Cruise Control

Description

The cruise control system uses mechanically and electrically operated devices to maintain vehicle speed at a setting selected by the driver.

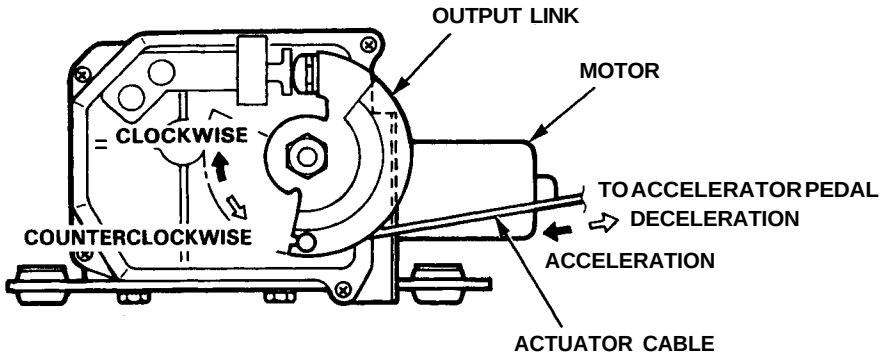
The cruise control unit receives command signals from the cruise control main switch and the cruise control set/resume switch. It receives information about operating conditions from the brake switch, ECM, vehicle speed sensor (VSS), the clutch switch (with manual transmission), or the A/T gear position switch (with automatic transmission). The cruise control unit sends operational signals to the devices that regulate the throttle position. The throttle position maintains the selected vehicle speed. Essentially, the control unit compares the actual speed of the vehicle to the selected speed. Then, the control unit uses the result of that comparison to open or close the throttle.

The brake switch releases the system's control of the throttle at the instant the driver depresses the brake pedal. The switch sends an electronic signal to the control unit when the brake pedal is depressed; the control unit responds by allowing the throttle to close. The clutch switch (manual transmission) or the A/T gear position switch (automatic transmission) sends a disengage signal to the control unit that also allows the throttle to close.

Operation:
The cruise control system will set and automatically maintain any speed above 30 mph (45 kph). To set, make sure that the main switch is in the "ON" position. After reaching the desired speed, press the set switch. The cruise control unit will receive a set signal and, in turn, will actuate the cruise control actuator. When the set switch is depressed and the cruise control system is on, the "cruise control" ON indicator in the gauge assembly will light up. You can cancel the cruise control system by pushing the main switch to "OFF". This removes power to the control unit and erases the set speed from memory. If the system is disengaged temporarily by the brake switch, clutch switch, or A/T gear position switch and vehicle speed is still above 30 mph, press the resume switch. With the resume switch depressed and the set memory retained, the vehicle automatically returns to the previous set speed.

For gradual acceleration without depressing the accelerator pedal, push the resume switch down and hold it there until the desired speed is reached. This will send an acceleration signal to the control unit. When the switch is released, the system will be reprogrammed for the new speed. To slow down, depress the set switch. This will send a deceleration signal to the control unit causing the car to coast until the desired speed is reached. When the desired speed is reached, release the set switch. This will reprogram the system for the new speed.

The electrically operated actuator controls the throttle position the same as a vacuum operated actuator. The magnetic clutch is part of the safety system, controls acceleration and deceleration.



Acceleration:
The motor actuates; then power is transmitted to the magnetic clutch by the transmission gear and the worm wheel. The magnetic clutch is rotated and magnetized. The magnetic clutch attracts the clutch plate, then power is transmitted to the output link by the gear directly connected to the clutch plate and the output gear. The output link rotates clockwise, then the actuator cable opens the throttle, and the car accelerates.

Deceleration:
The motor rotates in the reverse direction of acceleration; then in the same way, the power is transmitted to the output link. The output link rotates counterclockwise, then the actuator cable closes the throttle, and the car decelerates.