

Installation Instructions for Snowmobiles

Model #301 and #101,102,103,104

HOT GRIPS® Manufactured under one or more of the following Patents:

Canada 1,299,621

USA: 4,471,209 4,937,429 4,990,753

Read through entire instructions before starting installation. If you can not comfortably install this product, hire a professional mechanic to do it.

Hot Grips® can be installed on any snowmobile with 7/8" handlebars and a 12 volt electrical system capable of powering a headlight. It must have a thumbthrottle, not a twist throttle. Some electrical systems cannot handle the power requirements of heated grips and the headlights at the same time. If you have modified your sled's thumb-throttle to a motorcycle twist- throttle, then you must use our Street-Bike HOT GRIPS® kit instead. The difference with the Street-Bike is that the twist throttle grip's inside diameter is 1.000" diameter instead of .875" and the shape of the grips inboard end is different, adding more inboard rubber cushioning.

To pretest the grips, use a V.O.M. and check that each Hot Grip's® resistance measures approximately 2.4 ohms. You may temporarily wire them in series and test on a 12 volt car battery or battery charger of minimum 3 amps if you desire. Do not leave them unattended, and do not heat them up for more than a few minutes, because without the heat sink effect available from the metal handelbars, they may be damaged.

PREPARATION: Remove old grips and any remaining residue on handlebar with solvent. Roughen the handlebars with sandpaper or the edge of a steel file. This will create an aid in the epoxy bonding.

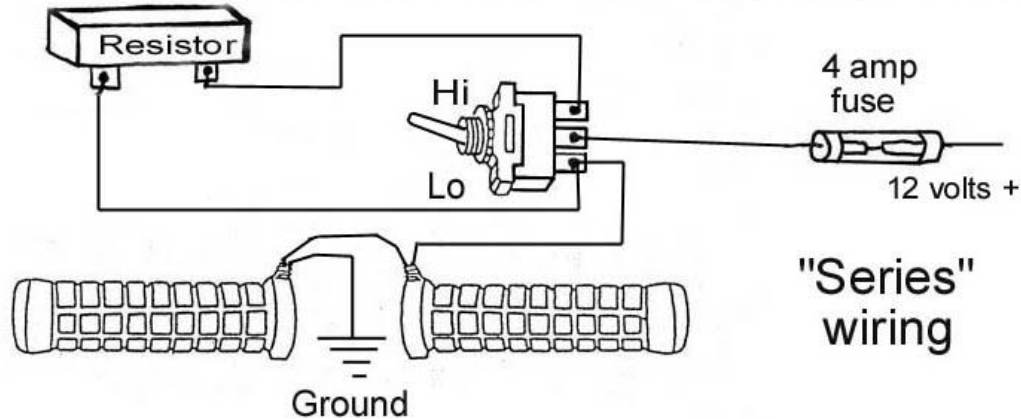
EPOXY INSTALLATION ONLY: Obtain a two-part slow-curing epoxy, such as Duro, Devcon, Borden, JB Weld, PoxyWeld, etc. Make sure it is not the quickcure type, such as a 5-minute epoxy. We need the slow cure (6-8 hours +) because generally these epoxies are good for service up to 250 degrees F., whereas the 5-minute quick cure type epoxies are generally good for only 200 degrees. Do not use any other method to install. We have tested everything else , and they don't hold up under the stress and strain, torque loads and heat that is present. (Do not use silicone seal, crazy glue, gasket cement, weatherstrip adhesive, etc. None of them will hold reliably under severe riding conditions!) Check that the grip will slide onto the handlebar without effort. It is designed to be a loose fit, to have the small gap filled with the epoxy. If it is not a loose fit, do not force the grip on. Your handlebar diameter isn't .875" and must be filed down until the grip fits on without excessive force. Some metric handlebars we have seen are up to .020" diameter oversize. Now drill the center-end of one of the grips with a small drill, to allow the air in the handlebars to escape as the grips are installed.

A full length pencil is helpful as a tool to spread the mixed epoxy inside the grip interior, and on the handlebar. Use a very light coat, and push the grip on 75% and remove, then redistribute the epoxy with the pencil and remove any excess quantity. Then install grip 100%, and again remove any excess epoxy. Be sure the grips do not interfere with any of the handlebar controls or the thumb-throttle lever. If there is interference, use a new single-edge razor blade to trim the grip as necessary, using care not to cut near the black lead wires that exit the grip. Allow to fully cure per the epoxy's instructions, or you may quicken the cure by temporarily wiring the grips in "series" per the diagram below, and wiring them to a 12v. car battery, or battery charger with a minimum of 3 amps charge rating. The epoxy will set up firm in about 30-45 minutes. Allow grips to cool off, and test epoxy for hardness where it oozed out of the grip. Do not twist the grip to test the epoxy as it is curing, as this will compromise and weaken it.

