

## Mechanical Advantage

Mechanical advantage is a measure of how much a machine changes a force. The mechanical advantage of a machine can be found by dividing the force exerted by a machine by the amount of force that must be applied to the machine.

For example, when jacking up a car with a hydraulic jack, the force that must be applied to the jack is 300 newtons, while the upward force or the weight of the car is 3,000 newtons, making the mechanical advantage of the jack 10.

This mechanical advantage is gained through the distance that the forces cover. Notice that the end of the jack handle moves 20 centimeters, while the car frame moves only two centimeters.

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