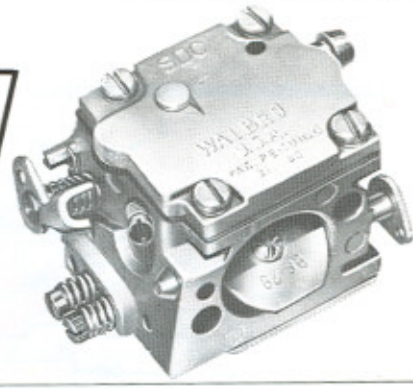
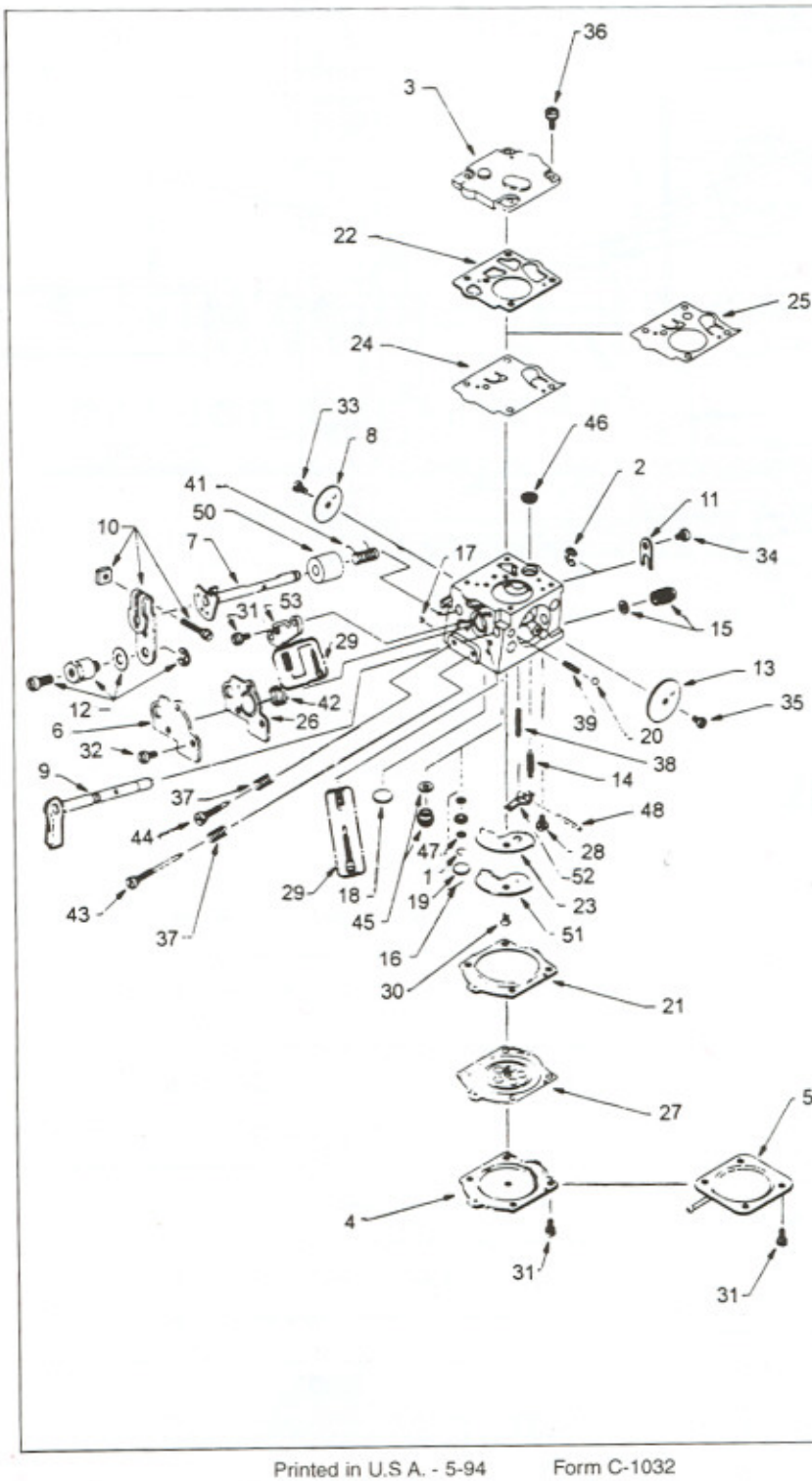
WALBRO

