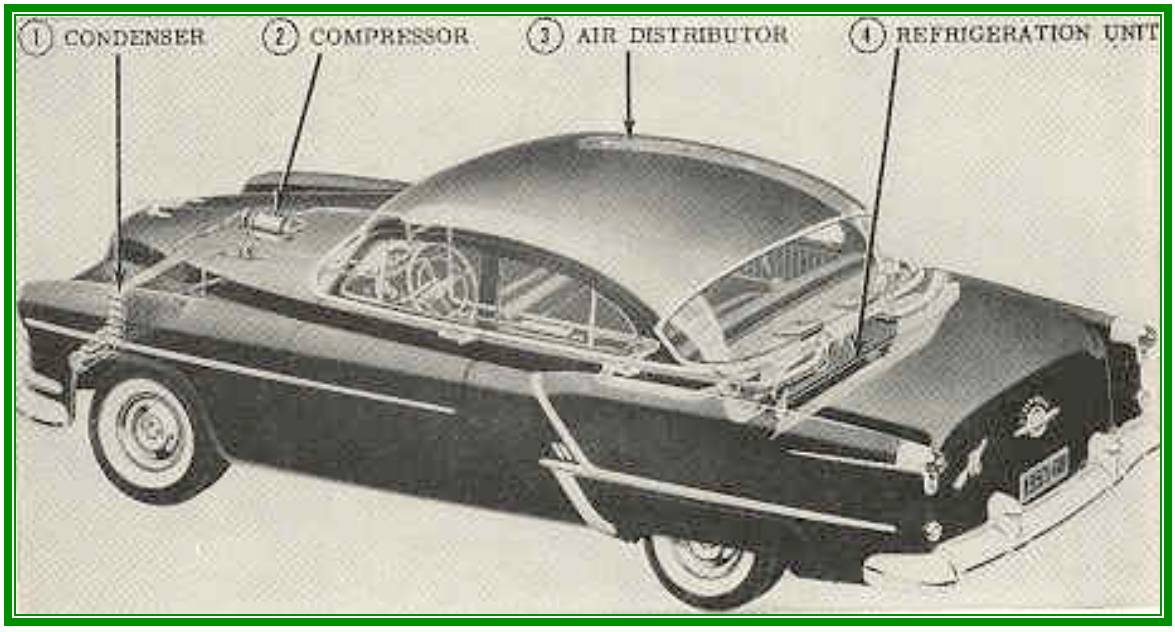
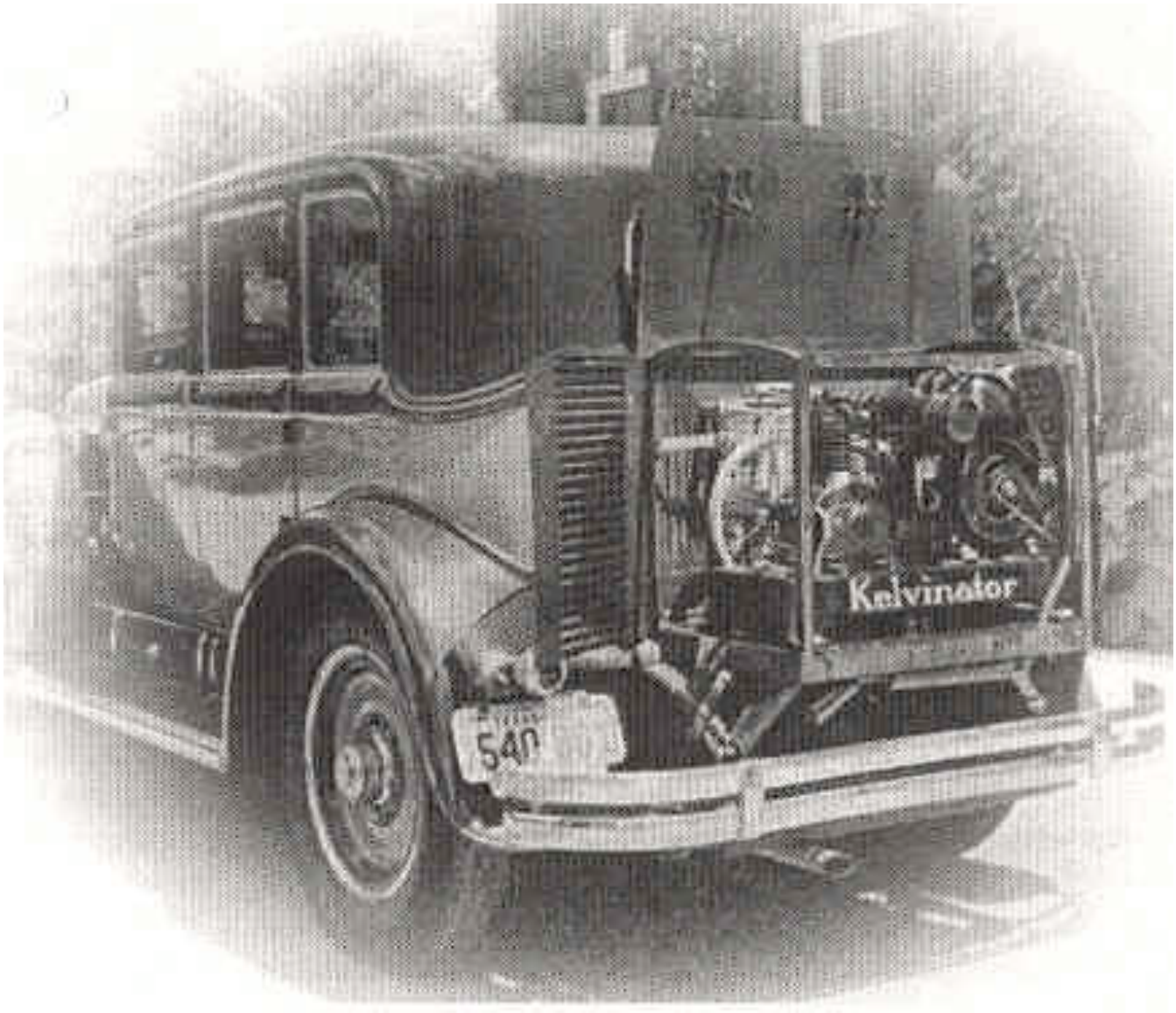
AUTOMOBILE AIR CONDITIONING, HEATING & VENTILATION USA, 1930's-1950's



General Motors, Oldsmobile air conditioning system (1950's)

The following pictures are taken from "Riding in Comfort: Part II," Mohinder S Bhatti, ASHRAE Journal, September 1999 and Section 50: "Passenger Automobiles" Air Conditioning Refrigerating Data Book, Applications, 1954-55, ASRE



