SNS COLLEGE OF TECHNOLOGY

Coimbatore-35
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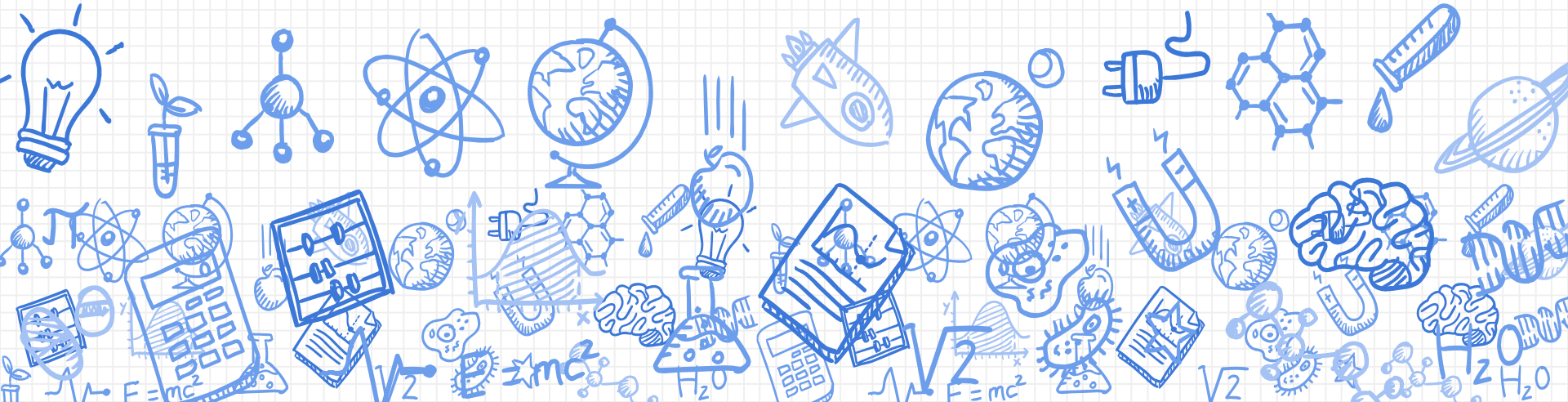
DEPARTMENT OF MECHANICAL ENGINEERING

16MEE304 – TOTAL QUALITY MANAGEMENT

III YEAR - V SEM

UNIT 4 – TQM TOOLS

TOPIC – TPM Concepts

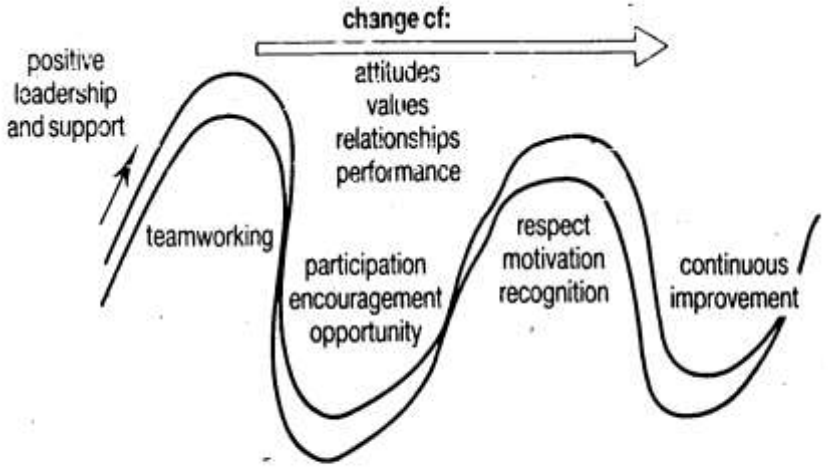


Introduction to TPM

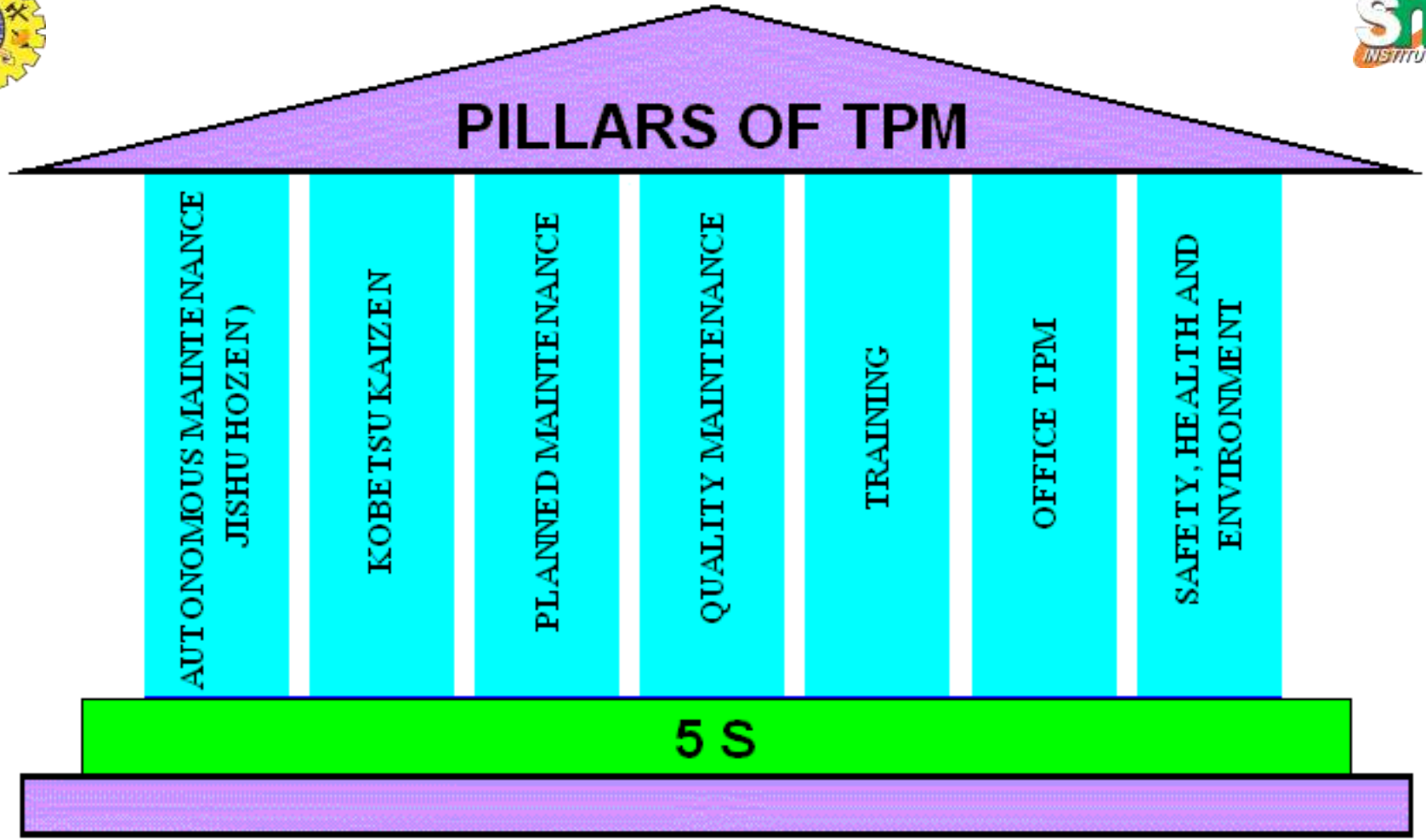
Total Productive Maintenance (TPM) is both

