

**UNIDO - ACMA**  
**Partnership Programme, India**

# Case Study #7:

## Nipman Fastener Industries



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## BACKGROUND OF NIPMAN FASTENER INDUSTRIES

*“The UNIDO-AMCA Programme has helped us to establish a single company-wide TQM System for creating a learning organization through awareness and training in order to build world class capabilities and practices within the team. It helped us to give our customers the best on a continuous basis for the long term success of our organization in a changing global market scenario.”*

**Pravin Malhotra, Managing Director**

### OVERVIEW

**Company:** Nipman Fastener Industries Pvt Ltd.

**Location:** Manesar, NCR

**Programme period:** May 2005 – October 2007 (30 months)

**Number of employees:** 128

**Core products and processes:** High tensile fasteners

**Average annual turnover:** INR 610 million (USD 13.55 million)

**Value of exports:** -

**Tier:** 1

### KEY CHALLENGES FACED

- » High production/operating costs due to rejections and un-necessary material handling
- » Frequent equipment breakdowns due to inadequate maintenance support
- » Limited involvement of operators' involvement in problem-solving processes
- » Frequent change-over of product types, which resulted in high set-up rejections
- » Unorganized work places

### ASPIRATIONS AND AIMS

- » Maintain its position as the most preferred supplier to its customers
- » To be an enjoyable place for people to work
- » To ensure on time deliveries
- » To keep manufacturing costs as low as possible

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*Shop floor training session*



Nipman Fastener Industries Pvt Ltd. was founded in 1997 for the manufacturing of standard and high tensile fasteners primarily for the automotive industry. Its first plant was established in Ghaziabad in the State of Uttar Pradesh in March 1998. The second unit at Manesar, in the state of Haryana was established in March 2002 to manufacture primarily import substitutes for engine cylinder studs for the company Hero Honda Motors Ltd. Both plants participated in the UNIDO-AMCA Programme. A third plant, which is currently under construction, will be situated in Haridwar in the state of Uttarakhand. Nipman currently employs 128 people.

The company applies a dacro-coating technology provided by Nippon Dacro Shamroc Co. Ltd. (Japan) for surface coating for the supply of engine cylinder studs. Nipman has qualified as an ancillary supplier to Hero Honda Motors Ltd. and enjoys the status of 'Direct on Line Supplier'.

In 2005, Nipman initiated several improvements within the company and obtained ISO 9002 certification in 2005, and TS 16949:2002 certification in 2008 for its plant in Manesar.

Though Nipman performed generally well in terms of growth, it still faced a series of problems in the organization, such as high in-process rejections, high inventories and increased cost of production. Furthermore, frequent machine breakdowns were a series concern. In spite of constant efforts Nipman did not achieve the desired results in those domains. When Nipman's management came to know about the UNIDO-ACMA Programme, it decided to join this initiative and become a member of a cluster of participating automotive component manufacturers that was formed in the same region.

### **VISION STATEMENT**

To make Nipman a partner of choice for global customers.

### **MISSION STATEMENT**

To achieve high turnover and profitability by supplying quality products to major local OEMs and Tier 1 suppliers through sustained efforts of motivated employees.



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### NIPMAN'S JOURNEY TROUGH THE PROGRAMME

Monthly review meeting



Kaizen gallery



The way into the UNIDO-ACMA Programme was paved in mid-2005 when the Nipman received a communiqué from UNIDO and ACMA inviting it to join this initiative. Soon thereafter, the CEO called for a meeting with all employees to inform them about their participation, to introduce the counsellor under this programme, Mr. Vikas Sethi, and to communicate the key expectations.

The counsellor started his assistance activities by **forming teams** (for different zones in the company) and giving them rigorous class room and on-the-job **training** on subjects such as 5S (workplace organization and cleanliness), 3M (avoidance and management of waste and non-value adding activities), Kaizen, and Poka Yoke.

