

Types of maintenance in machineries

1. Corrective maintenance

Corrective maintenance is implemented right after a defect has been detected on a piece of equipment or a production line: its objective is to make the piece of equipment work normally again, so that it can perform its assigned function. Corrective maintenance can either be planned or unplanned depending on whether or not a maintenance plan has been created.

Technicians apply unplanned corrective maintenance to react as soon as a failure couldn't be anticipated with preventive maintenance processes has been detected. Unplanned corrective maintenance can quickly become more costly than planned one because it can lead to costs which couldn't have been anticipated.

2. Predetermined maintenance

Predetermined maintenance, probably the less known one of all the maintenance types, doesn't rely on the actual equipment's state but rather on the programs delivered by manufacturers. They elaborate these programs based on their knowledge of failure mechanisms as well as on MTTF (mean time to failure) statistics which they observed on a piece of equipment and its various components in the past. Based on the assumption that this type of maintenance is only applied according to programs elaborated by manufacturers, failure risks are higher or lower whether the piece of equipment or part is new or old.

3. Condition based maintenance

Among all types of maintenance, the condition-based maintenance is the most complicated to implement. It aims to prevent failures and requires regular check-ups of the state, the efficiency as well as other indicators of the system. All this data can be gathered automatically on the field. These are all actions the teams can undertake

to ensure that no piece will cause a breakdown that would damage the whole production line. Even if condition-based maintenance can seem difficult to implement, it is particularly economical. Since maintenance technicians proceed to very regular checkups of their parts and equipment, they will only take in charge the ones that need to be repaired or replaced.

4. Preventive maintenance

Preventive maintenance is applied by technicians' teams and managers before any breakdown or failure occurs. Its aim is to reduce the probability of breakdown or degradation of a piece of equipment, component or spare part. In order to implement such maintenance, teams have to take the part's history into consideration and keep track of the past failures. This type of maintenance is described as planned because it's based on well-established maintenance programs and hard facts.

Maintenance to reduce complaints in machineries

DAILY MAINTENANCE BEFORE USE:

- Check engine coolant level.
- Check transmission oil level.
- Check hydraulic fluid level.
- Check A/C belt and/or serpentine belt tension.
- Grease boom: grease flag pins, sway pivots, tip hinge, and boom fold pivots every eight hours of run time.
- Check engine air intake system: make sure clamps are in place around the air filter and charge air tubes.
- Check lighting and flashers.

DAILY MAINTENANCE AFTER USE:

- Flush wet system.
- Clean boom strainers and main product strainer.
- Inspect machine for product or hydraulic leaks.

WEEKLY MAINTENANCE:

- Torque lug nuts: wheel deflection can loosen the lug nuts, especially when the sprayer is loaded.
- Grease steering and axle components.
- Grease center axle pivot.
- Check differential fluid level: inspect for leaks.

MONTHLY MAINTENANCE:

- Grease driveline.
- Check hydraulic filter indicator.
- Clean radiator.
- Inspect and clean engine air filter.
- Inspect cab air filter.
- Inspect boom for damage and boom pipe for leaks.
- Inspect hydraulic system for leaks.

Common maintenance required in Diesel Engine Machines

➤ SPARK PLUG CLEANING

Though diesel engines are often the main worker on the farm, there are numerous gas power plants that also need attention and maintenance. One of these crucial components is the often-ignored spark plug, which has a great effect on engine operation.



➤ BATTERY DRAINAGE

One of the biggest headaches during the cold, winter season is a dead battery when trying to get equipment up and running. Learning tips and tricks on how to keep batteries alive through winter can save money on dead batteries.



➤ **MAGNETOS ENERGIZING**

Magnetos work much like a miniature spring-drive generator. As the drive cog is rotated, the magneto drive wraps up a spring that is positioned between the drive link and the magneto rotor. Sometimes these complex systems can be complicated to find and fix issues.

➤ **CARBURETOR CARE**

Carburetors are a key component for there to be combustion for gasoline to run properly throughout the engine. This can only occur if the carburetor does a good job atomizing and emulsifying the gasoline. Setting carburetors for peak operation will start the carburetor off on the right foot. From setting the load valve correctly to managing the initial valve settings, these steps will ensure carburetors run smoothly.

➤ **CHANGE THE FILTERS**

Tractors and pickup trucks need frequent oil changes. Oil changes on tractors can sometimes be difficult if the oil filter is hard to reach. Air filters and other filters should also be changed according to the manufacturer's instructions.



Tips to reduce maintenance cost

1. **Keep accurate records:** Keep a notebook in your equipment shed so that you can record maintenance tasks and mileage (if applicable.). Your equipment maintenance log book should also be used to record problems, dealership phone numbers and other contact information, and mileage.
2. **Make a chart:** A large whiteboard or chart is an invaluable planning tool. Use it to note major equipment maintenance tasks and reminders.

3. **Check the hitch:** Always check the hitch or couplings where farm equipment hooks to tractors, trucks or ATVs. Make sure that couplings are secure and clean any evidence of rust.
4. **Examine the lights:** Make sure that brake lights, headlights, and other lights are all working.
5. **Check the tires:** Proper tire inflation on trucks, tractors, and trailers as well as on pull-behind seeding, harvesting and processing equipment helps them run better and for vehicles.
6. **Look for battery corrosion:** Corrosion on battery terminals can lead to power loss or stalls. Open up the hood on your truck or uncover the battery carefully on your tractor and visually inspect the terminals.
7. **Get an oil analysis done:** An oil analysis on tractor oil and transmission fluid can tell you whether or not these need to be changed on larger equipment. Small metal particles in the oil or transmission fluid, for example, may indicate wear that should be fixed before a major malfunction occurs.
8. **Clean equipment:** Always clean off your equipment before you put it away for the season. Use a broom to sweep loose hay, straw or plant material off of tractors and other equipment. Hose down implements and check the tires before storing equipment for the season. Cleaning off the exterior can prevent rust.