

A large, dark blue silhouette of a human head in profile, facing right. A person wearing a blue jumpsuit, a yellow hard hat, and a safety harness is climbing the side of the head. A rope is attached to the person's harness and extends upwards. The background is a solid light blue.

# TAKE A DEEP DIVE INTO PM SUCCESS

Preventive Maintenance Strategy Series

# QUICK RECAP



1



## Create:

- Define an effective PM Program
- KPIs to help you measure your PM Program
- Optimize process flow of your current PMs

2



## Schedule:

- Why a PM Program is important
- Developing or improving a PM Program

3



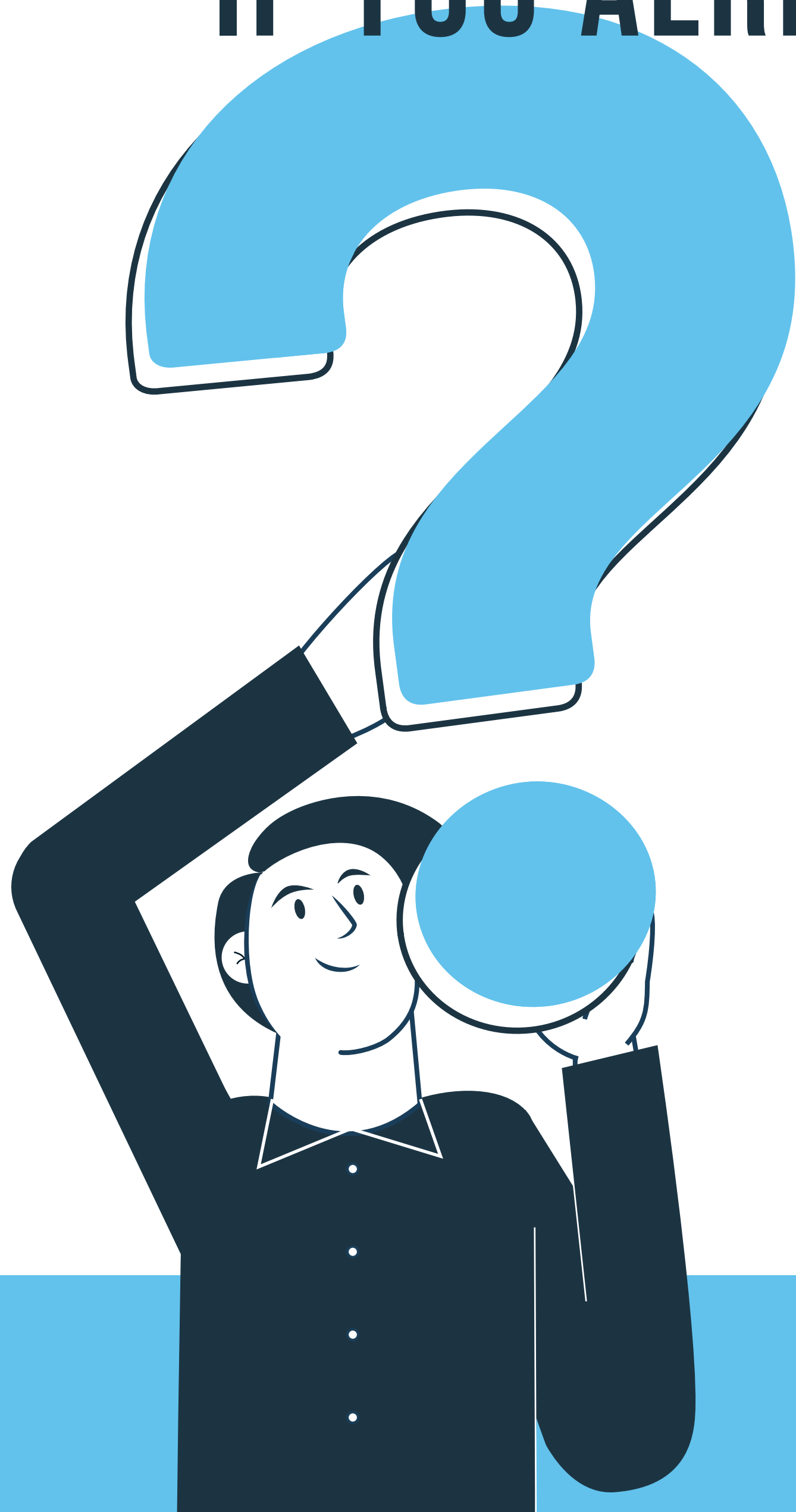
## Implement:

- Mapping a clear path to maintenance management success
- Identify the critical assets to include in PM program
- Collecting requirements and developing task sheets that drive efficiency

# IF YOU ALREADY HAVE A PM Program

## Ask Yourself

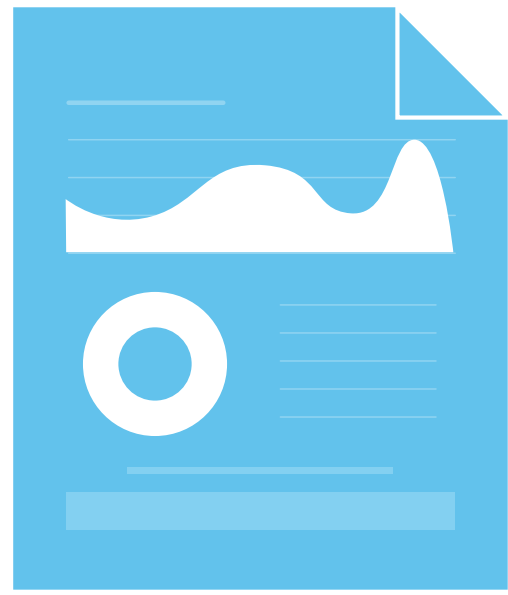
- Is your PM program execution effective?
- Do you follow up with your PM program consistently?
- Do you monitor the effectiveness of your PM program?



