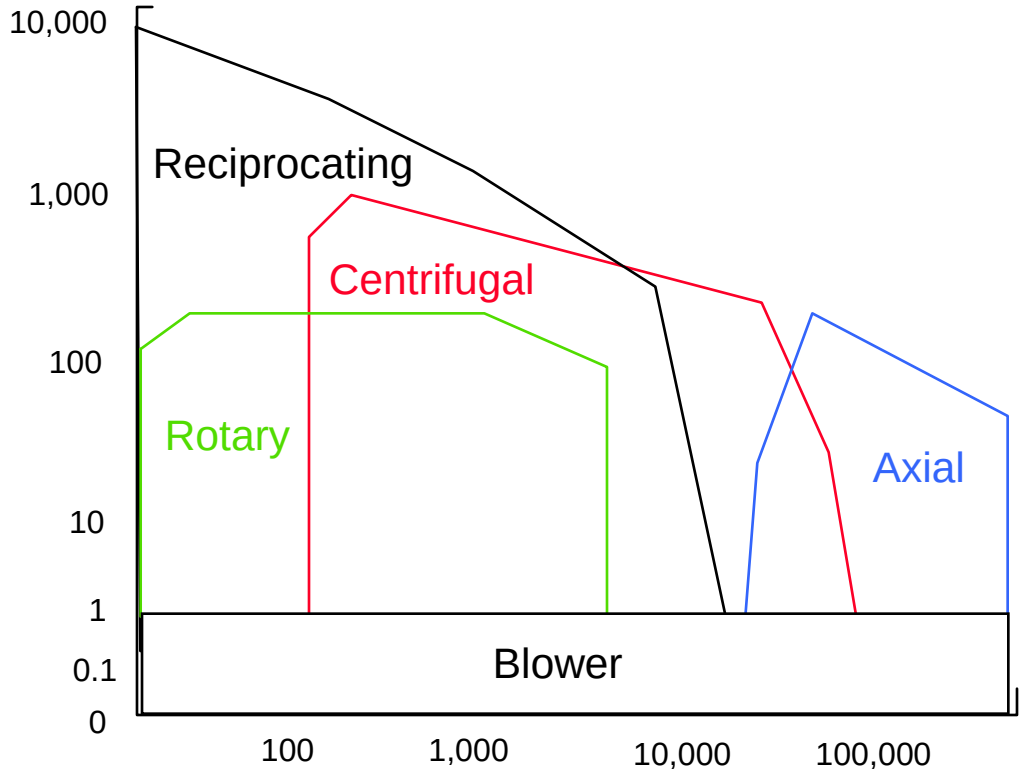
Rotary Compressors

Operating Ranges of Various Types of Compressors



ROTARY COMPRESSORS

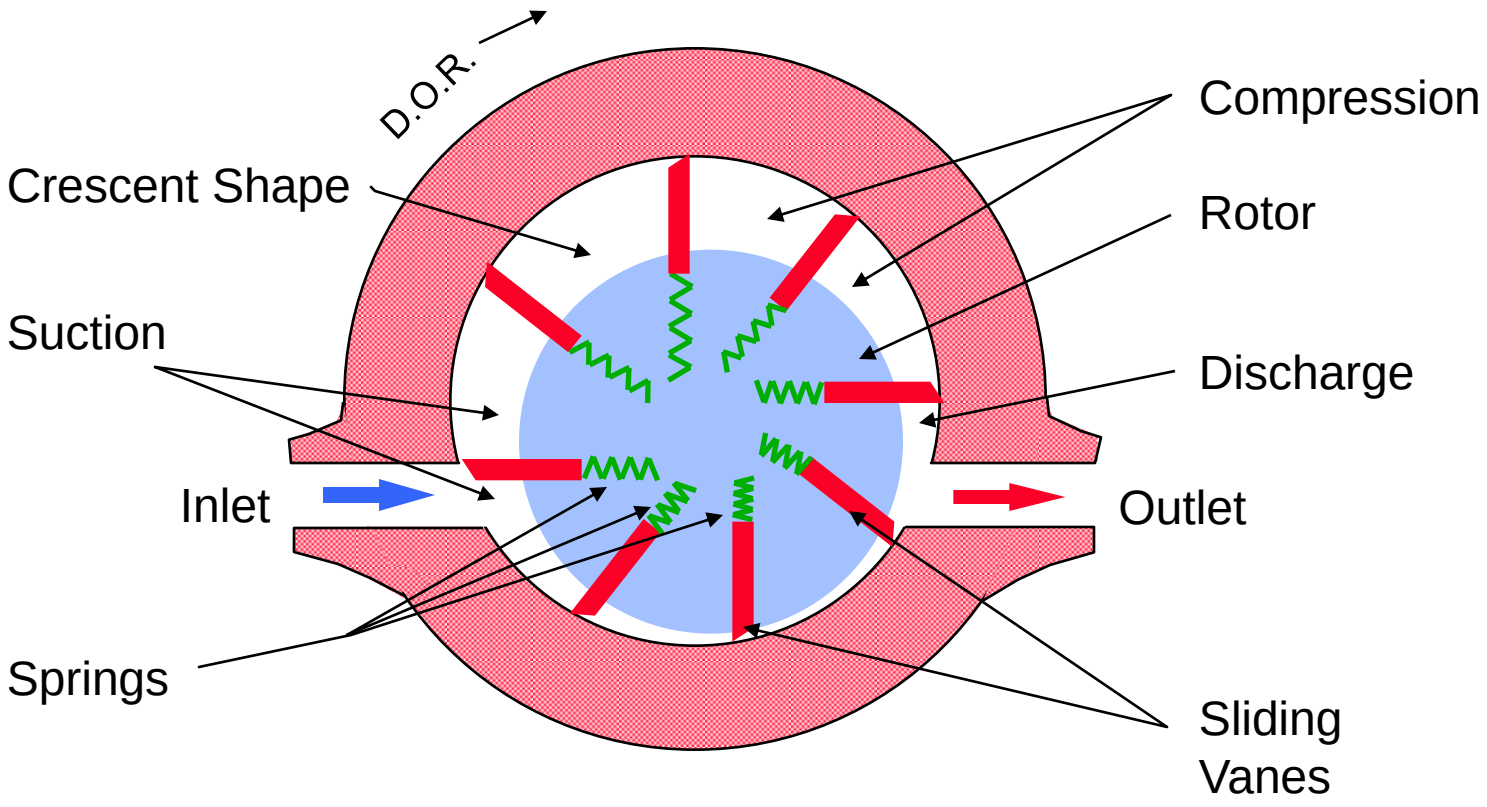
There are five types of rotary compressors, they are :

- **Sliding Vane**
- **Liquid Ring**
- **Lobe**
- **Screw Compressor**
- **Gear**

Sliding Vane Compressors and **Liquid Ring** Compressors compress the gas in the Compressor

Gear, **Lobe** and **Screw** Compressors carry the gas without changing its pressure. The pressure increase occurs in the receiving vessel

