***An Air-Cooled Car!*** For years America has been asking, "When will automobile interiors be *cooled* for summer driving?" The answer is *NOW!* . . . in the 1940 Packard — the first motor car to offer complete, year-around ***Weather-Conditioning*** as a standard, extra-cost accessory installed at the factory.

***Quick Cooling!*** Packard ***Weather-Conditioner,*** when regulated for cooling, functions immediately when the car engine is started. It is useful and enjoyable for short trips as well as for long—and operates effectively at all car speeds.

***Heat for Winter!*** Giving year-around comfort, the Packard ***Weather-Conditioner*** circulates an abundance of clean, heated air throughout the car for winter driving. A simple adjustment of damper controls located in the trunk compartment converts the ***Weather-Conditioner*** from a cooling system to a heating system. As with cooled air, the heated air is directed through the same grille, to follow the contours of the car roof and is distributed throughout the interior of the car.

***Closed Window Comfort!*** In summer, as well as in winter, passengers may ride in comfort with all windows closed. Dirt, dust and insects need no longer be a nuisance in summer. Air is effectively filtered as it passes through the ***Weather-Conditioner*** and pollen, as well as dust, is removed—a priceless boon for hay fever victims.

***Simple to Operate!*** No mechanical knowledge is needed to operate the Packard ***Weather-Conditioner.*** A handy switch on the dash regulates the speed of the blower to supply the desired volume of warm air in winter or cool air in summer. The damper controls in the trunk compartment, which govern the operation of the system for cooling or heating, are clearly marked and easily adjusted.

*for*

**1940**

**PACKARD**

**LEADS AGAIN IN PROVIDING PASSENGER COMFORT**

# THE COOLING SYSTEM IN OPERATION

## HOW AIR IS COOLED

Air in the car is cooled by the Packard ***Weather-Conditioner*** in the same way that air is cooled in an ordinary electric household refrigerator. It is simply a matter of circulating air over coils which contain a refrigerant. The refrigerant absorbs heat from the coils and the coils absorb heat from the air—thus *cooling* the air. Operation is automatic and positive.

Because the interior of a car is more spacious than the average refrigerator, the ***Weather-Conditioner*** differs from a refrigerator in one important respect! It *forces* circulation of air to assure cooling for the whole car interior. The efficiency and cooling capacity of the ***Weather-Conditioner*** cooling system are several times greater than in the average household refrigerator.

## PRACTICAL REFRIGERATION

The refrigerant used in the ***Weather-Conditioner*** is similar to that generally used in electric, household refrigerators. It has been thoroughly proved in this widespread kitchen use.

When the cooling system is operating, this refrigerant is compressed under a pressure of 180 pounds per square inch by the compressor. Under this pressure it enters the condenser which is located in the current of cooling outside air created by the engine fan. In the condenser the gas loses its heat and becomes a liquid.

## HEAT ABSORBED FROM AIR

Still under pressure, the refrigerant now in liquid form, is forced through a tube toward the rear of the car to the *receiver* which acts as a reservoir for the refrigerant.

From the receiver the refrigerant is forced under great pressure through a smaller tube and through an expansion valve into the cooling coils. Here it expands and again becomes a gas.

As it changes from a liquid to a gas it absorbs heat from the coils, which causes the coils to absorb heat from the surrounding air and the air is cooled. Refrigerant then returns to compressor and cycle starts again.

## HOW COOLED AIR IS CIRCULATED

The air which is cooled as it passes over the cooling coils is pulled through a duct and circulated throughout the car by an electrically-driven sirocco-type blower located behind the rear seat. The cooled air follows the contour of the roof toward the front of the car. Because cold air is heavier than warm air, it descends toward the floor when it reaches the front of the car and is pulled back under the rear seat into the cooling system again - - by the suction action of the blower. In this way, a constant flow of cooling air is kept in circulation.

