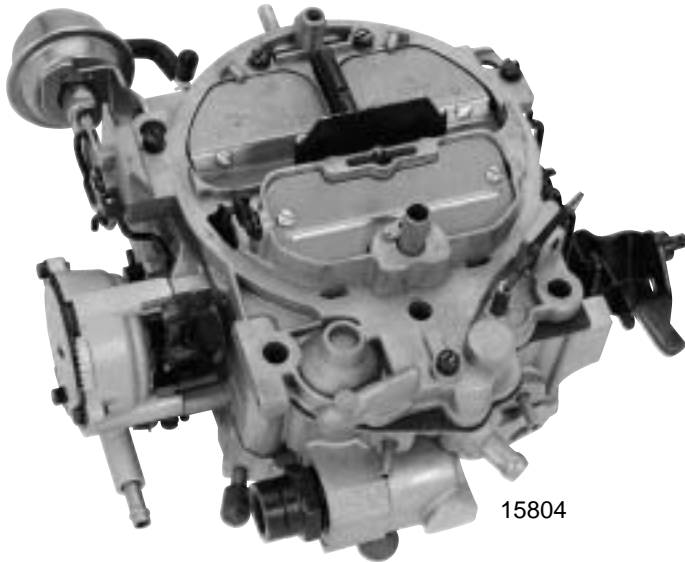


## ***Installation Instructions for 15800-05 Remanufactured Universal Performance Quadrajet Carburetors***

***15800, 15801, 15805 with Electric Choke  
15802, 15803 with Divorced Choke  
15804 with Climatic Choke***



15804

### ***Thank you for purchasing a Jeg's Performance Remanufactured Carburetor...***

All of our performance carburetors are 100% dynamically wet flowed before final packaging to be shipped to our many customers. We wet flow our carburetors to satisfy our final quality control reports and standards. We also make the final fuel flow adjustments to insure your carburetor is within a band of adjustment that allows you to start and run the engine in an effort to make the absolute final adjustments according to the specific needs of your engine package. Because we do not control atmospheric conditions, altitudes, or vehicle package, this carburetor will finally rest upon, all final adjustments such as idle RPM, idle mixture, and throttle "snap" response made by you.

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1-800-345-4545 [jeps.com](http://jeps.com)

### ***A Word about Universal Calibrated Carburetors....***

With this line of performance remanufactured carburetors, we turn all of our expertise to designing a carburetor assembly with a specific fuel curve that can service the needs of a wide variety of engine packages.

However, with the universal application declaration of this design there are engine packages in which this carburetor assembly could require tuning and re-jetting to properly service the fuel requirements of your particular engine assembly. You may also own an engine package that may require the same fuel requirement but need custom tailoring of the dynamics of the included fuel curve.

The vehicle that your engine package resides in has a lot to do with the fuel curve that is in place within your performance carburetor. For example, a 4000-pound vehicle will require different tuning than a 2000-pound vehicle with the same engine package using the same style of carburetor. In the case of the remanufactured Holley 4 BBL calibrations, please see the explanations below for jetting and power valve selections associated with the fuel curve calibrations of our carburetors.

### ***Off Road Labeling and Emissions Standards***

This carburetor assembly is not designed nor is it represented to operate within the emission controlled applications past 1974. We attach a label to the outside of our carburetor container to insure that this carburetor assembly is not used in violation of any or all of the Clean Air Act. If you have any questions concerning the applicability of this carburetor to your individual application, please call our tech line at 1-800-345-4545.

### ***Carburetor Fuel Curve Information***

**NOTE:** Please read this manual completely before attempting to re-tailor your fuel delivery curve included inside of this carburetor assembly. All aftermarket parts and accessories manufactured for use in a Rochester Quadrajet Carburetor will work in your Jeg's Remanufactured Performance Carburetor.

#### ***The fuel curve information for the 15800 is as follows:***

This fuel curve will properly service the fuel requirements for a small block engine up to 400 cubic inch engines. It can supply enough fuel to support engines up to 385 H.P. and RPM levels of 6000. The carburetor can be jetted for higher fuel requirements to reach higher horsepower and RPM levels. The vehicle application includes vehicles from 2500 lbs. up to 3000 lbs. A heavier or lighter vehicle may require recalibration. Camshafts up to 228 degrees of duration at .050" lift and dual plane or single plane manifolds are

also compatible. These carburetors are not designed to be used in dual carburetor applications and will require dramatic enrichment modifications when used with nitrous. Main Jet .076, Metering Rods: Primary 130x49, Secondary 130x102.

