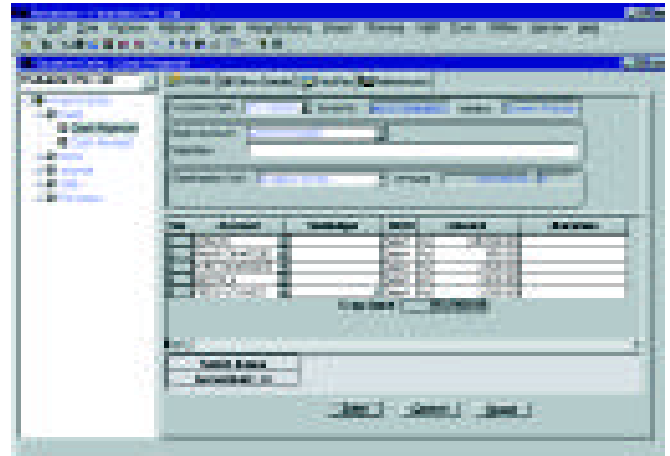




RECKONER PLANT MAINTENANCE

Reckoner Plant Maintenance has an intelligent structure, which provides an effective analysis and management tool and aims at reducing the breakdown levels substantially. It creates analysis data and maintenance history for future usage that keeps on improving maintenance management over a period.



A typical manufacturing organisation may have more than a few thousand pieces of equipment. In Reckoner Plant and Maintenance, all the machines/ equipment for maintenance in the system can be managed.

Various maintenance activities can be defined that need to be performed for a machine, e.g. oiling, greasing, overhauling, breakdown etc. Reckoner Plant and Maintenance also allows definition for cost & frequency of each activity for preventive maintenance. Each activity can then be booked in discrete maintenance orders and confirmed thereafter.

Reckoner supports all types of maintenance methods like Preventive, Predictive and Emergency Maintenance using definable order types and process settings for different machines. Reckoner allows the user to define Bill of Materials or material requirement for each maintenance activity.

If possible, the complete BOM structure for any machine may be defined, which will help in identifying the spare part requirements for the machines. Since frequency of each activity is defined this BOM will be used by MRP for planning of spare parts.

All types of resources used in maintenance like mechanics, tools, measuring instruments, cranes, jack etc. can be defined. There are 4 types of possible resources - Man, Material, Machines and others.

Reckoner keeps track of resource requirement for a management activity based on historic data.

The Logbook entries and the frequency for maintenance activities defined in the definition, can be used to create the schedule for Preventive Maintenance. Periodic Inspection of the machines forms the basis of Predictive Maintenance whereas Emergency Maintenance is done on the basis of manual generation of Maintenance Orders.

Reckoner provides for effective tools for ascertaining machine health for predictive maintenance. These are definable inspection documents, which allow recording of different test results on machines such as vibration, temperature, pressure etc.

Inspection documents in Reckoner may also integrate with devices or third party tools like DCS, metering devices etc.

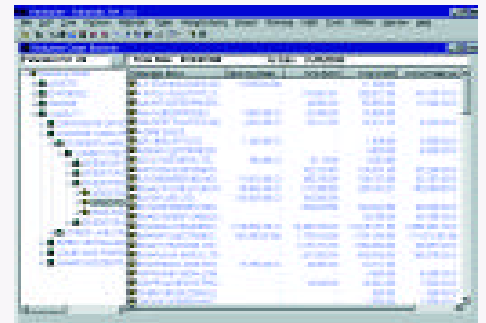
Whether maintenance planning is carried out on automatic or manual basis, Reckoner Plant and Maintenance works on the basis of individual Maintenance Order for each machine/activity. All the Maintenance Orders (manually entered or system created) can then be summarised into the Maintenance Planning Wizard which can then help in the creation of an effective maintenance schedule. Reckoner provides integration with Microsoft Project/ Primavera for fine-tuning of the maintenance schedule.

