

TYPES OF MAINTENANCE

REACTIVE MAINTENANCE

A maintenance strategy that involves restoring assets to operating condition **after a failure has occurred**. For this reason, reactive maintenance is often called "run-to-failure" maintenance.

Types of Reactive Maintenance



CORRECTIVE MAINTENANCE

Maintenance performed to restore a non- or under-performing asset to an optimum or operational condition.



BREAKDOWN MAINTENANCE

Maintenance performed on an asset that is no longer functioning and cannot be operated.



EMERGENCY MAINTENANCE

Maintenance performed immediately to prevent a threat to health and safety, serious property damage, or the viability of the organization.

Reactive Maintenance Advantages and Disadvantages

- ✔ Lower initial costs
- ✔ Easy to implement
- ✔ Cost effective for low-risk, non-critical assets
- ✘ More unscheduled downtime
- ✘ Higher costs per failure event
- ✘ Poorly optimized resources

Industry Statistics

10x
Up to

Cost of reactive maintenance compared to routine maintenance

51%

Percent of industrial facilities following a reactive, run-to-failure maintenance program

\$50B

Estimated cost of unplanned downtime in manufacturing environments, per year

PROACTIVE MAINTENANCE

A maintenance strategy that seeks to anticipate and eliminate the conditions of failure **before a failure occurs**.

Types of Proactive Maintenance



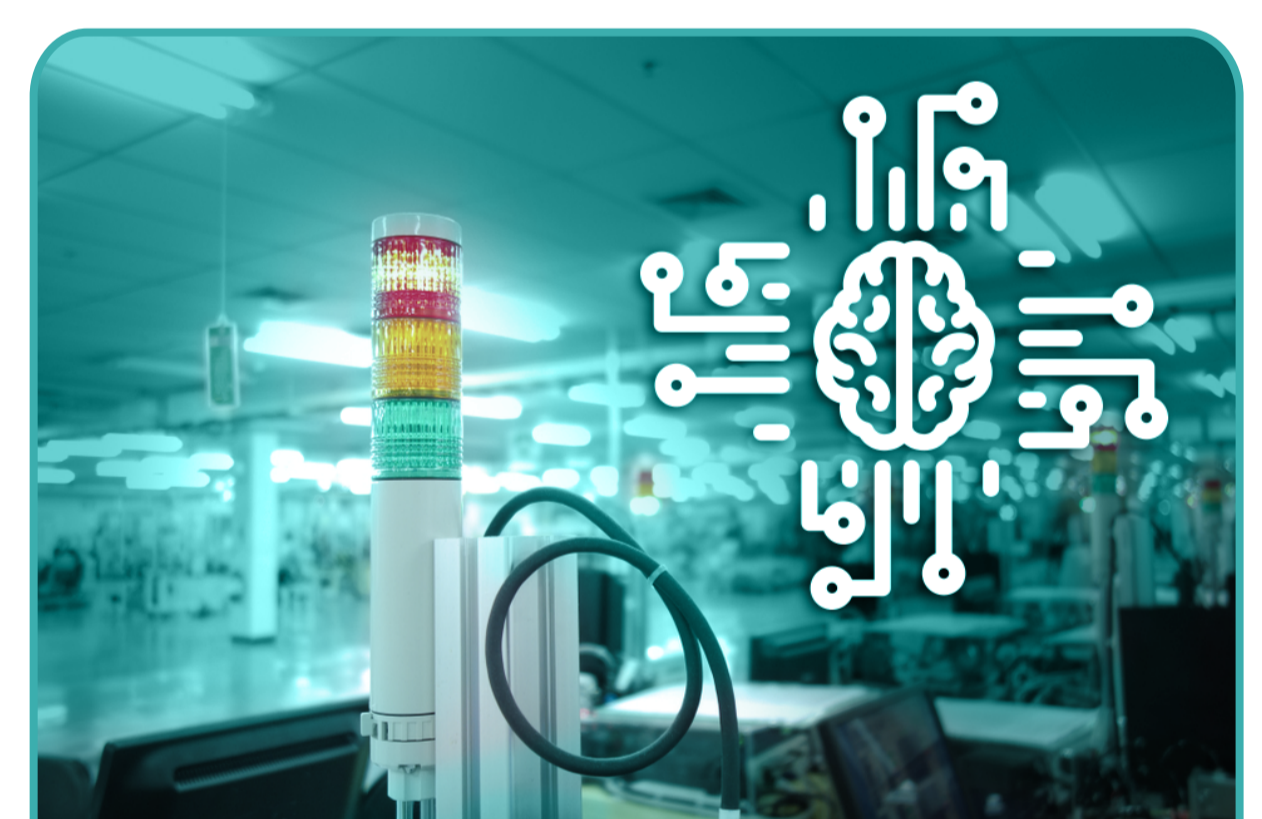
PREVENTIVE MAINTENANCE

Maintenance performed on a fixed time-based or runtime-based schedule with the goal of lessening the likelihood of failure and prolonging useful life.



CONDITION-BASED MAINTENANCE

Maintenance performed when an asset's real-time performance or condition reaches an unsatisfactory level, identified by condition-monitoring sensors.



PREDICTIVE MAINTENANCE

Maintenance performed before an asset is forecasted to fail, based on predictive analysis performed by artificial intelligence.

Proactive Maintenance Advantages and Disadvantages

- ✔ Increased asset reliability
- ✔ More predictable downtime
- ✔ Highly optimized resources
- ✔ Reduced long-term maintenance costs
- ✘ Higher initial setup costs
- ✘ More labor intensive
- ✘ Potential for over-maintenance

Industry Statistics

18%
Up to

Estimated percentage of cost savings of proactive maintenance over reactive maintenance programs

5x

Estimated average dollars saved for each dollar spent on preventive maintenance

52%
Up to

Percentage of unplanned downtime reduced by proactive maintenance

Sources:

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