#### ***The fuel curve information for the 15801 is as follows:***

This fuel curve will properly service the fuel requirements for a big block engine up to 460 cubic inch engines. It can supply enough fuel to support engines up to 430 H.P. and RPM levels of 5500. The carburetor can be jetted for higher fuel requirements to reach higher horsepower and RPM levels. The vehicle application includes vehicles from 3000 lbs. up to 3600 lbs. A heavier or lighter vehicle may require recalibration. Camshafts up to 228 degrees of duration at .050" lift and dual plane or single plane manifolds are also compatible. These carburetors are not designed to be used in dual carburetor applications and will require dramatic enrichment modifications when used with nitrous. Main Jet .078, Metering Rods: Primary 130x49, Secondary 130x101.

#### ***Fuel Curve Information for Part Numbers: 15802, 15803, 15804, and 15805***

##### ***The fuel curve information and application notes for the 15802 is as follows:***

750CFM, 1966 through 1973 327 through 454 engines, Chevrolet bowl entrance and linkage style, divorced choke, compatible with EGR, Main Jet .069, Metering Rods: Primary -36B, Secondary -DR.

##### ***The fuel curve information and application notes for the 15803 is as follows:***

750CFM, 1974 through 1978 350 through 454 engines, Chevrolet bowl entrance and linkage style, divorced choke, compatible with EGR, Main Jet .069, Metering Rods: Primary -36B, Secondary -DR.

##### ***The fuel curve information and application notes for the 15804 is as follows:***

750CFM, 1975 through 1985 305 through 454 engines, Chevrolet bowl entrance and linkage style, climatic choke, compatible with EGR, Main Jet .073, Metering Rods: Primary -50M, Secondary -DR.

**Not for use with computer controlled vehicles.**

##### ***The fuel curve information and application notes for the 15805 is as follows:***

750CFM, 1980 through 1989 305 through 350 truck engines, Chevrolet bowl entrance and linkage style, electric choke, compatible with EGR, Main Jet .073, Metering Rods: Primary -50M, Secondary -DR.

**Not for use with computer controlled vehicles.**

Camshafts up to 228 degrees of duration at .050" lift and dual or single plane manifolds are also compatible. These carburetors are not designed to be used in dual carburetor applications and will require dramatic enrichment modifications when used with nitrous,

### ***Who to Call With Your Questions***

For more information please call the Jeg's tech line at 1-800-345-4545, or consult one of the many quality books and manuals available today from your local bookstore, or parts supplier. When calling for assistance, please have your application information, carburetor part number, and specific issue ready for the technician. Having your information prepared is a big help when interfacing with our technicians.

### ***Before you get started***

Caution: This Universal Performance Carburetor has a fuel curve calibration associated with a mildly modified engine. As with all universal calibrations, some adjustments and/or tuning is required for ultimate performance. Please read this manual in its entirety before attempting the installation, tuning, and usage of this carburetor.

The following precautions will reduce the chance for mishap, property damage, vehicular damage, AND PERSONAL INJURY. Please follow these installation instructions and safety precautions before attempting the installation of your Tomco Universal Performance Carburetor.

1. Disconnect the negative terminal of the battery and store it in such a way as to insulate it from contacting any other metal surface until your installation is complete.
2. Have a fire extinguisher ready at all times during the installation procedure.
3. Do not smoke or perform this installation procedure close to any open flame or fire source.
4. Perform this installation procedure in a well lit, and well-ventilated area. Stay away from confined spaces in which flammable fluids or fumes can collect.
5. Always protect your eyes, and your person from any and all automotive chemicals such as gasoline, engine cleaners, etc.
6. Start this installation procedure only after the engine and the engine compartment is cool.
7. Never attempt working on your fuel system without the proper tools.

### ***A Last Piece of Advice....***

In so many situations related to fuel system modification and service, the fuel-mixing device often

receives the blame for many ills that are not fuel system related. In fact, more often than not, any number of underhood systems when compromised create "fuel system like" failure signals. Systems like the ignition, valvetrain, carb spacers, and component compatibility systems all create conditions in a primary failure situation that also fail the carburetor's ability to function properly. If you have modified any other underhood system, please check to verify proper operations of each of those systems before you install your new carburetor. If you have modified any of these systems and you do not know how they can or will affect the performance of your carburetor, please call our tech line.

