

**SECTION N**

**CARBURETTOR**

**TWO-CYCLE ENGINES**

## VICTA 3F &amp; 3L CARBURETTOR

Victa Two-cycle engines are equipped with the Victa fixed jet type carburettor which depends on some restriction in its air supply to function correctly. The restriction is achieved by having the air filter outlet designed to deliver the correct amount of air. The size of the outlet is dependent on the snorkel length.

Construction of the carburettor is shown in the exploded view (Fig. N9).

**DISMANTLING THE CARBURETTOR.**

1. Move the petrol tap to the "OFF" position.
2. Remove fuel line from the carburettor.
3. Unscrew the carburettor snorkel clip screw and remove the snorkel tube.
4. Loosen the clamp screw and remove the carburettor.
5. Remove the clip from the top of the carburettor and remove the throttle slide assembly.
6. Unscrew the lower float bowl screw and remove the float, bowl rim washer, and lower float bowl washer.
7. Remove main jet from inside the jet block using a wide screwdriver to avoid damage to the jet orifice.
8. Unscrew the two small guide screws on the side of the carburettor and remove jet block and jet block washer.
9. Turn float lever to one side and take out fuel needle.
10. Remove the fuel inlet nipple and fibre washer.

**To re-assemble,** reverse the above procedure, taking care that the cutaway section of the throttle slide faces the snorkel tube, and that the lower guide screw engages in the notch on top of jet block.

When refitting to the cylinder, ensure that the fibre washer and insulator are fully seated in the

carburettor body. On no account assemble carburettor with insulator sleeve on the cylinder stub. Later models have one-piece nylon insulator.

On occasions when it is necessary to dismantle the carburettor it is as well to check the float level. This should be adjusted so that the top of the float, when held parallel with the bottom of the carburettor body, is  $\frac{3}{16}$ " from the body (see Fig. (N7)). Adjustment is made by setting the curved fingers of the float lever.

To remove the fuel cut-off seat, use a No. 2 "Easy Out" inserted in the bore of the seat. Turn anti-clockwise to remove.

When replacing a fuel cut-off needle seat, insert the new seat in the carburettor body and tap down with a small hammer until the top of the seat is level with the bottom of the carburettor body. Remove any burrs from inside the seat bore with a small triangular scraper.

When cleaning the carburettor, take particular care to clean the jet block thoroughly, especially

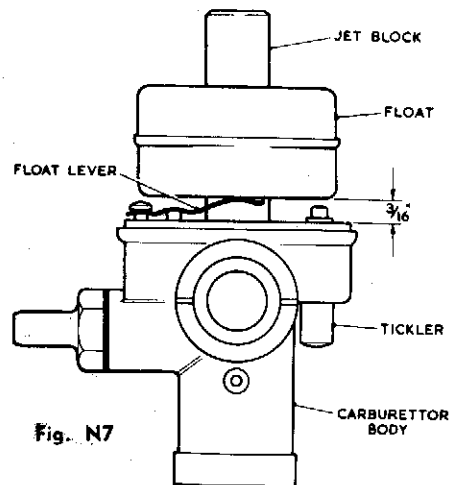


Fig. N7

in the emulsion chamber. (This is the area between the main jet and the top jet. See Fig. N8.)

Make sure the small jet hole in the jet block is not choked. Also, clean the main jet.

### JET BLOCK MODIFICATION: 3L & 3S CARBURETTORS

If over-oiling of spark plugs, excessive discharge of oil from the muffler, or other symptoms of over-rich running are apparent in an engine equipped with either of these carburetors, it is advisable to check the drilling of the compensating intake hole in the carburetor jet block.

The illustration shows a vertical section through the jet block, Part No. CR03017A.

In some jet blocks the short horizontal section of the compensating intake is drilled  $\frac{5}{64}$ " and in some the hole size is  $\frac{3}{32}$ ". Under certain conditions the  $\frac{5}{64}$ " drilling will cause the carburetor to run rich. The trouble can be overcome by opening it out to  $\frac{3}{32}$ ".

When drilling the  $\frac{3}{32}$ " hole, be sure not to break through into the emulsion chamber; this would completely spoil the jet block.

The long vertical section of the compensating intake hole is always drilled  $\frac{3}{32}$ " diameter.

