



**X1 THROTTLE LINKAGE KIT**  
**For Edelbrock 94 Two Barrel Carburetors on an X1 Manifold**  
**Part #1031**  
**INSTALLATION INSTRUCTIONS**

**PLEASE** study these instructions carefully before beginning this installation. Most installations can be accomplished with common tools and procedures. However, you should be familiar with and comfortable working on your vehicle. If you do not feel comfortable performing this installation, it is recommended to have the installation completed by a qualified mechanic. If you have any questions, please call our **Technical Hotline at: 1-800-416-8628**, 7:00 am - 5:00 pm, Pacific Standard Time, Monday through Friday.

**IMPORTANT NOTE: Proper installation is the responsibility of the installer. Improper installation will void your warranty and may result in poor performance and engine or vehicle damage.**

**DESCRIPTION:** The Edelbrock X1 Linkage Kit is designed to facilitate the synchronous operation of multiple two-barrel carburetors. The #1031 kit is designed to support six two-barrel carburetors installed on the Edelbrock X1 manifold for small block Chevy engines. It is a non-progressive linkage, meaning that all six carburetors will open up at the same time and will maintain the same throttle angle relative to pedal position.

**PARTS GUIDE:**



**(2x) - Spring-Loaded Throttle Rod**



**(1x) - Shaft Housing**



**(2x) - 12" Long Rod**



**(1x) - 7 1/2" Throttle Rod**



**(2x) - Throttle Return Spring**



**(1x) - Linkage Control Throttle Arm**



**(2x) - Center Carb Throttle Arm**



**(2x) - Shaft Housing Screw**



**(8x) - Swivel Stud Cotter Pin**



**(2x) - Carb Bank Control Arm**



**(2x) - Throttle Return Spring Bracket**



**(8x) - Swivel Stud**



**(3x) - 1/4" Ball Throttle Stud**



**(4x) - End Carb Throttle Arm**



**(2x) - Shaft Collar w/ Set Screw**



**(3x) - 1/4" Nylok Lock Nut**



**(8x) - Swivel Stud Washer**



**(3x) - Star Washer**



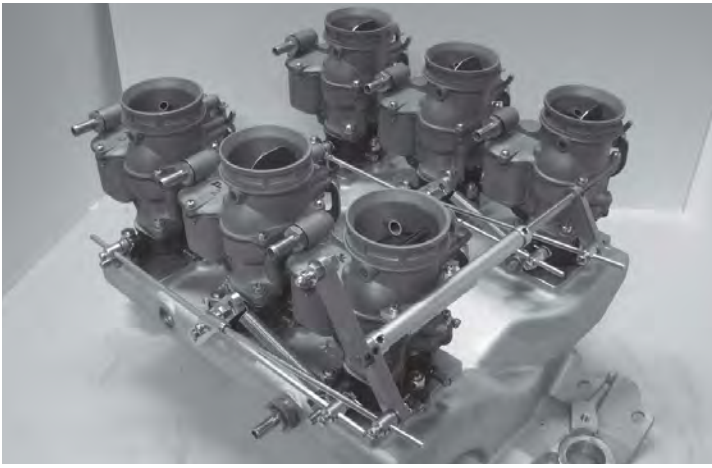
**(10x) - Set Screws**



**(8x) - Swivel Stud Set Screw**



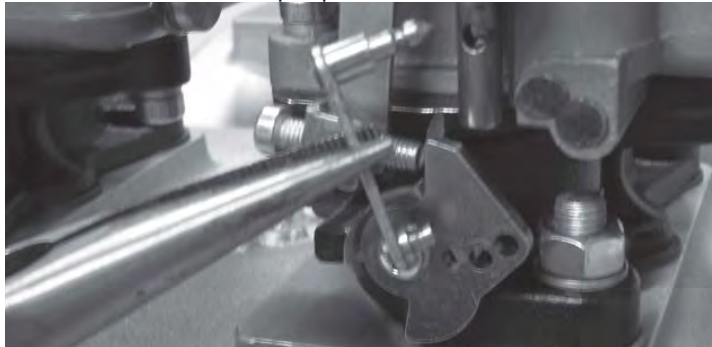
**(4x) - End Carb Throttle Arm Set Screw**



**INSTALLATION:**

**NOTE:** It is recommended that the linkage be installed with the manifold out of the vehicle, sitting on a level surface. A throttle linkage control arm and ball end stud are provided to connect to the vehicle's throttle rod or cable. Identify where the vehicle's throttle rod or cable will terminate so that the linkage control arm can be mounted to the linkage operating shaft accordingly. Also make note of any valve cover features that could interfere with the linkage, such as breathers and/or PCV valves.

1. Fully install three carburetors on the passenger side bank of the X1 intake manifold.
2. Remove the accelerator pump links from each of the carburetors.

