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SHIFTWORKS C350 Shifter Conversion Kit

	1968-72 Universal/Impala	1968-70 Chevelle/El Camino
TH350 & TH400	C350 C350-CS C350-R C350-R-CS C350-RVB C350-RVB-CS	C350-2 C350-2-CS C350-2R C350-2R-CS C350-2RVB C350-2RVB-CS
700-R4, 4L60E, 4L70E	SC224 SC224-CS SC224-R SC224-R-CS SC224-RVB SC224-RVB-CS	SC2242 SC2242-CS SC2242-R SC2242-R-CS SC2242-RVB SC-2242-RVB-CS

4L80E & 4L85E	SC225	SC2252
	SC225-CS	SC2252-CS
	SC225-R	SC2252-R
	SC225-R-CS	SC2252-R-CS
	SC225-RVB	SC2252-RVB
	SC225-RVB-CS	SC2252-RVB-CS
6L80E, 6L90E, 8L90E	SC261 SC261-CS	SC2612 SC2612-CS

Conversion Kits			
	1971-72 Chevelle/ 1970-72 Monte Carlo	1968-69 Camaro	1970-72 Camaro

TH350 & TH400	C350-3	C350-4	C350-5
	C350-3-CS	C350-4-CS	C350-5-CS
	C350-3R	C350-4R	C350-5R
	C350-3R-CS	C350-4R-CS	C350-5R-CS
	C350-3RVB	C350-4RVB	C350-5RVB
	C350-3RVB-CS	C350-4RVB-CS	C350-5RVB-CS
700-R4, 4L60E, 4L70E	SC2243	SC2244	SC2245
	SC2243-CS	SC2244-CS	SC2245-CS
	SC2243-R	SC2244-R	SC2245-R
	SC2243-R-CS	SC2244-R-CS	SC2245-R-CS
	SC2243-RVB	SC2244-RVB	SC2245-RVB
	SC2243-RVB-CS	SC2244-RVB-CS	SC2245-RVB-CS
4L80E & 4L85E	SC2253	SC2254	SC2255
	SC2253-CS	SC2254-CS	SC2255-CS
	SC2253-R	SC2254-R	SC2255-R
	SC2253-R-CS	SC2254-R-CS	SC2255-R-CS
	SC2253-RVB	SC2254-RVB	SC2255-RVB
	SC2253-RVB-CS	SC2254-RVB-CS	SC2255-RVB-CS

6L80E,	SC2613	SC2614	SC2615
6L90E,	SC2613-CS	SC2614-CS	SC2615-CS
8L90E			

Shifter Packages				
	1968-69 Camaro	1970-72 Camaro	1968-70 Chevelle/ El Camino	1971-72 Chevelle/ 1970-72 Monte Carlo
TH350	SW1001	SW1002	SW1003	SW1004
&	SW1001-R	SW1002-R	SW1003-R	SW1004-R
TH400	SW1001-RVB	SW1002-RVB	SW1003-RVB	SW1004-RVB
700-R4,	SW1011	SW1012	SW1013	SW1014
4L60E,	SW1011-R	SW1012-R	SW1013-R	SW1014-R
4L70E	SW1011-RVB	SW1012-RVB	SW1013-RVB	SW1014-RVB
4L80E	SW1021	SW1022	SW1023	SW1024
&	SW1021-R	SW1022-R	SW1023-R	SW1024-R
4L85E	SW1021-RVB	SW1022-RVB	SW1023-RVB	SW1024-RVB

6L80E,				SW1028
6L90E,	SW1025	SW1026	SW1027	
8L90E				

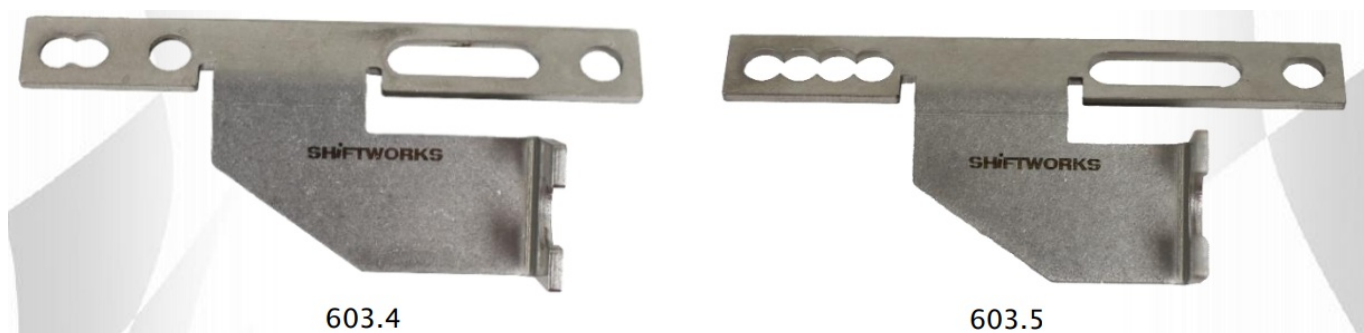
Parts Overview

Shift Control Levers



Transmission Cable Brackets:

3 and 4 Speed Pan Brackets



6 and 8 Speed Case Bracket



Detents:

3 Speed Detents:



4 Speed Detents:



6 and 8 Speed Detent:



Hardware Overview:

This is an overview of the hardware items you can expect to find in your Shiftworks shifter conversion kit.