SLIDING VANE COMPRESSOR

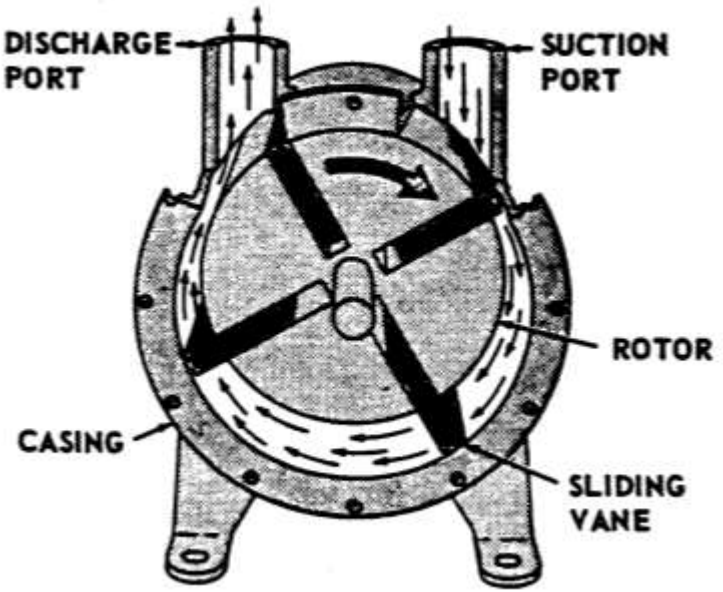


SLIDING VANE COMPRESSORS

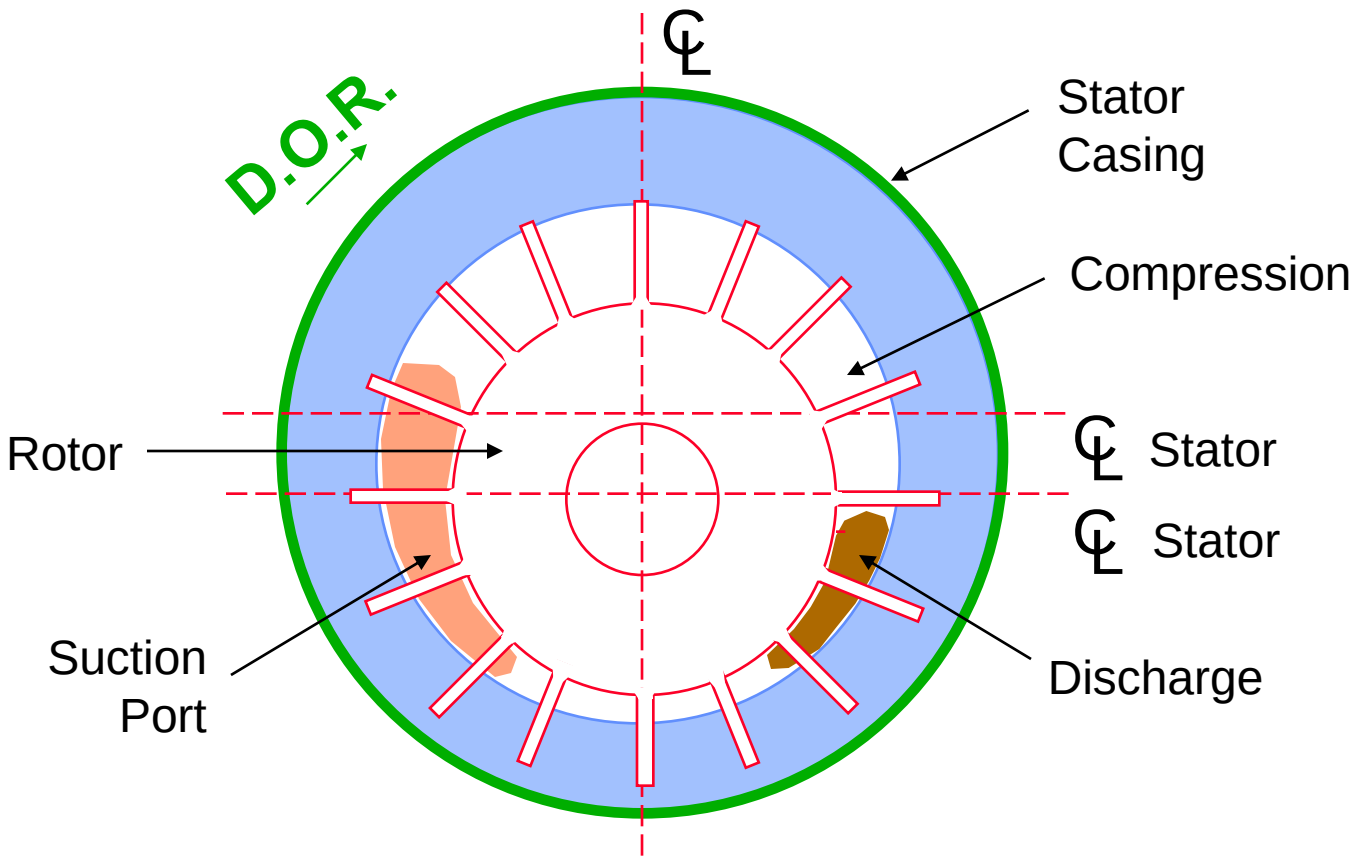
A sliding Vane Compressor comprises an eccentric rotor revolving inside a casing.

