Removing and Installing Carburetor

Special tools:

P 23 Carburetor wrench 12 mm
P 23 Carburetor wrench 14 mm

Removal

1. Close fuel cock.
2. Remove air filter.
3. Disconnect fuel line between fuel pump and carburetor.

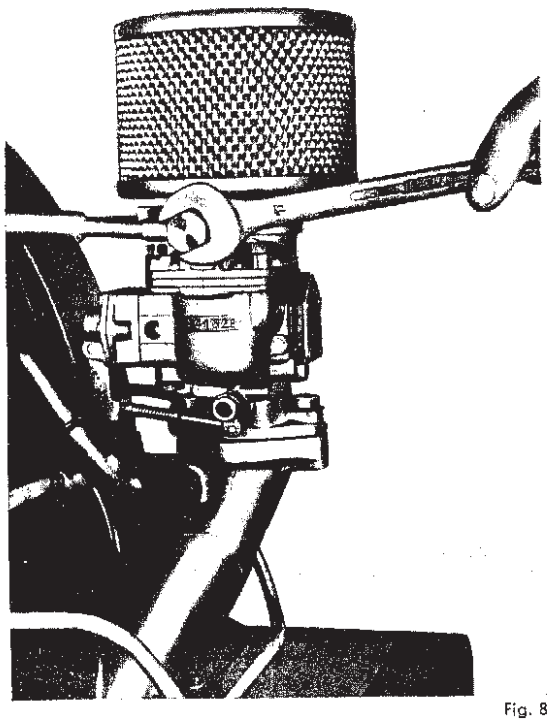


Fig. 8

4. Loosen and remove carburetor throttle lever.
5. Loosen carburetor flange nuts (special wrench P 23 or P 24).

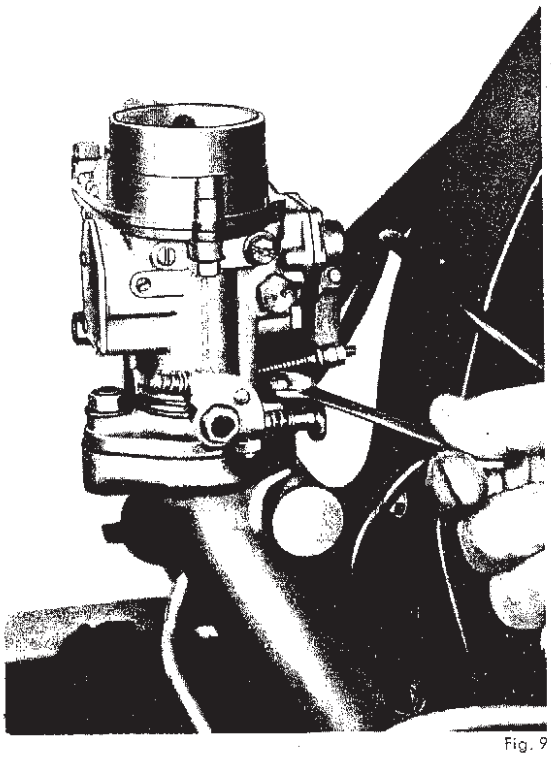


Fig. 9

6. Take off carburetor.
7. Cover intake manifold.

Installation

When installing proceed in reverse order, observing the following points:

1. Replace gasket at intake manifold flange.
2. Adjust carburetor connecting rod and tighten carburetor flange nuts lightly.
3. Both throttle positions must correspond with each other.
4. Tighten carburetor flange nuts uniformly.
5. Check gasket for fuel line nipple, replace if necessary.
6. If necessary clean and oil air filter.
7. Adjust idling speed.

