

TROUBLESHOOTING

Air leaks

Air leaks between cylinder head and carburettor will cause erratic slow running. Check the engine carburettor mounting flange has no signs of distortion, and ensure the correct sequence of gaskets are used on inlet manifolds as per manufacturers recommendations. Also check carburettor flange O ring is correctly seated.

Air filters

Ensure Air filter element is clean. A dirty or clogged air filter will cause rich fuel mixture and poor engine performance. Aftermarket filters may also require main jet adjustment from OEM settings. Running engine without air filter may also require jet adjustments from manufacturers OEM settings.

Float level

Wassell carburettors are fitted with an adjustable float as standard, and float level can be fine tuned by bending the stainless steel tabs. Correct fuel level parameters will be factory set between 4.3mm to 6.3mm from top of float bowl (a float level of plus or minus 0.040" 1mm from top edge) The float level may require fine tuning when fitted to individual machines depending on carburettor inclination.

Fault finding - Rich mixture

Symptoms

Rich mixture at full throttle
Rich mixture at 1/2 to 3/4 throttle
Rich mixture at 1/4 to 1/2 throttle
Rich mixture at 1/8 throttle

Remedy

Fit smaller main jet
Lower throttle needle height (raise clip)
Fit throttle slide with larger cutaway
Screw out pilot air screw

Fault finding - Weak mixture

Symptoms

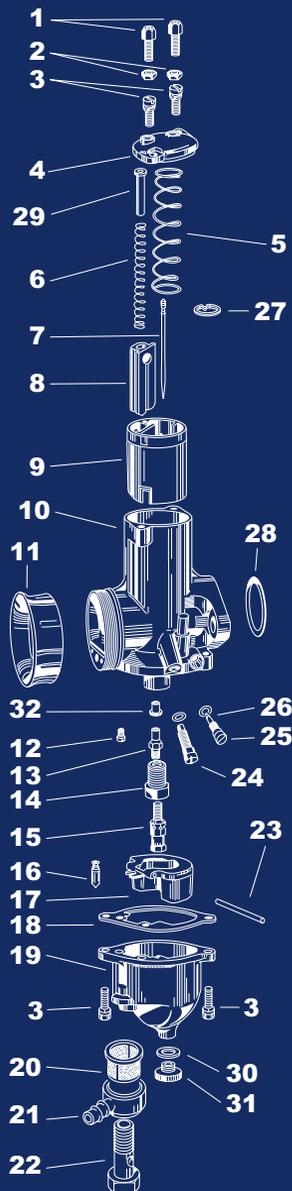
Weak mixture at full throttle
Weak mixture at 1/2 to 3/4 throttle
Weak mixture at 1/4 to 1/2 throttle
Weak mixture at 1/8 throttle

Remedy

Fit larger main jet
Raise throttle needle height (lower clip)
Fit throttle slide with smaller cut away
Screw in pilot air screw

6 & 9 SERIES CARBURETTORS

- 1 Top cable adjuster
- 2 Cable adjuster nut
- 3 Top securing screw
- 4 Mixing chamber top
- 5 Throttle slide spring
- 6 Choke valve spring
- 7 Throttle needle
- 8 Choke valve
- 9 Throttle slide
- 10 Carburettor body
- 11 Air tube
- 12 Pilot jet
- 13 Needle jet
- 14 Jet holder
- 15 Main jet
- 16 Float needle
- 17 Adjustable float
- 18 Float bowl washer
- 19 Float bowl
- 20 Fuel filter
- 21 Single banjo
- 22 Banjo bolt
- 23 Float spindle
- 24 Throttle stop screw
- 25 Pilot air screw
- 26 Sealing O ring
- 27 Needle clip
- 28 Flange O ring
- 29 Choke valve guide
- 30 Drain plug washer
- 31 Float bowl drain plug
- 32 Spray tube



Fitting instructions for Wassell 6 & 9 SERIES CARBURETTORS



88mm

90mm

95mm

FITTING INSTRUCTIONS FOR WASELL 6 & 9 SERIES CARBURETTORS

FITTING HINTS AND TIPS

Re-Assembly

When replacing throttle slide & choke valve after fitting control cables, take great care to ensure the throttle needle enters in to the needle jet/ main jet.

Also check both throttle and air valve springs locate correctly in the carburettor top.

Cables

Check the control cables are correctly adjusted with no backlash between inner/outer cable. When fitted ensure both throttle valve and air valve both operate to fully open and closed positions without restriction.

