

Retrofit Lube Oil Ports for T-84 Transmission and T-18 Transfer Case

By Tom Essary, Arlington, TX MVPA #31350

Background

As many antique machines have seals that are weak, worn or just loose, they leak lube oil. The transmission and transfer case on World War II jeeps are no exception. They present a special or at least difficult opportunity. These assemblies are snugged close to the body and the fill and check ports are A) Hard to Get To; B) Hard to see in or even to get a finger in to check the oil level; and C) There is no easy way to modify things to access these ports any better.

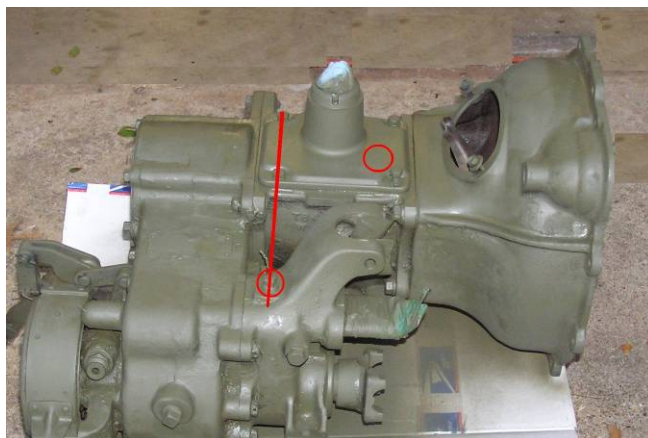
At first I considered adding an elbow and an extension to the fill port, but that seemed to add more complexity as it would make it easier to fill, but harder to check the oil level.

On the 2nd Annual Red Ballin' Through the Ozarks in NW Arkansas I helped a friend fill his transmission with lube oil. He had removed the transmission cover from the front floor and the cover from the transmission. There are about 23 bolts/screws and the accelerator rest if you had them all in place and possibly the shifter knob to remove to access the transmission from the top. Nothing for the transfer case! Some folks leave most bolts out as it is easier to attack from the top. I mentioned that I had considered adding a port on the top of the tranny and he said some jeepers have cut a hole in the floor to access the transfer case via the vent just behind the shifters.



This was the spark to set me to making the necessary adjustments to my jeep. I am not concerned about winning awards for perfect restoration and drive the jeep in all sorts of conditions and sometimes many miles from help. Adding a few holes and placing a plug, cap or grommet over them to make maintenance much easier sounds like a good compromise.

Please modify this method for other locations and for other vehicles.



Transmission

I worked on both projects at once, but will document them separate to simplify the procedure. Please modify things to meet your needs, tools and junk box etc.

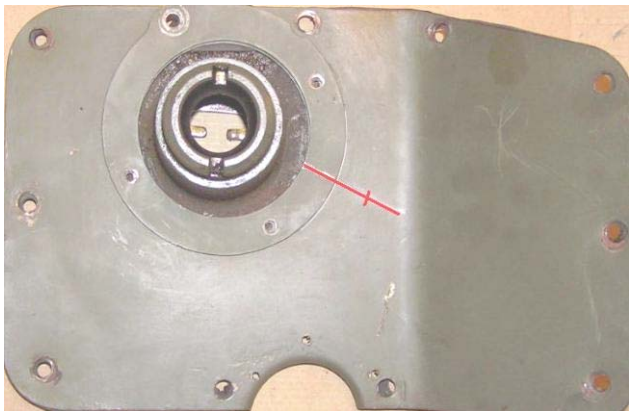
Note in the photo the circles are where the lube ports will be located. The line shows the alignment of the transfer case and the rear bolts on the transmission cover.

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Remove the floor rings, cover and as much of the parts as you feel necessary to access the transmission case cover. You may have to clean things off under the cover as oil, dirt and debris have probably accumulated. I determined by observation that the best location for a lube port and access for a dip stick was in the front passenger side.



In the photo, I placed a screw driver in the transmission next to the shift floor ring and marked the floor ring adjacent to the screw driver. This mark was transferred to the transmission floor cover. I made a mark around the outside of the floor ring. These marks will allow me to place an access hole so it will not interfere with the floor ring etc. After drilling the hole in the floor cover, temporarily replace the tranny cover and the floor cover. Mark the tranny cover through the new hole in the floor cover to drill for the lube port plug.



Remove the covers, center punch and drill the tranny floor cover with a 7/16" drill and tap for 1/4" NPT. If you have a 3/8" NPT tape, use it if you want as this is the same size as the transfer case vent.

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Replace everything and add a cover to the new hole. More on that later.

