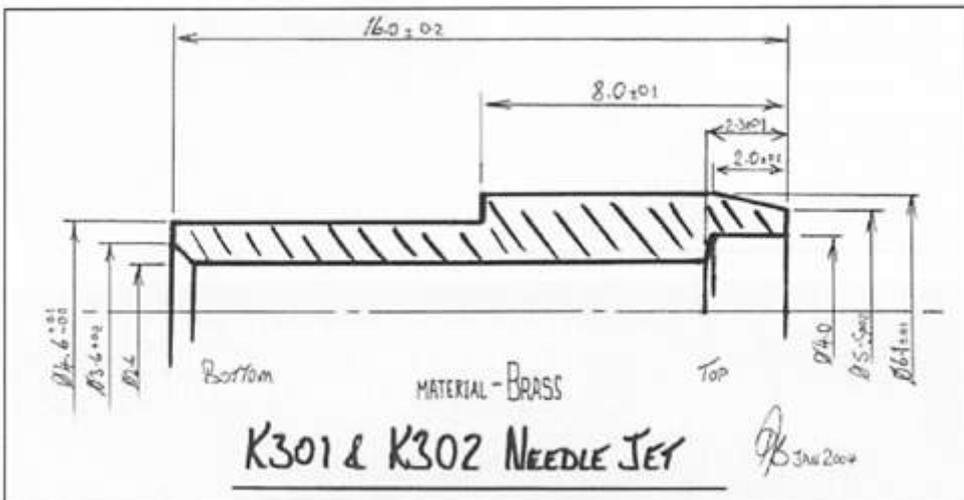


Living with K301's and other Things

It has to be said that back in the 1970s and 80s when you bought a Ural or Dnieper, usually in bits, the first things consigned to the unusable heap were the K301 s. This was because by the time they ended up in your possession they were usually the cause of the bike being sold in the first place.

For some reason best known to myself years ago, I had kept a pair of K301 s. Digging them out of hibernation I found that I was in possession of 1.3/4 K301 s. The slide in these carburetors is in two pieces, back and front, allowing very easy needle positioning. The front of one was missing so undeterred, I made one. Next was the re-tapping of all the threads because most of the bolts were either the wrong length, wrong thread and as mentioned above there was the ubiquitous self-tapper. Next, attention to the flanges. When the two carb flanges were placed face to face you could pass a fifty pence piece through the middle! The reason these flanges became so bent is, I think, because of the original heat insulating washers being made of compressible material (a bit like Balsa wood!). As the carb bolts were tightened the washers were compressed at the edges but not in the middle, hence bent flanges. So, the flanges were made flat again and tufnol insulating washers made.

The carburetors were duly fitted and cables connected and set to equal lengths such that the two slides started off in the same place, the bottom. Starting the bike was no problem but trying to see through the black smoke with smarting eyes was! Try again with both needles in their bottom position, no difference. One cylinder then stopped firing because the plug was sooted up and just as I was thinking what would happen if enough soot fell off to allow just one spark to ignite the mixture in the cylinder to allow very hot gases into the exhaust pipe full of unburnt gases it did. My, what a bang. The garage windows survived nevertheless! Using the dimensions shown below.



Available in sizes defined as below.

(Affects mixture from around 2/3rds throttle to max).

If it is the wrong size or blocked you will not notice the effect if you only ever use half throttle

Can be screwed out of the side of the carb and cleaned or replaced with carb insitu. It can never wear.

Main jet

If too small a size is fitted or it is partially blocked this will give a poor or zero throttle response at high load full throttle applications, particularly at mid rpm.

If too large will give black smoke at wide throttle openings, may be down on power but unlikely to foul plug due to high engine temperatures associated with the high power demand.

Available main jet sizes:

150 is approx. 0.83mm diameter.

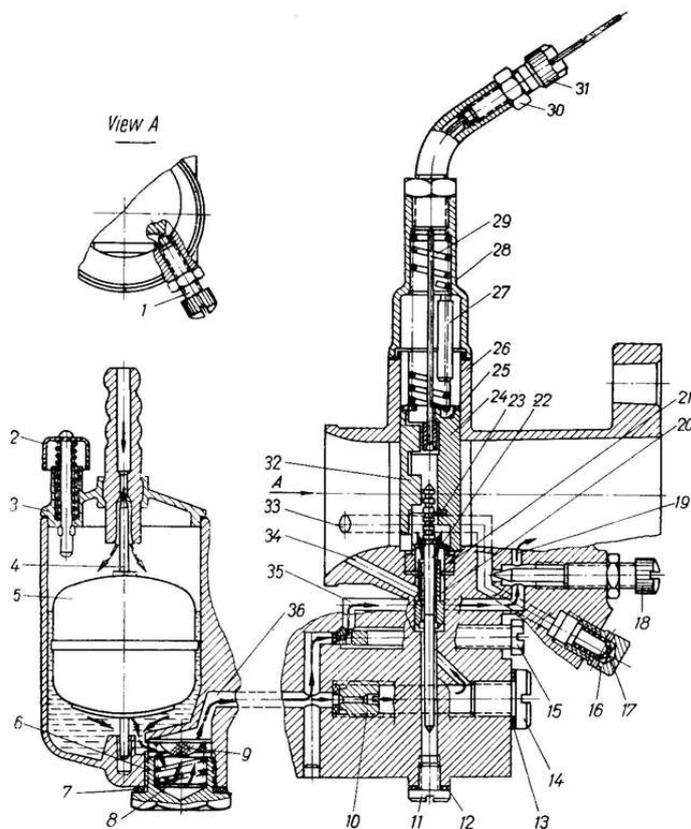
185 is approx. 1.04mm diameter.

