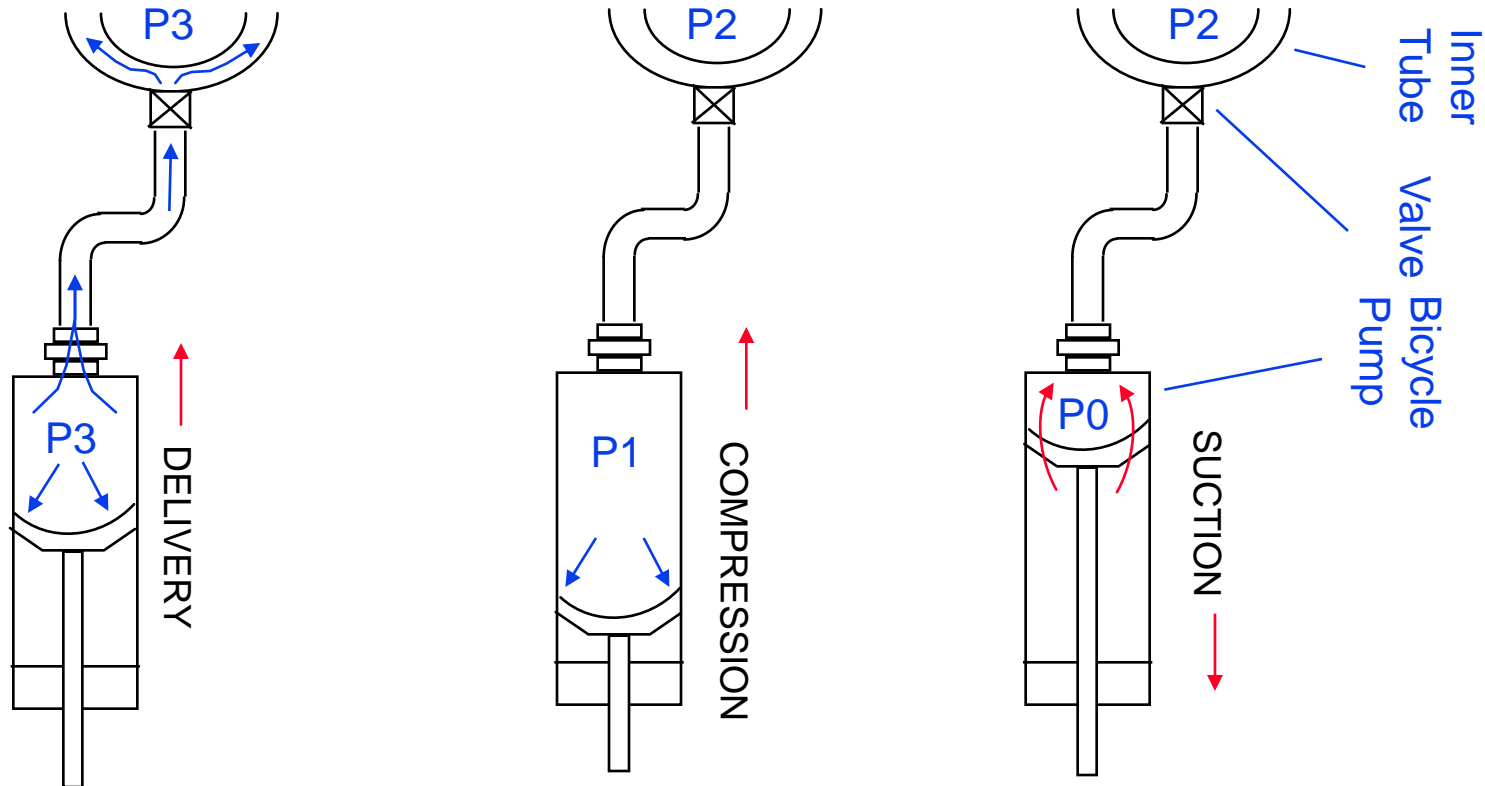


Reciprocating Compressors

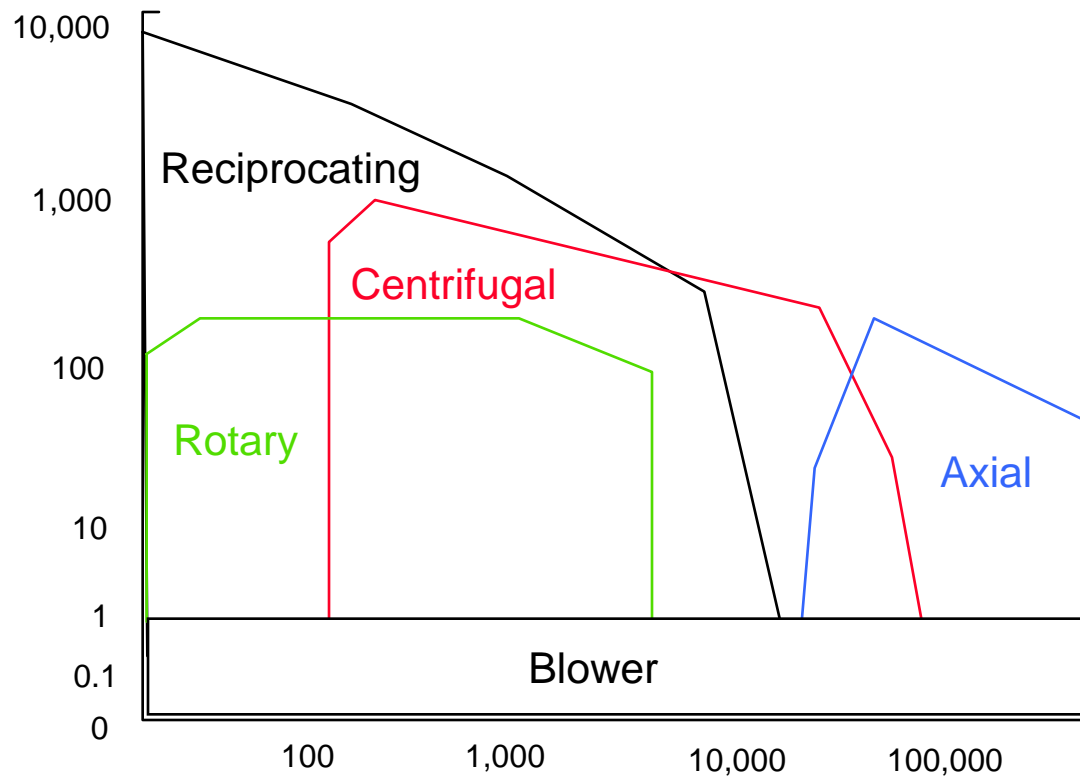
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The Simplest Type of Compressor - A Cycle Pump



