

AIR CONDITIONING YOUR IMPORTED CAR



STORY AND PHOTOS BY JOE H. WHERRY

MANY AREAS of the Southwestern section of the U.S. are very hot places for all but a few months of the year, and the air conditioning business has grown there by leaps and bounds. Because most of the state of Texas gets very hot indeed, it has, partly through necessity and partly by choice, become the home base for a number of manufacturers of air conditioning equipment.

The same hot sun that beats down on homes and office buildings makes it uncomfortable for the traveler as well. It's not surprising, therefore, that an answer to the demand for this equipment for imported cars has come from Texas. Seeing an MG-A coupe, a Morris Minor or possibly a Volkswagen dashing about with windows all rolled up when it's 105° may impress the onlooker as showing signs of madness in the midday sun. It did us until we investigated.

The search led us to William Anglin, president of Capitol Refrigeration of Dallas. Ten years ago Anglin was producing some of the earliest air conditioning kits for domestic cars, even before the factories got into the act with assembly line installations. The rise in popularity of imports led Anglin, in 1953, to engineer several air conditioners for the small cars. By 1957 Capitol's income was rising by \$100,000 a year manufacturing these kits. What the figure will be for this year is still anybody's guess, but it will be substantial.

Capitol's Artic-Kar units are available for just about any small car with the exception of the mini-cars or the very new ones like the Isetta, Goggomobil, Heinkel, etc. If the newly introduced NSU Prinz, Wartburg, Datsun, Toyopet and the others achieve worthwhile success, installations will be engineered for them as well.

In addition to Capitol, two other firms have jumped into the fray: Inter-Continental Sales of Houston markets the Continental Voyager (being manufactured in quantity for Volkswagens) and the International Cooling Engineers of Dallas are putting out the I.C.E. unit, which is aimed particularly at Renault owners.

At this writing Artic-Kar is probably the biggest outfit aimed at sports and small cars; the factory handles its own distribution after a rather unhappy beginning when an attempt was made to appoint regional distributors. Inter-Continental Sales is presently engaged in setting up one distributor in each state and the International Cooling Engineers are distributing through Sterling Motors, an import emporium.

What this all boils down to is that whether you own a VW, Metropolitan, 300-SL, Rolls-Royce or Hillman Estate Wagon, you need not fret about the onset of hot weather, although it will cost you at least \$275 and in some cases over \$600 to equip your car with one of these units.

If we owned a Volkswagen we would—after having checked into the various systems—pick the Continental Voyager because of several advantages. First, the compressor generally used (in most other systems) is the fairly large 2-cylinder York unit. At maximum throttle, it takes more than 7 horsepower, which cuts seriously into the VW's performance. Reg Cawley, Inter-Continental's vice-president, is a sports and small car enthusiast from way back and he tells us that when the Voyager was being engineered, a search was made for a low-drag compressor. The result of the search was the incorporation of the German-made Bock single-cylinder compressor, which siphons off only 1.6 hp at full throttle. We drove Reg's VW demonstrator and one can scarcely notice when the compressor, thermostatically controlled through a magnetic clutch as are the other makes, cuts in. On hills, taking off in traffic, and when otherwise flooring the accelerator, the Bock compressor's drag is almost negligible. Having driven VW's, Renaults, and several other low-powered cars with other systems, we do not hesitate to extol the virtues of the Continental Voyager.

We are advised by Cawley that the Continental Voyager will be available for the 10 largest-selling small cars at an early date. The Voyager's installation in the VW places the combined evaporator and blower box beneath the dash at the center. The compact unit does not interfere with the legs of either driver or passenger. The thermostat is variable and the blower is controlled by pushbuttons. The magnetic clutch is very small, just 4 inches in diameter, and the smoothness and output of the little Bock compressor are undoubtedly enhanced by its unusually precise interior finishing, bronze bushings, etc. Of the large components, only the evaporator and condenser are made domestically. The condenser is mounted transversely across the front of the VW behind the front bumper and is placed high for protection from flying gravel. The compressor, of course mounted on the engine, is driven off the crankshaft by a special belt with a tensioning idler. To date we have seen no other system so suitable for the VW as this unit which, when installed by a franchised dealer, will cost between \$300 and \$360 depending on the section of the country, freight costs, labor rates, etc.

