Typical Install Instructions

Read & understand all steps of these instructions before beginning this installation.

WEBER Conversion Kit, PVW103

VW T-1/2, up to 1835cc

32 / 36 DFEV Weber Carburetor

These instructions are intended as a general guide for installation.
Certain steps may vary slightly for different vehicles.

Jetting Specifications

Jetting specifications of carburetors supplied in kits may vary slightly,
but will always be correct for the intended application.

Tools Needed

Combination, box or open-end wrenches (metric)
Socket set with 12mm socket
Screwdrivers (regular and Phillips)
Pliers
Gasket Scraper, Knife
Wiping rags, Cleaning solvent
Gasket sealer
Wire cutters

Parts Supplied with Installation Kit

1 Weber 32/36 DFEV
1 Fully Heated Intake manifold
1 Throttle Linkage and levers Hardware Kit
1 Air Filter

INSTRUCTION / JETTING NOTES:

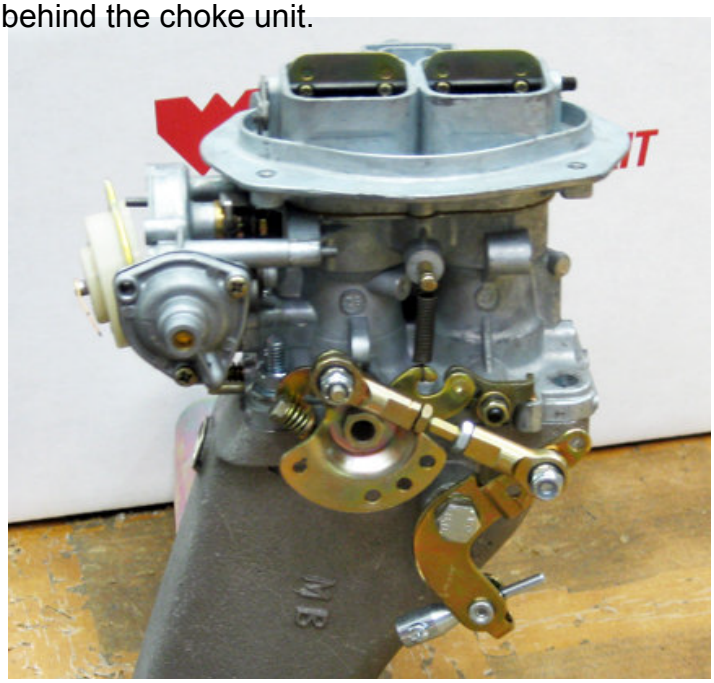
The following "instructions" are based on a vehicle and engine in a "relatively" stock condition. If you have modified your vehicle and/or engine, some of the following steps may not apply to your application. The jetting in this conversion kit will accommodate stock engines up-to 1800cc. Using stock dual port cylinder heads, mild grind camshafts and open exhaust systems may require a jetting change..

RECOMMENDED ADDITIONAL PARTS:

