



INSTALLATION & OPERATION MANUAL OF APCO MAKE THERMOSYPHON SYSTEM TYPE TS-100.

APCO Thermosyphon system is manufactured in SS304 & Cast Steel, comprising of SS cooling coil, level glass indicator, portable hand pump, reservoir, pressure release system, pressure guage, hoses etc.

WORKING :

The Thermosyphon pressurized lubrication system is connected to the mechanical seal cavity in the conventional way. (Ref: GA Drg. ATS-100)

The Thermosyphon pot is $\frac{3}{4}$ filled by the lubricating buffer fluid which should be compatible as per the process requirement, whereas, the remaining $\frac{1}{4}$ pressurized with Nitrogen Gas to the required pressure, which should be always 1.5 kg/cm^2 higher than the reactor pressure.

The low viscous oil raises up and siphon current is established between the flush in and flush out connection of mechanical seal. Normally, the temperature of mechanical seal flush out line is more than the flush in line to the mechanical seal.

INSTALLATION & OPERATION :

- a) Fix the Thermosyphon pot within one meter radius of mechanical seal and within 2 meter height above the seal.
- b) Connect the piping as shown in sketch .

NOTE : The flexible hoses are only for testing purpose. Customer has to make rigid piping as shown in the sketch . Also flush out connection from mechanical seal to Thermosyphon pot must be insulated (Under Customer scope).

- c) Fix hand pump assembly on the bracket welded to the pot. Fix polycarbonate jar on the top of hand pump. Fix NRV to the hand pump and Tee connection to it. One end of the Tee will be connected to the lid of the polycarbonate jar through needle valve. (which should remain normally closed). The remaining end of the Tee to be connected to N-9 connection.
- d) Now connect N-3 (flush out) to one end of the housing & N-4 (flush in) to the remaining end of the housing (refer drawing).
- h) If the mechanical seal is jacket cooled, cooling water circulation must be provided from cooling water in let to cooling water out let.
- i) Also, circulate cooling water through Thermosyphon cooling coils from connection cooling water in (N-1) and cooling water out (N-2).