



Organized by

Quality Circle Forum of India

Coimbatore & Bangalore Chapter



In Association with
PSG Institute of Technology and Applied Research

3 DAYS RESIDENTIAL TRAINING PROGRAM ON 'KARAKURI KAIZEN'



DATE

July 29,30 & 31, 2024

VENUE

KARAKURI KAIZEN Training Centre (KKTC)

Department of Mechanical Engineering

PSG Institute of Technology and Applied Research

Neelambur, Coimbatore – 641 062.

OVERVIEW

In the era of Industry 4.0, automation is becoming increasingly important. However, the term “automation” covers much more than just the complex high-tech robots that many associate with modern industry whose costs are highly prohibitive. The principle of Karakuri Kaizen, a central component of the lean philosophy, centres on easily implemented automation solutions that operates on a purely mechanical basis. By making clever use of kinetic energy as it is released and consistently avoiding waste, this approach can yield striking results.

Karakuri is an automation mechanism that was invented in Japan in the 17th to 19th century. At first, most of the applications that were developed were used for leisure purposes, such as serving tea. For decades, Karakuri has been a central element of the lean philosophy, where it refers to the simple but intelligent automation of processes based on physical principles – with no drives, sensors, electricity or compressed air. The intention is to use resources that are already in place – existing plants, parts and components on the one hand and the creativity of the on-site workforce on the other (low-cost automation). Karakuri is the use of mechanic gadgetry rather than electric, pneumatic, or hydraulic devices. Definitely no computers! Within lean, it stands for mechanical gadgets that improve your system.

In India, the adoption of Karakuri Kaizen has not gained momentum even though a few companies are practicing it without much publicity. Now QCFI is taking initiative through its Coimbatore Chapter in collaboration with PSG group of Institutions. PSGiTECH has set up an



exclusive Lab and Training Centre KARAKURI DHOSO for this purpose in their campus. Madurai chapter is proud to join this movement.

Karakuri demonstrates that Toyota's working currency is brain power, grown through rigorous problem solving and mentors who challenge their students. The wallet takes a backseat to the brain. Toyota's response to the challenge of increasing Kaizen capability wasn't to find smarter people or more clever machines.

Instead it was to make Kaizen more accessible by simplifying engineering and develop people to make work better using the engineering.

Clever use of pulleys, counterweights and gravity by assembly workers is outperforming pricey robots trained by highly educated engineers.

People are very good at making things and at making things better. Hence, as a means of thriving in the future, it is better to invest in people, pulleys and levers.

COURSE OBJECTIVES

- To impart the principles of KARAKURI KAIZEN and KARAKURI solution thinking
- To create design expertise among Engineering Departments of Manufacturing companies to understand and identify the need, design, bill of materials, assembly and maintenance of KARAKURI equipment
- To develop the real time skills for promoting the KARAKURI KAIZEN principles
- To accomplish some automation at 10% of the cost of regular automation machines, because Karakuri equipment do not use electricity or pneumatic power and just uses leverage, pulley, gravity and human/machine energy.
- The program has been designed in such a way that the participants will get hands on experience in dismantling and assembling of miniature kit components which have been manufactured to the maximum precision without any time limit.

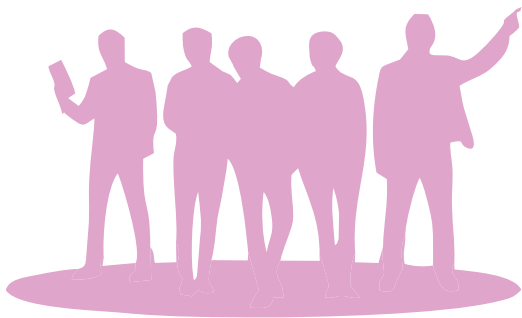
RESOURCE PERSONS

- Highly experienced faculty from PSGIM and PSGiTECH on the principles and effective application of Levers, Pulleys, Chains and other mechanical gadgets to maximum advantage.
- Industry experts with rich Toyota experience.
- Design engineers from Karakuri equipment manufacturers.
- Supported by QCFI experts on practical application of these principles in industrial situations.

PROGRAM DESIGN (3 Days)

- What is Karakuri, history and its relevance today.
- Principles of Mechanics and its practical applications with industry examples.
- Concept of Assemble to Design (Spring, Pulley, Gear, Ramp, Roller, Link, Angular tilting, etc.) and amplification
- Practical training on dismantling and assembling of miniature kits with its components.
- Solution thinking for Implementing Enhancing Sustainable Industrial Performance
- Systematic Analysis, Implementation Feasibility and Cost Benefit Analysis
- Illustrations with industry examples.
- Sample Model-Life Size Drawing, Model and Components (1 or 2): Feasible Design and Development
- of Material Handling Equipment (MHE) solutions by using Standard Components

At the end of the 3 days , the participants would have been motivated to implement Karakuri Kaizen in their units. They have to identify areas, collect data on current situations, problems encountered, develop solutions, prepare rough drawings etc.



QUALITY CIRCLE FORUM OF INDIA Coimbatore Chapter

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WHO SHOULD ATTEND?

- Engineers from Design, R&D, PED, Production and Maintenance departments.
- This must be a Cross Functional team of 3 to 5 people from the same unit.
- They must be willing to work hard, open mind to learn, readiness to face challenges and passion to develop solutions.

PROGRAM FEES

- Participants must be Institutional members of QCFI. If not they can become QCFI members first and then send the team.
- Program fees will be:
Rs.30,000 per delegate for all 3 days
- Package includes A/C accommodation on twin sharing basis from 28th night to 31st evening , starting with dinner on 28th, breakfast, and dinner in the hotel and lunch in the college on 29th 30th and 31st July 24.
- Transport from hotel to college and back on all 3days. Participants are advised not to plan for any personal work during these 3 days as the hours will be extended in the evening.
- All delegates must stay in the same place for facilitating easy transport.
- Even local delegates must stay in the same hotel. Delegates are requested to assemble at Hotel Jade Residency, (PSGIM GUEST HOUSE) PSG Institute or Management, Avinashi Road, Coimbatore – 641 001. Phone: 99524 83151 on July 28th night for dinner.
- Batch size of the program will be restricted to 40. Priority will be on first come first served basis.

BENEFITS

With very low or negligible investment, the organization gets multifold savings in lakhs or even crores.

MODE OF PAYMENT

- Payment may be made by DD / Cheque / NEFT/ in favor of **QUALITY CIRCLE FORUM OF INDIA COIMBATORE CHAPTER**

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