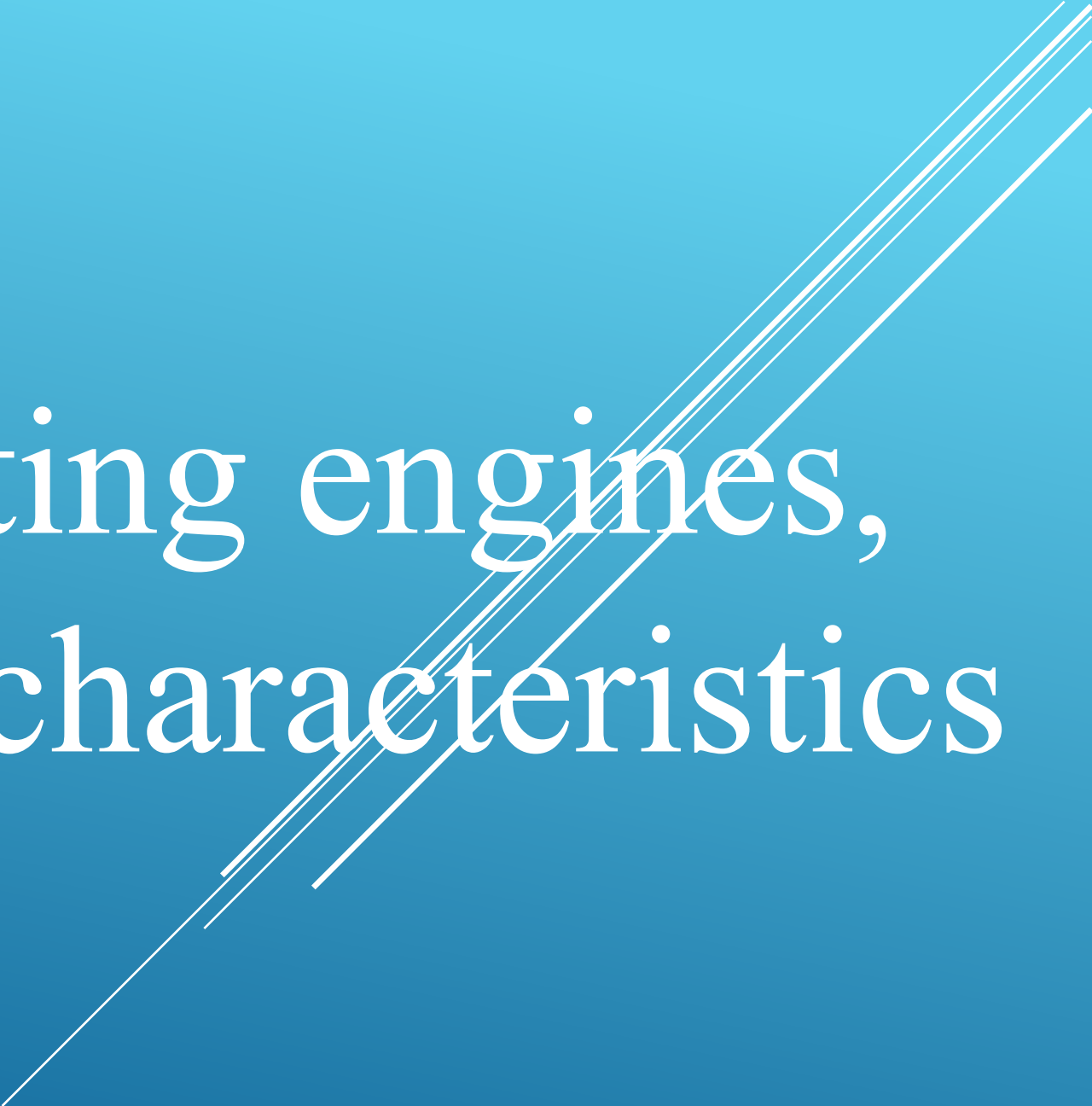