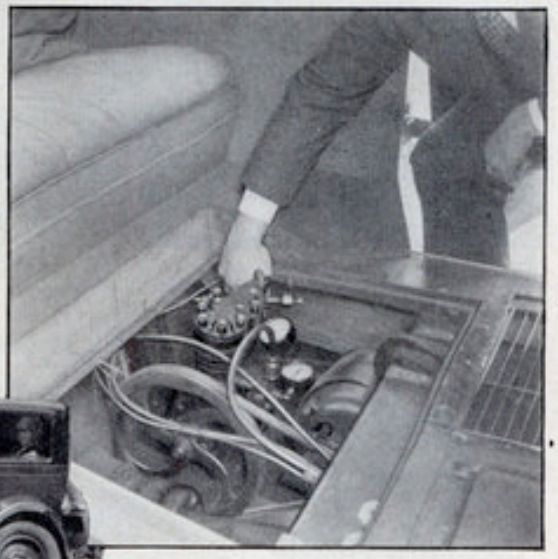
The first car air conditioned by C & C Kelvinator, Houston 1930

1939 Cadillac

First Air-Conditioned Auto

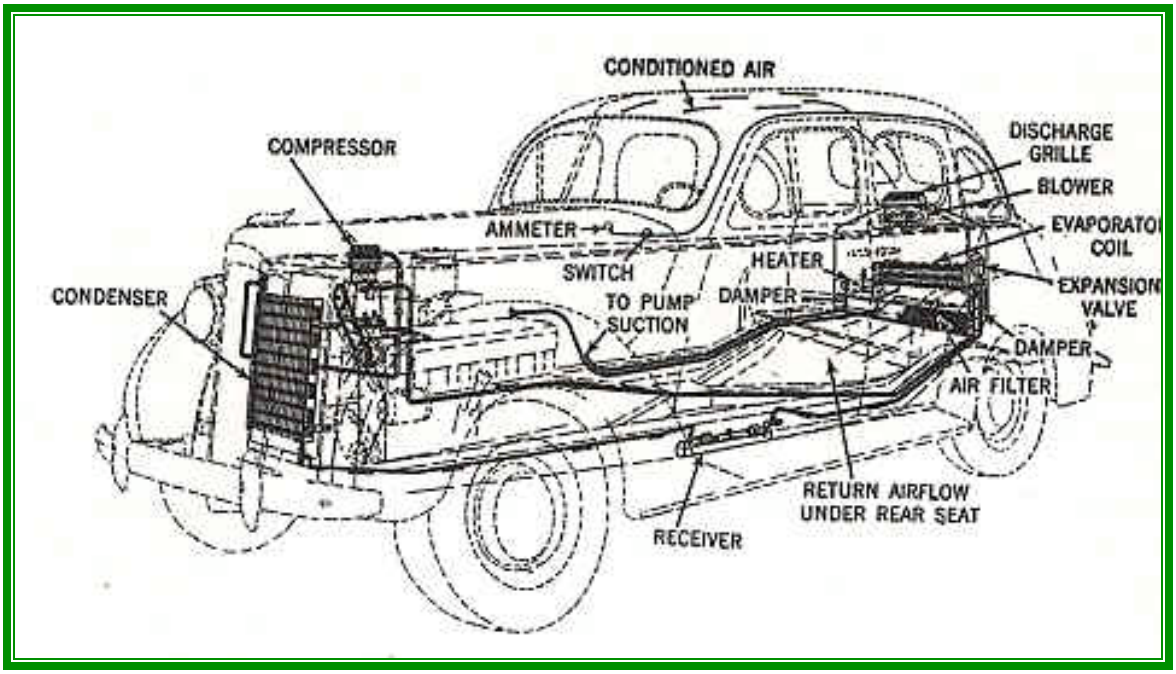
Through the grills seen above, fresh air enters and old air is expelled in the first air-conditioned car seen at right

With all windows sealed, and a stream of fresh, filtered air at just the right temperature entering through a special duct, the world's first air-conditioned automobile recently made its debut in a successful test run on New York City streets. It demonstrated a remarkable new system that promises all-the-year-round driving comfort, regardless of summer heat or winter cold. Air is drawn into this system through a concealed inlet, filtered to remove dirt and dust, blown over coils that chill or warm it as required, and admitted through grills to the car's interior. Cooling is effected by a refrigerating compressor beneath the floor boards, resembling that of an electric refrigerator, which takes its power from the car's generator or may be run from a special battery. To heat the air, hot water is circulated through the coils from the car's radiator. The air-conditioning equipment may be turned on or off at will from the instrument board or rear seat. Since the windows of the car are kept closed, outside noise is excluded. Any closed car, new or old, may have the air-conditioning system installed, according to the New York concern sponsoring the invention, which expects to manufacture it in the near future at a sufficiently moderate cost to permit its use even in low-priced cars. The makers foresee the car of the future provided with air conditioning as standard equipment. In that event many of the inconveniences encountered at present will be removed, along with a decrease in the danger of suffering carbon-monoxide poisoning.

