



CLICK ANYWHERE FOR MORE DETAILS

MANUAL PREVIEW

Tecumseh

Service Manual

Vector

purchase full manual at

Service Manual

JENSALES.COM

or Call **800-443-0625**

JENSALES

CLICK ANYWHERE FOR MORE DETAILS

THIS IS A MANUAL PRODUCED BY JENSALES INC. WITHOUT THE AUTHORIZATION OF
TECUMSEH OR IT'S SUCCESSORS. TECUMSEH AND IT'S SUCCESSORS
ARE NOT RESPONSIBLE FOR THE QUALITY OR ACCURACY OF THIS MANUAL.

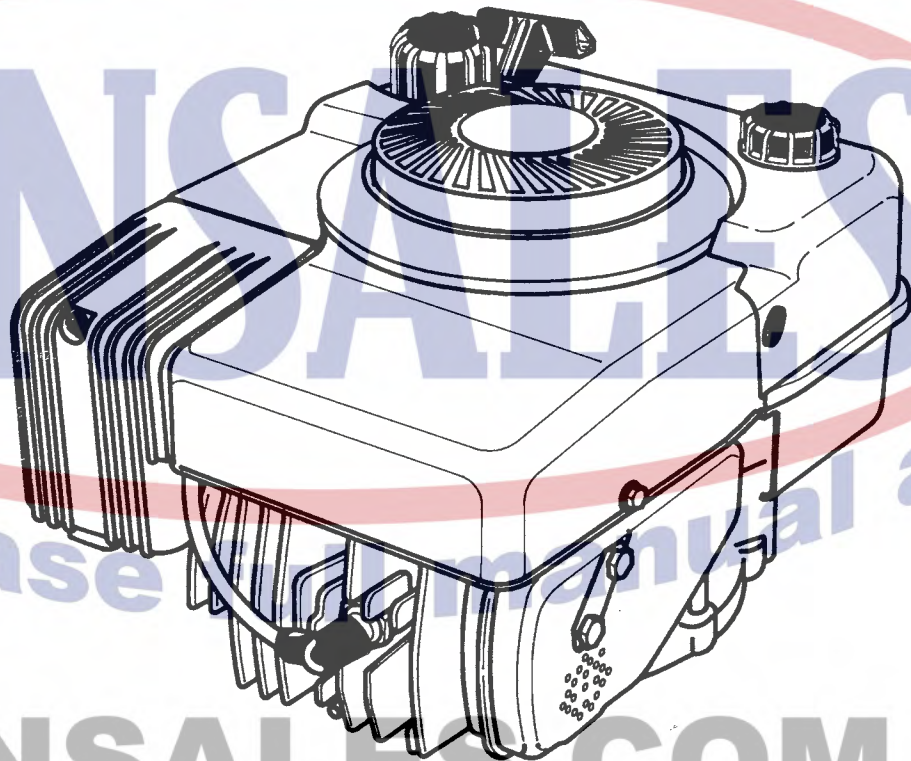
TRADE MARKS AND TRADE NAMES CONTAINED AND USED HEREIN ARE THOSE OF OTHERS,
AND ARE USED HERE IN A DESCRIPTIVE SENSE TO REFER TO THE PRODUCTS OF OTHERS.

TE-S-VECTOR

TECUMSEH ENGINES

VECTOR

MECHANIC'S HANDBOOK



JENSALES.COM

or Call 800-443-0625



TECUMSEH PRODUCTS COMPANY
ENGINE AND TRANSMISSION GROUP
SERVICE DIVISION
GRAFTON, WISCONSIN 53024

TABLE OF CONTENTS

Chapter 1

General Information	1
Engine Identification	1
Parts Breakdown	2
Parts List	3
Engine Care	4
Fuel, Oils, Storage	4
Tune-Up Procedure	5
4-Cycle Engine Theory	5
Air Cleaners	7-8

Chapter 2

Carburetion	9
Identification	9
Parts Breakdown	9
Float Bowl Service	10
Float Bowl Reassembly	11
Float Bowl Drain	10-11
Rebuilding the carburetor body	11
Welch Plug Removal	11
Cleaning Welch Plug Installation	11
Throttle Shaft & Shutter	12
Primer Bulb	12

