



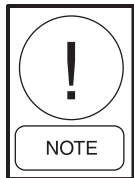
ES Service Information

File In/With:	N/A	SI0075
		New 12-03
Equipment Affected:	OM Titan Water Chilling Systems	
Commissioning and Operation of Oil Recovery System		

General

This letter supplements information supplied in the standard literature and also contains important information regarding the proper commissioning and operation of oil recovery units installed on OM Titan water chilling systems.

The reliable operation of these systems can only be achieved when the quantities of refrigerant, oil, and etc. are properly balanced, based on the normal system requirements. If the system becomes unbalanced, it may be necessary to add or remove oil from the system to restore the proper balance. Since the OM Titan system is a custom engineered product, please refer to the specific installation drawings for specific projects, and Forms 160.71 N1 and 160.71 O1 (for non electric models) as additional information to this letter.



Before energizing the heater(s) electrical supply, it is imperative that an oil recovery system (or any other application such as the compressor oil reservoir that utilizes electric immersion heaters) have an initial oil charge with the proper YORK "Alpha" designated lubricant to completely cover the heater element(s) before energizing the heater(s) electrical supply.



Burn hazard - the surfaces of energized electric immersion heaters can get very hot. Energizing the elements in "dry" or "vapor only" environments may result in decomposition of refrigerant or hardware damage!

System Oil Sampling Operation

The oil recovery system is intended to maintain the oil concentration in the system evaporator at a level where it does not adversely impact unit performance. A log sheet should always be maintained showing when oil has been added or removed from the system. This log can be referenced to determine if there might be too much oil in circulation or other operational issues with the system.

After the initial oil charge, the oil recovery system should be commissioned by verifying and/or adjusting the heater internal thermostats to the temperature specified on the project drawings (120° F can be used if no temperature is specified). The oil recovery system's sole function is the distillation of oil. The distillation rate is a function of many variables, the primary one being the amount of oil present in the system refrigerant charge. Return of the mixture sample is accomplished by discharge gas through an eductor tee. This process is controlled through a solenoid, which is operated via the oil recovery vessel temperature switch or transmitter and a PLC control algorithm.

In some instances, the oil feed eductor may feed more oil-rich liquid refrigerant than the vessel heater is capable of vaporizing due to the heater wattage. In this instance, it may be necessary to throttle the liquid feed and/or the hot gas vapor to the eductor. Throttling the feed valve will reduce the liquid feed rate into the vessel and improve the distillation rate.

During normal operation, the oil level in the oil recovery vessel is protected by a “standpipe” that maintains an adequate oil level to cover the heaters while allowing any excess oil that accumulates to return to the compressor. On larger systems this may be through a float drainer but care must be exercised that the drain line, which bypasses the standpipe, remains closed (except during service with heaters de-energized).

The oil sampling return rate to the vessel is a very important since the heaters are a fixed wattage. Returning the sample at too fast a rate will cause the temperature within the vessel to be reduced too low and the inventory in the vessel may flash (or boil) violently. This may result in the oil being forced back to the system through the vapor vent line, or there may be a chance for a portion of the undistilled sample to be returned to the compressor oil reservoir at a temperature lower than planned. Either situation can have a detrimental effect on the operation of the system. When working correctly, the inventory in the oil recovery vessel will be held at the nominal range of temperature difference that causes the switch to cycle the eductor solenoid on routine cycles.