

# READ THIS FIRST

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.

Before installing your linkage, set your carburetors to achieve the required engine idle rpm with each carb doing equal work - airflow/ vacuum. Your linkage must be installed and adjusted to fit these 'balanced' carburetor settings. If you adjust the idle rpm settings after installing the linkage, you must disconnect it 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!

All lock nuts and screws must be fully tightened before use. Do not over-extend any linkage to fit an application that it was not designed for. Your throttle linkage must operate freely at all times and not interfere with the fuel pump or distributor or fuel lines or hoses. NEVER run a carburetor without effective throttle return springs. Do not use the linkage in any configuration that will cause sticking, or binding, or 'over-center' movement, as this could result in uncontrolled engine speed, property damage, serious personal injury or death.

## TWOSTEP INSTALLATION

### Direct and progressive (4x2 and 6x2)

#### Step 1 - Fit linkages to each bank of carburetors

- a) All carburetors should be firmly fixed to the intake manifold before installing any linkage. You may find it easier to fit the right hand bank (US passenger side) of carburetors and linkage first, starting at the front. Set the back-bar linkage to one side and connect the carburetors on each bank together first.

#### 4X2

With reference to the main pictures, connect the two assembled linkages (with short levers and rod ends) to each pair of carburetors. Follow the instructions for **Premium direct linkage with rod ends**, in the TwoStep Linkage Installation Guide (supplied), placing the dual swivel/rod end connection on the front carburetor of each bank. (see A)

#### 6X2

For 6x2 direct linkages, follow the instructions for **Direct linkage with swivels** in the TwoStep Linkage Installation Guide (supplied), placing the dual swivel/rod end connection on the center carburetor of each bank. (see B) For progressive systems, follow the instructions for **Premium progressive linkage** in the same guide (supplied with your 3x2 linkages).

#### Step 2 - Connect the back-bar

- a) Keeping the back-bar assembled, position the brackets onto the back carburetor mounting studs, on top of the carburetor base flanges. (see main picture 2X2 Side-by-side kit)
- b) Add the spring washers and nuts onto the mounting studs and tighten the nuts progressively to 15 ft.lb. torque. As you tighten the nuts, constantly check that the cross-shaft spins freely in the self-lubricating bushes. Genuine Stromberg bases are cast iron, so the flange heights may vary slightly. If necessary, place a small washer (supplied) under one bracket (on the stud) to ensure good alignment across the manifold.
- c) Loosen the set screws on the two back-bar end stops, align the back-bar levers and attach the linkage rods.
- On 4x2 systems, connect them to the front carburetor levers. (see A) Now slide the back end of each rod into the swivel on each back-bar lever and tighten the set screws.

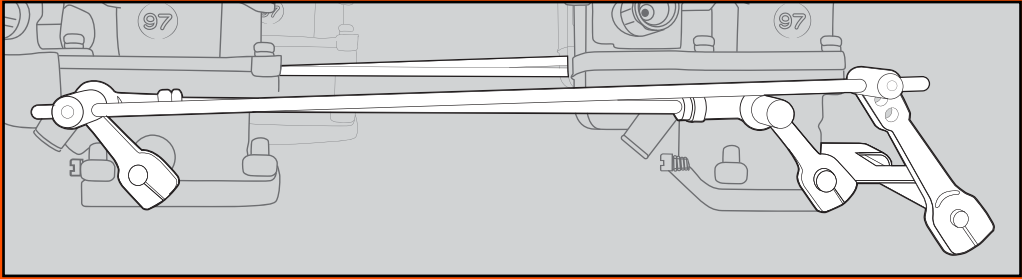
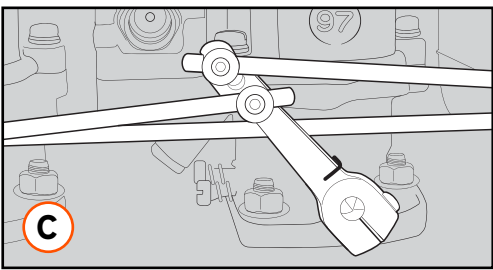
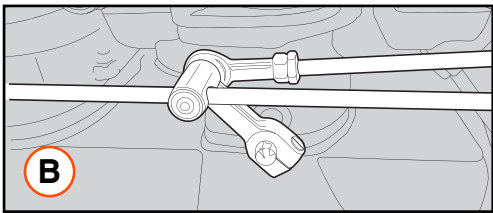
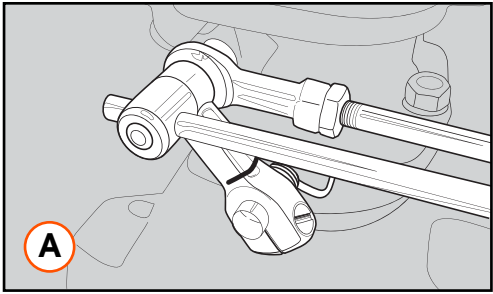
On 6x2 progressive systems, connect one end of each rod to the long levers on the center carburetors leaving about 3/16in of rod visible

