

Steering column upgrade and repair

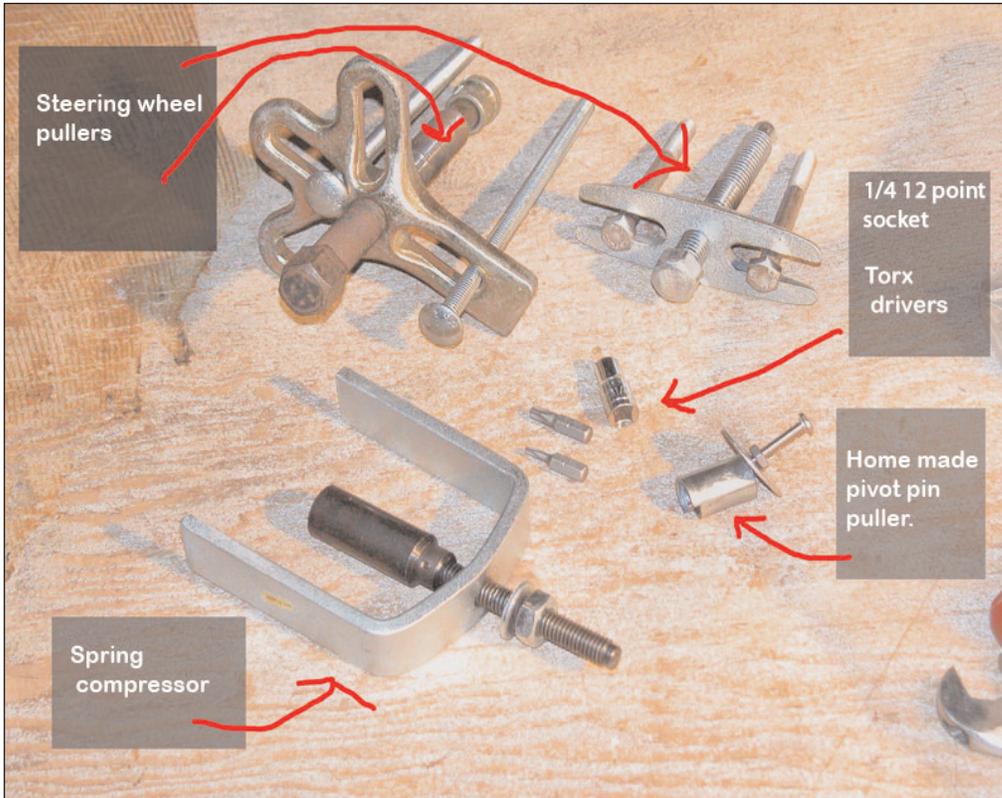
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By Richard Sowers

Tools needed to work on the column



In addition to the normal tools for such a job as this, some special ones are required:

1. Steering wheel puller
2. Spring compressor
3. Torx screwdriver bits
4. Pivot pin puller
5. 12 point socket

STEERING PIVOT PIN REMOVERS

This one you can get from Pep Boys for \$10.00.

This one you can get from www.harborfreight.com for \$5.00



ITEM 43072-0VGA

The one from Pep Boys works real well, I have not tried the one from Harborfreight.

Use the steering wheel puller to pull the steering wheel.



Remove the dust cover.

The GMC cover is held on with three screws. To remove the plastic ones, place a screw driver in the slot and pry it out.



Remove turn signal handle, the emergency flasher button, and the tilt handle. On a GMC column you will have to wait to remove the blinker handle. More on the in a second.

Use the spring compressor to take the spring tension off the retaining ring



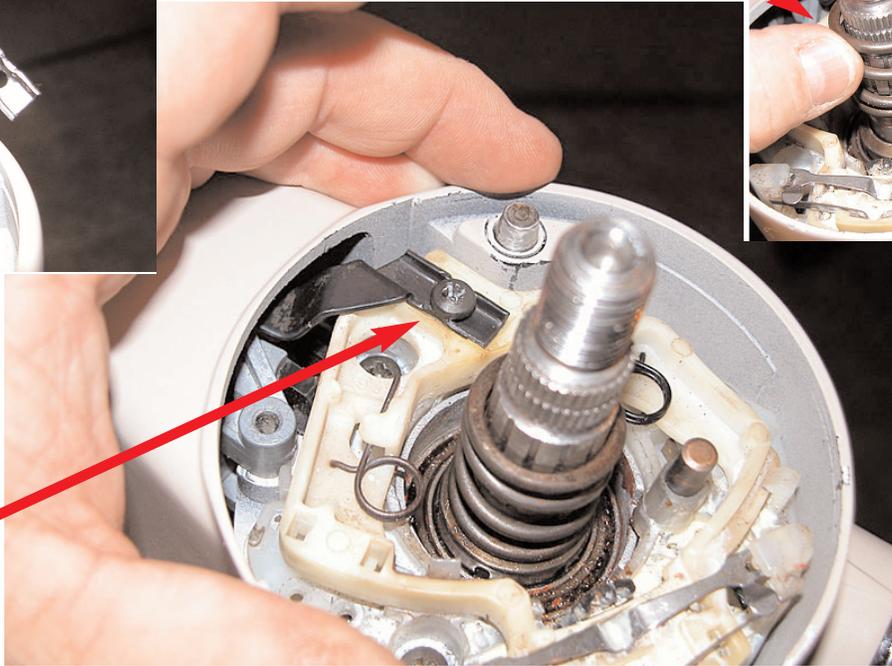
Use a set of ring pliers to remove the spring clip, or use a screw driver to pry it out of the groove.



Then remove the Spring compressor, and take off the locking plate, and the flasher return cam.

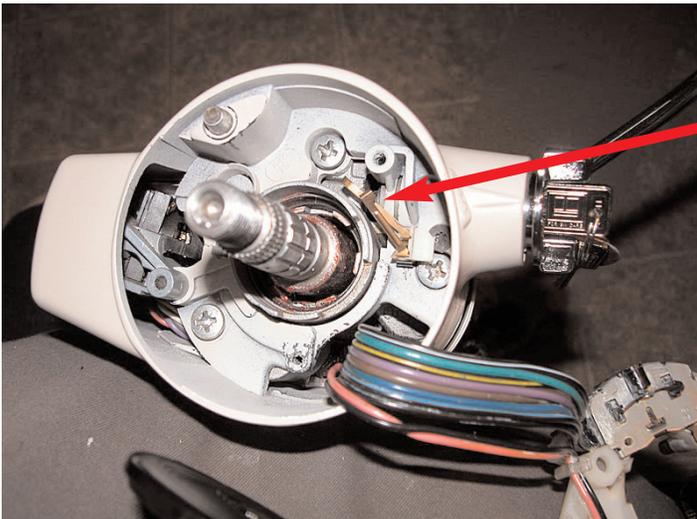


Remove the blinker arm and the three screws that hold in the blinker switch in place. Remove the spring and the spring seat.



On a GMC column this is where the blinker handle will be screwed down. You can remove it now.

Undo the blinker switch from the wiring harness at the bottom of the column. Slide the wires up inside the column to give you enough free wire to remove the switch and lay it aside. This may be harder than it sounds.



Remove the key reminder switch. Note how the tension spring is installed as you remove it. There are some different styles of the spring.



Remove the torx screw so you can remove the key cylinder. Note the button you will need to push up to remove the cylinder



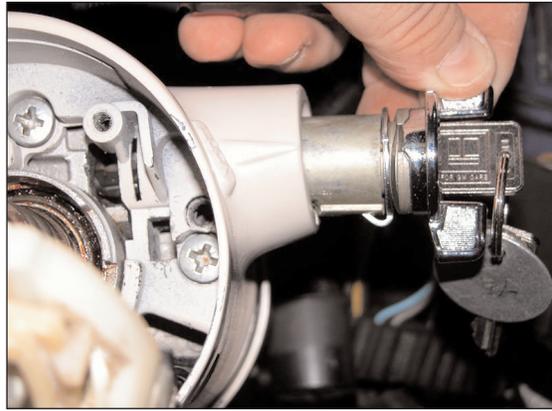
This is the button you need to push to get the key cylinder out.

GMC column does not have this torx screw.

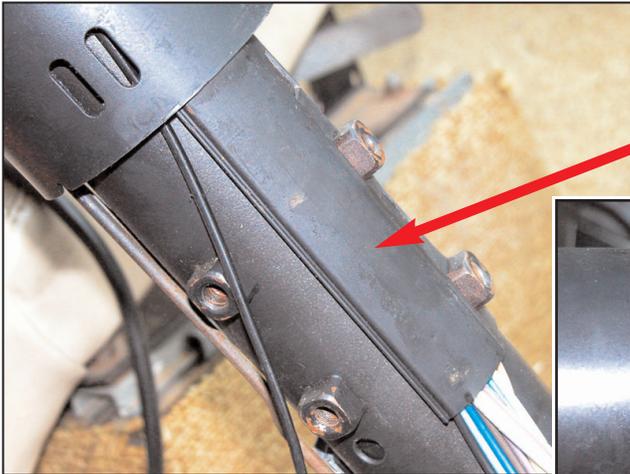
Remove this Torx screw to remove the key cylinder.



