WEBER INSTALLATION INSTRUCTIONS

READ AND UNDERSTAND ALL STEPS OF THESE INSTRUCTIONS BEFORE BEGINNING THIS INSTALLATION.

SUZUKI SAMURAI

For kit no. K600

using (1) Weber 32 DGAV

(Legal in California ONLY for racing vehicles which may NEVER be used upon a highway.)

Tools and equipment needed:

Combination, box or open end wrenches (metric)
Socket set with 12mm socket
Screwdriver (regular and phillips)
Pliers
Gasket scraper
Cleaning solvent and rags
Knife
Gasket sealer

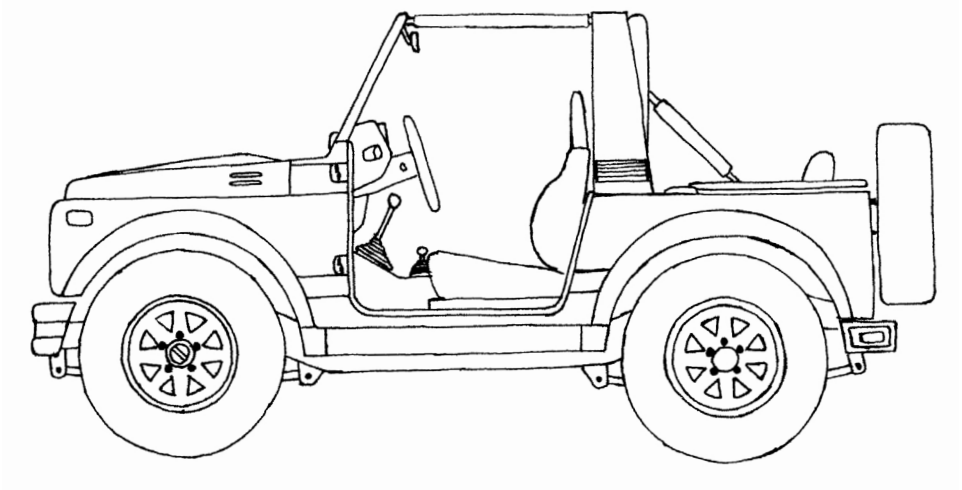
Parts supplied with installation kit:

1- 32 DGAV Weber Carburetor
1- Manifold Adapter
1- Air Cleaner Adapter
1- Cable Bracket
1- Hardware Kit

Tune-Up Specifications

All tune-up specifications for the Weber Carburetor remain the same as those specified by the Factory for the original unit. Emissions tune-up should be carried out by a suitably qualified dealer or independent garage, using infrared gas analyzing equipment.

NOTE: late model vehicles fitted with Emission Control Systems have many vacuum lines and electrical connections in their fuel systems. It is essential when dismantling, that disconnected lines be identified with a corresponding number tag or label system. To establish function, locate and identify the source of each line. Use the under hood emissions diagram, or the factory service manual for reference when identifying hoses.



Disassembly

1. Disconnect the vehicle's battery.
2. Remove the gas cap.
3. Drain approximately one (1) quart of engine coolant.
   CAUTION: Hot water may be present.
4. Using either the map inside the vehicle's engine compartment, or a factory service manual for your year/make vehicle: tag each hose, vacuum line and electrical wire/connector attached to the original carburetor and air filter assembly for proper identification during reassembly. Disconnect all connections once they are identified.
5. Disconnect and remove the flexible connector and the sheet metal elbow between the carburetor and the air cleaner housing.
6. Disconnect the fuel line from the original carburetor.
   Plug the end of the fuel line to prevent leakage.
7. Disconnect the throttle cable from the throttle lever and the cable bracket.
8. Remove the four (4) nuts that secure the carburetor to the intake manifold. Remove the carburetor and the spacer/gasket. Insert a clean rag into the intake ports to prevent dirt and gasket material from entering the engine.
9. Remove the stock carburetor mounting studs from the intake manifold. NOTE: For correct stud removal or installation, use stud removal/installation tool or the "double-nut" method.

   DOUBLE-NUT METHOD: Install two nuts approximately half way down the stud. Lock the nuts together. Turn the lower nut for removal and the upper nut for installation.
10. Clean the intake manifold flange surface thoroughly.

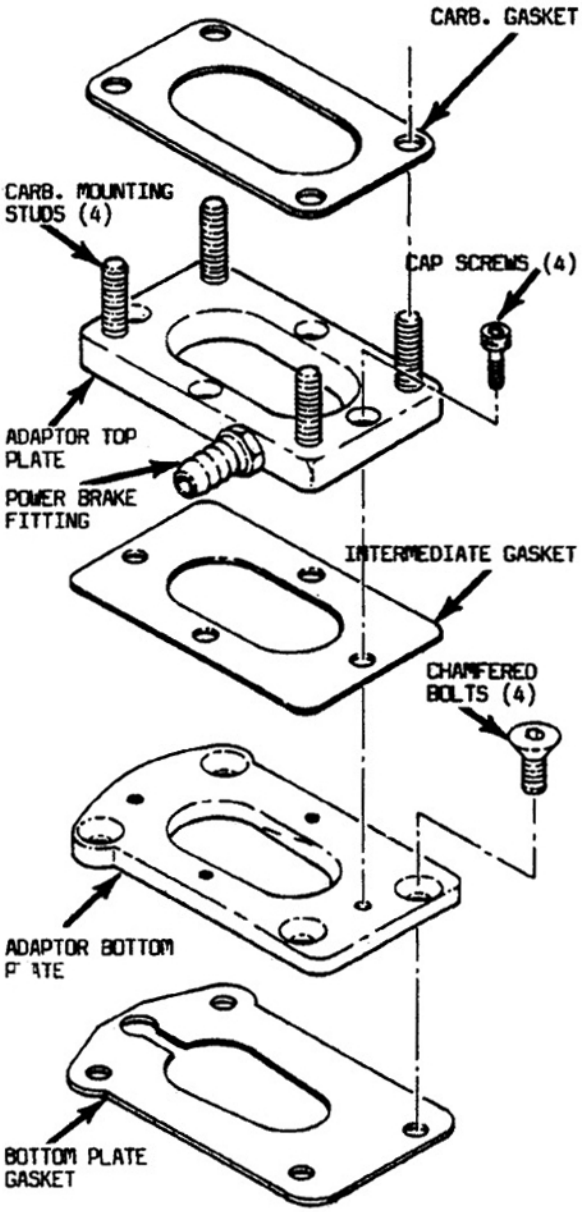
ASSEMBLY

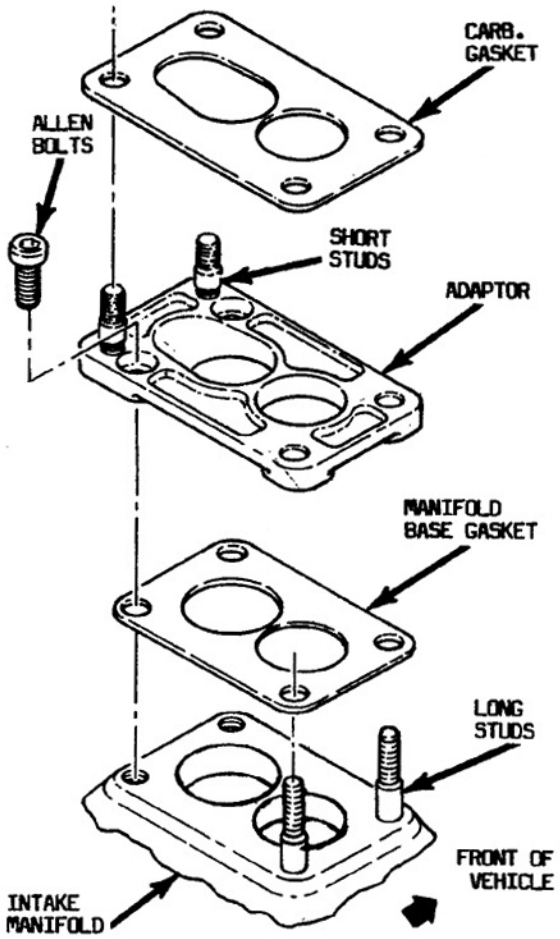
11. Remove the rag from the intake manifold.
12. Apply Loc-Tite (supplied) to the 8mm end of the stud into the two holes of the manifold closer to the passenger side fenderwell.
13. Using appropriate gasket sealer, slide the smaller of the supplied adapter gaskets over the two studs so that the larger hole is closer to the valve cover.
14. Slide the manifold adapter over the two studs in the same manner as the gasket and using Loc-Tite (supplied) on the tow allen bolts supplied secure it to the manifold.
    Torque the bolts to 7 ft/lbs.
15. Install 8mm studs into threaded holes of the manifold adapter (apply Loc-Tite to the studs) insuring that the studs go no further than flush with the bottom of the adapter.
16. Slide the remaining gasket over the studs (with the large hole facing the valve cover), followed by the Weber carburetor (insuring that the linkage faces the firewall). The Anti-Backfire Valve bracket may require bending for clearance.
17. Slide the supplied cable bracket over the two (2) adapter studs closer to the valve cover.
18. Using the nuts and washers supplied, secure the carburetor to the manifold and adapter; and tighten, in a criss-cross fashion to 7 ft/lbs.

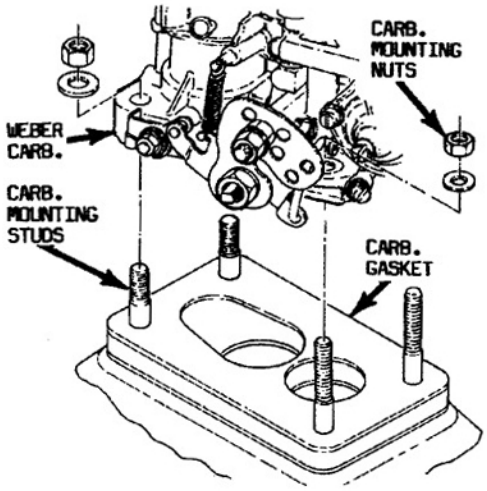
19. Re-route the throttle cable so that it runs from the firewall to the front of the valve cover and back around to the installed bracket. (Run cable under and through the PCV hoses and tee.) Install the cable on to the cable bracket and throttle lever.
20. Remove the throttle pedal stop adjustment bolt and nut from the floor of the passenger compartment.
21. Adjust throttle cable at the cable bracket so that full throttle can be achieved, AND, the throttle returns fully to an idle position (choke plates should be held open to bypass idle kick-up of choke linkage).
    CHECK THROTTLE OPERATION FOR FREE MOVEMENT. IF THERE IS ANY BINDING OR STICKING, CORRECT AS NECESSARY BEFORE PROCEEDING.
22. Remove the original water choke hose from the back of the intake manifold. Using the new hose and clamps supplied, install the hose between the fitting at the back of the manifold and the upper fitting of the water choke housing on the Weber carburetor. Connect the remaining original water hose to the lower fitting of the water choke housing.
23. Connect the supplied vacuum hose between the vacuum advance unit of the distributor and vacuum fitting on the base of the Weber carburetor that faces the passenger side fenderwell.
24. Connect the original float bowl vent hose to the 90 degree fitting on the passenger side of the Weber carburetor.
25. Remove the plug from the original fuel line and connect the line to the fitting on the driver's side of the Weber carburetor.
26. Cap off any exposed vacuum fittings from hose removal in step 4. (One (1) 1/4" vacuum cap is included to cap the larger fitting on the EGR Valve.)
27. Install air cleaner adapter using supplied washers between the adapter and the 5mm allen bolts for adapter. Torque bolts to 10 in/lbs.
28. Re-install the flexible connector and the sheet metal elbow removed in step 5. (The elbow may require modification in order to fit flush to the air cleaner adapter.) Use the supplied 6mm bolt and the original sealing washer to secure the elbow to the adapter.
29. Reconnect the battery and replace the gas cap.
30. Depress the throttle pedal once to initiate the choke unit and start the engine. (Realize that the float bowl is empty and it will require cranking the engine a few moments in order to fill the bowl with enough fuel to start the engine.)
31. A. Check for leaks around the carburetor mounting base and the fuel line connection. Correct as necessary.
    B. Warm engine to operating temperature and recheck step A.
    C. Set idle speed and mixture to factory specifications.
32. CHECK FOR ADEQUATE HOOD CLEARANCE BEFORE CLOSING THE HOOD.

REDLINE WEBER

Typical Adapter Installation Views





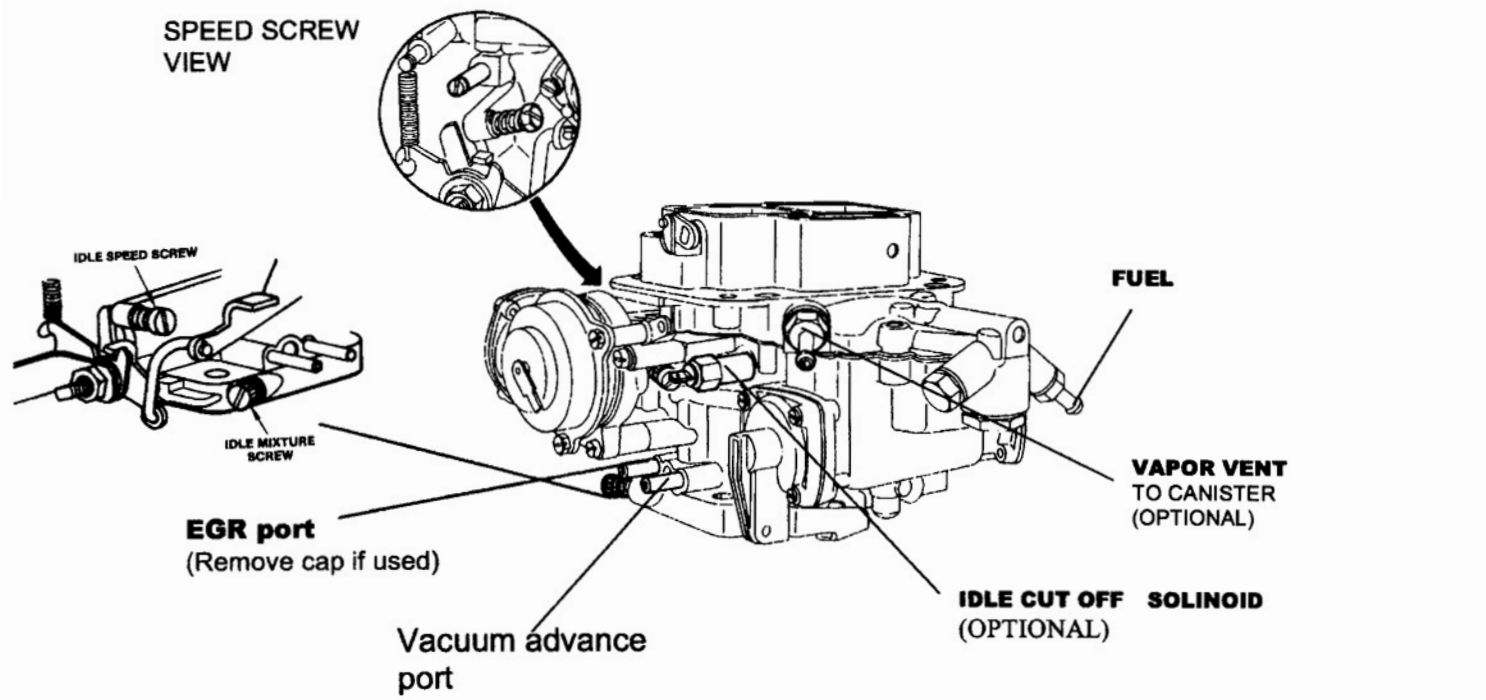


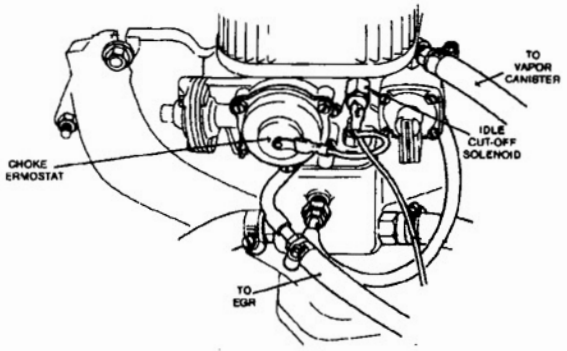
IMPORTANT

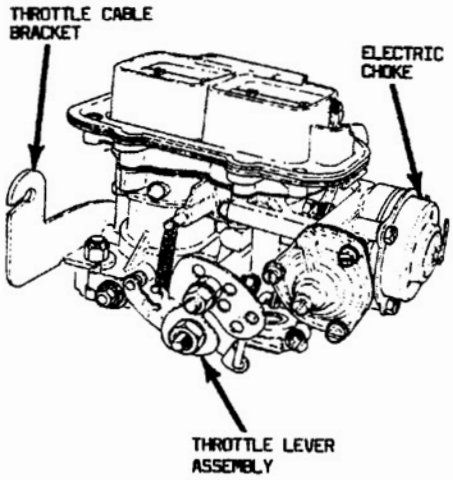
These are only typical views and may vary due to application.
PCV /Power Break fitting may not be supplied on some adapters.