# IN THIS E-BOOK



↓ Learn How To:



**EXECUTE  
PM TASKS**



**PM PROGRAM  
FOLLOW-UP**



**MONITOR  
EFFECTIVENESS  
PM PROGRAM-KPIs**

# MAKING A PM PROGRAM SUCCESSFUL



## Execute

### Assign

Provide **maintenance technicians** with

- Detailed instructions
- Spare part requirements
- Special tool requirements

For them to be able to perform task independently.

### To assign these tasks know:

- The complexity of the task
- Training or coaching requirements
- Special skill requirements

### Supervise

- Training technicians
- Coaching technicians
- Follow-up with PM program
- PM audit

## Follow Up

### Improve

- Misuse failures
- Normal wear-out failures

### Solution:

- Train technicians
- Replace the component just before it fails

### Cannot Eliminate

- Infant mortality failures
- Random failures

### What should be done?

- Perform root cause analysis and find out the real reasons behind failures

## Monitor

### Observe

- Equipment downtime caused by breakdowns
- Cost of breakdown repairs
- Preventive maintenance compliance
- Preventive maintenance efficiency

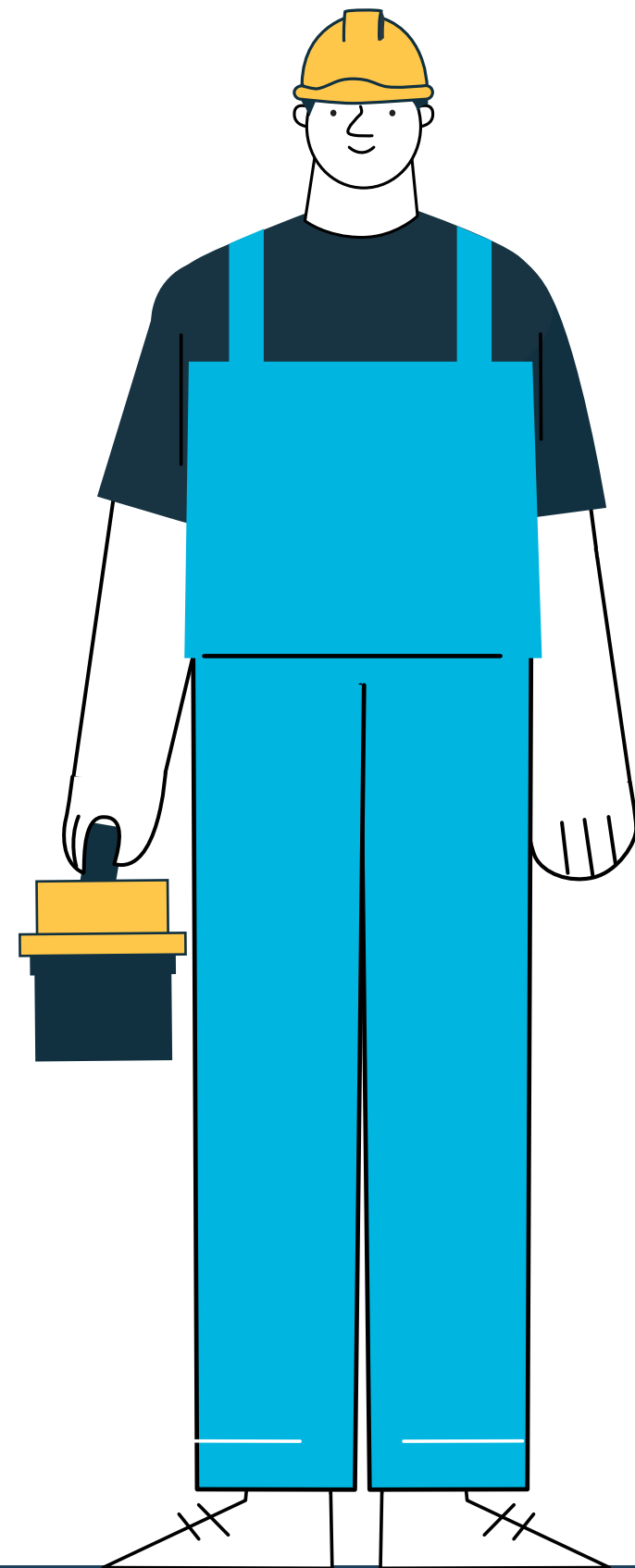
### Determine

- If breakdown is actually a problem or not
- Impact of the breakdown on the maintenance budget
- The level of compliance to the PM program
- PM program's efficiency

