
# Ural (Урал) - Dnepr (Днепр) Russian Motorcycle Carburetors

## Part 7B: Setting Up K-63/K-65 Carbs

(see also Part 7: K-63 Carburetor and Part 7A- Pekar K-63 Carbs)

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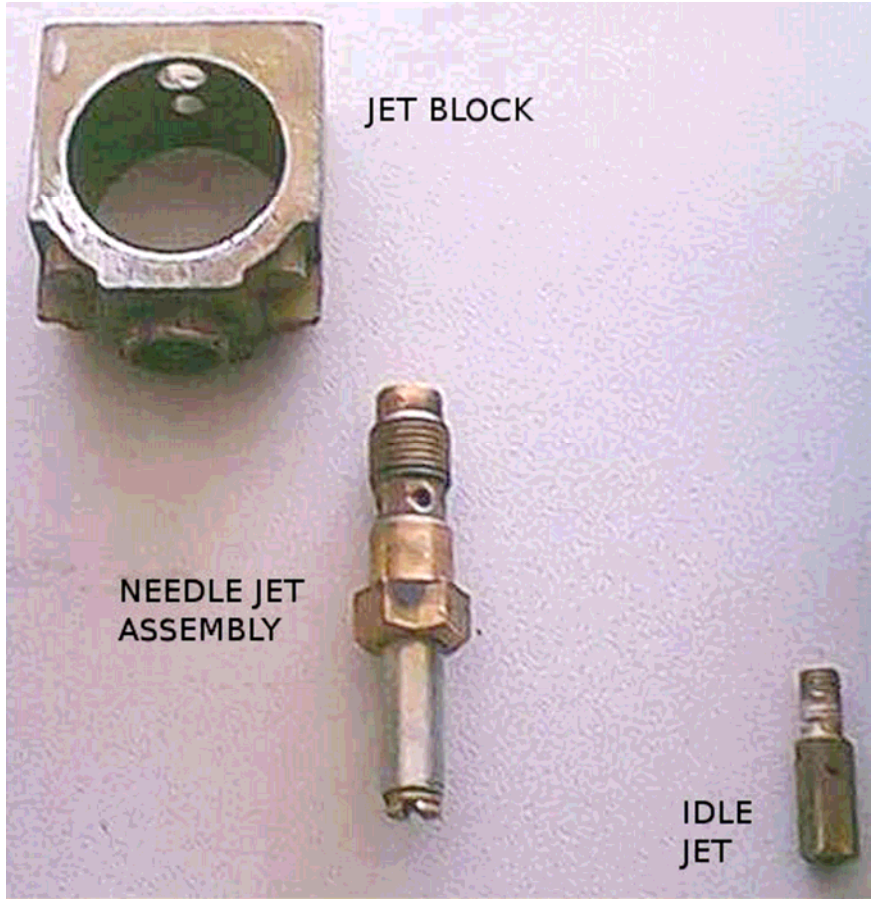
09/2012

