



## **INSTALLATION OF WIRED RITE SYSTEMS SST II ENGINE CONTROLLER WITH DUAL THROTTLE AND EMERGENCY POWER CONTROL**

### **INTRODUCTION:**

Thank you for purchasing the new System 21 SST II from Wired Rite Systems. This product has been designed with the same high reliability as all our previous products, and with the input of our many customers.

### **HARDWARE MOUNTING:**

For maximum weatherproofing, mount the SST II enclosure with the wire harness pointing down.

### **CONNECTIONS:**

When installing the SST II in a WRS Integrated Power System, plug the 12 pin connector, which is at the end of the SST II pigtail, into J4 of the Power Distribution Center.

Connectors J7 and J10, which control the Throttle and Emergency Power circuitry from the SST II box, are not included on the IPS and will need to be connected externally. The factory wiring is as follows:

<u>From</u>		<u>Thru</u>	<u>To</u>			
<u>SST II Circuit</u>						
<u>Board</u>	<u>Function</u>	<u>Pin #</u>	<u>Vehicle</u>	<u>Wire Color</u>	<u>Wire Label</u>	<u>AWG</u>
<u>Nomenclature</u>		<u>J4</u>				
IGNITION SPLICE STD2	Supply Power to Ignition and Starter Relays.	1	"KEY" SIDE OF SPLICE	Orange	IGN	14
MF9	Supply +12 volts to processor on board.	2	BATTERY (+)	Pink/ Green	SST (+)	16
MF8	GND (Do not use chassis.)	3	BATTERY (-)	White	NEG	16
MF5	Enables board operation	5	"MASTER" ENABLE SWITCH	Red/ White	MASTER	14
MF2	Triggers Start circuitry on board.	6	BUCKET START SWITCH	White/ Blue	START (-)	16
FF1 (FAULT)	Indicates fault to dash mount light.	7	DASH INDICATOR LIGHT	Gray/ Purple	FAULT	16
MF4	Triggers Throttle circuitry on board	8	BUCKET THROTTLE SWITCH	White/ Yellow	THROTTLE (-)	16
STD5	Supplies Power to starter when Relay is enabled	10	OUTPUT FROM KEY "START"	Orange/ Black	STARTER	14

<u>From</u>		<u>Thru</u>	<u>To</u>			
<u>SST II Circuit</u> <u>Board</u> <u>Nomenclature</u>	<u>Function</u>	<u>Pin #</u> <u>J4</u>	<u>Vehicle</u>	<u>Wire Color</u>	<u>Wire Label</u>	<u>AWG</u>
STD3	Interrupts Power to ECM when Relay is enabled.	12	ECM SIDE OF SPLICE	Orange/ Red	FUEL SOL	14

**For Throttle Circuits:**

<u>From</u>		<u>Thru</u>	<u>To</u>			
<u>SST II Circuit</u> <u>Board</u> <u>Nomenclature</u>	<u>Function</u>	<u>Pin #</u> <u>J7</u>	<u>Vehicle</u>	<u>Wire Color</u>	<u>Wire Label</u>	<u>AWG</u>
THROTTLE RELAY #1 IN	Control vehicle's throttle system.	3	THROTTLE CIRCUITRY	Black	RLY-1-30	18
THROTTLE RELAY #1 N.O.	Control vehicle's throttle system.	6	THROTTLE CIRCUITRY	Black	RLY-1-87	18
THROTTLE RELAY #2 IN	Control vehicle's throttle system.	1	THROTTLE CIRCUITRY	White	RLY-2-30	18
THROTTLE RELAY #2 N.O.	Control vehicle's throttle system.	4	THROTTLE CIRCUITRY	White	RLY-2-87	18

**For E. Power Circuits:**

<u>From</u>		<u>Thru</u>	<u>To</u>			
<u>SST II Circuit</u> <u>Board</u> <u>Nomenclature</u>	<u>Function</u>	<u>Pin #</u> <u>J10</u>	<u>Vehicle</u>	<u>Wire Color</u>	<u>Wire Label</u>	<u>AWG</u>
E-POWER BATTERY	Supply Power to E. pump Relay	1	E-POWER BATTERY	Red/ Green	FROME-BATT	14
E-POWER	Supply Power to E. pump when Relay is enabled.	2	E-PUMP	Purple/ Green	TO E-PUMP	14
MF12	Triggers E. Power circuitry on board.	3	BUCKET E-PUMP SWITCH	White/ Green	E-PUMP	14

**OPERATION:**

After mounting, and connection the System 21 SST II to your vehicle, you should power up the system.

