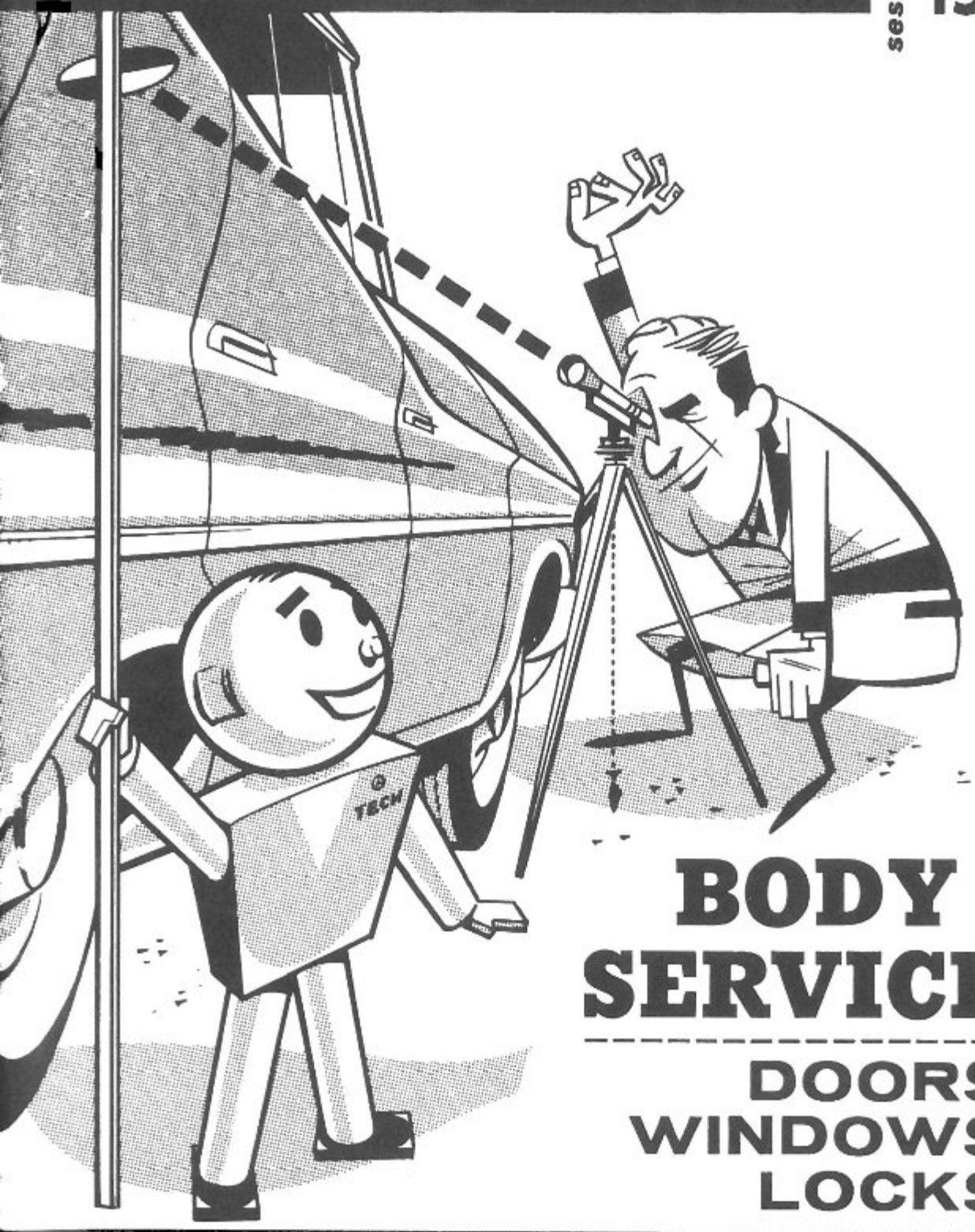
SERVICE REFERENCE BOOK

of the MASTER TECHNICIANS SERVICE CONFERENCE

session no. 150



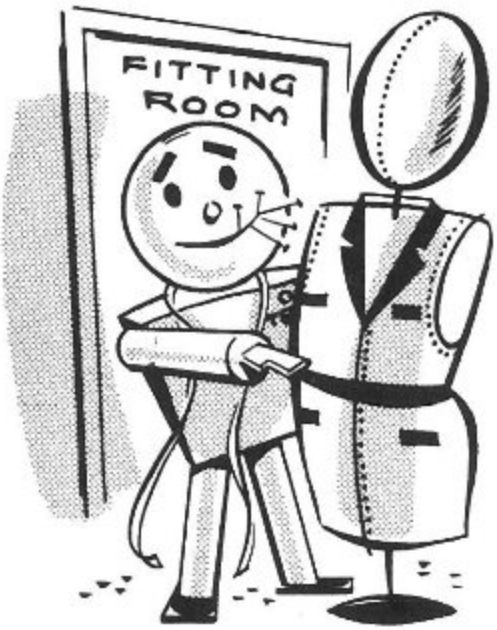
BODY SERVICE

DOORS WINDOWS LOCKS

PREPARED BY CHRYSLER CORPORATION

Dodge • Plymouth-De Soto-Valiant • Chrysler and Imperial Divisions

TECH SEZ: "Keep hardtop bodies beautiful!"



Hardtop owners take a lot of pride in the appearance of their cars—especially door and window fits. And they're quick to call your attention to a door that opens and closes with difficulty.

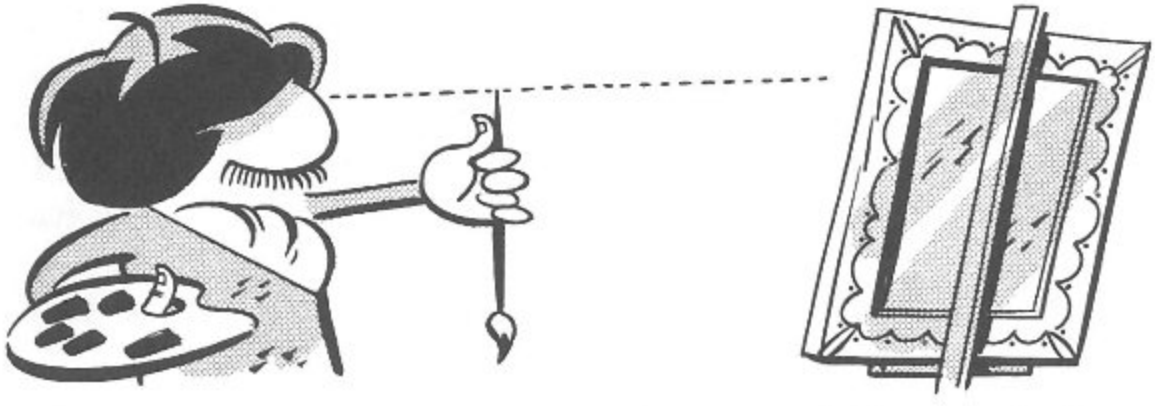
If you can give every hardtop model top-flight body service, you'll win quick popularity with this particular group of owners. And this reference book can help you do that. It outlines several suggestions on door and window alignment, along with helpful tips on door lock service.

Here's how this new and important information is arranged:

DOOR ALIGNMENT

How a door *works* . . . how it *looks* . . . and how it *seals* against water and dust . . . all are affected by door alignment. So if an owner comes in and asks for service on a door window—or door latch—that's your cue to inspect the door fit first. Adjusting the glass, or the latch mechanism alone, isn't enough if the doors happen to be out of alignment.

And always start your door adjustment with a good visual inspection of its appearance. Look for uniformity of spacing around each door. The gaps should be even on all sides. Each door should be centered in its opening, and should fit flush with surrounding panels.



You may have wondered why spacing around doors isn't always perfect. Every car made has that problem, and probably will, as long as metal stampings are used in door manufacture.

When sheet steel is drawn, or stamped, it often stretches or shrinks in the process. That's why $\frac{1}{16}$" is the usual manufacturing dimension tolerance allowed. Other large constructions, such as a home, call for tolerances a lot greater. With a $\frac{1}{16}$" tolerance, you can see how a stack-up of as much

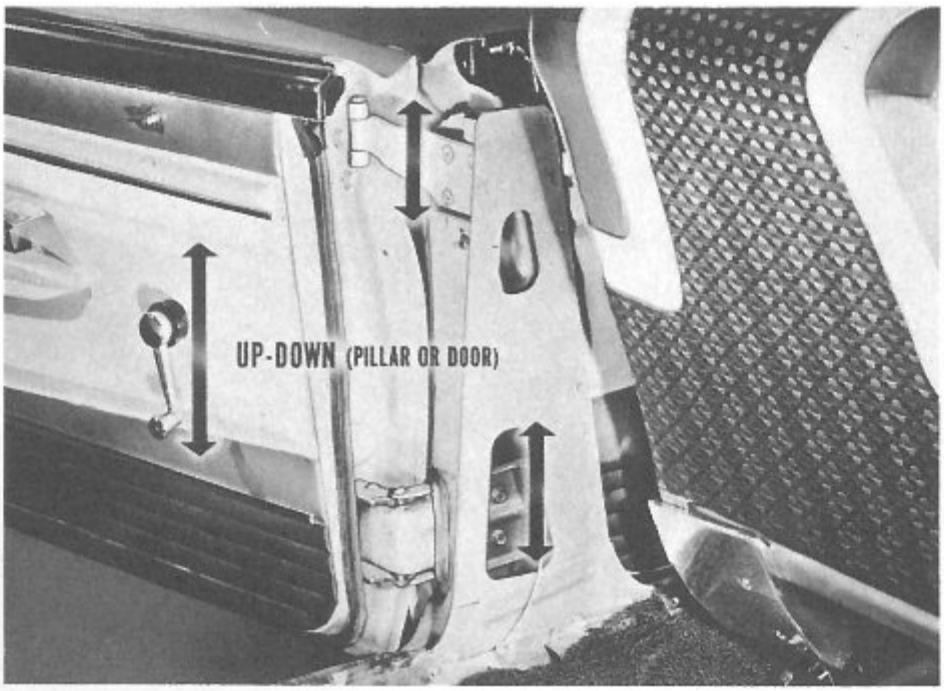
as 3/8" gap sometimes results when the door is fitted to the body opening. And that's why doors occasionally need to be centered so the spacing around them is evened out.

