



Part# 386-325 Manual Choke Conversion Installation Instructions

For MGB, Spitfire, Midget, TR7 with single Zenith Stromberg Carburetor

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Tools required:

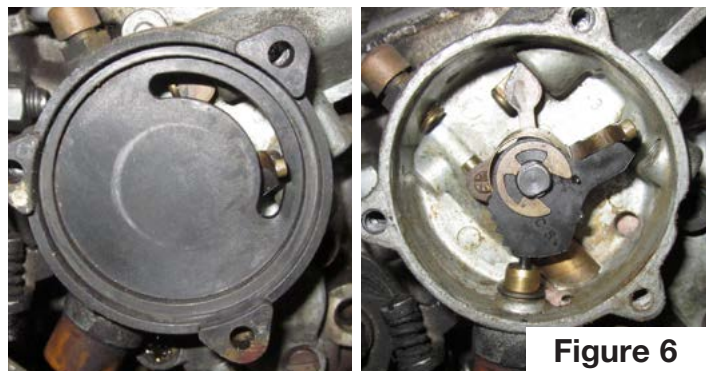
- Factory manual
- Flat screwdrivers- large and small
- Phillips screwdrivers- #1 & #2
- Combination wrenches- 1/2" & 5/16"
- 5/32" Allen wrench
- Sharp side cutters

Before you begin:

Please familiarize yourself with Figures A-E on pages 5 & 6 of these instructions. The terms in these figures will be used throughout the instructions.

Disassembly

- 1) Disconnect the negative battery cable and let the engine cool completely.
- 2) Remove enough of the air box to access the automatic choke.
- 3) Check that your engine is completely cool and cooling system is free of pressure. Remove the hoses leading to the choke heater body. Use the provided 3/8" heater hose to bypass the choke heater body.
- 4) Using a 1/2" wrench, loosen the central clamp bolt. Using a screw driver, remove the 3 bolts securing the choke heater to the choke body and remove the heater from the car. Figure 4.
- 5) Fully remove the bolt in the center of the heater body and separate the heat mass from the water jacket. This will allow you to remove the clamp ring. You will be reusing the clamp ring and 3 screws. The heating element, water jacket and central bolt will not be reused. Figure 5.
- 6) Remove the plastic insulator from the choke body to inspect the choke for function. Figure 6.



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Function Check

Refer to the "Automatic Fuel Enrichment Unit" section of the factory manual for more detail on the following steps.

- 7) Open the throttle while applying light pressure to the operating lever in a clockwise direction. This should move the operating lever and fast idle cam to the full "on" or cold position pictured in Figure 7. If the operating lever and fast idle cam do not look like the picture you must If the operation lever and fast idle cam do not look like the picture, use the factory manual to identify and fix the problem. Hold the throttle open and operate the choke back and forth several times to ensure free movement. The fast idle cam should be held to the operating lever via the spring in between the two. Figure 7.



Figure 7

- 8) Next you must check the clearance between the base circle of the fast idle cam and the fast idle pin. To do this;

- Open the throttle which should move the fast idle pin away from the fast idle cam. If the pin does not move away, fix it.
- Operate the choke counter clockwise to its full off, warm position.
- Release the throttle. Release the choke. This should put the pin on the base circle of the cam. If the pin is not on the base circle of the cam, fix it.

Your choke and fast idle pin and cam should look like Figure 8.

Now that the pin is on the base circle, check for and set clearance as instructed in the factory manual.

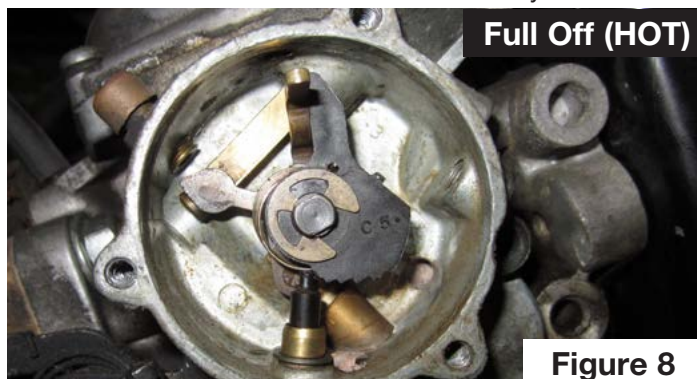


Figure 8

Assembly

- 9) Reinstall the plastic insulator on choke body.
- 10) Install the clamp ring on the manual choke unit. To do this you must rotate the choke lever arm clockwise to the cable bracket to install the clamp ring. Make sure the datum marks face out. Figure 10, D, E