When the Master Switch has been activated, the SST II board will automatically perform a diagnostic check to determine that all functions are operating properly. The diagnostic check routine is complete every 250 milliseconds as long as the processor power is on.

The SST II board indicates a fault with a fault indicator LED installed on the circuit board (D19).

All faults are recorded in volatile memory and can be recalled at any time by depressing the "PUSH TO TEST" button. As you hold the test button, the LED next to the failed circuit will flash (D1, D2, D3). To reset the fault memory you must remove the processor power for at least 1 second.

If there are no faults in the circuits that receive power when the ignition switch is turned "ON", the following LED's on the circuit board will be illuminated:

<u>LED#</u>	<u>SST II Circuit Board Nomenclature</u>
D7	MASTER POWER
D15	PROCESSOR POWER
D16	START INPUT
D17	E. PUMP INPUT
D18	IGNITION SPLICE INPUT
D25	RUN (NC)

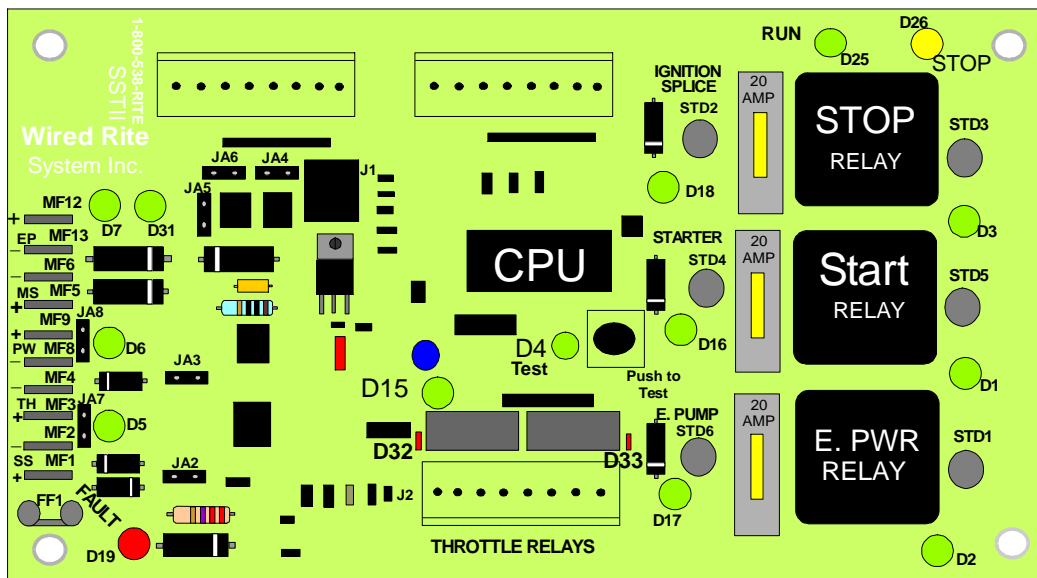


Figure 3-1

Unless specified, the SST II is wired as a "Negative trigger". A Negative trigger is defined as, supplying the negative side of the 12 Volt supply ( or ground) to energize a device.

A positive trigger is defined as, supplying the positive side of your 12 Volt supply to energize a device. If a positive trigger is required in your application this can be easily accomplished by the following steps:

Please refer to figure 3-1.

**For Start Circuit:**

1. Remove jumper from JA2, and reinstall the jumper to JA7.
2. Move the trigger wire from MF2 to MF1.

**For Throttle Circuit:**

1. Remove jumper from JA3, and reinstall the jumper to JA8.
2. Move the trigger wire from MF4 to MF3

**For E-Power Circuit:**

1. Remove jumper from JA5, and reinstall the jumper to JA6.
2. Move the trigger wire from MF13 to MF12.

Each of these circuits can be independently set for greater versatility with your vehicles application.

