

Jaguar V12 engine oil leaks, with a few other areas included:

If you are attempting to track down and rectify oil leaks from the Jaguar V12, read on. This is my findings from many years with this engine.

Most times the leak is due to very lousy care by previous owner/s. Stale fluid (Oil) would be AT the top of my list, if I made one. Many Jags in my fleet over a lot of years, have had lots of oil leaks dry up with a good dose of fresh clean oil, this applies to engine, trans, diff, steer, and even brakes.

I will list the area's, followed by "my fix", and sensible suggestions.

Some are simple, some are engine OUT, so be prepared.

STRONG SUGGESTION:

Ensure that YOUR Crankcase Breather System (PCV in some languages) is at 100% operational spec. I WILL NOT go into details, as every market has its own Emissions Legislation, and YOU should know what that is. Quite often, restoring the PCV system to spec, followed by a wash down of the messy area, sorts a lot of leaks. It can be that simple. If an engine (any engine) cannot breathe, the internal pressure in the crankcase will find a way of "breathing", and bring oil with it.

This is in NO particular order, just as I found and fixed them. I have grouped what I can to keep it readable.

Engine:

Cam Covers:

The cam covers are probably the most common oil leak area.

Removal is extremely time consuming, and care is required.

The original gaskets were a cardboard material, the later (6ltr spec) were of a gortex spec, and sealed well. I used neither. A simple 4mm Bead of Hi-Temp RTV sealed them 100%.

NEW "D" seals will be needed, of course, duly coated in Hi-Temp RTV.

Whatever way you choose to reseal these covers, the faces of the tappet block and the cam covers MUST be 100% clean, and NO scores or scratches.

For RTV only, you will need to make 4 guide studs for each cover. I used suitable threaded bolts, cut the heads off, and sliced a slot across the top

face so a blade screwdriver could be used for removal after the cover is seated.

Screw in these guide studs in suitably spaced positions around the tappet block.

Coat the “D” seals with RTV, and insert them in the tappet block groove, run a 4mm bead of RTV around the face of the tappet block, including the top face of the “D” seals.

Slide the cover on, and allow it to sit on the bead, push down VERY SLIGHTLY AND CAREFULLY, WATCHING for an even “witness” of RTV around the outer circumference. THAT’S IT, NO MORE. Let the RTV set up.

DO NOT APPLY UNDUE PRESSURE TO THE COVER/S, AS THIS WILL SQUISH THE RTV OUT OF THE JOINT AND IT WILL LEAK.

I leave them overnight. Then remove the studs, screw in the correct bolts and tighten them to “just over finger tight”, as this added SMALL amount of pressure will seal the joint 100%.

Tappet block to cylinder head seal:

This is NOT a common leakage point, as the cam cover leak is often the root cause of oil in this area, BUT, if yours are leaking here, there is NO gasket at this joint, as a chemical seal is the seal medium used.

1) To reseal this area the tappet blocks must be removed. This requires the camshafts to be removed, which in turn requires the timing chain tensioner (the plastic blade inside the timing cover) to be retracted, and this will most certainly cause it to fracture. Some have had success with simply lifting the cam sprockets onto the metal arms provided by Jaguar, but the tension of the chain from that blade is significant, and one slip and the tensioner will “ratchet” outwards, and basically ruin your day.

2) Modern sealants, RTV etc, can be used around the circumference of the tappet block where it meets the cylinder head, and is quite successful. Greg In France has a superb write up on how he did this on his own engine. The details are on the Forums, or send him a PM.

There is NO oil pressure here, it is drain back oil only.

I would go this route if mine did actually leak, before attempting removal for a reseal.

Tappet block banjo bolts:

There is a banjo bolt at the rear of each tappet block. They rarely leak, and are best left alone if dry.

If they are leaking PLEASE obtain, or make, 2 banjo bolts that are longer than the original by approx 10mm. There is plenty of thread in each

tappet block, and the original bolts only grip by about 3 threads, and are easily stripped.

Access to these, IN THE CAR, is near impossible.

Most oil in this area is from the “D” seals of the cam covers already discussed, so very careful diagnosis is needed before attacking them.

Engine valley plate:

This is the alloy plate that runs down the centre of the engine. The original gasket was a thin paper material.

The distributor that passes through this plate also has an o/ring seal, which leaks badly.

Removal of this plate requires the removal of ALL the items in the “V”, which includes the a/c compressor, cruise bellows, distributor, throttle pedestal, oil switch pedestal, EFI wiring loom.

I reseal this plate with Hi-Temp RTV only, and a new o/ring on the distributor.

Oil switches:

The 2 oil switches at the rear are well documented as oil leak items.

The small switch is for the light, and is nothing special, just a 1/8BSP male thread, with a spade terminal is all that is needed.

The larger switch is for the gauge. It is a Smiths unit. It is a leaker, and also electrically unreliable. There are few alternatives, due to the “reverse ohms” scale used.

