Introduction on PMGlobal

October 2014
PMG India - Present activities

**Project management / Program management**

**Quality Audit**
- Conducting Internal Quality audits and tracking the non-conformances to closure
- Third party Quality Auditing (Auditing at your Vendor site)

**Process Improvement**
- Good strength in Plastics, Forgings and Castings
- Review the operational practices, and identify the areas of quality improvements using Pareto analyses, Why - Why analysis, Cause & Effect Diagram, Cp, Cpk, Cm, Cmk and Gauge R & R
- Developing process parameters, testing techniques
- Continuous improvement in process capabilities
- Optimizing the operating procedure for better resource utilization to maximize productivity

**Supplier Improvement program and Quality auditing**
Knowledge in Plastics domain

- Process optimization to improve the Product Quality, Time and Cost
- Understanding of defects and provide effective solution
- Suggestion on usage of better material, in case of defective material
- Support for New product development
- PPAP (Prod. part approval process) trail validation
- Suggestions for converting Machined components to Plastic components based on feasibility study

Sample assignments:

- Conversion of ‘Center tube (fuel injection)’ from aluminum die casting to Engineering plastic Nylon 66 UF for Automotive industry: Achieved reduction of 50% cost and time; avoided machining, spl. packing and reduction in storage space
- Conversion of ‘Chain tensioner’ & ‘Engine cap’ from aluminum die casting to Engineering Plastic Stanil & Nylon 66 45% GF respectively for Two wheeler manf. industry: Reduction in 60% cost and time; reduced number of movements, machining operations, special processes avoided
Knowledge in Forgings and Castings domain

- Process optimization to improve the Product Quality, Time and Cost
- Support in development of Forgings and Castings
- Suggestions on certain components to convert from Castings to Forgings to improve Quality, Productivity and Cost
- Update of the existing process to improve the quality of product
- Good understanding to conduct Destructive and Non Destructive testing on Casting & Forged component through approved lab.

Sample assignments:

- Conversion of number of ‘Cap end cover’ of different models from sand casting to forging of Hydraulics industry: Avoided final stage rejection and got benefit of around 40% of time and cost, very good customer satisfaction
- Conversion of Trunion, Rod eye etc. from Machined components to Forging of Hydraulics industry: Saving 50% machining time and cost; improved quality to meet timely schedules
- Achieved 60% Time savings and 40% cost reduction and increased productivity by conversion ‘Cap and cover (smaller size)’ from machined component to forging
Case study 1 – Supplier Improvement Project

**Customer:** A Japanese leading supplier for advanced automotive technology, systems and components for all the world's major automakers – India operations

**Supplier:** Manufacturer of Automotive Plastic components

**Aim:** Improvement of Supplier in Quality and Delivery schedules

**Project Duration:** Three Months (Aug. to Oct.’11)

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**Project Methodology**

- Understanding of issues by discussions with connected members
- Identification of Defects / Issues and problematic components (from Customer data)
- Initial Process Auditing
- Brain storm and Why – Why analyses
- Root cause analyses ➔ Preventive actions and Suggestions
- Establishment of New MSP on identified Machines
- Machine performance check
- Updation of Control plan, Std. operations and Check manual
- MSP control document
- Identified Tool corrections with Customer & Supplier
- System implementation after Break hours
- Monitoring of MSP every 4hrs
- Training to Operators, QA Inspectors and Contract staff
- Pilot implementation
- Final Process Auditing

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**Some of the Suggestions to Supplier**

- T850 tonnage machine not consistent
- Maintain proper pre-heating of Material
- Effective Implementation of MSP
- Separate the first 5 components during Starting and Re-starting of production
- Effective ‘Preventive actions’ for the defects
- Maintenance of Three days Stock is very Important
- Four identified Moulds, repair work to be taken up
- Identification of Separate team for training activities
- Training on Plastic defects to Operators, QA inspectors and Sub contractor’s staff
- Trainings on Customer mind set, High Quality culture and Disciplined working culture

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**Rejection PPM (Parts per Million) Trend**

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<tr>
<th>Month</th>
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<tr>
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Case Study 2 - Cabin Improvement Project

Customer: A Global company, manufacturers of high quality Construction Machinery (Hydraulic Excavators)

Supplier: Design and Manufacturing of cabins for construction equipment, tractors, mining equipment and other diverse applications

Project Aim:
• Development of Process flow for Sealant and Painting processes
• Supplier Quality improvement for Sealant and Painting processes

Project Duration: 2 Months

Project Methodology:
1) Development of Process flow

2) Quality improvement

Identified defects:
1) Low Gloss level
2) Paint thickness variation
3) Dust adhere
4) Paint rough Surface
5) Paint over spray
6) Tape marks on paint
7) Paint color mismatch
8) Wrapper marks
9) Paint uncover
10) Paint scratch
11) Paint Shrinkage
12) Poor touch up
13) Paint shear
14) Paint Pin hole
15) Sealant missing
16) Sealant finishing
17) Sealant crack
18) Excess sealant

Some of the suggestions:
• Process parameters to be controlled in Manufacturing
• Paint booth improvements
• Reduce Putty usage
• Separate place for Painted Cabins to dry
• Customer approved painters to be used
• Proper paint mixing is being followed, Viscosity to be measured
• Spray gun cleaning procedure are to be followed
• Start using 3M tape (not local tape)
• Paint Spray bottle usage to be stopped
• Work instructions are to be followed
• More training and effectiveness to be measured
• Continuous monitoring is required till processes are sincerely followed
• Supplier needs to do better planning for completion of work and delivery
• Manufacturer’s support to be taken for some Sealant issues

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