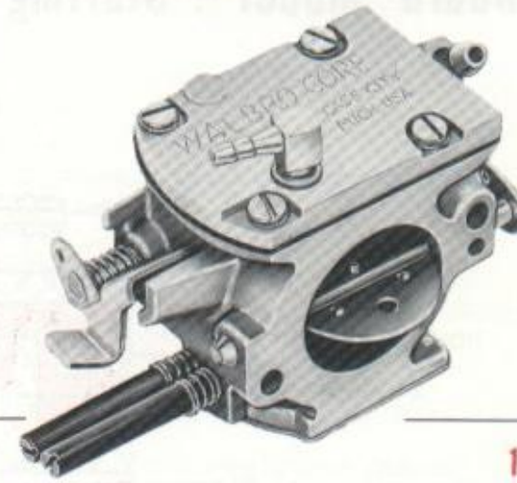
WALBRO®

chain saw
carburetors
standard model
SERVICE MANUAL







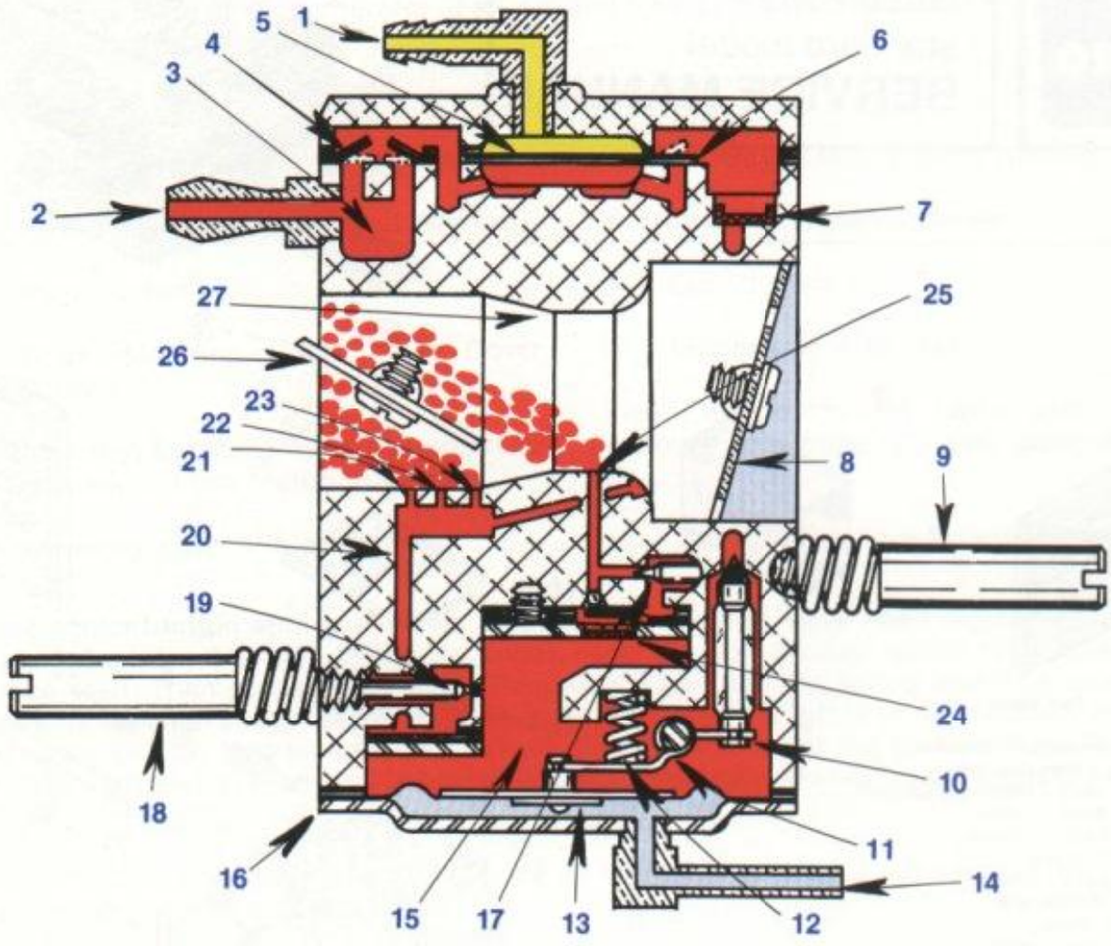


Ref. No.		Part Name
1		Body Assembly - carburetor
2	*	Ring - screen retaining
3		Cover Ass'y - metering diaphragm
4		Cover Ass'y - pump
5		Shaft Ass'y - throttle
6		Valve - throttle
7		Shaft Ass'y - choke
8	*	Clip - throttle shaft
9		Valve - choke
10	*	Valve - inlet needle
11	*	Ball - choke friction
12	**	Gasket - metering diaphragm
13	**	Gasket - circuit
14	**	Gasket - pump
15	*	Gasket Set - service
16	**	Diaphragm - check valve
17	**	Diaphragm - fuel pump
18	**	Diaphragm Assembly - metering
19	*	Screw - metering lever pin
20	*	Screw - circuit plate (2)
21		Screw - idle adjustment
22	*	Screw Assembly - throttle valve
