



TWM Performance Short Shifter Installation Manual 2006 And Up Chevrolet HHR (non SS)

Please Note: It is preferable to park on a flat surface, as you may have to engage and disengage the hand brake and shift from gears to neutral. If you cannot do so and are obliged to install the short shifter on a slightly inclined surface, place wooden blocks in front or behind the wheels to prevent the car from moving while you're working.

Estimated Installation Time: 120 minutes

Tools required:

- Flat head screw drivers (large and small)
- Needle nose pliers
- Ratchet and extension
- 13mm socket and 7 mm socket (or 7mm nut driver)
- 6mm or ¼" Punch
- Hammer
- Dremel tool with a multi-purpose cutting bit (strongly recommended)
- Eye protection – safety glasses
- Work table
- Bench vise
- White lithium based grease





1. Remove the stock shift knob by rotating the black ring at the top of the boot about $\frac{1}{4}$ to $\frac{1}{2}$ turn while pulling down. Lift up on the shift knob to remove from the shaft. This requires some effort as it is a friction fit and there are small white tabs at the bottom of the shift knob that rest in a groove. A small screwdriver may be used to assist in releasing the shift knob while pulling it up. Pull up to free the tabs and remove the shift knob.



The image to the left shows the shift knob removed from the shifter shaft.



2. Remove the shift boot by placing your fingers under the rear lip and pulling up to free it. Now pull the boot ring back slightly to completely release the shift boot base and remove it from the car. Put in a safe place for re-installation later.



3. Remove the electric window control cover by placing your fingers under the rear of the silver cover and pushing up as shown to the left. While doing this, use a small screwdriver to gently push the retainer clip down to release the two catches for the rear of the cover.

There are also two catches holding the top of the colored plate, one on each corner. Place a small pry tool such as a screwdriver between the colored plate and the black center console cover and gently pry apart.



4. Remove the top of the center console cover by removing the two screws on each top corner of the cover with a 7mm socket and ratchet with an extension or a 7mm nut driver as pictured.



5. Place your fingers under the rear of the cover and pull up to free the two rear latches. Now pull the cover back to release it as shown to the left.



5. Continued...

Lift the cover and disconnect the power window connector as shown to the left. Also disconnect the wiring harness retainer clip from the side of the console box to clear room to remove the shift assembly from the car later. Remove the cover from the car and put in a safe place for re-installation later.



5. Continued...

Pictured to the left is the shift assembly with the top of the center console cover removed.



6. Some models may have one or more wiring harnesses clipped to the shift assembly. If your car does not have any wiring clipped to the assembly proceed to the next step.

Remove any plastic clips holding any wiring harnesses to the shift assembly.



7. Put the shifter in 4th gear at this point. Disconnect the white and grey shifter cables attached to the bottom of the stock shifter and to the white plastic side arm. To do so, use a small flat head screwdriver to pry on the front of the grey cap to pop it open. Repeat for the white cap on the driver's side of the assembly. The caps will not open all the way, they should just click open slightly relieving tension on the cable allowing it to slide freely on the yellow threaded portion of the cable as pictured below.



7. Continued...

Pictured to the left is the grey cap popped open to allow the yellow threaded shifter cable to slide freely inside it.



8. Disconnect the shifter cables from their anchor points on the shift assembly (shown to the left with arrows) by lifting straight up on the white plastic frame holding the cable to the assembly. Needle nose pliers may be used to squeeze the tabs on the white plastic frame to allow them to slide out of the anchor points more easily.

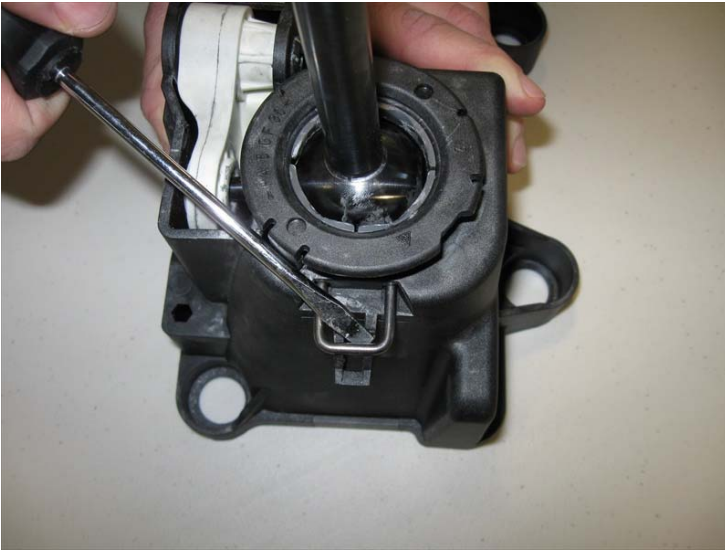
Remove the 4 bolts holding the shift assembly to the floor pan using a 13 mm socket and a ratchet with an extension.