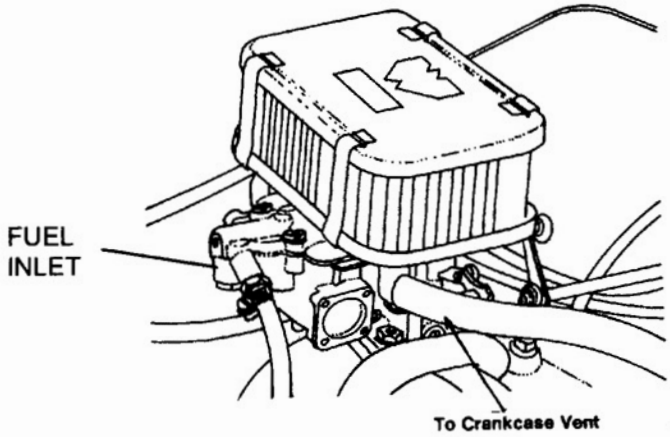
REDLINE WEBER
TYPICAL DGV CARB INSTALL VIEWS

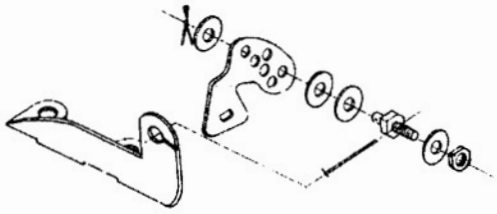
These views may vary depending on application. For general assembly assistance only.







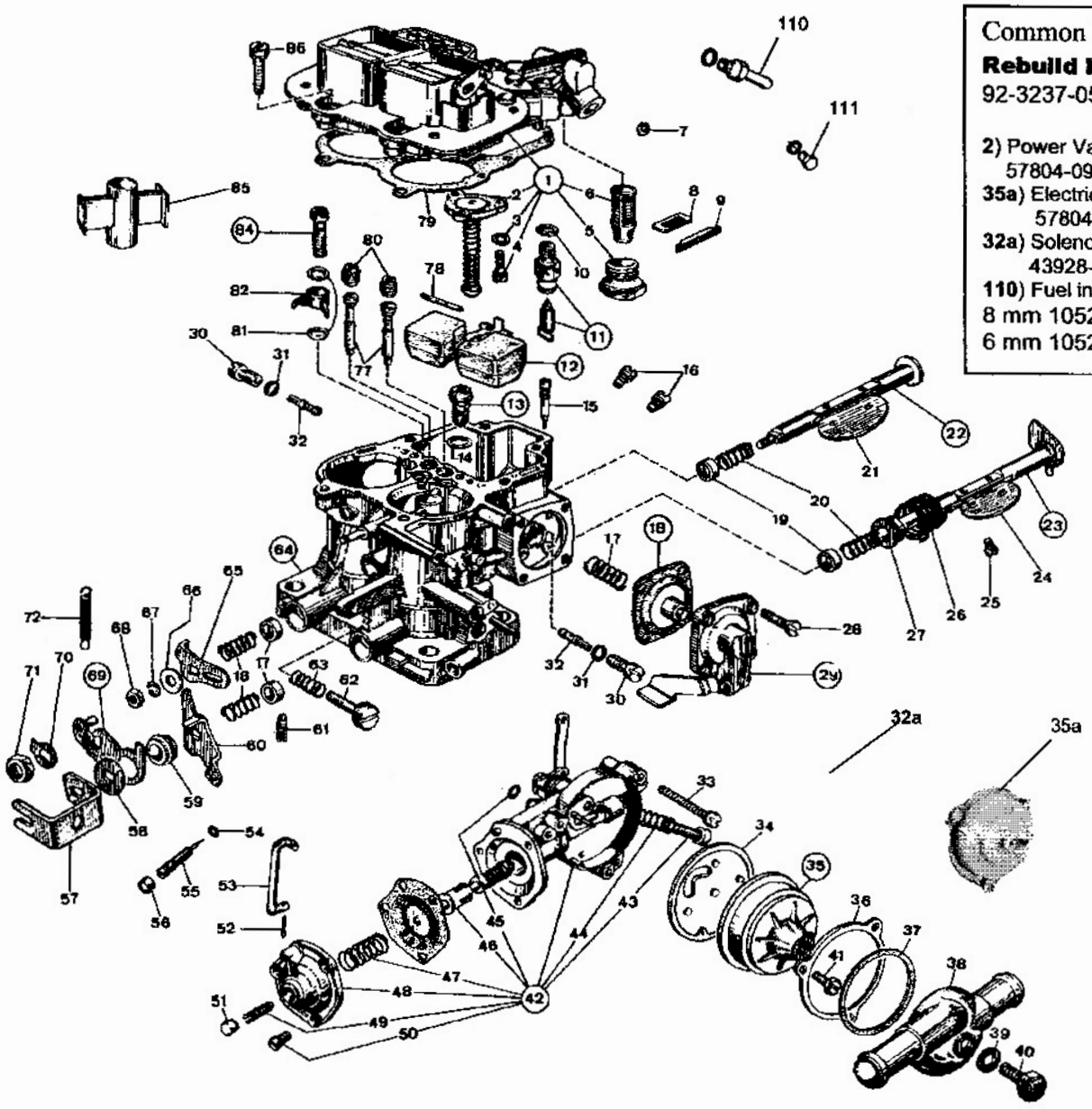




Air filter vent
to valve cover breather

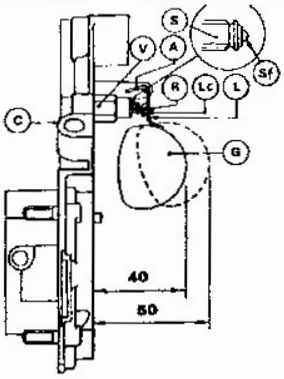
REDLINE / WEBER CARBURETORS
32/36 DGEV-DGAV

PROGRESSIVE SERIES
22680 033B DGEV
22680 051 DGAV



Common Parts
Rebuild kit
92-3237-05

2) Power Valve
57804-097
35a) Electric choke
57804-333
32a) Solenoid
43928-060
110) Fuel inlet
8 mm 10525 023
6 mm 10525 024



Float setting notes

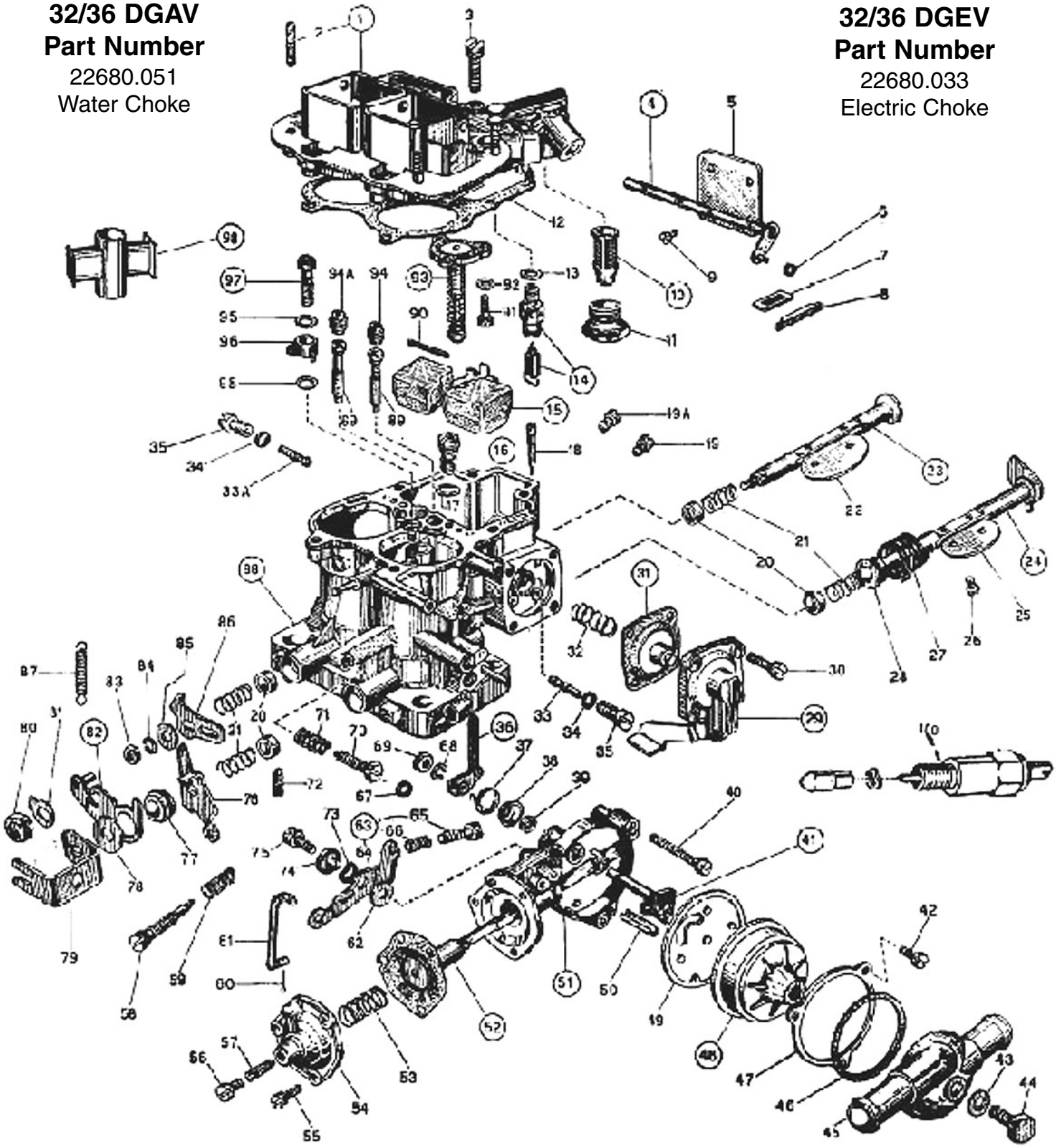
1. Fuel pressure is critical to float spillage.Redline recommends 2.5 to 3 lbs.
2. For aggressive off-road float drop should be limited to 44 .5 mm max drop.

KEY CALIBRATED PARTS

11) 79516-xxx Needle and seat (Steel needle)
79519-xxx (Viton performance needle)
12) 41030-019 Brass Float
41030-020 Nitrofill Float
16) 73801-xxx Main Jet
80) 77201-xxx Air corrector Jet
32) 74409-xxx Primary Idle Jet (choke side)
74403-xxx Secondary Idle Jet (Inlet Side)
some early models have 74403-xxx on both sides
82) 76226-xxx Accelerator pump Jet
76212-xxx Performance Double pump jet

32/36 DGAV
Part Number
22680.051
Water Choke

32/36 DGEV
Part Number
22680.033
Electric Choke

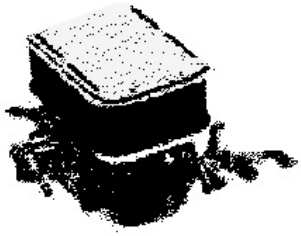


PARTS LIST

TYPE 32/36 DGAV – PART NO. 22680.051

32/36 DGEV – PART NO. 22680.033

Dia No.	Qty. Req'd	Description	Part Number		Dia No.	Qty. Req'd	Description	Part Number
1	1	Carburetor Cover Assy.	31716.166		51	1	Auto Choke Body Assy	57804.074
2	4	Stud Bolt	64955.002		52	1	Choke Diaphragm Assy	47407.056
3	6	Carb Cover Fixing Screw	64700.001		53	1	Diaphragm Loading Spring	47600.141
4	1	Choke Shaft & Lever Assy.	10020.221		54	1	Auto Choke Cover	32384.020
5	2	Starting Throttle Valve	64010.007		55	3	Auto Choke Cover Fixing Screw	64700.007
6	1	Spring Ring	10140.501		56	1	Screw Plug	61015.003
7	1	Dust Seal Plate	52135.018		57	1	Diaphragm Adjusting Screw	64595.005
8	1	Dust Seal Plug	61070.002		58	1	Idle Adjusting Screw	64750.025
9	4	Choke Plate Fixing Screw	64525.003		59	1	Spring For Idle Adjusting Screw	47600.007
10	1	Strainer Assy.	37022.010		60	1	Split Pin	32610.005
11	1	Strainer Inspection Plug	61002.018		61	1	Fast Idling Control Rod	61280.082
12	1	Carb Cover Gasket	41705.035		62	1	Washer For Loose Lever	55510.003
13	1	Needle Valve Gasket	83102.070		63	1	Fast Idling Loose Lever Assy *Including*	45041.053
14	1	Needle Valve Assy.	79519.*		64	1	*- Lever*	45039.056
15	1	Float Assy.	41030.019		65	1	*-Screw*	64590.004
16	1	Full Power Needle Valve Assy.	64235.016		66	1	*-Spring*	47600.007
17	1	Power Valve Gasket	41530.013		67	1	Auto Choke O Ring Seal	41565.008
18	1	Pump Discharge Blanking Needle	64900.001		68	1	Spring Washer	Not Serviced
19	1	Primary Main Jet	73801.*		69	1	Throttle Shaft Fixing Nut	Not Serviced
19A	1	Secondary Main Jet	73801.*		70	1	Primary Throttle Adjusting Screw	64625.017
20	4	Shaft Retaining Bushing	12750.085		71	1	Spring For Throttle Adjusting Screw	47600.007
21	4	Bushing Retaining Spring	47600.027		72	1	Secondary Throttle Adjusting Screw	64595.005
22	1	Secondary Throttle Valve	64005.034		73	1	Wavy Washer For Loose Lever	55530.005
23	1	Secondary Shaft	10015.492		74	1	Bushing For Loose Lever	12765.042
23A	1	Secondary Shaft Oversized	10016.477		75	1	Loose Lever Fixing Screw	64700.014
24	1	Primary Shaft	10015.493		76	1	Primary Throttle Control Lever	45046.016
25	1	Primary Throttle Valve	64005.090		77	1	Bushing For Loose Lever	12765.002
26	4	Throttle Plate Fixing Screw	64520.023		78	1	Washer For Loose Lever	55510.061
27	1	Shaft Return Spring	47610.079		79	1	Throttle Valve Control Lever	45136.029
28	1	Spacer	12765.047		80	1	Throttle Shaft Fixing Nut	34715.014
29	1	Accelerator Pump Cover Assy	32486.076		81	1	Lock Washer	55520.002
30	4	Pump Cover Fixing Screw	64700.006		82	1	Loose Lever Assy	45069.011
31	1	Accelerator Pump Diaphragm Assy.	47407.249		83	1	Secondary Shaft Fixing Nut	34705.001
32	1	Pump Loading Spring	47600.092		84	1	Spring Washer	55525.001
33	1	Primary Idle Jet	74403.*		85	1	Washer For Loose Lever	55510.046
33A	1	Secondary Idle Jet	74403.*		86	1	Secondary Throttle Control Lever	45032.124
34	2	Gasket For Idling Jet Holder	41565.002		87	1	Spring For Loose Lever	47605.010
35	2	Idling Jet Holder	52570.006		88	1	Carburetor Body	Not Serviced
36	1	Choke Control Lever Assy.	45034.090		89	1	Primary Emulsion Tube	61440.*
37	1	Spring For Fast Idle Cam	47610.080		89A	1	Secondary Emulsion Tube	61440.*
38	1	Spring Retaining Cover	58000.018		90	1	Float Fixing Pin	52000.015
39	1	Washer For Shaft	55555.029		91	3	Control Valve Retaining Screw	64700.007
40	3	Choke Fixing Screw	64700.008		92	3	Washer For Control Valve Screw	55510.038
41	1	Auto Choke Shaft & Lever Assy.	10085.033		93	1	Carb Power Valve Assy	57804.097
42	3	Plate Screw	64615.005		94	1	Primary Air Corrector Jet	77201.*
43	1	Washer For Water Cover Fixing Screw	41530.002		94A	1	Secondary Air Corrector Jet	77201.*
44	1	Water Cover Fixing Screw	64610.014		95	2	Pump Jet Gasket	41540.014
45	1	Auto Choke Water Chamber	32444.005		96	1	Accelerator Pump Jet	76226.*
46	1	Water Chamber Seal Gasket	41555.001		97	1	Pump Delivery Valve Assy.	64290.024
47	1	Thermostat Assy Locking Ring	52135.006		98	2	Auxiliary Venturi	71111.*
48	1	Auto Choke Thermostat Assy	57804.079		99	1	Choke Device 36-41,50-57,68,69	57804.509
48A	1	Electric Choke Assy	57804.333		100	1	Idle Cut Off Solenoid	43928.060
49	1	Gasket For Auto Choke Body	41640.005				*Calibrated Parts Require 3 Digits To	
50	1	Plate For Choke Shaft	52130.012				Complete Part Number.	
							See Calibrated Parts Section For Sizes	



