

INSTRUCTION MANUAL

ENGINE IDLER MODULE

PART OF A HIGH IDLE SYSTEM



**ENGINE IDLER
MODEL #091-84-005**



**VOLTAGE MONITOR
MODEL #091-84-004**

3 YEAR WARRANTY



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INTRODUCTION

The High Idle System consists of a model 091-84-005 Engine Idler and a model 091-84-004 Voltage Monitor. The system permits a vehicle operator to increase engine RPM to obtain more alternator output. RPM may be increased manually from the Engine Idler or automatically from the Voltage Monitor when the system voltage drops below the threshold. In order to move the throttle mechanism or interface with electronic controlled engines additional components are required.

DESCRIPTION

ENGINE IDLER:

This module is the heart of the system. It interfaces with the Brake Pedal Switch, the Voltage Monitor, Neutral Safety Switch and the output solenoid valve or relay. The Engine Idler has a High Idle "ON" and "OFF" pushbuttons on its front face allowing the operator to switch in and out of HIGH IDLE when the vehicle is in Park or Neutral. An LED indicator on the front face is illuminated when the engine is in HIGH IDLE.

VOLTAGE MONITOR:

This module interfaces with the Engine Idler module to activate the high idle system whenever the detected voltage drops. Three LED's indicate High, Low or Normal battery voltage. When the battery voltage is above 15.6 volts D.C. the HIGH indicator is illuminated. The LOW battery voltage indicator illuminates when the battery voltage is below 12.5 volts. At this time a signal is sent to the Engine Idler module automatically placing it in high idle. This occurs only if the transmission is in Park or Neutral and the brake pedal is not depressed.

INSTALLATION

Typical installations are illustrated in figures 1 through 4. Mount actuator and solenoid valve in an appropriate location and connect the actuator output to the throttle mechanism. (Note: The actuator and solenoid valve must be purchased separately. Kits that simplify the actuator mounting and connection are available for several engines. Consult KECO sales Department). Be certain that the ball chain or other coupling does not restrict throttle motion at full closed throttle or wide-open throttle. Connect solenoid valve air lines and electrical wiring as illustrated.

OPERATION

The High Idler receives its power from the ignition switch and functions only when the ignition switch is either "ON" or in the ACC. position. High Idle is automatically disabled under any of the following conditions:

1. Operator depresses the "OFF" pushbutton on the Engine Idler
2. Operator depresses the brake pedal
3. Operator places the transmission into Drive or Reverse
4. Operator turns off the ignition switch

TEST PROCEDURE

1. With the transmission switch in PARK turn the ignition switch the Accessory position. The LED on the Engine Idler should remain OFF.
2. Press the "ON" switch on the Engine Idler. The LED on the Engine Idler should turn ON.
3. Move the transmission to Drive or Reverse. The LED on the Engine Idler should turn OFF.
4. Place the transmission in PARK and press the "ON" switch to turn the LED ON again.
5. Depress the Brake Pedal. This should turn the LED OFF.

NOTE:

Steps 1 thru 5 are valid only if the battery voltage is greater than 12.5 volts. If less than 12.5 volts, the Voltage Monitor may turn on High Idle system.

6. Start the engine and allow it to warm up with the transmission in PARK mode.
7. Depress the ON switch on the Engine Idler and adjust the coupling to the actuator and the stroke to obtain the desired engine RPM. Recheck by turning the unit ON and OFF a few times.
8. Load the electrical system by turning on the headlights, area lights or other accessories. Note that when the voltage drops below 12.5 volts, the following occur:
 - a. The Low indicator on the Voltage Monitor illuminates.
 - b. The indicator on the Engine Idler illuminates.
 - c. The High Idle System is active and the engine is speeded up.

