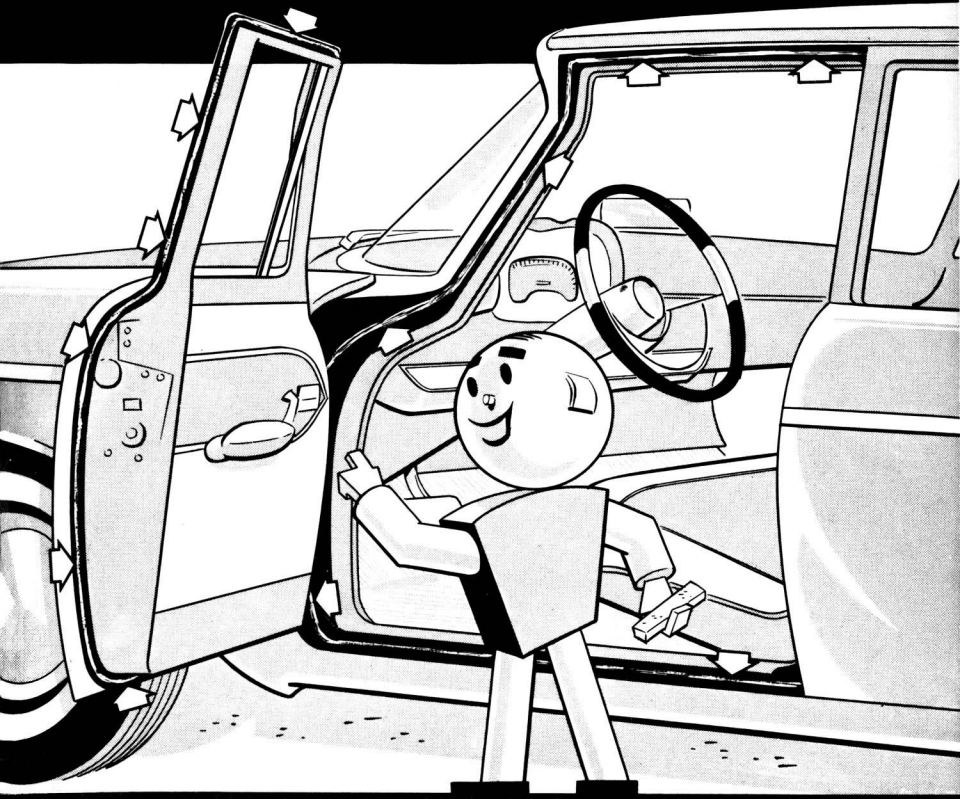
service reference book

session no. 11

BODY SEALING '57 CARS

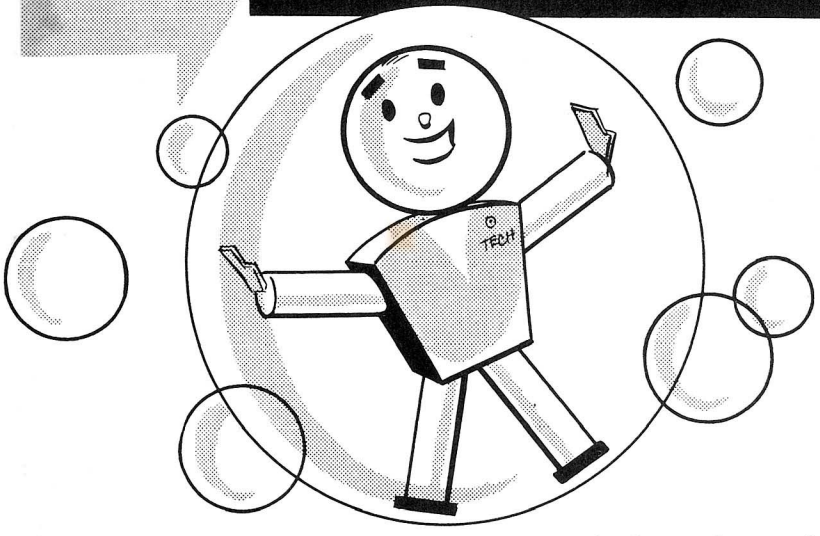


Prepared by CHRYSLER CORPORATION

Plymouth — Dodge — De Soto — Chrysler and Imperial Divisions

TECH SEZ:

"IF IT'S WEATHERTIGHT, YOU'VE SEALED IT RIGHT!"



A new-car owner expects his new car to be completely weatherproof. In fact, he expects as much weather protection inside his car as in his house.

Actually, a home-owner may ignore a leaking roof, a damp basement, or a rain-gutter clogged with leaves that cascades water over the front porch. But just let him find one trickle of water on his new-car floor mat—and WHAM! You've got yourself a Federal Case.

But since that's the way things are, let's face it. We've just got to do a first-class job of checking each new car for leaks before we turn it over to our customer. We've got to make sure each new car is sealed right so it's weathertight.

This reference book provides suggestions on good sealing practices. You'll find them helpful whenever you're asked to check body sealing on our '57 cars. Here's how this information is arranged:

ANYONE CAN DO BODY SEALING

Let's get one thing straight right off. Body sealing is an operation that *any* technician can do. So, don't think you have to be an expe-

rienced body man to perform the operations necessary to eliminate water leaks.

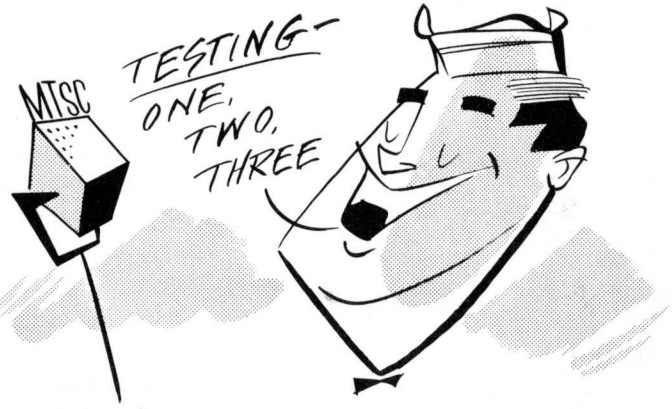
As you get into the body sealing story, you'll see for yourself how easily sources of leaks are corrected. To give you complete coverage on the subject, almost all of the points at which leaks may occur will be discussed. However, you'll hardly find more than one or two of them in any one car.

