

Section IX

FRAME, SPRINGS AND SHOCK ABSORBERS

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DATA AND SPECIFICATIONS

| FRAME | | | | |
|--|--|------|------|------|
| Models | C-71 | C-72 | C-73 | C-70 |
| TYPE | Welded, Double-Channel Box Section, Side Rails | | | |
| DIMENSIONS | See Figures 1, 2, 3 and 4 | | | |
| REAR SPRINGS | | | | |
| TYPE | Semi-Elliptic | | | |
| NO. OF LEAVES | | | | |
| SEDANS | *5 | 6 | 7 | 7 |
| TOWN & COUNTRY WAGON | 7 | 7 | — | — |
| WIDTH | 2.5 | 2.5 | 2.5 | 2.5 |
| LENGTH | 55" | 55" | 55" | 55" |
| SHACKLE | Silent Block Rubber Bushings | | | |
| HANGER | Side Strapped with Rubber Bushed Bolts | | | |
| *SIX LEAF SPRINGS USED ON ALL CARS EQUIPPED WITH AIR CONDITIONING UNITS, OR POWER PACKAGE. | | | | |

SHOCK ABSORBERS

| Models | C-71 | C-72 | C-73 | C-70 |
|--------|-----------------------------------|------|------|------|
| TYPE | Oriflow, Double Acting, Hydraulic | | | |

TORQUE SPECIFICATIONS**Foot-Pounds**

| | |
|---|--------------------------------|
| REAR SPRING SILENT BLOCK NUT | 60 |
| SHOCK ABSORBER STUD NUT $\frac{1}{2}$ " | UPPER..... 60 LOWER..... 70 |
| REAR SPRING U-CLIP BOLT NUTS | 70 |
| REAR SPRING SHACKLE NUTS $\frac{7}{16}$ " | 50 |
| SWAY BAR BRACKET TO FRAME BOLTS | 55 |
| SWAY BAR SHAFT RETAINER TO CONTROL ARM BOLT NUT | 55 |

ESSENTIAL TOOLS

| | |
|-------------|--|
| C-3413..... | Remover and Installer—Shock Absorber Lower Mounting Assembly |
|-------------|--|

