SERVICE BULLETIN
SB2518

ADDRESSEES	: Owners and operators ABC Customer Care and Parts Source
VEHICLE MODEL	: All coaches
MANUAL CHAPTER	: 8.14 Climate control – Refrigerant circuit
BULLETIN TYPE	: **Service information**
DATE	: December 05th, 2025
SUBJECT	: **To check/adjust superheat at evaporator outlet**
CONDITIONS	: This service bulletin does not entitle to any reimbursement.

JOB QUALIFICATION

Thermostatic expansion valve adjustment (= superheat) should only be performed by a refrigeration technician.

WHAT DOES SUPERHEAT MEAN?

Superheat is the temperature increase of a refrigerant vapor above its boiling point after it has completely turned from a liquid to a gas. It is a critical measurement in refrigeration systems to ensure that only vapor, and no liquid, enters the compressor, which prevents mechanical damage and ensures efficient operation.

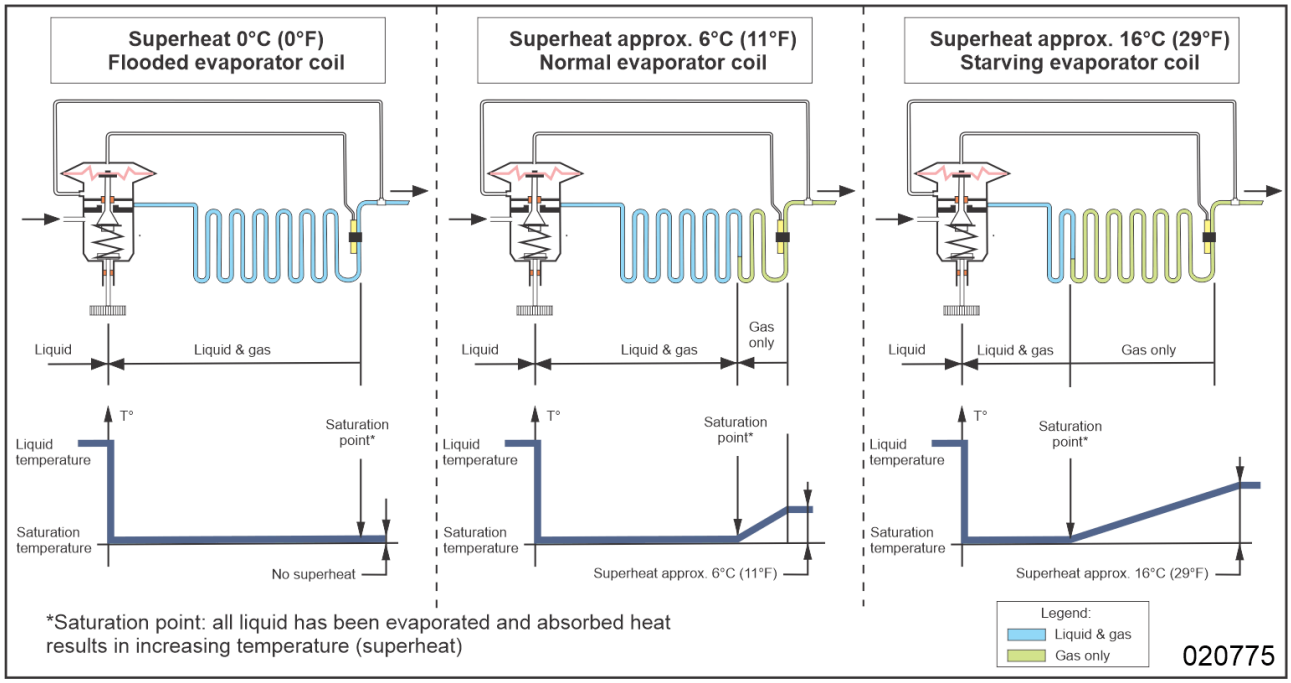

Figure 1: Thermostatic expansion valve (superheat setting)

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HOW TO CHECK SUPERHEAT AT EVAPORATOR OUTLET?

Step	Action
1	Connect the low side and high side of an accurate manifold gauge respectively to the suction and discharge service valves of the refrigerant compressor.
2	Gain access to the thermostatic expansion valve of the evaporator.
3	*NOTE: Thermal insulating tape must be wrapped around the thermostatic expansion valve sensor bulb, evaporator outlet line and thermometer probe to get a true reading of the line temperature.* Install an accurate remote reading thermometer to the evaporator outlet line next to the thermostatic expansion valve sensor bulb. The thermometer probe must be a tight fit and have good contact with the outlet line.
4	Make sure access panels are mounted back in their original position.
5	Start the engine and let it run at fast idle (1000 rpm).
6	Put the climate control system in the “Cooling override (GAS CH)” state. Follow for this the instructions mentioned in chapter 8.2 of the maintenance manual. Installation conditions: • Return air temperature must be a steady 20 to 22°C (approx. 72°F) • Discharge pressure to be maintained at a minimum of 8 to 10 bar gauge (120 to 150 psig). At low ambient temperatures, restrict air flow to condenser or disconnect some condenser fans.
7	Wait at least 15 minutes.
8	*NOTE: Due to pressure losses, suction pressures recorded at the compressor are 0.3 to 0.4 barg (3 to 4.5 psig) lower that the actual pressures at the evaporator coil outlet.* Check and record the gauge suction pressure and expansion valve sensor bulb temperature simultaneously. Record minimum five pressures and temperatures with a 2 minutes interval. Pressure and temperature will cycle between maximum and minimum. Records must include higher and lower measures, and extend over a time span longer than one cycle.