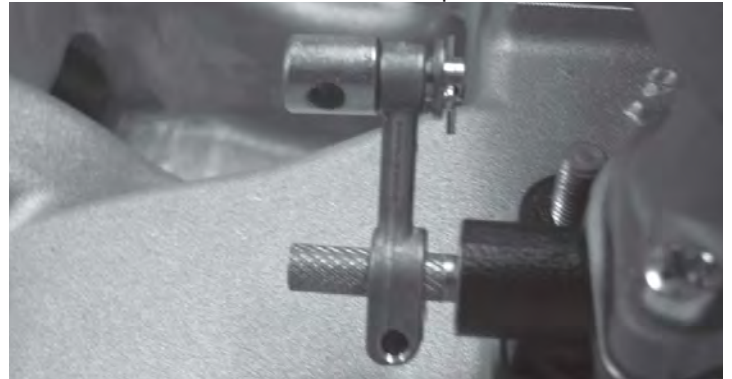


**NOTE:** All adjustments made to the carburetor arms should be conducted with all carbs at the wide open throttle position to ensure synchronized operation of such.

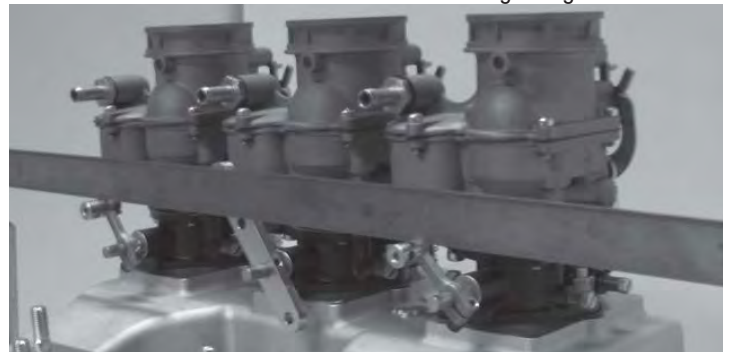
3. Rotate the throttle shafts to the wide open position. Install the cast throttle arms on the front and rear carburetors and the long arm on the center carb so that the end with three holes is angled upwards. Rotate each arm so that it will point forward at a roughly 45° angle then gently snug the set screws. Use a straight edge to ensure that the arms are installed at the same depth on each throttle shaft (approximately 1/4" away from the carburetor base).



4. Once the correct depth and roughly equal angles have been achieved, install a swivel stud in each of the throttle arms with the threaded end pointed away from carburetors. The swivel stud on the center carb will go in the lowest of the three holes. Slide a washer over the back of the swivel studs and secure them with a cotter pin.

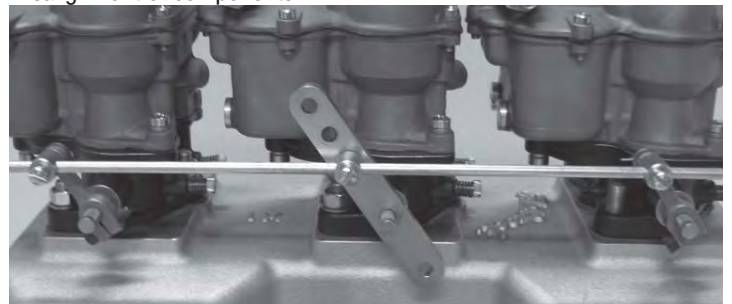


5. Verify that all three throttle arms are parallel by laying a straight edge across the swivel studs and measuring the distance between the straight edge and the bench at both the front and rear of manifold. It is recommended to start by aligning the front and rear arms without the center swivel stud in place. Once the two end arms have been determined to be parallel, add the center carb swivel stud and rotate the arm until the center swivel stud contacts the straight edge.



6. Once all three arms have been verified as parallel, tighten the set screws fully to secure the arms to their respective shafts. Twist each arm to ensure that the arms will not slip on the shafts.

7. Install the long linkage rod through all three swivel studs (it should slide in smoothly, if it doesn't, recheck the alignment of the throttle arms), then tighten the set screw on each swivel stud, starting with stud on the center carburetor. Verify that all three carburetors achieve wide open throttle simultaneously and return to the idle stops without any binding. If this is not the case, repeat steps 3-5 to remove any misalignment of components.





8. Install the ball end stud in the uppermost hole on the center carburetor throttle arm with the ball end extending away from the carburetor. Secure it with a star washer and nut.



9. Install the three remaining carburetors on the driver side bank.



10. Remove the two air horn mounting screws at the back of the rear carburetor on the driver side and install the shaft housing. Replace the air horn mounting screws with the two longer screws provided.



11. Slide the shaft into its housing. Slide a collar onto each end of the shaft so that they butt up against the housing.



12. Place a swivel stud in one the carb bank control arms and secure the stud with a washer and cotter pin.

13. Install the control arm with a stud on the passenger side of the shaft so that the hole side of the stud points toward the center of the manifold. (If the vehicle has a passenger side throttle linkage, install the throttle linkage control arm in the location that provides the best alignment at this time.) Position the arm on the shaft so that the hole in the swivel stud lines up with the ball end stud installed in step 8. Adjust the position of the shaft, if necessary, then tighten the set screws of the arms and collars.



