

## Rothewald® synchronous tester 10034216 / 10034217

### Description:

Depending on the version, the synchronous tester consists of two or four vacuum meters which are connected to the cylinders and measure the vacuum within the induction system. If e.g. the throttle flaps or the gas valves are opened to different degrees when running idle, the results will diverge. Since you are connecting a meter to each carburettor, you are able to identify the carburettor with the diverging vacuum. The carburettors can be synchronised by turning certain screws. You can furthermore determine which of the carburettors opens the respective throttle flap too early or too late. A malfunctioning throttle flap synchronisation leads to the following problems: erratic running, hesitant throttle response, reduced top speed, increased engine noise, high fuel consumption, and therefore more pollutants in the exhaust fumes.

### Assembly:

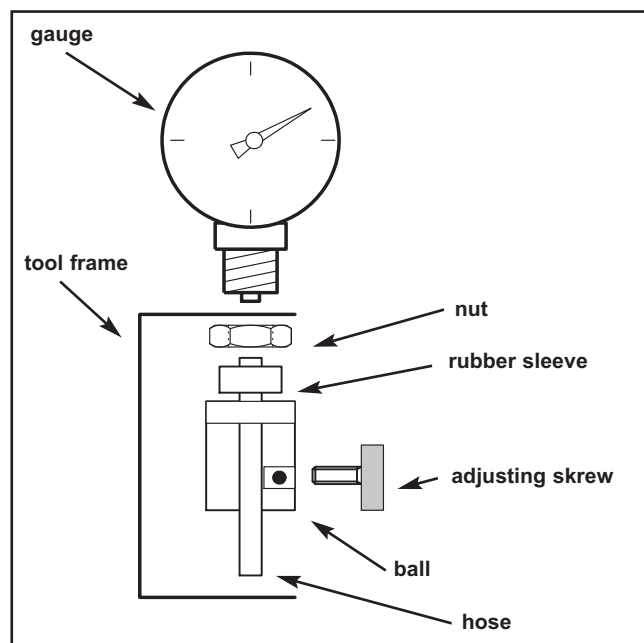
Fit the meter into the retainer and secure it with the enclosed nut. Now put the vacuum hose through the milled sleeve. The rubber sleeve is pulled over the end of the vacuum hose. The hose is then adjusted, pressed against the connecting piece of the meter and hand-screwed with the milled sleeve. This will clamp the vacuum hose. When seizing the milled sleeve, make sure that the tapped hole is facing the front. Now the ball is placed inside the tapped hole and the milled sleeve is loosely screwed in. By carefully turning the milled sleeve, the ball will narrow the cross-section of the vacuum hose. In this way the index pointers will be damped when measuring with the engine running.

### Connection:

Please refer to a repair manual. It is necessary in order to lay the foundations for the measurement. To localise the correct connections for the meters on the one hand, but also to close possible vacuum hoses and to observe other important details on the other hand. The repair manual furthermore contains information on the correct setting screws and on handling the synchronisation. With most motorcycles it is necessary to remove the tank. In order to enable petrol supply during the setting, hoses and Y-connectors are enclosed, which can be connected to the tank.

A separate fuel tank, which will considerably facilitate the handling of petrol supply, can be ordered via the order no. 10034110. Depending on the vehicle, in most cases the vacuum hoses are connected to the intake manifold between the carburetor and the cylinder head. In many vehicles, the intake manifolds already feature small tubes used for connecting the hoses. For this purpose a rubber sealing plug must be removed from the small connecting tube in many cases. The set also includes small adapter tubes and O-rings for different versions. They are used, if the vehicle does not feature connecting tubes, but tapped holes. The tapped holes are sealed with a locking screw which must be removed. Make sure that the threads of the small tubes correspond to the locking screws, before screwing in the tubes (with O-rings). Please note that the connection must be completely sealed, since

otherwise the vacuum would escape and the meters would display incorrect measurements. Before starting the engine, the milled screws of the damping must be slightly tightened and only opened far enough so that the pointers are still moving and a value can be read when the engine is running. Do not forcibly tighten the milled screws, because the small ball could get into the induction tract and therefore into the engine. After the synchronisation you must make sure that the sealing plugs or screws are once more completely sealed. Otherwise those induction air leaks will lead to weak fuel mixture and engine overheating.



### Attention:

Synchronisation is only possible with an engine at operating state temperature, the right ignition and carburettor settings, correct valve clearance and a mechanically flawless engine. Please consider that incorrect operation or settings can lead to engine failure. Use a repair or service station manual for these works. If you have any doubts concerning your technical skills, the settings should be carried out by an authorised service centre.