

XT Series Engine Auto Choke System Troubleshooting Guide

The following guide has been put together to aid in troubleshooting and the correction of issues with the auto choke.

NOTE: Read and understand all instructions before beginning this procedure.

A bimetallic spring reacts to muffler heat and moves linkage that opens or closes the choke. A diaphragm that operates from intake manifold vacuum assists the spring system. These two elements work together to operate a smooth choke system that facilitates easy reliable starting. See Figure 1.

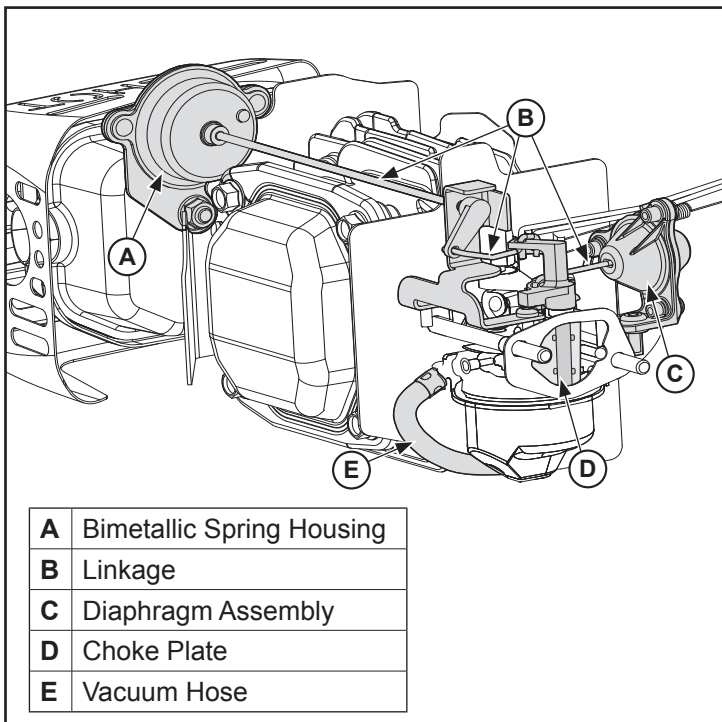


Figure 1. Auto Choke (Air Cleaner Base and Engine Cover Removed for Clarity).

Use the following procedures to troubleshoot the auto choke system and its components. These procedures are to be performed on a cold engine.

NOTE: The following procedures may be easier to perform with the engine cover removed. Refer to the applicable service manual for Disassembly and Reassembly procedures.

1. Remove the air cleaner cover (A), air cleaner (B), and breather cover (C) from the air cleaner base (D). See Figure 2.

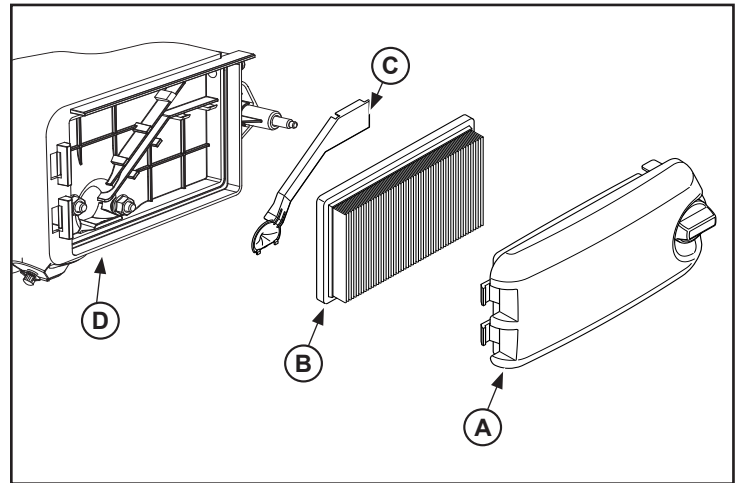


Figure 2. Cover, Air Filter, and Breather Cover.