After making your visual inspection, open and close all doors to see how easily they operate. There should be no need to yank, or slam the door.

Four-Door Hardtop

On four-door hardtop models, begin door adjustments with the *rear* door. You work from rear to front because the rear quarter panel cannot be shifted. The front fender, though, can be moved forward or rearward, as well as in or out, if necessary.

In most cases, you can align doors by using the built-in adjustments provided. All models except Valiant use newly designed cam-and-roller-type door hinges with tapped floating hinge plates. You can move doors up or down by loosening bolts at the hinge pillar. You can also move doors up or down by loosening bolts in the door itself. In this case, though, you'll have to remove the garnish molding, armrest, hardware, trim panel and water shield to get at all the hinge strap bolts.



Moving the door fore-or-aft and in-or-out can be done by a combination of hinge adjustments at the door and pillar. After aligning the door, you'll have to readjust the striker plate as required.

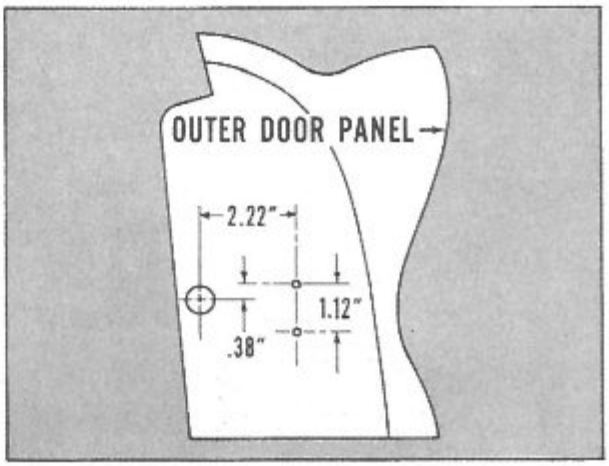
NOTE: Some technicians like to loosen or remove the striker plates to prevent interference as they align the doors.

If you need to bring the striker plate closer to the door for full engagement, you can shim between the striker plate and pillar. Two sizes of shims, $\frac{1}{32}$" and $\frac{1}{16}$", are available.

Convertible

Doors on convertible models are adjusted at the hinges the same as on hardtops. And, if you get an occasional report of interference between the door and quarter panel, here is the procedure to follow.

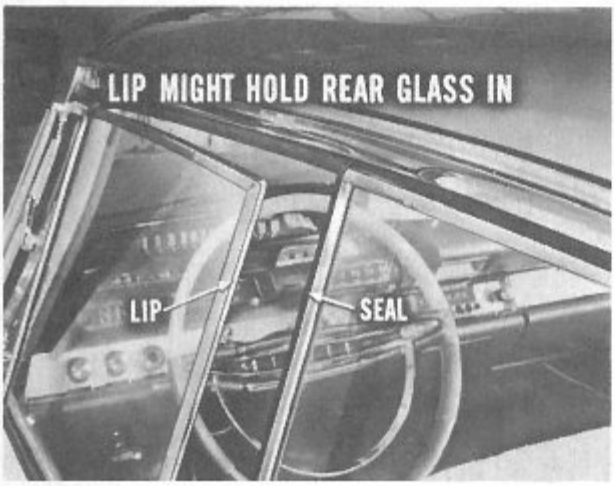
First, inspect the rear inner panel (face) of both doors for a *black plastic wedge* located in the position illustrated. If that wedge is not on the door, here's how you can install it: Remove the metal plug on the door rear face. Punch, and use a No. 29 drill to drill two screwholes, as shown in the illustration. Install the wedge (Part No. 989513) on each door by using No. 10 screws ½" long. Then reinstall the metal plug.



WINDOW ALIGNMENT

Four-Door Hardtop

Before you realign the windows on a four-door hardtop, inspect all glass fits carefully inside and out, and test window operation. One important thing to keep in mind is that it is easy to be side-tracked by what looks like good glass alignment. So always get inside the car, close the doors, and then run the windows down and up. Begin with the rear door.



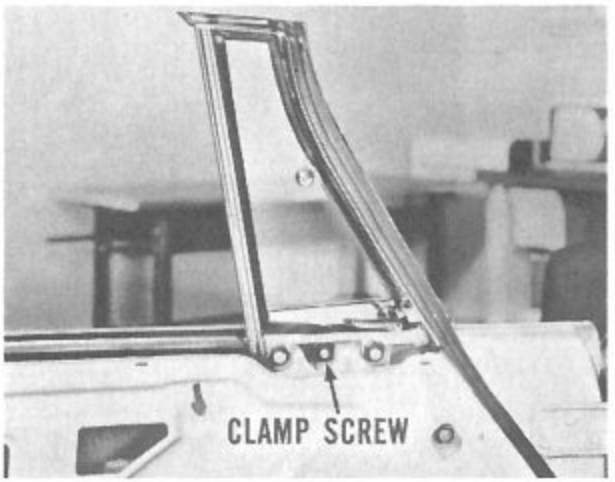
The metal lip on the front door window frame might be holding the rear door glass *in* against the vertical seal. But when you lower the rear glass and raise it, it might move outside the front door glass, indicating that the rear door glass is out of alignment.

Whenever the rear glass doesn't line up properly, it can gouge or shear the vertical seal as the rear window is raised. Testing window operation, as well as inspecting glass alignment closely, will help prevent such seal damage.

Always start glass adjustment at the front vent wing assembly, and work toward the rear.

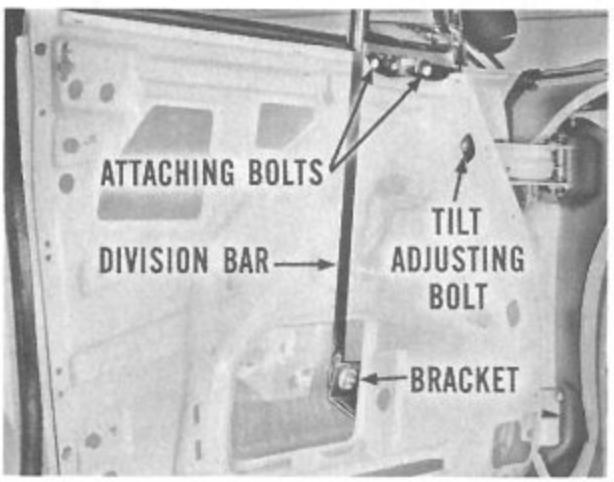
Front Vent Wing Adjustment. Inspect the vent wing for even spacing at the pillar, and at the top—especially at the upper rear corner. There should be no gap or overlap at that point, as that would cause water leakage or wind noise.

Open and close the vent wing next. If it feels smooth and firm, it is adjusted properly. If not, tighten or loosen the tension clamp screw to obtain the correct operation.

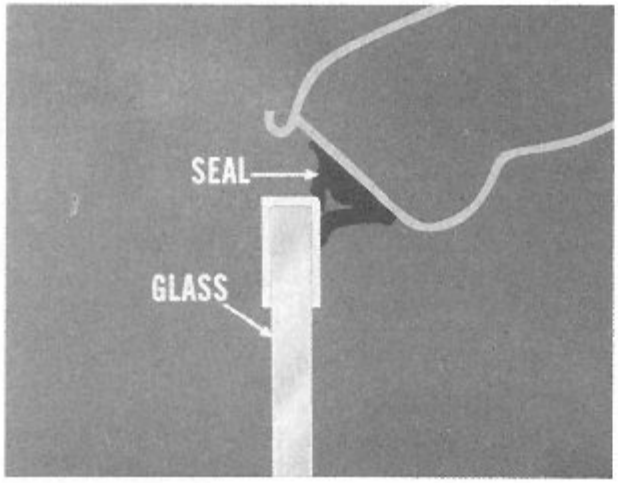


The vent wing assembly can be tilted, moved fore-or-aft, and in-or-out. Here's how you get that movement.

First, loosen the two vent wing attaching bolts. Also loosen the front vent tilt adjusting bolt. Then, down at the bottom, loosen the stud that holds the division bar to the bracket attached to the door inner panel. You reach that stud through a small access hole. You can get some fore-or-aft, and some in-or-out adjustment at the stud, plus enough movement to tilt the vent wing as needed.