Put the key in the run position. Use a screw driver to push the tab up. Then slide out the key cylinder.



To go any farther you need a lot of extra wire for the blinker switch so the upper cover can be removed. If you are upgrading the column you might as well remove it now. It will make it easier later. This will require you to remove the bracket that holds the upper part of the column in place.

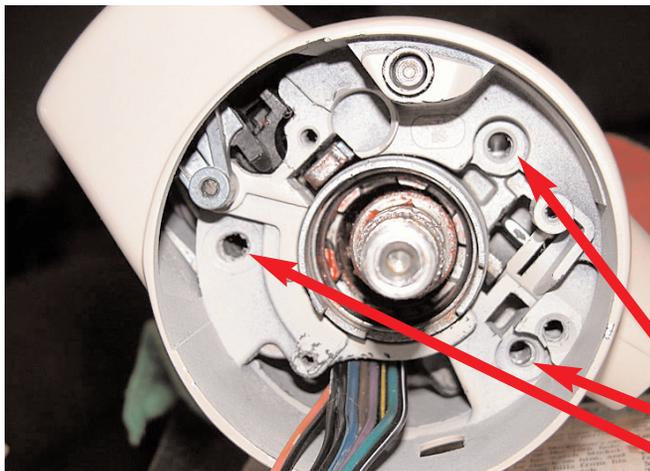


You need to remove the support bracket so the this plastic wire loom can be removed.



Once you get the bracket off, pull the wire loom off the braze-ons. Then pry the loom open and take it off.

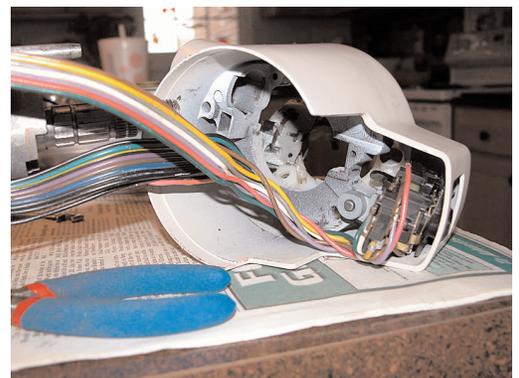
Now you will be able to remove the blinker switch by sliding the wires up through the column.



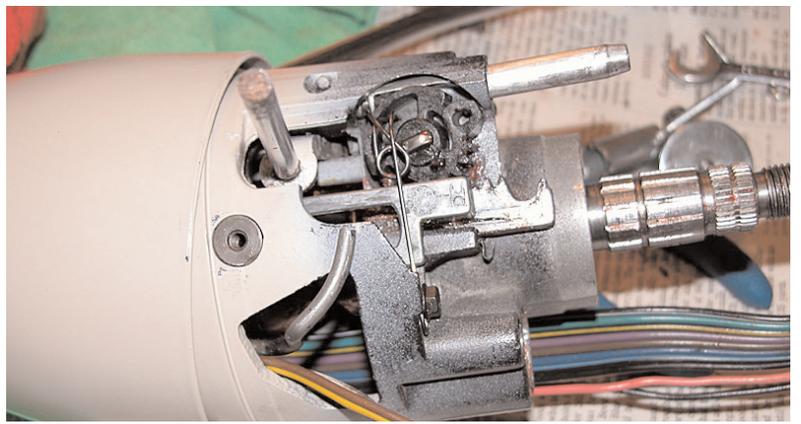
Remove the three screws and slide the cover off

On late model columns these will be torx head screws. On the GMC column they will be philips head screws.

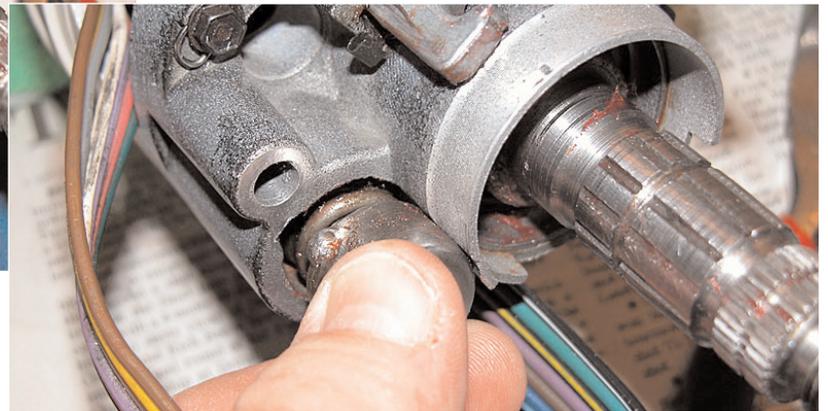
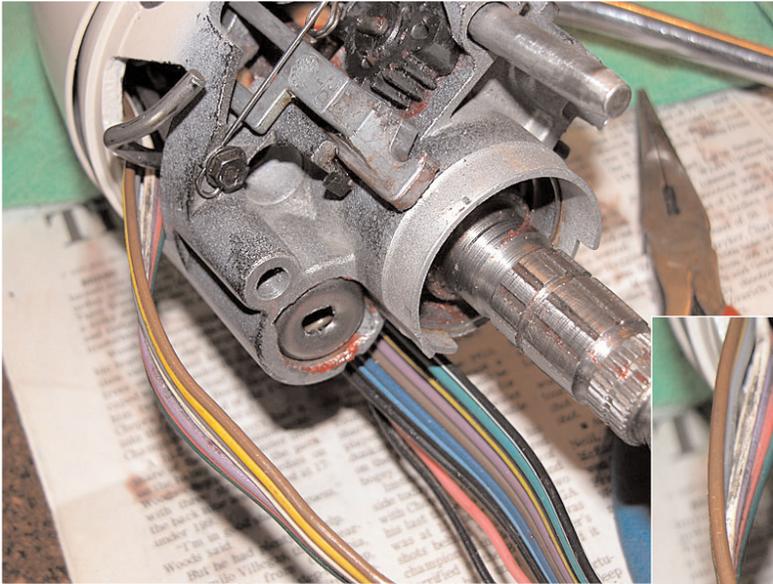
Screw locations



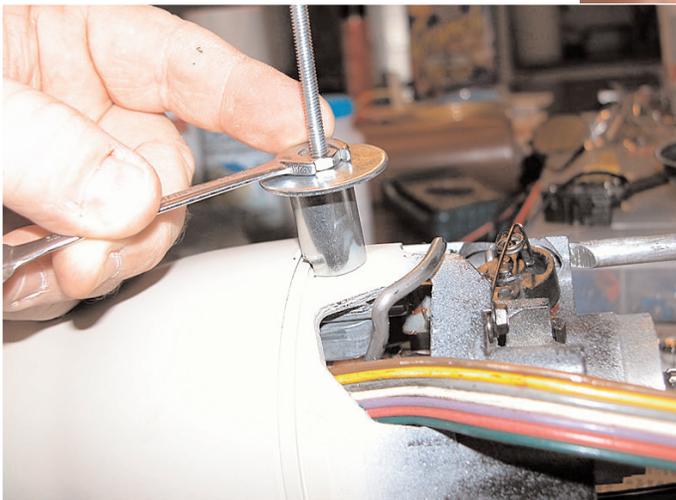
Put the tilt lever back on and tilt the column to the up position. This takes some of the tension off the spring.



Remove the tilt spring. You do this by putting a screw driver in the slotted spring cover, push down and turn to the left. The spring retainer will twist and come right out. Now remove the spring.