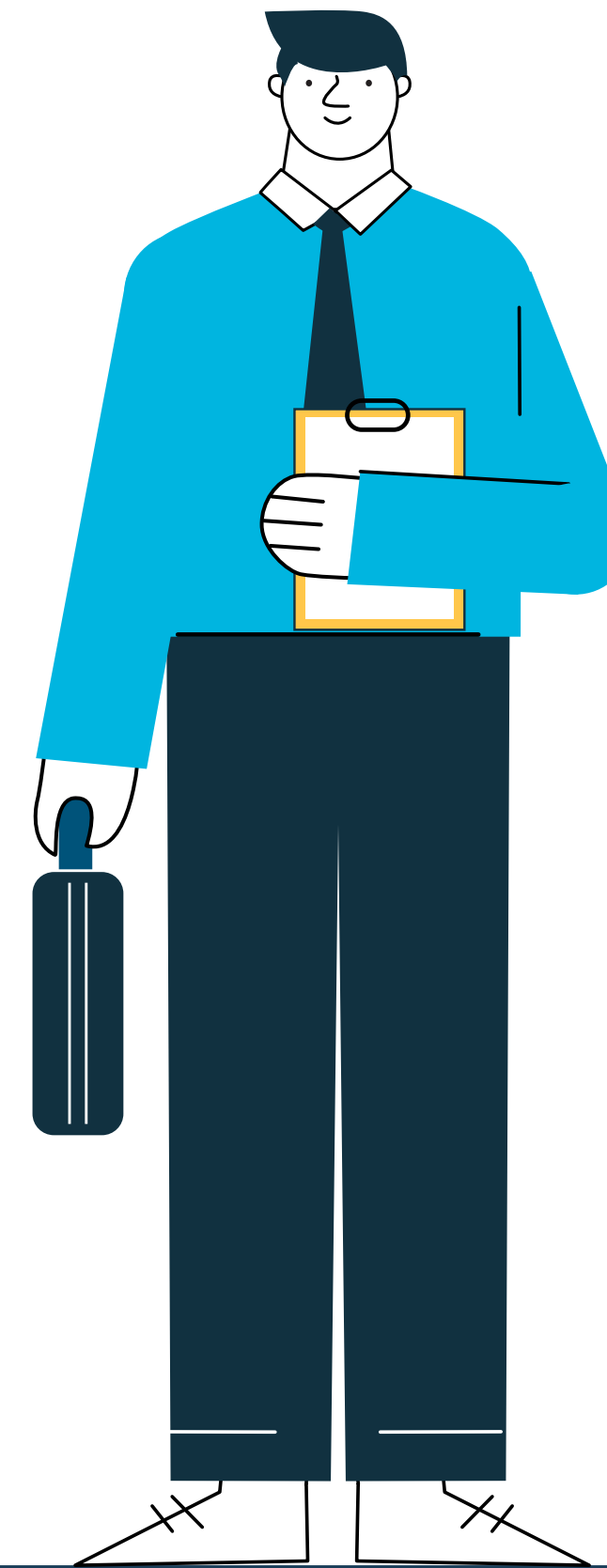


# EXECUTING PREVENTIVE MAINTENANCE TASKS

# EFFECTIVE EXECUTION OF PMs DEPENDS ON



Maintenance Technicians



Supervisors

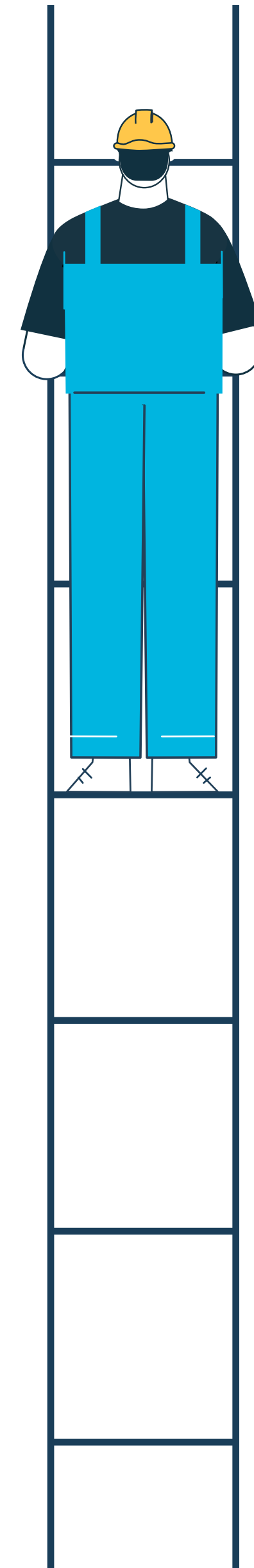
# Maintenance Technicians

## Responsible for executing PMs

For effective execution of PMs, technicians need:

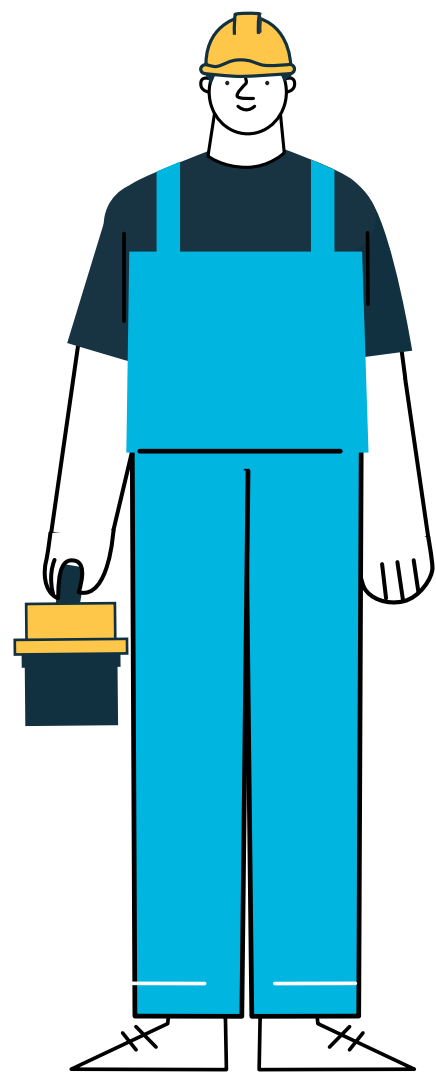
- ⚙ Detailed Instructions
- ⚙ Spare Part Requirements
- ⚙ Special Tool Requirements
- ⚙ Regulatory Instructions

Properly prepared, technicians should be able to complete PMs independently.





# How To Assign Tasks To Maintenance Technicians



## First, you Need to know:

How complex the PM is
Whether there is a needs for any kind of training or coaching
Whether the PM requires any special skills to complete

## Note:

For PM program efficiency, it is essential that technicians have the right skills for the job.