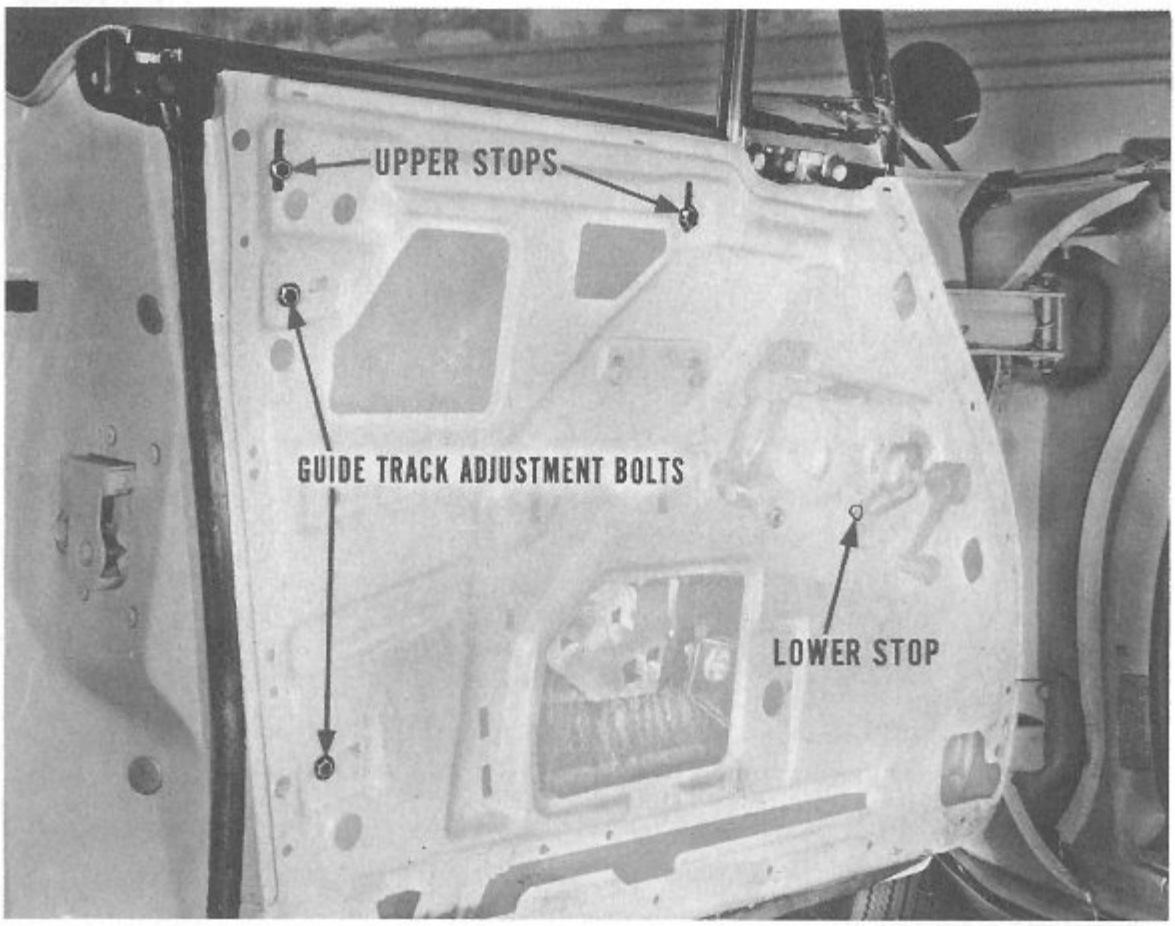


Move the vent wing to even out the spacing at the pillar and at the roof-rail weatherstrip. Make sure it leans in at the top to form a good seal. Then tighten all the bolts to secure the adjustment. Finally, run the window up and down to see that it fits properly against the roof-rail weatherstrip.



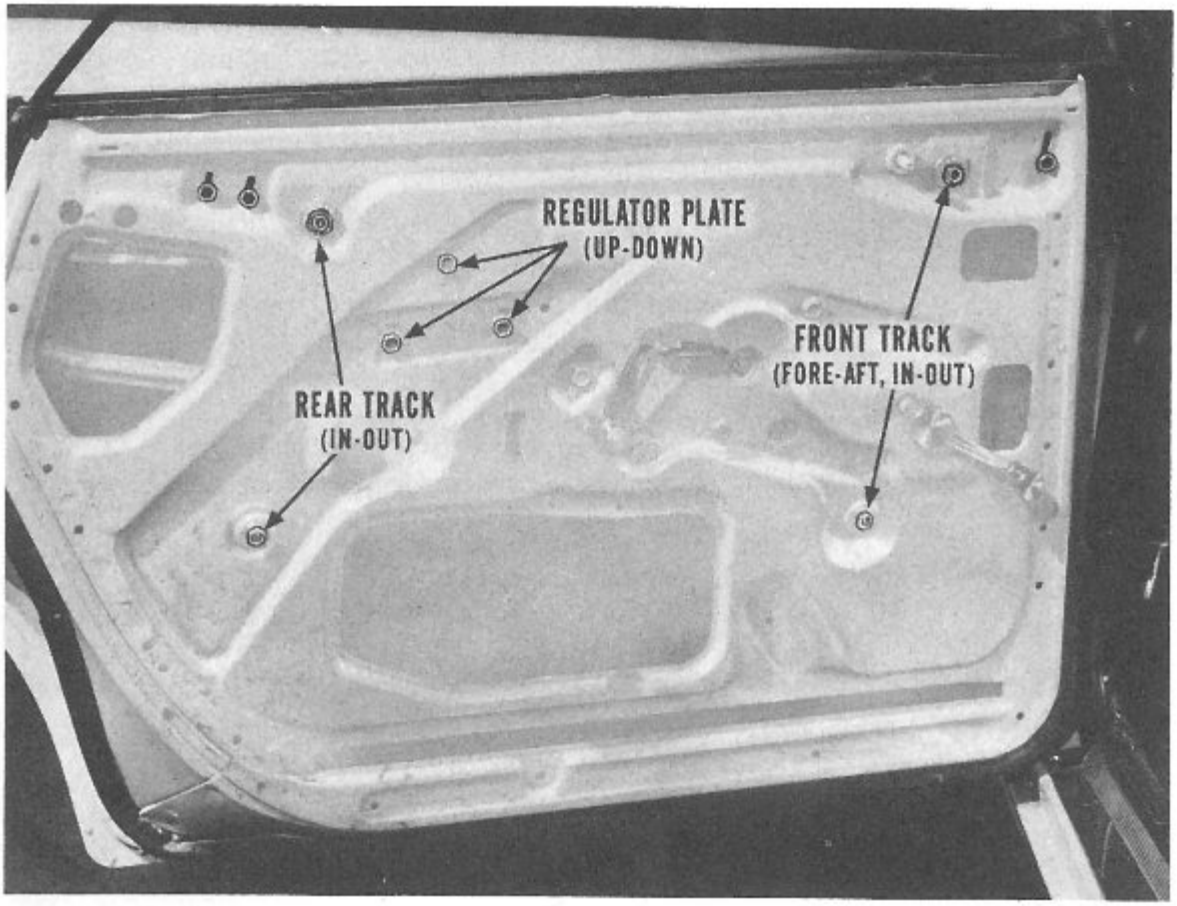
Notice that the roof-rail weatherstrip has been simplified. The top of the glass frame just has to rest against the outer lip. It should not fit into the wide groove.

Front Door Glass Adjustment. There are several built-in window adjustments in the front door. They permit movement of the glass fore-or-aft, in-or-out, and up-or-down as needed. Inspect front glass alignment to determine the adjustment required. Raise and lower the glass, too, as a check on ease of operation.



To adjust the door glass, loosen the upper and lower guide track adjustment bolts. That permits fore, aft, in, and out movement. Line the front edge of the glass with the vent wing, and move the top edge up so it rests against the outer lip of the roof-rail weatherstrip. Tighten the track adjusting bolts to secure the adjustment. Close the door next. Run the window up and readjust the upper glass stops. Then, lower the window and adjust the lower stop. Finally, close the door and inspect front door glass alignment. Run the glass up and down as a further test of adjustment and ease of operation.

Rear Door Glass Adjustment. Front and rear guide tracks on the rear door window are both adjustable.



To get fore-or-aft, as well as in-or-out adjustment, loosen the top and bottom adjusting bolts on the front track. On the rear track, the top and bottom adjusting bolts provide an in-or-out adjustment only. Besides that, you can get some up-or-down adjustment by loosening the screws at the regulator mounting plate.

