Do not keep grease cartridges too long

Lubrication is customization

Years ago, you became the proud owner of a brand-new combine harvester. The investment was big, but the machine is a big step forward for the company. The operation is simple, the result is above expectation and the maintenance is also easy. All maintenance is neat and tidy, both by the mechanization company and yourself. You treat the machine like your child. All oils are replaced at the right time. All bearings are also lubricated with the grease prescribed in the manual. There is no cloud in the sky. After many years the machine is still running on the farm. The operating system on the machine is a bit outdated, some parts have been replaced and also the maintenance is a bit less serious, but the machine is still functioning well. After a long day on the field you decide to lubricate the machine. With a grease gun lying on the tool trolley, you fill all the bearings. So full that the grease comes out and you know for sure that all the dirt is out. But was this the right grease? And was it the right amount?

Lubrication of bearings is often thought too easy. Lubrication takes place between jobs, which makes it a rush job. In addition, you often lubricate all bearings with one type of grease. A big mistake, because not every grease is suitable for the bearings on your machine. Example: a bearing that rotates at a high speed needs a different type of grease than one that rotates slowly. At high rpm, the grease must have a lower viscosity, or it must be more fluid. If the grease is very thick, the bearing encounters a lot of resistance. This friction heats up the bearing, expands the inner ring, the clearnace disappears and the bearing gets stuck. In short, the wrong type of grease will cause bearing failure and therefore the machine will come to a standstill. In the manual of your machine you will find the type of grease you need to use. Then you can be sure that the grease mixes well with the grease that is already in the bearing. Lubricating grease contains a thickener and a base oil. The grease you put in must have the same components, otherwise the grease won't mix. In fact, the grease becomes liquid and runs out of the bearing. This causes the bearing to run dry, causing it to jam. But which grease should you use? And which grease can you mix? SKF has special tables for this.

Furthermore, the type of grease also depends on the temperature of the bearing. Some greases are more resistant to high temperatures, other greases are more suitable for low temperatures. There used to be a difference between the grease you used in winter and in summer. Nowadays you can use one type of grease all year round and you shouldn't keep grease cartridges too long. If a lubricant cartridge has been on the shelf for two to three years, it's unwise to use it anymore. After all, the base oil separates itself from the grease, so that the grease loses its effect. In any case, store grease in a place where the temperature is constant.

Lubrication is similar to aquaplaning on the road. A grease must create a thin film between the inner and outer ring and the balls in the bearing. Because of this lubricating film the friction disappears and does not damage the parts in the bearing. But that film must have exactly the right thickness. In the manual of your machine you will find the right amount of grease to add in case of manual re-lubrication. If you don't have this manual, several free software programs or apps offer a solution. In practice, users often squeeze the bearing completely until the grease comes out. This is far too much and all grease residues end up in the environment. For manual re-lubrication, you can use a manually operated grease gun (quantity difficult to dose) or a gun with a delivery meter (more accurate). Do clean the nipples and the nozzle of the grease gun with a cloth before you lubricate the bearings and after lubrication put a cap on the nipple and close the nozzle. This will protect the bearing and prevent machine downtime. An option that is being used more and more often is a central lubrication system. In this way every lubrication point gets the right amount of grease at the right time. This way you are always sure that the rotating parts can perform optimally.

Sealing

Once the grease is in the bearing, it is important that it stays in place. Bearings are provided with a seal for this purpose. This seal keeps the grease inside and the dirt outside. The material of a seal must be resistant to sand, mud, moisture, but also ammonia. Handle seals with care. Spray for example, when spraying, on your machine and not on the bearings. A water jet of up to 200 bar pressure penetrates through the seal and corrodes the grease, losing its lubricating effect. And in the long run, corrosion occurs inside the bearing and it fails. Check the seal regularly for damage or dehydration. When replacing the bearing, seal or lubricating grease, never select only based on price. Select the product that fully meets the requirements of the machine. Keep in mind that the cost of unplanned downtime is many times higher than the small additional cost of an A-brand bearing or seal.
Bearings, seals and lubrication look like components of your machine, but if used incorrectly it can mean the difference between production and downtime, or between cost and revenue.

Coding

To make sure you have the right bearing with the right seal, there is a coding on each SKF bearing. Make sure that the new bearing has exactly the same coding, then you can be sure that it meets the machine requirements. Correct bearing designations can be found on www.skf.com/uk or in the Bearing Assist app.