

HI IDLE CONTROLLER

Model 091-112-007

A Voltage Sensing Hi Idle Controller

For International Engines With Cruise Control



SINCE 1967, DESIGNERS OF INNOVATIVE PRODUCTS

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INTRODUCTION:

The Model 091-112-007 Hi Idle Controller is a voltage sensing device designed to work with the Navistar International Engine NAVPAC Speed Controller. It will increase the speed into the High Idle mode when low battery voltage is detected. Safety interlocks are provided by Navistar as follows:

AUTOMATIC TRANSMISSIONS: The High Idle will be disabled when the foot brake is depressed or the transmission is placed in Drive or Reverse.

STANDARD TRANSMISSIONS: The High Idle will be disabled when the foot brake is depressed or if the foot clutch is depressed.

A hardware safety interlock is provided by the emergency brake switch. The High Idle will be disabled when the emergency brake is OFF.

PROGRAMMING:

The following parameters must be programmed on the NAVPAC by the International dealer for the Remote Throttle Interface:

PTO Power Takeoff	"In Cab Operation Only"
PTO in Cab Mode	"Stationary Preset"
Remote Throttle for PTO Control	"Off"
Maximum PTO Engine Speed (RPM)	"1800 RPM"
Set Engine Speed 1 (RPM)	"1400 RPM"
Engine Response Rate for PTO RPM	"250 RPM/Sec."

INSTALLATION:

Install and wire the controller as illustrated in Figure 1. An ON/OFF switch is illustrated to permit disabling the Automatic Hi Idle function. The Hi Idle Controller contains two relays which operate as required by the NAVPAC engine control to utilize cruise control to increase the engine speed at an emergency scene. Caution is advised in connecting the +12 volts and ground inputs to the High Idle Controller. The ground input must be a low resistance connection to the negative side of the battery. Any voltage drop between the ground connection and the battery ground will induce errors in the voltage set point. Similarly the connection of the +12 volt input must be as close to the battery + as possible. Any voltage drop due to load currents in the vehicle between the battery and the sense point will shift the set point of the Hi Idle Controller. The factory setting for the Hi Idle "ON" point is 12.4 volts.

OPERATION:

The operation of the Hi Idle Controller is as follows:

NORMAL OPERATION, low voltage turn-on. The High Idle Switch is "ON", see Figures 1 and 2

High Idle Controller is powered up for more than 10 seconds via pin 1 and pin 2

Low voltage is sensed (12.4 volts or less).

Relays K1 and K2 close, K1 completes the path from wire 97DJ18VT and 97CA18VT. K2 closes the circuit between 97CA18VT and 97DH18VT for a period of 3 seconds.

Engine runs at High Idle.

Once in High Idle, R14 (Figure 2) can be adjusted to obtain the desired engine speed.

