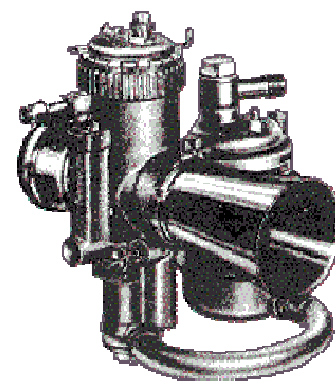


Technical manual of the SS Dell'Orto carburetor

INDUSTRIA NAZIONALE CARBURATORI DELL'ORTO Seregno (Milano) Italy – Phone 2341-2342-2343				
SERIES SS DELL'ORTO CARBURETORS				
For Sport and Racing engines				
Technical Data				
Carburetor type	Choke adapter diameter	Throttle valve diameter	Fitting	
			Clip	Flange
SSI-C	18-20-22-23	31	ø25.4 ø28.6	N/A
SS-A, SSI-A, SSF-A, SSFF-A	24 25-26-27 28-29-30	35	ø28.6 ø31.7 ø35	F 50.8
SSI-B, SSFI-B	32	38	ø36	F 50.8
SSI-B, SSFI-B	35	42	ø39	F 55
SSI-B	36-38-40-42	48	ø45	N/A



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• GENERAL FEATURES

Construction in light alloy with anodic protection against the oxidation and hot spraying painting in silver-grey color.

Clip and flange **Fittings**

Inserted **Choke** Adaptor at whole ring and carburation chamber with uninterrupted smooth cylindrical wall.

Throttle Valve in chromium plated special bronze to withstand wear.

Jet Needle with five positions of adjustment, acting in the needle jet.

Needle Jet in high strength special bronze.

Diffuser at great strength multiple elements.

Main Jet flooded in an emulsifying tube, placed under the mixing chamber.

Idle Device: in these carburetors, two are the idle different systems:

- with Interchangeable jet and air adjusting screw fitted on carburetors where the engine needs a high operation sensibility at low speed;
- with variable pilot jet by screw and air fixed, fitted on carburetors for racing engines, where these, according to their use, do not require a meticulous idle.

Mixture strength Control bearing additional air, which brakes the fuel delivery from the needle jet, letting so to enrich (by closing the air valve) the mixture strength if needed, without shutting the choke adaptor section.

Air tube with truncated cone shape in different lengths according to engine requirements.

Allowed fittings. The carburetors of the SS-A series can be fitted with a 15 degrees slant at the most (with throttle valve controlled both in vertical and horizontal plan).

On the contrary the carburetors of the series SS-I, for a special device, can be fitted with larger slants up to 90 degrees (downdraft).

Float Chamber. For the carburetors with choke adaptor from \varnothing 18 to \varnothing 30 mm. fitted on sport engines, stiff float chambers anchored to the carburetor directly are supplied. In this case it is necessary when ordering to point out the induction pipe slant, bearing in mind that 12-26-45 degrees standard slanting float chambers can be supplied. For racing engines, where their vibrations are of great degree, two types of float chambers are supplied: type SS 1 (larger) for carburetor from \varnothing 32 to \varnothing 42 – type SS 2 (smaller) for carburetor from \varnothing 18 to \varnothing 30.

These float chambers have the fuel level at 35 mm. from their lip; when installing they must be fixed so that their level is at the same height of air valve channel center line, as shown on fig. 2.

Banjos for fuel take, single and twin, with the end suitable for direct assembly of rubber pipe and 1/4 gas threaded.

• NECESSARY DATA FOR A SUITABLE CARBURETOR SUPPLY

1. Engine Make – displacement of each cylinder – 2 or 4 strokes – Number of cylinders.
2. Compression Ratio and fuel used.
3. Highest Rpm and corresponding power.
4. Inner Diameter of induction pipe tube. Induction valve diameter. Section size in mm.² of induction ports – Transfer and exhaust (only for 2 stroke engines).
5. Carburetor connection Type to the head or to the cylinder (clip or flange fitting) and its sizes: outside diameter if clip fitting and stud bolt centers if flange fitting.
6. Eventual Slant to which the carburetor will be subjected.
7. If normal or remote Float Chamber wanted; top or bottom feed and banjo sizes for the connection to the fuel pipe.
8. In case of normal float chamber, it is necessary to state if right or left is wanted, stating it by looking the carburetor body from the air tube side.
9. Air tube wanted: if long or short one.

For the choice of the carburetor to set up on the different engines please see table A.