For the first three months of the programme, employees were instructed to practice the first two steps of the **5S methodology** (1S/Seiri – Sort and 2S/Seiton – Set in order) very intensely and then started 3S (Seiso – shine/clean). This is a Japanese approach towards workplace organization and management, that describes how items are stored on the shop floor and how the newly established order is maintained by instilling ownership of the process in each employee.

The counsellor paid three visits to Nipman every two months to give feedback and inputs as per the predefined roadmap and assign tasks to the management team. A set of 40 key indicators were introduced in a phased manner and monitored regularly.

The results achieved were reviewed not only internally but also in the course of so-called **Monthly Review Meetings (MRM)**, that brought together all participating companies of one cluster that were taken care of by the same counsellor. Those meeting were organized with the objective to jointly evaluate the performance of each firm and learn from each others' experiences. On these occasions, all company representatives delivered a 30-minutes presentation highlighting their achievements as per the templates provided by UNIDO and ACMA. Nipman hosted one of these review meetings inviting all companies from the “Indore Cluster” to its Manesar plant.

The national expert continuously emphasized the importance of 5S, systematic data collection, identifying and eliminating wastes and non value-adding activities, safety issues, the need for total employee involvement and improving the problem-solving ability of workers through the formation of Quality Control Circles (QCC) and Small Group Improvement Activities (SGIA).

#### **INCREASING PRODUCTIVITY BY ENHANCED EMPLOYEE INVOLVEMENT AND PROPER WORKPLACE ORGANIZATION**

In an effort to improve the employee involvement in improvement activities in general, and the UNIDO-ACMA Programme in particular, the following steps were taken:

- » The CEO personally visited the areas where Kaizens were implemented in order to acknowledge employees' efforts.
- » Continuous training was imparted and actions were taken to reduce absenteeism. Nipman also introduced a self attendance board for this purpose.
- » Direct interaction between the management and employees was encouraged by getting the CEO personally involved in understanding employees' problems and offering solutions.

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Gauge design modification



Before

- » A competition was also organized amongst the participating companies of the same cluster, in which critical machines were classified as Model Machines under “My Machine Campaign”. This initiative was helpful to engage employees in the process of identifying and eliminating abnormalities to improve the overall equipment efficiency (OEE) of machines.

Other initiatives undertaken to enhance Nipman's productivity:

- » One point lessons and standard operating procedures were introduced in a phased manner.
- » Zonal boards were installed to document the results of the 5S implementation.
- » To reduce the time that was wasted by employees for searching tools, shadow boards (specific holders for tools featuring the outline of the tools to show where they should be stored) were introduced.
- » The accident frequency was reduced from four accidents per year to zero over the duration of the programme. This was achieved by implementing Kaizen to make the workplace clutter-free as well as by better organizing the procurement and production processes.
- » A design related flaw in machine measurement gauges was corrected based on the suggestion of an employee (Kaizen).

After





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### OUTCOMES

Direct on-line customer award from Hero Honda



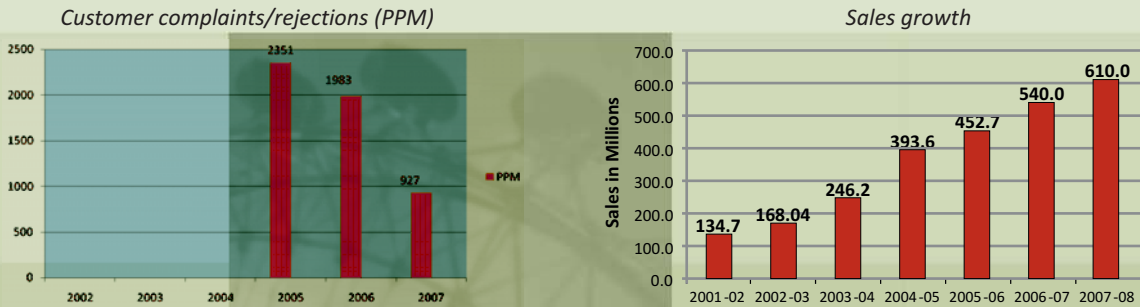
The visit of Mr. Wilfried Luetkenhorst of UNIDO to Nipman



Through the UNIDO-ACMA Programme the **involvement of employees** in improvement processes increased from 65% in 2005 to 100% in 2007. Around 850 Kaizens addressing various operational aspects of the company were implemented, which in total enabled the Nipman to save INR 1 million (USD 22,000) per year. Value added per employee cost (**VAPCO**) improved from 3.75 (2005) to 6.25 (2007).