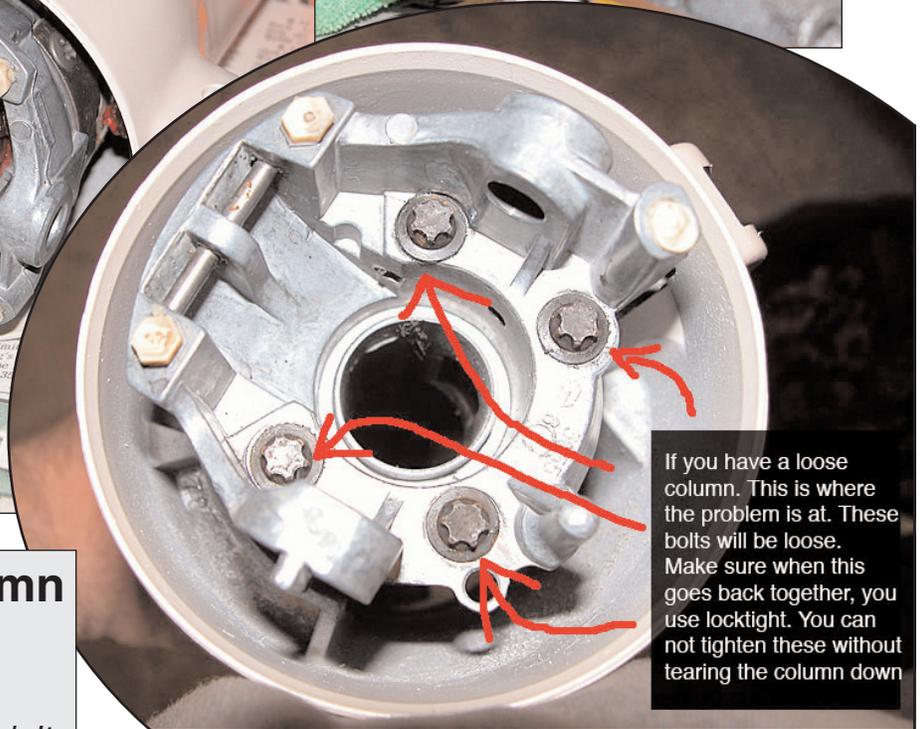
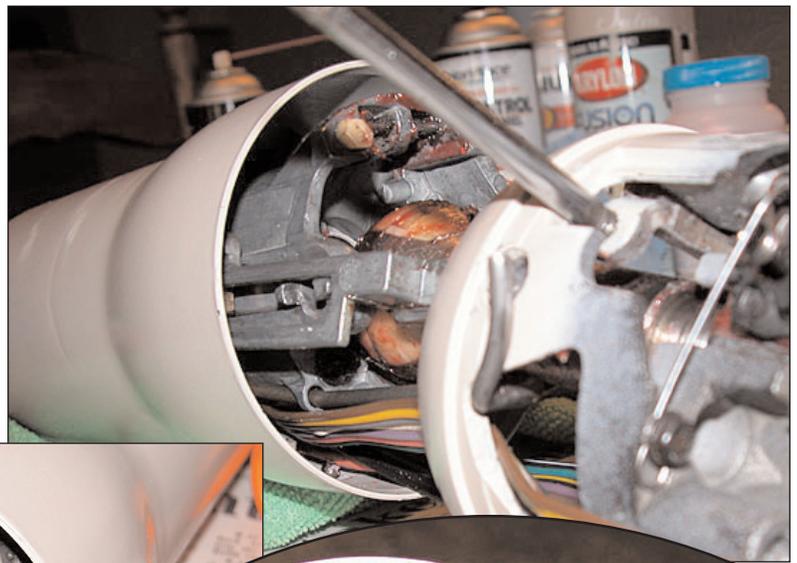
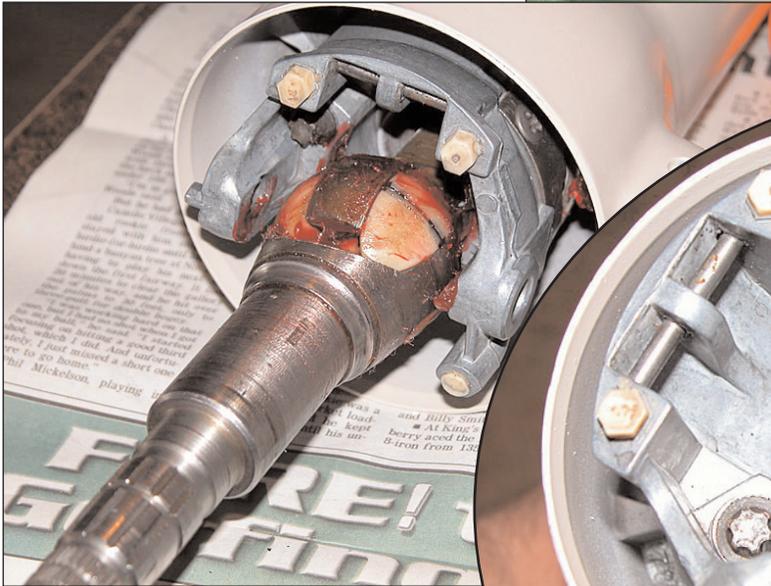


Pull the pin, then repeat on the other side.



Replace the tilt lever. Pull the lever to release the lock and pull the upper tilt block away from the lower part of the column.

This is the lower tilt block. If you need to you could pull out the steering shaft if you have unbolted it from the lower steering shaft.



If you have a loose column. This is where the problem is at. These bolts will be loose. Make sure when this goes back together, you use locktight. You can not tighten these without tearing the column down

OK now you have the column apart.

Now what?

Some options:

1. Fix what was broke (The reason you took it apart in the first place).
2. Upgrade to a late model column with the windshield wiper and dimmer switch moved to the column. You can also add support for late model cruise control and a daylight flasher.

So you want to upgrade here is what your going to need.

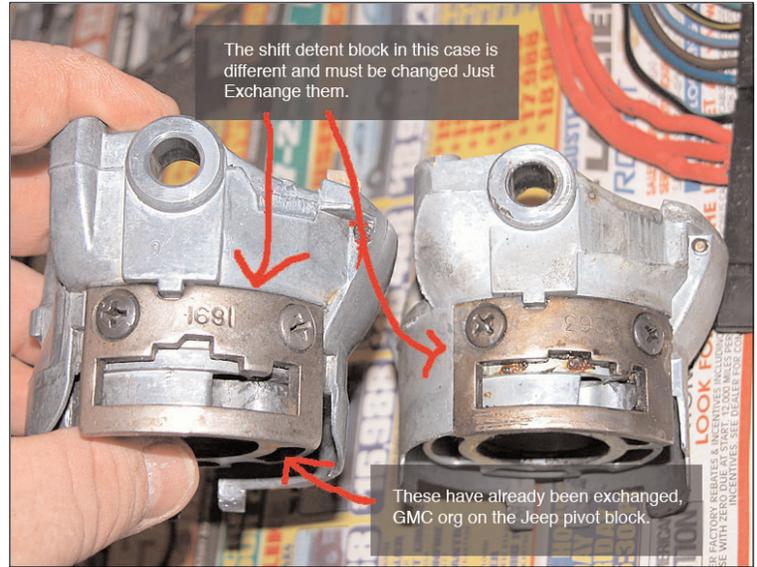
There are many GM cars and trucks in the salvage yards with the parts needed that will fit and work. You can even search for the color of your choice and the amount of chrome you want on the turn signal lever. It was found that the 1990 to 1995 GM Astra and Safari vans with pulse(delay) wipers are plentiful

List

1. Find a column, the key is to find one that has a multi function switch with only three wires.
2. Buy one of Ken Henderson's Electric Wiper Conversion Kits.
3. Once you find a column, you need everything from the lower tilt block up. If you want to move your dimmer from the floor to the column, you might as well get the whole column. Ebay can be a good source for these.

OK, lets put a upgraded column back together.

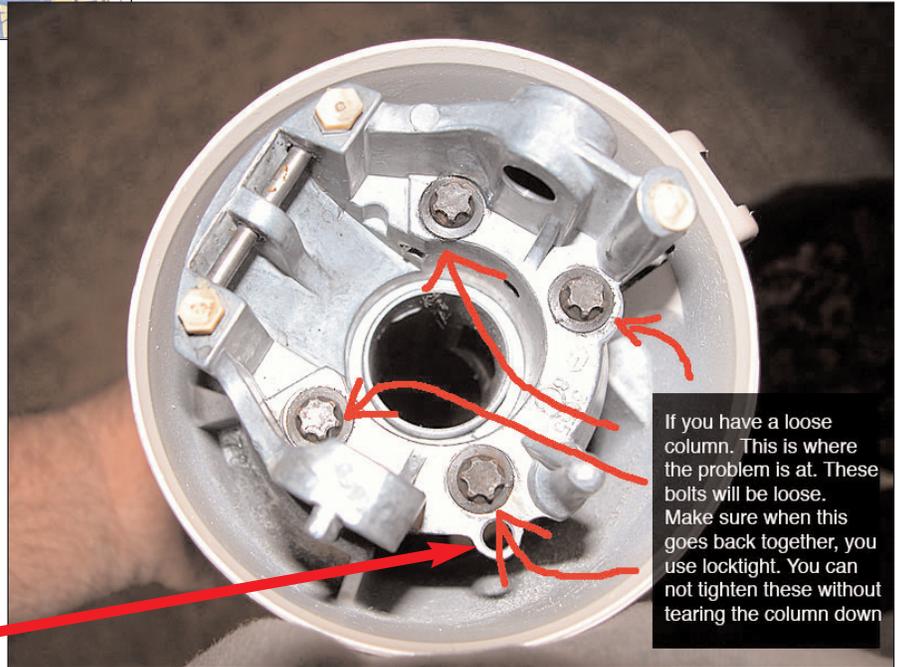
Note the guide for the dimmer push rod in the Jeep lower tilt block



Make sure you lock tight the bolts that hold the lower tilt block in place. Red or green lock tight would not be out of the question.