Sliding vanes are kept in contact with the casing by centrifugal force and by springs within the slots.

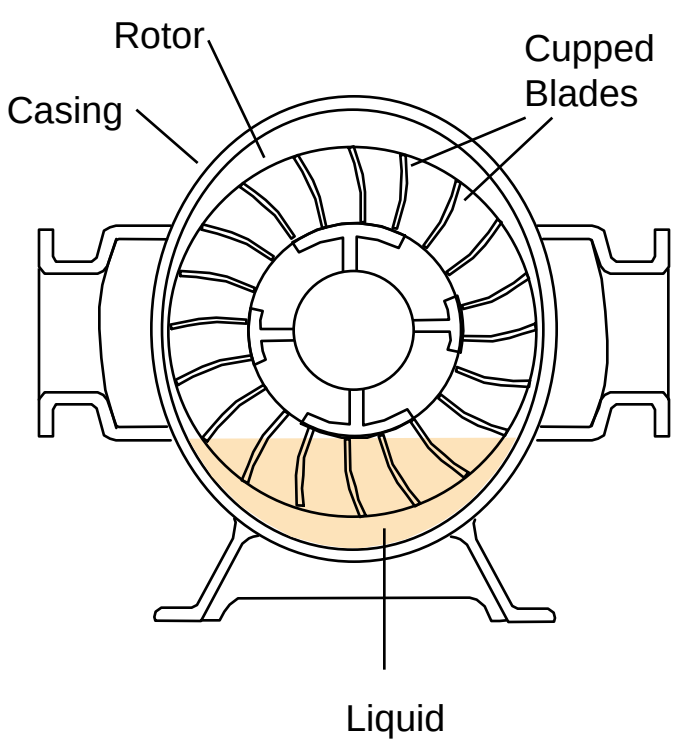
Sliding Vane compressors are lubricated by oil mist. This helps maintain the seal between the vanes and the casing. It also helps to avoid wearing of the vanes and casing.