Also, keep in mind that many of the sealing procedures used on passenger cars work equally well on Dodge Trucks. Truck owners, as well as new-car owners, will appreciate your help in providing body sealing service.

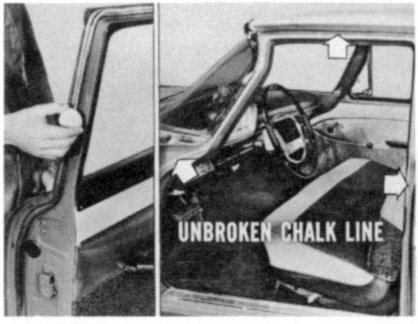
TESTING METHODS

Always begin your body sealing job by making a good visual inspection of the entire vehicle. Pay particular attention to the fit of the doors and deck lid. If there isn't a proper fit at these points, be sure to correct the fit *before* you do anything else. Sealers cannot be expected to compensate for incorrect mechanical adjustments.

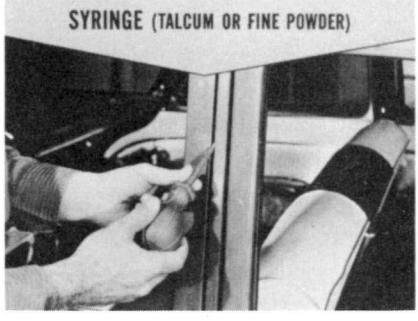
Now, if the body fits *are* good, then your next step is a thorough test for possible leaks to eliminate any guesswork. There are three different ways to check for leaks. At the doors and deck lid, for example, you can use carpenter's chalk . . . powder . . . or water.

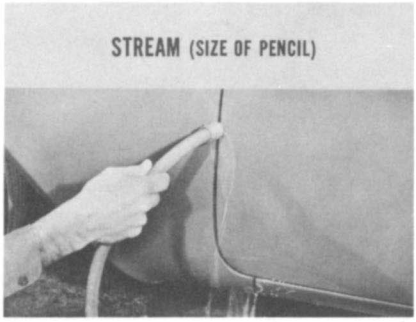


You can chalk the weather-strip lip all the way around. Then close the door or deck lid. Open up again and see if there's an unbroken chalk line on the body, which would mean there's a good sealing contact.



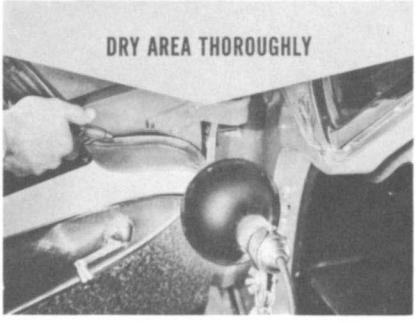
Instead of carpenter's chalk, you can use a syringe to blow talcum —or some other fine dusting powder—between the weather-strip and body all around the door, or deck lid. As in the case of a chalk-test, if the powder blown in leaves an unbroken line, it means the seal is good. But traces of powder found *inside* the line point out places that will need to be sealed.





Now, if you decide to use the water-test, just use a stream of water about the size of a pencil. Don't force water into body openings because high pressure can force water past a perfectly good-fitting weatherstrip.

Another thing, start your water-test by applying water low on the body. Gradually, work the stream of water upward. That will pinpoint the source of a leak much faster than starting at the top and flooding the whole area.



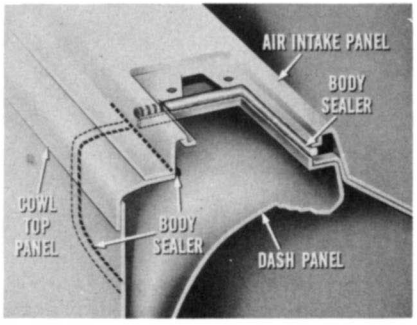
If you find a leak while water-testing, correct it as soon as you find it. Before attempting to do any sealing, use compressed air to blow away the moisture. Then use a heat lamp to thoroughly dry off the area to be sealed. Cement won't stick to a wet surface. Continue the water-test after making the correction.

When you check for leaks around the windshield, cowl area, belt moldings, rear window, rear fender moldings and panel seams, use the water-test. Chalk and powder are only alternate methods for checking at doors, vent wings and deck lids.

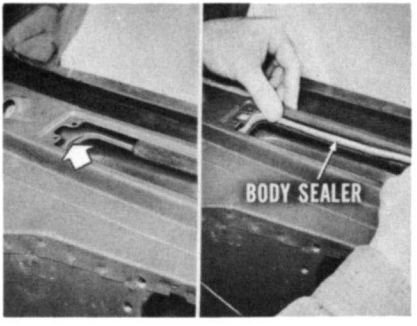
DIAGNOSIS AND CORRECTION

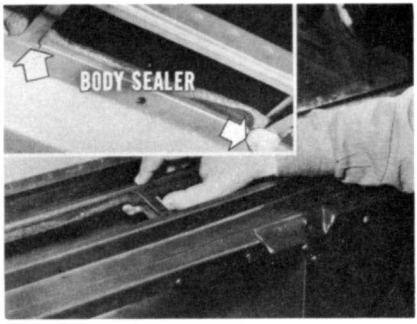
FRONT COWL AREA

Water that shows up on the driver's or passenger's feet, or from somewhere behind the instrument panel, might be entering the car through the fresh-air intake opening. Here are some points to check. The cowl vent panel, which contains the intake grille opening, fits on top of the cowl upper panel and is welded to it. Once in a while, water might get past the welded seams.