Cable Clip



Cable Adjuster
Pin



M10x1.5 Hex
Nut



1/4-20 Cap
Screw



Small Washer



Lock Washer



Sheet Metal
Screw



Cotter Pin



**M8x1.25 Hex
Bolt**



**Cable Eyelet
Retainer**

Required Tools for Installation

This is a list of typical tools required to complete this job. Additional tools may be required depending on your application.

- Metric socket set
- SAE socket set
- Standard wrench set
- Pliers
- Drill
- 1/4" Drill Bit
- Phillips & Flat-head screwdrivers

Preliminary steps

Before installing and adjusting your shifter assembly, follow these steps to ensure you have the best adjustment for your shifter and installation process.

Step 1: Chock the wheels and disconnect the vehicle's battery

Safety is always the most important step. When installing this kit, it is important to properly chock the heels to ensure the vehicle will not roll or move while clicking through the transmission gears. Additionally, disconnect the vehicle's battery before continuing.



Step 2: Adjust both bulkheads on the shifter cable to be in the center of their threads.

Setting your Shiftworks cable bulkhead to the center of its threads will help later with your cable adjustment. Simply turn the bulkheads until they are in the middle of the threads. These bulkheads are used for fine adjustments.



Step 3: Remove the center console to gain access to your shifter assembly

Remove the center console and surrounding trim to gain access to your shifter assembly. Refer to the factory service manual for details on how to properly remove the

console.

* If you have purchased and are using a Shiftworks horseshoe shifter, skip to step 6.

Step 4: Removing the Factory Detent

The current detent will need to be removed. It will be fastened to the shifter with either two bolts or one bolt and a rivet. If two bolts are present, simply unbolt the factory detent and remove the fit from the assembly. If one bolt and a rivet are present, remove the bolt first. Then, using a drill and a ¼" drill bit, drill out the factory rivet holding the original detent onto the shifter base and remove it from the assembly.



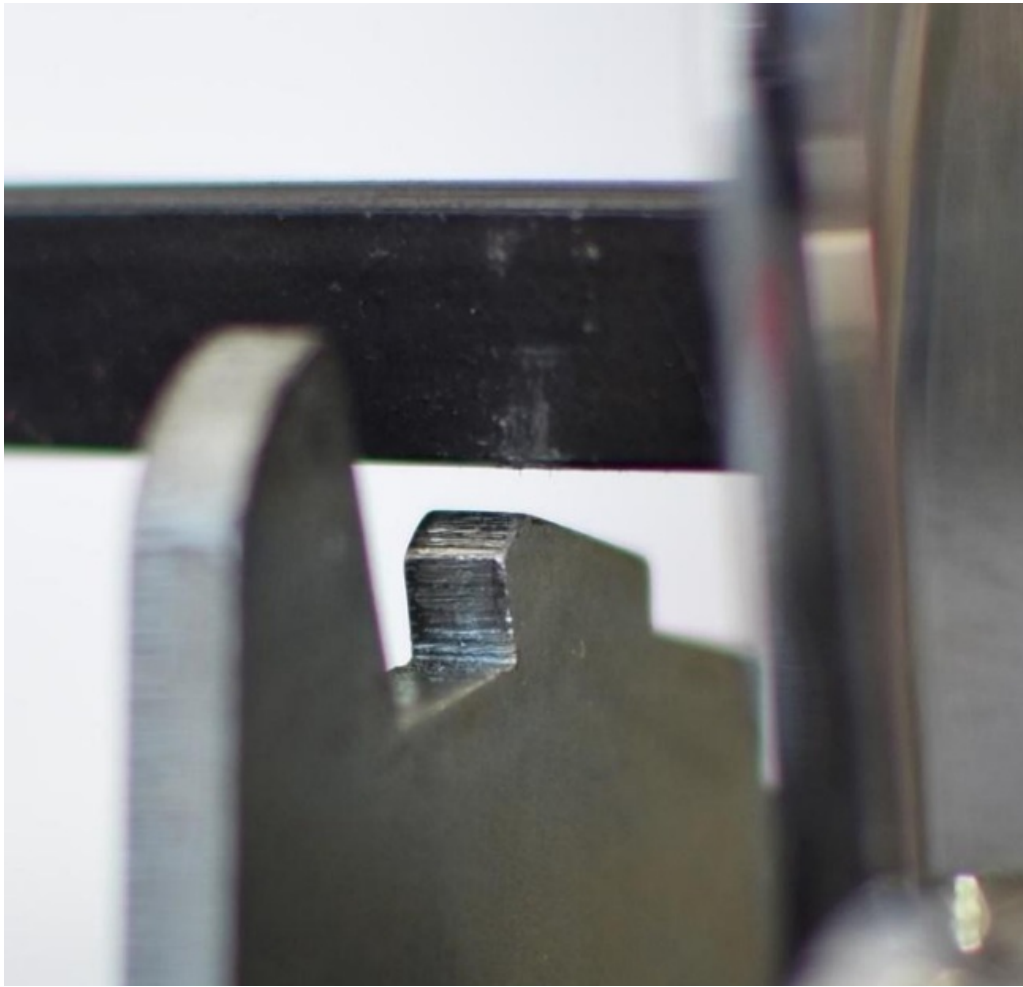
Step 5: Installing and adjusting the new Shiftworks Detent

Your new Shiftworks detent will be installed using the following provided hardware.