REDLINE
WEBER

CARBURETOR SET UP AND LEAN BEST IDLE ADJUSTMENT

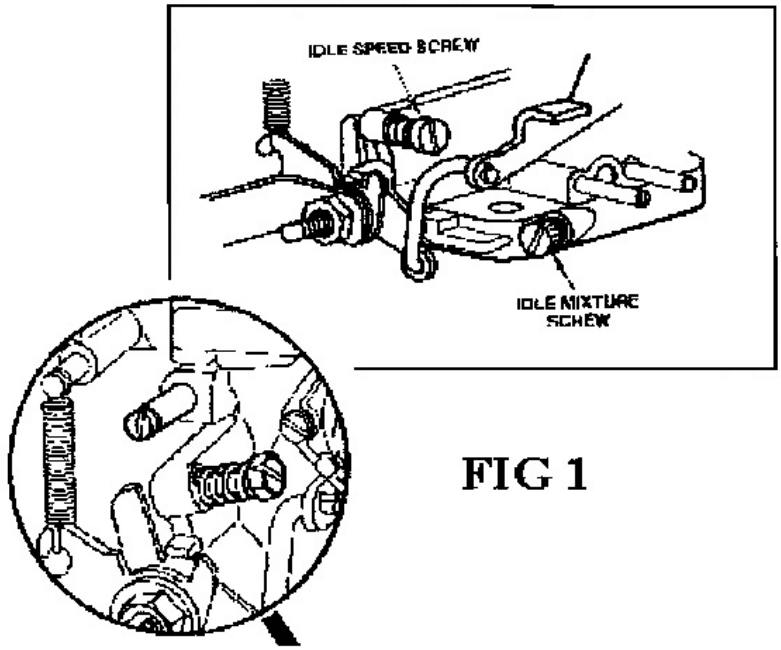


FIG 1

It is important to follow all linkage and lever installation instructions. The number one and two reasons for tuning errors are improper linkage installations and over tightened linkage nut, causing a binding in linkage assembly.

CALIBRATIONS MAY VARY DUE TO REGIONAL FUELS AND STATE OF ENGINE TUNE AND PERFORMANCE. POOR RUNNING QUALITY DOES NOT MEAN A DEFECT IN THE CARBURETOR. AN ADVANTAGE OF THE WEBER CARBURETOR IS ITS EASE OF ADJUSTMENT AND TUNING.

SET UP ADJUSTMENTS

Start set up by confirming carb base line settings. Do not depend on the factory delivered settings. Check them before the carb is installed.

1. All settings are done with choke disengaged or warmed up so that the choke is fully opened and disengaged. This is done on automatic choke carburetors by first opening the choke butterfly by hand and inserting a wood block or wedge of some kind to hold open while the linkage is cycled (linkage operated through its full movement) to clear the choke cam. (You will hear a metallic click as the cam is released. You can check the fast idle screw under the choke assembly to confirm that it is not in contact with the choke fast idle cam.)

2. Set the Idle stop screw (speed screw see fig 1) by backing out the Idle speed screw until it is not in contact with the throttle stop lever. Cycle the linkage again to be sure that the linkage comes to close without any assistance. (Checking for linkage bind) Now bring screw back into contact with the lever and continue to open or screwing in 1 turn no more than 1 1/2 turns.

3. Set the mixture screw (see fig 1) by first screwing in until the screw stops, bottoms out. DO NOT FORCE OR BIND AS THIS WILL CAUSE DAMAGE TO THE SCREW AND IT'S SEAT IN THE BODY OF CARBURETOR. Back out the screw 2 full turns.

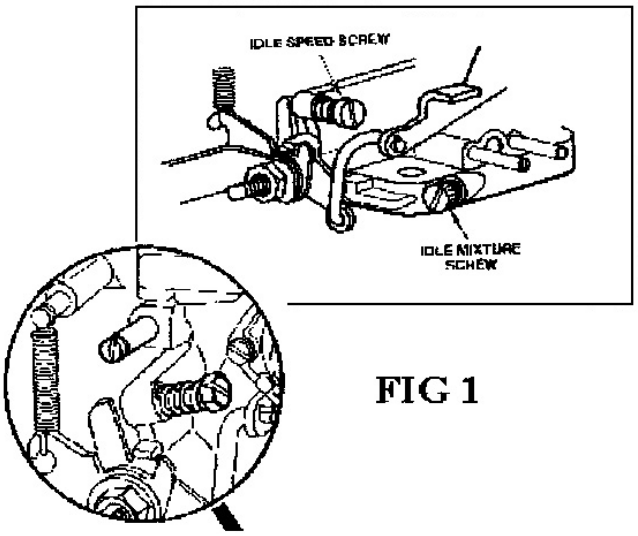


FIG 1

4. **TUNING**

BE SURE TO FOLLOW THE NEXT INSTRUCTIONS IN THE PROPER SEQUENCE, DEVIATION WILL CAUSE THE CARBURETOR TO NOT FUNCTION TO ITS IDEAL SPECIFICATIONS AND MAY NOT PROVIDE THE PERFORMANCE AND FUEL ECONOMY AS DESIGNED.

4a Start the engine, the engine will run very slowly more like a tractor. As long as the engine stays running idle speed is not important at this point.

4b The first thing to do is not set up the idle speed, but to set the idle mixture screw to lean best idle setting. First, turn in the mixture screw until the engine dies or runs worse, then back out the screw (recommend turning 1/4 to 1/2 turn at a time). The engine should pick up speed and begin to smooth out. Back out 1/2 turn more, or until the screw does nothing or runs worse then turn back to the point where it ran its best. Use your ear, not a scope or tuning instruments at this point. You want to tune the engine by sound. Adjust to best, fastest and smoothest running point.

4c Now that the mixture screw is at its best running location, you can adjust the idle speed with the screw. The screw will be sensitive and should only take 1/4 to 1/2 turns to achieve the idle speed you like.
Check and set idle to your driving preference. put the car in gear and apply slight load, (AC on) and set the Idle as you like it. Don't set it too high, as this will cause excessive clutch and brake wear. The Idle only needs to be 700 to 900 RPMs with light load or AC on.

5. Recheck timing and vacuum hook ups. Recheck mixture screw to lean best idle again. If all is still best and smoothest idle, then confirm and note the final settings.

To confirm settings with the engine running: Start by screwing in the mixture screw and count the number of turns it takes to bottom out and note if the engine dies. If Idle Mixture screws are with in 1/2 turn of base line setting then all is well and have fun. Also check the speed screw and note how many total turns from initial contact. You may have opened (turned in) the speed screw. Your final setting should be under 2 full turns. Reset the screws (back in) to the best final settings (per your notes) and go on a test drive and have fun. If the settings are other than described then you may want to recalibrate the idle circuit (low speed circuit) to your engines needs. This is done by following the rule of thumb below.
(see next page...)

Simple Rules for low speed calibration

If the mixture screw is more than 2 1/2 turns out, then the idle jet is too lean (too small). When the mixture screw is less than 1 1/2 turns, then the idle jet is too rich (too large). These assumptions are based on the fact that the speed screw setting is not opened more than 1 1/2 turns. If the speed screw has to be opened 2 or more turns then this is also an indication of a lean condition usually requiring greater change. At times it may appear to be showing signs of richness or flooding it is really a lean condition. See pictures and notes in the tech 2 article supplied in the kit instructions, view and please understand the need to keep throttle plate as near to closed as possible so as not to prematurely expose the transition holes. This is what causes the visible rich condition, and confirms the need to increase the jet size. JET KITS are available if needed.

EXAMPLE: With the speed screw set at no more than two (2) turns in after contact with the stop lever; and the best idle occurring with the mixture screw set at 3 turns from bottom, indicates the need for a larger Idle jet. Achieving the best idle at under 2 turns indicates the need for a smaller idle jet.

The secret to understanding the critical nature of the carburetor set up and the advantages of a WEBER over the other carburetors is the idle circuit. Referred to as the low speed circuit by Weber, this circuit is responsible for 80% of the driving operation. This is the reason that the Weber should give a fuel economy improvement over most factory carbs along with significant performance gains. In the worst case you should not see a significant fuel economy loss over stock, while improving HP and drivability.

The Weber Carburetor is a sequentially timed device to the motor like the distributor. Time taken in the setup will provide more fun later.

32/36 DGAV PRODUCTION JETTING

PRI/SEC VENTURI	AUX VENTURI	E-TUBE	MAIN JET	AIR CORRECTION	IDLE JET	PUMP JET	NEEDLE VALVE
26	3.5O	F50	1.35	1.7	0.55	0.50	2.00
27		F6	1.45	0.7	0.45		

32/36 DGAV BASELINE TUNINGS

MAIN JET	AIR CORRECTION	E-TUBE	IDLE JET	IDLE AIR
1.35	1.75	F50	0.50	1.50
1.30	1.45	F6	0.50	0.70

WEBER FACTORY OVERHAUL MANUAL #95.0022.35

ALTITUDE COMPENSATION TABLE

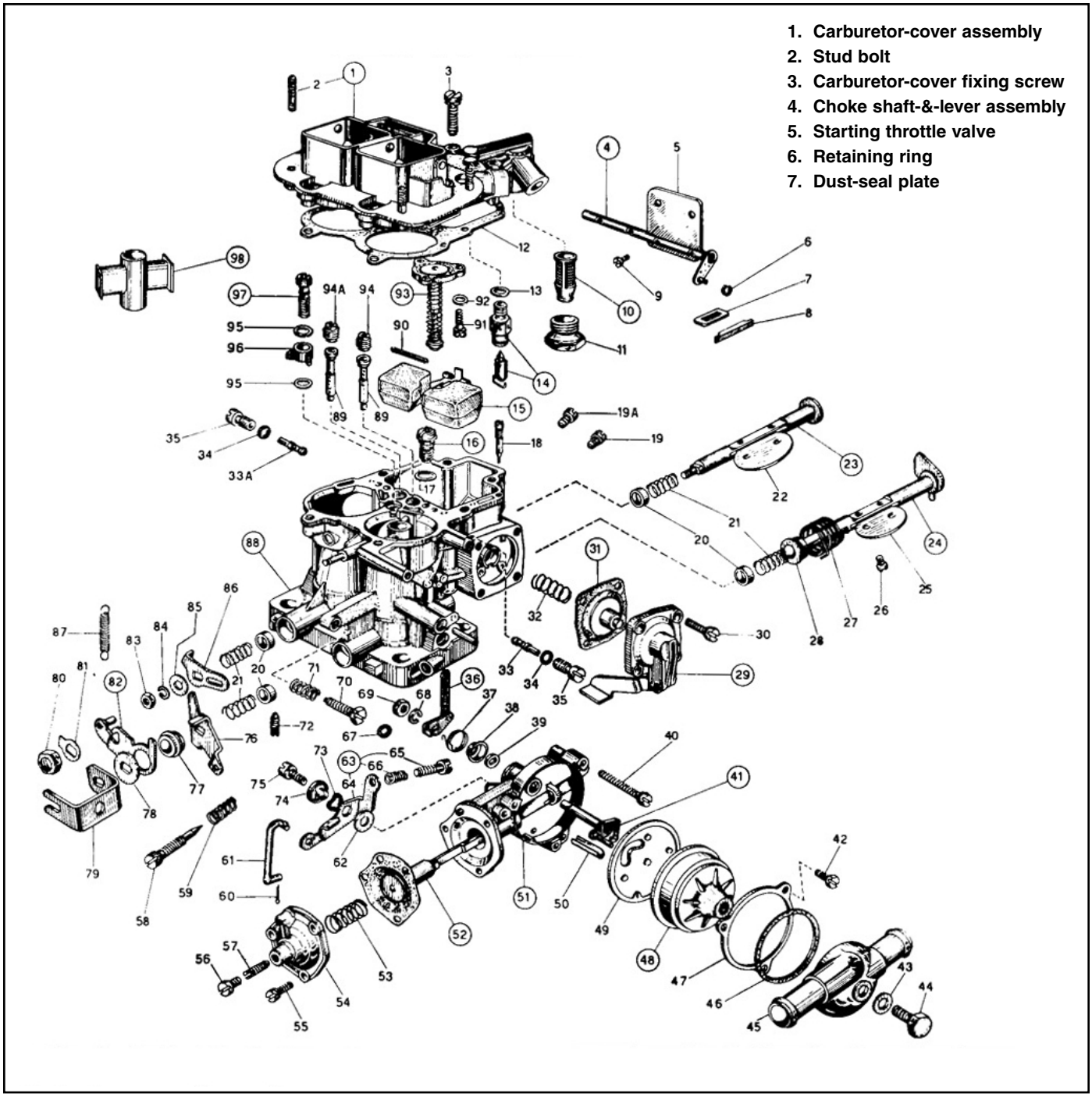
This table represents main jet sizes and the approximate altitude correction if the normal jet size is correct between sea level and 5000 ft.

ALTITUDE (ft.)

0-5000	5000-6500	6600-9800	9800-13000
2.00	1.95/1.90	1.85	1.80
1.75	1.70	1.65	1.60
1.50	1.45	1.40	1.35
1.25	1.20	1.15	1.13
1.00	0.97/0.95	0.95/0.93	0.93/0.90

32/36 DGAV/DGEV GASKET & REPAIR KITS

GASKET	REPAIR	OVERHAUL	PUMP DIAPHRAM
92.0108.5	92.1137.05	92.2170.05	47407.048



32/36 DGAV. Drawing courtesy Redline, Inc.

DUAL-DOWNDRAFT REPAIR:

DGAV

The DGAV carburetor is representative of the family of downdraft Weber carburetors with two venturis and two parallel throttle shafts. The dual-venturi, vertical carburetor is standard equipment on most Italian cars that do not use horizontal Webers such as the DCOE. It is a favorite conversion carburetor for every vehicle from Austin to Volkswagen.

The DGAV uses a progressive linkage from the primary throttle shaft to operate the secondary throttle, and there is an automatic choke, power enrichment valve and accelerator pump to enrich the fuel mixture as needed. The main casting includes the two venturis and carries all the jets and their drilled passages. The float bowl cover casting carries the power enrichment valve and float assembly.

DISASSEMBLY

See the sidebar, page 45, for information on special Weber tools. It's not practical to disassemble this carburetor completely just to fix one part, because you can do more accidental damage than could ever result form normal wear. A little extra time spent diagnosing the problem can save the grief of breaking a good part during disassembly.