23	*	Screw Assembly - choke valve
24	*	Screw Assembly - metering cover
25	*	Screw - clip
26		Screw - fuel pump cover
27	*	Spring - needle adjusting (2)
28		Spring - idle adjustment
29	*	Spring - metering lever
30	*	Spring - choke friction
31		Spring - throttle return
32		Needle - adj.
33	*	Screen - inlet
34	*	Screen - check valve
35	*	Pin - metering lever
36		Plate Assembly - circuit
37	*	Lever - metering
38		Kit - Kwik Kit
39	*	**Kit - Gasket/Diaphragm**
40		**Repair Kit - OEM**

* Contained in Kwik Kit
**Contained in Gasket/Diaphragm Kit

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Standard Model – Starting Circuit



WB 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.

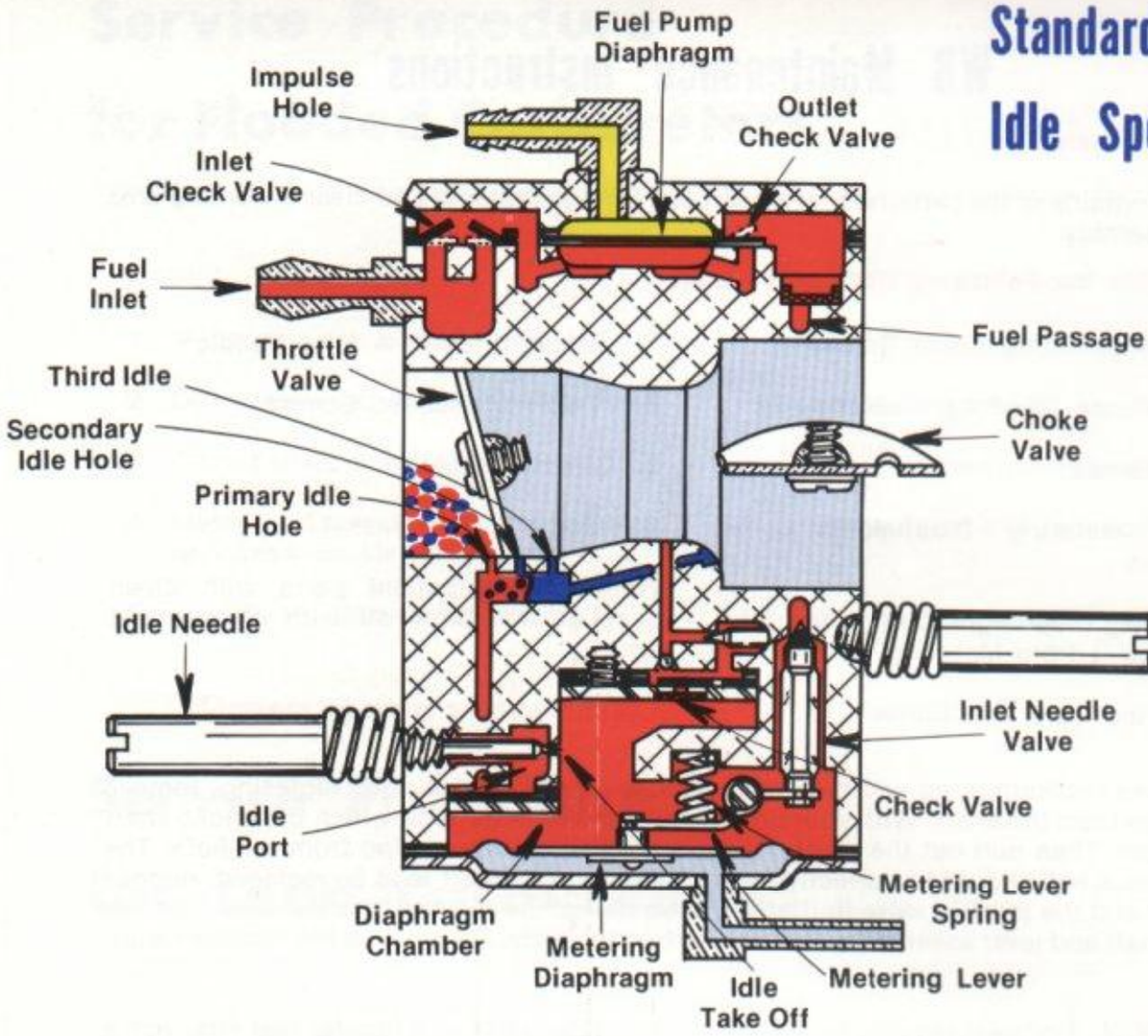
24 Nozzle Check Valve: Engine vacuum draws valve open.