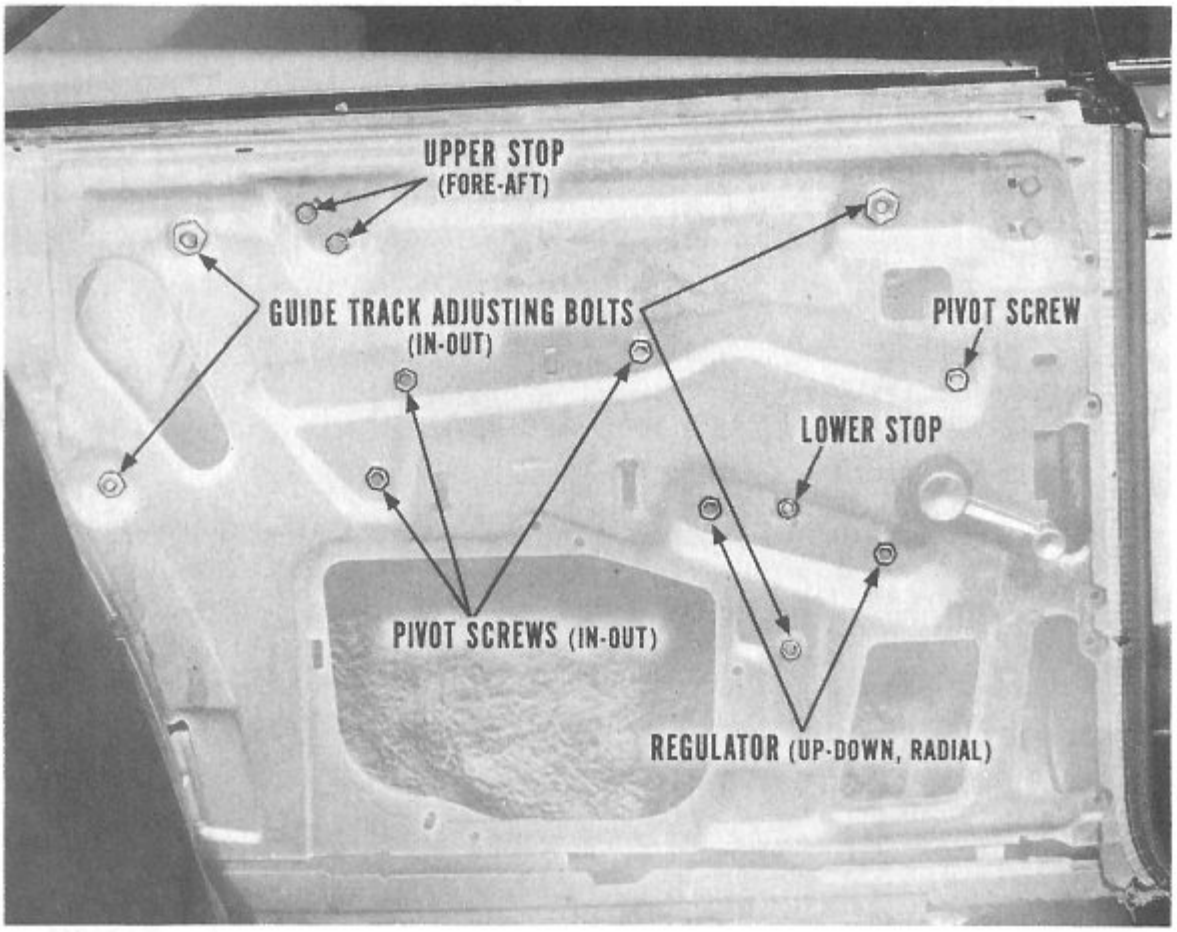
In addition, loosen the upper and lower stop screws. You'll want to line up the front of the rear door glass with the rear edge of the front door glass. At the same time, make sure that the curved frame contacts the roof-rail weatherstrip evenly all the way across the top. If the rear glass had been tending to go outside of the front window, move the top of the rear glass in toward the body.

Tighten the guide track bolts and test the operation and fit of the glass. It may be necessary to make this adjustment a few times before it lines up properly. Once the window is aligned, run it up until it makes good contact with the weatherstrip, and adjust the upper stop screws. Lower the window next. When it is flush with the top of the door, adjust the lower stop.

As a final inspection, close the door. Then, from the inside, run the rear door glass up and down to see if it operates easily and stays in alignment. If the glass looks good and operates smoothly without binding, reinstall the water shields, trim panels, door hardware and garnish moldings.

Two-Door Hardtop

Rear Quarter Glass Adjustment. On these models, you adjust the front door, front vent wing, and front door glass the same as on the four-door hardtops. But in order to adjust the rear quarter glass, you'll have to remove the rear seat cushion, the regulator handle and the trim panels.



You can adjust the rear quarter window in or out by means of four adjusting screws threaded into the pivot bracket. You can get some up-and-down, and *radial* movement, by moving the regulator. The rear of the window can be adjusted in or out by means of adjusting bolts at the top and bottom of the guide track.

Plymouth, Dodge Dart, and Dodge models have only one guide track. On Chrysler, De Soto, and Imperial models with the longer rear quarter window, two tracks are used to hold the glass more securely and prevent noise.

Upward travel of the rear quarter window is controlled by an adjustable stop at the rear. This stop also controls fore-and-aft adjustment. An adjustable lower stop controls downward travel on De Soto, Chrysler, and Imperial models. Downward travel on the Plymouth, Dodge Dart, and Dodge models is controlled by the regulator assembly.

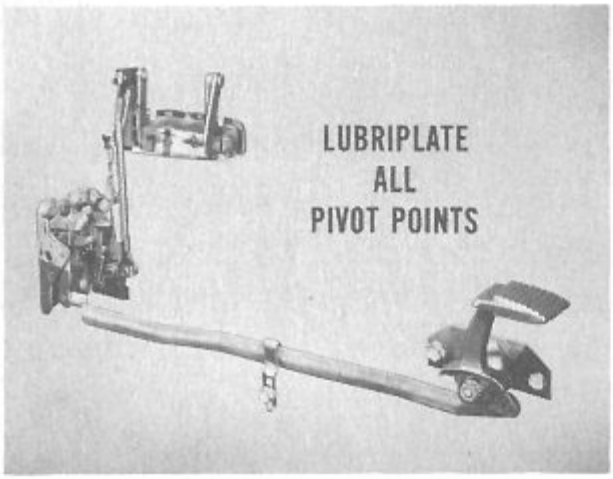
DOOR LOCK AND LINKAGE SERVICE

How easily doors open and close, and how smoothly door and rear quarter windows operate are also important hardtop body service items. Lubrication, too, has an important effect on door lock operation.

Lubrication

Too much or too little door lock and linkage lubrication can cause a door to bounce open when it is slammed shut, or make a door handle too hard to move. If the door lock mechanism tends to work too slowly in cold weather, or the lock cylinder tends to stick, improper lubrication could be the cause.

Whenever you have the trim panel off, apply a light coating of MoPar or Chryco Lubriplate to all lock pivot points, wearing surfaces, handle-to-lock ball joints, handle pivots, and into the door lock cylinders. Don't overlook the remote control assembly, of course. Use a light coating of Lubriplate on the window regulator gears and pivot points. In addition, put some MoPar or Chryco Door Ease on the lock striker.



NOTE: On all front doors of all cars, you'll have to remove the garnish molding, trim panel, and water shield to lubricate

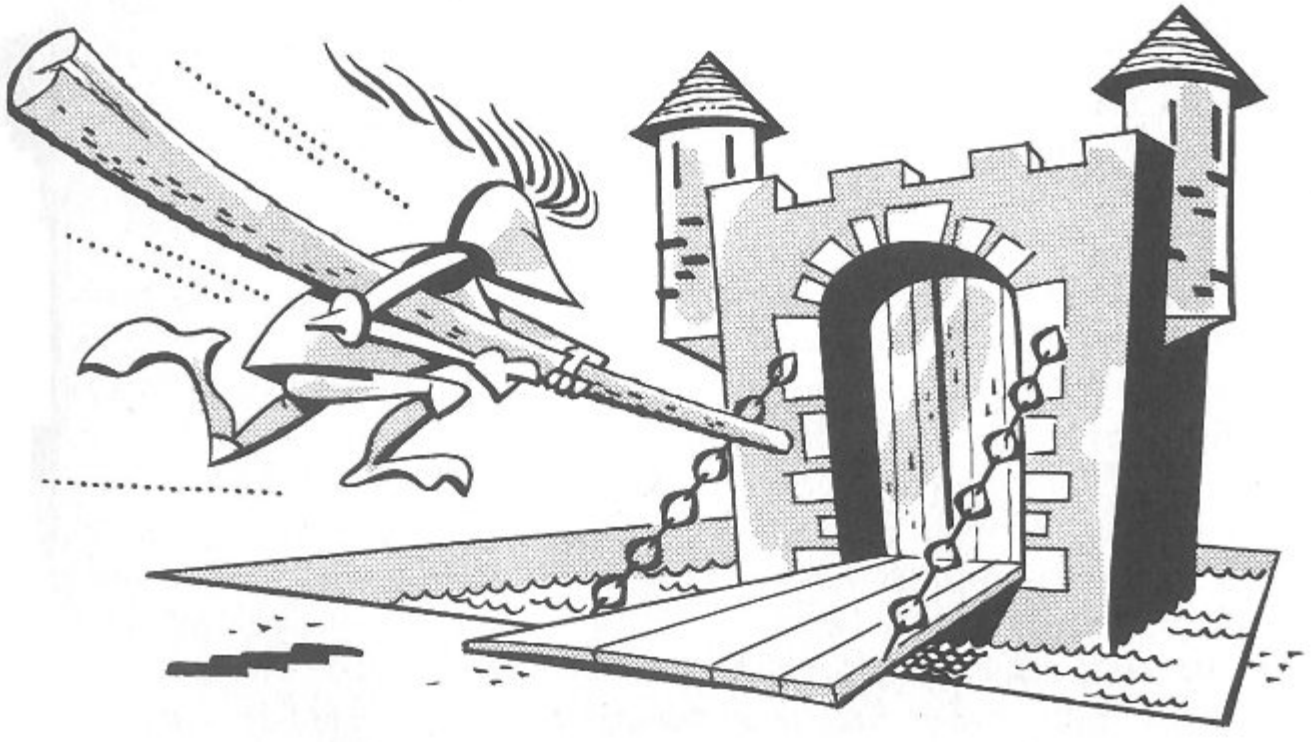
the lock. On Chrysler Windsor and Saratoga rear doors you can lubricate the lock by removing only the inside garnish molding. On Imperial and Chrysler New Yorker models you have to remove rear door trim panels and water shields.