Petrol feed

When fitting a new carburettor, check fuel flow from tank is not restricted in any way. Fuel tap filters can often become blocked by debris inside the fuel tank, which will restrict flow. Another good tip is to bleed fuel pipes by momentarily turning on fuel supply and once you have flow to the carburettor banjo, connect the fuel pipe. This will often help purge the system of air locks

Starting from cold

Turn on the fuel tap depress tickler to flood float chamber, close air valve and open throttle slightly to start engine. When engine starts, close throttle and open air valve. If engine falters you may have to partially close air valve until engine reaches temperature, then set air valve to fully open position.

Starting engine hot

Open throttle and start engine, flooding float chamber and use of air valve should not normally be required when engine is at working temperature.

TUNING

Main jet

The main jet controls fuel supply when the throttle slide is more than three quarters open. Although the fuel passes through the main jet at lesser throttle openings, this is metered by the needle/needle jet. Each main jet is stamped with a calibrated number system, the higher the number the greater the flow rate through the jet.

Main jet tuning

If engine performance seems sluggish at full throttle position the main jet is too large (reduce jet size), If closing the throttle slightly increases performance then the main jet is too small (increase jet size). Mixture can be checked by examining the spark plug electrode. Run the engine at full throttle under load, declutch and stop engine quickly, coasting to a halt if necessary. Now check spark plug colour.

If the centre electrode is grey in colour, this indicates weak mixture (increase main jet size). A black and sooty appearance on the electrode indicates rich mixture (reduce main jet size). Using a rolling road set up with exhaust gas analysis is recommended. This will ensure the correct air fuel ratio adjustments across all throttle opening positions can be made, and ensure optimum performance is achieved.

Needle & needle jet

The tapered throttle needle allows more fuel to pass through the needle jet, as it is raised by the throttle slide. Moving the needle clip position will affect the needle position in relation to the throttle slide, increasing or decreasing fuel flow. Needle jet size can also be changed by fitting a larger or smaller needle jet as these have a calibrated flow scale, the larger the number the greater the flow rate through the jet.

Needle & needle jet tuning

The needle and needle jet control a wide area of throttle openings (1/4 to 3/4 opening). Mixture can be adjusted by either raising the throttle needle position to richen mixture (lower needle clip), or by lowering the needle position to weaken mixture (raise needle clip).

If the required mixture adjustment cannot be made by making throttle needle adjustments, increase or decrease needle jet size until the required mixture is achieved.

Pilot jet

Fitted to Wassell two stroke carburettors only (four stroke range have bush metered pilot system), jets use a calibrated numbering system. The higher the number the greater the flow through the jet. Slow running mixture can be altered by changing jet size, if there is not sufficient adjustment on the pilot screw.

TUNING

Pilot jet tuning

Set tick over using pilot air screw (see pilot air screw tuning). Pilot jet controls slow running mixture up to 1/4 throttle opening, and is only fitted in two stroke applications in the Wassell carburettor range. If engine hesitates or spits back through carburetor when the throttle is opened quickly, this indicates a weak mixture (increase pilot jet size). If engine runs heavy, in effect four stroking, this indicates a rich mixture (reduce pilot jet size).

Pilot air screw

Pilot air screw is used for slow running adjustment. Both pilot air screw and throttle stop screw are fitted with O rings to hold the required setting via friction in the carburettor body.

Pilot air screw tuning

Ensure the throttle slide is shut down on to its stop screw. Now adjust stop screw until engine starts to falter. Screw pilot air adjusting screw, until engine speed increases to a fast idle speed. Now carefully adjust throttle stop screw until a satisfactory idle speed is achieved. Blip throttle and re check idle speed. This may take a couple of attempts to find a satisfactory tick over.

Throttle valve

The throttle slide cut away increases or decreases the air flow over the main fuel supply (needle and main jets), and thus gives a means of fine tuning mixture between pilot system and needle jet and main jet openings. A larger number slide cut away will increase air flow over the jets and weaken mid range mixture, a lower number slide cut away will richen fuel air mix at partial throttle openings.

Throttle valve tuning

Throttle valve cut away can only be adjusted by changing throttle slide (higher number indicates more air flow). If your engine spits and hesitates when pulling away, first try to richen the pilot mixture by screwing in the air adjusting screw. If this is not effective, screw it back in and fit a throttle slide with a smaller cut away. If the engine runs erratic and does not spit back through carburettor (exhaust may also show a puff of black smoke) mixture is too rich. Lower throttle needle position. If mixture is still too rich then fit a new throttle slide with bigger cut away.

Engines fitted with twin carburetors

Check both throttle slides are seated on their throttle stop screws in the shut off position. Both throttle cables require equal amounts of backlash. Check and adjust cable adjusting screws, so both cables are synchronized, and throttle slides both open simultaneously. Check any inlet balance tubes and manifold gaskets have no visible air leaks, as this will affect mixture set up. All other set up operations are as described in tuning notes.