Typical Install Instructions

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

Kit is for off-road use, not for use on the highways, or in California.

WEBER Conversion Kit, K298 by REDLINE

VW T-2, T-3 & T-4, up to 1800cc (1.8 ltr)

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 Intake manifold & end rails
1 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 modified dual port cylinder heads, larger engines 1800cc and up, mild grind camshafts, open exhaust systems, altitude or climate may (will) require a jetting change. Use the **REDLINE** jet kit #701-DFV4A if re-jetting your Weber Carburetor is necessary.

RECOMMENDED ADDITIONAL PARTS: (specifically fuel injection conversions)

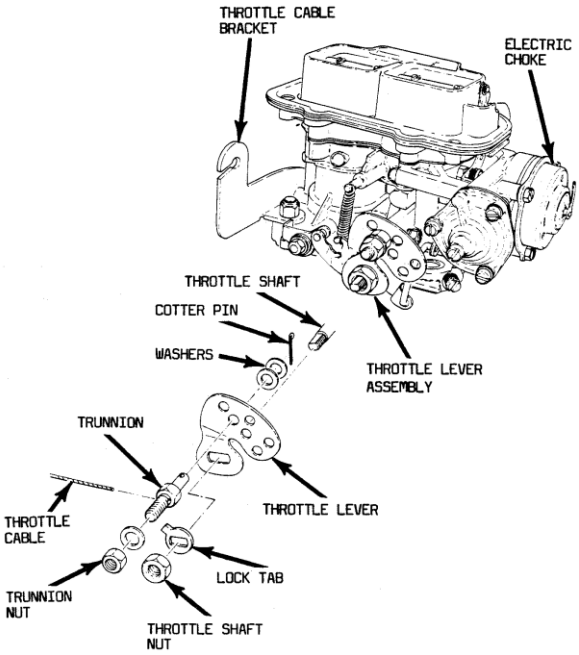
1. **New H.D. fuel filter #99901.525** and a lower pressure **new fuel pump # 99009.131**. Many late model fuel injected vehicles use a high-pressure fuel delivery system. The WEBER carburetor only requires **3 lbs Maximum**. For aggressive driving or off road use, **REDLINE** recommends the float height of 18mm from the gasket to top of brass float, DO NOT depress the ball and spring in the needle valve, then, set the float drop to 2mm "needle" travel. Use a fuel **pressure regulator #31800.063**, adjusted to 2 lbs. for more stable fuel and float control.

444.457. label

INSTRUCTIONS
K 298

WEBER CARBURETORS Distributed by REDLINE
America's premier distributor of Genuine WEBER Carburetors for over 30 years

1. First, disconnect the battery. Remove the distributor, making sure to mark its position for correct replacement. Do not turn the engine over while the distributor is removed from the engine.
2. Remove the stock air filter assembly, carburetor, throttle linkage, manifolds & balance manifolds.
3. If the car was fuel injected, install a new carburetor fuel pump #99009.131 and fuel pressure regulator 31800.063. The Weber carburetor needs 3 P.S.I maximum.
4. Take the new manifold #1 and screw the four 8mm studs #2 into it, making sure the stud's bottom out. If the car being worked on has power brakes, screw the nylon adapter (#3 aimed toward the front on the vehicle) into the manifold. If there are no power brakes use the nylon plug to block off this hole. (see diagram on page 3, #3)
5. Attach the mounting bracket #8 to the manifold #1 as shown in the diagram (page 3 #8). Loosely attach the manifold to the engine so some adjustments can be made.
6. Thoroughly clean off the intake runners seating area on the cylinder heads. Place the rubber collars #6 and their clamps #7 on the new induction runners #5, **sliding them back onto the runners to allow the rubber connectors to slide onto the box after being bolted in place.**
7. Install the induction runners using the gaskets supplied with the kit. The torque for the bolts are 12 ft/lbs. Once the runners are bolted and torqued in place, the rubber collars can be slid over the manifold outlets and clamed into place.
8. The manifold mounting bracket #8 can be tightened to the engine casing.
9. The new Weber carburetor and the greased or oiled base gasket can be bolted to the manifold #1. The throttle linkage should face the drivers (left) side of the car. Connect the new fuel hose to the outer inlet on the carburetor.

