

Preventive

Maintenance

Strategy Series

Kick-start Your Preventive Maintenance Program



Quick Recap

Before we delve into Part 3 of our preventive maintenance strategy series, here's a quick recap



Preventive Maintenance

Strategy Series

Make the most of your preventive maintenance plan

PART 1

Read Now

Preventive Maintenance

Strategy Series

Schedule for Success



PART 2

Read Now

Preventive Maintenance Program in Four Steps.

1

IDENTIFY

Asset Criticality

Not all breakdowns are equal. Some are inconvenient while others are disastrous.

To identify production-critical assets:

- **Make a list**

Include every asset and piece of equipment used in production.

- **Prioritize the list**

Go from highest criticality to lowest.

- **Determine assets' ages**

Equipment failures are often closely connected to age.

- **Focus on simple vs complex**

Divide equipment into common components so maintenance procedures are easier to develop

2

DEFINE

Asset Requirements

Each component requires a specific type of service, and each type of service has different requirements.

When setting requirements, look at:

- **Manufacturers' recommendations**

For new assets, no one knows them better.

- **Regulatory agencies**

Linking regulatory guidelines to maintenance records ensures better maintenance and compliance.

- **Maintenance engineers**

For older assets, they have all the valuable hands-on experience.

3

DEVELOP

Task Sheet

A clear, detailed set of instructions ensures the right work gets done. Avoid subjective terms that leave key steps open to interpretation.

Make sure to include:

- Step-by-step instructions
- Required resources
- Shutdown and lockout processes
- Required parts and materials

Time estimates

Determining how long will it take to perform PM tasks helps with effective scheduling. Make sure to include:

- Preparation time
- Estimated time on wrench
- Cleanup time

4

DETERMINE

Task Requirements

- **Skills**

When planning a PM, looking at the required work and available skill sets ensures you have the right resource assigned for each PM.

- **Parts**

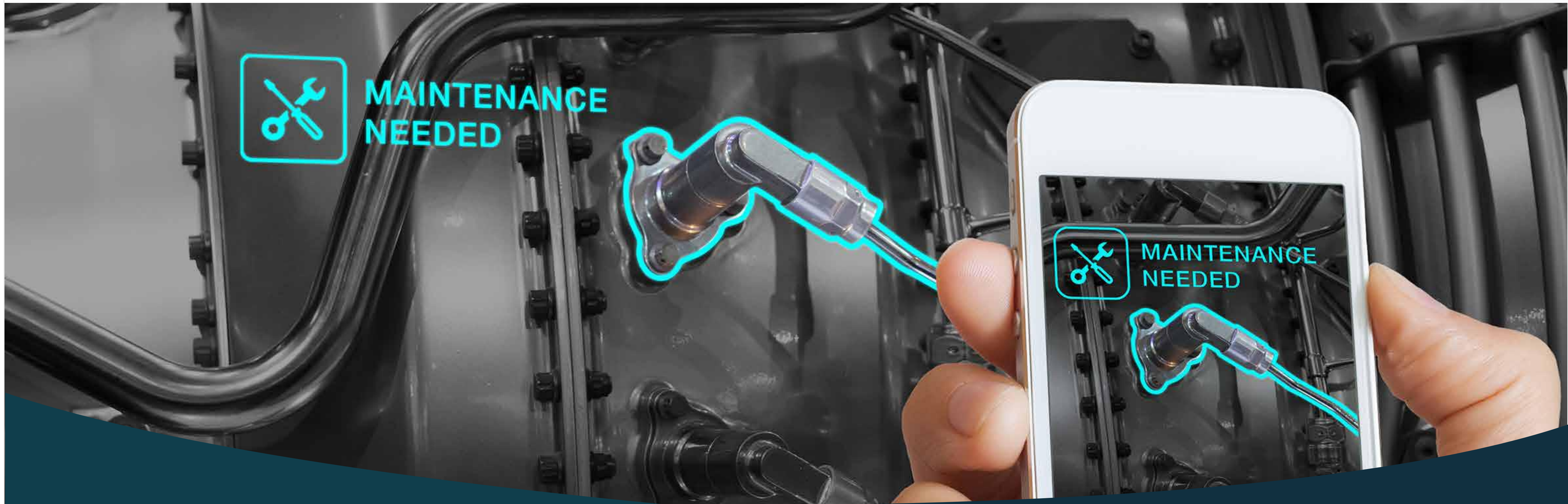
Specifying all the parts and materials required for a PM increases efficiency.

- **Scheduling**

Planning ahead keeps everything running smoothly because you have exactly what you need precisely when you need it.

In this eBook...

We'll explore every step of setting up a new preventive maintenance program.



Identify the Equipment for **Preventive Maintenance**



Step 1: Make a Critical Asset List

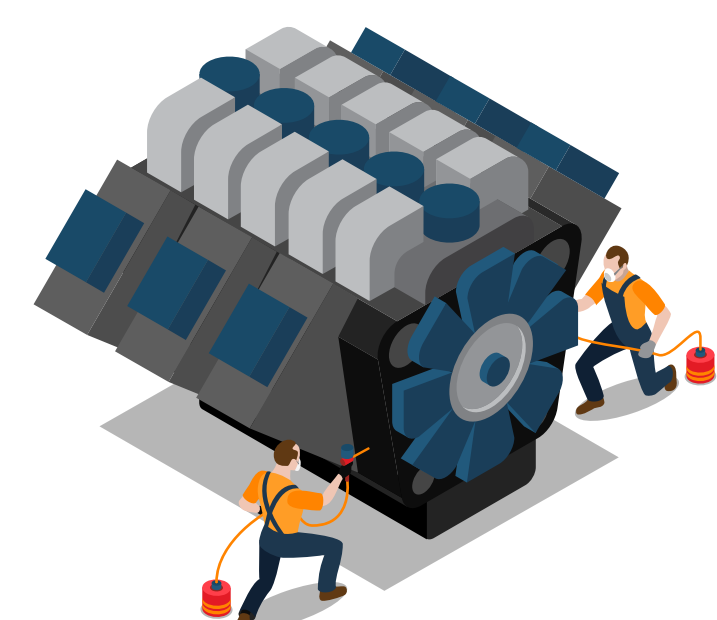
You'll need to find which pieces of equipment are responsible for:



Remember that some components are not part of the critical process and it will always be cheaper to let them run to failure.