When required, degrease the lock with clean mineral spirits or solvent. Apply solvent with a thin, long brush, or by means of a long-spout oil can, and be sure you don't get solvent on the trim panel. Dirt will flow out of the drain holes in the bottom of the door. Use a clean cloth to wipe off the door and sill. In extreme cases of excess grease and dirt, you'll have to remove the lock for thorough cleaning. In this case, follow the recommended service procedures for removing the lock.

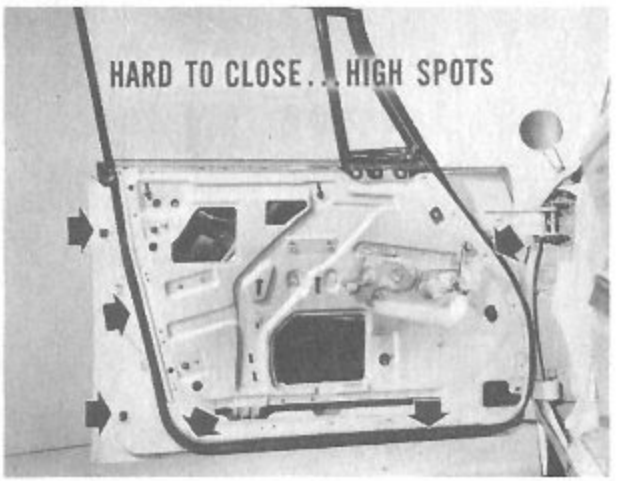
CAUTION: Don't use lubricants containing molybdenum-disulfide and graphite as they cause trim panel and clothing stains.

Diagnosis

If proper lubrication and cleaning won't correct a door malfunction, you'll have to look for other possible causes. Here are some examples and their remedies.



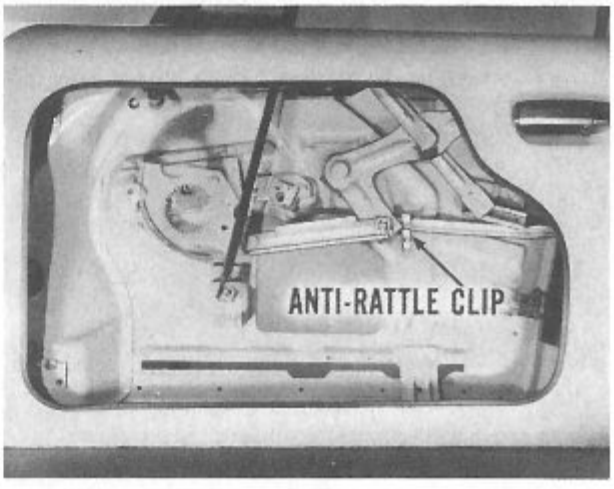
Door Sticks—Hard to Open. If a door tends to stick, or is hard to open, the striker might be rubbing on the door face or on the back of the rotor housing. In this case, you'll have to straighten or shim the striker to eliminate the interference. If the door molding or trim interferes with the pillar, relocate the sections that interfere. An incorrect striker angle can also cause sticking. If necessary, adjust the striker so the lock rests on the striker when the door is closed. There should be no door rise, nor drop as the lock engages the striker.



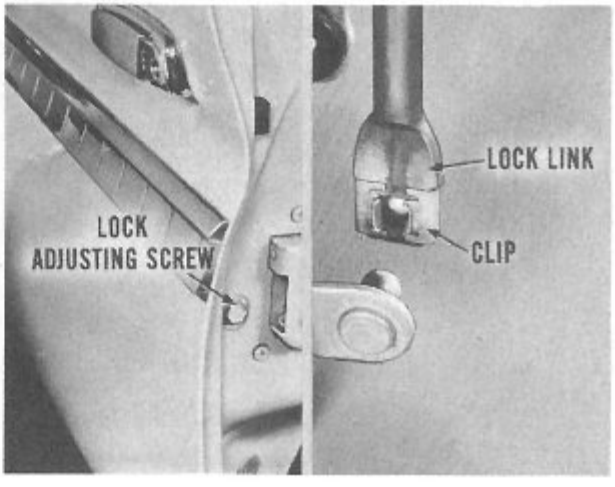
Door Hard to Close. If a door is hard to close, it could point to high spots on the weatherstrips. Also, the rubber bumpers might be a trifle too thick. Shim or adjust the weatherstrips and re-cement the sections where needed. Trim down any bumpers that jut out too far.

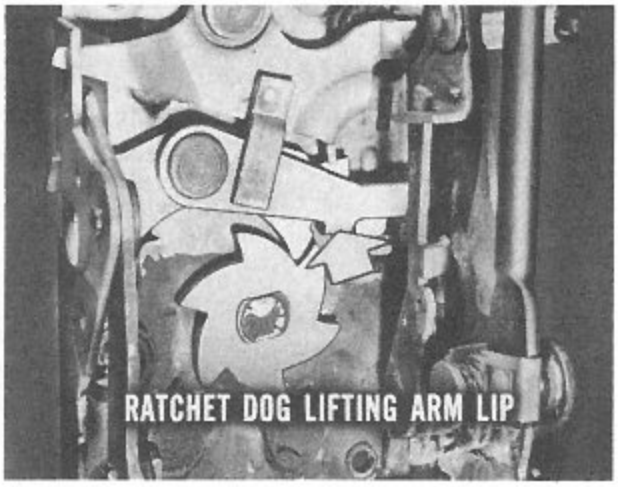
Outside Handle Doesn't Return. This can happen if the handle interferes with the escutcheon. If so, insert a screwdriver between the handle and escutcheon and pry as required to relieve the interference. If the door handle doesn't return freely because of a broken spring, replace the handle. You might find a case where the handle is sluggish. Inspection shows no interference and the spring works properly after you remove the handle-to-lock link. In a condition of this type, inspect for proper lubrication and apply a light coating of MoPar or Chryco Lubriplate. Besides that, test for interference in the pivot and spring of the lock release and links.

Remote Control Handle Won't Return to Neutral. If the remote control handle won't return to its neutral position, first inspect for interference on the trim panel. If the handle won't return properly with the trim removed, look for: (1) lack of lubrication of the remote control mechanism; (2) a tight anti-rattle clip on the inner panel at the center of the remote-to-lock link; and (3) tight pivots or damaged parts.



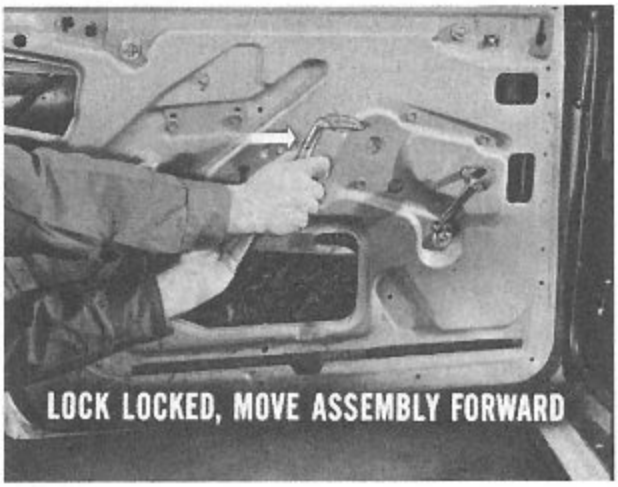
Outside Handle Doesn't Release Lock. In this case the lock adjustment might be set too high. If so, change the lock adjusting screw setting. If that doesn't work, the outside-handle-to-lock link might be disconnected. If the flattened end of the link is so wide that it spreads the clip, file the edge of the flat until the clip will fit freely.





If the outside handle still won't release the lock, it's possible that the ratchet dog lifting arm lip is bent or broken. This, of course, calls for installing a new lock.

Inside Handle Won't Release Lock. When this happens on a *rear* door, it usually means the remote control assembly is out of adjustment. Loosen the remote control assembly screws. Then, with the lock *locked,* move the remote control assembly *forward* as far as possible without forcing or bending the lock-to-control link. Tighten the attaching screws and recheck lock operation.



On a *front* door with the *same* condition, you'd readjust the remote control assembly the same way. But when you move the control assembly forward, *don't* move it *too far forward.* Too much movement might pull the lock dog out of engagement with the rotor ratchet. The rotor could free-wheel. So, on front doors, always recheck operation after remote control assembly adjustment and keep a close eye on how fully the dog and ratchet engage.

