



Organized by  
**Quality Circle Forum of India**  
**Coimbatore Chapter**



In Association with  
**PSG Institute of Technology and Applied Research**  
**PSG Institute of Management**



# 3 DAYS RESIDENTIAL TRAINING PROGRAM ON 'KARAKURI KAIZEN'



**DATE**

**March 09-11, 2023**

**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.



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.

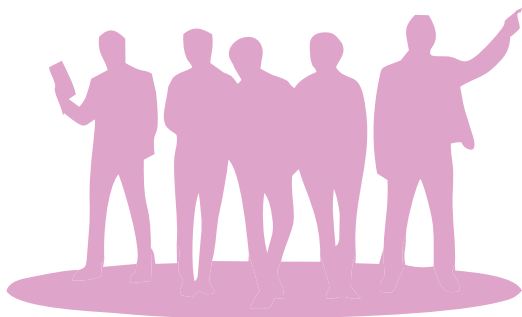
## RESOURCE PERSONS

- 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 3days , 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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**Program Co-ordinator**  
**Mr. M.SANKARASUBRAMANIAN**  
Vice Chairman, QCFI Cbe.  
Mob : +91 94434 51586

## 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:  
**a. For a team of 3 people - Rs.8,000 / day / person.**
- Program fee includes A/C accommodation on twin sharing basis with Vegetarian food (breakfast, lunch and dinner).
- Participants are advised not to plan for any personal work during these 3 days as the hours will be extended in the evening.

Batch size of the program will be restricted to 40.  
Priority will be on first come first served basis.

We have conducted a maiden program during October 2021 with an over whelming response with 40 delegates.

## BENEFITS

With very low or negligible investment, the organization gets multi fold 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**  
BANK : ICICI BANK  
SB ACCOUNT No : 243201000513  
IFSC CODE : ICIC0002432  
BRANCH : THUDIYALUR.

- GST IN : 33AAAAQ0008P3ZO



**Download Registration Form**  
**[www.qcficbe.com](http://www.qcficbe.com)**



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**REGISTRATION FORM**

**3 DAYS RESIDENTIAL TRAINING PROGRAM ON "KARAKURI KAIZEN"**  
**(Last Date : 27<sup>th</sup> Feb 2023)**

To  
The Secretary,  
QCFI Coimbatore Chapter

Dear Sirs,

We are pleased to nominate the following persons from our organisation as delegates for the 3 Days Residential Training on Program '**KARAKURI KAIZEN**' held on 9-11 March 2023

S.No	NAME	DESIGNATION
1.		
2.		
3.		
4.		
5.		

Organisation Name: \_\_\_\_\_ Contact No: \_\_\_\_\_

E-Mail: \_\_\_\_\_ Enclosed Cheque/DD No: \_\_\_\_\_ Date: \_\_\_\_\_

For Rs: \_\_\_\_\_ Drawn in favour of 'QUALITY CIRCLE FORUM OF INDIA COIMBATORE CHAPTER' towards delegate fees.

NEFT in favour of QUALITY CIRCLE FORUM OF INDIA - COIMBATORE CHAPTER

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Company's Stamp and Signature of authorized Signatory