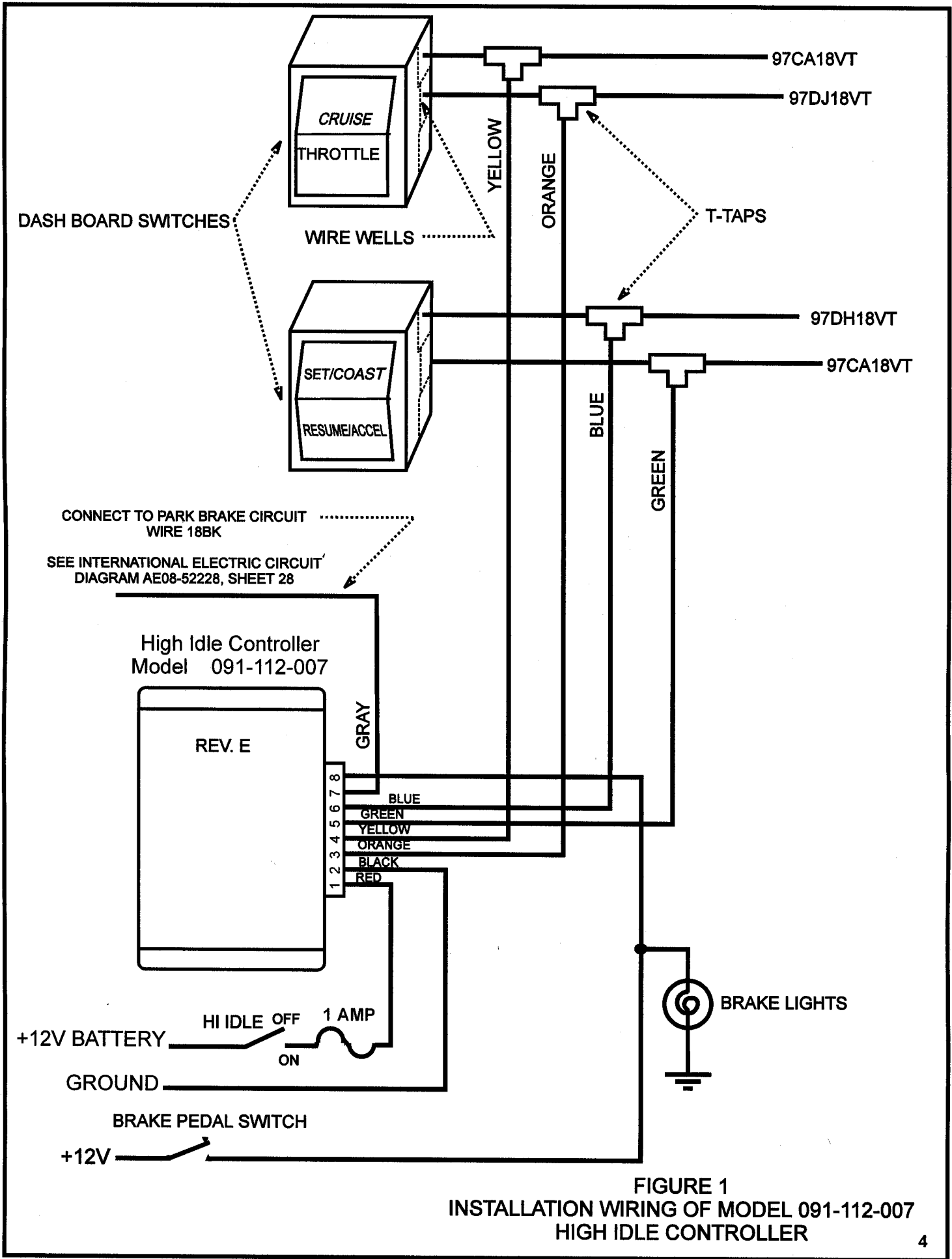


FIGURE 1
 INSTALLATION WIRING OF MODEL 091-112-007
 HIGH IDLE CONTROLLER

NORMAL OPERATION, turn off when voltage recovers. The High Idle Switch is "ON"

The High Idle has been engaged for at least 5 minutes.

The battery voltage rises to above 13.1 volts.

Relay K1 opens thereby disabling High Idle and returning the engine to normal idle speed.

The High Idle controller is ready for the next low voltage actuation.

OFF OPERATION, the High Idle switch is "OFF"

The High Idle Controller is de-activated and the engine returns to it's normal idle speed.

