SERVICE BULLETIN

Title: 19XL Continuous Improvements
Models Affected: 19XL

Number: C9403
Date: 1/20/94
Supersedes: C9308
Date: 4/16/94

Purpose :

This bulletin contains information on revisions that have been made to the 19XL centrifugal chiller product.

File: Engineering--Sales

Prepared By: Donald Berdan

Approved By: Alan Johnson

Oil Reclaim System:

Machines shipped after October '92 have a revised oil reclaim system that is less costly and more reliable. The changes include a new evaporator suction filter, a new style eductor, and piping changes to fit the eductor into the system. The strainer between the eductor and the low pressure side of the compressor has been eliminated. A drawing has been attached to illustrate the new eductor piping. A retrofit kit (19XL660006) is available if a new eductor is to be ordered in place of the old eductor.

Compressor Inspection Cover:

The compressor inspection cover was eliminated in February '93 as it does not serve any purpose since the compressor gears are shrouded so the view is blocked.

Motor Terminals:

Changed to a new style, in which the copper terminal threads do not run through the insulated area. RCD stocks only the new terminal, P/N HY85AA062.

Motor Cooling:

The motor cooling refrigerant drain back pressure device has been changed to a simple orifice.

Mechanical Loss Improvements To The Compressor:

A partial arc of babbit has been moved on all transmission journal bearings. These new bearings are directly replaceable on older compressors.

The motor shaft seal arrangement has been modified to replace the seal ring with a two tiered labyrinth. This new labyrinth is also directly replaceable for retrofits.

The gear oil spray has been reduced. This is not retrofitable.

A change to the transmission casting and bearings was made on machines shipped after May 1, 1993. This change adds bearing 'oil catchers'. These devices help to catch the oil as it is slung out of each bearing to reduce the amount of oil hitting the gears. This will reduce horsepower requirements of the compressor. This change is not retrofitable unless a new transmission casting is purchased. All of the bearings and the thrust temperature sensor will be different, and cannot be interchanged on older units.

Linear Float (23XL Style):

Since Nov. 1, 1992 all machines have been built with the linear float. This eliminates the float chamber, thus a height decrease of 6 inches. Certified prints are available. The refrigerant charge on the machine is less than the FA ball float style machines.

Refrigerant Isolation Valve:

Due to the change to the linear float, the isolation valve has changed to an in-line ball valve, located between the condenser and the refrigerant charging valve.

A Revised Start-up, Operation and Maintenance Manual and an Installation Manual have been printed:

Catalog numbers are 531-938 for the Installation manual, and 531-939 for the Start-up, Operation Manual.

Cooler Tube Swedging (Expansion At Tube Support Sheets):

Tubes on previous units were expanded on all cooler support sheets. Now, due to test findings, only tubes at the center support sheet are being expanded.

Condenser Tube Swedging:

The top 10 rows of condenser tubes are now expanded at all three support sheets to prevent vibration.

Pumpout Fitting:

A 1/2 inch connection on the condenser was added for pumpout around Sept., '92.

Impeller Changes:

A more efficient 300 ton impeller along with higher lift impellers have been released to sales. The tonnage range of 300 to 600 tons is now available. HFC-134a compressors are now available from the factory, with ranges from 200 to 500 tons.

Silencer Changes:

The silencer, previously located on the rear wall of the discharge chamber, is now moved to the front wall. A sound attenuation lagging kit is also now available through Direct Sales for installation on the outside of the discharge pipe. **P/N: 19XB44002401- Frame 4; 19XB44002402- Frame 5.**

HFC-134a Machines:

Machines built in the factory exclusively for HFC-134a will have a different liquid refrigerant feed distribution system into the cooler. Instead of a single line going into the cooler, a larger size line

from the float chamber will branch into two lines and feed into the left and right side of the cooler. This improves refrigerant distribution for this refrigerant.

Only one cooler refrigerant pressure relief valve is required for this unit. The two condenser relief valves remain the same.

Rigging Bar Changes:

The rigging bar located on the end bell cover of the compressor was redesigned on machines shipped after May 1, 1993. The new bar is similar to the old style, but now can bolted to the end bell cover vertically, to act as a foot for the compressor when rigging the compressor separately.

Oil Pressure Differential Cut-out:

An oil pressure differential switch was added to the chiller as an additional safety device after Nov. 15, 1993.

Other Improvements/changes:

- Marine Waterboxes in two and three pass arrangements.
- One pass nozzle-in-head now available.
- High voltage motors.
- New 'CR' size motor.