Make sure you install the dimmer push rod before you install the lower tilt block.



Grease up the steering shaft ball. Turn it 90 degrees to take it apart.



Install the steering shaft.



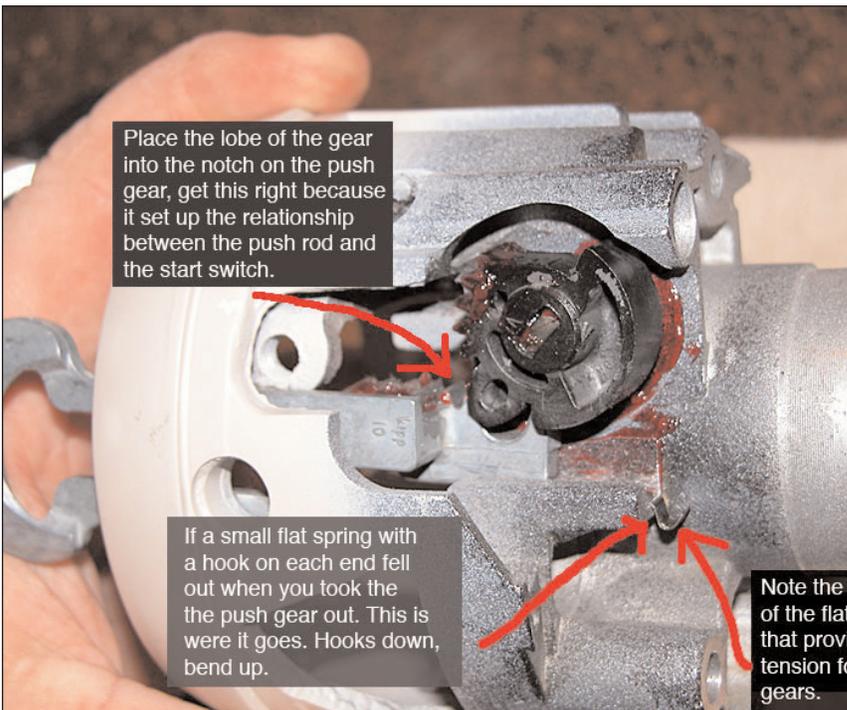
Replace or repack the lower steering shaft bearing and reinstall the bearing, the cap, and the retainer.



Grease and install the lower bearing in the upper tilt block. Note that only grease holds these bearings in place



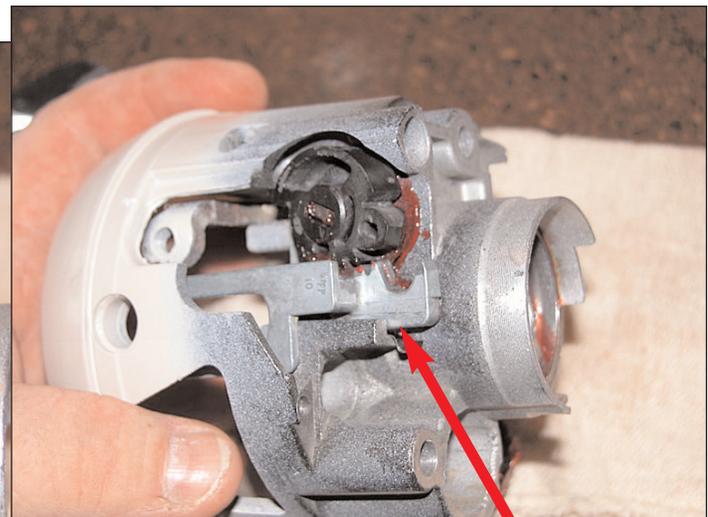
Make sure the push gear is in place.



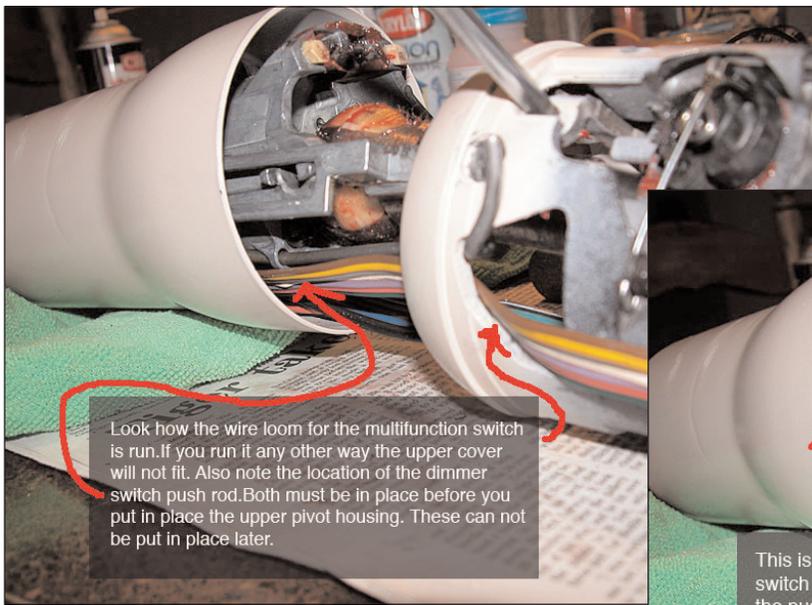
Place the lobe of the gear into the notch on the push gear, get this right because it set up the relationship between the push rod and the start switch.

If a small flat spring with a hook on each end fell out when you took the the push gear out. This is were it goes. Hooks down, bend up.

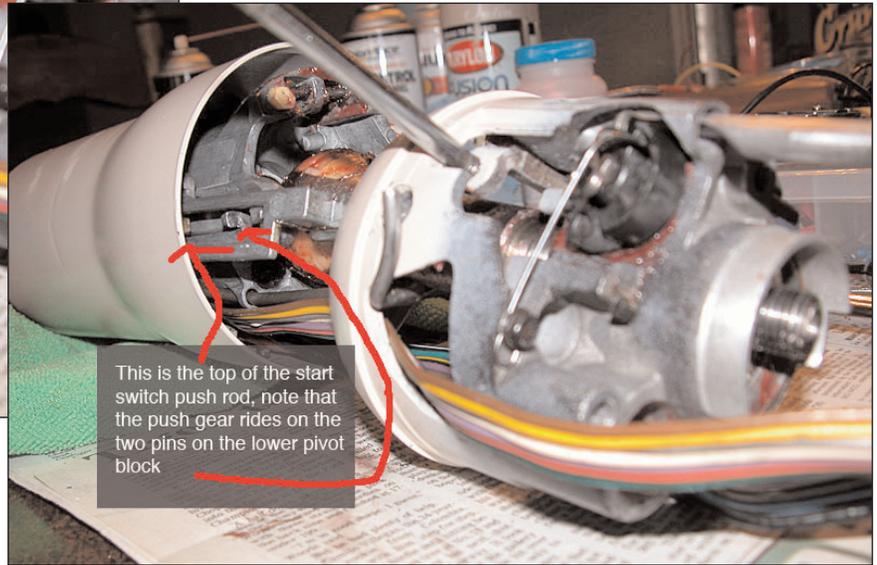
Note the location of the flat spring that provides the tension for the gears.



This is the relationship of the gears in the start position.

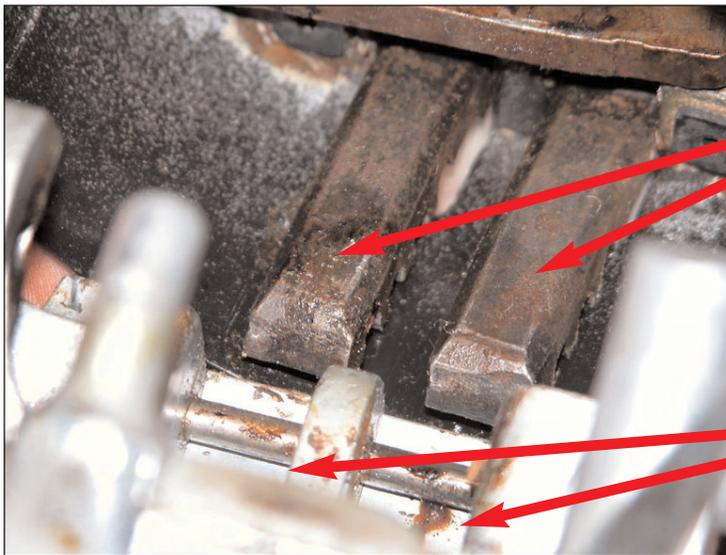


Look how the wire loom for the multifunction switch is run. If you run it any other way the upper cover will not fit. Also note the location of the dimmer switch push rod. Both must be in place before you put in place the upper pivot housing. These can not be put in place later.



This is the top of the start switch push rod, note that the push gear rides on the two pins on the lower pivot block

Here is a shot of the tilt lock.

