

On a motorcycle where fuel is supplied to the carburettor via a fuel pump, a needle valve of smaller size than the main jet is required because the boost pressure is much greater than the pressure head obtainable with the gravity tank.

To avoid the troubles which could be caused by excessive pressure produced by the pump ie. from flooding, it is possible to fit a two-way union to the carburettor thus permitting excess fuel to return to the tank.

However, it is advisable then to insert a restrictor in the return pipe which reduces the return flow, assuring an adequate supply of fuel to the carburettor still.

Different types of needle valve are available:

metal or viton-rubber-tipped, rigid or spring-loaded needle valve for different applications.

For carburettors for motocross, trials, etc, or for engines subject to strong vibrations, spring-loaded valves are required.

Needle valve assemblies are supplied individually packed and tested, so it is not advisable to interchange needles and seats with other different sizes and types.

Check the needle valves for leakage with a vacuum gauge (fig. 10), consisting of an air pump A and a mercury manometer B.

Connect the vacuum gauge pipe and the fuel union firmly and hold the carburettor in the position shown in the picture.

After having primed the air pump of the vacuum gauge by means of the cam C, you will see the mercury in the column rising due to the action of air compressed by the pump; if the mercury column tends to go down, check the complete fuel circuit for leakage; if the fuel circuit is in good working order, the pressure leakage is due to the needle-valve and therefore check it for wear or obstruction and, if necessary, replace it with a complete new assembly of the appropriate size and type.

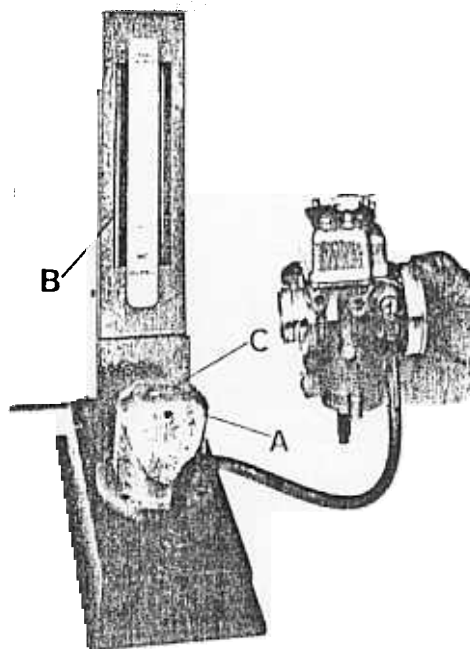


fig. 10

3.2.2 Selection of the float

The floats currently used are:

- **dual floats connected together** (figure 11)
- **floats with separate parts** (figure 12)

In the first type, the floats operate together, while in the second type they can move independently along two guides in the float chamber.

This latter type is particularly suitable for carburettors on racing motorcycles because it maintains a constant level even in the most arduous conditions of use.

Both types are usually available with two different weights:

- **a light float** to obtain a low level (for two-stroke engines)
- **a heavy float** to produce a higher level (for four stroke engines)

For all floats connected together and floats with independent parts, check the weight marked on them is correct and check that the first type is free to rotate on its pivot pin and is undamaged and that the second ones move freely along their guides and that the separate float arm is undamaged and is free to rotate on its pivot pin.

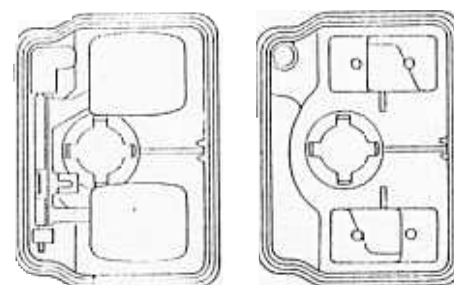
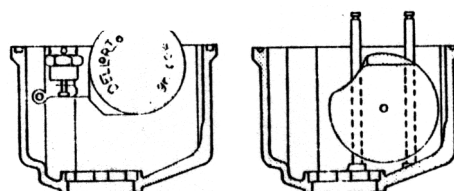


fig. 11

fig. 12