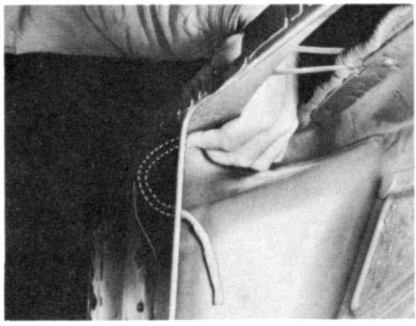


If that's what you find, remove the grille. Reach into the opening and cut away about 2″ of the rubber seal from both rear corners. This will expose a small, moon-shaped opening. Clean and dry the area. Apply body sealer to the exposed seams in each corner, and pack the sealer well into the seams.



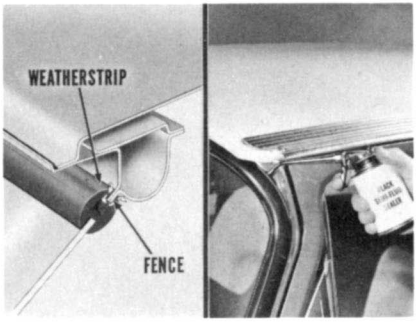


In addition, check for a leak through openings at the rear ends of the lower struts across the grille opening. If you find any openings there, pack them well with body sealer.



Occasionally, you may have to seal the seams at the ends of the plenum chamber. These are right at the corners, where the dash panel flange and cowl top panel are welded. Again, body sealer, pressed far into the joint at these two places, will prevent leaks.

Another seam to check is the lower seam that's formed by the air intake panel and cowl top panel. Use body sealer to seal this seam for about six inches from each end.

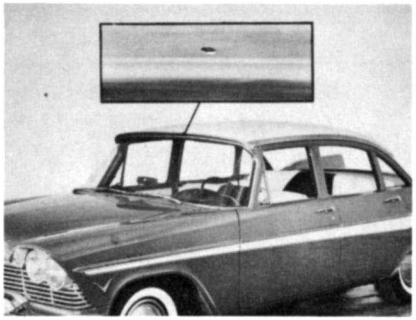


WINDSHIELD AREA

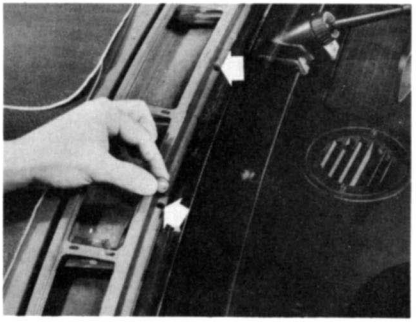
When driving into a heavy rainstorm, nothing lays itself wide open to leaks as much as the windshield. Wind, as well as the forward motion of the car, has a tendency to drive water past the weatherstrip. A water leak might show up between the metal fence and the

weatherstrip. If so, remove all the windshield moldings. Apply sealer under the weatherstrip, between it and the metal fence.

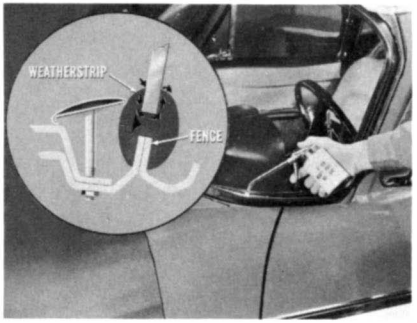
Every now and then, you might find holes in the drip rail – right where it joins the header. Be on the lookout for a hole at the center, directly under the drip rail. Seal any holes you find here with body sealer.



Sometimes there's a leak just outside the windshield opening that will look like a windshield leak. It comes from the three openings in the center of the windshield fence trough – at the bottom. Apply balls of sealer at these openings to keep the water out.



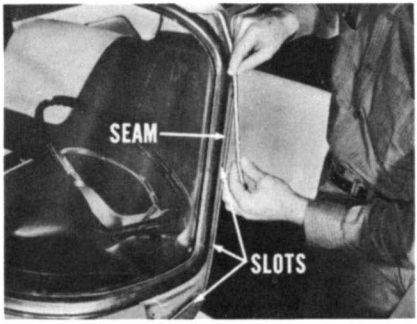
Here's another leak possibility worth checking. Water might work its way under the lip of the weatherstrip and around the edge of the glass. If this happens, unlock the weatherstrip and use a gun to force an *approved black weatherstrip adhesive* between the



lip of the weatherstrip and glass. When you lock up the weatherstrip and install moldings, some of the adhesive might be forced out onto the glass. To remove this excess, put masking tape over it. Remove the tape, and with it, the excess adhesive.

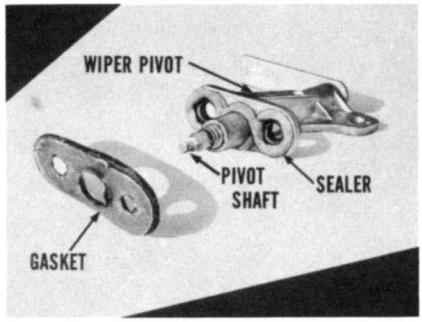
NOTE: Never use a "hard-drying" type of sealer. It becomes brittle in time and falls out of place. Use only a sealer that remains pliable when it sets.

You might uncover some open seams where the windshield pillars are welded to the roof panel. This is on both sides of the car, and down the outside of both windshield pillars. These seams continue along the side panels to the dash. In a case like this, apply body sealer the full length of the seams and into the molding attaching slots on both sides.



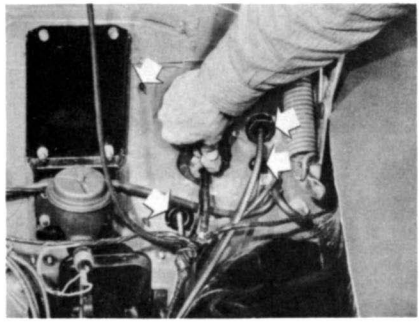
Before you reinstall all the moldings, put balls of body sealer at each attaching screwhole. Put sealer on each of the lower molding screws that are accessible through the fresh-air grille opening. And after installing the moldings, cover the attaching bolt nuts with sealer.