# Setting Up K-63 Carburetors

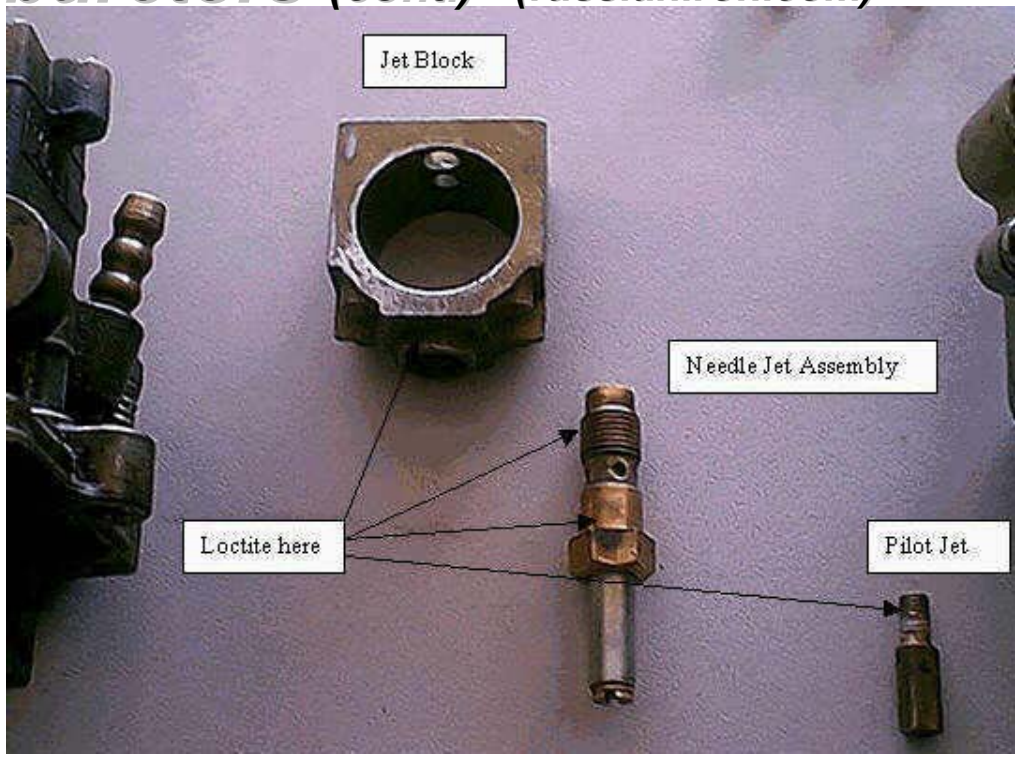
(http://russianiron.com/setting_up_k6365_carbs.htm)

- First Remove Carbs from Bike
- Carefully Dismantle One Carb and Lay-Out the Bits in Logical Order on Newspaper Sheet
- Clean Crud Out of Float Bowl and Blow Thru All Passages in Carb Body with Compressed Air
- Need Some Loctite Hydraulic Sealant (Ordinary Thread-Lock Appears to Work Too)
- Take the Jet Block (Square Block with Round Hole that Goes in thru the Top of Carb)
- Turn It Upside-Down and You'll See a Raised Ring with Threads in the Middle
- Put Thin Coat of Loctite Round the Outside of Ring and Place It in the Carb Ensuring That It Is Square to Carb Body
- Take Needle Jet Assembly that Screws in from Bottom of Carb into Jet Block
- Apply Thin Coat of Loctite to Threads and Under Hexagon
- Insert Needle Jet Assembly thru Carb into Jet Block and Tighten-Down
- May Have to Wedge Jet Block with Screwdriver to Stop Rotating Out-of-Square with Carb Body




**Loctite seals the emulsion chamber from any air leaks due to poor tolerances.**

# Setting Up K-63 Carburetors (cont.) (russianiron.com)




- Refit Main Jet, Choke Jet and Idle Jet, Also Using Loctite
- There Should Be A Little Black D-Shaped Washer under Idle Jet
- Washer Is Supposed to Lock Needle Jet Assembly in Place, which it never does. This can be safely binned.
- Install Float. The float needle has a tiny clear plastic ring on the end. THIS YOU MUST NOT LOSE! Next place the float chamber gasket on the face on the carb
- Next hang the needle from the float and lower it into its hole at the same time as lining up the float and spindle holes.
- Insert the float spindle.

