

Maintenance Approach for the Better Productivity

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INTRODUCTION

Mesto Paper has the following Service Business

Sectors and Product Groups

A) Roll Services (SRC)

Mechanical Roll Services (MEP)
Replacement Rolls (REP)
Roll Covers (COP)

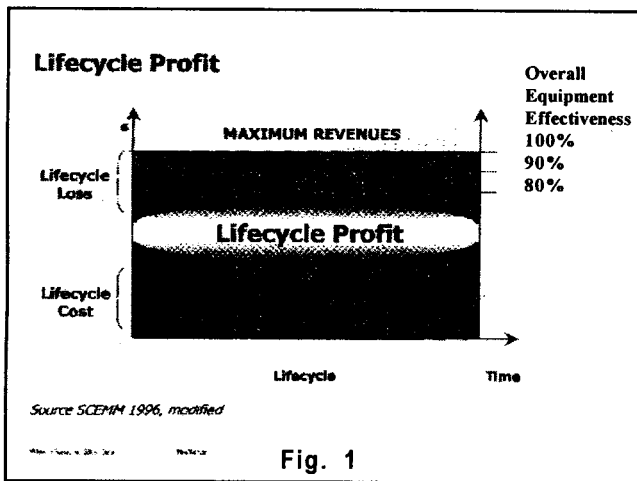
B) Spare Parts Services (SSP)

Spare Parts Packages (SPP)
Engineered and Replacement Parts (ERP)
Process Parts (PPP)

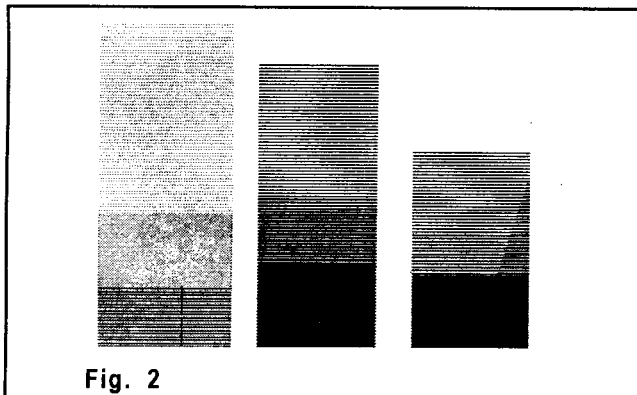
C) Maintenance Services (SMT)

Mill Site Programs (MSP)
Exchange Programs (EXP)

Lifecycle Profit



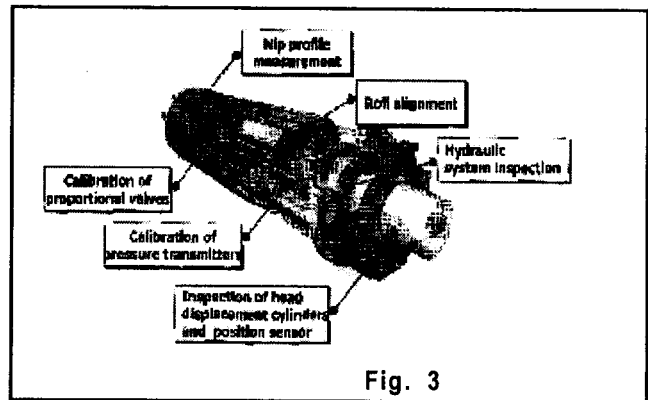
Lifecycle Management Improves Profitability



Maintenance Approach in Three Dimensions

Service Packages by Machine Sections

Example: ShoePressBoost

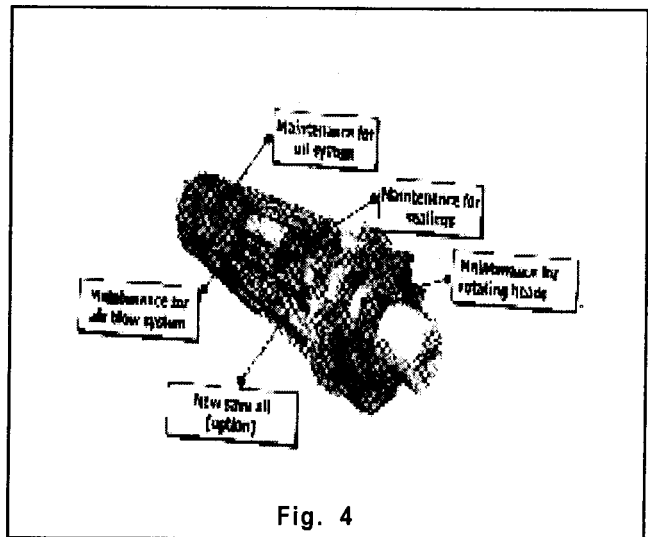


Step 1:

Condition test and Analysis

Service Packages by Machine Sections

Example : ShoePresszBoost



Headbox process and condition test

Headbox process and condition test provides information on:

- Paper profiles and factors affecting them

- Headbox functions
- Local apron and slice lip form deviations
- Headbox alignment
- Cleanliness of headbox
- Slice opening control
- Impingement control
- Edge control

Test and analyses:

- Paper sample analysis
- Process evaluation
- Microgeometry of slice area
- Alignment inspections
- Testing of transfer systems
- Testing of slice control system
- Visual inspection of flow surfaces and leaks

Options:

- Pulsation measurement
- Jet velocity profile measurement
- Capacity and flow calculations

Headbox Service

Service Module to Improve Dry Weight and Orientation Profiles and Machine Runnability

Main advantages of headbox service:

- Improved CD dry weight profile
- Decreased need for slice control

Service actions according to headbox process and condition test:

- Apron reconditioning on-site or replacement
- Realignments
- Overhaul of top slice transfer system
- Repair of wear damages
- Updating of slice lip loading system
- Replacement of failed parts

- Teflon treatment of flow surfaces
- Elimination of streaking problems
- Improved impingement

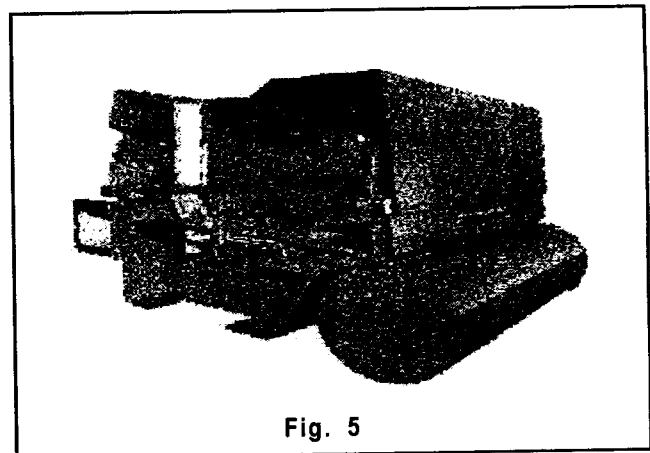


Fig. 5

Press section process and condition test provides information on:

- Press section functions
- Possibilities for higher dry content
- Need for nip loading calibrations
- Need for rolls realignment
- Corrosion failures
- Severity of vibrations

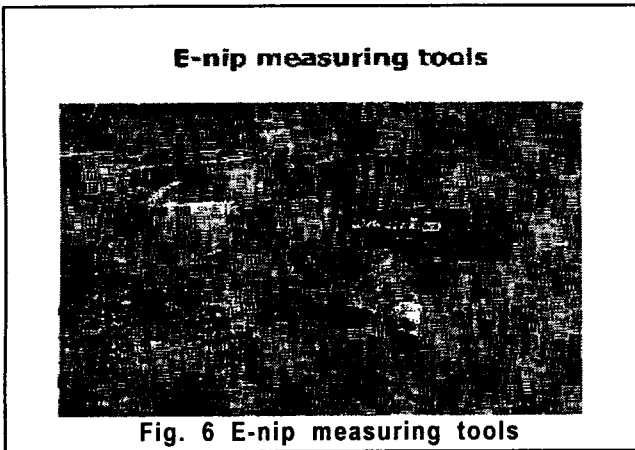
Test and analyses:

- Testing of nip loading systems
- Alignment inspection of nip rolls
- Testing of machine automation
- Corrosion inspections
- Foundation flatness measurement
- Vibration studies
- Process evaluation

Options:

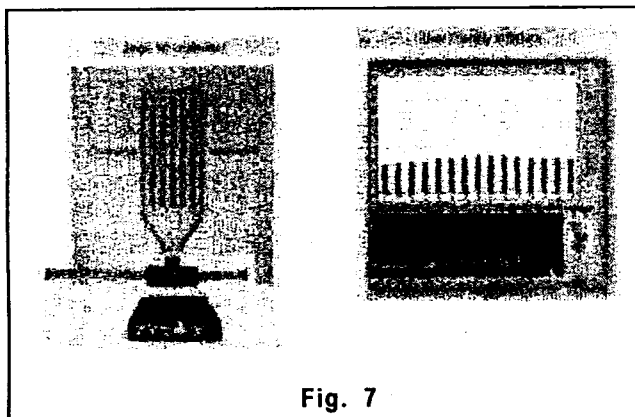
- Measurement of sheet moisture profile after press
- Vacuum system study
- Tail threading study
- Inspection of coutilevering
- Alignment inspection of felt rolls

