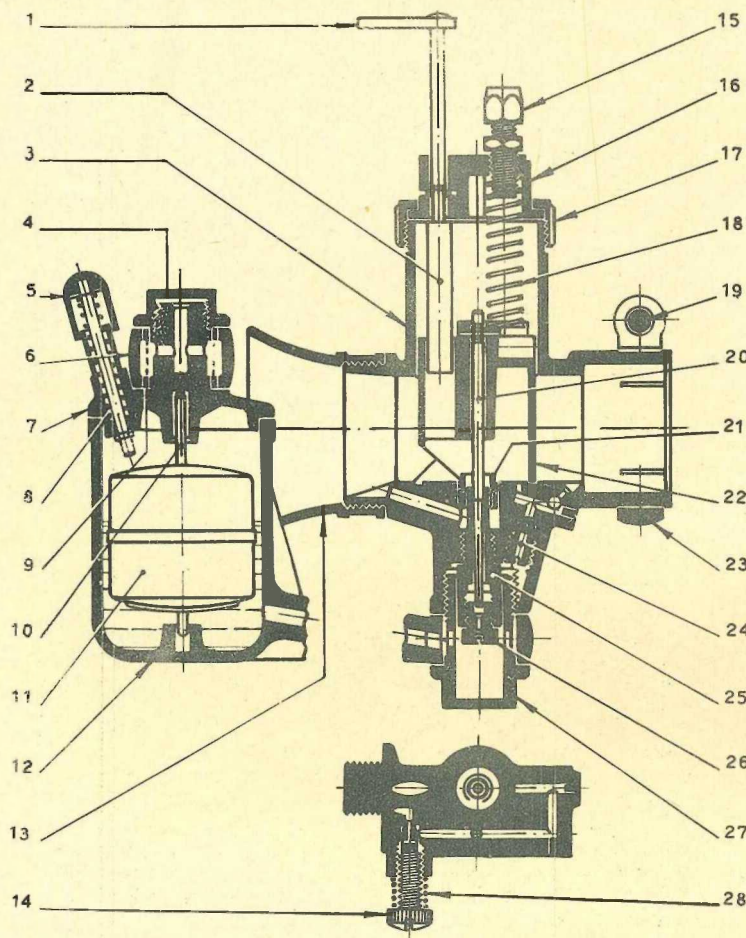


## INSTRUCTIONS FOR THE ASSEMBLY AND TUNING UP OF THE

# DELL'ORTO CARBURETTERS

### PART NAMES



- 1 Starter device
- 2 Air slide
- 3 Carburetter body
- 4 Banjo nut
- 5 Tickler
- 6 Banjo
- 7 Float chamber cover
- 8 Tickler spring
- 9 Fuel filter
- 10 Float needle
- 11 Float
- 12 Float chamber
- 13 Air intake
- 14 Air adjusting screw
- 15 Cable adjuster
- 16 Mixing chamber top
- 17 Mixing chamber cap
- 18 Throttle valve spring
- 19 Outlet clip screw
- 20 Needle
- 21 Jet choke tube
- 22 Throttle valve
- 23 Outlet clip
- 24 Pilot jet
- 25 Needle jet
- 26 Main jet
- 27 Jet holder plug
- 28 Spring for air adjusting screw

## INSTALLATION

See that the carburetter is assembled with the float chamber quite vertical with respect to the ground, and that it is in a forward position, as this aids a better flow of petrol to the jet when climbing and accelerating.

See that there are no air leaks at the point of attachment to the engine or through worn valve guides as this interferes greatly with its operation and with adjustment of the pilot system, as well as damaging the entire carburation.

See that the control cables are suitably arranged with no sharp bends.

See that the petrol pipe is sufficiently large to ensure feeding the carburetter, and that it is arranged with wide and downward curves so as to avoid the danger of the formation of air bubbles.

Ensure also that the tube can be fitted without forcing as it is liable to break if forced.

See that when the engine is running the temperature of the carburetter is not excessive (normally from 30° to 50°) in order that evaporation harmful for good working of the carburetter is avoided.

In order to prevent this, place isolating washers of hard material (e.g. fibroid, vulcanised fibre etc.) between the engine head and the carburetter.