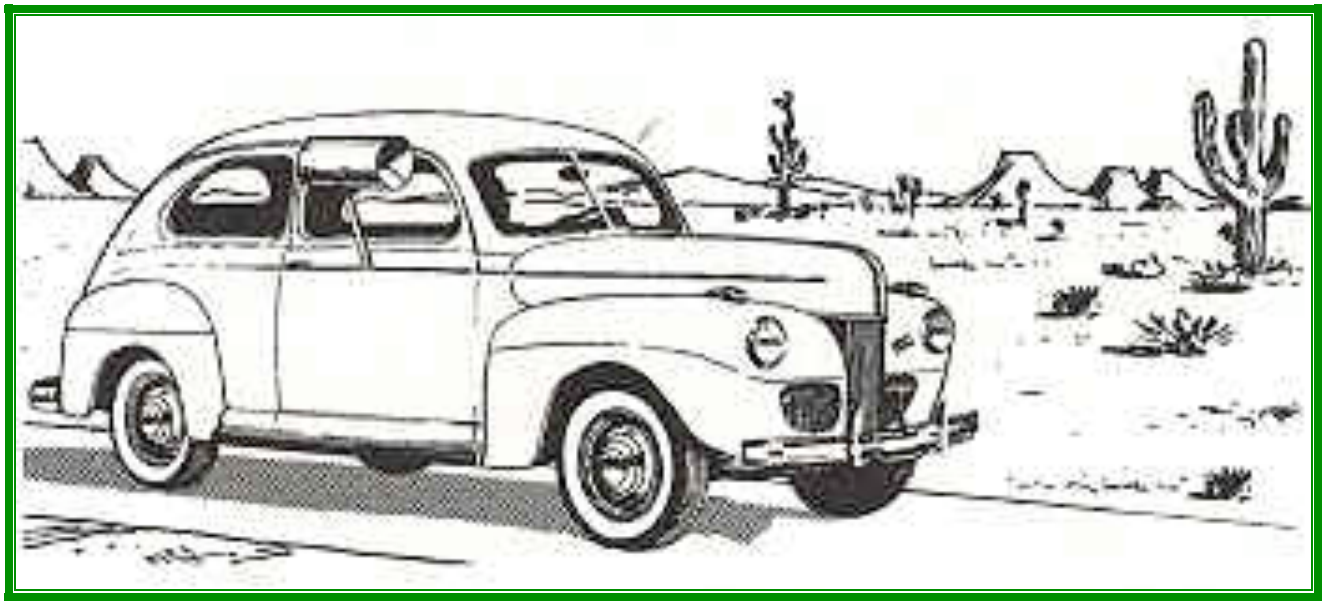


Beneath the floor boards in the auto's rear compartment is placed this refrigerating compressor to chill the air drawn into the car and make driving comfortable on hot days

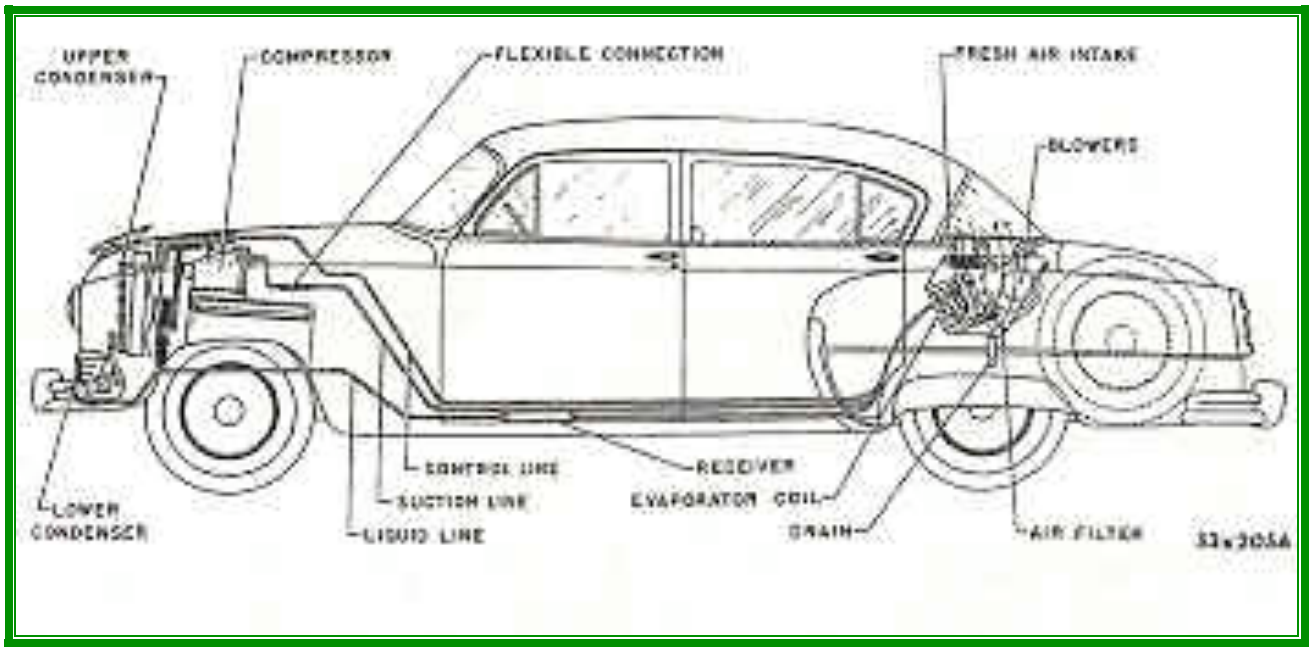
Popular Mechanix 1933



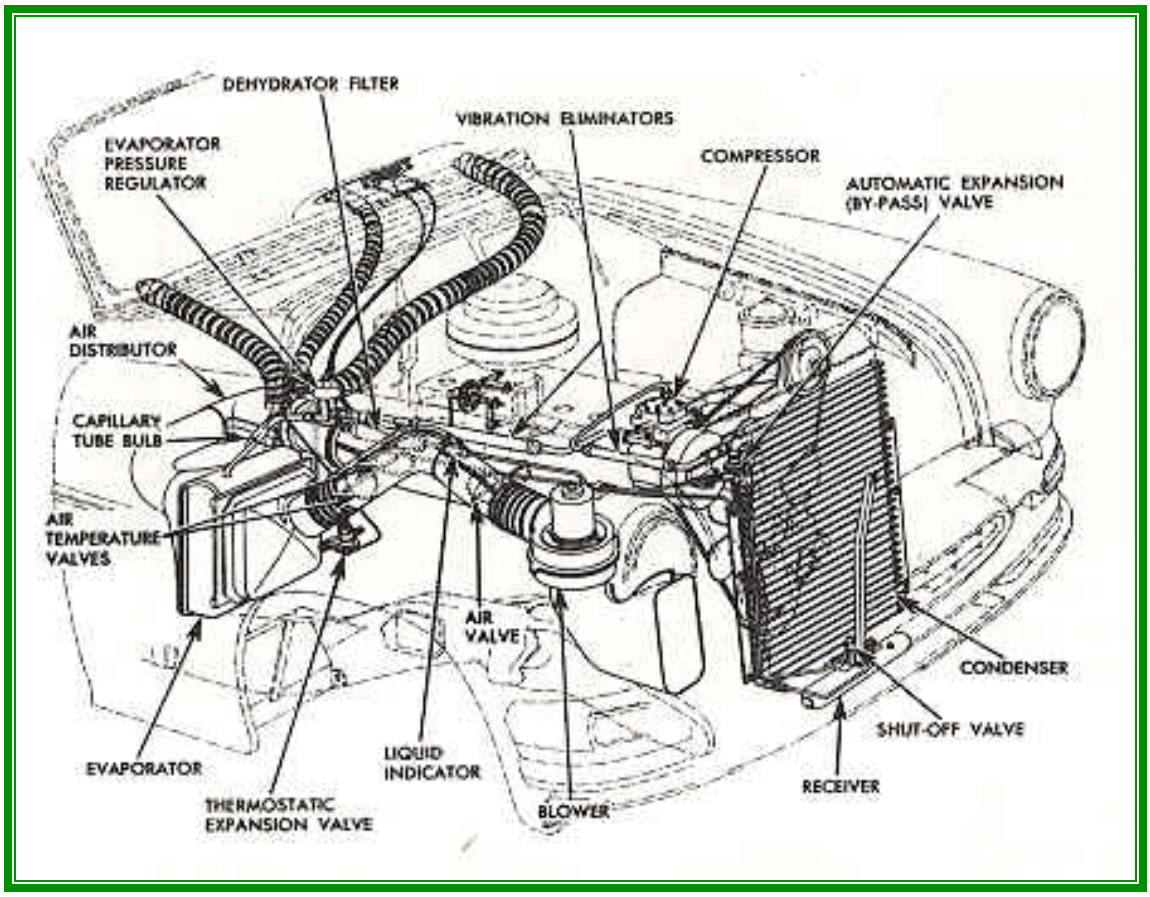
1939 Air conditioning system developed by Packard



