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TECHNICAL BULLETIN #64

INSTALLING AR-GLO® ADDITIVE INTO ROTARY SCREW COMPRESSOR UNITS WITH A COALESCING FILTER/SEPARATOR

CFC AND HCFC APPLICATIONS

Rotary screw air conditioning and refrigeration compressor units require large amounts of refrigeration oil for compressor cooling, both to create a gas seal between the rotors and to lubricate the compressor. The rotary screw compressor runs at very high speeds (3,600 RPM). This means that the lubricating oil must be free from contaminants and must always be available for compressor cooling and gas sealing. In order to maintain the high oil purity and adequate flow, a coalescing filter/separator is used. The coalescing units are highly efficient oil filter/separators (more than 99% effective at separation) with large oil reservoirs. All rotary screw machines have a coalescing filter/separator system.

TYPICAL ROTARY SCREW UNIT OIL CHARGE

RWB Models = Tons	Oil Charge/Gallon	AR-GLO 4 Charge
28-40	55	13 oz.
54-93	85	1 pt. 5 oz.
106-167	160	2 pt. 5 oz.
224	275	4 pt. 4 oz.
334	275	4 pt. 4 oz.

With the high efficiency of the coalescing filter/separators, circulation of the AR-GLO fluorescent additive past the oil separator-compressor loop is almost nonexistent. Field testing has shown that AR-GLO will not circulate sufficiently with extended run times. However, introducing AR-GLO after the coalescing filter/separator allows for leaks to be found in the high side of the system.

INFUSING AR-GLO AFTER THE COALESCING FILTER

To introduce AR-GLO into the system *after* the filter/separator, install a small line with a hand valve from the discharge of the oil pump to the high side of the system. The AR-GLO/refrigeration oil mixture can then be added downstream from the filter/separator. When installing AR-GLO in this fashion, the first step is to infuse the proper amount of AR-GLO 4 (¼ ounce per gallon of refrigeration oil) into the oil reservoir. When the proper ratio is reached, a bright yellow-green fluorescence will be seen through the sight glass when illuminated with a high-intensity ultraviolet lamp. When the refrigeration oil in the reservoir has the proper AR-GLO concentration, a temporary line from the discharge of the oil pump to the high side of the system should be installed with a valve to control the oil flow. Inject the oil into the high side until the receiver sight glass shows fluorescence. This procedure can be performed intermittently to provide for leak detection past the oil separator.