

CABLE ROUTING

There's a trick to keeping them out of harm's way

By Paul Clipper



To some of us, cable routing is the simplest part of putting a bike together, yet we can all remember a time when we kinked or melted a cable housing by not using our heads. Knowing a few simple rules at the time may have prevented this grief.

On a few popular bikes, the cables come from the factory routed in such a way that the housings are subjected to tremendous heat and bizarre bends. Because of this they never work well right from the start. Is this the planned obsolescence we've heard so much about? Maybe, but it doesn't need to be. With a little bit of forethought and some spare time for experimenting, you may be able to change a few things around on your bike and work all kinds of miracles.

If you're having problems with one specific cable on your bike, look it up in the next couple of pages; we may have the answer for you. Obviously, we can't describe in detail all the tricks on every different kind of machine, but follow these rules and you'll be in the right ballpark in no time.

Front brake

The most common problems with the front brake cable are snagging on trees and bushes or looping over the front number plate, speedo, headlight, or any of the handlebar items we use.

The symptoms are quick and painful: if the cable snags tight enough to lock the front brake, you're usually over the bars and on the ground before you know what hit you. Though common, this problem is also one of the simplest to cure.

Starting at the backing plate, make sure the cable end is firmly seated in whatever kind of holder your bike uses. Usually, there's an adjusting sleeve held in a boss, with a nut on either end; the cable housing slips into the end of the sleeve. No matter what happens, you don't want that cable jumping out of the sleeve, so take some safety wire and clamp it in, as shown in the photos. Moving on up the fork leg, the cable should be attached to the leg in at least one spot, with a clamp molded into or wrapped around the leg. This clamp should be getting a good bite on the outside of the housing. The housing should be taut between the adjusting sleeve and the clamp. If it isn't, wrap some tape around the cable to make it thicker inside the clamp, then cinch that sucker tight.

If the clamp your bike normally uses is broken, lost, or otherwise useless, there are a number of accessory clamps you can buy. One such item is the Pro Clamp 1, available from Moto-Vation Racing, 280 E. Harrison, Corona,

California 91720, for \$9.95. The price is a little high, but it's the best you can get.

From the fork leg up to the top of the number plate, the cable should run in a straight line, without bowing to the outside. There should be one or more plastic or steel loops attached to the upper or lower triple clamp to help it on its way. Some bikes don't use them, especially if the cable runs up the front of the number plate, but you may still need one. The object is to help the cable run a straight path right up until it starts making a loop down to the lever. With some careful eyeballing, you'll be able to tell if you need an extra guide.

If you regularly ride with a clock on the crossbrace, as most enduro riders do, you may have to install an extra loop on the number plate to keep the cable from flopping back and grabbing your timepiece. One way or the other, if the cable comes up in front of the number plate, you want to keep it in the front; if it comes up behind, keep it behind.

Lastly, if the upper half of the cable slaps you in the face constantly when you ride, a shorter cable is needed. If the whole thing is stretched tight when your forks are at full extension, you need a longer one. If you have to use

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other than a stock length item, a little bit of time spent snooping around the parts department of your local shop should turn up something in the right size. As a last resort you should be able to order a universal cable kit and build whatever you may need.

Throttle and choke

We include the throttle and choke together because they more or less share the same route down to the carb. If you don't have a choke cable on your bike, you're ahead of the game. That's one less cable to worry about.

If you can start your bike and make the idle go up and down as you turn the bars from right to left, then the cable is following the wrong path. The throttle cable should cross from the bars to the frame as close to the steering head as possible. This way, there's little chance that the cable will pull unevenly. The best route is low and under the crossbar on the handlebars, down to the steering head and then straight down the frame backbone. This keeps all of the cable out of the mess in front of the steering head. But this is only possible

if the cable is short enough to ensure a straight run to the top of the carb. There must be plenty of room between the tank, cylinder head and pipe to keep it out of trouble.