9. With the shifter cables free from the shift assembly, it can now be removed from the car. This may be simplified by tilting the assembly slightly as pictured to the left. The yellow threaded shifter cables pictured in the previous step should slide out of the white and grey plastic cable housings to allow the assembly to be removed from the car. Take the shift assembly to a solid work bench or table for disassembly.



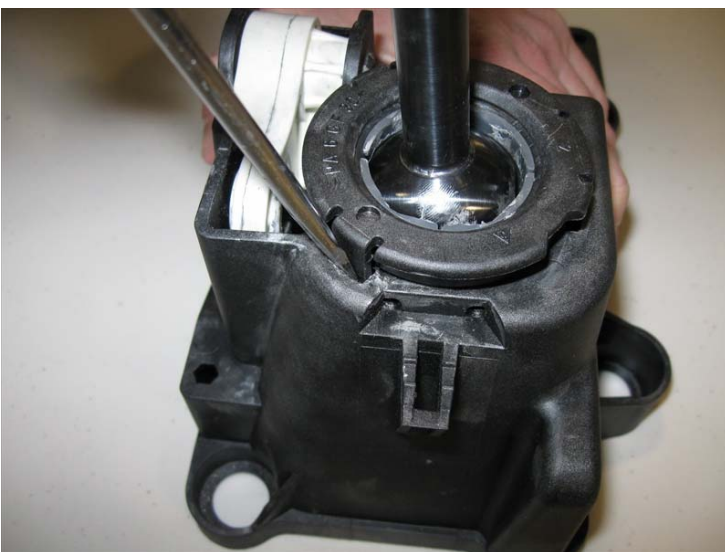
10. With the shift assembly out of the car, turn it on its side to have access to the plastic shifter cable housing still attached to the bottom of the shifter. The cable housing can be easily removed by prying it downward as shown to the left.



11. Put the shift assembly right side up flat on the work table. Use a flat head screw driver to remove the steel "U" shaped clip at the back of the assembly, it will slide out by prying as shown.



12. Rotate the black plastic cap on the shift assembly counter clockwise until it stops. This will allow it to be removed in the next step as the slots for the tabs on the cap are wider when it is rotated counter clockwise.



13. This step is more easily accomplished with the aid of an assistant. Use a small flat head screwdriver as shown to the left to depress one of the 2 small tabs on the cap. There are 3 tabs, one of which is larger than the other 2. Begin by depressing one of the small tabs first. When the tab is depressed, it can be pried upward so the bottom barbed section slides up through the slot in the shift assembly. When the barbed section is almost through the slot, the screwdriver can be used to raise it more as pictured on the next page.

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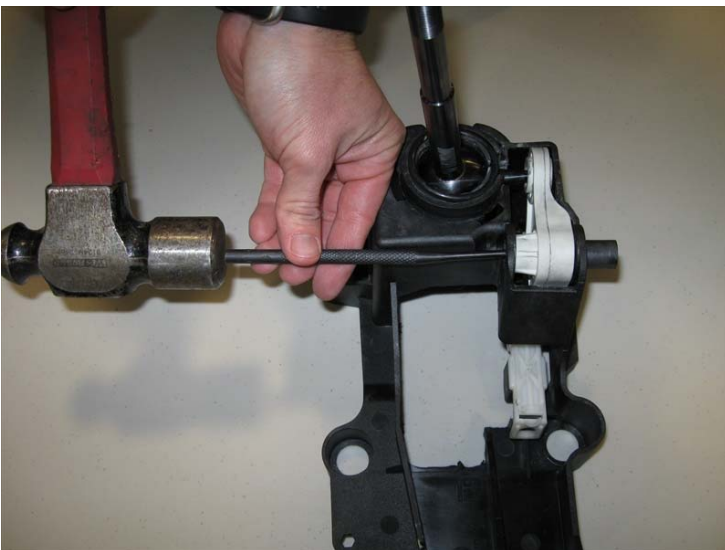


