

Carburettor Synchronising Tester.

General Description:

The Synchronising tester comes depending on the model with 2 or 4 dial gauges, which is connected to each cylinder to read the vacuum in each inlet manifold. The vacuum is negative pressure and depends on the butterfly opening in the carburettor. EG if the butterfly or slides are opened differently on the various cylinders it will result in a different reading on the gauges. As you get a reading of each individual carburettor you can establish which carburettor is giving a different reading and varies from specification. By turning the synchronising adjustment screws a balance between all carburettors can be achieved.

You can also establish a carburettor that might open the butterfly too early or too late. Badly synchronised carburettors can cause, bad idle, ineffective acceleration, poor top speed, high fuel consumption and therefore cause harmful emissions.

Assembly:

Fit the gauge onto the holder and secure it with the nut enclosed. Push the vacuum line through the adjuster wheel tube, above it fit the rubber sleeve over the vacuum hose and then push the vacuum hose onto the fitting in the bottom of the gauge. Fit the adjuster body with slight pressure on to the vacuum gauge fittings.

Take note that the threaded section for the adjuster screw points outwards with the ball into the bottom of the threaded section, and fit the adjuster screw loosely. By carefully turning the adjuster screw the ball reduces the inner cross section of the vacuum hose. This adjustment will steady the needle in the gauge when it is connected to a running engine at idle etc.

Connection

Have a repair manual handy. It is important to create a situation, in which the measurement can be taken. Locate the correct vacuum fittings in your manifold and eliminate any air leaks from any other vacuum hoses. It would also be described in the manual on how to handle the synchronising gauges and give the relevant details for your particular machine. In most cases it will be necessary to remove the tank. Enclosed you find some Y pieces that should assist with the fuel supply while the tank is removed. In any event a good flowing fuel supply to the carburettors has to be provided in order to proceed.

The vacuum hoses should be fitted depending on the make and model of the fittings provided by the manufacturer, normally between the carburettor and the cylinder head. Some models have a little tube in the inlet rubber, which is designed to take a vacuum hose for testing the synchronisation of the carburettors. The rubber cap needs to be removed and the vacuum line fitted. (When you have finished don't forget to put the rubber cap back on to the inlet rubber). For other threaded fittings please find enclosed various tubes and O rings.

These adaptors are used when the model of machine has threaded ports and requires a threaded adaptor. The threaded ports have screws in them that need to be removed, compare the screws you have with the ones with the adaptor kit provided and select the adaptor with the same thread as the screw that has been removed. Fit the adaptor tubes with an O ring. Bear in mind that the fittings have to be absolutely air tight, as any leaks will result in incorrect readings.

Before the engine is started the adjuster screws should be lightly tightened and only when the engine is started should the adjuster screws be opened, just enough to give an accurate and steady reading of the hand inside the gauge. Do not force the adjuster bolt shut as the ball could be pushed into the vacuum hose and therefore end up inside the engine.

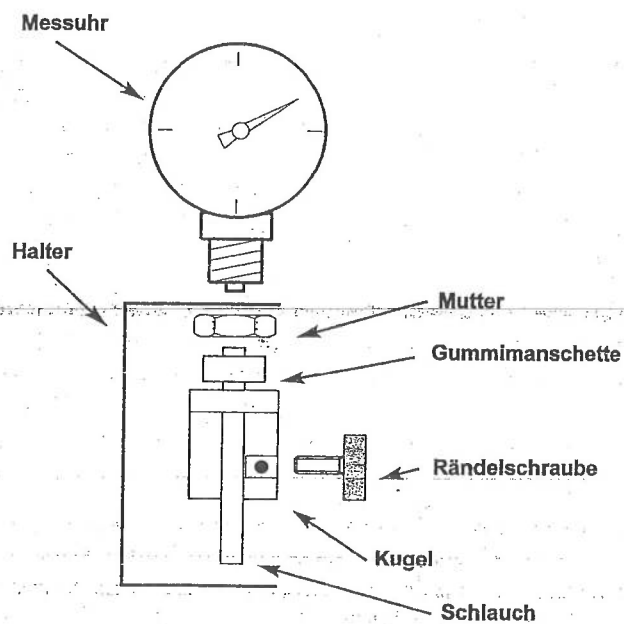
After the synchronising process it is important that the ports used to connect the vacuum hoses are properly and totally sealed. Otherwise the engine can draw air from other than through the carburettors and can lean of the engine and over heating could result, as well as bad idle and the symptoms discussed in the earlier paragraph.

Caution

To synchronise carburettors on an engine, it must be warm (operating temperature) have the correct ignition timing and carburettor adjustments to specifications, (EG) pilot screws, jetting and float level. Cam shafts to valve clearance to specification and in general good mechanical order. Consider that the wrong adjustments can lead to motor damage. Again, it is a must to use a workshop manual during this procedure. If you have any doubt in your ability to successfully perform the procedure described yourself it is recommended that you have the work performed by an authorised workshop.

German to English translation

Messuhr	=	Gauge
Halter	=	Holder
Mutter	=	Nut
Gummimanschette	=	Rubber sleeve
Rändelschraube	=	Adjuster screw
Kugel	=	Ball
Schlauch	=	Hose



German to English translation
By
Kingaroy Yamaha
2 Sawtell street Kingaroy QLD 4610