- **INSTRUCTIONS FOR TUNING**

- **IDLE ADJUSTMENT**

(Throttle valve opening corresponding to the section A – Fig. 1) It is necessary first of all to bear in mind that this adjustment must be established always when the engine has reached its normal running temperature.

- **In the first idle system,, where is subsisting the replacing jet and the air adjusting screw**, you must operate on this air screw in order to obtain a correct carburation, bearing in mind that by tightening it the mixture strength is enriching, while by unscrewing it the mixture strength is weakening.
- **In the second system, where is subsisting the variable screwed pilot jet and the fixed air**, the wished engine running will be obtained by operating only on the screw which adjusts the fuel passage; the mixture strength will weaken by tightening this screw and will enrich by unscrewing it.

This second idle system, although it is not exact and sensitive like the first one (suitable to particular uses and engines as told in the general features) allows a better and quicker mixture strength change; it favours therefore easy corrections of carburation also in the passage running's and necessary easy enrichments in case of alcohol feed. With both the idle systems is always advisable to adjust the mixture strength at the slowest running's, rather about the rich, in order to have then clean passages and pickups without hesitation.

- **FIRST PASSAGE ADJUSTMENT**

(Throttle valve opening corresponding to the section B – Fig. 1).

When obtained a satisfactory idle adjustment, one becomes to the choice of the suitable throttle valve for the intermediate runnings, proceeding as follows.

1. If opening gradually the throttle valve for a space corresponding to the part B – fig. 1 the engine running is normal, it means that the throttle valve is suitable.
2. If the engine is inclining to fall or it gives backfires for weaken mixture, it means that the fitted throttle valve has a cutaway too high and it is necessary to replace it with another one of lower size.
3. If the engine instead is emitting black smoke at the exhaust or it is giving irregular explosions with a heavy running, it means that the fitted throttle valve has a cutaway too low and it is necessary to replace it with another one of upper size.

- **JET NEEDLE ADJUSTMENT**

(Throttle valve opening corresponding to the section C – Fig. 1).

In order to have the possibility to adjust the jet needle there are on it 5 grooves or holes (the numeration is starting from the top as follows: 1-2-3-4-5). The jet needle checks the carburation for a throttle valve opening corresponding to the section C – Fig. 1.

If the mixture seems to be weak, the needle must be moved upwards one or two grooves so as to allow a larger flow of fuel at the exit of the needle jet.

If instead the mixture appears to be reach, the opposite must be done, by lowering the needle a few grooves (or holes where existing).

The average position of the jet needle is generally established by us at the third groove (or hole).

- **MAIN JET SIZE**

(Throttle valve opening corresponding to section D – Fig. 1).

The influence of the main jet is especially felt in the throttle valve opening corresponding to section D – Fig. 1. It is therefore in this field that it is necessary to operate in order to establish if the main jet fitted is the most suitable one, and precisely:

If fully opening the gas, the engine begins to turn over with difficulty and instead of increasing in speed, it does not change or even loses and tends to backfire, and if by closing the mixture control piston, a distinct improvement in running is noted, this indicates that the mixture is too weak. In this case the main jet must be replaced by others of the next sizes up until the one, which gives the correct result, is found.

If the throttle valve is fully turned on, and the engine gives a muffled sound from the exhaust or is missing explosions with emission of black smoke, and by closing the air valve the defect increases, this indicates too rich a mixture. In this case it is necessary to replace the fitted main jet by others of the smaller sizes until the one, which gives the correct result, is found.

A correct carburation at high speed must be obtained at completely opened air valve.

It must be born in mind that it is advisable to use the size of the main jet which will have given the best result in power or highest speed but that will have however kept the engine at a temperature of safety.

Exact main jet = normal engine temperature

Small main jet = higher engine temperature

Large main jet = lower engine temperature

Only following scrupulously the above instructions and using a sensibility at the highest point when effecting the tests on road and at the brake, one may arrive at a perfect adjustment of the carburetor and therefore at the best performance of the engine itself. As approximate adjustment data please see at the adjustment key for gasoline.