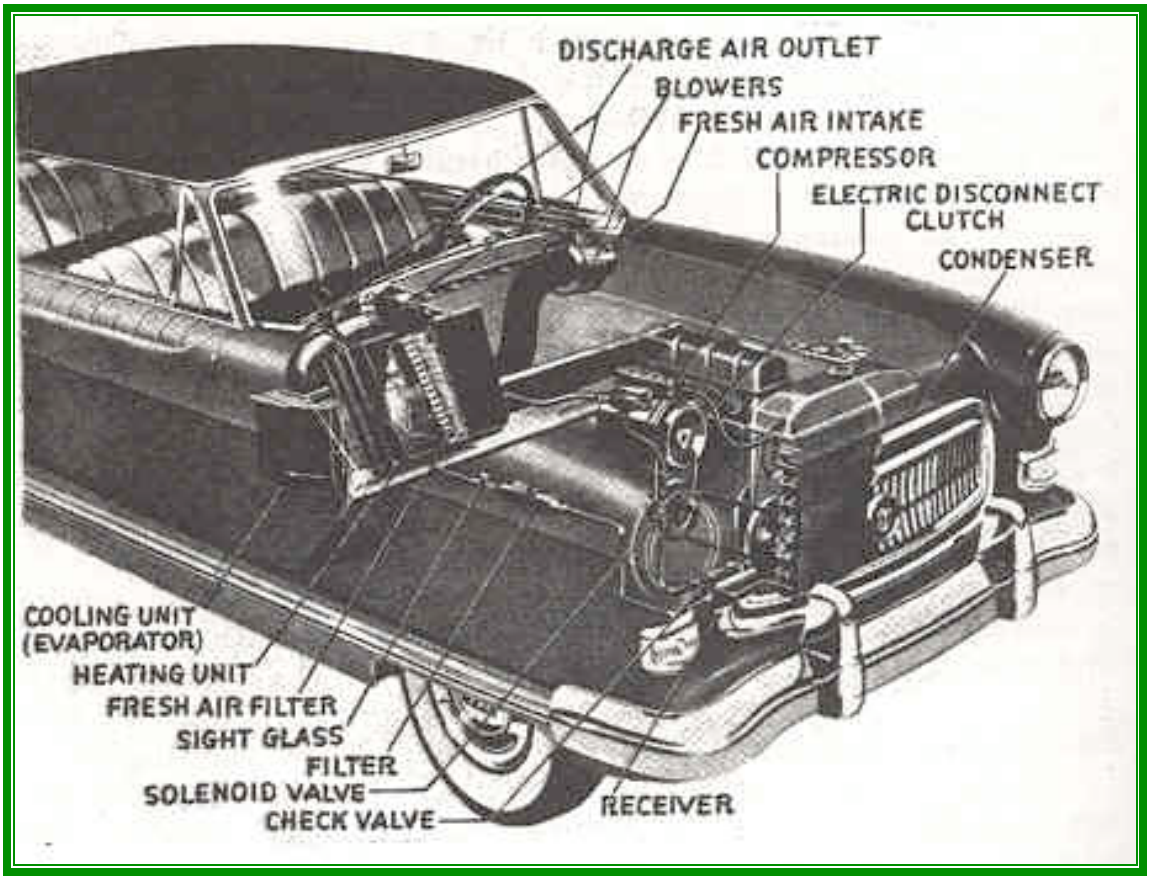
The 1940's and 50's saw trials of window-mounted evaporative coolers



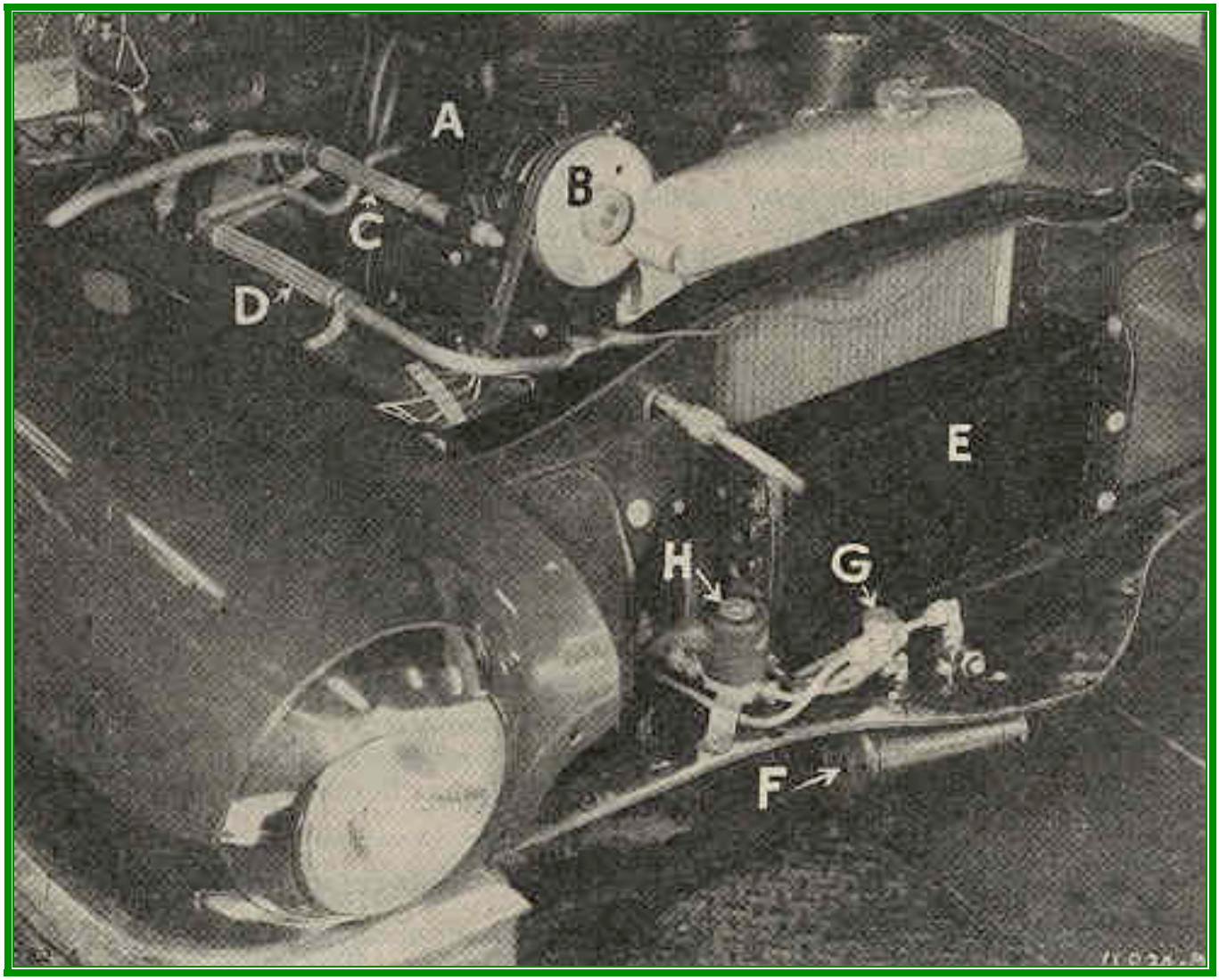
1953 Air conditioning system developed by Chrysler Airtemp