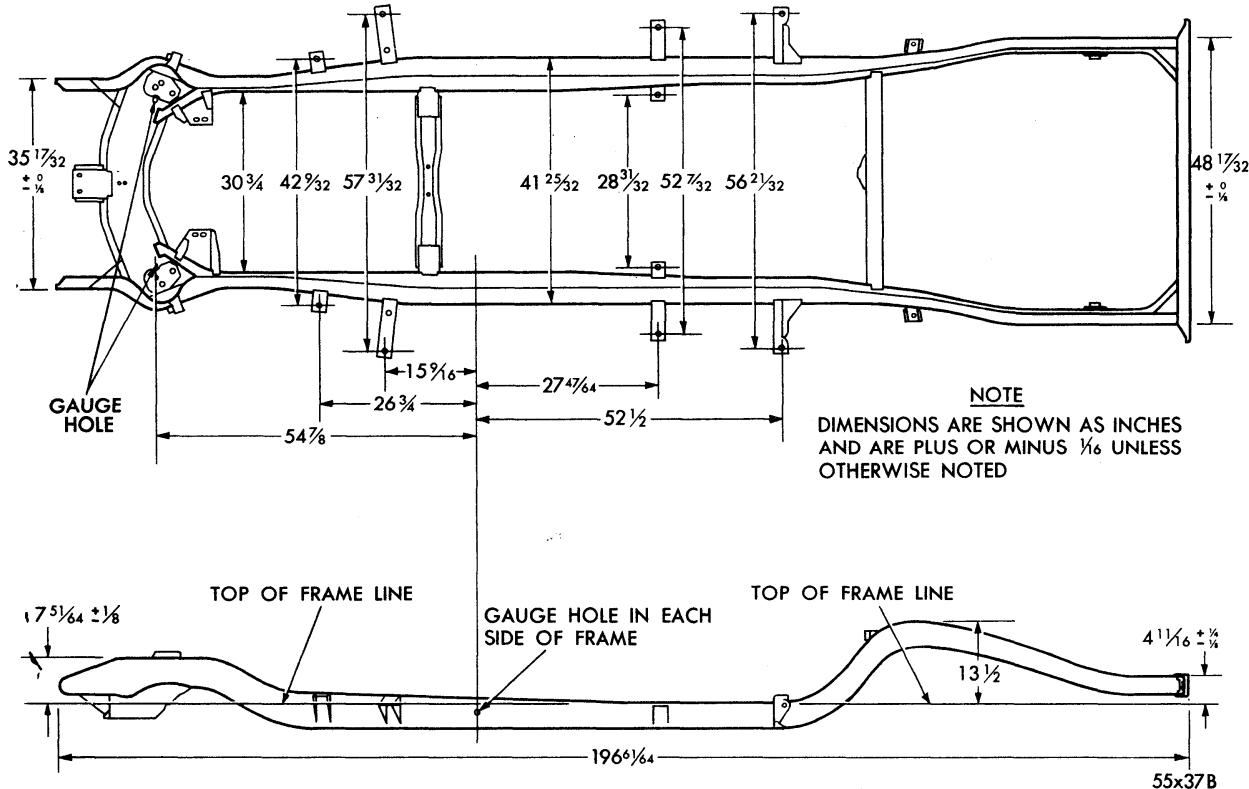


Fig. 1—Frame Dimensions (Windsor and New Yorker)

Section IX

FRAME, SPRINGS AND SHOCK ABSORBERS

FRAME

A full length box section frame with redesigned crossmembers and longer side rails are used on 1956 Chrysler Models.

The convertible coupe frames have X-members as formerly, to reduce body shake and improve frame to body attachment. A rear axle control strut and center bearing propeller shaft has been incorporated in frame and rear axle housing design of C-73 Model for the purpose of controlling rise of nose of rear axle carrier under varying load conditions (See Paragraph 8, Universal Joints, Section XII, for adjustment procedures).

I. CHECKING FRAME ALIGNMENT

In case of collision, frame members can often be satisfactorily straightened to required di-

mensional limits. It is possible that ordinary straightening methods will suffice for minor damage. In case of serious damage or fracture, however, the entire front suspension crossmember, brace and support must be replaced. Before member is replaced, it is essential that frame alignment be checked and corrected if necessary. Whenever possible, parts should be securely fastened with hot rivets. In cases where no riveting equipment is available, finished bolts snugly fitted in reamed holes may be used. The nuts should be securely tightened and non-spreading lockwashers used. (Cold rivets are not recommended unless adequate power press equipment is available to do a secure riveting job.)

When welding frame members, care must be taken to localize the heat so that the steel hard-

