

Main Jet Size

The ideal jet is the smallest size which gives the greatest maximum speed, always remembering the need to ensure that the engine does not overheat. There is very little danger of this with your Spitfire since the 260 main jet fitted as standard at the Factory gives an accurate gas supply for all normal conditions.

It will never be so far away from that which is ideal as to be likely to cause any serious problems.

If you feel that you may gain some advantage in absolute maximum speed by fitting a larger jet then you will need to accurately check the performance of the machine over a measured distance stepping up the main jet size progressively from 260 to 270, 280 and so on. It would be extremely unusual for you to require a main jet size in excess of 280.

Having decided upon the jet which gives you the maximum performance it is wise to check to ensure that the operating conditions within the cylinders are correct. To do this take the machine up to maximum speed and hold this for as long as possible before instantly closing the throttle, pulling in the clutch and stopping the engine. Coast to a halt and examine the plugs. They should show a smooth black appearance on the plug bottom and the centre insulation should retain its natural colour. If the mixture is too rich a sooty deposit will form on the bottom of the plugs and if it is too weak the end of the plugs will appear to be white. This condition of weakness, if extreme, may lead to serious mechanical trouble if the machine is ridden for prolonged periods with this main jet fitted.

Never try to carry out main jet tuning on a public highway!

Pilot Adjustment

Before attempting to set the pilot air adjuster you should ensure that the engine is at its normal running temperature, otherwise a faulty adjustment is possible. This could upset the correct selection of the throttle valve. Unlike standard Amal carburettors the GP.2 instruments have no positive throttle slide stops and the limit of travel on the throttle slides is controlled only by the cable and the carburetter body. Before doing any pilot adjustment ensure that the throttle slides both begin to lift at the same time when the twist grip is turned. If one slide starts to open before the other you will be able to correct this by simple adjustment of the cable on top of the carburetter bodies.

Start the engine and set the throttle by means of the twist grip until an engine speed of approximately 1,000 r.p.m. shows on the tachometer. Detach one of the plug leads and then adjust the pilot air adjuster which is rotated clockwise to richen the mixture and anti-clockwise to weaken it, until the adjustment giving the highest r.p.m. reading on the tachometer without moving the twist grip is achieved. Screw the adjuster inwards until fractional reduction in engine speed occurs. Replace the first plug lead detached and remove the other from the cylinder which has already been adjusted, repeat the pilot adjustment on this cylinder and reconnect the second plug lead. This should now give you satisfactory engine idling. As you become more expert you will find it possible to tune the GP.2 carburettors with both cylinders working. Try it—the sequence of adjustment is the same.

Throttle Cut-away

Having set the pilot adjuster, open the throttle progressively and notice the position where, if at all, the exhaust note becomes irregular. If this happens leave the throttle open at this position and close the air lever slightly. This will indicate whether the spot is rich or weak because if it is weak closing the air slides slightly will correct it. If it is a rich spot it will only get worse.

Correct a weak spot by fitting throttle slides with a smaller cut-away number and a rich spot by throttle slides with a higher cut-away number.

With the careful calibration that has been done on the instruments fitted to your Spitfire it is unlikely that you will find a need for change but it is as well that you should know what to do in case you either live or ride in an area where there are some unusual conditions which make the standard setting unacceptable.

Jet Needle Position

Tuning the pilot adjustment and throttle cut-away will effect the carburation up to somewhere over quarter-throttle and after this the jet needle becomes the most important aspect of further tuning. You will remember that earlier in this booklet you learnt that the jet needle is suspended in the throttle valve and, therefore, the two can be accurately inter-related to control mixture at medium openings. You should test for rich or weak spots in exactly the same way as you did for that part of the range which is controlled by the throttle cut-away and if you find a spot at which the carburation is not acceptable to you then you should use the air control lever to decide whether