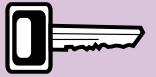


Figure 3.11 The Cylinder Head.

The **valves** are kept concentric to the **valve seats** by **valve guides**. The **valve seat** is ground to form a gas tight seal with the face of the **valve**. The **valves** themselves, both **inlet** and **exhaust**, open and close the passages for the induction and scavenging of the gases.

The face of each **valve** is accurately machined to the same angle as the **valve seat**. The **valve** and the **seat** are then 'lapped' or ground together with an abrasive paste until a full contact is obtained.

Each valve is only required to open and close once per working cycle.



The **valve springs** are manufactured from special spring steel, and they ensure that the **valves** remain closed except when they are being operated by the **rocker assembly**.

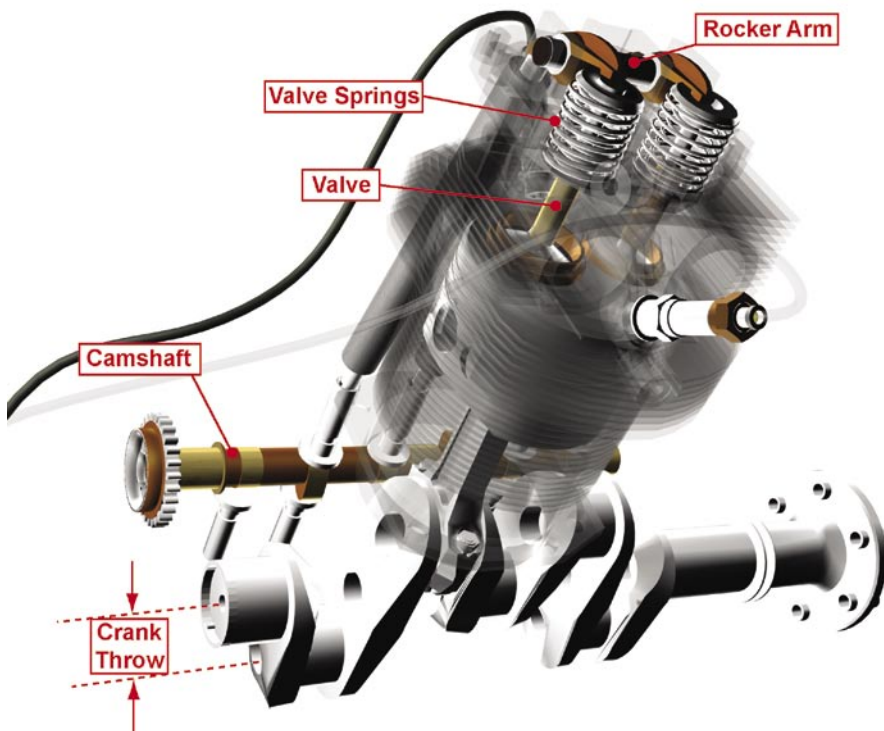


Figure 3.12 Cutaway of Cylinder Head and Crankshaft.

The **springs** are of the helical coil type, the usual practice being for two springs to be fitted to each **valve**, one inside the other.

This provides a safety factor, and also eliminates 'valve bounce', a condition created by the fact that each valve spring will have a resonant frequency (with the engine RPM) where it will be ineffective at closing the valve on its own.

Two springs are fitted to each valve, one inside the other. This provides both a safety factor and eliminates 'valve bounce'.