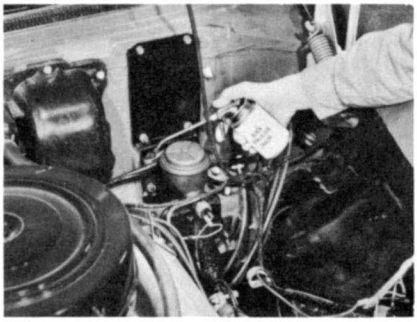
Always check sealing around the windshield wiper pivots, too. If you suspect that water's coming in around the pivots, reach under the cowl and loosen the pivot bracket. Replace the pivot gaskets, and put sealer around the wiper pivot shafts. Also, put some sealer at the molding clips near the wiper pivots.



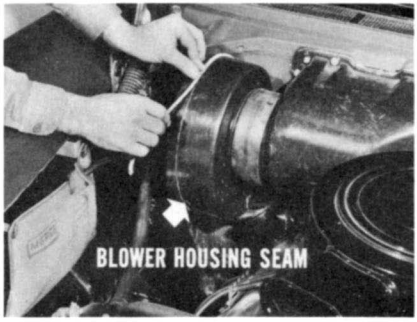
UNDER-THE-HOOD AREA

Any time you're checking leaks at the front end of the car, remember that sometimes water can work its way by the grommets and attaching bolt holes on the dash panel. So, it's wise to pack body sealer around the fasteners, bolts, and screws that stick out. In fact, it pays to seal every point on the dash panel where water might enter. Push grommets firmly in place before sealing, and don't forget to pack a ball of sealer in each grommet hole.





Use a gun to apply beads of sealer around the brake master cylinder at the reinforcement. Do this, too, around the accelerator linkage mounting bracket on the dash panel, and around the hood hinges. In addition, pack a ball of sealer over the top fender bolt at the cowl panel under the rear edge of the hood.



Check the blower housing seam, while you're working under the hood. Apply sealer over the seam if it looks as though it's open. This has nothing to do with water, but it will keep engine fumes from getting inside the car.

SEALING THE DOORS

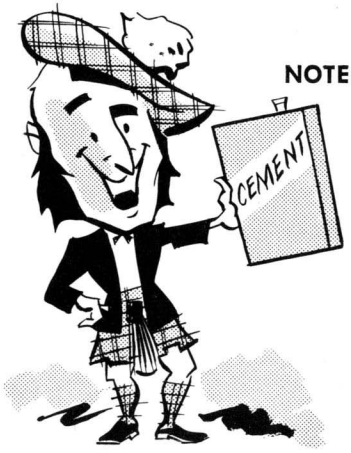
Door Weatherstrip. Once you're sure the front cowl area of a car is sealed watertight, check the sealing job around the doors. Many of these suggestions, remember, will also apply to doors on trucks.

For example, if your water-test at the door shows that water runs down the trim, the weatherstrip may be loose at the dog-leg, or . . . there might be a low spot. Stretching the weatherstrip across the dog-leg or around corners, installing

the weatherstrip in an improper position, or a poor cement job . . . all can cause the weatherstrip to come loose from the door.

And if you see a damaged weatherstrip . . . one that sticks out when the door is closed, or one that is crimped over . . . play it safe and replace the entire strip. Patching it with pieces just doesn't seem to work out. Pull the old weatherstrip off carefully, or use a razor blade to cut it free.

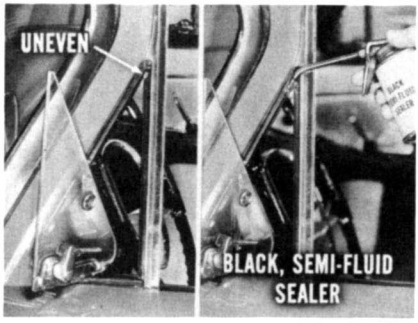
If you happen to find a low spot, you can shim it up with rubber shims cemented in place underneath the weatherstrip. Remember to featheredge the ends of the shim, however, to prevent any bulging of the strip.



NOTE: For a good cementing job, put a thin coat of cement on both the weatherstrip and metal surfaces. Let each coat become almost dry and slightly tacky. Keep in mind that too little cement is better than too much. You'll get a more solid bond with a thin coat. Also, apply the weatherstrip on the door flange first, and then, to the door frame.

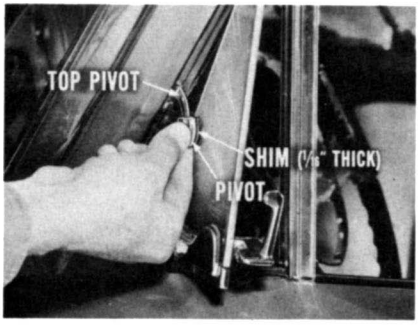
Always be careful when you install a door weatherstrip. Don't stretch or bunch the strip around the corners, or at the dog-leg. *Stretching pulls the sealing lip over on its side.* This keeps the weatherstrip from sealing properly against the door opening.

Front Door Vent Wings. When checking for leaks at the front door vent wings on four-door and club sedan models, you can use talcum powder to detect an opening. Be sure to check the weatherstrip seal at the top and rear corners especially.



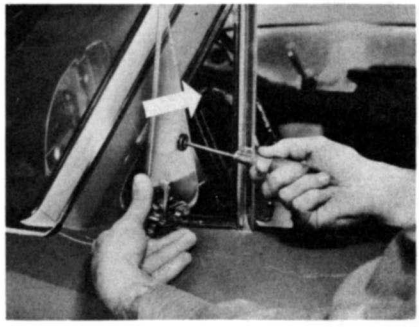
A weatherstrip that is uneven will let water get by. To correct any uneven spots you might find, first clean the surface to be sealed. With a gun, apply black semi-fluid sealer into the corners.

When the sealer takes a set, dust powder over it. Then, close the wing tightly to form an impression on the sealer. That will form a good flat surface which will be watertight.

