

Bosch hydraulic cylinder inlet ports seals replacement

Ivan Ruiz – December 2017

I recently purchased a Khamsin and noticed some hydraulic fluid (LHM) leakage in the areas under the headlights. I also noticed some wetness under the driver's front carpet, close to the switch that controls the seat height adjustment. Although none of these leaks were serious even a small amount of LHM seepage is a nuisance as this mineral oil is very slippery and difficult to clean.

In this DIY article I will tackle the removal and repair of the seals located in the inlet ports of the headlight lift cylinder. The steps outlined below also apply to a Bora and an early Merak. Also the hydraulic switches use the same retainers and seals, therefore this procedure will be useful if you have a leaky switch.

Before I begin let's start with some basic background information. The Khamsin's hydraulic system is made from components from two very different manufacturers. The brake, clutch assist and self centering steering are all Citroen components and used on various Citroen cars. The headlight lift, seat adjustment and pedal adjustment (in the Bora) are all Bosch components. If you ask a Citroen guy about one of the Bosch components you will get a puzzled look as no Citroen car ever used those components. In fact the only other car I've been told used those Bosch components is a Mercedes 600, not exactly a common car.

This article will cover how to replace the rubber seals located inside the two cylinder ports. If the leak is coming from the cylinder itself then your best solution is to get a replacement cylinder. At the end of the article is a reference section as to where to get a replacement cylinder and seals. It is very difficult to determine if the leak is from the port or the cylinder, but the great majority of cases the leak is from the port. I think many cylinders get needlessly replaced when this repair is rather simple.

As I mentioned, the subject car is a Khamsin but the steps are virtually identical for a Bora or early Merak.

- First, raise the headlights
- Remove 4 screws that hold the trim in front of the headlights, remove the trim



- Remove the three screws that hold the lamp making sure not to disturb the adjustment screws. Unplug the connector and remove the lamp.



- The cylinder is now accessible. If you have very large hands you may want to remove the other lamp as it is very easy to do.



- Make sure to depressurize the system by raising and lowering the headlamps until they no longer operate. Leave the headlamp lift switch in the up position as it will make it easier to hand lift the headlamp bucket once the system is depressurized.
- Hand lift the headlamp bucket and use the manual latch to keep it in the up position. Note: a manual latch is included in case there is a headlamp lifting failure and you need to manually lift them.
- Use an open 10mm and a 14mm wrench to disconnect the two hydraulic lines. Hopefully you remembered to depressurize the system ... if not, you will need to take a shower.
- Remove the bolt and nut that attach the headlamp bucket to the top of the cylinder.
- Notice that the cylinder can slide up and down in the retaining bracket. If your are happy with how the headlights fit make sure to note the position of the cylinder so that it can be returned to its original position.
- Use 17mm socket to remove the large nut at the bottom of the cylinder
- Use a 8mm socket to remove the two bolts that hold the U shape bracket
- The cylinder can now be removed. Some wiggling is required but it will eventually come out.



- Remove the clips that hold the two port adapters and remove the adapters



- Inside the ports you will notice a brass retainer. Under this retainer is the rubber seal that needs to be replaced.
- Use a 4mm tap to thread the hole inside the retainer
- Once threaded and secure, put the other end of the tap on a vice and extract the retainer using a small hammer on the cylinder



- Using a very small screwdriver remove the rubber seal which will be located inside the port hole.
- Use a cotton swab (Q-tip) to clean both ports as there will most likely be brass metal fragments.
- Lubricate the ports with LHM and insert the new rubber seals
- I like using the back end of a drill bit to push the seal all the way down the hole. Make sure the seal lays down correctly.



- You can reuse the brass retainer as the threads will not affect the seal
- Place the retainer on the hole and slightly tap it until it is flush
- Use the adapter and a non-metal hammer to drive the retainer down the hole. The adapter has a shoulder that will prevent the retainer from going too far inside the hole and damaging the seal.
- Put on the clips and the cylinder is ready to be reinstalled.
- Do not forget to remove the manual headlamp lift lock before you start the engine!
- Before reinstalling the lamp, operate the headlight lift switch several times and verify there are no leaks. I left the lamps out all night and verified there were no leaks the next morning.

Where to get parts

The only new parts that are needed for this repair are the rubber seals. MIE sells the seals and they are not expensive. Part number: MIE000337
<https://www.maseratinet.com/p-11226-port-seal-quad-ring.aspx>

Notice that the seals are not just a regular o-ring



If you feel the cylinder itself is the cause of the leakage I would still encourage you to try replacing the port seals first. As I said before, it is many times difficult to determine the cause of the leak and all three of the Khamsin leaks were fixed by replacing the port seals.

If a cylinder replacement is required, MIE has a rebuildable aftermarket replacement.
<https://www.maseratinet.com/p-23058-head-light-lift-cylinder.aspx>