

Studebaker Air Conditioning

By Ray Fichthorn

Many have asked...

"What is the best way to add AC to a Studebaker V8?"

(specifically- non-factory units, or Compressor upgrades)

Obviously, the "best" way would be to find a 100% complete AC unit from a factory equipped Studebaker. Various pieces are relatively easy to find, but so many cars have had pieces scavenged, or the guy parting it out- didn't bother to get "all" of the necessary pieces.

When I had the NCSDC site up, I had a technical page on different ways to locate the AC compressor, how to run the pulleys and belts, and that sort of thing. After installing AC on several Studebakers, I believe the way pictured below is the "best" I've found yet. I also like to incorporate an "upgrade" to a Delco one-wire 60 amp alternator (\$40 or so) into the setup. This provides better low-speed charging especially when in traffic with the AC running.

I like this set-up for several reasons:

1. You do NOT need to find a Factory compressor bracket, idler pulley, water pump pulley(very hard to find) or the matching crankshaft pulley.
2. Most of the bracket fabrication can be done with the minimum of tools (or experience): just a Drill, Big Hammer, Vice, some sort of cutter capable of doing 3/8"(minimum) thick steel (die grinder w/cutoff wheel, hacksaw), and a small (rented/borrowed) welder.
3. The use of a new Sanden compressor: Easy to fabricate mount, (relatively) cheap, less vibration, readily available, efficient, can be used for R12 and R134 systems,

No need to add pulleys to the crankshaft (requires pulling harmonic balancer)- it uses the original generator drive/water pump pulley.

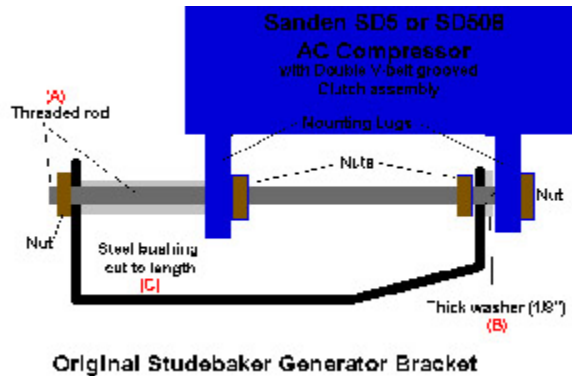


Here's a picture of the setup installed on Lee A's 1961 Hawk. It requires the bare minimum of modification to the car... and can be returned to original in a few hours. None of the wiring needs to be altered, but you do need to run an "additional" wire for the Alternator swap. Notice that the alternator is driven by the AC compressor clutch's 2nd (outer) pulley. Some have suggested that this is "bad" if the compressor goes south... you would lose your Charging system as well... My answer to that is: in 30 years of driving AC equipped cars.. I have never had a compressor clutch lock up. I have had the compressor itself lock, but the clutch just freewheels when it goes bad. This setup is no more likely to cause problems- than if your original generator should have trouble.

The compressor mounting bracket can easily be fabricated from an Original Studebaker Generator bracket.

What needs to be done:

The first thing to do is drill out the original generator mounting holes to 5/16".



I like to use threaded rod (A) to go all the way through the bracket, but you can just as easily use the correct length bolts instead. I just believe the threaded rod will keep the mount more "square". It is a bit harder to "install" this way since you have to thread the 2 inner nuts, washers, and lockwashers on a long way.

A thick washer (B) will need to be added to the front mount- to shim the compressor about 1/8" further forward. This will align the AC compressor's (rear) pulley with the original generator and water pump pulleys. I like to tack-weld this washer in place- but it is not necessary.

After you have aligned the pulleys- and snugged the front mounting nuts, measure the distance between the compressor's rear mounting lug, and the rear lug on the generator bracket. You will need to find some bushing material (C) (I use a piece of steel pipe).. and cut it to fit snugly between the 2 lugs. I cut mine a bit long, and use a grinder to trim it until it fits nicely.

Mount the compressor, and "bend" the original generator adjusting arm- to fit the AC compressor's upper mounting lug.

This completes the "fabrication" needed to mount a Sanden SD- series AC Compressor.

Condenser:

The AC condenser is the part mounted in front of the radiator. For Hawks and other C/K bodied cars, I use a 14 x 20 inch universal- type condenser. This size seems capable of handling the cooling needs of most Studebaker AC set-ups. I have fitted this same condenser to Lark-type Studebakers also. It takes a bit more fabrication to mount it securely due to the limited space- especially on pre-'63 Larks.



As seen in the photo, It is mounted to the lower air scoop by using 2 pieces of 1" x 1" aluminum angle. I like to use Aluminum because it won't rust- but you could use almost any thing... so long as it will hold the bottom of the condenser stable. If you look closely, you will see that the top of the condenser is held to the radiator brace with 2 Nylon tie-wraps. There is a small piece of foam insulation behind each corner where the condenser would touch the brace. This is to prevent rubbing or rattling that may damage the condenser. The top is the "hottest" part of the radiator... it is the first to receive engine coolant. For this reason, I like to mount the condenser as low as possible, and leave a few inches of the radiator exposed to fresh air of it's own. Does it help cool the radiator?.... I have no idea, but I don't see why it wouldn't help....



Evaporator:

I prefer to use an original Studebaker inside unit. They usually mount pretty easily- and look more like they "belong" in there. I have not had any trouble with flushing out original units in preparation for R12 or R134 use. The blower motor is available, and you can find switches, and controls that easily adapt- if not a direct bolt-in.