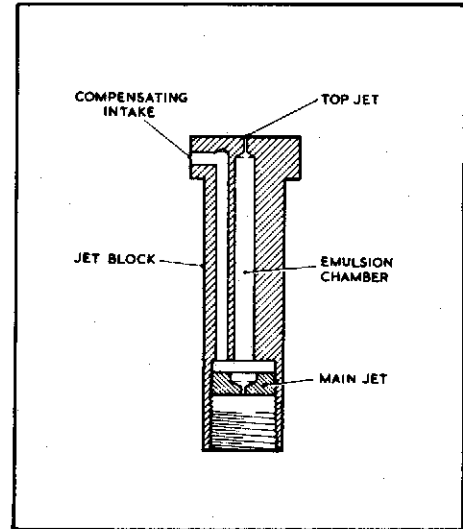


Fig. N8

### VICTA CARBURETTOR ASSEMBLY—3F & 3L

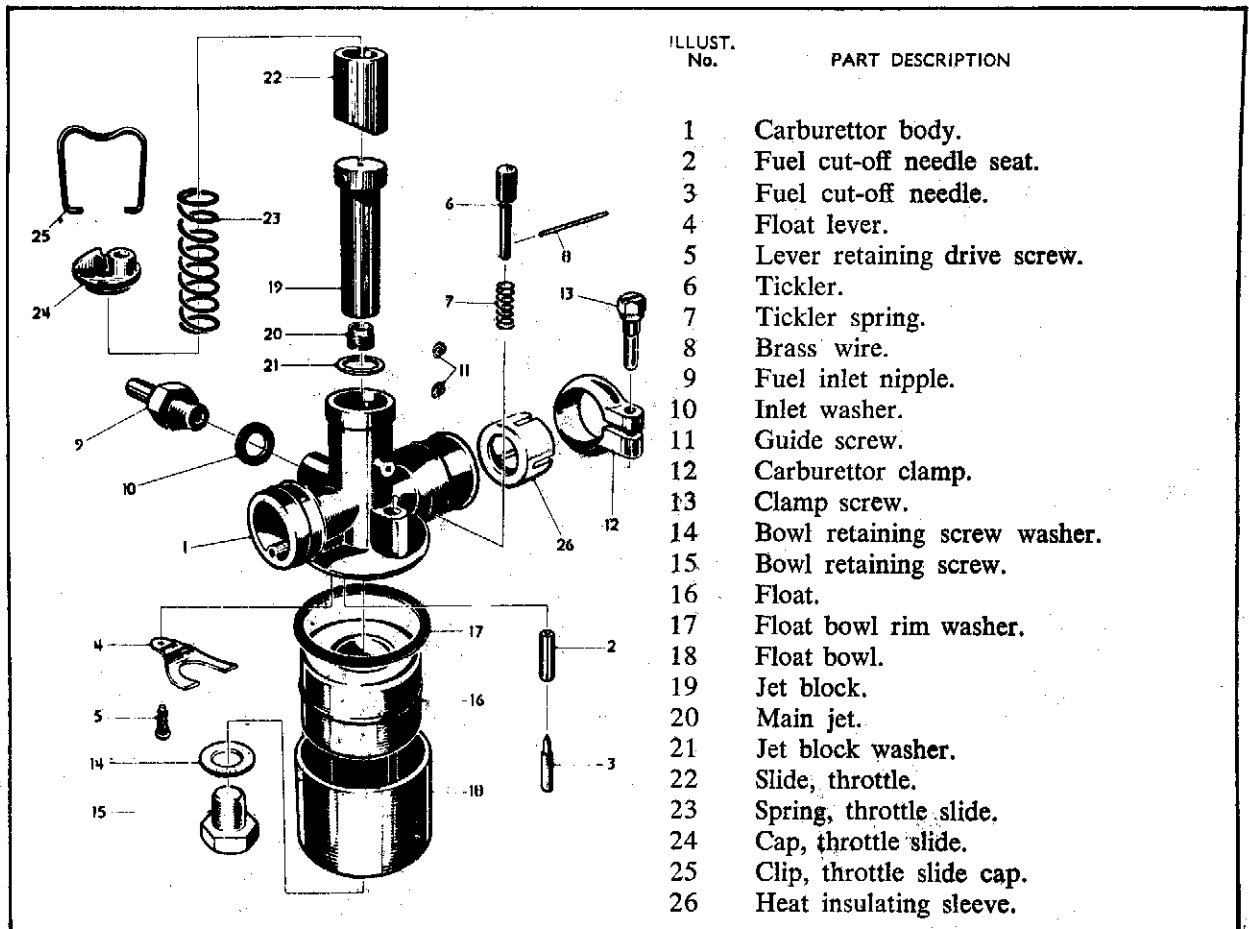


Fig. N9

**VICTA 3Q & 3S CARBURETTORS**

Refer to Fig. N10.