14. Connect the spring-loaded end of the throttle rod to the ball end stud on the passenger side center carburetor throttle arm, then push the center carburetor to wide open throttle and slide the opposite end of the throttle rod into the swivel stud on the passenger side control arm. With the passenger side carburetors still at wide open throttle, tighten the swivel stud set screw so that the control arm is pointing forward and down at a roughly 45° angle.



15. Mock up the distributor and spark plug wires in the manifold to ensure that the passenger side control arm and swivel stud can be operated throughout their full range of motion. (If the end of the throttle rod hits, it can be clipped off later.) Next, attempt to push the linkage past full throttle to be sure that bank control arms will not go over center and become inverted, and thus locked wide open.

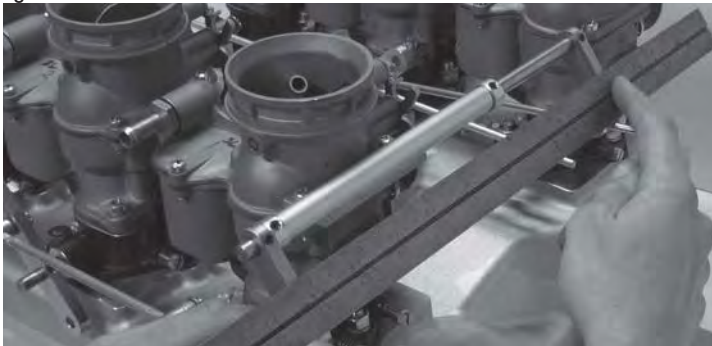


16. If the control arm or control arm swivel stud make contact with the distributor, begin making adjustments by first altering the orientation of the passenger side bank control arm forward by loosening the control arm swivel stud set screw and advancing the lock location forward on the throttle rod. To prevent inversion of the linkage, it is best to push the carburetors to wide open throttle prior to making the adjustment. If this fails to remedy the problem, shorten the overall throw of the linkage by relocating the ball end stud to the middle hole of the center carburetor throttle arm. **Be sure to always check that the arms will not become inverted after any adjustment.** Some trial and error will be required to achieve a properly balanced set up.

17. Once the linkage geometry has been properly established, install the driver side throttle arms by repeating steps 2-8, being careful to match the throttle arm angle to that of the passenger side bank. Try to match the measurements recorded in step 5 to get the arms as close to parallel as possible. Place a ball end stud in the same driver side center carb control arm location as determined in step 16.

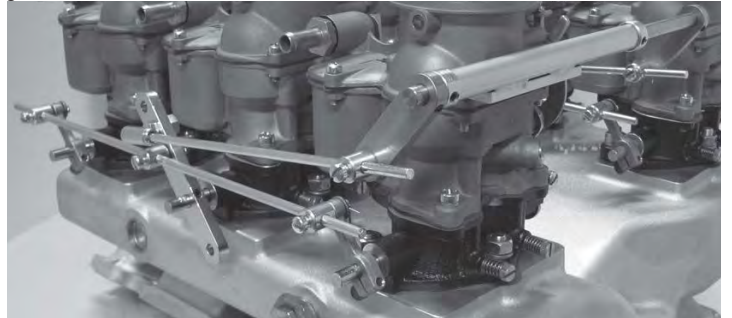


18. Likewise, install the driver side carburetor bank control arm. Loosen the collar set screws and readjust the position of the shaft, if necessary. Gently snug the set screws on the control arm and fully tighten the collars. Both bank control arms must be oriented at the same angle. To achieve this, use a straight edge across the back of arms and rotate one until the straight edge lays flat across them. Once properly aligned, fully tighten the set screws.



19. Attach the second spring-loaded throttle rod to the ball end stud on the driver side center carb throttle arm. Slide a swivel stud onto the driver side throttle rod and insert the swivel stud in the hole on the driver side control arm. Retain it with a washer and cotter pin, then tighten the swivel stud set screw.

20. At this time, both banks of carburetors will now be connected. Once again, operate the linkage throughout its full range of motion and check for any signs of binding. The linkage will take some effort to operate but should function smoothly and return to the idle position. If this is not the case, use a straight edge to check for any misalignment of rods or throttle arms. Ensure that all carburetors achieve wide open throttle simultaneously and fully return to the idle stops and that the operation is smooth throughout its full range of motion. Once again, attempt to push the linkage past wide open throttle and be sure that the linkage does not go over center and become inverted.



21. Cut rod ends to length, then mock up the distributor and plug wires once again to verify that nothing interferes with the linkage throughout its full range of motion.

22. Install the accelerator pump links at this time, if accelerator pumps will be used.

23. Two return springs and brackets have been supplied to allow for the installation of one return spring on each carburetor bank. A variety of return spring configurations can be used depending on your engine bay layout. Be sure to test your return spring layout for interference or binding once the return springs and brackets have been installed.

24. If the linkage control arm has not yet been installed, do so now.



25. Install the X1 manifold according to the instructions supplied, then attach the vehicle throttle rod or cable to the ball end stud on the throttle linkage control arm. With the fuel system disconnected to prevent flooding, have an assistant depress the accelerator pedal to full throttle and allow it to return to idle several times to ensure that there is no interference or binding with the throttle linkage.