• BASE ADJUSTMENT FOR GASOLINE

Carburetor type	Throttle valve	Jet needle	Needle jet	Main jet	Pilot jet
SSI-C 18-20-22-23	Cat. N° 1916 70	Cat. N° 2289 R2 at 3 groove	Cat. N° 1805 260	Cat. N° 1126 85-95-105-110	Cat. N° 1159 50
SS-A, SSI-A, SSF-A, SSFF-A 24-25 26-27-28 29-30	Cat. N° 2384 90 100 100	Cat. N° 1824 M7 at 3 groove M13 at 3 groove M13 at 3 groove	Cat. N° 1805 260 265 270	Cat. N° 1126 115-120 125-130-135 140-145	Cat. N° 1159 50 50 50
SSI-B, SSFI-B 32	Cat. N° 3466 110	Cat. N° 1141 N1 at 3 groove	Cat. N° 1121 315	Cat. N° 1126 155	
SSI-B, SSFI-B 35	Cat. N° 3686 120	Cat. N° 1900 P1 at 3 groove	Cat. N° 1121 320	Cat. N° 1126 170	
SSI-B 36-38 40-42	Cat. N° 4545 130 150	Cat. N° 2470 S1 S1	Cat. N° 1121 325 330	Cat. N° 2475 180-200 220-240	

• USE OF ALCOHOL FUEL

All our carburetor types of the series SS-A and SS-I are very well suitable also for running with alcohol fuel provided that their general adjustment is revised in the following points.

1. Throttle valve

The size generally used for normal super fuels must be replaced by one immediately lower.

2. Needle jet

A needle with calibrated hole of higher size must be fitted, bearing in mind that the increase of this hole will be directly proportional to the alcohol quantity contained in the fuel that one is intended to use.

3. Jet needle

For fuels with much than the 50% of alcohol end up to the use of methanol, it will be necessary else to replace the needle used for super fuels by one with a thinner end, foreseen by us for this use. The average position advised by us for alcohol fuels is at the 4th groove (or hole).

4. Main jet

A main jet oversized from 25 to 50 points about must be fitted according to the carburetor diameter and to the alcohol percentage of the new fuel.

5. Pilot jet

Also for the running in the idle area it will be necessary increase the mixture strength, operating as follows.

1. Idle with rechargeable jet and air adjusting screw

for fuels with alcohol up to 50% it will be enough to tighten the air screw, in comparison to the adjustment used for super fuels, just to its complete tightening.

for fuels with alcohol over the above percentage it will be necessary also to replace the pilot idle jet by a larger one from 5 to 15 points and adjust comparatively the air screw.

2. Idle with variable screw and air fixed

with the idle system it is enough to open the screw at pleasure just when a correct idle running is obtained and in the first throttle valve openings.

Of course all these instructions are not rigorously fixed but partly entrusted to the judgment and to the sensibility of the experimenter who only by meticulous tests and exactly knowing the features of his engine and of the fuel used, will have the possibility to realize a perfect carburetor adjustment.

As approximate adjustment data please see at the adjustment key for alcohol.

- BASE ADJUSTMENT FOR ALCOHOL (upper the 50%)**

Carburetor type	Throttle valve	Jet needle	Needle jet	Main jet	Pilot jet
SSI-C 18-20-22-23	Cat. N° 1916 60	Cat. N° 2289 R4 at 4 groove	Cat. N° 1805 275	Cat. N° 1126 130-135 140-145	Cat. N° 1159 60
SS-A, SSI-A, SSF-A, SSFF-A 24-25 26-27-28 29-30	Cat. N° 2384 70 80 90	Cat. N° 1824 M3 M3 M3	Cat. N° 1805 280 280 280	Cat. N° 1126 150-155 160-170-180 190-200	Cat. N° 1159 70 70 70
SSI-B, SSFI-B 32	Cat. N° 3466 80	Cat. N° 4338 N2	Cat. N° 1121 350	Cat. N° 1126 220	
SSI-B, SSFI-B 35	Cat. N° 3686 90	Cat. N° 4339 P2	Cat. N° 1121 360	Cat. N° 1126 250	
SSI-B 36-38 40-42	Cat. N° 4545 100 110	Cat. N° 2470 S8 S8	Cat. N° 1121 370 380	Cat. N° 2475 250-280 310-340	

- Proving diagram of the different running phases.