Chapter 3

Governors and Linkage	13-14
-----------------------------	-------

Chapter 4

Starters	15
Rewind Starter	15
12 Volts Starters	16-17

Chapter 5

Flywheels and Servicing	18
Removal and Assembly	18-19
Brake System Operation	19-20
Wiring	20
Battery	20
Replace Brake Pad	20
Brake Mechanism Installation	21
Control Switch & Replacement	21

Chapter 6

Alternator	22
Troubleshooting Electric Start Engines	22

Chapter 7

Ignition System	23
Ignition System Operation	23
Spark Plug Service	23
Timing Adjustment	23

Chapter 8	
Piston, Rings and Connecting Rod	24
Piston.....	24
Rings	24
Connecting Rod.....	24

Chapter 9	
Cylinders and Cylinder Heads	25
Cylinder Service.....	25
Reboring	25
Cylinder Head.....	25

Chapter 10	
Crankshaft, Camshaft and Lubrication.....	26
Crankshaft Timing Mark.....	26
Camshaft Timing Mark	26
Compression Release	26
Lubrication System Operation	27
Crankcase Breather Operation	27-28

Chapter 11	
Valves, Lifters, Springs and Seats	29
Valves	29
Valve Removal.....	29
Valve Seats.....	29
Valve Service	29
Valve Adjustment.....	30
Valve Installation.....	30
Lifters.....	30
Oversize Guides	30

Chapter 12	
Mounting Flange and Oil Seals	30
Removing the Mounting Flange	30
Oil Seal Service.....	31
Mounting Flange Installation	31

Chapter 13	
Ultra Balance System	31

Chapter 14	
Troubleshooting	32-38

Chapter 15	
Engine Specifications	39
Torque Specifications	40

Chapter 16	
Training Aids and Tools	41

CLICK ANYWHERE FOR MORE DETAILS

CLICK ANYWHERE FOR MORE DETAILS



PARTS IDENTIFICATION

This is a parts breakdown of a typical vector engine. Use this parts breakdown to identify parts. When ordering parts always refer to the engine model and specification number stamped on the engine blower housing.

Carburetor and starter breakdowns are found in the chapters referring to their repair.