2 FU

Cleaning of the Carburetor

Cleaning

1. Remove carburetor (1 Fu).
2. Loosen retaining screws on carburetor cover.
3. Take off carburetor cover.

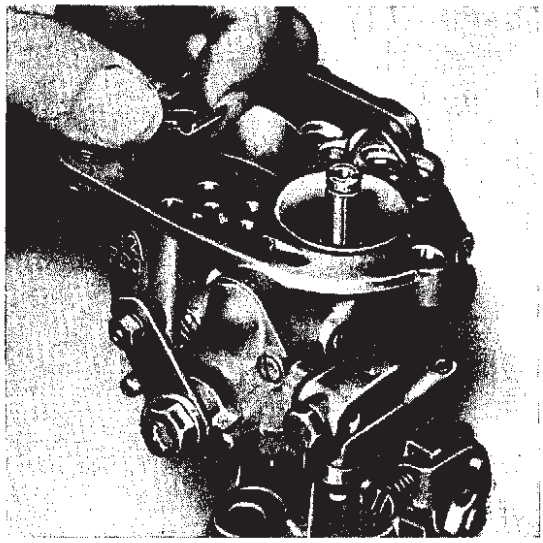


Fig. 10

4. Remove float (see Fig. 11).
5. Unscrew and clean main jet holder and main jet.
6. Remove and clean air correction jet and mixture tube (main jet holder cannot be disassembled).
7. Unscrew and clean idling air jet and idling fuel jet.
8. Remove and clean float needle valve, pump jet and injection tube.

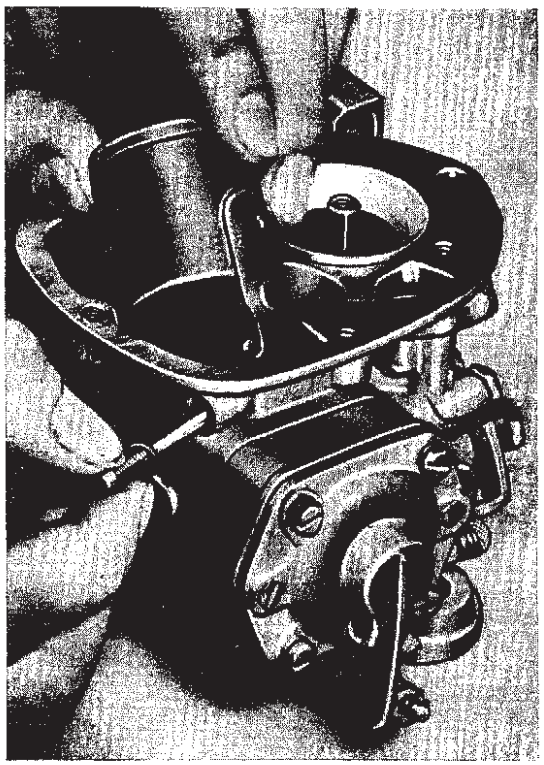


Fig. 11

It is recommended to clean the carburetor in clean gasoline (petrol). Blow compressed air through jets and lines. When cleaning the jets do not use wire, since this will damage or widen the gauged bores.

3 FU

Disassembling and Assembling Carburetor

Disassembly

1. Remove carburetor (1 Fu).
2. Remove retaining screws on carburetor cover and take off cover.
3. Screw out float needle valve.