WFP502 low pressure fuel pump

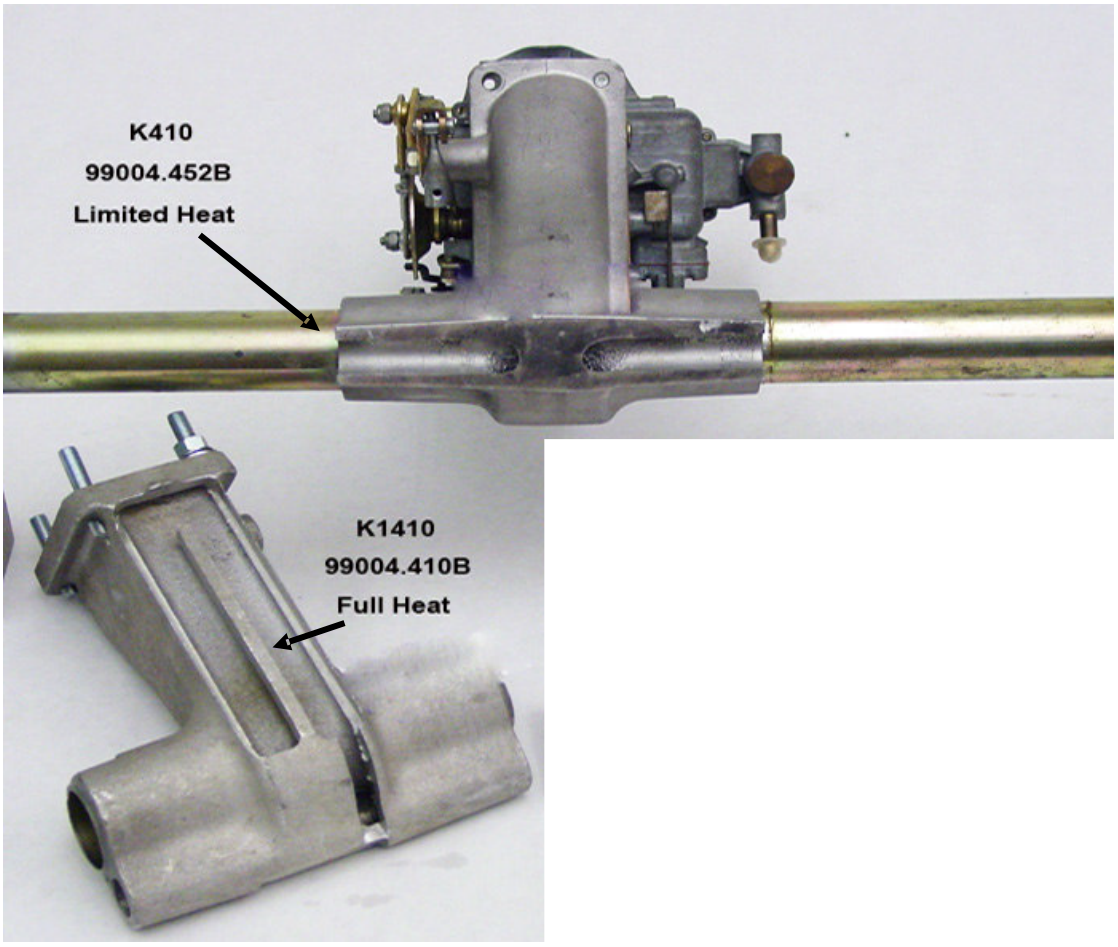
INSTALLATION
PVW103

1. Remove air cleaner and if applicable, any corresponding vacuum lines. Remove stock carburetor.
2. Remove the stock intake manifold and end castings. This is done by removing the fan belt, loosen the generator/alternator retaining strap and slide toward fan shroud, loosen the two side screws that hold the fan shroud to the cylinder head sheet metal. Lift the fan shroud with the generator/alternator still attached about 1.5 inches from the head sheet metal. Remove the two nuts that hold the #3 and #4 cylinder end casting (13mm). Remove the clamps that attach the end casting to the center section and remove the #3 and #4 end casting. Remove the bolt that secures the intake center section to the engine case. Loosen the clamps that secure the #1 and #2 end casting to the center section and remove the center section. Remove the two 13mm nuts that secure the #1 and #2 end casting and remove the casting.
3. Put some clean rags or paper towel far enough down the intake ports to prevent debris from entering the intake ports. If your car is in need of spark plugs, now is the time to replace them.
4. Install #1 and #2 intake manifold end casting and install the cast center section. (It may be necessary to trim the tubing the connects to the end casting. This tube is intentionally left too long to compensate for longer stroke engines.) Install #3 and #4 intake manifold end boot. Tighten all the connections ie: manifold boots, heat riser ends and the case through bolt. Refit the fan shroud back to its original position.
5. Install the 3 studs on the intake manifold flange (one hole is unthreaded for a through bolt). Remove the outer nut from the fuel pump and install the bracket that helps steady manifold. Replace the throttle lever on the Weber 32/36 DFEV with the lever supplied in the kit. **DO NOT OVER TIGHTEN THE THROTTLE SHAFT NUT. FINGER TIGHT AND ONE TO TWO MORE FLATS ON THE NUT.** Install the new Weber Carburetor to the manifold and check the choke to fan clearance. If there is not enough clearance, glue a 1 inch square piece of rubber to the shroud directly behind the choke unit.