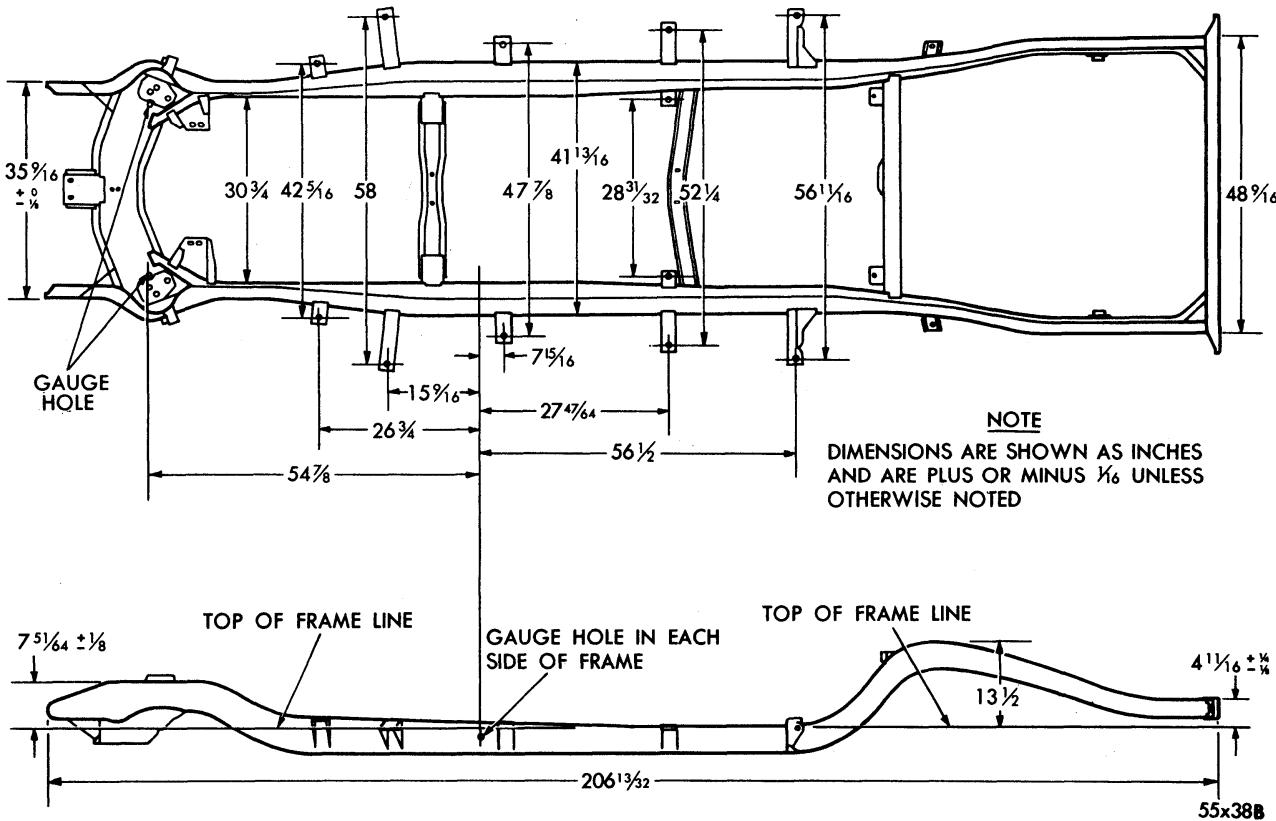


Fig. 2—Frame Dimensions (Custom Imperial)

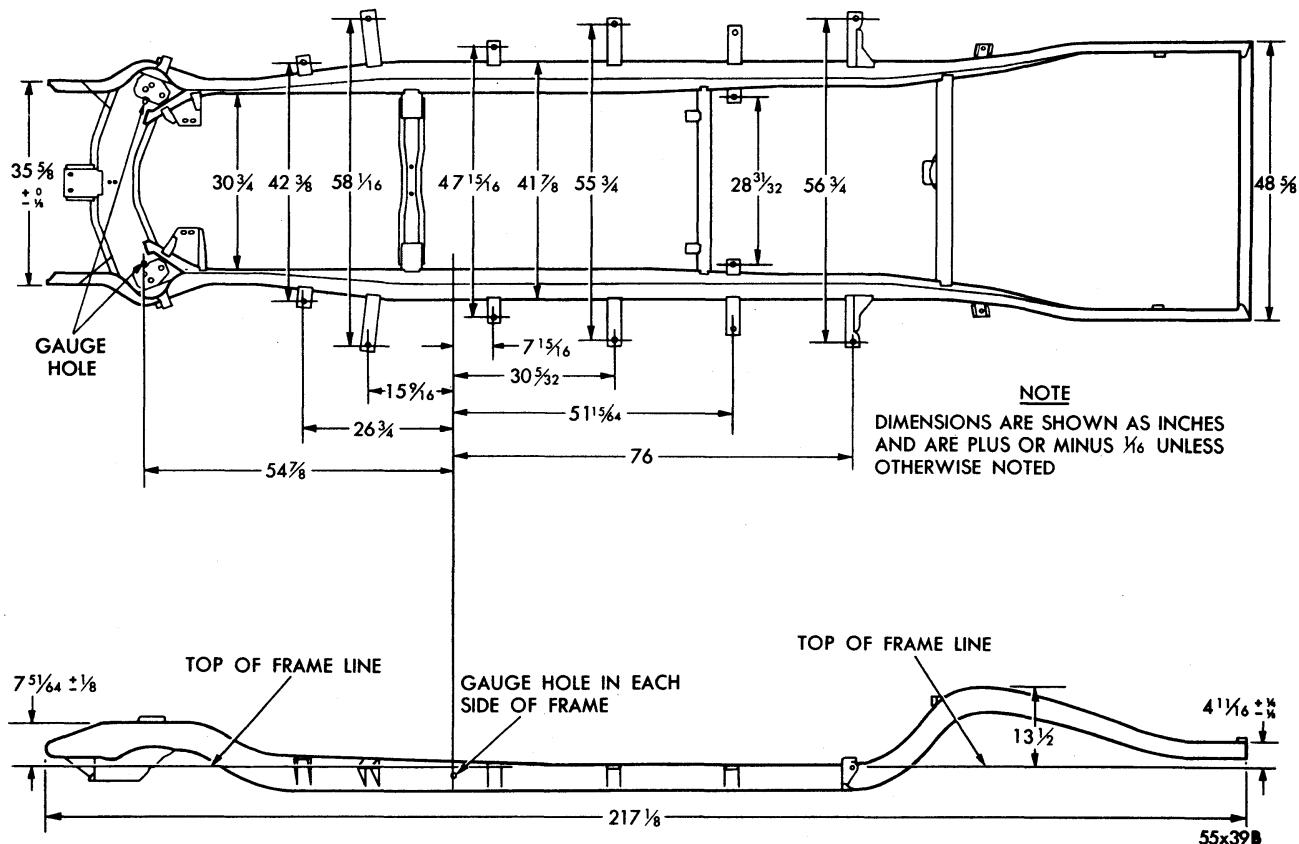


Fig. 3—Frame Dimensions (Crown Imperial)

ness of frame will be retained. Reinforcement welds should run lengthwise, along side of reinforcement.

Figures 1, 2, 3 and 4 show various dimensions to be used as a guide for checking frame alignment. These dimensions are the true distance between two points as measured with a steel tape.

