



## 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.