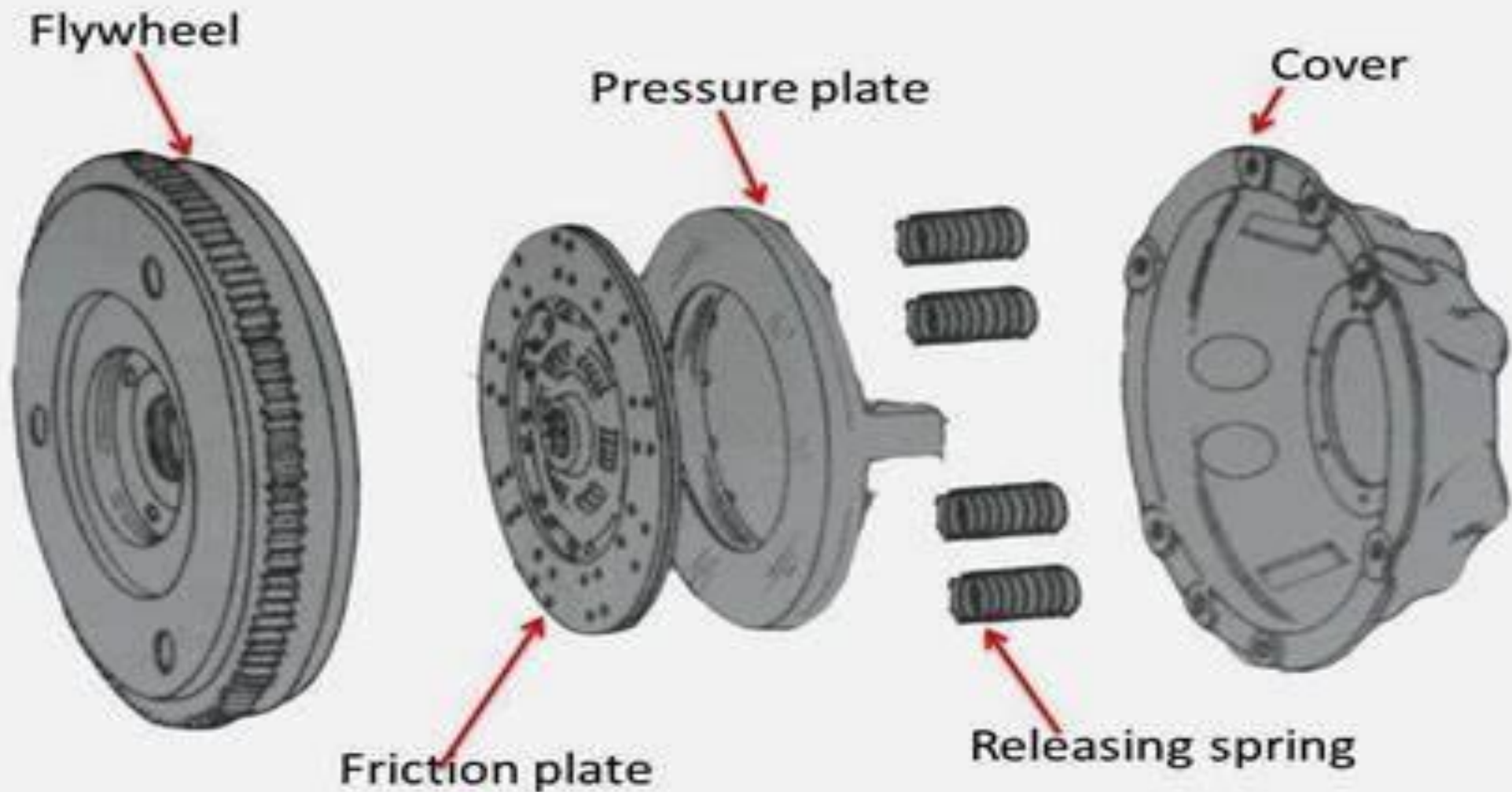


What are clutches

Clutch is a mechanical device used in the transmission system of a vehicle. It engages and disengages the transmission system from the engine. It is fixed between the engine and the transmission.