SWITCH AND RESISTOR: The switch can be located at any convenient practical location for your left hand that doesn't interfere with safe vehicle operation. (Note that the orientation of the wires in our wiring illustration to the "Hi-Lo" switch plate is correct because of the switch's internal action.) Drill a 13mm or 1/2" hole to install switch. The ceramic-resistor may be remotely mounted from the switch, using any length wires you need. Mount it securely on a metal area where there will be air moving around the resistor to dissipate heat. It will warm up during "low heat" operation. It is not in use during "off" or "high". The resistor should be secured with preferably plastic wire-ties. Squeezing out a "pad" of silicone sealant under the resistor is helpful in cushioning it against vibration and shock. Resistor may be located any distance from the switch. Use black wire left over from the grip's installation to connect and do not leave the resistor dangling by the wires or they'll fail.

WIRING: There is no polarity to the wires on each grip, i.e. no positive or negative. Follow the wiring illustration next page. A good ground is important so be sure to scrape the paint off the "ground connection" as even a layer of paint will create a problem. Ground should be to the engine or frame, not the handlebars, since some of them are rubber mounted and may reduce the good ground connection. Some machines use a wire or "common-wire ground" instead of "frame-ground". Check with your snowmobile dealer. The grips must be wired in "series", with one grip being connected to the other. One grip's remaining wire connects to ground, and the other to the switch. (See wiring illustration below.)

Note: Switch is in "Hi" which sends power from the center terminal to the terminal diagonally opposite the toggle direction.



Fuse not included

POLARIS: Some Polaris snowmobiles must be wired using the machine's AC common wire to complete the circuit, rather than a chassis "ground". Always follow our instructions when doing the wiring, and don't use the Polaris wires that are built into the machine unless you are certain which ones to use (don't call us on this). Warning: The original equipment Polaris heating devices are wired in "parallel", unlike the Hot Grips® which are wired in "series" . If in doubt, contact your Polaris dealer's service department.

SKI-DOO: Some Ski-Doo snowmobiles don't use a "chassis-ground" for the grips. Instead, locate a yellow wire and a yellow with black-stripe wire at the sled's Regulator or Regulator-Rectifier. Use the yellow wire as your power positive wire, and the yellow with black-stripe as your 'ground-substitute' wire. Do not ground to chassis or engine except on older Ski-Doo's that do not have the yellow and yellow with black-stripe wires. Improper wiring will result in the Hot Grips® not working and/or dim lights. If in doubt contact your Ski-Doo dealer's service manager.

Power Source: Use the vehicle's accessory terminal if available, one that will not have voltage when the engine is off. (Otherwise your battery will be drained if the grips were left on, just as if you left your headlight on.) If your electrical system uses fuses for protection, then use a 4 amp fuse (not included). On non-battery systems, generally if they don't use fuses in the system for other electrical uses, then a fuse isn't necessary for the Hot Grips®. Some sled's do not have enough electrical power to run both the headlights and heated grips. Ask your dealer's service department if in doubt. In such a rare case, you would have to turn off the headlight during daylight hours when the heated grips are on. (Check with your local laws) For safety you should not use the heated grips in the dark if it causes your headlights to dim appreciably. Solder all connections. Do not be tempted to use the plastic 3M® scotch-lok connectors for splicing into wires, as they are often sized incorrectly, will make poor electrical contact and eventually oxidize and corrode. Cover all connections and exposed switch and resistor terminals with electrical tape .

HEAT CONTROL: The heated grips do not have automatic temperature regulation. They rely on the rider to adjust the heat to "high", "off", or "low" as needed. The grips should not be left energized unattended as they might become too hot. Heat output on a 12 volt regulated system is 15 watts per grip on "high" and 8 watts per grip on "low". Current draw is 2.5 amps for the set on "high" and 1.66 amps on "low". On "low" the ceramic resistor will heat up, which is normal, because it creates a voltage drop for the grips.

Need to cut off grip ends? Some race sleds have extra end-loop handles on the handlebars. The Hot Grips® end may be drilled out (do not use a hack-saw or you will ruin the grip's internal heating wires). Use a fine-toothed steel hole-saw with a centering pilot drill. Do not use a 2-blade type hole saw or it will grab the rubber and ruin the grip. Do not drill larger than necessary (max. 7/8" and preferably 3/4") .

CAUTION: IMPORTANT to check for interference with vehicle controls, levers, and throttle operation before starting or operating vehicle. Correct any interference condition before starting engine.

LIMITED WARRANTY: Guaranteed against defects in materials and workmanship. Grips should be checked prior to installation, as they cannot be removed without damage. We do 100% testing at the factory before packaging grips. Installing them without epoxy will very quickly DESTROY them, BECAUSE the black lead wires will be pulled out when the grips heat up, expand, And Rotate on handlebars.