Please refer to figure 7-1 for a diagram of a typical vehicle wiring.

Please refer to figure 8-1 for a diagram of various vehicle throttle interface wiring.

## **PROGRAMMING**

The SST II comes with a programmable memory which makes it versatile to a wide range of vehicle applications. The software has been preloaded at the factory for the specifications noted at the time of order. Please see the SST II programming sheet which has been shipped inside the box with your SST II, this sheet shows all your programmed functions. If this sheet is not present, call your supplier immediately. This is a very important part of your system. It is possible to reprogram the SST II at any time. To change these settings you must purchase the software and download cables from Wired Rite Systems, PN# X-KIT-7138.

For information about purchasing the software kit please call Wired Rite Systems at 1 (800) 538-7483.

## **TROUBLESHOOTING**

The processor on the SST II can go into a locked-up situation if the power is toggled on and off at a rapid rate. When this occurs, the processor may be reset by disconnecting the power to the board momentarily. To test for a lock-up situation, press the "PUSH TO TEST" button if D4 will not light then reset the processor.

Please note the SST II board's negative power must not be hooked to a chassis ground, but should be connected directly to the negative side of the battery.

Below is a list of the LED's and the operations they indicate in normal mode:

<u>LED #</u>	<u>Description</u>	<u>On Indicates:</u>
D5	START INPUT	A Start/Stop trigger has been applied.
D6	THROTTLE INPUT	A Throttle trigger has been applied.
D16	START	Power is being applied to the Start circuit.
D18	IGNITION SPLICE	Power is being applied to the IGNITION SPLICE.
D25	RUN (NC)	The Ignition switch is on, and the stop relay is not energized.
D26& D3	STOP	The Stop relay is energized.
D31	E. PUMP INPUT	An E. Pump trigger has been applied. (Triple Plunger application only)
D32	THROTTLE RELAY #2	The Throttle relay #2 is energized.
D33	THROTTLE RELAY # 1	The Throttle relay #1 is energized.

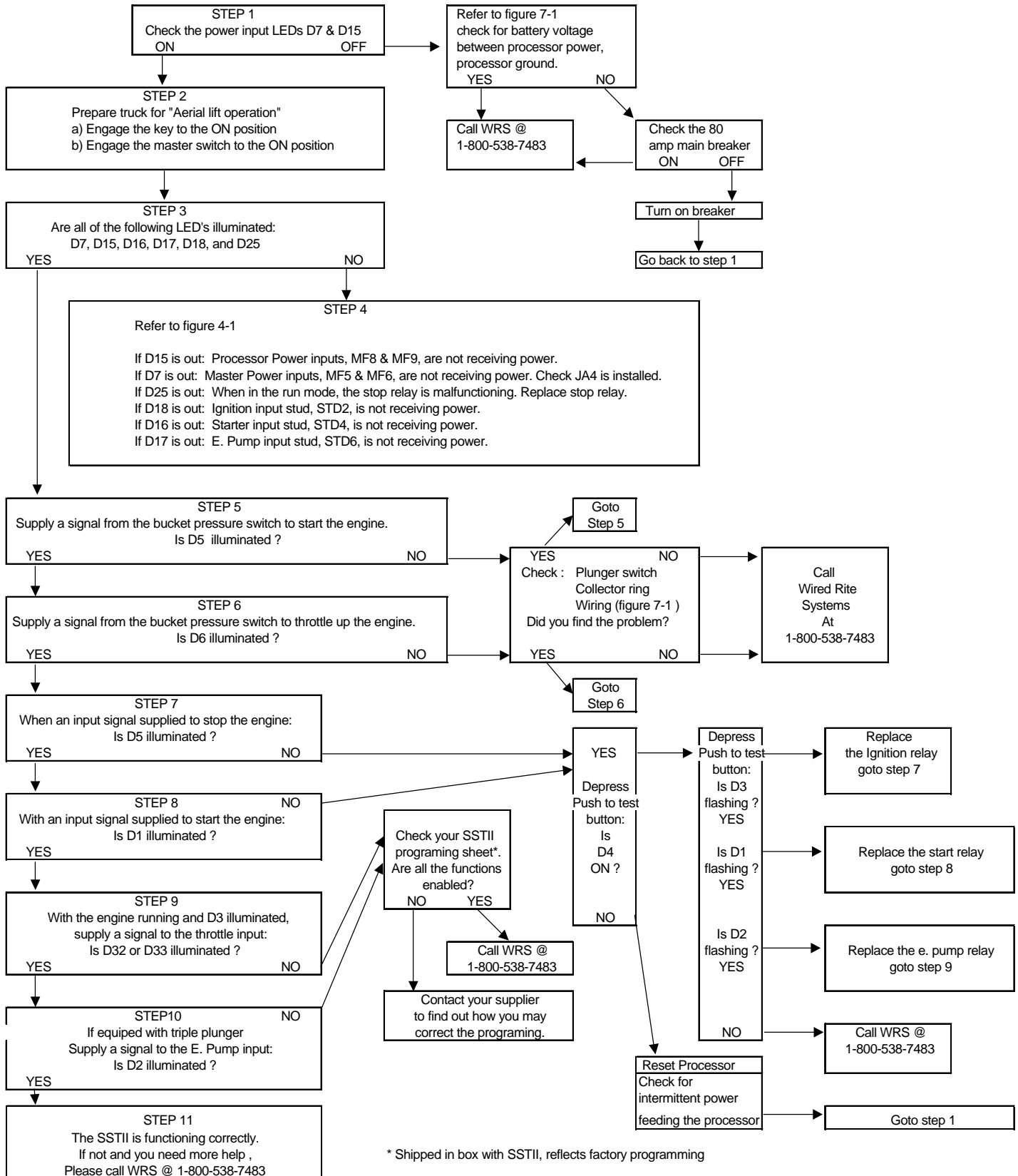
If the fault light (D19) is on and the SST II is not operating correctly, press the "PUSH TO TEST" button. Note the LEDs that flash while the button is pressed.