Step 2: Prioritize Your Critical Asset List

Put the list in order from most to least critical for your operations by:



Following the critical equipment order



Speaking directly with technicians to tap tribal knowledge



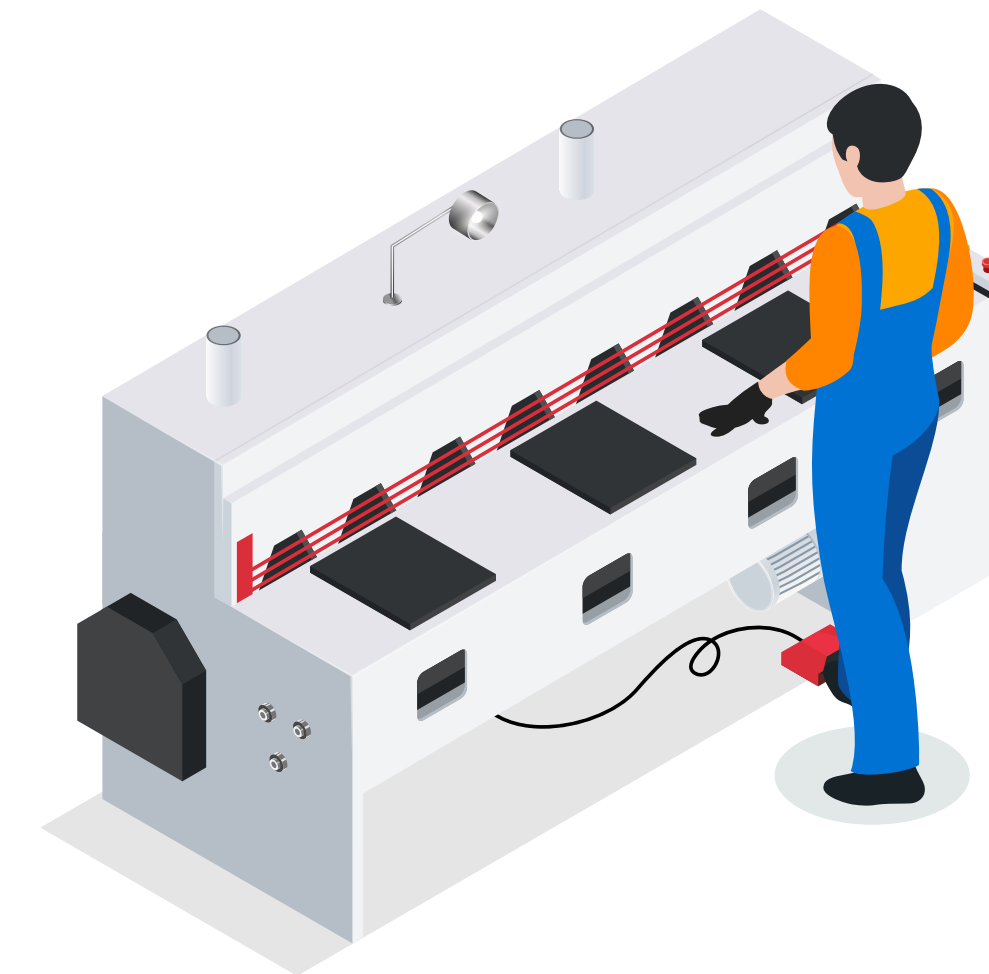
Determining each piece of equipment's impact on production

Step 3: Determine Age of Asset



New

No maintenance history? Refer to manufacturer's recommended maintenance.