**DISMANTLING THE CARBURETTOR.**

1. Move petrol tap to "OFF" position.
2. Remove fuel line from carburettor.
3. Unscrew snorkel clip screw and remove snorkel.
4. Loosen clamp screw and remove carburettor.
5. Remove clip from the top of carburettor and take out throttle slide assembly.
6. Remove two screws 12, take off float bowl, bowl gasket 28 (early models have no gasket) and float. The float lever 26 will then drop down, releasing fuel needle 25.
7. Push out pivot pin 20 and take off float lever. Unscrew combined inlet nipple and needle seat 24, this will release tickler leaf spring 23, pivot plate 21 and tickler 22.
8. Slide filter assy. 27 off carburettor stem, screw out jet holder 9 and release jet 7.
9. If necessary the guide screw 5, throttle cap clip 13 and insulator sleeve 19 can then be removed.
2. Check "O" ring 8 on jet holder, replace if damaged, any fuel leak past the "O" ring will cause a rich mixture. Slip jet into carburettor stem, install and tighten jet holder firmly but not excessively, it should clamp jet in carburettor body so that no leakage can occur at either top or bottom shoulder of jet. Slide filter over jet holder and carburettor stem.
3. Fit tickler, pivot plate and tickler spring, screw in combined inlet nipple and needle seat.
4. Fit float lever to pivot plate by inserting pivot pin, check fuel needle for damage, replace if necessary, fit to seat, hold in place with float lever.
5. The float level is set by the clearance between tip of float lever and end of tickler, this should be in the range .090" to .120", bend arm of float lever to adjust, set remaining arm to same height so that float makes even contact.
6. Check float for leaks by shaking it, replace if faulty. Install float, bowl gasket, bowl and two screws.
7. Enter throttle slide after lining it up with guide screw, clip on cap, this has a large "O" ring 2 to keep out dust.
8. Install carburettor on engine, tighten clamp screw 18, connect fuel line and snorkel.

**RE-ASSEMBLY.**

1. Re-fit guide screw, throttle cap clip and insulator sleeve.

**TROUBLE SHOOTING GUIDE FOR TWO-CYCLE MODELS**

| SYMPTOM   | CAUSE  | REMEDY   |
|---|--|--|
| ENGINE SPITS BACK INTO CARBURETTOR.             | Blockage in internal passages of jet block.<br>Air leak where carburettor joins cylinder.<br><br>Air restriction section of choke or air filter missing or broken.<br>Snorkel torn or punctured.<br>Faulty gasket on cylinder base.<br>Faulty top or bottom crankshaft oil seal. | Dismantle and clean.<br><br>Ensure that carburettor is fully home on cylinder stub; check heat insulator for correct installation.<br><br>Replace choke, air filter flange,<br>Replace snorkel.<br>Replace gasket.<br>Replace faulty oil seal. |
| FUEL FLOODS FROM VENT HOLE ADJACENT TO TICKLER. | Punctured float.<br>Dirty or faulty fuel needle and seat.<br>Incorrect float level.  | Replace.<br>Clean or replace.<br>Reset.  |