CHAIN SAW CARBURETOR STANDARD MODEL SERVICE MANUAL





Ref. No.		Part Name
1	*	Ring - Screen Retainer
2		Ring - Shaft Retainer
3		Cover - Fuel Pump
4		Cover - Metering Diaphragm
5		Cover - Metering Diaphragm
6		Cover - Accelerator Pump
7		Shaft Assembly - Throttle
8		Valve - Throttle
9		Shaft Assembly - Choke
10		Lever - Choke
11		Clip - Throttle Shaft
12		Swivel Kit
13		Valve - Choke
14	*	Valve - Inlet needle
15		Kit - Governor
16		Nozzle Assy - Check Valve
17		Plug - Limiting
18	*	Plug - Welch (idle 3/8)
19	*	Plug - Welch (main 5/16)
20		Ball - Choke Friction
21	**	Gasket - Metering Diaphragm
22	**	Gasket - Fuel Pump
23	**	Gasket - Circuit Plate
24	**	Diaphragm - Fuel Pump
25	**	Diaphragm - Check Valve
26	**	Diaphragm - Accelerator Pump
27	**	Diaphragm Ass'y - Metering
28		Screw - Merering Lever Pin
29		Screw - Idle Adjustment Kit
30		Screw - Circuit Plate
31		Screw - Diaphragm Cover (4)
32		Screw - Accelerator Pump (3)
33		Screw - Throttle Valve
34		Screw - Retainer Clip
35		Screw - Choke Valve
36		Screw - Fuel Pump Cover (4)
37		Spring - Needle (idle & power) (2)
38		Spring - Metering Lever
39		Spring - Choke Friction
41		Spring - Throttle Return
42		Spring- Accelerator Pump
43		Needle - Power
44		Needle - Idle
45		Jet - Nozzle Assembly
46	*	Screen - Fuel Inlet
47	*	Screen - Check Valve
48		Pin-Metering Lever
50		Seal - Throttle Shaft
51		Plate - Circuit
52	*	Lever - Metering
53		Bracket - Idle Adjust

*Contents in Repair Kit
**Contents in Gasket/Diaphragm Kit

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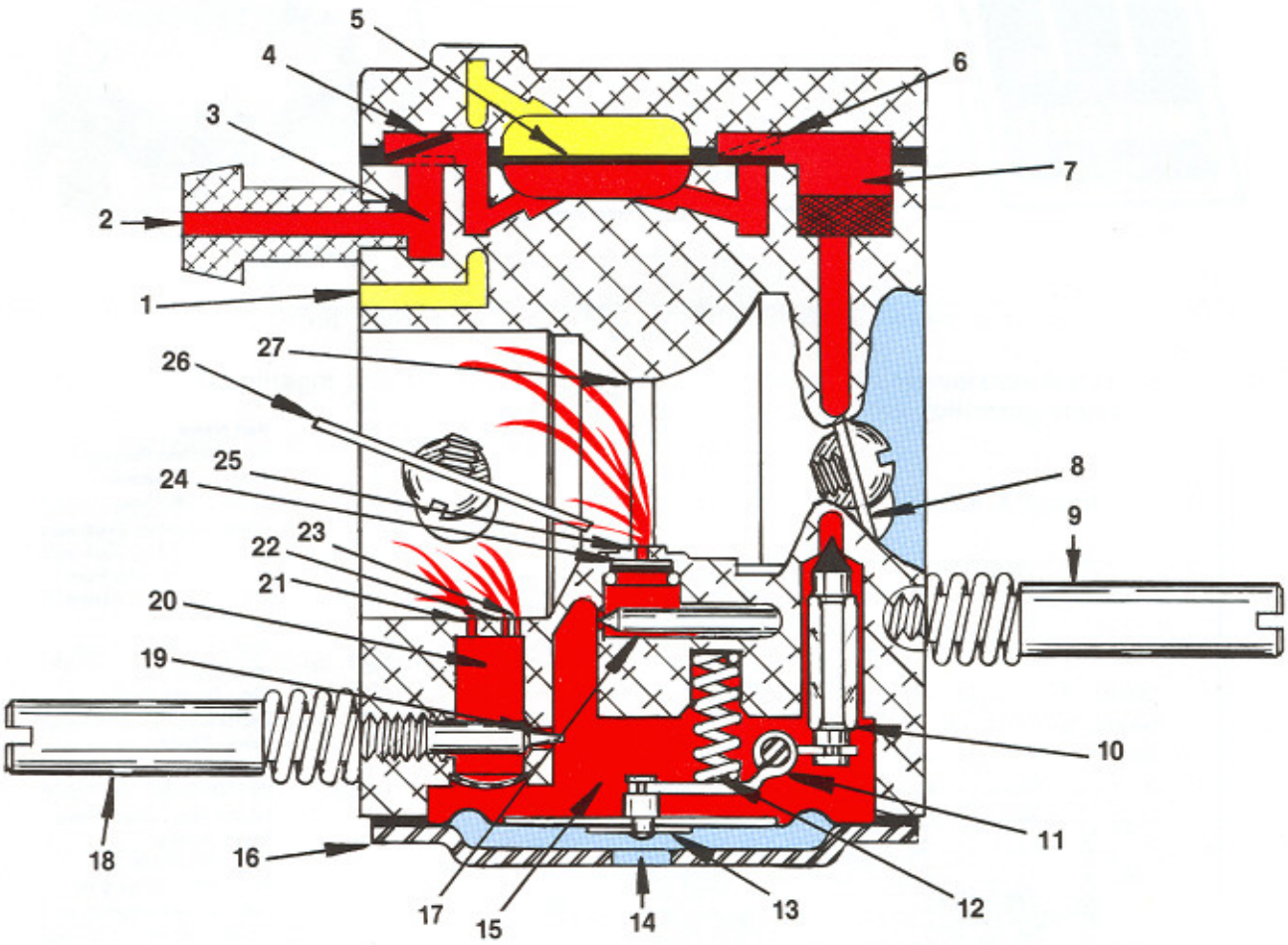
Standard Model Starting Circuit