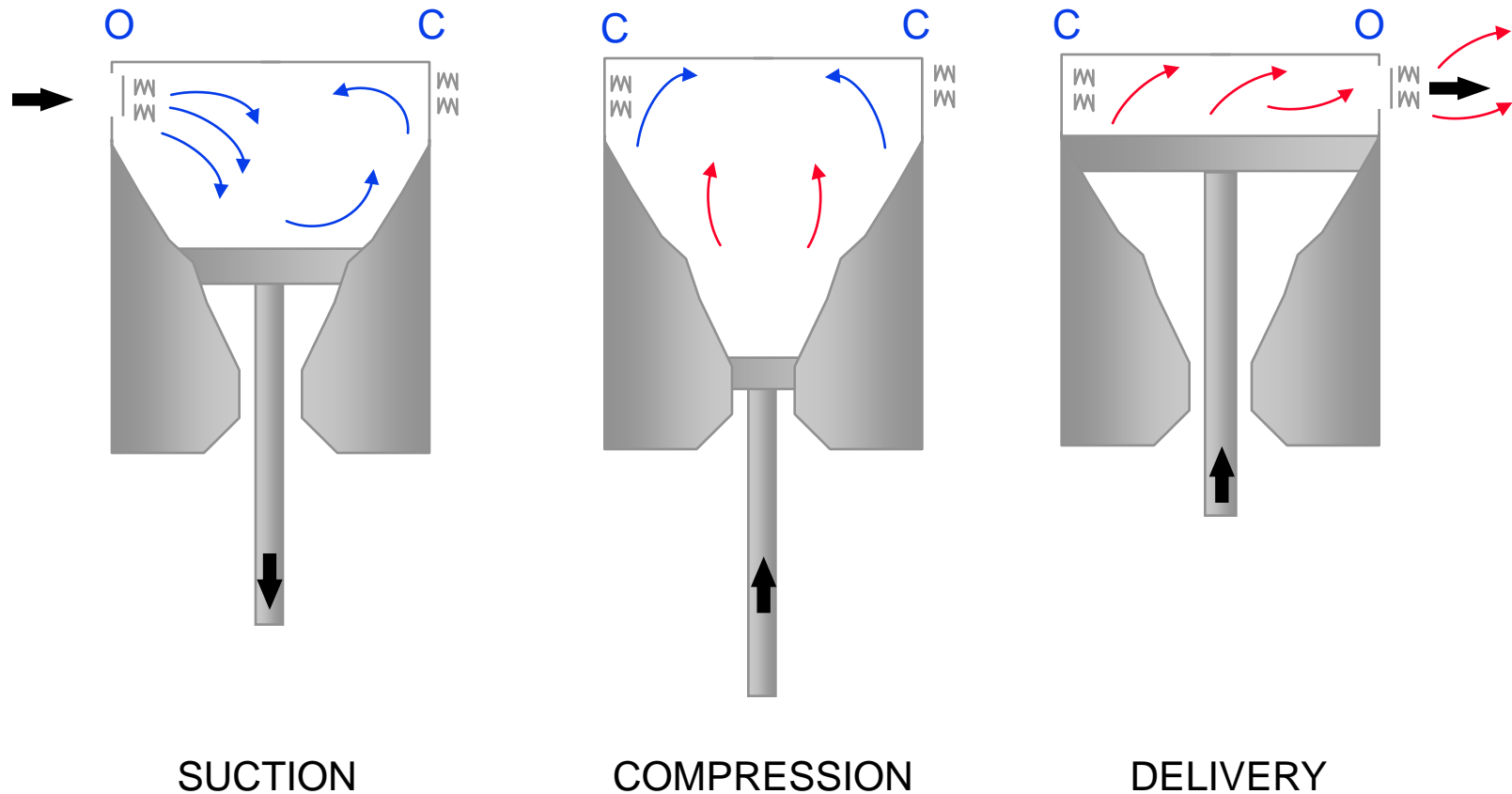
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Operating Ranges of Various Types of Compressors



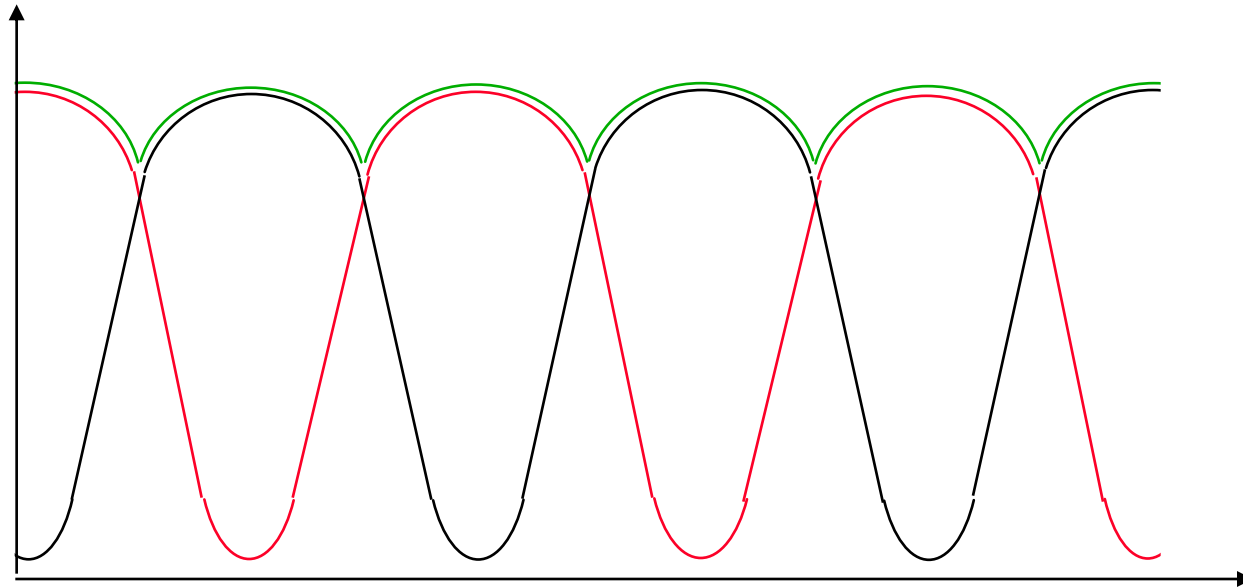
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Reciprocating Compressor



