



Service Bulletin No. 1067

COACH MODEL	: T2100 Series ; C2000 Series
BULLETIN TYPE	: Service information
MANUAL & SECTION	: Maintenance Manual : Chapter 10 - HVAC System
DATE	: January 31st, 2001
SUBJECT	: Refrigerant charge - change of procedure
TERMS & CONDITIONS	: No claims will be accepted with reference to this Bulletin.

DESCRIPTION:

Field tests have shown that the temperature and pressure ranges at which the refrigerant level of the T2100 and C2000 Series coaches air conditioning system needed to be checked, were too wide. The ranges have been adjusted to avoid overfilling of the system.

The service procedure below supersedes the "Procedure to check refrigerant charge and add refrigerant in expansion tank with two sight glasses" in Chapter 10 of Maintenance Manuals M380D and M494.

SERVICE PROCEDURE:

To check the refrigerant charge and add refrigerant to a system with an expansion tank with two sight glasses

CAUTION
OBSERVE SAFE SHOP PRACTICES AT ALL TIMES. READ ENTIRE PROCEDURE BEFORE BEGINNING TO WORK.

Service Bulletins are issued to supplement or supersede information in the Van Hool manuals. Note Service Bulletin number, date and subject on the register at the end of the relevant chapter(s). File Service Bulletin separately for future reference.

NOTE

The procedures below should only be carried out by persons trained and certified in the repair and maintenance of bus air conditioning systems with the use of proper equipment.

1. Preparations and checking of refrigerant level :

The following conditions must be met to check the refrigerant charge accurately :

1. Install the manifold gauge set.
2. The coach engine should be operating at fast idle (1,200 to 1,300 rpm).
3. The compressor unloaders should be disconnected.
4. Maintain the head pressure at 173.5 to 203.5 psig (12 to 14 bar gauge). At low ambient temperature this pressure can be maintained by reducing the airflow through the condenser. To obtain less airflow, cover the fins of the lower part of the condenser coil or disconnect condenser fans as required. When doing so, make sure the condenser coil is being cooled evenly from bottom to top. One of the top condenser fans should ALWAYS remain operational to ensure airflow through the liquid sub cooler.
5. At the evaporator inlet, the interior temperature should be between 74° to 78 °F (23° to 25 °C). Set the interior temperature to 78 °F (25 °C). Keep it steady by adding heat through the heating system, by opening windows or roof hatches, etc.
6. The fresh air flaps should be closed and the evaporator cover plates should be in place.
7. All evaporator blowers should be operating. The air filters should be clean to allow full evaporator air flow. Make sure no outside air is circulated. The front unit blower should operate at full speed with the hot water valve closed (if the front unit is switched off, the system will overcharge as liquid refrigerant accumulates in the front unit evaporator and liquid line).
8. Maintain these conditions for about 20 minutes to stabilize the system.
9. When the ball in the lower sight glass is on top, the system is sufficiently charged. When the ball in the lower sight glass is not on top, continue this procedure. Maintain the test conditions as mentioned in items 4 and 5 during the rest of the test, and during charging.
10. Check the operating pressures.

CAUTION

EXCESSIVE HEAD PRESSURE COMBINED WITH A NORMAL LOW SIDE PRESSURE INDICATES AN OVERCHARGE, OR AIR IN THE SYSTEM.

K:\SERVICE\USA\PrmSB#\SB1067

2. To add refrigerant :

1. Observe the sight glass and fill the system until the ball in the lower sight glass is on top. The ball in the upper sight glass must not float. Charging is now completed. Check again items 4 and 5 of "Preparations and checking of refrigerant level".
2. Close all valves, remove all hoses and cap the fittings.

NOTE

The total refrigerant charge for T2145 systems is 28.15 to 29.25 lbs (12.75 to 13.25 kg).

The total refrigerant charge for C2045 systems is 33.65 to 34.75 lbs (15.25 to 15.75 kg).

Service procedure complete.

THIS PAGE HAS BEEN LEFT BLANK INTENTIONALLY

K:\SERVICE\USA\PM\SB#\SB1067