear wheel brake drag (Fig. 2). Then, loosen the adjusting nut until the rear brakes are fully released and torque jam nut to 7 to 10 ft-lbs. There should be no brake drag.
3. Lower the rear wheels and check operation of parking brake.



FORD/MERCURY/LINCOLN CONTINENTAL
TYPICAL DRUM REAR BRAKES SEE ①



INSERT PIGTAIL END OF
SPRING SECURELY THROUGH
HOLE IN FRONT FACE OF
LOWER ARM MOUNTING BRACKET

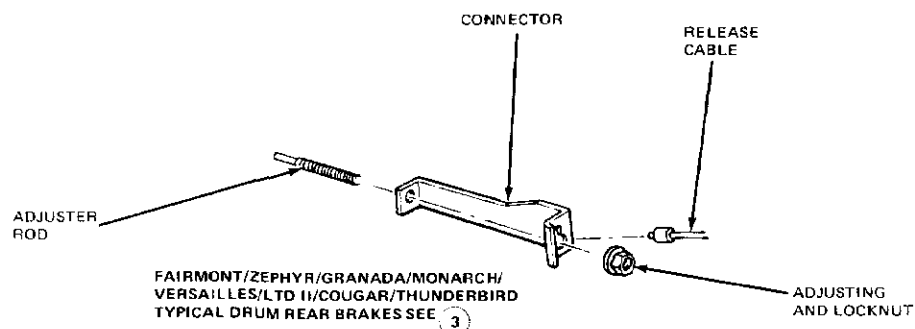
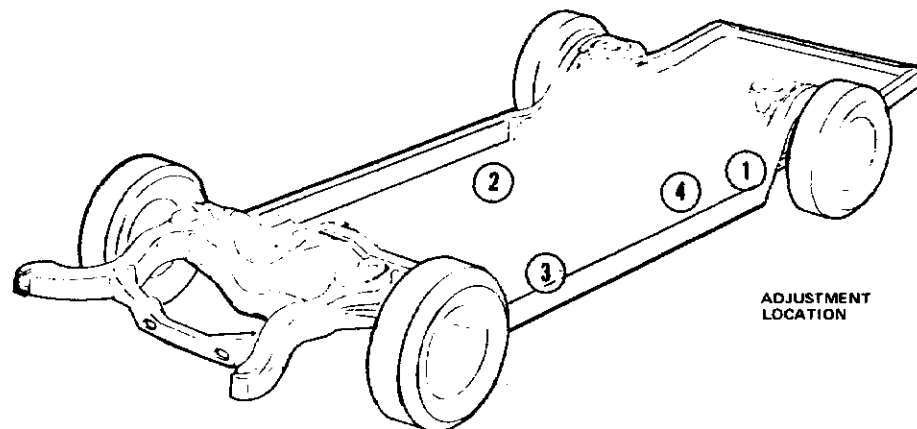
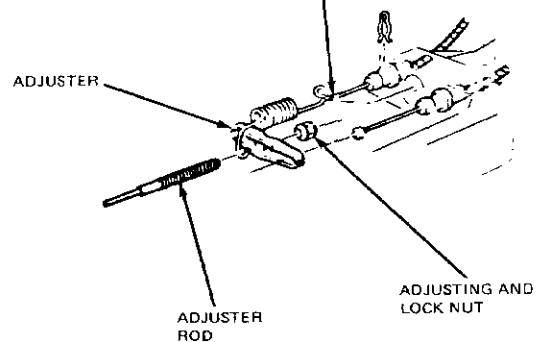


FIG. 2 Adjustment Points—Parking Brake

SPECIFICATIONS

Refer to the Car Shop Manual, Volume One, for the
Brake System Specifications.

Steering

PART 50-13

All Models

SUBJECT	PAGE	SUBJECT	PAGE
LUBRICATION		MAINTENANCE	
Power Steering Control Valve		Drive Belt Tension — Check	
Ball Stud Lubrication	13-1	and Adjust	13-2
Power Steering Pump Reservoir		Steering Linkage and	
Fluid Level Check	13-1	Connections Check	13-2
Steering Arm Stops Lubrication	13-1	SPECIFICATIONS	13-2
Steering Gear Housing Lubricant			
Level Check	13-1		
Steering Linkage Lubrication	13-1		

LUBRICATION

NOTE: If the vehicle has been parked in a temperature below 20 degrees F, park it in a heated garage for 10 minutes, until the joints will accept lubricant.