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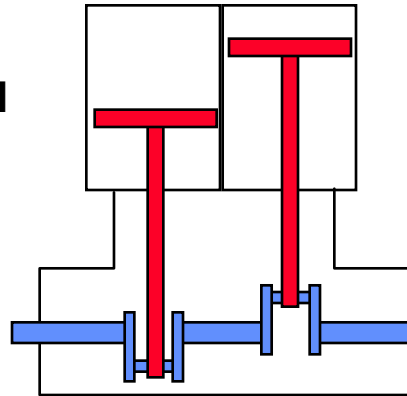
Pulsed Flow



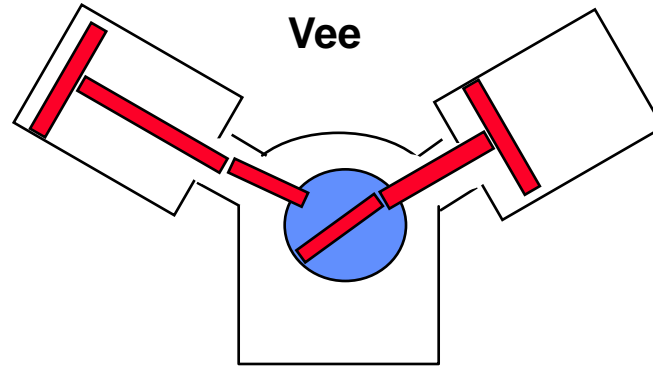
Pulsed flow is undesirable
With double acting piston, peaks and troughs are evened out