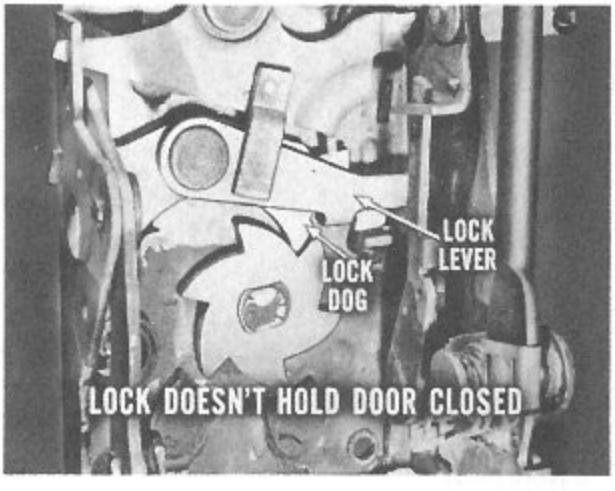
Inside Handle Won't Lock Front Door. This may be due to a remote control assembly being positioned too far forward. Loosen the attaching screws and, with the lock locked, move the assembly *rearward* just enough for proper lock operation. Also, the remote-control-to-lock link might be bent or binding. Free up the link or install a

new one. If the lock is inoperative, it may only need lubrication. However, look for bent levers, and straighten them if necessary. Also, inspect for loose pivots. In some cases, you may need to install a new lock.

Key Won't Lock or Unlock Front Door. This can happen if the key-cylinder-to-lock link is disconnected, lock cylinder operation is too stiff, or the levers are bent. Connect the link, lubricate the lock cylinder, or straighten the levers.

Front Door Won't Unlock After Locking. In a case like this, the outside door handle may be improperly adjusted, the lock lever could be bent, or the lock levers are bent and override each other. Try adjusting the handle linkage first. Next, straighten any bent lock levers. But if the lock levers are bent so that they override, install a new lock.

Door Lock Doesn't Hold Door Closed. If the lock doesn't hold the door closed, inspect the rotor assembly. The lock dog or lock lever could be jammed or bent. If so, install a new lock assembly.



Front Door Locks Automatically on Closing. This can be due to friction in the lock levers, or an improperly adjusted remote control assembly. Lubricate and free up the lock levers, or readjust the remote control assembly.

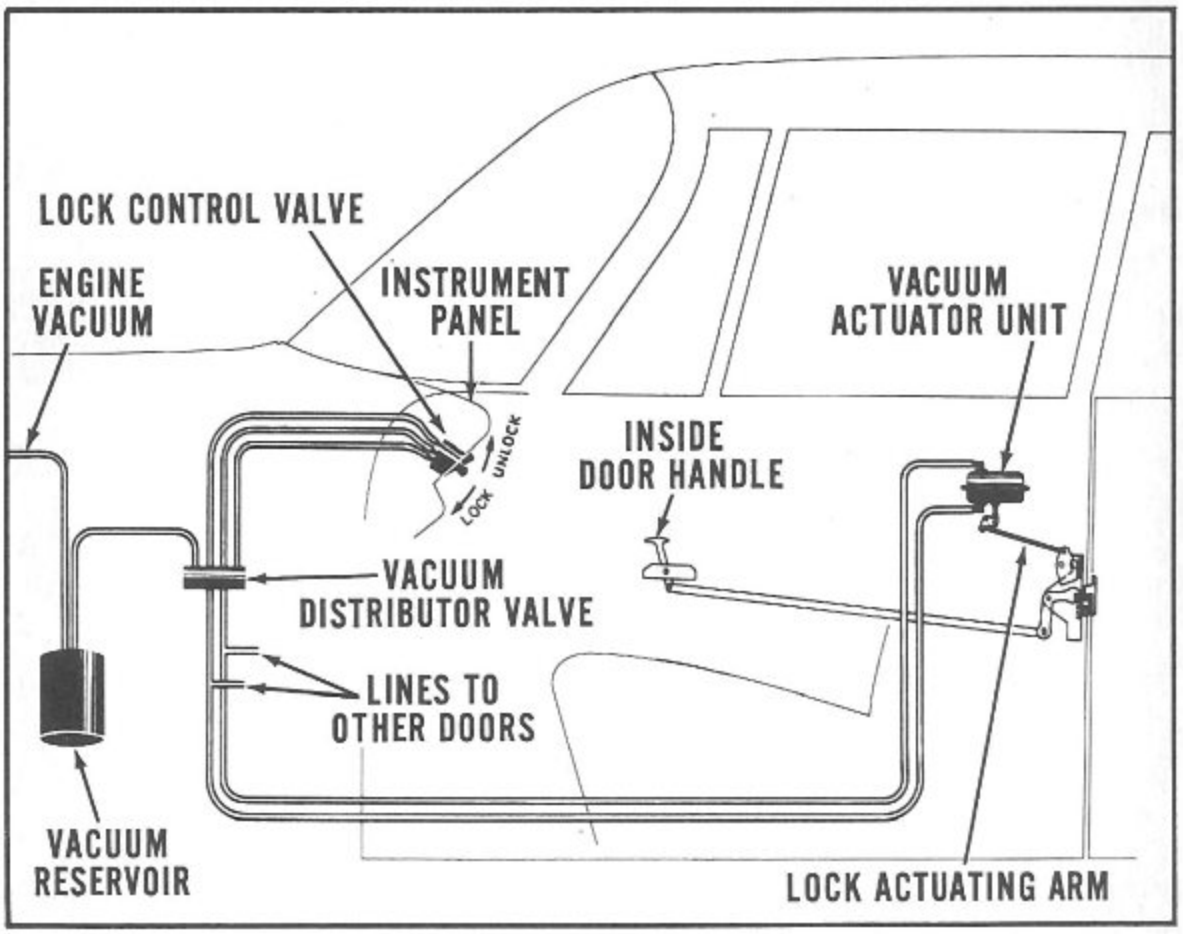
Door Rattles When Driving. Inspect for missing door bumpers and install any that might have been removed. Test the lock striker adjustment and readjust, if necessary. Examine the rotor for looseness. It may be necessary to re-rivet the inside and outside rotors. If welds are broken, though, and the rotor cover is loose, install a new lock.

VACUUM DOOR LOCK SERVICE

Doors equipped with vacuum power locks, or power windows, are adjusted the same way as manually operated doors and windows. When doors and windows are adjusted properly and the power systems work as designed, satisfactory door and window operation are a natural result.

If an owner reports that the power door lock system doesn't work, test the system yourself to make sure the owner is operating the controls properly.

WARNING: Do not apply air pressure anywhere in the system.



Operation

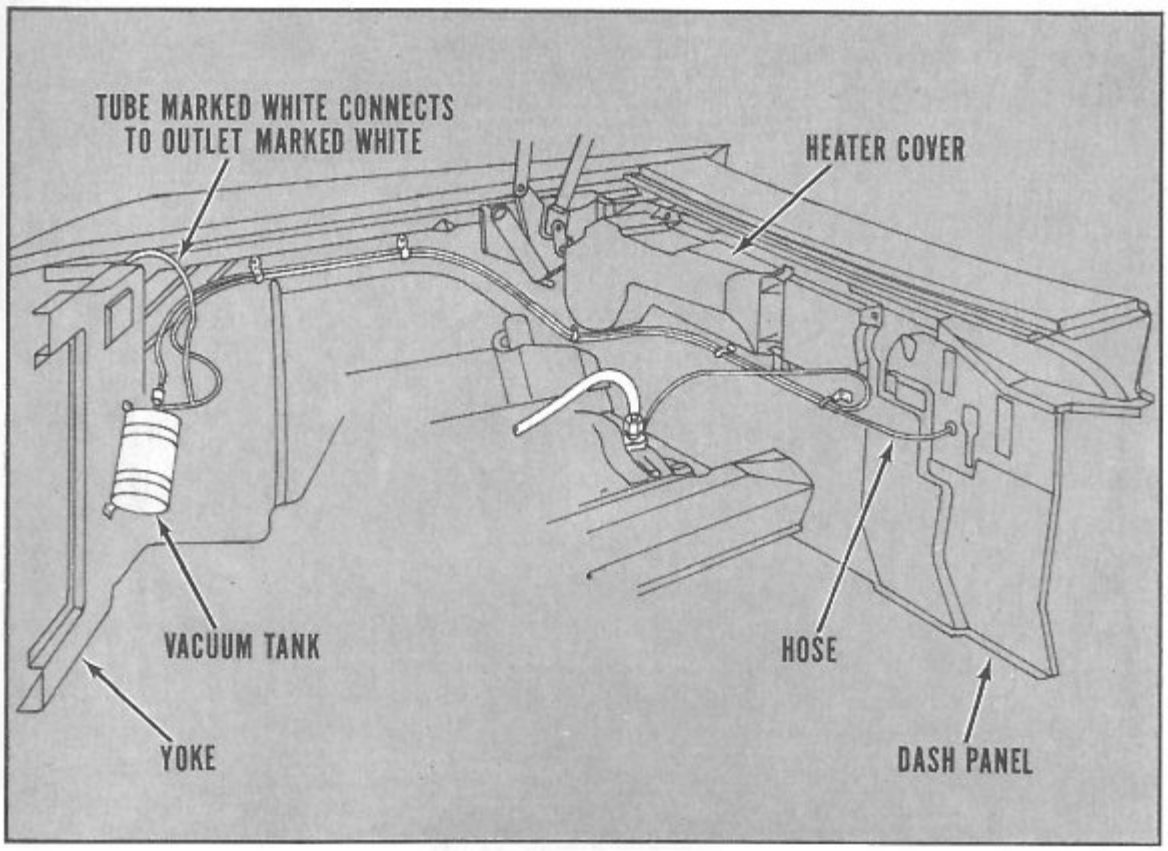
Remember that the manual switch on the instrument panel has three positions: (1) down—lock; (2) up—unlock; and (3) center, or neu-

tral. You should be able to lock or unlock all doors at the same time with the manual switch. Each front door may be unlocked individually from inside with the door handles. Rear doors may be unlocked with the key from outside the car.

