CBX Technical: Advanced

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Servicing the ProLink Shock

Mike Nixon

Most of us probably do not think of our ProLink shock very often, **Figure 1**.

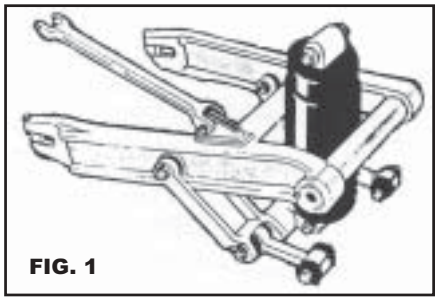

FIG. 1

However, three things will sooner or later bring the later model shock to your attention. First, its main seal will eventually leak, but fortunately it is replaceable. Second, the damping will need revival at some point, which means an oil change. Third, the shock was assembled by Honda with too little oil inside it, with the result excessive bottoming, a situation that the typical rider compensates for by adding more air pressure. Unfortunately, this makes the shock too harsh all over. The solution to all three of these problems is the same – a simple oil change. However, the official manual is not very good in this area. To begin with, there are *two* different published factory methods, depending on when your manual was printed, though neither works very well. There are other problems as well, but the *big* problem with the factory's methods is that neither of them include fully *draining* the shock, which means that the new oil mixes with the old, which is an unacceptable outcome. The procedure described here is a combination of the factory's second, revised method, plus the extra steps necessary to completely drain all the old oil out.

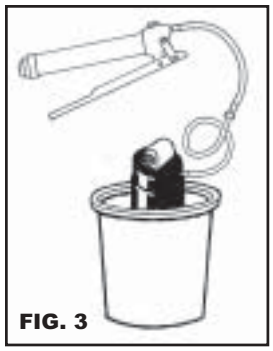

FIG. 3

Refer to the manual for how to remove the shock – it comes out pretty easily, **Figure 2**. Stick a chunk of 2x4 in the shock linkage to prop the bike up and render it rollable. Leave the schraeder valve / pressure monitor block attached to the shock because it is needed to remove the seal. Clamp the shock upside-down in a vise (at the upper mount), using soft jaws. Remove the circlip and rubber boot, and remove the seal circlip. Once the seal circlip is out, envelope the shock in a kitchen garbage bag and lay it right-side up in a tall wastebasket or barrel. Then fill special tool 07971-MO1000A with ATF and after attaching it to the schraeder valve pump steadily until the seal "belches" out inside the bag, **Figure 3**.

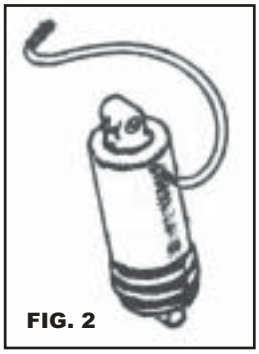

FIG. 2

Be sure and retrieve both the seal and the large plastic bushing – the bushing must be out before the shock can be refilled. It is also the shock shaft's bearing — don't throw it away with the garbage bag, **Figure 4**. Let the shock drain, tipping it back and forth occasionally to get all the old oil out of the damper. Afterward, clamp the shock in your vise again and inspect the chrome plated surface on which the seal rides. If the surface is heavily scored, the shock will have to be replaced, because the new seal will wear prematurely. Once the shock passes inspection and is completely drained, you're ready to pour in 550cc of ATF, using a baby bottle for measurement. Go slowly. If the shock won't take all the oil, it either still has some old oil in it, or (more likely) it has some air trapped in it. Tilt the shock in your vise and tap on its side until you see bubbles come up from under the oil. Then leave the shock in the vise for a

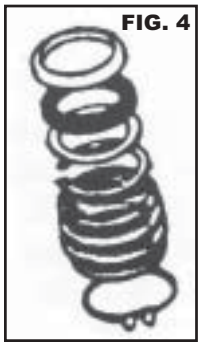

FIG. 4

This article was originally published in the July-August-September 1991 issue of the CBXpress. Today's DeCarbon shocks are far more sophisticated than the emulsion design on our CBXs. The modern shock's air pocket is segregated from the oil by a flexible bladder, allowing the shock to be completely filled, resulting in superior performance. Nonetheless, our old-tech emulsion shocks can be made to function well, if they are treated to the simple oil change described here. This procedure was conceived after I had performed this task many times as a dealer tech, and even more as a suspension tuning shop proprietor. As the article points out, the best single thing you can do for the ProLink shock is to change its oil. Changing the oil is not a difficult job, although it requires some special tools, some of which are probably no longer available. If you would like me to do this work for you, all you have to do is send me your shock along with a new seal, and if needed, dust boot. I will fill the shock to the correct oil level, replace the seal, and return the shock to you insured UPS, for $70 (which includes the cost to ship it back to you). Be sure to include this amount with the shock, or pay by PayPal.

