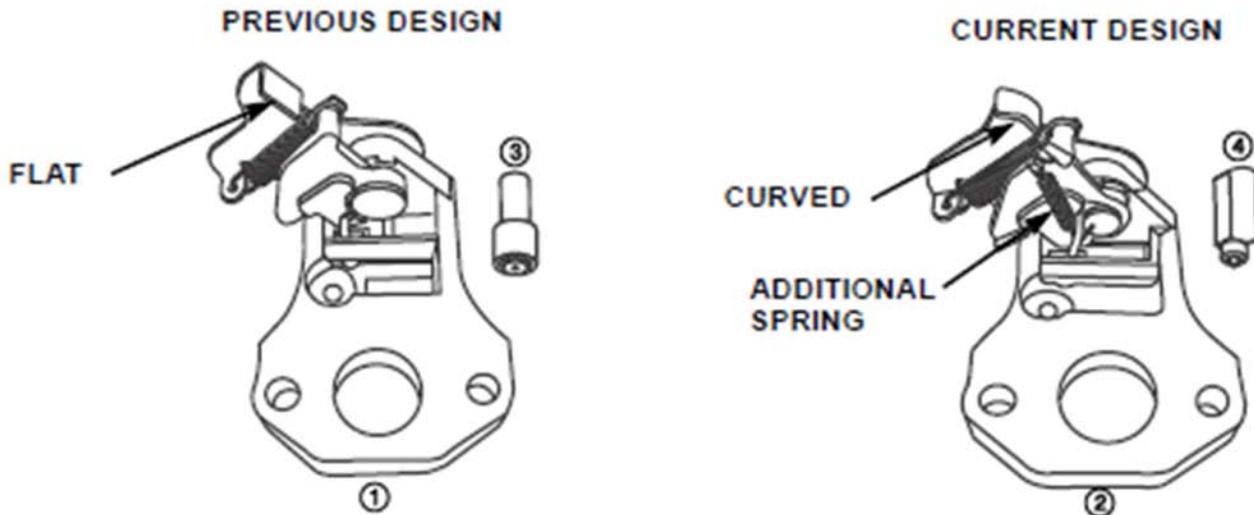


GCV160/GCV190 AUTO CHOKE SYSTEM (ACS) NEW PARTS

Several changes were recently made to the GCV160/190 ACS. The thermowax shape was changed from cylindrical to square and the auto choke control assembly was redesigned to match the characteristics of the new thermowax assembly.

Due to design changes, the previous and current parts are not interchangeable. Always be sure to order the correct parts based on the serial number of the engine.



Model	Engine Serial Number	Choke Control Assy.	Thermowax Assy.
HRR216K7VKC (All)	Up to GJAPA-1546574 (All K7 models)	① 16600-Z1L-840	③ 16620-Z1L-841
HRR216K8VKC/PKC/VYC (All)	GJAPA-1546575 and Up (All K8 models)	② 16600-Z8D-840	④ 16620-Z8D-841
GCV160S3T/GBT	Up to GJARA-3180268	① 16600-Z1L-840	③ 16620-Z1L-841
GCV160S3T/GBT	GJARA-3180269 and Up	② 16600-Z8D-840	④ 16620-Z8D-841
HRX217K2VKC (All) HRX217K3HYC/HZC	Up to GJAAA-2661509 (Running change on K3)	① 16600-Z1L-840	③ 16620-Z0Y-M41
HRX217K3HYC/HZC	GJAAA-2661510 and Up (Running change on K3)	② 16600-Z8D-840	④ 16620-Z8D-841

Simplified Auto-Choke System Check

If you're troubleshooting a hard starting problem on an auto-choke equipped GCV engine or lawn mower, follow these simple steps to confirm if the auto-choke (including the thermowax) is working properly. **This procedure applies to the latest "square" thermowax design only.**



1. With the engine cold (at room temperature), check the choke position - it should be fully closed.
2. Start the engine and allow it to run for 3 ~ 4 minutes and shut it off. The choke should be fully open.
3. Allow the engine to cool for 30 minutes and recheck the choke position. The choke should be fully closed.

The time required for the choke to re-close from normal operating temperature will vary from 15-30 minutes, depending on the ambient temperature. If the above test passes, rest assured the auto choke components are working properly and the cause of the starting problem is likely something else.

Don't forget to check the basics (air filter, spark plug, ignition coil gap, fuel condition, fuel delivery, compression, etc.) before replacing parts. Also, make sure you are familiar with the recently issued service reminder (available on EBiZ) advising customers to always run an auto-choke equipped lawn mower for at least 3 minutes when it's started cold. This will give the choke time to fully open, which will help prevent spark plug fouling and ensure easy restarts every time.

Carburetor and Auto-Choke Reassembly

HRR216K8, HRX217K3 with Square Auto-Choke Thermowax

If the carburetor is removed before the engine has completely cooled, the thermowax plunger may still be extended. The plunger will not retract without continuous force applied to it when the thermowax is allowed to cool after removal.

Installing the carburetor and choke linkage with the thermowax plunger even partially extended may result in improper assembly, causing binding and/or damage to the choke components.

The thermowax plunger **MUST** be fully retracted and the overall length of the thermowax must be no more than 23 mm before reassembly.



Plunger Extended - Not Ready to Install



Plunger Retracted - Ready to Install

Follow these steps to ensure the thermowax plunger is fully retracted before reinstalling the carburetor or choke components.

- A. Before removing the carburetor, allow the engine to cool long enough for the choke to completely close. This typically requires about 20 minutes. Following this step is all that's required to ensure the plunger is fully retracted.

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B. If the carburetor is removed before the engine has completely cooled and the thermowax plunger is not fully retracted, proceed to the following steps to fully retract the plunger prior to reassembly:

1. Position a pair of pliers on the thermowax assembly as shown below. Do not apply any force yet.



2. Place the thermowax under warm tap water (do not exceed 40° C or 104° F) and gently squeeze the pliers until the plunger is fully retracted. Be careful not to apply too much force or bend the thermowax plunger. Only 15 N (3.4 lb.) force is required to push the plunger in.



3. Measure the length of the thermowax. The overall length of the thermowax must be 23 mm or less during reassembly.



The thermowax, choke control, and carburetor can now be reinstalled. However, be sure the engine has cooled for at least 25-30 minutes before reassembly to prevent the thermowax from activating. The plunger must remain fully retracted during assembly.