

1962 Studebaker Hawk

Air conditioning

This project started as a must do one very hot day. No more explanation required.

On one of those days I drove the Hawk to the local Radiator repair shop (with a radiator for my son's car in the boot) the discussion naturally focused on the Hawk and the lack of AC became a topic. The owner went to the rear of his workshop and returned with a large box. "Maybe this will help" he said and produced Peugeot 504 copper condenser from the box which was a perfect fit in front of the Hawk radiator. So at a more than giveaway price the project got a kick start. The seed being set it took some time for the overall idea to materialize.

I had already installed a heater and all of its controls and tried to fit the entire climate control including the evaporator but there was insufficient space under the Hawk dash for the complete unit. I also fitted a console with CD player and speakers mounted in the side so that prevented an under dash unit. (I hate the look of those things anyway; they always look as if they were not meant to be there).

The plan evolved to put the evaporator and fan unit in the boot and blow up through the rear parcel shelf. This meant long hoses to the rear which I was not sure about. After an information seeking visit to Hasting air and auto (blatant plug for Peter who has been helpful beyond the call of duty) I was convinced it would work well. Further info seeking provided me with the fact that Hawks were fitted with just such a system. (Aftermarket? Novi, I'm not sure but here are some pictures.)



Buoyed on by this I took on the task of fitting the compressor. I opted for the simple method of using the single pulley on the crank driving the double idler pulley on the compressor, the alternator then being driven via this idler. I had a choice of a swash plate or vane pump compressor. Peter advised me to use the vane types are better. Next I removed the drive pulley from a seized compressor and machined it to fit over the spigot on the rear of the good compressor pulley. It was then welded on and re assembled onto the compressor. fabricated the bracket. I used both holes on the exhaust manifold and two on the water pump manifold. This bracket mounts both the compressor and the alternator and two tensioning pulleys.

I hate those curved slotted adjusting brackets, so this “work of art” bracket has two adjustable idler pulleys. My brake modification was easier! It was necessary to run the drive belt over a back tensioner, a pulley running on the back of the drive belt. So I needed to check that a belt without cogs on the back was available. Yes, I was in luck and a common A1560 Bosch belt is perfect. It is not normally acceptable to back tension a vee belt unless it is on the slack side and fortunately this is exactly how the geometry worked out. The back tensioner is a vee belt pulley machined out square to suit running on the back of the belt. This is also one of the tension adjusting pulleys.

So far so good.

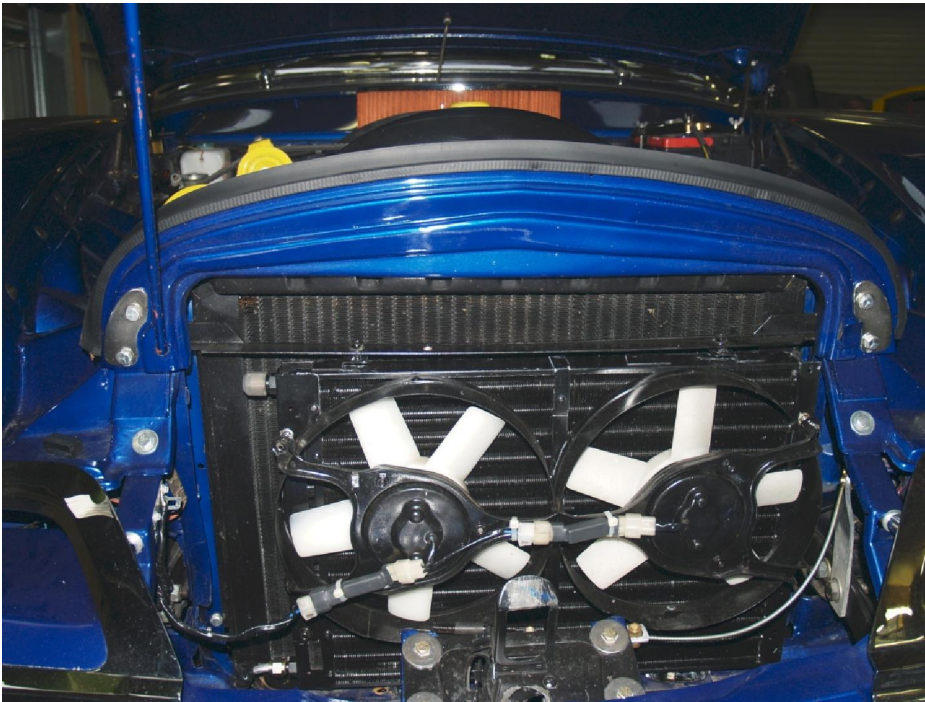
The picture below shows the compressor and the alternator on the bracket with the alternator tensioning pulley in place. The main drive belt is not installed. Note the tensioning bolt on the lower (main) idler. The GM style alternator swings off the bracket and one of those brackets “I hate” is used to hold the passenger side of the alternator to the other side of the water pump manifold mount bolt.

At this point I rewired the alternator, plugged the compressor ports and made the car drivable.

I then went to the computer and redrew the wiring diagram of the Hawk to show what I needed to do electrically. This allowed me to position all the various parts and make the wiring loom to suit.



The wiring loom took a lot of time to make. I had all the fan controls in the console, the evaporator and blower fan in the boot (trunk) which involved a relay for each of the four speeds to avoid running four heavy wires to the blower. The thermostat wiring to the boot, condenser fans, trinary pressure switch and compressor clutch to the engine compartment.



The condenser was mounted in front of the radiator with two auxiliary fans in front of that.

Note the double plugs on the connectors to the fans.

The shrink wrapped grey parts are current limiting devices to prevent huge current draw by the two fans.



Here you can see the drive belt in place and the receiver drier mounted on the front radiator support.

Wiring loom complete and the aluminium high pressure line to the condenser is complete. The line to the evaporator in the boot is not installed at this point



The fan, evaporator and wiring mounted to the air duct.

The duct is mounted to the rear parcel shelf and air is delivered across the entire width the inside of the car. The duct has since been covered by a black carpet and the entire unit hidden by a covered panel.



A view from inside with the rear seat removed.

The delivery and return lines went down through the floor with suitable grommets.

Note the delivery duct outlet across the rear shelf.



Here you can see the control switch above the CD player in the console.

Note the heater outlets above. The heater also blows to the floor and demist via the original control knobs.

After the installation of the thermo fans, rear blower, with engine running, headlights on high beam, etc, it became apparent that the alternator was not capable of this sort of load.



So another alteration was required. This picture shows the finished project.

An 80A remote sensing alternator is fitted in place of the 55A single wire unit.

All hosing complete and "gassed up".

This project took a considerable amount of work to complete, however the end result is great. It cools down the cab really well and clears fogged windows in no time.

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