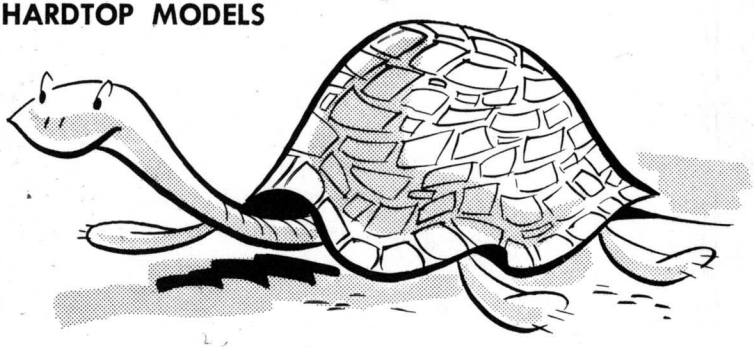


Next, remove the screw from the top pivot. Cut a shim from rubber stock about one-sixteenth inch thick. Put the shim between the gasket and pivot outside the glass. Then, reinstall the screw.

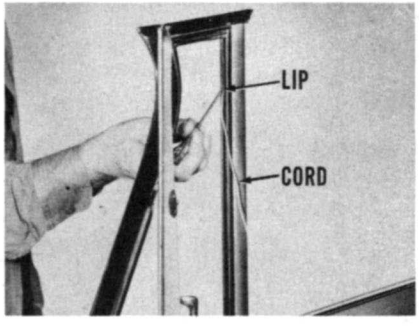
As you tighten the pivot screw, press the vent glass forward, and securely tighten the screw. This increases compression of the glass on the rubber at both sides. Finally, apply black, semi-fluid sealer around the upper pivot.

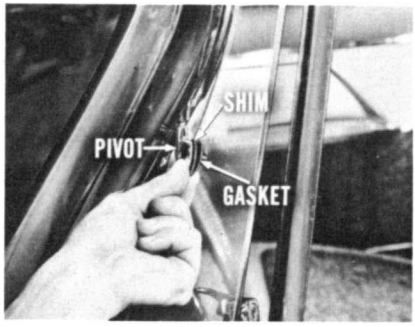


HARDTOP MODELS



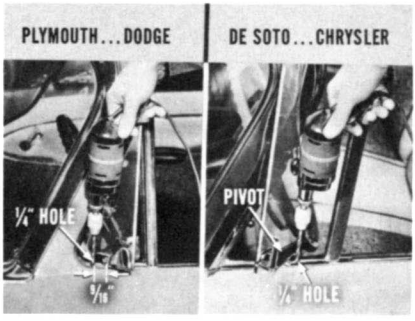
Front Vent Wings. To check for water leaks around the front vent wings on hardtop models, use the powder method. If you find an opening, you'll know that water might be getting by because there isn't enough compression between the glass and rubber. To increase this compression, roll back the weatherstrip lip at the rear and at the top. Put a length of heavy wrapping cord between the rubber and metal, inside the body. Remove the screw from the top pivot as you did on other models.





Cut a one-sixteenth-inch-thick rubber shim next. Place it between the gasket and pivot. Reinstall the screw. Press the vent glass forward and securely tighten the screw. This will increase compression at both sides—*and* at the top. Apply black semi-fluid sealer at the upper pivot on the door.

Now, if water appears to be getting in behind the lower pivot and draining down over the trim on the inside, there's a different correction involved. In a case like this, check to see if there is a drain hole drilled through the weatherstrip and the retainer channel. If there isn't, here's what you do. On Plymouth and Dodge models, drill a one-quarter inch hole about nine-sixteenths of an inch *forward* of, and outside of the pivot. On De Soto and Chrysler cars, drill the same size hole, but do that just to the *rear* and outside the pivot.

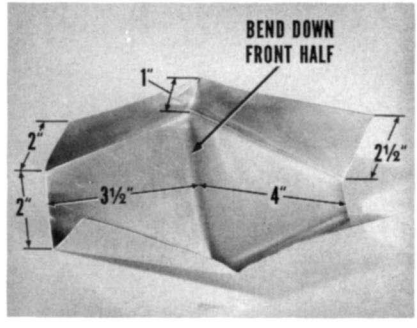


While we're in that general area, we might as well mention correction of a leak at the lower front corner of the vent glass and frame. If your test shows that water's getting through that point, just use black weatherstrip cement to seal up the joint.

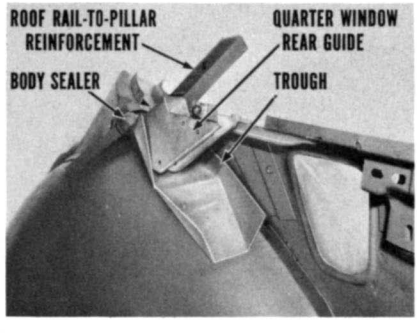
Rear Quarter Window (Plymouth Hardtop Models). You might get a report of a water leak into the luggage compartment or under the rear seat. This probably starts at the rear end of the rear quarter window. This can happen as the result of "ram-air" helping water collect in the lower rear corner. From there it can leak into the window rear guide, run down over the wheelhouse and be deflected to the front or rear.

You can correct a leak of this type by installing a drain trough which will re-route the water so it will drain over the outside of the wheelhouse, between the housing and quarter panel, and down onto the road.

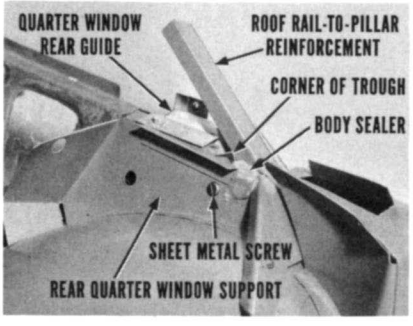
You can make this drain trough with a piece of $\frac{1}{32}$" aluminum sheeting, $7\frac{1}{2}$" long by 6" wide. Mark off four corners to the dimensions sketched on this page. Bend up front corners for sides two inches wide at the front edge, and one inch wide at a point three and one-half inches to the rear of the front end. Bend the rear corners up for two sides two and one-half inches wide at the rear edge, and one inch wide at a point four inches from the rear end. Bend the trough down slightly near the center. Also bend the rear inner corner outward slightly.



