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| ***Windsor Machine & Stamping (2009) LTD*** | | Document Type: **PROCEDURE**  Department: **MANUFACTURING** |
| Prepared By: Barry Winder  Approved By: Jerry Mitri | Release Date: Aug 11, 1997 | Document No: **PR-MFG-004** |
| Revision Date: May 23, 2012 | Revision No: 007 | Page 1 of 2 |
| Subject: PREVENTATIVE MAINTENANCE | | |

PURPOSE

The purpose of this procedure is to provide for a system and instructions, and to assign responsibilities for preventive maintenance program for key process equipment.

This procedure applies to process equipment and machines, and in particular equipment responsible for processing Special Characteristics and directly concerns Production and Maintenance at Windsor Machine & Stamping plants.

PROCEDURE

Process Equipment

Plant Management and Maintenance are responsible for identifying the key process equipment which is included in a formal, planned preventive maintenance system. As a minimum, equipment to be included, are machines responsible for processing Special Characteristics, and those machines that are crucial for maintaining production schedule.

Contingency Plans

A contingency plan to reasonably protect the customer’s supply of product in the event of emergency (e.g. utility interruptions, labor shortages, key equipment failure), excluding natural disaster and acts of God is established and documented by the senior plant management.

Packaging and Preservation of Equipment, Tooling and Gaging

The proper packaging, preservation of tooling equipment and gaging is identified at each facility.

Preventive Maintenance Plan and Schedule

For identified key process equipment, Maintenance prepares a preventive maintenance plan and schedule, and the location where spare parts can be procured. The preventative maintenance plan defines the scope and frequency of routine maintenance activities and inspections. The plan is established based on experience with equipment reliability and key process equipment manufacturer’s recommendations. Preventative maintenance objectives are also established for each plant by the Plant Manager as directed by the Corporate Operating Officer.

Predictive maintenance methods/schedules are developed using one or more of the following methods. a) manufacturers recommendations, b) tool wear, c) correlation to/history of the preventative maintenance system, d) fluid analysis, infrared monitoring of circuits and e) vibration analysis.

All pieces of key equipment and machines included in the maintenance program, are inspected and serviced at least once a year. Preventive maintenance activities may include, as appropriate: dismantling of machines for inspection and testing of parts; fluid analysis; replacement of fluids, filters, seals, gaskets, drive belts, and so forth.

Every inspection, maintenance, and repair activity is recorded in a maintenance log. At a minimum, an entry in the log includes: classification of the activity (inspection, maintenance, or repair); description of what was done; listing of replaced parts and/or supplies; and, when relevant, test results.

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The preventative maintenance plan and objectives shall be reviewed by plant management annually for suitability of preventative maintenance objectives and improvements. An action plan will be devloped and put into place to address any preventative maintenance backlog of key process equipment.

Equipment Performance Monitoring

In order to identify equipment problems at an early stage and prevent breakdowns, equipment operators may be instructed to monitor tool wear, process performance, vibrations, etc., and report any abnormal functioning to the Supervisor.

Housekeeping

The state of order, cleanliness and repair of the facilities must be maintained at a level appropriate for the product being produced. The Plant Manager and/or the Corporate Operating Officer will establish this level.

**Record Retention**

Records of maintenance are to be maintained for one year.

**ASSOCIATED DOCUMENTS**

- Maintenance Log

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