CAUTION

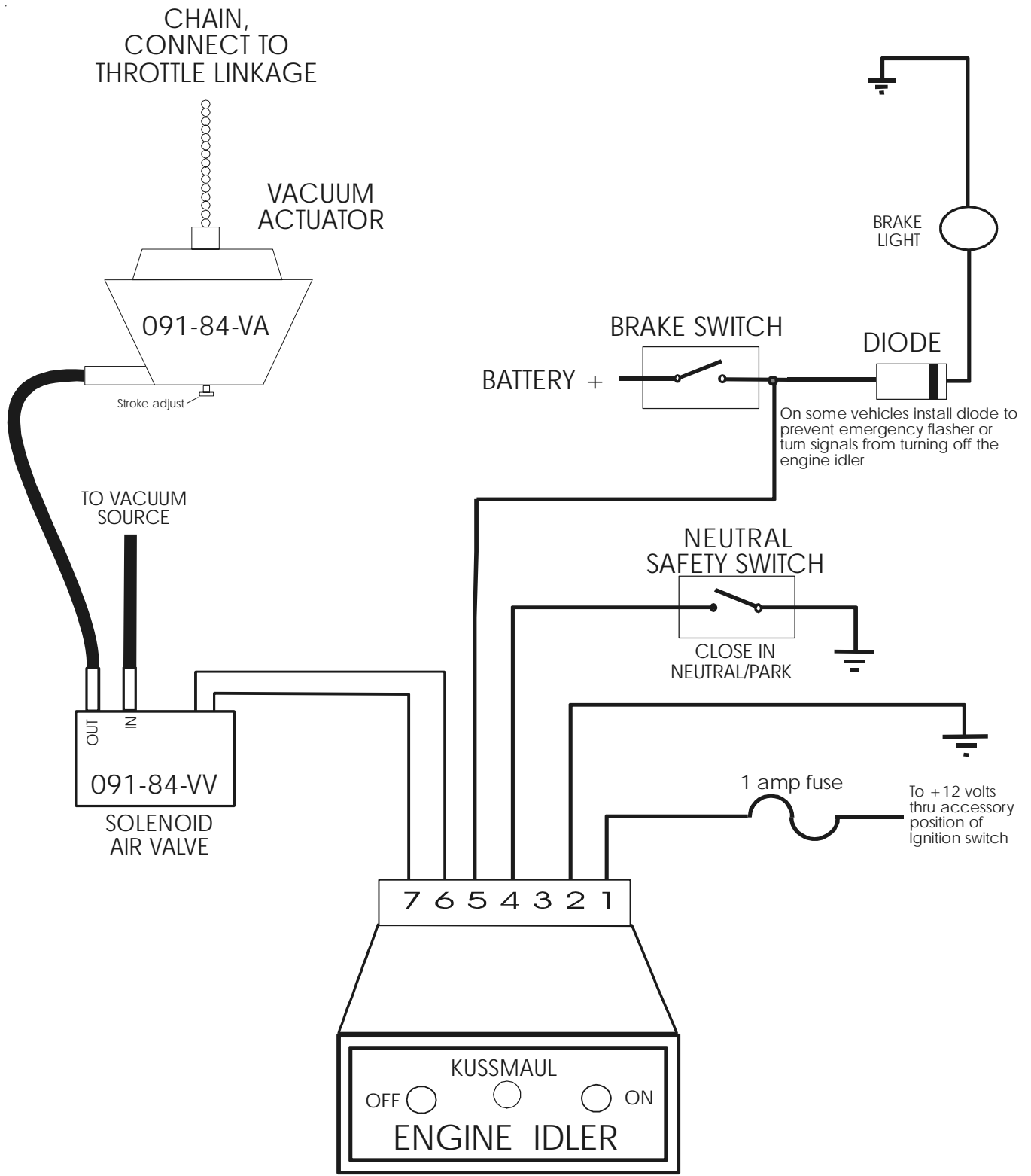
FORD INSTALLATIONS

FORD, in many installations uses a starter solenoid which has one side of the coil grounded. The neutral safety switch is then placed in the supply side of the solenoid coil.

This configuration creates a considerable voltage spike when the vehicle is started.