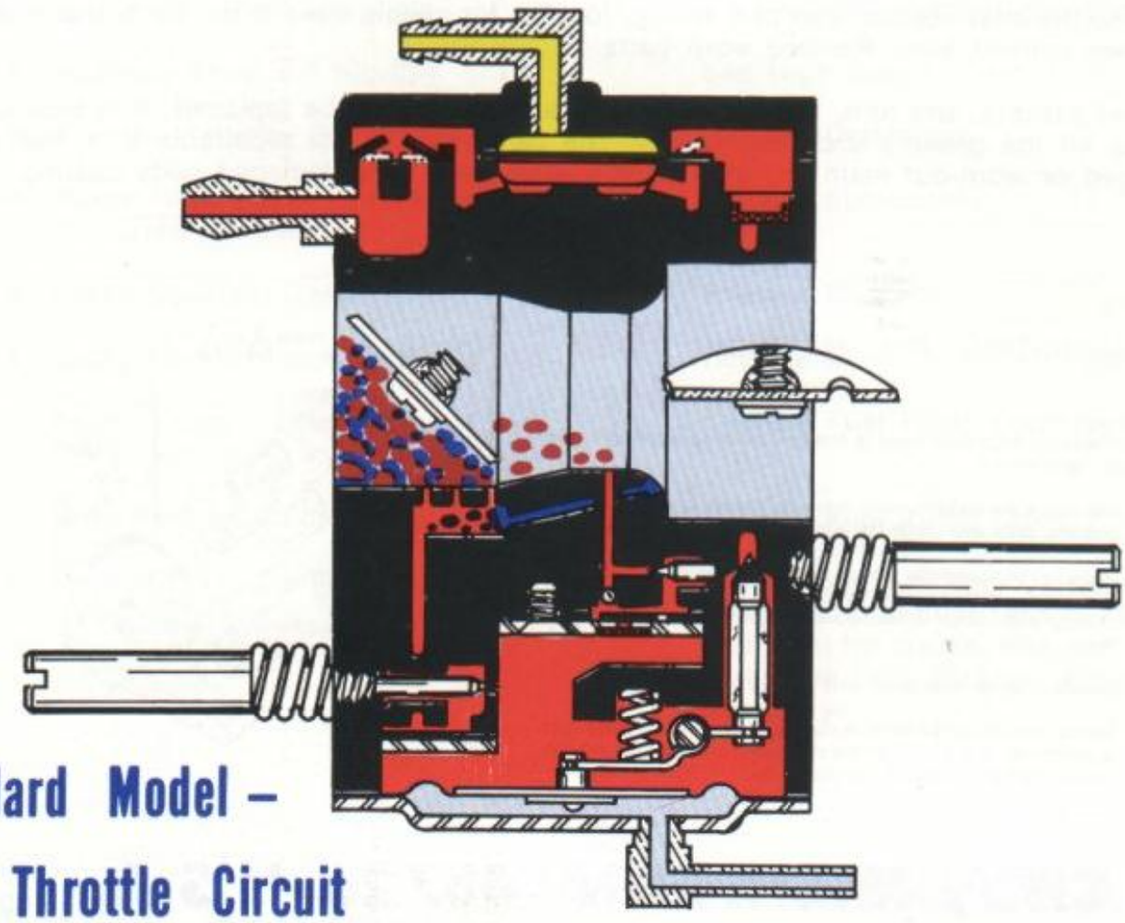
25 Nozzle: Increases fuel discharge for high speeds.