past the swivels. (see C) On 6x2 direct systems, connect them to the center carburetor levers. (see B)

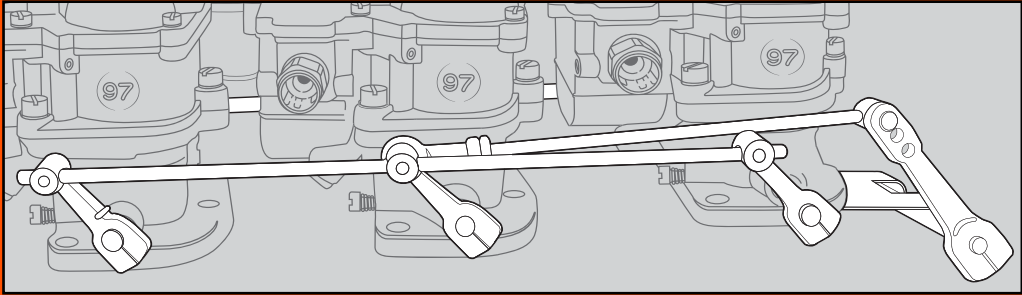
The back-bar levers should be set at the same angle as those on the carburetors (aim for 40 degrees before the vertical). Depending on your application, you may prefer to pin the back-bar levers. See below for details.

On 2x2 side-by-side systems (9263-D) the two linkage rods come with Stromberg Linkage Bomb clips which snap directly onto the carburetor throttle shaft brackets.

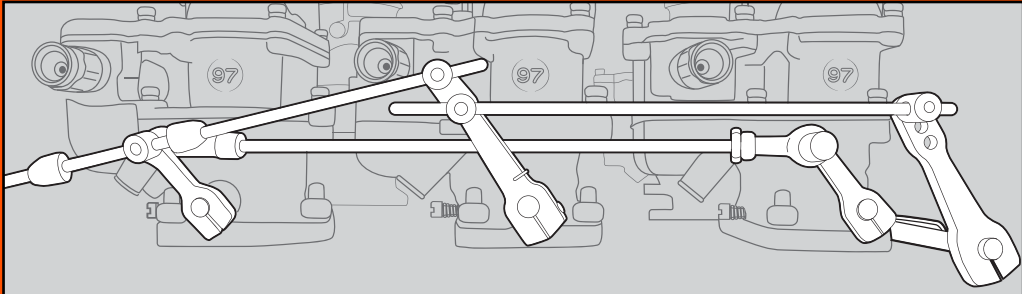
- d) Linkage alignment is critical to keeping the system bind-free and operating efficiently. Looking from above, check that all rods are in alignment up and down the manifold and at right angles to the back-bar. Adjust the back-bar cross-shaft left or right to ensure there is no bind or misalignment, then tighten the set screws to fix the end stops in place.
- e) Go to 'Connecting the throttle pedal' overleaf.