If after the installation of your new Jeg's carburetor, you find that your performance expectations are not met, or your vehicle is running worse than it did before, please stop and call our technicians.

**A new carburetor is the worst diagnostic tool in your toolbox.**

### ***Carburetor Removal***

Take the time to create a clean and safe working area before attempting this removal procedure. Have some containers ready to collect and properly store all components and small parts during the installation of your new carburetor. In case of trouble do not destroy your original carburetor box. Also, do not attempt any other modification before completing and verifying your new carburetor is functioning properly.

#### ***Step 1.... Negative battery Cable***

Disconnect the negative battery cable before any work on the fuel system starts.

#### ***Step 2.... Vacuum Lines***

Carefully disconnect all vacuum lines from your existing carburetor and mark each line with the included labels.

#### ***Step 3.... Throttle Linkage and Cables***

Use the proper tools and remove all clips, springs, trans kick down assemblies, and cruise control cables. Take a picture, create a sketch, or label each component assembly during the disassembly period to insure that you can properly re-install each of these components and assemblies.

#### ***Step 4.... Disconnect the choke assembly.***

There are several styles of choke mechanisms in use on vehicles. Please consult your service manual if you have questions concerning the style of choke you are working with and familiarize yourself with any specialized techniques associated with the removal of the choke.

### **Step 5.... Fuel lines.**

**NOTE: Before loosening any fuel line or performing any work procedure on a fuel line, take time to insure that your engine is cool. Validate that there is no open flame, and the ventilation of your work area is sufficient. Extinguish all sources of flame and move the fire extinguisher into a ready position that would allow easy access to it if a fire were to break out.**

**5a...** Place rags under the ends of all fuel lines that will be disconnected to collect dripping and leaking fuel. Do not allow for puddling or collection of fuel in, around, or under the carburetor position upon or inside the intake manifold.

**5b...** On applications with threaded fittings, use 2 wrenches and remove the fuel lines following proper fuel fitting removal/tightening techniques. Please refer to your shop manual for proper fuel line removal techniques. When a barbed fuel line fitting has been used, remove the fuel line clamp and disconnect the fuel line.

Your new carburetor utilizes a threaded type inlet fitting, therefore it requires some modifications to accept your barbed fuel line system. NEVER use a barbed fuel fitting in conjunction with an inverted flare inlet fitting.

**5c...** Remove the carburetor flange hardware, and lift the old carburetor from the intake manifold. Once the carburetor pad on the intake manifold is exposed and open, please cover this opening with a rag therefore keeping debris, and contaminants out of the inside of your engine.

**5d...** With a gasket scraper and a cleaning agent, remove all gasket material and sealant residue on the carburetor-mounting pad of the intake manifold.

**Note: Take care to insure no debris and/or small parts fall into the intake manifold. Any foreign materials or small parts allowed to enter the engine can cause catastrophic engine failure.**

### ***Stuff to Look For Before Starting The Installation Procedure Of Your Jeg's Carburetor...***

You have now completed the removal procedure of your old carburetor. Take this opportunity to double-check the following areas of concern in preparation for the installation of your new carburetor.

1. Check for any stripped or cross-threaded fasteners on or around the carburetor-mounting pad of the intake manifold.
2. Insure the carburetor-mounting pad of the intake manifold is clean of old gasket material and sealant residue.

3. Insure that the choke mechanism of the new carburetor is compatible with the style of choke mechanism currently in place on the manifold. Do not install the carburetor if the choke mechanism on the manifold cannot accommodate the choke style of your new carburetor.
4. Check inside the plenum area of your intake manifold to insure there is no debris or small parts that could enter and damage your engine. Clean all areas on and inside the plenum area of the manifold before installing your new carburetor.
5. Inspect all rubber vacuum lines for signs of cracking or old age. Replace these lines as necessary.
6. If you are installing a new manifold at the time of installation of your new carburetor, verify that the linkage of the carburetor does not come in contact with any portion of the manifold casting. Double-check all fittings, fastener torque values, and distributor positioning before attempting to run your engine package.

