

Tech Tip

FROM YOUR FRIENDS AT
NEW YORK BUS SALES!



GM Type A units with “tie-in” rear A/C

Complaint – The Air Conditioning is not cooling the bus properly

Cause – GM uses a “Flooded” Evaporator Orifice for their expansion valve which is not adjustable and basically on or off while Ford uses a “TXV” – Thermostatic Expansion Valve. The TXV adjusts the refrigerant flow to maintain a designed condition at the evaporator outlet.

To simplify what the issue is – If a driver turns on JUST the rear A/C there is coolant flow which is directed across the front evaporator and seeing as the front (OEM) system is not blowing it becomes “frozen”Figure #1 below shows the evaporator at a normal state while Figure #2 shows how it becomes “frosted”

As the system is allowed to run in this state, refrigerant will continue to flow through the orifice and evaporator coil regardless of temperature or load. The system incorporates controls that will cycle the compressor clutch as required to maintain evaporator refrigerant exiting conditions and must include an accumulator to prevent liquid refrigerant from returning to the compressor. When operating the rear system only the front system will cycle the compressor so frequently that there performance is dramatically reduced to an unacceptable level.

Correction –

1. The easiest solution is to operate both systems at the same time, and train the operator to adjust fan speed and temperature to suit. Tie-in systems are very common and it is my opinion that this is what is done in most if not all cases.
2. The more complex alternative is to add liquid line solenoids (LLS). This will require the addition of LLS which is an electro-magnetic valve placed in the liquid line to the in-dash

evap. In addition it will require some changes to the electrical system to allow the system to truly run independently. (Please see the attached description of how to install with part numbers)



Figure #1



Figure #2

Contact Our Service Department With Any Questions

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