GENERAL MOTORS MAX-TRAC TRACTION CONTROL SYSTEM

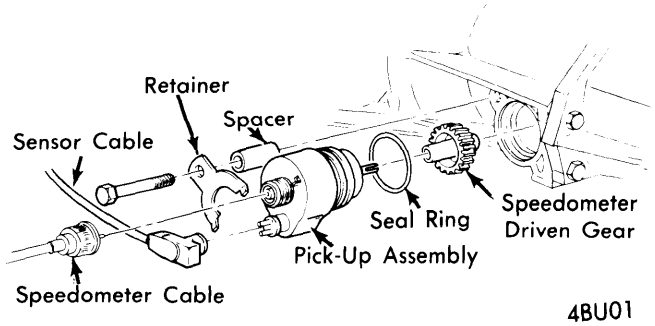
Buick

CAUTION — If equipped with Air Cushion Restraint System, do not attempt any adjustment, repair or removal of any components which would require removal or disconnecting any component of Air Cushion Restraint System until ignition switch has been turned to LOCK position, and negative battery cable has been removed from battery and taped.

DESCRIPTION

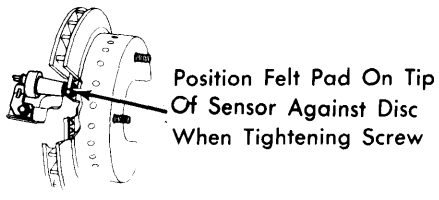
Purpose of system is to aid driver in maintaining directional stability and manuverability during acceleration and/or cornering by automatically limiting engine power to value required for maximum acceleration without excessive rear wheel slippage. System uses existing ignition switch, brake switch, brake light, and ignition components. Basic system consists of four main components:

Transmission Speed Sensor — A mechanically driven electromagnetic device mounted in transmission at speedometer cable connection. Sensor prodices AC voltage with a frequency proportional to transmission output shaft speed, and sends voltage frequency to electronic controller via electrical harness.



TRANSMISSION SENSOR INSTALLATION (TYPICAL)

Front Wheel Speed Sensor & Speed Disc — An electromagnetic device which, in conjunction with rotating speed disc, produces AC voltage proportional to speed of disc. Speed disc is mounted on hub of left front wheel, sensor is mounted at a predetermined distance from disc. Front wheel speed signal produced is sent to controller via wiring harness.



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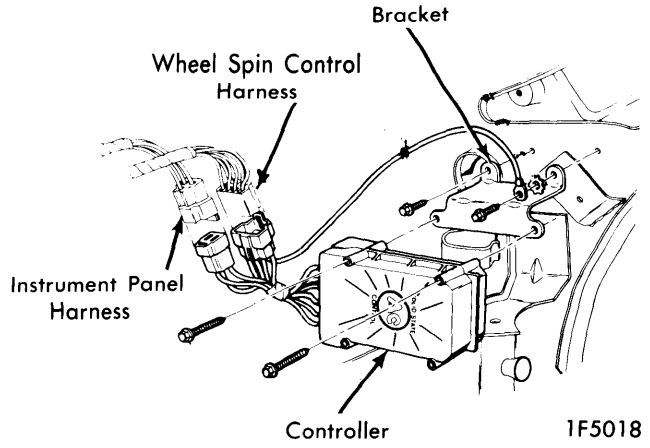
SENSOR ALIGNMENT

Electronic Controller — A solid state electronic computer located in passenger compartment. Unit receives wheel speed signals from both sensors, and compares signals; when difference exceeds predetermined amount, it transmits signal to ignition system.



CONTROLLER INSTALLATION (TYPICAL)

On — Off Switch — Located on instrument panel and normally in ON position. In OFF position, switch shorts controller output signal, preventing transmission to ignition system. Vehicle may be driven with switch in OFF position should a malfunction occur in system, or under special conditions such as rocking car in snow.

Diverter Valve Solenoid — On vehicles equipped with Max-Trac and A.I.R., a solenoid is mounted on A.I.R. pump to prevent engine backfire when Max-Trac is operating.

OPERATION

When vehicle is driven normally, no ignition interrupts will occur if slippage does not exceed a predetermined value. If excessive acceleration and/or hard cornering reduces normal load on rear wheel, slippage can exceed predetermined amount. Controller compares sensor signals, determines if excessive slippage has occured, and generates an output signal which interrupts ignition. Result is a reduction of engine power to a value required for maximum acceleration without excessive rear wheel slippage. *NOTE — When system is functioning normally, engine may appear to miss or lack power when accelerating on a slippery surface.*

DIAGNOSIS & TROUBLE SHOOTING

System Inoperative At All Speeds — On-off switch set at "OFF". No ground connection to controller: unplug #6 terminal connector and check black wire for proper ground. Brake lights dead: check fuse and stop light switch. No signal from transmission speed sensor: unplug #6 terminal connector at controller and check resistance between red and white wires at harness (should be 1600-2400 ohms); if circuit is open, check resistance across sensor terminals (if open, replace sensor; if 1600-2400 ohms, replace harness). Controller faulty.

