



Installation Instructions

Kit Nos.
5006222, 5006223
& 5006224

ET-STOET-S2 RETROFIT KIT

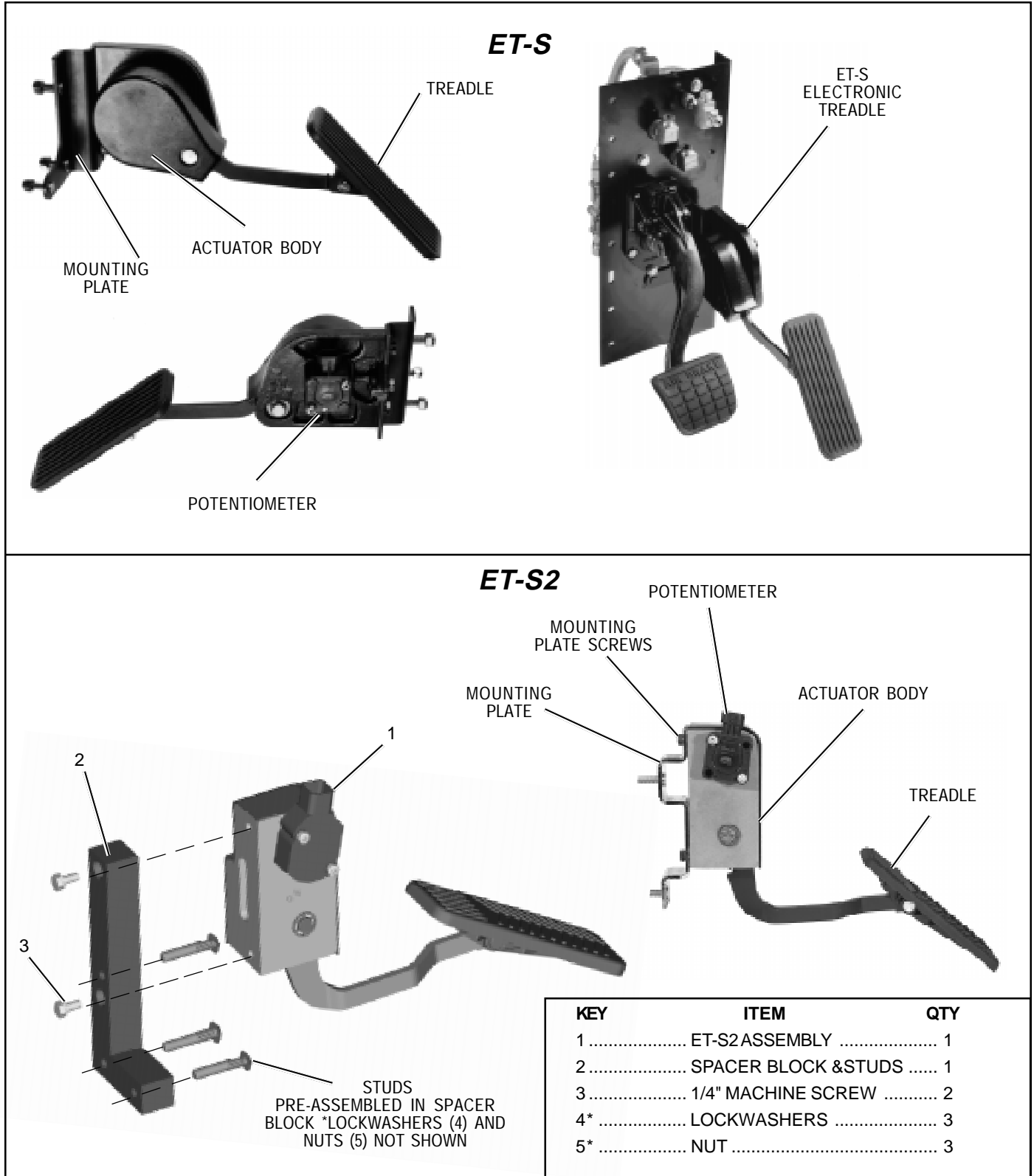


FIGURE 1 - ET-S & ET-S2

IMPORTANT! PLEASE READ AND FOLLOW THESE INSTRUCTIONS TO AVOID PERSONAL INJURY OR DEATH:

When working on or around a vehicle, the following general precautions should be observed **at all times**:

1. Park the vehicle on a level surface, apply the parking brakes, and always block the wheels.
2. Stop the engine when working around the vehicle.
3. If the vehicle is equipped with air brakes, make certain to drain the air pressure from all reservoirs before beginning ANY work on the vehicle.
4. Following the vehicle manufacturer's recommended procedures, deactivate the electrical system in a manner that removes all electrical power from the vehicle.
5. When working in the engine compartment the engine should be shut off. Where circumstances require that the engine be in operation, **EXTREME CAUTION** should be used to prevent personal injury resulting from contact with moving, rotating, leaking, heated, or electrically charged components.
6. Never connect or disconnect a hose or line containing pressure; it may whip. Never remove a component or plug unless you are certain all system pressure has been depleted.
7. Never exceed recommended pressures and always wear safety glasses.
8. Do not attempt to install, remove, disassemble or assemble a component until you have read and thoroughly understand the recommended procedures. Use only the proper tools and observe all precautions pertaining to use of those tools.