The power produced inside the engine cylinder is ultimately aimed to turn the wheels so that the vehicle can move on the road. The reciprocating motion of the [piston](#) rotates a crankshaft by rotating the flywheel through the connecting rod.





Main parts of clutch

Clutch plate

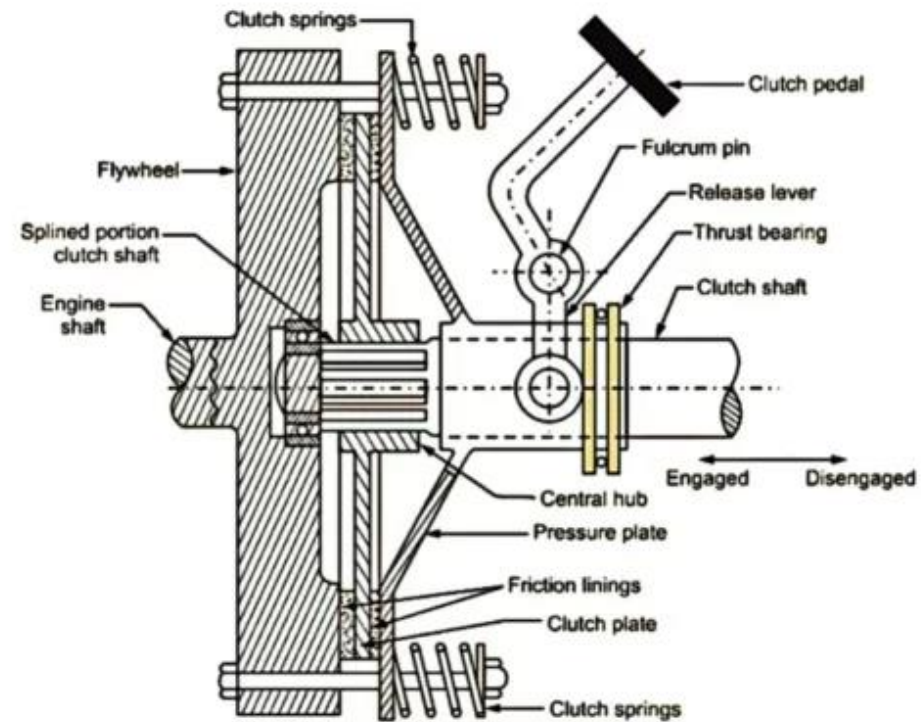


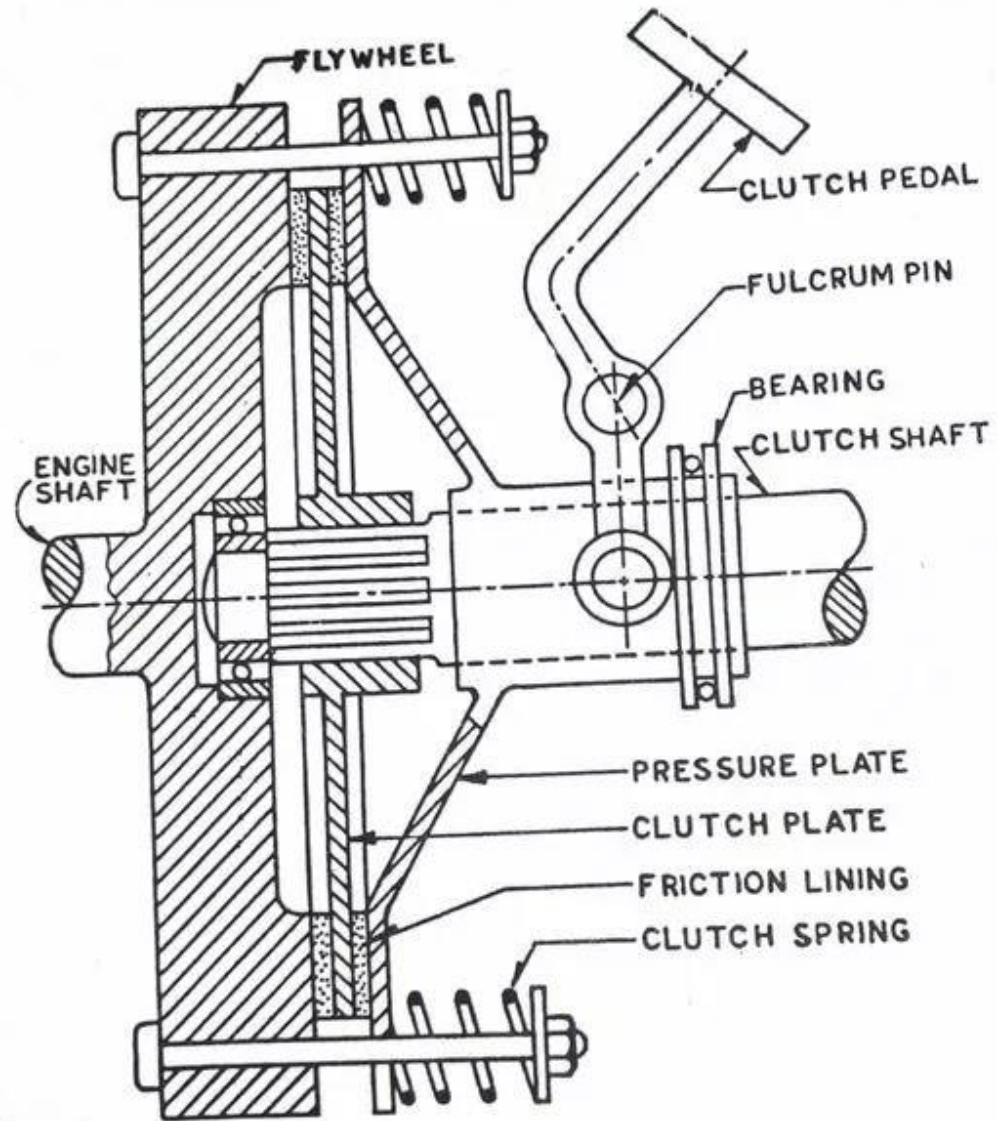
Single plate clutch

A single plate clutch has one clutch plate. This clutch works on the principle of friction. It is the most common type of clutch used in motor vehicles. The clutch primarily consists of two members, one mounted on the driving shaft and the other on the driven shaft.

These two shafts are parallel and concentric with each other; one shaft is fixed to its housing while the other is splined so that it can move axially. The driving torque can increase by increasing the effective radius of contact.