### ***Before You Run Your Jeg's Carburetor You Must Purge The Fuel System To Insure A Clean Supply Of Fuel To The Carburetor***

It is very important to rid your fuel system of existing dirt, rust and debris that has accumulated in your fuel pump, fuel lines, and fuel delivery flow path over the time you have been driving your vehicle. An empty fuel bowl on a new carburetor is a prime candidate for contamination on initial fire up once a new carburetor has been installed. 80% of new carburetor failures are due primarily to contamination failing some, or all of the fuel flow (i.e. jet wells, needle and seat assy., etc.) circuitry within the carburetor.

The reason for this condition lies in the way the fuel pump delivers fuel to the carburetor. During normal operation, the fuel pump diaphragm moves only enough to keep the supply line feeding the carburetor full. When an empty fuel line and an empty fuel bowl on a carburetor is sensed, the fuel pump will not only deliver high amounts of fuel at a high rate, the diaphragm within the fuel pump also stretches more than it has in some time. All of the contaminates stuck to the inside of the fuel lines, and across the face of the fuel pump diaphragm break free and head right into that new and clean of contaminates float chamber. This is a very undesirable situation and can cause a failure situation with the carburetor.

### ***Fuel System Purge Procedure***

1. Reconnect your battery cable(s).
2. Disable your ignition system so that you can crank the engine without concern of spark energy going through the ignition system.

3. With a mechanical fuel pump, place the end of the fuel line in an unbreakable container that is not sensitive to gasoline and crank the engine for 7 to 10 seconds, or until approximately one (1) pint of fuel has been pumped by the fuel pump into the container. Repeat the procedure until the fuel within the container appears to be clean.

When you have an electric fuel pump, no cranking is required, just turning on the ignition switch should be enough to cause the pump to come on. In some applications, you may need to bypass the oil pressure default switch to run the fuel pump.

4. Reconnect the ignition system and reconnect the oil pressure default switch. Insure that all electrical systems are connected properly.

### ***Carburetor Installation***

1. Position the included base gasket onto the intake manifold carburetor pad. Verify a good fit, and take care to inspect the mating of the plenum shape and the perimeter contour of the gasket to insure no open sections or potential vacuum leaks.
2. Install your Jeg's carburetor over the gasket and onto the intake manifold again taking time to insure a good match of perimeter shape of the manifold/gasket and the carburetor base. Torque the carburetor hold down bolts and nuts to 60 inch pounds.
3. Reconnect the fuel line to the bowl fitting on the front of the carburetor. It is very important to start this fitting by hand first before attempting to use a wrench for final tightening of the fuel line. **DO NOT** use any sealant on the fuel line fitting. This fitting uses an inverted flare to mate to the incoming fuel line and proper seal is made only on the flare, not with the threads of the fitting. **DO NOT** try to fix a leak here by adding a sealant or by high torque loads upon the fitting itself.
4. For those vehicles that have any form of inline fuel filters, you must replace them at this time.
5. Reconnect all vacuum lines, and other connections like choke linkage, choke electrical wires (if applicable) and throttle linkage, which includes throttle return springs at this time.
6. Verify all linkage connections by operating the throttle linkage in it's full travel making sure that the throttle plates move unobstructed to a full open position.

Take care to insure there is no interference with any portion of the intake manifold casting, or any other components like carb spacers, etc that may take place during the movement of the linkage. Manually operate the linkage several times to insure that there is nothing binding or interfering with throttle operation.

**NOTE: The proper installation of a vehicles throttle linkage is critical to the safe operation of your vehicle. Failure to properly install your carburetor and/or transmission kickdown linkage can result in uncontrolled engine operation, which could cause personal injury, property damage, or even death.**

### ***When Installing An Electric Choke On A Vehicle That Did Not Come With One Originally...***

The Rochester Quadrajet Carburetor electric choke is a "single terminal, internal ground" style of choke cap. This means that for your electric choke to function properly a couple of very important procedures and conditions must be in place to insure proper choke operation.

### ***If Your Vehicle Came With An Electric Choke From The Factory...***

**ANY REMOVAL OF THE GROUND STRAPS FROM THE ENGINE TO THE VEHICLE CHASSIS WILL HINDER THE OPERATION OF THE ELECTRIC CHOKE ON YOUR ROCHESTER QUADRAJET FROM FUNCTIONING.**

The reason for this lies in the fact that the ground portion of the choke circuit is completed through the housing of the carburetor through the ground strap of the engine to the vehicle chassis. Many times an extra ground strap is required to insure proper operation of the electric choke when installing your carburetor onto an aluminum intake manifold. This ground strap is installed at one of the carburetor attachment studs and run to the vehicle chassis or proper ground station.