## VICTA CARBURETTOR ASSEMBLY—3Q

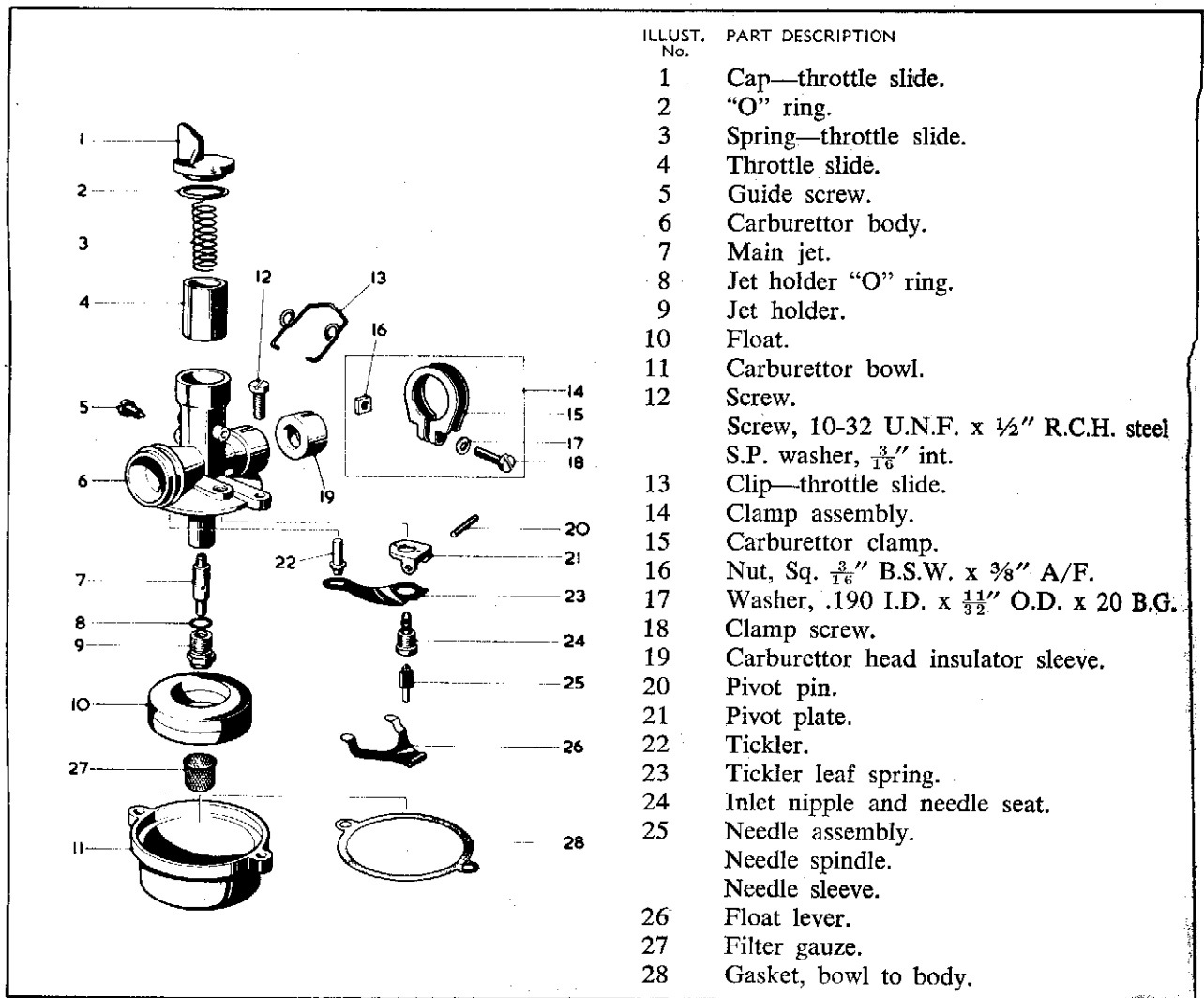


Fig. N10

## ALTERNATIVE CARBURETTOR FOR 160 c.c. ENGINE

A carburettor designated 3S has been introduced as an alternative to the 3Q carburettor for use on 160 c.c. engines.

The 3S carburettor is a modified version of the 3L carburettor used on 125 c.c. engines. The only differences are that the 3S has a larger venturi bore and a larger jet. (Refer to jet block modification 3L and 3S carburettors).

The 3S carburettor body is identified by a turned groove just below the top (see picture). The part number for the body is CR03255A.

The jet is identified by a groove cut in the face which carries the screw-driver slot or, it may be without the groove, in which case it will have a black finish. The part number is CR 03256A.

DO NOT use a grooved or black jet in a 3L carburettor on a 125 c.c. engine as the fuel/air mixture would be too rich.

DO NOT use a bright finished 125 c.c. jet in a 3S carburettor on a 160 c.c. engine as the mixture would be too lean, causing over-heating and possibly seizure.

