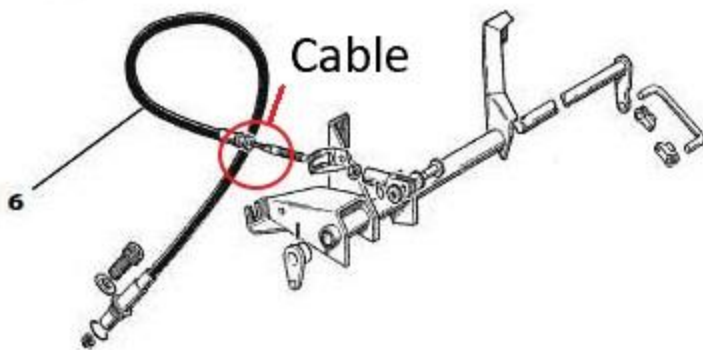


# Mark X/420 Intake Manifold installation

**Note:** Before removing the twin, carburetors and manifold you need to save several settings and measurements for installation of the Tri-carburetor setup.

1. Disconnect choke cable from carburetor and stretch the cable forward over top of carburetor. Measure the choke cable outer casing and inner wire in relation to CL of the carburetor. These measurements will be used to trim all three-choke cable for Tri-carb setup.
2. Before disconnecting any throttle linkage, cut a small piece of vacuum tubing, cut a length-wise split so the hose can fit over the exposed portion of the Transmission cable mechanism below and aft of the Manifold. The hose length should be cut to the **exact length of the exposed cable**. This will allow you to adjust the "cable adjustment fitting" to the correct starting point when installing the new tri-carb manifold.



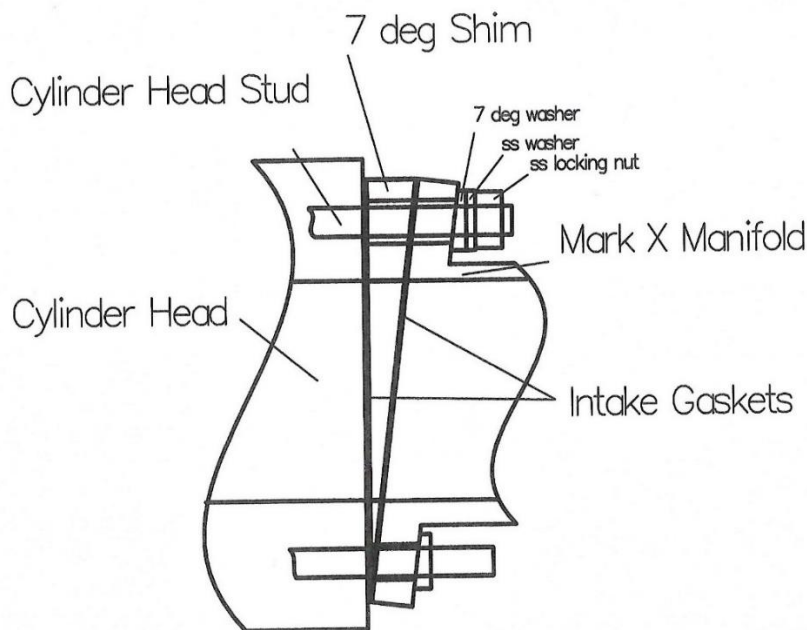
3. The above kick down linkage is attached to the manifold with 3 of the long lower cylinder head studs. Note location of these studs before removing the manifold; 3 each 2" studs will be installed at these locations. The other 6 lower cylinder head stud locations will have 1.75" studs.