### ***If Your Vehicle Did Not Come With An Electric Choke From The Factory...***

To install the electric choke equipped carburetor onto a vehicle that did not originally come with an electric choke a "hot" wire (12 volts) must be run to the electric choke cap. The source of this hot wire must be an "engine crank only" source. This is to say that the source of your 12 volts must only be "on" when the ignition switch is in the engine cranking only position. Any other source of voltage will harm the choke and possibly cause damage to your carburetor assembly, or your vehicle.

### ***Before You Drive Down The Street***

Every effort has been made to insure that your Jeg's carburetor will start and run through the adjustments that we make on the flow bench during the quality control check of the carburetor assembly. However, due to altitudes, and specific climatic conditions combined with engine package configuration, some fine-tuning adjustments may be needed.

## ***Idle Adjustments***

Here are the idle adjustment areas that may require some minor tuning for proper interface within your particular engine package.

**Idle Speed Adjustment Screw** is the large screw on the linkage side of the carburetor. Although we preset idle speed here at the factory, take care to insure that your idle speed (RPM) is set properly for your region and engine package. Depending on the engine package, engine idle speeds are best kept in the range of 750 to 1000 RPM. This adjustment must be made with the engine hot and all other systems normalized.

**Idle Mixture Adjustment Screws** are the screws that face forward on the carburetor and are installed in the base plate. The easiest way to adjust these screws and your idle mixture is via the lean drop method. This is performed when the engine is warm and all other engine systems have normalized. Through 1/8 turns of your screwdriver, find the adjustment point in which the idle raises to the highest point before starting to stumble. Once the engine begins to stumble return the idle screw to the last position. Work between the two idle adjustment screws to insure a balanced adjustment and a smooth idle.

**Fast Idle Adjustment** is also set here at the factory and is critical to engine performance during cold start and normalization time periods. Proper fast idle speeds should be in the range of 1600 to 2000 RPM. This adjustment is made by setting the fast-idle linkage on the highest position on the linkage and starting the engine in neutral and when warm. All adjustments should be made in 200 RPM increments until you are satisfied with the RPM level.

## ***Parts and Systems to Consider.....***

This section is designed to cover some basic systems and how they cause your carburetor to not always act the way you would like it to. Also, we will discuss how these systems can enhance the operation of your carburetor and therefore your engine package as a whole.

### ***Fuel Pressure***

The desired fuel pressure setting for ultimate performance is 4 to 6 psi flowing. Quadrajets can operate successfully at lower pressures, however drivability can suffer under oblique throttle positions such as snap to wide-open throttle positions. The Jeg's Performance quadrajets are designed to interface with stock style fuel pumps, stock fuel tanks, supply lines, and pressures as low as 2 psi.

## ***Spark Timing***

Spark timing is a great way to tune an engine. With octane differences and fuel additives, spark timing can be an effective tuning method. As your octane rating increases, so can your total timing increase. Not only can you adjust the total timing figure, but you can also tailor the timing curve to fine-tune the shape of the timing introduction for your engine package. As your air to fuel ratio is increased or decreased timing must be adjusted. All jetting adjustments can be accompanied with a timing adjustment.

## ***Ignition System***

The engine system that can best be described, as a direct dependant sub system to the carburetor is the ignition system. Any and all upgrades to the ignition system can only help improve the ability of the carburetor to operate properly. Remember, the carburetor cannot process a fuel signal until it senses a demand signal from the engine. If the ignition system is weak and or in dis-repair, the fuel signal will always be compromised.

## ***Performance Camshafts***

Many times the camshaft is called the heart of the engine. The location of the timing events as manipulated by the manufactured specifications of the camshaft set many operational characteristics of your engine. In relation to the carburetor, the camshaft controls intake manifold pressure signals that can dramatically affect the operation of a carburetor. Large duration, or short lobe center camshafts drastically affect idle characteristics. With the Quadrajets, the small primary bores are less sensitive than other carburetors with larger primary throttle plates however, there could be some camshaft/intake manifold combinations that could require a bleed hole to be drilled into the primary throttle plate of the Quadrajets.

**Remember...** Before performing any modifications on your carburetor please consult the manufacturer of the camshaft, and call our tech line to discuss your situation and or operational conditions that lead you to believe you need to make changes to your fuel system because of a camshaft choice.

