Scott R. Nelson 8-August-2000

Notes on installation of Factory Pro jet kit on a 1997 Ducati M900.

When I installed the jet kit on my Monster, I took careful notes to make sure I got it all back together correctly. I decided to publish them in hopes that it might help save someone else some time or aggravation. Sorry for the total lack of pictures.

The proper jet kit for a 1997 M900 (actually 93-98) is the "CRB-D12-1.1-ti Ti ProKit" which includes the following;

2 42.5 pilot jets
2 1180g4-102n-44t5-ti needles
2 335-43-23-41 slide springs
2 each 135, 145, 155 main jets
4 5 x 16mm screws
8 5 x 12mm screws

The only ones you can't get directly from Mikuni are the needles and springs. The needles are significantly different from the originals with much more taper.

Tools needed: 8mm, 10mm, and 12mm open end wrenches. 5mm and 6mm allen wrenches. Medium phillips and small flat bladed screwdrivers. 8mm and 10mm nut drivers. Some clean rags. A small steel ruler with a T-shaped adjustable mark or some other way to measure float height. Spray carburetor cleaner. An electric drill.

Changing the jets:

1. Using a very small flat screwdriver, remove the pilot jet. It's down in a hole a little ways, right next to the main jet and the other jet marked "70". My old pilot jet was a 37.5 and the new one is a 42.5. They were shaped a little different from each other, but obviously work the same way. Put the new one in and tighten snugly, but carefully.

2. Remove those two jet thingies marked "70" and the little brass arms holding the main jets in place, then pull the main jets out with your fingers. Twist a little if you have to. They're just held in by a rubber O-ring. My old mains were 142.5 and the new ones were 145. It was a real dilemma whether or not I should go to 155, but I felt it would be easier to detect a lean condition and I wasn't going with a fully open airbox anyway.

Put the O-rings on the jets you'll be reinstalling and push them back into place. You may have to do some twisting to get the jets back in all the way. Make sure the O-rings go down into the holes. Tighten the screw/jet thingies marked "70".

Do not remove the 8mm brass screws that cover up the needle emulsion tubes unless you will be replacing those tubes.

3. Remove the big black covers from the side opposite the float bowls to expose the CV (constant velocity) section. Remove the old springs and put the little plastic pieces onto the new springs. Carefully pull out the slides, remove the needles, and replace with the new, much pointier needles. There is a stainless steel washer, a nylon spacer, and a circlip on the needle. The circlip can be removed with a small screwdriver. The nylon spacers were very difficult to get off and to get back on the new needles. Be patient and don't bend those needles! I considered drilling the centers of the nylon washers slightly to get them back on.

I started off with the circlip on the #3 (middle) position. The jet kit came with a set of 8 new circlips, although only two are needed. The new ones may not be as high of quality as the old ones, so you might consider just reusing the originals. I have 8 spares now.

4. Drop the needles into place in the slides, making sure the metal washer and the nylon washer are on the pointy side of the needle and that the nylon washer is snug against the circlip.

5. Carefully reinstall the slides into the carburetors, lining up the needles as they drop through. If your bike has very many miles on it, check the "emulsion tubes" that the needles slide into to make sure they're still round (you'll have to remove those 8mm brass screws I previously said not to remove, to do this). Mine looked good.

6. Install the spring, being sure to line up the plastic end-piece with the needle. Put the black cover back on. I intended to use the new 16mm hex-head screws here, but I couldn't get the washers off of the old screws so I just used the old screws. The philips screws work better here than for holding the float bowls on anyway and I found a use for two of the 16mm screws when I put the throttle bracket back into place.

7. Set the float height to 14mm. I called Factory Pro and they said to rotate the carburetor until the floats are hanging free, then back just until they touch. If you rotate them more, they'll compress the small spring in the float valve and you'll get an incorrect measurement. Be sure to measure from square side of the float rather than the more pointed side. The measurement is made from the float bowl surface to the part of the float furthest away from the surface. Note that the float is at more than a 45 degree angle to the measuring surface. My floats measured 9mm, which is why I felt the need to call Factory Pro to make sure I was measuring from the right place.

To adjust the float height, pull the pin that the float pivots on, then bend the metal tab that pushes against the valve that stops the gasoline from entering the carburetor. Small adjustments can be made without removing the float. You don't have to bend the tab by much to make a big change in float height.