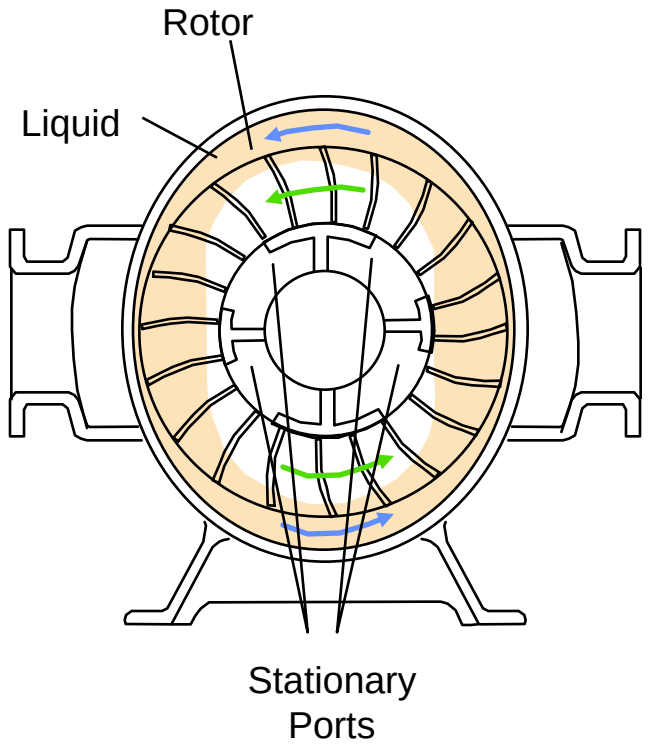


LIQUID RING COMPRESSORS

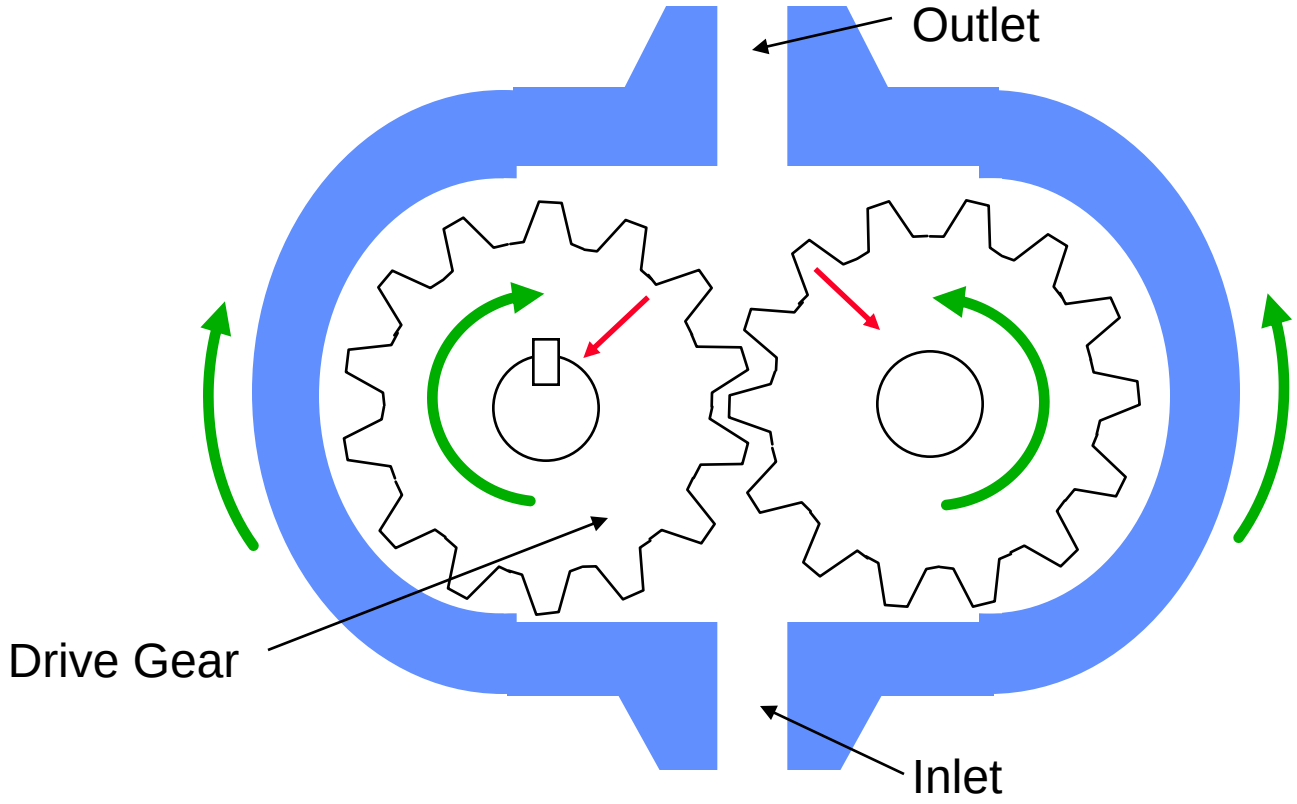


LIQUID RING COMPRESSORS

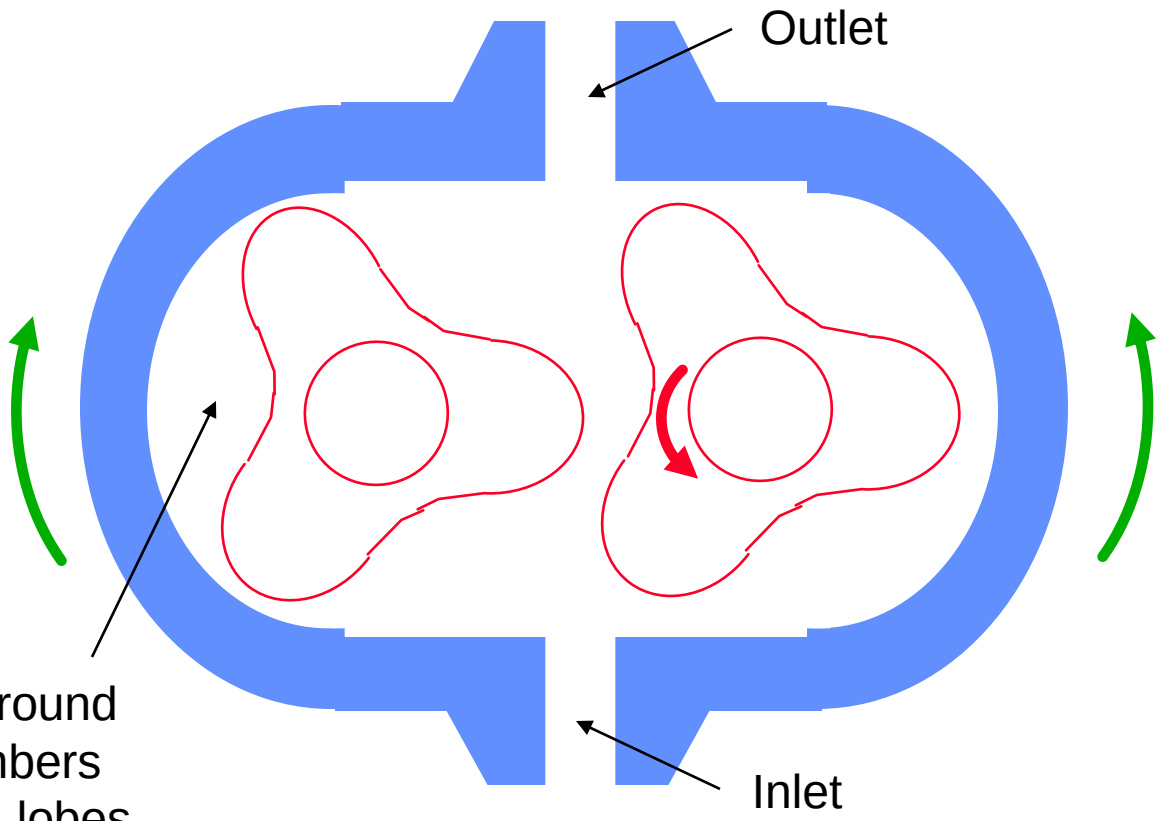




