



Heated Grips

When the temperatures outside drop, cold hands soon become a problem for the biker. You can protect your torso with a warm jumper, your legs with long underwear, your feet with thick socks – but it's your hands that get cold first when out on your bike. A freezing-cold biker's reactions and agility are not as sharp as they should be on the road. Very thick gloves are not a good idea, as you can't operate the controls as well

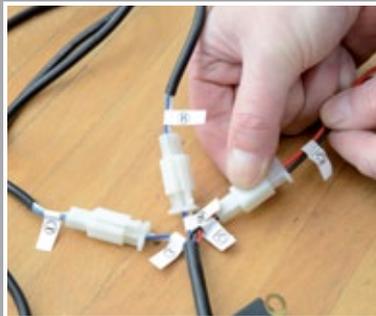
as you should, with the result that safety is impaired. Heated grips are therefore a low-cost, useful accessory if you want to start the biking season as soon as possible and finish as late as possible in autumn. Of course, if you bike during winter you will appreciate heated grips all the more. And if you want to get the most out of them, you can use handlebar cuffs or hand guards to keep the wind blast off your hands.

1



Read installation instructions and familiarise yourself with parts!

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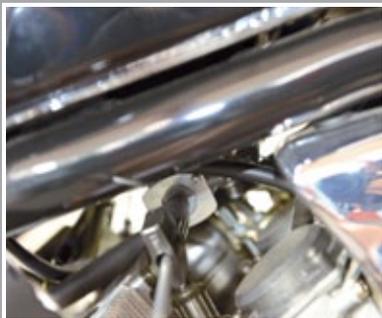
Trial run: connect up grips, switch and lead

3



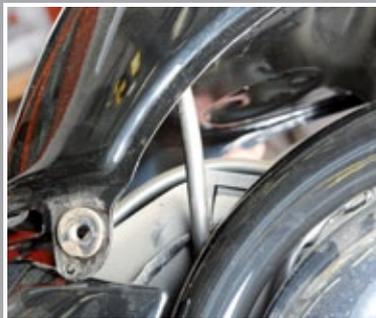
Take off seat

7



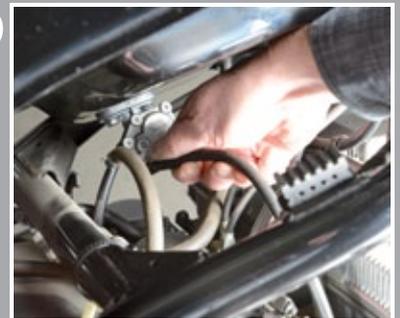
Unscrew fuel cock extension

8



Disconnect tank ventilation,...

9



... vacuum and fuel hoses

In order to use heated grips, your motorcycle must have a 12 V electrical system and battery. The battery must not be too small, as heated grips have quite a high wattage (up to 50 W depending on the switch setting and type). The battery should therefore have a capacity of at least 6 Ah, and the alternator must also adequately charge the battery. If you mainly drive in stop-and-go city traffic, only do short journeys, and use the starter motor a lot, you may overtax your alternator if you install heated grips, which would mean topping up the battery every so often on the charger. For this reason, heated grips may not always be an option on small motorcycles. 6 V electrical systems or magneto ignitions without a battery, unfortunately, are not sufficient.

If you want to install heated grips yourself, you should have a basic knowledge of vehicle electrics and some experience, particularly for connecting via relays. The only time you do not need a relay is for relatively low-power heated grips. But for most models a relay is needed in order to take load off the switch and the ignition and to prevent inadvertent power consumption, which is the risk with direct battery connection. To ensure that the heated grips are securely attached to the handlebars, and especially the throttle tube, they should be affixed with a heatproof two-component adhesive. It is best to source the adhesive, a relay, suitable insulated cable terminals for connecting the cables, brake cleaner and a good crimping tool before starting work. You may need a plastic hammer, a socket wrench set, a thin screwdriver and, possibly, a drill and some cable for relay connection.

1 Before you start work, read the installation instructions for the heated grips and familiarise yourself with the components.

2 To avoid unnecessary work, try wiring up the heated grips, switch and battery lead, and test the system with a 12 V motorbike battery. If everything works perfectly, you can begin installation.