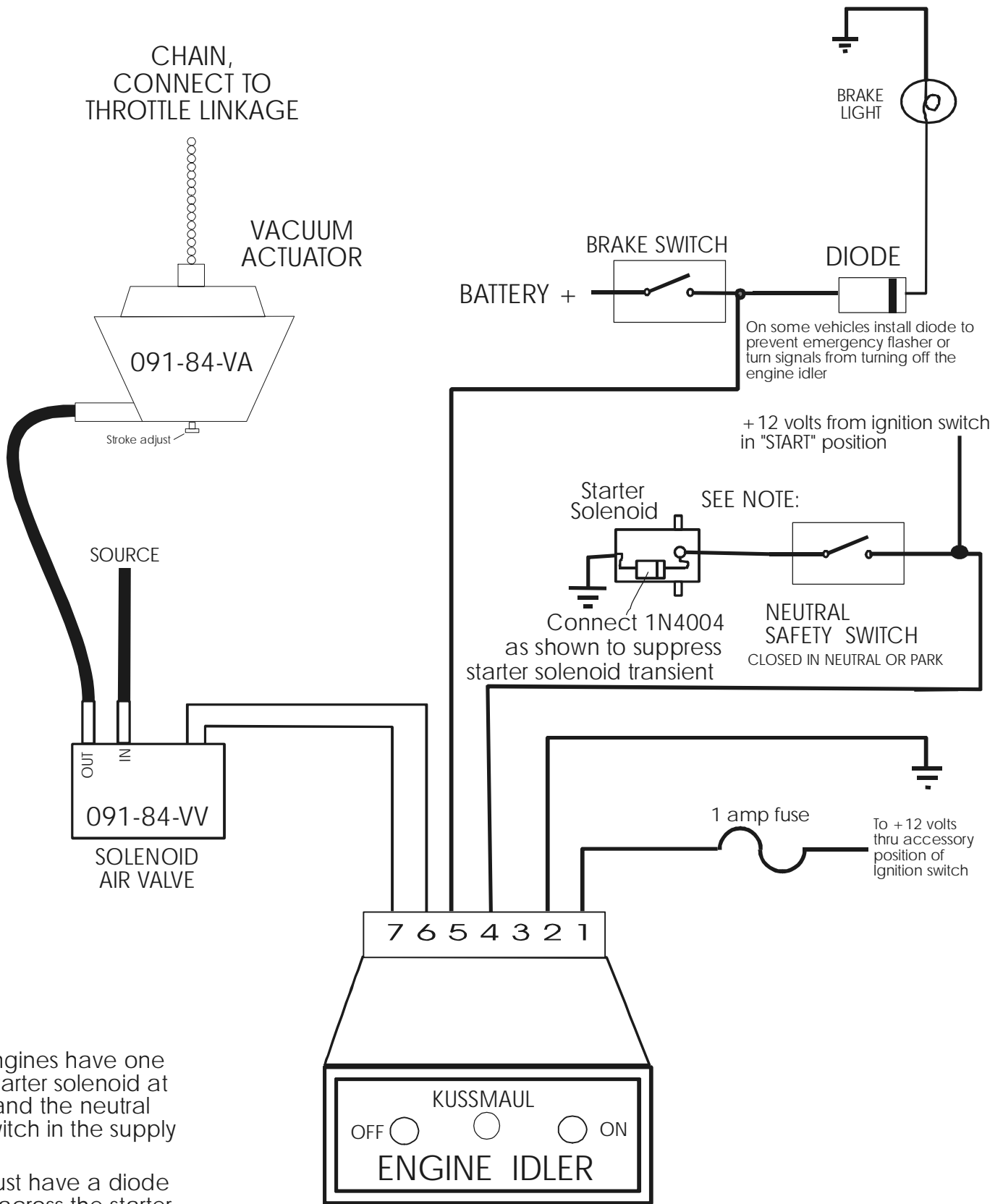
A diode must be placed across the starter solenoid in these installations to prevent damage to the engine idler.

See the appropriate wiring diagram for diode installation details.



