多联机 U4 缺冷媒保护故障排查方法

Troubleshooting method for VRF U4 refrigerant shortage protection

一、故障显示和现象 Fault display and phenomenon：

通过压力传感器检测系统的高低压，启动前如果系统高低压低于外环境温度 5℃以上，机组将保护不允许开机。室外机主板、室内机线控器、室内机接收灯板显示为：

The high and low pressure of the system is detected by the pressure sensor. If the high and low pressure of the system is lower than the ambient temperature by more than 5 ℃ before starting, the unit will be protected and not allowed to start. The outdoor unit mainboard, indoor unit line controller, and indoor unit receiving light board display:

=压力表 Pressure gauge		量程 0~4MPa Range 0 ~ 4MPa	测压力值，抽真空，灌注冷媒
活动扳手 Adjustable wrench		满足螺栓规格 4mm~30mm Meet bolt specifications 4mm~30mm	打紧、退出螺栓
螺丝刀 screwdriver		“+”、“-”	打紧、退出螺钉
真空计 Vacuum gauge		10-1600Bar	测量真空度
真空泵 Vacuum pump		8 升以上	抽真空
冷媒 refrigerant amount			适量 amount

冷媒加液管 Refrigerant liquid pipe		带压力表，视液窗 With pressure gauge and sight window
氮气 Nitrogen		100L

二、可能原因分析：Possible cause analysis

■系统冷媒量不足 Insufficient amount of system refrigerant

■管路泄露 Pipe Leaking

■灌注冷媒类型错误 Incorrect refrigerant type

三、故障判断条件和排查方法：Fault judgment and troubleshooting

2.1 确认系统管路的冷媒灌注量与设计要求一致：查看冷媒灌注记录，确定机组额定灌注量和管路模块追加量是否符合设计要求。

Confirm that the refrigerant injection volume of the system pipe is consistent with the design requirements: check the refrigerant injection records to determine whether the rated injection volume of the unit and the additional volume of the pipeline module meet the design requirements.

2.2 冷媒灌注无误，需要检查并排除系统管路泄露的地方。

The refrigerant filling is correct, and the leakage of the system pipeline needs to be checked and excluded

检验方法：将管路进行抽真空并保压约 1h，查看压力是否降低。压力降低，确定管路存在泄露。逐一检查每个管路接头处是否有泄露。

Inspection method: evacuate the pipe and maintain the pressure for about 1 hour to check whether the pressure decreases. The pressure drops and it is determined that there is a leak in the pipe. Check each pipe joint one by one for leaks.

处理方法：将排查出的存在泄露的接头重新打紧，再抽真空保压。

Treatment method: re-tighten the leaking joints found in the exhaust, and then vacuum and maintain the pressure.