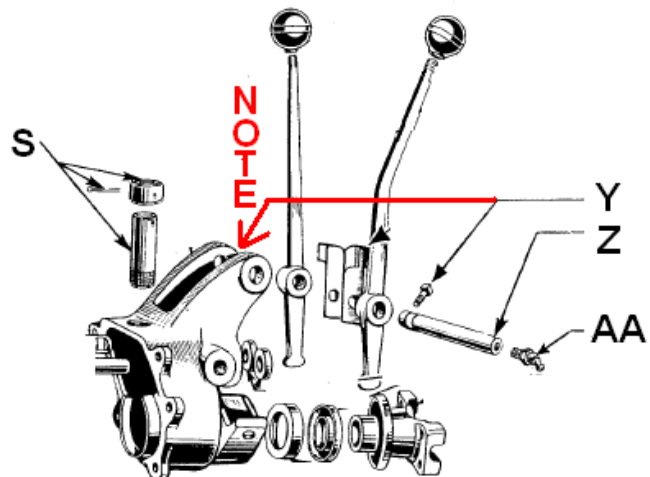
A dip stick made from almost any small rod can be made. I marked mine for both transmission and transfer case. The new dip stick will be stored either in the tool box or glove box. As with most things that are not tied down it will probably end up in lots of places in the jeep.

Transfer Case

Make a jig to locate the access hole in the floor. I made a loop of wire about 1/2" diameter and place it over the plug in the transfer case vent port under the floor. If the transfer case breather is in place, make a U shaped bend in the end of the wire to hook around the breather. My jeep did not have a vent, just a 3/8" pipe plug. Place the loop or U around the pipe and bend the wire vertical at edge of the transmission hump (See photo). Make a small mark where the vertical wire passes the floor. Place the wire on top of the floor with the loop/U over where the vent port is, align the wire with the mark made earlier. Mark the center of the wire loop/U. Center punch and drill this hole. Make the hole the same size as previously made for the transmission fill port. That is if you are going to use the same covers to keep things uniform.



As I do not have a transfer case vent, you will have to work out however you can to remove the vent to check and fill the t-case with oil. I ground the 7/16" square lug on the top of the 3/8" pipe plug down to 3/8" square to match the other plug. The 1/4" pipe plug has a 3/8" square lug. Weld an inverted 3/8" drive socket to another socket to be used to remove/replace the vent/plugs. My pick was a 7MM which has a narrow shank that fits into a 7/16" socket ... makes alignment and welding easy.



NOTE: Some jeeps have a hole cut in the

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side of the transmission hump that matches up with the transfer case lever pin (Z) grease Zerk (AA). The hole needs to be forward or back and the Zerk fitting pointing toward the hole as that fitting is at 45°. You can adjust this lever pin by loosening the set screw (Y) located on the drivers side of the levers. The screw is mounted facing forward. The cover is described in number 3 below. S in the drawing is the breather. You could change the Zerk to a straight one.

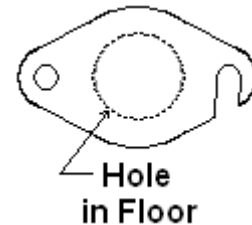
Access Hole Covers

There are many options, some more crude, some more elegant. All rely on your expertise, goals, tools and junk box.

1. Use electrical junction box covers ... snap in caps to cover open conduit holes. Use a thin o-ring to seal the opening. (See photo of covers and finished transfer case project.)



2. Rubber Grommets
3. Make an oval shaped piece of sheet metal, drill holes in the long ends to screw down the cover. If you make one hole elongated and break out of the side of the cover, you can loosen the screws and swing the cover to one side.
4. You could make the cover round and about ½" larger than the hole, then use about 3



screws to hold it down. E.g. Similar to the floor ring for the dimmer switch without the large hole in the middle.

5. There are many plastic caps that can be found.
6. Make a temporary cover and hope to get back to another method later.

For some of these covers, cut a small rubber or leather gasket to use under the cover to keep out water and mud.

Use ¼"-20 bolts if needed to match the other covers. I don't know of any 7/16" hex head sheet metal screws, but sheet metal screws would be easier unless you weld a nut on the bottom of the floor. A captive nut is the correct way. Screws that match the lever floor rings would look good too.

Tom and Laurie Essary live in Arlington TX and are new to Arrowhead, Arkansas Travelers and the MVPA. They spent 5 months reviving 1943 GPW-I00709 in early 2008. This jeep named "Toby" has over 2500 miles on it since the restoration 10 months ago. Tom can be reached at tom@ad5zo.com See ad5zo.com for more info about the jeep restoration etc. Tom spent about 8 years in the US Navy as an ET3 and LTjg. He served as the Damage Control Assistant (DCA) on the USS Luce DDG-38 in '85-'86.*