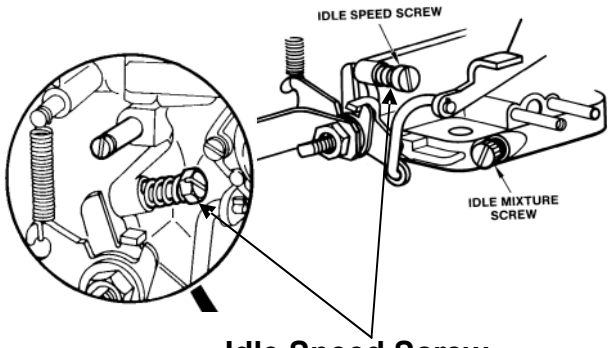
INSTALATION
PVW103

6. Install the throttle cable and check for free operation, then check for full throttle operation by pushing/depressing the accelerator pedal to the floor.
7. Connecting the heat tubes from the exhaust system is **very important**. This is our premium “fully heated” manifold and will keep the air and fuel in much better atomization in **ALL** driving climates. (including summer time in the hot deserts) The cut-away picture below shows the difference between the fully heated and the slightly heated version of virtually the same manifold.



8. This Weber 32/36 DFEV Carburetor comes with a “baseline” factory jetting which is suitable for most engines to 1835cc. However, because of various engine conditions and over 3800ft altitude and different climates, the jetting *may* have to be changed somewhat. We recommend purchasing the Weber Tuning manual or, find a competent mechanic that can follow these instructions, and can evaluate then adjust jetting.
9. Because of the various climate conditions the choke and fast idle may need a slight adjustment also.

TUNING GUIDELINES
LOW SPEED CIRCUIT



Idle Speed Screw

B A S E L IN E S E T T IN G

S p e e d S cre **1 1 /2 tu rn s in A** .

M ixtu re S c re w 1 1 /4 to 1 3 /4 tu rn s

F in a l S e ttin g s

Id le S p e e d S c re w _ _ _ _ _
Id le M ixtu re S c re w _ _ _ _ _

It is important to verify all linkage and levers are installed without binding and the linkage opens to full throttle and closes to the Idle Speed Screw. **The number one and two reasons for tuning errors are improper linkage installations and over tightened linkage nut, causing a binding in the linkage**

***** All settings are done with engine warmed up so that the choke is fully opened and disengaged.

1. Back out the Idle Speed Screw until it does not touch the throttle lever. Cycle or Snap the linkage again to be sure that the linkage and lever comes to complete close. (Checking for linkage bind) Turn in the idle speed screw until it contacts the throttle lever, then continue to turn the **idle speed screw in 1 1/2-turn MAXIMUM.**

2. Set the Idle Mixture Screw by turning it in until it **lightly** seats. Then back out the mixture screw 2 full turns out. **DO NOT FORCE THE MIXTURE SCREW, AS THIS WILL CAUSE DAMAGE TO THE SCREW AND Its SEAT IN THE BODY OF CARBURETOR.**

3. ***** With the engine at operating temperature, choke fully open and engine running, turn in the mixture screw until the engine starts to run worse, then back out the screw (recommend ¼ turn at a time) until the engine picks up speed and/or begins to smooth out. Back out 1/4 turn more, or until the screw does nothing or runs worse then turn back to the point where it ran its best. We are looking for the Lean Best Idle or the “sweet spot”.

4. Recheck timing and vacuum hook ups. Then, recheck mixture screws to lean best idle again. If all is still the sweet, best and smoothest idle then confirm and note the final settings.

5. If the mixture screw is out more than 2 turns, then the Idle jet is too lean (too small). If the mixture screw is out 1 1/4 of a turns or less, then the Idle jet is too rich (too large).

   All of these assumptions are based on the fact that the Idle Speed Screw is not more than 11/2 turns in. (see the next page pictures) If the Idle Speed Screw has to be opened more than the **1 1/2 turns MAXIMUM** then this is also an indication of a lean condition usually requiring jet change. “At times” it may appear to be showing signs of richness or flooding this could also be the fuel level is too high in the float bowl. Set the ***plastic*** float 18mm from gasket surface to the tip of the float not depressing the ball & spring in the needle valve. Then the float drop is set to 1.5mm of “needle” travel. Check the fuel pressure, MAX. 3 PSI.