**IN SUMMER:** Air is *cooled, dehumidified, filtered* and *circulated* throughout car.

### *How To Regulate System For Cooling:*

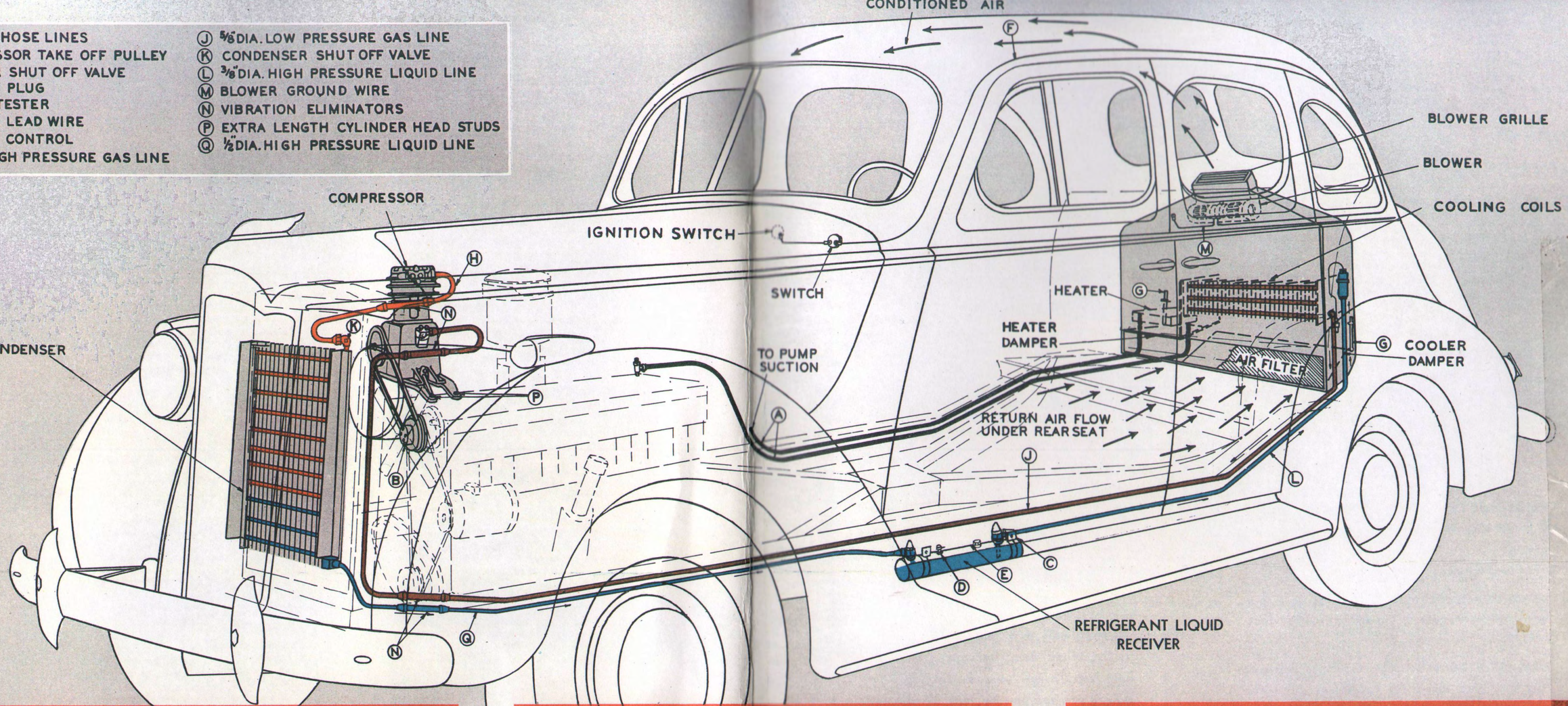
The right-hand damper lever (located in trunk compartment) should be adjusted to its full *up* position where it will stay locked in place. This opens the damper on the cooling duct. The left-hand damper lever should be adjusted to its *down* position where it will stay locked in place. This closes the damper on the heating duct. If cooling is to be used continuously —through summer months, for example—it is suggested that the hot water line to the heating unit be shut off by closing the two shut-off cocks mounted on the engine block.

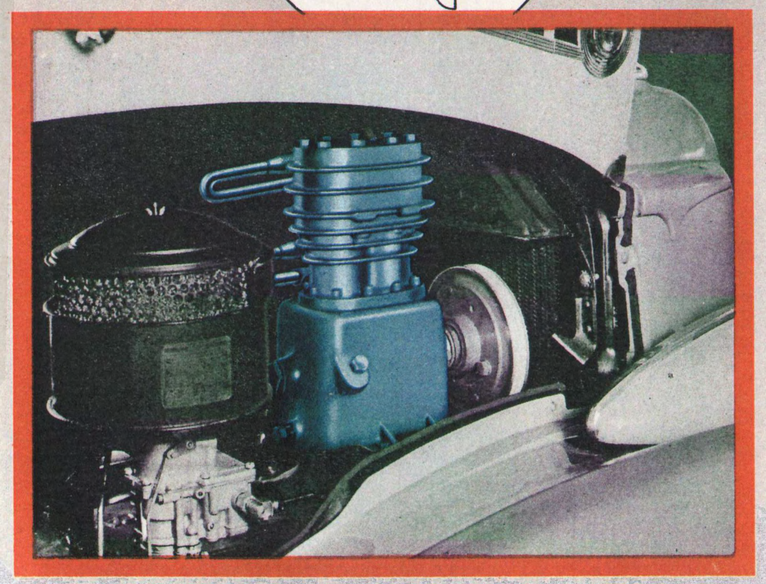
**IN WINTER:** Air is *heated, filtered* and *circulated* throughout car.

