



THE QUALITY CONUNDRUM

How Indian Industry is managing quality

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Understanding exactness

The concept of "exactness", propagated by Yoshikazu Tsuda, the professor of quality, is an effective concept for controlling process variations. Tsuda, who transformed clustering in India, drew up a plan for companies to start the cluster journey with "exactness", followed by daily work management.

Exactness is the starting block of quality. It requires that each company pursuing quality practises daily work management. Exactness of operations comes through exactness in man, method, material, machine and environment. These conditions must be exact enough to achieve daily targets consistently.

While daily work management is important, for exactness, an organisation must distribute the responsibility for three performance-management objectives appropriately. The first of these, retention of the existing levels of performance to ensure that there are no drops from current standards, should be left to shop-floor workers who can use techniques of total quality management (TQM) such as the 5Ss, daily work management and Poka-Yoke for the purpose. The second and third objectives, improving performance levels, and effecting quantum jumps in them, should be the responsibility of the middle-manager, taking 40 and 50 per cent of his time, respectively.

Precision pays

These TQM tools have been implemented by many companies to achieve targeted results. At Hi Tech Carbon, a Birla Group company, the TQM movement was successful due to the involvement of the employees in cleaning, maintaining and improving the plant and office areas. Cleaning events were organised for the employees to demonstrate 100 per cent involvement in pre-total productivity management activities.

Cleaning up the work area leads to increased safety, hygiene and better productivity; it also frees up valuable floor space. Some of these benefits, such as freeing up space, also result in monetary savings.

At Rane Brake Linings, even suppliers are involved in TQM activities at the design stage. They educate their suppliers on problem solving, ISO-related activities and the 5Ss. The 5Ss are five Japanese terms: *seiri* (separating required tools from the rest), *seiton* (neatly arranging tools and markings for easier identification), *seiso* (clean-up campaign), *seiketsu* (to conduct the above three regularly), and *soitsuke* (forming the habit of following the first four).



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In a manufacturing environment, machine set-up and changeovers, tool setting and monitoring conditions, exactness of input material and its feeding, accessibility of tools and consumables, appropriate information, and the appropriateness of handling systems all contribute to exactness. Thus, parameters that affect machine conditions must be known and controlled. Manuals must define the methods to carry out maintenance and how to react when parameters go out of control. These must be updated to improve performance and reduce

breakdown and downtime.

Exactness in checking, measurement and feedback given to each work station, the method of maintenance and the skill level of the operator all play equally important roles. For instance, if certain process parameters need to be measured, say, the temperature of oil, the location where the sensor is planted and made available to the operator must also be exact.

The safety factor

Operator safety is critical in attaining exactness. High noise levels, slippery floors, metal chips on the floor, and the possibility that they may lead to hazardous situations clearly must be avoided.

Another aspect of safety is related to housekeeping and 5S. There are two facets of housekeeping to be kept in mind. The first is the cleanliness of the product itself, while it is in process, in a handling container, or being received or packed for delivery.

Housekeeping is essential to make a conforming and clean product.

The second relates to carrying out safe operations. Metal chips on the floor or on motors, or oil on the floor are hazardous and must be stopped by maintenance activity and design of suitable handling systems and guards. Housekeeping is a cost but if it helps people find what they need, when they need, from where it should be, it is always advisable.

Central to maintaining "exactness" is the handling of exceptions. The person who can decide on action in a crisis must be identified. Experience of dealing with crises will lead to more flexible and responsive systems. 📌