Figure 4 shows a few of various measurements that may be taken to check "squareness" of frame. Diagonal measure will quickly deter-

mine which section of frame is bent and where force should be applied to restore correct alignment.

2. FRAME ALIGNMENT

To properly check a frame for alignment, diagonal measurement should be performed with great care. When body is removed, the frame may be easily checked for alignment by measuring diagonals, as shown in Figure 4, with trammels or steel tape and check dimensions given in Figure 1, 2 and 3. Measurements may

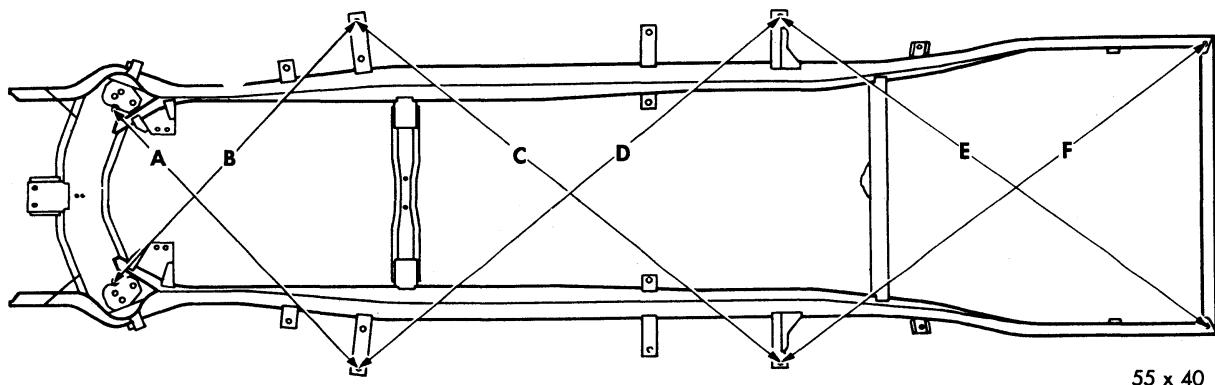


Fig. 4—Typical Frame Diagonal Measurements

be taken without removing body from chassis by using a plumb-bob and chalk line on level floor.

Attach line of plumb-bob to center of one of rear body bolts. The plumb-bob should be suspended slightly above floor. When plumb-bob comes to rest, mark floor directly underneath it.

The marks made on floor will represent various points of frame to be checked diagonally. Move car away so the distance can be measured to compare with the diagonal measurements, shown in Figures 1, 2, 3 and 4.

3. REPLACING BODY SUPPORT BRACKETS

The body support brackets are welded to frame

in manufacturing. Due to "Box" construction of frame, rivets cannot be used to attach a new body bracket to frame.

Cut damaged bracket off frame, file surface smooth. Clamp new bracket in correct position and weld securely to frame member.

The shielded arc-weld method is recommended for frame welding, or replacement of body frame support brackets. The heat generated from welding operation is localized and burning of material is held to a minimum when a mild steel welding rod is used.

Install body bolt and washers, insulator and nut. Tighten to 18 foot-pounds torque. On Convertibles, install a solid spacer, bolt and nut, and tighten securely.

SPRINGS

The rear springs used on Chrysler cars are of the semi-elliptical design. The front ends of rear springs are mounted to removable hangers which are bolted to brackets welded to outer surface of frame side rails. (See Fig. 5).

The spring front pivot bolts are cushioned in rubber which tends to help reduce noise and allows increased riding comfort through a reduction in torque and brake reaction shock. (No lubrication is required at this point.)

The rear ends of springs are attached to frame through medium of flat plate shackles, rubber shackle bushings, shackle bolts and nuts. (See Fig. 6.) Thus, suspension of rear springs in rubber, tends to reduce road noise to a minimum. (No lubrication is required at the rear shackles.)

The width of spring leaves are 2½ inches (refer to Data and Specifications.) Thus, with outboard-mounted rear springs, rear-end roll is greatly reduced and car stability on curves or sharp turns is maintained.

NOTE

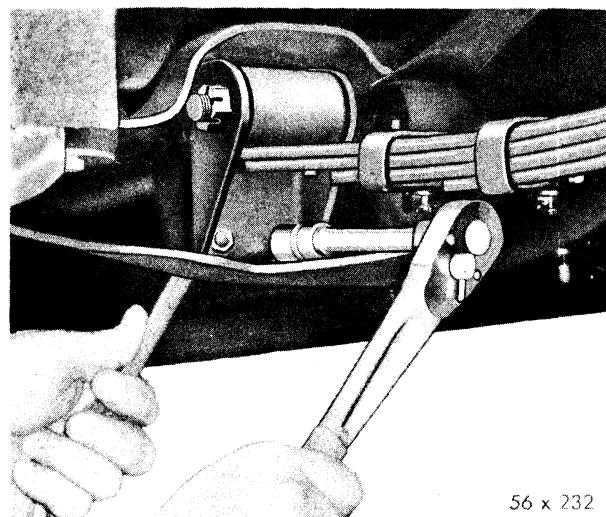
Cars equipped with air conditioning units are equipped with a heavier rear spring.

