

### TWOSTEP LINKAGE INSTALLATION GUIDE



If you need further information or assistance, please contact your Stromberg Dealer, or e-mail us direct at: [tech@stromberg-97.com](mailto:tech@stromberg-97.com) or log on to our Tech Center at: [stromberg-97.com](http://stromberg-97.com)



### Premium progressive linkage (2x2 and 3x2)

Stromberg progressive linkages can be mounted with the sliding rod set to push the rear carburetor open or pull the front one. The linkage must be mounted to avoid any interference, (eg. with a fuel pump, hose or adjoining carburetor), at any point in its travel.

A 'push linkage' (on the rear carburetor) is the most common application, eg. on most overhead valve V8 intakes and flathead Ford engines with a remote fuel pump. A 'pull linkage' (on the front carburetor) extends your options, especially for 6x2 intakes, but can present different issues, usually in clearing the fuel lines. The good news is, we do have solutions, as described below.

#### Step 1 - Fit the SuperLink levers

a) On a 2x2 progressive, fit the two levers as previously described using the narrower throttle return spring (supplied) on the shorter lever. Go to Step 2.

On a 3x2 progressive, offer up the whole linkage as per the illustrations below depending on which way you need the linkage to work. Follow the previous instructions to secure the two short SuperLink levers onto the two outer carburetors. Use the narrower throttle return spring (supplied) on one of these two levers.

b) Adjust the linkage rod length to ensure both levers are at 40 degs before the vertical with both carburetors shut against their throttle

stops, then tighten the lock nuts and clamping screws. (see B&C) The linkage must fit your pre-set 'balanced' carburetor idle settings - not dictate them.

c) Now mount the long lever arm (and its wider torsion return spring) onto the center carburetor. Clamp it tight at the same angle as the smaller levers, with the carburetor firmly shut against its throttle stop. Check that the center lever arm does not touch the linkage rod between the two outer carburetors. For most applications, keep the swivel in the top hole of the center lever.

#### Step 2 - Fit the sliding linkage rod

a) With all carbs shut against their throttle stops, mount the sliding rod through the center and outer carb swivels as in the pictures (front or rear carburetor), with one tapered throttle stop each side of the outer swivel. Tighten the set screw in the center carb swivel with a 3/32in hex key, leaving around 3/8 inch of rod clear past the swivel. Eye the rods through from above and adjust the position of the center lever on its shaft to keep the two rods parallel and avoid any bind in the swivels.

b) Now set the rod stops (it's easier with a helper). Hold all three carburetors at Wide Open Throttle (WOT) and :

#### Push linkage (on rear carburetor)

Slide the middle rod stop up to the rear carb swivel and tighten it with a 5/64in hex key.

#### Pull linkage (on front carburetor)

Slide the rod stop on the far front end of the rod up to the front carb swivel and tighten it with a 5/64in hex key.

Return the carbs to idle, then slide the other rod stop to meet the same swivel, but from the other direction. Lock that one down too.

#### Kickdown (KD) linkages

On Stromberg KD linkages, the extended center lever has a 1/4"UNF thread to accept the special fixing common to most hot rod auto-trans kickdown cable kits. If space is limited behind the lever, please secure the cable end fitting with thread locker (Loctite® or similar) and trim the screw back to ensure free movement from idle to Wide Open Throttle. Always check that your vehicle's automatic transmission is compatible with the cable and Stromberg KD linkage. Automatic transmissions have specific kickdown requirements and incorrect set-up can result in transmission damage.

#### Tune the linkage

With the swivel in the top hole of the center carburetor lever, the outer carburetors will start to open at around half throttle (ie. when the center lever is near to vertical). We say 'near to' because the geometry changes for different intake manifolds, and whether you use a push or pull linkage. By adjusting the position of the rod stops, and the centre carb swivel, you can bring the outer carbs in earlier or later to suit your own application. The weight of the car, the gearing and rearend ratios, engine tune and driveability, your favored freeway cruising speed, and more, can all play a part.