If you can't run the cable behind the steering head, aim it in a smooth loop around all possible snags out front, then bring it back and tie-wrap it right up against the *side* of the steering head. What you're trying to do is keep the cable as close as possible to the point the bars pivot from.

From here the cable will probably run under the tank and down the frame backbone until it drops down to the carb. Whatever you do, keep that cable as far away from the hot pipe and cylinder as you can—use plenty of tie-wraps or wire loops to keep it out of the way. As with any cable, make smooth, gradual bends down to the carb; once there, use a snug-fitting rubber boot over the top adjuster on the cap. If you want to make sure that the cable won't pull out of the adjuster, wire it the same way we did on the front brake.

Clutch

You may think that the clutch cable is one you don't have to worry about, but did you know that you could make your clutch action easier just by routing the cable properly? It's true. And, you may even be able to improve the whole system—with a little work.

Just like a throttle cable, you don't want the clutch cable pulling tight when you turn the bars back and forth, so right away you know that the cable should be close to the steering head. The normal route is around the front of the bars, tied to the steering head and then down the front downtube to the actuating point on the cases. If you have plenty of room around the cases, or a cable that's a little short, you can run it behind the steering head just like the throttle cable. Either way, tie-wrap the cable housing securely to the downtube. Keep it away from the pipe.

Down at the cases is where you can make the most improvements, if needed. The most important requirement for a light clutch pull is a cable with no sharp bends in it, and a straight shot at

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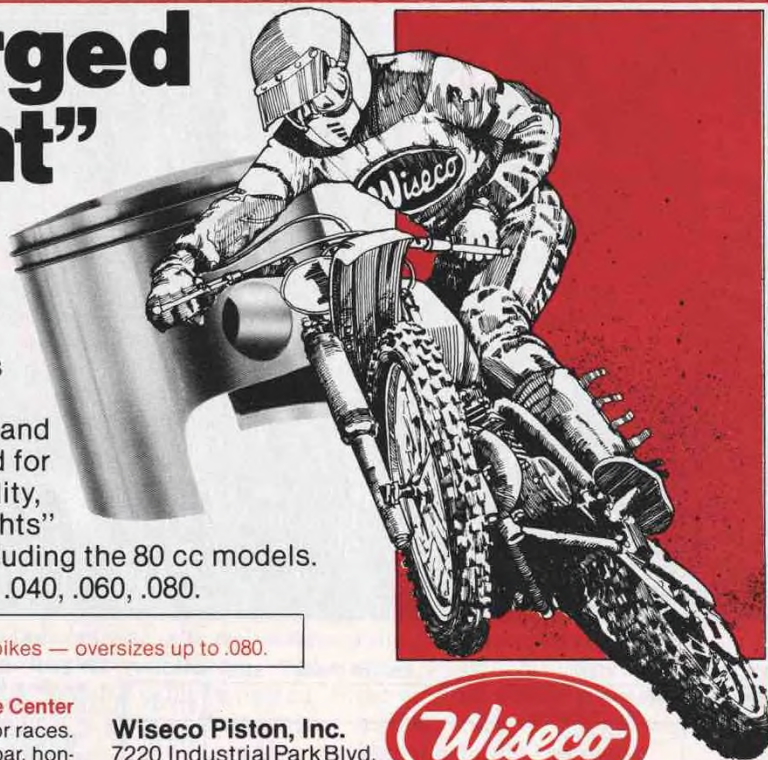
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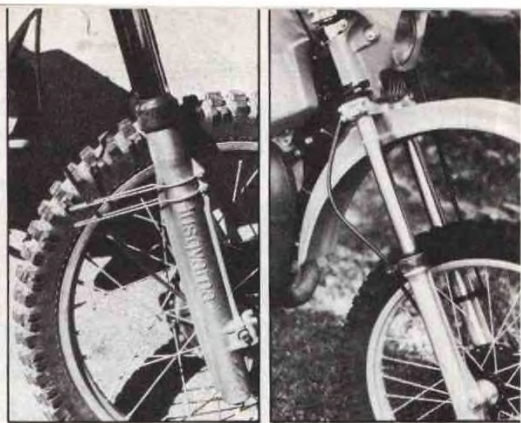
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For the best, safest operation, the front brake cable should run a straight line right up to the lever.