The manual switch selects the distributor valve function. The vacuum distributor valve sends a pressure signal to the vacuum actuator units in each door. The actuator units lock or unlock the doors. A vacuum reservoir provides power assist when the engine isn't running.

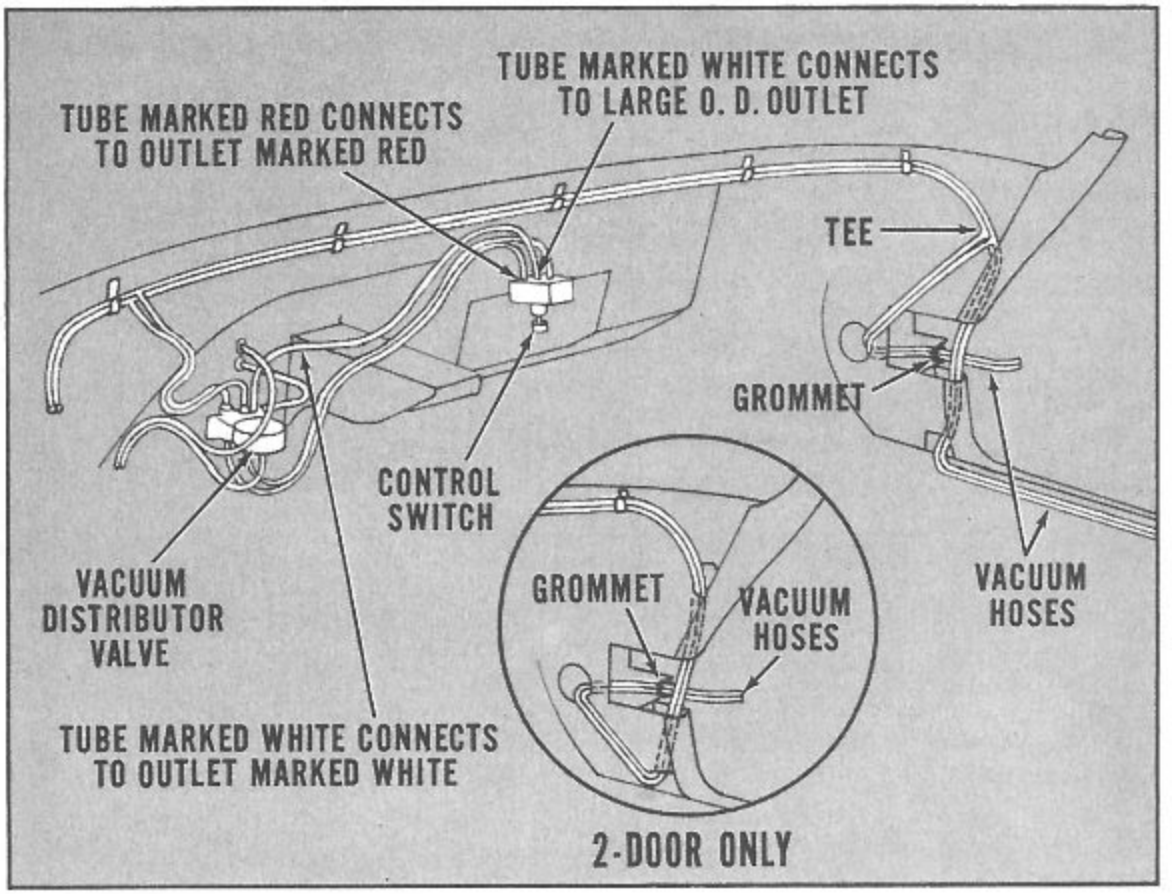
Diagnosis

Vacuum Door System Inoperative. Before undertaking any disassembly, look for obvious leaks, or hose disconnections. The main vacuum feed hose, for example, may be pinched or blocked. So inspect main hoses from the intake manifold to the vacuum tank. And inspect hoses from the tank to the vacuum distributor. Watch for short bends, kinks, or signs of pinching. Correct as needed. Install new hoses if ends are split or sections are broken.



Connect the manifold-to-vacuum-tank hose if you find it disconnected. Make sure the vacuum-tank-to-vacuum-distributor hose is connected. Refer to the illustration on page 19.

See if the vacuum-distributor-to-control-switch hose has a good connection. Be sure the hose marked "white" connects to the large-diameter fitting marked "white" on the switch.



You may find that the vacuum-distributor-to-the-main-tee hose is disconnected. If so, make proper connections according to the color code of the hoses and fittings.

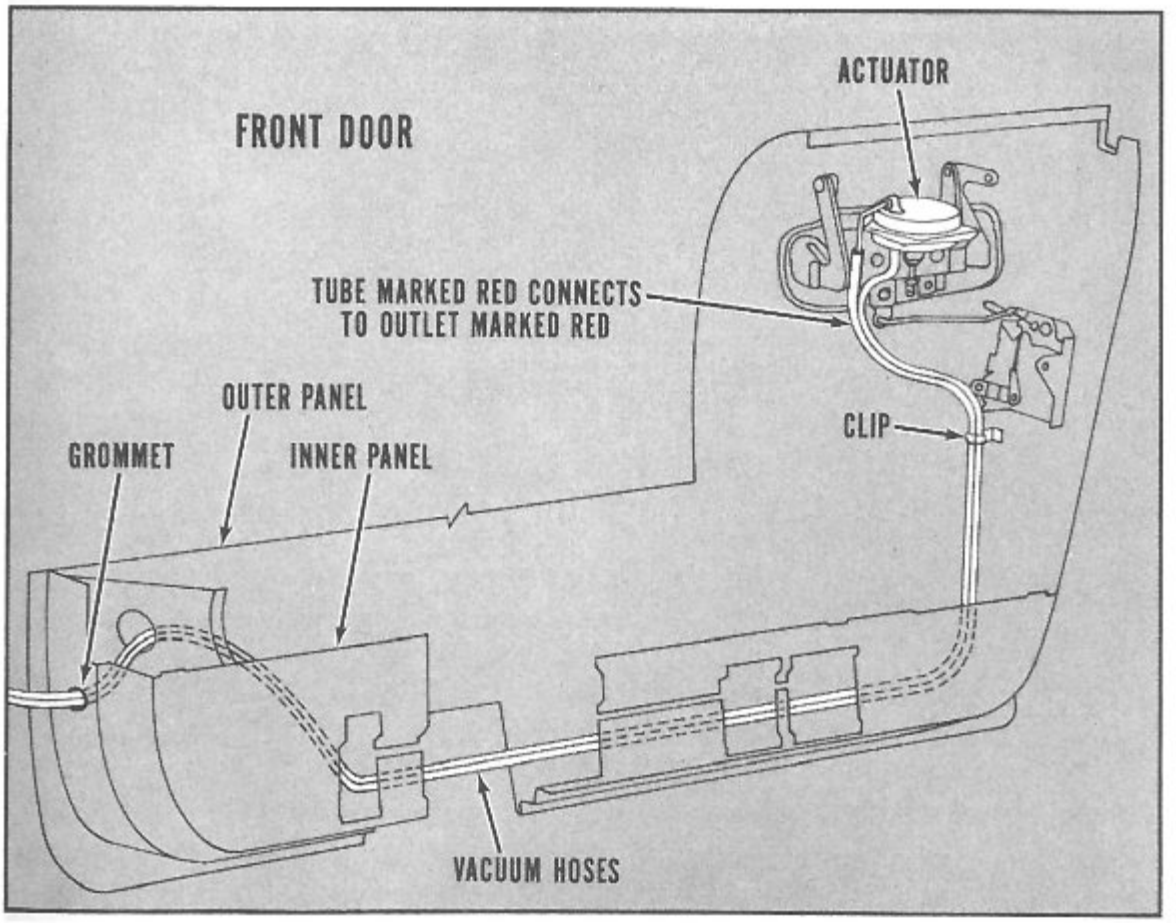
If connections are all right, the switch may be faulty. Test for this by removing the small-diameter hoses from the switch. Start the engine and operate the control switch. If there is no vacuum at the switch connections, the switch should be replaced.

Another possible cause is that the vacuum distributor is faulty. You can find this out by removing the distributor-to-main-tee hose

from the distributor connection. Start the engine. Move switch to lock and unlock positions. If there's no vacuum at the connection, replace the vacuum distributor.

Vacuum System Unlocks, Doesn't Lock. If the system fails to lock, but you can lock doors manually and unlock them under power, first see if the hose with "red" marking is disconnected at the switch. If that's okay, see if the "red" hose is disconnected at the vacuum distributor. If connections aren't the answer, test for a faulty switch and a faulty vacuum distributor in that order. Replace any faulty parts.