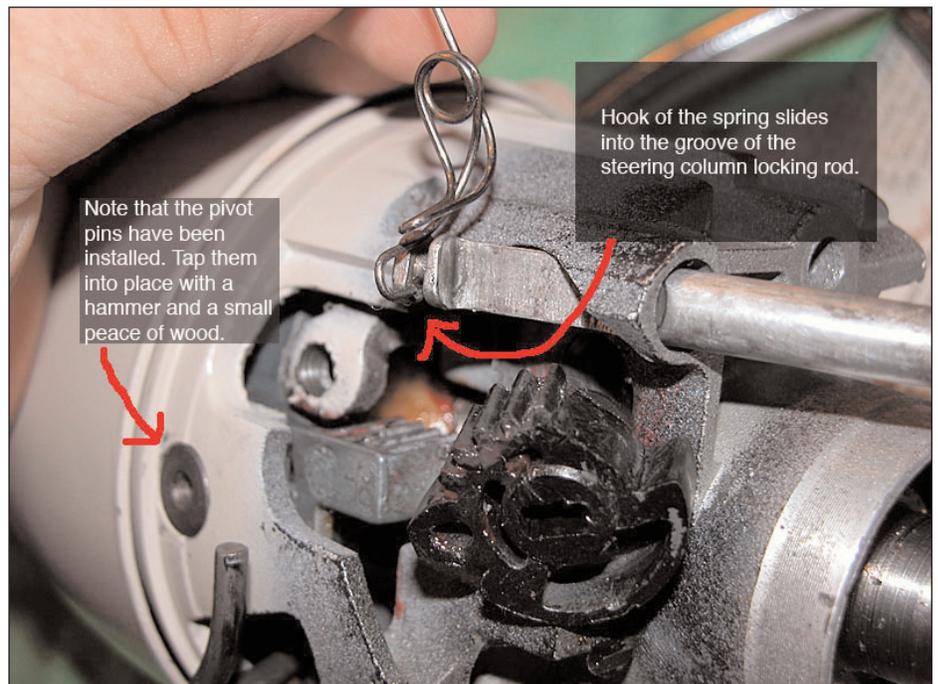


The teeth in these two bars

Sit on these two bars when it is in place.

Now install the tilt lever. Pull the lever forward as you slide the upper tilt block into place. Make sure the push gear moves into place as you slide the two parts together.

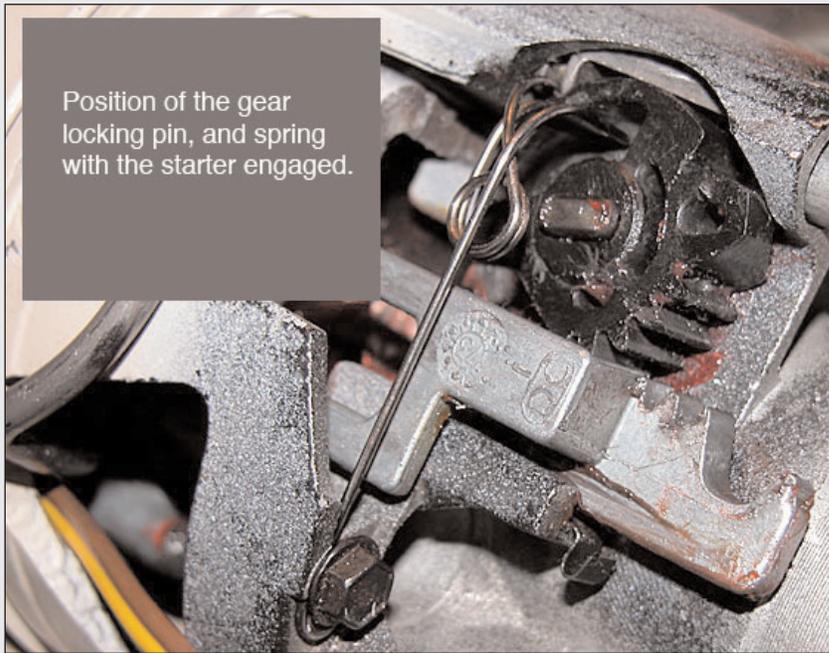
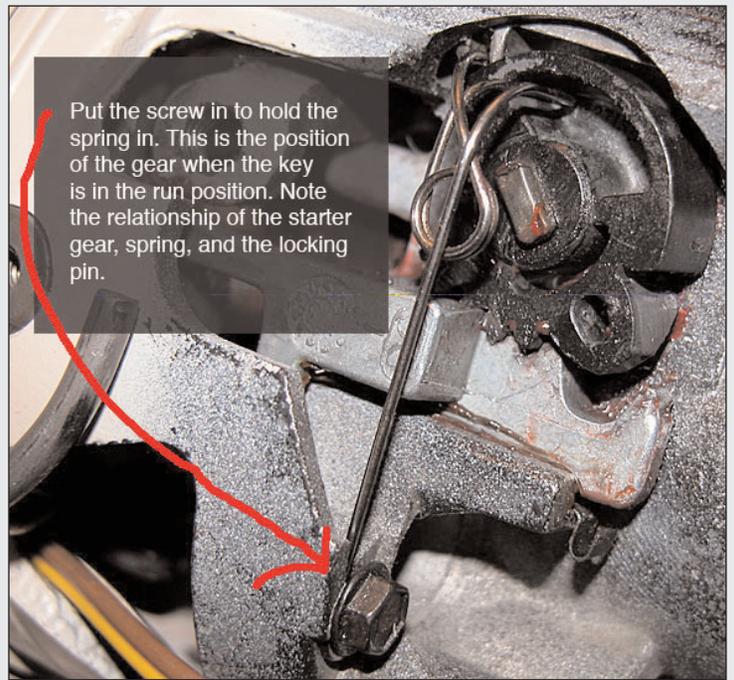
Now reinstall the pivot pins, add the locking pin and it's spring if they were removed



Note that the pivot pins have been installed. Tap them into place with a hammer and a small piece of wood.

Hook of the spring slides into the groove of the steering column locking rod.

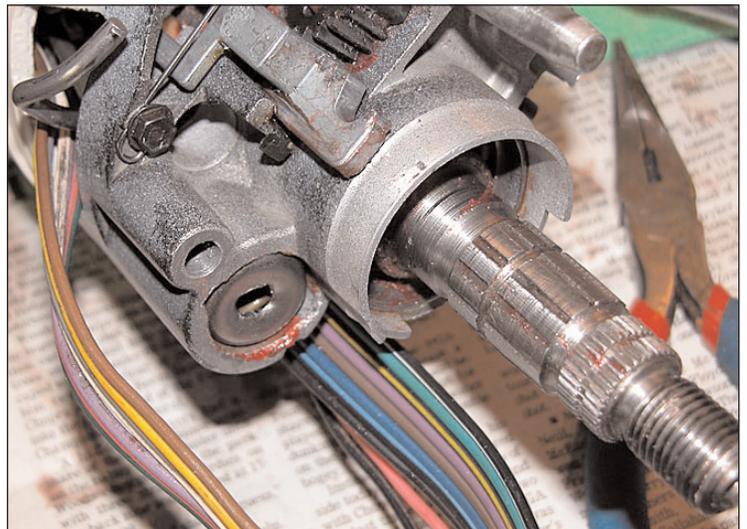
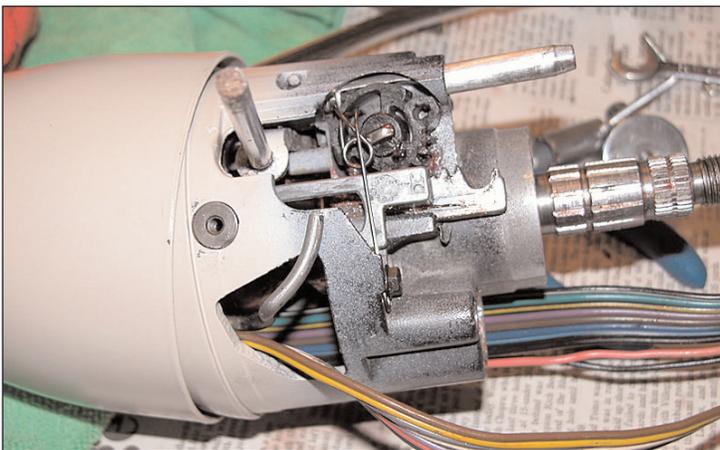
Spring placement