13. Continued...

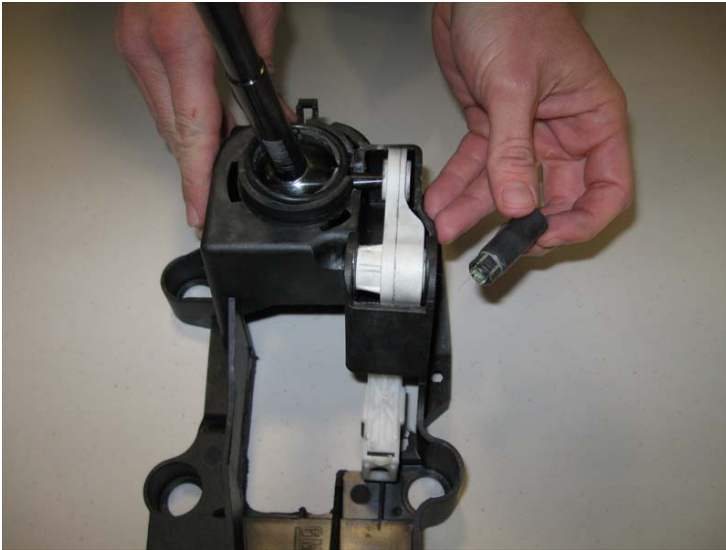
Repeat for the other small tab. Once the 2 small tabs are free, the larger one will be easy to free from the shift assembly.



14. Remove the black plastic cap from the assembly.



15. Use a punch or a screwdriver and a hammer as shown to punch the plastic pivot pin out of the shift assembly while an assistant holds the assembly in place. Use caution not to damage the plastic pivot pin.



16. Remove the plastic pivot pin from the assembly to free up the plastic side arm at its pivot point.



17. Lift the shifter straight up and out of the shift assembly. The plastic side arm will need to be raised slightly as well to free the shifter from the assembly.



18. Pop the small plastic cup off of the shifter side arm as shown.



19. Remove the o-ring from the top of the grey plastic pivot cup surrounding the shifter main pivot ball.



20. Remove the grey plastic pivot cup surrounding the shifter main pivot ball as shown. Use caution as this step requires moderate force.



21. Pictured to the left: The components which have been removed from the stock shifter which are required for installation of the TWM short shifter. Pictured is the shift assembly, rubber o-ring, large grey plastic pivot cup, grey cap cable housing, plastic pivot pin, plastic shift assembly cap, and the small white side arm pivot cup.

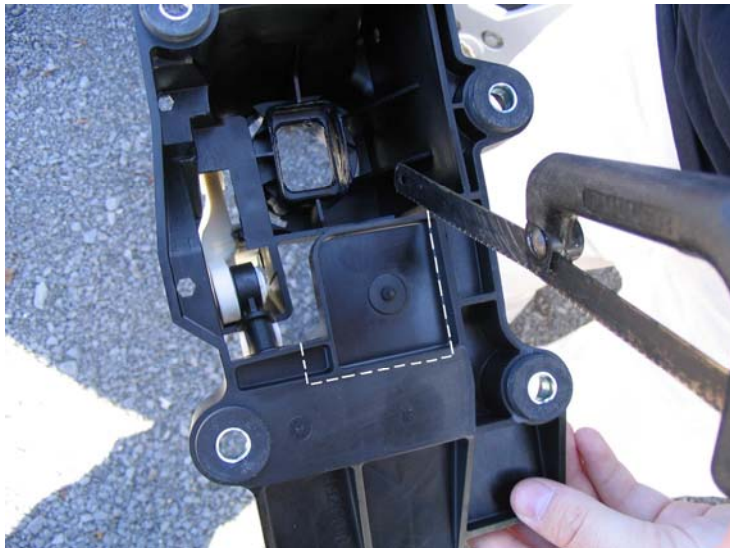


22. Turn the shift assembly upside down. Use a small flat head screwdriver to push the steel bushing sleeves out through the top of the assembly and remove the rubber bushings from below as shown to the left. Having these bushings removed will help in the next step as the shift assembly must be secured in a bench vise. The bushings that are removed in this step will not be re-used for the install as they are replaced with aluminum bushings supplied by TWM. They can be set aside for now but should not be discarded.