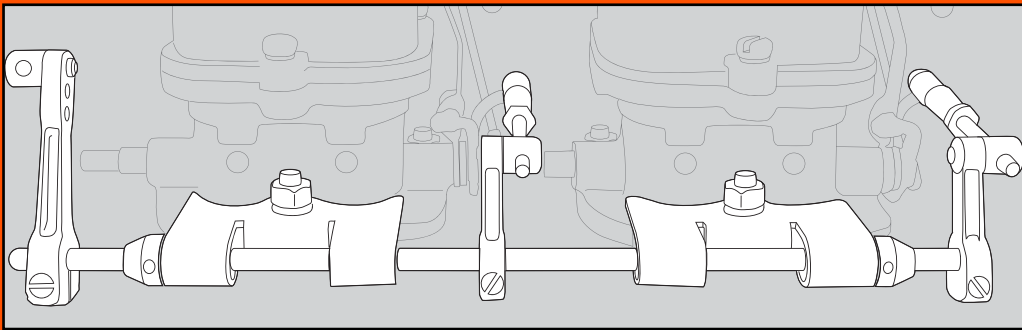
4X2 Direct Linkage Kit



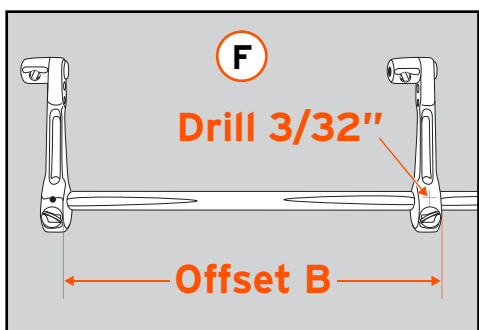
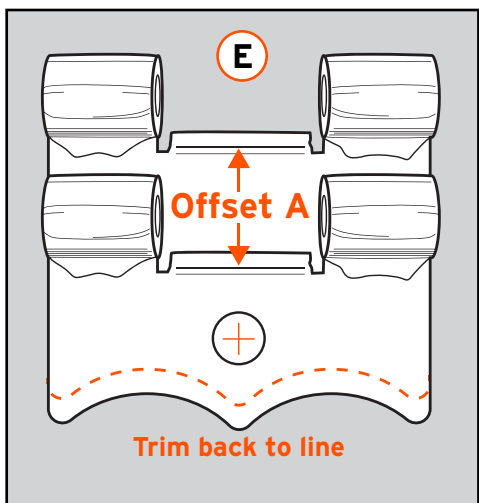
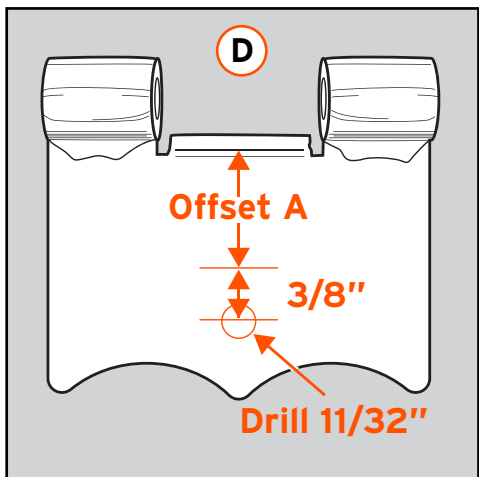
6X2 Direct Linkage Kit



6x2 Progressive Linkage Back-bar Kit



2X2 Side-by-side kit



## TRIM-TO-FIT LINKAGE KITS

**Stromberg Trim-to-Fit linkage kits will require modification before fitting.**

### Step 1 - Mark & trim the long back-bar bracket

- To accommodate the typical offset between the two banks of carburetors on 4x2 and 6x2 intake manifolds, Trim-to-Fit kits are supplied with one long and one short back-bar bracket. Trim the long one (only). Measure twice. Cut once!
- On your intake manifold, put a long straight-edge across the two front mounting studs for one carburetor on the bank that is set forward of the other. Measure back to the corresponding studs on the other bank. Offset A will be the difference between the two back-bar brackets. If your offset is 1 inch, the long bracket will not need trimming.
- Take the longer back-bar bracket and (on the centerline) mark a point 3/8th inch PLUS Offset A, from the inside edge of the folded bracket flange. (see D) Drill an 11/32in diameter hole at that point. Then, using the shorter bracket as a pattern, align the holes, mark out the forward edge and trim the bracket to match. (see E)