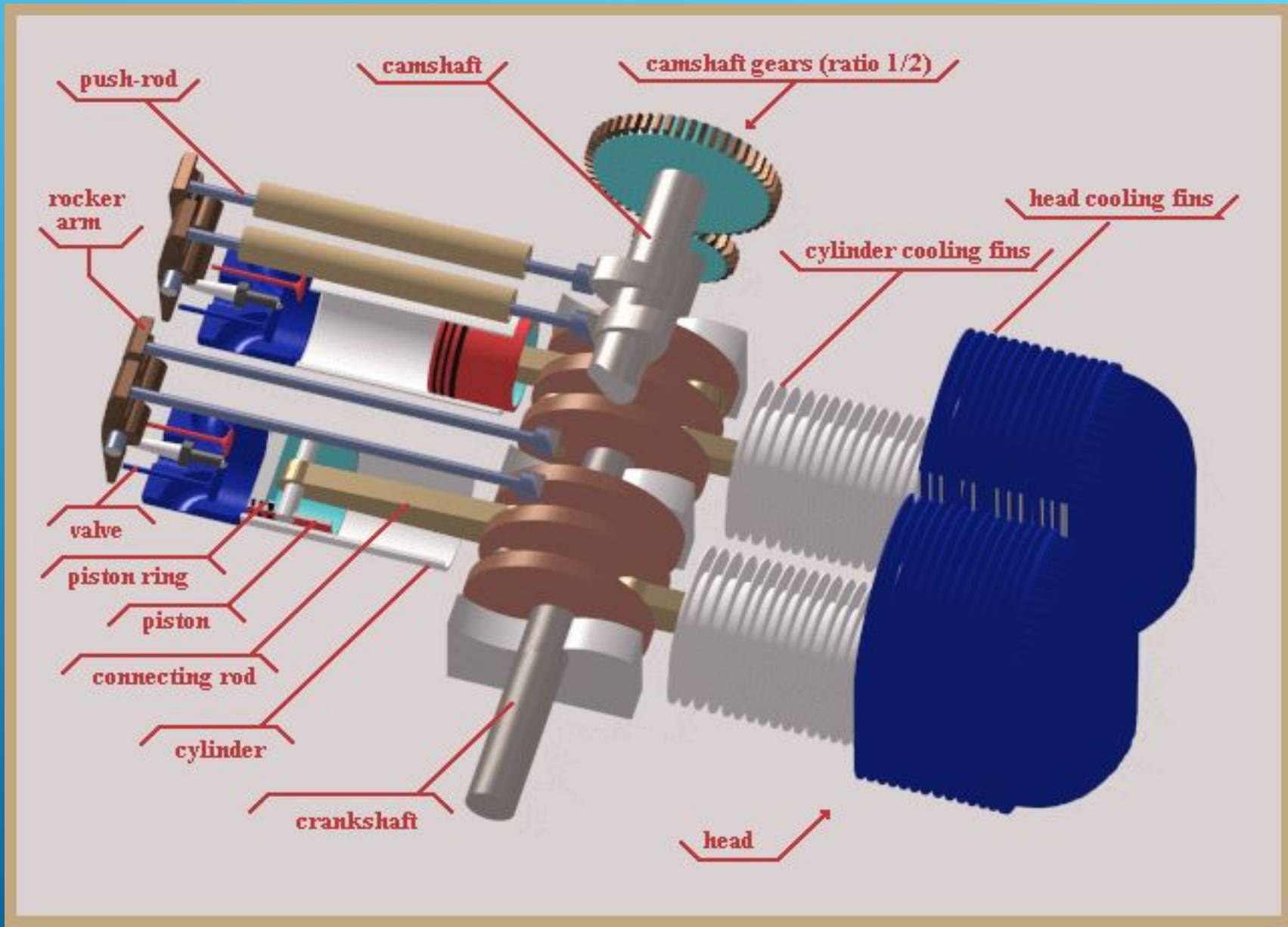