- 11) Install the manual choke onto the choke body ensuring the loop in the spring is around the operating lever. Loosely install the three clamp ring screws but do not tighten them. The mechanical choke must be free to rotate in the choke body. To check that the loop is around the operation lever, rotate the manual choke body one half turn in either direction. You should feel spring tension. Rotate 1/2 turn the other direction. If spring tension is felt in both directions continue on to next step. If no spring tension is felt, the spring loop is not on the operation arm. Figure 11



- 12) Loosen the pinch bolt on the mechanical choke using a 5/32" Allen wrench.



- 13) In this step you will be setting the position of the manual choke to operation lever on the stock choke.

For a video overview, please search YouTube for [Moss Tech Short - Carburetor Choke Conversion Step 13 \(386-325\)](#)

or scan this link with your QR reader:



- You must first make sure the operation lever is in the full cold position (see figure 7). Using a screw driver, turn the manual choke shaft ½ turn clockwise to load up the spring inside. While holding tension on the shaft, open the throttle. This should allow the pin to move away from the cam and the operation lever should move to full cold.
- Next, hold the cable lever on the manual choke firm with one hand and turn the manual choke shaft clockwise no more than ½ turn. Keep the screw driver in place and release the cable lever. The manual choke body should spring into a new position. The goal is to repeat this sequence until the arm and datum are aligned as pictured without you holding the arm in place. You must only turn the shaft clockwise to ensure the operation lever stays in the full cold position.
- If the manual choke does not reposition itself when turning the screw and letting go of the arm, either the lock ring screws are too tight, or the manual choke spring is not on the operation lever as it should be. Refer back to step 11.

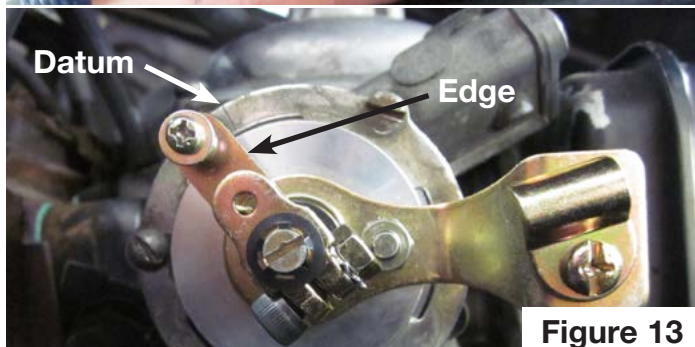


Figure 13

- 14) Once you have clocked the manual choke to the operation lever as described in the step above, tighten the pinch bolt using the 5/32" Allen wrench. It only needs to be tight enough so the lever arm and shaft are locked together, less than 2 ft. lbs.



Figure 14

- 15) In this step you will clock the manual choke to the choke body.

Rotate the manual choke counter clockwise until the edge of the cable bracket is aligned with the datum mark on as in Figure 15. As the edge of the bracket approaches the datum, you should feel the spring start to load up a bit. The manual choke should spring slightly clockwise from the tension if you let it go. If there is no spring tension you need to find out why and fix it. If you feel the spring tension with the arm and datum aligned, tighten the 3 screws until the manual choke can no longer be rotated in the choke body.