How to Install the Trough. (The accompanying illustrations showing the installation of the trough were made with the quarter panel removed.) Raise the rear quarter window fully. Reach through the luggage compartment from the rear, to install the trough on top of the wheelhouse and under the rear guide. Slide it back as far as possible under the guide. The rear inner corner of the trough should be positioned inboard of the roof-rail-to-pillar reinforcement,



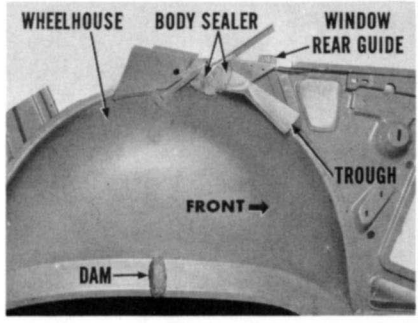
right next to the guide. Use a flashlight and with a sharp tool or a pencil make an index mark on the trough through the rear gauge hole in the rear window support. Remove the trough and punch a three-sixteenths inch hole at the mark. Punch the hole instead of drilling it, in order to raise a slight thread flange.



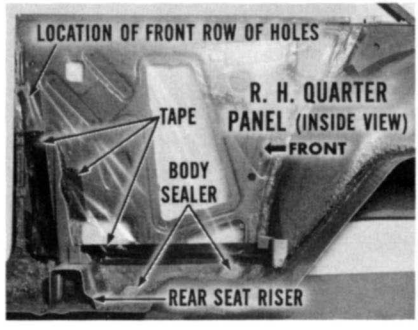
Reinstall the trough as before, and fasten it by installing a Number Twelve sheet metal screw, one-and-one-quarter inches long, through the gauge hole. Pack body sealer over the opening just above and to the rear of the screw.

Now you are ready to apply sealer around the drain trough and on the lower part of the wheelhouse. Pack plenty of body sealer under the rear end of the trough (where it touches the window rear guide).

Pack a vertical dam of body sealer about one inch wide by three inches long at the center of the lower edge of the wheelhouse. Water-test this correction to double-check the openings and proper re-routing of water that still might trickle by.

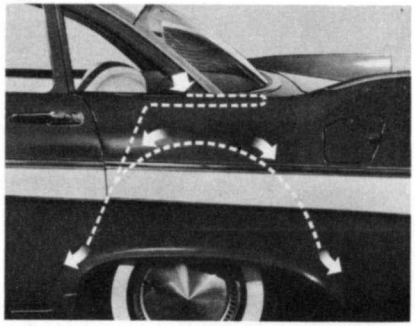


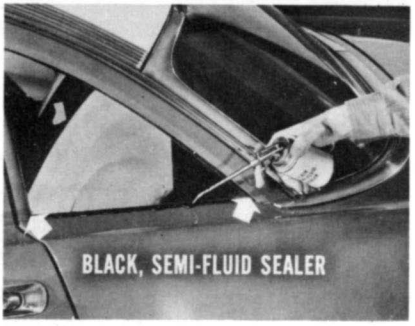
Sealing at the Shower Curtain. If you notice water getting into the rear compartment next to the door lock pillar, remove the rear quarter trim panel. Cut away a vertical section of the shower curtain where it covers a row of openings next to the lock pillar. Apply strips of pressure-sensitive tape over the holes and under the top part of the shower curtain. Apply a strip of pressure-sensitive tape over the hole above the rear seat riser. Finally, secure the lower edge of the curtain with a strip of tape applied the full length of the lower edge of the quarter panel. Remember to pack body sealer in any holes or openings found in this general area.



SEDAN MODELS

Rear Quarter Window, Stationary Type. Leaks near the stationary rear quarter window may be traced to improper sealing between the lip of the weatherstrip and the outer reveal panels, or between the outer reveal panels and the body opening. Water entering here can get onto the package shelf, or drain down on the rear wheelhouse and be deflected under the rear seat, or into the luggage compartment.

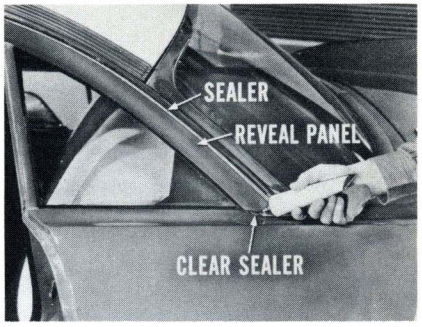




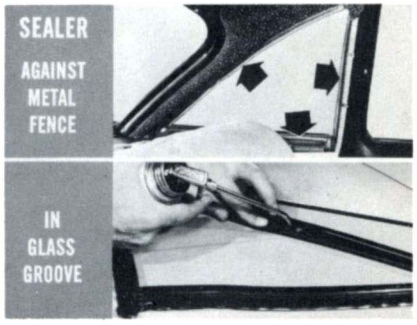
The first step in correcting this condition is to use a gun to apply black semi-fluid sealer between the weatherstrip lip and the reveal panels. Be particularly careful to add a little extra sealer at both lower corners.

Then, lay a bead of sealer in the seam of the rear door lock-pillar reveal panel. Also at the top and bottom of that panel.

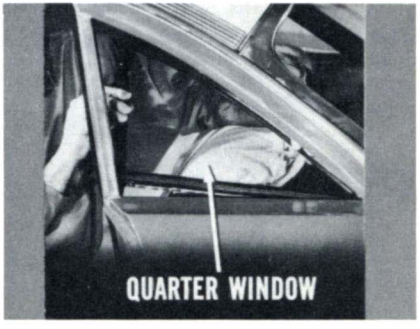
The next step is to lay a bead of sealer above the curved reveal panel. Paint the bead to match the finish, if necessary. Also, put clear sealer on the seam above the belt line. Water-test to see if this has stopped the leak. If it hasn't, you'll have to remove the window and weatherstrip for a more thorough sealing operation.