200 is approx. 1.11 mm diameter.

210 is approx. 1.14mm diameter.

I made two new pilot jets. The jet size of 2.6mm is critical and should only be done with a brand new drill. Unless the point is absolutely dead center it will drill a bigger hole than 2.6mm. You can guess by now that black smoke ensued again. Two more jets made this time using a brand new 2.5mm drill. The bike, now, would only start and run with the air filter restrictor half shut. I actually set the carburetors up like this and bike runs very well with performance being good throughout the speed range.

It has been in these pages before but it is essential that you inform your insurer of any alteration to your bike. Having owned my present bike for 19 years, it has been in the same state for most of that time until last year when I decided it was time to put it back on the road after 5 years off. I bought the original bike from Peter Ballard in 1987 but as you have read before, it has changed a bit. I put on the road originally with a left hand sidecar and until I took it off the road 5 years ago it still had a left-hand sidecar. Cutting a long story short I bought, again via Peter, a complete right hand chair. Strangely, even the colour was right! As the bike was made in 1972 I was able to fit this chair to the bike, legally.



- | | | |
|-------------------------|--------------------------------------|---|
| 1 - Throttle Stop Screw | 13 - Gasket | 25 - Throttle Expansion Spring |
| 2 - Float Sinker | 14 - Plug | 26 - Carburettor Body |
| 3 - Float Chamber Cover | 15 - Idling Jet | 27 - Throttle Travel Limiter |
| 4 - Float Chamber | 16 - Air Cleaner Body | 28 - Carburettor Cover |
| 5 - Float | 17 - Air Cleaner Strainer | 29 - Spring |
| 6 - Filter Spring | 18 - Air-tool Ratio Adjustment Screw | 30 - Stop Lock Nut |
| 7 - Gasket | 19 - Idling Jet Atomizer Bolt | 31 - Nylon Spacer |
| 8 - Filter Spring | 20 - Atomizer | 32 - Throttle Side Piece |
| 9 - Fuel Filter | 21 - Nozzle | 33 - Idling Jet Air Channel |
| 10 - Main Jet | 22 - Adjusting Needle | 34 - Atomizer Air Channel |
| 11 - Plug | 23 - Throttle Needle Retainer | 35 - Channel Supply of fuel to atomising hole |
| 12 - Gasket | 24 - Throttle Body | 36 - Main Fuel Supply Body |

Being a little unsure as to the set up of a left hand drive outfit I looked in the old club magazines for clues but there are precious few, tons for right hand drive but virtually nothing for left hand drive. I set it up with 10mm toe in on the sidecar with the bike leaning away 'a bit' as a starting point. It seemed fine when I went for the MOT, I went a long way round to take in all sorts of roads. In fact it felt good.

Later, much later actually, after winter but that's another story, I was going out of the village when more or less without warning the outfit went left off the road onto the grass verge towards a ditch. Happily, at that very point the grass verge ended and the pavement started so I steered back onto the road. It felt for all the world like a rear tyre puncture, but it wasn't. I carried on, feeling a little nervous of course. All was well for a while but coming into the village from another direction one day it happened again. Luck was again with me as the dry stone wall I was heading for ended so back onto the road I steered and without stopping carried on home. On reflection, both instances occurred because the sidecar wheel hit a bump in the road. However, I journeyed to a local vehicle show one Saturday and used all the back roads, which should have been enjoyable but was certainly not. It felt like being on roller skates on a 30-degree slope in a strong wind, on ice. 30mph was the maximum believe me!

Drastic action called for. Past experience with left hand sidecars showed that solo they were great, but put a passenger in and the whole plot leans the wrong way and starts:

1. Breaking rear wheel spokes.
2. Pulling to the right all the time; to the extent of the right hand twist grip rubber coming off!

ANSWER: Spring the body, not the chassis. This I now did on my right hand chassis, replacing the suspension unit with an adjustable link. I have set it so that I can just remove the wheel without it fouling the mudguard. Next, set the bike so that with me sitting on it, the bike is vertical. The outfit is now absolutely marvelous, an unbelievable transformation. With a passenger (Not easy to find with a right hand chair) the handling is the same as riding solo.

Looking again through old C.O.C. magazines (From the 1970s) I came across a letter from a club member saying that the handling of his outfit with right hand chair was transformed when he reset the whole plot with the bike vertical with him sitting on it. The answer is out there somewhere whatever the problem!

