

Replacing the flexible clutch hose

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This is definitely not the most fun job you will need to do on your MX-5 but after quite a bit of cursing I finally stumbled on the best method of replacing this troublesome little blighter.

Overview

The full hydraulic system for your clutch can be seen in figure 1.

From the clutch master cylinder a steel line travels along the firewall to the passenger side where it then descends to a bracket at which point it is fitted to the flexible line. From here the flexible line goes behind the engine (across the top of the bell housing) back to the driver's side where it connects to the lower steel clutch line. The lower line descends under the car where it is coiled into a pig's tail then finally connects to the clutch slave cylinder.

Removal

Starting at the passenger side of the car, locate where the steel and flexible clutch lines join (figure 2).

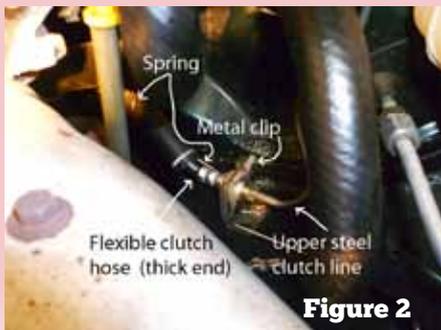


Figure 2

Place some absorbent rags under where the two lines join, then using a 10mm flare nut spanner, separate the steel and flexible lines. Remove the steel clip from the fitting on the end of the flexible line and also the spring that is wound around it. That is the easy part done. **Note:** If you don't have a flare nut spanner, one can be made from a spare 10mm ring spanner; it is not advisable to use an open-ended spanner as they usually burr the heads on the fittings.



Jack up the car and place it on jack stands.

Note: NEVER get under any car that is only supported by a jack. On most vehicles this is a very dangerous practice ... with the low clearance of an MX-5 it is suicidal!

Next, get under the car and locate the slave cylinder on the driver's side of the gearbox (figure 3); using the 10mm flare nut spanner remove the lower steel clutch line. The lower clutch line is also attached to the bell housing with one bolt (10mm) at the "pig" tail"; remove this also.

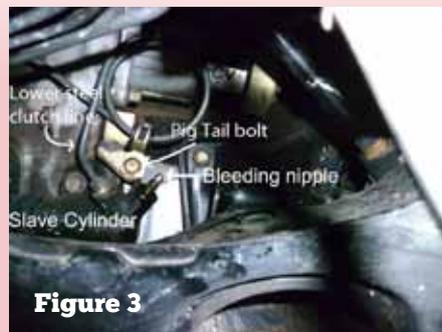


Figure 3

On the side of the gearbox you will see a wire loom held in place by a single bolt (10mm) (figure 4); remove this bolt and push the loom out of the way (you don't have to do this bolt but it makes it easier).



Figure 4

You will now be able to see where the flexible clutch line and lower clutch line join on a bracket attached to the bell housing (figure 5).

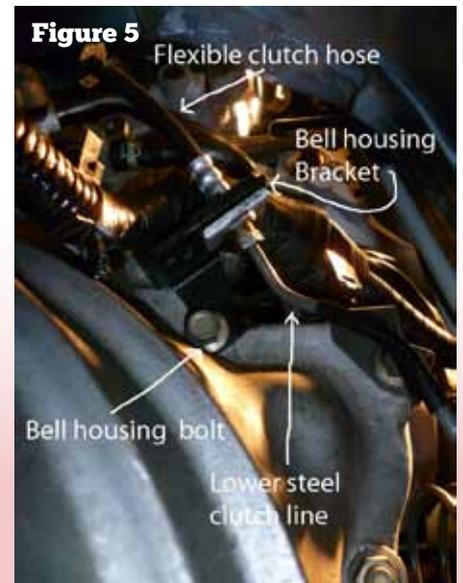


Figure 5

Using a 12mm socket and a long extension bar, remove the bolt securing the bracket. The loom you have just moved out of the way is also attached to this bracket by an expandable cone through a hole in the bell housing bracket. Compress this "cone" and force it back through the hole in the bracket using a pair of needle nose pliers. The whole assembly can now be removed from the car. Once out of the car you need to separate the flexible hose from the lower clutch line. If you have a vice put the flexible hose fitting in the vice and remove the lower steel line with a 10mm flare nut spanner. If you don't have a vice, hold the flexible hose fitting with a 17mm open-ended spanner and remove the steel line with a 10mm flare nut spanner. Finally, remove the metal securing clip.