Cylinder Arrangements

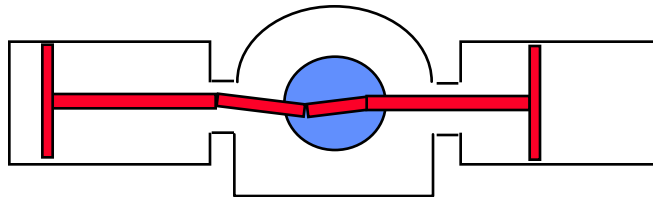
Parallel



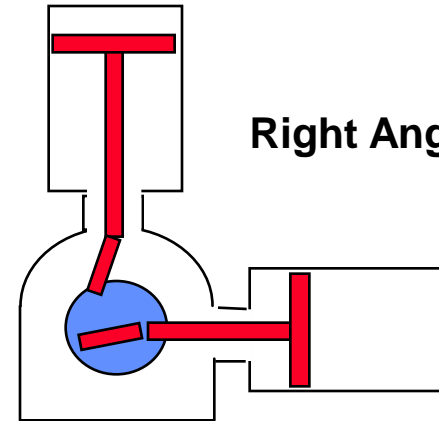
Vee



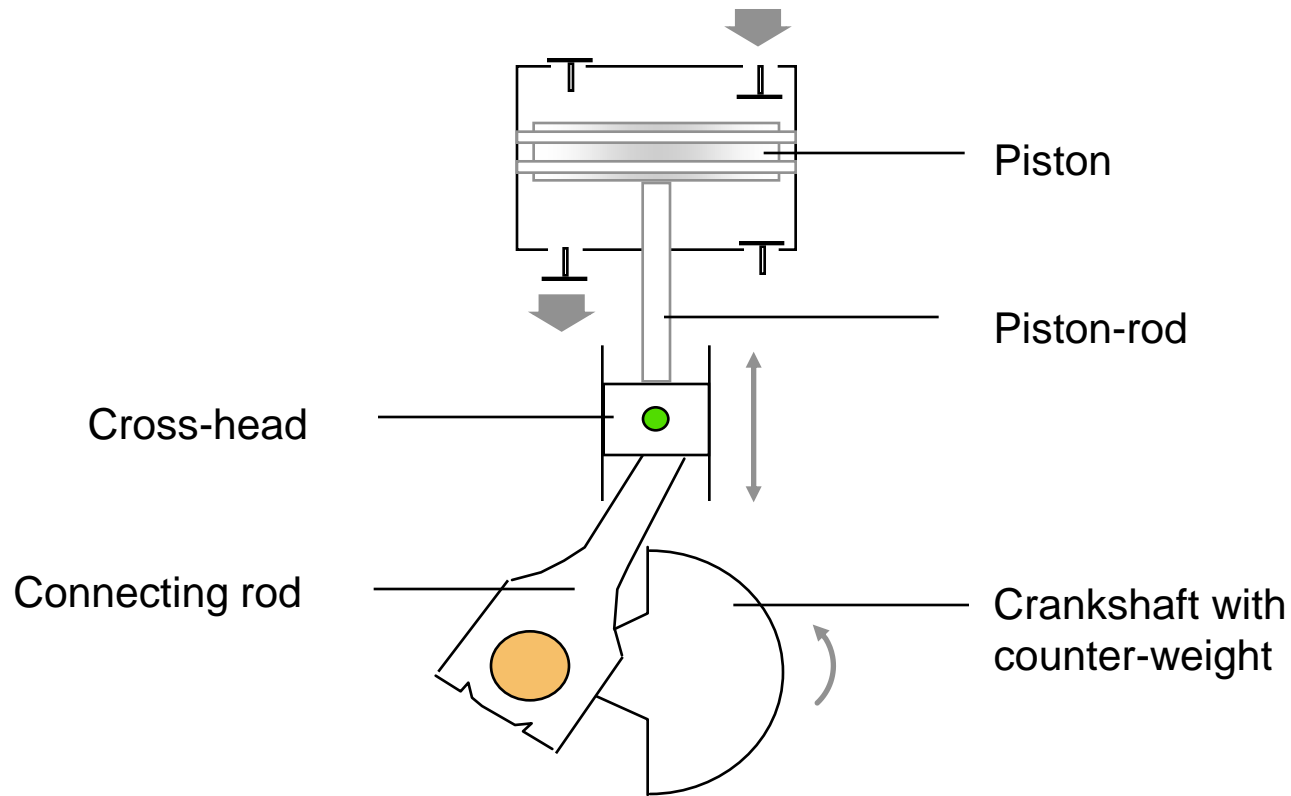
Tandem



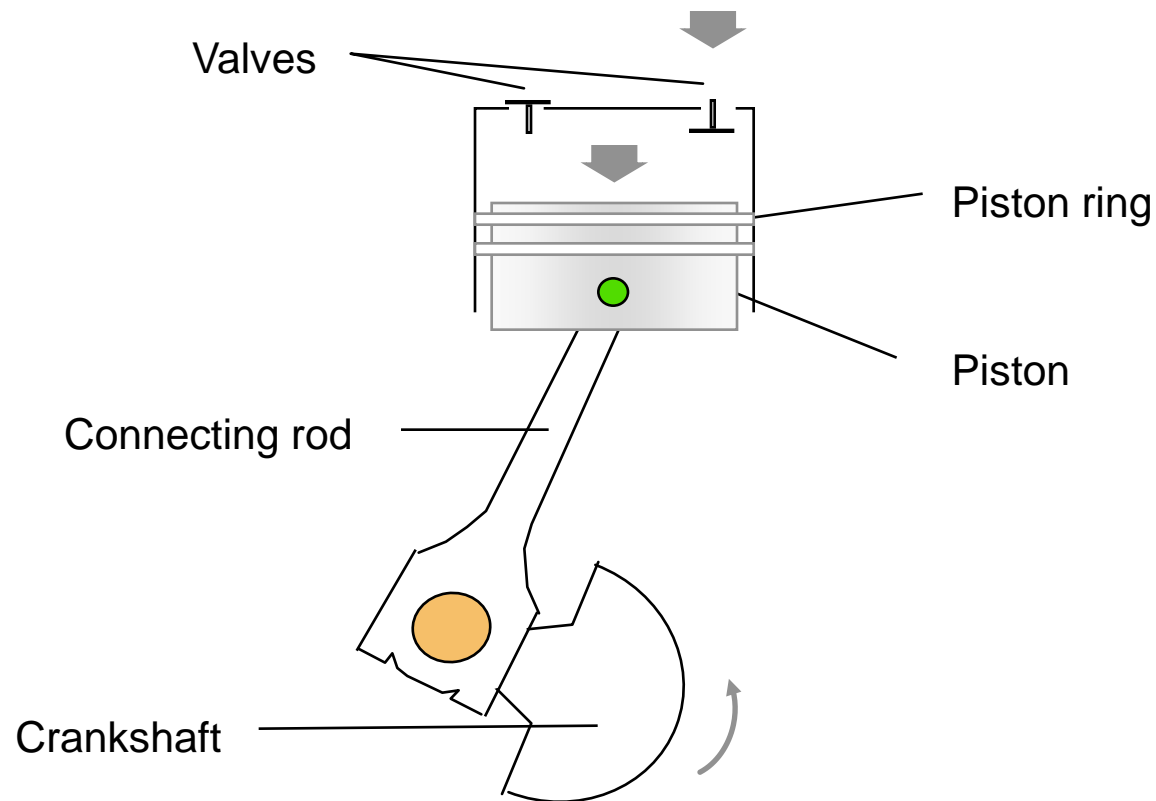
Right Angle