In stubborn cases of leakage at this area, remove the garnish molding. Take the quarter window out and separate it from its weatherstrip. Pack body sealer into all three corners of the opening. In addition, put sealer on the seam at the pillar, and against the metal fence, all around the opening. Put sealer in the glass groove of the weatherstrip, and install the weatherstrip on the glass. Put sealer in the fence groove of the weatherstrip.



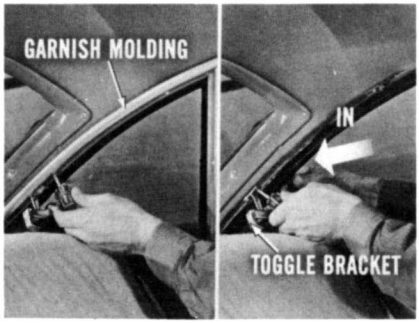
Next, install the quarter window and its sealed weatherstrip into the opening, and reinstall the inside garnish molding. Finally, run a bead of black semi-fluid sealer under the *outer lip* of the weatherstrip.



Rear Quarter Window, Pivoting Type. On rear quarter windows that pivot, there is no mechanical hinge. The weatherstrip itself does the hinging. A toggle lever and strap permits full opening or full closing of the window.

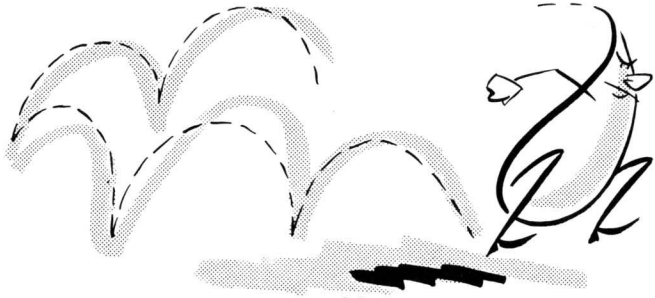
Leaks you might find at this pivoting window usually point to too little compression between the glass and weatherstrip, and between the weatherstrip and quarter panel.

So, to increase compression on the pivoting type of window, first remove the aluminum garnish molding. Then, move the toggle bracket *in* toward the center of the body as far as possible, and retighten the screws securely. If you have to seal around the quarter window, force black semi-fluid sealer between the weatherstrip and body opening.



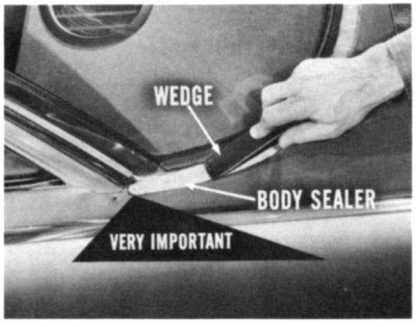
THE REAR WINDOW

At the rear window, water might enter at the bottom between the metal fence and rubber weatherstrip. From there, the water could run down the rear wheelhouse under the rear seat, or into the luggage compartment. If you do find a leak of this type, remove the lower outside molding so you can seal at both of the lower outer corners.

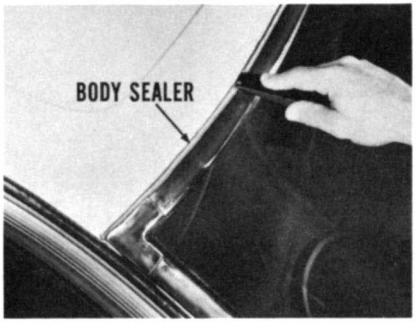


Once the molding's off, remove all the old sealer in the trough. With a damp cloth, wash off any soap solution used during installation of the rear window. You see, sealer won't stick to a soapy surface.

Use a wedge, or clothespin to pack body sealer smoothly against the weatherstrip lip. Also, pack sealer in the openings at the lower end of the drip molding where it joins the roof rail and quarter panel. This is very important. Plug the molding screw holes, and test for leaks. Finally, reinstall the moldings, retaining screws, and nuts. Put balls of sealer on the nuts in the luggage compartment. Besides that, use sealer to cover the lower molding screws at the sides of the rear window.

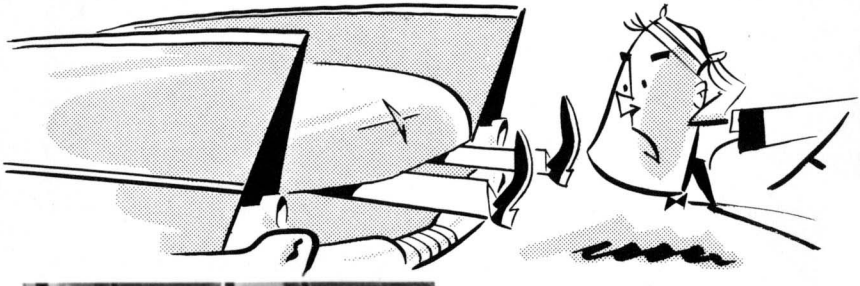


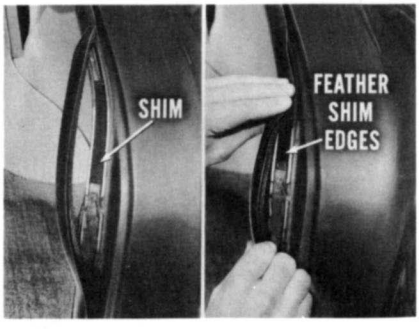
If water was detected as getting between the metal fence and upper part of the weatherstrip, put body sealer or cord-type sealer in the channel above the molding. Pack it in place with the wedge, or clothespin, and then paint it to match the finish.



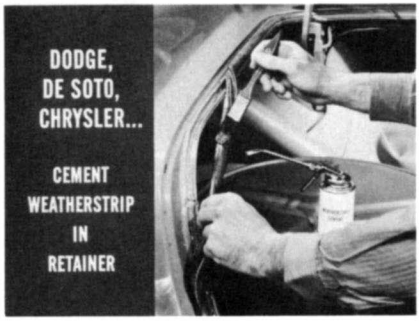
THE REAR DECK LID

When you go about checking for leaks at the rear deck lid, remember to make sure the deck lid fits properly first. Water-test the lid with the help of a man inside who can use a flashlight to see where water might be entering the luggage compartment, at a low spot on the weatherstrip, for instance.