Ref. No.	Part Name	Ref. No.	Part Name
1	Cylinder Assy.	54	Cap, Valve spring
2	Pin, Dowel	55	Gasket, Valve cover
3	Element, Breather	56	Cover, Valve spring box
4	Cover, Breather	57	Screw, Hex hd. Sems, 10-24 x 1/2
5	Gasket, Breather cover	58	Stud, Carburetor mounting
6	Screw, Hex washer hd., thread forming, 10-24 x 1/2	59	Link, Governor
7	Body, Breather valve	60	Spacer, Carburetor mounting
8	Valve, Breather check	61	Lever Assy., Brake
9	Breather Tube	62	Lever, Brake control
10	Washer, Flat	63	Link, Brake control lever
11	Rod, Governor	64	Spring, Brake
12	Lever, Governor	65	Ring, Retaining
13	Clamp, Governor lever	66	Terminal
14	Screw, Hex washer hd., 8-32 x 5/16	67	Spring, Brake control lever
15	Spring, Governor extension	68	Bushing, Brake control lever & brake lever
16	Seal, Oil	69	Spring, Compression
17	Baffle, Blower housing (Incl. No. 195)	70	Spring, Compression
18	Screw, Hex washer hd. tapite, 1/4-20 x 5/8	71	Screw, Fil. hd., 5-40 x 7/16
19	Crankshaft Assy.	72	Screw, Fil. hd., 6-32 x 21/32
20	Piston & Pin Assy.	73	Gasket, Carburetor to air cleaner
21	Ring Set, Piston	74	Body, Air cleaner (Incl. Nos. 239, 299 & 350)
22	Ring, Piston pin retaining	75	Screw, Fil hd. Sems, 10-32 x 2-3/32
23	Rod Assy., Connecting	76	Filter, Air cleaner (Paper)
24	Bolt, Connecting rod	77	Cover, Air cleaner
25	Lifter, Valve	78	Nut, Lock, 1/4-20
26	Camshaft Assy.	79	Screw, Hex washer hd., tapite, 1/4-20 x 11/16
27	Pump Assy., Oil	80	Plate, Control Assy. cover
28	Gasket, Mounting Flange	81	Screw, Hex washer hd., tapite, 8-32 x 1/2
29	Flange, Mounting	82	Housing, Blower
30	Plug, Oil drain	83	Screw, Hex washer hd. tapite, 1/4-20 x 1/2
31	Seal, Oil	84	Ring, Starter
32	Washer, Flat	85	Muffler
33	Gear Assy., Governor	86	Plate, Muffler locking
34	Spool, Governor	87	Screw, Hex hd. shoulder, 5/16-18 x 2-11/32
35	Ring, Retaining	88	Cup, Starter
36	Gear, Idler	89	Screw, Hex washer hd., 8-32 x 21/64
37	Screw, Hex washer hd., 1/4-20 x 1-9/16	90	Line, Fuel
38	Key, Flywheel	91	Clamp, Fuel line
39	Flywheel	92	Clip, "U" Type Nut, 10-32
40	Fan, Flywheel	93	Tank Assy., Fuel
41	Washer, Belleville	94	Cap, Fuel
42	Nut, Flywheel	95	Tube, Oil fill
43	Solid State Assy.	96	"O" Ring
44	Cover, Spark plug	97	Clip, Fill tube
45	Screw, Hex washer hd. Sems, 10-24 x 1	98	Dipstick, Oil
46	Wire Assy., Ground	99	Plug, Starter
47	Gasket, Cylinder head	100	Screw, Hex washer hd. 10-32 x 35/64
48	Head, Cylinder	101	Primer
49	Valve, Exhaust	102	Decal, Instruction
50	Valve, Intake	103	Decal, Primer
51	Screw, Hex flange hd., 5/16-18 x 1-1/2	104	Carburetor
52	Spark Plug (Champion RJ-19LM or equivalent)	105	Starter, Rewind
53	Spring, Valve		