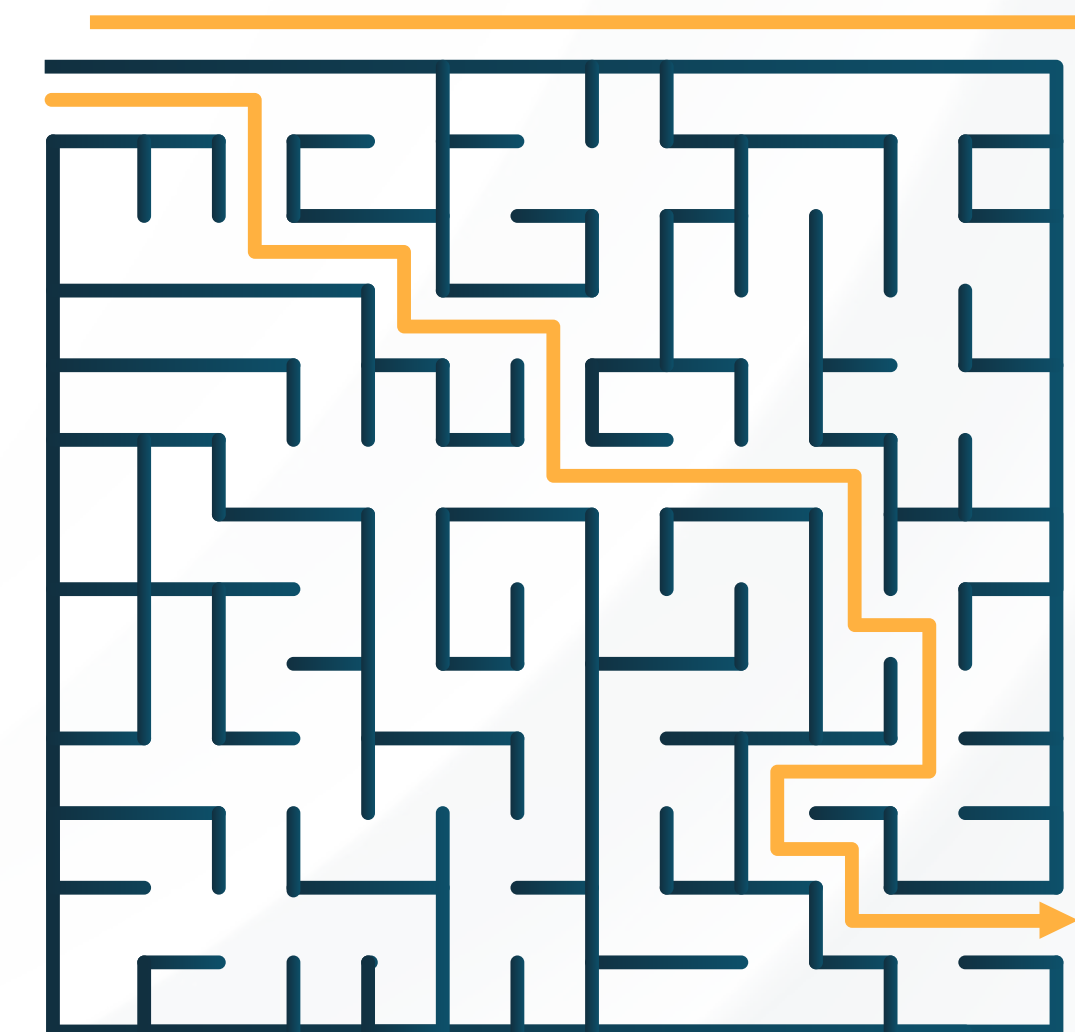
Existing

PM program development relies heavily on historical equipment performance and failures.

Break each asset down to its component parts for a comprehensive list of required services.

Being asked to examine a cold mill can be overwhelming. You're not sure where to look first.

But breaking the mill down into its component systems makes it easier to see a path to success.



