HESD (Honda Electronic Steering Damper)

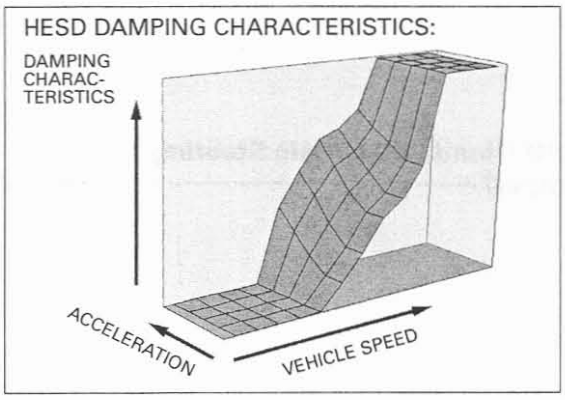
This motorcycle is equipped with the Honda Electronic Steering Damper (HESD).

The HESD system consists of the following components.
- Steering damper assembly with linear solenoid
- VS (vehicle speed) sensor
- ECM
- Malfunction indicator lamp (MIL) and HESD indicator

The steering damper assembly is installed on the main frame near the steering head pipe and the linkage arm is installed on the top fork bridge.

The damping characteristics are automatically controlled by the ECM in response to vehicle speed and acceleration and offers optimum handling over a wide range of riding conditions.

HESD employs a hydraulic rotary damper unit. The hydraulic oil is filled into the steering damper and is sealed permanently. The steering damper unit is not serviceable.



Each component of HESD functions as follows.

- **Damper oil chamber/Vane**
  The damper oil chamber is divided in two by a moving vane connected internally to the linkage arm. The edge of the vane is covered with an oil seal so that the left and right chambers are sealed from each other. Therefore oil moves between the left and right sides of the chamber via check valve controlled hydraulic passages.
- **Check valve**
  Four one-way check valves ensure that oil flows through the main valve in only one direction, whether the vane is moved left or right.
- **Accumulator**
  Accumulator compensates for temperature-induced changes in oil volume.
- **Main valve/Linear solenoid**
  The opening of the main valve is controlled by a linear solenoid that receives its control signals from the ECM. The damping characteristics are varied by the main valve/linear solenoid.
- **Relief valve**
  The relief valve controls and sets a limit to the maximum damping force.