Chapter 2 CARBURETION

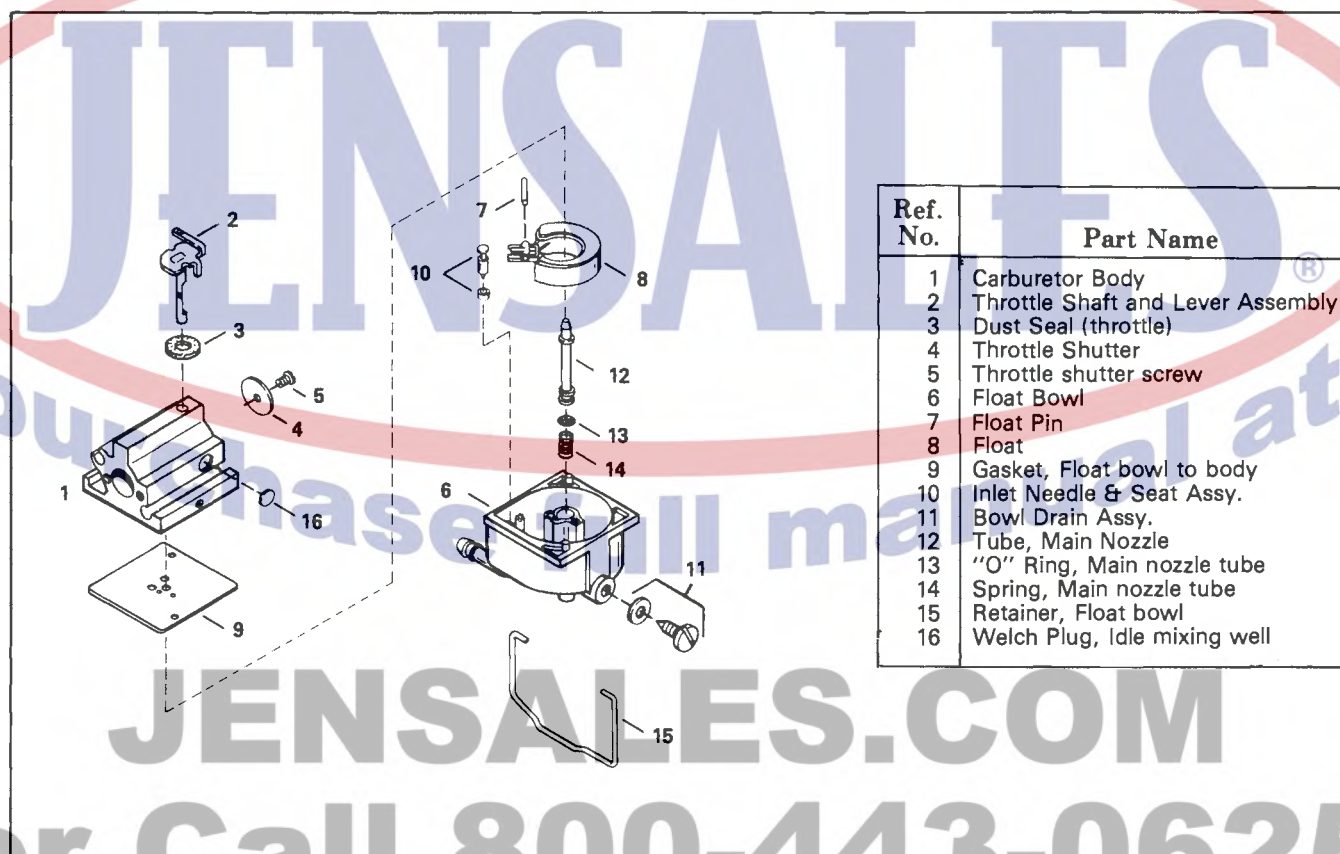
Proper Carburetion Function is dependent on clean fresh fuel and a well maintained air cleaner system. Most causes of carburetion problems are directly related to stale fuel and dirt ingestion. Inspection of the carburetor for dirt wear and fuel deposits should always be done before servicing the carburetor.

Carburetor Identification:

Tecumseh carburetors are identified by a model number and date code stamped on the carburetor as shown. When servicing carburetors, use the engine model number or the model number on the carburetor to find repair parts in the Master Parts Manual.

Below is a parts breakdown of a typical Vector carburetor.

MODEL AND
DATE CODE

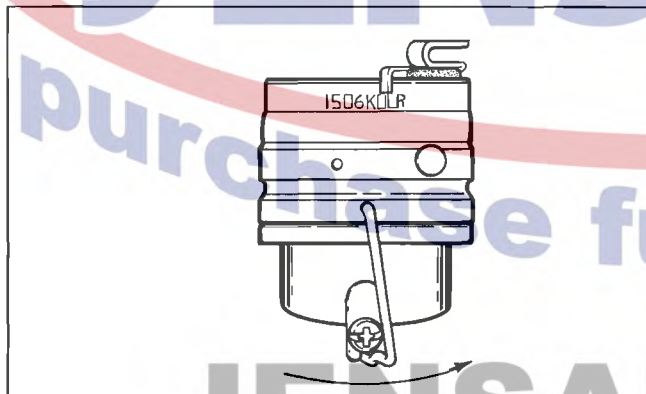
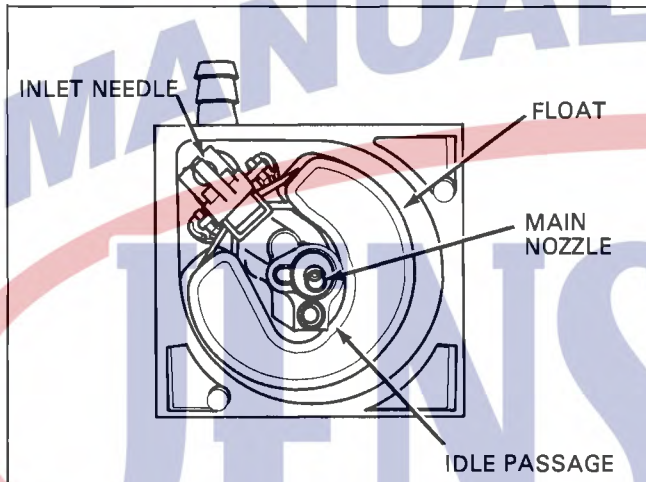