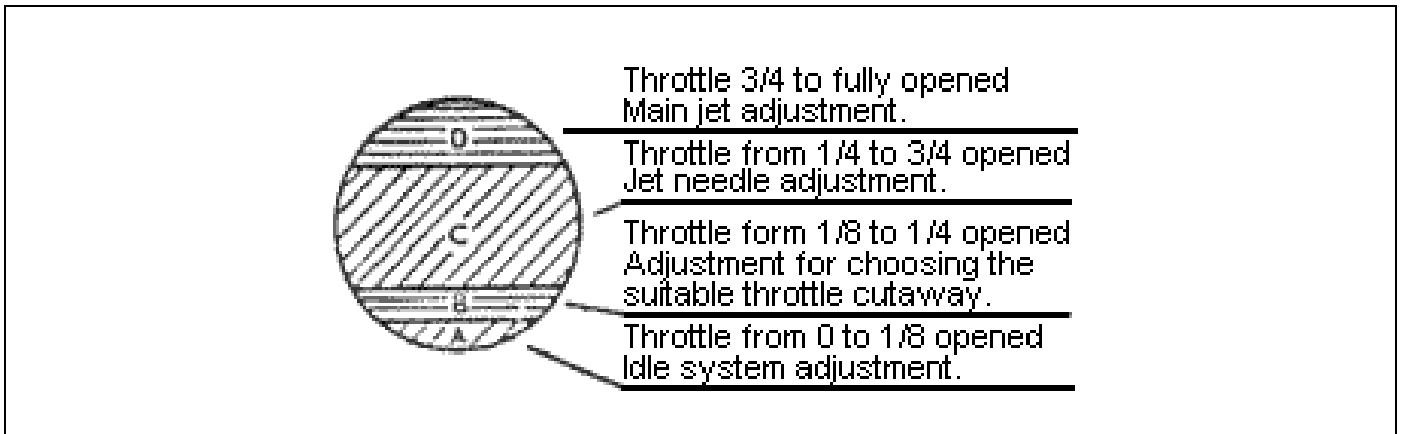


Figure 1

- Proving diagram of the exact level position.