1953 System developed by Harrison Radiator and Pontiac Divisions of General Motors

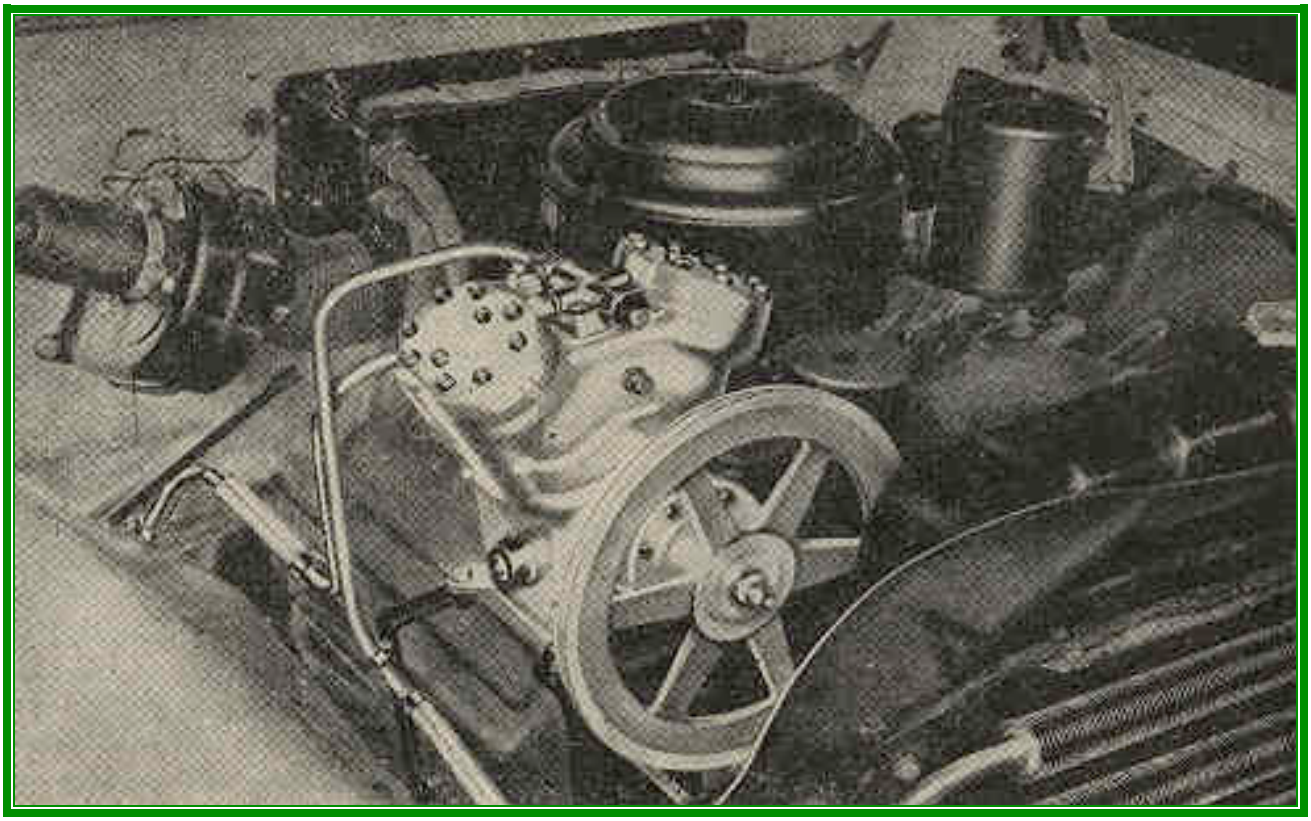


1954 Nash "All Weather Eye" system

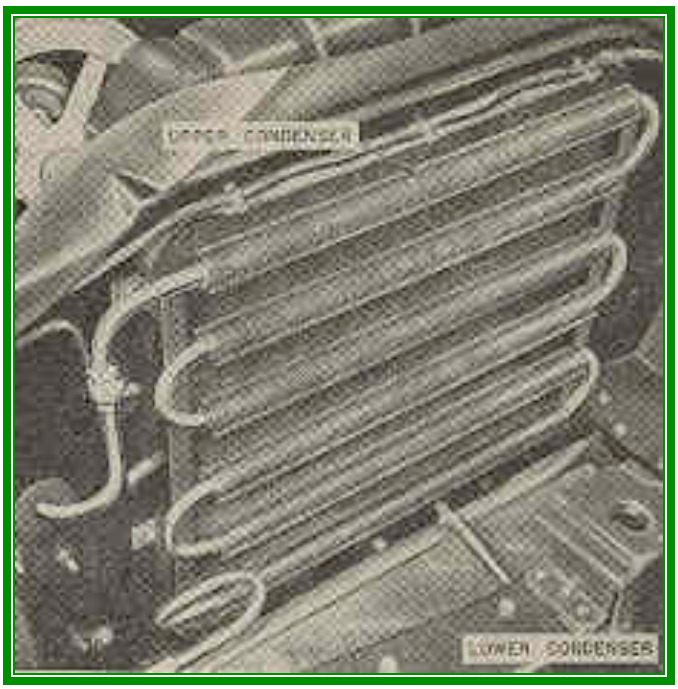


Cadillac: General Motors-Frigidaire Rotary Compressor Installation

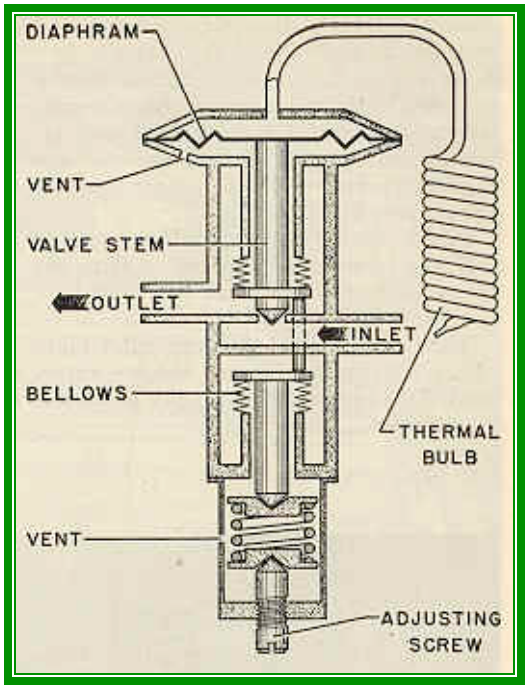