SDC Operating Functions

1 Engine Impulse: Actuates Fuel Pump Diaphragm No. 5.

2 Fuel Inlet: Fuel drawn from Tank.

3 Surge Chamber: Dampens Fuel Flow.

4 Inlet Valve: Opens on demand from Fuel Pump.

5 Fuel Pump: Responds to engine impulse force.

6 Outlet Check Valve: Forced open by pump pressure.

7 Filter Screen: Filters fuel.

8 Choke Valve: Closes air passage at starting position.

9 Hi Speed Needle: Adjust for fuel richness at high speeds.

10 Inlet Needle Valve: Lifts off seat to allow fuel entry.

11 Metering Lever: Lifts Inlet Needle off seat.

12 Metering Lever Spring: Transmits force to Metering Lever.

13 Metering Diaphragm: Drawn up by vacuum to activate Metering Lever.

14 Atmospheric Vent: Allows air pressure against Metering Diaphragm.

15 Metering Chamber: Fuel reservoir, feeds to idle and nozzle holes.

16 Cover: Protects Metering Diaphragm.

17 Nozzle Well: Fuel is drawn in from Metering Chamber at high speed.

18 Idle Needle: Adjust for fuel richness to 3 Idle holes.

19 Idle Take-off: Fuel entry for Idle and Part Throttle holes.

20 Idle Port: Fuel reservoir for Idle and Part Throttle holes.

21 Primary Idle Hole: Only fuel source to engine at Idle position.

22 Second Idle Hole: Allows additional fuel flow on acceleration.

23 Third Idle Hole: Increases fuel flow at Part Throttle.

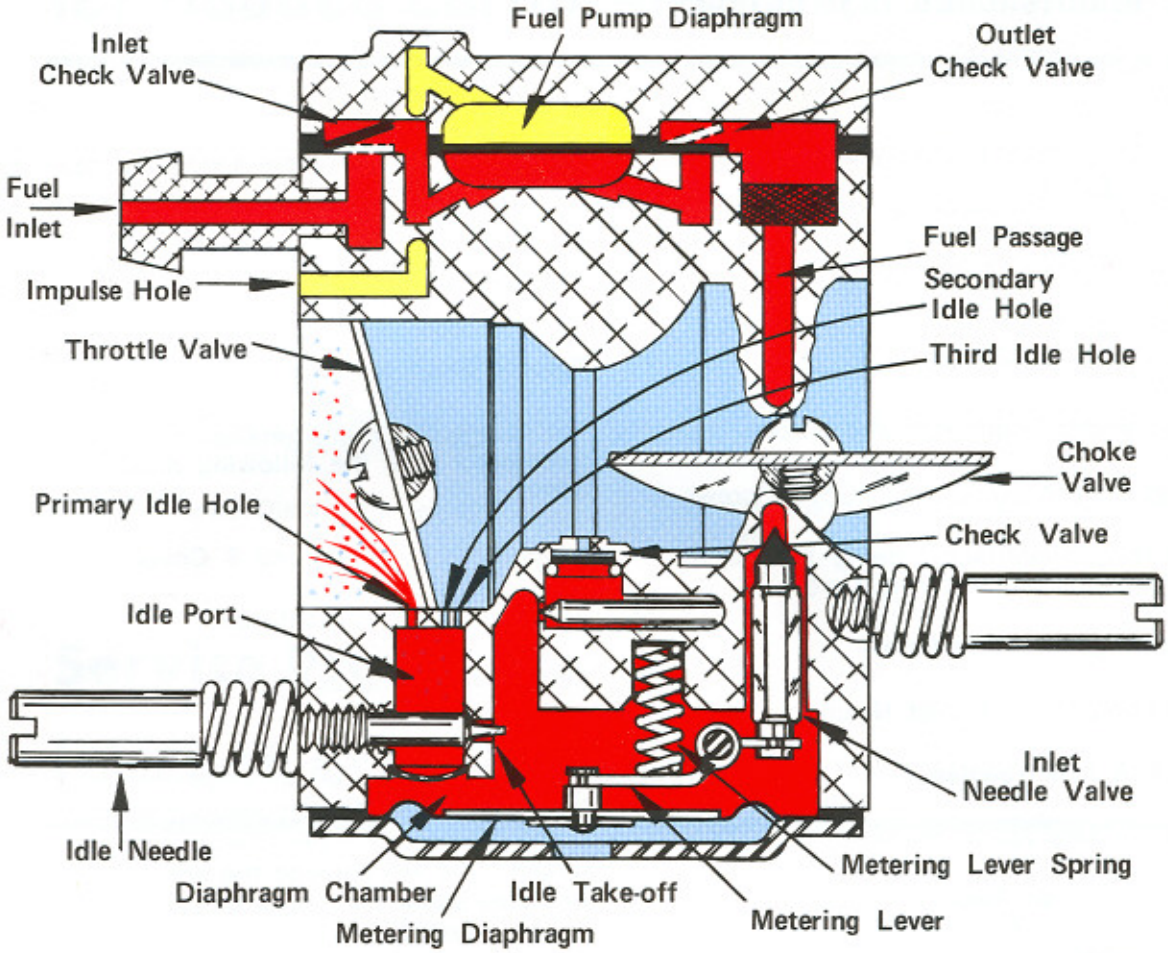
24 Nozzle Check Valve: Engine vacuum draws valve open.