Progression Hole's Throttle Plate Adjustment Diagram

SPECIAL NOTE:

The following describes the importance of having the Throttle Plate(s) below the fuel enrichening progression holes that are drilled in the throat of the carburetor.

Weber Carburetor: 32 / 36 DFEV Progressive

Shown in Figure "A", the idle speed screw **IS NOT** turned in more than **1 ½ turns .** The throttle plate (F) is below the enrichening progression holes (2), the carburetor would be at "curb" idle. Also, there would be zero vacuum at the distributor "ported" vacuum source.

Shown in Figure "B", the idle speed screw more than the **1 ½ turns in .** The throttle plate exposing the enrichening progression holes. Also, you would have vacuum at the distributor "ported" vacuum source. The extra fuel at curb idle, from the exposed enrichening holes, is 95% of the tuning problems we experience. The Idle Speed Screw **CAN** be turned in more than **1 ½ turns MAXIMUM** or, you will experience a rich idle condition, a stumble off idle, "flooded" hard starting, "dieseling" or run on.

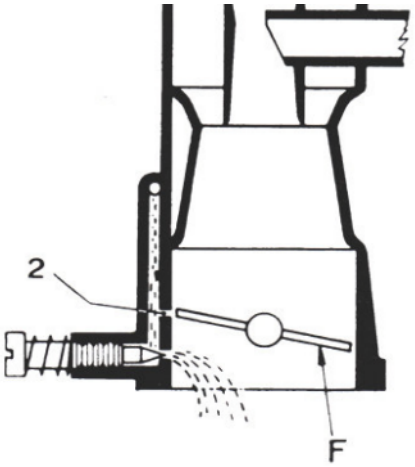


Figure A
Correct Throttle Position

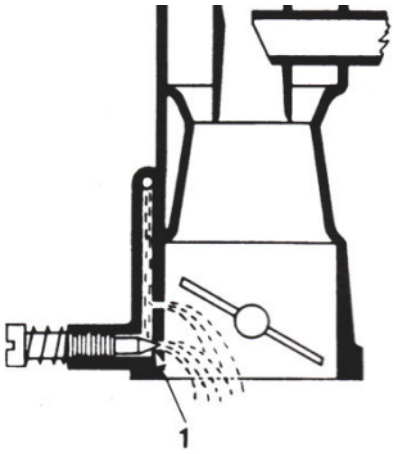


Figure B
Enrichening Holes Exposed

Trouble shooting

This guide in intended for diagnostic purpose only. Specific procedures and adjustments should be obtained from factory service manuals or the carburetor specification sheet.

Since other engine components problems affect the performance of the carburetor it is strongly recommended to perform the general engine checks of this guide BEFORE making any carburetor adjustments.

GENERAL ENGINE CHECKS

IGNITION SYSTEM
1. Cracked, broken wires
2. Incorrect ignition wire location (firing order)
3. Timing improperly adjusted
4. Distributor cap cracked, arcing
5. Low coil output
6. Corroded plug terminals
7. Incorrect vacuum advance hose connection
8. Points corroded, wrong gap
9. Incorrect spark gap

EMISSION SYSTEM
1. Cracked, loose vacuum hoses
2. Improper vacuum hose connections
3. Faulty EGR valve operation
4. Air pump diverter valve anti-backfire valve faulty
5. Faulty PCV valve operation
6. Dirty breather filters (Charcoal canister, Valve cover breather, PCV filter inside air filter assembly)
7. Faulty feedback system operation
8. Vacuum delay valves (switches) faulty

FUEL SUPPLY SYSTEM
1. Dirty fuel filter
2. Incorrect fuel pump pressure (1.5 – 3.5)
3. Restricted, kinked fuel lines
4. Fuel lines in contact with hot surface
5. Contaminated fuel

SPARK PLUG ANALYSIS

Normal spark plug condition is a sandy brown deposit on the insulator surface with no signs of electrode damage. The following conditions will help you analyze your plugs condition.

