Powering Coach A/C While Engine is Off

Post By: brettpearson67

Was wondering if anyone has tried running coach A/C with another compressor (electric) while engine is off?

Post by: richard5933

Seems like running the huge HVAC air handler fan would use as much or more power than the compressor.

Post by: Jim Blackwood

It's a DC motor so if you want to run it slower just supply less voltage.

Post by: brettpearson67

I'm picking up a DL3 this week and thought that there might be a way to switch to an electric compressor while parked, rather than replace it with rooftops or mini splits or basement HVAC, especially since it is still working great. Maybe even some sort of AC motor powering the coach compressor? Is there such a thing as a “dual fuel” compressor, so to speak?

Post by: rusty

The only Eagle model 25 built had an A/C system like that. The last time I saw it at the poor excuse for a factory, it was working. I have not seen the bus or have heard if the system is working. I don’t know what size the system was.

Post by: brettpearson67

It seems like the coach compressor is maybe 16-18 tons, with HP requirements of 12-14. This would be doable with a 240 volt power supply. Although I don’t know that the requirements wouldn’t be less for an electric motor, as torque specs are different?

Post by: Jim Blackwood

I didn’t know anybody had done it but that is my plan eventually. I don’t think it is too practical to try to drive the original compressor with an electric motor, both because newer sealed compressors are more efficient and because the drive would likely be both impractical and inefficient. But there is no reason a sealed compressor could not be plumbed in parallel to the original. What size to use is the question. My thought was that you might be able to get by with running two smaller sealed compressors, making it more versatile for if you had 30 or 50 amp service. Run one or both depending on power available.

Post by: jap42

So this was one of my first thoughts also. I asked on an HVAC forum I belong to about running an electric compressor in parallel. As I understand the OTR HVAC system is much larger than typically required because it’s harder to heat or cool the bus while it’s in motion. So I want to know, how big the system is now, and could a smaller compressor providing 24K-36K be feasible using the same condenser and evap.

One Idea I had was to replace the current belt driven compressor with an A/C generator. 240V 10KW. And then use the existing system with a 240V compressor and fans.

Post by: chessie4905

You could consider one of these run by an electric motor. GM used two of these in 4905’s as an option in place of the big V-York compressor. Might need a large motor though. You also will need lots of current to run the condenser fan and blower motors.

https://www.hemmings.com/stories/article/frigid-air-a-6-air-conditioning-compressor

Post by: Jim Blackwood

Maybe you could use a couple of these:

https://ordering.fwwebb.com/woitem/437290*1?CAWELAID&gclid=CjwKCAjw8df2BRA3EiwAvfZ-WaMuXio9wJ7zPZet5Fr6i5beX37E8xLPLwtLEhZ-90JTL5cet5XqjBoC3UsQAyD_BwE

Heating & Cooling Refrigeration Compressors

Copeland ZP24K5E-PFV-800

Compressor ZP Scroll 208/230 Volt 1 Phase R-410A 24000 BTU Polyl Esters

Or, depending on the current demands, maybe two or three 3-ton units and stage them in as needed, leave the engine driven compressor alone, and use it OTR as intended. They do have intake and exhaust valves that will prevent backflow. (Might need check valves with the scroll compressors.)

The 102DL3 has 13 tons of on board air at least. Depending on how you add it up, it could be as much as 14 tons

Post by: Fred Mc

Seems to me that it MIGHT be more cost effective and easier to simply put in a mini split. Some people have replaced both his rooftops with a single mini split that he says can cool his bus to the point of being uncomfortably cold. AND run them off batteries.