



## System Operation

### Manual Steering Operation

Steering wheel input rotates the pinion of the gearbox through the universal joint. Due to the rack and pinion mechanism, the rotation of pinion is converted into a transverse motion at the rack, which steers the front wheels through the tie-rods and knuckles the same as an ordinary rack and pinion system.

### Assisting Operation

In addition to the manual steering operation, the steering sensor on the pinion shaft transmits a signal to the EPS control unit when it receives a steering input. The EPS control unit calculates an adequate motor control with addition of speed signals then transmits a control signal to the power unit. Based on the signal from the EPS control unit, the power unit drives the motor inside the gearbox. The torque generated by the motor is transmitted to ball screw through gears and converted into an assisting thrust in the axial direction of rack. The assisting thrust acts in the steering direction and lessens the steering force required at the steering wheel.