Should it become necessary to install new springs or silent blocks, it will be necessary to remove four bolts, nuts and lockwashers that

hold spring hanger to frame bracket. The pivot bolts cannot be removed unless this is done.

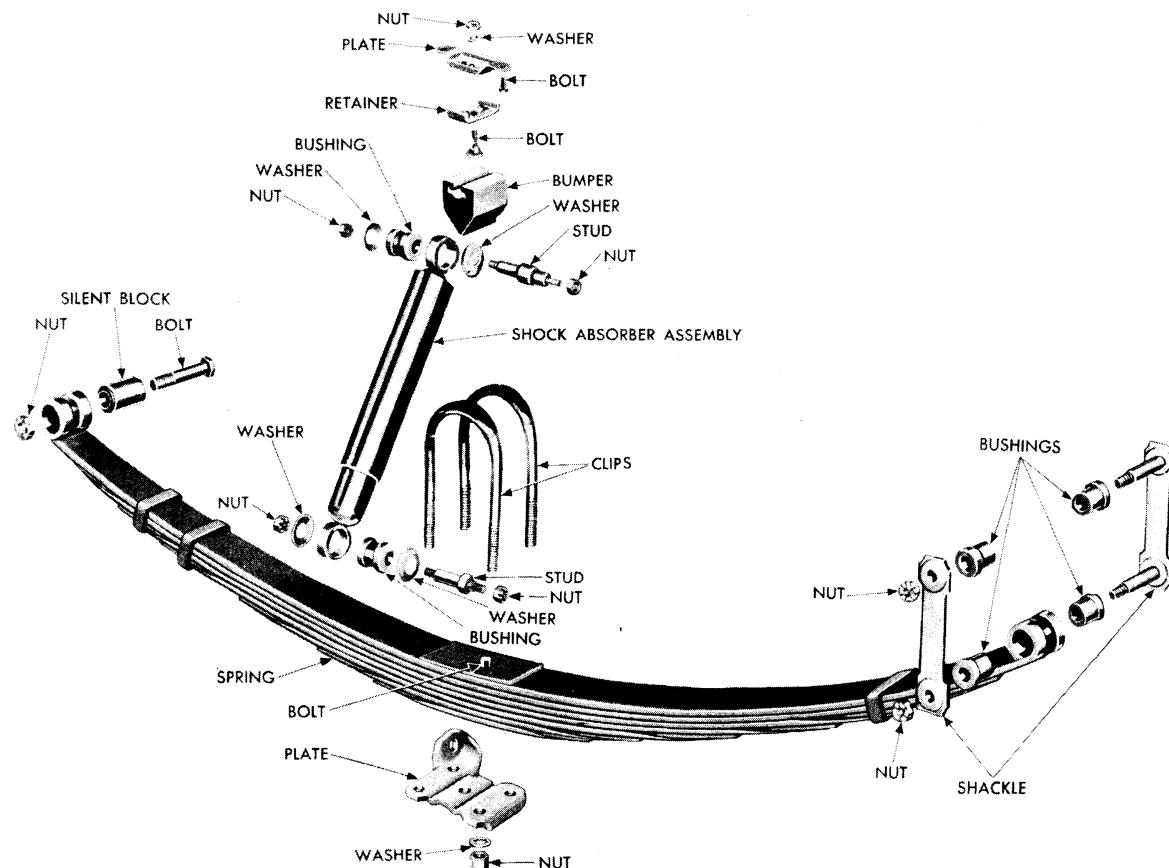
4. SPRING MAINTENANCE

It is important that spring "U" bolts be inspected at regular intervals and kept tight to prevent spring breakage. Tighten spring "U" bolt nuts to 70 foot-pounds torque. The spring shackles should be inspected occasionally to make sure they are tight, but not binding. Tighten to 50 foot-pounds torque. No lubrication of any kind must be used on rubber bushings.



56 x 232

Fig. 5—Rear Spring Front Mounting



54x544A

Fig. 6—Typical Rear Spring Suspension (Exploded View)

Front spring heights may be affected if rear spring height varies more than $\frac{3}{4}$ inch on one side as compared with other side. To check this, measure vertical distance from top of rear spring main leaf to underside of frame side rail on both sides of car. If these distances differ by more than $\frac{3}{4}$ inch, this is an indication that one of rear springs should be replaced. This condition could be due to a bent frame kick-up or an incorrectly welded spring saddle.

CAUTION

Care should be taken when replacing rear spring on Imperial Models to see that the rear axle housing to strut shims are reinstalled in same position so as to maintain correct propeller shaft to axle pinion shaft angle.

