Engine Model	Jet Needle No. "E" Clip Position	Needle Jet No.	Throttle Valve Cutaway	Valve Seat	Idle RPM ± 200	Fuel/Oil Mixture
EC25PS07	5DT2-3	O-8 (169)	3.0 AL	1.5	1200	Variable Ratio/ Automatic Injection
EC34-2PM02/E02	5DP7-2	O-6 (169)	2.5 AL	1.5	1600	Variable Ratio/ Automatic Injection
EC44-3PM01	6DH7-3	P-4 (166)	2.5 CH	1.5	1600	Variable Ratio/ Automatic Injection
EC44-3PM02	6FJ6-3	P-8 (166)	2.0 CH	1.5	1600	Variable Ratio/ Automatic Injection
EC50PM04/E04	6DH7-3	P-8 (166)	3.0 CH	1.5	1600	Variable Ratio/ Automatic Injection
EC45PL02	6DH7-2	P-4 (166)	2.5 CH	1.5	1600	Variable Ratio/ Automatic Injection
EC50PL04/E04	6F9-3	P-8 (247)	2.5 CH	1.5	1900	Variable Ratio/ Automatic Injection
EC50PL06	6EJ26-2	P-6 (166)	3.0 CH	1.5	1600	Variable Ratio/ Automatic Injection
EC50PM03	6DH7-3	P-6 (166)	3.0 CH	1.5	1600	Variable Ratio/ Automatic Injection
EC45PL05	6DH7-3	P-0 (286)	2.0 CH	1.5	1500	Variable Ratio/ Automatic Injection
EC58PL02	6DH7-3	Q-2 (247)	2.5 CH	1.5	1900	Variable Ratio/ Automatic Injection
EC58PLE04	6DP17-3	Q-2 (166)	2.5 CH	1.5	1900	Variable Ratio/ Automatic Injection
EC58PL03	6DP17-3	Q-2 (166)	2.0 CH	1.5	1900	Variable Ratio/ Automatic Injection
EC80PL02	6CGY3-3	Q-0 (247)	3.0 CH	1.5	1600	Variable Ratio/ Automatic Injection
EC50PL07/08	EFI**	N/A	N/A	N/A	1900	Variable Ratio/ Automatic Injection
EC65PL05	EFI**	N/A	N/A	N/A	1900	Variable Ratio/ Automatic Injection

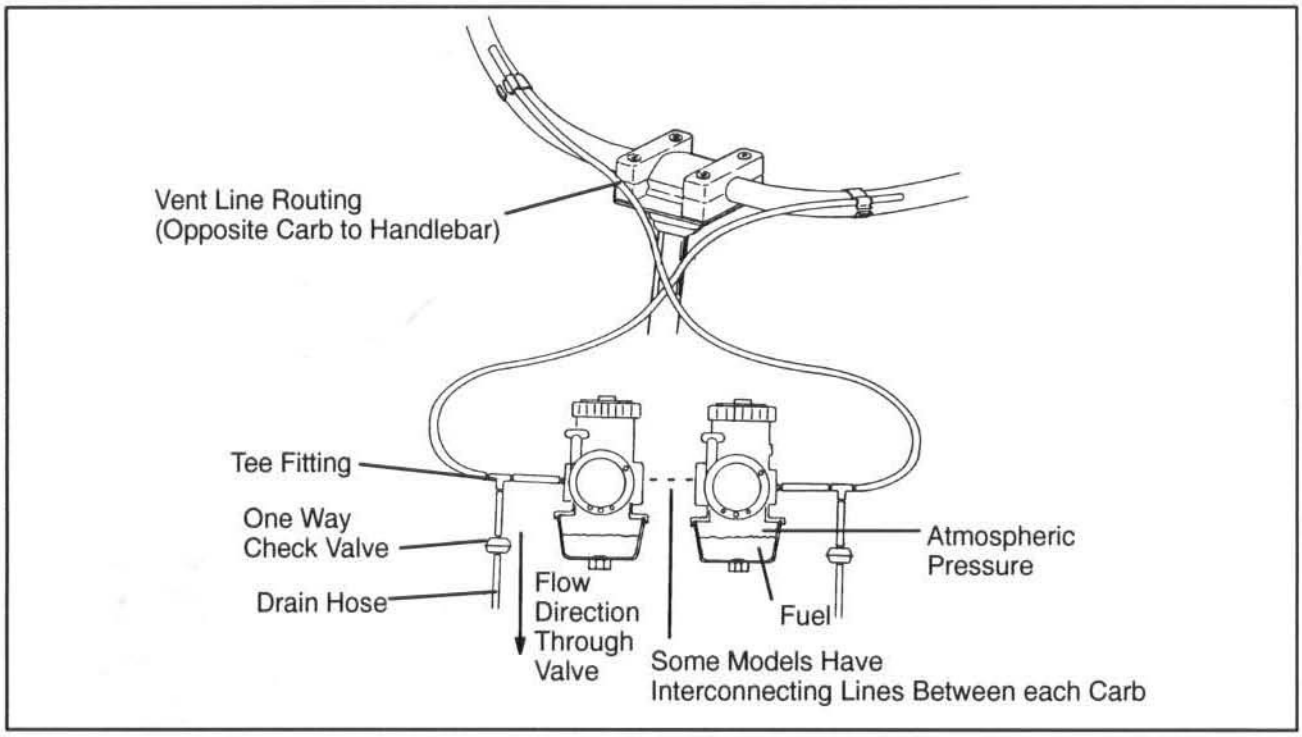
* T.B.I. (Throttle Body Injectors)