## Preparation for installing the Mark X/420 manifold

1. The manifold mounting holes have previously been drilled to accommodate the 7 deg angle change. Clean all cylinder head stud holes with 5/16" NC bottom tap. Install new studs in the cylinder head: 2" studs at top 9 position and 1.75" studs at bottom 9 positions. If you have an automatic transmission, then 3 studs at bottom will have to be 2" for kickdown bracket installation.
2. Machined Tapered Shim requires two standard intake manifold gaskets one on each side. Mark one gasket in top right-hand corner with arrow pointing up and forward for the cylinder head, and the second gasket mark top left-hand corner with arrow up and forward for intake manifold. Once fitted the gaskets should not be fitted any other way.
3. Install cylinder head intake gasket followed by shim. If any of the studs bind during installation, file the hole on shim with a round file as needed. Using temporary extra-large washers and nuts, tighten manifold to cylinder head. Stuff clean rags into the intakes as far as possible. You will most likely find a miss-match between shim, gasket and cylinder head. This you will clean up with 1" to 1 1/4" diameter medium-fine sanding drum, chucked-up in light weight drill motor. Move sanding drum around the hole in opposite direction of rotation, until all three are matched. If you want to do any addition smoothing of cylinder intake wall casting flaws, this is time, if you have right porting tools and skill. Clean intakes and remove rags.

4. Remove Shim from Cylinder head and install second gasket on the Mark X/420 Intake manifold followed by Shim, using temporary bolts, extra-large washers and nuts. Again, you will find mismatch between manifold flange, gasket and shim. Using the 1" drum sander in drill motor, rotate sanding drum around hole until the miss match is gone. If desired, you can clean up casting protrusions in the intake manifold.
5. Everyone has their own way of prepping the gaskets: spraying with cooper etc. The key is to get the gaskets to release easily in the future and reduce corrosion around cooling passages. I used Synthetic high temp Disc Brake Grease, especially around water outlets and intake inlets on both sides of gasket; that means both sides of the two gaskets should be prepped.
6. Install manifold with Shim and two gaskets in place. Install tapered washer, followed by 5/16" SS washer and 5/16-24 SS self-locking nut. Slowly increase torque in a classic center out, crisscross pattern until you get to final torque 12-14-foot pound torque; (5/16"-24 SS to grade 5 nuts). If you have the automatic transmission, the kick down bracket assembly should be installed before starting the torquing process.