Through this programme, Nipman also managed to improve its **inventory turnover ratio (ITR)** from 4.68 to 11 turns per year, which marks an improvement of 135% over a period of 30 months. This represented a vast improvement in the company's internal supply chain and material management policies. Even though inventory management was not one of the key challenges outlined at the inception of the UNIDO-ACMA Programme, this improvement was a by-product of several Kaizens suggested by employees and helped the company in moving towards **reducing costs in the manufacturing processes**.

Nipman also managed to develop **17 new products** and add **6 new customers** during the programme period, who were well satisfied with the present status and key improvements achieved by the company. Sales growth reached a new height INR 610 million (from initially INR 393.6 million).



Nipman also received the ACMA Award (Gold trophy) for “Excellence in Quality and Productivity” in 2007. On of its customers, Hero Honda, was so satisfied with the improvements achieved in terms of quality, that it gave Nipman 'Direct On Line' status for its products.

Mr. Wilfried Luetkenhorst, Managing Director of one of the operational divisions of UNIDO visited the company on February 2007 and appreciated the efforts made under this programme.

### KEY RESULTS

- » Value added per employee cost (VAPCO) increased from 3.75 to 6.25
- » Accident frequency and severity reduced to zero
- » In-process rejection PPM reduced from 15,341 to 3,529
- » Inventory turn ratio increased from 4.68 to 11
- » OEE improved from 66% to 73%.
- » Delivery schedule adherence improved from 90% to 99%

IMPROVEMENTS			
	Before	After	Change (%)
Accident frequency (Ratio)	126	0	+ 100
Accident severity (Ratio)	214	0	+ 100
VAPCO (Ratio)	3.75	6.25	+ 66
In-process rejection in PPM	15,341	3,529	+ 77
Inventory turnover ratio	4.68	11	+ 135
OEE %	66	73	+ 10
Delivery Schedule Adherence %	90	99	+ 10
New customers Added			6
New products Added			17
Tangible savings in operating costs (US\$ / year)			22,000

Note: Positive trend mark will be '+' and negative trend mark will be '-'.

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## FUTURE OUTLOOK

*Entrance to the plant of Nipman in Manesar*



### THE SUSTAINABILITY CHALLENGE

Sustaining zero PPM at the customer's end, maintaining a zero accident rate and keeping up other improvements that have resulted from the UNIDO-ACMA Programme can only remain in place if learning continues and if best practices are being followed. After the completion of the programme, the CEO of Nipman started internal reviews of the previously established key performance indicators in both of his plants on monthly basis. A yearly plan for trainings and audits was also elaborated. Furthermore, internal plant audits on various key indicators were foreseen. Expertise is also being built within the company at senior levels to ensure that the learning is maintained and knowledge is being passed on to new and existing employees (e.g. 5S champion, inventory champion, etc.).

Through this programme, Nipman's team has been introduced to a systematic approach towards problem-solving, analyzing methods and adopting best practices to compete in global markets.

### FUTURE TARGETS

- » Further improvements in skills matrix of employees by 2010/11 in order to make them multi-skilled
- » Vendor rationalization to have better control on quality parameters of incoming parts
- » Achieving zero customer complaints by 2011
- » Reduction in internal PPM by 50% until the end of 2010
- » Attaining 100% employee involvement

The main target for the company is to satisfy its customers, further lower costs by improving productivity, and reduce in-house rejection. The challenges which are most crucial for achieving this target are the induction of new employees and the quality levels of incoming parts.

Another goal is to further boost the ITR in order to further streamline the procurement process, and squeeze additional savings that can be applied to other areas of the manufacturing process.

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### CONTACT DETAILS:

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