## ***Compression Ratio***

The carburetor does not require much tuning as a direct result of changing compression ratio. The fuel curve does require some tuning, primarily due to the possible timing curve manipulation to support a compression change. Idle mixtures sometimes need enrichment when going to a lower compression ratio. If the mechanical efficiency increases with a

compression change (and it almost always does), then more fuel will be required as a direct result of the engines ability to produce more power.

### Intake Manifold Design

With the spread bore design, the Quadrajets manifold can take some interesting shapes. There are many manifolds to choose from in the marketplace today and all may require some fuel curve adjustment especially with the many different camshaft choices available. Please consult your manifold manufacturer for any advice as well as contacting our technicians. The Jeg's performance carburetor is not designed to be used in a multiple carburetion situation. We do not recommend that you try to use any other than a 175 horsepower increase with a nitrous system when used in conjunction with the Jeg's quadrajets Carburetor.

### Carburetor Spacers

Carburetor spacers are a great tuning aid especially for spread bore carburetors. We recommend that you use 1/2" thick spacers and add or subtract them as your engine package responds. Carburetor spacers are a very good tuning tool when working through manifold or cylinder-to-cylinder distribution issues.

### Tuning Guide

The Quadrajets is one of the most sophisticated carburetor designs ever produced. In the many years that the Rochester Carburetor Company produced the Quadrajets, several different versions were produced as well as many subtle upgrades to each version of Quadrajets. For these Jeg's versions we concentrate on a non-computer controlled, 750-CFM style of Quadrajets. For tune up information for the 15802, 15803, 15804, and 15805 please check the tune up manuals for the years and applications of each vehicle.

### 15800 Carburetors

Adjustment	Manual Trans	Automatic Trans
Slow Curb Idle Speed in RPM	650 to 750 RPM	600 to 700 RPM
Fast Idle Speed in RPM	1500 to 1800 RPM	1500 to 1800 RPM
Float Level Setting	.250"	.250"
Accelerator Pump Rod Location	Inner	Inner
Accelerator Pump Adjustment	.687"	.687"
Choke Rod Setting	.100"	.100"
Air Valve lockout	.015"	.015"
Initial Timing	8 degrees	12 degrees
Max Timing	32 degrees	32 degrees

#### Plug Recommendations

Below 350 HP	AC R44*	AC R44*
350 HP to 385 HP	AC R43*	AC R43*

\*Or equivalent in Champion, NGK, Motorcraft, Accell, Splitfire, etc.

### 15801 Carburetors

Adjustment	Manual Trans	Automatic Trans
Slow Curb Idle Speed in RPM	650 to 750 RPM	600 to 700 RPM
Fast Idle Speed in RPM	1500 to 2400 RPM	1500 to 2400 RPM
Float Level Setting	.250"	.250"
Accelerator Pump Rod Location	Inner	Inner
Accelerator Pump Adjustment	.687"	.687"
Choke Rod Setting	.100"	.100"
Air Valve lockout	.015"	.015"
Initial Timing	6 degrees	10 degrees
Max Timing	34 to 36 degrees	34 to 36 degrees

#### Plug Recommendations

Below 430 HP	AC R44*	AC R44*
430 HP to 470 HP	AC R43*	AC R43*

\*Or equivalent in Champion, NGK, Motorcraft, Accell, Splitfire, etc.

### Notes...

1. Fast idle Cam second step should be close to 1500 RPM, last step should be close to 2400 RPM.
2. Disconnect vacuum advance feed line to distributor before adjusting idle speed. Be sure to plug line to insure no vacuum leaks.
3. Set idle in neutral with the air conditioning on (if applicable).
4. Idle settings should be higher in speed with large camshaft (228 or higher degrees @.050", or less than 112 lobe centers).

### Personal Tuning Guide and Notes

Use this area of the manual to keep track of your calibration changes and tune up adjustments that optimize your engine package.

Adjustment Description	My Adjustment
Slow Curb Idle Speed in RPM	_____
Fast Idle Speed in RPM	_____
Float Level Setting	_____
Accelerator Pump Rod Location	_____
Accelerator Pump Adjustment	_____
Choke Rod Setting	_____
Air Valve lockout	_____
Initial Timing	_____
Max Timing	_____

### Plug Recommendations

Plug Choice #1	_____
Plug Choice #2	_____

## ***Troubleshooting Guide***

Troubleshooting a carburetor can be a very difficult procedure if a methodical and simple approach is not used. Some simple tools and the use of your senses can make diagnosing fuel system problems a snap. Many times the use of a liquid that is flammable to determine vacuum leaks is used and always with poor results. We recommend the use of propane to verify any carburetor and/or manifold integrity issues. Call our technicians if you have any questions when using propane to diagnose your engine.