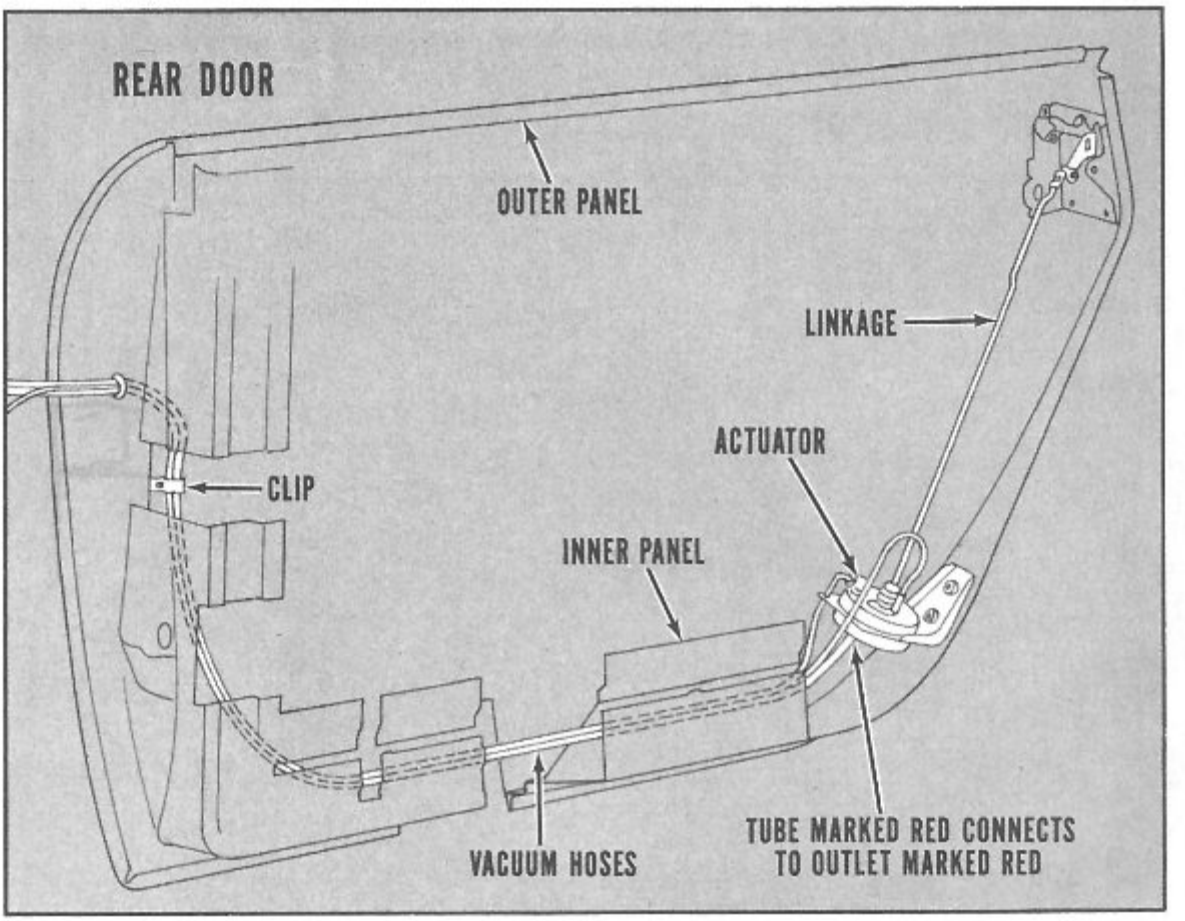
If the switch and distributor are okay, inspect all connections in the "red" hose system to the actuator. Also, inspect for a leak in the hose to the door. If all points check up to here, remove the door trim panel and inspect the actuator. If the hose connector on the actuator is broken, replace the actuator.



Vacuum System Locks, Doesn't Unlock. If manual operation is satisfactory, and the vacuum system locks all right but doesn't unlock, look for a hose disconnected at the switch or vacuum distributor. If connections are right, test for a faulty switch or vacuum distributor.

If the switch and distributor are okay, inspect all "unmarked" system hoses all the way to the actuator. Replace any leaky hoses, or actuators with broken hose connectors.

Door Locks Operate Opposite Switch Operation. See if the small hoses are reversed on the control switch, or if the hoses are reversed at the distributor connections. Next, see if the control switch is mounted in its reverse position.



Doors Lock on One Side, Unlock on Other. Inspect to see if the door hose lines are incorrectly connected to the tees at the cowl side panels. If so, connect them as illustrated.

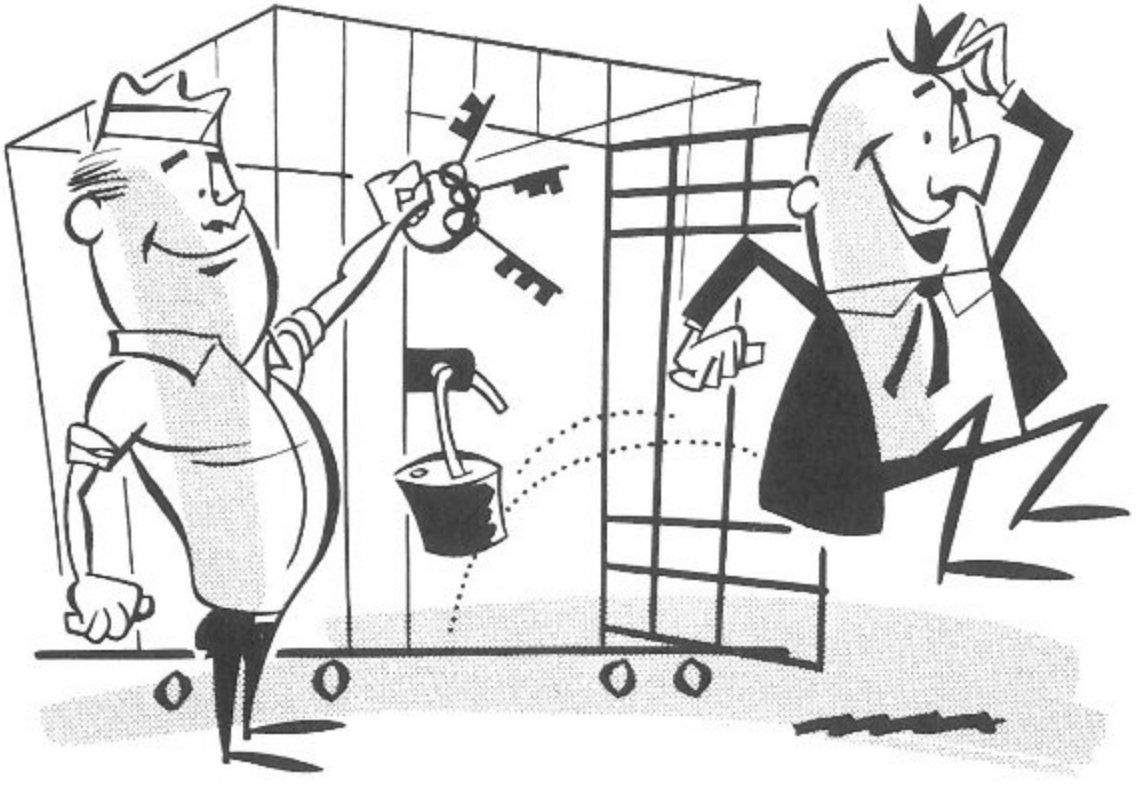
Door Lock Works Opposite Lock on Other Doors. The hoses are probably improperly connected to the tee at the cowl side panel. If not, then see if the hoses are improperly connected at the door lock actuator. Correct any improper connections.

One Vacuum Door Lock Inoperative. This may be due to binding or malfunctioning door lock actuator linkage. Remove the trim panel, inspect, and correct. If that's not the answer, the actuator is faulty and should be replaced.

A CLOSING WORD . . .

Suggestions in this reference book are a useful assortment designed to add to your knowledge of hardtop body service. The service operations are of a mechanical nature, and can be performed by any good technician.

So keep this book handy. Study and review it from time to time. You'll find it a mighty big help in this field of automotive service.



RECORD YOUR ANSWERS TO THESE QUESTIONS ON QUESTIONNAIRE NO. 150

When a window adjustment is required, always inspect the door fit first. RIGHT 1 WRONG

Always begin door adjustments with the rear door and work from rear to front. RIGHT 2 WRONG

Always start adjusting glass at the front vent wing assembly and work toward the rear. RIGHT 3 WRONG

The front door glass can be moved fore-or-aft, in-or-out, and up-or-down by means of built-in adjustments. RIGHT 4 WRONG

Door lock and linkage lubrication has little or no effect on lock operation. RIGHT 5 WRONG

An inside handle that won't release the lock usually means that the remote control assembly is qut of adjustment. RIGHT 6 WRONG

To adjust a vent wing assembly, you must loosen the attaching bolts, the front vent tilt adjusting bolt, and the adjusting bolt at the bottom of the division bar. RIGHT 7 WRONG

Shims are available for shimming the striker to provide full engagement with the lock. RIGHT 8 WRONG

Upward travel of the door glass is controlled by adjustable stops in the door. RIGHT 9 WRONG

Fore-and-aft movement of the rear quarter glass is not adjustable. RIGHT 10 WRONG