COLD MILL

Electric System

Mechanical System

Fluid Power

High Voltage

Mechanical Voltage

Fluid Power Voltage

Belt Drives

Bearing

Chain Drives

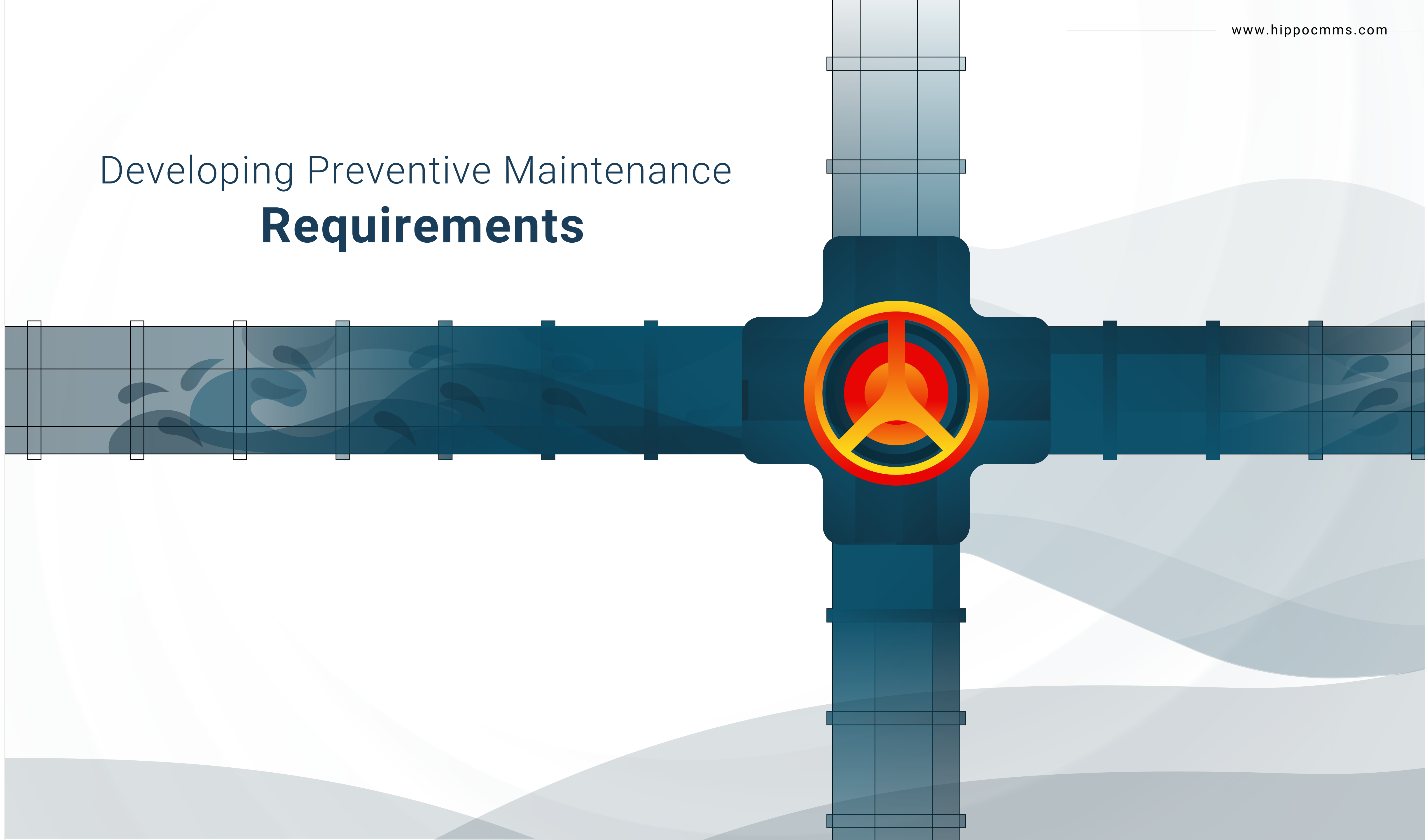
Coupling

Hydraulics

Pneumatics



Developing Preventive Maintenance **Requirements**

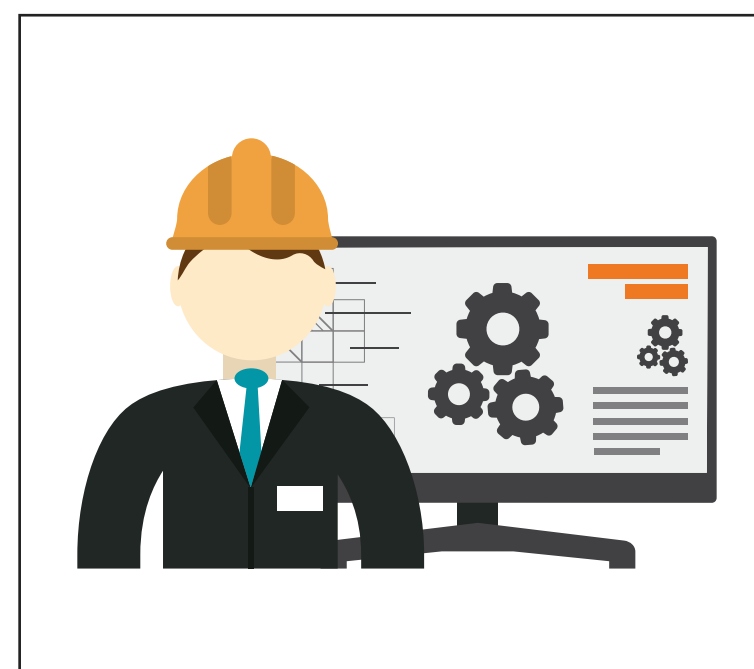


To determine PM requirements,

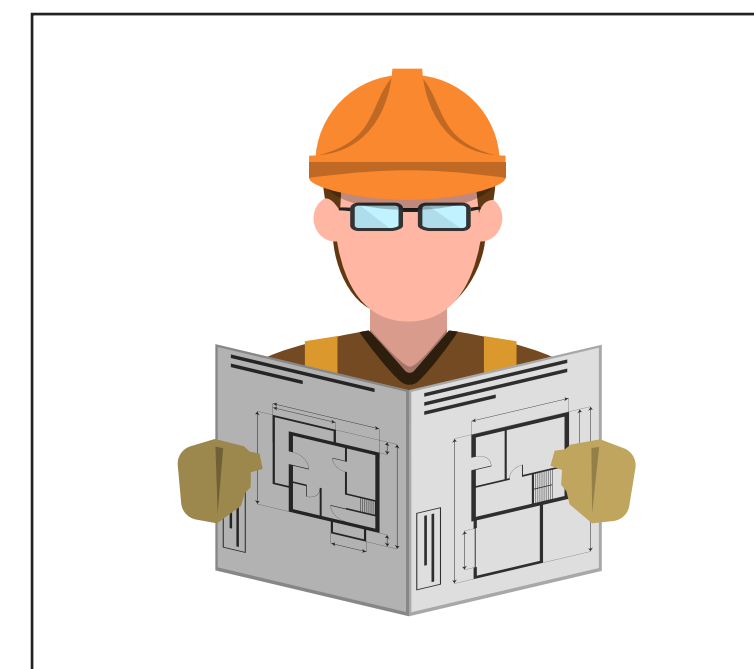
You can find information in a number of places, including:



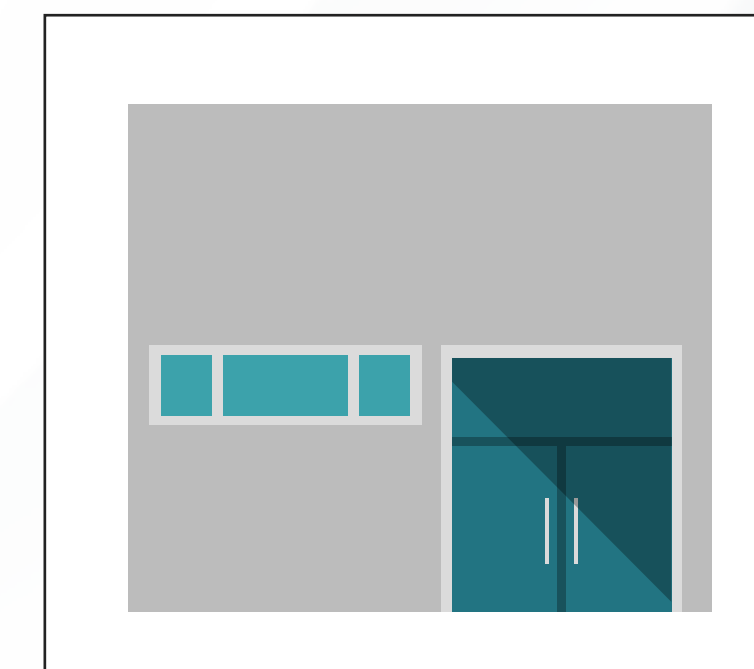
Manufacturer recommendations



Maintenance engineers



Operators, technicians, supervisors



Regulatory agencies



Manufacturer Recommendations

With every new piece of equipment, maintenance requirements are specified by the manufacturer.

Requirements can be found in:

- Operations manuals
- Maintenance manuals
- Recommended spare parts lists



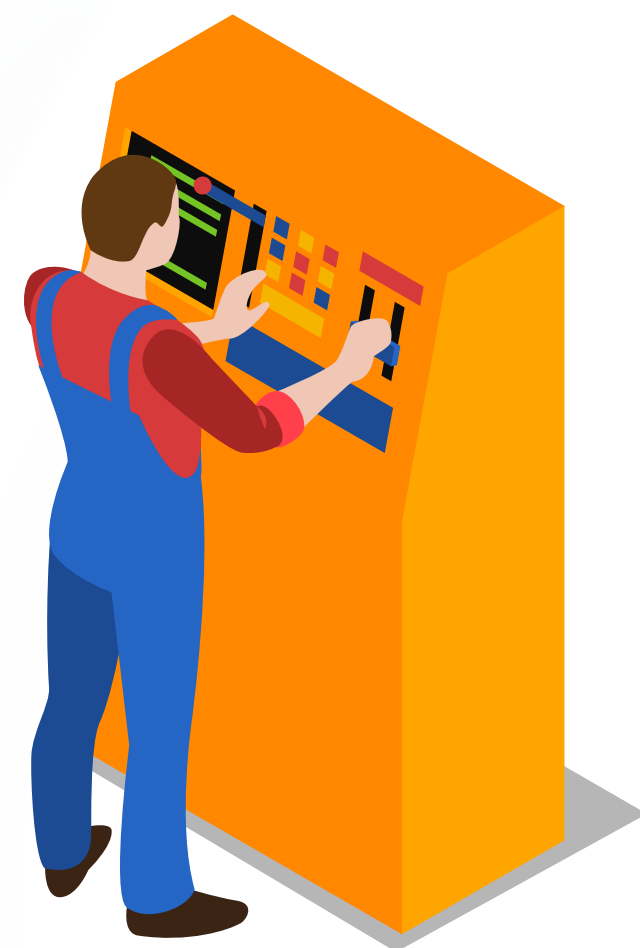
Maintenance Engineers

Why maintenance engineers?

