SNS COLLEGE OF TECHNOLOGY
(Autonomous)
DEPARTMENT OF AERONAUTICAL ENGINEERING

UNIT-3

PISTON AND JET ENGINES

Ms.P.Kalpanadevi,
Airctaft System and Engines –
19AEO302

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JET ENGINES

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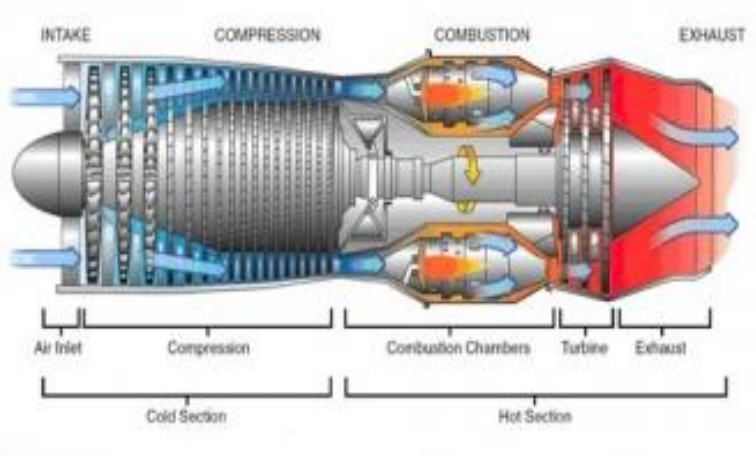
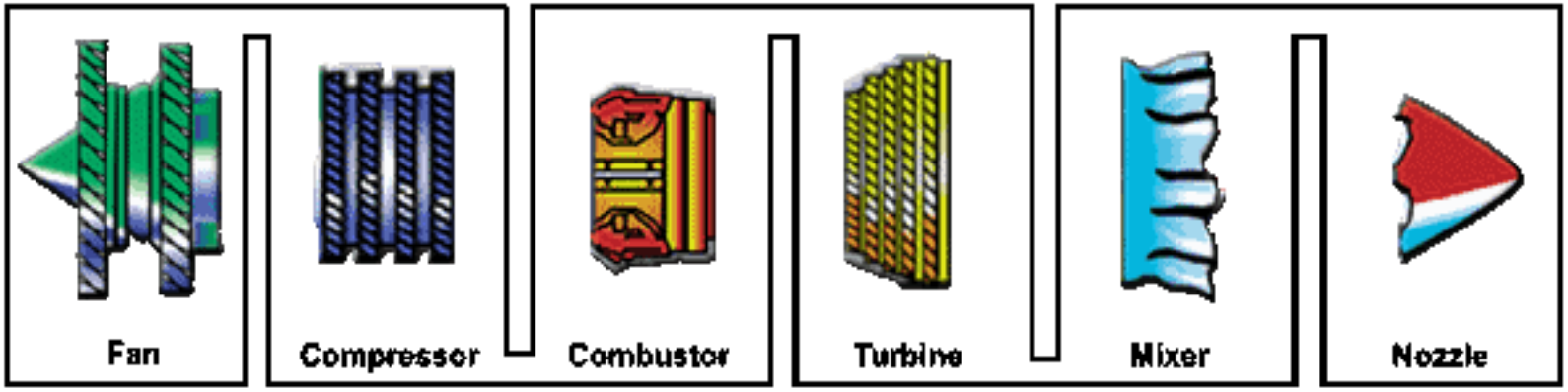
How do aircraft jet engines work?

- The first jet engine was built by Egyptian scientists during 100 B.C
- This device was known as **Aeolipile**.
- It is also called as **the Hero's Engine**

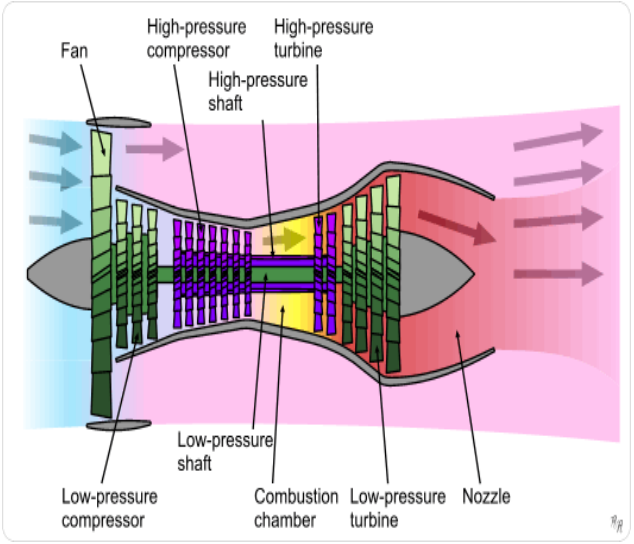
- Jet engine is nothing but a Gas turbine.
- It works under the principle of Newton's third law
- It states that "For every acting force there is an equal and opposite force"
- Gas turbine operates like toy balloon