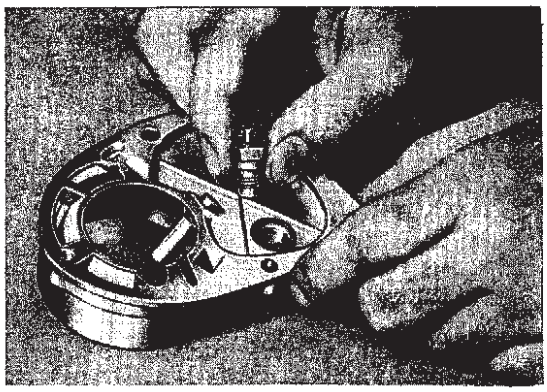


Fig. 12

4. Remove float toggle lever and take off float.

5. Remove air correction jet and mixture tube.

6. Remove main jet, idling fuel jet and idling air jet.

7. Remove idling mixture regulating screw and spring.

8. Release venturi clamping screw and lift out venturi.

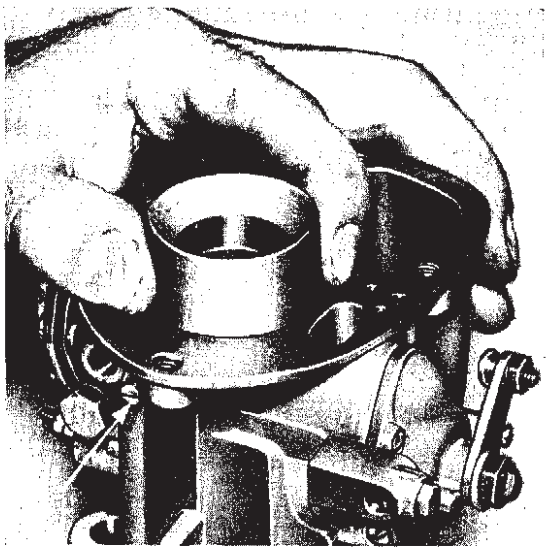


Fig. 13

9. Loosen lock nut on pump lever.

10. Remove lock nut and adjusting nut.

11. Remove pump cover retaining screws. Take off cover, diaphragm and spring.

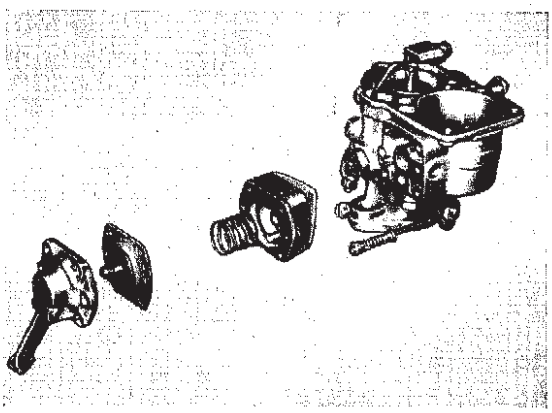


Fig. 14

12. Remove retaining screw on injection tube and take off injection tube.

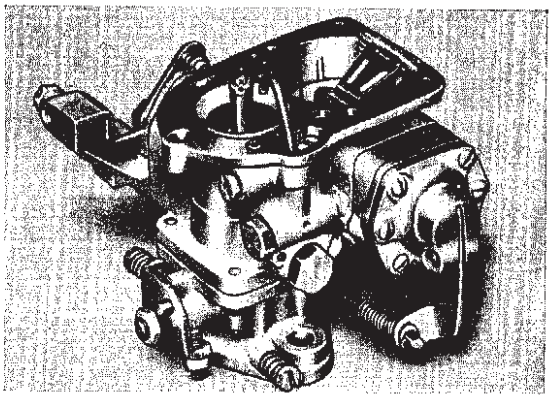


Fig. 15

Cleaning

1. Clean all components in fuel.

2. Blow compressed air through jets, valves and lines. When cleaning do not use wire, since this will damage or widen the gauged bores.

Inspection and Assembly

When assembling proceed in reverse order of disassembling.

To check the components the following points should be observed:

Carburetor cover

1. Check float needle valve for leaks.

2. The sealing surface of the float needle valve must be perfectly clean and smooth.

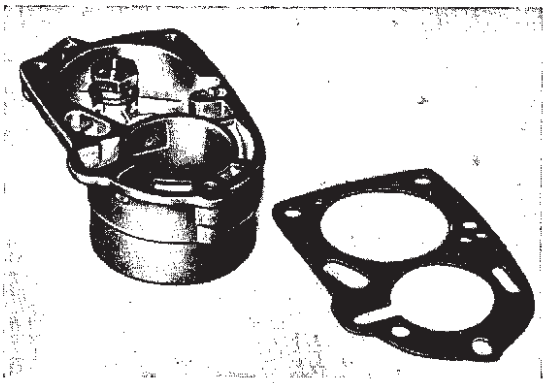


Fig. 16

3. Check needle valve gasket for perfect condition and be sure that it is properly installed to prevent leakage.

4. Thread for hollow bolt must be undamaged.

5. Check sealing surface of carburetor cover.

6. Replace gaskets.

Carburetor Bowl

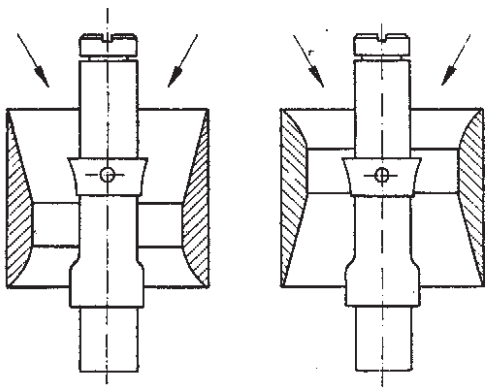
1. Check pump diaphragm for leaks, if necessary replace.

2. Dip float in hot water. If air bubbles appear, the float is leaking and must be replaced. Do not solder leaking floats, as this would result in a weight increase. See carburetor adjustment data for correct weight of float, page F 5.

