



SERVICE BULLETIN

Title: 19XL Motor Cooling Arrangement
Models Affected: 19XL

Number: C9716
Date: 4/25/97
Supersedes: New

PURPOSE:

To advise the field of the latest motor cooling configurations on all 19XL centrifugal chillers.

File: Compressor-Motor-Drive-Gears

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BACKGROUND:

Motor cooling is primarily accomplished by diverting refrigerant to a nozzle assembly located in the motor end bell. In some applications an extra motor cooling line was added to feed a separate orifice located on top of the stator shell. There have been several changes to the motor cooling nozzle assembly and application of the extra motor cooling line.

GENERAL INFORMATION:

As of 4/22/97 the factory has made a change to the motor cooling nozzle. Previously the motor cooling nozzle was an assembly made up of several copper fittings with a 3/4" threaded end and three orifices drilled into the opposite end. The orifices and length varied depending on the application. This copper assembly has been replaced with a steel assembly made up of a 3/4" schedule 40 pipe with a cap at one end. The capped end has the three orifices drilled in it similar to the copper nozzle assembly. The size of the orifices and length of the assembly vary depending on the application. The steel assembly can replace the copper assembly (see cross reference chart). The steel nozzle assembly can not replace any of the motor cooling nozzles used on the early 19XL's with the cast iron motor end bell (see cast iron application table for correct nozzle application).

Steel End Bell Application

Application R134a*	CB-CP LV 50/60 HZ	CQ-CR LV 50/60 HZ	CB-CD MV 50/60 HZ	N/A	CE-CR MV 50/60 HZ
Application R22*	CB-CR LV 50/60 HZ	N/A	CB-CD MV 50/60 HZ	CE-CR MV 50/60 HZ	NA
COPPER NOZZLE	02XB34012301	02XB34012302	02XB34012303	02XB34012304	02XB34012305
STEEL NOZZLE	02XB34013201	02XB34013202	02XB34013203	02XB34013204	02XB34013205

Cast Iron End Bell Application

Application R134a*	CB-CR LV 50/60 HZ	CB-CD MV 60 HZ	CB-CN MV 50 HZ	N/A	CP-CR MV 50/60 HZ
Application R22*	CB-CR LV 50/60 HZ	CB-CR MV 60 HZ	CB-CR MV 50 HZ	CE-CR MV 50/60 HZ	NA
COPPER NOZZLE	02XB34002001	02XB34002002	02XB34002002	02XB34002002	02XB34002003

*Application based on motor size and voltage.

LV — Low Voltage (200-575 volts)

MV — Medium (600-5000 volts)

N/A — Not Applicable

Initially the extra motor cooling line application was limited to a few motor/voltage combinations. Later, the extra motor cooling line was added to all high voltage motors. As of March 1, 1997 the extra motor cooling line was added across the board on all voltages and motor sizes. This was done to standardize and to address some variation in motor temperature measurement because of sensor location and tolerances. There have been a few occasions when extra motor cooling was necessary to address an over temperature situation. **Before adding the extra motor cooling line the motor should be tested to insure no other problems exist.** Below is a list of parts needed to add the extra motor cooling line if necessary. The interconnecting piping must be field fabricated out of 3/8" refrigerant grade copper. See Figure 1 for a guideline in fabricating and routing the piping.

Parts List For Extra Motor Cooling Line

Item	Part Number	Description
307)	DE40BA403	3/4 X 3/4 X 1/2 Reducing T
308)	DE36BA203	1/2 X 3/8 Reducing Bushing
309)	02XB35035501	Orifice (R22) .106" (2.7 mm)
	02XB35035502	Orifice (R134a) .153" (3.9 mm)
302)	02XB05000601	Elbow
311)	DD01CA101	3/8 Flare Nut
310)	3/8 Copper Interconnecting Piping (Field Fabricated)	

INSTALLATION:

- Transfer refrigerant to the condenser.
- Cut 3/4" copper line between refrigerant feed and "T" feeding oil cooler. Braze copper reducing "T" and orient as shown in figure.
- Remove stator plug closest to the transmission on the top of the stator. Install the elbow in its place orienting the other leg to the rear of the motor as shown in figure.
- Fabricate the 3/8" interconnecting piping using the diagram as a guide. Install the 3/8 flare nut and flare the end that secures to the 90 degree elbow.
- Install the fabricated pipe. One end fits into the reducing "T" using the reducing bushing. This end can then be brazed.
- Select the orifice based on the refrigerant type and install it in the flare nut. Thread the flare nut onto the elbow and tighten.
- Leak check, pump down and restore unit to operation.
- Check operation of motor cooling line.