ENGINE IDLER INSTALLATION

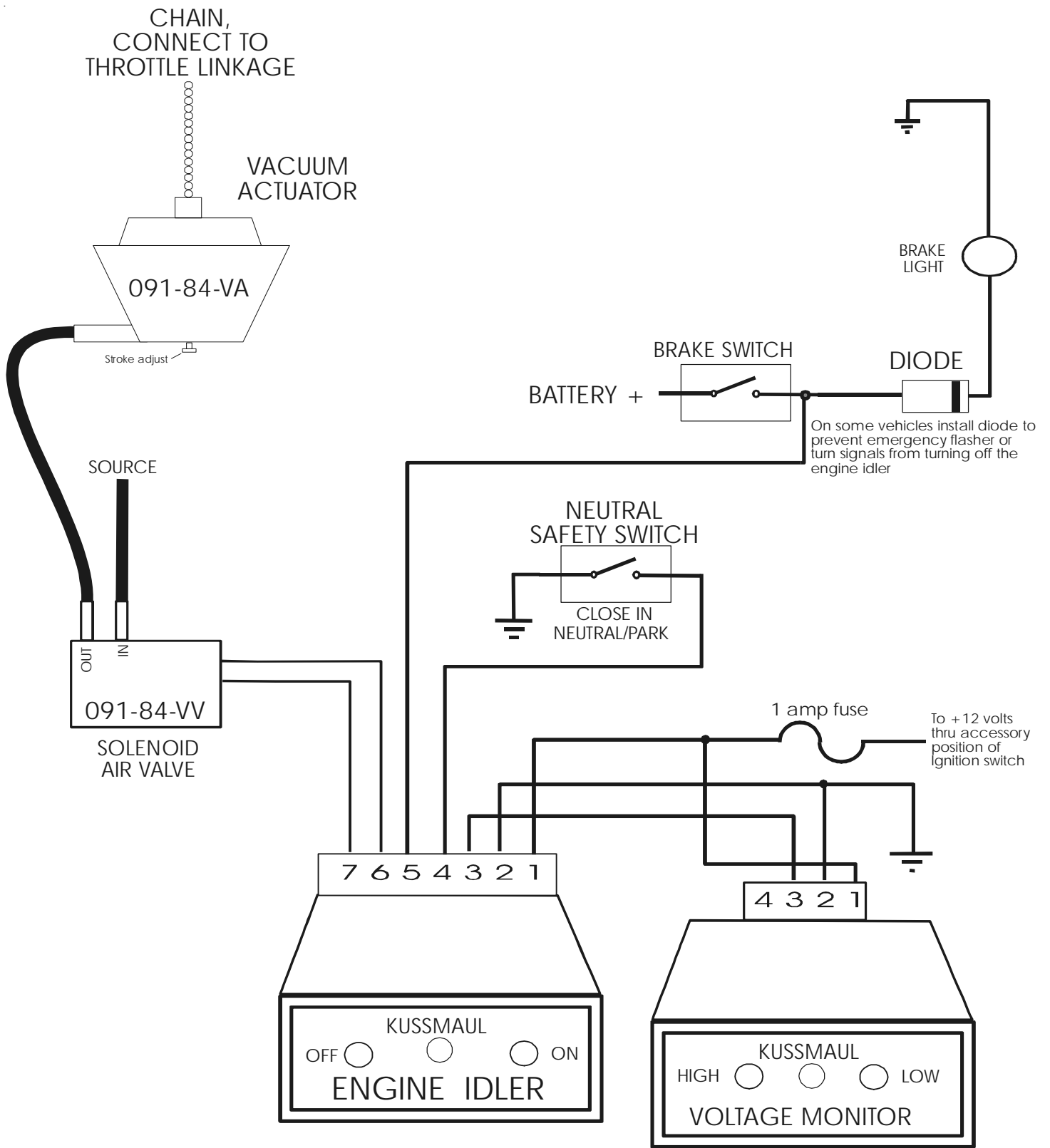
Figure 1



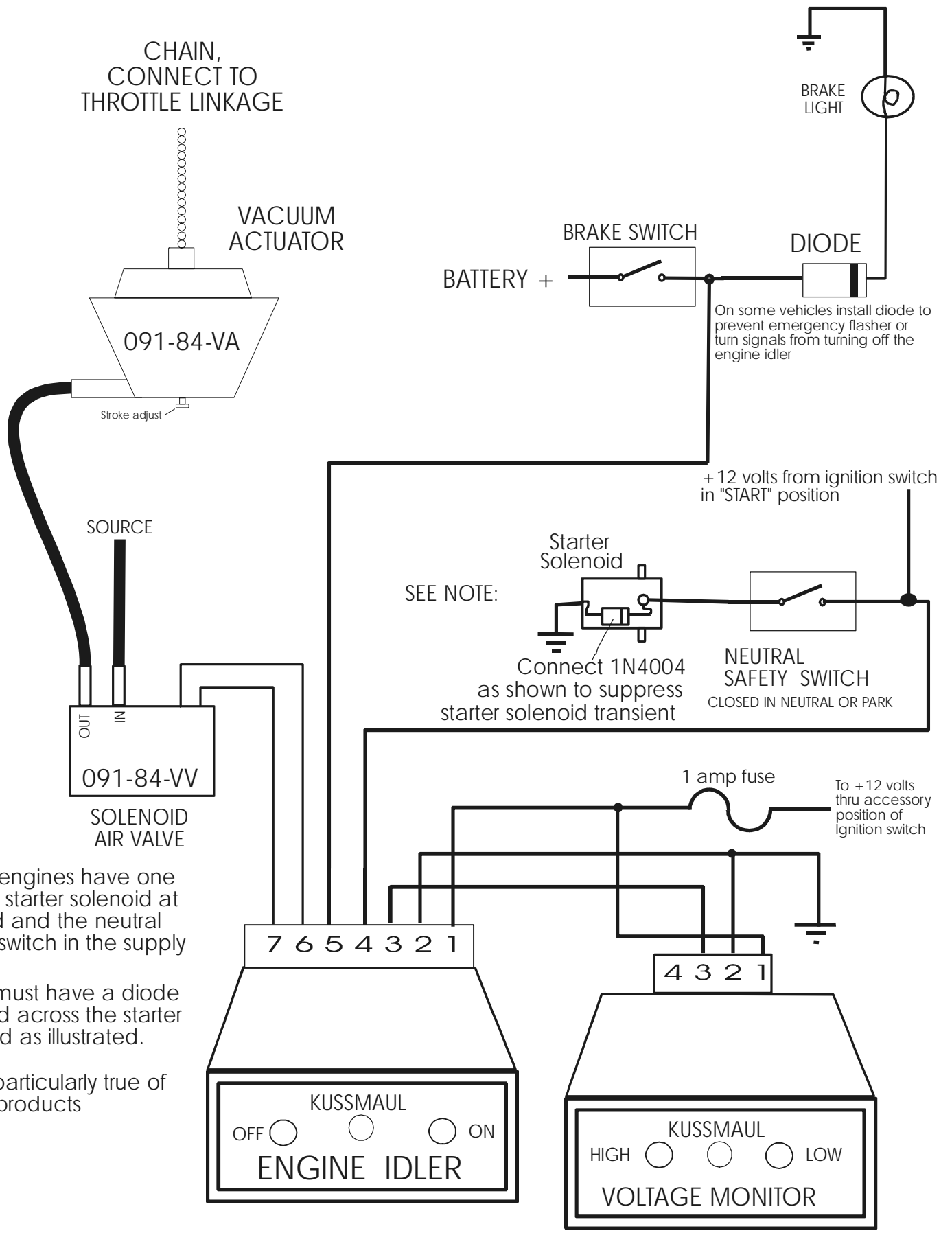
NOTE:
Some engines have one side of starter solenoid at ground and the neutral safety switch in the supply side.

These must have a diode installed across the starter solenoid as illustrated.