Parts Of Jet Engine

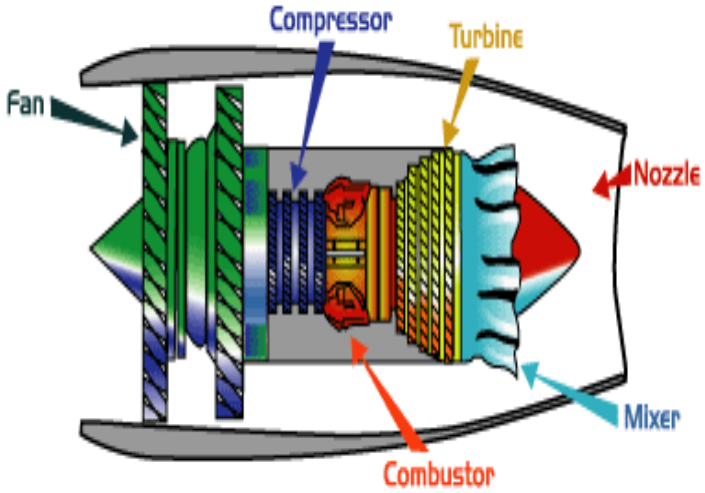


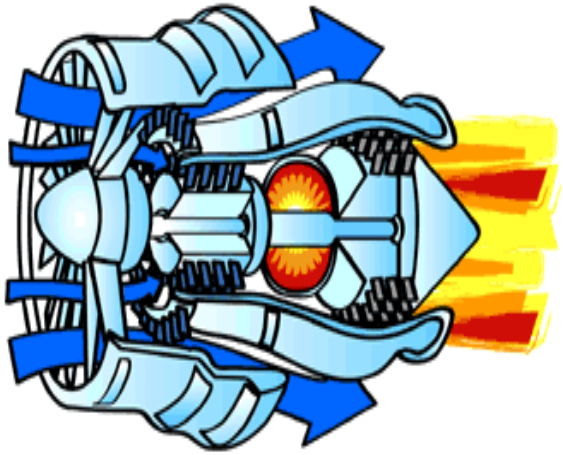
- FAN
- COMPRESSOR
- COMBUSTOR
- TURBINE
- MIXER
- NOZZLE



How A Jet Engine Works ?

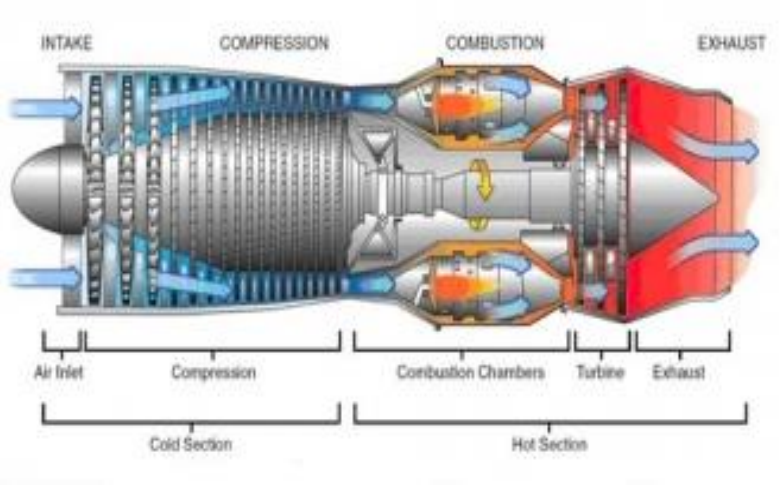
- Jet engines move the airplane forward with a great force that is produced by a tremendous thrust and causes the plane to fly very fast.





How A Jet Engine Works ?