Reciprocating engines, their types, characteristics

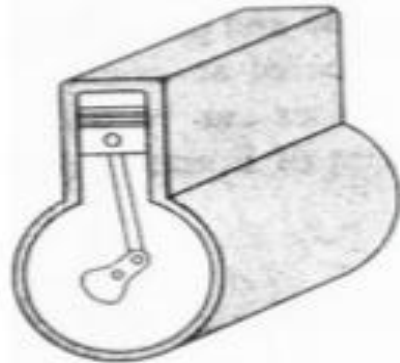
The image features a solid blue background. In the bottom right corner, there are several thin, white, parallel lines that extend diagonally from the bottom edge towards the top right corner, creating a sense of motion or design.

Piston engine - internal combustion engine , in which the thermal energy of expanding gases formed by the combustion of fuel in a closed volume is converted into mechanical work of translational motion of the piston through the expansion of the working fluid (gaseous combustion products) in the cylinder into which the piston.

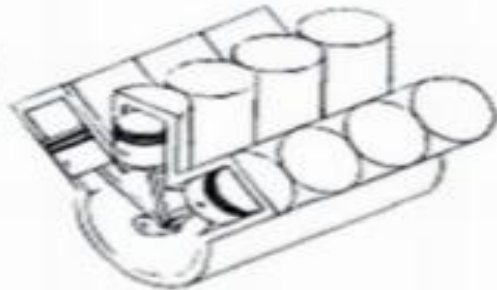
Reciprocating internal combustion engine is currently the most common heat engine . He used to drive a means of land , air and water transport , military , agricultural and construction equipment , generators , compressors , water pumps , pumps , motorized tool (benzorezok (benzo - Bulgarians) , lawn mowers , chain saws) and other machinery, both mobile and stationary , and the amount produced annually in the tens of millions of items in the world



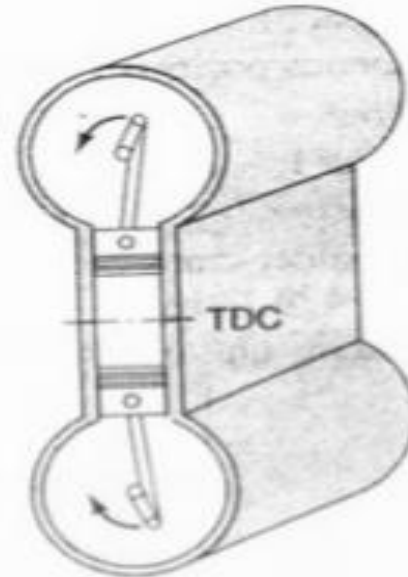
Types of Reciprocating Engines



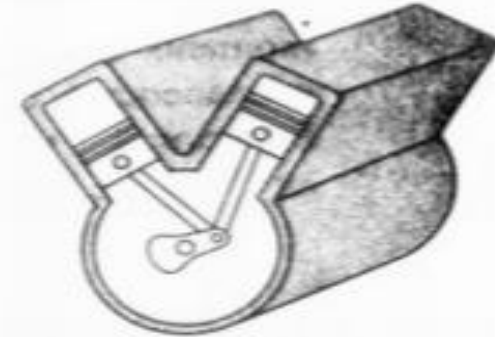
(a) In line



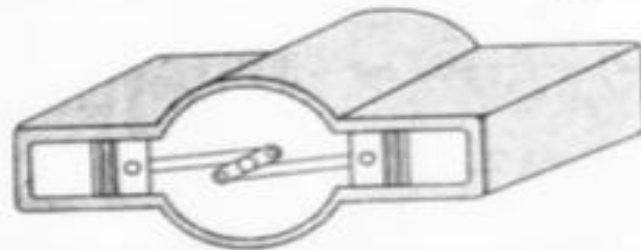
(f) W Engine



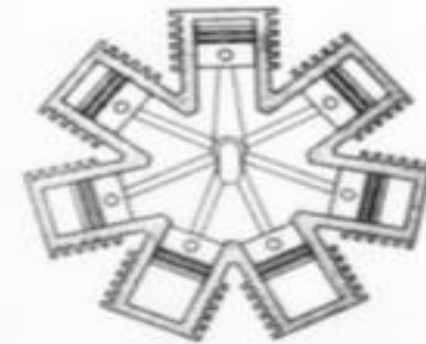
(c) Opposed piston
(crankshafts geared together)



(d) V



(b) Horizontally opposed



(e) Radial

An axial piston pump has a number of pistons (usually an odd number) arranged in a circular array within a housing which is commonly referred to as a cylinder block, rotor or barrel. This cylinder block is driven to rotate about its axis of symmetry by an integral shaft that is, more or less, aligned with the pumping pistons (usually parallel but not necessarily) Axial piston pumps , with axial cylinder structure. There are to oust the axial plunger and axial- piston hydraulic machines .