- (2) ¼ Cap Screws
- (2) Lock washers
- (1) Small Washer



Loosely install the front and rear hardware to hold the gate in place. Then adjust the front (park end) of the gate as high as the slot will allow while still allowing the handle cross bar to be able to clear the raised stop between park and reverse. Once adjusted, tighten the front bolt first to hold the adjustment, then finally tighten the rear bolt. Before proceeding further, check that the shifter will still move through its entire range of motion and properly engage with all gear positions and stops.



Step 6: Install Shift Control Lever

In your Shiftworks conversion kit, you will receive a new shift control lever that attaches to the transmission's select shaft. The selected shaft length can vary between short and long ranges depending on the transmission. Typically, the TH350, TH400, 200-4R, and 700R4 use a short-range select shaft. The 4LE series transmissions can vary between a short-range and a long-range shaft, while 6-speed and 8-speed transmissions generally feature a short-range shaft.



Long Range Select Shaft



Short Range Select Shaft

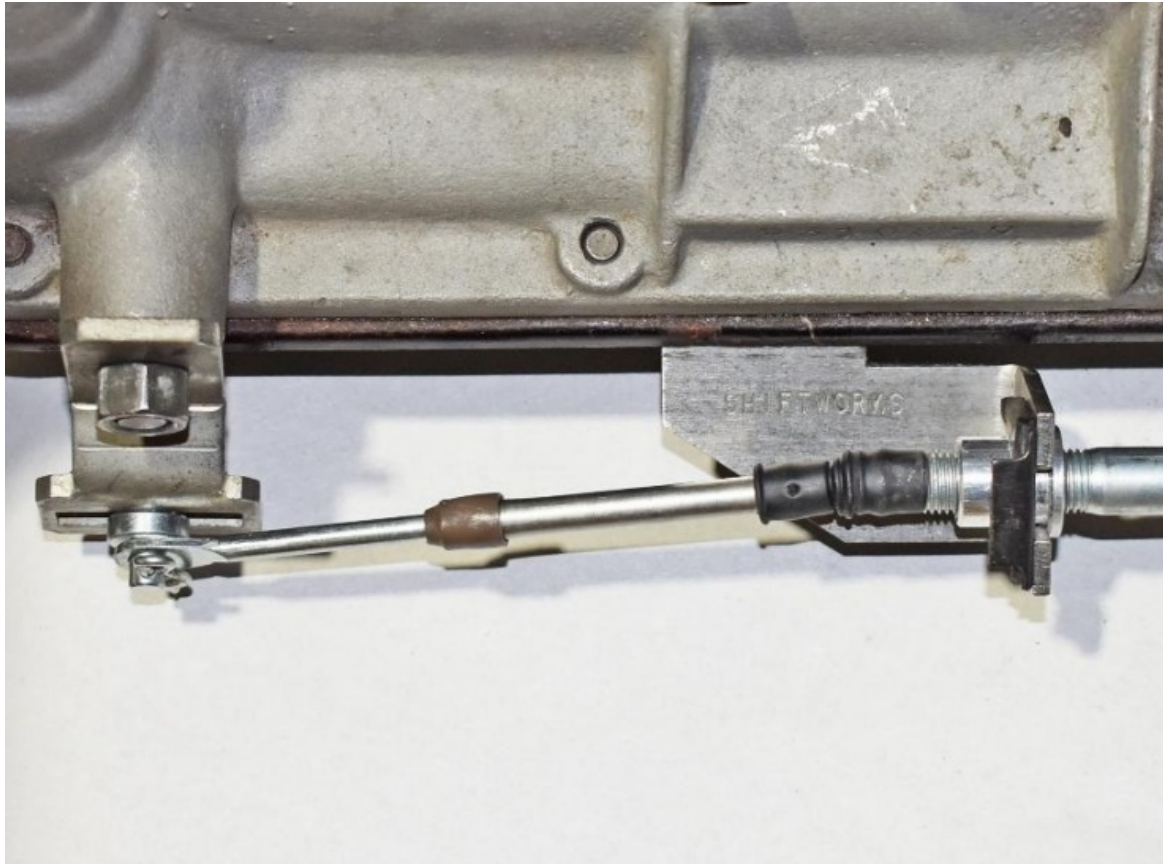
To remedy this, some of our kits come with an additional shift control lever. Shift control levers are always installed with the “Shiftworks” logo facing outward, so that it is away from the transmission. Install your Shiftworks shift control lever by matching the cutouts on the shaft to the opening of the other lever. Then install and tighten the M10 x 1.5 nut



Correct – Long Shaft



Correct – Short Shaft



Incorrect Applications

Making sure you install the range select shaft and the shift cable correctly is important to the functionality of your shift linkage as well as the longevity of the components. Be sure to install correctly, and please contact Shiftworks customer service at [585-924-2700](tel:585-924-2700) or email support@shiftworks.com with any questions.