**NIP PROFILE MEASUREMENT
BY ELECTRONIC NIP IMPRESSION SYSTEM**



ELECTRONIC NIP READER - ENIP

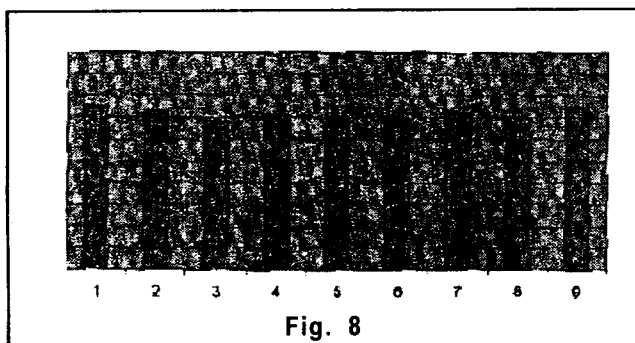
- Developed by Sensor Products Inc./Metso
Paper's use within the papermaking industry
- Quickly perform real-time static nip impressions



NIP PROFILE MEASUREMENT

Example:

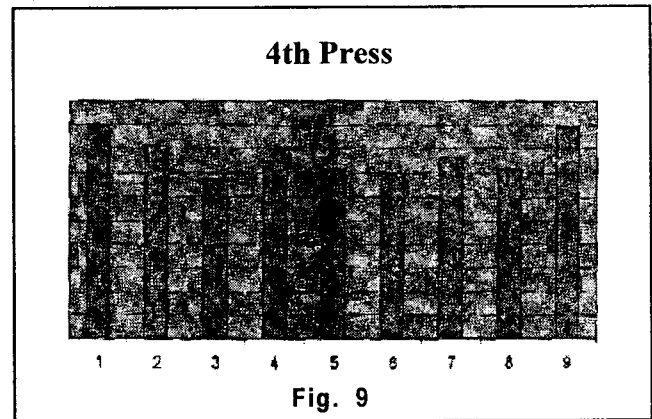
- 1st measurement before adjustment of 4th press.
- Higher load at both ends.



NIP PROFILE MEASUREMENT

Example:

- 2nd measurement after adjustment (crowing) of 4th press
- Straightend profile!



Coating Station Process & Condition Test

Good coatweight MD control, CD profile, runnability and surface quality are the main goals of the coating process.

The coating station test provides information on:

- Coating color application & blade beam
- Functions
- Mechanical condition
- Alignments
- Possible reasons for coating problems

The test includes:

- Alignment measurements
- Blade beam closing force
- Measurement
- Mechanical inspections
- Blade beam & blade holder
- Frames
- Instrumentation
- Adjustments
- Blade support list
- Gliding support list

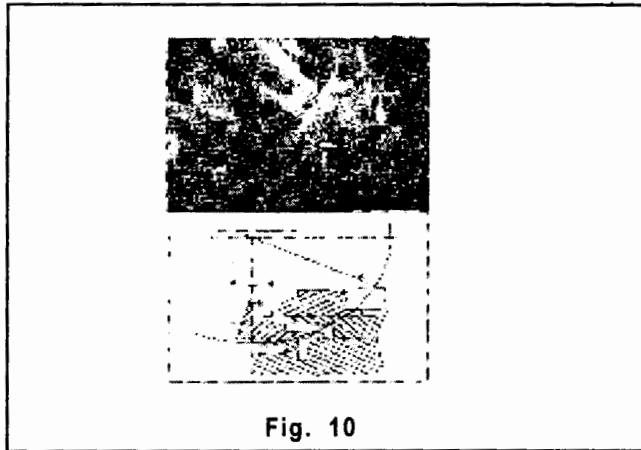


Fig. 10

- Gliding blade holder operation
- Waterfilm trials

Coating Station Service

Service Module to Improve the Performance of Coating Station Equipment

Main advantages of coating stations service:

- To optimize the operation of the coat weight MD control and CD profile
- To maintain the runnability and surface quality

Test and analyses:

- Alignment measurements
- Balance beam closing force measurement
- Mechanical inspections
- Control inspections (optional)

(Test Shutdown 16th/station)

Service actions according to tests and inspections:

- Blade holder service
- Moving frame joint bearings and shaft replacements
- Component replacements
- Automation tuning
- Cleaning and creasing operations
- Blade support list adjustments

Winder Process & Condition Test

Good roll quality and reliable runnability are the main goals of the winding process.