### ***Choke Service***

A common problem with high mileage quadrajets is gum deposits on the choke linkage hindering the movement of the choke. Remember, the choke itself has little torque producing capacity so maintaining the proper choke operation by checking the free movement of the choke linkage is very important.

### ***Rough Idle***

If after all base adjustments are completed, a rough idle exists, you will need a vacuum gauge to perform some simple diagnostic routines. The vacuum gauge should be used to adjust the carburetor to the highest vacuum reading that you can adjust into the carburetor without creating a lean condition and experiencing a lean mis-fire (which is different than a backfire!). The larger the plenum area of the intake manifold, and/or the larger the camshaft duration or the narrower the lobe centers the lower the maximum vacuum reading will be able to be achieved during the adjustment period.

If the vacuum reading is very low, check the vacuum hose connections and check the vacuum lines for cracks, splits, or flexibility to insure tight and proper fit. Also check the base gasket to insure proper alignment and tightness of all fasteners. The ignition system components like the cap, wires, and primary trigger mechanism can also contribute to a rough idle. If the engine is equipped with an EGR valve, make sure the EGR valve is closed at an idle.

### ***High Idle Speeds***

A few different systems on the carburetor account for idle speeds. As discussed earlier, we wet flow each carburetor assembly before we package the carburetor and during that flow testing, we adjust the idle speed on all conditions which include idle mixture, idle speed and fast idle speed. In a previous section of this manual we discuss how to adjust each of these sub systems. Again, any compromise in any sub system such as the base gasket, vacuum lines, brake booster feed line, distributor vacuum feed line, EGR valve, or intake manifold seal can cause the idle speed to be high or even erratic.

Another major source of idle or engine speed trouble can result from a mis-aligned distributor.

### ***Backfiring and Mis-Firing***

The idea that a carburetor can cause a backfire is just not accurate. A carburetor can cause a lean mis-fire, but never a condition in which fire comes back up and exits through the air horn of the carburetor itself. So, lets talk about what happens when a backfire is detected and how to diagnose its origin.

A backfire condition exists when one of the major components within the ignition system has failed. Check the integrity of the ignition system secondary components such as the coil, coil wire, coil interface within an HEI distributor, spark plug wires, rotor, and distributor cap. Timing is also a critical issue with backfiring. Check rotor positioning in relationship to number one (1) cylinder to insure proper rotor phasing. A failing camshaft can cause a backfire as well as timing chain wear or mis-alignment to the crankshaft. Many times the advance or retard adjustments of the camshaft are outside of the operational window for a particular engine package.

Detecting and fixing mis-fires is more a tuning issue than a broken or worn component situation. A mis-fire does not have fire coming from the air horn of the carburetor. It is a pressure wave coming from the intake manifold, which presents a loud "popping" sound, and a shot of raw fuel from the air horn. If a choke comes open too soon, or is not closing the choke plate completely, a mis-fire can happen. A low float adjustment or too low fuel pressure can cause a mis-fire. A plugged bowl vent, bad EGR valve, or a mis-aligned intake manifold gasket can also all cause a mis-fire.

### ***Flooding***

As was discussed earlier within this manual, contamination fails 80% of all new carburetors. There are three (3) major reasons why carburetors experience a flooding condition. The number one reason a carburetor will flood especially during start up conditions is due to some form of contaminates (dirt, charcoal, etc.) interfering with the proper operation of the float system within the float bowl. The needle and seat can have a form of contaminate holding the needle off of its seat and not allowing the float to regulate the flow of fuel. If this condition persists, the float itself can be forced into a sticking situation and therefore lose its ability to properly move with the flow of fuel again, resulting in unregulated fuel levels.

The fuel line and/or carburetor can be exposed to a higher than normal heat source. This flooding condition brings excess fuel into the venturi area of the



carburetor hindering starting of the engines and excessively rich operating conditions. Many times this condition is called percolation not unlike the way a coffee pot works. This condition can be caused by a fuel line running too close to a radiator hose, header, or exhaust manifold.