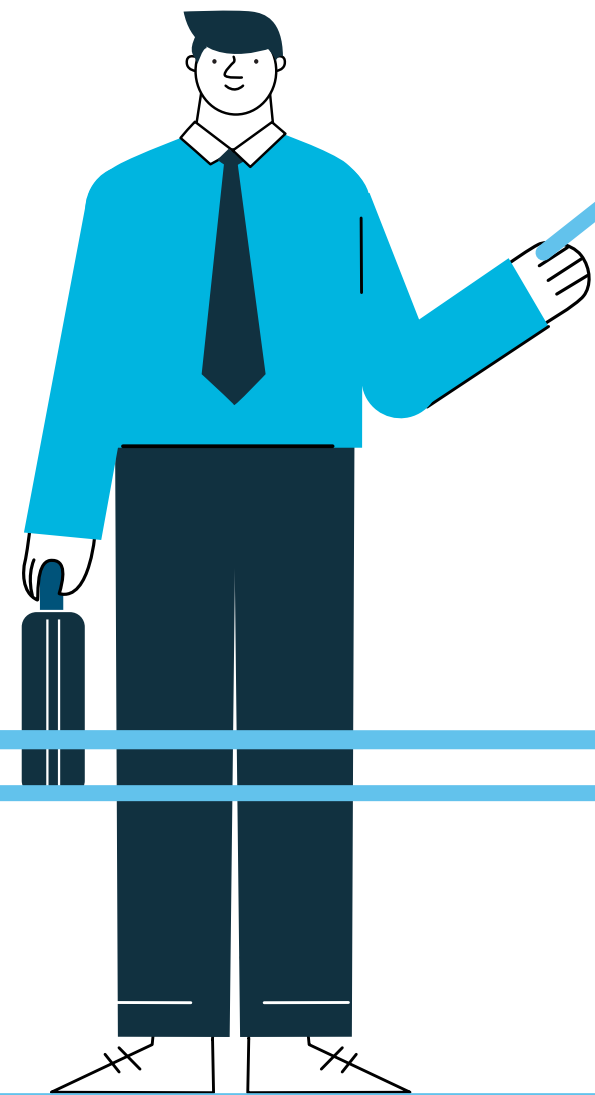
# Supervisors

## Responsible for

- **Training**  
unskilled technicians
- **Coaching**  
technicians if they need any last minute reminders
- **Follow-up**  
with technicians work w.r.t technical and safety aspect
- **Conducting**  
a PM Audit



# How to Conduct a PM Audit



Maintenance operations change over time.

This leads to:

- ✓ New opportunities
- ✓ New inefficiencies

The aim of a PM audit is to find existing problems.  
Supervisor should examine:

- ▣ Current PMs and their schedule
- ▣ Previous year's failure history for equipment
- ▣ Root cause analysis from the equipment history

and then modify the PM program accordingly.



# PM PROGRAM FOLLOW-UP

# DOES YOUR PM PROGRAM CONTINUE TO MAINTAIN ITS FOCUS AND DELIVER RESULTS?

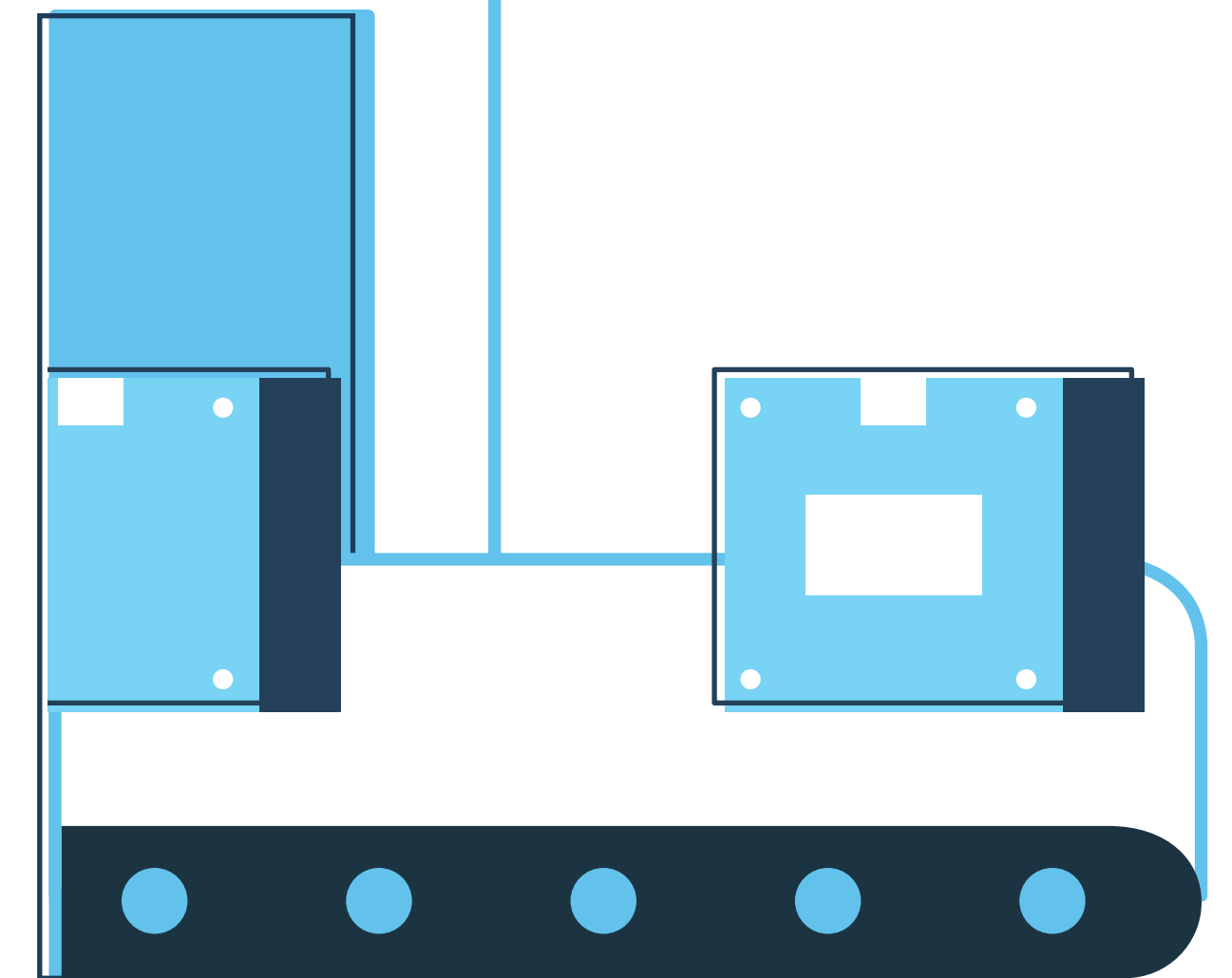
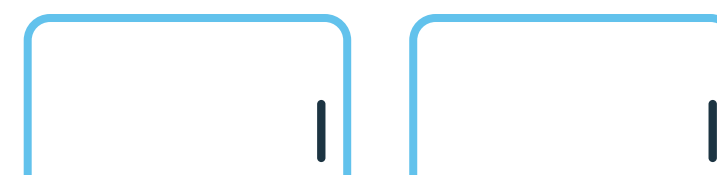
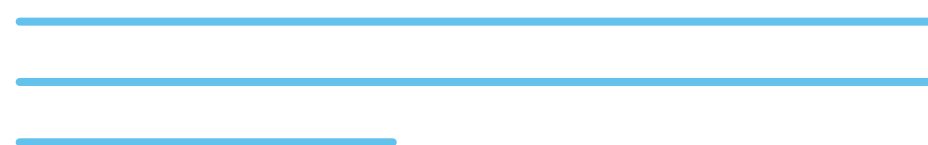
Follow up by reviewing the focus of your PM program  
Decide what types of failures can and cannot be reduced