3 Place the motorcycle securely on the stand. A folding side stand is best fixed with a lashing strap so the bike cannot topple over. Now fold up the seat or take it off (it is usually fixed at the seat lock; see motorcycle manual) and find the battery. A side cover or a battery box may have to be taken off as well; in rare cases the battery sits underneath a false tank, or in the rear fairing, or in a separate box on the frame.

4 Disconnect the battery at the negative terminal to prevent inadvertent short-circuits when you connect the cables later. Make sure you don't lose the terminal nut when disconnecting the negative cable.

5 Next take off the tank. But first check where it is connected to the frame and other components.

6 On our demonstration bike, a Suzuki GSF 600 Bandit, for example, the side covers are connected to the tank via push-in connectors, and first have to be disconnected.

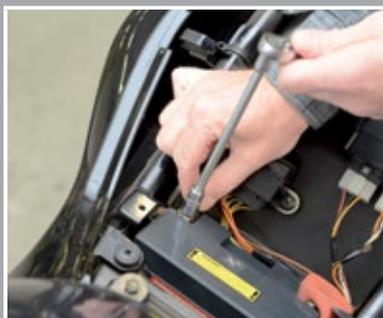
7 In addition, the fuel cock actuator extension must be screwed off so that it's not left hanging from the frame later.

8-9 If the fuel cock is vacuum-controlled, set it to ON, but not PRI – so no fuel leaks out when you take off the hoses. Set a non-vacuum-controlled fuel cock to OFF. Now you can take off the hoses: on the Bandit, this means the ventilation and vacuum hoses and the fuel hose to the carburettor.

10 The best thing for getting the original grips off the handlebars is a solution of water and dishwashing liquid, which you spray under the grip. To do so, lift the grip away from the handlebar or the throttle tube with a thin screwdriver, then run the screwdriver around the handlebar once to distribute the solution, and it will be easy to remove the grip.

11 For rubber grips, you may also use brake cleaner, but not on foam grips, as brake cleaner can dissolve the foam. If the grip is stuck to the controls, you must first cut it away with a utility knife. Now have a look at the throttle tube. It is easiest to install the heated grips on smooth throttle tubes. If the grip slips on easily, you do not need to take the throttle tube off the handlebar.

12 However, if the tube is contoured or slightly too thick, you will need to saw, file and sand it so that the new grip fits on tightly but without the use of force. For



4

Disconnect battery at negative terminal



5

Unscrew tank



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Remove tank, undo side cover



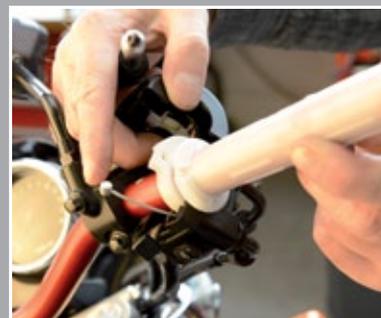
10

Lift grip with thin screwdriver and...



11

... free it from handlebar with brake cleaner or diluted dishwashing liquid



12

Disconnect throttle cable and take throttle tube off handlebar

this job, it's better to take the throttle tube off the handlebar. This means unscrewing the controls so that the throttle cables can be disconnected. It's easier if you twist the cable adjuster knob a little so that there's more play in the cable. Metal throttle tubes are more robust than plastic ones and will withstand a tap with a hammer, but take care with plastic. It's best not to use a hammer when putting on the new grip, and definitely not if you're doing this with the throttle tube mounted on the handlebar, because if the housing of the controls is also made of plastic and a small pin fixes it to the handlebar, it may break off under the least strain. Then the controls will no longer be tightly fixed to the handlebar.

13-14 The Suzuki has protrusions on the throttle tube, which we saw off for our new heated grips, and then file down. In addition, the

diameter has to be reduced slightly by rubbing with sandpaper so that the new grip fits on without the use of force. You may have to do the same with your throttle tube. If you want to keep your old grips in reserve, the best thing to do is buy a new tube right now and adapt it for the heated grip.