Below is a list of the LEDs and the operational/ fault condition they indicate:

<u>LED #</u>	<u>Description</u>	<u>On Indicates:</u>
D1	TO STARTER SOLENOID	The Start relay is energized, flashes if a fault is detected in the Start circuit.
D2	TO E. PUMP	The E-power relay is energized, flashes if a fault is detected in the E. Power circuit.
D3	STOP	The Stop relay is energized, flashes if a fault is detected in the run circuit.
D4	TEST	Comes on when you press the board mounted "PRESS TO TEST" button. (Processor not in Lock-up situation.)
D19	FAULT	A fault condition exist.

Please refer to the flow chart on page 6 for addition Troubleshooting information.

## TROUBLESHOOTING FLOW CHART



## SSTII WITH DUAL THROTTLE AND EMERGENCY POWER CONTROL

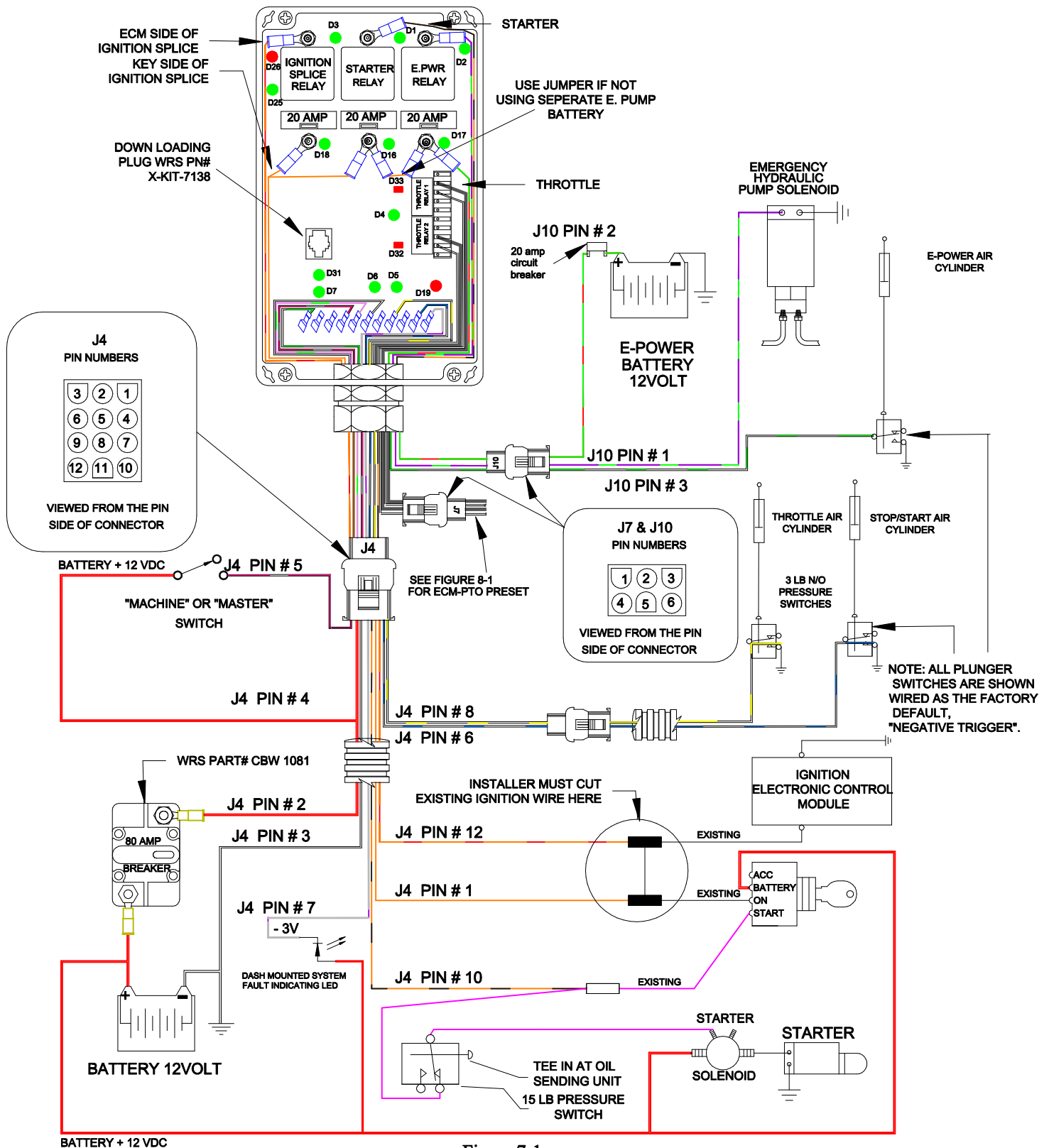