incorrect

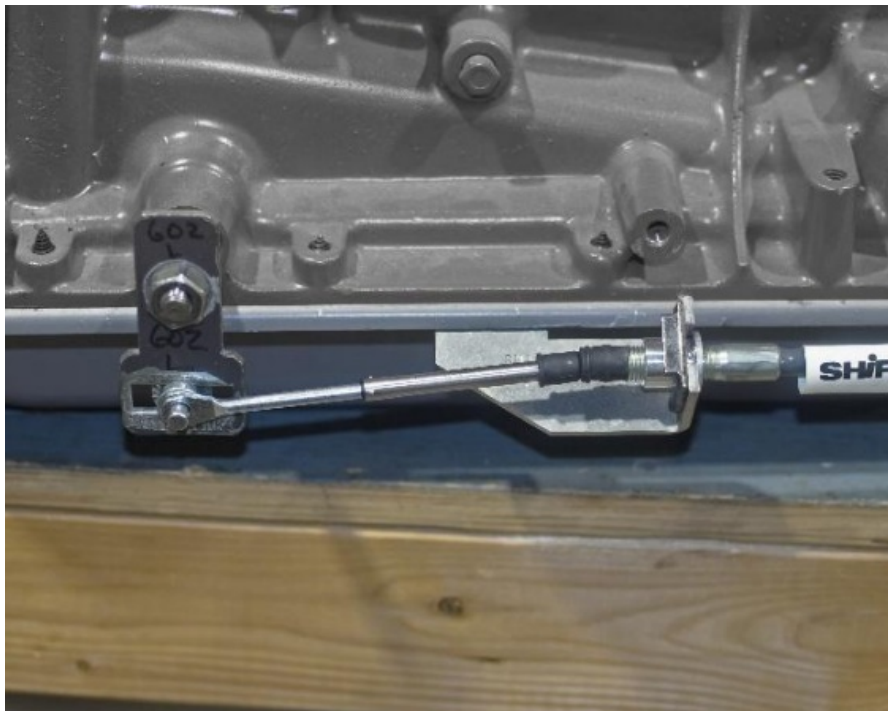
This is the long-range for the long-range select shaft. As you can see by the steep angle in the cable. This can cause resistance and binding in the shifter linkage.



This is incorrect because the cable adjuster pin is backward on the shift control lever. This will typically damage the cable eyelet when attempting to fit into the park.



This is incorrect because the cable adjuster pin is backward on the shift control lever and can lead to the cable binding when shifting out of park.



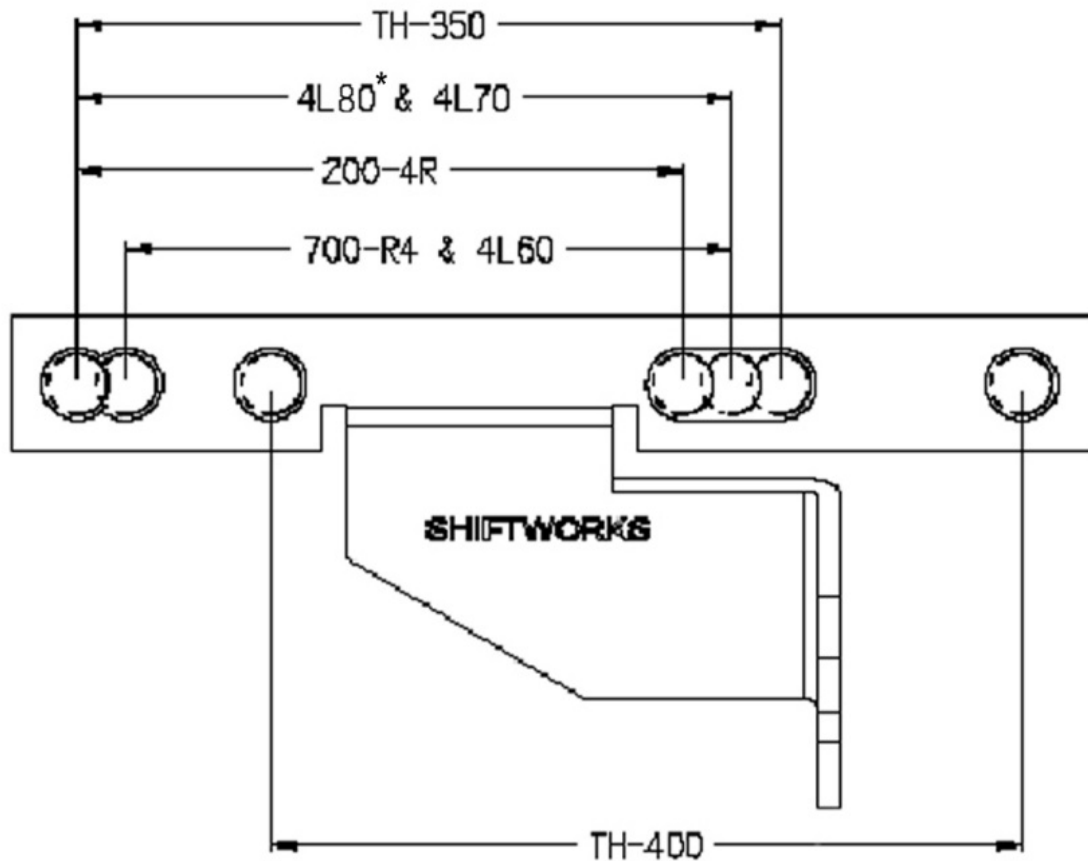
This is incorrect due to the shift control lever being installed backward. On all shift control levers, the “Shiftworks” logo will be facing out.