3. Check all jets for correct sizes given in the „Carburetor Adjustment Data" table.

   When replacing jets or valves, only marked SOLEX parts should be used which are available as spare parts. These parts are exactly calibrated and assure proper adjustment and low fuel consumption.

4. Install venturi. Be sure that the restriction of the inner diameter of the venturi faces upwards. Do not overtighten clamping screws. (Hold venturi).



wrong correct

Fig. 17

5. Check clearance of throttle valve shaft. Excessive clearance allows secondary air to enter which has a detrimental effect on the starting and idling conditions.

6. Check tip of idling mixture regulating screw for perfect condition. Replace screw if tip is bent or broken off.

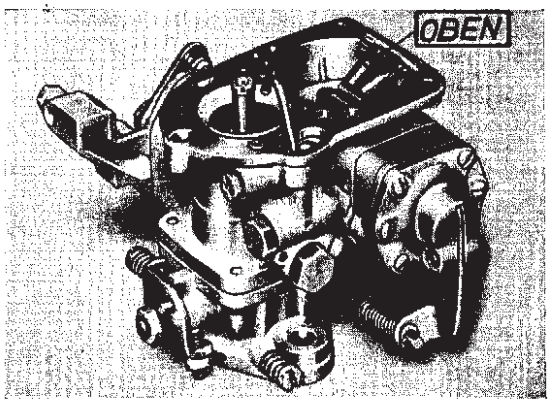


Fig. 18

The lettering „oben" on the float toggle lever of the carburetor 32 PBI must face upwards.

