1 Ex-01 (a) : Study and performance test of a Pelton wheel

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Pelton Wheel

- Impulse turbine

- High head, low discharge

- axial flow

- low specific speed

- head : 150m +

- specific speed ($8 \sim 27$)

1.1.1 Why specific speed?

Can compared with all turbines in a generalized way.

1.2 Important Points

- Survo mechanism : automatic control

- delfector

- Operating curve : Q will vary, N will be constant

- Characteristic curve : N will vary, Q will be constant

- Mechanical power = Torque $\times \omega$

- Torque: measured by hydraulic dynamometer

- angular velocity: measured by tachometer

- Input power = $Q\gamma H$

- Q is measured by orifice meter (manometer height difference)

- H is measured by pressure gauge (with pump by bernoulli eqn, where v = 0, Z = 0) and psi to m conversion is needed.

- Pressure head = $\frac{P}{\gamma} + Z$, where Z is the height difference of the gauge from the ammeter readings.

2 Ex-01 (b) : Dismantling of hermatically sealed compressor

- Spring: Vibration absorb

- Stator + rotor

- stator : create magnetic field intensity

- coil pickup tube : shaft like parts

- Rotor $\rightarrow$ Crank $\rightarrow$ piston

- a chargin port

- 1 suction chamber, 2 delivery chamber : backup refrigerant

- Suction chamber is only one, as pressure is less. so less space required

- Delivery chamber is two, as pressure is high. so more space required