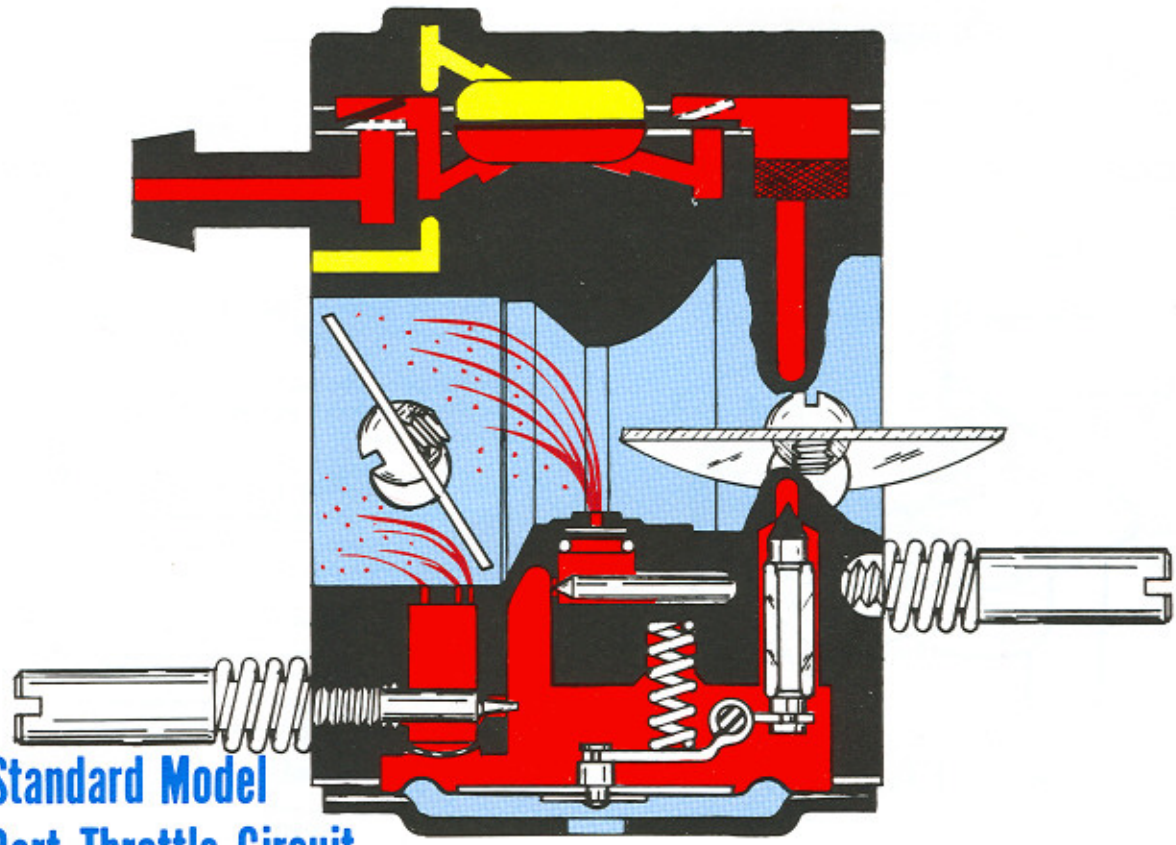
25 Nozzle: Increases fuel discharge for high speeds.

26 Throttle Valve: Regulates engine speed as it exposes Primary, Second and Third Idle holes, then Nozzle for fuel delivery.

27 Venturi: Increases air velocity at Nozzle, creating a suction to draw fuel into Throttle Bore passage to engine intake.