Where it is not possible to do this, try to move the carburetter further from the cylinder head by lengthening the connecting pipe.

### STARTING

Turn on the petrol tap, turn off the starter, lower the float tickler two or three times, open the gas lever for about 1/4 of its run, put the magnet control lever in a half-way position, run the engine and let it warm up for a few minutes, after which the starter may be raised.

When starting with a hot engine, the starter and float tickler should not be touched in order to avoid too rich a mixture from flooding the engine, thus making starting difficult.

### ADJUSTMENT AND RUNNING

#### Regulation of pilot system (see fig. 1, part A)

The regulation of the pilot system should always be done on a warm engine.

In order to do this there are two screws, one for regulating the closing of the throttle and the other for regulating the pilot air flow. The latter regulates the strength of the mixture which forms at the exit of the pilot jet.

In this connection it should be remembered that by tightening this screw the intake of air is reduced and the mixture is consequently enriched, while if it is unscrewed the mixture is weakened. Proceed as follows in order to achieve a correct adjustment of the jet:

- 1) Set the first screw which controls the valve opening so as to achieve a fairly quick pilot jet.
- 2) Adjust the second screw, which is the one for the air flow, so as to make the engine run as regularly as possible (if it races this means that the mixture is rich - if there is a tendency to stop or stutter the mixture is thin).
- 3) Next work alternatively on the first and second screws until the correct mixture combination is found so as to achieve the correct and desired pilot jet.

In general, the air flow screw is loosened from a half to two turns starting from being fully tightened. If the screw must be completely tightened in order to keep the motor running, this means that the pilot jet is too small, while if it is necessary to loosen it for more than two turns, the pilot jet is too big. Once the pilot is adjusted, if on opening the gas control slowly the engine tends to falter or stop, this means that the mixture is too thin. In this case the air flow screw must be slightly tightened until the weak point disappears.

## DRAWING SHOWING THE VARIOUS WORKING STAGES

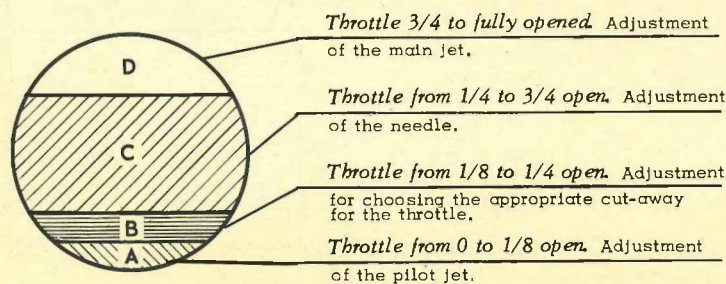


Fig. 1

### Adjustment of the passage (see fig. 1 part B)

Having achieved a satisfactory pilot jet, the throttle suitable for the intermediate runnings is chosen. It has a more or less high cut-away and this is marked by its own number printed on the throttle itself corresponding to so many tens of mm.

The following conditions must be observed in order to check and find the exact size of this throttle:

- 1) If, on gradually opening the throttle for a distance about equal to part B, the engine runs regularly, this means that the throttle is suitable.
- 2) If on the contrary the engine falters or backfires due to weak mixture, this means that the throttle fitted has too high a cut-away and one of the next size smaller must be substituted for it.
- 3) If the engine gives off black smoke from the exhaust or explodes irregularly or runs heavily, this means that the throttle has too low a cut-away and one of the next size bigger must be substituted for it.

The «passage» may also be checked with the starter; with the valve 1/4 open, if by lowering the air slide by a few millimetres below the cut-away of the throttle itself, the engine at once begins to race or give irregular explosions, this means that the mixture is already rather rich and that the throttle has too low a cut-away.

Viceversa, if the engine falters or stutters and by lowering the air slide it returns to normal running, this indicates that the mixture is weak and that there is a throttle which has too high a cut-away.

If, however, the engine does not react to the introduction or not of the air slide, this means that the mixture is correct and that the throttle is right.