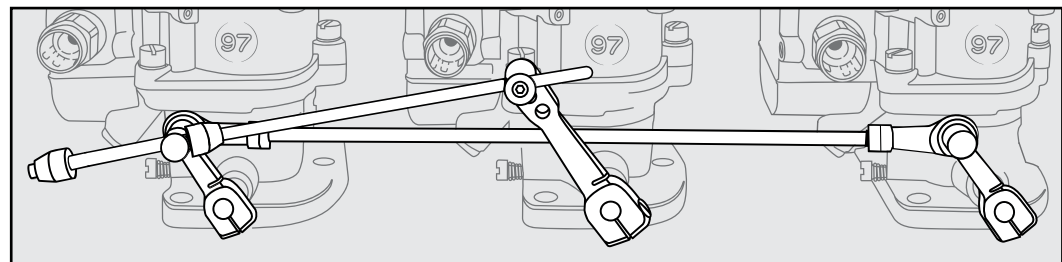
#### Check for interference

Before and after you attach the throttle pedal, check that the linkage moves all carburetors freely from idle to Wide Open Throttle (WOT). Check that the throttle return springs work effectively and that all carburetors snap shut when released. Check the pedal does not strain the linkage once WOT is achieved, or cause any 'over-center' condition. And check that the throttle linkage does not interfere with the fuel line or anything else.

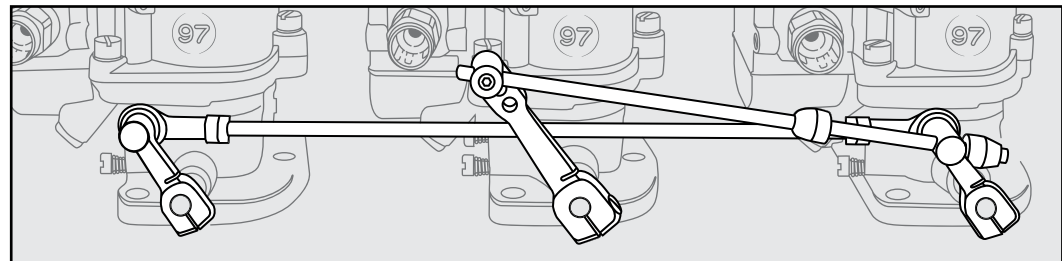
#### Security and maintenance

Engine vibration can cause fasteners to become loose over time. Once you have established your preferred linkage setting, we recommend the use of thread locker (eg. Loctite® or similar) on the linkage set screws.

After an initial running period, and at regular intervals throughout the life of the linkage, check and retighten all fasteners as required.



Premium progressive linkage (3x2) pulling front carburetor



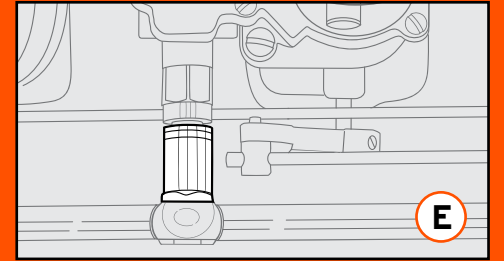
Premium progressive linkage (3x2) pushing rear carburetor

#### Stromberg fuel fittings

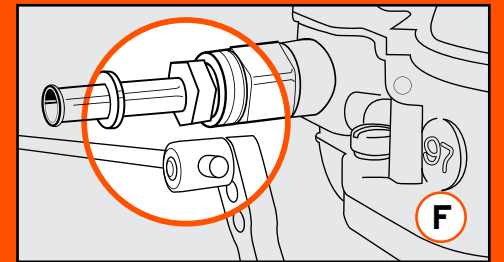
Stromberg offers a wide range of fuel fittings to suit all applications in both regular and chrome or polished finish. Our best-selling SuperSeat fitting (9080K) is the only brass hose end available with the correct angle seat for Stromberg inlet valves. Our stainless steel banjo fittings come with one or two ends, and an optional 1/8in NPT port to accept an inline fuel pressure gauge. And for an even more sophisticated look, Stromberg ready-to-fit stainless steel hard lines are available for selected intake manifolds.