A Double-acting Reciprocating Compressor

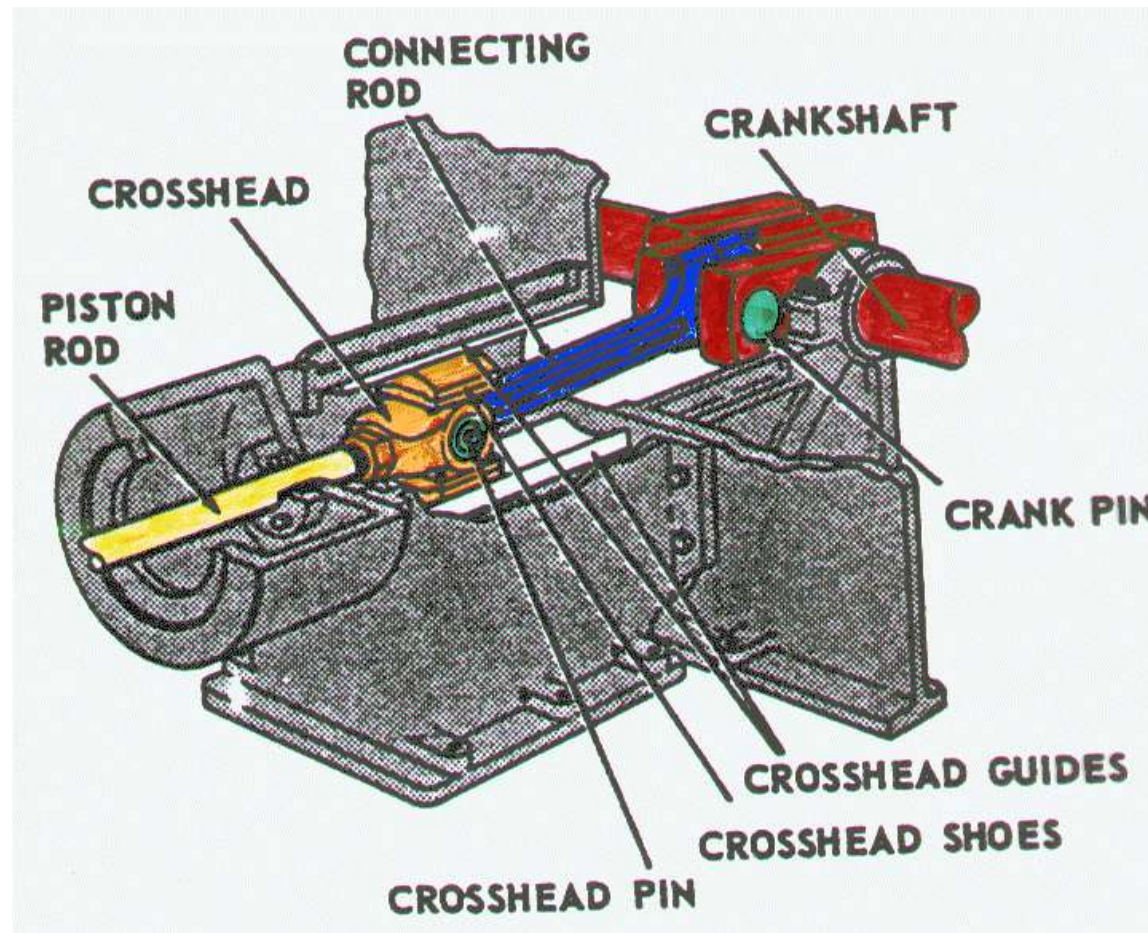


A Single-acting Reciprocating Compressor



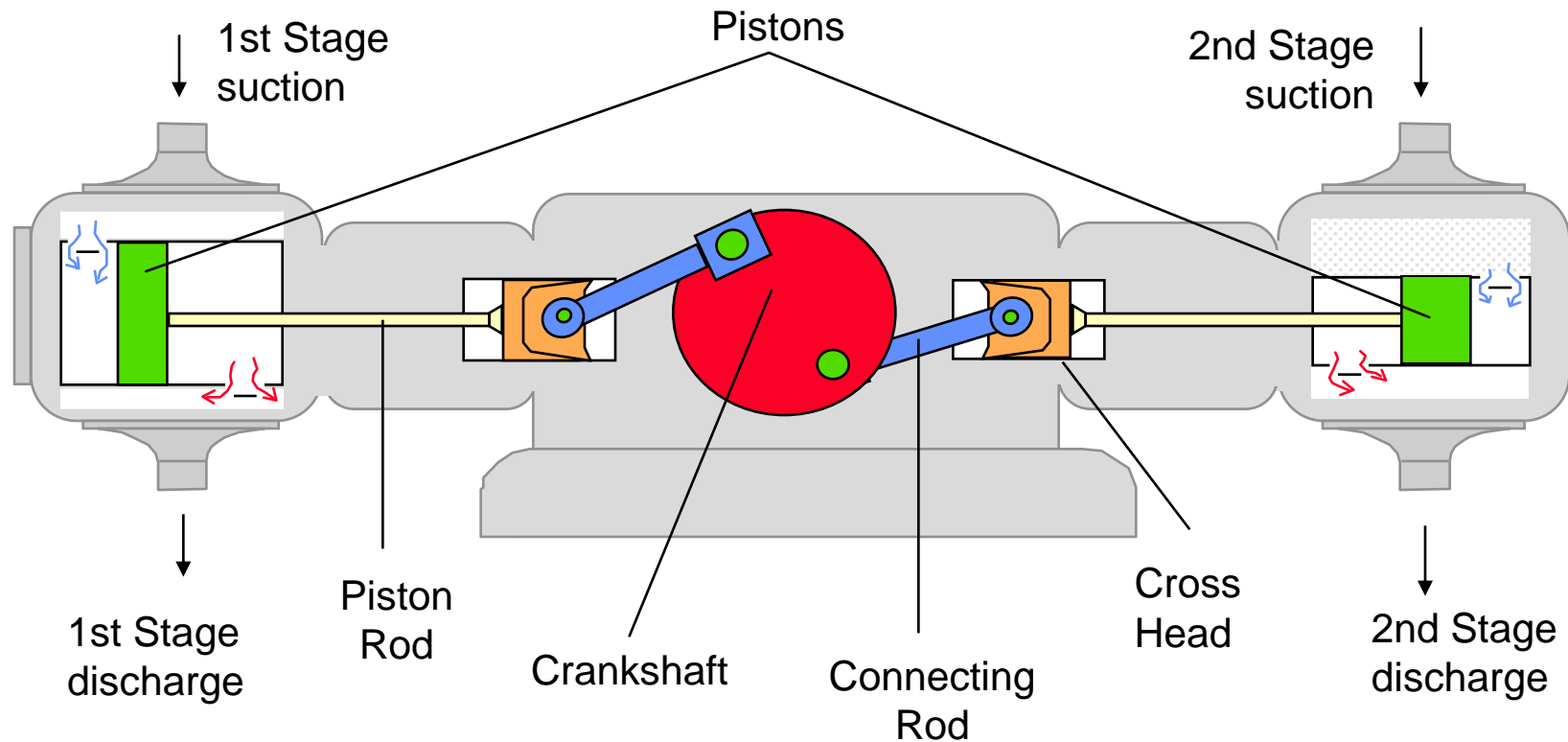
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Reciprocating Motion



