

# Machine

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## EDITORIAL

A machine is a mechanical structure that uses power to apply forces and control movement to perform an intended action. Machines can be driven by animals and people, by natural forces such as wind and water, and by chemical, thermal, or electrical power, and include a system of mechanisms that shape the actuator input to achieve a specific application of output forces and movement.

They may also include mechanical systems, which are computers and sensors that track output and plan movement.

The ratio of output force to input force, known today as mechanical advantage, was determined by Renaissance natural philosophers by identifying six simple machines, which were the basic devices that placed a load into motion.

Modern machines are complex structures with structural elements, mechanisms, and control components, as well as user-friendly interfaces.

A wide variety of vehicles, such as cars, aircraft, and airplanes; appliances in the home and workplace, such as computers, as well as farm machinery, machine tools, and factory automation systems and robots; and farm machinery, machine tools, and factory automation systems and robots are just a few examples.

The English word machine is derived from the Latin machine, which is derived from the Greek (Doric makhana, Ionic mekhane contrivance, machine, engine, a derivation from o mekhos means, expedient, remedy.

The term "fabric, structure" has a broader meaning in classical Latin, but not in Greek. This meaning can be found in late mediaeval French, and it was translated into English in the mid-16th century from the French.

In the hands of a human, the hand axe, which is created by chipping flint to form a wedge, converts the tool's force and movement into a transverse splitting force and movement of the workpiece.

The first example of a wedge is the hand axe, which is the oldest of the six classic simple machines on which most machines are built. The inclined plane (ramp) was the second-oldest simple machine, and it has been used to move heavy objects since prehistoric times.

The other four basic machines were created in ancient Near Eastern civilizations. The wheel was invented in Mesopotamia (modern Iraq) around the 5th millennium BC, along with the wheel and axle mechanism.

The lever mechanism first appeared in the Near East about 5,000 years ago, where it was used to drive large objects in ancient Egyptian technology and in a basic balance scale.

The shadoof water-lifting unit, the first crane engine, appeared in Mesopotamia around 3000 BC[11], and then in ancient Egyptian technology around 2000 BC.

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**Received:** March 10, 2021; **Accepted:** March 17, 2021; **Published:** March 24, 2021

**Citation:** Pradhan E (2021) Machine. J Appl Mech Eng. 10:354.

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