CONTINUED IMPROVEMENT PROGRAMME: RESULTS & LESSONS LEARNED.

Presented by: BEN SALEM Ali

Position: PRODUCTION & SUPPLY CHAIN MANAGER

Date: 02 / 07 / 2018

Venue: Durban South Africa
**1. PRESENTATION OF SOMEF**

**INNOVATION THROUGH EXPERIENCE**

**SOMEF** is a group of companies specialized in manufacturing and marketing of electrical tooling and equipment for domestic use.

- **Turnover**: 20 M€uros (2017);
- **Exports** to more than 10 countries: 30% of turnover spent on exports;
- **Employs** over 600 people;
- **SOMEF** possess its own R&D lab: engineers, senior technicians, dedicated development and simulation software (SolidWorks), 3D Printing machine;
- **Lab** equipped with several test machines;
- **System quality certified ISO 9001: 2015**;
- **CE branding**;
- **1 % of turnover invested in R&D**: Product development and process;
- **5 Production sites**: 5 in Tunisia;
- **Dedicated logistics warehouses**;
- **2 injection workshops** with 30 presses of 40 T to 350 T and 30 robots;
- **Several assembly workshops** for finished products: switches, prises, circuit-breakers, etc.
1. PRESENTATION OF SOMEF

OUR MAIN PARTNERS
1. PRESENTATION OF SOMEF

OUR FIELDS OF ACTIVITY

- Electrical appliances
- Circuit-breakers
- Distribution boxes
- Accessories and wiring
- Videoconferencing
- Lighting
- Energy saving
- Home automation
2. KAIZEN ACTIVITIES: METHODS / ENHANCEMENT TOOLS

- 5S Method;
- KAIZEN Approach: Improvement of Productivity, Stock Optimization, Lead Time Reduction & Area reduction;
- SMED Method: Reduction of mold change time;
- TPM : Total productive maintenance.
2. KAIZEN ACTIVITIES: 5S / SMED

5S : ACTIONS PERFORMED AND RESULTS

*Produce better – Improving productivity & quality:*
- Minimizing the time lost looking for tools, items or documents;
- Reducing the number of breakdowns;
- Fast detection of defects;
- Better visual management.

*Live better:*
- Improving working conditions (housekeeping, reducing the number of incidents...);
- Better ergonomics for work stations;
- Encouraging teamwork.

SMED : (Single Minute Exchange of Die) : METHODOLOGY & RESULTS

- Initial situation: Video recording of a mold change
- Analysis of the change process
- Weak points and upgrade plans:
  - Gain per organization
  - Gain per technical modification

Result assessment.

PROGRESS OF MOLD CHANGE TIME

AVANT

APRES

- 38 %
2. KAIZEN ACTIVITIES: Switches production line. PICTURES OF UPGRADE ACTIONS

- Assembly work split into two separate operations
- Improvement of components layout at the stations: Reduction of assembly time.
- Production line modified into production cells (part by part production).
- Design and implementation of a semi-automatic assembly press (10 parts at a time).
2. KAIZEN ACTIVITIES: CIRCUIT-BREAKERS ASSEMBLY WORKSHOP.

Layout upgrade

- Scope: Circuit-breakers assembly lines;
- The workshop produces 5 ranges of circuit-breakers.
- There are 3 projects for the layout upgrade.

<table>
<thead>
<tr>
<th>Range</th>
<th>Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>F1</td>
<td>MCB modular TD1</td>
</tr>
<tr>
<td>F2</td>
<td>MCB modular TD2</td>
</tr>
<tr>
<td>F3</td>
<td>MCB in 1 module</td>
</tr>
<tr>
<td>F4</td>
<td>RCBO</td>
</tr>
<tr>
<td>F5</td>
<td>Differential block</td>
</tr>
</tbody>
</table>

- Project No. 1.
- Project No. 2.
- Project No. 3.
## 2. CIRCUIT-BREAKERS ASSEMBLY WORKSHOP: RESULTS IN NUMBERS

<table>
<thead>
<tr>
<th>LINE</th>
<th>LINE TD2</th>
<th>LINE 01 MOD</th>
<th>LINE TD 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>LEAD TIME IMPROVEMENT</td>
<td>- 65 %</td>
<td>- 80 %</td>
<td>- 70 %</td>
</tr>
<tr>
<td>PRODUCTIVITY ENHANCEMENT</td>
<td>+ 32 %</td>
<td>+ 65 %</td>
<td>+ 47 %</td>
</tr>
<tr>
<td>CURRENT STOCKS IN DAYS</td>
<td>- 66 %</td>
<td>- 66 %</td>
<td>- 66 %</td>
</tr>
<tr>
<td>DISPLACEMENT</td>
<td>- 70 %</td>
<td>- 68 %</td>
<td>- 75 %</td>
</tr>
</tbody>
</table>

### RESULTS IN NUMBERS: WORKSHOP AREA

| Reduction in occupied area | - 38 % |
3. LESSONS LEARNED

- The involvement of ALL company stakeholders from the field teams up to Management: operators should participate in selecting the solutions to be implemented;
- Staff training;
- Stringent steering of projects;
- Communication with staff members is a key factor for success;
- Selecting simple solutions to be implemented;
- Identification of constraints before implementing projects;
- Acknowledging the results achieved by project teams;
- Follow-up and continuous assessment of performances;
- Resistance to change decreases steadily as projects progress: SOMEF took two years to upgrade the first line of production, and have upgraded an entire production workshop (5 production lines) in less than a year;
4. CONCLUSION & RECOMMENDATIONS

- The results achieved have shown that the Lean tools (5S, Kaizen, SMED) represent real potential for progress, and lead to tangible and sustainable results;

- SOMEF will continue in their quest to being more competitive through planning and by launching new enhancement projects;

- SOMEF strongly recommends the adoption of a strategy of continued enhancement based on these tools.
SOMEF TUNISIA expresses great appreciation to:

- Japan International Cooperation Agency (JICA)
- Centre des Industries Mécaniques et Electriques (CETIME)
- Unité de Gestion du Programme National de la Promotion de la Qualité (UGPQ).
Thank you for listening