Ref. No.	Part Name
1	Carburetor Body
2	Throttle Shaft and Lever Assembly
3	Dust Seal (throttle)
4	Throttle Shutter
5	Throttle shutter screw
6	Float Bowl
7	Float Pin
8	Float
9	Gasket, Float bowl to body
10	Inlet Needle & Seat Assy.
11	Bowl Drain Assy.
12	Tube, Main Nozzle
13	"O" Ring, Main nozzle tube
14	Spring, Main nozzle tube
15	Retainer, Float bowl
16	Welch Plug, Idle mixing well

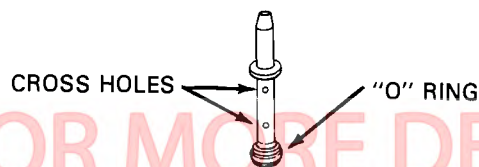
The Vector carburetor is a float feed, non-adjustable carburetor, with a 1 piece extruded aluminum body. The float bowl, float, nozzle, and venturi are nonmetallic, eliminating the corrosion and varnishing problems associated with similar metallic parts. Common service areas of the carburetor are contained in the fuel bowl. These areas are the float, needle, seat and main nozzle. All of these parts can be serviced without removing the carburetor body from the engine.

FLOAT BOWL SERVICE. Disconnect and plug the fuel line. Remove the bowl drain screw. Remove the float bowl by snapping the bale spring towards the throttle end of the carburetor.

IF A SCREW DRIVER OR SIMILAR TOOL IS USED TO AID IN THE BAIL REMOVAL, CARE MUST BE TAKEN NOT TO PERMANENTLY BEND THE RETAINER.

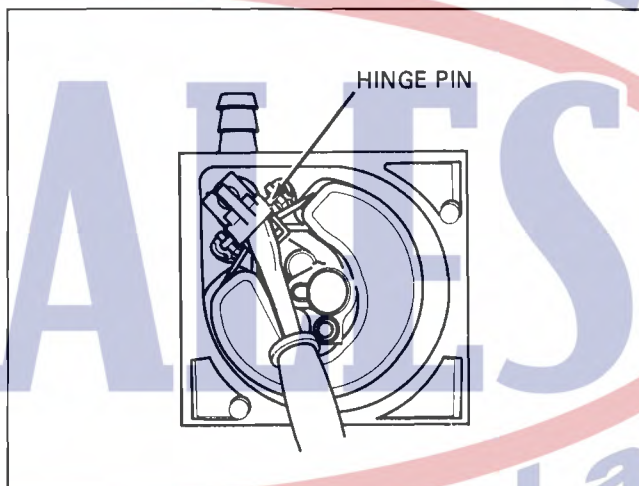


This will allow removal of the float bowl. After the bowl gasket is removed, the parts contained in the bowl can be inspected and serviced. Pull out the main nozzle and spring. Inspect the main nozzle for deposits, be sure to check the cross holes on the body of the nozzle and the main jet orifice in the bottom of the nozzle. Use compressed air or monofilament fishing line to remove any deposits in the main jet or cross holes. Replace the "O" ring if damaged.



MAIN JET

The float is held in the float bowl by the float pin which is pressed into tabs on top of the float support towers. To remove the float, insert a screwdriver into the rectangular hole in the float at the hinge. Carefully pry the hinge shaft out of the tabs in the float bowl. Carefully lift the float out of the float bowl and inspect for damage or deposits. Clean the idle passageway with compressed air, or probe with tag wire.



NOTE: The inlet needle is attached to the float and should also be inspected for damage or deposits.

The inlet seat can be removed with a small wire hook or forced out with compressed air. Inspect the float bowl and main nozzle area for sediment and deposits. Use a mild carburetor cleaner to loosen and remove deposits and sediment.