### *How To Regulate System For Heating:*

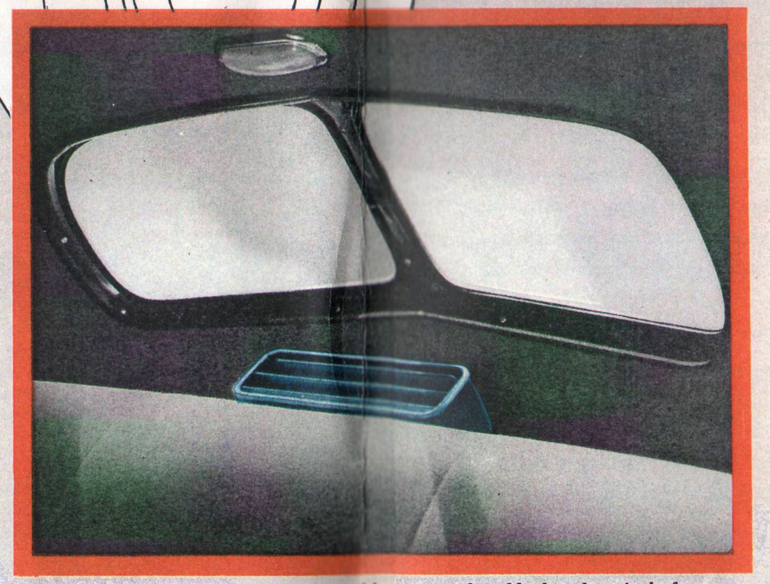
For heating, the position of the damper levers as described for cooling should be reversed. That is, the right-hand damper lever should be adjusted to the *down* position and the left-hand damper lever should be adjusted to the *up* position. This eliminates the cooling operation and puts the heating system into effect. When heating is to be used continuously for a long period—through winter months, for example—it is suggested that the compressor drive-belt be removed so that the compressor does not operate when the engine is running.

Ⓐ HEATER HOSE LINES
Ⓑ COMPRESSOR TAKE OFF PULLEY
Ⓒ RECEIVER SHUT OFF VALVE
Ⓓ FUSIBLE PLUG
Ⓔ LIQUID TESTER
Ⓕ BLOWER LEAD WIRE
Ⓖ DAMPER CONTROL
Ⓗ 1/2" DIA. HIGH PRESSURE GAS LINE
Ⓙ 5/8" DIA. LOW PRESSURE GAS LINE
Ⓚ CONDENSER SHUT OFF VALVE
Ⓛ 3/8" DIA. HIGH PRESSURE LIQUID LINE
Ⓜ BLOWER GROUND WIRE
Ⓝ VIBRATION ELIMINATORS
Ⓟ EXTRA LENGTH CYLINDER HEAD STUDS
Ⓠ 1/2" DIA. HIGH PRESSURE LIQUID LINE

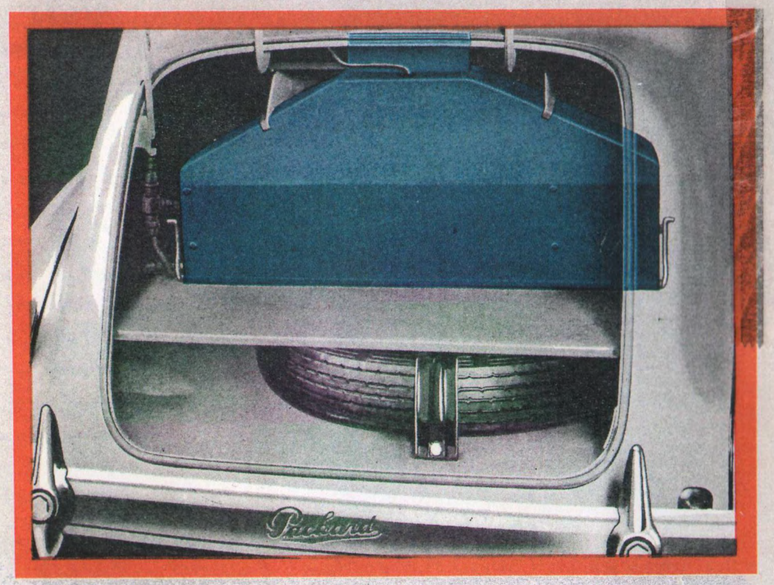


*Months of experimental research produced this compressor—with triple the efficiency of average household units. Small in size, large in capacity, it operates effectively at all engine speeds.*



*An electrically-driven, sirocco-type blower, regulated by handy switch, forces conditioned air through this outlet grille. Speed of the blower, which controls volume of air, is regulated by a dial rheostat on instrument panel.*




*The evaporator assembly, which includes filter, cooling coils, heater, duct and blower, occupies no more room in the trunk compartment than a large traveling case—10" . . . leaves plenty of room for luggage.*