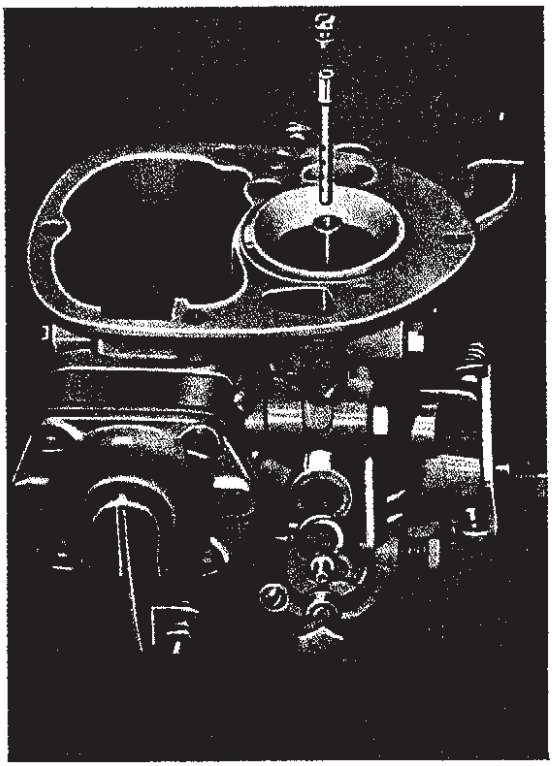


Fig. 19

① **Main jet holder**

② **Main jet**

③ **Gasket**

④ **Mixture tube**

⑤ **Air correction jet**

Idling Adjustment

1. Check spark plugs (electrode gap .027" [0,7 mm]).

2. Check throttle valve adjustment (must be equal for both carburetors).

3. Set engine running to reach the normal operating temperature.

4. Tighten idling adjusting screw on one carburetor until the engine speed increases slightly.

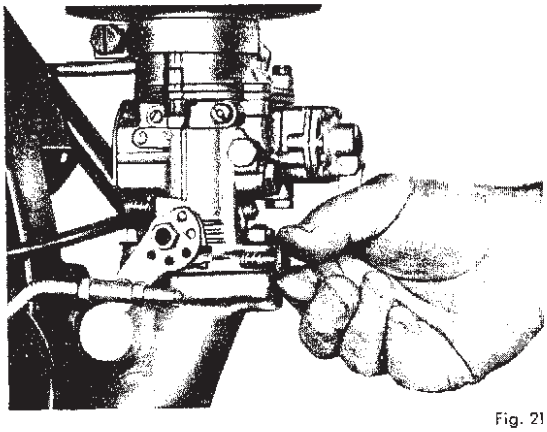


Fig. 21

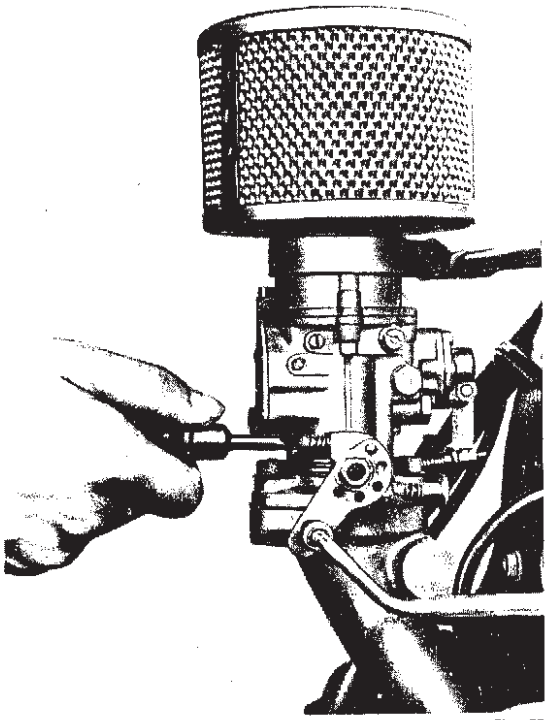


Fig. 20

5. Fully close both idling mixture regulating screws, reopen 1½ turns. Now adjust by opening or closing until the engine runs smoothly. In no case may the mixture regulating screws remain fully closed.

6. Back off idling adjusting screw until the idling speed is obtained.

7. Adjust second idling screw until it stops.

8. Check injection quantity.

Note!

On carburetors with independent idling do not screw the mixture regulating screws out more than absolutely necessary, as otherwise the fuel consumption will increase at low speeds.

Idling Speeds:

Type 1300, 1600 : 600 to 800 r. p. m.
Type 1300 S, 1600 S : 700 to 900 r. p. m.

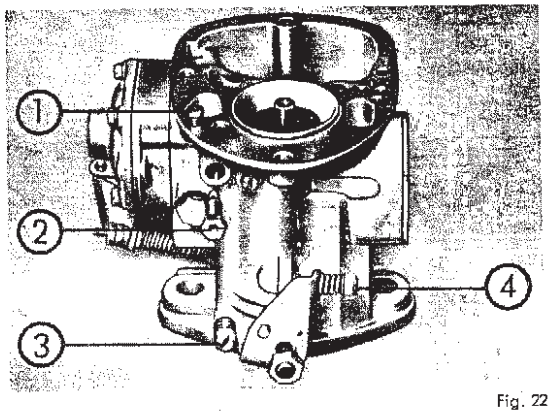


Fig. 22

① Idling air jet (u)
② Idling jet (g)
③ Idling mixture regulating screw
④ Idling adjusting screw

5 FU

Adjusting the Injection Ratio

Special tool:
P 25 a Measuring glass to measure the injection quantity of the carburetor accelerator pump

1. Adjust idling (4 Fu).
2. Fill float housing with fuel (while the engine is running).
3. Remove air filter from carburetor.
4. Operate throttle lever, until bubbles on the injection tube disappear.
5. Hold measuring glass (P 25 a) toward injection tube opening and press throttle lever from stop to stop.

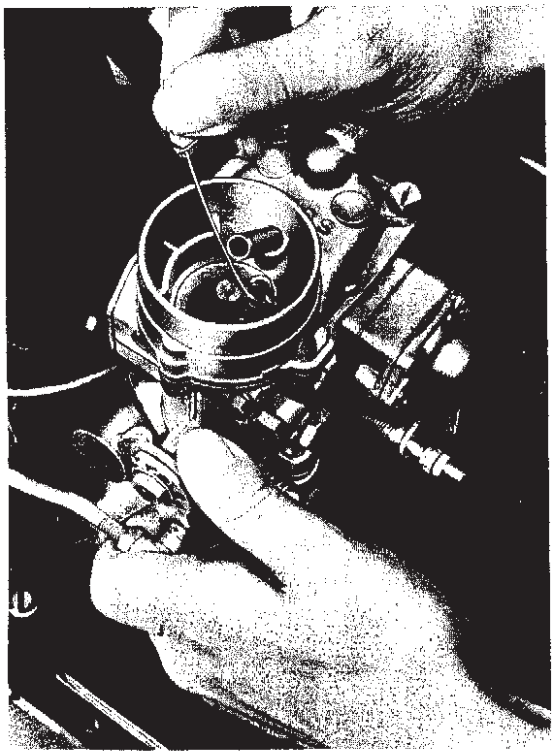


Fig. 23

6. Check fuel quantity, fully empty measuring glass and repeat measuring process.
7. Injection ratio
   of Carburetor 32 PBI 0.5 to 0.7 c. c.
   of Carburetor 32 PBIC 0.5 to 0.7 c. c.
   of Carburetor 40 PICB 0.55 to 0.75 c. c.
8. Repeat measuring process on second carburetor.
9. If necessary adjust the injection quantity on the adjusting nut.