Air Intake



- Sucked in by the compressor

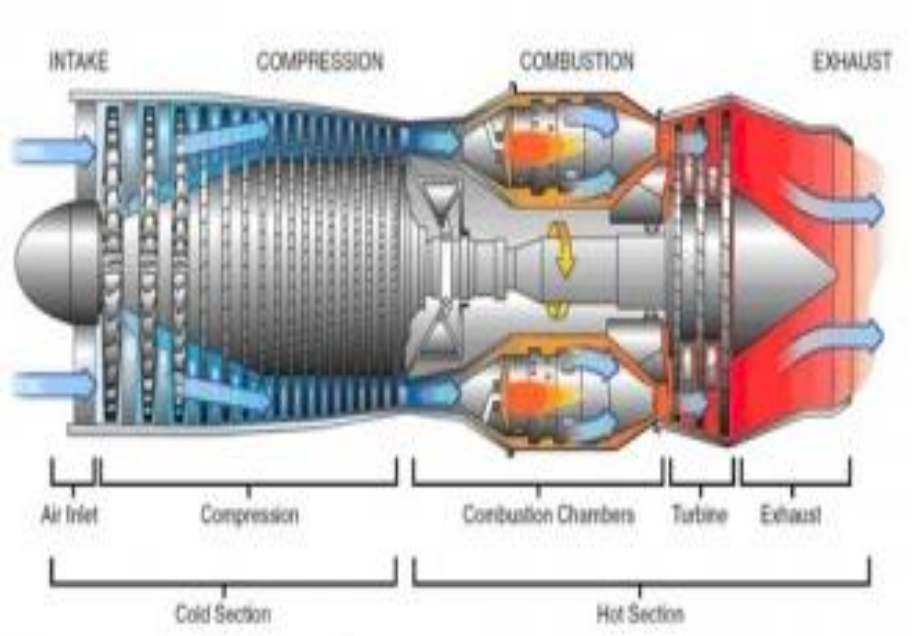
Compressor

- Series of vanes and stators
- The vanes rotate, while the stator remains stationary
- Compressor speed and temperature increases gradually

How A Jet Engine Works ?

Fuel Burner

- Fuel is mixed with the air, and electric sparks light the air, causing it to combust



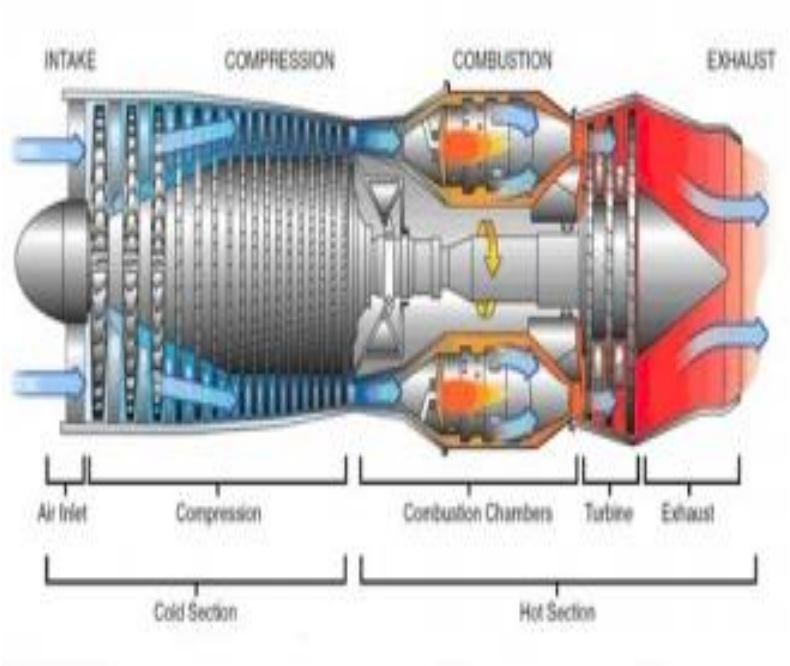
Combustion Chamber

- The air is burnt
- Increase in the temperature of the air, thus increases the pressure inside the engine

How A Jet Engine Works ?

Turbine

- Works like a windmill
- The blades gain energy from the hot gases moving past them
- This movement is used to power the compressor



Jet Pipe and Propelling Nozzle

- The hot air rushes out of the nozzle
- High pressure
- Hot air rushes out at very high speed