How to ID the stock Mikuni carbs used on the (K)Z650s.

This document is not intended to describe all possible carburetors that one might find on a (K)Z650 but rather a how to determine what the carbs are and especially what carbs were used stock on the (K)Z650s.

There were 2 basic types of Mikuni carbs that came stock on the 650s and there are visual differences that one can use to determine which type the bike has installed.

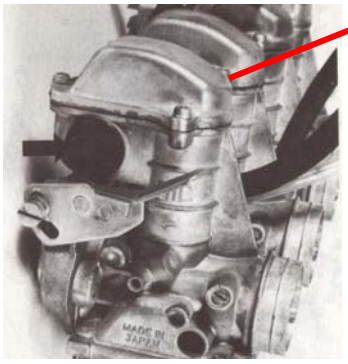
The first being, the mechanical controlled slide/needle frequently called VM or round slide type carbs. The slide/needle is moved via cables directly connected to the throttle grip. These were stock on all the models from 1977 through 1981.

The other type being pressure/vacuum controlled slide/needle frequently called CV (constant velocity or constant vacuum) type carbs. For the (K)Z650 CV type carbs used are Mikuni BS carbs. The slide/needle is not directly connected to the throttle grip, rather its movement is controlled by the pressure difference created in the carb throat as a butterfly, on the engine side of the carb throat which is connected to the throttle grip via a cable, is opened or closed. These were stock on all the models from 1982 through the end of the 650 production run in 1983.

The easy way to tell the difference between them is the CV types have a large round top and the VM types do not.