5. REPLACEMENT OF REAR SPRING INTERLINERS

The 1956 Chrysler rear springs are similar to

those previously used with exception of rear spring interliners. To replace interliners, proceed as follows:

a. Removal

Unload rear springs by jacking up the rear end of frame until rear shock absorbers are fully extended.

Remove alignment clips from springs. If any of removed parts (nut, bolt, spacer, clip) are damaged, use corresponding replacement parts.

Examine spring interliners. If any are missing, or if any have lost their metal fasteners, they must be replaced. For replacement of these interliners, proceed as outlined below.

Pry out metal fastener directly beneath spring leaf surface and slip out old interliner, after separating the spring leaf to which interliner was fastened from the next longer spring leaf. To effect this separation, pry open the

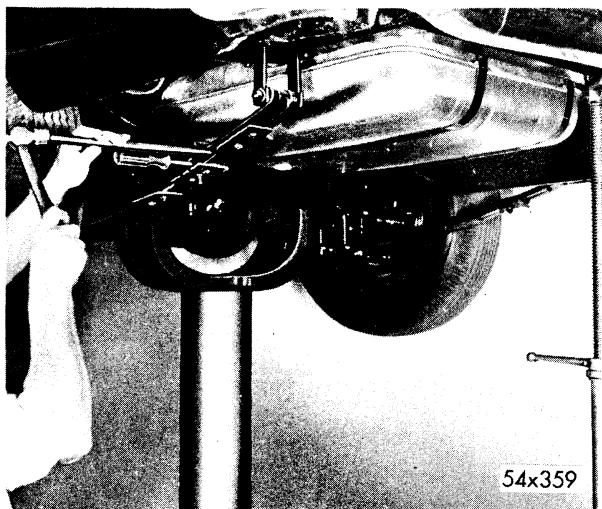


Fig. 7—Separating Spring Leaf

slight gap between leaves with a screwdriver until a tapered bar can be hammered in place between screwdriver and interliner as shown in Figure 7. Keep tapered bar in place.

Clean the lower (grooved) surface of the longer spring leaf as far as interliner makes contact. Use sandpaper wrapped around a flat file and scrub vigorously to remove any dirt or rust spots to obtain smooth metallic surfaces to left and right of groove. Wipe off excess particles, including dirt in groove itself, with a clean cloth. In order to reach between leaves, open gap by bearing down on end of tapered bar.

b. Installation of Interliner

Slip new interliner in place by opening gap between the spring leaves again with tapered