Step 7: Install Transmission Cable Bracket

3 and 4-speed application

Remove the two transmission pan bolts and loosely install the Shiftworks transmission pan bracket. Please note the adjustment holes on the transmission pan bracket. Different holes and positioning are used for different applications. Please view the following diagram to see which adjustment holes are recommended for your application.



* 4L80E uses 603.4 pan bracket

Tighten transmission pan bolts with the bracket installed. Make sure not to overtighten. The transmission case is aluminum and will strip easily.

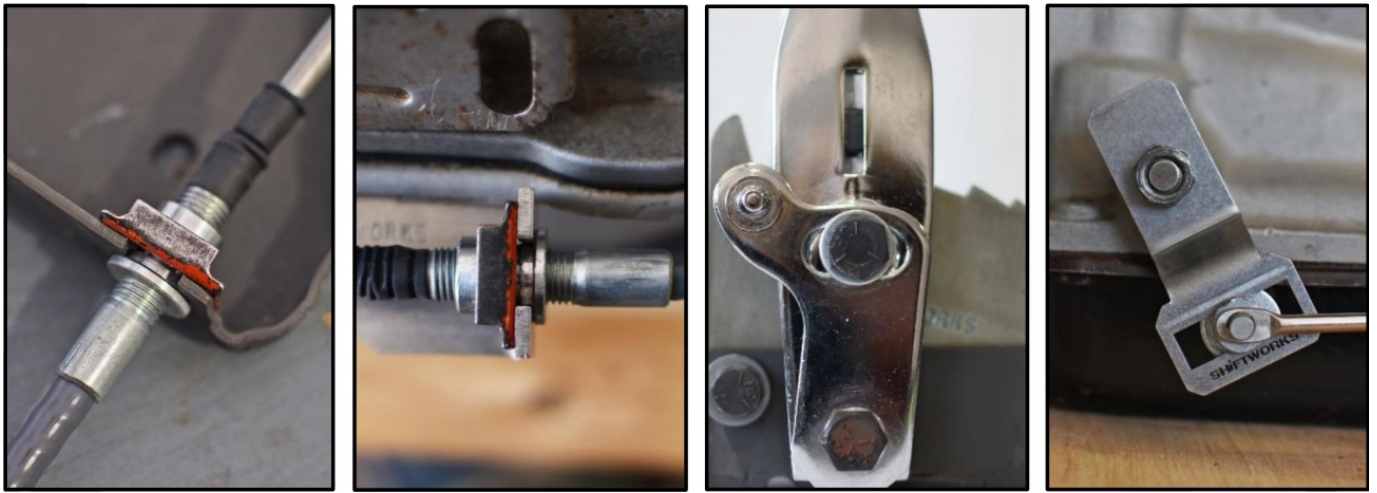
6 and 8-speed application

Install the transmission case bracket as shown in the illustration. Use the provided M8 x 1.25 hardware to fasten the case bracket.

