

Pre-Amble – WHY IT HAPPENS:

Automatic Transmission - Stuck in Neutral

C6 Corvette automatic transmission that gets stuck in neutral. This affects all 2005, 2006 and 2007 models equipped with an automatic transmission, up to VIN 75105780. It may also affect later models as well.

Quick shifting from PARK to DRIVE after starting the vehicle can bind the shift lock control. This happens because the ECM requires at least a few seconds to release the Transmission Shift Control Solenoid before the driver should move the shift lever.

Prior to the introduction of Keyless Access, the driver turned the ignition key and then moved to the shift lever - this gave the ECM enough time to send and receive signals.

With Easy Key, if the driver presses the START button and then immediately shifts the transmission shift lever, it is possible to beat the shift lock control signal to the ECM.

Cam Lock Normal Condition - Cam Lock Released Properly

When this quick shifting occurs - the Cam Lock may not release - which makes the shifter very hard to move, and possibly moving without actually shifting gears. If the shift lever is placed into gear prior to the Shift Lock Control Solenoid deactivating the park pawl, the shift assembly can become jammed leaving the vehicle stuck in neutral.

An updated shifter assembly with improved tolerances will begin showing up on vehicles starting with VIN number 75405780. This revised shift assembly will have the same part number as the current shifter assembly.

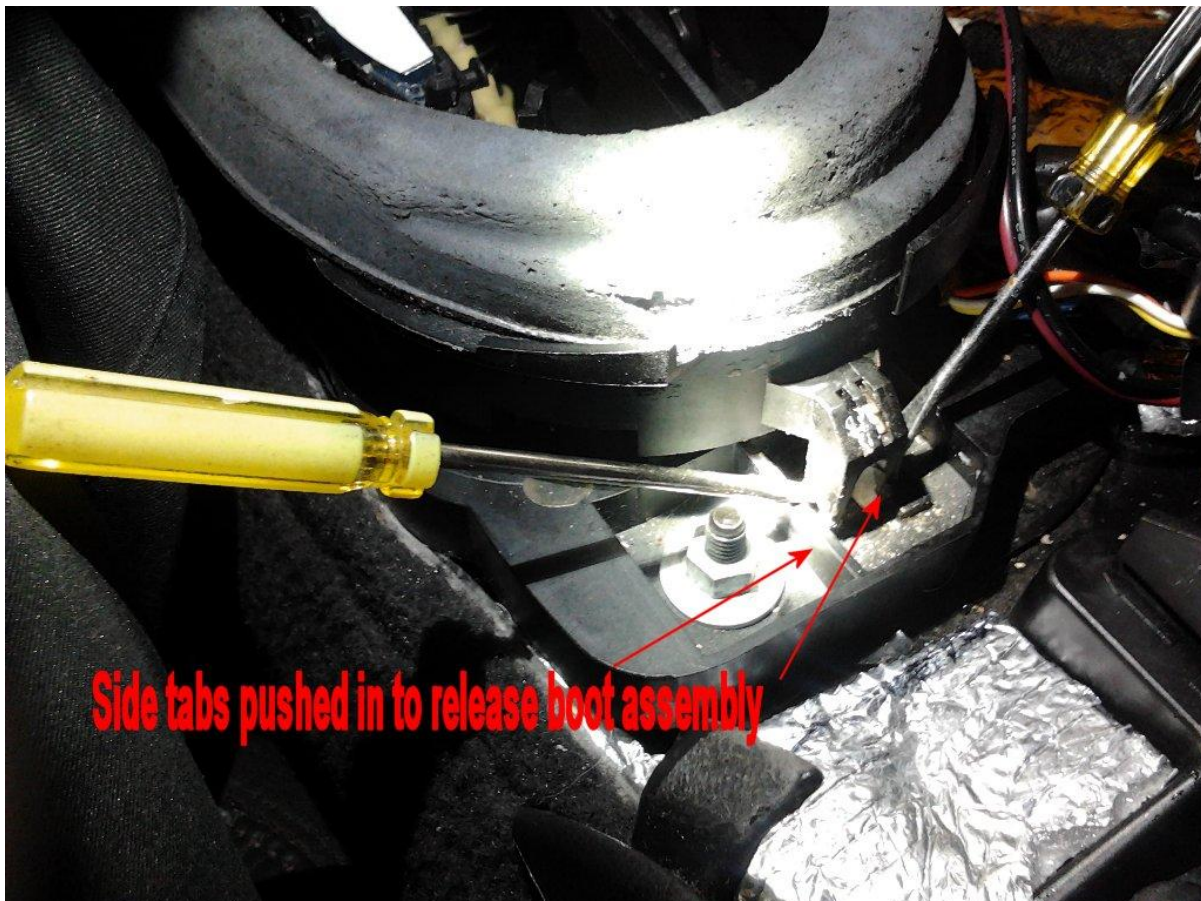
How to Release Auto Shifter Stuck in Park or Unable to Get back to Park