23. In order to clear room for the TWM short shifter, the stock plastic shifter assembly needs to be modified as per the illustrations in this step. Secure the shift assembly in a bench vise to modify it. Always wear eye protection and use extreme caution when working with power tools.

The cut-out can be made with a small saw or a Dremel-type tool. TWM strongly recommends a Dremel tool with the type of cutting tool shown to the left.



23. Continued...

A saw can be substituted if a Dremel tool is not available. Also, be sure to remove the raised tab in the middle (shown in the circle in the picture below).



The small tab on the top side of the shift assembly which must be trimmed is shown to the left.



To the left is the shift assembly seen from below with the cutout completed.

Clean the plastic shavings off of the assembly with a shop towel or blow the assembly clean with compressed air.



24. Apply white lithium based grease to the main pivot ball, side arm pivot ball, and bottom pivot ball of the TWM short shifter.



25. Re-assemble the shift assembly by reversing steps 10 to 20.

The correct order for re-assembly is:

- install large grey pivot cup on to shifter
- install o-ring around top of grey pivot cup
- install small white pivot cup on side arm
- place shifter in assembly
- install pivot pin through white side arm
- install black plastic cap, rotate clockwise
- install steel "U" shaped clip
- turn assembly upside down and pop the cable housing on to the bottom pivot ball of the short shifter.



26. With the shift assembly re-assembled, bring it back to the car for installation. Install the aluminum base bushings included with the short shifter on to the studs beneath the shift assembly with the smaller diameter step facing up. Install a bushing on each stud beneath each corner of the shift assembly and lower the shift assembly on to them, moving the shifter cables out of the way. The yellow threaded portion of the shifter cables should be slid in to the cable housings attached to the shifter. Ensure that the assembly is seated properly with each smaller diameter step on the bushing inserted in the holes at each corner.



27. With the shift assembly properly seated on the aluminum bushings, place one of the stainless steel base bushing washers on to each stud protruding through the assembly, on top of the shift assembly.



28. Secure the shift assembly back in place with the stock nuts and a 13mm socket and ratchet. Be sure the step on the bushings at each corner of the assembly are in the holes in the assembly properly before tightening it down.

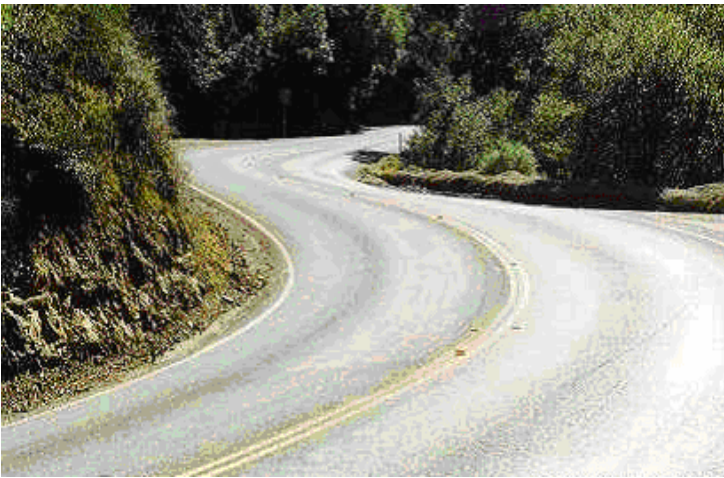


29. Re-connect the shift cables that were removed in step 8 to the shift assembly anchor points. Re-secure the shift cables that were disconnected in step 7 to the bottom of the short shifter and the white plastic side arm by closing the white and grey plastic caps on the cable housing. The cables may need to be adjusted to achieve the correct range of motion and desired shifter orientation.

Re-install the center console cover, power window control cover, and shift boot by reversing steps 2 to 6.



30. Refer to the TWM shift knob install manual to install the supplied TWM shift knob on to the short shifter shaft.



31. Thank you for choosing TWM Performance, enjoy the drive!

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- Products that have been modified, incorrectly installed or misused.
- Regular day to day wear on vehicle
- Installation costs and vehicle down time

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