lets are collected on the extended surface area of the wire mesh pads where the oil falls by gravity into the oil reservoir.

The third and final stage of oil separation is achieved in the oil coalescing element section of the oil separator. The oil mixed with the refrigerant entering the coalescer element is a very fine aerosol mist about the size of cigarette smoke particles. These small aerosol mist particles wet the coalescer element media and form larger oil droplets which fall by gravity to the bottom of the coalescer element section. The oil collected in the coalescer section is drained from the oil separator with a small amount of refrigerant gas. This provides the high pressure "gas drive" for the eductors to return oil from the evaporator. Refer to section titled "Oil Eductor Circuit", page 41.

Three sight glasses are provided in the oil separator for monitoring the oil level and verifying performance of the coalescer element. Liquid oil should be visible in the top glass of the oil separator when the chiller is off. During operation, oil may be higher or lower due to system load and operating conditions.

A low oil level safety switch is provided in the bottom of the oil separator. A safety shutdown will be initiated if the oil level is below the switch setting for 30 continuous seconds after the chiller has been running for 3 minutes.

An oil drain and charging valve is located on the bottom of the oil separator. A 5/8 inch male flare connection is provided for ease of connecting a hose to quickly drain used oil into a EPA approved recovery cylinder or tank. Oil can be added into the oil reservoir with the chiller in service.

CAUTION

Do not add oil. YORK YS Chiller packages are pre-charged with the correct amount of YORK oil during functional testing after manufacture. Refer to the Table 6, YORK Oil Types, in the Maintenance Section.

Oil loss is most often the result of operating conditions at loads under 10% of the chillers rated capacity and with condensing water that is too cold for load and operating condition.

The oil is not "lost" but has migrated into the refrigerant charge and is most likely in the evaporator. Excessive amounts of oil in the evaporator will result in operational problems.

Oil management problems result if the compressor discharge superheat is not maintained at the values listed in Table 9. Compressor discharge superheat is the difference between the compressor discharge temperature and the saturated condenser temperature. Compressor discharge superheat is used in conjunction with the evaporator approach to determine the most efficient refrigerant charge.

WARNING

Should the control panel display EXCESS CHARGE WARNING this is most likely the result of excessive amounts of oil in the evaporator. Excess amounts of oil in the refrigerant will cause foaming. The oil foam carries liquid refrigerant into the compressor. This results in lowering the compressor discharge superheat to low levels. If the compressor discharge superheat falls to within 10ºF of the saturated condensing temperature the control panel will display EXCESS CHARGE WARNING. Compressor loading will be inhibited while the EXCESS CHARGE WARNING is displayed. The inhibit loading will remain in effect until the compressor discharge superheat increases to 15ºF. Refer to "Oil Recovery Procedure" in the Maintenance section on page 56.