Installation Instructions for Model #123 Only for Snowmobiles or ATVs

This model has three (3) wires for each grip. They can be used as a direct replacement on any Ski-Doo, Polaris, or Arctic Cat machine that originally came fitted with a 3-wire 12 volt heated grip. Not for Yamaha snowmobiles but can be used on Yamaha ATVs. Can be used on any ATV brand with 7/8" bars and a thumb-throttle.

HOT GRIPS® Manufactured under one or more of the following Patents: USA: 4,471,209 4,937,429 4,990,753 and Canada 1,299,621 additional Patent Pending.

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

Hot Grips® model # 123 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 thumb-throttle, 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 volt-ohm-meter .There are three wires: One is a ground wire, and the other two are for low heat and high heat. When you test the electrical resistance between the low wire and ground it should measure approximately 15 ohms. When you test the electrical resistance between ground wire and the high wire, this should measure approximately 9.5 ohms. You may temporarily wire the grips and briefly 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 handlebars, they may be damaged.

PREPARATION: Remove old grips and then remove any remaining residue on handlebar with solvent. If you 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 quick-cure 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 ofthem 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 7/8" 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.

Test fit the grip first on the handlebar without epoxy to ensure that the positioning of it does not interfere with the machine's controls or thumb-throttle.
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.
Allow to fully cure per the epoxy's instructions, or you may quicken the cure by temporarily wiring the grips to 12 volts per the diagram below, and wiring them to a 12v. car battery, or battery charger with a minimum of 3 amps charge rating. We strongly recommend you cure them on "LOW" heat only. 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 the epoxy bond.

SWITCH: 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 pivot action.) Drill a 13mm or 1/2" hole to install switch. We offer a handlebar-mount housing at www.hotgrips.com

IDENTIFYING GRIP WIRES: With this grip's wires aiming at you, the right wire is GROUND. The middle wire is LOW , the left wire is HIGH. If you test with an ohm-meter between ground and LOW the resistance number will be 50% higher than a test between ground and HIGH.

WIRING: Follow the wiring illustration closely. 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 not provide a good ground connection. Some machines use a wire or "common-wire ground" instead of "frame-ground". Check with your snowmobile or ATV dealer if in doubt on your specific machine.
Fuse: If your machine uses fuses, use the accessory fuse terminal or you can purchase an in-line fuse holder and use a 5 amp fuse . A fuse is not included in this kit. If your machine uses no fuses at all, then you don't need to use one for the heated grips.

POLARIS: Some Polaris snowmobiles must be wired using the machine's AC common "ground" 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 phone us on this, we don’t have the wiring diagrams for any machine). Improper wiring will result in the Hot Grips® not working and/or dim lights. If in doubt, contact your Polaris dealer's service department for assistance.

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 department for assistance.

12 volt 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 5 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, (usually machines from the mid- 1980's and older) 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 blue commonly available plastic 3M® scotch-lok connectors for splicing into wires, as they are the wrong size for our wire, will make poor electrical contact and eventually oxidize and corrode. Cover all connections 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 theymight become too hot. Heat output on a 12 volt regulated system is 15.3 watts per grip on "high" and 9.5 watts per grip on "low". Current draw is 2.5 amps for the set on "high" and 1.7 amps on "low". Do not wire the grips in such a way that both low and high are energized at the same time, as this would cause them to get too hot.

Open Ends: Need to open the 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.

www.hotgrips.com

The illustration below has correct labeling on the High and Low. When toggle moved left to High side, power is fed from center terminal to the horizontal line.

Printed 1-31-05