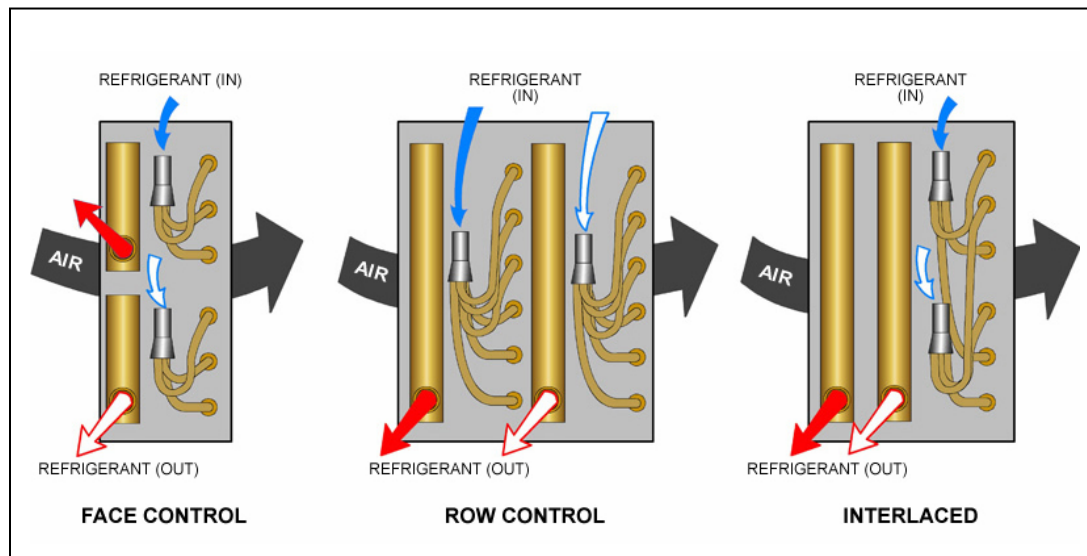


Multiple Refrigeration Circuits

For control and redundancy, many refrigeration systems include two or more refrigeration circuits. Each circuit must be kept separate and designed as if it were a single system. In some cases, a single refrigeration circuit serves multiple evaporators, **but multiple refrigeration circuits should never be connected to a single evaporator**. A common mistake is to install a two circuit condensing units with a single circuit evaporator coil.

Figure 11 shows common DX coils that include multiple circuits. Interlaced is the most common. It is possible to have individual coils, each with a single circuit, installed in the same system and connected to a dedicated refrigeration circuit.

Figure 11 - DX Coils with Multiple Circuits



While most common air conditioning applications have one evaporator for each circuit, it is possible to connect multiple evaporators to a single refrigeration circuit.

Figure 12 shows a single refrigeration circuit serving two DX coils. Note that each coil has its own solenoid and thermal expansion valve. There should be one TX valve for each distributor. Individual solenoids should be used if the evaporators will be operated independently (i.e. for capacity control). If both evaporators will operate at the same time, then a single solenoid valve in a common pipe may be used.