

Lean Poster Series #14

Poka Yoke

What is Poka Yoke?

Poka Yoke, meaning 'mistake-proofing' in Japanese, is any mechanism in Lean manufacturing that helps to avoid (yokeru) mistakes (poka). Poka Yoke was developed by Shigeo Shingo at Toyota.

When and Where to Use Poka Yoke?

Poka Yoke is a technique that can be applied to any type of process in manufacturing or the service industry. It can be used wherever something can go wrong or an error can be made.

Why is Poka Yoke Important?

- If something can go wrong, it will! Poka Yoke techniques make it difficult or even impossible to make mistakes. These techniques can remove defects from products and processes and substantially improve quality.
- It helps producing processes and services that are defect-free
- It eliminates scrap and rework
- It helps reducing costs and improving customer satisfaction downstream process.

How Does Poka Yoke Work?

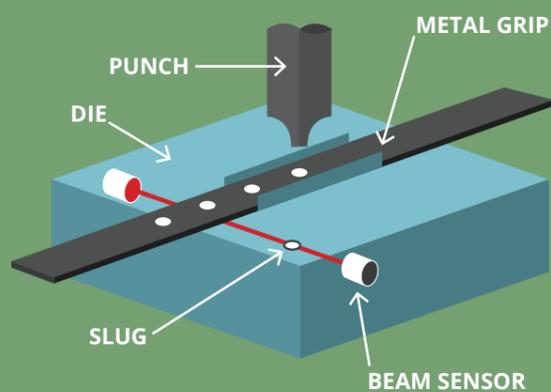
1. Identify the operation or process
2. Analyze the 5-whys and understand the ways a process can fail.
3. Choose the right Poka Yoke method
4. Choose the right Poka Yoke system
5. Trial the method and see if it works
6. Train the operator
7. Review performance and measure success.

Poka Yoke Systems

METHODS OF POKA YOKE FOR DETECTING AND PREVENTING ERRORS

SHUTDOWN

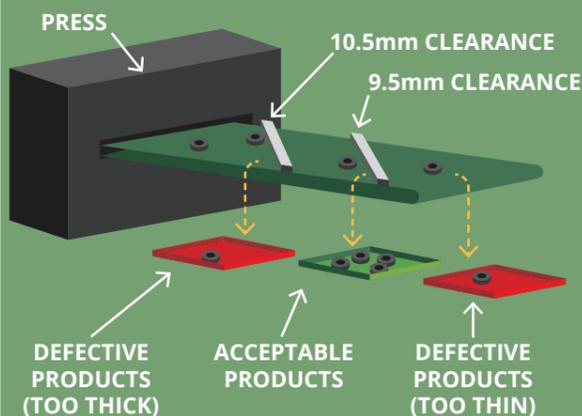
Process stops automatically when the problem occurs.



Example: Metal Stamping
Machine will stop if no slug is detected.

CONTROL

Physical mechanism to prevent problem from occurring or escaping.



Example: Valve Tightener
Good and bad products are reliably sorted.

WARNING

Physical mechanism to prevent problem from occurring or escaping.

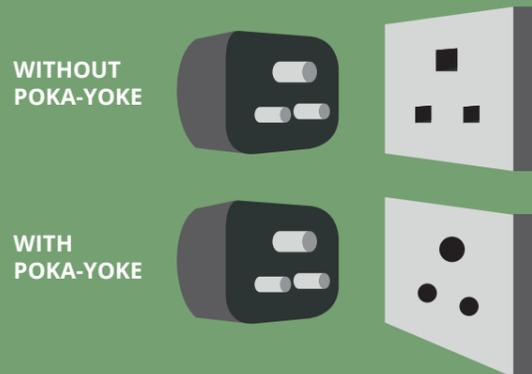


Example: ATM
Reminds customer to remove card.

METHODS OF POKA YOKE FOR DETECTING AND PREVENTING ERRORS

CONTACT METHOD

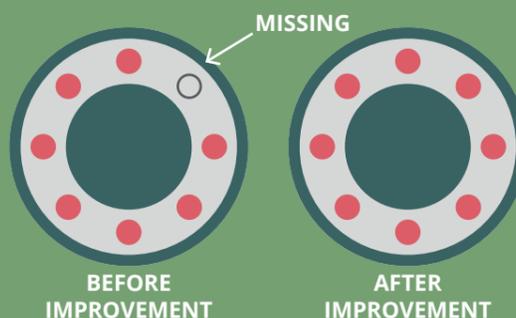
The contact method identifies product defects by testing the product's physical attributes such as shape, size and color.



Example: Power plug and socket
The plug can only be inserted into the socket in one way.

FIXED VALUE METHOD

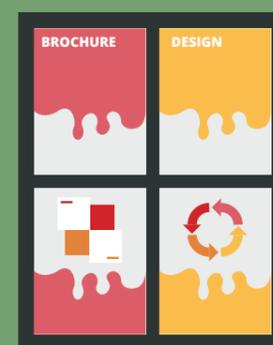
The fixed-value method alerts the operator if a certain number of actions are not made. This method employs automatic counters or optical devices.



Example: Missing Rivets
Counter built into riveting machine will only release when all 8 rivets are inserted.

MOTION-STEP METHOD

The motion-step method determines whether the prescribed steps of the process have been followed.



Example: Product Manuals Visual
Visual to point employees to the right collateral for various products.

