

Checklist R-22 Conversion to Klea® 407A

Converting a refrigeration system from R-22 to Klea® 407A is straightforward but must be done in accordance with good refrigeration engineering practices. This procedure should be followed.

Before Commencing Any Change

Before converting R-22 systems to Klea® 407A, check OEM recommendations to ensure the existing system design is sufficient, including equipment capacities, relief valve sizing, equipment and seal material compatibility.

Klea® 407A is a HFC refrigerant and POE oil will be required. The older the system the greater the possibility of incompatibility with HFCs or POE oil.

System Preparation

1. Record system performance to obtain a baseline prior to the retrofit, e.g. suction and discharge pressures, discharge temperature, temperatures in and out of condenser and evaporator, energy usage.
2. Check and repair any existing leaks on the system.

Oil Change

1. Remove mineral oil from system. Most of the mineral oil can be removed by draining the compressor sump, suction line accumulators, oil float, oil separators, etc.
2. Record the amount of oil removed.
3. Replace drier.
4. Add the compressor OEM recommended POE oil.
5. Evacuate system and check for any leaks.
6. Re-charge with old refrigerant.
7. Restart system and check for any leaks. Check oil level.
8. Run system for at least 24hrs to allow for mixing of POE and remaining mineral oil. (Larger systems may require more time).
9. Check mineral oil concentration in POE using a refractometer. Historically, a target of less than 5% mineral oil in POE has been used for HFCs. In simple systems one oil change alone may achieve a 5% mineral oil level and systems have run satisfactorily after a single flush of POE. Please contact Mexichem for more information.

10. Remove refrigerant from system. Record weight removed.

Charge with Klea® 407A

1. Replace equipment as required.
 2. Install a HFC compatible filter drier.
 3. Replace all seals on joints that have been opened and on the receiver.
 4. Replace receiver float seal.
 5. Replace or repair old solenoid valves and ball valves to minimise leaks.
 6. Reset pressure controls for Klea® 407A. Temperature/pressure data is available at www.mexichemfluor.com or call Mexichem +44 (0) 1928 518880.
 7. Remove air in system by pulling a vacuum to at least 1 mbar.
 8. Hold vacuum and check and repair any leaks.
 9. Charge system with Klea® 407A with a target level of 95% of the R-22 charge amount. Note that the concentration of the Klea® 407A blend components will be different in the vapour than the liquid so when filling a system remove liquid from the cylinder to ensure the correct composition and if charging into the suction line on a running system the liquid must be vapourised before entering the system.
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System Start-up

1. Replace equipment as required.
 2. Start system and check for any leaks.
 3. Set TXV settings. For calculating sub-cool, use the bubble point as the reference temperature. For calculating superheat, use the dew point as the reference temperature.
 4. Monitor refrigerant and oil levels and adjust amounts as needed.
 5. Record performance data.
 6. Label the system to indicate refrigerant and oil type and amount.
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