MIKUNI MAIN JETS EXPLAINED
or
HOW I SAVED BIG BUCKS JUST BY LEARNING THIS STUFF

OK folks, here's the full meal deal on Mikuni main jets. This is from various sources gathered over the years. Read this carefully 3 times. It helps to have an example of each style of jet at hand when reading this explanation.

1) the "long (or large) hex" style main jet is known as the "Amal" style in Mikuni-speak. It's also Mikuni type 4/042. This style of jet has its fuel flow calibrated in the "wrong" direction i.e. from the threaded end through the orifice and out what we consider the inlet end. The number stamped on the jet corresponds to the number of cubic centimetres of gasoline which will flow through the jet when poured in the calibration direction from a height of 50 centimetres. Since the direction of flow during calibration is opposite to what the flow is during actual operation when installed in the carb, the OPERATIONAL flow rate does NOT correspond to the number stamped on the jet. The chart below bears this out. No, I don't know why they would do such a thing as having opposite directions for calibration and operational flows. Japanese inscrutability ?? Holdover from the way the Brits calibrated the original Amal jets ?? Take your pick.

2) the "button" or "slot" style main jet is properly known as the "reverse" style in Mikuni-speak. It's Mikuni type N100/604. The fuel calibration flow can be done from either side of the orifice. This also holds true for actual fuel flow volume when in operation in the carb. I assume it's called the "reverse" style because the calibration can be done in the reverse direction compared to the Amal style jet. Regardless of that, although none of the info I have specifically states so, you can PROBABLY ASSUME that the number stamped on the jet is the operational flow volume in cubic centimetres of gasoline as well as the calibration flow volume.

If you look carefully with a magnifying glass at both ends of the orifices in both styles of jets you will see marked differences in how the orifices are machined. You physics majors out there (and also the rest of us who have a less-than-perfect understanding of fluid dynamics) will immediately see that the Amal style jet has the capability of flowing much more liquid in the calibration direction than the reverse style can.

Keep in mind when reading the chart shown on the next page that the numbers for the Amal style are CALIBRATION flow volumes, while the numbers for the reverse style are calibration AND OPERATIONAL flow volumes. One can deduce from this that the flow volume in the OPERATIONAL direction of the Amal jet is FAR LESS than the flow volume in the CALIBRATION direction of that same jet, since both styles of jets are (more/less) exact replacements for each other.

INTERCHANGE CHART FOR MIKUNI MAIN JETS	
N100/604 (Reverse)	4/042 (Amal)
90	95
92.2	100
95	105
97.5	110
100	115
102.5	120
105	125
107.5	135
110	140
112.5	145
115	155
117.5	165
120	170
122.5	175
125	185
127.5	195
130	200
132.5	210
135	215*
137.5	225*
140	230
142.5	245*
145	250
147.5	265*
150	275*
152.5	285*
155	295*
157.5	310
160	320
162.5	335*
165	345*
167.5	360
170	370

The asterisk behind the Amal style jet numbers indicates that you can use 5 numbers higher or lower than the indicated number and still be in the range of its reverse style equivalent in the left hand column. This “adjustment” is necessary because even though the Amal style jet numbers shown are the EXACT FLOW EQUIVALENTS to the reverse style jets shown in the left column, Mikuni does not offer the Amal style jet in “half sizes” (i.e. XX5) above #200.

A Final Word Of Caution

Please note that there are differences in the threads between the two types of main jets. The jets are made with different threads to prevent exactly what you are trying to do....substituting one type of jet for the other type. The reverse (or slot or round style) jet can be screwed partially into a needle jet that is threaded for the Amal (or long hex) style jet but the reverse is not true. In other words, do not attempt to thread an Amal style jet into a needle jet that was originally fitted with a reverse style jet.
If you look carefully at any needle jet that you have, you will see two sets of numbers stamped on the body (assuming it's a genuine Mikuni needle jet):
1) the upper three digit number identifies which type of needle jet it is e.g. 159, 171, etc.
2) the lower two-character alpha-numeric identifies the size of the needle jet e.g. N–5, Q-3, etc.
There are other subtle differences in needle jets such as the overall length of the needle jet body and the length of the bottom shoulder.
Here is another table to help you understand what you can get away with and what you can't:

Needle Jet Type #	Normal Main Jet Style Used	Substitution With Other Style Jet Y/N ?
159	Amal (Long Hex)	Yes (see note below)
166	Amal (Long Hex)	Yes (see note below)
171	Reverse (Round)	No
176	Unknown	Unknown
183	Unknown	Unknown
188	Reverse (Round)	No
196	Reverse (Round)	No
205	Unknown	Unknown
211	Unknown	Unknown
224	Unknown	Unknown

NOTE:
Keep in mind that even though you may be able to partially thread a reverse style jet into the hole that once held the Amal style jet, you may have to shim or otherwise modify the needle jet body to make everything work correctly. Such modification should not be attempted by persons not thoroughly familiar with the complexities/dangers involved.

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