This increased temperature causes the fuel to expand and pressurize the needle and seat attached to the float to the point of allowing fuel past the float system and overflowing into the venturi area of the carburetor. This fuel eventually ends up lying as raw fuel on the plenum floor of the intake manifold. This raw fuel hinders start up performance and engine performance due to overly rich mixtures.

Excessive fuel pressure can cause flooding as well. The Jeg's carburetors are designed to work with low fuel pressures but nothing under 2 psi or over 5 psi. These carburetor assemblies use the long fulcrum style of float and cannot control fuel levels at fuel pressures above 5 psi. When fuel level control is lost, again we experience overly rich fuel mixtures and a poor-performing engine.

### ***Hesitation***

Hesitation is another operational condition that is mostly associated with systems that are not adjusted properly and not necessarily broken. Systems like the EGR valve can cause hesitation when the EGR valve itself is compromised in its ability to function and or if an EGR equipped engine has had the valve removed completely. The combustion chamber temperatures can go up as high as 400 degrees between a non-EGR and an EGR engine. A hesitation can be felt during hard acceleration if some fuel curve or timing curve adjustments do not compensate for the higher combustion temperatures. Don't forget to double-check the EGR valve or the block off plate for properly torqued fasteners and gasket integrity.

Other systems that can cause a hesitation are exhaust system restrictions including catalyst and muffler

contamination, compromised vacuum lines and support lines like the brake booster connection. An insufficient accelerator pump shot can be a major contributor to a hesitation. With a Quadrajets, there are several adjustments that can add or subtract pump shot to overcome a hesitation or sag in acceleration. Don't forget to verify that the timing adjustment is where it needs to be and the timing advance curve is matched to the fuel curve of the engine package. Like the fuel curve, the ignition curve can be infinitely adjusted to allow for vehicle and engine dynamics.

### ***Hard Starting***

When the engine is cold, the choke system restricts the amount of incoming air to then enrich the air/fuel mixture in an effort to help start the engine. Depression of the gas pedal inside your car is enough to set the choke to "on". If the carburetor has an electric choke, the minute you turn on the key, your choke goes to the "on" position. As the vehicle warms up, the choke mechanism pulls the choke plate to the open position therefore allowing the entire potential air signal to enter the carburetor. If the choke plate does not completely close, the engine could be hard to start. In this case, a simple adjustment on the rich side of choke operation is required. Be careful to not over compensate, as warm engine operation will be affected. If the choke is adjusted to a rich position, the engine may be hard to start when warm. Again, a simple adjustment of the choke to the lean side of its calibration will allow more air to enter the engine when warm, therefore allowing for easier starting when warm.

Many engines have vacuum advance. These engines require that the vacuum line be connected to a "ported" vacuum source on the carburetor. If the vacuum advance line is connected to a "full" vacuum source, the engine will see ignition advance settings that will make starting difficult no matter if it is hot or cold. This is due to a full vacuum signal over advancing the timing during engine cranking time periods, which can make starting difficult.

## ***Warranty Information***

### ***Conditions of Limited Warranty***

1. Purchased carburetor must be returned to the original place of purchase within 90 (ninety) days.
2. Purchaser must present the original sales receipt as verification of date of purchase.
3. The original sales box in which the carburetor is packaged is your warranty validation box. This limited warranty is effective only if the warranty carburetor is returned in the Jeg's Sales box.

### ***Warranty Limitations***

We do NOT warrant the proper application of the purchased carburetor and/or the competence of the installer. This performance carburetor has been calibrated and adjusted as a universal application and in many uses requires knowledge of adjustment and tuning of this carburetor to the specific application for which the installer intends. We assume no liability and WILL NOT PAY for LABOR, DAMAGE and/or TOWING claims arising from the installation or use of the purchased carburetor. This limited warranty does not apply to any defects caused by negligence after purchase, misuse, collisions or other accidents, or any unauthorized or unreasonable use including, but not limited to, improper application and installation. This performance-calibrated carburetor MUST NOT BE USED in any form of MARINE or AIRCRAFT application.

We neither assume nor authorize any person, agent, distributor, dealer, service facility or company to change, modify, supplement or amend this Limited Warranty or assume for us any warranty or liability in connection with the remanufacturing, sale, shipment or use of our products. Nor do we authorize any other person, service facility or company to make any qualitative determination as to the fitness of our products. Except and to the extent provided in the Limited Warranty, we make no expressed or unexpressed warranty regarding this product.



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