



TCI[®] Trans-Brake Solenoid for Powerglide & TH-350/400 221300/221301/749800

In order to realize all of the benefits this solenoid has to offer it is important to follow the installation guidelines provided.

Theory of Operation: A solenoid is a device that converts electrical energy to mechanical force. Any time electricity flows through a wire it creates a magnetic field. The solenoid has a coil, which is basically a bobbin that is tightly wound with layers of insulated wire. When electricity flows through the coil, a magnetic field surrounds the coil. This is referred to as magnetic flux and it is this flux that causes the plunger to apply your Trans-Brake.

The magnetic strength of the coil is directly proportional to the amount of current (Amps) flowing through it. As current flows through a coil, heat is generated. Unfortunately, the resistance (ohms) of a coil goes up as it heats which in turn, lowers the current and the magnetic strength.

Specifications:

Maximum current draw:	10 amps (16 volts DC)
	8 amps (12.5 volts DC)
Coil resistance:	1.5 Ω (ohms) @ 80°F
Nominal Stroke:	Part no. 221300 for TH-400 - 0.200 inches
	Part no. 221301 for TH-350 - 0.250 inches
	Part no. 749800 for Powerglide - 0.200 inches

Installation Guidelines:

- The solenoid requires a solid connection to ground. This is done through contact with your transmission case so be sure that your case has a clean path to ground. A supplemental ground strap from your case to the chassis may help bad grounding caused by rubber or polyurethane mounts, paint on the case and engine block, etc.
- Although the TCI[®] solenoid was designed as a 12 volt DC device it can be safely operated by a 16 volt DC system.
- Wire the solenoid circuit in the vehicle using at least 14 or 16 gauge wire. TCI[®] recommends using our 387600/387700 switches or 388400/388500 switch on a retractable cord. Voltage measured at the solenoid should be no less than 12 volts DC. (This takes into account your wiring from the voltage source through the switch, and delay box if applicable, and down to your solenoid.) Low voltage translates to low current, which means the solenoid may not have the necessary power to apply your Trans-Brake. If your vehicle does not have an alternator then it becomes extremely important to keep track of your battery voltage.
- When utilizing a delay box, be sure to follow the manufacturers' instructions carefully and always verify that full voltage is being supplied to the solenoid.
- It is a good idea to protect your wiring with an in-line 15-amp. fuse.
- All electrical components are sensitive to heat and the TCI[®] solenoid is no exception. Make sure that your transmission operates at a reasonable temperature; i.e. no more than 225°F. Not only will you increase transmission longevity but the solenoid will be more reliable as well. Also, pay attention to other heat sources such as exhaust gasses. This is especially important on TH-400 transmissions due to the location of the solenoid in proximity to the headers. If necessary, fabricate a simple aluminum heat shield such as those used on starter solenoids.