They are:

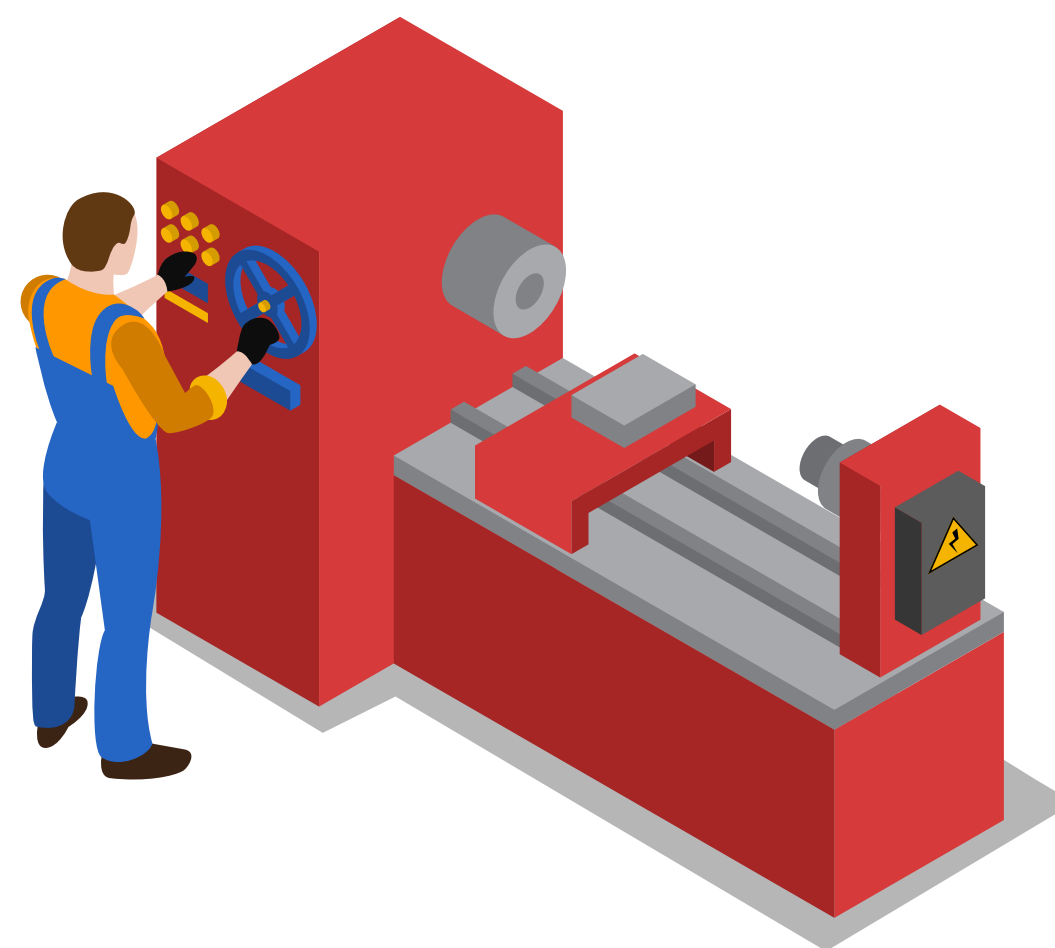
- Involved in all technical activities that affect asset performance.
- Able to analyze equipment operating data and to optimize the maintenance strategy.
- Responsible for the PM programs at most companies.