Starter gear positions

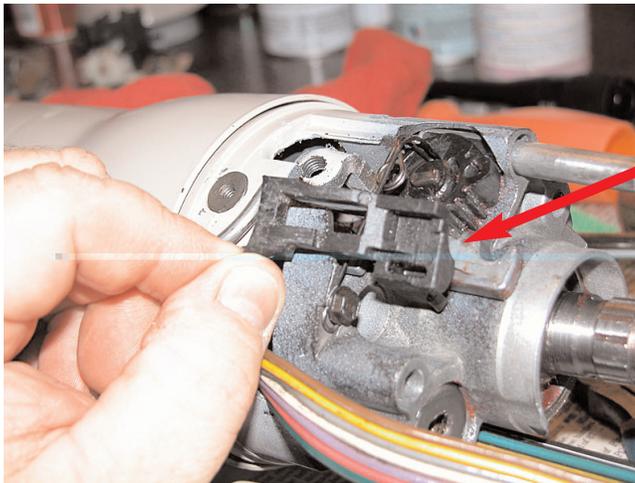
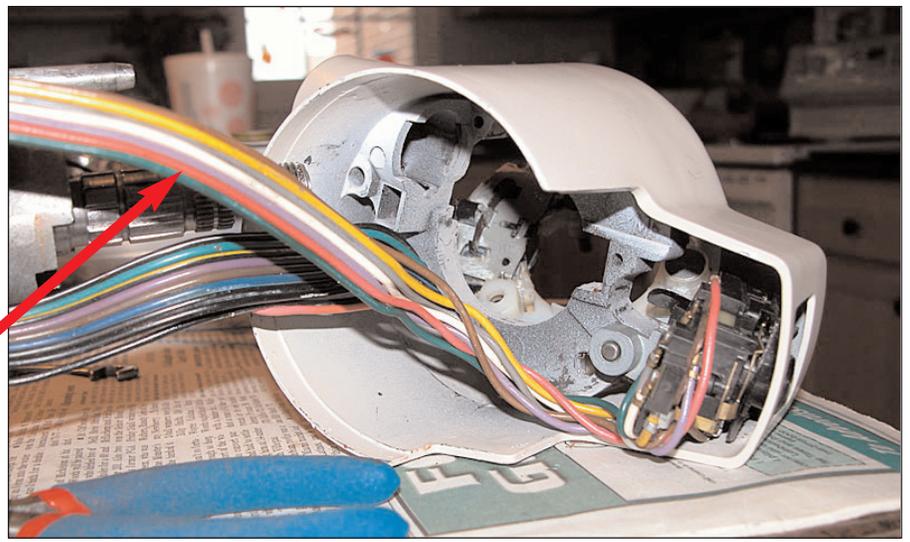


Reinstall the tilt spring. Reverse the procedure for removal.



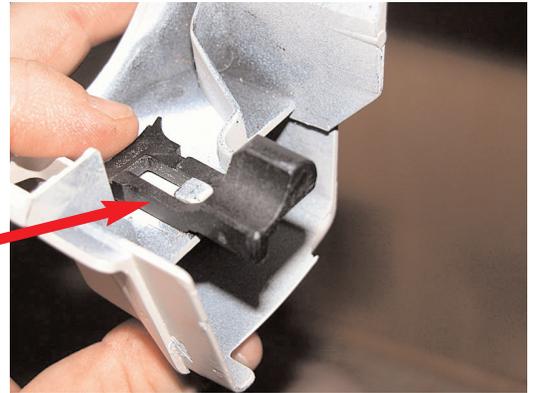
This is what we are after, the multi function switch.

Note the the switch shone in this photo in the wrong switch. The switch we are after has only three wires. See Ken Hinderson's wiper documentation for more info on the correct switch.

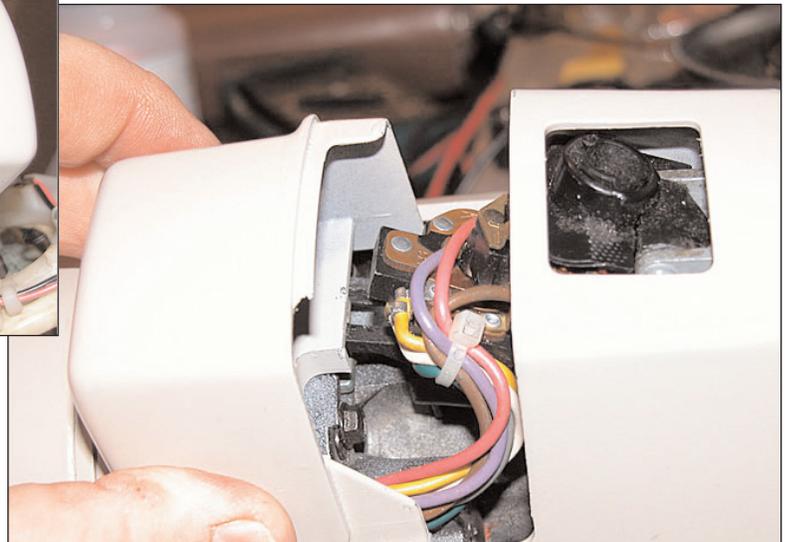
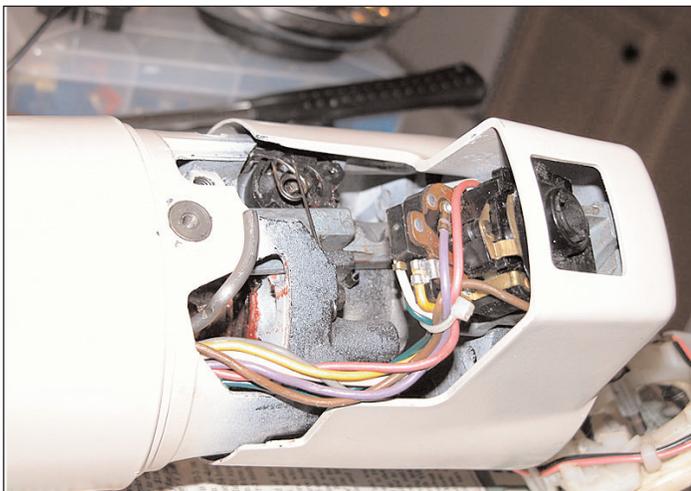


The upper dimmer switch push rod.

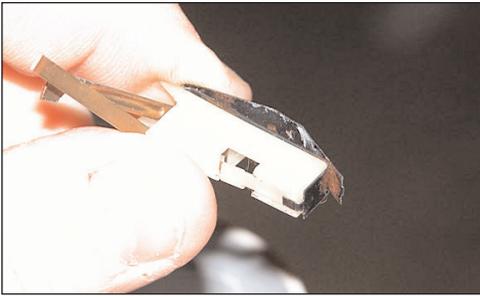
This is the pin it rides on. Note the position.



Slide the upper cover on, make sure to guide the wires and the dimmer push rod into place



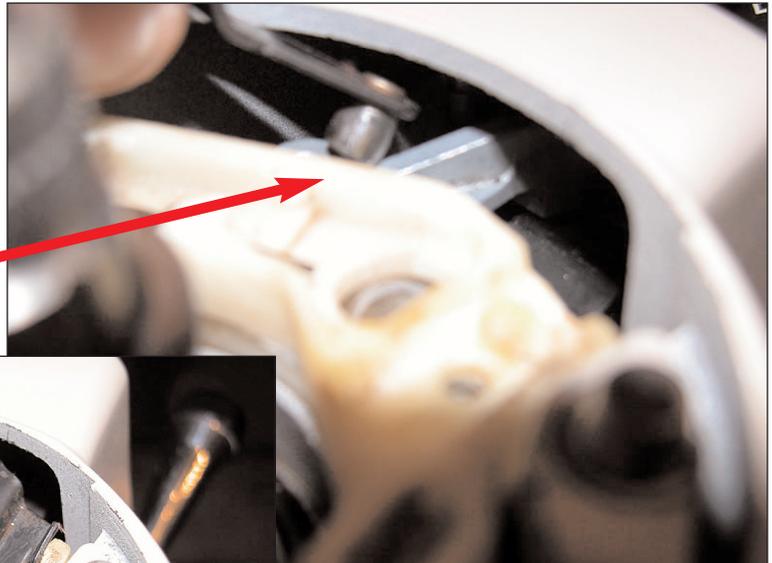
Reinstall the key cylinder, key reminder and the blinker switch. All the in reverse of the way you took them apart.



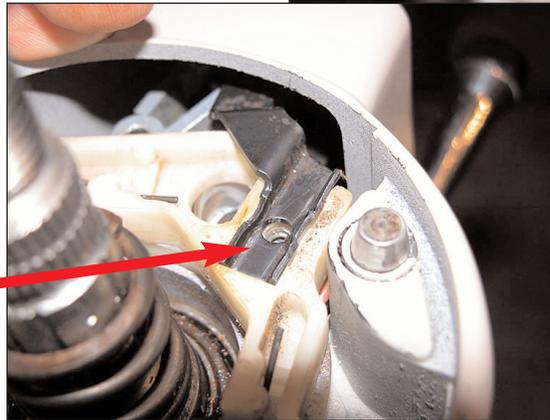
Install the blinker arm.



Slide the pin that is on the arm down the underside of the arm on the multi function switch.