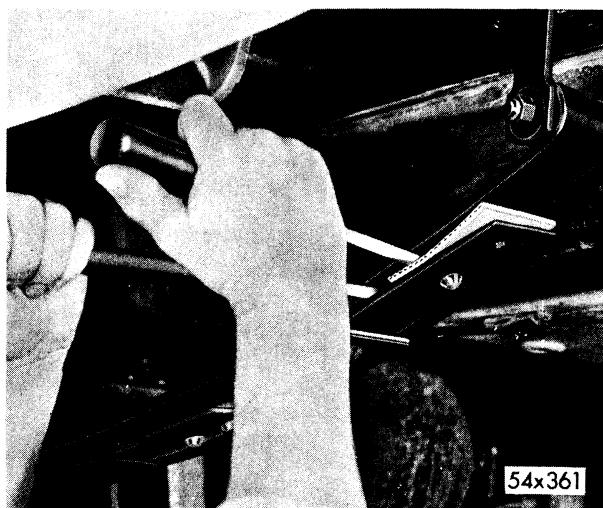


Fig. 9—Prying Interliner Fastener Through Leaf

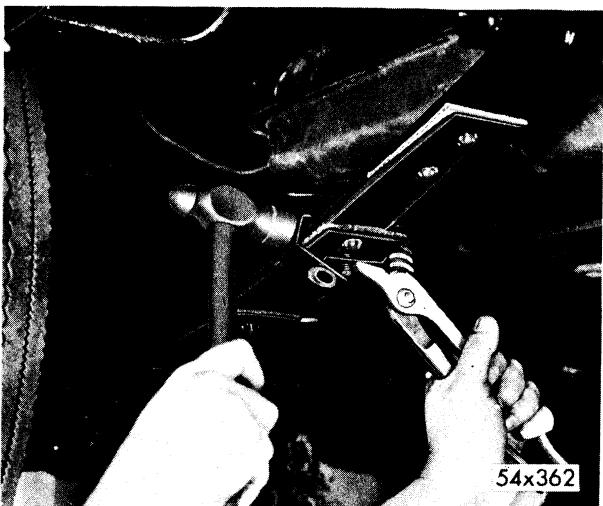


Fig. 10—Positioning Wrap-Around Aligning Clip

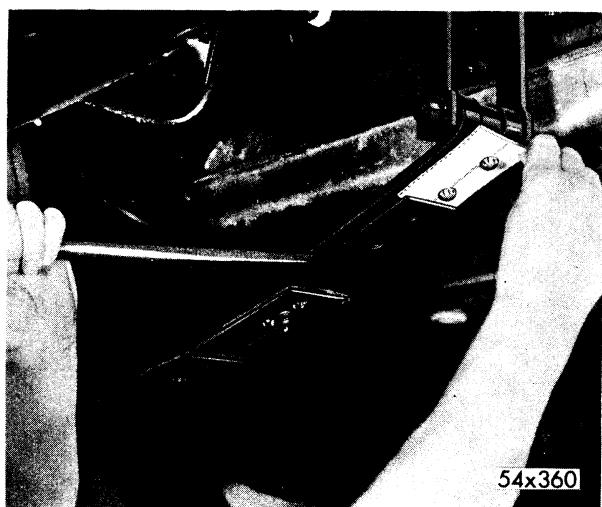


Fig. 8—Positioning New Interliners

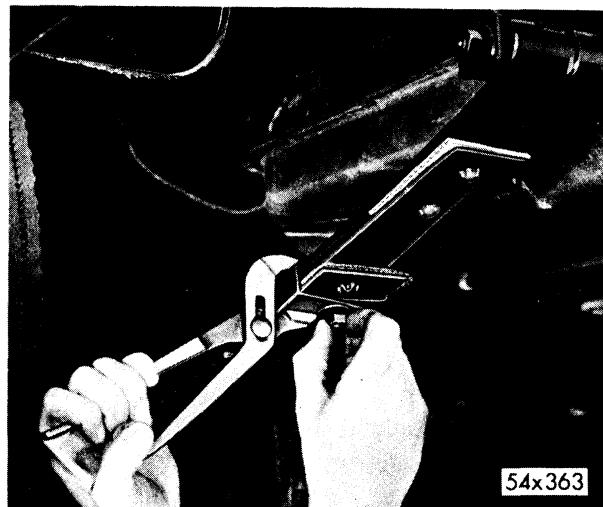


Fig. 11—Tightening Aligning Clip

bar and moving interliner until prongs of metal fasteners are aligned with holes in the shorter leaf, as shown in Figure 8.

With tapered bar still in place, pry prong end of each metal fastener through hole in spring leaf, as shown in Figure 9.

Remove tapered bar which has remained between leaves during these operations. The bar may be withdrawn while a screwdriver is placed alongside. Then the screwdriver may be pulled

out, reversing operation which was used to insert bar in position. A faster method for withdrawing bar is to insert end of a bar with a short tapered hook alongside the tapered bar. After tapered bar has been withdrawn, the bar with hook can be slipped out easily using leverage motion inward on the far end of hooked bar.

Position wrap-around alignment clip and tighten retainer nut, as shown in Figures 10 and 11. Peen end of bolt over nut so it will not loosen.

SHOCK ABSORBER

Chrysler cars are equipped with double acting Oriflow shock absorbers. Oriflow shock absorbers provide a smoother, steadier ride with greater comfort and stability, which is particularly noticeable at high speeds or on rolling or rough roads. In the Oriflow shock absorber, resistance is built up slowly at beginning of stroke so as not to jolt passengers. This resistance is increased to a maximum at mid stroke and is tapered off to zero at end of movement. The major part of dampening is accomplished at high velocity mid-operation of stroke where no jolt can originate. There can be little jolt at beginning and at end of stroke because both velocities of movement and resistance offered by the shock absorber are low at those points.

This simply means that the piston encounters minimum resistance at beginning of stroke and is gradually slowed down by increased resistance due to fluid velocity through the orifices. In turn, slow movement of piston causes fluid velocity to decrease and offer minimum resistance at termination of stroke.

6. TESTING ORIFLOW SHOCK ABSORBERS

Oriflow shock absorbers are designed to operate with low resistance when operated slowly and with high resistance when operated rapidly. Since they operate with little resistance when compressed by hand or by bench test methods, their true operating efficiency can be determined best by a road test. It is impossible to determine operating efficiency of Oriflow shock absorbers by rocking the car by the bumper.