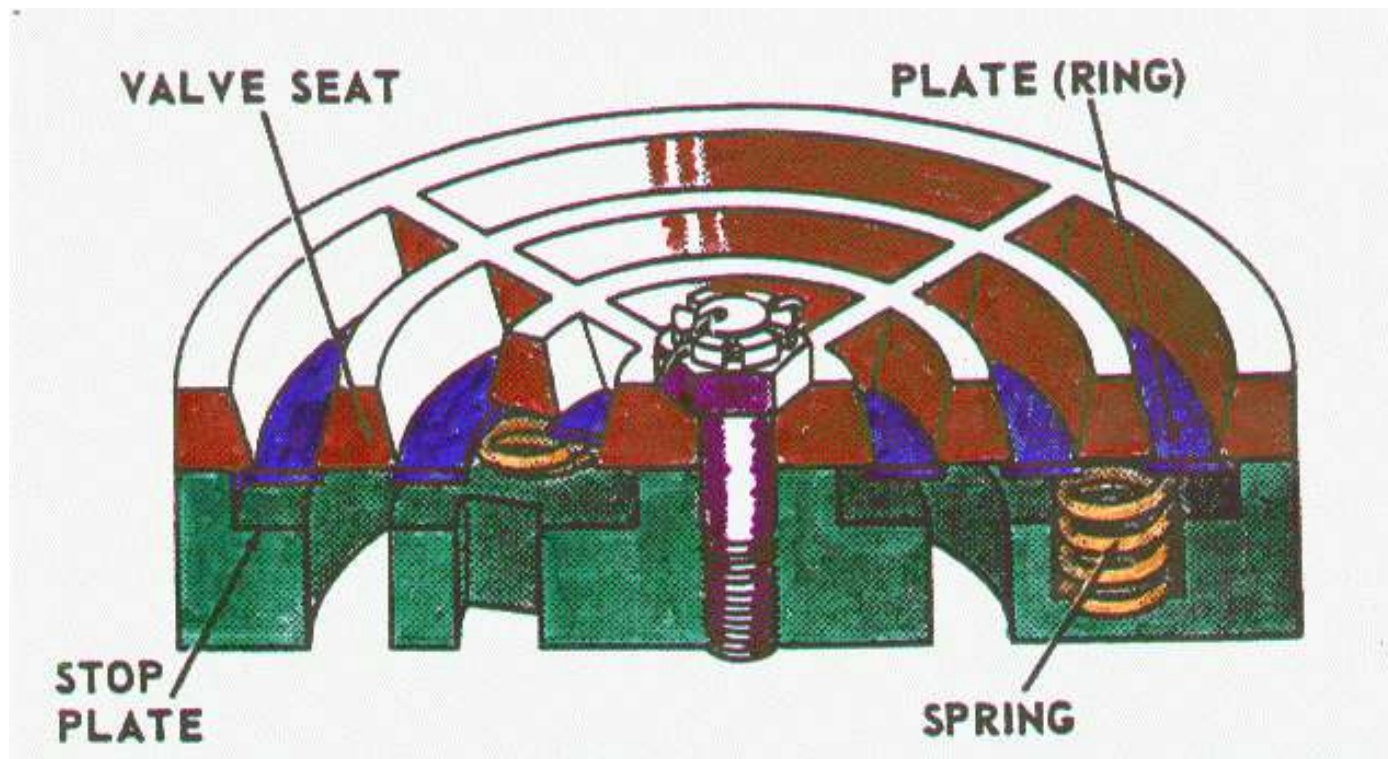
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Two Stage Compression



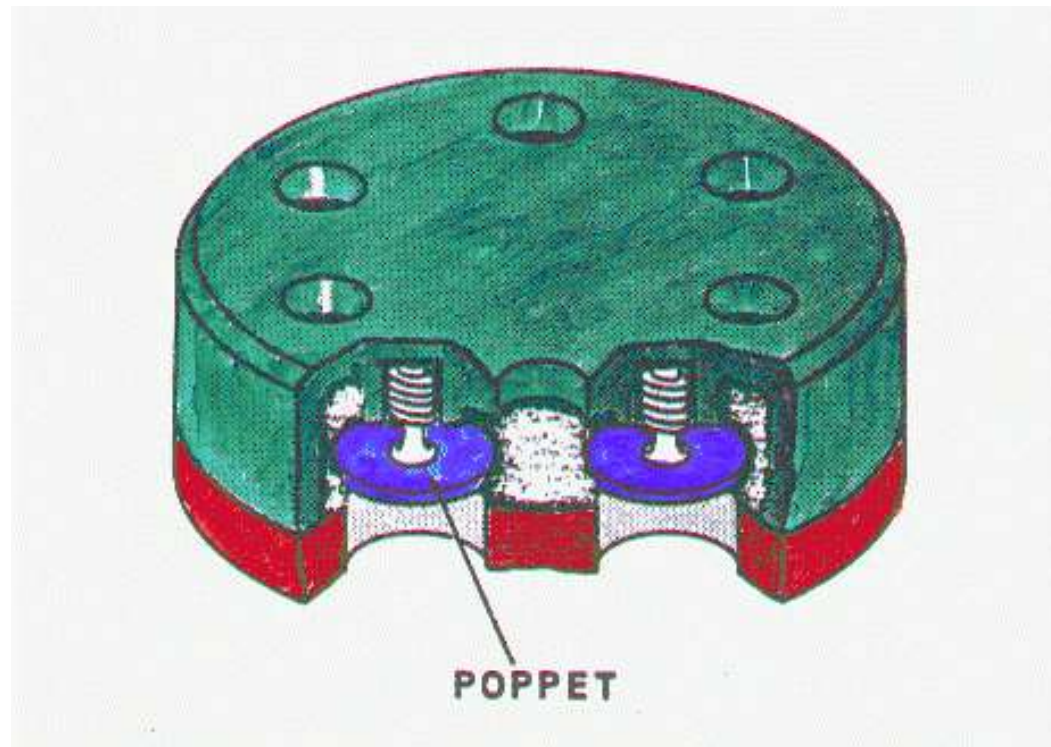
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Plate Valve