Tools required: Small socket set – ¼ Inch drive is sufficient including

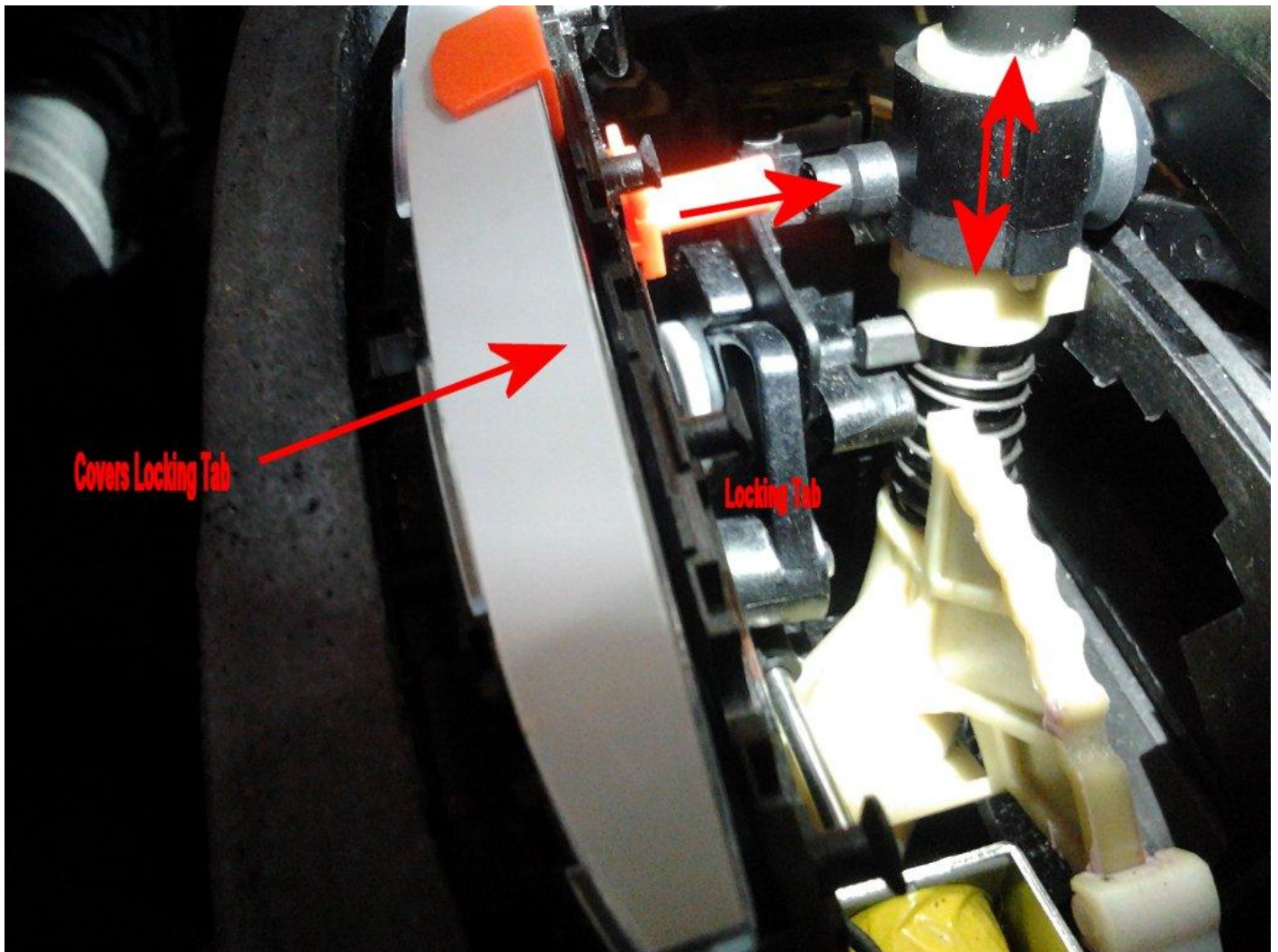
7mm socket, 10 mm socket and 2 small flat screwdrivers