a philosophy to permeate throughout an operating company touching people of all levels

b collection of techniques and practices aimed at maximizing the effectiveness (best possible return) of business facilities and processes



The TPM philosophy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PLANNED MAINTENANCE
QUALITY MAINTENANCE
TRAINING
OFFICE TPM
SAFETY, HEALTH AND
ENVIRONMENT
5 S

Role of TPM

Answers of the following questions are able to tell what role TPM can play within a company:

- Does TPM replace traditional maintenance techniques ?
- Why is it so popular and important ?
- What are its policies and objectives ?
- How does it fit in with TQM ?
- What are its steps, activities and components?
- What are its benefits and results ?

TPM and Traditional Maintenance

- Reactive maintenance inherently wasteful and ineffective with following disadvantages:

  No warning of failure
  Possible safety risk
  Unscheduled downtime of machinery
  Production loss or delay
  Possible secondary damage

TPM and Traditional Maintenance

Need for:

- Stand-by machinery
- A stand-by maintenance team
- A stock of spare parts

Costs include:

- Post production
- Disrupted schedule
- Repair cost
- Stand-by machinery
- Spare parts

12 TPM Development Program Steps

Preparation

1. Formally announce the decision to introduce TPM
2. Conduct TPM introductory education and publicity campaign
3. Create TPM promotion organization
4. Establish basic TPM policy and goals
5. Draft a master plan for implementing TPM
6. Kick off TPM initiatives
   (to cultivate the atmosphere to raise morale, inspiration and dedication)

Implementation

7. Build a corporate constitution designed to maximize the effectiveness of facilities
   i. Conduct focused improvement activities
   ii. Establish and deploy autonomous maintenance program
   iii. Implement planned maintenance program
   iv. Conduct operation and maintenance skills training

8. Build an early management system for new products and equipment
9. Build a quality maintenance system
10. Build an effective administration and support system
11. Develop a system for managing health, safety, and the environment

Consolidation

12. Sustain a full TPM implementation and raise levels (Prize)

Components of TPM

Figure The practical components of TPM

Practical Components of TPM

To be achieved through TPM team:

- **Restore, maintain and continuously improve the existing facilities**

Role of maintenance personnel

Carry out major repairs

Role of operation personnel

Maintain ‘basic’ machinery condition to prevent deterioration

Practical Components of TPM

Role of maintenance personnel (contd.)

Improve weak points and eliminate deterioration

Plan and carry out preventive maintenance

Analyze breakdowns and performance, and carry out predictive maintenance

Role of operation personnel (contd.)

Monitor machinery effectiveness

Regularly inspect to detect problems

Carry out simple improvements / repairs

Detect and eliminate faults and problems

Faults that:

Cause breakdowns and/or stoppages

Slow the process down

Cause breakdowns and/or stoppages

Problems that:

Slow down the operator and make life difficult

Make changeovers difficult

Slow down the operator and make life difficult

Faults and Problems

Faults

- that cause breakdowns or stoppages
- that slow the process down
- that cause inconsistency
- that cause rejects
- that provide safety hazards

Problems

- that slow down the operator and make life difficult
- that make changeovers difficult
- that make the workplace dirty, oily and smelly
- that make the machinery dangerous to operate and set up
- that lead to injury

Figure 3.4 Types of faults and operating problems

Detect and eliminate faults and problems

Faults that:

Slow the process down

Cause inconsistency

Cause rejects

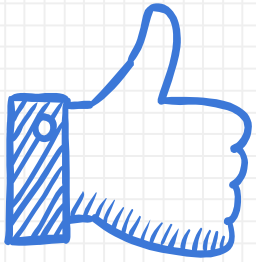
Provide safety hazards

Problems that:

Make changeovers difficult

Make workplace dirty, oily and smelly

Make the machinery dangerous to operate and setup => lead to injury



THANKS!