8	Dust-seal plug
9	Choke-plate fixing screw
10	Strainer assy.
11	Strainer inspection plug
12	Carburetor-cover gasket
13	Needle-valve gasket
14	Needle-valve assy.
15	Float assy.
16	Full-power needle-valve assy.
17	Power-valve gasket
18	Pump-discharge blanking needle
19	Primary main jet
19A	Secondary main jet
20	Shaft retaining bushing
21	Bushing retaining spring
22	Secondary throttle valve
23	Secondary-shaft assy.
23	Secondary-shaft assy., oversize
24	Primary-shaft assy.
24	Primary-shaft assy., oversize
25	Primary throttle valve
26	Throttle-plate fixing screw
27	Shaft return spring
28	Spacer
29	Accelerator-pump-cover assy.
30	Pump-cover fixing screw
31	Accelerator-pump-diaphragm assy.
32	Pump loading spring
33	Primary idle jet
33A	Secondary idle jet
34	Gasket, idle-jet holder
35	Idle-jet holder
36	Choke-control-lever assy.
37	Spring, fast-idle cam
38	Spring, retaining cover
39	Washer, shaft
40	Choke fixing screw
41	Auto-choke shaft-&-lever assy.
42	Plate screw
43	Washer, water-cover fixing screw
44	Water-cover fixing screw
45	Auto-choke water chamber
46	Water-chamber-seal gasket
47	Thermostat-assy. locking ring
48	Auto-choke thermostat assy.
49	Gasket, auto-choke body
50	Plate, choke shaft
51	Auto-choke-body assy.
52	Choke-diaphragm assy.
53	Diaphragm loading spring
54	Auto-choke cover
55	Auto-choke-cover fixing screw
56	Screw plug
57	Diaphragm adjusting screw
58	Idle adjusting screw
59	Spring, idle adjusting screw
60	Split pin
61	Fast-idle control rod
62	Washer, loose lever
63	Fast-idle loose lever assy.
64	Lever
65	Screw
66	Spring
67	Auto-choke O-ring seal
68	Spring washer
69	Throttle-shaft fixing nut
70	Primary-throttle adjusting screw
71	Spring, throttle adjusting screw
72	Secondary-throttle adjusting screw
73	Wave-washer, loose lever
74	Bushing, loose lever
75	Loose-lever fixing screw
76	Primary-throttle control lever
77	Bushing, loose lever
78	Washer, loose lever
79	Throttle-valve control lever
80	Throttle-shaft fixing nut
81	Lock washer
82	Loose-lever assy.
83	Secondary-shaft fixing nut
84	Spring washer
85	Washer, loose lever
86	Secondary-throttle control lever
87	Spring, loose lever
88	Carburetor body
89	Emulsion tube
90	Float fixing pin
91	Control-valve retaining screw
92	Washer, control-valve screw
93	Power-valve assy.
94	Primary air-correction jet
94A	Secondary air-correction jet
95	Pump-jet gasket
96	Accelerator-pump jet
97	Pump delivery-valve assy.
98	Auxiliary venturi

The most common wear points on this carburetor are the throttle shaft bores in the carburetor body. The DGAV has nylon seals around the shafts where they pass through the main casting. Replacing these seals means removing the throttle plates, which is the most challenging repair operation for this unit. If the shafts are not worn, refurbishing a DGAV is straightforward enough that it can be performed without removing the carburetor from the car.

The procedure described below is divided into sections and covers the complete disassembly of the carburetor when it's off the car:

- Removal and disassembly of float bowl cover.
- Removal of components accessible when float bowl cover is removed.
- Disassembly of components on the outside of carburetor.
- Removal of throttle shafts.

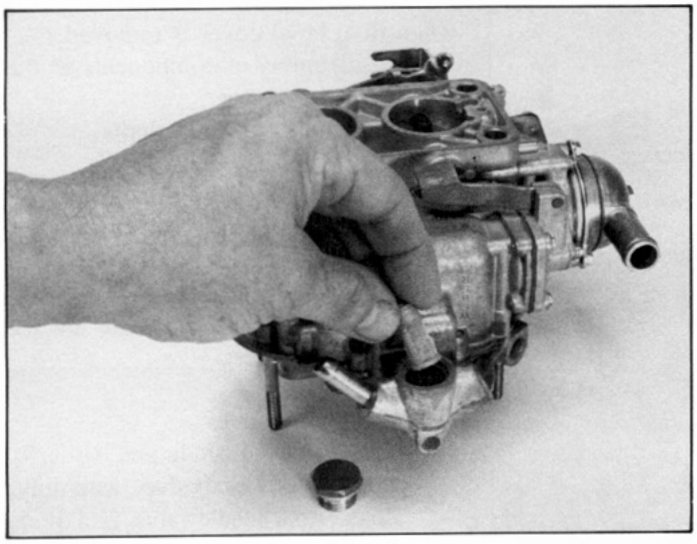
This is not the only order in which assemblies can be removed. Think of the carburetor as a collection of modules, any one of which can be worked on without disturbing the others. Here are the three main modules:

- Float bowl cover:
  Carries choke shaft and butterfly valves, power valve assembly, floats, float needle valve, fuel filter. Gives access to main jets, air-correction jets and emulsion tubes, accelerator-pump delivery valve, full-power needle valve, and auxiliary venturis.
- Exterior of carburetor:
  Idle jets
  Accelerator pump
  Automatic choke assembly
- Throttle shafts:
  Gives access to shaft seals and throttle plates.

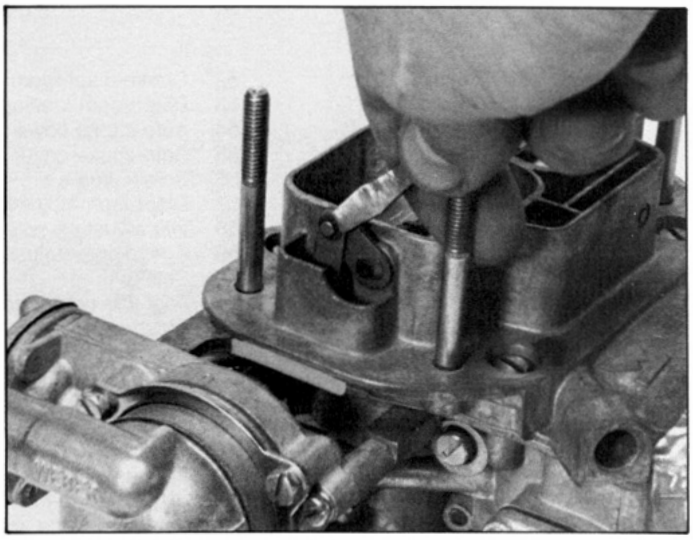
The following procedure suggests the order in which assemblies may be removed. Variations are possible, depending on the repair needs of the carburetor.

If you're going to do a complete overhaul, buy an overhaul kit. If you're doing anything less than a complete overhaul, you may be able to save most of the old gaskets and diaphragms necessary to successfully reassemble the carburetor. If you're trying to save a gasket or diaphragm, work very slowly and carefully to separate it from its mating surfaces.

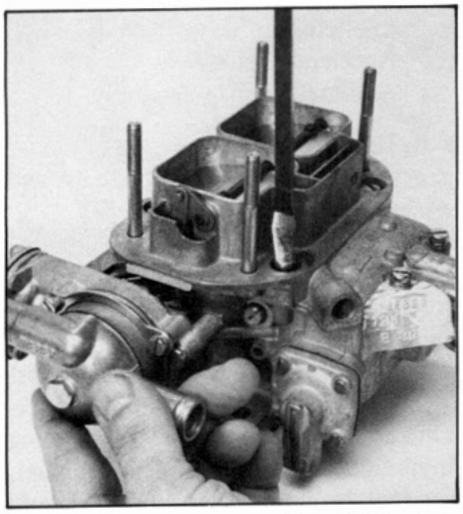
Begin the overhaul by cleaning the outside of the carburetor as completely as possible. Scrape baked-on dirt with a knife or screwdriver, but be careful not to gouge out pieces of the carburetor in an attempt to clean its surfaces. Use an aerosol can of carburetor cleaner to remove varnish and any remaining dirt. Follow the precautions and instructions on the cleaner's can.



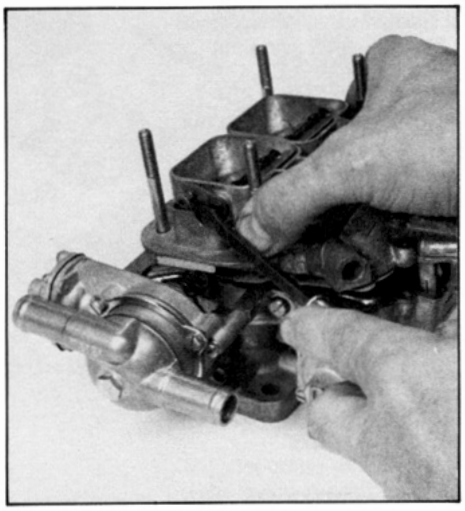
DGAV fuel filter is beneath fuel-inlet boss on float-bowl cover. To clean, blow from inside out with compressed air.



E-clip holds choke control arm to choke assembly in float bowl. Remove by pressing off with screwdriver. Be careful not to lose clip by pressing too hard, too fast.



Float-bowl cover removal: Note that screwdriver blade is ground to fit screws perfectly. It's important to keep screwdriver from slipping, marring screws.



Float-bowl screws removed, and cover lifted free: Use screwdriver to release choke control arm.

Float Bowl Cover—Turn the carburetor over and use a 14mm wrench to loosen the fuel filter plug. Lift out the fuel filter, clean it with carburetor cleaner and set it aside.

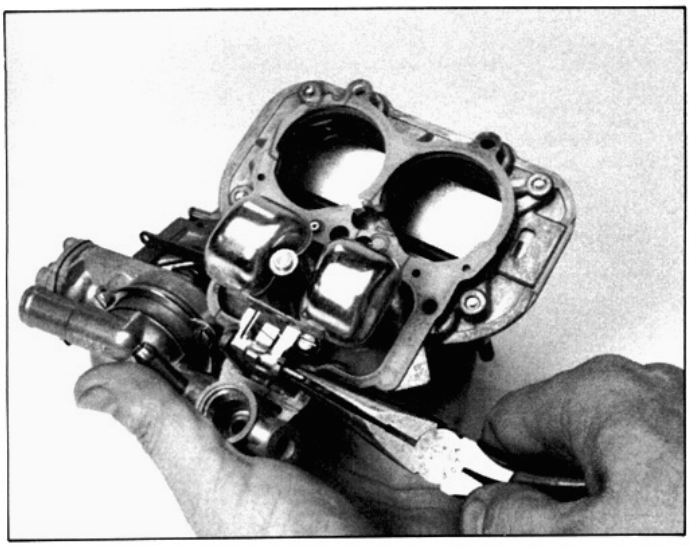
The only link between the main body of the carburetor and float bowl cover is the arm that controls the choke plate. It's held onto the choke plate bellcrank with an E-clip. *Very carefully* force back the clip with a screwdriver blade and remove it. This piece is easy to lose, so store it appropriately. Don't try to disconnect the arm from the bellcrank yet.

Unscrew the six screws attaching the float bowl cover and loosen the cover. If you can't remove the cover with a slight pull, turn over the carburetor and use the handle of a screwdriver to tap the cover and loosen it from the carburetor body. Hit the cover lightly on the fuel filter extension. If you're trying to save the gasket for the float bowl cover, slide a knife along the gasket to separate it from the mating surface. Do this slowly and as carefully as possible. Don't nick or gouge the mating surfaces. The gasket may be brittle from age and heat. It's not always possible to remove one whole, so if you do tear the gasket, replace it.

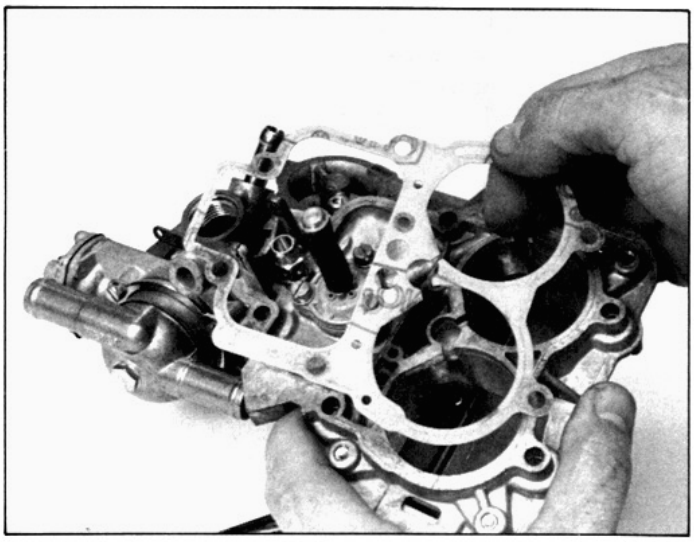
Lift the float bowl cover free from the carburetor body, and slip the arm off the choke-plate bellcrank. Turn over the cover.

Needle & Seat—Plug the fuel filter opening with your finger, and blow into the fuel inlet. With only the weight of the float assembly pressing on the needle valve, you should not be able to blow air past the valve. If you can, and there's no dirt trapped between them, the needle and seat should be replaced.

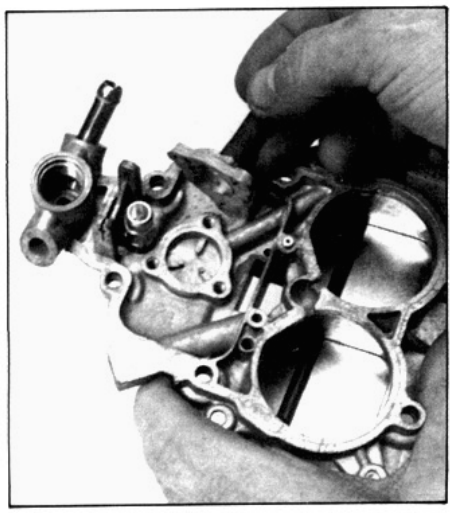
Use needle-nose pliers to pull the pin holding the float assembly to the cover. Don't pull the pin through the *split* boss; pull it through the other side. The float assembly will lift off, taking the needle valve with it. The needle valve is attached to the float assembly with a loop of spring wire. Don't bend the wire as you slide it from the float.



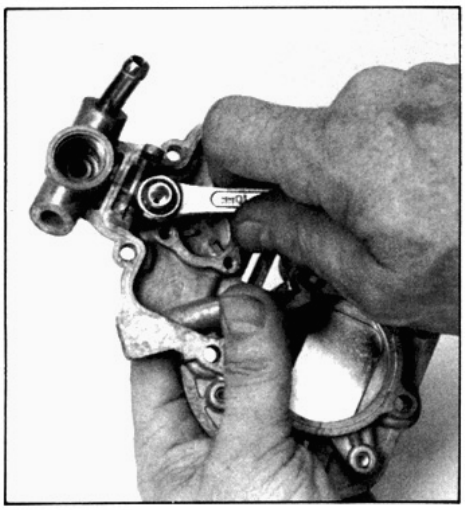
Remove float-pivot pin. Needle valve is attached to float assembly; be careful not to drop it when removing float.



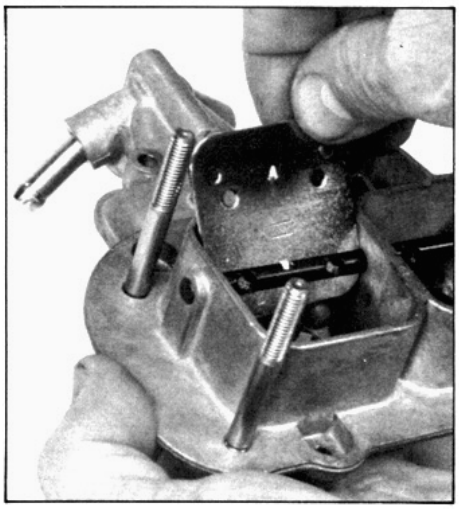
Remove float-bowl-cover gasket. Gasket can be reused if not torn or leaking. Don't use liquid gasket material. It's too messy for this joint and will clog power-valve passage.



Power valve is held to float-bowl cover with three screws. Remove valve carefully so diaphragm doesn't tear. Power valve can usually be left intact.



Needle-valve seat is removed with 10mm wrench. Be sure to save metal gasket under seat.

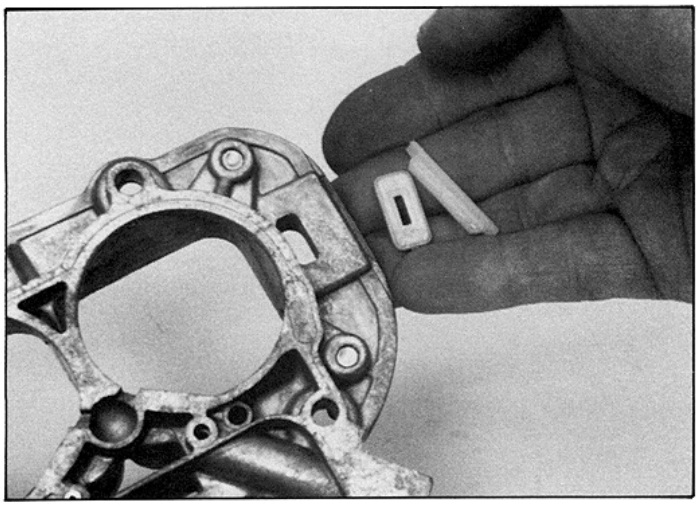


Removing choke valves (plates) easily damages shaft. Avoid disassembly unless absolutely necessary. Note identifying white paint mark applied to shaft and valve to ease matching parts at reassembly.