Wipe any accumulated dirt from around the lubrication plugs.

Use a rubber-tipped, hand-operated grease gun at low pressure, loaded with lubricant which meets specifications. Force lubricant into the joint until the joint boot can be felt or seen to swell, indicating that the boot is full of lubricant. **Do not over-lubricate, until lubricant escapes from the boot, as this destroys the weathertight seal. Install the plug.**

LUBRICATE STEERING ARM STOPS

Clean all friction points. Steering arm stops are located on inside of steering arm and upturned end of front suspension strut, where it is attached to the lower control arm (Part 50-03).

LUBRICATE POWER STEERING CONTROL VALVE BALL STUD (IF SO EQUIPPED)

Remove the lubrication plug and install a fitting in its place. Use a hand operated grease gun filled with ESA-MIC47-A (or equivalent) lubricant. Force tube into assembly until the ball stud boot can be felt or seen to swell (.35-.55 oz). **Do Not Overfill.** Replace the plug after lubrication.

LUBRICATE STEERING LINKAGE

Ford, Mercury, LTD II, Cougar, Thunderbird, Continental Mark V, Lincoln Continental, Granada, Versailles and Monarch

1. Remove plugs from each tie rod end.

2. Apply the recommended lubricant (Part 50-03) to each tie rod end with grease gun.

STEERING GEAR HOUSING LUBRICANT LEVEL CHECK—MANUAL AND LINKAGE TYPE POWER STEERING

Remove filler plug and lower cover bolt from cover to expose holes. Slowly turn the steering wheel to the left stop; lubricant should rise within the lower cover bolt hole; then slowly turn the steering wheel to the right stop; lubricant should rise within the filler plug hole. If lubricant does not rise in both the cover bolt hole and the filler plug hole, add lubricant meeting specifications.

CHECK POWER STEERING PUMP RESERVOIR FLUID LEVEL

Run the engine until the fluid is at normal operating temperature. Then turn the steering wheel all the way to the left and right several times, and shut off the engine.

1. Check the fluid level in the power steering reservoir. The level must show between the "COLD FULL" mark and the "NOT FULL" mark, depending on the temperature. (Part 50-03). **Do not overfill.** Remove excess fluid with a suction device. Check for adequate power steering hose clearances to moving parts (belts, pulleys) and the exhaust manifold.
2. If the level is low, add power steering fluid meeting specifications to raise the level to the FULL mark on the dipstick.

MAINTENANCE

CHECK STEERING LINKAGE AND CONNECTIONS

Check for looseness at the tie-rod ends. Looseness can affect the toe readings and adjustment.

Check the front suspension ball joints and mountings for looseness. Check the brake caliper attaching bolts. Torque all loose nuts and bolts to specifications. Be sure all cotter pins are correctly installed.

Check the steering gear mountings and all steering linkage connections for looseness. Torque all loose mountings to specifications.

CHECK AND ADJUST POWER STEERING DRIVE BELT TENSION

Refer to the Maintenance Section of Part 50-21 for procedure.

SPECIFICATIONS

Refer to the Car Shop Manual Volume 1 for any Specifications or Special Tools not contained in this part.

Suspension

PART
50-14

SUBJECT	PAGE	SUBJECT	PAGE
LUBRICATION	14-1	SPECIFICATIONS	14-1
MAINTENANCE	14-1		

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LUBRICATION

LUBRICATE FRONT SUSPENSION BALL JOINTS, PITMAN ARM AND IDLER ARM (IF EQUIPPED)

NOTE: If the vehicle has been parked in a temperature below 20°F, park it in a heated garage for 30 minutes, or until the joints will accept lubricant.

The plugs are located on the top of the upper ball joint and on the underside of the lower ball joint, and on the pitman arm and idler arm (on some models).