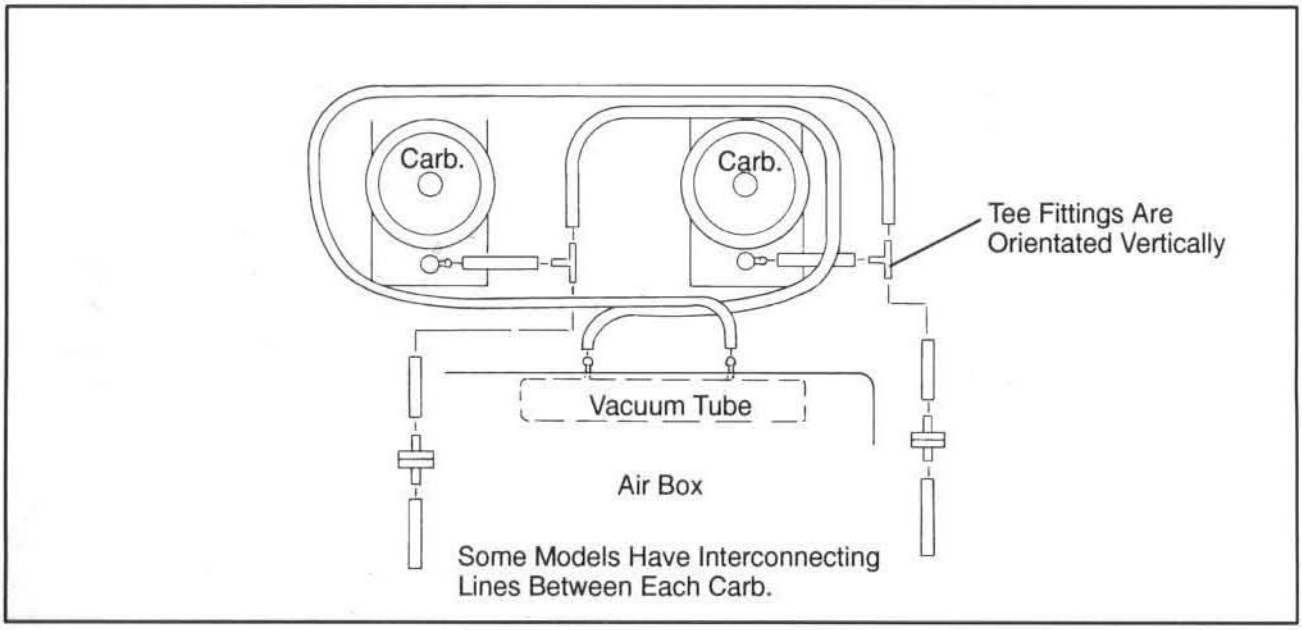
** E.F.I. (Electronic Fuel Injection)