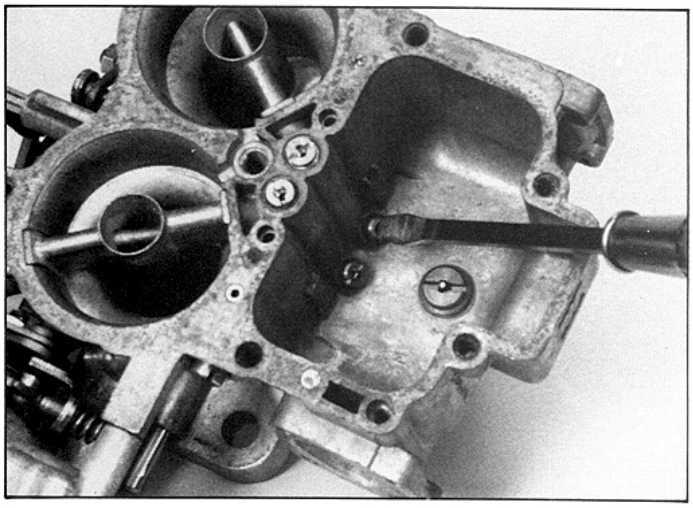
Power Valve—The gasket usually stays attached to the float bowl cover. Carefully lift it off. It's preferable to leave the power valve in place unless its diaphragm is damaged. If it's necessary to inspect or replace the diaphragm, unscrew the three screws for the power valve assembly and separate the power valve from the cover. Be careful not to tear the diaphragm. Check to make sure the diaphragm is flexible and doesn't have any cracks or tears.

Needle-Valve Seat—Unscrew the needle-valve seat using a 10mm wrench. This step is necessary only if you're replacing the needle and seat as a set. The gasket under the valve seat is shiny, and can look like it's part of the casting. Double-check to be sure you've removed the gasket. If you don't and install another one on top of it during reassembly, the float level will be lowered significantly, and lean the mixture.

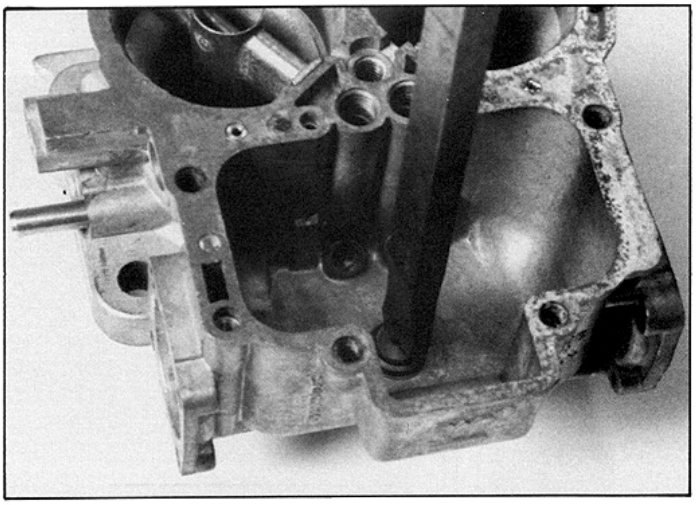
Choke Plates—Unless **absolutely necessary**, don't remove the choke plates. It's easy to damage the threads in their shaft. A thorough cleaning and lubrication is usually all that's required to renew them. If they were binding or their shaft is bent, remove them.



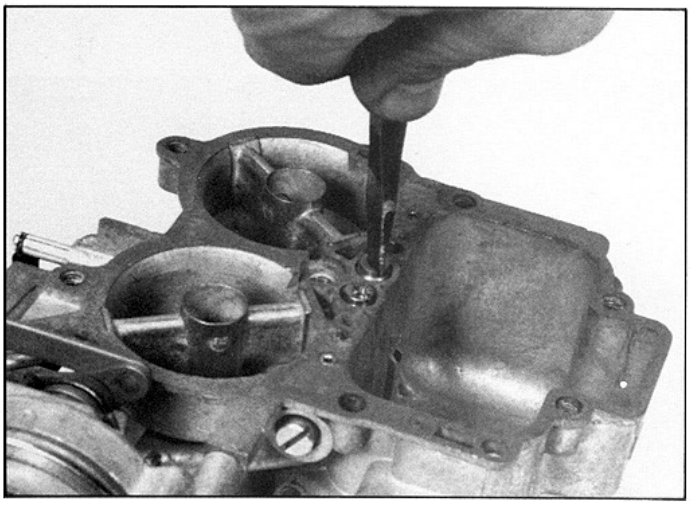
Choke-arm dust seals are held in casting on underside of float bowl. Pry off longer seal: O seal will fall out. Both seals can be re-used.



Remove main jet. Screwdriver must fit slot correctly or jet could be damaged. Jets fit at bottom of float bowl. Entire main circuit is illustrated here. Air-correction jets sit on top of cast-in wells, with main jets at bottom. Note how auxiliary venturi webs point at wells. Drilled passage in webs directs fuel from top of wells to venturis.



Remove power-valve plunger assembly from bottom of float bowl. Note that screwdriver is large, fits slot.



Air-correction jet removal: Use screwdriver that fits; don't damage screw slot.

Mark the choke valves so you can replace them exactly as they were removed. Then, try to unscrew the four screws holding the two valves to the shaft. The screw ends are punched (staked) to keep them from vibrating loose. If you can't unscrew them with just a little torque, grind away the damaged threads with a small grinding wheel. Once the screws are out, slide the plates from the shaft.

Pull the choke shaft from the casting and then remove the two dust seals.

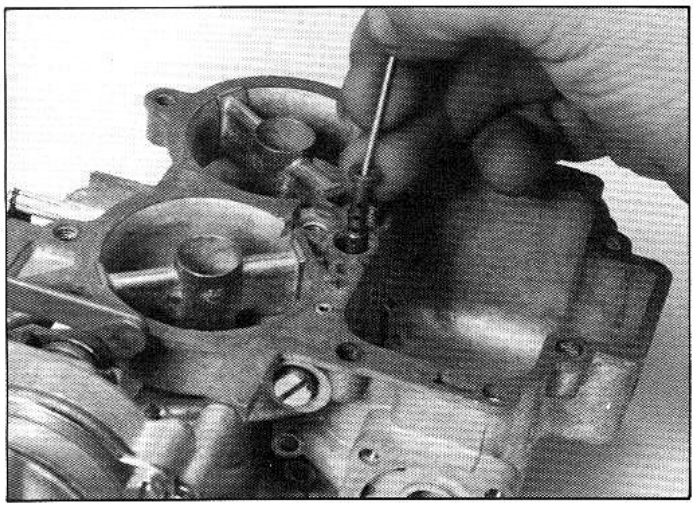
Jets, Power Valve & Emulsion Tubes—Two main jets are in the bottom of the float bowl. Carefully remove them with a screwdriver that snugly fits their slots. If the screwdriver isn't a good fit and slips, the flow pattern of the jet could be changed as a result of any damage.

Unscrew the power-valve plunger assembly from the bottom of the float bowl and remove it with its gasket.

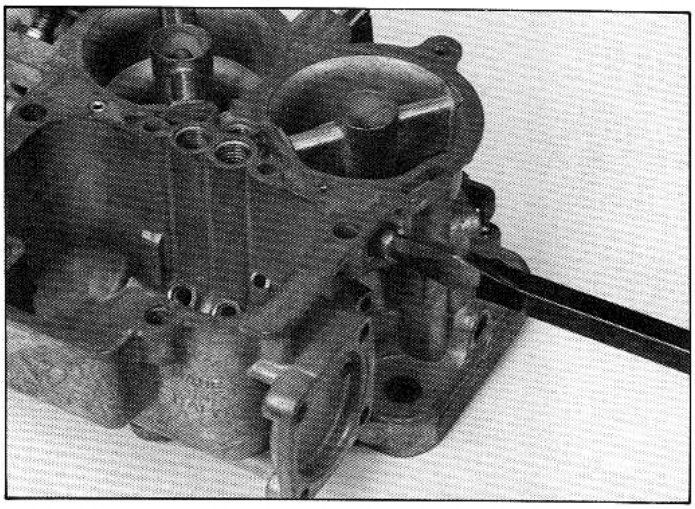
The two air-correction jets are on the top of the main casting. Unscrew them to get at the emulsion tubes trapped below the jets.

The emulsion tubes will probably be stuck in their bores. Remove them with a 3mm tap. Cut three or four threads at the top of the tube with the tap and then pull on the tap.

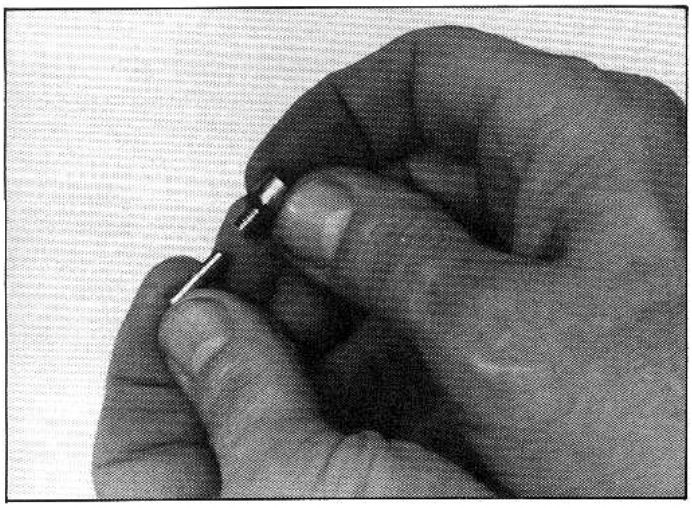
Remove the idle jet holders. Check the



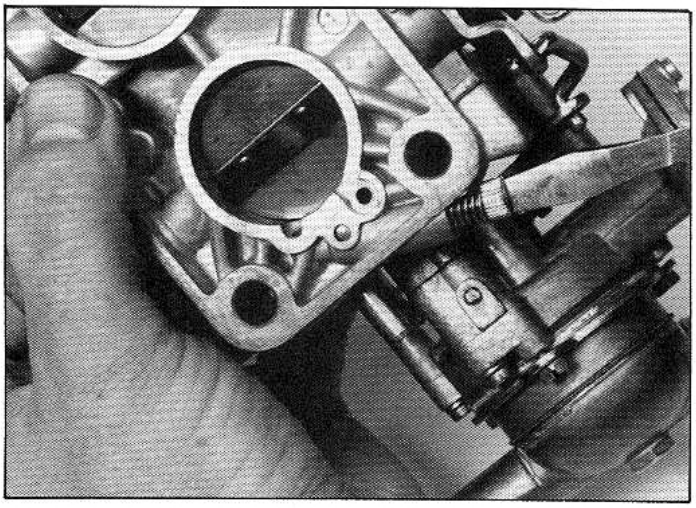
Use wire to remove emulsion tube. Pry against tube and lift. If stuck, make about three threads in tube with 3mm tap and pull tube free with tap.



Idle-jet removal: Another idle jet is on opposite side of carburetor. Rubber O-ring seals jet assembly.



Idle jet pulls apart for cleaning, if necessary. Never use pliers to separate jet from holder.



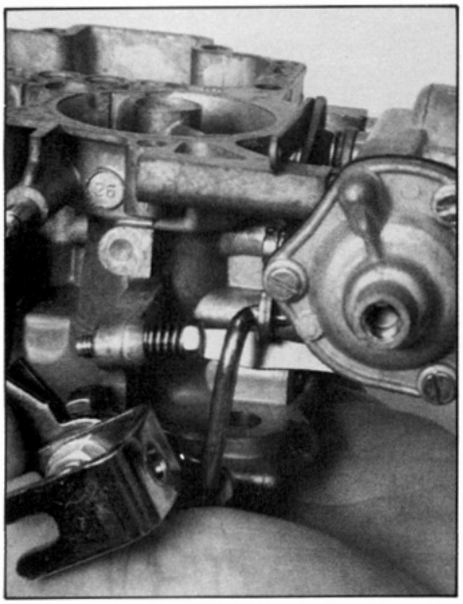
Remove idle mixture screw. First, record number of turns to seat, then unscrew. Use same number for initial setting at reassembly.

rubber gasket sealing the holder to the body of the carburetor. It should be pliable and not broken. The idle jets can be separated from their holders simply by pulling them from the threaded holders. Blow through the jets to make sure they're clean.

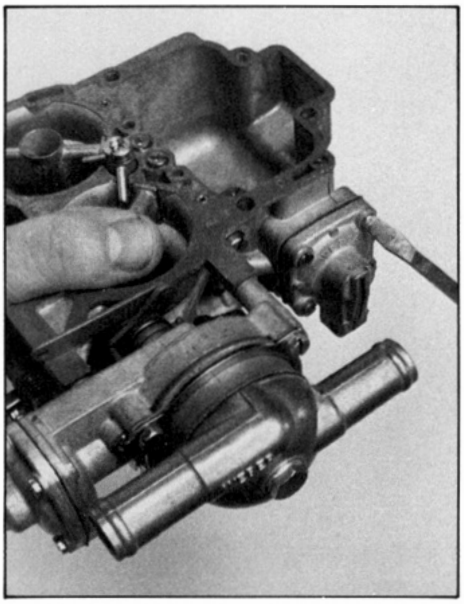
Idle Mixture Screw—Count the number of turns required to seat the idle mixture screw, and unscrew it from the carburetor body. When you replace the screw, use the number of turns from the seated position to make the initial idle mixture adjustment. Remove the idle speed adjustment screw.

Accelerator Pump—The accelerator pump cover is held to the body of the DGAV with four screws. These screws have tapered seats and no lock washer, and are usually a little hard to remove. Be sure the screwdriver blade fits tightly in the screw slot, then carefully remove the screws. There is a rubber diaphragm sealed by the cover. When you pull the cover back, be very careful not to tear the diaphragm.

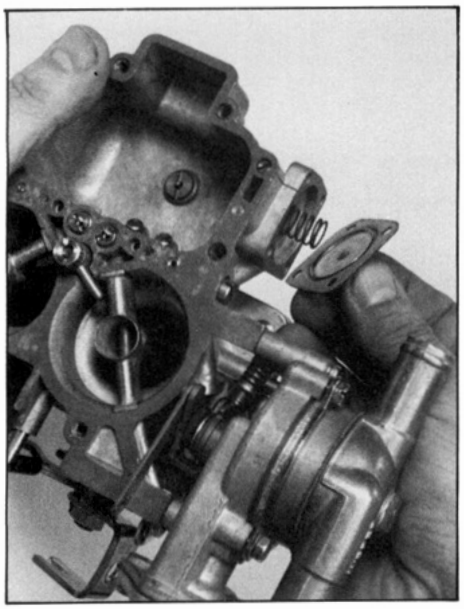
A gasket will be stuck to the diaphragm on one side. Leave it alone unless it's seriously damaged. Check the part of the diaphragm which moves to see that it's not cracked. As you remove the diaphragm, you'll find a small spring underneath it. Set it aside.



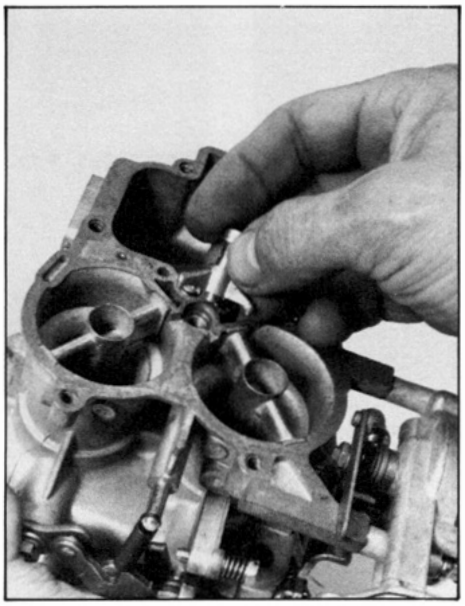
Remove idle-speed screw. Removing it is usually unnecessary, unless total overhaul of carburetor is required.



Remove accelerator-pump cover. Screws are typically hard to remove, and diaphragm beneath cover is easily torn. Don't disassemble unless pump is defective.



Accelerator-pump diaphragm and spring are held in body of carburetor. Diaphragm rubber should be supple, tear-free. At reassembly, replace diaphragm exactly as removed.



Pump jet also holds accelerator-pump-circuit nozzles. See that check ball operates freely.

The next step in removing the accelerator pump is to remove the jet that sits between the two venturis. It's retained by the *pump-delivery valve* assembly, which looks like a large screw from the top, but contains the pump circuit's one-way valve. After you unscrew the delivery valve assembly, you'll find two thin washers sealing the jet and delivery valve to the carburetor body. Make sure the hole in the jet is clear, and keep the entire assembly together by reassembling it on the bench.