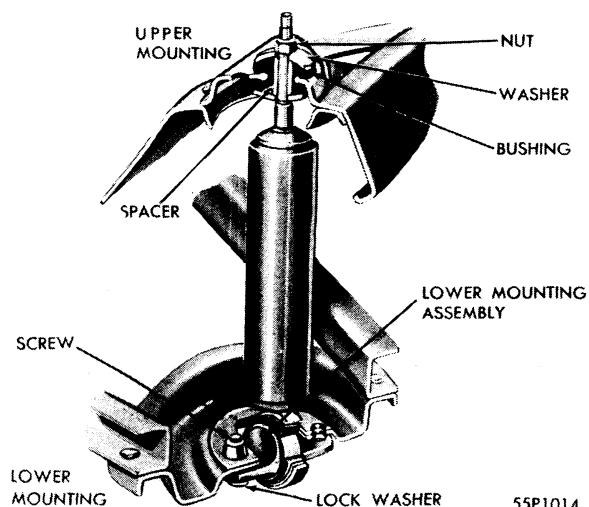
When road testing, drive car over a fairly rough road to test resistance under fast shock

absorber piston speed. Then drive over a fairly smooth road to test resistance during slower shock absorber piston speeds.

Hand testing Oriflow shock absorbers will only reveal complete failure. The amount of ride control evident from a hand test on bench is small, compared with control exerted under actual riding conditions. For this reason, it is impossible to feel any sudden resistance in an Oriflow shock absorber, no matter how fast it is operated by hand.

7. SERVICING THE ORIFLOW SHOCK ABSORBER

The Oriflow shock absorber cannot be refilled or disassembled. Where servicing is required, the shock must be removed and a new unit installed. **SHOCK ABSORBERS SHOULD ONLY**



55P1014

Fig. 12—Front Shock Absorber Installed

BE REPLACED IF THEY HAVE LOST THEIR RESISTANCE IN ONE OR BOTH DIRECTIONS OR IF THEY DRIP OIL. EVIDENCE OF OIL MOISTURE IS NOT CAUSE TO REPLACE THEM AS SEAL MUST WEEP TO PREVENT SCORING.

8. REMOVAL AND INSTALLATION OF FRONT SHOCK ABSORBER

a. Removal

Refer to Figure 12 and proceed as follows:

Raise hood and remove dirt or grease from around shock absorber upper mounting area. Remove piston rod nut and cup washer. Remove two lower mounting bolts, then withdraw shock absorber through opening in bottom of spring seat. The lower cup washer may remain in place or drop through when shock absorber is removed. Using a suitable drift, force inner steel sleeve out of bushing, then remove bushing from frame opening. Check bushing for deterioration or fatigue. Install new bushing if necessary.

Before installing new bushing, dip bushing in soapy water, insert in position in frame, using a twisting motion. When properly installed, groove in bushing will index with frame. Force steel sleeve through opening in bushing and down into position. Remove mounting bracket from shock absorber eye using Tool C-3413. Press mounting bracket and bushing out of eye. The mounting bracket and bushing are serviced as an assembly only.

b. Installation

To install a new mounting bracket and bushing, refer to Figure 12 and proceed as follows:

Position the new mounting bracket so the mounting holes are at a right angle to shock absorber. Using Tool C-3413, press mounting bracket into eye until centered.

CAUTION

Always press against steel sleeve to avoid damage to assembly.

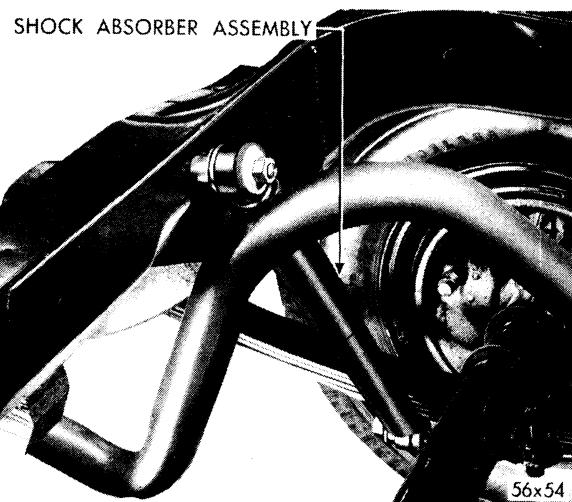


Fig. 13—Rear Shock Absorber Installed

Extend shock absorber piston rod to its full travel, and slide lower cup washer (concave side up) over rod and down into position. Slide shock absorber up through opening in spring seat (be sure the extended piston rod enters steel sleeve through upper bushing), and up into position. Install retaining bracket bolts and tighten 35 foot-pounds torque.

Slide piston rod upper cup washer (concave side down) over piston rod and down on bushing. Install nut, and tighten 35 foot-pounds torque, or until upper and lower concave washers bottom against steel sleeve.

9. REMOVAL AND INSTALLATION OF REAR SHOCK ABSORBERS (Fig. 13)

To remove rear shock absorber, remove nuts from shock absorber mounting stud pins which pass through eyes at top and bottom of shock absorber, and remove shock absorber.

When installing a shock absorber, first install the bushings in the shock absorber's eye. Install inner bushing retainers, shock absorber and bushing assembly and outer retainers and nut. The concave face of each retainer must fit against convex face of adjacent bushing. Tighten to specified torque.