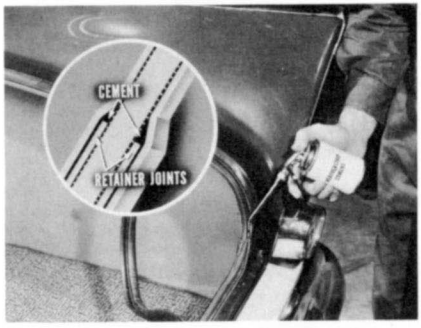


If you do find a low spot letting water get past, remove the weatherstrip by pulling it out of the retainer. Shim up the low point and feather-edge the ends of the shim before you cement it in place so there won't be any bulging of the strip.

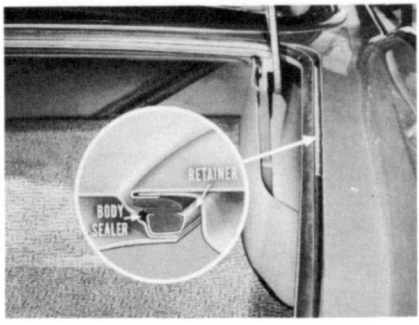


On Dodge, De Soto and Chrysler cars, you can cement the weatherstrip in place in the retainer. Use very thin coats. Let them get almost dry, and then firmly press the strip into the retainer.

On Plymouth cars, the weatherstrip is simply locked in the retainer and isn't cemented. But on all cars, be sure to use plenty of cement at the retainer joints. Here's one place that can stand a generous amount of cement. Just let it fill up any open cracks. Incidentally, don't use body sealer at these retainer joints. Sealer will affect the sticking-power of cement and the weatherstrip might loosen up.



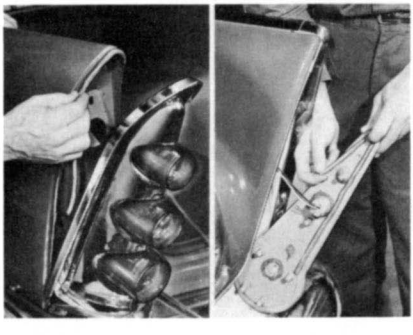
Now, if water gets between the weatherstrip retainer and body panel, body sealer will make an effective seal. Pack it in between the retainer and the body.



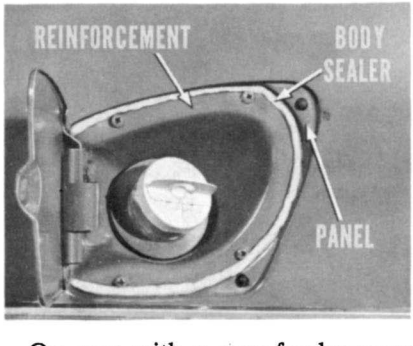
MISCELLANEOUS POINTS

You might find it necessary to apply balls of body sealer at the side molding clips and studs on the rear fender and quarter panels. In addition, be sure to seal at the medallion and name studs, and at the license plate frame and name studs.

On Plymouth models, you may have to remove the rear fender fin moldings so you can seal the holes and seams under them. After reinstalling the fin moldings, put balls of sealer on each stud nut. You get at these points from inside the luggage compartment.



On some models, you might have to remove the rear fender moldings to seal up any seams or openings. On Plymouth cars, again, it may sometimes be necessary to remove the taillamp base and put a bead of sealer between the base and fender. Reinstall the base and water-test again.



Another possible source of water leakage is at the joint between the gas tank filler tube opening flange reinforcement and the rear quarter panel. Loosen the four screws and then run a bead of sealer in the seam. Tighten the screws and put balls of body sealer over the nuts on the inside.

On cars with a rear-fender-mounted radio antenna, the gasket at the antenna base should be sealed with body sealer—at top and bottom. The gasket at the top of the mounting tube should also be sealed at the top and bottom. In addition, be sure to tighten the nut.

SUMMARY

We have attempted to cover all points at which water leaks have been known to have occurred. Naturally, they add up to quite a number. But, when you consider that no one car will have more than one or two of the conditions described, and that the vast majority of cars will have none of them, the subject of water leaks becomes no more of a problem than any other condition.

Most of the corrections described require only a very few minutes to complete. Proper diagnosis to determine the source of the leak, and then a careful application of the corrective procedure will result in a neat and effective job that will please the owner. Careful attention to detail is the key to success in this type of work.

RECORD YOUR ANSWERS TO THESE QUESTIONS ON QUESTIONNAIRE NO. 111

Inspect the fit of doors and deck lid and correct when necessary before you do any body sealing.	RIGHT	1	WRONG
At doors and deck lid, you can test for leaks by using carpenter's chalk, fine dusting powder, or water.	RIGHT	2	WRONG
After water-testing, use compressed air and heat lamps to dry the area before attempting any sealing operation.	RIGHT	3	WRONG
Water entering the fresh-air grille in the cowl panel can't leak into the driving compartment.	RIGHT	4	WRONG
Always remove windshield outside moldings when correcting a source of leakage between the metal fence and weatherstrip.	RIGHT	5	WRONG
Between the windshield weatherstrip lip and glass, use only the approved black weatherstrip adhesive applied with a gun.	RIGHT	6	WRONG
When installing a weatherstrip on a door, stretch it slightly to put it under slight tension.	RIGHT	7	WRONG
Leaks at stationary rear quarter windows can sometimes be corrected by applying black semi-fluid sealer between the weatherstrip lip and reveal panels.	RIGHT	8	WRONG
To increase compression at pivoting rear quarter windows, remove the aluminum garnish molding, and move the toggle bracket in toward body center and retighten the screws securely.	RIGHT	9	WRONG
One place to use plenty of cement is at the deck lid weatherstrip retainer joints.	RIGHT	10	WRONG

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