Single plate clutch





Single Plate Clutch

Multi plate clutch

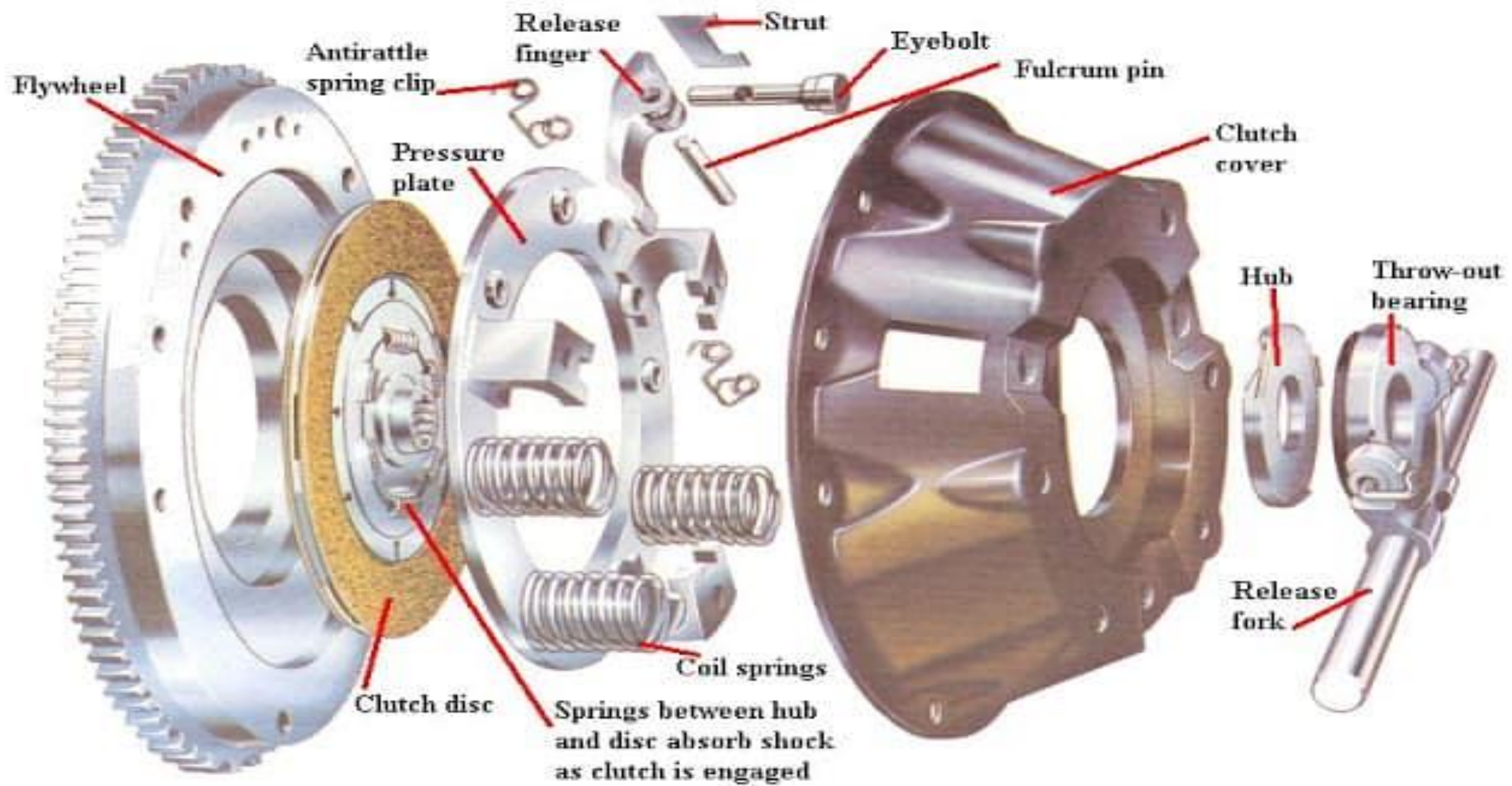
The multi-plate clutch is a special type of clutch that can produce high torque. It mainly transmits the power from one shaft to another shaft. One of them is the engine shaft and another one is the transmission shaft. Friction takes place in the engine by the clutch plates. This friction makes high torque.

Moreover, it can be said that in the automobiles or in pieces of machinery, where high torque is needed like in the gearbox of motorcycles, this multi-plate clutch can be used to assure the precision level of that machine.

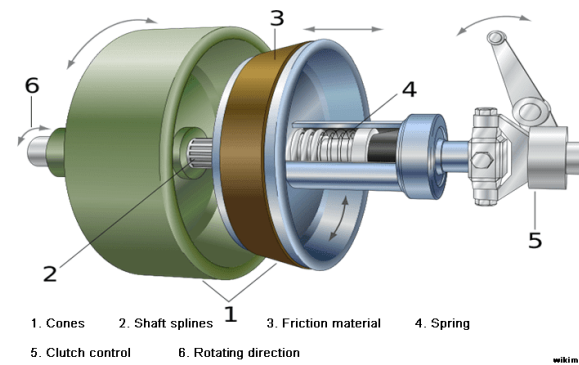
The high amount of torque can be generated by the multi-plate clutch due to the number of plates.