8. Reinstall the float bowls using the new 5 x 12mm hex head screws. But first, spray some carburetor cleaner in the float bowls to get rid of any fine residue that has collected

there. Every motorcycle I've ever owned with a few thousand miles on it has had some kind of residue in the float bowls. Use the two longer 5 x 16mm screws for the throttle plate because the 12mm screws are too short. Don't forget to put the throttle plate on. Gently tighten the screws a little at a time until the float bowls are snug. Remember that this would be a very bad place to strip a thread.

9. My bike still had the brass inserts covering the mixture adjusting screws, so I had to remove them. They're located right next to the float bowls on the tube-shaped piece that is in the way when installing the float bowls. You can see a matching hole on the carburetor intake that lines up with it.

What worked well for me was to use a very small bit to drill the center, then about a 3/16" bit to get them out. Don't go in more than 2-3 mm with the small drill or you'll be drilling on the mixture screw itself. Also remember that brass is quite soft and drill bits cut into it very quickly. To remove the inserts, I drilled with the 3/16 bit until the bit grabbed, then it spun the insert and I was able to gently pull it out as it was spinning. There may be a better way to remove the brass inserts, but this worked for me.

10. To check the previous setting of the mixture screws, I suggest a screwdriver marked on one side. I got mixed up counting half-turns to find out what the old settings were. I think they were both 3 1/2 turns out. Set the mixture screws to the desired setting. I used the recommended 3 1/2 turns out.

Okay, time to put everything back together again. The jetting changes are done.

Go ride it and try to figure out if it's running right at all different speed ranges. Factory Pro offers many good hints as to what adjustments to make and how to tell what is needed.

If you try this and find any steps that I haven't listed or that could be explained more clearly, please contact me and I'll make the changes.

Updates (as of 30-Nov-2000)

Changing the idle mixture screw adjustment to 4 turns out rather than 3 1/2 makes it run better when cold and improves the transition from no throttle to part throttle.

Later testing showed that the bike pulled strongest at high rpms with only one of the two snorkels removed from the airbox. Looks like the main jet should either be a 155 or maybe a 150.

Updates (as of 13-Sept-2001)

Wow, I really don't get around to updating this, do I?

A few months ago I cut open the airbox to give about 30 square inches of opening and switched to a 155 main jet and it all runs very well, I also dropped the needle one notch from the middle to lean out the midrange just a bit. The idle mixture screw stays at 4 turns out.

With this setup the plugs are the right color and it runs smoothly nearly all of the time. When the temperature gets into the 90's I can tell that it's just a touch rich but it is not a significant problem. I don't have to let it warm up for more than about 30 seconds before I can turn the choke off and ride it away, probably due to the mixture screw setting.

MoPerfServ@aol.com (Doug L)
The Main Jet on U.S. models is #140 (1.4mm dia. hole) The Ducati Mikunis use a 'push-in', O ring sealed main jet the same as (I am told) the Yamaha YZF750.

The pilot (low speed) circuit is set lean to make sure it meets EPA standard, which require light (by M/C standards) acceleration. This is typical of all EPA motorcycles.

What is not typical is that there is a common leakage problem in the pilot circuit.

The off-idle holes are drilled from the float bowl side, (probably using a hardened tool-steel drill guide, to maintain accurate positioning.) The cast in area where these holes are drilled is then plugged with an 'O'ringed plug.

These plugs are put in at a rate of (probably) 1000/hour. Of the 25 sets of carbs I have kitted, only one of these 'O'rings wasn't ripped, torn, or otherwise maimed!

I don't know if 50% or 5% of these plugs leak, and I don't know if they leak air or fuel, but I do know that, if you take care of this problem the carbs idle better and generally behave themselves much better.

There is another inherent short-coming of the design. It is in the main circuit, and I believe that it is the underlying cause of the hesitation that these bikes exhibit.

This problem is generally dealt with by making the mid'range richer, however, when the design is changed the carbs respond like crazy with very lean jetting. Like, 132.5 MJ with the rubber snorkels removed from the lid.

And one more thing- don't get into that 'lean is bad-rich is good' syndrome. Too rich mixture soots up you combustion chambers and plugs, washes the cylinderwalls of oil, and contaminates you engine oil. What we want is performance, and if we can get it without drenching everything in gas, why not?