9. Use only genuine Bendix replacement parts, components, and kits. Replacement hardware, tubing, hose, fittings, etc. should be of equivalent size, type, and strength as original equipment and be designed specifically for such applications and systems.
10. Components with stripped threads or damaged parts should be replaced rather than repaired. Repairs requiring machining or welding should not be attempted unless specifically approved and stated by the vehicle or component manufacturer.
11. Prior to returning the vehicle to service, make certain all components and systems are restored to their proper operating condition.

ET-S REMOVAL

1. Park the vehicle on a level surface and block the wheels.
2. Drain the air pressure from all vehicle reservoirs.
3. Disconnect the cable assembly of the potentiometer. Lift the lock tab and pull the connectors until they disengage.
4. Remove the electronic treadle from the vehicle.

CLEANING AND INSPECTION

1. Use suitable solvent to clean all metal parts (note that mineral spirits may damage the paint finish).
2. Inspect the cable assembly for loose or frayed wires, physical damage, or any contaminants on the connectors. Replace as necessary.

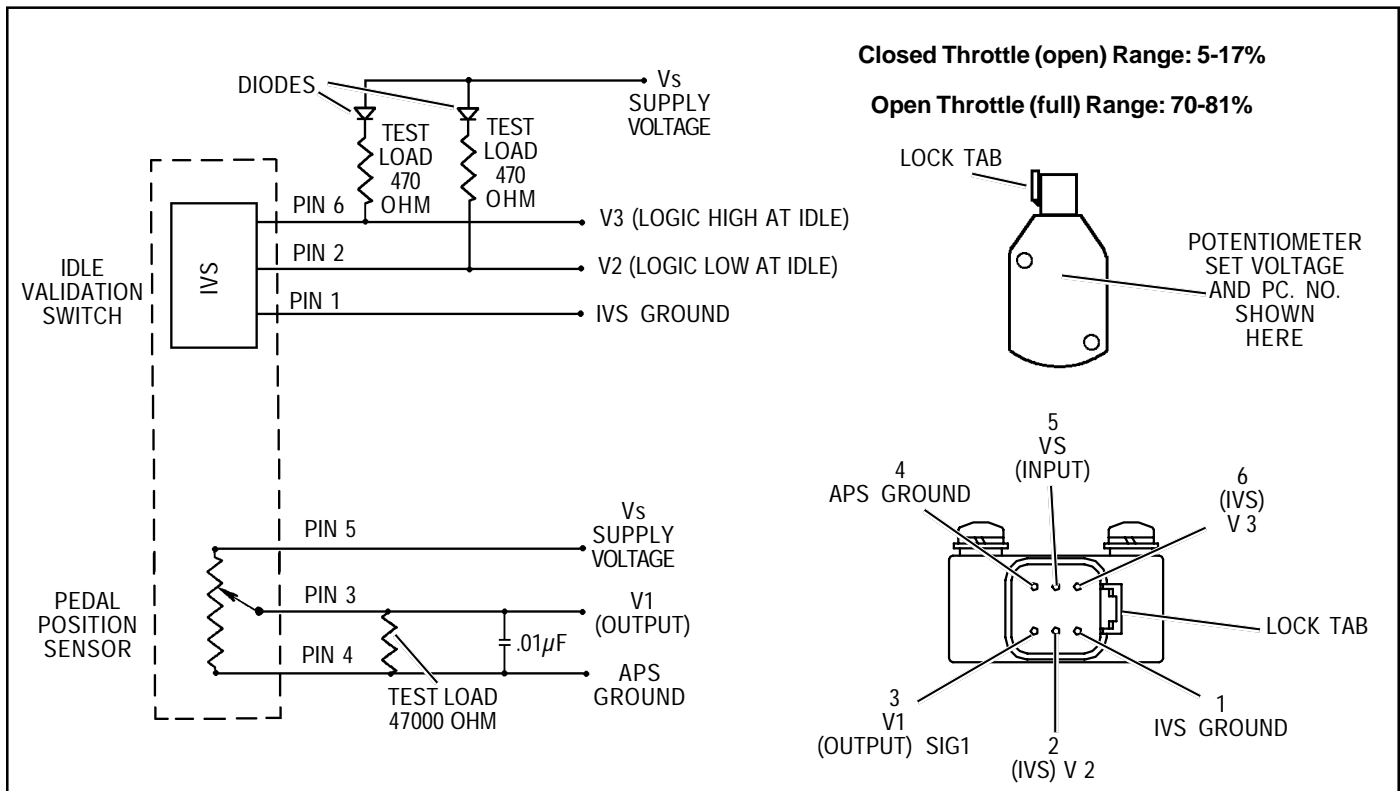


FIGURE 2 - ELECTRICAL TEST SCHEMATIC FOR THE CUMMINS CONNECTOR