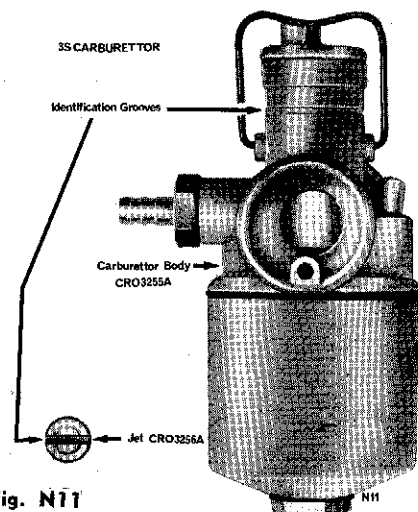


Fig. N11

The complete carburettor is designated P/N. CR03257A.

MODEL G2 GOVERNED CARBURETTOR 1968/69 TWO STROKES

OVER-RICH RUNNING

This is mostly due to petrol by-passing the jet. Refer to illustration for identification of the parts. The 'O' ring (7) is designed to seal the jet (6) against the cavity in the float bowl. Two projections in the jet cavity in the carburettor body contact the top of the jet and hold it against the 'O' ring. There are several things which can cause lack of pressure:

- (a) The gasket face of the carburettor or the float bowl could be warped or imperfectly finished. The remedy is to re-face both parts by rubbing them down on a sheet of emery cloth. Place the emery cloth on a flat surface and lubricate with kerosene. Trueing up the faces will increase the pressure on the 'O' ring.
- (b) If attention to the gasket faces does not cure the trouble, change main jet. Some jets in circulation are too short in the body, resulting in not enough pressure on the 'O' ring.
- (c) Always replace the bowl gasket (8). Some of the material used for the gasket in early production had a tendency to swell when in contact with fuel. All gaskets supplied as replacements are not effected by fuel.

FLOODING CARBURETTOR

- (a) Check that the float (3) is free on the spindle (4), rub the spindle down with fine emery cloth if it is too tight.
- (b) Check that the float bowl gasket (8) does not foul the float in the vicinity of the hinge.
- (c) Drop the float into a can of fuel. The hinge will cause that end of the float to sink but one corner should project  $\frac{1}{4}$ " to  $\frac{3}{8}$ " above the level of the fuel. If the float sinks altogether replace it.
- (d) Check the fuel needle (5) for burrs which would prevent it operating smoothly.

GEAR REPLACEMENT

The smaller of the two governor gears (12) can be split if the governor vane is over-stressed. The gears are sold only in pairs and both should be replaced if one is damaged.

Remove the screws (15) and take off cover (14). With a  $\frac{1}{8}$ " pin punch, tap the spindle of the vane (27) out of the large gear and remove the gear. The small gear can be taken off the spindle (17). It is a push on fit. Line up the 'D' shaped hole in the new small gear with the spindle and push the gear on.

Set the butterfly in the wide open position and put the large gear into place with the middle of the toothed section in engagement with the top tooth of the small gear. Make sure that the post seal (29) is in place and slide the post down through the bearing (28). Enter the small plain section of the vane post into the large gear with the vane approximately in the running position. This will hold all the parts in place for final setting of the vane.

Place the carburettor on the cylinder stub, locate with the peg and set the tip of the vane approximately  $\frac{1}{8}$ " from the flywheel. The vane

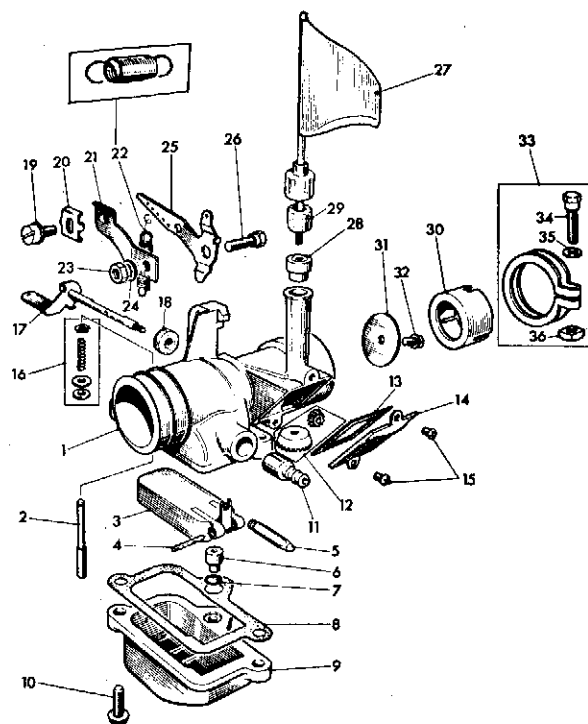


Fig. N12

post can easily be turned in the large gear to enable adjustment. Hold the large gear and make sure the throttle remains wide open while adjusting.

