



DIAGRAM SHOWING ACTION OF THE DAIMLER SLEEVE VALVES

Cycle of operations:

- 1. Suction stroke : inlet open.
- 2, Compression stroke : perts closed.
- 3. Firing strake lendy: exhaust opening
- Exhaust stroke (end) : exhaust closing, inlet opening.

To reduce the noise from the valve train in a conventional petrol engine C.Y.Knight invented the sleeve valve engine, which used a system that consists of sliding sleeves, forming moveable linings inside the cylinder. These sleeve valves are operated by small connecting rods from an eccentric shaft that is driven from the crankshaft by a silent chain. Sliding valves are common practice in steam engines. The valves are placed inside the cylinder itself, in the form of two sleeves, telescoping each other, and the larger of the pair being a sliding fit inside the cylinder proper. These sleeves have slots, called ports, near their upper ends and corresponding ports are made in the cylinder wall. The sleeves move up and down in the cylinder, the extent of this motion being very much less than the movement of the piston. The sleeves move out of phase with each other and the motion is such that the ports in the sleeves coincide with each other and the ports in the cylinder at the appropriate times for the suction, or exhaust, as the case may be.

Prior to ignition both sleeves move upwards into a position where the ports in them are sealed by gas tight ring in the cylinder head and are thus removed from the gas pressure during the working stroke. The cylinder head has an extension, not unlike a stationery piston, which projects into the cylinder as a guide to the sleeves. The lower end of the sleeves has lugs that are attached to the con rods that operate them from an eccentric shaft. The ignition plugs are centrally in the cylinder heads, the combustion chamber is perfectly spherical and free from pockets likely to cause pinking which was a common problem at the time

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