

*MINNOW CARBURETTORS are Developed and Manufactured by:-*

## MINNOW FISH CARBURETTORS LTD.



MINNOW HOUSE, LOCHGILPHEAD, ARGYLL

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### ***Trouble Shooting or Snag Sheet***

1. **Hesitation on Acceleration.** This may be caused by four different things: low fuel level in float chamber; dirt under feather valve in chamber plate; lack of ignition advance; or full throttle mixture adjustment too lean.

A. **Low Fuel Level.** This level may be checked by removing sight plug from float chamber. Fuel should be level with the bottom of the sight plug hole. If you find that the level is too low, check your fuel pump pressure. If it is less than  $2\frac{1}{2}$  PSI you should replace it with another pump. If this doesn't do the job, the lobe on the camshaft must be worn and you need an electrical fuel pump. In some cases the level can be raised by adding solder to load the float, or slight bending of float arm.

B. **Dirt Under Feather Valve.** After you make sure fuel pump pressure is at or above  $2\frac{1}{2}$  PSI check for dirt or a sticking feather valve. Do this by running engine at idle to establish correct fuel level, turn off ignition, open throttle quickly. If feather valve works properly petrol should squirt out of the holes in the throttle shaft. If it works properly check spark advance. If it doesn't, remove float chamber, take out brass chamber plate and inspect feather valve. The feather valve should be free from dirt and set somewhere between, but not touching, the chamber plate and the feather valve guard. It should also cover the hole in the chamber plate completely when closed. If it is touching the guard or plate, re-set it by inserting a knife blade between valve and the side it touches, twisting the blade slightly. If it doesn't cover hole completely, loosen screw and turn valve until it does cover hole. Tighten screw, re-assemble Carburettor and try again.

C. **Ignition Advance.** After checking fuel system and you still have hesitation, check to see if your distributor is advancing according to spec. with a timing light or distributor machine. You may find that your centrifugal advance is sticking; that your vacuum spark advance diaphragm is broken; or that your initial ignition setting is retarded. Correction of any of these factors should solve your problem. The majority of hesitations are caused by ignition troubles of some sort!

D. **Full Throttle Mixture Adjustment Too Lean.** This can occur only if Carburettor has been leaned down on wide open throttle. Back out full throttle mixture adjusting screw  $\frac{1}{4}$ th turn at a time until hesitation disappears.

2. **Hard Cold Starting.** This may be cured by first pumping accelerator once or twice before trying to turn engine over. If this fails check for leaks around float chamber. If engine is still hard to start, check ignition system.

3. **Hard Hot Starting.** This is generally caused by too high fuel level. Check fuel level by removing sight plug from back of float chamber. Fuel level should be even with bottom of sight plug hole. If it is not too high check fuel pump pressure at idle. If pressure is over 3 PSI you can bring level down by slight bending of float arm.

Make sure any re-routed fuel pump to Carburettor line does not pass close to car heater hose, water pump casting or exhaust manifold. This may cause vapour lock.

4. **Flooding.** This is caused by leaky float, bent hinge or dirt under fuel needle valve. Remove float chamber, hold float against needle valve and shake next to ear. If float has leaked you should be able to hear petrol sloshing inside float. If not, check for scratch marks on float where it might be rubbing or hanging up on some part of chamber or chamber plate. If no marks are visible, check for dirt in bottom of float chamber. If you find some, you need a fuel filter. You generally can purchase them locally.

5. **Poor Mileage or Economy.** This may be caused by incorrect adjustment, too high fuel levels. (See Hard Hot Starting) or icing. As stated before, the Carburettor has been dynamometer adjusted for almost all engines. In some cases, this adjustment may not be right for your engine. In this event, the Carburettor should be adjusted as follows :

- A. Attach vacuum gauge to intake manifold.
- B. Disconnect accelerator linkage from throttle arm.
- C. Start engine, run till it is warmed up to operating temperature.
- D. Remove throttle stop screw spring. Run screw in against stop until engine is running at approximately 2,000 RPM (throttle open approximately 1/4 of full travel).
- E. Set idle air bleed  $\frac{1}{2}$  turn out ( $\frac{1}{4}$  on 1.55 bore models).
- F. Loosen throttle (Butterfly) locking screw so that throttle will turn on shaft.
- G. With arm held steady by throttle stop screw, tap throttle valve lightly to open or close it until you get a maximum reading on vacuum gauge. You will find a range of several degrees through which the throttle can be turned without any drop in vacuum. In order to obtain most economical operation you should be on the lean side of this range. To find the lean side place a finger or point (ball point pen is ideal) over the centre hole and readjust to maximum vacuum. Remove finger and see if your vacuum has dropped any. If it has, try adjusting again with your finger over the hole. When you get Carburettor adjusted so that it pulls same (maximum) vacuum with hole closed or open it should be exactly right for economy.

H. Re-tighten throttle screw and readjust idle.

5a. On some cars, where insufficient hot spot area is provided, rough running and black exhaust smoke may occur, usually in cold or damp conditions. This is caused by icing and may need the use of a Minnow Electric De-icer (state 6 or 12V.) On some cars such as VW, Jaguar, Peugeot, etc., a de-icer is an essential in winter. On some others they may be advisable.

6. **Drag.** This is caused by dirt becoming lodged between arm and pad. Remove float chamber and chamber plate. Blow out arm chamber with compressed air, turning throttle lever and compressing throttle lever spring at same time.

7. **Too Rich at Wide Open Throttle.** Remove throttle adjusting screw plug with car on chassis dyno and with Carburettor wide open turn throttle adjusting screw in clockwise until engine loses power. Back off (turn counter-clockwise) one full turn (1 flat or so on  $1\frac{1}{4}$ " bore models). This should set flow for maximum power.

If you cannot obtain the use of a chassis dyno, adjust screw with engine not running. This will require several trials and road tests. Run screw down one turn at a time (or 1 flat on  $1\frac{1}{4}$ " bore models) to begin with. Road test car. Try one more adjustment on screw. Repeat until engine definitely loses power. Back off until full power returns.

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