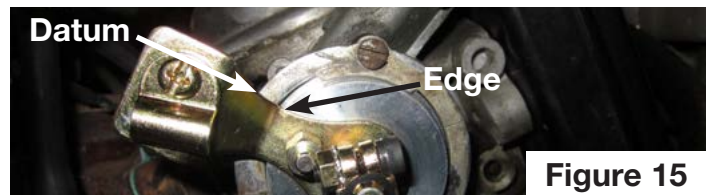


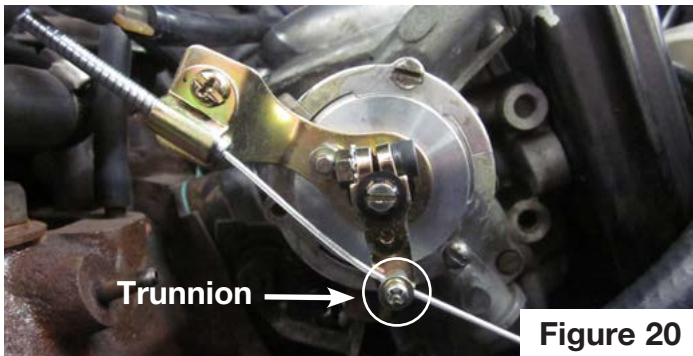
Figure 15

- 16) In the previous step while you clocked the manual choke to the body, it also moved the operation arm of the choke to its warm (counter clockwise) position. The spring from the manual choke is holding the operation arm in the warm position because you only want the choke working when the engine is cold and you pull the choke lever. Operate the lever arm on the manual choke by hand open and closed to ensure it moves freely. You should be able to hear the vacuum kick piston and metering needle moving as you manipulate the lever arm.

- 17) Find a spot on your dash for the choke cable. There is a bracket and screws provided in this kit for the cable if there are no available holes in the dash. Install the bracket in you desired location. Install the cable in the dash or bracket.

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- 18) Run the cable through the firewall and out to the manual choke.
- 19) You may want to trim the cable and housing using sharp side cutters for a cleaner look. Make sure to account for engine rock before trimming. Pull the cable out of the housing before attempting to trim the housing.
- 20) Install the cable end through the trunnion on the manual choke lever arm. Install the housing on the cable arm leaving minimal protrusion of the housing on the lever arm side. Make sure the choke handle is pushed all the way in and tighten the trunnion screw. Figure 20.



- 21) Reinstall the air box and any vacuum lines you have disconnected.
- 22) Reconnect the negative battery cable.

Operating the choke

- 23) Pull the choke and turn the handle to lock it in position. Step on the throttle and release it. Failing to step on the throttle with the pulled will not allow the choke to operate. The lever arm will have physically moved, but the operating arm, metering needle and vacuum kick piston under the manual choke will not have moved. You must step on the throttle once to move the fast idle pin out and allow the fast idle cam to spin.
- 24) Start the engine. If you need less choke, simple turn the knob to unlock it and push it in a bit. However if you need more choke, you must step on the throttle after setting the handle.
- 25) As the engine begins to warm up, the rpm's will rise just as with the automatic choke. Once the engine is warm and you have completely shut the choke off, you may need to step on the throttle once to move the fast idle pin off the fast idle cam.
- 26) The install is complete. Enjoy your manual choke conversion. See Moss Motors for all your classic British car needs.