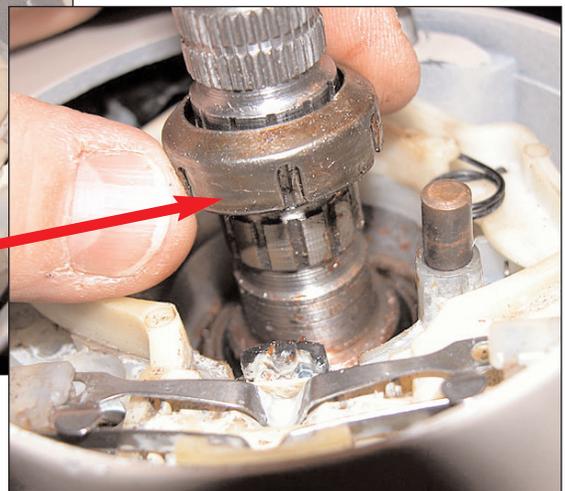


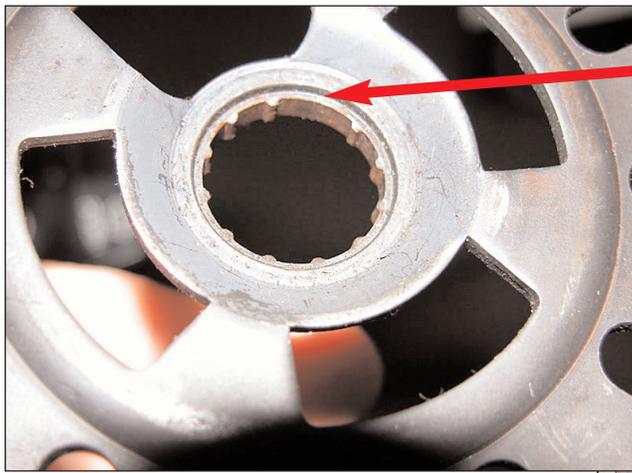
Then screw into place.



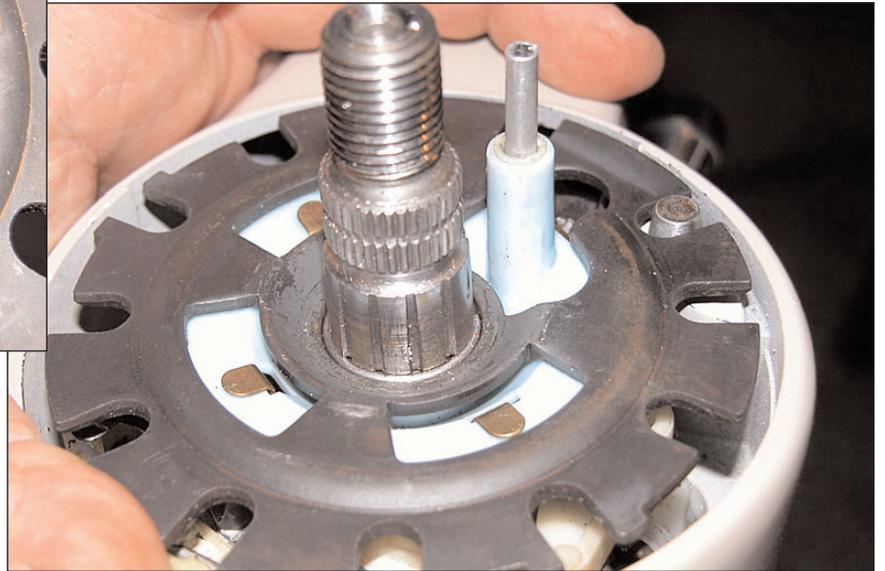
Now install the upper bearing and race.

Install the spring seat. Note how it is placed, with the slits going down.



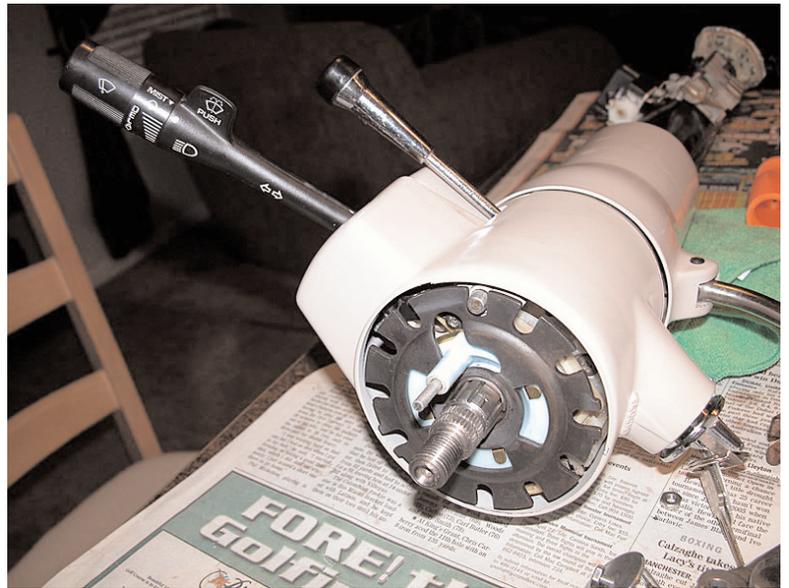


Reinstall the locking plate. Note that it is keyed and will only go on one way.

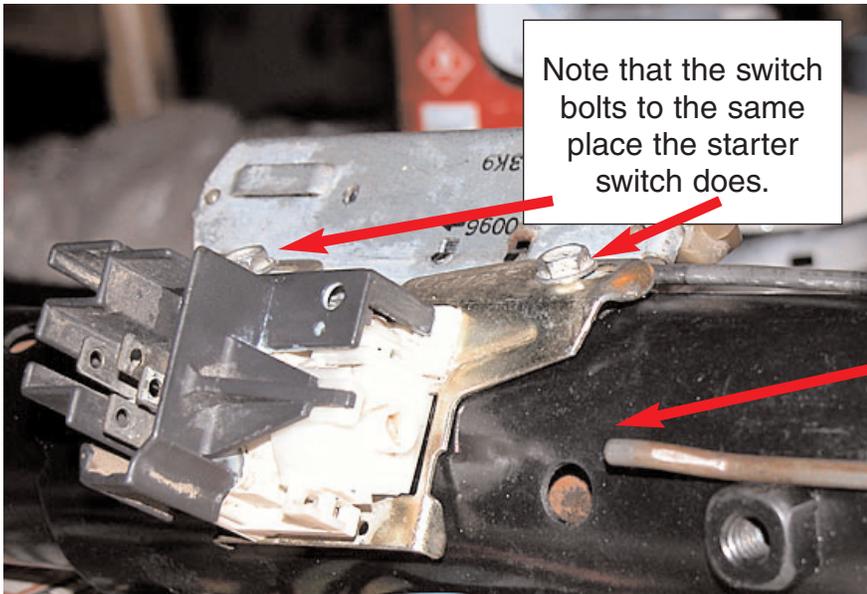


The reverse procedure is used to reinstall the locking plate using the spring compressor.

Put on the levers and the column is back together.



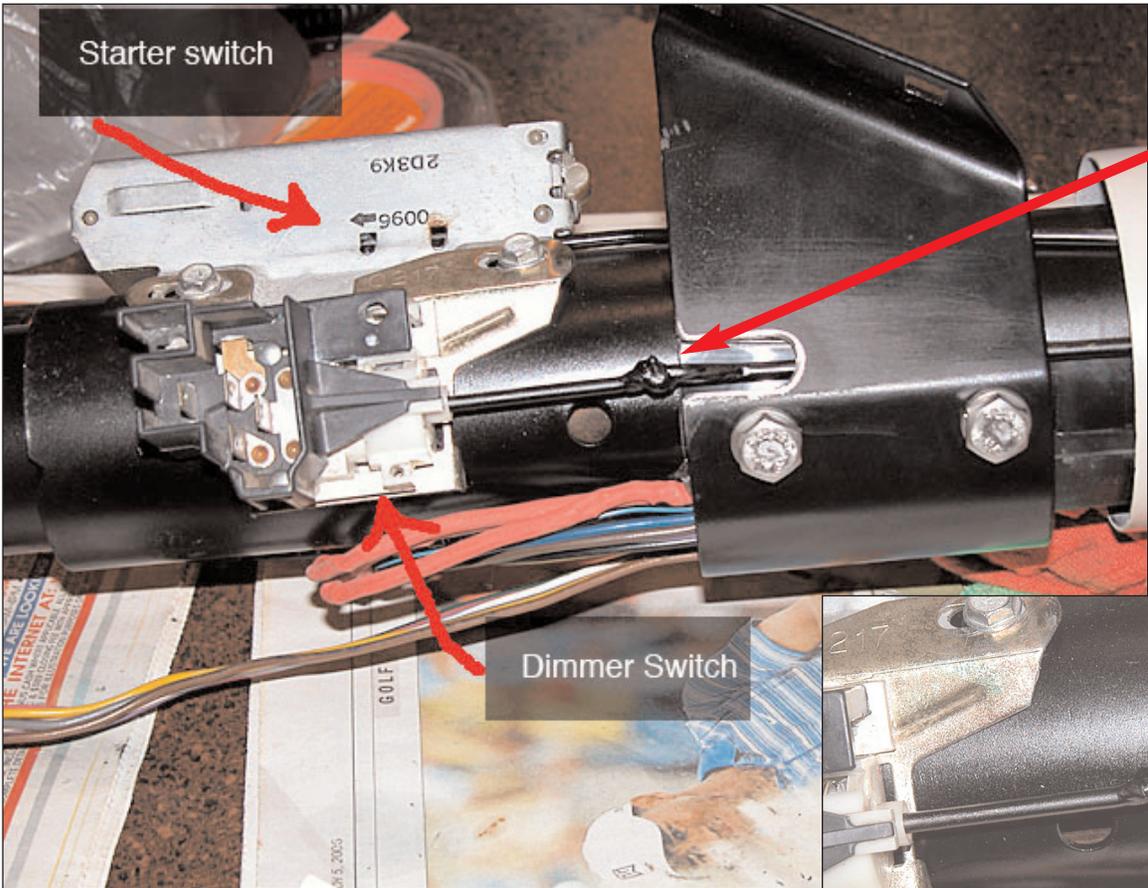
Now lets add the dimmer switch



Note that the switch bolts to the same place the starter switch does.