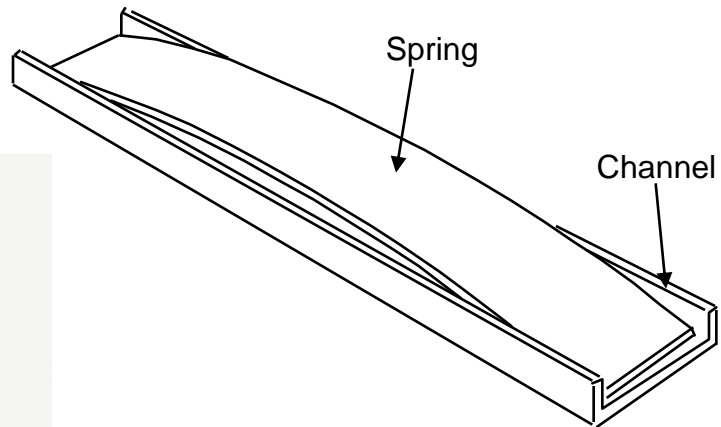
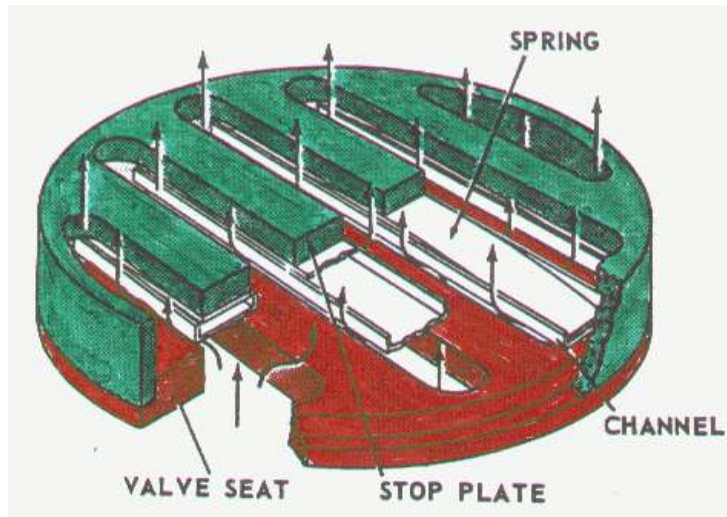
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Poppet Valve



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Feather Valve



Piston Ring Material

PTFE -

Polytetra Fluoroethylene

Ideal for use in non lubricated service - it has a low co-efficient of friction

BRONZE

Offers great wear resistance

Preferential for high temperatures and pressures

Requires marginal lubrication

CARBON

Is unaffected by sour or wet gases

For temperatures up to 275°F

CAST IRON

Provides good sealing over a wide temperature range but needs lubrication.

PACKING

The purpose of packing is to prevent the leakage of gas through the clearance between the cylinder head and the piston rod.

The packing must operate over a long period of time with little or no leakage and a minimum of friction.

A packing unit is made up of two elements :

1. The packing case
2. The packing rings

PACKING

The number of packing rings contained within the packing case is determined by the operating conditions of the compressor.

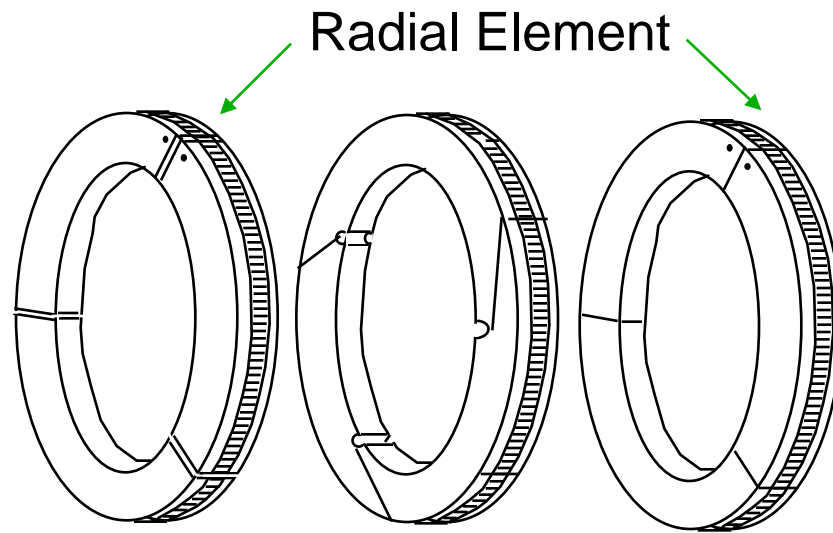
Packing rings are fitted as a set with 2 or 3 to a set.

These sets comprise :

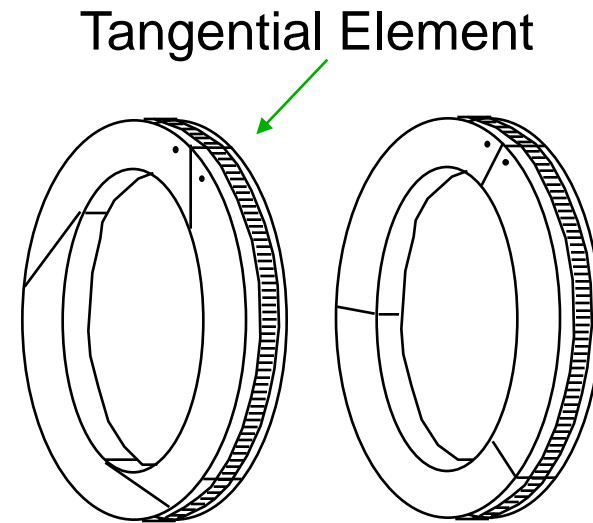
- Radial cut rings
- Tangential cut rings

The sets are located in retainers within the packing case.