## Installation Diagram

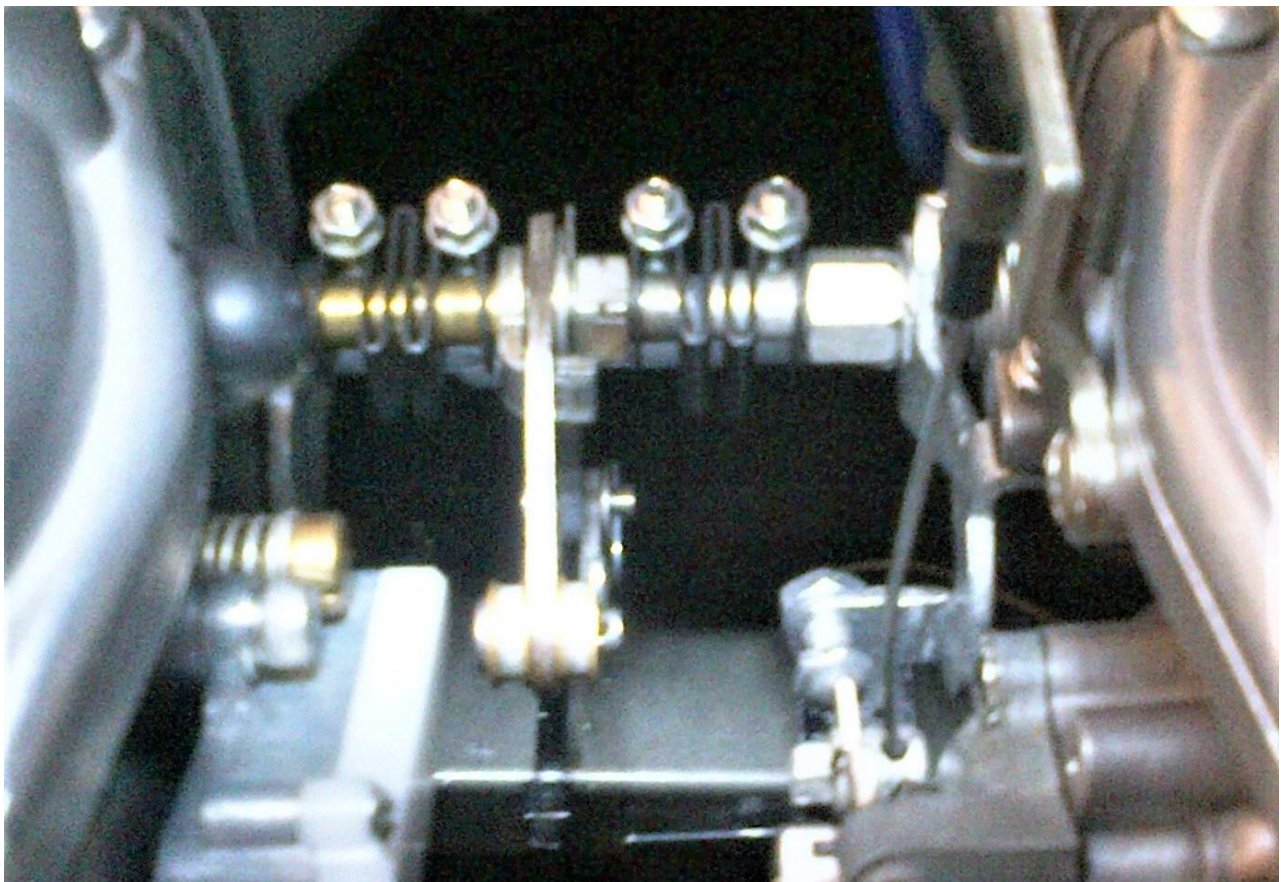


7 Deg Shim Corrects Manifold 7 Deg upslope to 0 deg

## Installing the 3 CD175 Carburetors on the Mark X manifold

1. Clean stud holes with bottom Tap. Install the 12 each 5/16 18 x 24 2.25" long studs in the 2" Mark X/420 manifold flanges. Install 3ea. 2" Gaskets (P/N CO-7221), followed by the 3ea. **Machined Carburetor to intake Manifold Spacer**. Next install 3ea. Insulator gaskets (P/N CO-2363), followed by 3ea. CD175 Insulators (P/N CO-33060). Install an additional 3ea. Insulator gaskets (P/N CO-2363). *{one gasket on each side of the "Heat" insulator}*
2. Fitting the Carburetors: Start with Forward Carburetor placed on manifold and held with temporary washers and nuts.
3. Install center carburetor noting any interference between Carburetor shafts. The **Center Carburetor shaft** and possibly the **(OEM) Lost Motion Lever** may require trimming to allow the **Two Zig-Zag fittings** to be installed. Add temporary washers and nuts to the center Carburetor. (A Dremel rotary tool with a cut off disc worked perfectly)

