

# The History and Origins of TPM

The origins of a powerful methodology

**Total Productive Maintenance (TPM)**, was developed primarily in Japan in the turbulent years following the Second World War.

Japan's defeat at the end of World War II devastated the country's industrial infrastructure.

Japanese industrial leaders began adopting American philosophies about quality management and quality control.

These ideas, which stressed the importance of **Total Quality Management**, were imported in the recovery years, when experts such as **Dr. W. Edwards Deming** toured and lectured in Japan.

Japanese corporations began to turn increasingly toward highly technical, automated equipment.

Although this move toward automation greatly increased the efficiency rate of production, it also brought along many unforeseen challenges.

# Challenges of Automation

The belief that only skilled technicians could properly maintain machines created a wedge between line operators and their equipment.

This mindset of separation quickly lead to losses of capacity and costly breakdowns.

The Japanese quickly realized they would never be able to reach their goals of consistent, high quality products with poorly-maintained equipment.

In the early **1950s** Japanese Companies began to focus on **Preventive Maintenance** techniques.

- Preventive maintenance is the concept of daily maintenance designed to keep equipment in good operational condition and avoid failures through periodic inspections and the prevention of deterioration.

**Nippondenso** (a parts supplier for Toyota) was one of the first companies to adopt plant-wide preventive maintenance.

With the introduction of increasing automation, more and more maintenance personnel were needed.

Even with the addition of extra technicians, they were unable to meet their quality and equipment utilization goals.

- Top management proposed that line workers should perform routine maintenance on their own machines.
- This allowed for a reduction in maintenance personnel, and gave those who remained the time to focus on more major technical projects.

**Autonomous Maintenance**, performed by the operators, combined with **Preventive Maintenance** techniques and a total commitment to **high quality** and **zero losses**, lead to the birth of **Total Productive Maintenance**.

- As the rest of the Toyota group adopted similar policies, and combined them with other earlier Lean tools, they began to experience unprecedented levels of efficiency and success.