### Adjustment of the needle (see fig. 1, part C)

It is advisable to make this adjustment on the road, regulating the throttle as shown in fig. 1 part C. Here again the usual checks must be made using the same method as for checking the «passage».

If the mixture seems to be weak, the needle must be moved upwards one or two grooves passing, for example, from the second to the third groove so as to allow a bigger flow of petrol at the exit of the needle-jet. If, instead, the mixture appears to be rich, the opposite must be done and the needle lowered by a few grooves.

(We numbers the grooves starting from the top with the following numbers 1.a, 2.a, 3.a, 4.a, 5.a).

### Adjustment of the main jet (see fig. 1, part D)

This adjustment is always done on the road. It is included roughly in the last quarter of the throttle opening, part D in fig. 1 where the maximum influence of the jet is always felt. It is mainly here therefore that adjustment must be made following the same method used for controlling the passage in order to decide if the jet is too small or too large, as follows:

1) If when the gas is fully turned, on the engine begins to turn over with difficulty and, instead of increasing in speed, it does not change or even loses and the engine tends to backfire, and if by slightly closing the air slide a distinct improvement in running is noted, this indicates too thin a mixture for too small a main jet. In this case it must be replaced by one of the next size up until the one which gives the correct result is found.

2) If by turning the gas full on, the engine gives a muffled sound from the exhaust and emits black smoke and if, by only slightly lowering the air slide the defect increases, this indicates too strong a mixture in which case the opposite measures must be taken to those applying in the previous case.

## MAINTENANCE

In order that the carburetter may always be in good working order, perfect mechanical efficiency must be maintained to which end the following rules must be observed:

a) **Maximum cleanliness:** From time to time dismantle the whole carburetter and give it a thorough washing with petrol in all its component parts. If compressed air is available, it is advisable to blow through all the channels and holes, but if this cannot be done a copper wire must be passed through them so as to ensure perfect cleanliness. Re-assemble the whole with care making sure that each part is in its right position.

b) **Good preservation:** When the carburetter is dismantled carefully check the state of all component parts and especially of the following:

a) **Throttle valve** - See that this runs well in the mixing chamber and if it seems excessively loose due to heavy wear replace it with a new one. If signs of wear in the mixing chamber are noted, such as to prevent a normal seal or free running of the throttle (even if new), have the body of the carburetter smoothed at one of our Service Stations, and then have a larger throttle fitted.

b) **Needle** - See if the needle shows obvious signs of wear along its conical part, or in the fixing grooves, caused by long use or maltreatment and, if there is doubt, it should be replaced with another of the same type.

c) **Needle jet** - A periodical check should be made on the state of preservation of the calibrated part where the needle enters. This check is made at our Service Stations where with special plug gauges it can be found out if it still corresponds to the printed size on the hexagon of the needle-jet. If it is found to be bigger, or in the event of doubt, it must be replaced by a new **original** one of the same enumeration.

N.B. - It should be borne in mind that a correct consumption bears a direct relation to the state of preservation of the needle and the needle-jet.

d) **Main jet** - See that the jet is never tampered in its calibrated hole with the idea of readjusting it, and even more important, that it is never allowed to have a wire passed through it which is not much finer and of a soft material. This is in order to prevent widening which would result later on in increased consumption and faulty carburation.

In case of doubt the main jet should be replaced with a new and original one of the same number.

e) **Pilot jet** - The same rules as those given above apply to this jet.

f) **Constant level float chamber** - The good working of this part of the carburetter is essential for correct carburation and to achieve this, the following parts must be given a periodical check over:

1) **Float needle** - See that the conical part of the float needle is always in good condition. If signs of wear are visible have it changed at once.

2) **Float needle seat** - Check that this is not worn or has not deteriorated at the point where the float needle stands. If it is, have it replaced.

3) **Float** - Ensure that this is not weighed down by any infiltration of petrol due to maltreatment, and that its means of attachment to the float needle is fully efficient. If it is worn, have it replaced with a new and original one.

g) **Air cleaner and petrol filter** - In the case of carburetters fitted with these accessories, it is advisable to inspect them often and take them down for cleaning, bearing in mind that an air cleaner impregnated with dust is the cause of an increase in consumption and in loss of power.