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CLUTCH



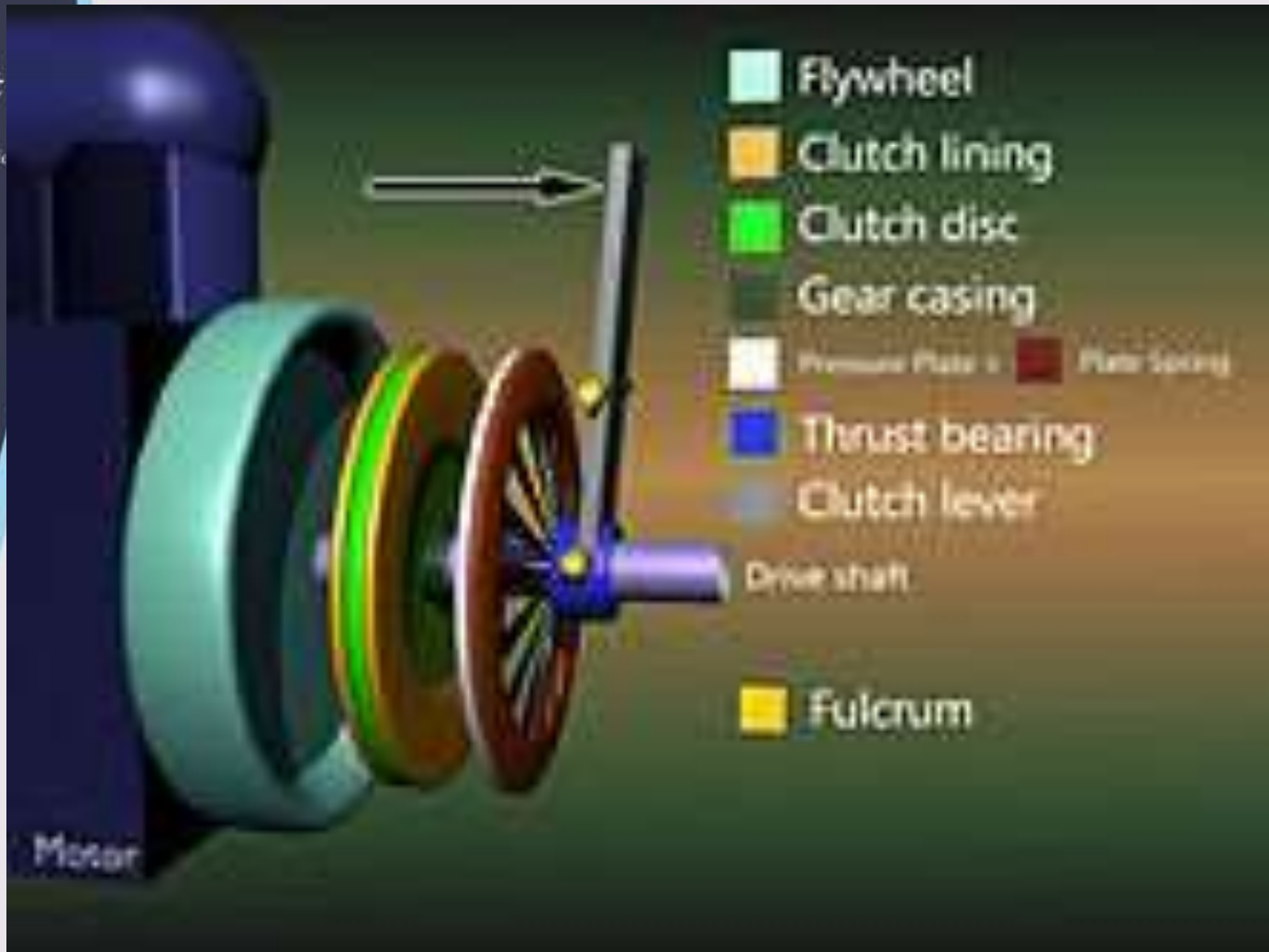
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Function

- **It disconnects the engine from the remaining units of the power transmission system when disengaged by the operator and hence the engine runs with out transmission of power.**
- **It also enables the engine to take up load of driving the vehicle gradually and without jerk (shock) when properly engaged.**