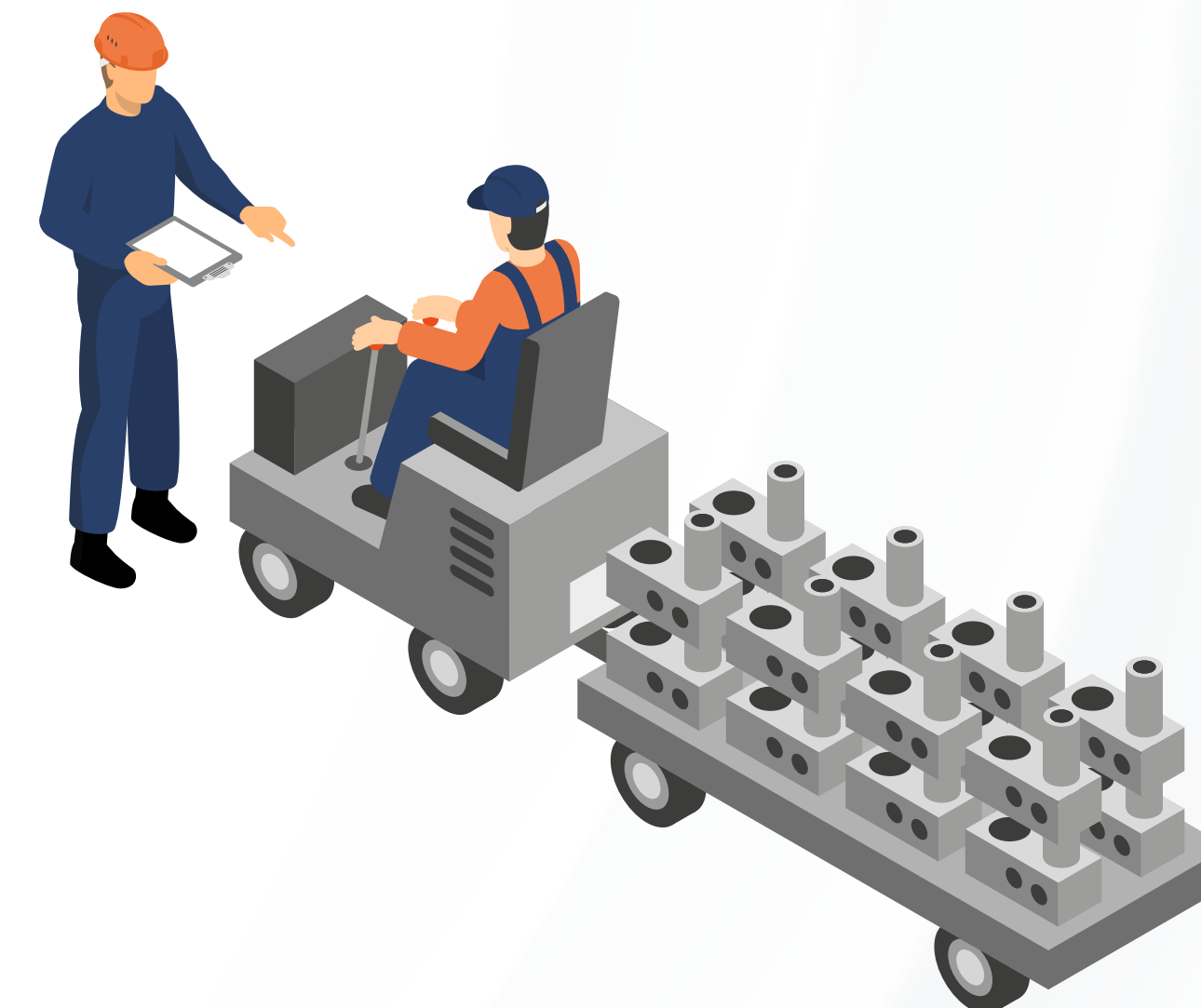
Operators

- They run the equipment and know it best.
- Any changes in the equipment can be recognized on the spot.
- They can capture a checklist of information daily.



Craft Technicians

- Perform maintenance on the equipment.
- Their observations are more technical.
- Capture information in a format that can be entered into a CMMS for further analysis.



Supervisors

- More focused on equipment performance.
- Don't perform equipment inspections.
- May perform area inspections for safety-related issues.

Regulatory Agencies

Depending on your industry, PMs could be dedicated by government or industry agencies. Food processing, for example, involves a lot of regulation. In America, the Occupational Health and Safety Administration sets and enforces standards across industries.

OSHA covers:

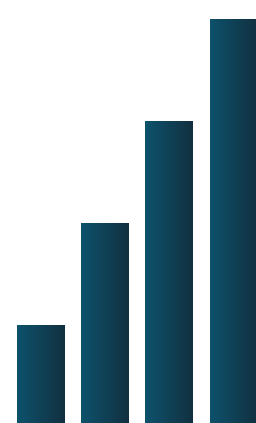
- Proper equipment guarding
- Scaffolding
- Work practices and safety programs



Developing Preventive Maintenance **Task Sheets**



Develop a Detailed Procedure and Job Plan



Make sure to describe everything step by step.



Be specific. Anything that's unclear or subjective introduces inconsistency.



Cater for the fact that every technician ends up doing things slightly differently, depending on their level of experience and expertise.

In your job include



Shutdown and lockout information



Detailed job instruction, including safety requirements



Time estimates



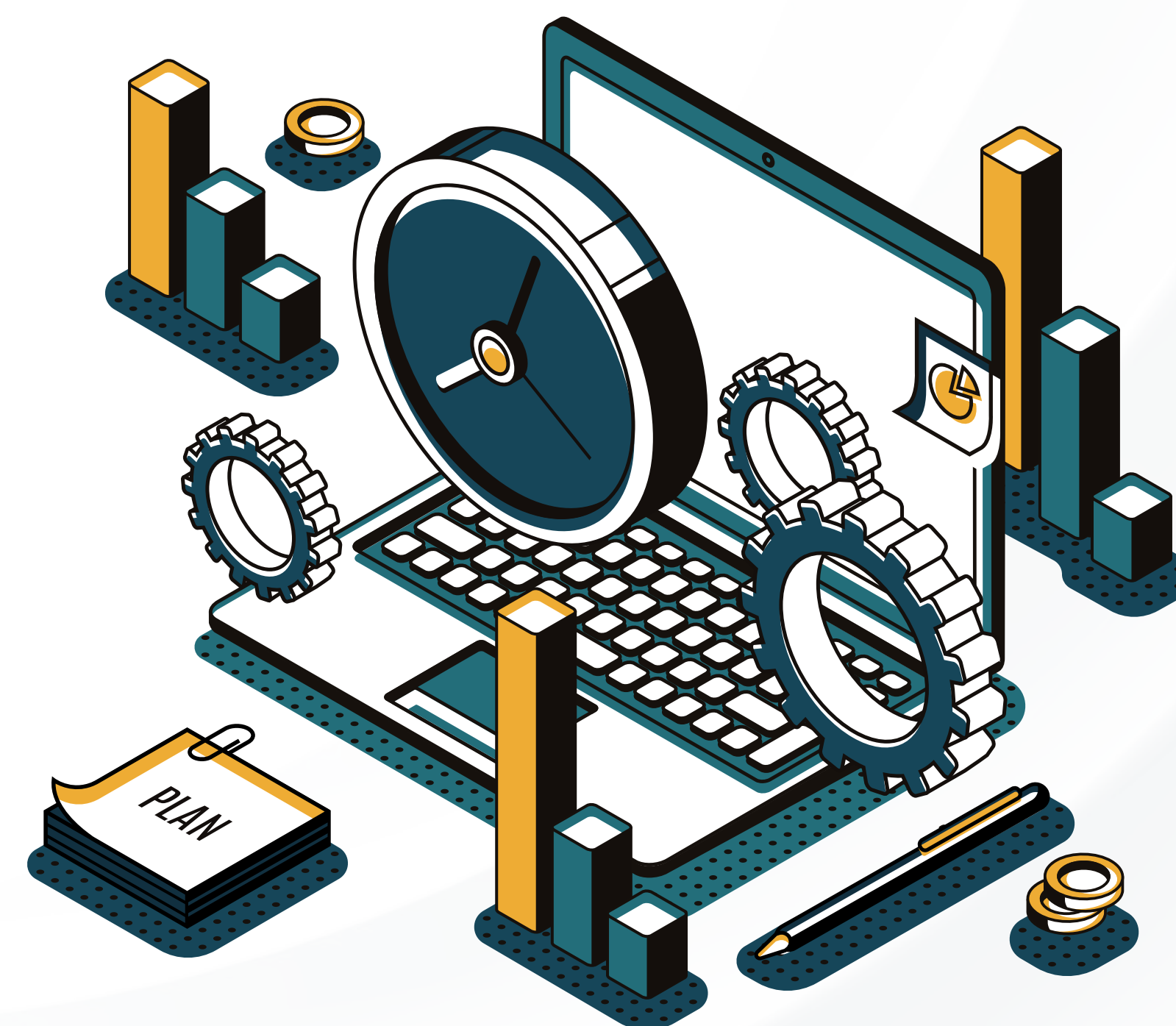
List of required parts and materials



Time Estimates

Your time estimates should include:

- Preparation time
- Travel time
- Actual time to perform PM, including testing
- Cleanup time



Developing Requirements for **Preventive Maintenance Tasks**

- Skill requirements
- Part requirements
- Scheduling requirements



Step 1: Skill Requirements

Determine the skills required to perform the PM tasks:

Groups that are responsible for performing PM are:

Craft Technicians

Operators

Outside Contractors



Operator PM Tasks

Operator based preventive maintenance tasks include:

- Taking operating readings across various parameters
- Performing sensory inspections
- Performing minor adjustments

Proper training for operators involved in preventive maintenance is critical. Lack of training can damage equipment resulting in higher maintenance cost.



Craft Technician PM Tasks

They can do all PM tasks in their particular craft discipline

Their skills allow them to:

- Properly service all equipment
- Determine equipment condition
- Determine required service

Perform PM to a level of detail that allows the tasks to be successful.



Outside Contractors

Contractors are great for specialised work that's not often performed.

They're also required for work that needs to be certified to meet government regulations.

For example, a technician installing a new fire suppression system.

Benefits of outside contractors include:

- Increased responsiveness
- Reduced workload for internal technicians
- Reduced staffing costs



Step 2: Part Requirements

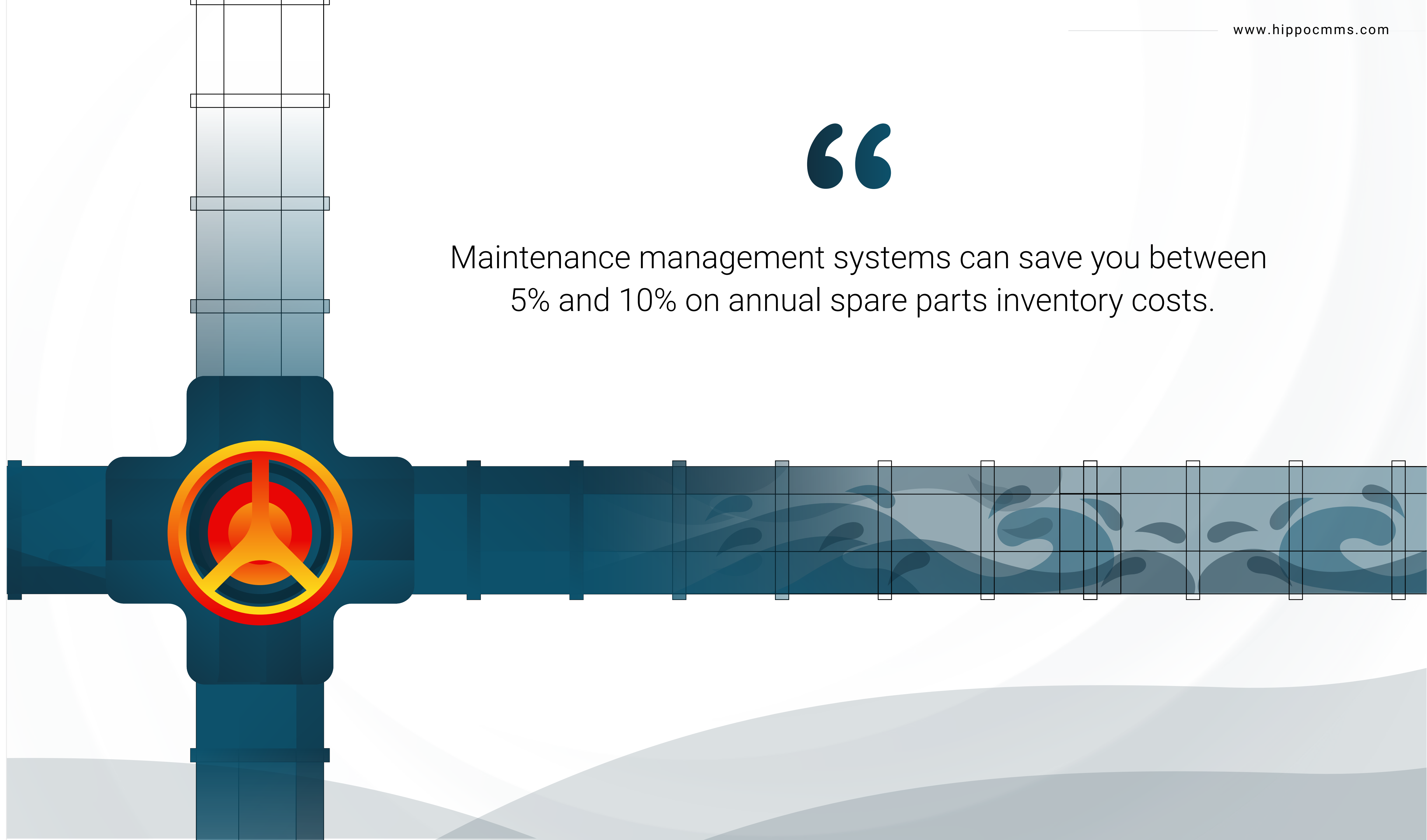
Having access to the right spare part at the right time is crucial to maximizing equipment uptime.

- Load your Bill of Materials when implementing CMMS or EAM systems
- Go through the inventory database and electronically attach each part to each piece of equipment where it is used.
- Notify the store room electronically and further reduce the delay time in obtaining parts.



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Maintenance management systems can save you between 5% and 10% on annual spare parts inventory costs.



Step 3: Scheduling Requirements

Scheduling is a two-step process.



