

Guide to re-opening bars & clubs

CELLAR COOLER SYSTEMS, COLD ROOM SYSTEMS, BACK BAR COOLERS & ICE MAKERS

As cellar cooler systems, cold room systems, back bar coolers and ice makers are being switched on, many of which have been turned off or not monitored over the winter, below is a start up and check over procedure to ensure they are operating safely and efficiently

Pre-start up

1. Looks for any visible signs of refrigerant leakage in the form of oil patches on the coils and flare nuts/pipe joints and ensure that refrigerant is in the system by attaching gauges. It is advised to use hoses with a shutoff as this will ensure most refrigerant is left in the system on disconnect (see point 11 below).
2. Visibly check the integrity of cables & pipework to ensure no damage had occurred to it from vermin. Check for loose connections on the mains isolator and contactors.
3. Check the rubber compressor mounts to ensure they are still intact.
4. To ensure efficient running and heat exchange, the evaporator and condenser coils should be clean and clear of any restrictions. Although the surface of the coil may look clean, quite often debris builds up within the coil, coating the pipes and fins, resulting in poor heat exchange and therefore less efficiency. The best way to ensure this debris can be broken down and removed, is with a chemical cleaner. Vertex by Advanced can be used on the evaporator and condenser, and is perfect for scale, rust, grease & fat. If the aluminium fins have been flattened, use a fin comb to straighten these out to get maximum performance from the heat exchanger.
5. A further cleaning cycle of the evaporator can be done with Condencide by Advanced, which has been proven to kill **SARS-CoV-2**.
6. If the unit has a crankcase heater, ensure this is turned on for several hours before start up (most manufacturers recommend 24 hours); Check oil level in compressor oil sight-glass and ensure there are no leaks of oil in the compressor compartment.



Start-up

7. Upon start-up, check the evaporator and condenser fan motors are working – be sure to check each fan's rotation is correct as some fans that are not working appear to be running due to the turbulent effect of adjacent fans. Check for any loud bearing noise which may indicate a failing fan; Check there is no damage to the fan blades, or debris in the housing. Check fans in back bar coolers, these can be replaced with multi-fit motors from the spares list below.
8. Check compressor is running, and discharge and suction pressures are within range by using your gauges and a comparator to convert the pressures into a saturation temperature. If you don't have a comparator the Danfoss Ref Tools app is available on the App store for IOS & Android devices (see below). The saturated temperature should be several degrees lower than the actual room temperature. Checking superheat and sub cooling is the best way to ensure a system is correctly charged, Superheat should be around 6k to 10k, whilst sub cooling should be 3k to 10k. Ensure there are no restrictions in the system through the liquid line drier and metering device, and if there is a sight glass with a moisture indicator, ensure this is "dry" and not "wet". If the discharge pressure is extremely high, and it looks like there are excessive amounts of sub cooling, this could indicate non-condensable in the system. If these seem ok, check for any leaks. The most efficient way to do this is with an electronic leak detector, as this will quickly home-in on the leak. Bubble-up formulas can also identify leaks. Be sure to check the F-Gas logbook to see if any previous work has been done and when the system was last leak check. Fill in the F-Gas logbook with your leak check and any findings/repairs.
9. Check the operation of the thermostat and pressure switches by either letting the unit hit temperature, or raising the set point up to turn cooling off. This will either cut the compressor out if an "on-off" system, or deenergise the liquid line solenoid valve if a "pump down" system. If pump down, ensure the pressure switch is set up to cut the compressor out in positive pressure so it doesn't run into a vacuum. Ensure the suction pressure does not raise rapidly, indicating a passing solenoid valve or passing compressor valves. Ensure the differential is correctly set so when the solenoid valve opens, the compressor cuts back in.
10. Please beware that it may take a while to reduce the cellar/room temperature as all items within the room, and the fabric of the room, are now at ambient temperature, and these will need to be brought down in temperature.
11. Upon removing your hoses, shut the service valve or ball valve on the high-side connection. Open up the ports on your manifold and whilst the compressor is running, pull the high pressure from your hose into the low-side of the system. This will ensure minimal amount of refrigerant loss on disconnection.

For technical advice, please email refteam@tfsolutions.co.uk

Danfoss Ref Tools App

[IOS App](#)

[Android App](#)