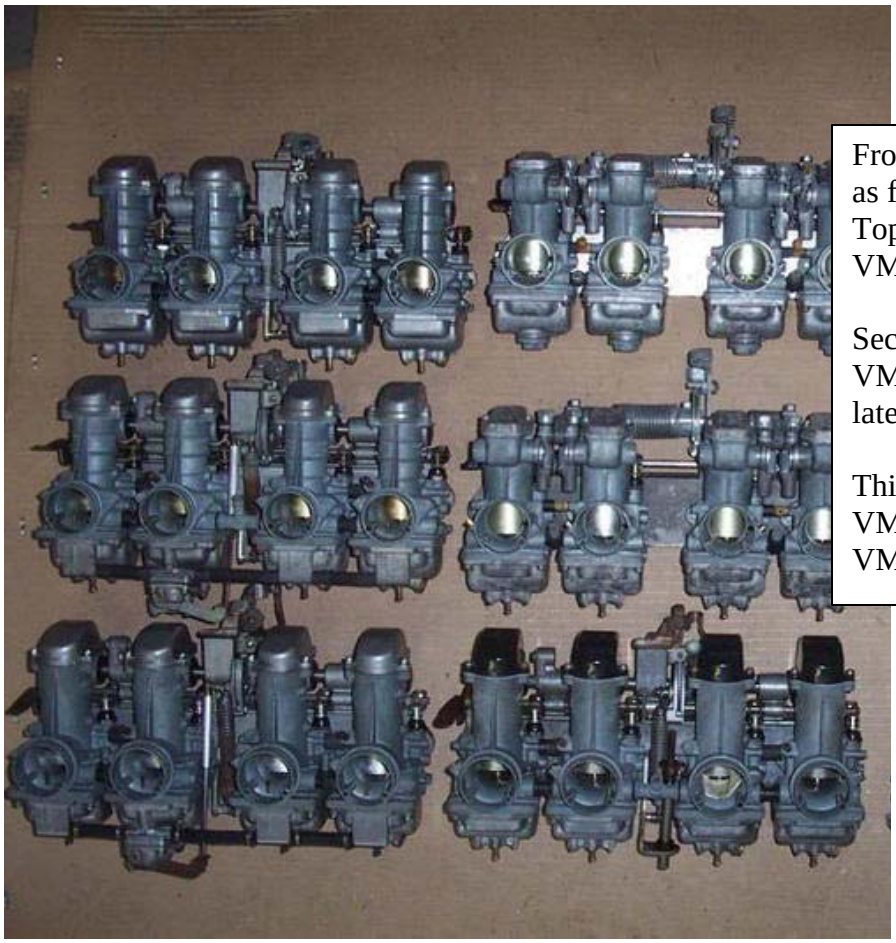


Note large round top on the Mikuni BS or CV type carbs



Note the non – round top on the VM or round slide style carbs

Ok you say but many of the Mikuni VM style carbs look somewhat similar as in the pic below which has vm22ss, vm24ss, vm26ss, vm28sc, and vm28ss carbs in it. But how do you tell which is which.



From left to right these carbs are as follows
Top row
VM22ss, early VM28sc

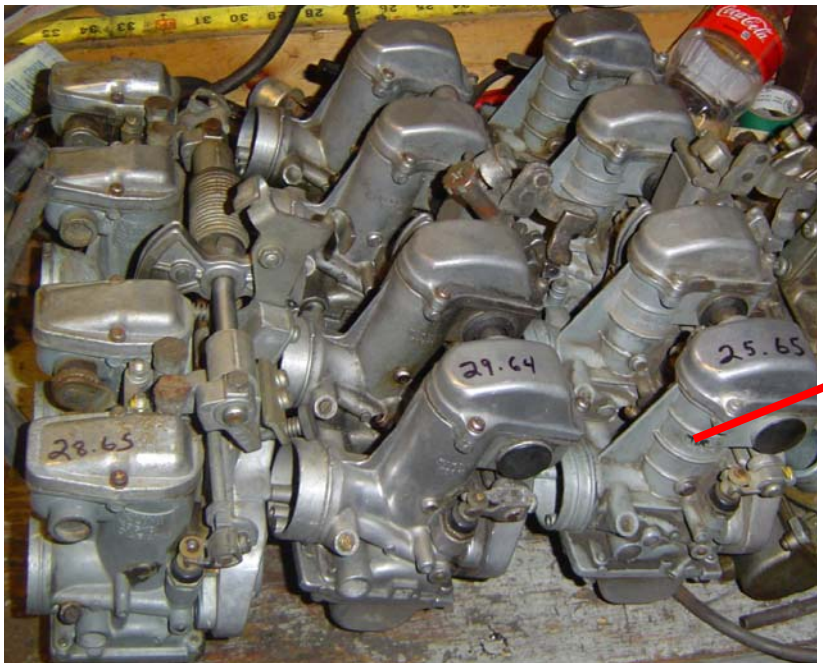
Second row
VM24ss with accelerator pump, later vm28sc

Third row
VM28ss with accelerator pump, VM26ss

At first glance they do all look somewhat similar, but there are differences between them that can be used to determine what carbs they are. First there are visual differences. The VM22ss and VM24ss carbs have ribs on the upper body the other carbs do not have. The SC type carbs have a flatter top cover with 2 screws and the SS type carbs have a taller top cover with 3 screws. The SC type carbs also have external sync screws while the SS style have internal sync screws.

There were only 2 different size VM carbs used stock on the 650s - vm22ss and vm24ss carbs. The number indicates the size of the venturi of the carb, either 22 or 24 mm. To measure them you need to do so where the slide meets the carb throat, not at the opening of air intake bell or at the exit of the carb into the engine. Both the Mikuni vm22ss and the vm24ss carbs have ribs on the upper part of the exterior carb bodies that the larger size Mikuni carbs (vm26, vm28, aftermarket vm29) do not have. So this is a quick way to determine if the carbs are 22s or 24s as opposed to the larger ones which may have been installed on the bike. The larger carbs were stock, other than the vm29ss, on the larger KZ bikes – the 900 and 1000s.