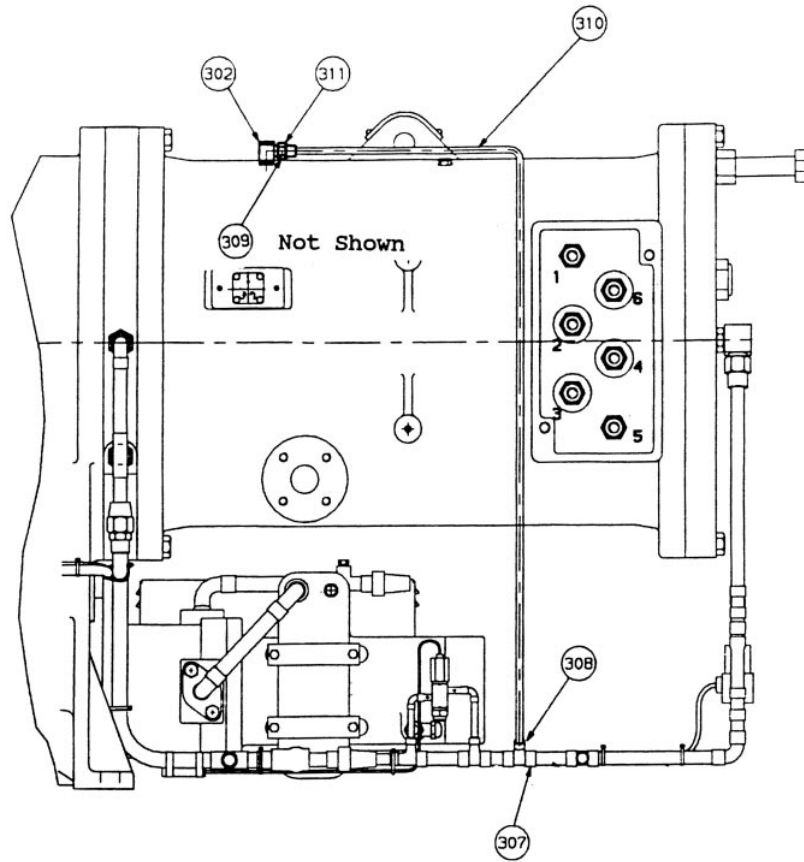


Figure 1
Typical Motor Cooling Arrangement

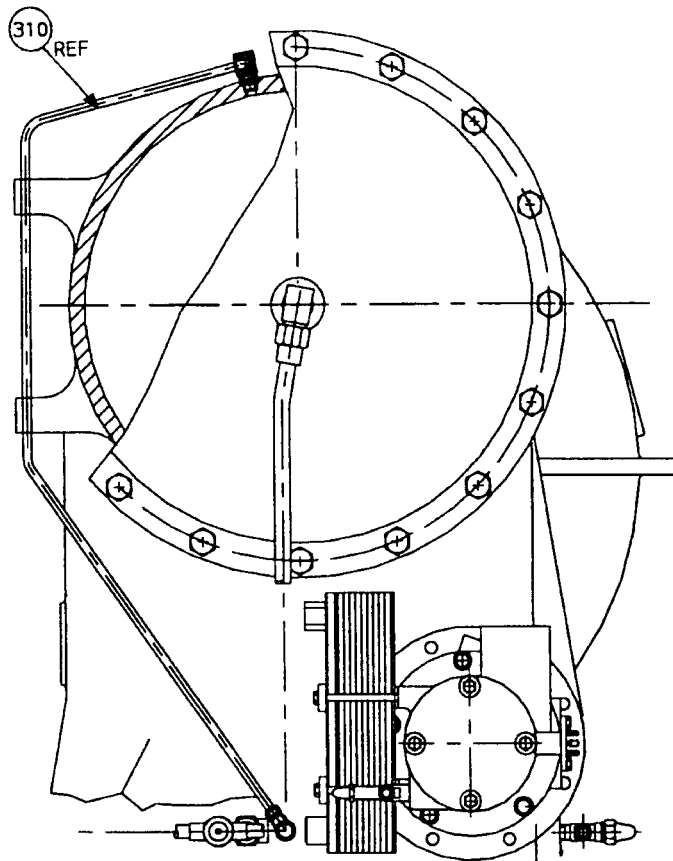


Figure 1
Typical Motor Cooling Arrangement (continued)