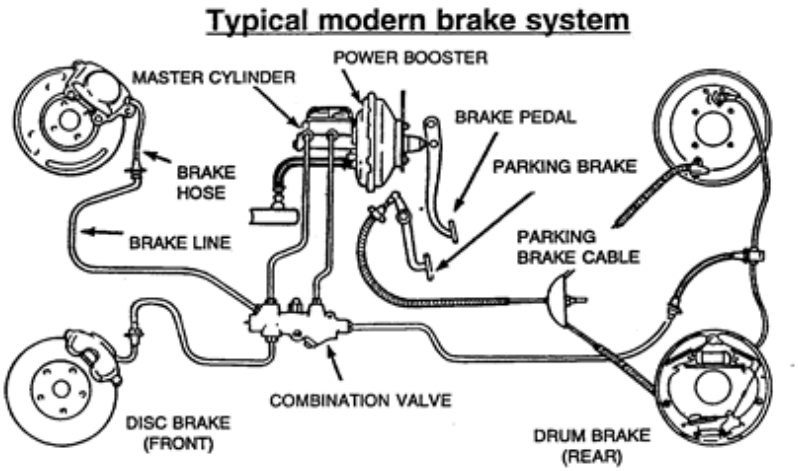
Topic 6 – Combining Systems

As time passed, people expected more and more difficult tasks to be completed by machines. Machines became more complex. Several simple machines all working together in a system are called **complex machines**. A **system** is a group of parts that work together to perform a function. Groups of parts that perform specific functions, in a complex machine, are called **subsystems**. Each subsystem in a complex machine contains a simple machine and usually has just one function.

Subsystems

The different subsystems in a mechanical device can produce a force advantage, such as the **disc brakes** in a car.



The brake fluid transfers the pressure from the brake pedal to the brake pads and the disc, which produces enough force to stop the car.

Another example of a highly efficient combination of levers and hydraulics is the **backhoe**.

The backhoe is a combination of 3 levers, called the *boom (class 3 lever)*, the *dipper (class 1 lever)* and the *bucket (class 1 lever)*.

The assembly of the 3 levers swings around on a gear-like part called the *slew ring*.