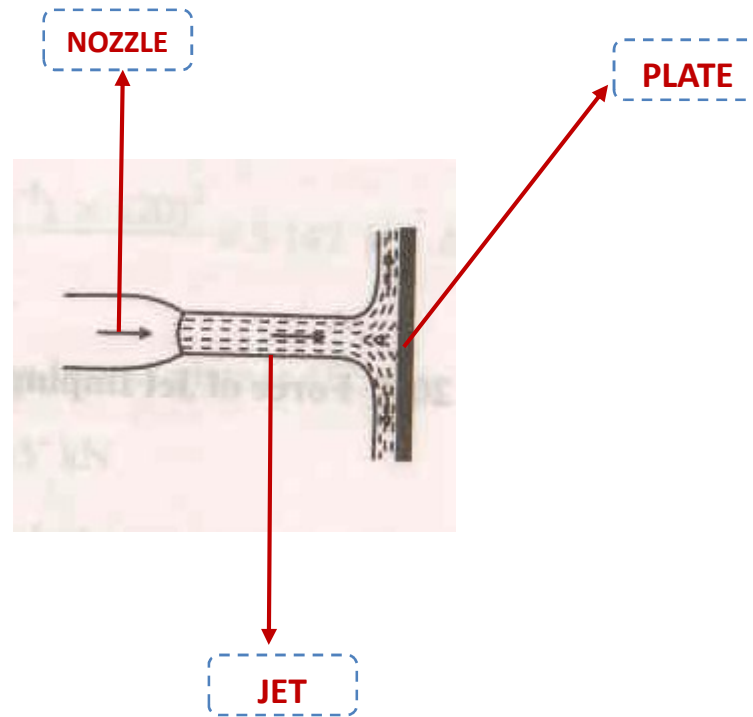


IMPACT OF JETS

A Jet of water issuing from a nozzle has a velocity and hence it possesses kinetic energy. If this Jet strikes a plate then it is used to have an impact on the Plate. This Jet will exert a force on the plate. This force is equal to the rate of change of momentum.

i.e the force is equal to (mass striking the plate per second) x (change in velocity).



Force exerted by the jet on the plate.

$P = \text{Mass per second} \times \text{change in velocity.}$

$= W/g \cdot (v-0)$ for stationary plate.

$= wav \times v/g$ [$a = \text{cross sectional area of the jet in } m^2,$
 $v = \text{velocity of the jet in } m/s, Q = av. \text{ and } W = Q \cdot w$]

$P = wav^2 /g \text{ KN}$ [where $w = \text{sp weight of water in } kN/m^3$]