Email me if you are interested, at <mikenixon@earthlink.net>.

while, tilted, or drain and start all over again. After filling, carefully clean off the chrome shaft and wrap one turn of electrician's tape around the weld, near the bottom mount, **Figure 5**. Slide the new seal (91257-MA2-003) — well greased and the number side up — onto the shaft. Once the seal is on, remove the tape and carefully push the seal down to the shock's outer case by hand.

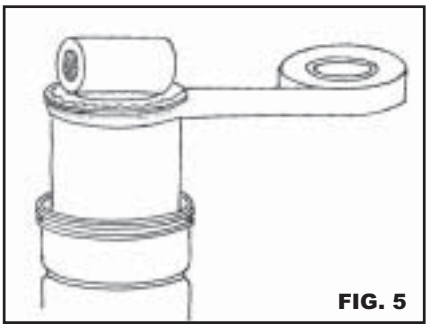
FIG. 5

Place the shock upside-down, with its case resting on the edges of the support plates in the hydraulic press, **Figure 6**. This is important – the shock must be well supported to avoid distorting the lightweight case. Next, put special tools 07965-MA10100 and 07965-MA10200 over the shock so that they rest on the seal. Then operate the press to gently drive the seal down into the case. Press the seal in until it *just* clears the circlip groove, and no further. This is important! Pushing too far will distort the shock outer case, as will also trying to install it with a hammer. Don't make either mistake. Put the shock back in the vise and install the circlip and dust boot, then reinstall the shock into the bike and air it up.

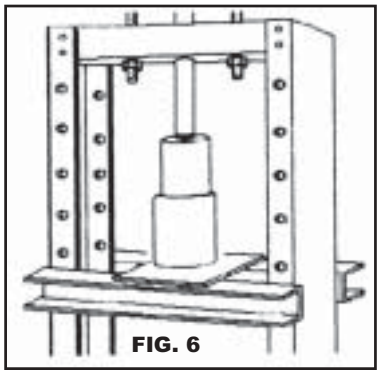
FIG. 6

We left some air space inside the shock, on purpose. You see, the CBX rear shock's damper valving fills and empties at different rates during compression and extension, due to the emergence and retraction of the shock shaft into and out of the shock body. Therefore, as with *all* shocks, an air pocket is needed inside the shock which prevents it from being under-filled in one direction and over-filled in the other, and thus avoids hydraulic lock, **Figure 7**. In the CBX shock, this air pocket is *tunable*. That is, changing the size of the pocket has a marked effect on suspension action. Reducing its size, by increasing the shock's oil volume, makes the shock firmer in the last stages of its travel without affecting the initial travel. It's an air spring effect. We have already raised the level somewhat by filling the shock to 550cc, which is just what the ProLink shock needs, because it is an obviously-better way to reduce bottoming than by adding air pressure. However, should your conditions be heavier or harsher than average, there is still 50cc of air space left inside the shock to play with. Test ride your bike for at least 3 miles to get the shock warmed up, and note whether it bottoms. Back at the shop, if the shock bottomed, remove the Schraeder valve and with a syringe (without the needle) inject 25cc of shock oil, replace the schraeder valve and the air pressure, and go back out to your test loop. That should take care of it. If not (be sure it is actually *bottoming* you are experiencing), add part or all of the remaining 25cc. However, do NOT add any more, whatever the conditions. This shock will hold only 600cc (total) without hydraulicing. E-mail me if you would like information on advanced shock tuning.

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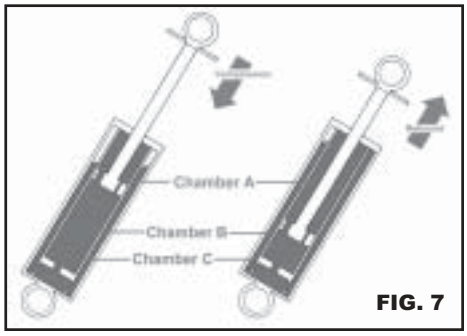

FIG. 7