

CSM Auxiliary Shifters

2 & 4 Position

These instructions will not go into great detail about installation in specific applications as almost every installation of these is different depending on the truck, transmission, etc. This is a reference to help you understand how to plumb the air, how they bolt to the floor, how they adjust, etc.

If you have questions about your specific application, call 4 State Trucks at 417-624-2900.

The 2 position shifter is ideal for an 8, 9, or 10 speed application where only a range selector is needed.

The 4 position shifter is intended for use in a 13, 15, or 18 speed application where a range selector as well as a splitter is needed, or in the case of a 15 speed, a range selector and a deep reduction.

A 2 position shifter can still be used in these applications, but will only be able to operate one function or the other. For example, if you use a 2 position shifter in an 18 speed to operate the splitter, then you'll still need a way to operate your range selector. We've done this a variety of ways.....a 3rd shifter is an option we've done before, an air toggle on the dash, or even an old skool foot operated dimmer switch hooked to an electric over air solenoid! However, these instructions will not go into all of these options.

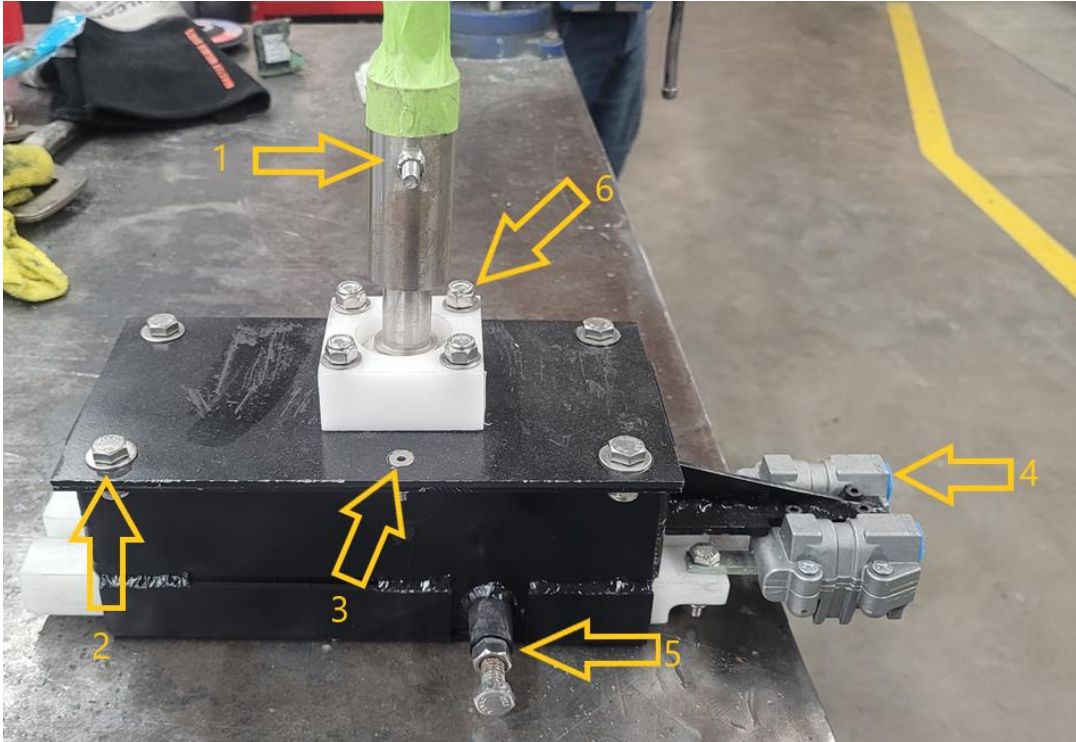
Both of these shifters will need a hole cut in the floor as the main housing of the shifter will bolt to the bottom of the floor and the shifter will stick up through the floor. It is up to you to determine the best spot in your floor to mount the shifter.