The position of the vane is not critical. It can almost touch the flywheel, or be up to  $\frac{1}{4}$ " away when the throttle is in the wide-open position.

With the fingers, move the vane from the flywheel and check that the butterfly closes until the lug on the spindle (17) is against the stop. Move the vane back towards the flywheel, check that the butterfly is wide open and that the small gear is contacting about the middle tooth of the large gear.

When the correct position is established, support the large gear and tap in the vane post until there is just appreciable end play. Make a final check of the position of the vane in relation to the flywheel, reassemble the cover (14).

SLOW RUNNING

To get the best slow running, the bracket (21) should be moved in an anti-clockwise direction as far as it will go. If any difficulty is experienced with the bracket working loose, the shakeproof washer (24) should be installed between the bracket and the carburettor body rather than against the nut.

With the bracket in a full anti-clockwise position, the control arm (25) can be brought further back to the idling position, and a reasonably slow idle speed will be obtained just before the control lever on the handle reaches the stop position.

**GOVERNOR SPRING (22)**

A modified spring with more positive attachment at the lower end is now available. The Part No. CR03279A remains the same and the new spring will be supplied against all future orders.

**MODEL G3 GOVERNED CARBURETTOR**

This is a modified version of the G2, many of the parts are the same.

**GOVERNOR**

Comparison of the drawing with the G2 will show that the major changes are in the governor section. The vane operates on the principle of air being deflected off a section of the cowl, rather than directly from the flywheel.

The governor spring is located in the vane assembly and is adjustable. The tension applicator (25) can be rotated with the fingers in a clockwise direction, each click of the teeth adding about 150 R.P.M. to the engine speed. The adjustment must not be taken too far as it increases the idle R.P.M. at the same time. The original setting is marked during factory assembly and can always be restored by lifting the tension applicator and turning it back. (Note: see section on page N14 re retaining clip).

**CUT-OUT SWITCH**

The lead from the magneto connects to the

The new spring has two loops for attachment. Fit top loop first and twist spring 180° before connecting lower loop to throttle arm.

**INCREASING GOVERNOR SPEED**

If more engine speed is required, cut away the top corner of the vane as illustrated.

**1968/72 TWO STROKES**

terminal (27). The action of fully closing the throttle pushes the moving contact (28) overcoming the insulating breaker (29) and earthing the terminal.

**BUTTERFLY**

This fully closes in the shut-off position. It has a small hole which allows enough air through to maintain idling.

**MAIN JET**

Positive sealing of the jet is obtained by an 'O' ring located in a groove in the jet. The outer surface of the 'O' ring engages in a smooth bored hole in the carburettor body. Sealing is no longer dependent on end pressure, and the relationship of the float bowl to the carburettor body is not as critical as with the G2 carburettor.

**FUEL FEED**

Float bowl, float, fuel needle and seat, remain the same as in the G2 carburettor.

