

Water-Pressure-Gradients in a water-column exist in three-conditions:

1. At varying depths in water-column, where every one (1) meter of water depth there exists 0.1barg of pressure or 10kPa. This derives from 1cu.m of water on 1sqm of area equates to 1000kg mass (density of water is 1kg/l) and pressure is force/area; thus 10000N/sqm or 10kN/m2.
When two or more chambers or ports are located in a water-column at varying-levels, varying-pressures in each of the chambers or ports is produced; the varying-pressures are called pressure-gradients (due to varying depth in water colm).
2. Where each of the chambers have varying-projected-area to the water; pressures in each of the chambers or ports are varied, whether they are on the same level or not, varying-pressures produced on that various-states are also called pressure-gradients (due to varying chambers projected-piston-area).
3. At varying-levels where the pressure-gradient exits in each of the chambers, the water-pressures seek to equalise at a speed as a natural phenomena. This speed or velocity in m/s is capable to be computed by applying Bernoulli's formulas. The potential-energy exits can be computed using power formula force (N) x velocity (m/s) = Joules/sec of work = Watt of power.

Pressure-gradients are therefore an energy source, as is the case with temperature-gradients existing in a water-column where higher temperature exists close to the surface and lower-temperature exists at a certain depth below. The major difference is ΔP medium always exists and that pressure-gradient is a constant; temperature-gradients **are Not**.

In the case of temperature-gradients [ΔT] the energy is harnessed in a heat-exchanger system and the energy as heat-transfers is harnessed via the HE surface-area. The energy harnessed that equalised to nil represents the Δ energy-input into a refrigerant/ammonia system for conversion into usable electrical energy.

In pressure-gradients [ΔP] the energy derives from harnessing varying-pressure-force at varying-levels and at varying-projected-area in water-column that is a constant medium n, are where: pressure-force in Newton (N)= Pres (kN/m2)XArea(m2). Power-equivalent is Force (N) X Vel (m/s) = J/s = Watt of electrical energy.

Higher work-efficiency is derived from 'speed' of the pressure-force being released to do work.

Whilst Bernoulli's formula and Terracini's principles prevails, the 'releasing-speed' in the form of a projectile, varies the pressure-force resultants. The 'kinematic-speed' is a 'factor on fluid-implosion' a prefix coefficient to Bernoulli's.

This coefficient (cêf) is an ejectile-factor for this new findings, hereby named the " theory of ejectility".

where: potential energy={cêf x [mgh]} (Nm); power={cêf x [Q(m3/s) x Prs(kN/m2 or kPa)]} (J/s or Watt).

[*area under parable is theory of proximity].