You may find it's necessary to add another loop to the top of the front brake cable. On this bike, the extra loop keeps the cable away from the enduro clock.



The best you can do with speedo cables is to keep them out of the bushes. Two methods are shown here.

the actuating lever on the cases. There will most likely be a molded or bolted-on boss or slot for the end of the cable to sit in or attach to. Make sure the cable housing is seated properly at this point. Then eyeball the run of the inner cable to the actuating arm. You want a straight line from the center of the cable housing to the arm, with the inner cable not rubbing against the edge of the cable housing or any part of the cases. If it *is* rubbing on anything at all, cut, grind, file, or relocate to get it running in a straight line.

Following the above guidelines with a new cable, your clutch pull will be as

light as it can be, *stock*, but it's possible to make it even lighter. A lot of racers these days are lightening up their clutch action by lengthening the actuating lever. And it's not a difficult job. All you need to do is remove the lever from the cases, cut it in half, and add a section to the middle to make it about 3/4-inch longer. Once you do this, though, you'll probably need a cable a little longer than stock, and have to change the mounting position around some.

If your bike has a clutch mechanism that uses internal linkage, like a Can-Am, for example, the most you can

usually do is make sure the cable is pointed in the best direction. If you really want to make the clutch lighter at any cost, check with the service department of your dealer. They may be able to help you.

Speedometer

Not much can be done with a speedo cable. The fact that the ends are fastened tightly at the top and bottom guarantees that it'll bow out when the forks are compressed. What we need is a speedometer with the cable attachment on the side rather than at the bottom, so the cable could loop up and out of the way, like a brake cable.

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Until then, we have to live with what we've got. Make sure the cable is screwed on tight at both ends, and clamp it good at the top of the fork leg. Use tie-wraps to aim the bowing down and back, rather than straight out. There are a number of different types of wire loop guides available to keep them under control. If your bike doesn't have one, it may be possible that another model's guide can be made to fit. Try to keep it out of the bushes, and replace it when it gets sloppy; that's the best you can do.

Rear brake

There are a few machines with a cable-operated rear brake; like a speedo cable, not much can be done with it. Use tie-wraps to keep it out of the rear tire. Check the action with the shocks removed to make sure that it isn't binding on full travel. If you find a problem, it's usually because something is bent, broken or just plain worn-out. Setting up a new cable in the stock position will normally cure it.

A few general hints

Many people today are saying that you should never lube a cable; that the lube attracts dirt and wrecks the insides. This is wrong. The only cables you shouldn't lube are teflon-lined cables, such as Terry cables. It is true that oil attracts dust, so let us you in on our own cable secret: silicone spray. Shoot that stuff in a cable with a Yamaha lube injector and they'll work slick as a greased hound.

Speaking of Terry cables, most of the accessory front brake cables are coming with plastic stiffener tubes wrapped around the outside housing to make them even more resistant to bowing out. If you need a new front brake cable, look one up—they're worth the extra bucks.

It is possible to shorten cables, but don't expect a great amount of success at it until you've done it a few times. The outside housing can be cut



To keep them seated in the adjusters, safety wiring on the front brake and throttle cables is a good idea.



Sometimes the smoothest clutch action can be obtained by changing the position of the cable. On this Kawasaki, a small bracket was built to re-route the cable away from the pipe and cylinder, and to aim it in a straighter line to the actuating lever.

off with a pair of sharp, diagonal wire cutters, or ground off with a grinder. The wire cutters will do a good job on the inner cable, too. The barrels on the cable ends are just soldered on, but make sure they're firmly re-soldered before you reuse them—a bad job means they'll pull right off. You can also expect a little trouble crimping the metal ends back on the housing.

If we still haven't managed to discourage you, at least practice on an old cable before you start cutting up the good ones! ☐

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