Granada, Monarch and Versailles ball joints have polyethylene liners and do not require lubricant.

Wipe any accumulated dirt from around the lubrication plugs. Remove the plugs and install appropriate lubrication fittings.

Use a hand-operated, low pressure grease gun loaded with chassis and ball-joint lubricant which meets

specifications. Force lubricant into the joint until the joint boot can be felt or seen to swell, indicating that the boot is full of lubricant. **Do not over-lubricate until lubricant escapes from the boot, as this destroys the weathertight seal.** Remove the lubrication fittings and install the plugs.

MAINTENANCE

CHECK FRONT WHEEL ALIGNMENT, SUSPENSION AND LINKAGE

See Group 14, Part 14-01 for all Front End Suspension Checks and Alignment Procedures.

SPECIFICATIONS

Refer to the Car Shop Manual Volume I for any Specifications or Special Tools not contained in this Part.

Rear Axle

PART
50-15

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LUBRICATION

CHECK REAR AXLE LUBRICANT LEVEL

Clean dirt and grease from the area around the filler plug, and check level as described in Specifications.

When checking lubricant level, the axle must be in normal curb position. If checked on a frame contact hoist, use safety stands to hold the axle in normal curb position. Replace the filler plug.

SPECIFICATIONS

Refer to the Car Shop Manual Volume 1 for any Specifications or Special Tools not contained in this Section.

LUBRICANT CAPACITIES AND CHECKING PROCEDURES

Vehicle	Engine Displacement	Axle Type	Ring Gear Size	Lubricant Capacity (U.S. Pints)	Lubricant Capacity (Imperial Pints)
Pinto, Bobcat, Mustang II	2.8 Litre		8 inch	4.0	3-3/8
Granada, Monarch, Versailles (1)	4.1L (250 CID), 5.0L (302 CID)		8 inch	5.0	3-3/8
Cougar, LTD II, Ford, Mercury, Thunderbird	5.8L/6.6L (351M/400 CID)		9 inch	5.0	4.0
Lincoln Continental, Continental Mark V (2)	7.5L (460 CID)		9 inch	5.0	4.0
Pinto, Bobcat	2.3 Litre	Integral Carrier (Conventional)	6.75 inch	3.0 (3)	1.8 (3)
Mustang II	2.3 Litre				
Ford, Mercury	5.8L/6.6L (351M/400 CID)	Integral Carrier (WER)	8.7 inch	4.0 (2)	3-3/8 (2)
Fairmont, Zephyr	All	Integral Carrier	7.5 inch	3.50 (5)	2.8 (5)

All conventional axles use ESW-M2C-105-A lubricant. All limited slip axles use ESW-M2C-119-A lubricant.

(1) Approximate refill capacity – Actual lubricant capacities are determined by filling to 3/8 inch below filler plug hole.

(2) Approximate refill capacity – Actual lubricant capacities are determined by filling to 1/2 inch below filler plug hole.

(3) Approximate refill capacity – Actual lubricant capacities are determined by filling to 1/4 inch below filler plug hole.

(4) To check these axles, the plug should be backed out slowly. If seepage occurs around the threads, the plug should be turned back in immediately to avoid any drainage. This indicates that specified amount of lubricant is present in axle housing.

(5) Approximate refill capacity – Actual lubricant capacities are determined by filling to 1-1/4 inch below filler plug hole.

CE2609-2C

Clutch And Manual Transmissions

PART
50-16

LUBRICATION

CLUTCH LINKAGE LUBRICATION

Lubricate dry or noisy clutch linkage pivot points with Long Life lubricant C1AZ-19590-B (Ford Specification ESA-M1C75-B). **NOTE: Do not lubricate clutch cable linings.**

CHECK TRANSMISSION LUBRICANT LEVEL

1. Clean dirt and grease from the area around the filler plug, and remove the filler plug from the side of the case.
2. If lubricant does not flow from the filler hole, fill the case with the specified lubricant until it is level with

the bottom of the filler hole with car in a level position.