The final step in dismantling the accelerator pump circuit is to remove the *blanking screw* from the carburetor body. Store the screw with the jet and delivery valve.

Venturis—Remove the auxiliary venturis by lifting up on them. If it's necessary to remove the auxiliary venturis and they won't lift out, tap them out using a wood dowel from underneath. Weber has an expensive tool for doing this if you can't remove them with a wood dowel.

Automatic Choke—The operation of the automatic choke is adjusted by rotating the water chamber assembly in relation to the choke body. The three screws you're about to loosen permit changing this adjustment. The factory punches an *index mark* to indicate the relationship between the two castings. The mark is usually on the top of the choke assembly and overlaps the joint where the water chamber mates with the choke body. Find the index mark and be prepared to reassemble the two halves in exactly the same relationship. Make your own reference mark if there's any question about the relationship of the two parts.

Remove the three bolts holding the automatic choke water chamber assembly to the choke body. Use a 7mm wrench to remove the bolt covered by the water pipe; the other two are removed with a screwdriver.

Lift the water housing free of the choke body as shown. The housing carries the bimetallic coil that operates the choke. If the coil is broken or deformed, replace it. Remove the white plastic gasket on the choke body.

The water housing can be further disassembled by removing the 11mm bolt that holds the assembly together. Unless the bimetallic coil requires replacement, there is usually no reason to disassemble the housing.

Three screws hold the choke body to the carburetor main casting. Remove them to release the choke body from the carburetor. Now, lift the choke body free. Take note of how the components inside the body are arranged.

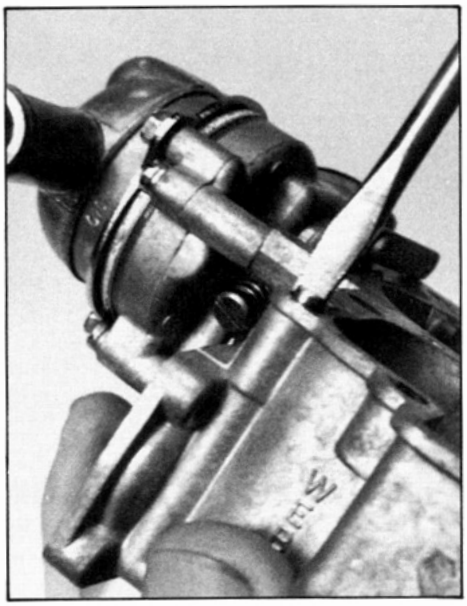
If the choke is operative, don't disassemble it. Chokes are complicated and have plenty of parts to get out of order or lose. Usually, all that is needed to service them is to thoroughly clean the linkage mechanism and check for tears in diaphraphms or gaskets. Be sure the cleaner you use is compatible with the choke's plastic parts. I've included the choke disassembly procedure for repair purposes.

Choke Disassembly—Free the gasket that seals the vacuum path into the body. Replace it if brittle or broken. Use an 8mm wrench to loosen the bolt holding the choke shaft in the choke body. Remove, in order: bolt, washer, control lever assembly, spring, spring locating cover, and slotted shaft washer. Remove the choke shaft from the choke body.

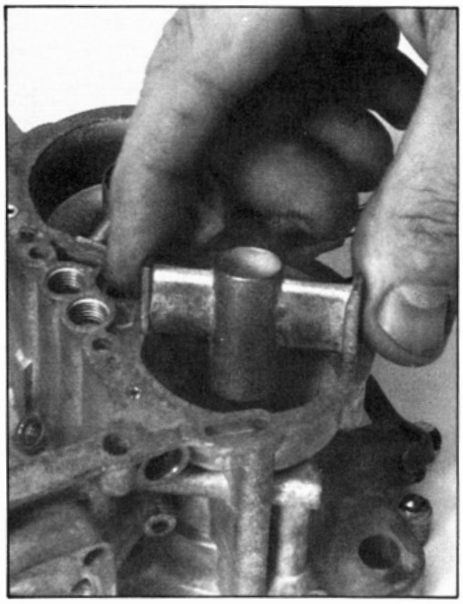
Loosen the screw holding the adjusting lever to the choke body. Remove, in order: screw, bushing, wave washer, adjusting lever with adjusting screw still attached (there's no need to remove it), and washer.

Three screws hold the vacuum diaphragm to the choke body. Remove them and catch the spring that pushes against the diaphragm. Separate the diaphragm from its mating surface and pull its rod from the choke body. Inspect the diaphragm for tears and replace if it has any.

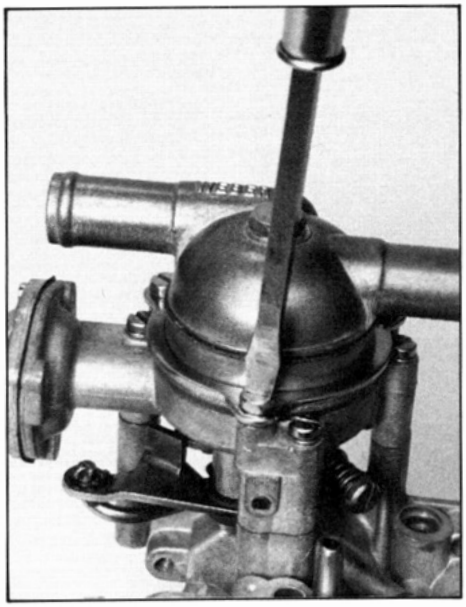
Throttle Valves & Shafts—Don't remove the throttle valves and shafts unless **absolutely necessary**. The chances of making errors and ruining parts are high. So, what's absolutely necessary? If a valve is binding and can't be freed with cleaner, or the shaft is bent or worn, this should be taken care of. A worn throttle



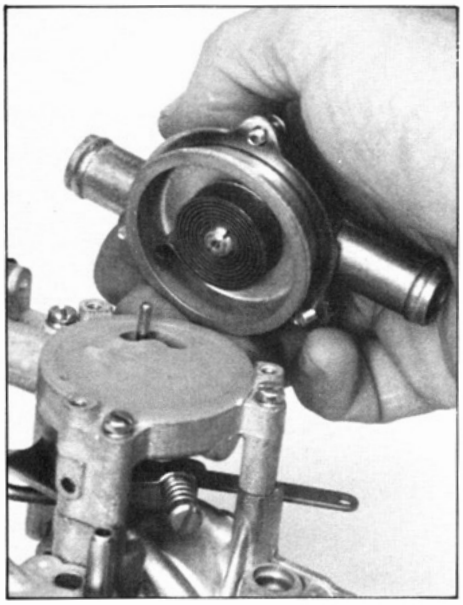
Remove accelerator-circuit blanking screw to clean drilled passage. Use aerosol carburetor cleaner to assure passage is clear.



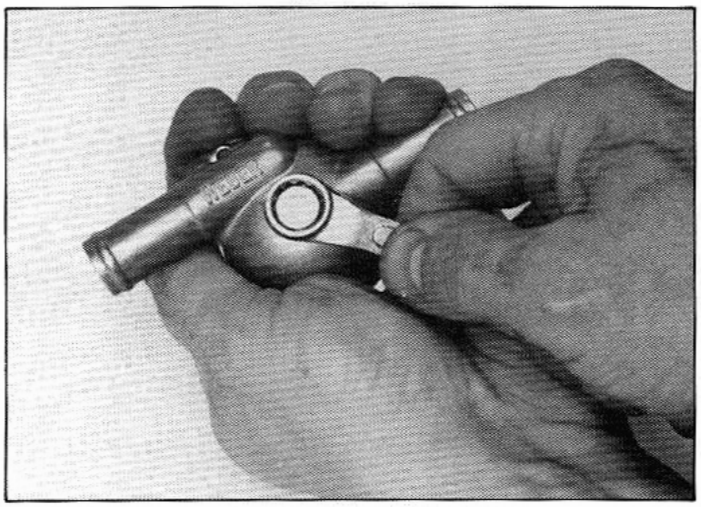
Auxiliary venturi removal: Unit should slip out easily. If stuck, use wood dowel from below to remove. Trying to lift with pliers will usually break venturi.



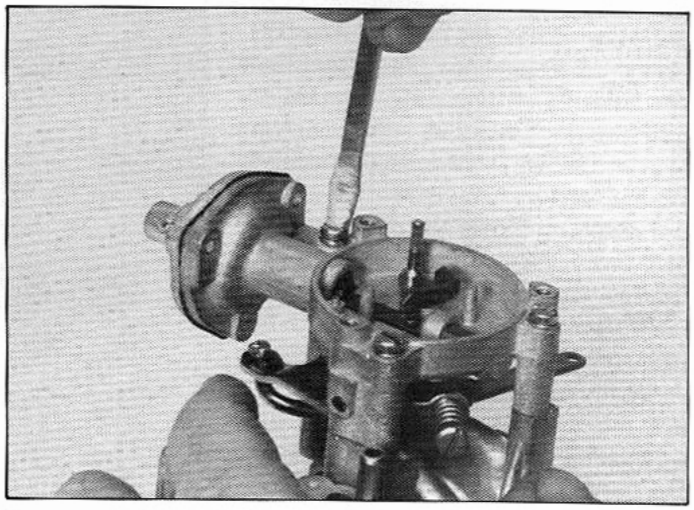
Remove choke water chamber. Establish index mark so chamber is not rotated incorrectly on reassembly.



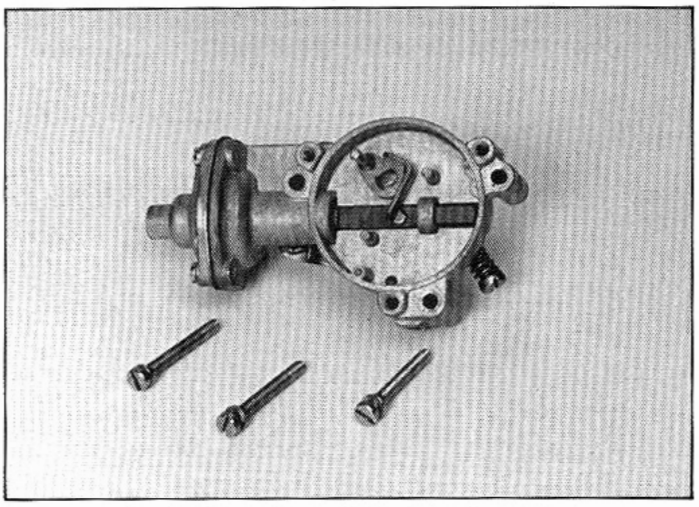
Bimetallic coil that controls choke operation is heated by water chamber to slow choke action.



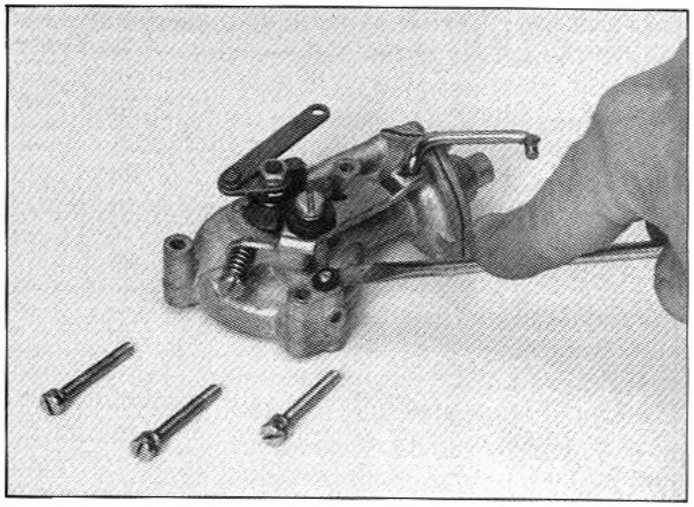
Water chamber comes apart easily by removing 11mm bolt. Unless it leaks, leave chamber assembled.



Remove choke body from carburetor. Three screws attach it through a stand-off to provide room for operating linkage behind housing.



How it all goes together: if you disassemble choke mechanism, reassembling can be difficult. Don't take it apart unless something is wrong with choke actuation.



Remove rubber O-ring from back of choke housing. Ring makes an air-tight seal so manifold vacuum, operating on diaphragm, pulls off choke.

shaft will produce an erratic idle or an inconsistent return to a stable idle. If faced with these conditions, then seriously consider replacing the complete unit or having a Weber specialist do the repair. The removal and assembly procedures are included here for those with a stout heart, ample dexterity, and plenty of time.

Use a 12mm wrench to loosen the nut at the end of the throttle shaft. Don't put any pressure on the throttle valves. Use a screwdriver against the bellcrank assembly to keep the valves open while loosening the nut.

The shape of the parts that you'll remove from the throttle shaft will change, depending on the application. Generally, the next step is to strip the shaft of all its components. Lay them out carefully so

you can reassemble them exactly the way they came off. Make a sketch to aid your memory. Begin by removing the nut, lock-tab washer, main arm, washer, lever, and shoulder washer. Note that the shoulder faces the carburetor body.

Release the fast-idle rod from the choke if the choke hasn't yet been removed from the carburetor. Use needle-nose pliers as shown to remove the split pin, see page 66.

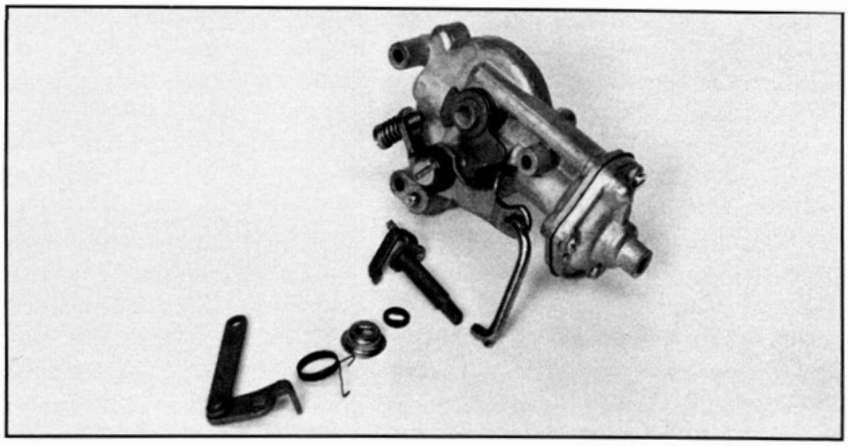
Now remove the remaining lever and spring behind it. You may remove the nylon seal from the throttle shaft, but it's better to leave it in the cavity of the housing for now.

Now, remove the parts from the secondary throttle shaft: nut, lockwasher, washer, arm, and spring.

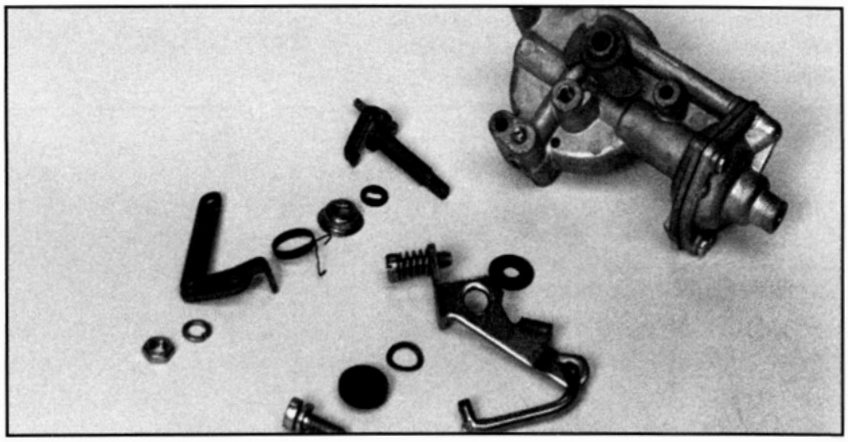
The next step is to remove the four screws that hold the throttle valves to the two shafts. As in the choke valve removal, the ends of the screws are punched to keep them from vibrating loose. Only slight pressure on a screwdriver can be applied to the screws to avoid bending the throttle shafts.

If slight pressure won't remove the screws, try unscrewing them in increments of about 1/2 turn, followed by screwing them back in, and then out again in 1/2-turn increments. If that method doesn't work, grind their ends so they can be removed without stripping the threads in the throttle shaft. The shaft itself is quite hard, so even if you do strip the screw, there will be enough thread left in the shaft to chase with a 4 × 0.7mm tap for new screws.