**Center Carburetor on Left, Forward Carburetor on Right**  
**OEM lost motion link from dual carb setup between**

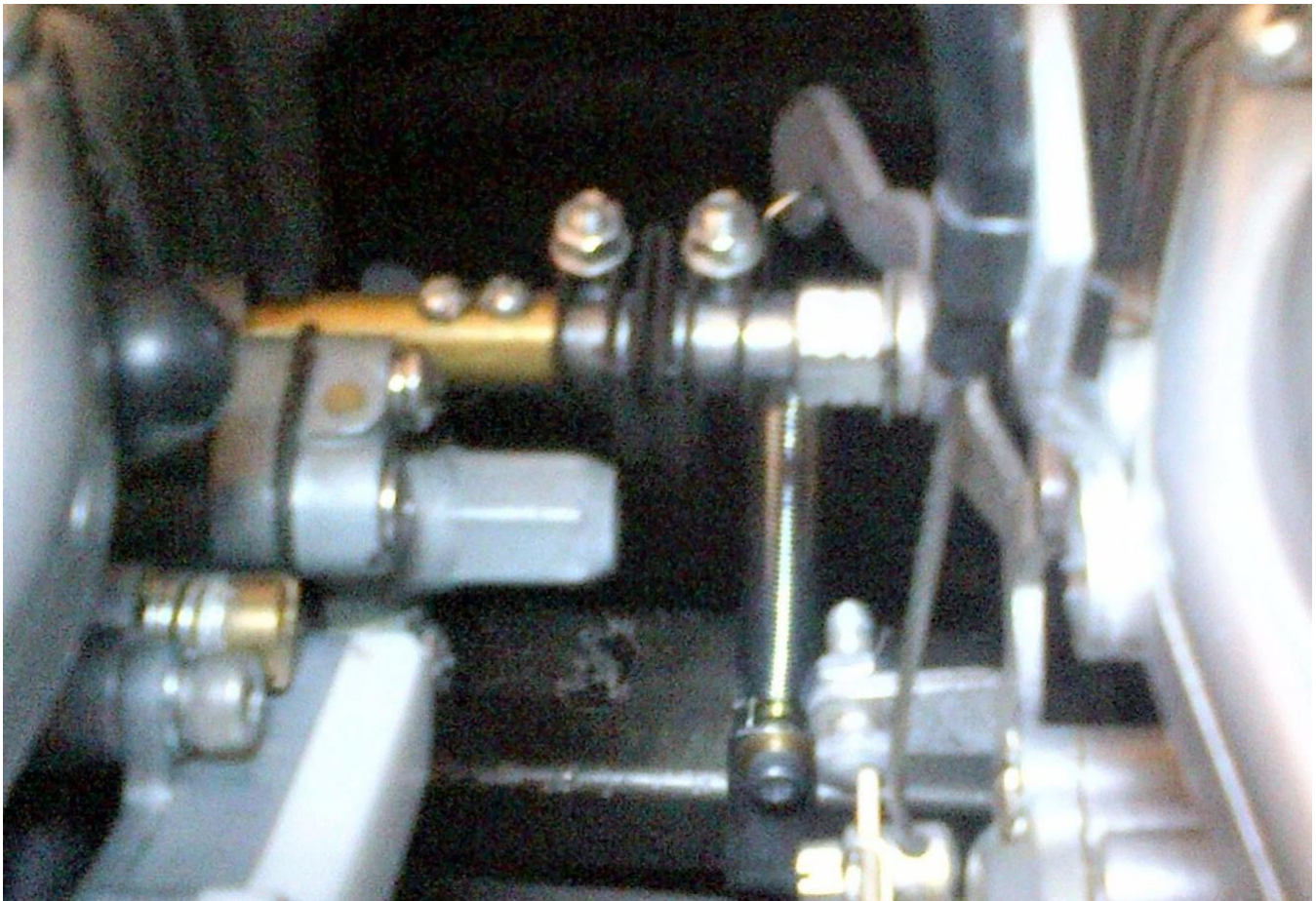




## AFT Carburetor Fitting

4. Install the Aft Carburetor with Carburetor **Return Spring Lever** (P/N C14371) on the shaft. Trim the shaft to get **one Zig-Zag fittings** in place. *{Note: The picture below shows the Aft Carburetor with a 5 1/4" shaft and a splice to get the desired length. Later replaced the shaft with a 6 1/4" shaft for final setup.}* The Spring Return lever should be placed on the aft shaft approximately where the **second splice screws** is located (screw closest to center between carbs).
5. *{Note: The picture below shows the Return Spring (P/N CO-14366 SS) and the Spring Mounting Bracket (P/N BD28582) on the right side of Center line with a different Return Lever from an MGB.}* The mount bracket and spring should be secured on left side of the Zig-Zag fitting, aligning with the Shaft Spring Return Lever. The Spring return lever should point toward the Cylinder Head.

## Aft Carburetor on Left, Center Carburetor on Right



6. Secure all Carburetors with correct 5/16" SS washers and 5/16" SS nuts. Slowly bringing all up to 11-foot pounds torque. Loosen the aft side of Zig-Zag fittings until tuning begins. If you have uneven torque, you could see misalignment between the two Carburetor Shafts under the Zig-Zag fittings. There are 3 gaskets and one insulator block that can lead to uneven installation if miss-torqued. (Notice the 8mm extension nut on aft side of Center Carburetor connecting to Zig-Zag fitting)