The winder test provides informations on:

- Winding functions
- Nip loading system
- Alignments
- Vibrations
- Paper roll structure
- Security level

The test includes:

- Paper roll structure measurement
- Mechanical condition inspections (16th shutdown time)
- Winding parameters analysis
- Control inspections
- Safety device check-up
- Re-alignment & measurements (optional)
- Vibration measurements (optional)

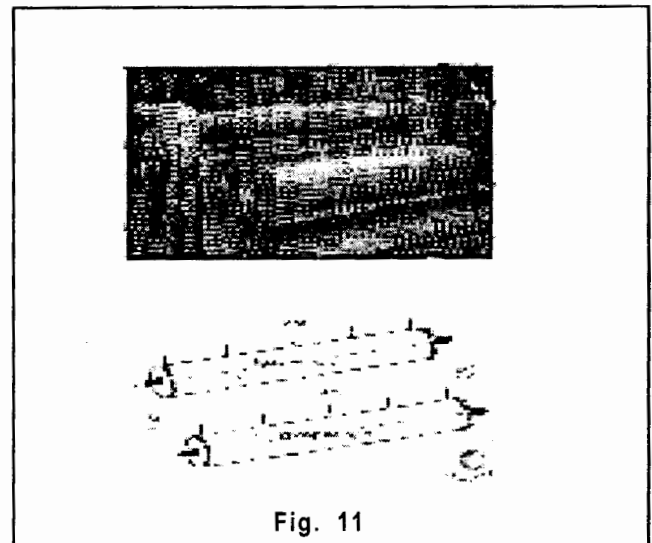


Fig. 11

Winder Service

Service Module to Improve Roll Quality and Winder Runnability

Main advantages of winder service:

- To optimize winder operation
- To minimize unexpected failures and find slow changes in process

Test and analyses:

- Analysis of winding parameters
- Control inspections
- Mechanical condition inspections
- Safety devices check-up
- Alignment and vibration measurements (optional)

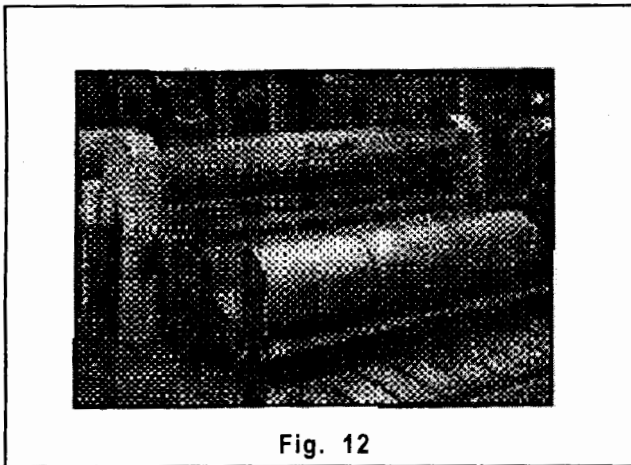


Fig. 12

Service actions according to tests and inspections:

- Slitter Management Program
- Head of JR winding stations
- Change of winding belts (Win Belt)
- Rider roll unit service
- Sectional and spreader roll service
- Alignments
- Component/spare part replacements
- Winding drum, on-site re-coating work

TracMate for Winder and Reeler Drums

Condition Testing, Surface Refurbishment

Service Packages

Benefits

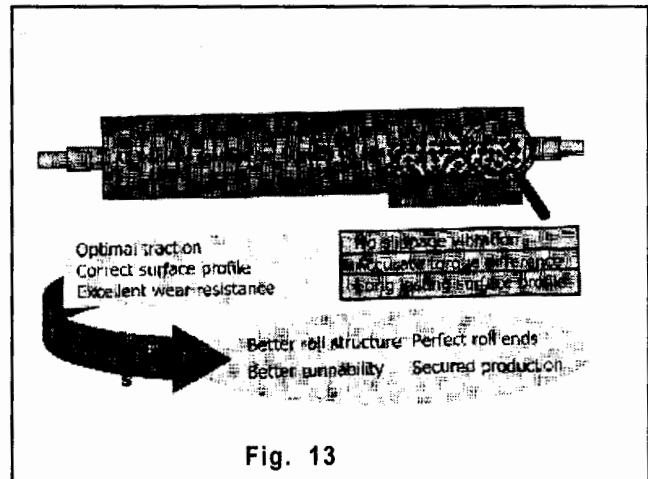


Fig. 13

- Optimized maintenance cost
- Maximized paper machine running time
- Improved quality of end product

Maintenance Agreements

Maintenance agreements targets at:

- Long term commitment
- Improved reliability and availability
(fewer shutdowns, better quality)
- Improved systematic and continuous development of maintenance operations.