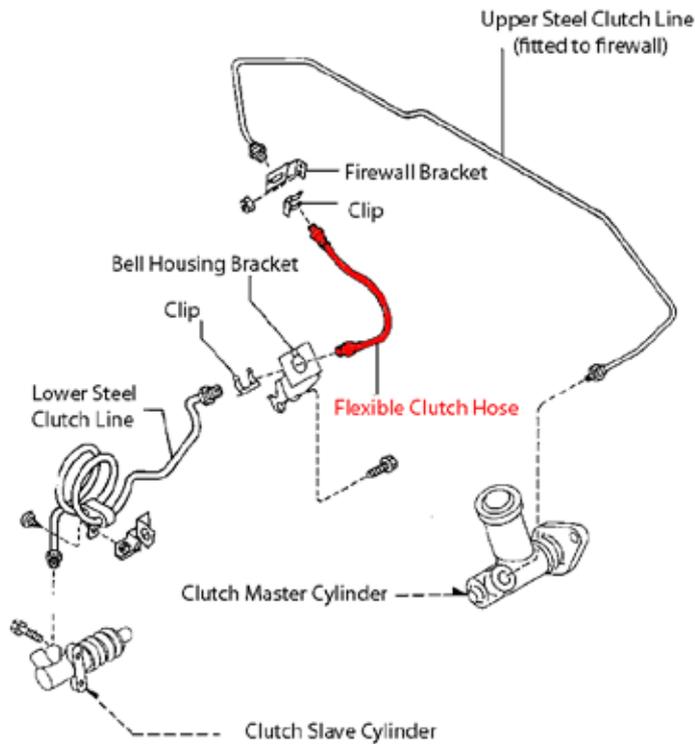
Refitting

With the new hose to hand fit the thin end of the flexible hose to the lower steel clutch line (finger tight only). Refit the metal securing clip and tighten the steel line fitting ensuring the lower clutch line will be at the right angle when refitted to the car. Place the 12mm bell housing bolt into the socket and bar and push through the hole in the bell housing bracket. Put the whole assembly back in place and tighten the (12mm) bell housing bolt (finger tight only). Refit the connector to



Figure 1

Clutch Piping NB MX-5



the slave cylinder and the “pig tail” bolt and tighten both (in that order). Fully tighten the bell housing bolt and refit the loom clip to the side of the gearbox. Unless you have miniature hands, don’t attempt to refit the plastic loom clip to the bell housing bracket – we will deal with that later.

Everything under the car should now be back in place. From the top pull the loose end of the flexible hose across to the passenger side and refit the metal fitting (finger tight). Place the end of the flexible

hose back into its bracket, fit the steel clip, tighten the metal fitting and reattach the spring. Your little girl is now back as she was.

Bleeding

Before we get on to the bleeding process, a word on brake fluid. Always use a quality (DOT4) brake fluid in your clutch system; do not use fluid that has been lying around with the top off the bottle or a bottle that was opened more than 12 months ago. If in doubt buy a new bottle. Brake fluid is hygroscopic, so it absorbs

moisture (even just from the air). Brake fluid that contains water will not only boil more easily, it will also rust out the steel components of the clutch’s hydraulic system.

It is at this point in time you invite a friend over for a beer (“Oh, while you’re here ...”). I might add that wives also make very good clutch pumpers if required. If however you are like me and have no friends, the process can be done with one person though it is much slower. Either way the process is the same.

Ensure the clutch reservoir is full of FRESH brake fluid. Depress the clutch pedal (can be done with a suitable length of wood between the pedal and seat). Get under the car and remove the rubber dust cover from the slave cylinder bleeder valve. While the clutch pedal is on the floor open the bleeder on the slave cylinder, close the bleeder valve then release the clutch. Continue this process until you get a steady stream of fluid (with no air bubbles in it), making sure you only open and close the bleeder when the clutch pedal is pushed to the floor.

Periodically check the master cylinder and top it up if required ... if the master cylinder runs dry it will suck air into the system and you will have to start all over again! The system will have plenty of air in it so be prepared for the bleeder valve to splutter – keep your head well away and if you get brake fluid in your eyes irrigate them with plenty of fresh water. When you’re finished, replace the dust cover and check the entire system for leaks.

Finally, bend a large cable tie into a “U” shape; from underneath poke it up making sure it captures the cable loom and bell housing bracket from the top, then tighten the zip tie and you are all done. ■

What you’ll need:

- » NB flexible clutch hose (Mazda part # N05341380)
- » 10mm flare nut spanner (or modified ring spanner - see right)
- » 12mm socket and a long extension bar
- » 17mm open-ended spanner
- » DOT4 brake fluid
- » vice (optional)
- » wife or unsuspecting mate (or a length of timber)

*10mm ring spanner
modified into a
10mm flare nut
spanner*



*The “no friend”
system for pumping
the clutch*