Figure 7-1

# SST II THROTTLE CONNECTIONS

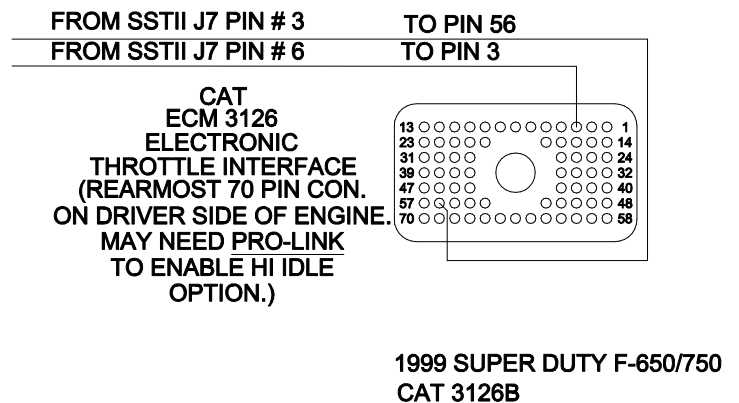
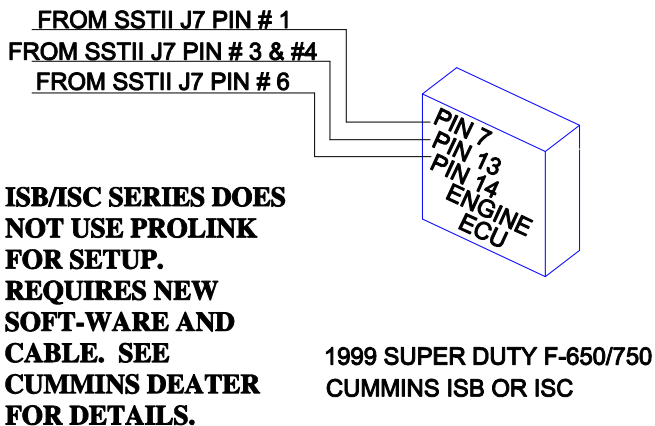
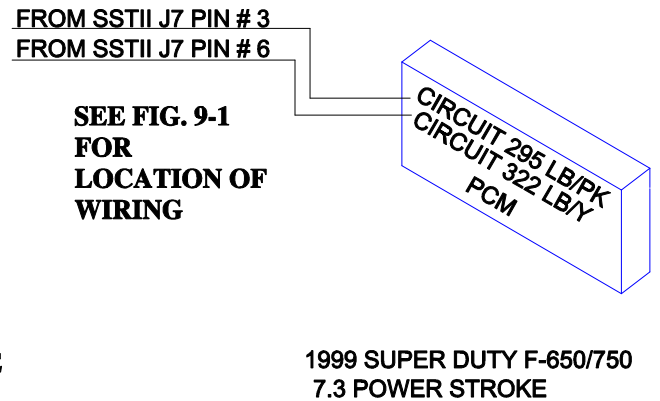
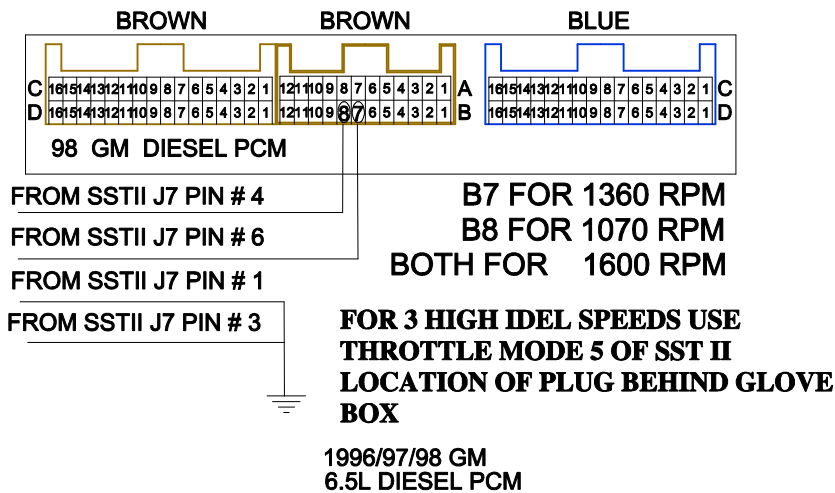
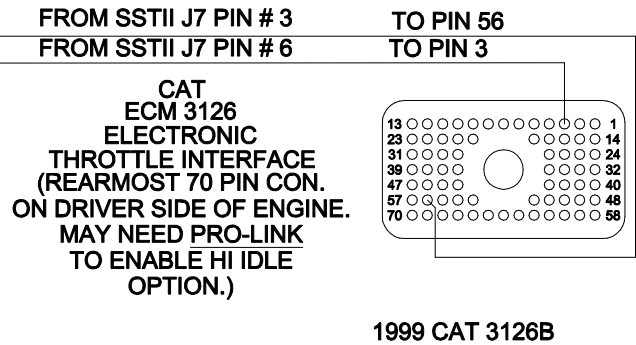
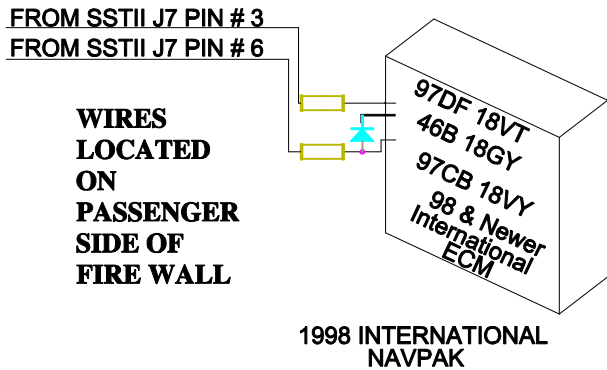
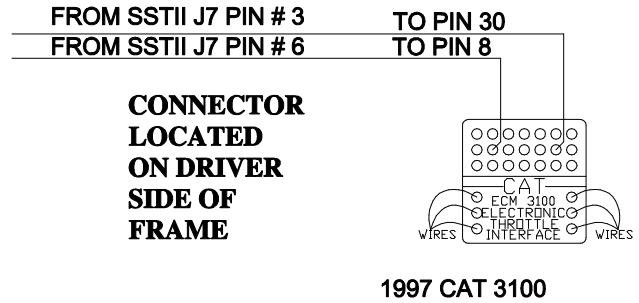
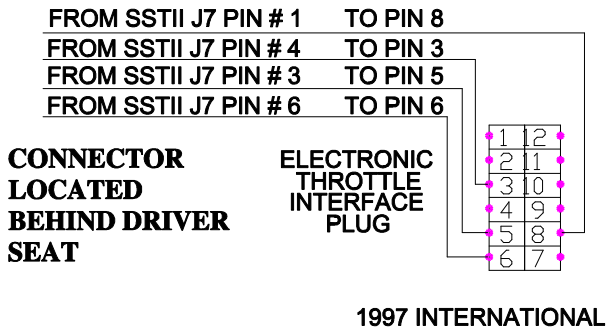