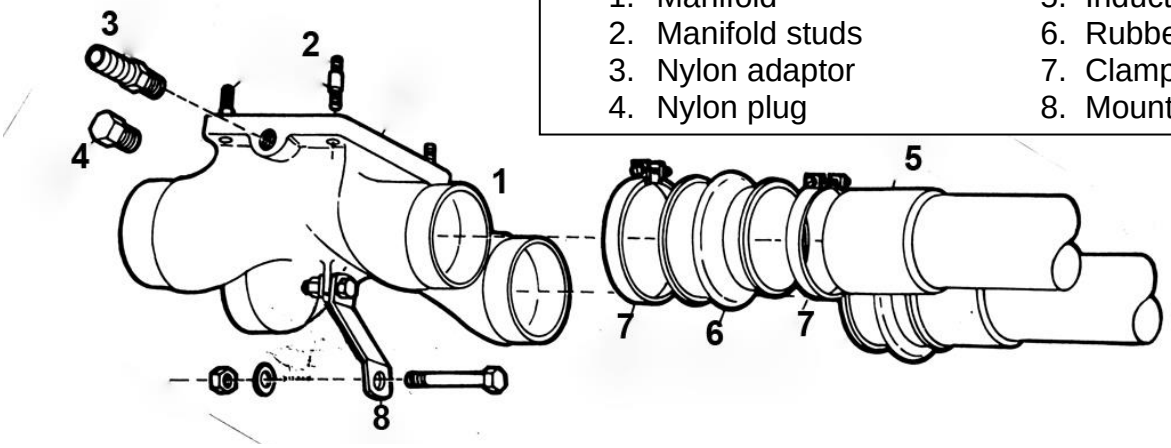


Install the new REDLINE lever on the carburetor. **CAUTION: Do not over tighten throttle shaft nut**. Proper tightness can be achieved by installing nut just slightly more than finger-tight (finger tight then one more flat of the nut) and bend lock tab.

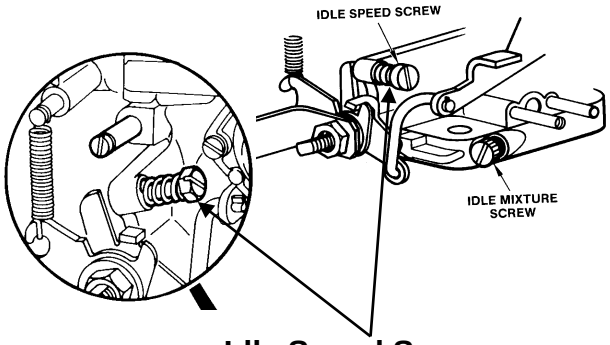
444.457. label

10. On some models it may be necessary to drill another hole for the throttle cable to pass through the engine sheet metal about 4” to the right of the existing hole. This is to allow the cable to meet up correctly with the carburetor linkage. Attach the throttle cable to linkage (swivel pin) with the hardware provided in the kit. **NOTE:** Connect the built-in electric choke to the lead from the old Solex electric choke, or, injected cars use a 16 gauge wire to a “keyed/switched” 12 volt source. **Do Not** use the positive side of the coil as a source of power for the choke.
11. Reconnect the fuel lines and vacuum lines. Replace the distributor and reconnect the battery. If a centrifugal advance distributor is being used, block off the ported vacuum source on the carburetor. Located below the choke and above the mixture screw on the carburetor.
12. Lightly lubricate all moving parts on the linkage and carburetor. Check for full throttle operation by pushing the accelerator foot pedal inside the vehicle. **Make sure** all linkage operates smooth and free not to be stuck at a full throttle position. Be sure the return spring is operable and cannot bind or vibrate loose. Install the new air filter by removing the studs from the top of the carburetor and using the 6mm bolts provided with the air filter.
13. Before starting up the engine, check that all parts have been correctly installed and tightened down.
14. The engine can now be started; **check for fuel leaks**. It is very probable that some carburetor adjustments and timing adjustments will need to be made. Please follow our detailed tuning instructions on page #4 for best results.

1. Manifold
2. Manifold studs
3. Nylon adaptor
4. Nylon plug
5. Induction runner
6. Rubber collar
7. Clamp
8. Mounting bracket



GENERAL TUNING GUIDELINES
LOW SPEED CIRCUIT CALIBRATION



Idle Speed Screw

BASE LINE SETTINGS

Speed Screw **- 11/2 turns in Max**.

