

FORK MAINTENANCE TIPS

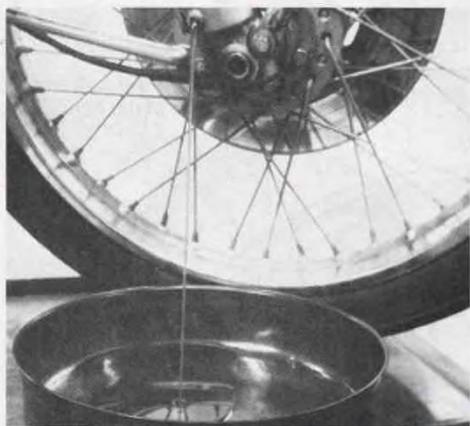
A collection of helpful hints guaranteed to solve the mysteries of fork rebuilding.

by Mike Capalite

A fork assembly may need delving into for a number of reasons, like to trick it out for better suspension, to straighten the stanchion tubes after an accident or to replace the fork seals. Whatever the reason, when you have to take yours apart, the job should be a little easier with the following tips

I've picked up over the years.

Fork assemblies differ internally, but they are all disassembled in basically the same way. The three types included in this article are, with some minor variations, representative of most kinds of fork assemblies.



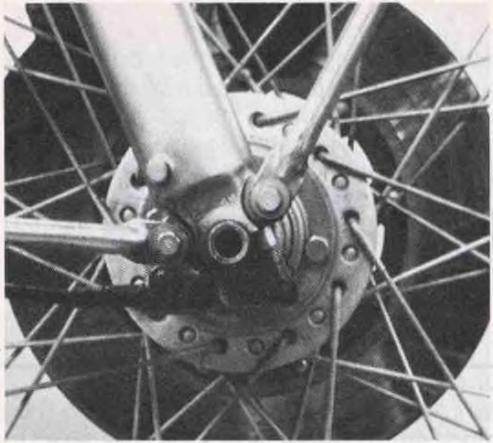
1

Always drain the fork oil with the front wheel on the machine. This way, you can squeeze as much oil as possible out of the fork by pumping the front end up and down. Don't try to drain both sides at once—you'll wind up with oil all over the tire and that's not good for the rubber. Loosen or remove the top plug in the fork tube before pulling the drain plug to release any pressure that may have built up inside the fork, then replace the top plug. Examine the oil as it comes out. If it is white and frothy, water has probably condensed in the stanchion tubes.



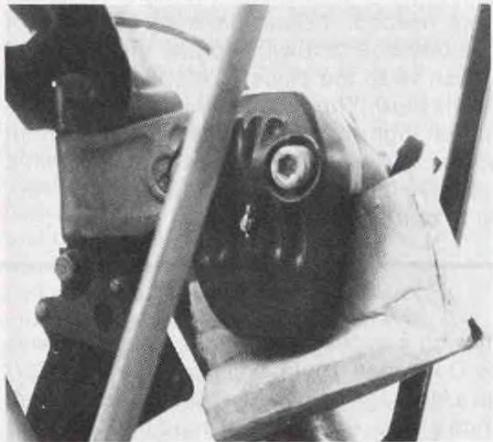
2

After draining the oil, block up the front of the machine. I prefer to use a jack to do this, but any system that will get the front end off the ground and keep the bike stable will do. If you are working alone, the big advantage in using a jack is that you can install the front wheel by lowering the machine onto the wheel instead of lifting the wheel up into the fork.



3

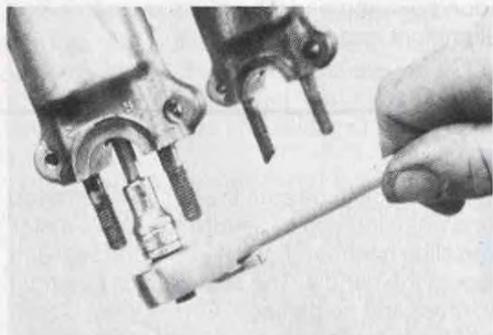
On fork assemblies with removable lower axle clamps, you will have to raise the front end high enough to allow the axle to clear the studs before pulling the wheel out. (This is where the jack also comes in handy.) Prior to pulling the wheel, remove any cables, such as speedometer or front brake cables, that may be attached to the front wheel. If you have a disc, as shown here, the front wheel just slips out. For models with drum front brakes, also check for a backing plate anchor arm that has to be unbolted. With the through-axle type, pull the axle out and the wheel will drop out.