While the direct linkages rarely cause issues, our progressive linkages often need a little more planning to ensure interference-free clearance with the fuel system. Stromberg banjo fittings (eg. Stromberg 9082K and 9083K), must be used with our banjo spacers 9086K. (see E) Without them, the fuel hose will interfere with the longer center carb linkage arm causing binding or sticking, which must be avoided.

The Stromberg 97's fuel inlet position has always made 'front-pull' progressive linkages difficult, as the sliding rod can touch the fuel fitting. If you have a 6x2 progressive set-up, however, 'front-pull' is the only option. A Stromberg extended SuperSeat hose fitting (9080K-E), or one of our banjo spacers with rod clearance (9086K-C) on the centre carburetor, will provide the clearance you need. (see F)



Progressive linkages w/ banjo fittings need spacers



Clearance is needed between fuel line and linkage

# READ THIS FIRST

## Have you got the right linkage?

Stromberg TwoStep linkages are designed to fit Stromberg 97, BIG97, 81 and 48 carburetors. Carburetor spacing differs between intake manifold makes and models. Please check you have the right linkage for your intake.

All carburetors should be firmly fixed to the intake manifold before installing the linkage. Most linkages come preassembled, but installation is easier if you remove the sliding linkage rod from progressive linkages. Leave any rod ends fixed in place. All linkage lock nuts, screws and set screws must be fully tightened before use.

Before installing your linkage, set your carburetors to achieve the required engine idle rpm with each carb doing equal work - airflow/vacuum - before you install the linkage. Your Stromberg linkage must be adjusted to fit your pre-set 'balanced' carburetor settings. If you adjust the idle settings after installing the linkage, you must disconnect it first otherwise you cannot adjust them separately.

## WARNING!

Always disconnect your vehicle's battery and make sure that the engine is cool before performing any work on the fuel system. Never smoke, use an open flame, or produce sparks where gasoline or gasoline vapors could be present. Always work in a well ventilated area. Failure to do so may result in the build up of dangerous gasoline or other combustible vapors that can cause severe respiratory injury, or a fire or explosion, resulting in property damage, serious personal injury or death.

## WARNING!

Stromberg recommends that installation be performed only by a professional auto mechanic. An improperly fitted linkage may cause poor performance or lead to property damage, personal injury or death.

## WARNING!

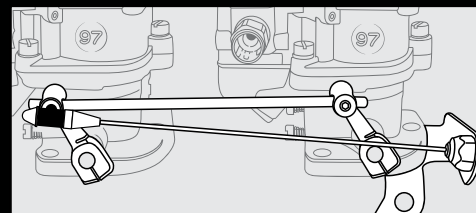
Do not over-extend any linkage to fit an application that it was not designed for. Your throttle linkage must also operate freely at all times. Do not use the linkage in any configuration that will cause sticking or binding, as this could result in uncontrolled engine speed, property damage, serious personal injury or death.

## WARNING!

Stromberg torsion-type throttle return springs are supplied. NEVER run a carburetor without an effective throttle return spring. The Stromberg accelerator pump lever spring is NOT a throttle return spring. Failure to run an effective throttle return spring, or any sticking, binding, or 'over-center' movement in any part of the linkage could result in uncontrolled engine speed, property damage, serious personal injury or death.

## Cable Throttle

The Stromberg Cable Throttle Bracket (9136K) makes it easy to use Stromberg TwoStep linkage kits with aftermarket throttle and kickdown cables. On a 2x2 intake, use a linkage with swivels and screw the throttle cable 'ball' fitting into the front swivel (see picture below) in place of the 10-32 thread set screw to clamp the linkage rod. On a 3x2 system, fix the ball fitting to the center carb lever, either into the swivel or the lowest adjustment hole. (Note: 9136K is not compatible with some Ford Flathead fuel pumps).