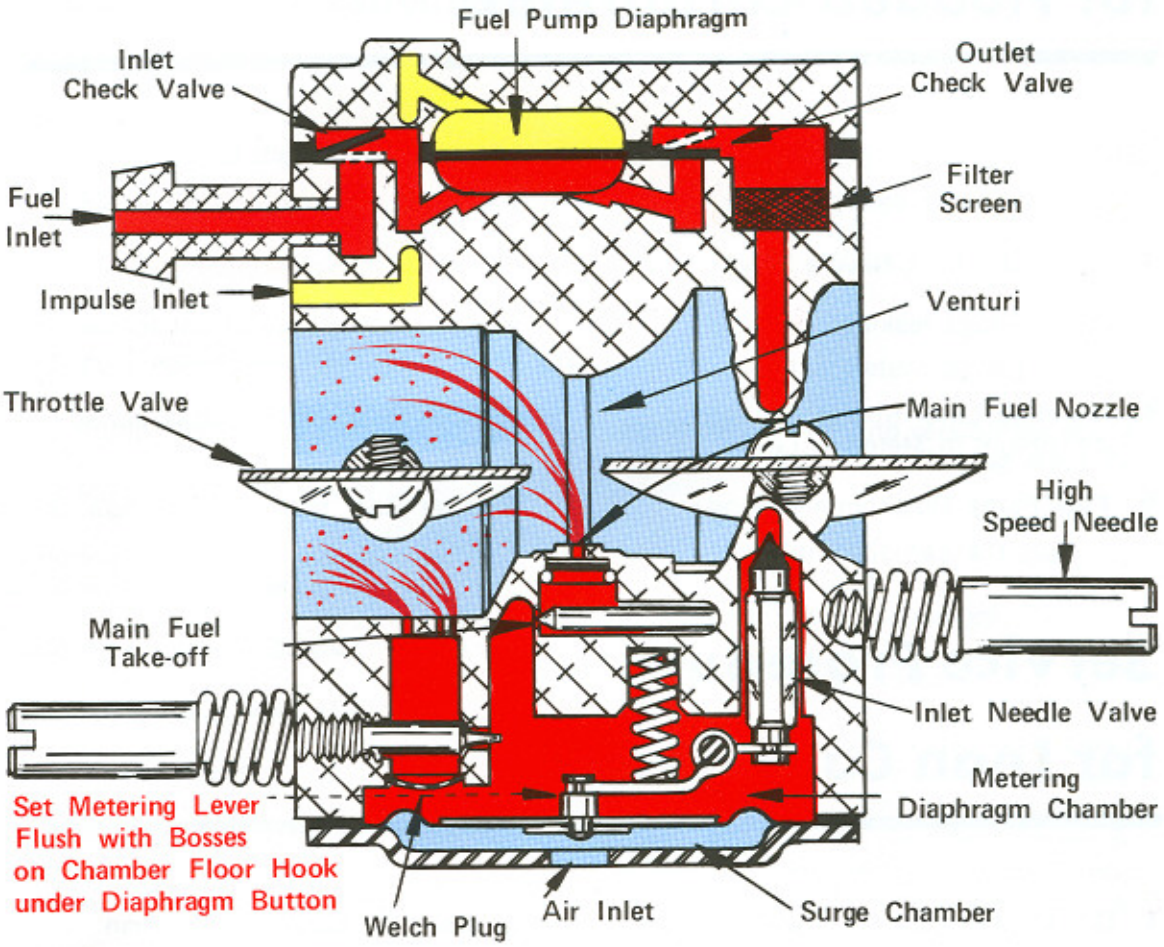
Standard Model Idle Speed Circuit





Standard Model Part Throttle Circuit

Standard Model High Speed Circuit



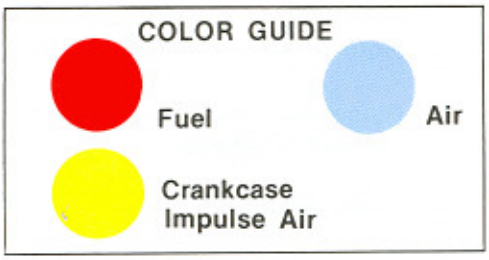
Trouble Shooting Guide

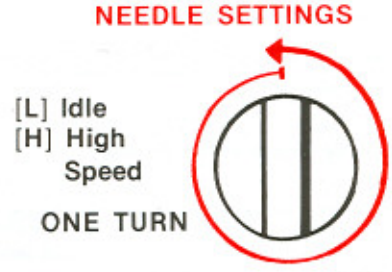
1. Fuel Source - In-tank filters, lines, fittings — check for leaks or obstructions, venting and air filter.
2. Choke and Throttle - Check mechanical linkage and cables - Look for ice, kinks, etc.
3. Adjustments - Idle and Main needles, 1 turn off seat - Tune from rich side by 1/8 turn, gradually.
4. Ignition - Spark plugs - Change if back-fire or preignition - when timed correctly, white plugs mean fuel is too lean, black - too rich, chocolate brown = normal.
5. Fuel Mixture - Use 16 to 1 or as recommended by engine manufacturer.
6. Tighten all screws on the carburetor - tighten all mounting bolts - check for cracks or leaks at flanges and manifolds.

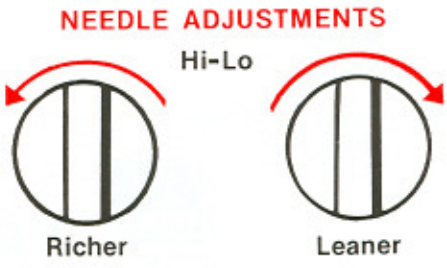
TIGHTEN ALL SCREWS

NEEDLE SETTINGS

The power and idle needles control the lubrication received by the engine. Adjustments should be done carefully. Start by turning the needles all the way in (do not force them). Set Power (high speed) needle one (1) turn open and the idle (low speed) needle one (1) turn open. This puts both slightly on the rich side and leaner adjustments can be made as needed. (Too lean an adjustment can cause improper lubrication).