The bike was running well but only with the air restrictor, or choke if you prefer, half closed. With it fully open you could not start the bike at all and if it did it would not run. As the bike was needed every day fiddling time was up for a while. The months went by during which I bought an elec-tronic ignition kit from 'Boyer Bransden' but didn't fit because the bike was in more or less constant use.

However, events gave a window of time where I could start fiddling again even though the bike was running well and starting first time every time. The first job was to fit the ignition and prove that it was set to the correct settings by using the bike for a week or so before working on the carburettors. Remember the golden rule; alter one thing at a time!

I modified the mounting plate for the points and condenser in the early 1990s and considering the mileage I must have done since then the points were the same set and looked quite good! But with electronic ignition, timing will not need checking again which is good considering access is not exactly easy!

- By the way, a hint to setting up the timing on the Boyer unit. It seems that on a standard installation (British bikes) the stator is in front of the rotor. On the Ural the rotor is in front of the sta-tor so even though the camshaft rotates anticlockwise you set the Boyer unit up via the clockwise timing mark. Confused? No need to be, quite simply the correct timing mark is the one before the in-ductive pick up (Going anticlockwise remember) coinciding with the fully advanced mark on the flywheel.

Back to the carburettors. Even with good running it was obvious that one cylinder was running quite rich while the other was quite weak. The rich one had the needle fully down but was still rich while the weak one had the needle fully up to make it richer but it was still a bit too weak. Are you following this?

First job, check the petrol levels in the float chambers by removing the top and the float, having made sure beforehand that the carburettors were in 'running' condition. The level in the rich carb was 6mm higher than in the weak carb! That is a lot. I was using a set of vernier callipers with a depth gauge on the end so I could be a bit accurate! The obvious next job is to check the brass floats for leaks, no problem there. So using a set of Weight Watchers kitchen scales (I knew I would find a use for them) I weighed the floats. The 'rich' one was 12 grams and the weak one was 9 grams! No wonder the petrol levels were differing by 6mm. It looks as though in the past someone had repaired the heavier float but of course solder is heavy, hence the difference.

Sorting through my assorted bits of carburettors I found two plastic floats from K38 carbs but overall they were shorter but could be made useable by using the K38 float chamber tops. Are you still following this?

The levels in the float chambers were now equal. Relative to 'official' level of petrol they may be a little out but not that much compared with the situation before.

Next job

Check the needles. These were as originally found in the carbs but I thought I would check them again. Needles are not easy to check as I found out last year. Measuring the diameter every 3mm or so and doing exactly the same with another needle and comparing the results needs better equipment than I have. However, as a go / no go comparison the following procedure works well. Mount the vernier callipers in the vice, lightly! (If you have three hands ignore this bit)

Set the callipers so that a needle will go through the parallel faces by 3mm. Then push the other needle alongside. They should stick out the other side by an equal amount. Then open out the callipers a touch more and try again. At all points the needles should stick out the other side by the same amount. Mine didn't! You can be correct in thinking that the rich carb needle was thinner than the weak one. Having found the floats to be different I was not expecting this at all!

I considered the chances of finding another K301 needle in my swag box to be a very remote possibility but the luck that deserts me in respect of the lottery and premium bonds was with me that day! Hiding under much grime was a needle that compared perfectly with the 'weak' needle. I am still trying to figure out where on earth it came from but I will not lose sleep over it.

The problem with altering carb settings on a motorcycle is the probability that the starting sequence will be different and a long learning curve lies ahead. Before part two of setting the K301s, the sequence was to turn on the petrol, flood the two carbs, turn on the ignition and one kick on the starter would have the bike going (Remember, of course, that the choke was half shut permanently) Cutting a long learning curve story short the sequence is now to shut the choke fully, turn on the petrol, flood both carbs, turn on the ignition, one kick will start the bike and then open the choke fully. I can almost believe this is how it is supposed to be!

(This ritual of starting bikes and cars based on early technology reminds me of the even worse ritual of flushing the old style toilets with the cistern mounted near the ceiling with a chain hanging down ending with a polished handle grasped in the foolish hope of achieving a first time flush. Many times these were outside, yes I am that old, with no electric light to add to ones coming woes. One short pull followed by a long one exactly two seconds later, or was it one long pull followed by two short ones? Every one was different and you could be trying for what seemed like hours trying to understand the mystery. Meanwhile panic was rising in that the resident spiders in such unspeakable outbuildings were about to pounce. Breaking the Enigma code must have seemed a doddle compared to flushing the bog) [ED: I believe that they were flushed with success!]

There are times when progress is a wonderful thing!

Anyway, back to the future. How does the bike run? Very well, it seems a lot smoother at 40 to 50 mph and sounds more subdued and 'happier'. All in all, a worth while exercise.

A bit for the newsletter / HV: In the Popular Flying Association Magazine (A mag for builders and flyers of homebuild aircraft) one of the professional inspecting engineers uses 'Pledge' aerosol polish on 'perspex' [Ed: a type of acrylic] windscreens. It seems that not only does it build up scratch resistance but also polishes out existing scratches over time! My bike screen was looking a bit 'milky' but 'pledge' is improving it slowly but surely. Remember where you read this tip first!

Phil Hardcastle