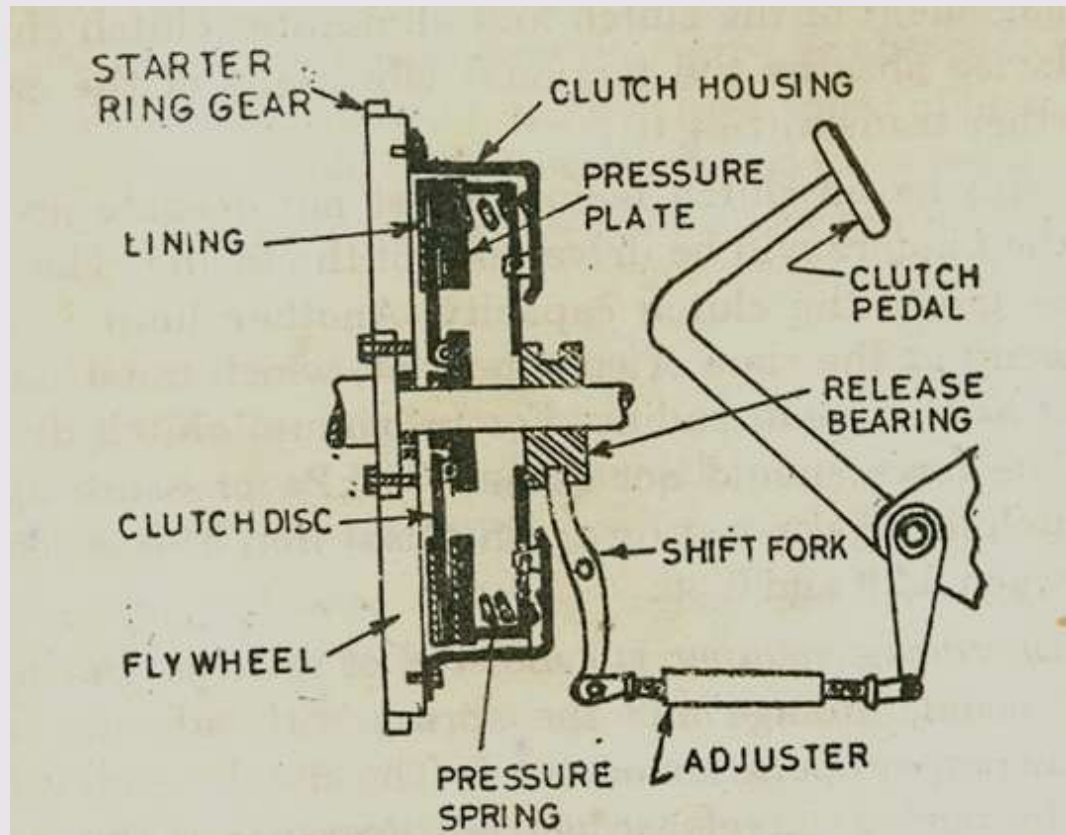
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Operation of clutch

- It is a friction type coupling that transmit power between the driving member and driven members of the clutch.
- This is accomplished by bringing both the driving and driven members of the clutch into gradual contact.
- The contact is established by strong spring pressure controlled by the operator through clutch pedal linkage.
- When the clutch is fully engaged, The spring pressure must be sufficient enough to prevent slipping between driving and driven members.
- Therefore, transmission of power through clutch depends on the material in contact(which causes friction) and the contact pressure.



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The clutch must provide smooth engagement without grabbing or shattering. This operation depends on the coefficient of friction of the friction surface.

Slippage occurs during engagement, which continues until the input(engine) and output (drive line) members are turning at the same speed,

Slippage produces heat that must be absorbed by the clutch material and then dissipated into air.

Centrifugal forces on the clutch increase with the engine speed and the increase is at a ratio of four times the engine speed. When the centrifugal force becomes greater than the strength of the parts, the clutch will fry apart and shatter.

So clutch burst speed is usually designed at twice the expected maximum speed



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Main components of clutch

Driving member

It consists of a pressure plate assembly and the flywheel bolted together such that the assembly rotates at the same speed of the engine.

Driven member

It consists of a disc or plate assembly and the clutch shaft. This driven plate assembly is gripped between the flywheel and the pressure plate assembly under the action of pressure springs.



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Operating member

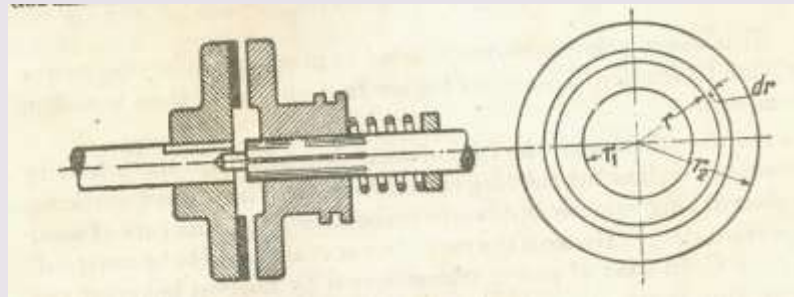
It consists of release bearing, release lever, foot pedal, linkage and the spring which are necessary for proper operation of clutch.



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Plate Clutch





Cone clutch

