

Mistake Proofing

An Introduction to the Poka-Yoke philosophy

Why this is important?

- Mistake happen because a system or process allows it to happen
- Goal should always be to make it impossible for a mistake to happen
- Improve safety and efficiency

What is Poka-Yoke?

- Japanese term
- **Poka** = Inadvertent Error --- **Yoke** = Prevention
- Made famous through the Toyota Production System
- Focuses on the prevention of errors through process or tool design
- Makes mistakes either impossible to occur or very obvious
- Typically simple, practical and low-cost

What are the benefits?

- Helps reduce:
 - Rework and scrap
 - Exposure to health and safety risks
- Helps improve:
 - Throughput
 - Employee morale by reducing frustration
 - Employee onboarding

What does Poka-Yoke look like?

- Everyday examples:

Microwave Door	Doesn't work if the door is open
Bathroom Sink	Overflow hole to prevent flood
Gas Pump Nozzles	Different nozzle for diesel and unleaded
USB-C plugs	Fit electronics in either direction

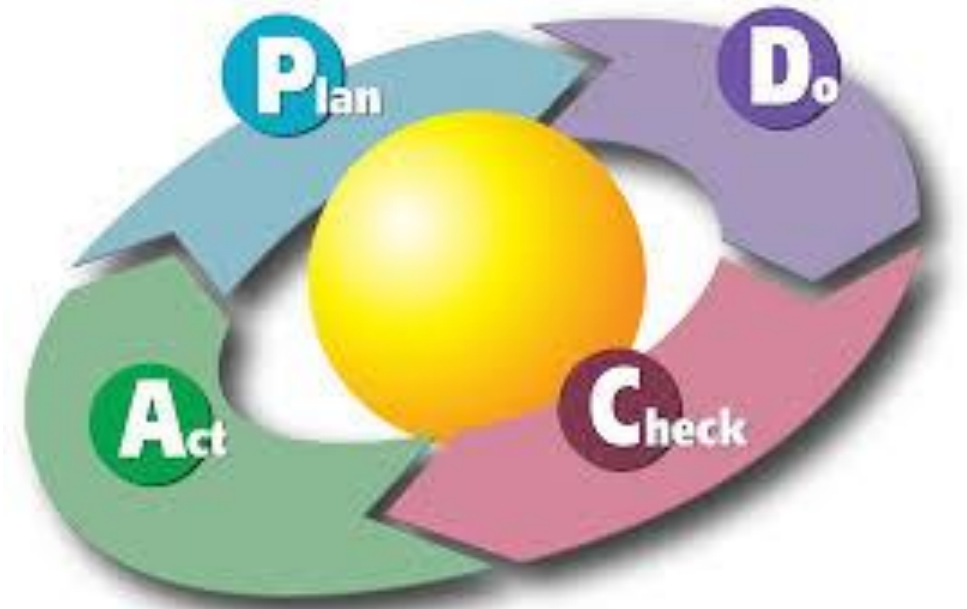


Types of Poka-Yoke

Level	Type	What it does	Effectiveness
1	Checking	Leverages the worker to identify errors Examples: - Checklists - Color Coding	Least
2	Detection	Stops or flags if there is an error that is detected Examples: - Alarm if settings are incorrect - Sensors that identify missing parts	Good
3	Prevention	Does not allow any error into the process Examples: - Parts can only fit one way - Interlocks on equipment	Best

Basic steps of Poka-Yoke

1. Identify where errors are happening
2. Get to the root cause(s)
3. Think of simple fixes
4. Implement and test them out
5. Formalize and share the tested fixes



A practical example

Morning Coffee Emergency:

You wake up in the morning, expecting a carafe of coffee ready when you get to the kitchen.

When you get to the coffee maker, there is coffee all over the floor since you forgot to put the carafe in place.

What do you do to mistake proof this process?

A practical example

Level	Type	What it does
1	Checking	- Post it on the coffee maker to remember to place the carafe - Flashing light or audible alarm lets you know the the carafe isn't in position
2	Detection	- The sensor on the coffee maker could stop/hold the brewing process for a few seconds to prevent spilling
3	Prevention	- The coffee maker could have an interlock that requires the carafe to be in position before it allows the brewing process

Call to action

1. Identify errors or friction points
2. Determine the root cause or causes
3. Implement a fix and track its success