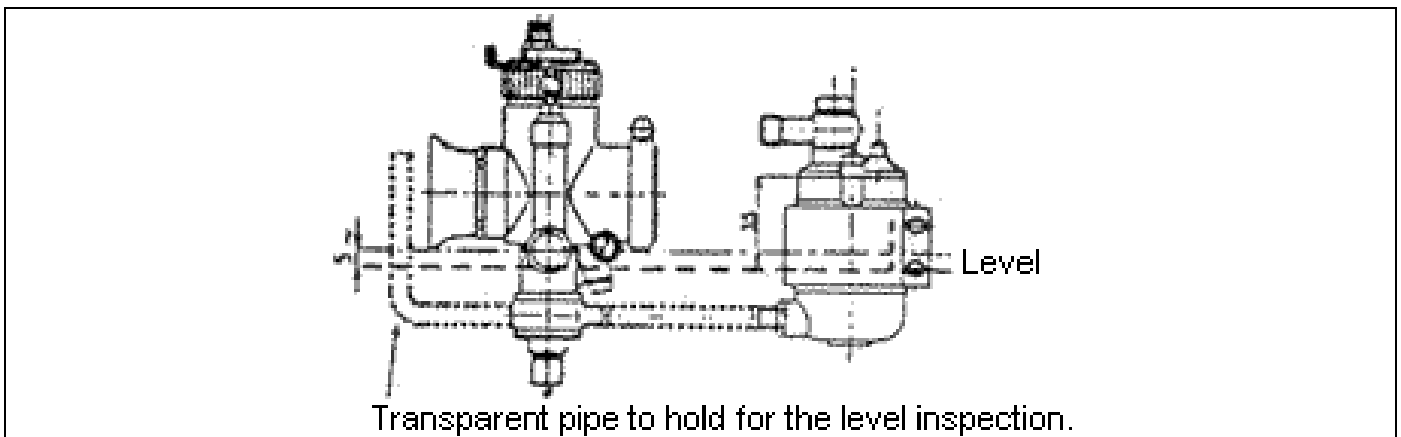
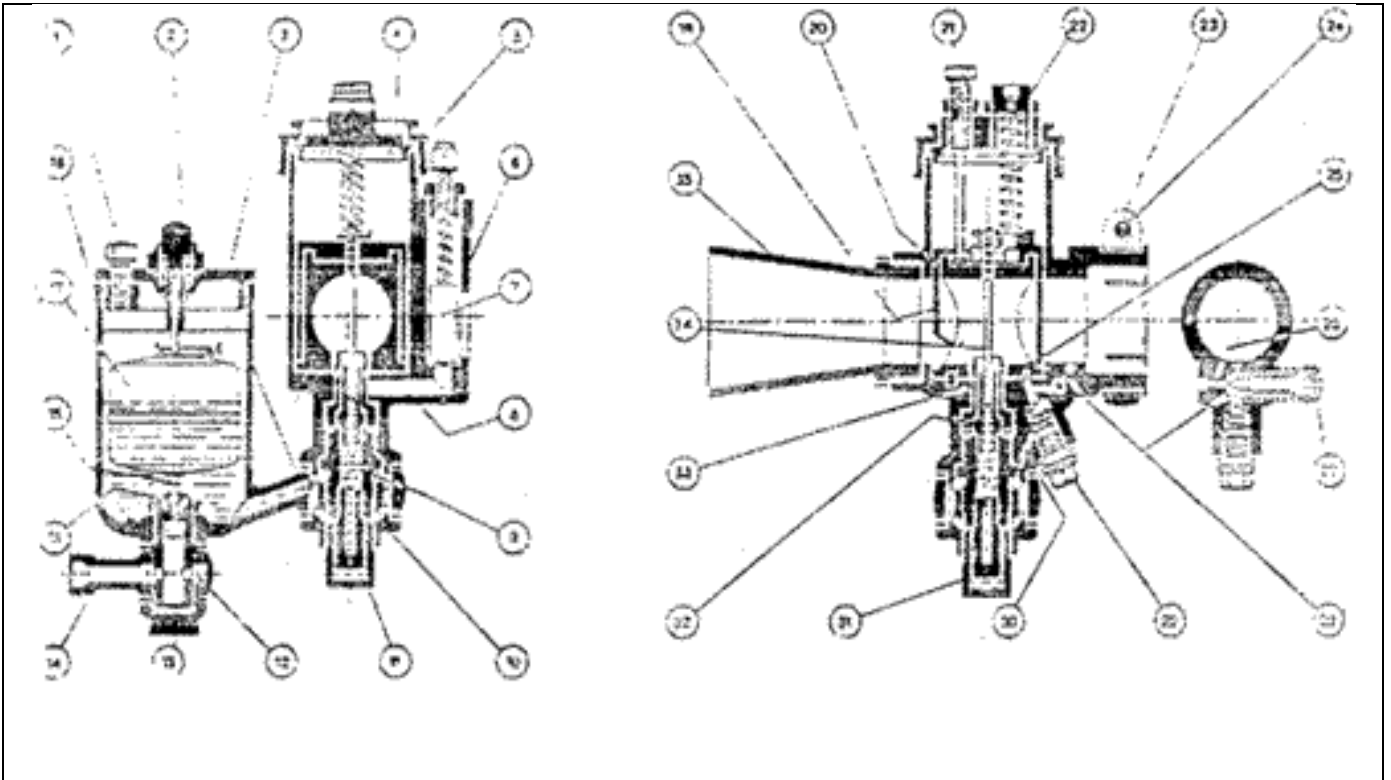