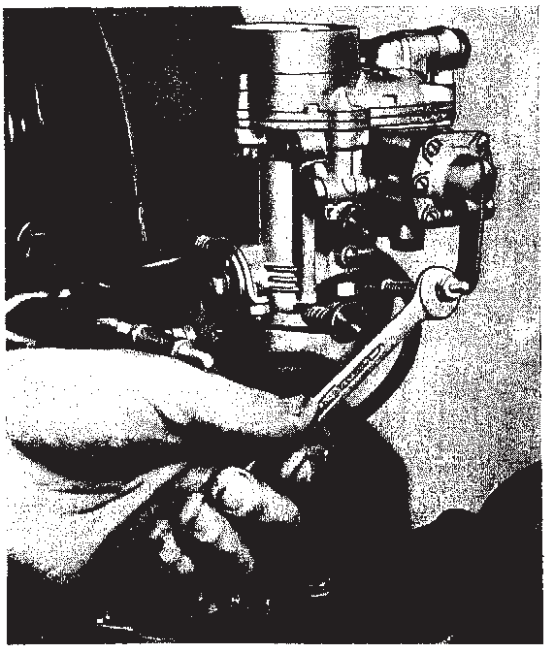


Fig. 24

Note: —
The pump jet has no influence on the injection ratio.
Injection time and ratio must be uniform for both carburetors.
The fuel jet should not impigne upon any carburetor component.

6 FU

Checking Fuel Level in Float Housing

1. Set carburetors horizontally.
2. Pour fuel into float bowl in the normal manner. Use a 2 m high fuel column to obtain the correct pressure.
3. Close fuel supply and remove carburetor cover carefully without moving the carburetor.
4. Take off carburetor cover.

5. Measure height „h" using a depth gauge. Thereby the fuel surface must be even and the carburetor position exactly horizontal. As soon as the depth gauge touches the meniscus, the fuel visibly jumps up to and along the top of the depth gauge.

Required Sizes:

Carburetor 32 PBI : h = 16 ± 1,5 mm
Carburetor 32 PBIC : h = 19 ± 1 mm
Carburetor 40 PICB : h = 20,5 ± 0,5 mm

Note: —

The fuel level in the carburetor float bowl can be corrected by bending the float toggle lever or by using a gasket of different thicknes on the float needle valve.

As of May 1954 floats of 40 PICB carburetors are provided with fins to avoid a carburetor overflow during idling. The weight of the float with fins increases to 23 gramms.

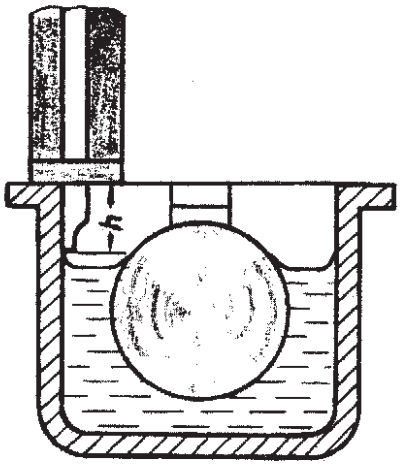


Fig. 25

Carburetor Troubles and their Cure

The below mentioned carburetor troubles presuppose the specified carburetor setting (see page F 5)