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.

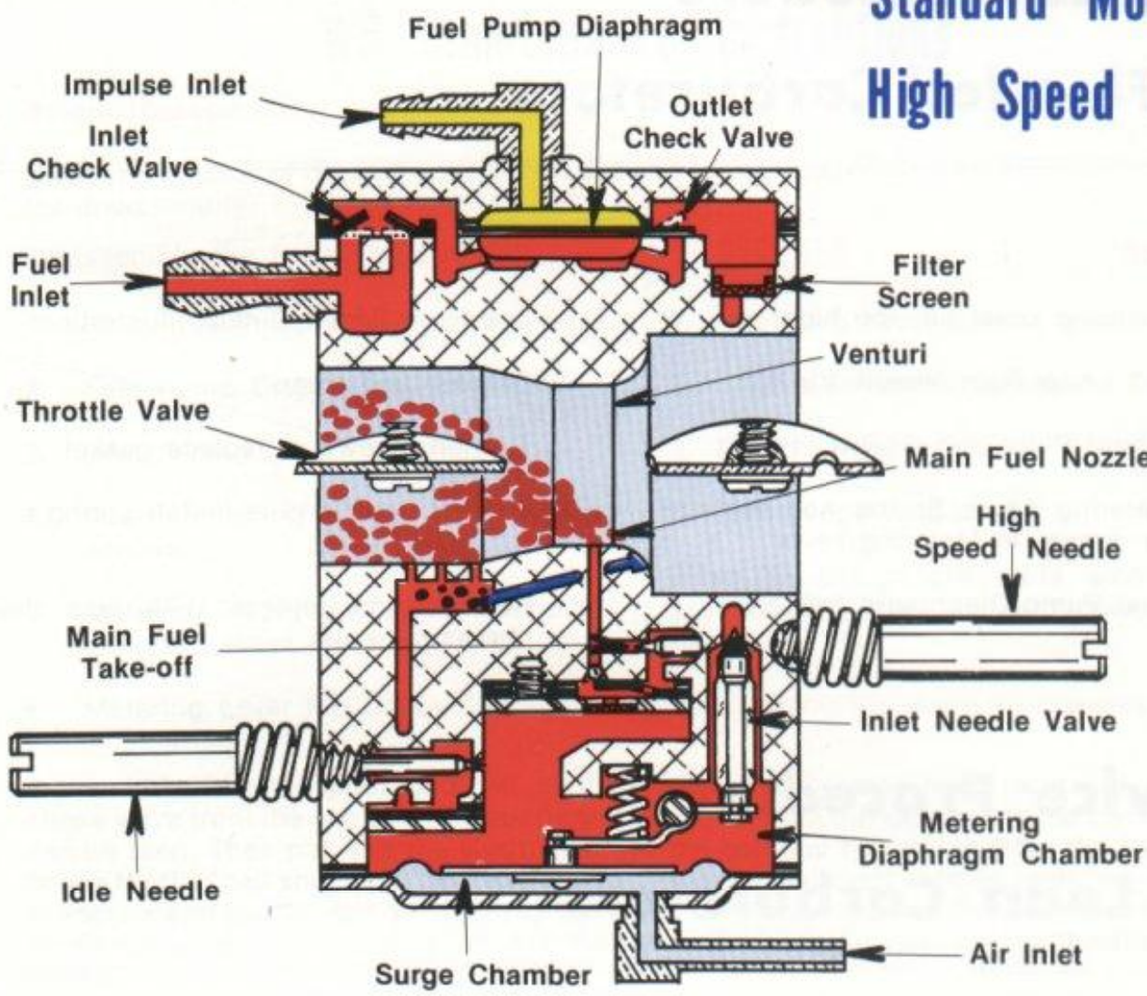
Standard Model – Idle Speed Circuit





Standard Model – Part Throttle Circuit

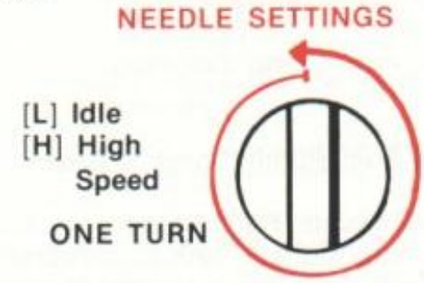
Standard Model – High Speed Circuit

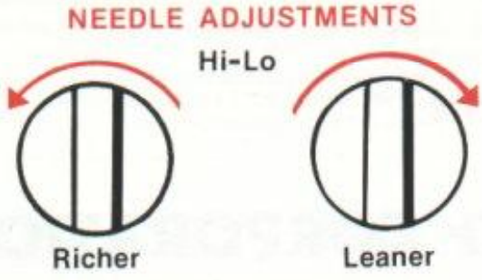




Needle Settings

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 1¼ turns open and the idle (low speed) needle 1¼ turns 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).





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. Basic Adjustments - Idle and Main needles, 1¼ turns off seat - Tune from rich side by 1/8 turn, **gradually,** leaning the mixture. CAUTION: **Excessive lean mixture can damage the engine.**
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

Service Procedure for Flooded Carburetors

	CAUSE	REMEDY
1	Metering Lever set too high	See High Speed Circuit Illustration
2	Dirt under Inlet Needle Valve	Remove and clean
3	Circuit Plate and Gasket leaking	Tighten screws or replace gasket
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 High Speed Circuit Illustration
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

TIGHTEN ALL SCREWS

WB 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. Inlet Screen
4. Four Metering Diaphragm Cover Screws
5. Metering Diaphragm, being careful to unhook it from Metering Lever
6. Metering Lever Pin Screw
7. Metering Lever & Inlet Needle
8. Two Flat Headed Screws
9. Circuit Plate
10. Diaphragm & Gasket

Wash all component parts with clean gasoline and blow off with compressed air.