INSTRUCTIONS

REPLACEMENT COMPONENTS DIVISION

For Use With: 19XL Ejector Kit **Part Number:** 19XL660006

Date: 11/18/92

Prepared By: D. Ryder **Instruction Sheet #** 99TA550130

Machines manufactured prior to serial number 4192JXXXXX use an ejector which is no longer available. The new ejector is not directly interchangeable, and requires kit for additional change-out.

CAUTION ⚠ **CAUTION**

Pump refrigerant out of the cooler before making modifications

Procedure:

Remove Old Fittings: (Refer To Figure 1)

1. Pump out refrigerant from cooler. Isolate refrigerant in the condenser, or in a separate storage vessel. Use the pumpdown lockout feature on the PIC controls test.
2. Cut the oil suction line, line 2, at point A. Leave enough tubing to braze a fitting onto this line.
3. Remove the high pressure line, line 1, by loosening the flare nuts.
4. Remove line 2, remove strainer on other high side line. It is recommended that the low side filter be changed at this time. It is located to the left of the float box. Remove connection into the compressor casting at location 3.

Install New Fittings: (Refer to Figure 2)

5. Install line 1. Install line 10 by brazing the tubing into the original tubing. Cut the new tubing to size. Use the coupling fitting, item11, to braze the copper lines together.
6. Install the remaining components, items 2-9.
7. Tighten all fittings, then leak test all connections. Recharge the machine, use the PIC controls "terminate lockout" function to equalize or recharge the unit. Installation is now complete.

Ejector Replacement Kit Contents

Item	Description	Quantity
1	Ejector Inlet Tube (to Strainer)	1
2	Strainer (high side)	1
3	90 Degree Flare Elbow (3/8" M to 3/8" F)	1
4	3/8" Flare Gasket	1
5	Ejector Inlet Tube (Female Strainer to Ejector)	1
6	Ejector	1
7	1/2" NPT- 3/8" Flare Coupling	2
8	Ejector Tube (Ejector to Compressor)	1
9	Connector (9/16-18 to 3/8 Flare)	1
10	Ejector Suction Tube	1
11	Coupling (3/8)	1
12	Filter (Low Side)	1

Figure 1
Old Style

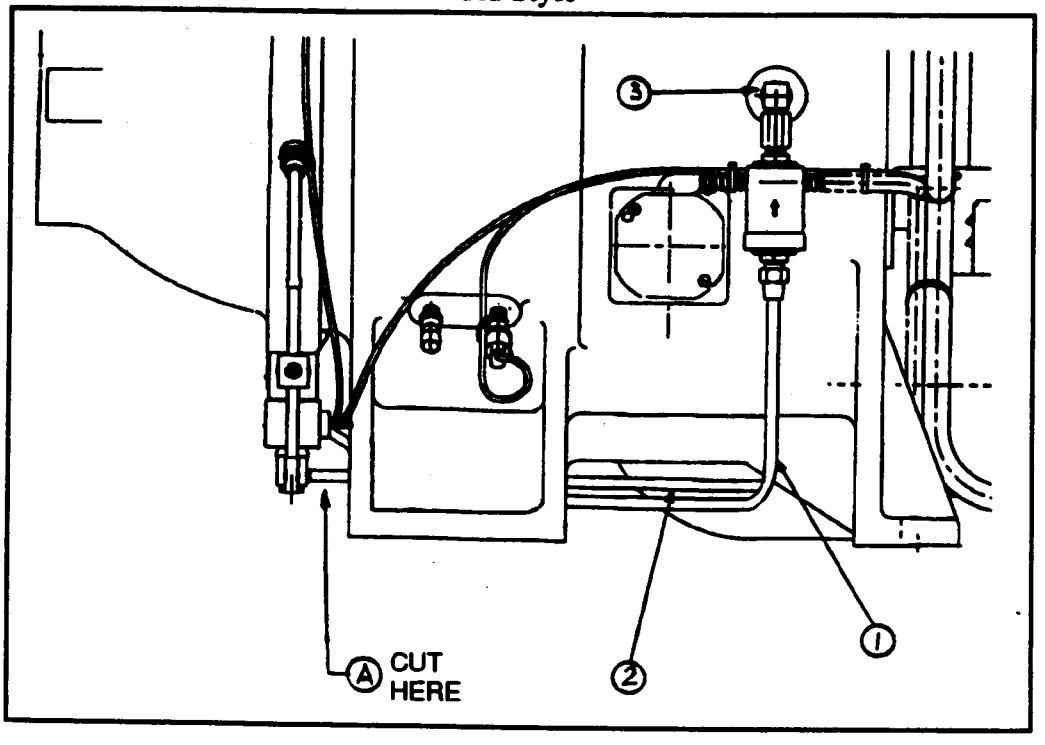

Figure 2
New Style