Float Chamber Venting

In order to provide consistent fuel flow through the carburetor, the air pressure inside has to remain the same as the outside air pressure. For this reason, the float chamber is vented. It is very important that the vent lines are routed properly to the handlebars. Proper routing provides atmospheric pressure to the float chambers rather than high under hood pressure. If high pressure is introduced into the chamber it could push extra fuel through the jets, creating a rich running condition. In some cases high air pressure may not allow fuel to enter the float bowl, causing a lean mixture.

If the vent line is pinched or restricted, it can result in either a rich or lean condition, depending on how much fuel is present in the float bowl before the restriction begins. Generally speaking, if the fuel level is low to begin with, as fuel is trying to get in a pressure is built up inside the float chamber, not allowing fuel in. If the fuel level is high to begin with, low pressure can be created causing fuel to be siphoned in through the inlet needle and seat.

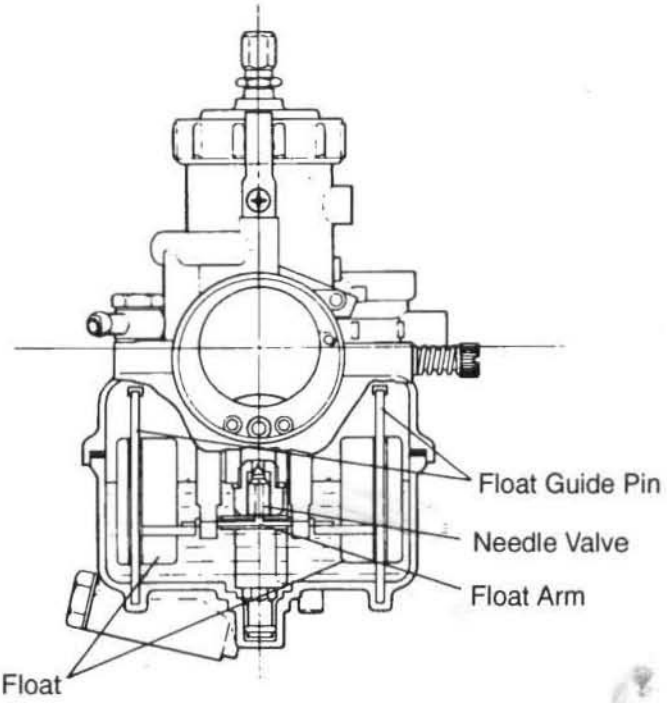




The function of a carburetor is to produce a combustible air/fuel mixture by breaking fuel into tiny particles in the form of vapor, to mix the fuel with air in a proper ratio, and to deliver the mixture to the engine. A proper ratio means an ideal air/fuel mixture which can burn without leaving an excess of fuel or air. Whether the proper mixture ratio is maintained or not is the key to efficient engine operation.

The engine of a vehicle is operated under a wide range of conditions, from idling with the throttle valve remaining almost closed, to full load or maximum output with the throttle valve fully opened. In order to meet the requirements for the proper mixture ratio under these varying conditions, a low speed fuel system, or pilot system, and a main fuel system are provided in Mikuni VM type carburetors.

The Mikuni carburetor has varying operations depending upon varying driving conditions. It is constructed of a float system, pilot system, main system, and starter system or initial starting device.



Float System

The float system is designed to maintain a constant height of gasoline during operation. When the fuel flowing from the fuel pump into the float chamber through the needle valve reaches the constant fuel level, the floats rise. When the buoyancy of the float and the fuel pressure of the fuel pump balance, the needle valve sticks fast to the needle seat, preventing further delivery of gasoline, thereby holding the standard level of gasoline.

The fuel level in the bowl controls the amount of fuel in the fuel mixture. Too high a level allows more fuel than necessary to leave the nozzle, enriching the mixture. Too low a level results in a leaner mixture, since not enough fuel leaves the nozzle. Therefore, the predetermined fuel level should not be changed arbitrarily.