- Now look at the horizontal line on the side of the float. This should be parallel with the top of the float chamber (The book says 13 mm from this line to the float chamber face on the carb body).
- The little brass tang on the float chamber should be CAREFULLY bent to make this so. The tang-to-float joint area is a weak spot and frequently leaks. As a precautionary measure it can be filleted with a small bead of epoxy resin.
- Sometimes the float legs are twisted so that you can only get one side parallel. In this case just average the difference.
- Now refit the float bowl checking that the gasket does not interfere with the movement of the float. If it does it should be trimmed.
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# Setting Up K-63 Carburetors (cont.) (russianiron.com)

- The next thing is to install the float
- Float needle has a tiny clear plastic ring on end
- THIS YOU MUST NOT LOSE! If you do you will have to buy a new carb repair kit and these are becoming hard to find. Apparently the float needle from a Briggs & Stratton lawn mower fits but I have not checked this so far
- Place Float Chamber Gasket on Face of Carb
- Hang Needle from Float and Lower It into Its Hole at Same Time as lining up Float and spindle holes
- Insert Float Spindle
- Look at the horizontal line on Side of Float
- This should be parallel with the top of the float chamber (The book says 13 mm from this line to the float chamber face on the carb body)
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# Setting Up K-63 Carburetors (cont.) (russianiron.com)

- Next check that both faces of the slide (flat-slide throttle valve) are parallel and there are no burrs on the top of the carb
- where the slide goes in. The long sides of the square hole that the slide fits into are frequently bowed. If you are feeling brave then mount the carb in a vice and use a broad brass drift and smallish hammer to gently tap them straight. Do not try for complete perfection here as the carb body may crack! Just make it so the slide goes in easily. If you have K-63 carbs check the length of the needle to the threaded plate at the top of the carb. Usually they are totally different. The base setting is that the plate should be 72 ±0.15 mm from the tip. I set it in the middle but if the motor feels lumpy I lower the needle a notch. Assemble the slide, spring and top of the carb and fit it into the top of the carb body. The cut-out in the slide goes toward the air filter side. Be careful not to put the needle in the wrong hole and don't use force. If you have to there is something wrong.
- Screw in the idle mixture screws in till they GENTLY seat in the carb body. These are the screws with the sharp points with springs over them. The base setting for these screws is 1-¾ turns out but experience has show me that Urals seem to like around 3 turns and Dnepr around 2 turns out. Final adjustment should be carried out once the engine is synchronized by using a Color Tune or a well practiced ear! I find that if you screw the mixture adjuster in till the engine just begins to miss and then screw until it just misses, count the turns between the two points then set it half way it usually works fine.
- Once you have both carbs done and fitted to the bike take a two 7 mm drill bits and place the so that the front of the slides traps them by there parallel sections. Next screw out the hexagon on the top of the carb so that the resistance when you gently draw on the drill bits. You should try for about the same resistance on both sides. This sets up the idle synchronization.
- Now open the throttle until the front of the slides are both just level with the top of the carb bore. If they are not they should be adjusted using the screws on the throttle cable. Reconnect the rubber trumpets, check the bike over and start it. The idle speed will be too high. Reduce it using the hexagonal screw on the top of the carbs, turning each screw one flat at a time.

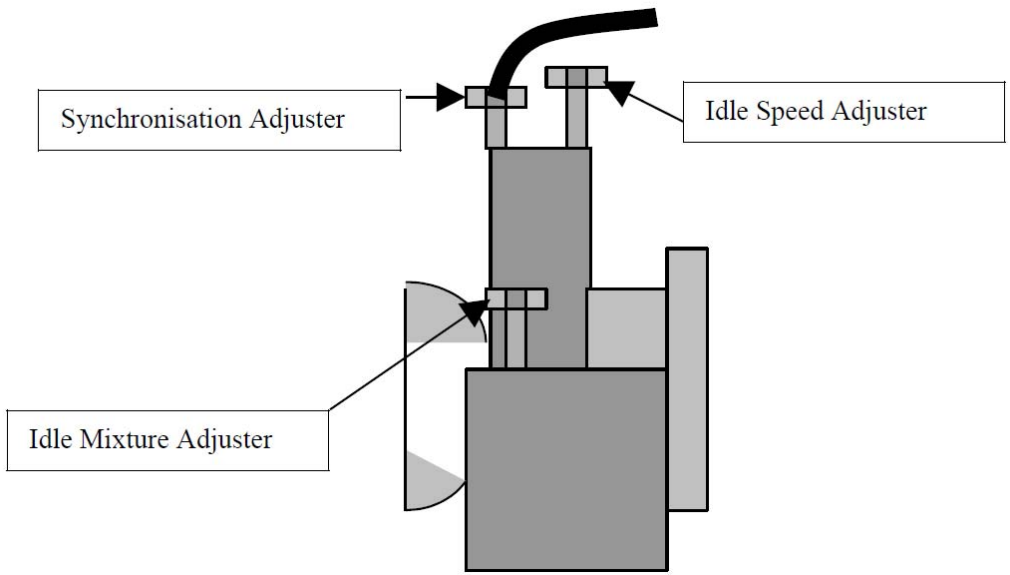
To finally set the carb balance the Ural book suggests a method shorting out each individual plug with throttle cracked open and the back wheel jacked up. I have never done this but it sounds the best way as it balances the engine by load not airflow, as is the usual way. Some people use a Twinmax and some outfit there bikes with take-offs for a vacuum gauge. These all work.