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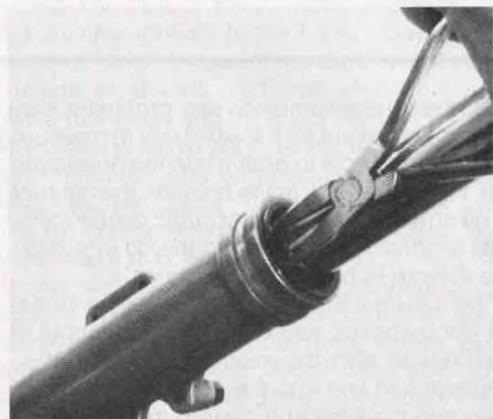
Whenever you remove the wheel on a model with a disc front brake, wedge a piece of cardboard into the space between the pads, as shown here. This way, if someone bumps the brake lever or unthinkingly squeezes it, the pucks won't pop out. On models with drum front brakes, cover the lining with masking tape to prevent oil and grease from contaminating the brakes.

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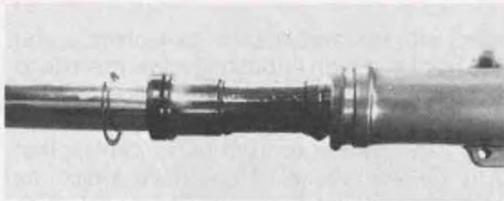
Fender removal should be no problem. On the side with the disc brake, the caliper can be removed as a unit and left hanging on the line. If your fork's lower legs are the type with Allen screws in the bottom, they can be removed with the tubes left in the machine. Don't take a chance on butchering up the Allen heads by using an American-sized Allen wrench—use a wrench of the correct size. Sometimes it is better to break the Allen screws loose before removing the fender so the fender will offer some support. NOTE: If the Allen screws break loose but will not come out, the damper rod into which the screw fits is turning. Since the design of damper rods varies so greatly from one bike to another, the best idea is to check with your dealer to find out what type you have and the best way to deal with a damper rod that turns when loosening the screw.



6

If the lower legs do not come off when the bolts on the bottom are removed, your fork is probably the type that has bushings mounted on the bottom of the fork tubes that are held together by whatever retains the fork seals. It is best to check with your dealer first to make sure. When the legs and bushings are popped out on this type of fork, the seals come out too.

Using a set of internal circlip pliers, carefully remove the circlip that holds in the seal. It is worth investing a few bucks in a pair of these pliers. If you try to remove the seal without the proper tool, you may scratch the fork tubes and you'll have an instant leak.



7

On a fork with internal bushings, remove the tubes from the fork crowns so you can work on a bench—but do them one at a time. After removing the circlip, clamp the bottom of the fork leg in a vise (or have a friend get a tight grip on it) and give the tube a good jerk. This will drive the seal out of the leg and make the tube and bushing come out as well. CAUTION: If you are going to clamp the leg in a vise, be extremely careful. Clamp only on the very bottom where the axle goes through—never up on the slider area.



8

Some fork assemblies have seal holders that thread onto the bottom fork stanchion, and these have to be unscrewed to take the fork apart. Occasionally a special tool will be needed to remove them. Ninety-five percent of the time, however, special tools are not needed. Instead, take an old piece of inner tube and wipe one side of it with lacquer thinner. Let it dry for a minute. Then wrap the piece of rubber around the seal holder as shown here. The lacquer thinner makes the rubber just gummy enough to give a fantastic grip without hurting the seal holder. Never try to remove the holder with a pipe wrench. Besides the obvious cosmetic damage it will do, it could cause you to ruin an expensive part.



9

This unit for removing fork seals is one of the best I've ever seen. Made by the Owatonna Tool Company, the tool's \$20 price tag may seem a little high to the street rider who replaces his seals maybe once a year. But to the off-road rider who will use it probably half a dozen times in a year, the price is reasonable. It comes with a fork-seal and exhaust-baffle puller as well as a set-up for pulling seals from around shafts. Some manuals recommend that you lever the seal out with a screwdriver, but I don't recommend it because most fork legs are made out of aluminum and damage easily.



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To pull the seals, first check to be sure the circlip is removed (even this type has a retaining clip to secure the seal). Install the correct tip on the slide hammer, hook it under the seal and slam the weight back to the handle. The seal will just pop right out with no fuss, no muss and no damage. On the West Coast, you can order one of these tools from the Flanders Company, 340 South Fair Oaks, Pasadena, California 91105. On the East Coast, you can order one from the Precision Manufacturing Company, 509 'D' St., Clearwater, Florida 33517. You can also order one through your dealer.



11

After the fork has been reassembled, two problems may crop up when it comes time to put oil back in: How to measure the correct amount of oil and how to pour it into the hole in the top of the fork tube. When you look in the manual, the amount of oil to use will be given in either ounces or cubic centimeters. This problem is easily solved by measuring the oil in a baby bottle, which gives volume in both ounces and cc's.

If you try pouring oil into the tube in the conventional manner, there is a good chance you will get an air bubble in the tube and oil will run all over the machine. To avoid this, stick a six-inch piece of fuel line into the bottom of a funnel, then stick this down into the tube and pour in the oil. 