Here is the problem I encountered using the parts from a 1990 Jeep Wrangler column.

Push rod was too short.

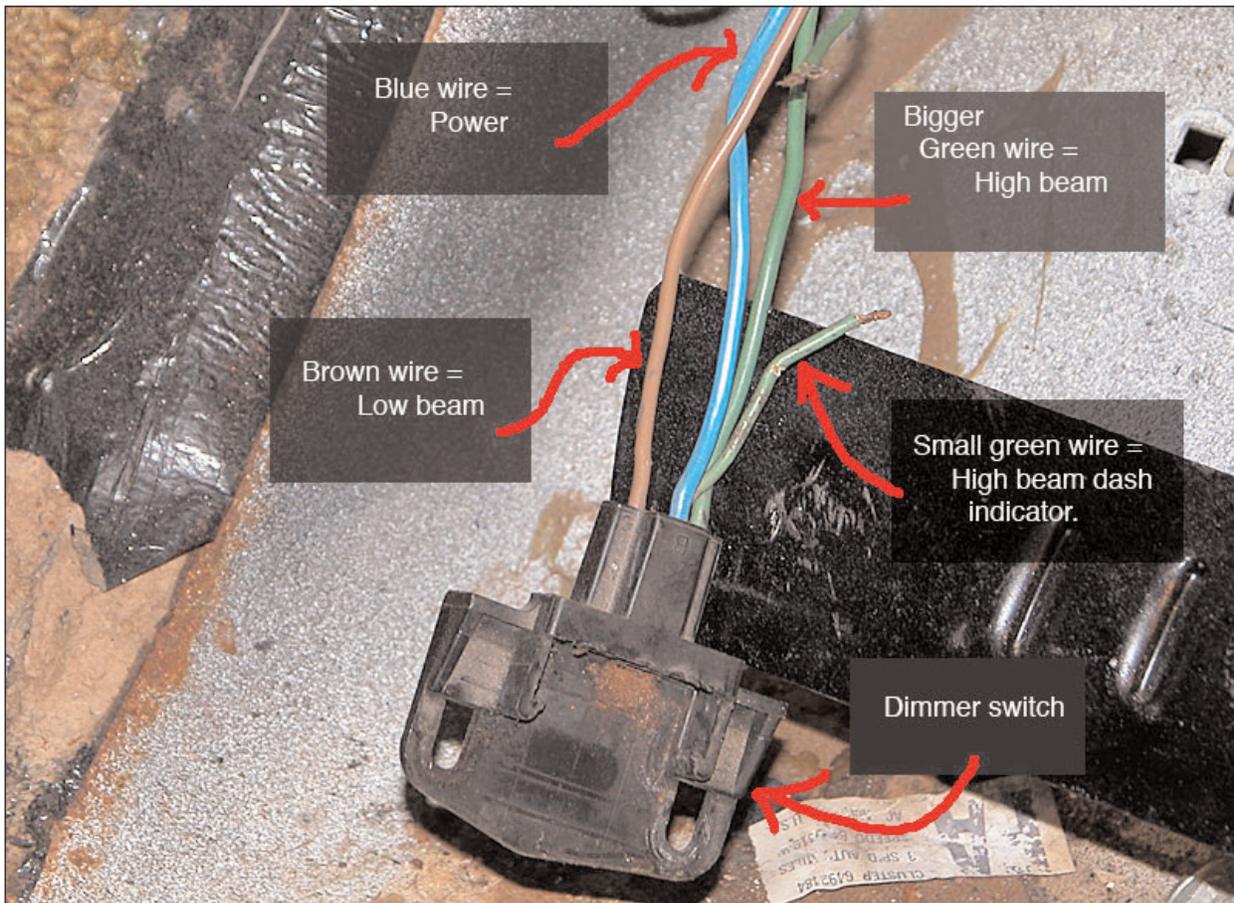


Here is how I fixed it. I butt welded on some more rod. Ugly, but it works.

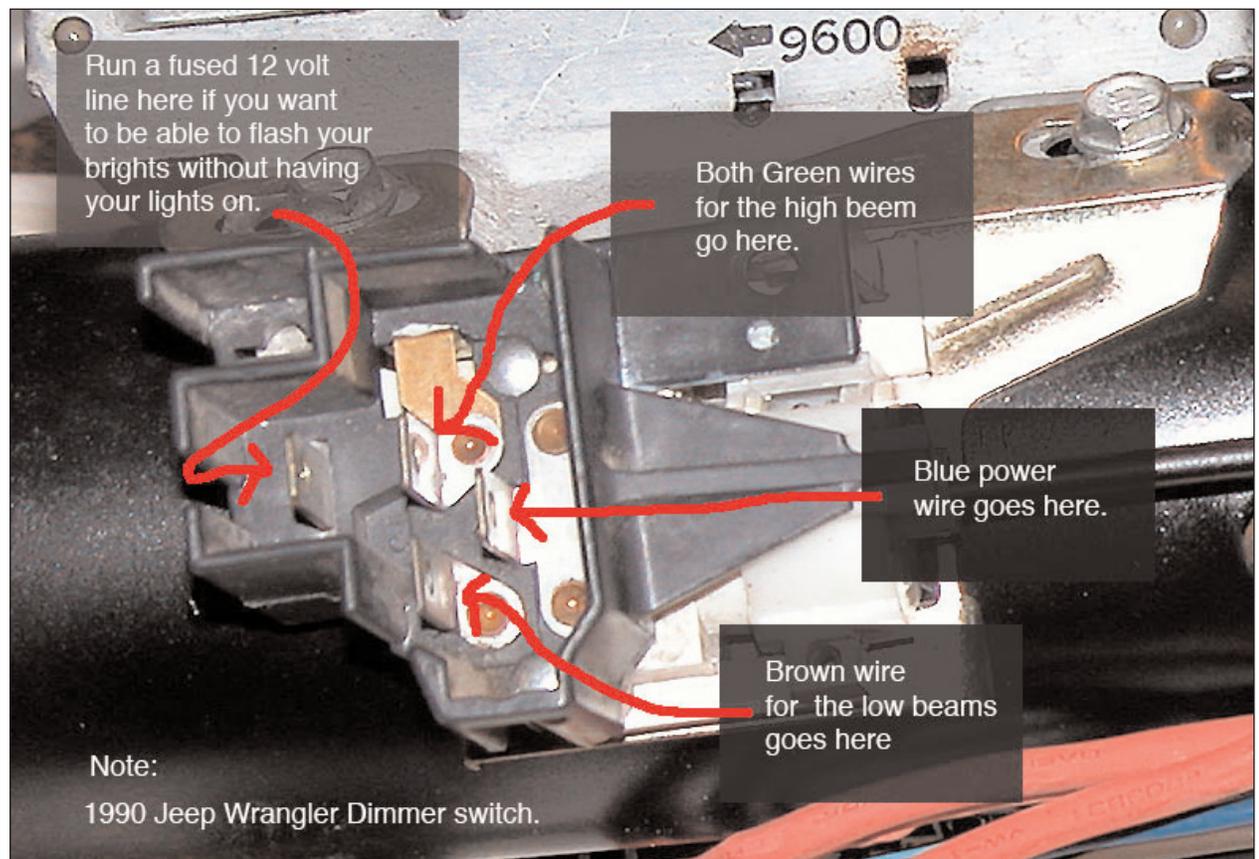
Note that I had to make a small cut out in the mounting bracket so the bend in the rod would clear.



Here is how the floor switch is wired.



Here is how you wire the dimmer switch. This switch provides for a daylight flasher.



Please look to the instructions that Ken Henderson provides with his wiper kit on how to wire the multi function switch for wipers and cruse.

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