GEAR COMPRESSOR



LOBE COMPRESSOR



Gas is forced out of port as lobes go back into mesh.

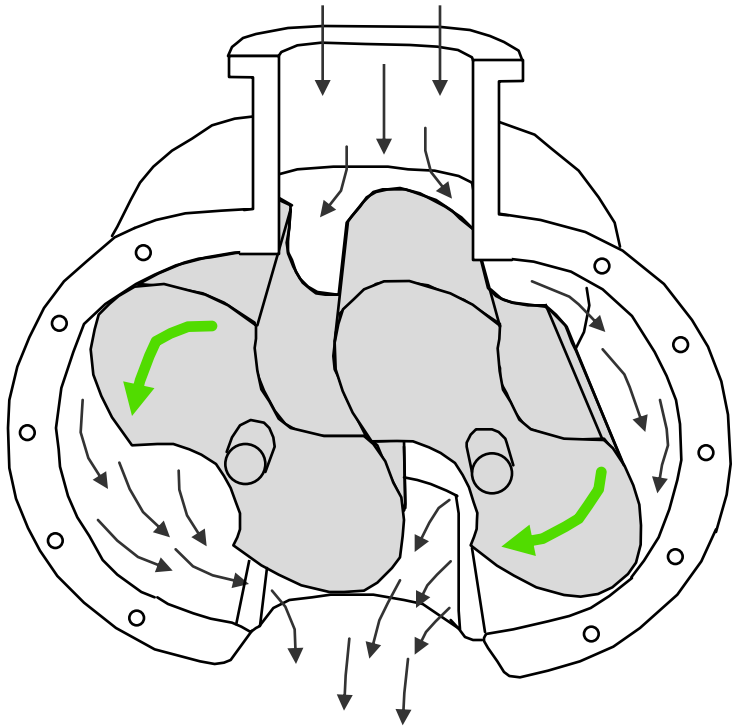
Gas is carried around housing in chambers formed between lobes.