Engine breather elbow:

This is the alloy elbow bolted to the front of the B bank cylinder head, with the rubber elbow fitted on top, and a filter capsule inside.

The 2 bolts are threaded into “open” holes, so oil tracks via the threads, and leaks out at the bolt head.

Remove this elbow, discard the filter capsule, clean all the area, fit a copper washer to each bolt, smear a new gasket with RTV, refit the elbow, and tighten the 2 bolts ONLY FIRM. Stupid tight will damage the elbow and the gasket.

If a gasket is not available, RTV will suffice, with a finger tight set up, and then a slightly firmer tightening after 24 hours.

The rubber elbow on top of the alloy elbow should be replaced. They rot and split, and leak badly.

Timing cover rubber plug:

There is a rubber pug in the timing cover. On the A bank side, just above the water pump line.

They leak. They shrink, and leak even worse.

Obtain a new one, pry out what remains. Some will fall inside, no issues, it will come out with the next oil change. Smear the new plug with RTV, and push it into the hole, wipe off the excess RTV.

Some have used the “new style” alloy plug, privately made by Forum members, I have not, so I have no “hands on” info on them.

Front crankshaft seal:

Rarely a leakage area.

If it is proven to be leaking, remove the front pulley assembly. Pry the old seal out of the cover, clean the area, smear the new seal outer edge with RTV, tap it GENTLY into the cover until its is flush. DO NOT tap it too far, it will fall inside, and ruin your day.

The new seal WILL come with a seal runner. This seal runner MUST be used with the new seal.

Oil filter housing and associated pipes and hoses:

The gasket between the oil filter housing and the engine block leaking is rare.

The 2 small hoses on the small steel pipe for the drain back to the sump from the relief valve are well known leak areas. They are simply 6mm oil hose, nothing specific.

Access is from under the car, with the oil filter removed and feel your way through the task. Visual access is minimal at best, and if you have cat converters in the engine pipes, you will have fun here. We don't have them, so I have no idea of the added difficulty involved.

There is a drain back housing arrangement out the bottom of the filter housing, and there are 3 o/rings within this thing that rarely leak, but,, maybe yours are. That is a PITA to do insitu, so if the engine is out for ANY reason, renew them.

Lower sump pan gasket:

This is the tin pan that houses the drain plug.

Drain the oil, remove the pan.

Some fiddling with the power steer pipes that run across that area will be needed, so take care not to damage them.

Check the “flatness” of the gasket face on this tin pan, and dress it down flat as needed, especially around the bolt holes.

Smear a new gasket with RTV and refit the pan, bolts fitted to just over finger tight, let it set for 24 hours, and retighten to firm only.

I use no gasket here also, so guide studs again, 6mm bead of RTV, paying attention to a circle of RTV around each bolt hole, slide the pan up the studs, fit a number of pan bolts, and tighten “finger tight”, again watching for the RTV squish, and STOP. Let it set up overnight, then follow up with a ½ turn more to complete the seal.

Upper alloy pan, also known as “the sandwich plate”:

This is the large alloy plate that covers the lower section of the engine.

Most leaks here are from the alloy fitting at the front for the oil cooler hose, OR the blanking plate if you have the Full Flow Oil Cooler.

The By-Pass housing has o/rings that dry up and leak. Replacing them is straight forward, so no explanation is needed.

The Full Flow plate simply has a gasket.

The sandwich plate gasket is another matter. The front suspension prevents access. Either lower the cradle, supporting the engine from above, OR, remove the engine, its that simple.

I use RTV here also. Same procedure, guide studs, and set up, allow to dry, then further tighten the bolts the next morning.

Whilst the plate is off, I strongly suggest going inside the engine, and replacing the o/rings on the oil suction, and supply pipes. These leak internally, and oil pressure AND flow is affected.

Oil cooler pipes and hoses:

These are age related leaks now. The hoses are No Longer Available, so any competent hydraulic shop can and will, replace the hose section of these pipes.

The cooler itself is robust, BUT, areas that use salt in Winter are now reporting cooler failures. We don't use salt, no got snow, so I have never had issues with the cooler itself.

Oil filler cap:

The oil filler cap has an o/ring seal in a machined groove. Over time it cracks, or compresses past sealing size. A new o/ring is available, and is easily fitted.

Rear Main Oil Seal:

The early engines, up to engine # 66782 have the rope seal fitted, These are a good seal, and rarely give problems. Then at engine #66783, and the

introduction of the Marelli Ignition system on the XJS in 1989, the Flaseal Full Circle seal was introduced.

These rope seals are very old school seals, and work very well. IF they are actually leaking, fresh engine oil will often soften it enough to almost stop the leak. They are a FULL engine strip down to replace, as they are the FIRST item fitted when building the engine. Jaguar have a specific “sizing tool” for sizing this set up, so it dont leak, and without using that tool, it could be a hit and miss repair. They may WEEP, and the repair of the PCV system mentioned way up at the top of this, will significantly reduce this weep.