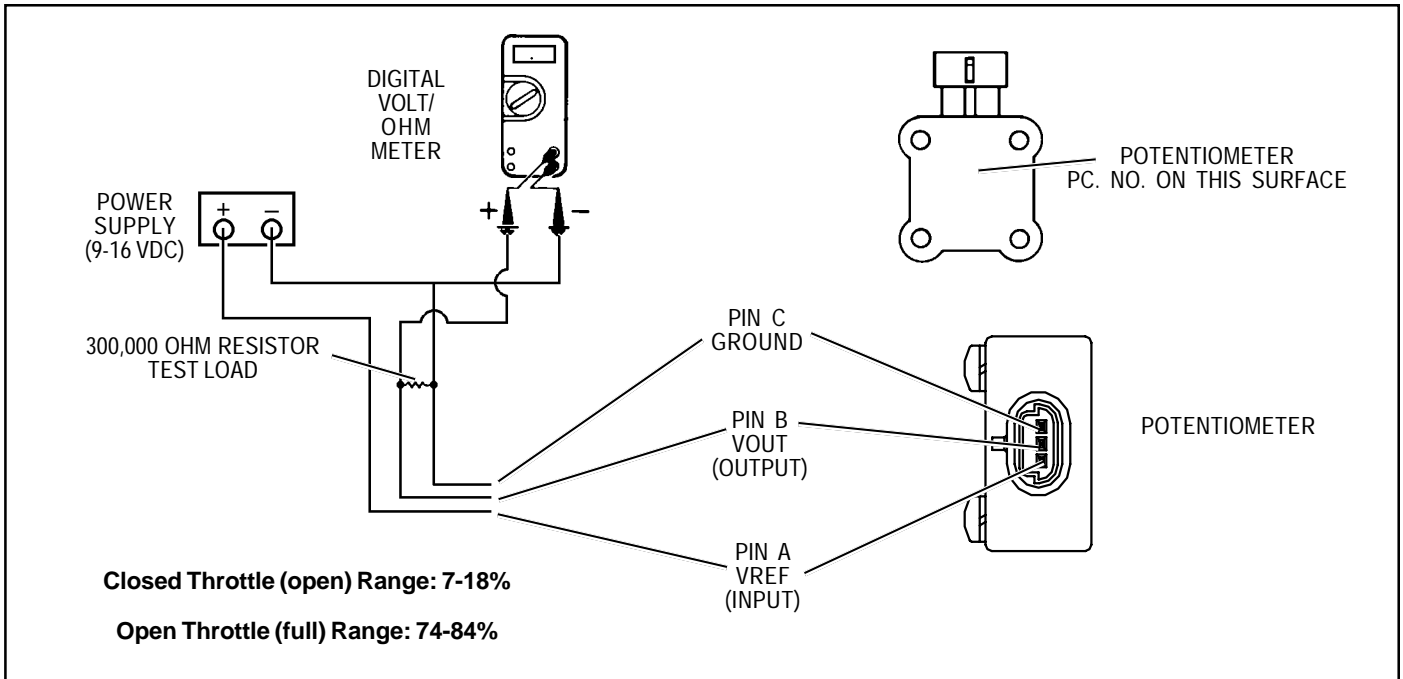


FIGURE 3 - ELECTRICAL TEST SCHEMATIC FOR THE DETROIT DIESEL CONNECTOR

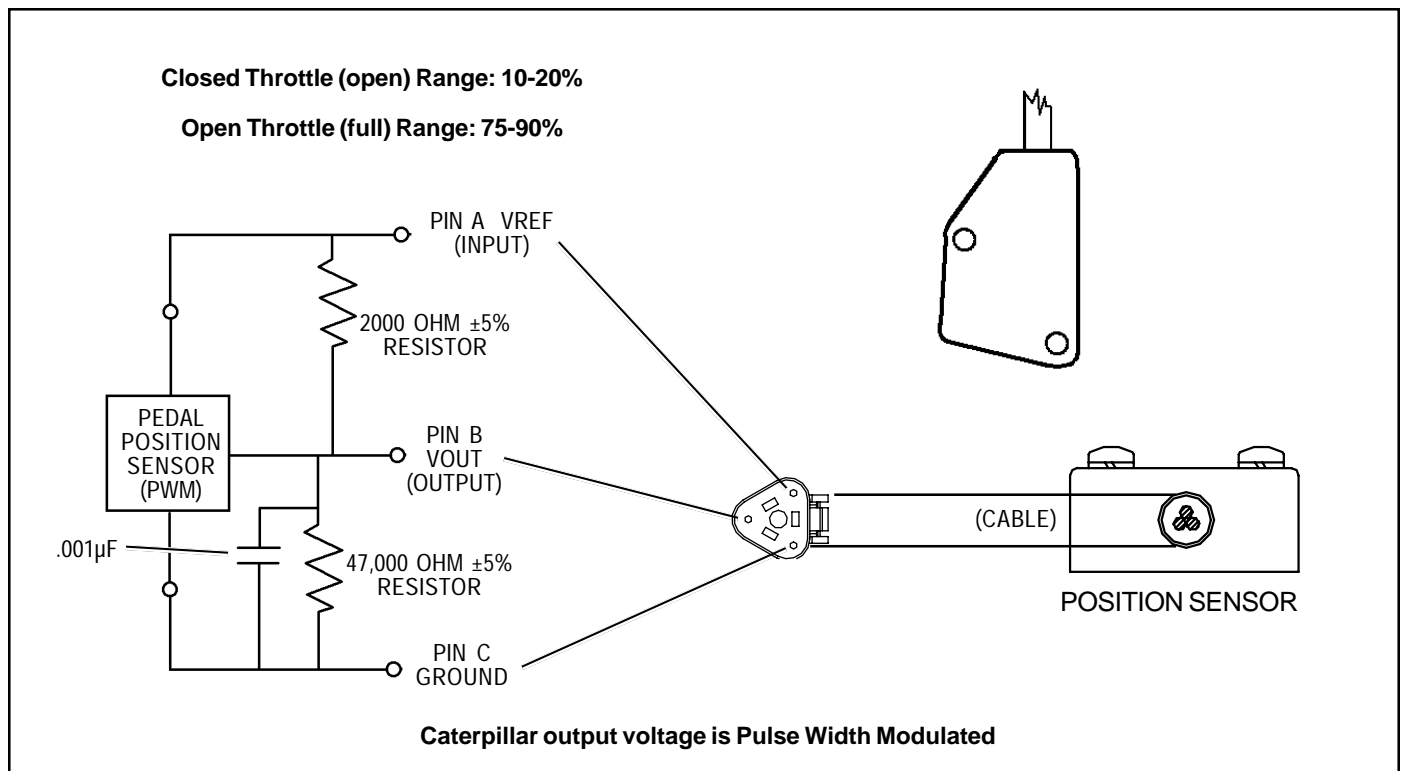


FIGURE 4 - ELECTRICAL TEST SCHEMATIC FOR THE CATERPILLAR CONNECTOR

ET-S2 INSTALLATION

1. Use kit contents for assembly. Remove the preinstalled mounting plate from the ET-S2 assembly (1). (This mounting plate is used for ET-S2 assemblies installed as original equipment.) Using the 1/4" machine screws(3) secure the spacer block and studs(2) to the ET-S2 assembly as indicated in figure 1.
2. Using nuts (5) and washers (4) secure the ET-S2 and spacer block to the firewall. Torque to between 85 and 110 lb. in.
3. Connect the cable connector by plugging it into the potentiometer's integral connector and pushing until the lock tab snaps into place.

OPERATIONAL TEST

[Note for Cummins potentiometers only: The optimum output & switch points should be achieved when the idle voltage equals the set voltage written on the potentiometer. Use the test circuit shown in Figure 8.]

- a. Check that the electronic treadle Mounting Plate is securely attached to a smooth, flat surface in such a way that does not twist the unit.
- b. Connect the Potentiometer or Position Sensor to the volt meter and power supply as shown in Figures 6, 7 or 8, depending on the model. **Note:** The power supply needs to be 5 VDC. Do not exceed this voltage.
- c. Verify that the closed throttle (idle) output voltage, as a percentage of supply voltage, is within the limits listed in Figure 2. For example, with a supply voltage of 5 volts, for the Caterpillar Potentiometer in its closed throttle position, read between 0.5 to 1.0 volts (10%-20% of supplied voltage).

- d. Depress the Treadle to its full throttle position. The output voltage, as a percentage of supply voltage, should be within the limits listed in Figure 2. For example, with a supply voltage of 5 volts, for the Caterpillar Position Sensor in its open throttle position, read between 3.75 to 4.5 volts (75-90% of supplied voltage).
- e. Make five full applications and record idle position voltage each time. Verify that idle position voltages recorded do not vary by more than .4% (For example, for a 5 volt supply, if there is any variation, the difference between the high and low readings should not exceed .02 volts).

If the Electronic Treadle fails to function within its specified ranges, it should be repaired or replaced with a new or genuine Bendix remanufactured unit, available at any authorized parts outlet.