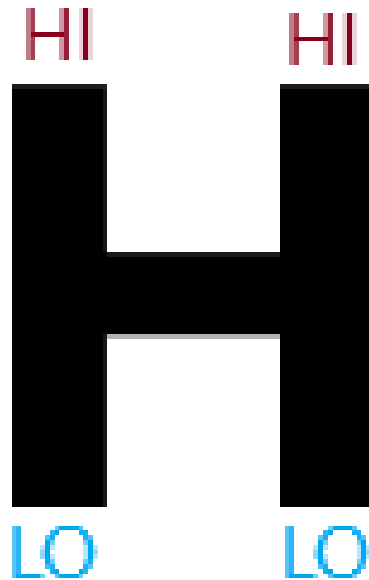
4 position shifter

1. The 4 position shifter will require a 2 ½" x 2 ½" square hole, or if using a hole saw, a 4" hole as the top ½ of the "pivot ball housing" will have to come up through the hole.
After your hole is cut, remove your top floor covering. Ex. Carpet, rubber mat, etc. This way the mounting bolts will be hidden under the floor covering rather than be exposed.
2. Remove the shifter rod from the isolator by removing the bolt (labeled 1), and then lifting the shifter out of the isolator.
3. Remove the bolts in the 4 corners of the housing, (labeled 2). These bolts will go through the floor and be used to bolt the housing to the bottom of the cab floor.
IMPORTANT!!! DO NOT remove the 2 smaller allen, counter sunk bolts (labeled 3). Their only job is to hold the housing together during installation!
4. Lay out the 4 mounting holes in the floor around the hole you cut for the shifter to come up through and drill. Then you can bolt the housing to the bottom of the floor and reinstall the shifter in the isolator.
5. Next you will need to plumb your shifter. There are many different options for this, depending on what side of the shifter you want to perform what function, what transmission you have, etc. Each valve has an inlet and an outlet (labeled 4) so you will need a supply for each valve.

The most common transmissions that these are used on is 13 and 18 speeds. Typically a 13 speed will already have 4 airlines. 2 of them are supplies but 1 will be a full time supply that supplies for the range selector and the other will be a "part time" supply since you can only split the high gears in a 13 speed. When you parked the truck, you most likely had the transmission on the low side so determining which supply is for your range selector should be easy. Next you'll want to determine which return line performs which function and this can be done with some trial and error. Make sure your truck has air and is shut off so you can hear the transmission. Hook up your returns and work the shifter, the louder "clunk" is the range selector and the softer, quieter "click" is the splitter. If you want the opposite side of the shifter to control the opposite function, just switch your lines around. Of course on the 13 speed, you'll also have to switch the supply lines.
If installing on an 18 speed, you may only have 1 supply line. Since you can split your gears on the high and low side, both functions need air full time. If this is the case, you will just need to put a "T" in your supply line in order to run it to both valves. The function of each return line can be checked the same way.
6. If during this process, you want to tighten or loosen the movement of the shifter in one direction or another, this is fully adjustable. The movement of the slides (forward and backward) can be adjusted by loosening the lock nut and tightening or loosening the detent spring on either side (labeled 5) Side to side movement can be adjusted by tightening or loosening the 4 bolts coming through the "pivot ball housing" (labeled 6). These are carriage bolts so you don't have to disassemble to adjust these, just tighten or loosen the nuts on the top.



Here is a diagram of the “pattern” of the 4 position shifter, just to help clarify any other questions. Keep in mind that this is NOT a typical “H” pattern. While it does resemble an “H” pattern, each side is independent of one another and you can freely move from one side to the other.



2 Position Shifter

1. This shifter will require a much smaller hole than the 4 position shifter as only the isolator will have to pass through it. (labeled 1)

After your hole is cut, remove your top floor covering. Ex. Carpet, rubber mat, etc. This way the mounting bolts will be hidden under the floor covering rather than be exposed.

2. Remove the shifter from the isolator by loosening the 2 set screws (labeled 2)
3. Drill a hole in each corner of the top flanges of the housing (labeled 3) and 4 corresponding holes in your floor around the hole you cut for the isolator to come up through.

Now you can bolt the housing under the floor.

4. Next you must hook up your airlines to the inlet and outlet on the valve (labeled 4)
If installing on a 8, 9, or 10 speed, you'll only have 1 supply and 1 return. If you are using on a 13, 15, or 18 speed, refer to page 1 and step 5 of the 4 position shifter instructions.
5. Reinstall shifter and test. If you want to adjust the movement of the shifter, this can be done by loosening the lock nut and tightening or loosening the detent spring (labeled 5)