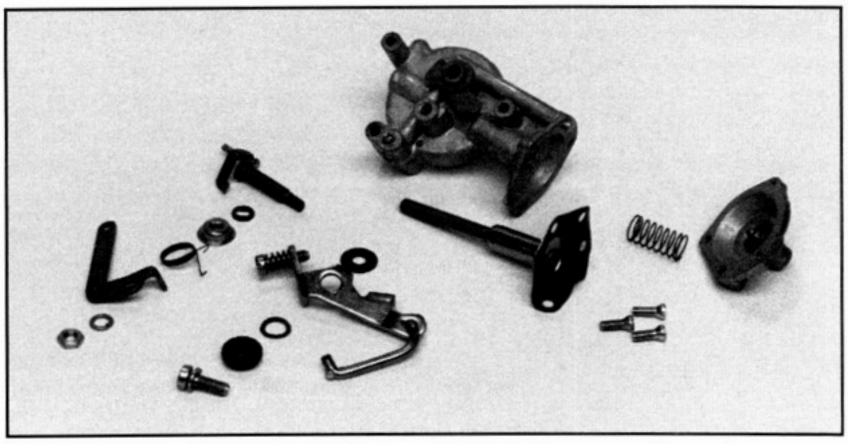
Mark both throttle valves so they can be replaced exactly as they were removed, and then remove the valves. Check to see that there are no burrs on the throttle shaft caused by removing the screws. Remove any burrs with a file, then pull the two shafts from the carburetor body. A spring will come out with the shaft. The spring is used to seat the nylon shaft seals in the carburetor body. Remove any nylon shaft seals that may hang up in the cavity of the carburetor body.



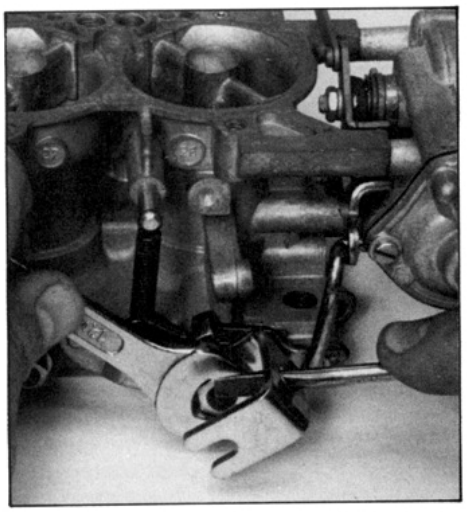
Make sketch so you understand assembly order of choke-shaft components before removing them. Photo gives assembly order, but not orientation of lever around shaft.



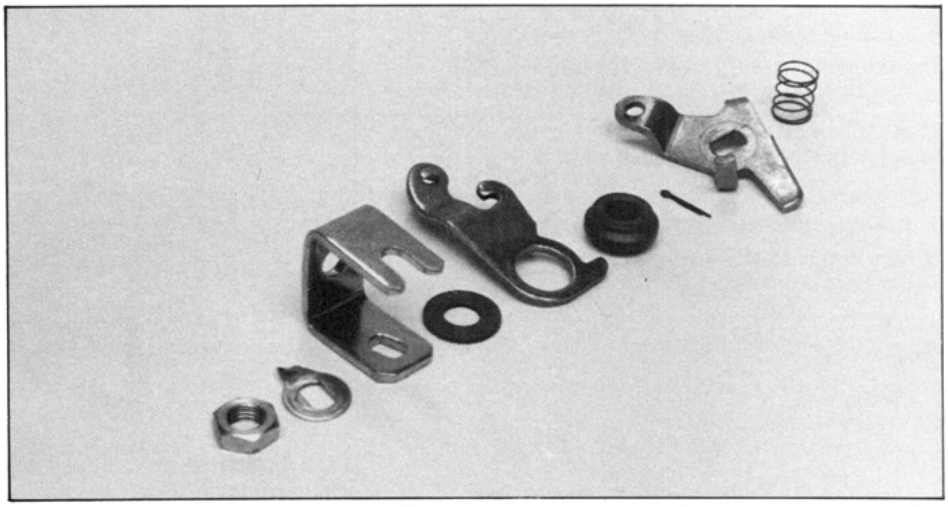
Adjusting-lever components laid next to choke-shaft components: Lever's orientation around shaft is easily forgotten and should be recorded.



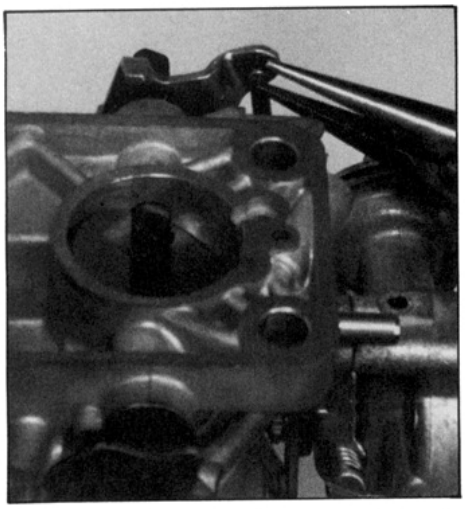
Choke mechanism completely disassembled. Diaphragm, spring and cover are attached with three bevel-head screws. Diaphragm must be supple; replace if it isn't.



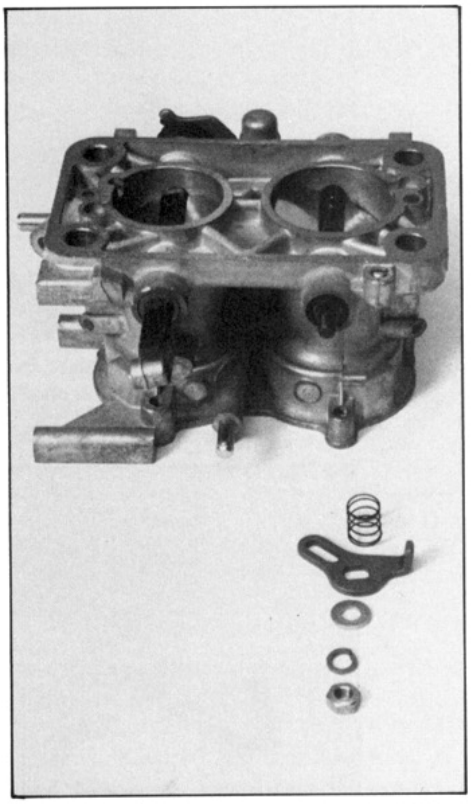
Don't loosen primary throttle-shaft nut with only a wrench. Use screwdriver to relieve any pressure against throttle valves. Note how levers are oriented before beginning disassembly.



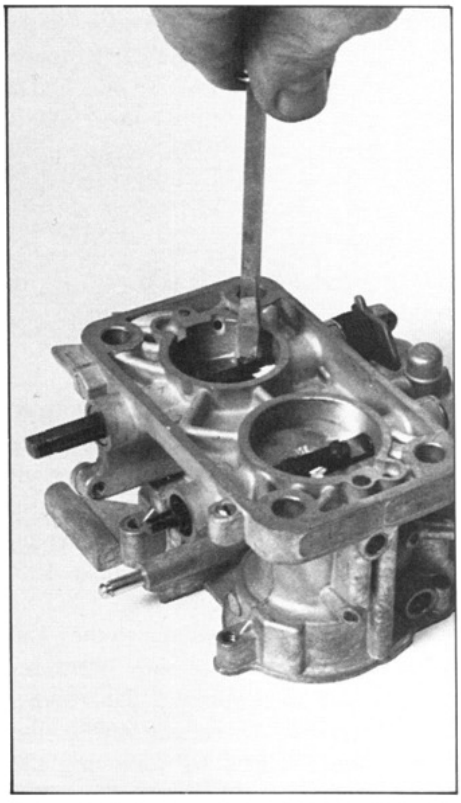
Throttle-shaft components removed in order: Orientation of levers around shaft must be noted before disassembly.



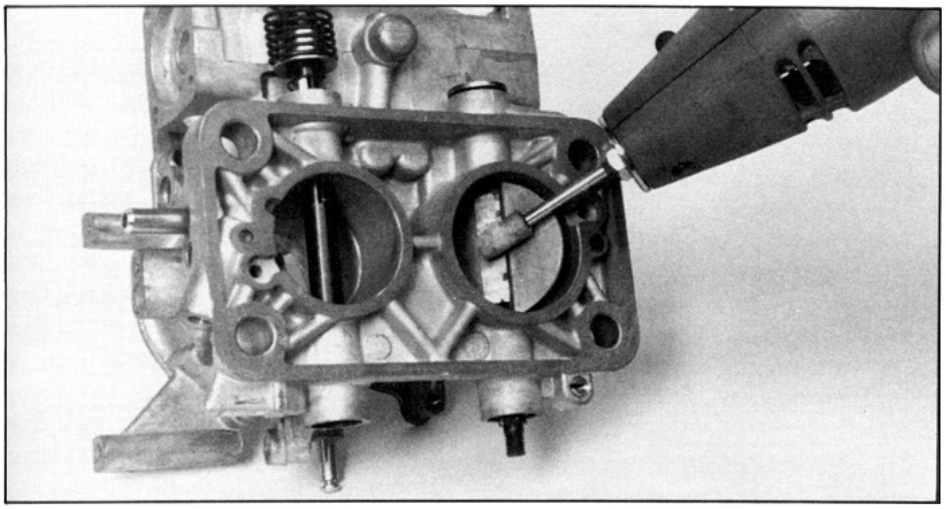
Remove choke's fast-idle rod from opposite end of throttle shaft. Cotter pin is small, somewhat hard to get at.



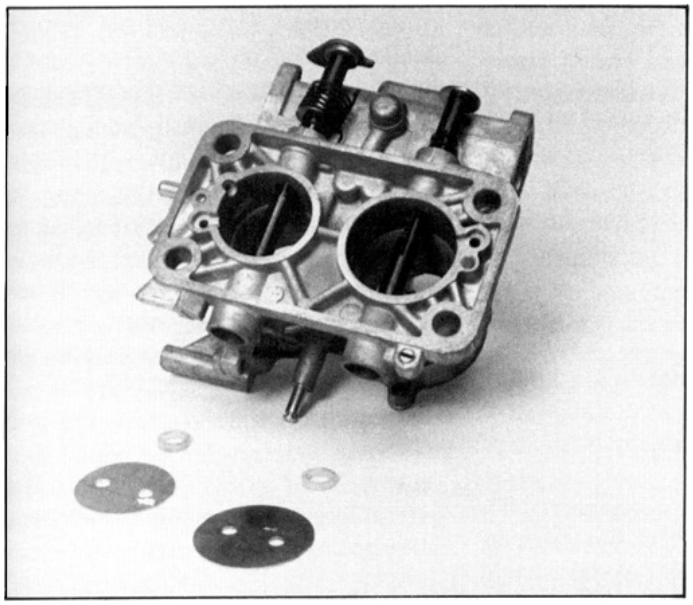
Secondary throttle-shaft components disassembled in order: Orientation of secondary throttle arm should be noted on a sketch before disassembly.



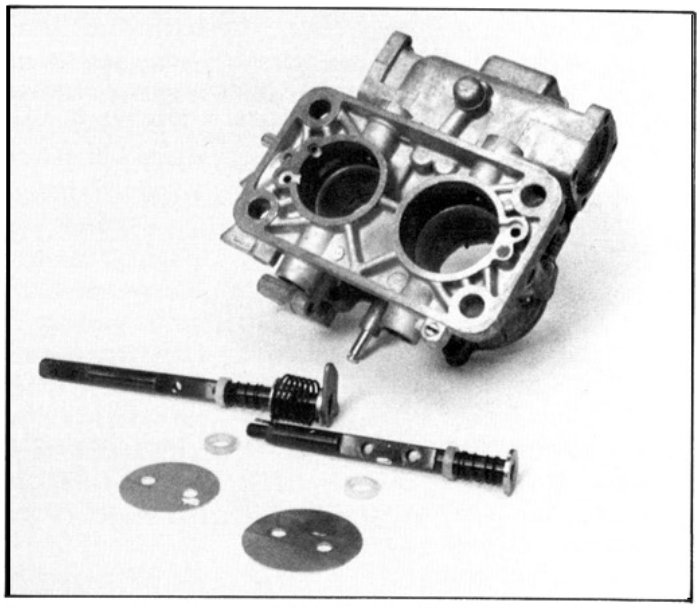
Removing screws from throttle shaft is a major step. Chance of success is good, but complications are unnumbered and unpredictable. Don't do this unless absolutely necessary.



If throttle-shaft screws are typical, this step is necessary. Grind off just enough of staked end to relieve upset threads. Use new screws at reassembly.



Throttle valves removed: Note white markings on valves for relocating at reassembly.



Throttle shafts removed: Carburetor body is now completely stripped. Note white plastic shaft seals on throttle shafts and their seating springs.

INSPECTION

Cleaning—See the Cleaning section, page 51, of the IMPE part of this chapter for tips on cleaning the carburetor.

Float Bowl Cover—The gasket that seals the float bowl cover to the carburetor main casting should show that the sealing surfaces of the two castings are parallel. Check the float bowl cover for broken flanges, cracks or other physical damage. Check the threads for the fuel filter plug and screw threads for the power valve.

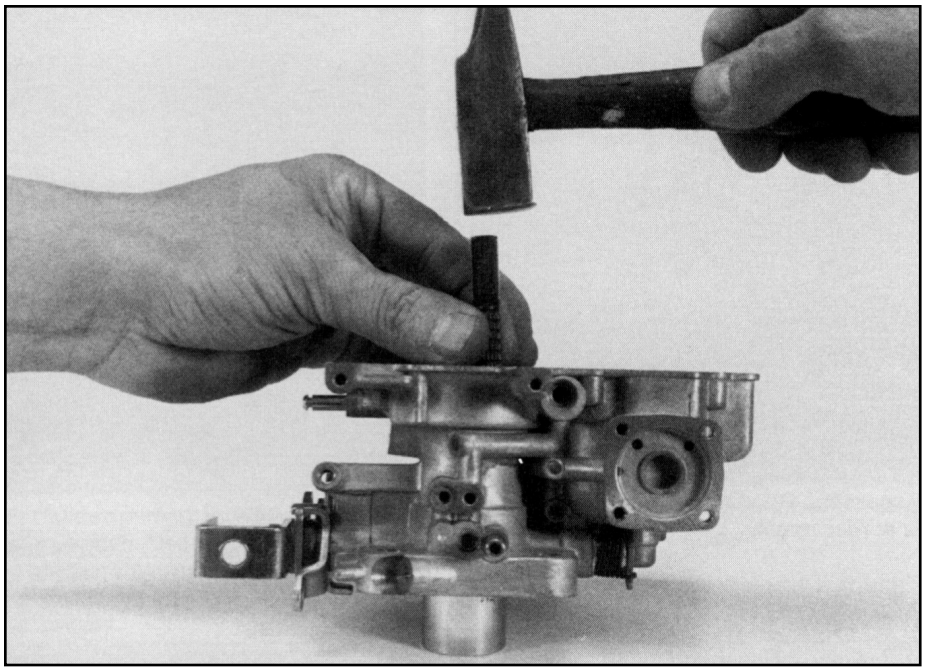
Check the fuel filter for any damage to the screen. Blow it clean with compressed air to remove any dirt.

The choke shaft should be straight, with no visible wear where it bears on the float bowl cover. The choke valves should have smooth edges and be flat.

The floats should not show any evidence of leaking. Shake the assembly near your ear and listen for any gasoline sloshing inside. If the floats leaked, replace them.

The float needle valve and seat should not show uneven wear at their mating surfaces.

The diaphragm on the power valve assembly should not be damaged, nor



Shaking throttle-shaft screws requires that you support throttle shaft. End of screw presents itself at an angle, so a dead-center punch is impossible. Note hammer used weighs less than five pounds. Shaft support is drive side of 1/4-in. drive socket, or short section of solid metal rod.

should its long spring be broken or corroded. Renew it as required.

Jets–Blow compressed air through the main jets, the air-correction jets, emulsion tubes and accelerator-pump jet to clean them. Never use a wire to probe or clean a jet; it will disturb the flow characteristics. Blow air through both sides of the accelerator-pump delivery jet. It is a one-way valve, so you should be able to blow through it only one way.

Press down on the center needle of the full-power valve to make sure it moves freely against its return spring.

If you removed the auxiliary venturis, blow through the passage and remove any burrs or dirt on their surfaces.

Main Casting–Check for any damage to the main casting. Use a straightedge to check the base of the carburetor for excessive warpage.

Remove the idle jets from their holders and check each jet by holding it up to a light. Blow through the jet if it's clogged. Check the diaphragm of the accelerator pump for damage.