Scope can include for example:

- Project manager
- Development teams
- Regular reports and meetings
- Specialist visits
- Service actions and preventive maintenance
- Remote diagnostics support

Maintenance Agreements

Examples : Shoes Press Boost Program

Remote Machine Support

Remote support for condition monitoring

Benefits

- Cost-effective way to operate

- Extensive vibration analysis gives a lot of information to customer's maintenance and product
- Extensive vibration analysis gives a lot of information to customer's maintenance and production personnel
- Collection and follow-up of history and experimental information
- Support and help-desk for special analyses and trouble-shooting
- Strong support by paper machine supplier (experience, analysis, structures, components)
- Extensive Metso specialist network
- Intensive co-operation and interactivity between specialists from Metso and customer
- Regular meeting and discussions on-site

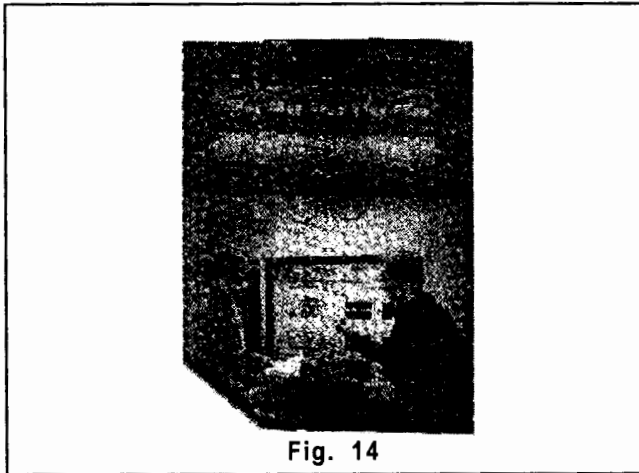


Fig. 14

Maintenance Agreements

Benefits

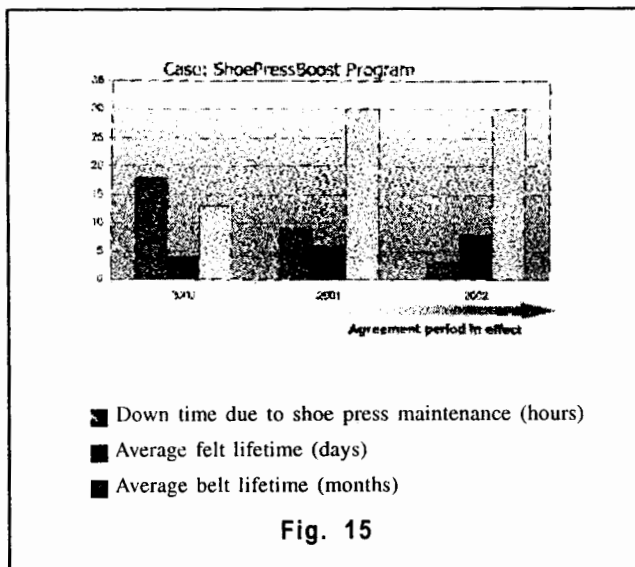


Fig. 15

Mill Maintenance Programs

Cases

- Existing Mill Maintenance Development
- Maintenance Programs in New Investment Projects

Mill Maintenance Programs

The purpose of Mill Maintenance Program is to:

- Increase efficiency of mill maintenance
- Decrease maintenance costs per ton produced
- Utilize direct contacts to Metso Paper's experts

Options of Mill Maintenance Program:

- Management of maintenance
- Process maintenance operations
- Roll workshop operations
- Materials and spares in agreed conditions
- Development of maintenance
- Steering group

Mill Maintenance Programs

Existing Mill Maintenance

Mill Maintenance Programs

Benefits

- Effective maintenance resource utilisation and expenditure prioritization
- Optimized risk and asset management
- Production volume and quality improvements

Mill Maintenance Programs

Existing Mill Maintenance

Mill Maintenance Programs

Benefits

- Effective maintenance resource utilisation and expenditure prioritization
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- Production volume and quality improvements