3. Install the filler plug.

LUBRICATE TRANSMISSION SHIFT CONTROL AND LINKAGE

Clean and lubricate the shift linkage, trunnions and external shift mechanism (floor shift) with lubricant meeting Ford specifications (See Part 50-03).

MAINTENANCE

CLUTCH PEDAL

Adjust the clutch pedal free travel whenever the clutch does not disengage properly, or when new clutch parts are installed. Improper adjustment of the clutch pedal is one of the most frequent causes of clutch failure

and can be a contributing factor in some transmission failures.

See Part 16-03 for clutch free play adjustment.

Automatic Transmissions

PART
50-17

All Models

SUBJECT	PAGE	SUBJECT	PAGE
LUBRICATION		MAINTENANCE (Cont'd.)	
Fluid Level Check	17-1	Neutral Start Switch Adjustment	17-5
Kickdown Linkage Lubrication	17-1	Shift Lever Check	17-2
MAINTENANCE		SPECIFICATIONS	17-8
Band Adjustment	17-2		

CA4238-2B

LUBRICATION

LUBRICATE TRANSMISSION KICKDOWN LINKAGE

Lubricate all pivot points in the kickdown linkage with lubricant meeting Ford Chassis and Ball Joint Lube specifications.

CHECK TRANSMISSION FLUID LEVEL

With Transmission Hot (Operating Temperature)

The automatic transmission is designed to operate with the oil level between the ADD and FULL mark on the dipstick at an operating temperature of 150°F to 170°F, (dipstick is hot to the touch) and should be checked at those temperatures. The operating temperature may be obtained by driving 15 to 20 miles of city type driving with the outside temperature above 50°F. Check the fluid level as follows:

1. With transmission in **PARK** position, engine at curb idle rpm, foot brakes applied and vehicle on level surface, move the transmission selector lever through each range, allowing time in each range to engage transmission. Return to **PARK** position, and apply parking brake.

Do not turn off the engine during the fluid level check.

2. Clean all dirt from the transmission fluid dipstick cap before removing the dipstick from the filler tube.
3. Pull the dipstick out of the tube, wipe it clean, and push it all the way back into the tube. **Be sure it is fully seated.**
4. **With transmission at operating temperature (150 degrees F to 170 degrees F):** Pull the dipstick out of the tube again and check the fluid level. The fluid level should be between the **add** and **full** mark. If additional fluid is required, add enough fluid through the filler tube to bring level between the **add** and **full** marks on the dipstick.

Do not overfill the transmission, as foaming and loss of fluid through the vent may result in transmission malfunction. If the transmission is operated with the fluid level too low, extreme cold temperatures can cause the fluid to contract and may result in transmission malfunction.

5. Insert the dipstick, **making sure it is fully seated in the tube.**

With Transmission Cold (Room Temperature)

If the transmission is not at an operating temperature of 150°F to 170°F and it becomes necessary to check the fluid level (such as pre-delivery) the fluid may be checked at room temperature 70°F to 95°F (dipstick cool to touch).

1. With the transmission in Park "P" position, engine at idle rpm, foot brakes applied and vehicle on level surface, move the transmission selector lever through each range, allowing time in each range to engage transmission. Return to Park "P" position and apply parking brake. **Do not turn off the engine during the fluid level check.**
2. Clean all dirt from the transmission fluid dipstick cap before removing the dipstick from the filler tube.
3. Pull the dipstick out of the tube, wipe it clean and push it all the way back into the tube. Be sure it is fully seated.
4. Pull the dipstick out of the filler tube again and check the fluid level. The level should be between the middle and top holes on the dipstick (See Attached Illustration). If the fluid level is below the middle hole or above the top hole:

On C4 and FMX Transmissions: Add or remove fluid to bring level between the middle hole and the "Add" mark.

On Jatco, C6 and C3 Transmissions: Add or remove fluid to bring level between the middle hole and the top hole.

5. If it becomes necessary to add fluid to a transmission, be sure to use the correct fluid, as specified on the transmission dipstick.
6. Install the dipstick, making sure it is fully seated in the tube.