A-Compressor
B-Drive pulley and belts
C-Flexible connector in suction line
D-Flexible connector in discharge line
E-Refrigerant condenser
F-Refrigerant receiver
G-Receiver check valve
H-Metering solenoid



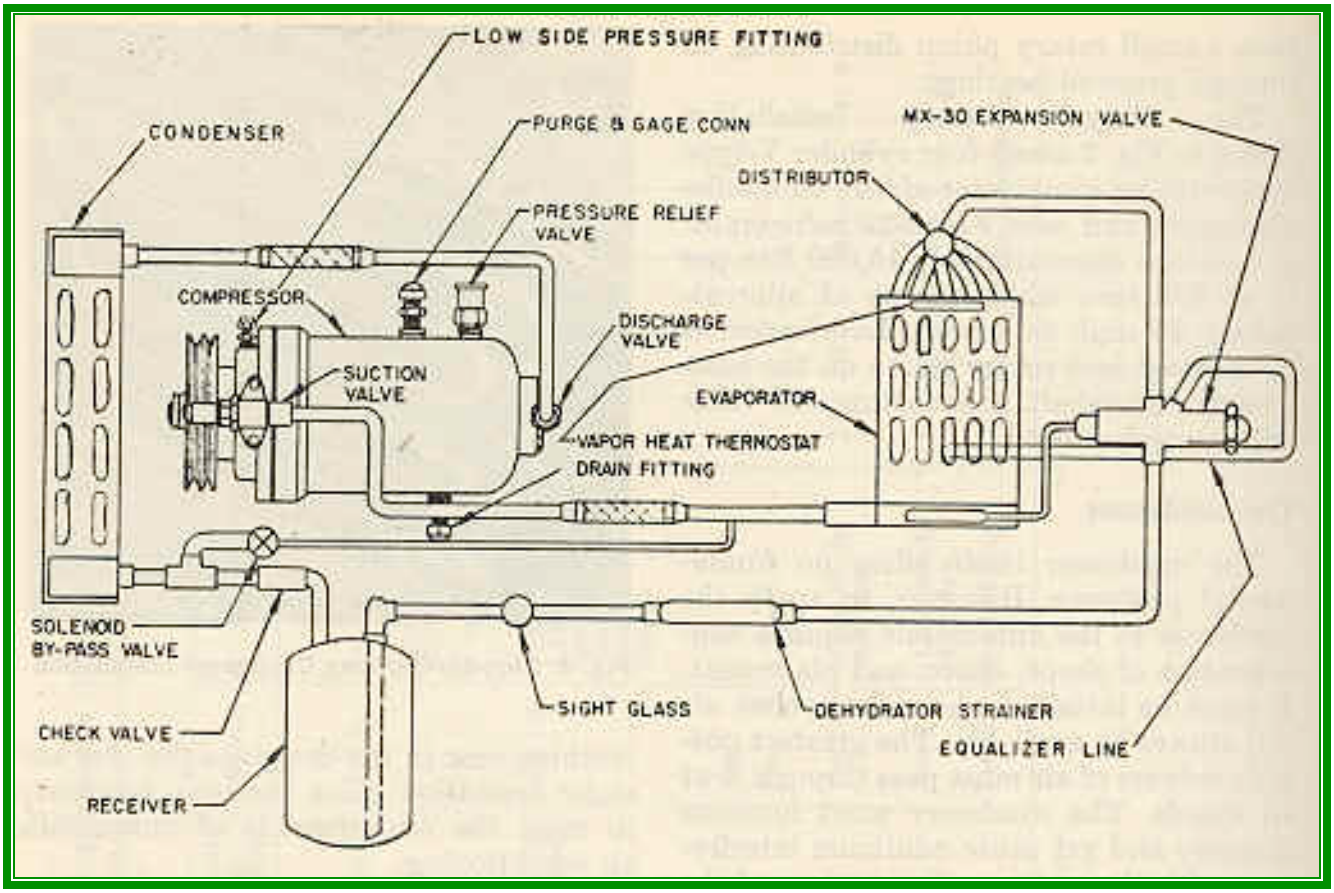
Chrysler-Airtemp Reciprocating Compressor Installation