There are dozens of “Snake Oil” cures for Rear Main Seal leaks, and I have never used them, or believe in them.

Either style of seal, it is NOT a common leak area that I have found. Most oil that people find in the flywheel tin cover is NOT from that seal, it has seeped in from above.

Other oil leak suspects:

1) The power steering pump, bolted to the LH side of the engine is now becoming an oil leak item.

Age is involved, and the lack of fresh steer fluid annually, is the root cause that I have found. A simple syringe out of the old, and refill, 3 times over a week, does wonders.

It is a GM Saginaw pump, with Jaguar specific mounting brackets, and a Jaguar specific Hi pressure fitting fitted. Early fittings are a “flare” style, with later fittings being an “o/ring” style, so pay attention if swapping pumps.

The return fluid hoses are NOT specific to Jaguar, simply “off the roll” 10mm transmission hose, and use EFI spec lamps is a good idea. 5 years is the average life of these hoses.

Hi Temp seal kits are available for these pumps, and resealing, once off the car, is a simple process.

The steer oil cooler, mounted inside the brackets of the LH engine mount, is also a source of leaks, mainly from the hoses, age related again.

The High pressure line is specific to the market the car is operating in, as in LHD and RHD, and Jaguar units are big \$\$, but well worth it in my opinion.

2) Transmission cooler pipes and hoses. These run down the RH side of the engine upper sump line, and are held in place by small metal brackets and metal clips. Vibration has them rub a hole in the metal pipe, usually the bracket under the starter motor, is the one I have had issues with.

The hoses at the front of these 2 pipes, are now OLD, and will leak, and fill the alternator with oil, not good.

Early cars have these hoses slid over the pipes and clamped in place, and the same at the radiator.

Later cars have these hoses swaged onto hydraulic style fittings. These swaged style hoses can be separated, revealing barb ends, that 10mm transmission hose can be slid over, with suitable clamps.

TH400 Transmission oil leaks:

Not a known leaker, but again, it can leak.

Main issues are the pan. This is mainly due to IDIOTS taking a shortcut to access the internal filter. By that I mean bending the pan down from the front to reach inside and replace the filter. The Jaguar installed "Collision Bracket" is the root cause of this practice. None of mine have that "bracket", so the pan removal is a 5 minute task.

These pans get damaged, again by idiots over tightening the retaining bolts to TRY and stop a leak. When you remove the pan, tap the surface FLAT, paying particular attention to the bolt holes, as they deform badly. I stopped using gaskets on trans pans a very long time ago. Once more I use RTV, and guide studs, NO MORE LEAKS.

The torque converter seal (front pump seal) is not a known issue, but if it is, trans out is the only way.

Selector shaft seal, rare in the big scheme of things, and a PITA to replace, as it is fitted from the inside. Mostly a problem with "Garage Queen" cars.

Output shaft (rear seal), never had one leak. Prop shaft removal is required, so that means removing the rear transmission spring mount arrangement.

Speedo transducer adaptor, some do, most dont. Again, a small o/ring seal inside.

Governor cover plate, never seen one leak. Accessed from under the car, RH side rear of the transmission, 5? bolts I think, NOT rocket science.

Vac Modulator. Located on the RH side near the front of the transmission, just above the pan gasket line. Has an o/ring seal. The exhaust pipe will need to be lowered to allow removal of the modulator. Some oil MAY dribble out as its removed, but a bath of oil, NO.

Trans dipstick tube seal. This is further forward of that Modulator, and up topside. NOT a common leak item, and a PITA to fit insitu. I always replace it if the engine is out for any reason.

Kick down switch, On the LH side of the casing, bear the sector shaft. It is an o/ring seal, and requires the pan off to release the internal tangs.

Rear Axle:

The XJS has 2 brands of differential units fitted, mainly at about 1985ish, they came with a Dana unit, NO DRAIN PLUG, so easily identified. The Salisbury style HAS a drain plug.

The Sedan did not get the Dana, it was the XJS only.

They both have a breather tube arrangement on the backing plate, RH side, topside, and a PITA to access. These breathers gum up, so get down and dirty and remove it and clean it well, and refit it.

The output shaft seals are common leakage items, and although only pennies per seal, a MAJOR labour intensive task. Basically cradle out of the car, brakes off, stub axles out, dismantled, new seals, maybe bearings, and reset with a new collapsible sleeve, then all reassembled. LOTS of “while I am in here” items if you are doing these seals.

Keeping the diff fluid FRESH, as in new fluid annually, has reduced these as leakers on all my Jags to ZERO.

The diff backing plate, not a common leak area. It is a simple gasket, and although messy to replace ,not difficult.

Pinion seal, very rare to have a leak here in my time. GREAT care must be taken when replacing one, as the “pinion pre-load” is by collapsible sleeve, and over tightening that pinion nut will collapse that sucker more than intended, and really put a smile on your face.

I have NOT touched on brakes, as that is a specific area that I consider NOT oil leak related in the meaning of this Doco.