

Contractor Service Tips

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Tip Card
13

Oil Separators

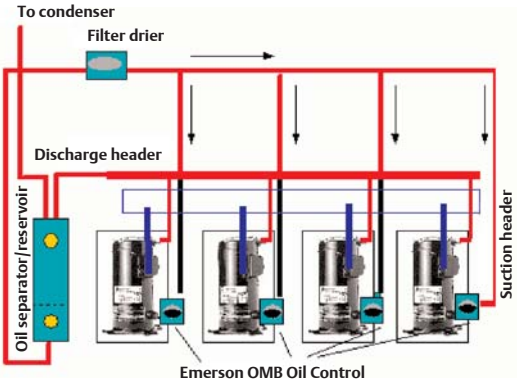
Q: What is the purpose of oil separators and how do they operate?

Oil separators are used on refrigeration systems where it is difficult for the oil to return from the evaporator. These typically are field built-up systems, such as in supermarkets, and ultra-low temperature systems.

Oil separators are installed in the compressor(s) discharge line. They are usually a vertical container with the discharge gas connections at the top and an oil return port at the bottom. This return line may be piped directly to the suction line on single compressor units or on multiple compressor racks would be piped to a holding tank called an oil reservoir. Some oil separators have a reservoir built into the bottom portion of the container with the upper portion being the separator.

From the reservoir, the oil is then returned to the compressors by use of a mechanical or electronic oil level control fastened to the compressor crankcase.

Oil separators use various modes of oil separation methods to remove the oil from the discharge gas as it leaves the compressor. These methods include reduction of velocity, impingement, centrifugal action, or coalescing elements. Oil separators vary in capacity and efficiency depending upon the mass flow that is being pumped through them and no oil separator is 100% efficient.



Typical System Oil Piping Schematic