



OPERATION OF ENERCON'S FIXED ORIFICE ASSEMBLY

ENERCON'S FIXED ORIFICE UNIT OPERATES on the two-phase flow principle. Steam, several hundred times lighter than condensate, tries to pass through the orifice at about the speed of sound but is impeded by any condensate present.

THE STEAM IS CONTINUOUSLY FORCING the much denser condensate (travelling about 30 mph) into the orifice, and is effectively blocked from escaping. At a 100% condensate load, a properly sized Enercon unit loses no steam.

ALL CONDENSATE LOADS VARY TO SOME EXTENT. When the load drops below 100%, the orifice passes a violently turbulent mixture of condensate and steam in equivalent volumes. Since condensate is several hundred times denser than steam, steam loss by weight is negligible.

PROPERLY SIZED ENERCON UNITS in a 100-psi system producing 375 lbs/hr condensate, for instance, lose only 1.76 lbs/hr steam if load drops to 25%. At 100 psi, according to both DOE and trap company 'Leaking Steam Trap Discharge Rate' charts, a failed conventional trap (1/8") loses 52.8 lbs/hr.

ENERCON RECOMMENDS its units for any application where the load drops as low as 25% of capacity, although sources such as the U.S. Naval Facilities Engineering Command Supplements (10-90 & 1-92) say 'a fixed orifice sized for a 100% load operates efficiently down to a 10% load.' Enercon has replaced an average of 99% of the mechanical traps in plants it has completely converted.