Figure 8-1



## ADDITIONAL INFORMATION

Ford wiring pass through information:

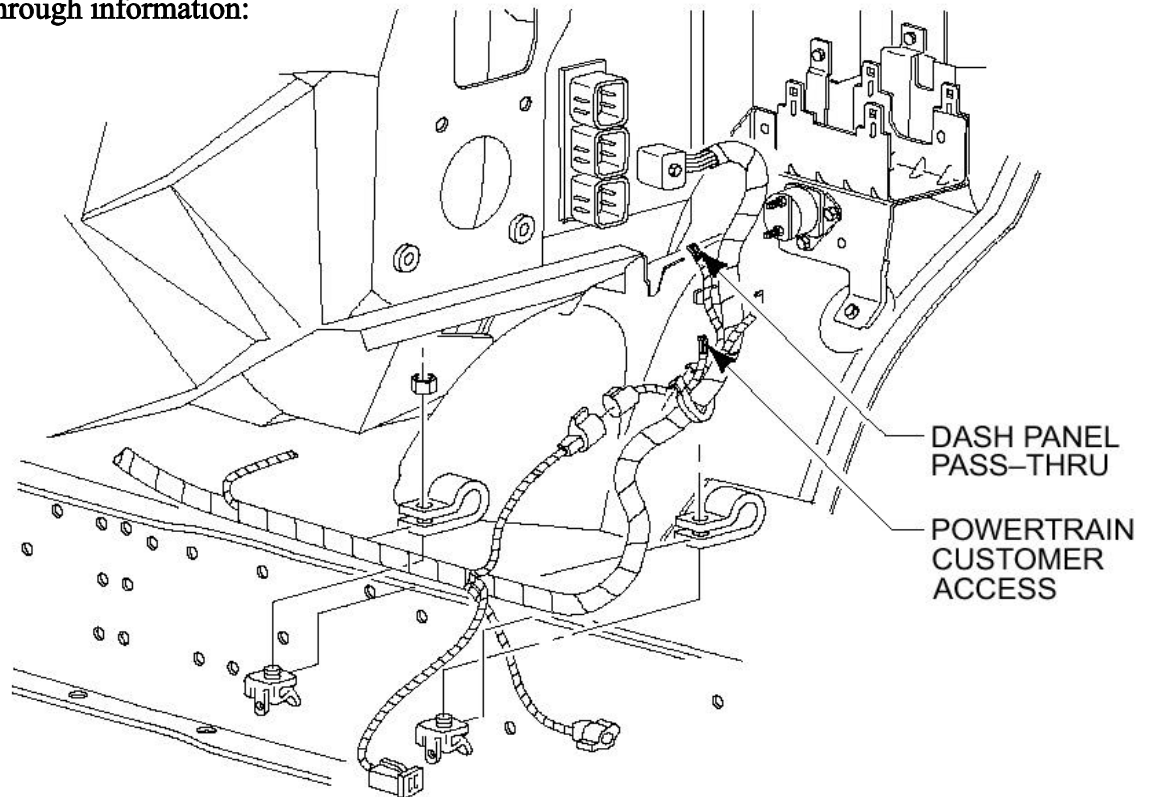


Figure 9-1

### GM

GM Engineer Ray Bucellato (248) 680-5000  
GM Hotline (800) 875-4742  
[WWW.GMUPFITTER.com](http://WWW.GMUPFITTER.com)