2. Check the choke linkage for binding or debris build up. Gently actuate the linkage and observe that the choke plate has full range of movement (open and close).
3. Remove the vacuum hose (B) from the carburetor vacuum fitting (C). Attach a vacuum gauge or manometer to the carburetor vacuum fitting (C). Run the engine while holding the choke plate open. The gauge should indicate a vacuum with a **minimum of 15" of water**. If the reading is correct, check again for binding of restricted linkage. See Figure 3.

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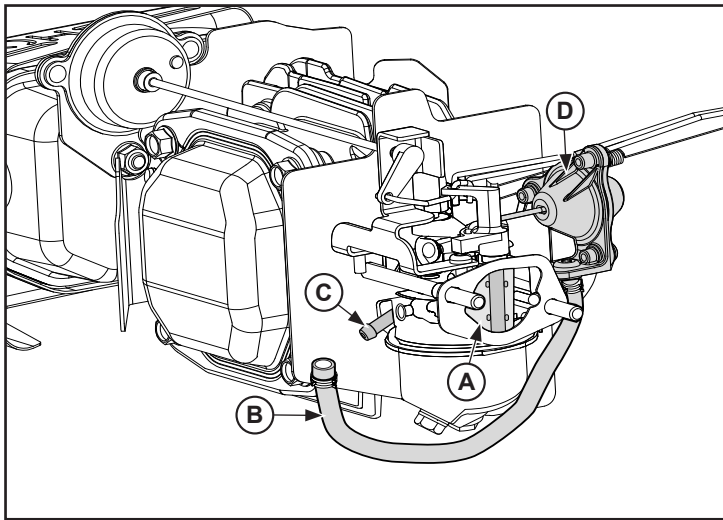


Figure 3. Diaphragm Assembly and Hose.

4. If the vacuum indicated is **less than 15" of water**, the problem is **not** an auto choke issue.
5. Note the position of the choke plate (A). Attach a vacuum pump to the vacuum hose (B). The choke plate should open 1/2 to 3/4 under vacuum and with a **minimum of 15" of water**. If the diaphragm assembly is unable to open the choke plate, check the hose for cracks, leaks, or restrictions. If necessary replace the vacuum hose (B). If the hose is in working condition and the choke plate fails to open with the specified vacuum, or diaphragm fails to hold choke plate open for a minimum of three (3) seconds, replace the diaphragm assembly (D). See Figure 3.
6. Attach the vacuum hose (B) to the carburetor vacuum fitting (C). See Figure 3.

7. Start the engine. Upon start up the choke plate (A) should open 1/2 to 3/4 of the way. The choke plate should gradually change to the fully open position after 2 to 2-1/2 minutes of running. This action is performed by the bimetallic spring assembly (B) being heated. If the choke plate fails to open, recheck the linkage for binding. If necessary replace the bimetallic spring assembly. See Figure 4.

NOTE: Inspect to ensure the choke linkage is not binding.

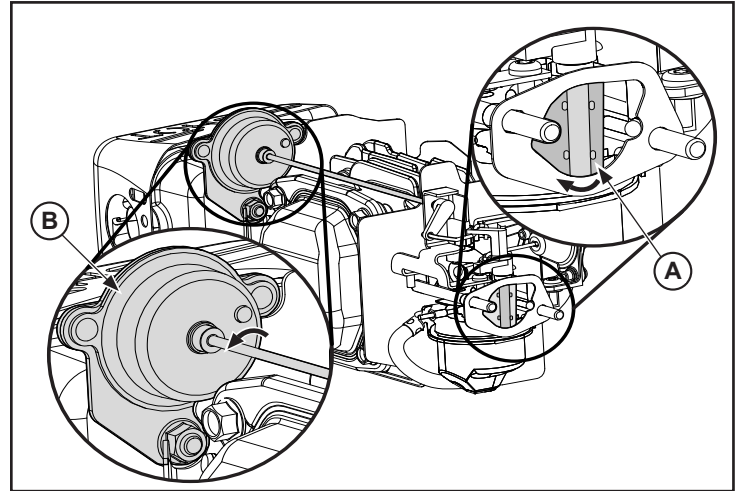


Figure 4. Choke Plate and Bimetallic Spring Housing.