

Overhauling the front fork anti-dive units

Apart from the Harris G80, the only other machine known to have used the Paioli telescopic forks with the four-position adjustable anti-dive units was the Ducati Santa Monica, a limited-edition derivative of the 750 F1. Obtaining spares could be a problem, but it is possible that Baines Racing of Silverstone might have some.

Fortunately, there is little to go wrong in these devices. Apart, that is, from oil leaks and these can be cured. The only tool needed for the overhaul, apart from a 5mm Allen key to remove the unit itself, is a pair of internal circlip pliers.

Before doing anything to the unit, it will be necessary to drain the fork. The following method differs slightly from the one in the Owner's Manual, but the principle is the same: get the handlebar out of the way, and remove both the drain plug and the top plug.

Tools needed: 10mm spanner, 6mm and 12mm Allen keys and a fairly large drip tray (or two, if both forks are being drained together).

With the machine on its centre stand and ignition off, detach the connection to the front brake stop-switch. This is because although complete removal of the bar is not needed, there isn't enough slack to allow much rotation of the bar without putting a strain on the cable. Then slacken the four socket-headed bolts that secure the handlebar and, supporting it to prevent it from turning forwards, turn it backwards until there is room for the fork top plugs to come all the way out. Tighten the handlebar securing bolts again.

Remove the plastic cap with the Paioli logo on the fork top, exposing the hex socket on the top plug. Loosen this plug but do not remove it yet.

Position the drip tray below and to the rear of the fork and undo the drain plug, which is near the base of the fork facing rearwards. Oil may begin to trickle out.

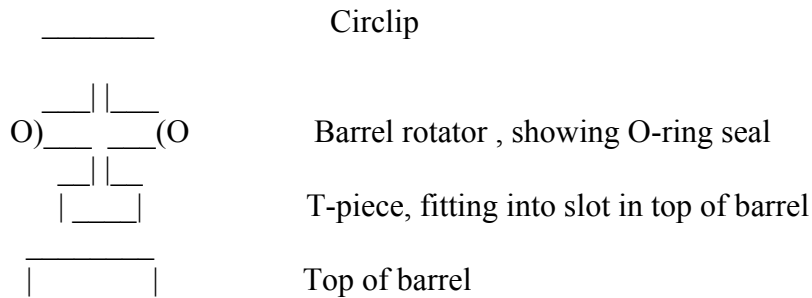
Now remove the top plug. As the O-ring clears the fork top, air pressure may cause oil to gush rearwards out of the drain hole. Lift out the short piece of tube under the plug, and when the flow (if any) has stopped, a few compressions of the forks will help the emptying process. **WARNING!** If both forks are emptied at the same time, they will simply collapse slowly downwards, shooting oil out to the rear, and no extra "pumping" will be needed. A short piece of spring will pop out at the top of each fork. By supporting the engine with a suitable block of wood or similar, the forks can be extended again.

With the fork drained, the anti-dive unit can be removed using a 5mm Allen key on the two bolts. It isn't necessary to have the adjustment at any particular position before dismantling, but as we will be putting it back together at position 1 (with the single dot facing forward, next to the inverted "V" marker) it helps to turn the knob to this position at the start.

The unit consists mainly of a vertical cylinder, attached to the fork by a flange. Inside this cylinder is a barrel with oilways (for want of a better term) that somehow control

the flow of the oil when the brakes are applied and the forks compress. The barrel is turned to the selected position by the knob at the top, which is attached to a disc that sits snugly in the cylinder, surrounded by an oil-sealing O-ring. On the underside of this disc is a T-shaped arm that acts on the barrel. Between the disc and the barrel there is a coil spring.

The unit internals, in cross-section



With the unit off, note that there are two oil holes, with O-rings. Nothing much can be seen through the lower one, but in the upper one part of the rotating barrel is visible. Note the vertical channel, 3mm wide, that ends just below the top of the hole when the adjuster is at position 1.

To remove the black plastic knob, lever it gently upwards using a knife-blade. The circlip holding the device that rotates the barrel can now be seen. Clean off any road grit, and remove the circlip using circlip pliers. When it comes free, the barrel-rotator disc may pop up slightly owing to there being a coil spring underneath, but will probably need some assistance (pliers, or similar). The remaining components are the barrel and spring, and they can be removed and cleaned.

Renew the O-ring on the barrel-rotating disc, and re-fit the barrel ensuring that the wide (3mm) channel is visible through the upper oil-hole in the body of the unit. The spring goes on top, and then the barrel-rotator. Re-fit the circlip, and the knob with the single dot pointing to the front, and the job's done apart from replacing the two O-rings that fit between the unit and the fork. Bolt the unit back on.

Before refilling the fork with oil, check the condition of the drain plug washer and replace if required. Similarly, check the condition of the O-ring on the top plug. Use jointing compound on the threads of both plugs. Refill with 180ml fork oil. The manual states "medium", whatever that is. Personally, I use thin (SAE5) oil, but ATF (Automatic Transmission Fluid) can also be used, I'm told.

Finally, put the handlebars back to their original position and re-fit the stoplight wires.

O-rings: The ones I am using now were bought from Rhondama of Loughborough (tel: 01509-218149) and are catalogue number 8-2 to fit between the unit and the fork, and No.112 for the cylinder.

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