15 Degrease and clean the handlebar and throttle tube with brake cleaner so the grips will stick.

16-18 Then mix the adhesive as directed on the pack. Work quickly, as two-component adhesive cures fast. Apply a little adhesive to the inside of the grip, mount the left grip so that the cable outlet is facing down, and repeat the step for the throttle tube. Of course, you've already tested that the new grip can be pushed onto the throttle tube.

CAUTION: You must always leave a large enough gap for the housing of the controls so that the throttle tube twists easily later and does not stick. After the adhesive hardens, the grips generally cannot be readjusted or taken off without destroying them!

19 Route the cables from the grips between the fork tubes towards the frame so that they do not interfere with the throttle cable or get caught at full lock.

20 Depending on the bike, clamp the switch to the handlebar within easy reach, or stick it to the dashboard or in the front fairing with an adhesive pad. Also route the cable towards the frame, making sure that it does not get caught at the steering head when you turn the handlebar.

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Carefully saw off protrusions on throttle tube...

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and file smooth. Sand to reduce diameter

15



Degrease and clean left end of handlebar.

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Apply adhesive to inside of grip and...

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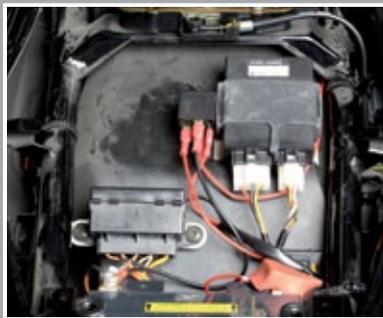
install grip with cable outlet facing down.

18



Repeat for throttle tube.

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Find good place to securely mount relay.

23



Use insulated cable terminals for connection.

24



Remove switched positive (ignition) from starter relay

21 Now the wiring harness for battery connection can be connected to the cables from the grips and switch unit. Saito heated grips make this extremely easy because the contacts are clearly marked with little flags. Route the wiring harness along the frame to the battery. Fix all the cables to the handlebar and the frame with adequate cable ties. You can now connect low-wattage heated grips direct to the battery's positive and negative terminals (see the installation instructions for the heated grips). However, with this arrangement, there is a risk of draining the battery if you forget to turn off the heated grips at the switch at the end of your ride, as the ignition does not break the circuit.

22 If the grips are left on, e.g. overnight, depending on the heat setting they may overheat and deeply discharge the battery to the extent that the motorcycle will not start. To avoid this, it is always advisable to connect them via a relay.

First, find a suitable place near the battery to install the relay. On our Bandit, we drilled a small hole in the mudguard under the seat and screwed it on there.

23 Use insulated cable terminals for connection.

24 Now connect the relay to the negative terminal of the battery via terminal 86; to the positive terminal of the battery, with the fuse inbetween, via terminal 30; to the red positive cable of the heated grips via terminal 87 (lead to the switch unit), and to a switched positive of the

ignition via terminal 85. You can take this from a nearby electrical device, such as the horn, which is rarely used, or from the starter relay, which our Bandit has. You can find the switched positive with a test lamp – it must light up on the correct cable as soon as the ignition is switched ON, and must go out when it is switched off. Once you have connected the relay, recheck all power connections. If everything has been correctly connected up, you can connect the battery, switch on the ignition and try out the heated grips. Does the indicator light up, can you set the heat levels and activate all other functions?

25 If so, you can put the tank back on. But first, recheck that the throttle tube is working correctly if you had uninstalled it. Then check that the hoses are connected without kinks and any terminals are positioned correctly. Sometimes it is practical to have a helper to hold the tank – this is the safest way to prevent the paint from getting scratched or the tank from falling.

Once you have put on the seat (see Fig. 26) and the bike is ready to ride again, you can start it up for a test-ride and enjoy how the warmth from the heated grips spreads from your hands to your whole body! Very pleasant!



19 Cables must not get caught at full lock.



20 Fix switch to handlebar or controls.



21 Connect to battery cable.



25 Mount tank again.



26 Put on seat – done!

Please note!

These tips for DIY mechanics contain general recommendations that may not apply to all vehicles or all individual components. As local conditions may vary considerably, we are unable to guarantee the correctness of information in these tips for DIY mechanics. Thank you for your understanding.