**CARBURETTOR ASSY.—P/No. CR03335A**

|     |          |  |
|-----|----------|--|
| 1   | CR03332A | 1 Carburettor body assy.               |
| 2   | CR03337A | 1 Tickler.                             |
| 3   | CR03266A | 1 Float assembly                       |
| 4   | CR03268A | 1 Float spindle                        |
| 3A  | CR03342A | 1 Float assembly.                      |
| 5   | CR03265A | 1 Cut-off needle.                      |
| 6   | CR03316A | 1 Main jet.                            |
| 7   | CR03330A | 1 Main jet "O" ring.                   |
| 8   | CR03269A | 1 Bowl gasket.                         |
| 9   | CR03262A | 1 Float bowl — superseded by CR03370A. |
| 10  | CR03250A | 2 Screw, sems unit.                    |
| 11  | CR03282A | 1 Needle seat.                         |
| 12  | CR03321A | 1 Butterfly spindle.                   |
| 12A | CR03310A | 1 Governor vane gear and pinion.       |
| 13  | CR03319A | 1 Spindle seal.                        |
| 14  | CR03305A | 1 Gasket.                              |
| 15  | CR03264A | 1 Cover plate.                         |
| 16  | CR03301A | 2 Screw, taptite.                      |
| 17  | CR03309A | 1 Tickler spring assy.                 |
| 18  | CR03298A | 1 Screw, sems unit.                    |
|     | CR03324A | 1 Butterfly.                           |
| 19  | CR03338A | 1 Screw, cable clamp.                  |
| 20  | CR03329A | 1 Cable clamp.                         |
| 21  | CR03334A | 1 Governor vane assy.                  |
| 23  | CR03320A | 1 Post seal.                           |
| 24  | CR03323A | 1 Governor spring.                     |
| 25  | CR03317A | 1 Tension applicator.                  |
| 26  | CR03318A | 1 Throttle connector.                  |
| 27  | CR03326A | 1 Contact terminal.                    |
| 28  | CR03325A | 1 Moving contact.                      |
| 29  | CR03327A | 1 Insulating breaker.                  |
| 30  | CR03200A | 1 Heat insulating sleeve.              |
| 31  | CR03224A | 1 Clamp assembly.                      |
| 32  | CR03238A | 1 Clamp screw.                         |
| 33  | HA22043A | 1 Washer.                              |
| 34  | HA24932A | 1 Square nut 3/16" whit.               |
| 35  | CR03355A | 1 Clip                                 |

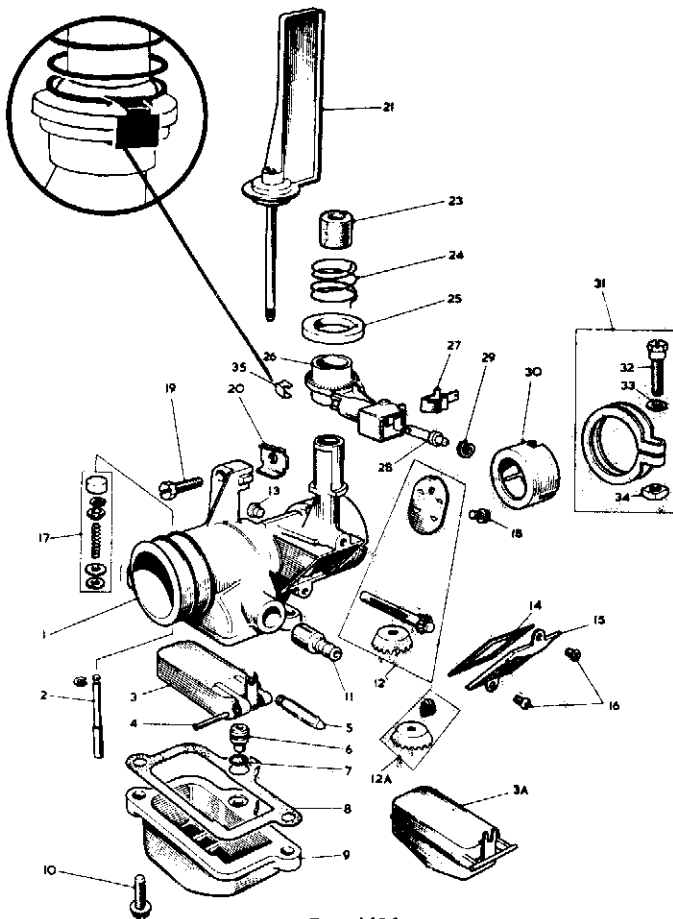


Fig. N13

**GOVERNOR SPRING RETAINING CLIP**

The introduction of the Governor Spring Retaining Clip is to ensure that governor settings cannot be accidentally released. Instances have occurred where persons cleaning around the carburettor have bumped the tension applicator and unknowingly lost the governor tension.

The clip is positioned in such a manner that if extra spring tension is necessary the clip can be pulled off with a pair of long nosed pliers, the tension increased, and the clip put back in position. See illust. No. 35 in fig. N13.