2x2 direct linkage with cable throttle

## TWOSTEP INSTALLATION

### Direct linkage with swivels (2x2 and 3x2)

#### Step 1 - Fit the SuperLink levers

a) Hook one of the supplied torsion-type carburetor return springs over one of the levers and slide it onto the front carburetor throttle shaft, pointing upwards with the clamping screw head to the right, as shown. (see A)

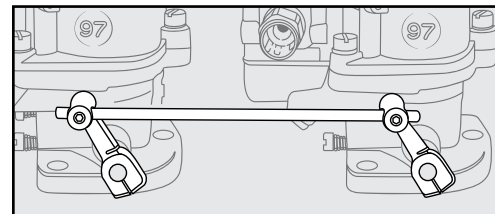
b) With a small protractor or angle finder, set the lever to 40 degrees before the vertical. (see B) Tighten the countersunk clamping screw with a long, flat blade screwdriver. The return spring will help keep the carburetor 'snap shut' against the throttle stop. (see C)

c) Now fit the other return springs and SuperLink levers to the other carburetors. Set them all at the same angle and the same distance onto the throttle shaft (use the hole in the shaft as a guide). Three-carburetor systems only need two springs - fit one to the carburetor which is linked to the throttle pedal.

#### Step 2 - Fit the linkage rod

a) Slide the linkage rod through the swivels to connect the carburetors together. Ensure it slides easily through both (or all three) swivels. If it binds in operation, go back to Step 1 and realign the levers on the shafts as required.

b) Check that each carburetor is still firmly shut against its throttle stop screw. (see C) Center the linkage rod between the carburetors and tighten the set screws with a 3/32in hex key to secure the rod to the swivels. Go to 'Check for interference.'



Direct linkage with swivels (2x2)

### Premium direct linkage with rod ends (2x2)

#### Step 1 - Fit the SuperLink levers

a) Install the SuperLink levers and torsion-type return springs as described above, but install the linkage fully assembled.

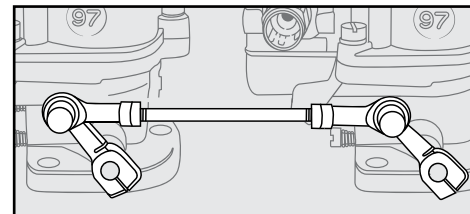
b) Set the front carburetor lever at 40 degrees before the vertical (see B) and tighten the countersunk clamping screw. The rear carburetor lever arm should now fall into approximate alignment.

c) Eye the linkage from above to ensure correct positioning, adjusting the levers on the shafts to correct any misalignment.

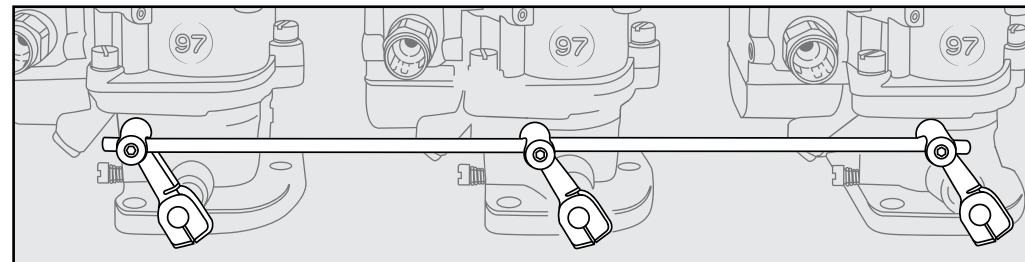
#### Step 2 - Adjust the linkage rod

a) Before you clamp the lever onto the rear carburetor shaft, check that it is at the same angle as the front lever with both carburetors shut against their stops. (see C)

b) If the rear carburetor lever is not at the same angle, or if one of the carburetors is not shut against its throttle stop, you must adjust the length of the linkage rod. Loosen the rod end lock nuts, which are right and left-hand threaded at opposite ends. Then spin the rod to pull the rod ends closer together or further apart. (see D) With both levers at the same angle and both carburetors shut against their throttle stops, tighten the lock nuts onto the rod ends using a 3/8in open-end wrench, taking care not to alter the rod length. Do not over-extend the threaded rod. Clamp the lever onto the rear carburetor throttle shaft. Go to 'Check for interference.'



Premium direct linkage with rod ends (2x2)



Direct linkage with swivels (3x2)