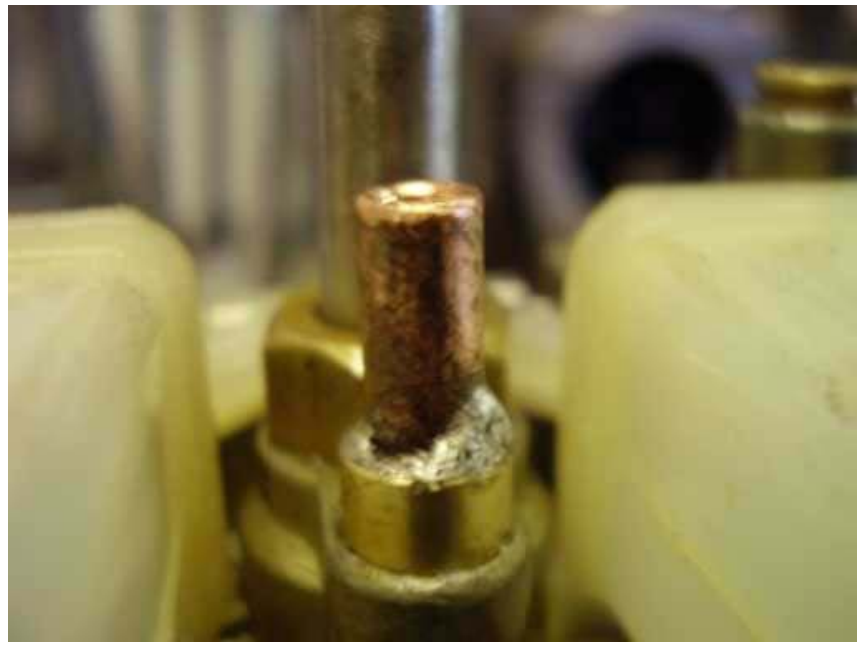
# Setting Up K-63 Carburetors (cont.) (russianiron.com)