- 1) The Radio Surround console will have to be removed in order to access the auto shifter lock out pawl (tab). The instructions for removing the console are not included in this PDF, but I can provide that PDF if requested by email (lv2tour@gmail.com)

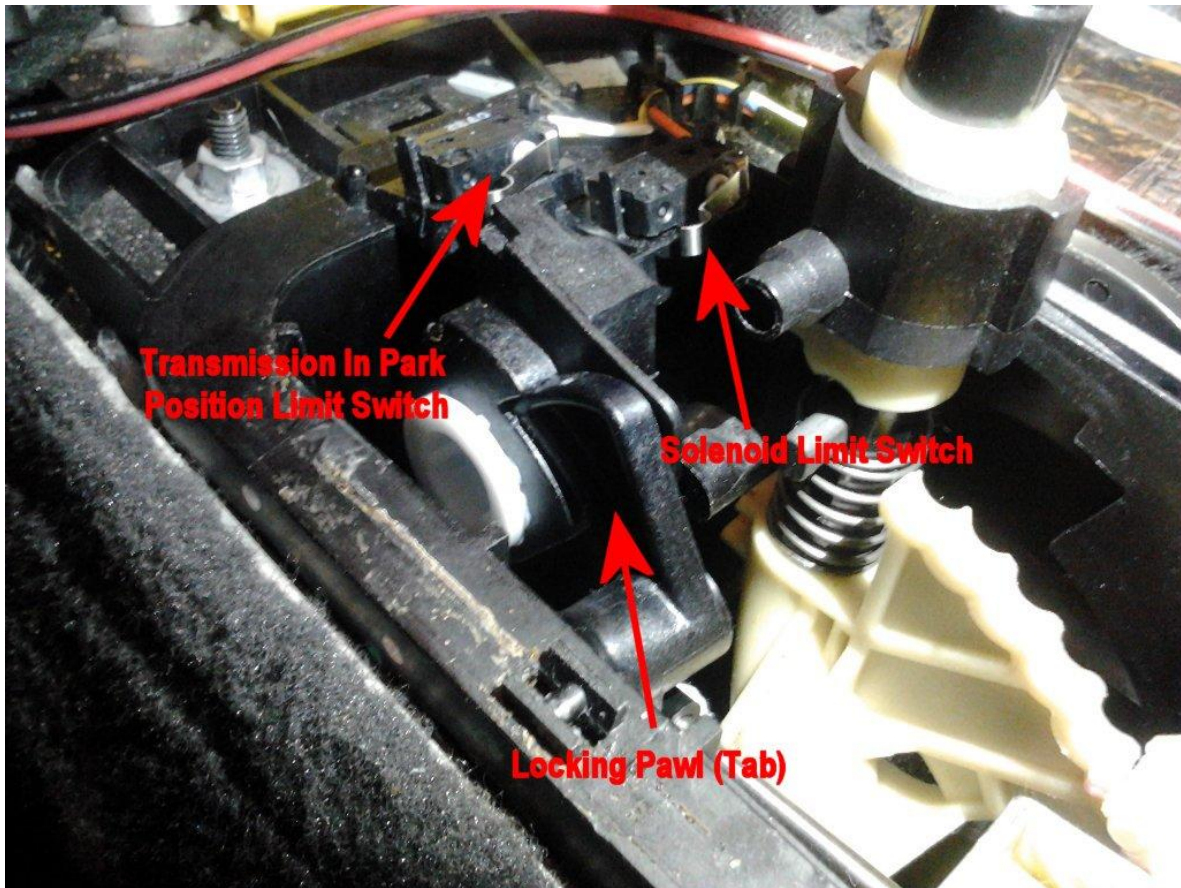
- 2) Once the radio surround console has been removed, then the shifter leather boot will have to be removed or lifted up from the bottom of the shifter assembly. In order to get the leather boot off, the shifter position indicator cap (P-R-N-D-S) will have to be removed. This can be done by gently prying up on one end with a small flat screwdriver as the cap is only snapped in place.
- 3) Once the shifter indicator cap is removed, then the leather boot can be lifted up. It is held in place on the bottom by elastic sewn inside the leather, which was covering the foam material /plastic attached to the bolted assembly. The leather boot can be lifted as far up as possible, and out of the way, without removing the shifter knob. If the shifter knob wants to be removed, I have instructions for that as well.
- 4) The top plastic/rubber part of the assembly will now need to be removed to uncover the locking pawl (tab) which is found directly beneath the bottom section of the shifter indicator.
- 5) To remove this top section, which is held in place by (2) plastic tabs that fit in a square hole. There is one on the dash side (top) and one on the console side (bottom).