Advantages - simplicity of design , work at pressures up to 70mPa , high efficiency , speed up 4000ob / min , high power separate .

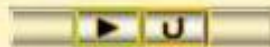
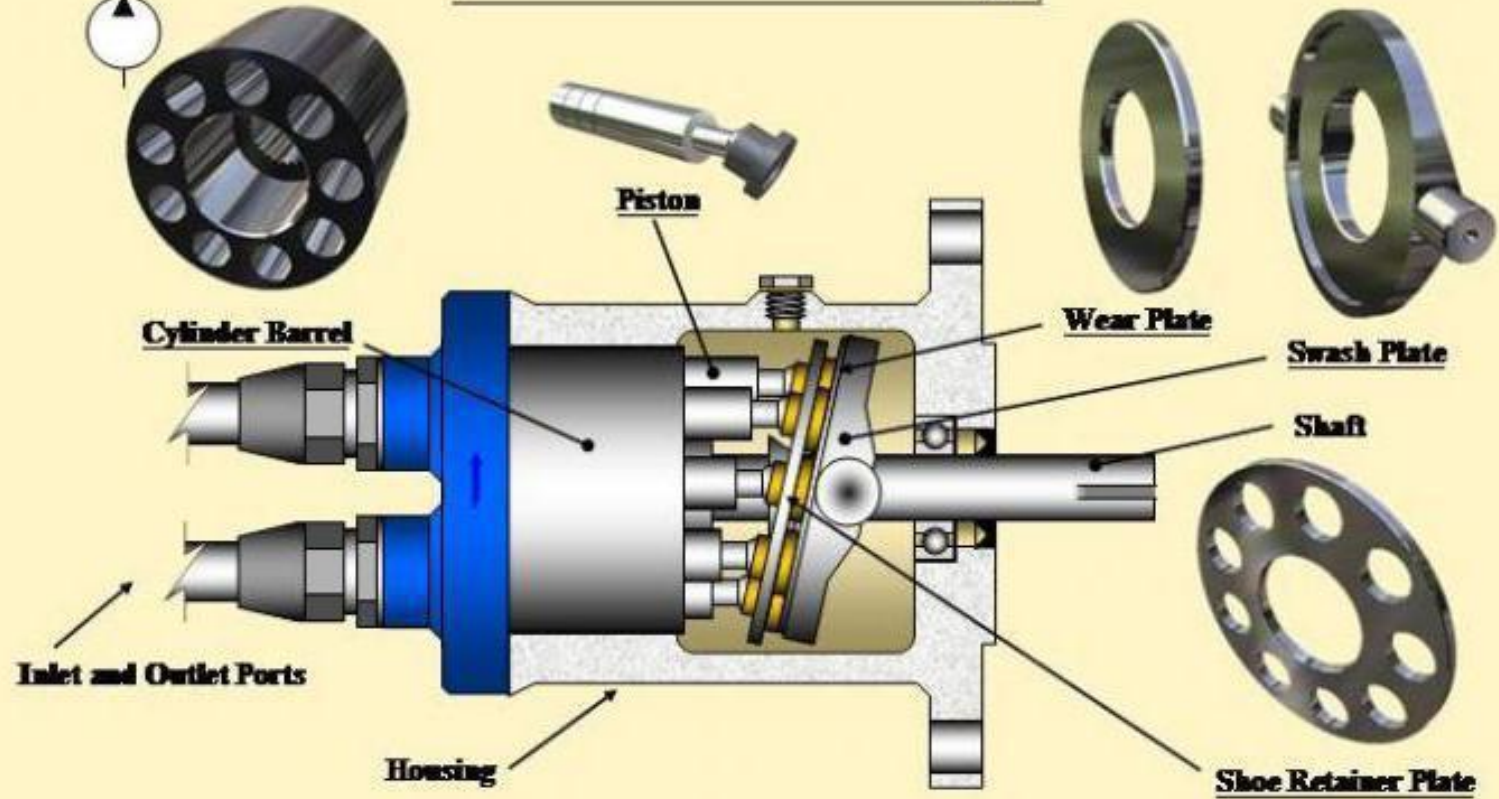
Disadvantages - high pressure pulsation , unlike other types of high cost .