HOW TO CALCULATE EVAPORATOR SUPERHEAT?

Step	Action
1	Convert the pressure readings to temperature by using table 1 “Temperature-pressure chart R-134A”.
2	Calculate the superheat at the evaporator outlet with the average of the recorded values. Example: • average line temperature: 10°C (50°F) • average suction line temperature: -4°C (39°F) Superheat = 10°C (50°F) – 4°C (39°F) = 6°C (11°F) **Superheat should be 5 to 7°C (9 to 13°F)** NOTE: Low swings must not get below 4°C of superheat.

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HOW TO ADJUST EVAPORATOR SUPERHEAT?

NOTE: Factory setting of the thermostatic expansion valve can be approached as follows: turn adjusting stem clockwise until stop, then open 2 turns counterclockwise.

NOTE: Before adjusting the expansion valve, check for restrictions in the suction line, clogged filter-dryer, unequally cooling evaporator coil, low refrigerant level.

NOTE: A readjustment of the thermostatic expansion valve should be done in small steps only and always after the system has stabilized in the new adjusted position. Turning the adjusting stem one turn will change the superheat approximately 2.5°C (4.5°F).

Step	Action
1	Remove cap from expansion valve adjusting stem.
2	Turn adjusting stem: • clockwise to increase superheat (decreasing the flow of refrigerant); • Counterclockwise to decrease superheat (increasing the flow of refrigerant).
3	After valve adjustment, run unit at least 15 minutes under stable conditions and re-check superheat.
4	Remove manifold gauges and thermometer. Reapply insulation.
5	Re-install the access panels.

Table 1: Temperature-pressure chart R-134A

Temperature		Pressure			
°C	**°F**	**bar abs.**	**bar gauge**	**psia**	**psig**
-25.0	-13.0	1.1	0.1	15.5	1.0
-20.0	-4.0	1.3	0.3	19.3	4.8
-15.0	5.0	1.6	0.6	23.8	9.3
-10.0	14.0	2.0	1.0	29.1	14.6
-7.5	18.5	2.2	1.2	32.2	17.7
-5.0	23.0	2.4	1.4	35.3	20.8
-2.5	27.5	2.7	1.7	38.9	24.4
0.0	32.0	2.9	1.9	42.5	28.0
2.5	36.5	3.2	2.2	46.6	32.1
5.0	41.0	3.5	2.5	50.7	36.2
7.5	45.5	3.8	2.8	55.4	40.9
10.0	50.0	4.1	3.1	60.1	45.6
15.0	59.0	4.9	3.9	70.8	56.3
20.0	68.0	5.7	4.7	82.9	68.4
25.0	77.0	6.7	5.7	96.5	82.0
30.0	86.0	7.7	6.7	111.7	97.2
35.0	95.0	8.9	7.9	128.6	114.1
40.0	104.0	10.2	9.2	147.3	132.8
45.0	113.0	11.6	10.6	168.2	153.7
50.0	122.0	13.2	12.2	191.1	176.6
55.0	131.0	14.9	13.9	216.2	201.7
60.0	140.0	16.8	15.8	243.7	229.2
65.0	149.0	18.9	17.9	273.9	259.4
70.0	158.0	21.2	20.2	306.8	292.3
75.0	167.0	23.6	22.6	342.6	328.1
80.0	176.0	26.3	25.3	381.6	367.1
85.0	185.0	29.3	28.3	424.1	409.6
90.0	194.0	32.4	31.4	470.2	455.7

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HELP DESK

If there are any questions, please call ABC Customer Care & Parts Source toll-free for guidance on 1-877-427-7278. Listen for the prompts for warranty and select that option.

DISCLAIMER

The procedures contained herein are not exclusive. VDL Van Hool cannot possibly know, evaluate, or advise the transportation industry of all conceivable ways in which a procedure may be undertaken or of the possible consequences of each such procedure. Other methods may be equally reasonable or even more effective, depending on the specific circumstances involved. Each carrier that uses the procedures herein must thoroughly ensure that neither the safety of its employees or agents, nor the safety or usefulness of any products, will be jeopardized by any procedure selected.

INFORMATION HANDLING

Important additions and modifications regarding technical information not yet included in the manual will be communicated through Service Bulletins.

VDL VAN HOOL CUSTOMER PORTAL

Consult the customer portal regularly for the latest service documentation. In addition to the maintenance manual, you will also find the operating manual and the spare parts catalogue of your vehicle on the customer portal. The customer portal is accessible through www.vdlvanhool.com/MyVDL Van Hool, and only with a code (password) from VDL Van Hool. If you do not have a password yet, request it by using the link on the VDL Van Hool website.