

## OPEN CYCLE STEAM TURBINE

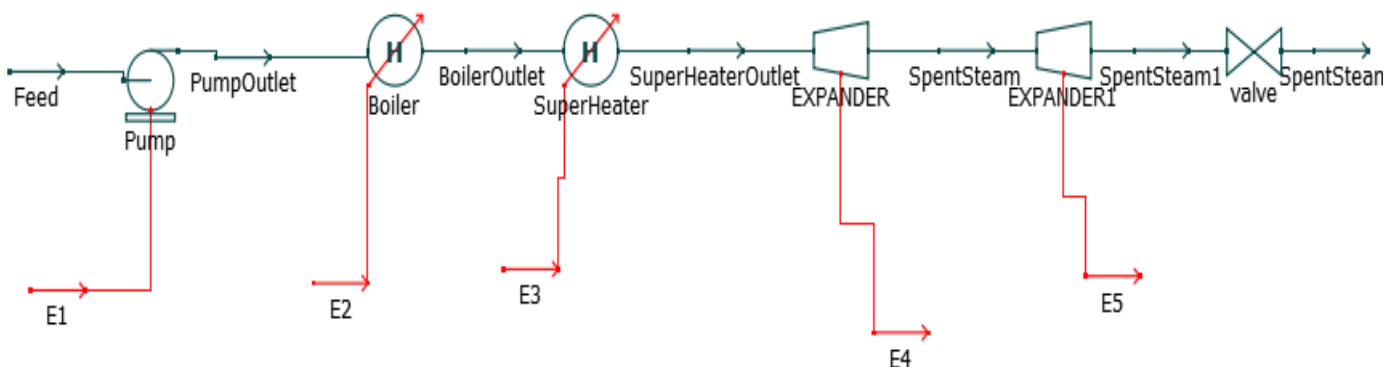
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### Background & Description:

A **steam turbine** is a device that extracts thermal energy from pressurized steam and uses it to do mechanical work on a rotating output shaft. Its modern manifestation was invented by Sir Charles Parsons in 1884. Because the turbine generates rotary motion, it is particularly suited to be used to drive an electrical generator. The steam turbine is a form of heat engine that derives much of its improvement in thermodynamic efficiency from the use of multiple stages in the expansion of the steam, which results in a closer approach to the ideal reversible expansion process.

### Flowsheet:



**Results:**

**DWSIM**

- 1) Energy produced in the steam turbine is **101.31988KW** .
- 2) Energy required to superheat the steam is **736.342 KW**.

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- 1) Energy produced in the steam turbine is **610.449KW**.
- 2) Energy required to superheat the steam is **748.6806 KW**.