A PM program helps you  
**Improve:**

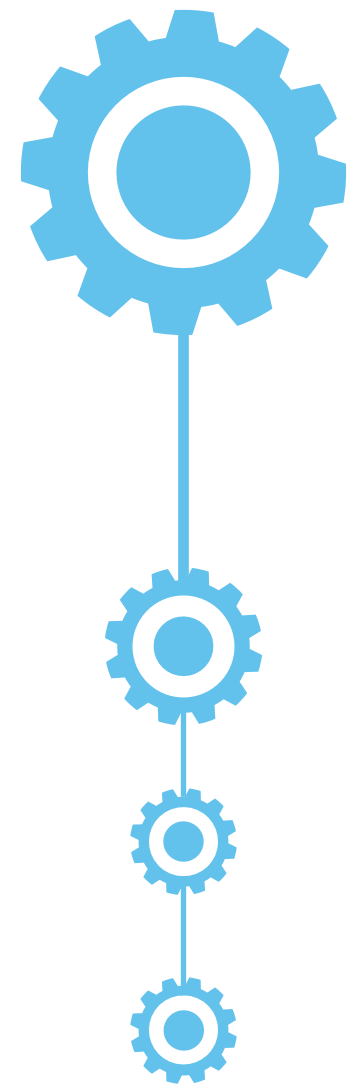
- Misuse failures
- Normal wear-out failures

But a PM program  
**Cannot Eliminate:**

- Infant mortality failures
- Random failure



# Improve



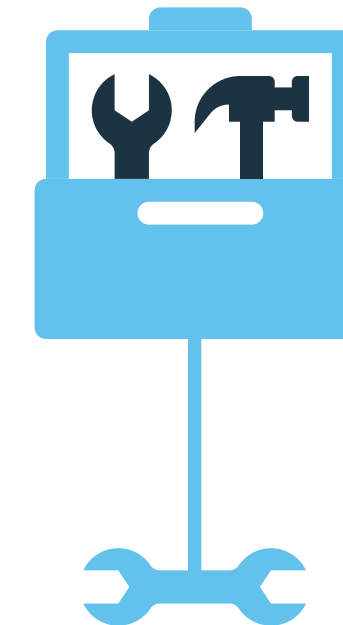
## Abuse or misuse failures

Occur when operator lacks training or are trying to make up for lost production

### Solution:

Train technicians and ask them to follow management guidelines.

Follow up and make sure technicians are applying their training.



## Normal wear-out

Occur when equipment is reaching the end of its design life

### Solution:

Analyze maintenance history and try to replace components just before failure.