- 6) As per the above picture, with 2 small flat head screwdrivers, start with the bottom, and wedge a screwdriver on each side of the locking tab, prying the tab inwards until the tabs release and the section can be lifted up and out. Use the same technique for the top tab. The above picture only shows the bottom locking tab location.
- 7) With the tabs freed up, lift up the top plastic assembly. This will separate the (red) shift position pointer from the shifter position coupler (black piece). This will be returned to the proper position during re-assembly. The picture shows the red pointer and the black coupling that the pointer fits into, located on the shifter shaft over the white plastic.



- 8) With the removal of the top section, all the parts that incorporate the shifter mechanism are viewable.



The above pics have: the shifter shaft (with black coupling), a solenoid contact limit switch in front of the shifter. This contact limit switch is made when the shifter is in Park. The contact has to be closed in order for the signal to be sent to energize the Transmission Lock Out Solenoid.



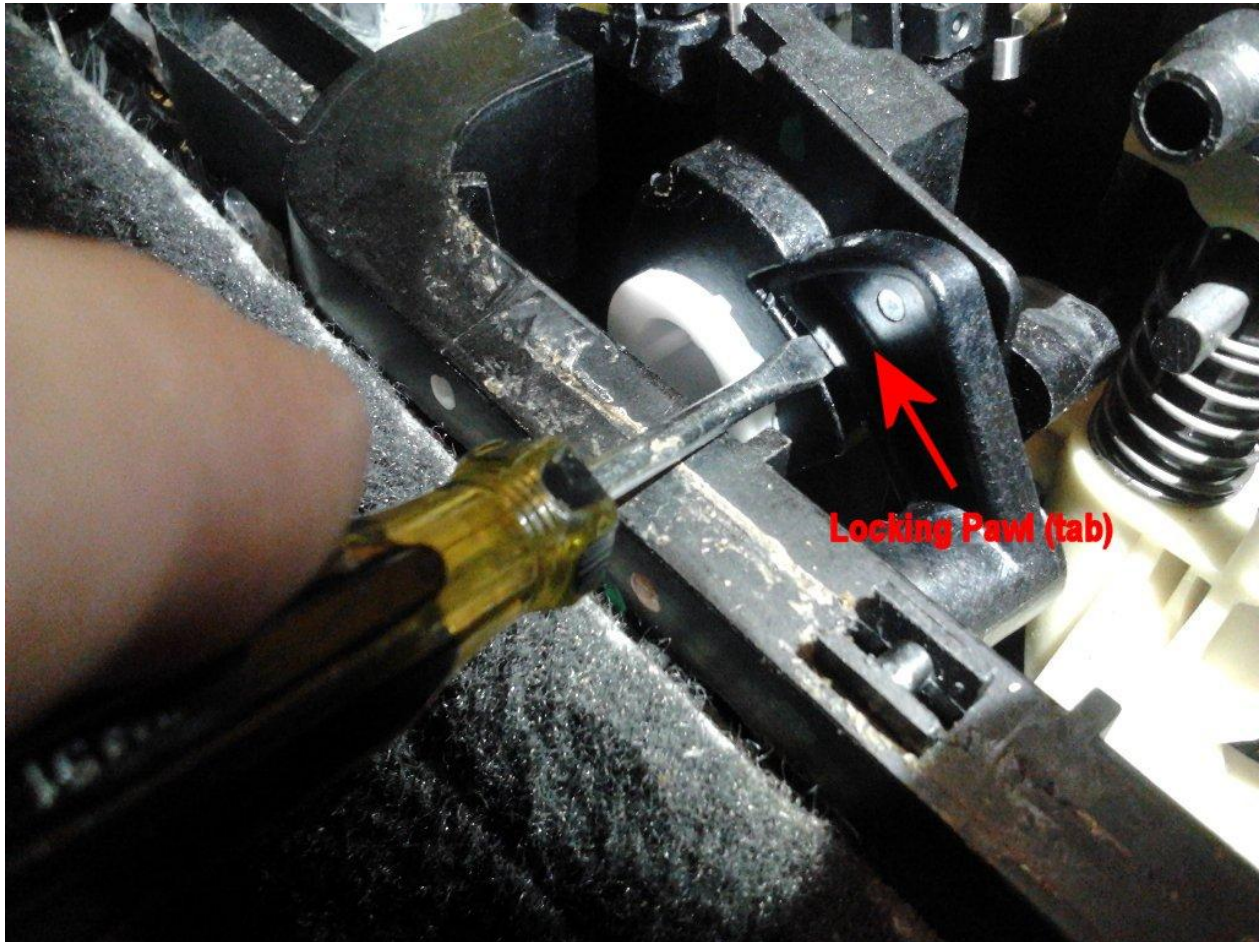
- 9) If the shifter contact limit switch is open, and the Transmission lock out solenoid is not energized, then the shifter will be very stiff to shift out of Park, and will likely not be able to be moved past Drive. For sure, it will be extremely difficult to move back into Park, if not impossible. If the TLO solenoid is not energized, the rod will not move forward to pivot and release the locking pawl (tab).
- 10) The picture below shows a close-up of the Transmission Lock Out Solenoid and rod. When the solenoid is properly energized, it moves the rod forward moving the pivot to release the locking pawl so the shifter button can be depressed and easily moved from Park into gear.



11) The other limit switch located just in front of the locking pawl (tab), is the Transmission In Park limit switch. This must be made for the car to be able to start. The car can also be started if the shifter position is in Neutral.