### Step 2 - Trim the cross-shaft

- Using a straight edge against the centre mounting studs on one bank, measure the distance (Offset B) across to the other bank. Now, starting from up against the left hand lever, mark a point along the back-bar cross-shaft equal to your Offset B. (see F) Slide your lever onto the shaft (swivels pointing left, except on 6x2 direct systems) up to your mark. Lay the two levers down onto a flat surface to keep them indexed in the same orientation on the shaft, then tighten the clamp screw to fix the lever onto the shaft.
- Assemble the back-bar linkage onto the intake and carburetors at this point to double check alignment. Both levers should be the same distance from their nearest brackets.
- If you decide to pin the levers to the shaft, confirm the lever positions then drill them and the shaft to accept the roll pins (supplied). Use the hardest 3/32in drill you can find. Take it slowly and use plenty of lubrication. Do not insert the pin. Remove the lever from the shaft.
- Now trim the cross-shaft to length. The overall length is typically 4 7/8in PLUS your Offset B, but you may prefer to assemble it onto the carburetors (remembering the end stops) and check it visually.

- Now re-assemble the whole back-bar kit (see main pictures). Fix the levers to the cross-shaft only when you are sure everything is in place, including your extra pedal-pull lever if needed. (see below)

### Step 3 - Tune the linkage rod lengths

- Trim-to-Fit linkages are supplied over-length so may need shortening to fit. First, measure the spacing (Offset C) between carburetors on each bank.
  - On 6x2 direct linkages, slide the long plain rod through the swivels on all three levers on each bank and trim it with around 3/16 to 1/4in showing clear past the swivels at each end.
- On 4x2 systems, remove the two threaded rods from the rod ends and lock nuts on the front and rear carburetor levers. Starting at the left-hand-threaded end of the rod, measure a length equal to your carburetor spacing (Offset C, but each bank will have just two carburetors, of course) MINUS 1.5in. Trim the rod to length then rethread the end of the rod using a 3/32in right-hand-thread UNF die. Ensure you have at least 1/2in of thread at each end of each rod. You may find it easier to mark your points first, then extend the current thread further down the rod (which helps with die alignment) before trimming each rod to length. Replace the lock nuts and rod ends and fit the linkage as per the instructions above.

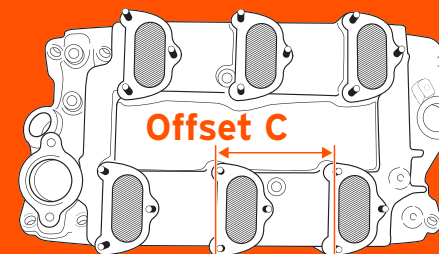
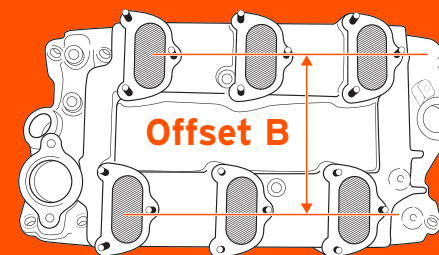
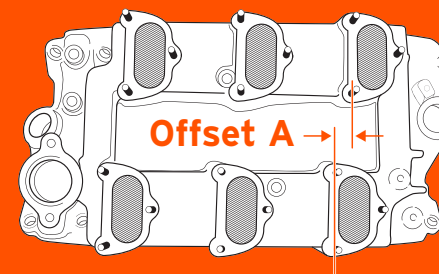
- Now shorten the linkage rods from the carburetors to the back-bar levers. Fit them as described overleaf, then trim the excess length, allowing around 1/4in showing clear past the end swivels. Remember that on intakes with an offset between banks, one link will be longer than the other (by your measured Offset A)

## CONNECTING THE THROTTLE PEDAL

We recommend that back-bar linkages use a direct, mechanical link to the throttle pedal. You can connect the pedal system to one of the two back-bar levers, or add a third lever (Stromberg part number 9096K), to the back-bar to suit your pedal alignment. Our long back-bar levers have three holes so you can adjust pedal leverage and throttle response.

## 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 that the pedal does not strain the linkage once WOT is



achieved, or cause any 'over-center' condition, and 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, check and retighten all fasteners as required.



## BACK-BAR LINKAGE INSTALLATION

If you need further information or assistance, please contact your Stromberg Dealer, or e-mail us direct at:

**tech@stromberg-97.com**

or log on to our Tech Center at:  
**stromberg-97.com**