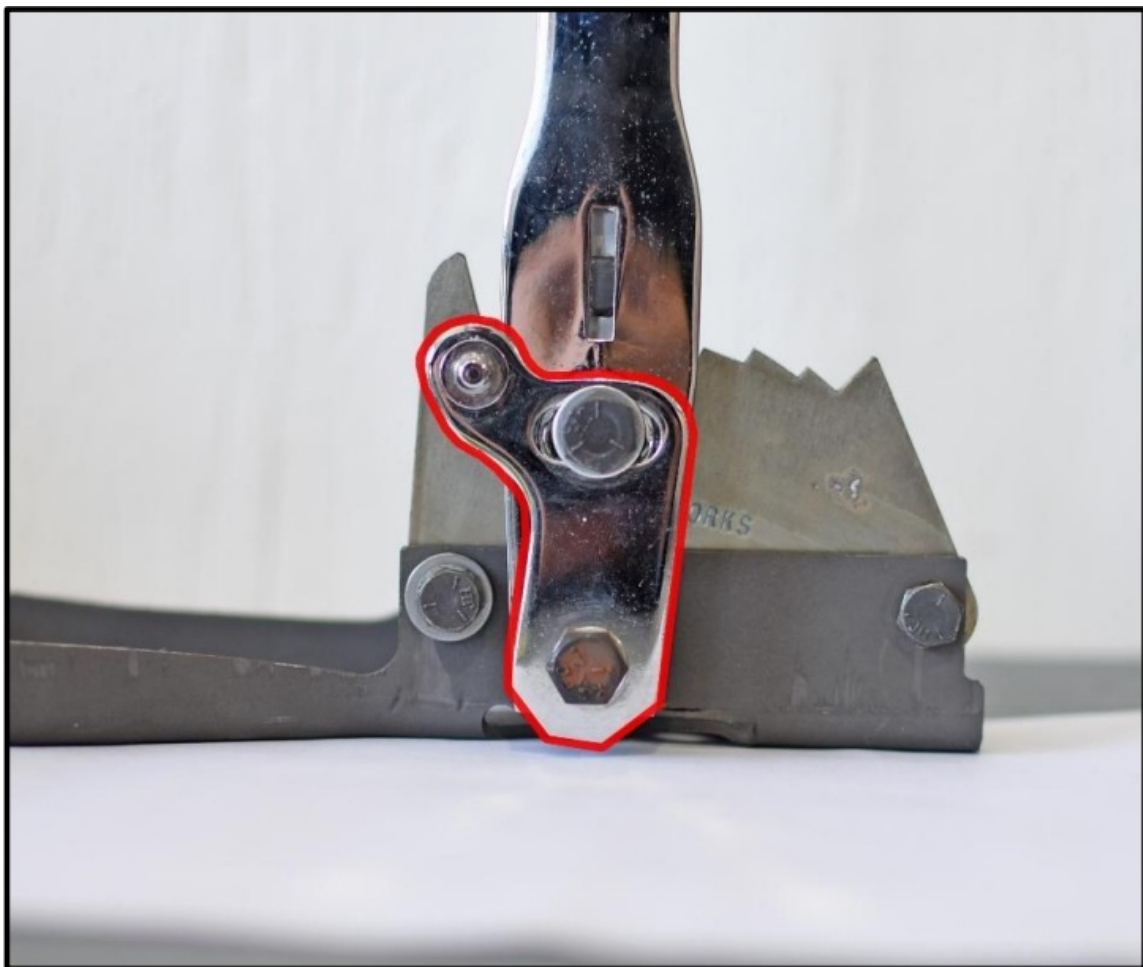
Linkage adjustment

Set a baseline

Ensure that the shifter cable bulkheads are centered on the threads at both ends and that the pin on the shift control lever is centered.



Ensure the shifter cable bracket on the handle is set in the center of its adjustment slot, and the hardware is tight

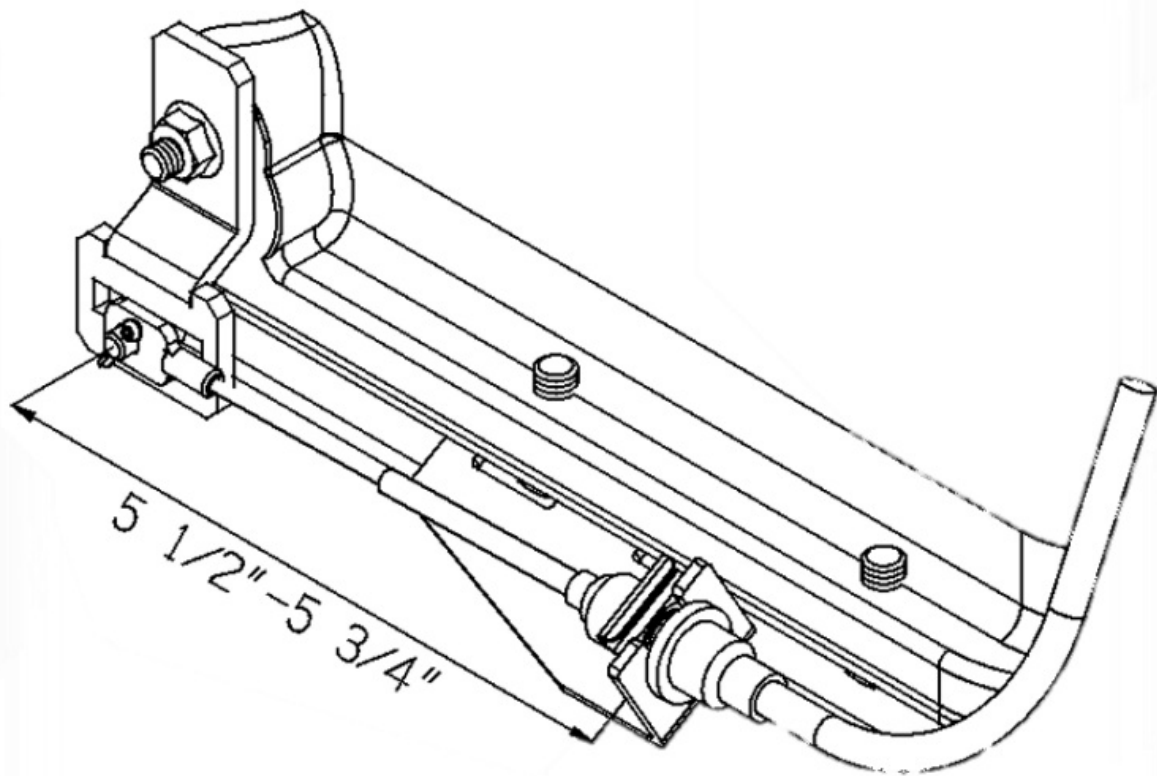


Install cable with BOTH the shifter and transmission in neutral

With your transmission in park (All the way forward towards the front of the car), move the shift control lever down 2 clicks to the neutral position. Then place your shifter in the neutral position as well.



