Definition: **motorcycle** from *Philip's Encyclopedia*

Powered vehicle, usually with two wheels. Gottlieb Daimler is credited with building the first practical motorcycle in 1885. Motorcycles are classified in terms of engine capacity, usually 50cc to 1,200cc. Transmission of power to the rear wheel is by chain, shaft or belt. The clutch, accelerator, and front brake controls are on the handlebars. Foot pedals control the gear change and rear brake.

### Summary Article: motorcycle
from *The Hutchinson Unabridged Encyclopedia with Atlas and Weather Guide*

Two-wheeled vehicle propelled by a petrol engine. The first successful motorized bicycle was built in France in 1901, and British and US manufacturers first produced motorbikes in 1903.

**History** In 1868 Ernest and Pierre Michaux in France experimented with a steam-powered bicycle, but the steam-power unit was too heavy and cumbersome. Gottlieb Daimler, a German engineer, created the first motorcycle when he installed his lightweight petrol engine in a bicycle frame in 1886. Daimler soon lost interest in two wheels in favour of four and went on to pioneer the car.

The first really successful two-wheel design was devised by Michael and Eugene Werner in France in 1901. They adopted the classic motorcycle layout with the engine low down between the wheels.

Harley Davidson in the USA and Triumph in the UK began manufacture in 1903. Road races like the Isle of Man TT (Tourist Trophy), established in 1907, helped improve motorcycle design and it soon evolved into more or less its present form. British bikes included the Vincent, BSA, and Norton.

**Industry** In the 1970s British manufacturers were overtaken by Japanese ones, and such motorcycles as Honda, Kawasaki, Suzuki, and Yamaha now dominate the world market. They make a wide variety of machines, from mopeds (lightweights with pedal assistance) to streamlined superbikes capable of speeds up to 250 kph/160 mph. There is still a smaller but thriving Italian motorcycle industry, making more specialist bikes. Laverda, Moto Guzzi, and Ducati continue to manufacture in Italy.

**Technical description** The lightweight bikes are generally powered by a two-stroke petrol engine (see two-stroke cycle), while bikes with an engine capacity of 250 cc or more are generally four-strokes (see four-stroke cycle). However, many special-use larger bikes (such as those developed for off-road riding and racing) are two-stroke. Most motorcycles are air-cooled – their engines are surrounded by metal fins to offer a large surface area – although some have a water-cooling system similar to that of a car. Most small bikes have single-cylinder engines, but larger machines can have as many as six. The single-cylinder engine is economical and was popular in British manufacture; the Japanese developed multiple-cylinder models, but there has recently been some return to single-cylinder engines. A revived British Norton racing motorcycle uses a Wankel (rotary) engine. In the majority of bikes a chain carries the drive from the engine to the rear wheel, though some machines are now fitted with shaft drive.

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