Basic Sealing Elements

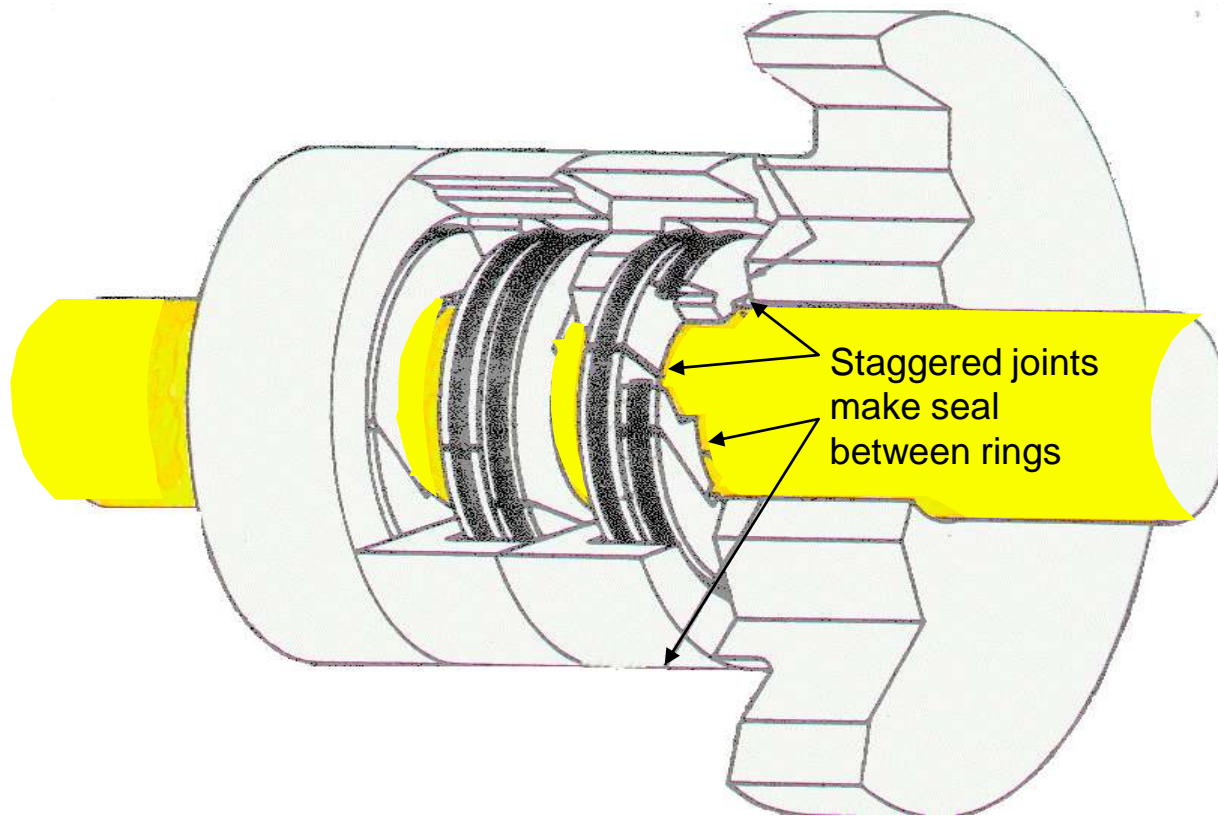


The three radial cuts in the ring permit compensation for wear.



The tangential cuts provide a complete seal and provide compensation for wear.

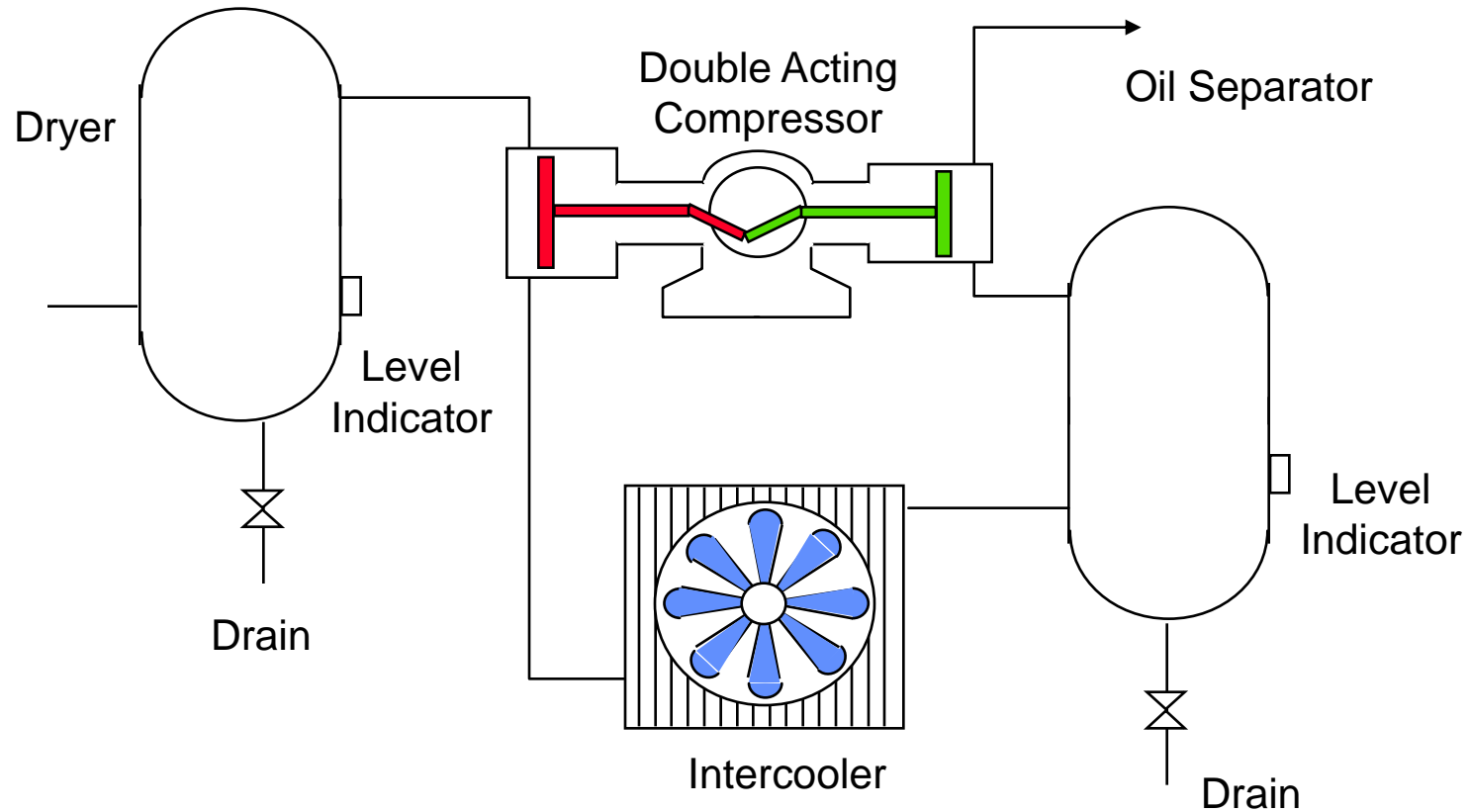
Packing Case



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Compressor System



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Fig. 3

Forced Lubrication with Cylinder Lubrication from the Crankcase

In small high speed compressors such as this, the cylinders and bearings are both lubricated by the crankcase oil. Typical arrangements can be seen here for application of a pressure-recirculating system in a small machine.

