

NWCG Equipment Technology Committee

National Fire Equipment System

Equipment Warning: 24-001

10/01/2024



To: Wildland Fire Community

From: Nathan Hesse, Chair, NWCG Equipment Technology Committee (ETC)

Subject: Stihl Chainsaw Toolless Fuel Cap Spill Prevention

Issue: Misaligned toolless fuel caps on Stihl chainsaws has led to recurring fuel spillage, fuel ignition, and burn injuries during wildland fire management operations.

Action: Check fuel cap to make sure it is properly aligned, seated, and sealed. Ensure that fuel is not leaking from any parts of the chainsaw prior to use. Refer to the operator manual for the manufacturer's recommended safety and operating instructions that are included with your chainsaw. Many chainsaw manufacturers provide online versions.

Stihl Manuals may be found here: <https://www.stihlusa.com/manuals/>.

This Safety Warning is intended to highlight the details and recommended procedures for the installation of a Stihl chainsaw toolless fuel cap and how to identify and correct a misaligned, damaged, or broken fuel cap to help prevent fuel spillage.

If the details and recommended procedures in this Safety Warning differ from the instructions for your specific model Stihl chainsaw toolless fuel cap, the instructions for your specific model take precedence.

The following figures outline Stihl's recommended procedures.

- Stihl's recommended procedures to correctly align, seat, and seal a Stihl model MS 462 chainsaw toolless fuel cap: Figures 1 and 2.
- Stihl's recommended procedures to identify and correct issues for a misaligned, damaged, or broken Stihl chainsaw toolless fuel cap: Figures 3 – 5.

Figure 1 A pictograph from a Stihl MS 462 Chainsaw Owner's Instruction Manual that shows the recommended procedure for the installation of a toolless fuel cap.

Installing the Toolless Fuel Cap

⚠ WARNING

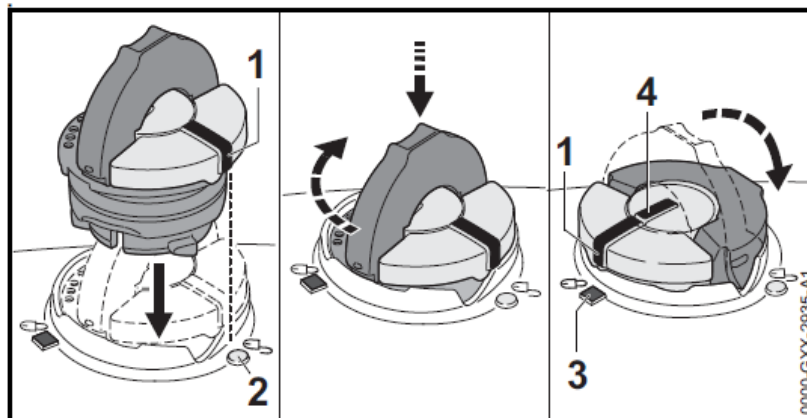


Figure 2 Instructional details from a Stihl MS 462 chain saw Owner's Instruction Manual for the recommended procedure for the installation of a toolless fuel cap.

- An improperly tightened fuel filler cap can loosen or come off and spill quantities of fuel. To reduce the risk of fuel spillage and fire from an improperly installed fuel cap, correctly position and tighten the cap in the fuel tank opening:
 - Raise the grip on the top of the cap until it is upright at a 90° angle. Insert the cap in the fuel tank opening with the exterior positioning mark (1) lined up with the "unlocked" symbol (2) on the fuel tank housing.
 - Using the grip, press the cap down firmly while turning it clockwise to the closed position (approximately 1/4 turn). In the closed position, the interior (4) and exterior (1) positioning marks will align with the "locked" symbol (3) on the fuel tank housing.
 - Fold the grip flush with the top of the cap and check for tightness.
 - If the grip does not lie completely flush with the cap or the detent on the grip does not fit in the corresponding recess in the tank opening, or if the cap is loose, the cap is not properly seated and you must repeat the above steps. Refer to the procedure below for returning the base of the cap to the proper starting position for installation.

Figure 3 A pictograph from a Stihl MS 462 chain saw Owner's Instruction Manual that shows a misaligned, damaged, or broken toolless fuel cap.