ENGINE IDLER INSTALLATION
FOR ENGINES WITH NEUTRAL SAFETY SWITCH CONNECTED TO STARTER

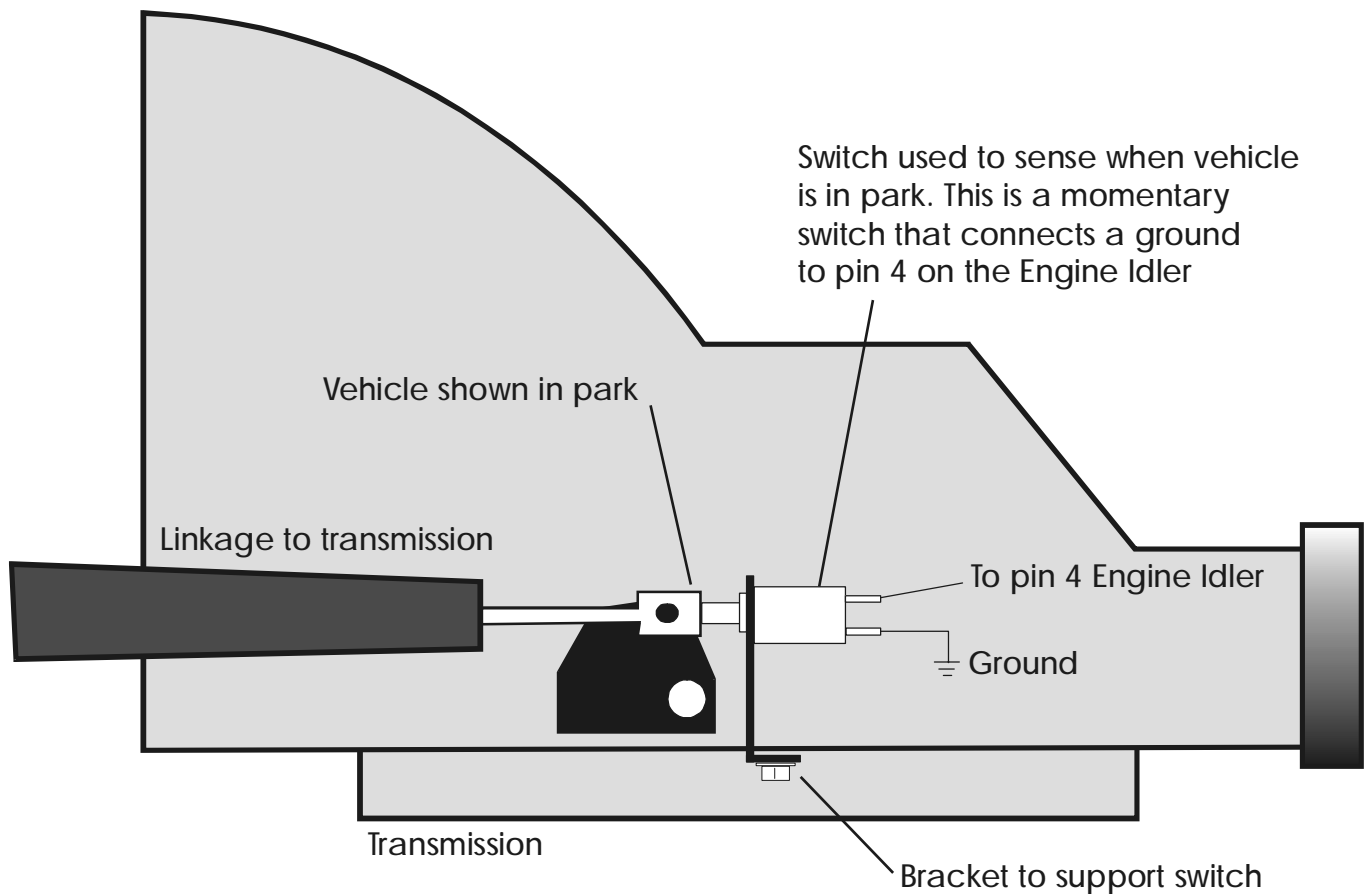


VOLTAGE MONITOR & ENGINE IDLER
INSTALLATION AND WIRING DIAGRAM



VOLTAGE MONITOR & ENGINE IDLER
 INSTALLATION AND WIRING DIAGRAM
 FOR ENGINES WITH NEUTRAL SAFETY SWITCH CONNECTED TO STARTER

For vehicles that do not have a Neutral Safety Switch or have a digital switch that does not connect to ground.



Instructions

Find a suitable momentary switch preferably watertight.

Construct a bracket to mount the switch to the transmission. Use the oil pan to mount the bracket.

Align the switch so when the vehicle is in park the switch will make a ground connection.

Figure 5

INSTALLATION RECORD & WARRANTY

Date Installed _____

Installed By _____

Vehicle Identification _____

Vehicle Owner _____

WARRANTY

All product of Kussmal Electronics Company Inc. are warranted to be free of defects of material or workmanship. Liability is limited to repairing or replacing at our factory, without charge, any material or defects which become apparent in normal use within 3 years from the date the equipment was shipped.

Kussmal Electronics Company, Inc. shall have no liability for damages of any kind to associated equipment arising from the installation and /or use of the Kussmal Electronics Company, Inc. products. The purchaser, by the acceptance of the equipment, assumes all liability for any damages which may result from its installation, use or misuse, by the purchaser, his or its