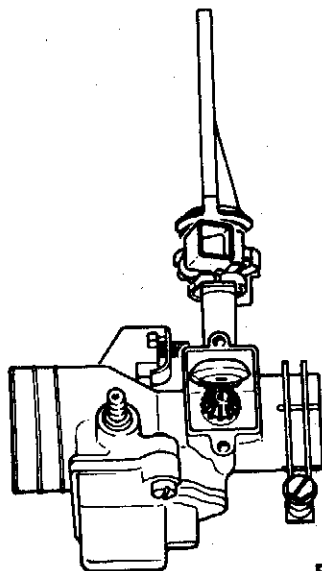
It is desirable for effective cutting and catching to have the engine running between 3,800 and 4,000 revolutions per minute.

The governor flag is now coloured black, this is to indicate that this carburettor will also suit a 125 cc and 160 cc motor. It is 1/8" shorter than the white flag, to allow it to operate without fouling the cowl. Black flags can be used in place of the white but not in reverse.

**GOVERNOR GEAR REPLACEMENT**

**Refer to Fig. N13 for Illustration Numbers.**

Remove the cover plate (15) and gasket, (14) and tap the governor vane post (21) out of the large gear—using a 1/8" pin punch. Take the large gear out and remove the small gear from the throttle spindle. Put the new small gear on the end of the 'D' shaped throttle spindle. Insert governor vane post making sure seal (23) is still in position. Hold carburettor in the left hand and hold butterfly (12) closed with middle finger. Place the large gear in position with one tooth space showing to the right hand side of the top of the small gear. See Illustration N13A.



**Fig. N13A**

Enter the governor vane post into the large gear with the vane at 90° to the bore of the carburettor. In this position the vane, the two ends of the governor spring (24), and the throttle connector (26) will all be directly in line above the top screw hole of the gear cover (see illustration N13A.)

Take multi-grips in right hand and open to widest adjustment. Place top jaw on large governor gear and bottom jaw on governor post end behind flag. Gently squeeze multi-grips until governor post end becomes level with the underside of the large bevel gear. It is essential to have slight end play between the governor vane post and the carburettor body.

Install the carburettor on the engine and connect the throttle cable. The small elbow P/N. 4-216 screwed into the end of the inner cable should be quite free to turn. Screw it out one turn if it is not free. Its purpose is to provide a flexible connection so that any twist in the cable will not be transmitted to the throttle connector arm.

**CARBURETTOR No. CR03357A**

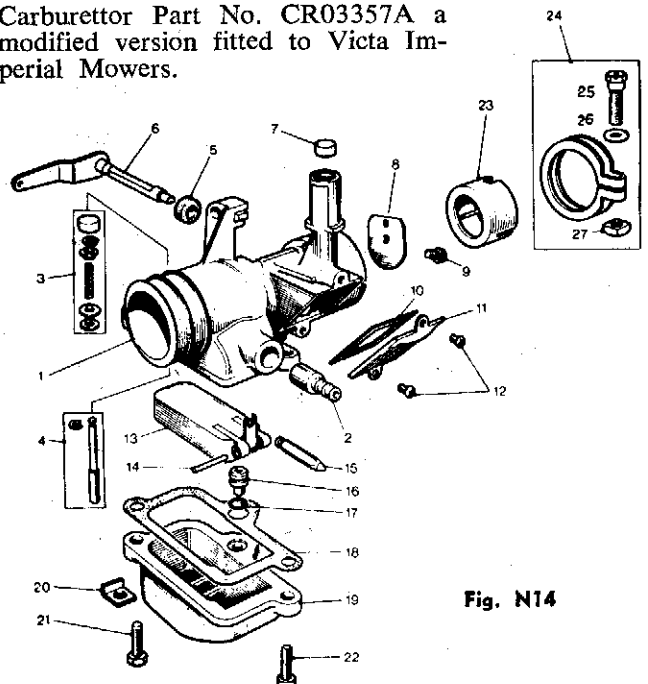
**A modified version fitted to Victa Imperial Mowers. (Refer Fig. N14)**

This is a modified version of the G3 model carburettor, especially designed to be fitted to the engines mounted on the Victa Imperial mower range (14", 16", 20" and 24").

The governor flag and attachments are deleted and a modified main jet (No. 16) is fitted.

If at anytime the main jet (No. 16) requires replacement the correct main jet **MUST** be fitted.

Carburettor Part No. CR03357A a modified version fitted to Victa Imperial Mowers.



**Fig. N14**