Misaligned, Damaged or Broken Cap

⚠ WARNING

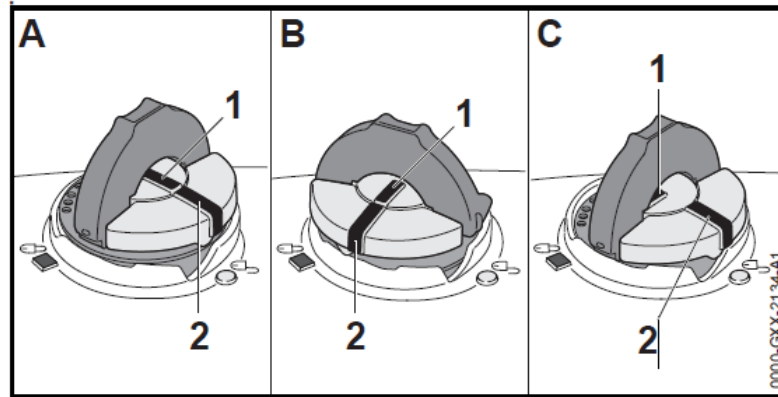
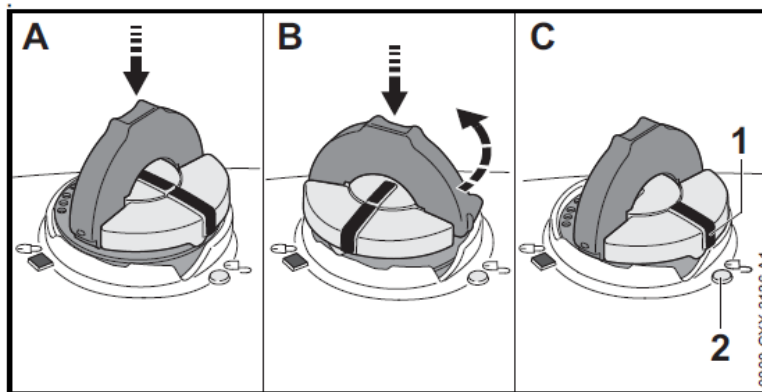


Figure 4 Instructional details from a Stihl MS 462 chainsaw Owner's Instruction Manual that shows how to correct a misaligned, damaged, or broken toolless fuel cap.

- If the cap does not drop fully into the fuel tank opening when the positioning marks (1, 2) line up, or if it does not tighten properly when turned, the base of the cap may be prematurely rotated in relation to the top. Such misalignment can result from handling, cleaning or an improper attempt at tightening.
 - Illustrations A and B: The base of the cap is prematurely rotated to the closed position and is not in the correct starting position for installation. The tank will not seal in this configuration. Note: in Illustrations A and B, the interior positioning marks (1) are in line with the exterior positioning marks (2).
 - Illustration C: The bottom of the cap is in the correct starting position for installation. Note: in Illustration C, the interior positioning mark (1) is under the grip and not in line with the outer positioning mark (2).



- To return the base of the cap to the proper starting position for installation:
 - Drop the cap into the fuel tank opening (A).
 - Turn the cap counter-clockwise with slight pressure until it drops fully into the fuel tank opening (approx. 1/4 turn) (B). This will rotate the base of the cap into the correct starting position for installation (C). The exterior positioning mark (1) on the cap will line up with the "unlocked" symbol on the fuel tank housing. The interior positioning mark (3) should be under the grip and not in line with the outer positioning mark (1).
 - Then, turn the cap clockwise, closing it normally.

Figure 5 Continuation of instructional details from a Stihl MS 462 chain saw Owner's Instruction Manual that shows how to correct a misaligned, damaged, or broken toolless fuel cap.

- If your fuel cap still does not tighten properly, it may be damaged or broken. Stop using the unit and take it to your authorized STIHL dealer for repair.

Background: Chainsaw “toolless” or “quarter turn” fuel caps have been occasionally misaligned since their introduction. Associated fuel spills and burn injuries have also occurred. Notable Wildland Fire Lessons Learned Center documents on this topic are listed below:

- [Rock Ridge Burn Injury 2014](#)
- [RX Fuel Cap Near Miss 2016](#)
- [Temple Fire Burn Injury 2017](#)

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