# Cannot Eliminate

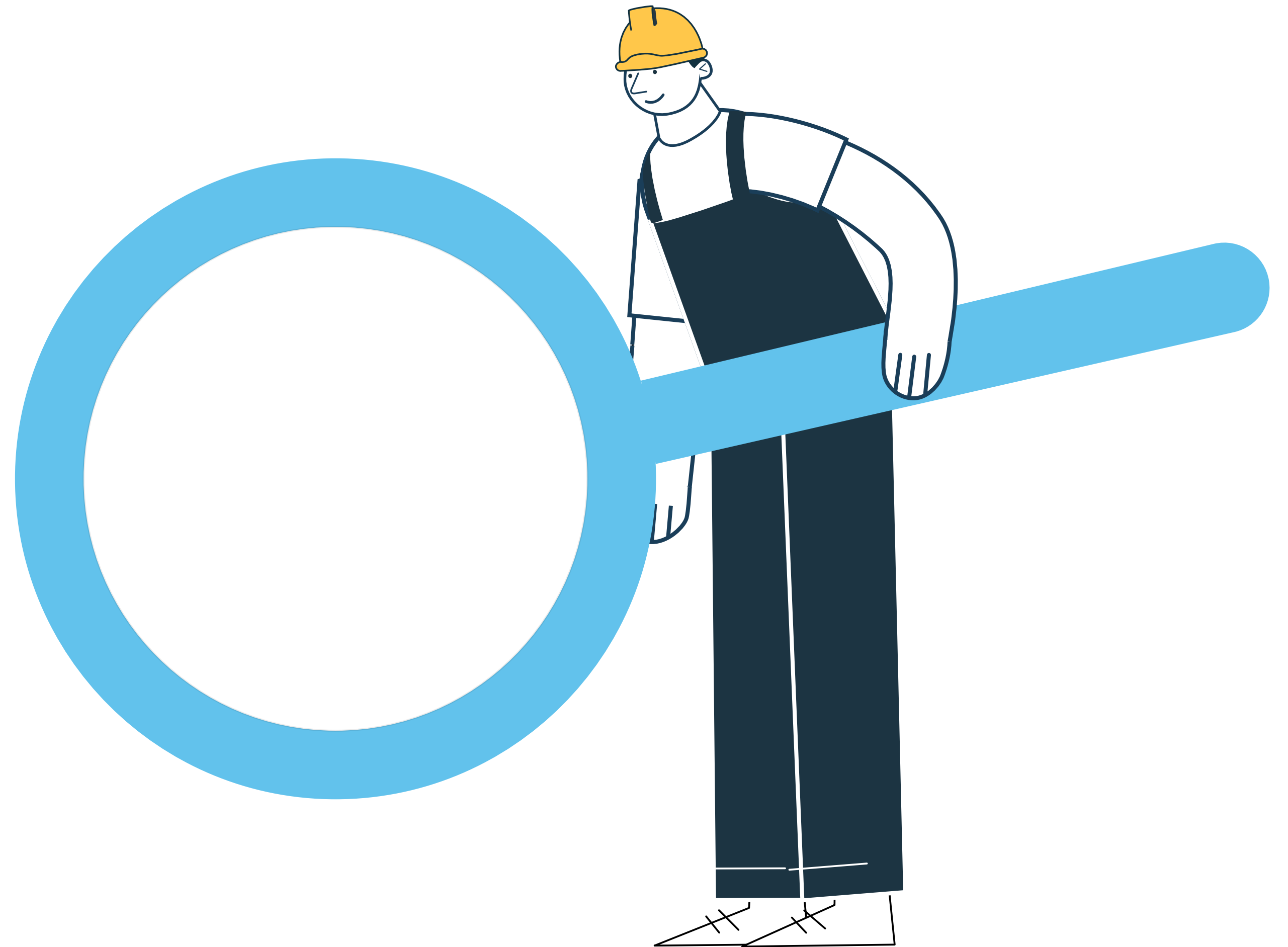
- **Infant Mortality Failures**

Occur in the first few hours of a component's use

- **Random Failures**

Occur without warning and are difficult to predict.

Perform **root cause** analysis and find the real reason for equipment failure



“

“Running a piece of equipment to the point of failure could cost up to 10 times as much as a regular maintenance program would.”

**- Buildings.com  
2018**





## **PM Versus Breakdown**

"Repair and rehabilitation costs for damage to equipment under a breakdown program can be as high as 300% or more over preventive maintenance cost."

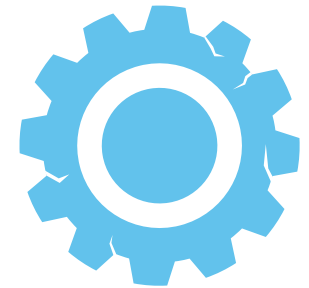
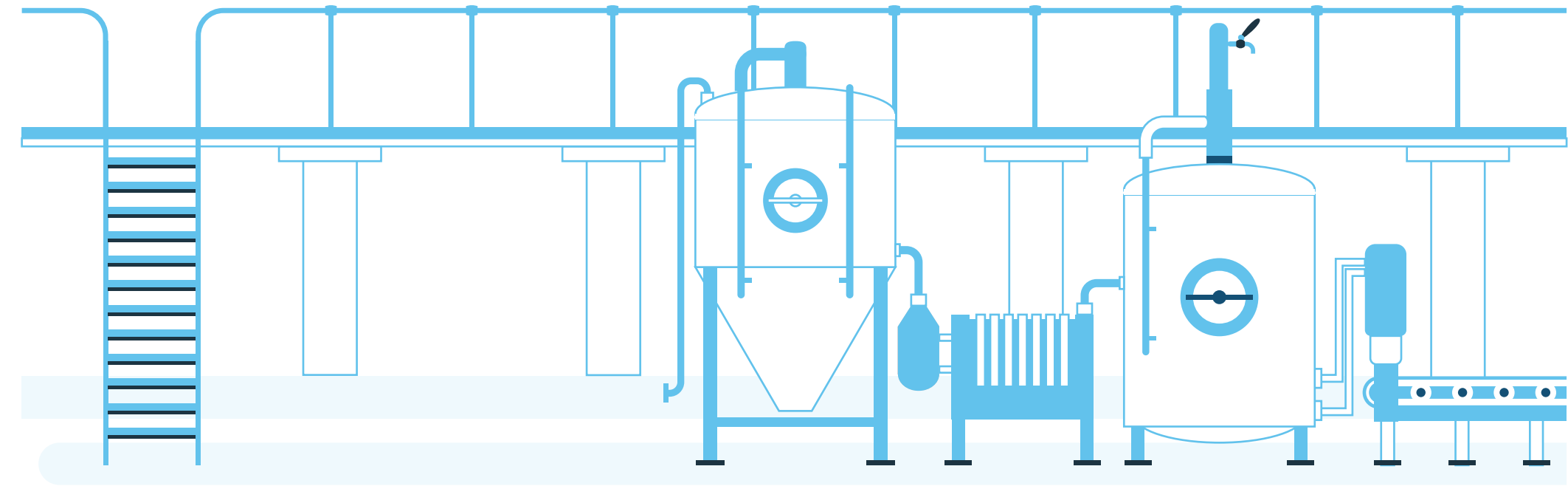
**- Terry Wireman**



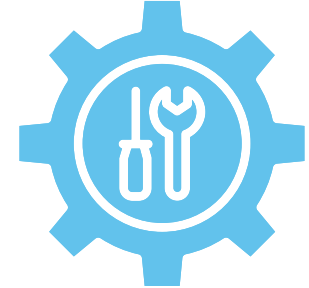
# MONITOR EFFECTIVENESS

IPM PROGRAM - KPIs

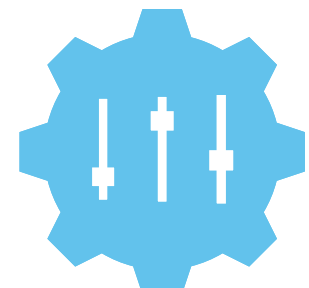
# HOW TO MONITOR THE EFFECTIVENESS OF YOUR PM PROGRAM



1. Equipment downtime caused by breakdowns



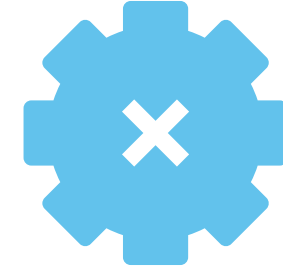
2. Cost of breakdown repairs



3. Preventive maintenance compliance



4. Preventive maintenance efficiency



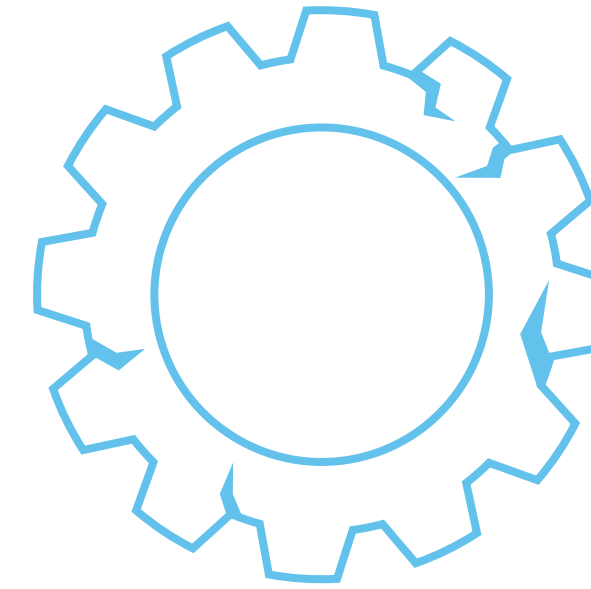
5. Breakdowns caused by bad PMs



Let's explore each of them individually.