The automatic choke assembly contains a lot of levers. Check that all operate freely. The bimetallic spring should not be bent or broken. Check the water chamber for signs of leakage.

Throttle Shafts–The throttle shafts should be straight, with no visible wear where they bear on the nylon seals. Double-check the threads on the end of the primary throttle shaft and the threads on both shafts where the valves are attached. The throttle valves should have smooth edges and be flat.

The springs that slide onto the throttle shafts should be strong and not deformed. Replace the nylon shaft seals whether or not they show any evidence of wear.

REASSEMBLY

The disassembly of the DGAV is, in itself, a lesson on reassembly. After all the components have been inspected and damaged parts replaced, begin reassembling the major components first. The disassembly photos will be helpful during assembly. Start with either the float bowl cover or main casting. The following notes give the most important points to remember in reassembly.

Throttle Shafts–There are two dangers in reassembling the throttle valves; bending the throttle shafts and not positioning the valves correctly. The first danger requires only care; the second, some strategy.

The holes in the valves are oversize so they can be positioned for a perfect seat in the bores. The auxiliary venturis should be removed to give free access to the attaching screws for this operation.

Install the throttle shafts with all their linkages and springs in place, then tighten the end nuts before installing the valves. This strategy assures that the valves are not moved while you're installing anything else on the throttle shafts. On the primary shaft, working outward from the innermost part, the order is:

Nylon washer
Spring
Arm
Shoulder washer, shoulder side to carburetor casting
Arm
Washer
Throttle bellcrank
Lock tab
Nut

On the secondary shaft, working outward, the order is:

Nylon washer
Spring
Arm–Engage arm with slotted arm on the primary shaft before slipping it onto the secondary shaft.
Washer
Lock washer
Nut

Let the valves position themselves in the bore and then tighten the attaching screws lightly, being careful not to move either the shafts or valves.

Double-check your work by holding the carburetor up to a bright light and looking around the circumference of the valve. You should be able to achieve an almost light-tight seal between the valve to the bore. If there is a crescent of light, it should be concentric with the valve.

Tighten the screws securely and recheck your work. The valves are held in place by the tightness of the screws. But the ends of the screws should be deformed (staked) to ensure they don't vibrate loose and drop into the engine.

Take the appropriate steps to prevent this catastrophe. Use fuel-resistant Loctite on the threads and stake the screw ends. Do this with a punch while supporting each so no force is transmitted to the throttle shafts.

Set a 1/4-in. drive, 1/2-in. socket on a steel or concrete surface with the square drive end facing up. Place the carburetor on top of the socket so a throttle valve screw head rests against the smooth surface of the socket. Then, place a punch down the venturi and position it on the end of the screw being supported by the socket. The valves won't allow the throttle shaft to rotate so you can hit the screw dead-center, but the angle is so small that it shouldn't matter. Try to deform the screw with a single sharp blow directed as closely centered on, and aligned to the screw, as possible.

You can also secure the screws with Vise-Grip pliers. Reach inside the venturi with a small pair of them to squish the threads on the exposed screw end. This will deform the end and keep the screw from backing out.

Carburetor Body—Place a rubber O-ring on both idle jet holders and screw them in place. Install the idle speed adjusting screw and set it so the throttle valve just begins to open. Run in the idle mixture screw all the way, gently so you don't damage the seat. Then back it out the number of turns that match its original setting. Two turns out is a good starting point. Screw in the accelerator-pump blanking screw.

Place the spring into the accelerator pump cavity and then cover it with the pump diaphragm; its nipple points outward. Be sure that the long arm on the accelerator pump cover fits against the underside of the cam on the throttle shaft. Gradually tighten the four shoulder screws that hold the pump to the carburetor, working in diagonal steps so the cover seats evenly.

Automatic Choke—Assemble the parts in the automatic choke housing. Begin by slipping the arm attached to the vacuum diaphragm into the housing, then seat the diaphragm. It's a one-way fit. Assemble its spring and cover. Tighten the three shoulder screws that hold the cover to the housing. Check to see that the Teflon bushing for the operating shaft is in place, then slip the operating shaft through the housing. The rounded end of the arm on the shaft should swing in the milled cutout of the vacuum diaphragm arm. Make sure the levers are returned to their original positions as shown.

Assemble the choke operating arm to the operating shaft. Work out from the casting: slotted washer, stamped cover, spring, arm, lock washer and nut. Don't bend the arm on the end of the shaft as you tighten the nut. Then, assemble the fast-idle operating arm working out from the casting: washer, arm, spring washer, locating bushing, screw. The lever and arm should point away from the vacuum diaphragm. Slip the heavy wire arm into the keyway on the fast-idle operating arm.

Fit the O-ring to the vacuum line and position the two arms. The flat-steel arm goes up to the choke butterfly valve and the heavy wire arm goes down to the linkage on the primary throttle shaft, where it's secured by a cotter-pin. Check to see that the adjusting screw clears its stop when the housing is placed against the carburetor. With everything in place, attach the choke housing to the carburetor with three screws.

Put the white plastic gasket in place over the housing. There's a locating pin so the gasket goes only one way; cover it with the water housing assembly. Make certain the loop in the end of the bimetallic coil fits onto the shaft projecting through the white plastic gasket.

Match up the index marks on the choke housing and water housing, then tighten the three screws that hold them together.

Jets—Replace the main jets, emulsion tubes and air-correction jets, auxiliary venturis, accelerator-pump delivery valve and power valve with its copper washer.

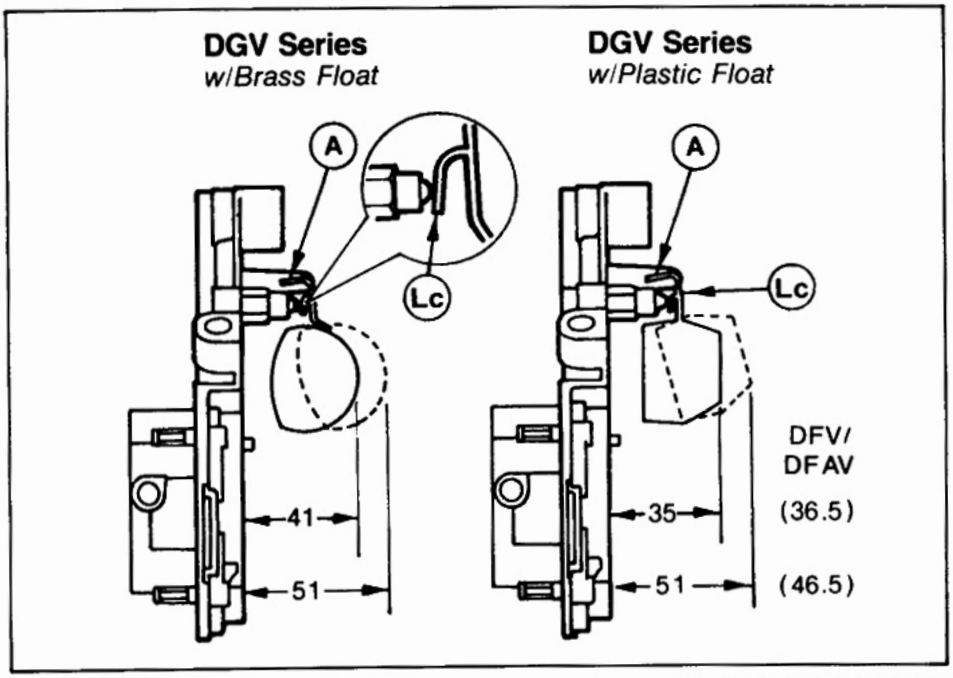
Float Bowl Cover—Fit the two dust seals into the float bowl cover. Install the choke shaft and valves, if they were removed. Use the same procedure and precautions as for the throttle valves. Next, attach the power valve assembly to the cover. Replace the float needle-valve seat if it was removed.

Slip the float needle valve onto the float assembly, place the valve into its seat and replace the pin that holds the floats to the top of the carburetor. Check to see that the needle moves freely in its seat.

Set Float Level—Whenever a DGAV is disassembled for repair, the float level must always be checked and set. Check float level by measuring the distance from the float's bottom edge to the bottom surface of the float bowl cover without the gasket installed. The float is in the correct position for measuring when the float tab is just touching, but not depressing, the spring-loaded ball in the needle valve.

This measurement is most easily made by holding the cover vertically with one hand so the float pivot is at the top and the float dangles straight down. See the accompanying illustration for the proper orientation and dimensions, page 70.

Move the cover slightly so that the float tab just touches the float needle assembly and then measure the distance between the float's bottom and cover's face using your other hand. For metal floats assembled from two halves, measure to the surface of the float itself, and not to the raised soldered joint at the circumference of the float.



Float-level dimensions (in mm) for DGV series: For brass floats, use drawing at left; plastic floats at right.

Correct float level by bending the float arm tab that presses against the float needle assembly. Attach the float bowl cover to the main casting and secure all fittings; snug but not stripped.

DGAV INITIAL SETUP & TUNING

Cold Engine:

- If float level has not been set, do it now.
- Check for fuel leaks. If using an electric fuel pump, turn on ignition so it operates and then check all fuel fittings for leaks. If mechanical pump is used, disconnect high-tension (large) wire from coil, crank engine for several seconds and then check for fuel leaks. Reconnect coil wire.
- Remove air cleaner. Open throttle all the way and then close it. The choke butterfly valve should close completely on a cold engine. Move choke-valve linkage to verify there is no binding. If there is, carefully free linkages so operation of the choke is correct. Be careful, if you bend a link, not to upset choke setting.
- Hold choke valve open and locate accelerator-pump outlet in primary venturi. Open throttle, then close it. Fuel should flow from accelerator-pump outlet. If it does not, correct problem.
- Fully depress accelerator pedal. Verify throttle plates fully open. If not, readjust linkage so they fully open.
- Verify, if necessary, that idle-speed and idle-mixture adjustment screws are at their initial settings. Connect tachometer to engine to monitor idle speed. Start engine and let it warm to operating temperature. This may require resetting idle speed so engine continues to run.

Warm Engine:

- Adjust idle speed to approximately 850 rpm. Any speed below 1000 rpm is acceptable so long as intermediate or main circuits are not operating and engine continues to run.
- Adjust idle-mixture screw so engine idles at maximum speed. Start by turning screw out in equal increments of 1/2 turn—rotate slot in screw's head exactly 180°—until engine rpm begins to decrease. If turning screw out only increases engine rpm, reset screw to the initial setting and readjust baseline idle speed so it is as low as possible. Then, repeat idle-mixture adjustment. As engine rpm decreases, turn in idle-mixture screw until maximum idle speed is obtained.
- Readjust idle speed to 850 rpm, or as specified in owner's manual or underhood label.
- Disconnect tachometer.

Carburetor Repair Kits

Carburetor Type	Rebuild Kit	Gasket Set
32 DGAV, DGEV	92.3237.05	92.0108.05
32/36 DFV, DFAV, DFEV	92.3230.05	92.0073.05
32/36 DGAV, DGEV	92.3237.05	92.0108.05
32/36 DGV	92.3238.05	92.0108.05

Suzuki Samurai SJ413 General Specifications (stock)

Vehicle type	Two-door, hard and soft top
Vehicle class	Sport / utility
Powertrain layout	Front engine, four-wheel drive
Body structure	Body with chassis frame
Body material	Steel
Seating capacity	Four
Suspension (Front and Rear):	Leaf spring solid axle
Shock Absorber Specifications	Stock Samurai front replacement shocks measure 10.125” collapsed and 15.25” extended, the rear measures 11.75” collapsed and 18.” extended.
Steering	
Turning radius	16.7 ft. (5.1 m)
Toe in	0.08 - 0.24 in. (2 - 6 mm)
Caster angle	3° 30'
King pin angle	9° 00'
Brakes	Type: Power-assisted hydraulic
Front	Disc, floating caliper
Rear	Drum leading and trailing
Parking brake	Lever-hand operated
Wheels and Tires	15 x 5" Steel Wheels (381 x 127 mm)
Tire type	All-season, steel-belted radial
Tire size	P205/70R15 (Full-size Spare)
Front hubs	JA and JX: Manual/Automatic
Restraint System	Safety belts: Front and rear lap / shoulder belts

Fuel Economy (EPA Estimates) City: 23 MPG Highway: 25 MPG

Engine Type

The engine is an aluminum-block, steel-sleeve 1.3L (81 c.i.) four-cylinder, in-line, 8-valve OHC, weighs about 200lbs. and generates 64 hp and 74 ft. lbs. of torque.

Bore x Stroke	2.91 in. x 3.03 in. (74 mm x 77 mm)
Displacement	80.8 cu. in. (1.3 liter)
Compression ratio	8.9:1
Induction system	2bbl Carburetor
Horsepower (SAE net)	60 hp @ 6500 rpm (45 kw)
Torque (SAE net)	74 lb.-ft. @ 3500 rpm
Manual Transmission	Five-speed, all synchromesh
Clutch	Dry, single disc, diaphragm spring

Gear ratios		Transfer gear ratios	
1st	3.652	Low (4WD)	2.268
2nd	1.947	High	1.409
3rd	1.423		
4th	1.000		
5th	0.795	Differential ratio	373:1
Reverse	3.466	373:1	

Capacities / Calculated Data

Engine oil	3.7 qts (7.4 U.S. pt.) (3.5 liters)
Fuel tank	10.6 U.S. gal. (40.3 liters)
Engine coolant	1.34 gal (10.69 U.S. pt.) (5 liters)
Transmission oil	Manual (4WD) 2.76 U.S. pt. (1.3 liters)
Differential gear oil Front	4.2 U.S. pt. (2.0 liters)
Differential gear oil Rear	3.2 U.S. pt. (1.5 liters)
Transfer gear box oil	1.7 U.S. pt. (0.8 liter)

Samurai VIN # Codes:
first 3 characters = manufacturer's ID (JS4)
next character = car line
next character = series, chassis and restraint system type
next character = engine type
next character = design sequence
next character = body type
next character = "check digit" (tells you what city the vehicle was originally sent to to be sold.)
10th character = model year (G=86, H=87, J=88, K=89, L=90, M=91, N=92, P=93, R=94, S=95)
next character = assembly plant
next six digits = sequential number

Replace the plugs at least every 30,000 miles. Gap them to .028-.032
Timing: 10 degrees BTDC. Firing order is 1-3-4-2
Wiper blades are 12" Idle speed should be 750-850 rpm

Exterior Dimensions

Wheelbase	79.9 in. (2030 mm)
Tread width Front	51.2 in. (1300 mm)
Tread width Rear	51.6 in. (1310 mm)
Overall Length	135.0 in. (3430 mm)
Overall Width (Body)	60.2 in. (1530 mm)
Overall Height	65.6 in. (1665 mm)

Interior Dimensions - Rear cargo
Length = 32.5 in (826 mm)
Width = 50.0 in. (1270 mm)
Height = 40.2 in (1021 mm)

***Suzuki Parts & Supplies** (Web pages / Phone numbers)*

1 Asian Auto Parts of Arizona
1-877-885-9341
http://asianautopartsofaz.com

2 Calmini
http://www.calmini.com

3 Hawk Suzuki Parts
1-888-SAMURAI (1-888-726-8724)
http://www.hawksuzukiparts.com/index.html
hawkins@hawksuzukiparts.com

4 North Coast OffRoad
1-866-4X4PART (1-800-494-7278)
http://www.northcoastoffroad.com

5 PetroWorks Off-Road Products
1-800-952-8915
http://www.petroworks.com

6 Pierce Manifolds (Source for Weber Carb parts)
http://www.piercemanifolds.com

7 Roadless Gear (formerly Giri Trading Co.)
1-208-660-6905
http://www.roadlessgear.com

8 Rocky Road Outfitters
1-888-801-7271
http://www.rocky-road.com/suzuki.html

9 Rod's Samurai Parts
Rod Reyerson - Marshalltown, Iowa
Email: Rey55@prodigy.net
Phone: 641-751-2468 or 641-752-2150
http://www.izook.com/spy/rods/rods.htm

10 Sky Manufacturing
1-541-736-3743
http://www.sky-manufacturing.com

11 Spidertrax
http://www.spidertrax.com/index.html

12 Suzuki John
http://suzukijohn.hypermart.net/index.html
suzukijohn@aol.com

13 Trail Tough
1-877-SUZUKIS (1-877-789-8547)
http://www.trailtough.com

14 Wheeler's Off-Road
1-541-474-2879
http://www.wheelersoffroad.com

15 Zuki South Samurai parts
http://www.zukisouth.com