LOBE COMPRESSORS

A Lobe compressor has two rotors whic are driven via a set of gears

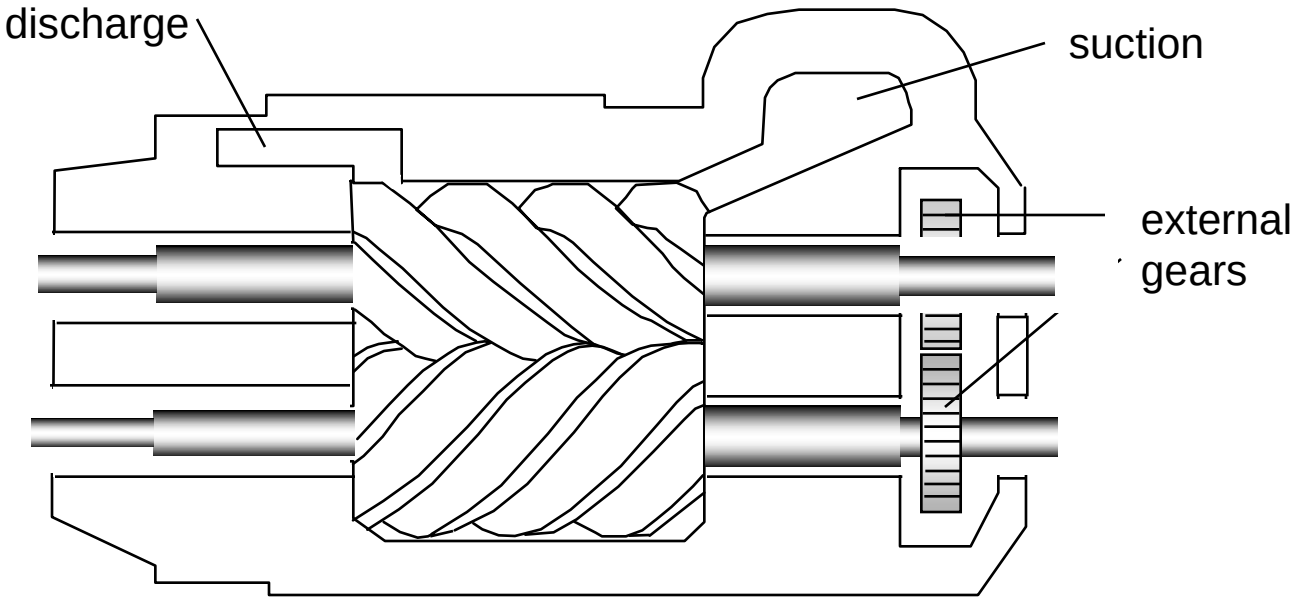
The two rotors rely on tight tolerances between the casing and the lobes

These rotors never come into contact with each other



SCREW COMPRESSORS

In this compressor, gas is displaced by helically lobed rotors



ROTARY COMPRESSORS

There are four recognised ways of controlling flow rate on a rotary compressor :

- A regulatory valve on the suction (the use of this is limited)
- The speed of the rotors
- A recycle valve, recirculating gas from discharge back to suction
- A vent on the discharge