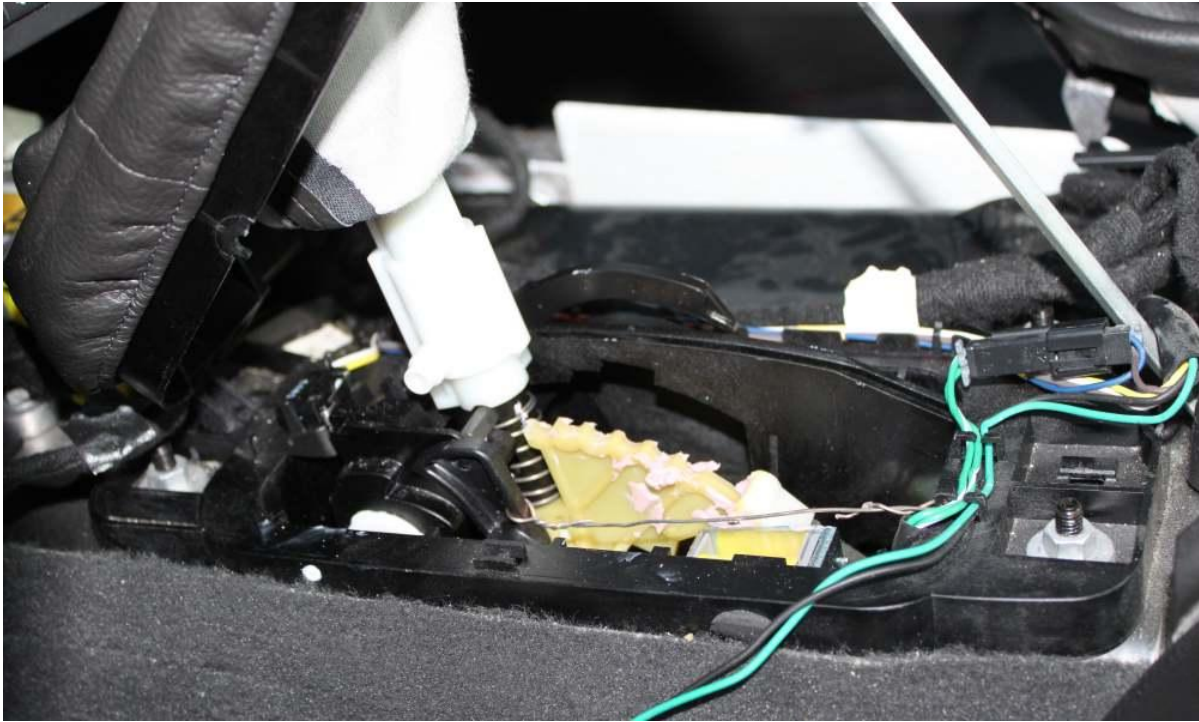
12) Assuming that your transmission is out of Park and stuck somewhere around Drive or Neutral. In order to release the Locking Pawl (tab), a small flat screwdriver can be inserted between the locking pawl and the catch, and pried up to get it released. Once this tab is released, then the shifter finger button can be pushed in, and easily moved into the Park position.



13) The locking pawl (tab) can also be pried and released if the shifter is stuck in Park.

14) Most often, getting the shifter stuck will not happen if the owner waits 5-10 seconds after the car is started before he or she attempts to shift out of Park and into gear. If after waiting for 5-10 seconds and the shifter is still hard to move, then possibly the Transmission Lock Out Solenoid is failed, or not getting any electricity (wire or fuse)

15) In the case of #14, then the locking pawl (tab) can be released, and tied back so it no longer requires the Transmission Lock Out Solenoid to release the shifter, thus eliminating hard shifting or a stuck shifter. See pic to see how to tie back the locking pawl (tab).



16) With the locking pawl tied back and taken out of the circuit, there will be no more need to worry about the shifter being hard to shift or stuck in Park.

17) Re-installing components is basically reversing the steps. The most important step will be to assure that the shifter pointer is reinserted in the shifter shaft holder. The holder moves up and can be turned in order to get the pointing tab rod back in the cylinder. Once that is accomplished, then the top plastic/rubber boot assembly can be pushed and locked into their holders.

18) Once the top portion of the assembly is back in place, then the leather boot can be fitted back in place, and the shifter position plate snapped back into place on top of the leather.

19) The radio surround console can be installed, and the work completed.