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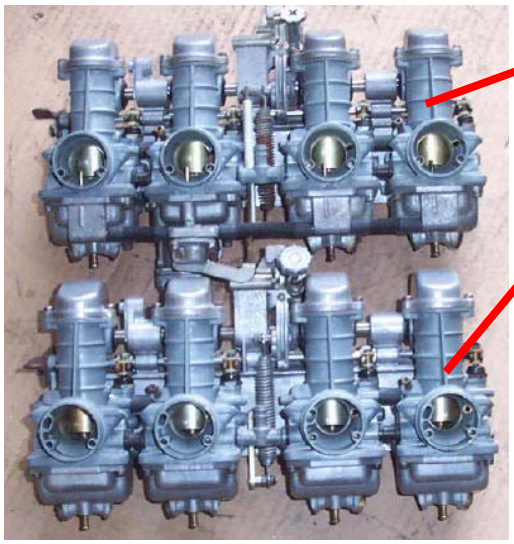
Here are 3 sets of Mikuni VM style carbs

From left to right they are sets of VM28sc, VM29ss and VM24ss carbs.

Note that only the VM24ss carbs have the ribs on the upper carb bodies. The VM22ss carbs also have these ribs.

The VM26sc and VM26ss as well as the VM28ss carbs do not have these ribs either.

The difference between the 22s and 24s can be determined via a look into the air intake side of the carb throat. The 22s have an additional oblong vent like opening at about 10 o'clock, as you look into the carb, that the 24s do not have.



VM24ss carbs – this set has an accelerator pump

VM22ss carbs

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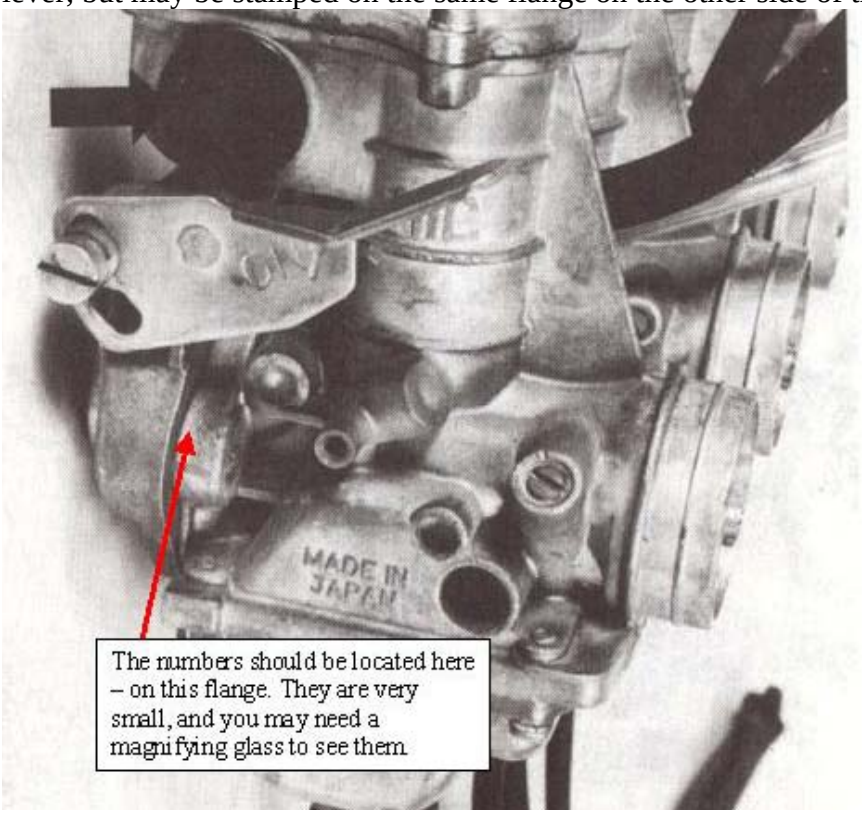
The VM24ss and VM22ss carbs look much the same from the outside. But the VM22ss carbs have an additional vent like port that the VM24ss do not have. In this picture the 24ss carbs are on top and the 22ss carbs are on the bottom