Figure 2

- Table A – For the choice of carburetor diameter

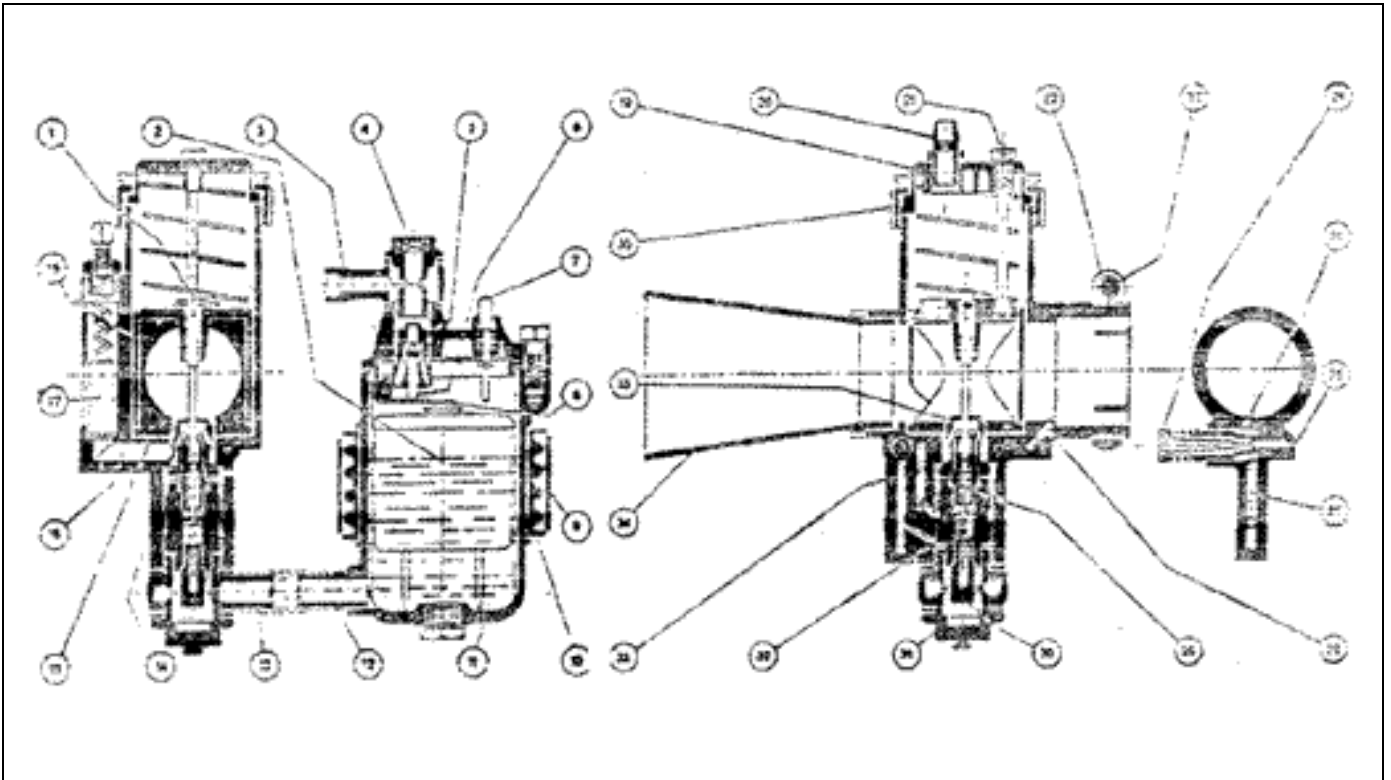
Cylinder displacement	Choke adaptor diameter for the under mentioned motorcycle classes		
	Sport	Supersport	Racing
125 cc 4 st.	20	22	28
125 cc 2 st.	22	24	30
175 cc 4 st.	24	26	30
175 cc 2 st.	26	28	32
250 cc 1 st.	26	28	32
250 cc 2 st.	28	30	35
350 cc 4 st.	28	30	35
500 cc 4 st.	30	32	38
600 cc 4 st.	32	35	40
750 cc 4 st.	35	38	42

- Proving section of SS-A carburetor with idle system of rechargeable jet and normal float chamber.



- | | | |
|------------------------------------|-----------------------------|-------------------------|
| 1) Fixing float chamber top screw | 13) Banjo nut | 25) Idle second hole |
| 2) Tickler | 14) Banjo | 26) Idle air channel |
| 3) Float chamber cap | 15) Needle seating | 27) Air adjusting screw |
| 4) Mixing chamber top | 16) Float needle | 28) Idle first hole |
| 5) Mixing chamber cap | 17) Float | 29) Pilot jet |
| 6) Carburetor body | 18) Float chamber body | 30) Idle fuel channel |
| 7) Air valve | 19) Throttle valve | 31) Jet plug |
| 8) Air valve channel | 20) Choke adapter | 32) Needle jet |
| 9) Jet holder | 21) Throttle stop screw | 33) Spray tube |
| 10) Holding bolt for float chamber | 22) Throttle cable adjuster | 34) Jet needle |
| 11) Main jet | 23) Outlet clip | 35) Air tube |
| 12) Filter | 24) Outlet cable clip | |

- Proving section of SSI-B carburetor with idle system of rechangeable jet and remote float chamber SS-I.



- | | | |
|---|-----------------------------|----------------------------------|
| 1) Jet needle | 13) Banjo | 25) Pilot needle insert |
| 2) Float | 14) Carburetor body | 26) Idle air channel |
| 3) Banjo | 15) Choke adaptor | 27) Idle fuel channel |
| 4) Banjo nut | 16) Air valve channel | 28) Idle outlet channel |
| 5) Jet needle seating | 17) Air valve | 29) Needle jet |
| 6) Jet needle | 18) Throttle valve | 30) Main jet |
| 7) Tickler | 19) Mixing chamber top | 31) Banjo nut |
| 8) Rocking lever | 20) Throttle cable adjuster | 32) Jet holder |
| 9) Clamp ring for float chamber | 21) Throttle stop screw | 33) Air channel for emulsioneing |
| 10) Clamp ring gasket for float chamber | 22) Outlet clip | 34) Air tube |
| 11) Float chamber body | 23) Outlet clip pin | 35) Spray tube |
| 12) Petrol outlet connection | 24) Pilot adjuster | 36) Mixing chamber cap |