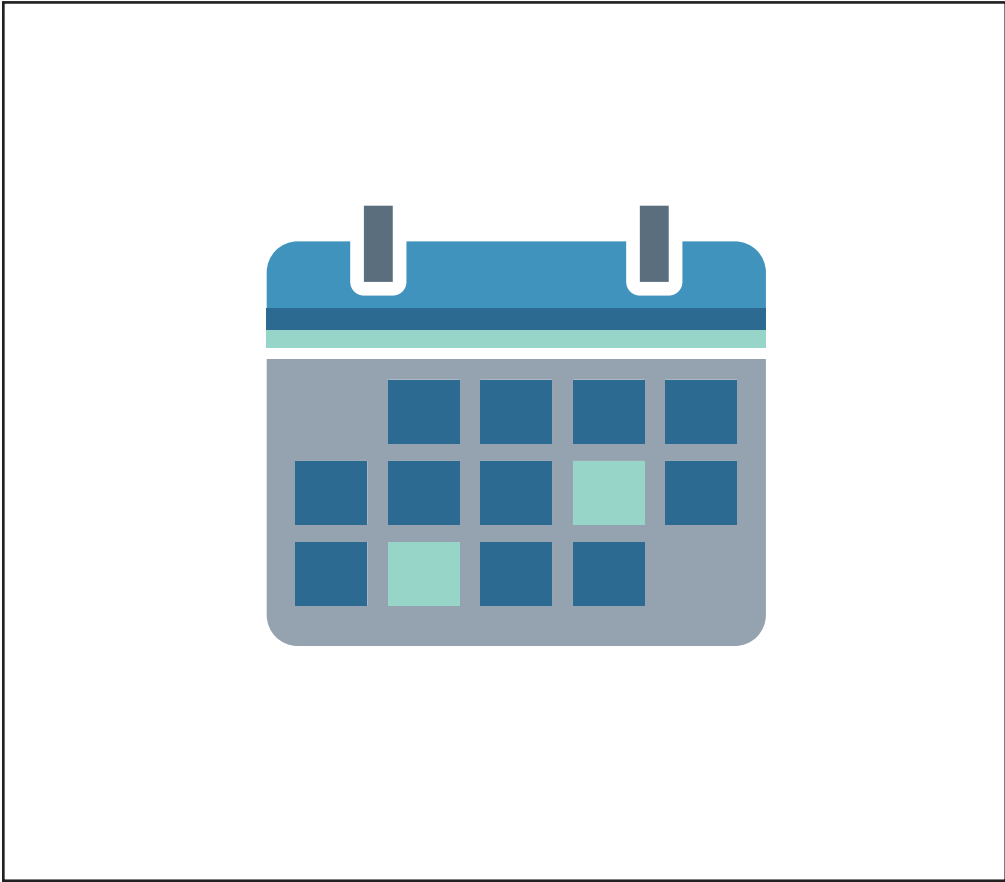
Determine how long the task should take (time estimates)



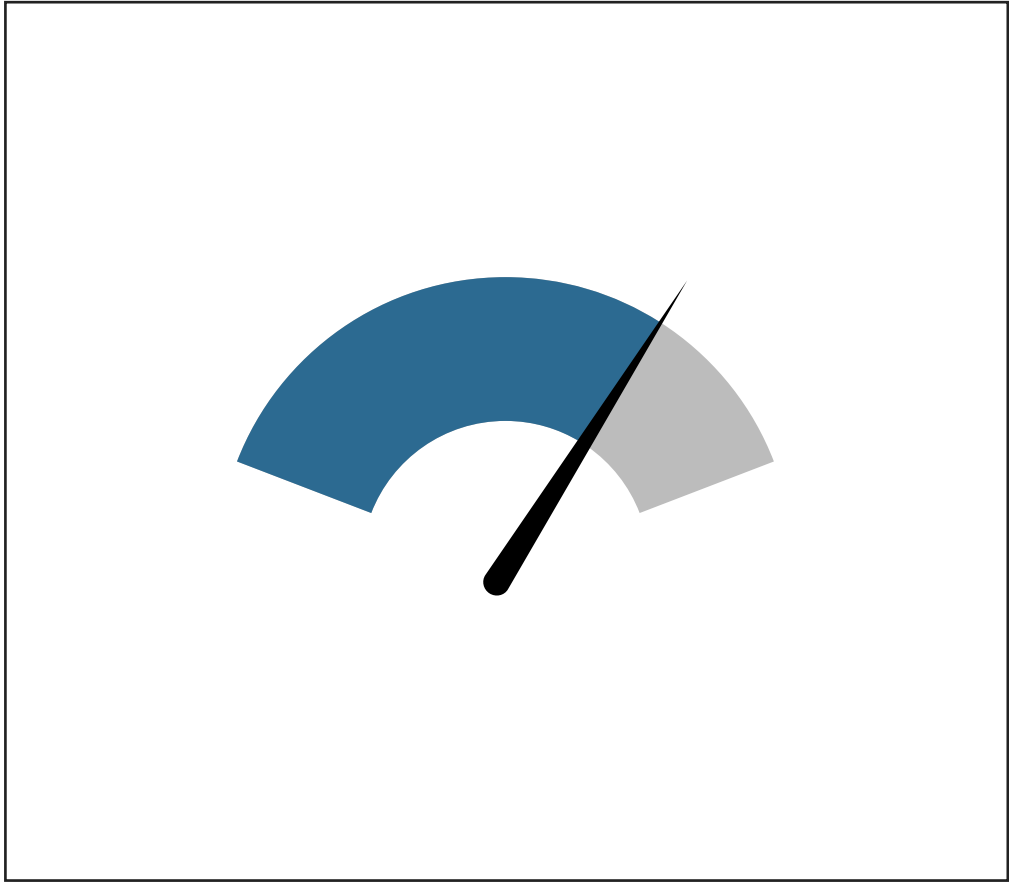
Determine how often it should be performed (frequency estimates)

Ways to setup a PM Schedule

You can set your maintenance schedule according to:



Date



Meter reading



Other tasks

What's Next?

Find the Right Preventive Maintenance Software

Still trying to keep track of your maintenance needs with a spreadsheet?

Time to upgrade.

[Get started for free](#)



Wondering if a CMMS is worth the cost?

Calculate how much a CMMS will cost you

Price Calculator