There are certainly differences between what the stock internal components of the 22s and 24s used. An additional difference that can help to ID the carbs, is that only the VM24ss carbs may have an accelerator pump. The pump was not used on the VM22ss carbs that were stock on the (K)Z650s. As far as I know the accelerator pumps were only used on US market bikes starting in the 1979 model year. Another possible difference is that the VM22ss carbs came with a pilot screw, while most of the VM24ss carbs came with an air screw. The very early VM24ss carbs which were stock on the B1 and some C1 models also came with pilot screw only. Having said that there were some carbs that came with both a pilot and an air screw, it appears that these types of carbs with both a pilot and an air screw were VM24ss carbs only. This is true of some 5400 bikes that came this way.

Frame #s of bikes that stock had VM24ss carbs with both a pilot and an air screw
1977 KZ650B1 KZ650B024641-026991 - 2350 bikes
1977 KZ650C1 KZ650C007751-010000 - 2250 bikes
1978 KZ650B2 KZ650B027901-028701 - 800 bikes

But the easiest way to determine what Mikuni carb you have is via the ID that is stamped on all of the sets used on the Kawasaki bikes. It is usually stamped just below the choke

lever, but may be stamped on the same flange on the other side of the carbs.



This ID will frequently be two lines of numbers and or letters. To the best of my knowledge they correspond to the second part of Kawasaki carb assembly part#. As an example the part# 16001-1020 (a vm carb) would be stamped as follows;
102
0- may or may not be some other letter(s) or number(s) after this

Like wise the part # 16001-1480 (a cv carb) would be stamped like this
148
0 - may or may not be some other letter(s) or number(s) after this

Again to the best of my knowledge this is true for all of the Mikuni carbs used on Kawasaki bikes from the early 1970s to mid 1980s. I know that the 26s and 28s used on the larger Kawasaki's certainly have these IDs stamped on them, though they are different than the ones stamped on the vm22's and vm24's. It is also true of the aftermarket 29's. I also know that the Mikuni carbs used on the Suzuki bikes also have IDs stamped on them - they are different than those on the Kaw's - those that I am aware of begin with a 4 for some reason. I would assume this is true of the Mikuni carbs used on other bikes as well, but have not researched this to date. So if you can get the ID stamped on a set of carbs with a little research you can determine what they are and what models they may have been stock on. This can be very useful when ordering parts or attempting to tune them.

How to ID the stock Mikuni carbs used on the (K)Z650s.

All of the CV type carbs that were stock on the (K)Z650s were Mikuni carbs and only the BS32s were used on them. This is unlike some of the (K)Z750s 4cylinder bikes, which as I understand it, some had Keihin CV style carbs and some Mikuni BS carbs. It would appear the main difference between the BS32 carbs used is dependent upon where the bike was intended to be sold. The carbs on the bikes for the US market are jetted leaner than those for other markets.

Below are the part #s for the VM style carbs used stock on the (K)Z650s – remember that the second part of the part # corresponds to the ID stamped on the carbs. Not sure what IDs are on the carbs with both air and pilot screws the one example I have some data on indicates they had both a 1020 and 272 ID on them.

16001-272 – vm24ss - pilot screw only
16001-1020– vm24ss – air screw only
16001-1022– vm24ss – air screw only
16001-1026 -vm22ss - pilot screw only
16001-1046 -vm22ss - pilot screw only
16001-1069– vm24ss – air screw only
16001-1084– vm24ss - accel pump – air screw only
16001-1208– vm24ss - accel pump – air screw only
16001-1401– vm24ss - accel pump – air screw only
16001-1417– vm24ss – air screw only

Below are the part #s for the BS32 carbs that came stock on the 82 and 83 (K)Z650s. Again remember the second part of the part # is the ID stamped on the carb.

BS32s
16001-1480
16001-1479
16001-1654