Reverse the above for assembly.

If the choke friction spring and ball, or the choke shaft or valve need replacing, remove choke valve from the shaft. With your finger, cover the hole through which the choke shaft can be seen. Then pull out the shaft. Remove the ball and the spring from the hole. The choke friction ball should be perfectly round. If the throttle shaft is to be replaced, remove the screw and the throttle valve (butterfly); also the screw and the throttle stop. Pull the throttle shaft and lever assembly out of the carburetor body. Do not lose the throttle-return spring.

INSPECTION: For best results, first soak all the metal parts in a regular fuel mix, not a "carburetor cleaner solution".

Examine the inlet needle, lever and spring, looking for needle wear at the tip and also at the lever contact area. Replace worn parts.

Cracked gaskets, and torn, frayed or porous diaphragms must be replaced. It is best to replace all the gaskets and diaphragms. The carburetor is not repairable if it has a damaged or worn-out main jet, inlet needle valve seat, or a damaged body casting.

ADJUSTING THE METERING LEVER

With metering diaphragm cover (4 screws), metering diaphragm, and gasket 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 straight-edge across carburetor body casting, as illustrated. Metering lever should be 3/64 to 1/16 below straight-edge. Slight pressure will bend needle valve end up or down.
3. Gasket must be assembled next to body as shown.
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.

