

Magnetic Drum

Definition - What does *Magnetic Drum* mean?

A magnetic drum is a magnetic storage device used in many early computers as the main working memory, similar to how modern computers use random access memory (RAM) cards. In some cases, magnetic drum memory was also used for secondary storage. It is basically a metal cylinder that is coated with a magnetic iron-oxide material where the changing magnetic polarities are used to store data on its surface, similar to how modern disk drives use magnetism to store and retrieve data.

Magnetic drums are also known as drum memory.

Techopedia explains *Magnetic Drum*

The magnetic drum was invented by Gustav Tauschek in Austria in 1932, but it was only in the 1950s to 60s that it gained wide use as the main memory for computers, and to an extent, secondary storage. The main storage area of the magnetic drum is the metal cylinder coated with a ferromagnetic layer. Read-write heads were positioned micrometers above the drum's surface, along a predefined track, in order to produce an electromagnetic pulse that can be stored by changing the orientation of the magnetic particles which the read-write head is hovering over. So as the drum rotates and the read-write heads produce electric pulses, a series of binary digits are generated. Reading was done simply by detecting which magnetic particles were polarized and which were not.

Read-write heads are positioned in rows along the axis of the drum, one head for each track, with some drums containing up to 200 tracks. The heads were in a fixed position so each one only monitored a single track, which made latency for read and writes dependent on the speed of the drum's spin. Faster rotating drums achieve higher data rates, but 3,000 rpm was a common speed for many manufacturers.

The hard disk drive was invented in 1954, while the magnetic-core memory was invented in 1947. The emergence and subsequent advancement in both meant the decline of the magnetic drum as the main and secondary storage for computers. By the 1970s magnetic drums ceased to be manufactured.

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