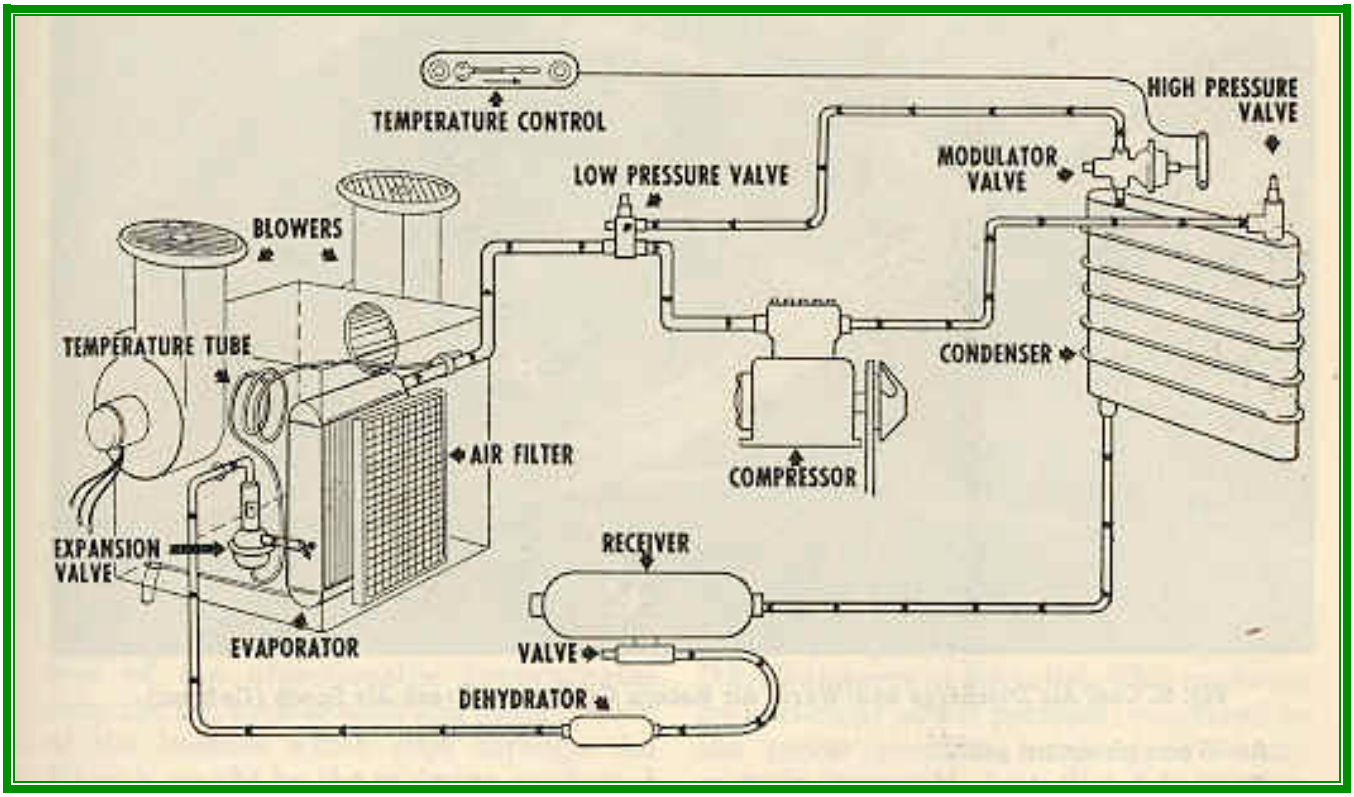
Chrysler Airtemp Condenser Installation



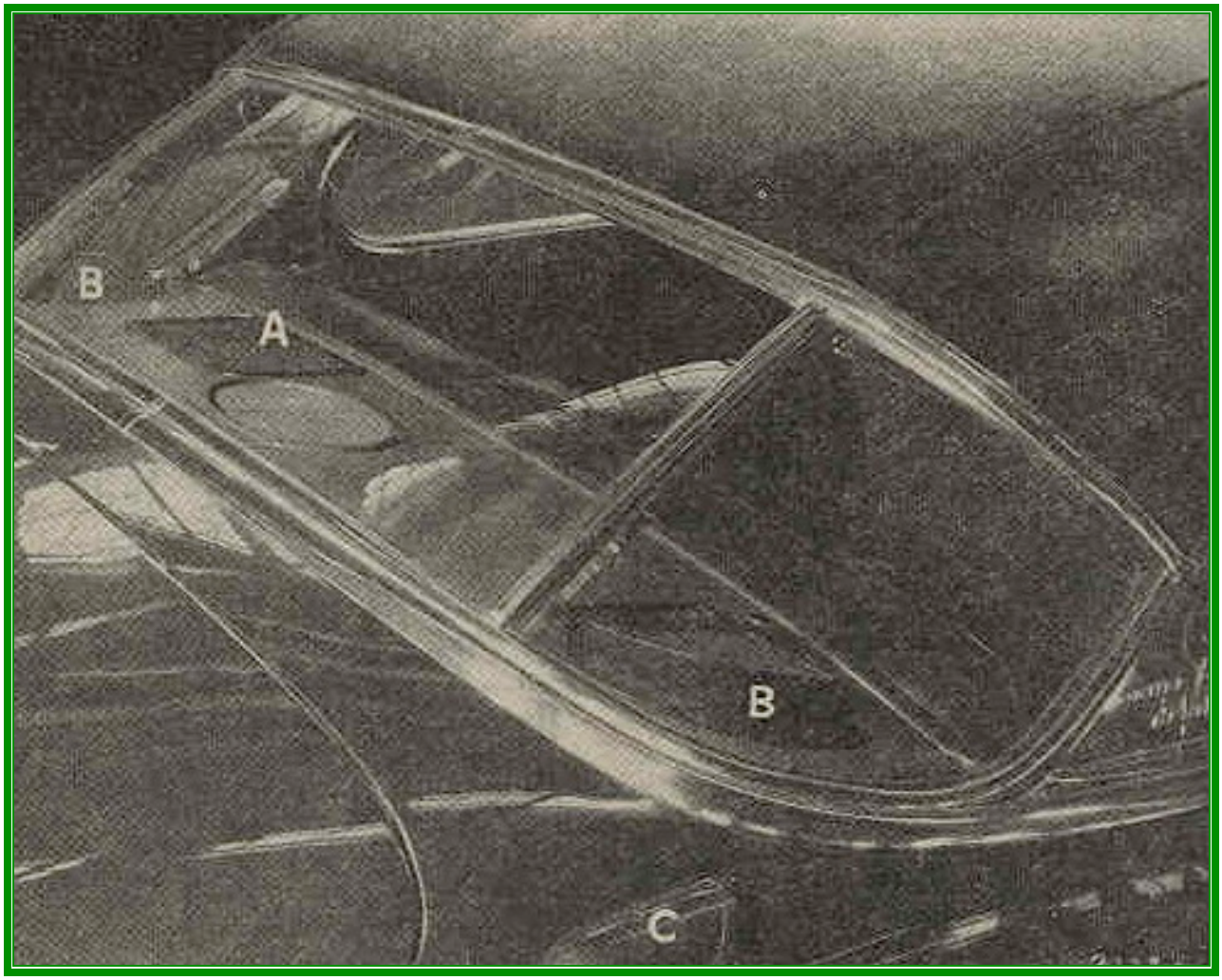
Automatic Bypass Valve, Chrysler Air Temp