Artic-Kar units are universally adaptable to virtually any make. In some instances you have the option of an underdash or trunk-mounted unit—in the Peugeot 403 and the Jaguar 3.4, for example. The trunk units cost more, but some people seem to prefer having the cold air enter from the outlets on the parcel tray behind the rear seat. The underdash units now come in five colors.

Most Artic-Kar installations have double blowers, and their outlets can be directionally aimed for good distribu-

tion. As is the case with makers of almost anything these days, Artic-Kar has several models. Here the difference is mainly in the amount of cooling capacity. In each, however, the thermostats are variable (not always the case even in some of Detroit's factory installations), permitting the owner to determine just how cold he wants to be. The lower the thermostat is set, the more frequent and the more continuous is the running of the compressor, which is operated by the magnetically controlled clutch.

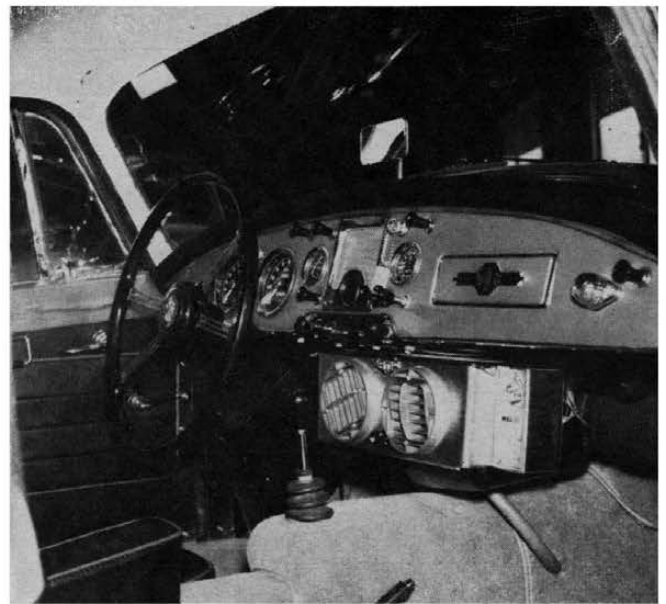
Because the York compressor used in the Artic-Kar system drags off so much power, it is our feeling that this system is better suited to those cars with well over 1.5 liters displacement. The system works beautifully on the low-powered machinery, but when that compressor is running, you have the feeling of dragging an anchor when starting up from a stop or when climbing hills. On the VW the Artic-Kar condenser is split; in effect it is in two units with the primary condenser mounted in the engine compartment and the secondary condenser mounted underneath, immediately forward of the right axle shaft.

Until recently all VW installations by Artic-Kar were behind the rear seat, but now a new under-dash installation is available with the three-outlet blower centered but attached to the evaporator, which occupies considerable space in front of the passenger. For Karmann-Ghia models the same installations are used. The retail installed price in a VW is \$394 for the under-dash and \$358 for the rear mounting of the outlets and evaporator.

Artic-Kar, it should be noted, has been in close contact with the Volkswagen, Mercedes-Benz, and Rolls-Royce factories and, according to Anglin, has received the approval of the home office engineers.

The I.C.E. unit for the Renault will run about \$300 installed. This is a trunk or behind-the-seat unit with two blower outlets that can be directionally adjusted. The condenser fits forward of the engine in either the 4-CV or the Dauphine, and above it are mounted the combination evaporator and the blower box. There is no disputing the fact that the parcel tray outlets leave the space beneath the dashboard absolutely uncluttered. The theory of many air conditioning engineers, too, is that the cold air first strikes the headliner and then is distributed without drafts throughout the interior. Having tried all the various installations, we find that we prefer an under-dash outlet. That, though, is an individual choice.

With the I.C.E. unit you also have the big 9-cubic inch York compressor and while this didn't reduce the Dau-



The Artic-Kar evaporator and blower box can be mounted under the panel in one unit as in this MG-A coupe.

