



**Specialty  
Heat  
Transfer  
Products**

## Line set sizing

It is important to size the main line to accommodate the system capacity. To large a line can lead to problems with oil return (burnouts of the compressor will result) or too small can result in excessive pressure drop which will reduce the system capacity. A good utility is the “refrigerant line sizing” program located at [boxload.tecumseh.com](http://boxload.tecumseh.com).

Input the parameters of the system and it will recommend a suitable line size for both Liquid and Suction lines.

For a single evaporator the total amount of pressure drop for the suction line should be equal to 1 to 1.5 degree F. This will vary depending on the refrigerant chosen. For R134a the suction pressure drop should be in the 1 - 1.5psig range. For blends (R404a, R407c) the drop should be 1.5 to 2 psig in pressure drop.

When sizing for a multiple evaporator installation break the main line sizing apart from the branches. Each should be sized to add up to the desired total amount of pressure drop for the complete suction line.

For long lineset runs over 50 feet pressure drop and oil return are big issues. Long lineset runs can be done but pressure drop is critical the system operation. LRC's lineset charts are based on 100 feet of run. For runs over 100 feet please ratio the pressure drop - for 150 feet the pressure drop would be  $150/100 * \text{chart value}$ . Oil return is also a large issue. For long runs over 50 feet or runs with alot of rise where the evaporator is higher than the condensing unit it is a good idea to utilize an oil separator to minimize the amount of oil that leaves the condensing unit. If an oil separator is not used for runs over 30' then please add 1 ounce of oil for each 10 feet of lineset over 30 feet.