General Motors Frigidaire System

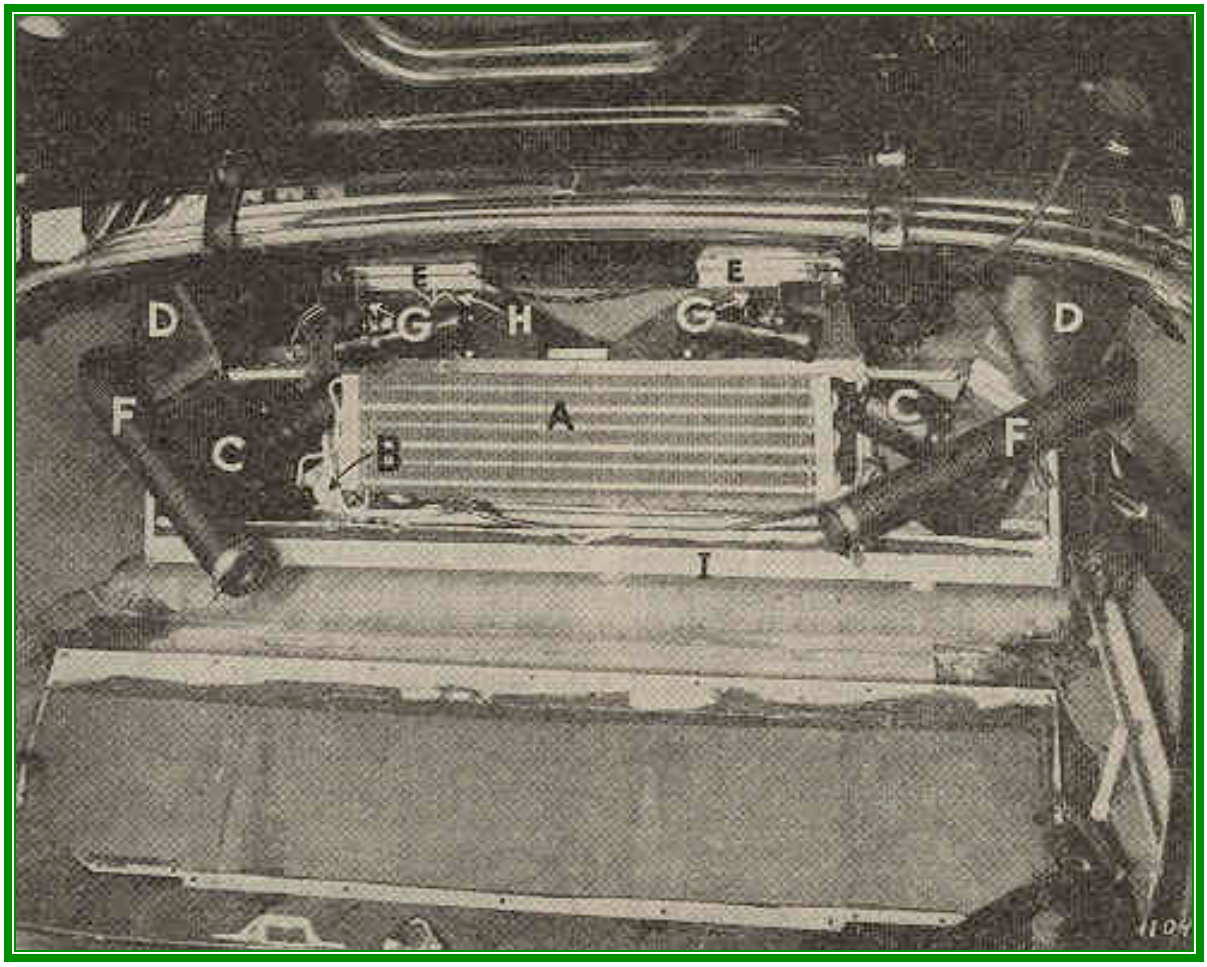


Lincoln Mercury System



Cadillac: Cool Air Discharge & Warm Air Return Grilles and Fresh Air Scoop

A-Warm air return grille
B-Cooled air discharge outlets
(Air distribution ducts are attached to these when used)
C-Fresh air scoop



Buick: Cooling Unit Assembly with Casing Removed

A-Evaporator
B-Expansion valve
C-Fans and fan motors
D-Cool air supply ducts to car
E-Warm air returns from car and filters
F-Fresh air inlets
G-Fresh air volume controls
H-Thermostat behind left fresh air inlet
I-Condenser drain pan

Table 1. Comparative Data Auto Air Conditioning Systems (Nov., 1953)

Make	Installed[1]	Compressors										Evaporators				Condenser	
		Type	Make	Displacement cu in./rev	Refrigerant	Wgt lbs	Capacity Control	Air Distribution[3]	Fresh Air Supplied	Filters[4]	System Capacity	Fans	Cfm	Sq ft	Wgt lbs	Sq ft	Wgt lbs
ARA, Ft. Worth,* Texas	BC	Recip.	G.E.								2 Tons*						
Chrysler—Airtemp	A	Recip. 4 cyl. V.	Tecumseh	9.74	F-22	75 aprox	Yes[2]	B	Yes 25%	Yes T	15,000 Btu/hr 825 compr. rpm @ approx 25 mph	2	200 300 400	153	70	114[2]	30
Frigikar* Dallas, Texas	BC	Recip. 2 cyl.	Servel								2 Tons*						
General Motors—Frigidaire	A	Rotary	Frigidaire	7.14	F-12	51.5	Yes[2]	A or B	Yes 20% @ 50 mph	Yes CE	17,500 Btu/hr 1,750 compr rpm 35# suction 190# head @ approx 40 mph	2	300 max	155	89	92	40
Kool-Car Co.,* Detroit, Mich																	
K-3	B	Recip. 2 cyl.						B	No	Yes							
K-4 System	B	Recip. 4 cyl.						B	Yes	Yes	3 Tons*						
Lincoln-1953	A	Recip. 2 cyl.		6.6	F-12	35	Yes[2] Hot gas by pass	B	No	Yes CE	12,000 Btu/hr @ 40 mph	2	265		41.6		29.3
Packard																	
Prewar System—Bishop & Babcock	A	Recip. 2 cyl.	Servel	8.35	F-12	34	None	B	No	Yes T	18,000 Btu/hr @ 40 mph	1	275 max	48	63	43	25
Present System—Frigidaire	A	Rotary	Frigidaire	7.14	F-12	51.5	Yes[2]	B	Yes	Yes CE	See GM-Frig.	See General Motors-Frigidaire					

[1] A—At car mfgrs factory; B—At system mfgrs plant; C—In the field by auto dealer or refrigeration dealer.
[2] See text.
[3] A—Ducts.
B—Discharge Grilles on package shelf.
[4] C—Cleanable.
E—Electrostatic.
T—Throw away.
* Data secured from trade publications. Conditions of operation not stated.

Comparison of Car Air Conditioning Systems (1953)