Steam turbine

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Summary

- What is the turbine?
- What is the principle of steam turbine?
- Types of steam turbines.

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Principle of steam turbine:

- The steam energy is converted mechanical work by expansion through the turbine.
- Expansion takes place through a series of fixed blades(nozzles) and moving blades.
- In each row fixed blade and moving blade are called stage.

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What exactly is the turbine?

Turbine is an engine that converts energy of fluid into mechanical energy

The steam turbine is steam driven rotary engine.

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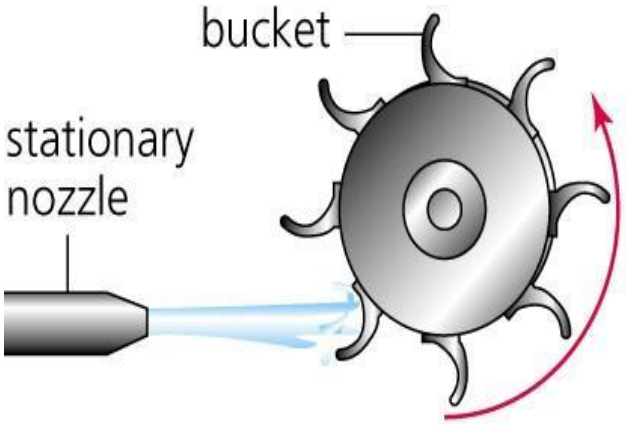
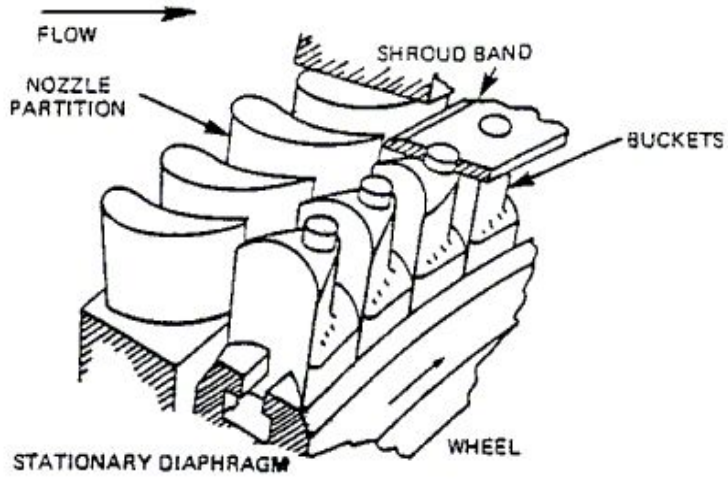
Types of steam turbine:

- There are two main types

1. Impulse steam turbine
2. Reaction steam turbine





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Impulse steam turbine:

- The basic idea of an impulse turbine is that a jet of steam from a fixed nozzle pushes against the rotor blades and impels them forward.
- The velocity of steam is twice as fast as the velocity of blade.
- Pressure drops take place in the fixed blade (nozzle).

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Reaction steam turbine:

- A reaction turbine utilizes a jet of steam that flows from a nozzle on the rotor.
- Actually, the steam is directed into the moving blades by fixed blades designed to expand the steam.
- The result is a small increase in velocity over that of the moving blades.

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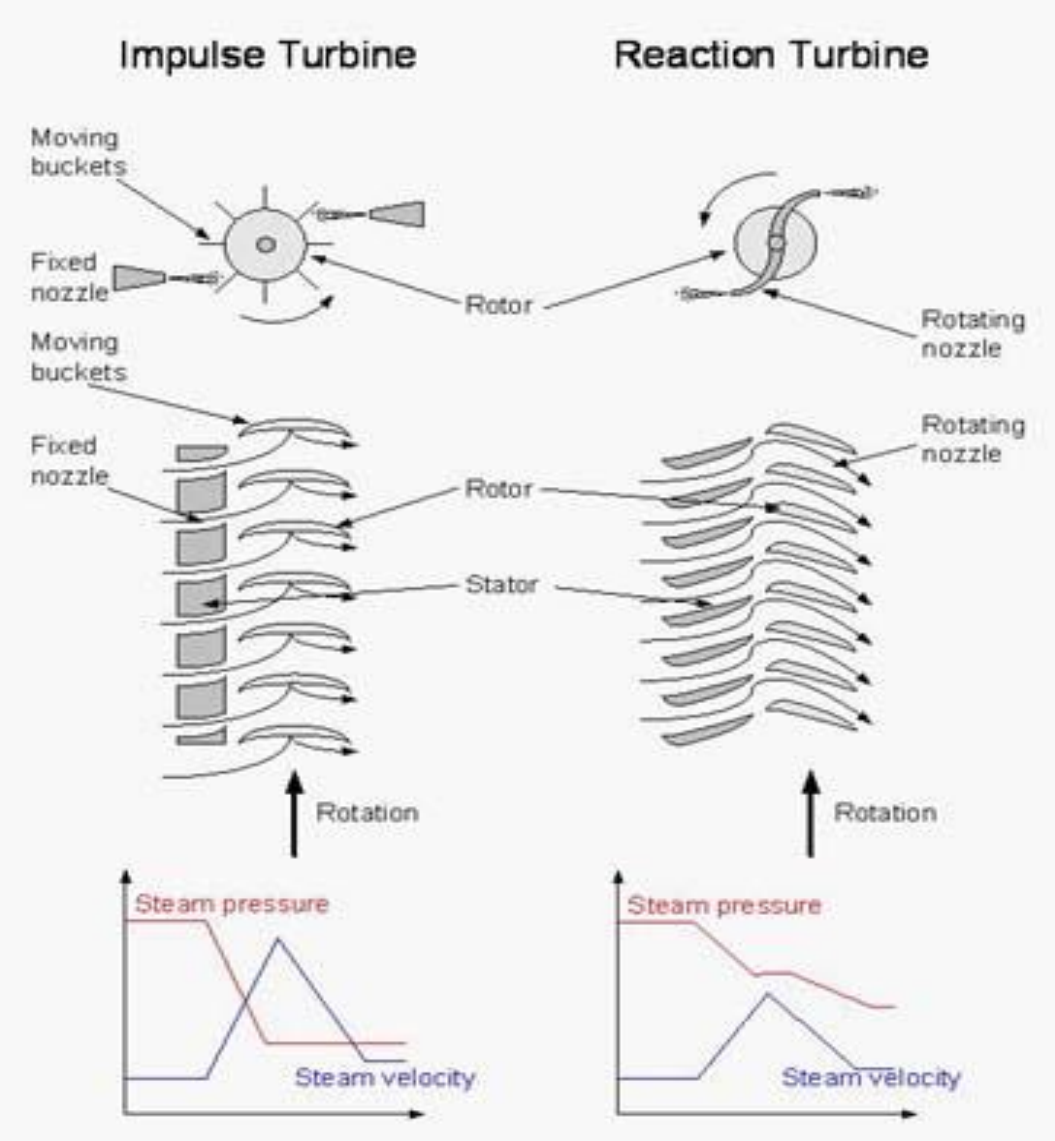
Comparative diagram:



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Tandem-compound

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Cross-compound

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Thank you

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