Trouble	Cause	Remedy
1. Engine will not start (with fuel in tank and ignition in order)	a) No fuel in system	a) Check in the following order: Unscrew main jet holder; if fuel is coming out, the main jet is dirty. If no fuel is coming out, disconnect line to fuel pump and operate starter without switching on ignition. If fuel is coming out of the pump, the float needle valve is clogged. If no fuel is coming out it may be due to: sticking pump valves, damaged pump mechanism, or dirt in fuel cock.
	b) Carburetor flows over	b) Check and clean float needle valve Check gasket Check float, if necessary replace Replace normal 40 PICB carburetor float by fin-provided float
2. Flat spot at idling speed	a) Idling adjustment incorrect	a) Readjust idling speed
	b) Idling jet or idling air jet clogged	b) Clean idling jet or idling air jet
	c) Intake manifold leaking	c) Check intake manifold, flanges, gaskets and compensation line
	d) Idling mixture regulating screw damaged	d) Replace idling mixture regulating screw
3. Poor acceleration	a) Idling mixture too lean	a) Readjust idling speed (check jet)
	b) Incorrect injection ratio	b) Check injection ratio
	c) Intake manifold leaking	c) Check intake manifold, flanges, gaskets and compensation line
4. Engine stalls when accelerator pedal is suddenly released	Incorrect idling adjustment	Readjust idling speed
5. Engine runs uneven, misfires, and cuts out	a) Fuel surplus	a) Check pump pressure Check float needle valve Check float Check fuel level
	b) Lack of fuel	b) Clean main jet Check fuel lines Check fuel level
	c) Intake manifold leaking	c) Check intake manifold, flanges, gaskets and compensation line
6. Fuel consumption too high	a) Float needle valve flooded	a) Check pump pressure
	b) Float leaking	b) Replace float
	c) Float needle valve does not close	c) Check float needle valve

Cleaning Air Filter

7 FU

The metal air filter wetted with oil filters the air intake. The frequency with which the air filter is cleaned depends on local conditions.

1. Take off air filter.
2. Rinse air filter in clean gasoline (petrol).
3. Blow compressed air through air filter.
4. Oil filter lightly.
5. Mount air filter.

Fig. 26

Removing and Installing Intake Manifold

8 FU

Removal

1. Remove carburetor.
2. Take off compensation line.
3. Take off spark plug connectors.
4. Remove vertical side duct plate.
5. Loosen intake manifold nuts and screws and take off intake manifold.
6. Cover suction port of cylinder head.

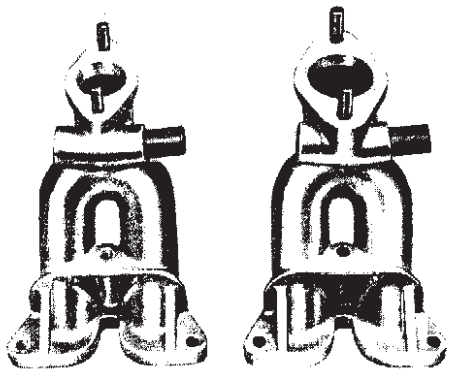


Fig. 27

normal Super

Installation

Follow reverse order, observing the following details:

1. Replace intake manifold gasket. Care should be taken that the punched gasket holes correspond to the size of the cylinder head suction ports.
2. Install graphite treated side of gasket toward cylinder head.
3. Check intake manifold for cracks.
4. Tighten intake manifold nuts and screws carefully and uniformly.
5. The compensation line must fit tightly to the connecting tube of the intake manifold; the rubber socket must seal perfectly.
6. Replace carburetor gasket.

Fig. 28

9 FU

Removing and Installing Carburetor Linkage

Removal

1. Unhook ball pan on accelerator pedal.
2. Remove accelerator pedal.
3. Remove left half of floor board.
4. Loosen ball pan of long accelerator rod from ball joint on bell crank.
5. Unscrew ball pan and lock nut from accelerator rod, as otherwise the accelerator rod cannot be pulled backward.
6. Open rear hood.
7. Detach ball pan from ball joint (see Fig. 29).
8. Jack up rear end of car.
9. Loosen long accelerator rod from bell crank on transmission and pull it out of the frame moving backward.
10. Pull out short accelerator rod from engine compartment and unhook it on bell crank.

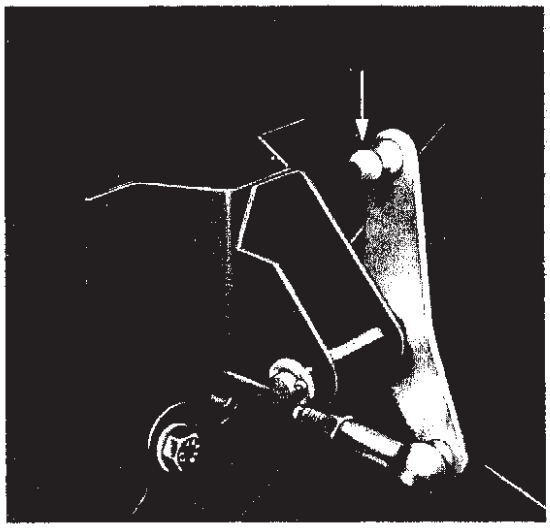


Fig. 29

Installation

When installing proceed in reverse order. Carefully crease the ball pans and all bell crank axles. Tighten lock nuts of ball pans. After installation make sure that both throttles are open when the accelerator pedal is depressed to the stop screw. Without operating the accelerator pedal, the idling adjusting screws of the throttle lever must contact the stop.

