



BY JOHNSON CONTROLS

Service Information

File In/With: N/A

SI0135

Supersedes: SI0135 (1110)

411

Equipment Affected: YK, CYK, YKEP, YST, and YD Chillers using R-134a

Recommended Oil Viscosities for R-134a Single Stage Compressors

General:

To insure the maximum reliability of YORK single-stage centrifugal compressors, it is necessary for the chiller to utilize the appropriate YORK oil. YK, CYK, YKEP, YST, and YD chillers operating with R-134a refrigerant are typically supplied with YORK “K”, an ISO 32 cSt polyolester oil.

Under normal conditions this oil performs extremely well in the YK series of compressors. However, unusual or abusive chiller applications may cause the lubrication quality of the oil charge to deviate from optimum properties. Conditions that subject the compressor and its oil reservoir to unusually high temperatures and/or high system pressures may preclude the use of the standard YORK “K” oil. Elevated ambient temperatures and system standby pressures tend to cause an associated reduction in the viscosity of the oil. In these applications it is appropriate to charge the chiller with a higher viscosity oil to help diminish the effects of the extreme conditions.

The normal allowable application temperature range is 40°F to 104°F (4.4°C to 40°C). Refer to Engineering Guide Form 160.75-EG1 (1010), Application Data section.

Recommended Guidelines

The following recommended guidelines are to be used for oil selection on R-134a YK, CYK and YD chiller applications.

For Single-Stage compressors operating on R-134a and with ambient equipment room temperatures up to and including 104°F (40°C):

YORK “K” oil --- ISO 32 cSt @100°F (37°C) – Supplied as Factory Standard

For Single-Stage compressors operating on R-134a and with ambient equipment room temperatures greater than 104°F (40°C):

YORK “H” oil --- ISO 68 cSt @100°F (37°C)

These applications require a Special Quote (SQ)

If the chiller is subjected to temperatures greater than 104°F (40°C) either during commissioning OR initial start-up OR normal operation, “H” oil should be utilized.

If, after commissioning and initial startup, the equipment room ambient temperature under normal (post-commissioning) operating conditions is 104° or less, the lubricant charge in the compressor should be changed from “H” oil to “K” oil.

Additional YORK oil grades are available for plant rooms with ambient temperatures above 104°F (40°C). Please consult the Product Technical Support Group for the appropriate oil selection.

Additional available York oil grades:

YORK “J” oil --- ISO 46 cSt @100°F (37°C)