Mixture Screw - 1 1/4 to 1 3/4 turns

Final Settings:

Idle Speed Screw _____

Idle Mixture Screw _____

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 assembly.**

***** 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 ½ - turns 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 IT'S 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 ¼ 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 ¼ of a turns or less, then the Idle jet is too rich (too large). **These assumptions are based on the fact that the Idle Speed Screw is not more than 11/2 turns in.** If the Idle Speed Screw has to be opened more than 1 ½ turns 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 2mm of "needle" travel. Check the fuel pressure, MAX. 3 PSI. USE a pressure regulator #31800.063!

Progression Hole's Throttle Plate Adjustment Diagram

REDLINE FUEL MANAGEMENT

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 Synchronized Carburetor: 32/36 DFEV"
Shown in Figure "A", the idle speed screw **IS NOT** turned in more than the **1 ½ turn MAXIMUM**. The throttle plate (F) is below the progression holes (2), the carburetor would be at "curb" idle. **Also, there would be "ZERO or NO" vacuum at the distributor "ported" vacuum source next to the choke.**

NOTE:

Shown in Figure "B", the idle speed screw **IS** turned in more than a **1 ½ turn in MAXIMUM**. The throttle plate **IS** opened exposing the enrichening progression holes. The extra fuel at curb idle, from the exposed enrichening holes, is 95% of the tuning problems we experience. The Idle Speed Screw **CAN NOT** be turned in more than **1 ½ turn MAXIMUM**, or, you will experience rich idle condition, a stumble off idle and at around 1800 RPM.

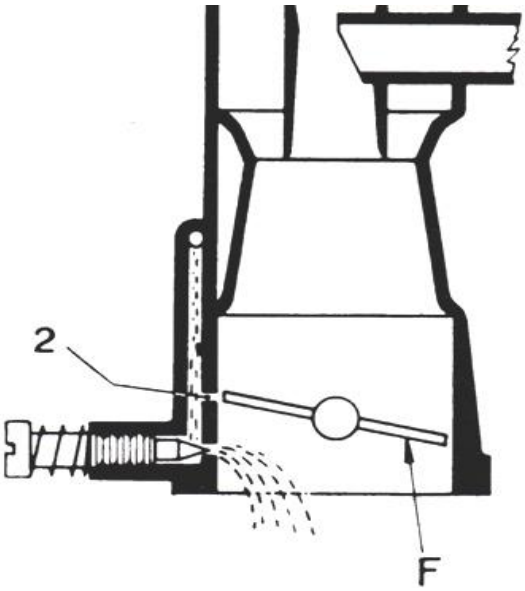


Figure A
Correct Throttle Position

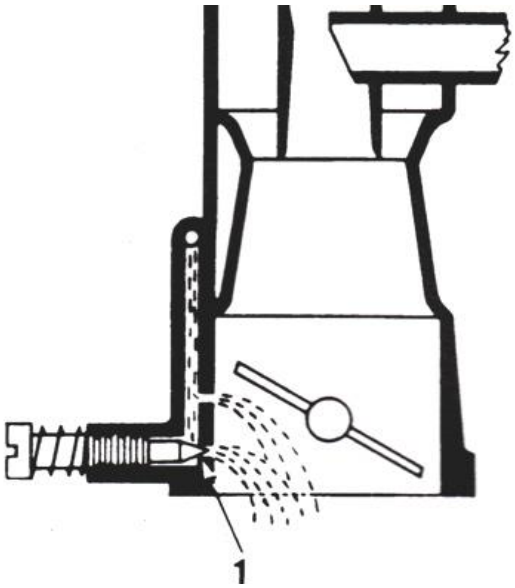


Figure B
Enrichening Holes **Exposed**

We offer free **technical support service** for the first 90 days after your purchase of this conversion kit. **Provide us with the kit part number, and the production code on "our" label on the outside of the box.**

Additional assistance for special performance tuning AND **non-warranty service** is available **for a fee,** based on each problem resolution and the service charge will be confirmed at the time of the call, if applicable.

All Warranty and technical assistance is provided through the manufacture, REDLINE. **No part will be credited or exchanged through the retailer.**

ALL technical support and warranty issues will be handled through the manufacture. REDLINE @ 1-800-733-2277 ext 7457.

Trouble shooting guide

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

Every **REDLINE** Conversion kit is thoroughly tested at the factory and meets high quality and performance standards.

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 wires
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 guide

This is a guide for diagnostic purposes only

.

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

444.457. label