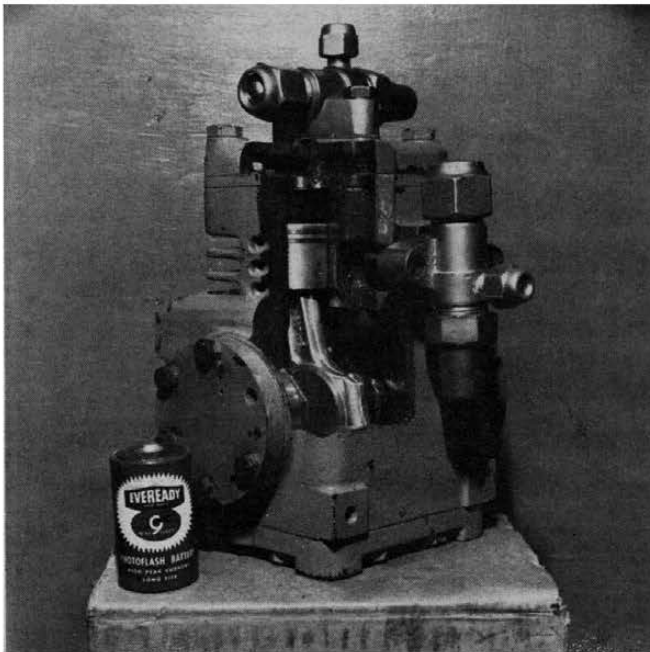
phine's performance as much as we had anticipated, it does add a good 2 or 3 seconds from 0 to 30 miles per hour when the compressor is running. The same can be said of any other unit using the York compressor, Artic-Kar included.

The I.C.E. unit we tested was mounted in one of Johnny Green's Dauphine demonstrators. On only one count do we question this installation: the thermostat is not variable and there is just one blower speed. In other words the I.C.E. unit, as installed in the Dauphine, is either off or on, determined by the simple flick of a toggle switch beneath the dash. Being able to vary the amount of cold air and the temperature at which the compressor cuts in is desirable, in our opinion.

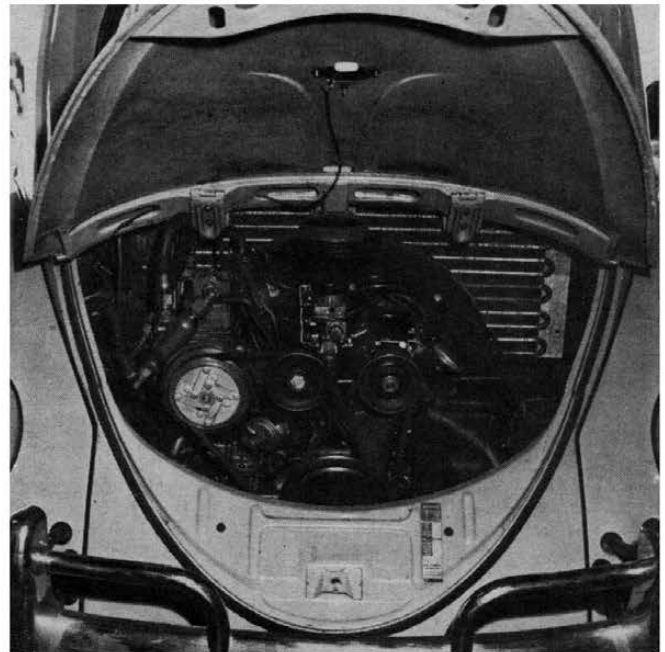
When a long hill is to be negotiated the driver could, with controls like the previous two systems, cut out the compressor but leave the blowers operating. True, the condenser will not continue to furnish cold air very long under such a condition, but it will for a few moments and by that time the hill may have been topped. At least it will enable the car to pull the hill with less strain.

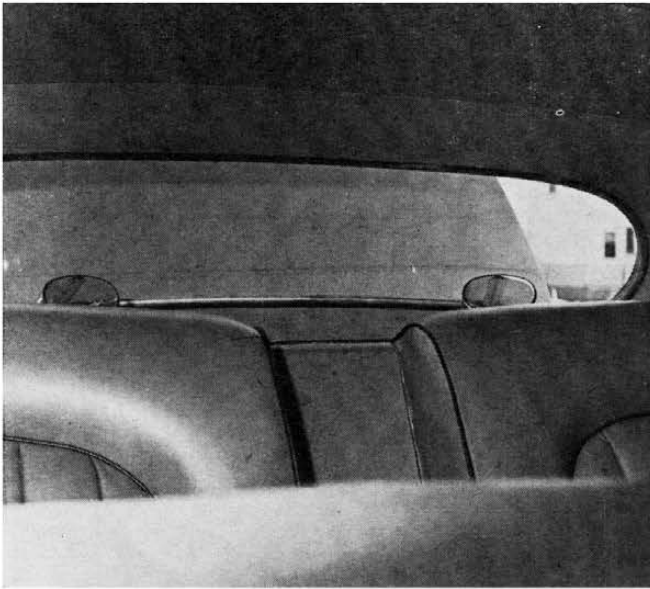
Generally speaking these air conditioning systems are

Relative size of the single-cylinder, German-made Bock compressor compared with 2 1/4-inch dry-cell battery.