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Graphic Symbol



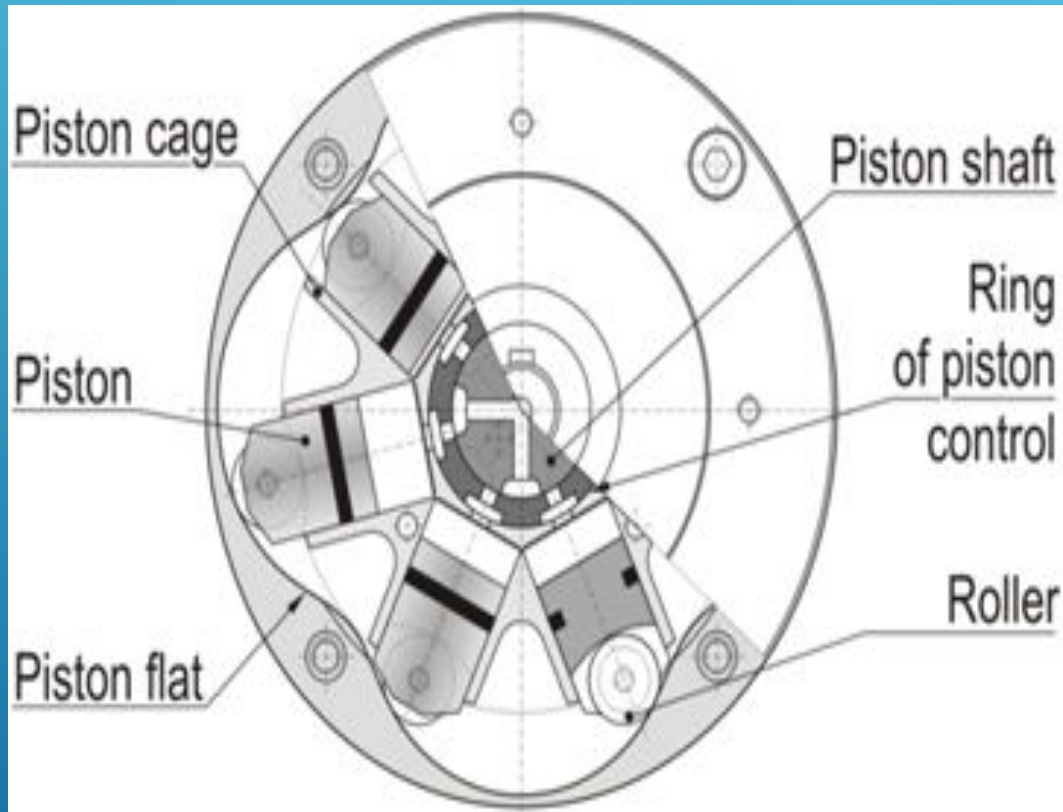
Axial Piston Pump



Reciprocating pistons are used as the pumping mechanism to generate increasing and decreasing volumes.

Radial engine - piston internal combustion engine whose cylinders are arranged radially around the rays odnogokolenchatogo shaft at equal angles . Radial engine has a short length and compact allows to place a large number of cylinders . I found a wide application in aviation.

Reciprocating engines of other types is the construction of a crank mechanism . One rod is the main (it is similar to a conventional crank engine with in-line arrangement of cylinders) , the rest are trailed and mounted to the main connecting rod on its periphery.



Radial - piston pumps are rotary-piston hydraulic machines. Advantages - simplicity of design, high strength, work at pressures up to 100MPa, a small axial dimension. Disadvantages - high pressure pulsation, low rotational frequency, a greater weight compared to designs of axial-piston engines.



Radial piston engine aircraft.

Disadvantages: the possibility of getting the oil in the lower cylinders of the engine when parked aircraft . This can lead to , respectively, the instantaneous hammer and break the entire crank mechanism .

Advantages: Radial engine it is worth noting its relatively small size, ease of use and a decent power.

Thank you for attention