ALIGNMENT: (See Figure 3)

1. Set input voltage to 15.0 volts
2. Turn R6 to maximum CCW
3. Measure voltage at R7-A (see figure 3)
4. Slowly adjust R6 until voltage is at 4.88 VDC (this adjusts setpoint to 12.4 VDC)
5. Slowly adjust input voltage from 15.0 VDC toward 12.0 VDC and verify that the voltage at R7-A goes high at 12.4 VDC
6. Slowly adjust input voltage from 12.4 VDC toward 13.1 VDC and verify that the voltage at R7-A goes low at 13.1 VDC

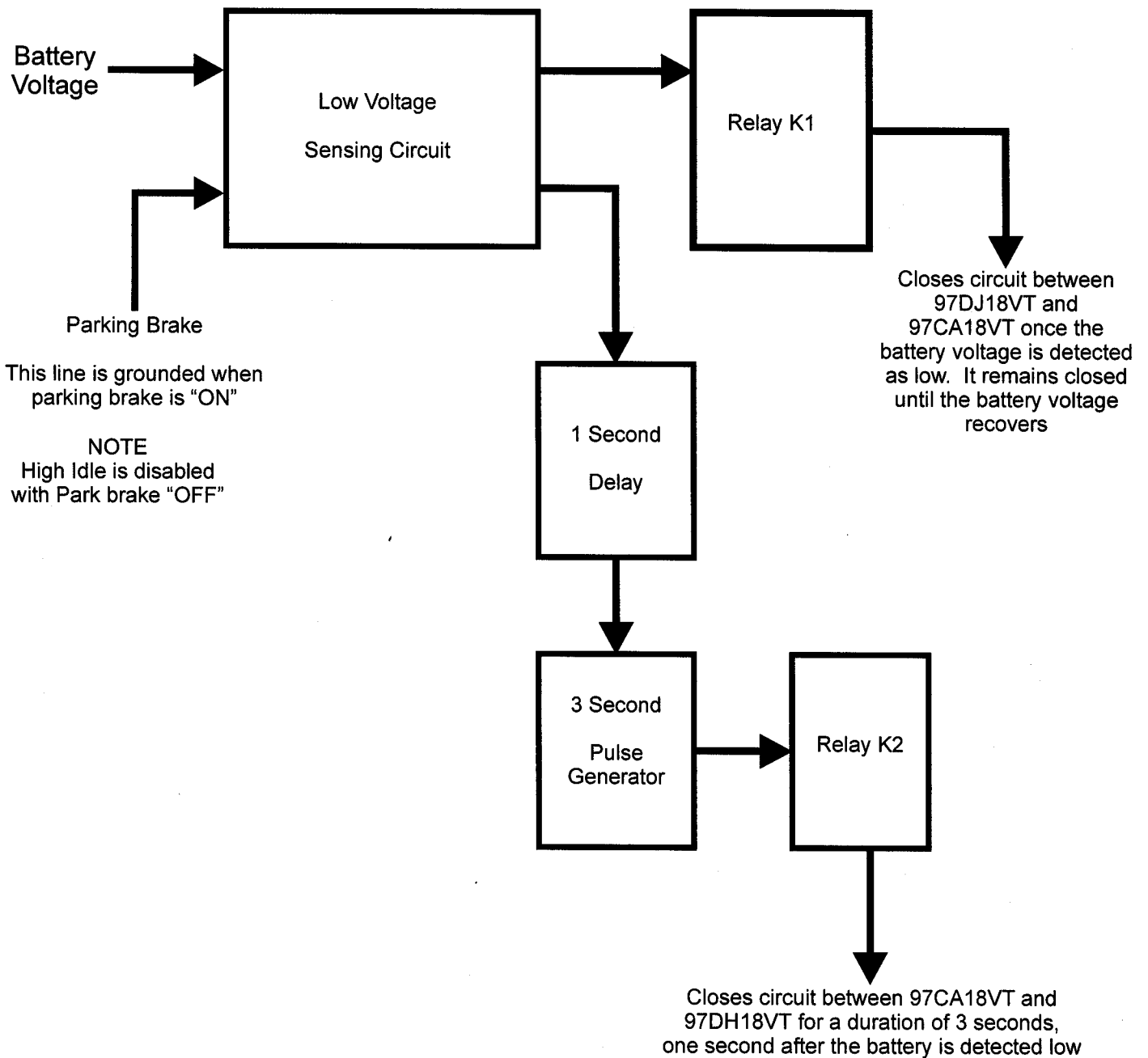
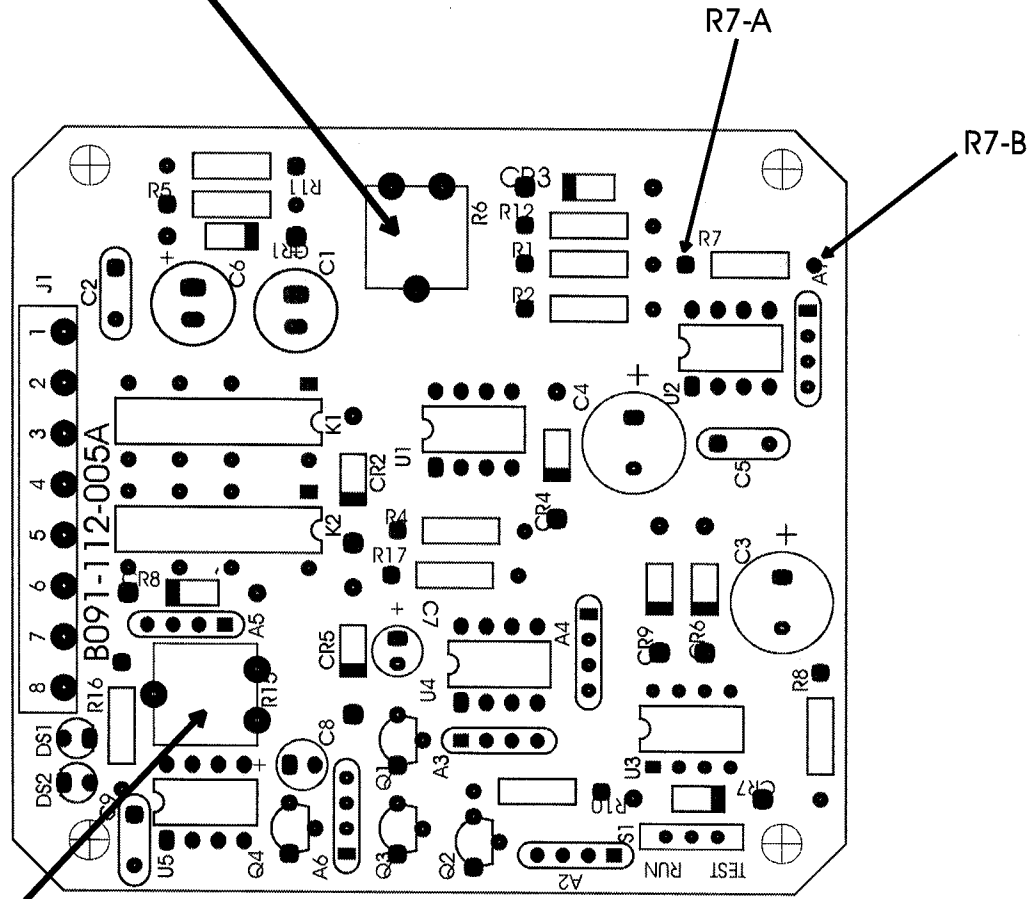


FIGURE 2

BLOCK DIAGRAM FOR HIGH IDLE CONTROLLER
FOR INTERNATIONALLY ELECTRONICALLY CONTROLLED ENGINES

Normally adjusted at the factory,
may be adjusted per alignment
procedure on page 5



Adjust to obtain desired engine speed
In order to test this adjustment, HIGH IDLE
must be turned OFF and started again.

FIGURE 3
CIRCUIT BOARD LAYOUT

INSTALLATION RECORD & WARRANTY

Date Installed _____

Installed By _____

Vehicle Identification _____

**Vehicle
Owner** _____

WARRANTY

All products 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. Equipment is to be returned, shipping charges prepaid and will be returned, after repair, shipping charges paid.

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 employees or others.