OIL DEPOSITES – WET FOULING
1. Worn piston rings, bearings, seals
2. Excessive cylinder wear
3. Leaking- damaged head gasket

BLACK CARBON BUILD-UP, DRY FOULING
1. Fuel mixture to rich
2. Dirty air filter
3. Engine over heating
4. Defective ignition
5. Sticking valves, worn seals
6. High carburetor float level
7. Damaged, sticking needle and seat assembly
8. Incorrect fuel pump pressure (1.5 - 3.5)
9. Spark plug heat range to cold

BLISTERED, BURNED ELECTRODES
1. Spark plug range to hot
2. Timing improperly adjusted
3. Engine overheating
4. Incorrect spark plug gap
5. Burned engine valves
6. Wrong type of fuel

INSULATORS CHIPED
1. Incorrect spark plug gap
2. Improper spark plug installation
3. Severe detonation

PLUG GAP BRIDGED
1. Lead deposits fused to electrode
2. Engine overheating
3. Spark plug heat range to hot

GASOLINE FOULING
1. Distributor cap cracked, arcing
2. Loose, broken ignition wires
3. Low coil output

Carburetor troubleshooting

This is a guide for diagnostic purposes only

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ENGINE WILL NOT START

Over 90% of engine failure to start conditions are ignition system related

1. Open circuit between starter and solenoid, or between ignition switch and solenoid
2. Starter motor faulty
3. Battery charge to low

ENGINE HARD TO START WHEN COLD
STARTS & STALLS

1. Incorrect choke operation (worn coil, electrical connection faulty)
2. Fast idle speed to low
3. Improper choke pull off operation
4. Low carburetor float level
5. Timing improperly adjusted
6. Damaged sticking needle and seat
7. Engine flooded

ROUGH IDLE, SURGING, MISSING, STALLING

1. Incorrect idle speed and idle mixture adjustment
2. Timing improperly adjusted
3. Vacuum leak
4. Incorrect vacuum advance hose connection
5. Faulty EGR valve operation
6. Faulty PCV valve operation
7. Incorrect choke operation (coil settings)
8. Improper choke pull off diaphragm operation
9. Improper vacuum hose connection
10. Low carburetor float level
11. Restricted, kinked fuel lines
12. Restricted fuel filter
13. Distributor cap cracked, arcing
14. Loose, corroded, or broken ignition wires
15. Damaged idle mixture adjusting screw
16. Distributor shaft worn
17. Faulty idle solenoid operation
18. Restricted carburetor jets or air bleeds
19. Restricted air, breather filters
20. Incorrect spark plug gap

ENGINE KNOCKS, PINGING

1. Timing improperly adjusted
2. Incorrect vacuum hose connections
3. Distributor malfunctions
4. Carburetor jets to lean, restricted
5. Low carburetor float level
6. Poor quality fuel
7. Faulty EGR valve operation
8. Faulty feedback system operation

ENGINE KNOCKS, PINGING (Cont.)

9. PCV system malfunction
10. Loose fan belts
11. Faulty vacuum delay valve (switch)

DIESELING, ENGINE RUN ON

1. Faulty idle solenoid operation
2. Carburetor linkage binding
3. Incorrect idle speed and idle mixture adjustment
4. Timing improperly adjusted

HESITATION, POOR ACCELERATION, FLAT SPOT

1. Vacuum leaks
2. Improper vacuum hose connections
3. Timing improperly adjusted
4. Low carburetor float level
5. Loose, corroded or broken ignition wires
6. Low ignition coil output
7. Fouled or damages spark plugs
8. Incorrect accelerator pump operation
9. Incorrect fuel pump pressure (1.5 – 3.5)
10. Restricted or kinked fuel lines
11. Restricted fuel filter
12. Carburetor power enrichment system malfunction

POOR LOW SPEED OPERATION

1. Indirect idle speed and idle mixture adjustment
2. Dirty air filter
3. Timing improperly adjusted
4. Loose, corroded, or broken ignition wires
5. Distributor cap cracked or arcing
6. Restricted idle jets or air bleeds
7. Incorrect carburetor float level

POOR HIGH SPEED OPERATION

1. Incorrect vacuum advance hose connection
2. Incorrect distributor centrifugal advance
3. Incorrect spark plug gap
4. Incorrect carburetor main jets, air correctors
5. Incorrect vacuum hose connections
6. Dirty air, or breather filters
7. Incorrect fuel pump pressure (1.5 – 3.5)
8. Worn distributor shaft
9. Incorrect carburetor float valve
10. Incorrect carburetor float level
11. Restricted or kinked fuel lines
12. Restricted fuel filter