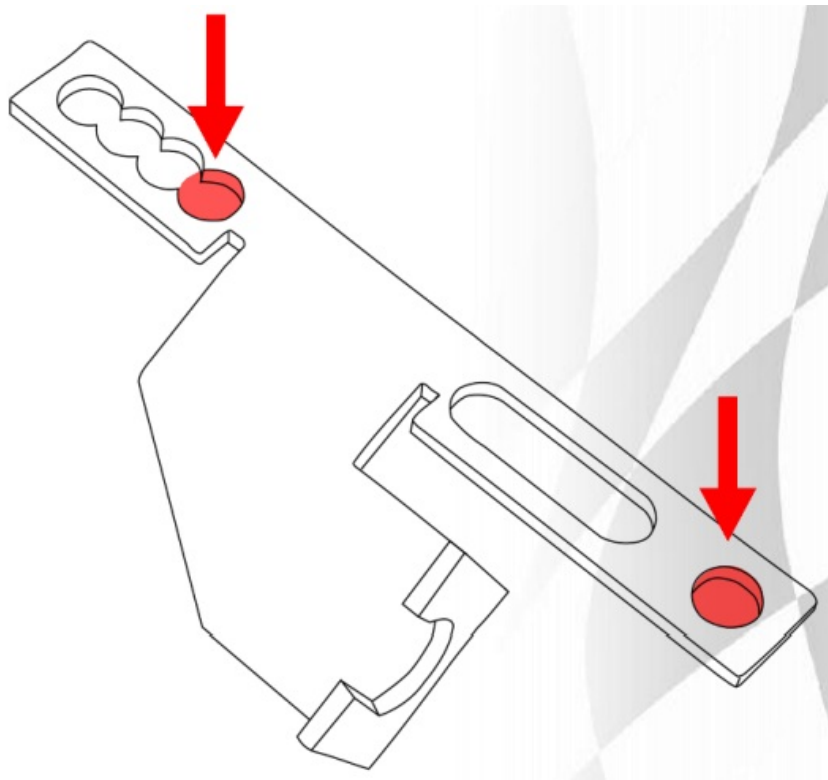
Install your cable into the car and connect the linkage to the shifter first, then look at the cable on the transmission side. The cable is adjusted by moving the pin on the shift control lever and the adjustment slots on the transmission pan bracket. Fine adjustments can be made with the bulkheads on the cables.



The cable eyelet and pin should be around 5 ½" to 5 ¾" from where the cable meets the transmission bracket. This measurement is taken in the neutral position. This measurement is a suggestion and could vary depending on the application.

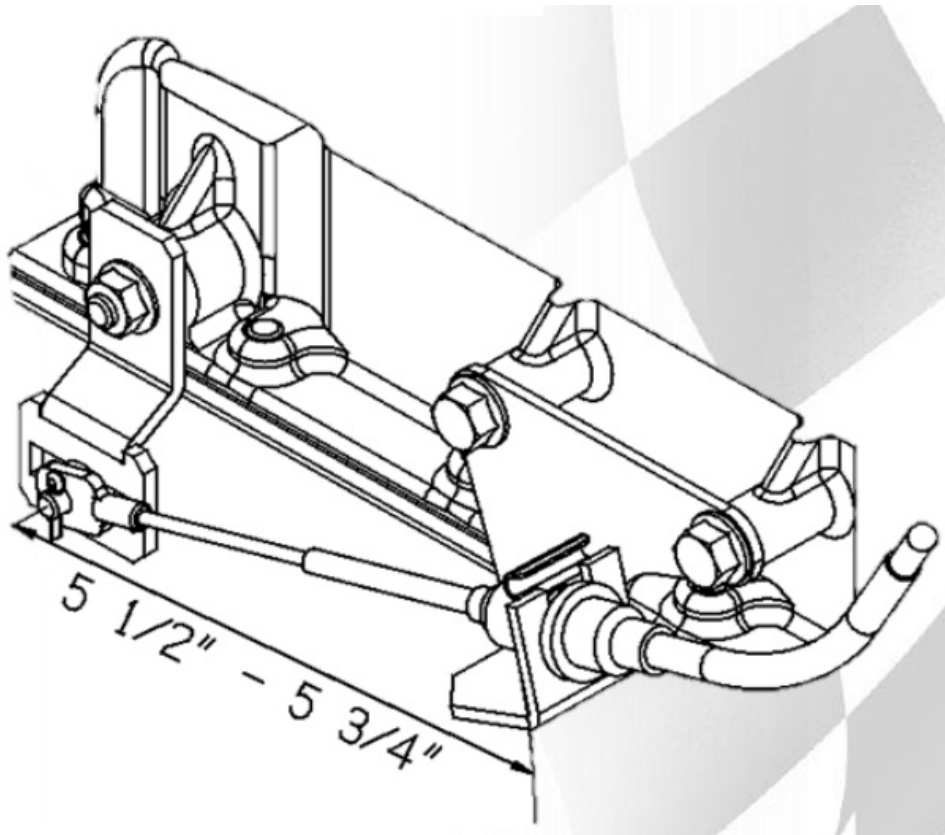
For TH400 Application:

Use the single non-slotted hole at the end of the transmission cable bracket.