Service Procedure for Flooded Carburetors

	CAUSE	REMEDY
1	Metering lever set too high	See adjusting meter lever page 6
2	Dirt under Inlet Needle Valve	Remove and clean
3	Welch Plugs leaking	Replace, being careful not to damage ports when removing plugs
4	Metering Lever Spring not seated on dimple in Metering Lever	Remove lever and re-install spring
5	Fuel Pump Diaphragm leaking	Remove and replace with new diaphragm

Service Procedure for Lean Carburetors

	CAUSE	REMEDY
1	Dirt in Idle Main Channels	Disassemble carburetor & clean
2	Metering Lever set too low	See adjusting meter lever page 6
3	Hole in Metering Diaphragm	Replace Diaphragm
4	Pulse line from Crankcase to carburetor plugged	Remove obstruction
5	Leaky Manifold Gaskets	Replace Gaskets
6	Leaky Nozzle Check Valve	Replace Check Valve with Kit
7	Fuel Pump Diaphragm Check valves worn	Replace Fuel Pump Diaphragm
8	Dirty Fuel Inlet Screen	Remove Fuel Pump Cover & Clean
9	Faulty Fuel Delivery System to carburetor	Check complete Fuel Delivery System from Pickup in Fuel Tank to carburetor Fuel Inlet for cracks, dirt, etc. Replace fuel line or Pickup Filter when necessary
10	Leaky Accelerator Pump Diaphragm	Replace Diaphragm

TIGHTEN ALL SCREWS

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Walbro Engine Management Aftermarket Division
WALBRO CORPORATION
CASS CITY, MICHIGAN

SDC Maintenance Instructions

Before Disassembly

Clean the outside of the carburetor of all dirt and foreign material and clear a working area for disassembly.

Disassemble the Following Part in Sequence

1. Four Fuel Pump Cover Screws
2. Fuel Pump Diaphragm and Gasket
3. Four Metering Diaphragm Cover Screws
4. Metering Diaphragm, being careful to unhook it from Metering Lever
5. Metering Lever Pin Screw
6. Metering Lever & Inlet Needle
7. Main & Idle Needles
8. Main & Idle Welch Plugs
9. Throttle Shaft Retaining Ring
10. Throttle Valve
11. Throttle Shaft & Return Spring

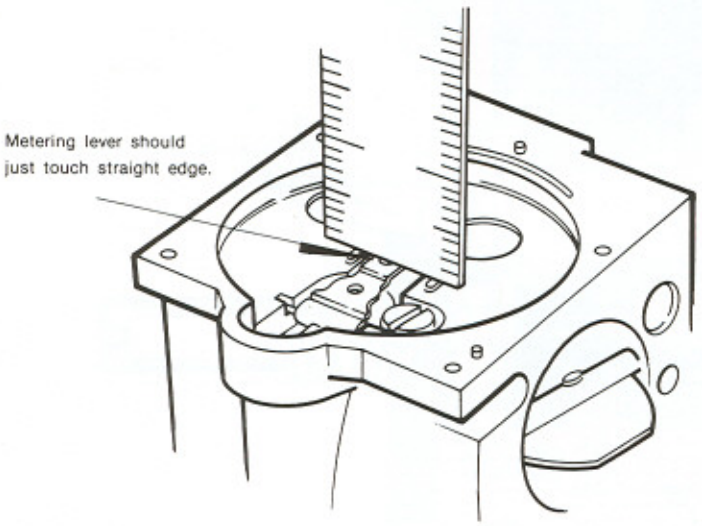
For Accelerator Pump version the above operations plus the following must be done:

12. Accelerator Pump Screws & Cover
13. Accelerator Pump Diaphragm
14. Accelerator Pump Spring

Wash all component parts with clean gasoline and blow off with compressed air, being SURE compressed air is not blown through nozzle check valve & screen. This will damage the small rubber valve under the Check Valve Seat & Screen Assembly.

Reverse the above for assembly.

ADJUSTING THE METERING LEVER



With metering diaphragm cover (4 screws) and metering diaphragm removed:

1. Make sure the metering lever spring is seated in its hole in the chamber floor and under the dimple in the metering lever.
2. Place a short straight-edge across two bosses on chamber floor as illustrated. Metering lever should just touch the straight-edge. Slight pressure will bend needle valve end up or down.
3. Gasket must be assembled next to the body.
4. Special care should be taken to make sure that the metering lever is assembled to the hook on the diaphragm and the inlet valve to prevent malfunctioning of the carburetor.