10 FU

Adjusting Carburetor Connecting Rod Assembly

1. Fasten carburetor so that the connecting rod assembly is placed at a right angle to the throttle spindle.
2. Completely loosen idling regulating screws of both throttle levers.
3. Loosen adjusting sleeve nuts on right carburetor, fully close both throttles and tighten adjusting sleeve nuts firmly so that both throttles are completely closed.
4. Check for perfect opening and closing of both throttles; check for proper functioning of connecting rod assembly.

Note: —

The assembled carburetor connecting rod assembly must automatically return to its initial position also when the return spring has no tension. If necessary correct by bending the carburetor levers.

5. Measure height „h" using a depth gauge. Thereby the fuel surface must be even and the carburetor position exactly horizontal. As soon as the depth gauge touches the meniscus, the fuel visibly jumps up to and along the top of the depth gauge.

Required Sizes:

Carburetor 32 PBI : h = 16 ± 1,5 mm
Carburetor 32 PBIC : h = 19 ± 1 mm
Carburetor 40 PICB : h = 20,5 ± 0,5 mm

Note: —

The fuel level in the carburetor float bowl can be corrected by bending the float toggle lever or by using a gasket of different thicknes on the float needle valve.

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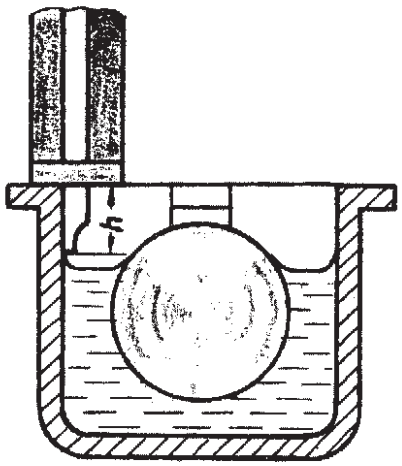

Fig. 25

Carburetor Troubles and their Cure

The below mentioned carburetor troubles presuppose the specified carburetor setting (see page F 5)

Trouble	Cause	Remedy
1. Engine will not start (with fuel in tank and ignition in order)	a) No fuel in system	a) Check in the following order: Unscrew main jet holder; if fuel is coming out, the main jet is dirty. If no fuel is coming out, disconnect line to fuel pump and operate starter without switching on ignition. If fuel is coming out of the pump, the float needle valve is clogged. If no fuel is coming out it may be due to: sticking pump valves, damaged pump mechanism, or dirt in fuel cock.
	b) Carburetor flows over	b) Check and clean float needle valve Check gasket Check float, if necessary replace Replace normal 40 PICB carburetor float by fin-provided float
2. Flat spot at idling speed	a) Idling adjustment incorrect	a) Readjust idling speed
	b) Idling jet or idling air jet clogged	b) Clean idling jet or idling air jet
	c) Intake manifold leaking	c) Check intake manifold, flanges, gaskets and compensation line
	d) Idling mixture regulating screw damaged	d) Replace idling mixture regulating screw
3. Poor acceleration	a) Idling mixture too lean	a) Readjust idling speed (check jet)
	b) Incorrect injection ratio	b) Check injection ratio
	c) Intake manifold leaking	c) Check intake manifold, flanges, gaskets and compensation line
4. Engine stalls when accelerator pedal is suddenly released	Incorrect idling adjustment	Readjust idling speed
5. Engine runs uneven, misfires, and cuts out	a) Fuel surplus	a) Check pump pressure Check float needle valve Check float Check fuel level
	b) Lack of fuel	b) Clean main jet Check fuel lines Check fuel level
	c) Intake manifold leaking	c) Check intake manifold, flanges, gaskets and compensation line
6. Fuel consumption too high	a) Float needle valve flooded	a) Check pump pressure
	b) Float leaking	b) Replace float
	c) Float needle valve does not close	c) Check float needle valve