# 1

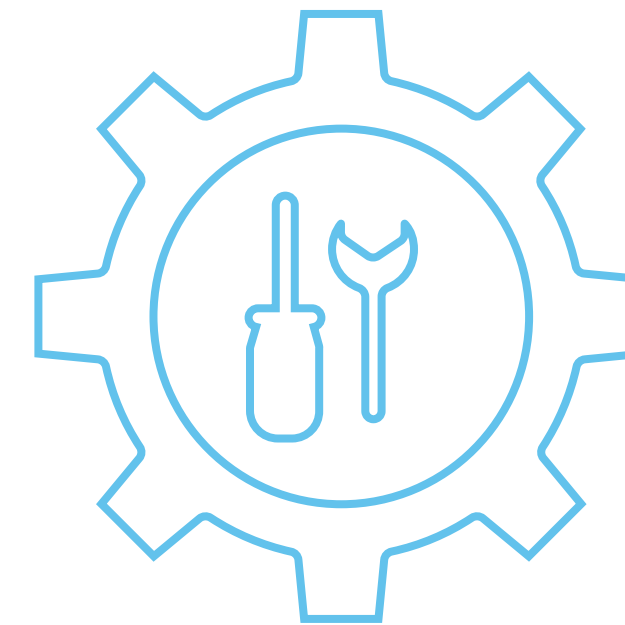
## EQUIPMENT DOWNTIME CAUSED BY BREAKDOWNS



$$\frac{\text{Downtime Caused By Breakdowns}}{\text{Total Downtime}} \quad (\text{Expressed as a \%})$$

It will help you determine whether the breakdown is actually a problem or not.

# 2 COST OF BREAKDOWN REPAIRS

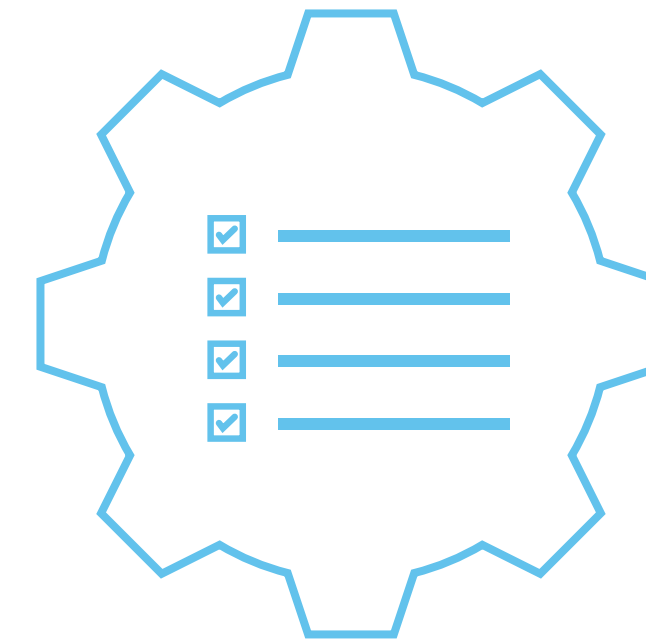


*Direct Cost Of Breakdown Repairs (Labour, materials, Equipment & Others)*  
*Total Direct Cost Of Maintenance*

*(Expressed as a %)*

This KPI highlights the impact of breakdowns on your maintenance budget.

# 3 PREVENTIVE MAINTENANCE COMPLIANCE

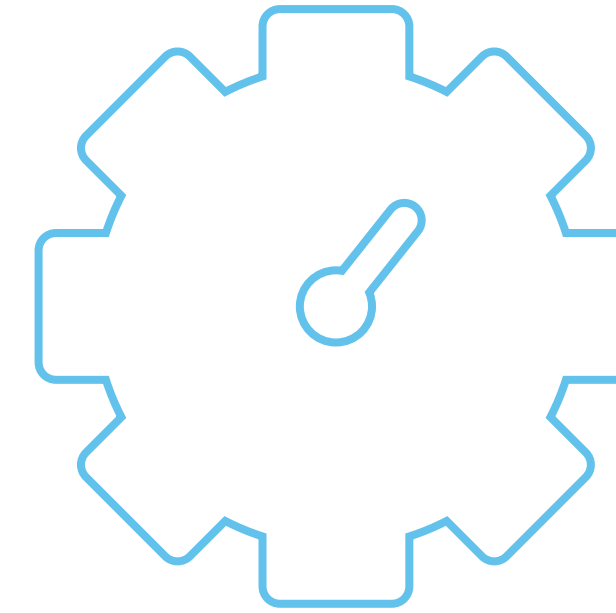


$$\frac{\text{PM Tasks Completed}}{\text{PM Tasks Scheduled}} \quad (\text{Expressed as a \%})$$

This measures your organization's PM program compliance.

Remember: The goal is to have 100% of your PMs completed.