- MORE TIPS
  - Some stuff I missed because I was in a hurry. The enrichment circuit plunger. There are two types of rubber seal on these. one is a single piece of tube and is OK. The other is made up of two rubber disks, 6mm in diameter if my memory serves me correctly. If you look at these disks under a magnifying glass you may find they have a criss-cross pattern on them. Mine certainly had. I used a hole punch to knock up some replacements from fuel resistant rubber. Then bored a 1mm hole in the middle. After doing this I had to make slight adjustments to the idle settings. I strongly suspect the rubber disks do not seal properly and allow fuel into the enrichment circuit under high carburetor vacuum. Also seal the enrichment jet using Loctite.
- K63/65 DIFFERENCES
  - The needle jet assembly from one type <u>cannot</u> be used with the needle jet from the other. The needle jet assembly on the K-63 is all brass and is stamped 278 (2.78 internal diameter). The corresponding needle is also brass and threaded for adjustment. The K-65 needle jet assembly has a steel insert and, on VERY occasional instances, may be stamped 265.The K-65 needle is steel and adjusted by moving a clip up or down.
- FURTHER IMPROVEMENTS
  - The standard main jet (#165 this refers to flow rate in cc/min.) is too rich for the Ural but fine for the Dnepr. I suspect because of the more tortuous inlet arrangement on the Ural. I did a little experimenting using a donkey exhaust system fitted with a lambda sensor from a fuel injection system. I found out that a type of Del Orto main jet has the same thread and fits like it was meant too. The part number is 1486.xx, were the x's denote the jet size in hundredths of a millimeter. My bike, with K-65s, ran smoother with 1486.100 jet. (This was with a 2 into 1 exhaust but the bike felt a touch weak when I fitted a 2 into 2 exhaust.) I was a bit fed up with not getting a good idle with the mixture screw at anything less than 2 ½ turns out. This far out means that the screw is on the limits of it's adjustment range. I decided to experiment with Idle jets. As Ikov jets are unobtainable I made some up using Dell Orto jets extended with short pieces of copper brake tube. I ended up with a 40 jet and the mixture screw out 1 ½ turns. As the idle jet feeds fuel into the engine throughout the range of throttle openings I decided to put a 105 jet in to compensate. The bike ran beautifully and MUCH smoother. It runs better round town also using less fuel in town. I will get round to trying this on a friends MT-11 over the next couple of months. I will try a 45 idle jet with a 110 main to start of with. I did try cutting 1mm of the bottom of the slide to richen the mixture as the engine came off the idle jet calibration and on to the needle jet calibration range. This was not a success.

# Setting Up K-63 Carburetors (cont.) (russianiron.com)

- *Indications were that the K-65 needle could be optimized further. I found an alternative set of needles in the Dell Orto catalog. At the moment I am experimenting with a V3 needle. This needle is the same length as the Ikov but the taper starts earlier than the K-65 but not as early as the K-63. The needle is also slightly fatter at the tip than a K-65 needle. I still have some experimenting to do to find out if it's worth the trouble of changing needles. My dynamometer says it is.*
- *One further experiment I carried out was to remove the strangler choke fitted to the Ural and replace it with some short 38 mm diameter stubs. These stubs had a 5 mm rounded flare at the entrance end, were 90 mm long and made from car exhaust pipe. My reasoning was that Dnepr do fine without them and I suspected that the long, thin slot in the choke was creating turbulence in the intake tract. This modification was very successful. The engine ran better everywhere in the rev range. I can go down to 40km/h in top and then accelerate without any drama.*



# *Setting Up K-63 Carburetors (cont.) (russianiron.com)*

- *My air-filter box is one of the Russian 'go-aster' oval metallic type that uses a cylindrical paper filter. This is less restrictive that the round plastic one filled with copped up fishing line. I do plan to fit a K&N type filter to the round plastic box and try that. There is a filter for a Stihl chain saw that looks like it will fit. I have previously tried with a filter meant for a Ford Fiesta but the crankcase breather contaminated the filter with water vapor. The Fiesta filter require removing all the contents of the round box where the Stihl filter will allow me to retain the inner part that shrouds the filter from the crankcase vapor. The middle tube will require removal though. I am also going to experiment with a cheap conical K&N style filter fitted to the tube in the original Russian box. The lid of the round Russian box also has to be raised or it causes a restriction.*
- *I have also heard on the grapevine of somebody involved with a rally team in the UK (Subaru?) who also installed an air jet as per Mikuni to good effect. My research in this direction has hit a dead end and my experiment was inconclusive. Can anybody help with any information on this modification? All in all I like these carbs as they are robust and tolerate abuse and maladjustment and still keep the engine running acceptably.*
- *I hope you got all this and find it useful. This is the way I do it and I can get my bikes so that I can read the car number plate behind me in the mirror.*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