*Complete, Year-Around*

# WEATHER-CONDITIONING

*Pioneered by Packard*

*A standard extra-cost accessory*

## QUICK FACTS:

**1** **YEAR-AROUND COMFORT**—The Packard *Weather-Conditioner* provides either heating or cooling, according to the season. *Air is cooled by a mechanical refrigeration process.*

**2** **COOLING PRINCIPLE**—the same as in household refrigerators. Practical, trouble-free, simple.

**3** **COOLING EFFECTIVENESS**—Cooling plants of this type are rated in accordance with the equivalent cooling effect of a quantity of ice used for the same purpose in twenty-four hours. The Packard system has a cooling capacity at higher car speeds equivalent to the cooling effect of placing one and one-half to two tons of ice in the car body to be melted in twenty-four hours, which indicates its ability to cool at lower car speeds.

**4** **DEHUMIDIFICATION**—Air is dehumidified as it is cooled — for comfort on humid days, rain or shine.

**5** **HEATING PRINCIPLE**—Air is heated by passing through a core in which hot water is circulated. Heating core is in different part of same housing as cooling coils.

**6** **FILTERING**—Air is filtered as it passes through the unit which keeps it clean, and low in pollen content. Filter operates with either heating or cooling.

**7** **SIMPLE ADJUSTMENT**—To change from heating to cooling, or cooling to heating, it is necessary only to adjust damper control levers in the trunk compartment. This adjustment takes only a few seconds. During the winter season the compressor may be disconnected.

**8** **INSULATION**—Every Packard equipped with *Weather-Conditioning* has additional special body insulation to help maintain desired interior temperatures.

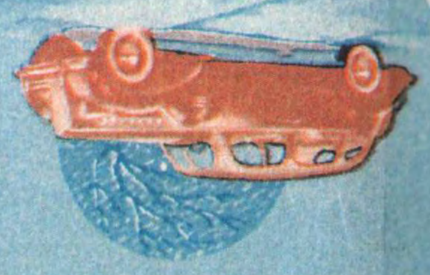
**9** **FACTORY INSTALLATION** — *Weather-Conditioning* is installed at the factory, while the car is in process, as a standard, extra-cost accessory. It is available on enclosed models of the sedan body type.

**10** **AN EXCLUSIVE SYSTEM** — *Weather-Conditioning* is not to be confused with common types of heating, "conditioned air" or ventilating systems. It is the *only* system now available as a standard accessory which provides refrigerated cooling as well as heating.

**PACKARD MOTOR CAR COMPANY • DETROIT, MICHIGAN**

**ASK THE MAN WHO OWNS ONE**

*Here's how . . .*



**. . . WARM**
**WHEN IT'S COLD?**

*. . . cool*
**WHEN IT'S HOT?**

***Like to be . . .***

## *The More You Look* . . . THE MORE YOU'LL WANT A PACKARD

**YEAR-AROUND WEATHER-CONDITIONING**—Everybody talks about the weather . . . now Packard has *done something* about it! By offering ***Weather-Conditioning*** as a standard, factory-installed, extra-cost accessory, Packard becomes the first motor car to offer year-around comfort, regardless of outside weather conditions. Read about it in this folder.

**NEW SPEED-STREAM STYLING** — With Packard long acclaimed as "America's most beautiful car," the 1940 model is far more deserving of honors for beauty than its stunning predecessors. A narrower, tapered radiator, trim chromium cooling grilles and a longer, more graceful hood are a few of the new design features which glorify the most famous style-lines in motordom.

**SAFER NIGHT DRIVING**—New Sealed-Beam headlamps on the 1940 Packard give 50 per cent more illumination than previous lights . . . make driving easier and safer for other drivers as well as for you—by reducing glare when passing.

**A GOOD ROADS MOVEMENT ON 4 WHEELS**—Improved for 1940, Packard's famous and exclusive Safe-T-fleX spring suspension gives the mellowest ride in motoring—the ride that's the envy of the automotive industry! Try it on the roughest road you know . . . you'll think the road's been paved since your last trip!

**MORE HORSEPOWER PER POUND OF CAR WEIGHT**—Behind the wheel of a 1940 Packard awaits motor car performance that's a brand-new experience. When the light turns green, you'll leave where you've been like a greyhound after a rabbit—and no matter how far or where you go, you'll find every mile filled with exciting pleasure. Once you've driven this new Packard you'll never want to be without it.

**MORE CAR FOR YOUR MONEY**—At their new low prices the 1940 Packards offer you more value per pound, per inch and per horsepower than your motor car dollar could ever buy before. 4 times out of 5, the car traded in covers the low down-payment on a Packard . . . and the smallness of the difference between monthly payments on a Packard and on smaller cars will be a pleasant surprise.

**TOM MILAM**

**511 Alma St.** **Palo Alto, Calif.**

**Phone 24121**