

## GMCMH Entry Door Latch Tutorial

This treatise is intended to share some of the knowledge I've gained about the GMC's entry door latch assembly. It includes instructions for unlatching the door when neither the outside nor the inside handle is effective.

First, a general description of the latch's operation (all numbers refer to the red on black labels I've added):

At the right of the photo, at 11, is the actual latch, those being the two jaws which grip the striker when the door is closed and latched. Those jaws, and their operating mechanism are part of a discrete assembly, which is everything to the right of, and including, the arm labeled 5. The jaws, 11, operate simultaneously when depressed by the striker. They have two "latched" positions, "Intermediate" and "Closed". When in either of those positions, they cannot open unless arm 5 is rotated clockwise.

Arm 5 can be rotated by either the outside or the inside handle. Pulling the outside handle causes the arm with the labels 9 and 10 to rotate counterclockwise. If the latch is not locked, the 9/10 arm pushes up on connecting rod 6, which results in arm 5 rotating clockwise, releasing the latch jaws. Alternately, the inside handle can rotate the 9/10 arm via a connecting rod which fits on pin 10. (The inside handle being attached to the cover over all this stuff, it obviously can't be shown.)

Now to the locking mechanism: Notice the slot at 9 on the 9/10 arm. In this photo, the latch is unlocked -- the pin of link 6 is seated in a "notch" of the slot so that movement of arm 9/10 results in movement of link 6. In the locked position, arm 8 moves link 6's pin into the curved slot at 9 so that movement of arm 9/10 does not cause movement of link 6. The movement of arm 8 is caused by motion of the vertical link with the 3 & 4 labels -- the threads at the top of that link are for the "Lock Button".

I posted to GMCNet earlier about the lockout prevention feature that's available to us. Here's how it works: When the jaws 11 close, arm 5 momentarily rotates clockwise very slightly. It's not visible in this photo, but link 3/4 passes through a hole in an arm bent to the rear of arm 5. So, when arm 5 rotates, it raises link 3/4, causing arm 8 to rotate CCW, moving link 6's pin into the curved slot at 9 -- unlocking the latch. If the lockout prevention feature is to be implemented, the locknut at 3 must be loosened so that the barrel nut 4 can be adjusted pretty precisely -- if it's too low, the latch cannot be locked; too high and the door can be latched with the lock ON. Be sure to re-tighten the locknut 3.

One more note: The reason this latch is exposed is because the coach's owner was locked out. He had to send a grandson in through a cockpit window to open a large window so he could get inside himself. He then had to remove the lower door panel and work behind the metal top

trim to unlock the door. Remember that the metal panel CANNOT be removed with the door closed -- there are 4 each 1/4"-20 screws through that panel securing the latch mechanism into the concealed surface of the door. You DO NOT want to allow those 4 screws to become loose! That's all that was keeping this owner out of the coach. Locktite them and check their security frequently.

Now, a fix, in case you disregard the previous paragraph: Notice the machinist's scale at the upper right of the photo: Just above it, at 1, is a nutsert for one of the 5 exposed screws holding the metal trim panel. That is an always-visible reference point which one could use as a guide for emergency opening of the latch. Notice hole 2 in arm 5. It's not used for anything. So, if one drilled a hole through the metal trim panel directly over (or slightly to the right of) hole 2, it would be possible to rotate arm 5 CW, unlatching the door! The best I could measure, a 1/8" (or larger) hole 7/8" below the nutsert at 1 and 1-1/8" to its left, would suffice. A nail, punch, screwdriver, etc., could be inserted to pry the lever to the right. It might even be a good idea to use a 3/4"-1" hole saw at that position to create an emergency access which could be unobtrusively concealed with a hole cover. At any rate, there's really no need for a large hole to be cut to unlatch the door -- if moving arm 5 won't do it, you've got a BIG problem.

If you ever see this scene, I strongly suggest that you remove the entire assembly, clean all the old grease out, and re-grease and oil the mechanism. My door, which always latched nicely, after that treatment now latches superbly!

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