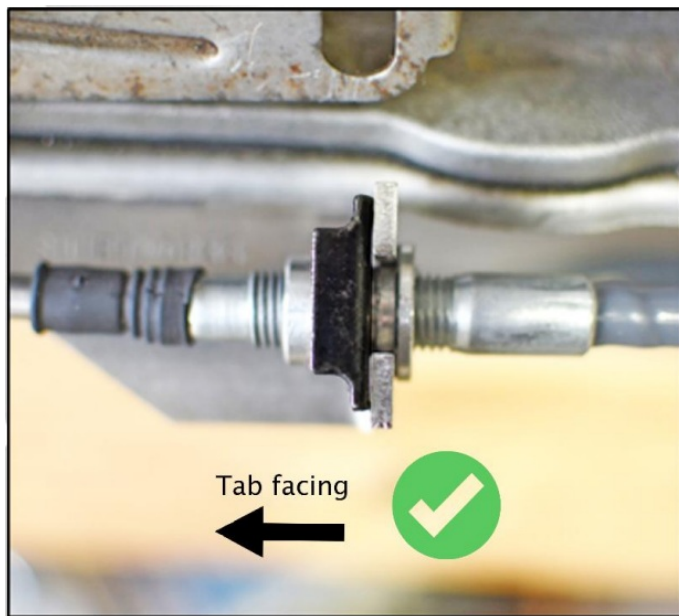
For 6-8 speed Application:

Attach the transmission cable bracket to the case as shown in the illustration to the right. The suggested distance from the pin to the face of the case bracket should be around 5 1/2" – 5 3/4". This measurement can vary depending on different applications and is just a base measurement to aim for.

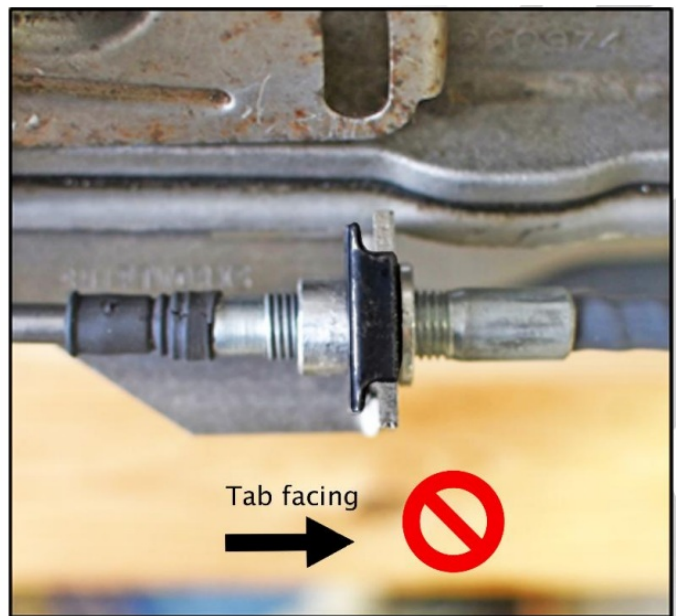


Cable Clip Installation:

One of the most common mistakes made when installing a new cable is how the cable clips are installed. Installing these clips backwards can cause a loose fit and potential for the clip to come out. Be sure to install the clips the correct way as shown in the photos below.



Correct



Incorrect

Adjust Shift Cable:

Large adjustments should be made first with the cable pin on the shift control lever. Then adjust the bulkheads on the cables for fine adjustments. With both the transmission and shifter in neutral, adjust the shift cable so the cable eyelet can freely be removed from the pin on the shift control lever in any gear. There should be no resistance when taking the cable off the pin. By doing this procedure, you are ensuring your transmission is fully in gear. Ensure your transmission cable bracket is positioned properly, and make sure the shifter cable bracket on the side of the shifter is tight and positioned in the center of its slot. Use Shiftworks cable #K100 Series or GM cable #3956765 only. No other cables are recommended. If you are having difficulty setting up your shift linkage or have any other questions regarding products, please reach out to us.

We are here to help.

Phone: [585-924-2700](tel:585-924-2700)

Email: support@shiftworks.com

www.shiftworks.com

Social media:

Instagram: @shiftworksshifters


Facebook: Shiftworks, Inc.

FAQ

Q: How do I determine which conversion kit or shifter package is compatible with my vehicle?

A: You can refer to the user manual or contact our support team with your vehicle make, model, and year for assistance.

Documents / Resources

	<p>SHIFTWORKS C350 Shifter Conversion Kit [pdf] Instruction Manual</p> <p>C350, C350-2, C350-CS, C350-2-CS, C350-R, C350-2R, C350-R-CS, C350-2R-CS, SC224, SC224-CS, SC224-R, SC224-R-CS, SC224-RVB, SC224-RVB-CS, C350 Shifter Conversion Kit, Shifter Conversion Kit, Conversion Kit</p>
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References

- [User Manual](#)

SHIFTWORKS

C350, C350 Shifter Conversion Kit, C350-2, C350-2-CS, C350-2R, C350-2R-CS, C350-CS, C350-R, C350-R-CS, Conversion Kit, SC224, SC224-CS, SC224-R, SC224-R-CS, SC224-RVB, SC224-RVB-CS, Shifter Conversion Kit, SHIFTWORKS

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