Figure A Water-Heated Automatic Choke

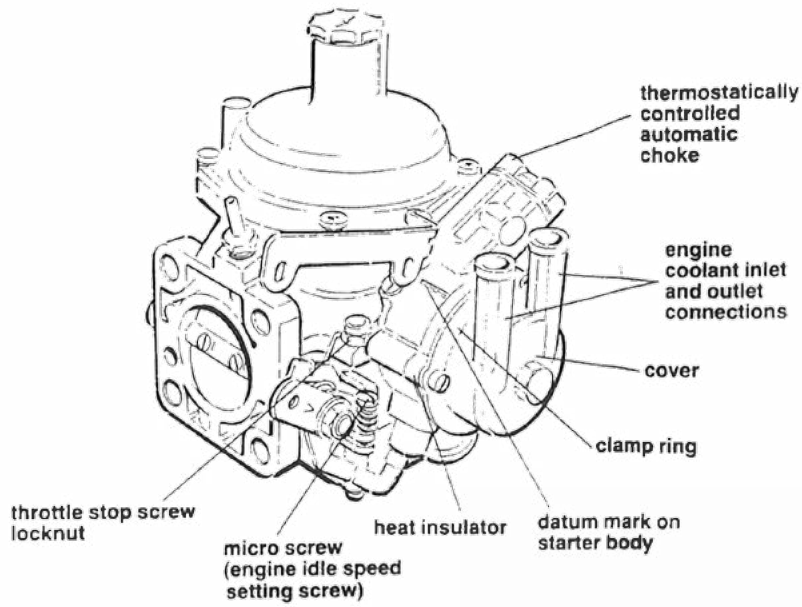


Figure B Dismantling the Auto-Choke

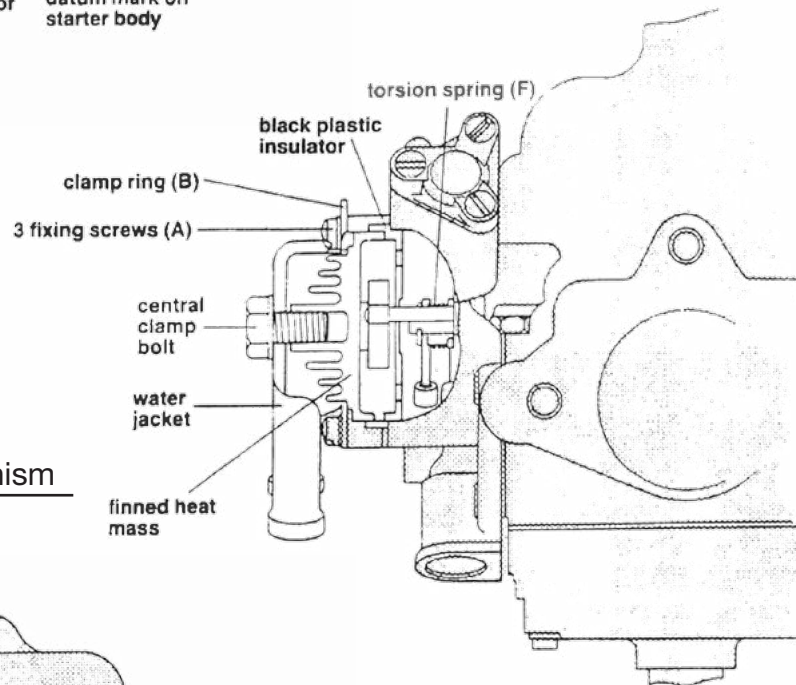
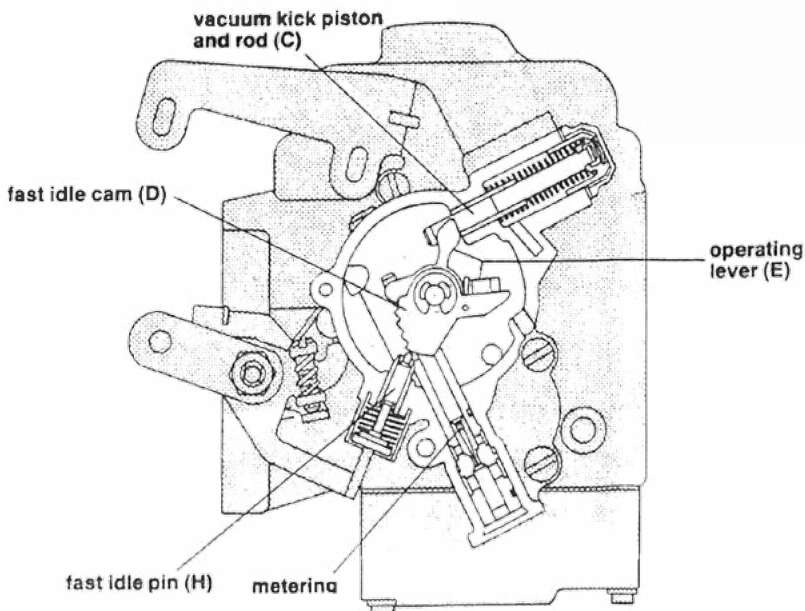


Figure C Servicing Choke Mechanism

(Note: Choke fully on in this illustration)