Bock compressor occupies minimum space in VW. Condenser can be seen behind the engine, against the firewall.





The two blower outlets of the Clardy air conditioned Jaguar Mark IX are mounted in the rear package tray.

relatively trouble free so long as you check once in a while to make certain all the plumbing joints are tight to avoid losing Freon. The three systems all include a sight glass permitting visual check of the Freon supply. The blower motors and the compressors are sealed and require no fussing. One precaution, however, should be observed: do *not* turn up the thermostat control (on either the Artic-Kar or the Continental Voyager units) to maximum, for the cooling coils themselves may freeze, with subsequent uselessness and possibly permanent damage. Artic-Kar, for example, has the thermostat settings numbered from 1 to 9, but the manufacturer suggests 5 as the maximum normal setting. We have found a setting of 3 perfectly adequate on our own Artic-Kar unit in the hottest time of the year in the desert.


The best operational results are obtained with one window opened a mere crack to permit the release of air and the intake of a bit of fresh air. These conditioners are recirculators—that is, they do not bring in fresh air from the outside but cool and recirculate the interior air. Cars with cowl vents beneath the dash can have a constant supply of fresh

The Mark IX trunk lining is folded down to show the compact space requirement of the evaporator and blower.



air: the under-dash units will pick up this incoming air as rapidly as it enters and filter, cool and distribute it in much the same manner as do the fresh air systems being installed on Detroit production lines. For this reason alone we would suggest the choice of an under-dash unit if it is available for your car. The rear-mounted units eventually condition any incoming air but not until this cowl draft has distributed whatever foreign matter there is in the ambient air.

Subsidiary benefits of air conditioning not generally realized until you become accustomed to it are that you can quickly de-fog windows in cold weather by running the conditioner for just a few moments; you can enjoy clean, cool air in a dust storm or on smog-laden super highways; and you can drive long distances in warm weather with far less fatigue.

Can the buyer install a refrigerating kit himself? Yes, if he is a top-notch mechanic, if he understands air conditioning, and if he has the necessary equipment. However, we do not advise this course of action. Air conditioning is a specialty and there are many pitfalls that can cancel out the savings (from \$100 to \$200). But that's for you to decide. If you ever spend a hot season driving an air conditioned car, you won't want to do without it. And now there's no need to, even in a sports car. 

THE MANUFACTURERS

Artic-Kar: Capitol Refrigeration and Manufacturing Co., 3922 Kalloch Drive, Dallas, Tex.

Continental Voyager: Inter-Continental Sales Co., Inc., 4138 Sarong Drive, Houston, Tex.

I.C.E.: Sterling Motors, 732 North Pearl Street, Dallas, Tex.

ARTIC-KAR RETAIL PRICES, INSTALLED

Under-dash units: Austin A-55, \$376; Borgward, \$422; Ford Consul, \$337; Jaguar 3.4, \$482; XK-140, \$532; MG-A, \$422; Mercedes 190-SL, \$479; 220-S, \$479; 300-SL, \$735; Metropolitan, \$337; Morris Minor, \$337; Opel, \$337; Peugeot, \$394; Renault, \$363; Simca Aronde, \$346; Sunbeam Rapier, \$378; Vauxhall, \$337-398; Volkswagen, \$394; VW Karmann-Ghia, \$398; Volvo, \$376.

Trunk-mounted units: Austin A-55, \$425; Citroen ID & DS-19, \$541; Facel Vega, \$687; Hillman, \$403; Jaguar 3.4, \$537; Mark VII, VIII, IX, \$537; XK-150, \$537; MG Mquette, \$447; Mercedes 180, 190-S, \$530; 219, 220-S, \$535; 300-A, B, C, \$566; 300-D, \$582; Peugeot, \$451; Rolls-Royce & Bentley, \$547-629; Singer Gazelle, \$403; Volkswagen, \$358; VW Bus & Camper, \$680; Volvo, \$415.

York 2-cylinder compressor mounted in a Rolls-Royce crowds its way into an already full compartment.