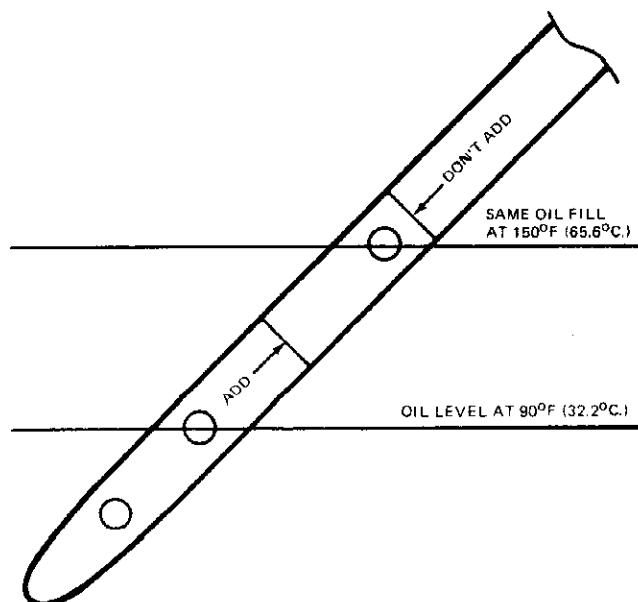
If the transmission fluid level is correctly established at 70°F to 95°F, it will appear between the "Add" and "Full" mark on the dipstick when the transmission reached an operating temperature of 150°F to 170°F. **Do not overfill or underfill.**

Overfill can cause the fluid to foam and spill out through the transmission vent with resultant transmission malfunction.

Underfill can result in transmission loss of engagement or slipping. This condition is most evident in cold weather or when the vehicle is parked or being driven on a hill.

If the transmission fluid level is checked when the fluid is cold, the dipstick could indicate that fluid should be added. If fluid is added at this time, an overfill condition could result (Fig. 1) when the fluid reaches operating temperatures of 150°F to 170°F (Dipstick hot to touch).

Fig. 1 shows how the fluid will expand with temperature increase, causing a rise in fluid level.



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FIG. 1 Typical Fluid Expansion During Transmission Warm-up

Note: If the vehicle has been operated under such conditions as hot weather operation in Downtown Traffic, extended periods of high speed driving or trailer towing, the fluid may have become hotter than 150°-170°F. When this has happened, the fluid should be allowed to cool before attempting to check the fluid level.

MAINTENANCE

CHECK TRANSMISSION SHIFT LEVER

Check and adjust, if necessary, to match transmission range and lever in the D position. Refer to Part 17-02 of Volume 1.

ADJUST TRANSMISSION BAND(S)

Refer to Part 50-02, Maintenance Schedule, for recommended frequency of band adjustment.

Automatic transmissions used in current production vehicles are variations of five basic transmissions; FMX, C6, C4, JATCO or C3. As a guide to band adjustment, Fig. 2 lists the combination of bands used in each transmission.

To prevent damage to the transmission and to assure proper band adjustment, it is essential that the tools and procedures described here are used whenever the bands are adjusted.

C3 TRANSMISSION FRONT BAND ADJUSTMENT

1. Remove the downshift rod from the transmission downshift lever.
2. Clean all dirt from the band adjusting screw area. Remove and discard the locknut.
3. Install a new locknut on the adjusting screw. Using Tool Kit T71P-77370-A or equivalent (Fig. 3),

tighten the adjusting screw until the tool handle clicks. The tool is a preset torque wrench that clicks and breaks when the torque on the adjusting screw reaches 10 ft.-lbs.

4. **Back off the adjusting screw exactly one and a half turns.**
5. Hold the adjusting screw from turning and torque the locknut to specification.
6. Install the downshift rod on the transmission downshift lever.

FMX Transmission—Front Band Adjustment

1. Loosen the pan attaching bolts, starting at the rear of the pan and working toward the front. When

Transmission	Band Location	Used For
FMX, C3, C4	Front	Second Gear
	Rear	Manual Low Gear and Reverse Gear
C6, JATCO	Intermediate	Second Gear

CY1144-1E

FIG. 2 Band Arrangement of Automatic Transmissions