Installation Instructions

Figure D Fitting Manual Choke Unit

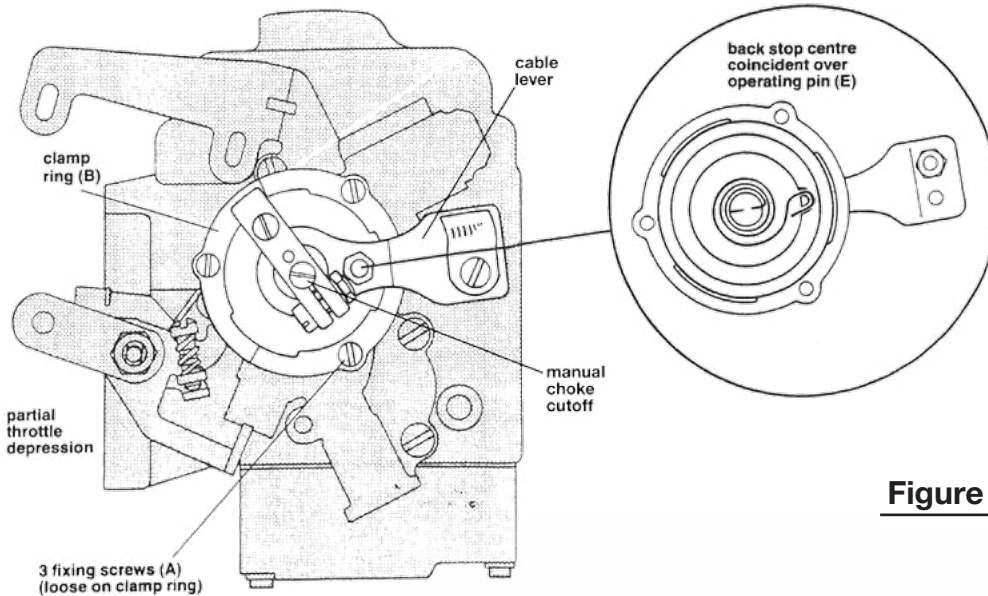
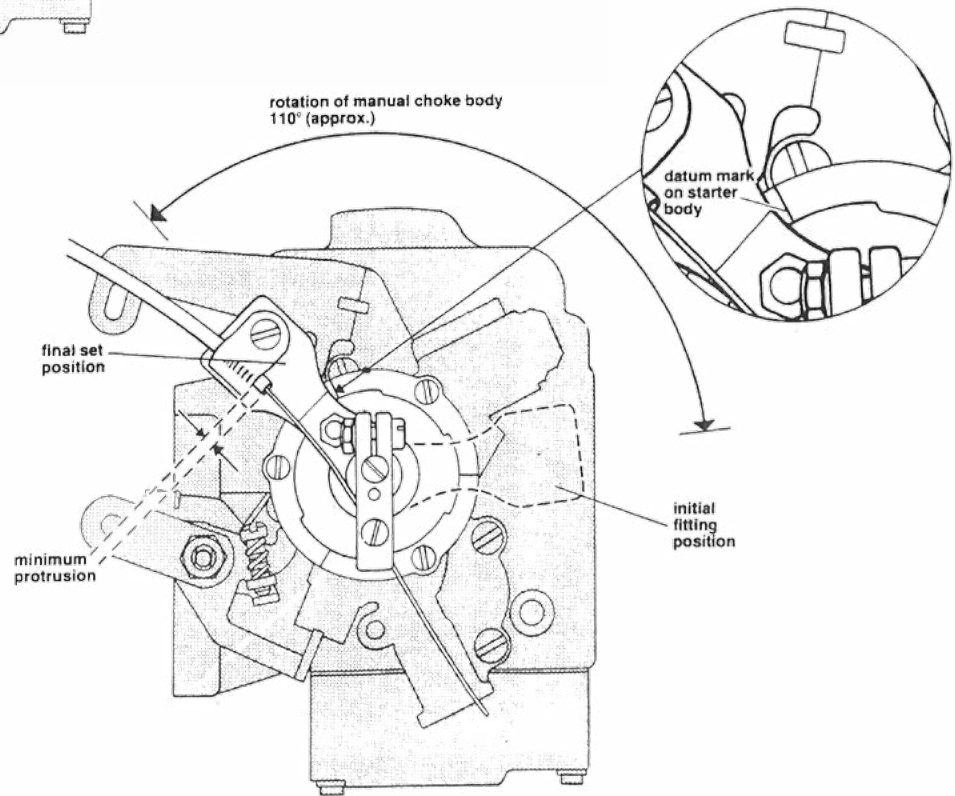


Figure E Setting Manual Choke Unit



Although every effort has been made to ensure the accuracy and clarity of this information, any suggestions that you may have that will improve the information (especially detailed installation notes and photos) are welcome. These instructions were developed and written by Moss Technical Support. If you have any questions or difficulties with your installation of this product, telephone 800-667-7872 between 7:00 a.m. and 4:00 p.m., Pacific Time for assistance.

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