Engine Will Start, But Will Not Run Until On-Off Switch Is Set At "OFF" — No battery (positive) electrical supply to controller: unplug #3 terminal connector at controller, turn ignition to "ON", and check for available battery voltage between pink wire and ground (if not, replace harness). No connection between controller output and ignition ballast resistor: unplug #3 terminal connector at controller, and check resistance between pink/black wire at harness connector and positive terminal of coil (should be 1.8 ohms). Faulty controller.

GENERAL MOTORS MAX-TRAC TRACTION CONTROL SYSTEM (Cont.)

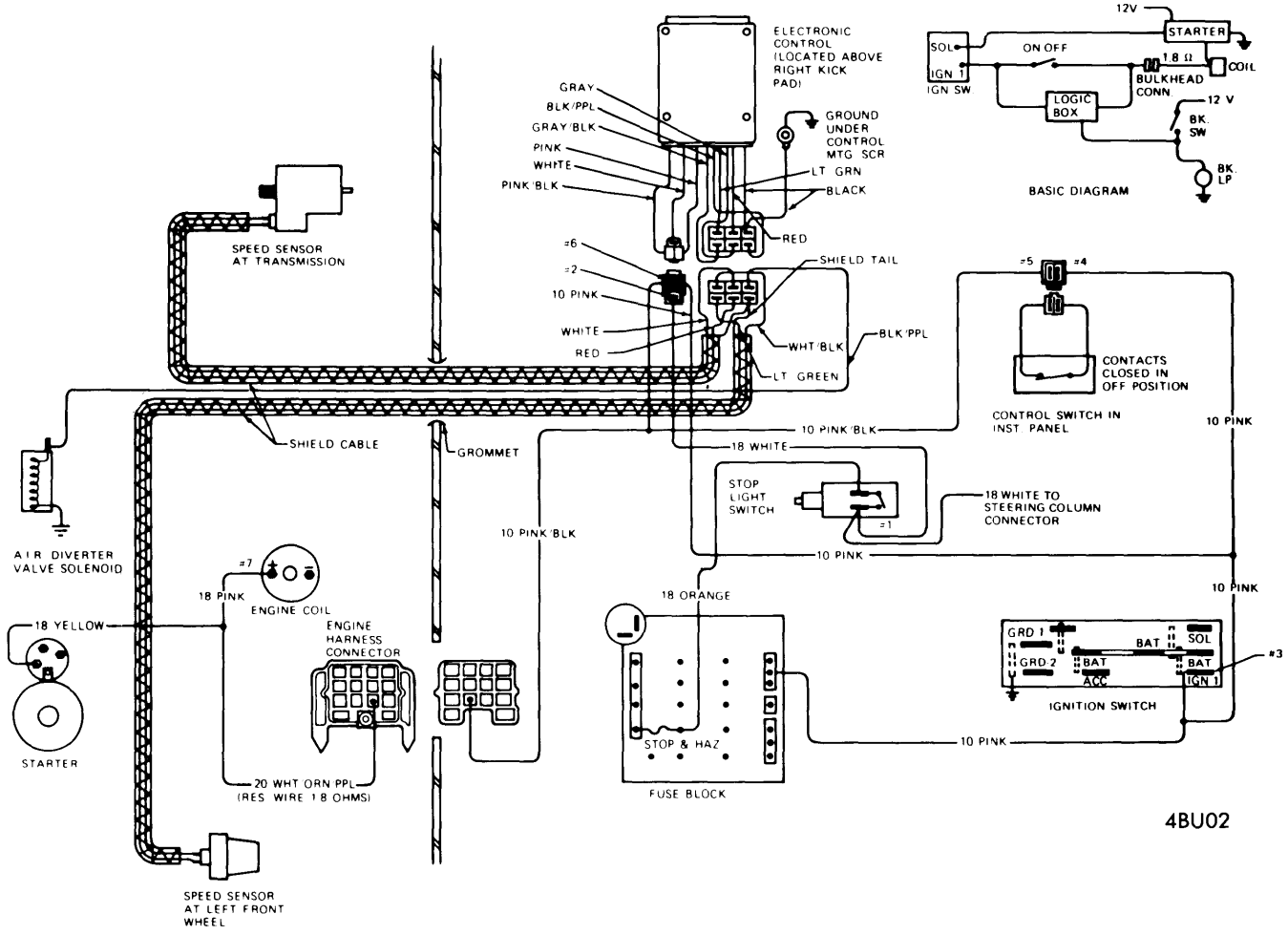
System Functions Or Engine Stops During Braking – No positive electrical supply from brake circuit, or no connection from controller to brake switch: unplug #3 terminal connector at controller, with brakes applied, and check for battery voltage between white wire and ground (if not, replace harness). Brake lights dead. Faulty controller.

System Functions Properly At High Speeds, But Is Inoperative At Lower Speeds – Low signal from front wheel speed sensor: check for proper gap between sensor and disc. Faulty controller.

System Functions At Low Speeds Causing Engine Hesitation – Low signal from front wheel speed sensor: check for proper gap between sensor and disc.

System Operates When Not Necessary – Wrong speedometer gear.

Engine Backfires – A.I.R. by-pass system disconnected. A.I.R. by-pass solenoid not grounded. Front wheel speed sensor improperly positioned.



GENERAL MOTORS MAX-TRAC WIRING