Based on the Maintenance Plan MRP (Material Requirement Plan) can generate requirement of material automatically and can convert this into planned indents. Based on reorder level for other maintenance parts MRP can also generate indents for the same. The FSN & VED analysis can also be carried out for spare parts for better planning. Post maintenance order history also helps in ascertaining the consumption patterns of spares. The "where-used list" and maintenance history may also suggest availability of spares in existing machines.

Maintenance Order can automatically generate a requisition for spares or other material based on maintenance type. Material can be issued and costs booked for the order/machine.

Reckoner Plant Maintenance comprises of:

- **Preventive Maintenance:** This is based upon pre-defined frequency of activities for machines as per manufacturing recommendations of history. It also uses Logbook information for scheduling.
- **Predictive Maintenance:** This kind of maintenance is based upon Inspection results of machines and definable symptom analysis of test results entered in the Inspection documents
- **Emergency Maintenance:** This is based directly upon the Maintenance Orders raised manually on occurrence of a problem.



Maintenance Scheduling

- Maintenance Order Definition
- Automatic Generation of requisition for spares or other material based on Maintenance type
- Confirmations and Material Consumption for each activity can be done in the Maintenance Order

Condition Based Maintenance

- Entry of Machine Inspection Information
- Integration of Inspection results with third party tools/devices generating data regarding machine condition.
- Diagnosis of Symptoms in the machine and predicting maintenance needs.

Maintenance Costing

- Records the actual machine running time and fuel consumption of the machine using Logbook
- Analysis of the cost of running of the machine
- Provides information about machine life used and is used to predict next maintenance due

- Analysis such as operator- wise usage/ cost/ breakdown/ efficiency etc.

Maintenance Forecast and Costing

- Forecast based upon frequency, machine health, history data
- Forecast of spare parts requirement
- Statistical Analysis available machine-wise, resource- wise etc.
- Statistical information regarding costing of machine, repetition of problems, efficiency of maintenance staff, downtime analysis etc.

Reports

- Scheduling reports help predict the maintenance due for machines, the spare part requirements, etc. For example: List of machines due for replacement, Spare part requirement Plan as per Maintenance Plan and Maintenance Due List
- MIS reports like Machine Downtimes for period and machine maintenance, help in analysis related to the machine maintenance, costing and their output

- Registers like Maintenance Inspection, Logbook Register, Maintenance Manual, Maintenance Order/ Job Card etc. display periodical information regarding the placement of Maintenance Orders, the fuel consumption of machines, Inspection of machines etc.

Standard Reckoner Features

- Online Authorisation of Documents
- True Workflow based system
- In built Mail system
- Alerts can be set in the system to monitor exception activities or events.
- Ensures people access only the information they need and are authorised to access.

SUB-MODULES & REPORTS LIST

Maintenance Scheduling

- Order Definition
- Order Entry
- Maintenance Scheduler
- Resource Definition

Condition Based Maintenance

- Test Definition
- Inspection Definition
- Activity Definition
- Inspection Entry

Forms

- Maintenance Order
- Machine Inspection Document
- Machine Logbook

Registers

- Machine Inspection Registers :
 - Machine-wise
 - Test -wise
 - Period -wise
 - Inspection -wise
- Logbook Register

Reports

- Person -wise Maintenance Details
- List of Machines Due For Replacement
- Machine History
- Machine-wise Maintenance Details
- Maintenance Due List
- Item Search List
- Spare Part Status Reports
- Machine Breakdown Reports
- Machine Showing Symptoms
- Repeated Problem Reports
- Machine Cost of Maintenance Reports
- External Maintenance Jobs Attended
- Average Fuel Consumption
- Maintenance Schedule Reports
- Maintenance Forecast Reports



ASCOMP TECHNOLOGIES PVT. LTD.

1203, Padma Towers - I, Rajendra Place, New Delhi - 110 008 INDIA
Phones: 91-11-5762401 - 04, 8539101 Fax: 91-11-5762405
Email : reckoner@ascomp.com
Website : <http://www.ascomp.com>

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