### FORD

Ford Truck Body Builders Advisory Service  
(877) TRK-LINE  
(877) 875-5463

or FAX to

(313) 594-2633 to "Attention to: Body Builders Advisory Service," along with your name, address, and telephone number.  
[WWW.FLEET.FORD.com](http://WWW.FLEET.FORD.com)

### CUMMINS

Cummins Tech Line (800) 343-7357

### INTERNATIONAL

Tech Central Help Line (800) 448-7825

### FREIGHTLINER

Electrical Engineer: (503) 735-6875  
Engine & Transmission: (503) 735-8834  
Service (503) 735-8948

Rick Henry  
Steve Hall

**ADDITIONAL**  
**INFORMATION (CONT.)**

**GM Vehicles with Passlock Modules.**

When attempting to start the vehicle from a location other than the ignition switch, the Passlock Module will interrupt this as a vehicle theft and will disable the fuel injectors. This can be corrected with this minor wiring modification:

1. Select a high quality low energy normally closed switch, mount in a location that is, close to the Passlock Module ( see figure 10-1), accessible to the driver, and will not interfere with vehicle operation.
2. Turn off ignition switch.
3. Locate the purple Class 2 data link wire that exits wire cavity B4 of the 16 way connector. Cut wire close to Passlock Module making sure that no splices or connectors between your cut and the Passlock Module.
4. Splice a 20 guage purple wire to each end of the cut wire, connect these wires to your switch contacts that are open when the switch is in the on position.
5. Turn switch off.
6. Start vehicle to verify normal operation. If vehicle will not start recheck the switch contacts are closed.

To enable remote start the vehicle must be running when the modification switch is turned on. The security Telltale will indicate that the Passlock System is inoperative, once the Security Telltale has been on for 5 seconds the vehicle can be remotely started.

To disable remote start the modification switch can be turned off when the vehicle is running or not. If battery power is lost to the Vehicle Control Module the modification switch must be turned off to start vehicle.

See Bulletin on the GM Web site for more information.

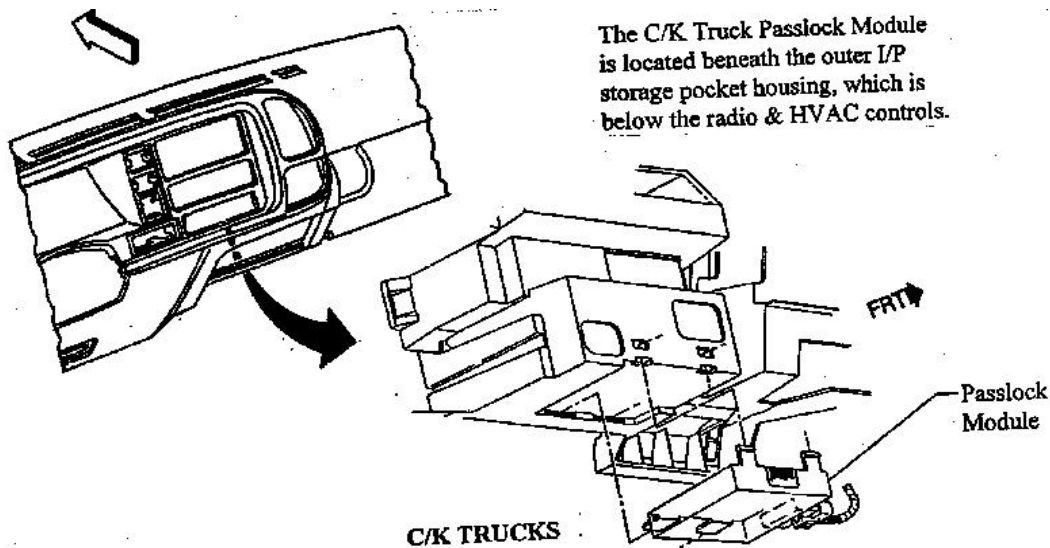


figure 10-1