Multi plate clutch





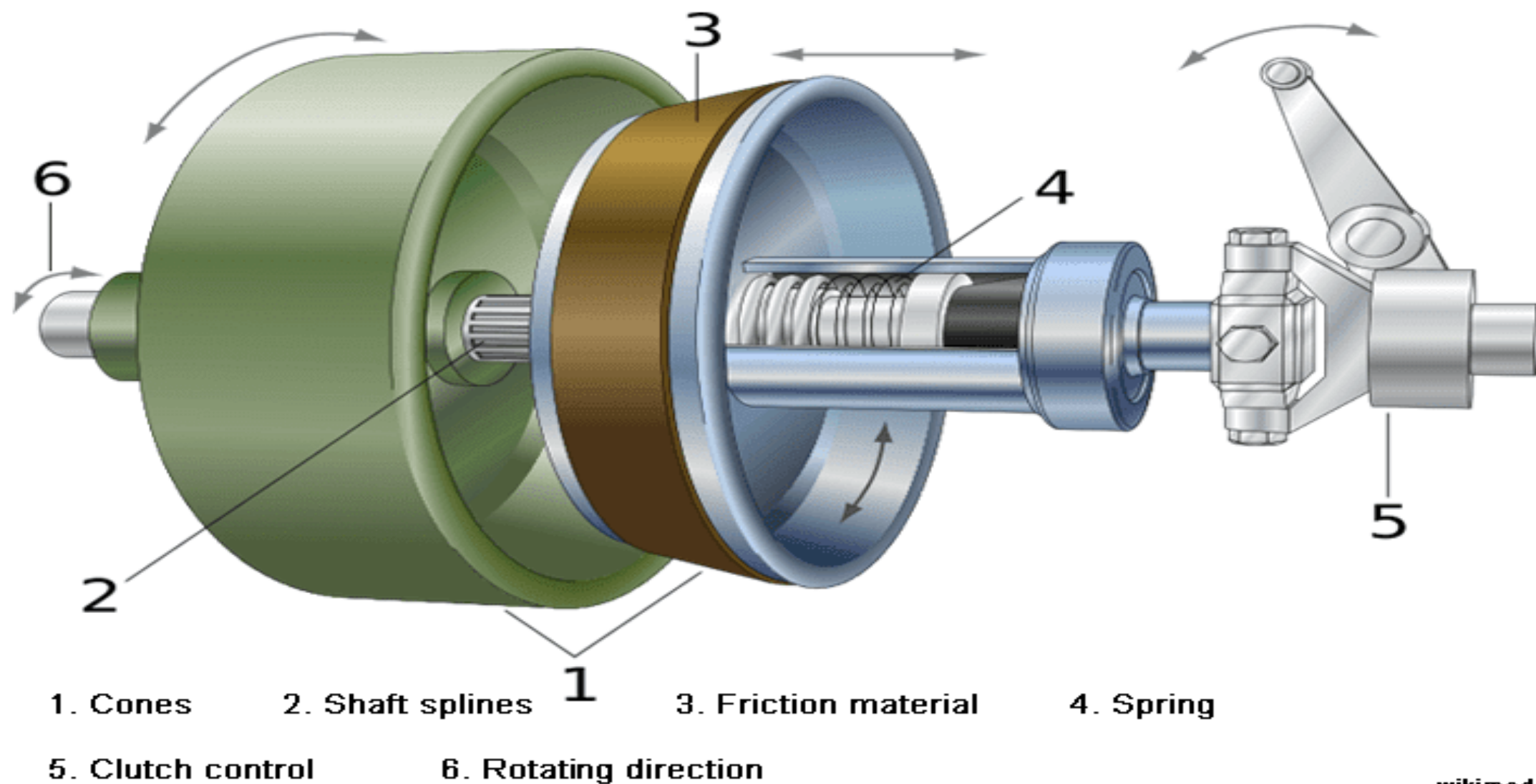
Cone clutch



A **cone clutch** serves the same purpose as a disk or plate [clutch](#). However, instead of mating two spinning disks, the cone clutch uses two conical surfaces to transmit [torque](#) by friction.^[1]

The cone clutch transfers a higher torque than plate or disk clutches of the same size due to the wedging action and increased surface area. Cone clutches are generally now only used in low peripheral speed applications, although they were once common in automobiles and other [internal combustion engine transmissions](#).^[2]

They are usually now confined to very specialist transmissions used in racing, rallying, or in extreme [off-road vehicles](#), although they are common in [power boats](#),^[3] [dredge](#) pumps and other ship-drive lines.^[4] This is because the clutch does not have to be pushed in all the way and the gears will be changed quicker. Small cone clutches are used in synchronizer mechanisms in [manual transmissions](#) and some [limited-slip differentials](#).



thank you