# 4 PREVENTIVE MAINTENANCE EFFICIENCY

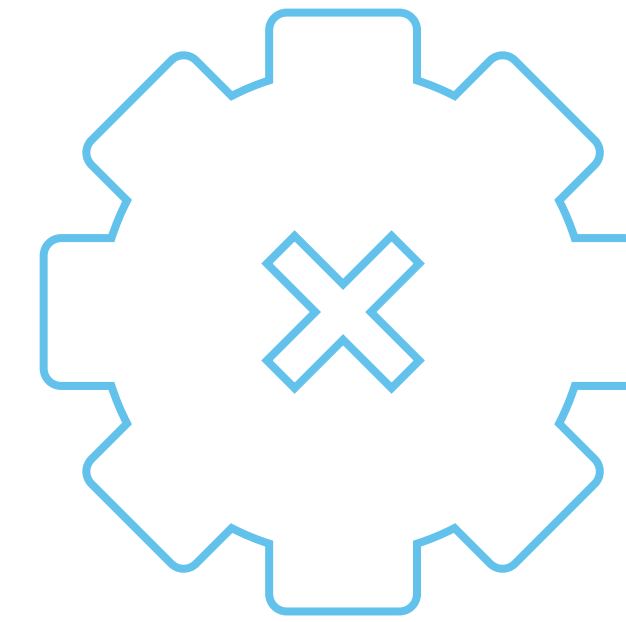


Examine the amount of work that is generated from the PM program.

$$\frac{\text{Total Number Of Work Orders Generated From PM Inspection}}{\text{Total Number Of Work Orders}} \quad (\text{Expressed as a \%})$$

This percentage highlights whether the PM program is effective in finding developing equipment problems proactively.

# 5 BREAKDOWNS CAUSED BY POOR PMs

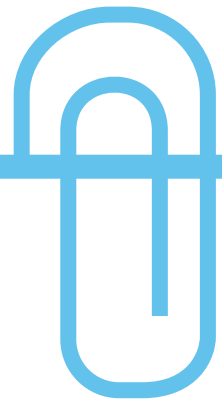


Examine the root cause of breakdowns and investigate whether it should be a part of your PM program.

$$\frac{\text{Breakdowns Caused By Items That Should Have Been A Part Of The PM Program}}{\text{Total Number Of Breakdowns}} \quad (\text{Expressed as a \%})$$

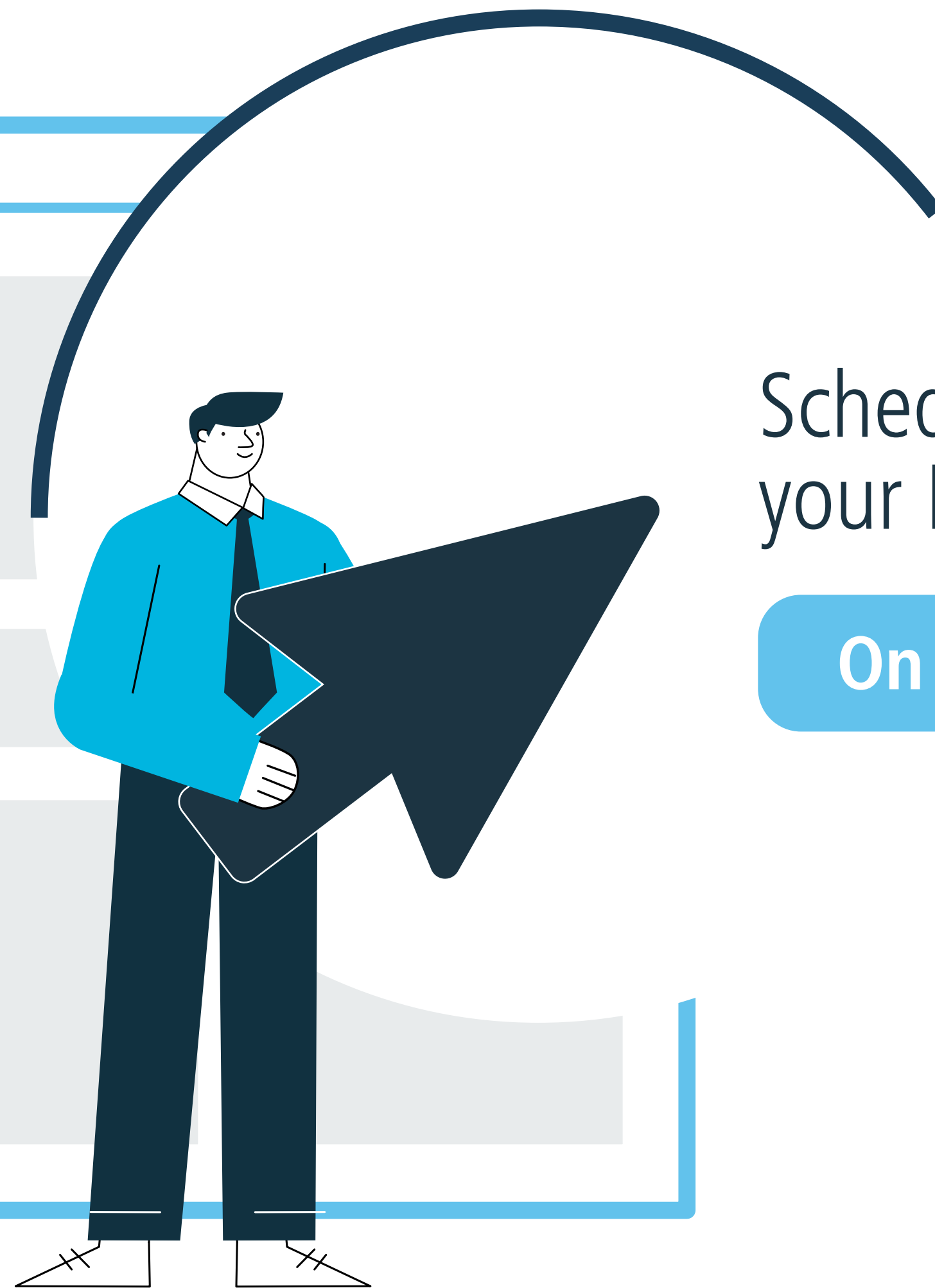
This indicator gives you an accurate picture of the effect your PM program is having on equipment breakdowns.





The overall use of predictive maintenance rose from 47% in 2017 to 51% in 2018, though preventive maintenance is still preferred by 80% of maintenance personnel.

# NEXT STEP



Schedule a consultation to optimize  
your PM program

[On Site Audit](#)

[Contact Us](#)

Don't have a PM program?

**Get started for free!**

