

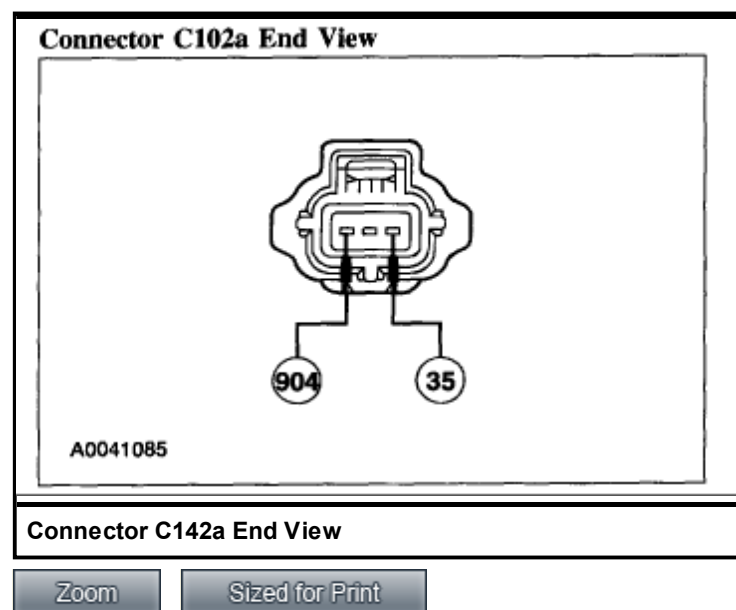
Your Vehicle: 2004 Ford Truck F 250 4WD Super Duty V8-6.0L DSL Turbo VIN P

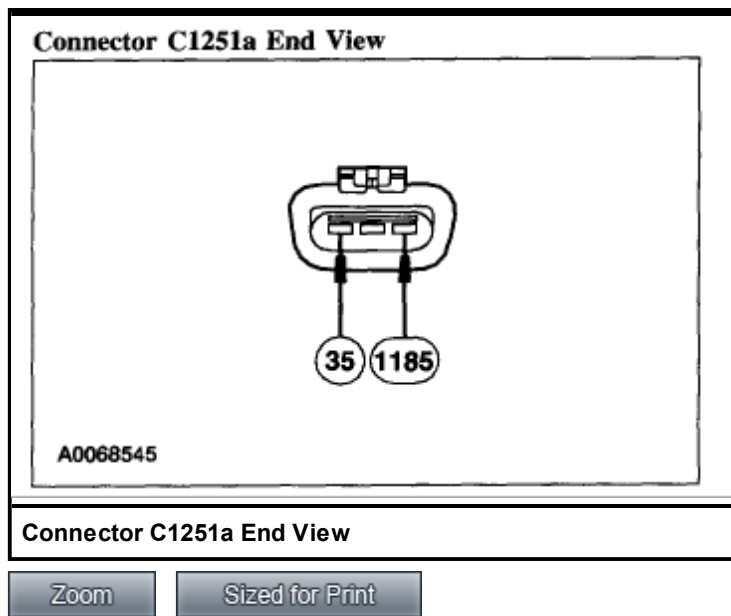
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With Dual Generators

#### PRINCIPLES OF OPERATION





### Functionality

With the [ignition switch](#) in the ON position (dual generator system), voltage is supplied by the powertrain control module (PCM)-controlled I circuit 1183 (WH/YE) to I circuit 904 (LG/RD) to the upper generator and through the I circuit 1185 (YE) from the PCM to the lower generator. If the glow plug system is not cycling, the PCM will maintain power to the lower generator. If the glow plug system is cycling, the PCM will supply power to the lower generator momentarily to verify there is a volt drop, then the PCM shuts off the power on the lower generator I circuit 1185 (YE). Once the glow plug system stops cycling, the PCM will supply power on the lower generator I circuit 1185 (YE), which turns the regulator on allowing current to flow from the [battery](#) sense A circuit to the generator field coil; at which time it begins to function normally. The PCM maintains power on the upper generator I circuit 1183 (WH/YE)/904 (LG/RD), which turns on the regulator, allowing current to flow from the battery sense A circuit to the generator field coil.

Once the generator begins generating current, a voltage signal is taken from the generator stator and fed back to the regulator internally. This voltage feedback signal (typically half the battery voltage) is used by the PCM to turn off the warning indicator.

With the system functioning normally, the generator output current is determined by the voltage of the A circuit 35 (OG/LB). The A circuit 35 (OG/LB) voltage is compared to a set voltage internal to the regulator, and the regulator controls the generator field current to maintain the correct generator output.

The set voltage will vary with temperature and is typically higher in cold temperatures and lower in warm temperatures. This allows for more efficient [battery](#) recharge in the winter and reduces the chance of overcharging in the summer.

### **Battery Positive Output Circuit 36 (B+) (YE/WH)**

The generator output is supplied through the battery positive output (B+) terminal on the rear of the generator to the battery and the electrical system.

### **I Circuit - Dual Generator**

The I (ignition) circuit is used to turn on the [voltage regulator](#)(s). This circuit is powered up when the [ignition switch](#) is in the ON position. When the PCM detects ignition ON, the PCM will provide power to the upper generator I circuit 1183 (WH/YE) and also to the lower generator I circuit 1185 (YE). The power to the lower generator will only be momentary unless the glow plug system is not cycling. Once the glow plugs stop cycling, the PCM will provide constant power on the lower generator I circuit 1185 (YE).

### **A Circuit**

The A circuit or [battery](#) sense circuit is used to sense battery voltage. This voltage is used by the regulator to determine generator output.

