



**EXTENDED MEDIUM TEMPERATURE R-502
COMPRESSORS AND CONDENSING UNITS**

Recently, new hermetic R-502 compressors and condensing units have been released with an operational capability to -25°F saturated suction temperature.

The models are:

Compressors

RSU5-0050
RSN5-0075
RSL5-0100

Condensing Units

F3AF-0050
F3AF-0075
F3AF-0100

To some degree, these models have been released due to the need to find R-12 alternatives. It should be noted however, that under low evaporating temperatures, the operating conditions of the compressor will be restricted.

As other R-12 alternates become available, restricted compressor operating envelopes could become a way of life. It is part of the price we may all have to pay for the ozone crisis.

The above models have the following return gas and condensing temperature RESTRICTIONS:

For a given evaporator temperature, neither the maximum condensing temperature nor the maximum return gas temperature should be exceeded. Operation beyond these limits will cause high compression ratios and/or high return gas temperatures. This results in compressor overheating or connecting rod wear and a shortened compressor life.

From a practical standpoint, these restrictions may mean:

1. The compressor and condensing units may not be suitable for outdoor use.
2. Units operating at -25° will be susceptible to overheating with dirty condensers and/or restricted air flow.
3. Minimum suction line pressure drops will be important.
4. Traditional superheat settings may be **too** high.
5. Suction lines should be well insulated.
6. Suction to liquid heat exchangers may produce excessive return gas temperatures.
7. Condensers may need to be oversized in warm ambients.

Maximum Operation Conditions

Evaporator* Temp (°F.)	Maximum Return Gas (°F.)	Maximum Condensing Temp. (°F.)
25	65	145
20	60	145
10	50	130
0	40	130
-10	40	130
-20	40	120
-25	40	120

* Saturated Suction Temperature **At The Compressor**

