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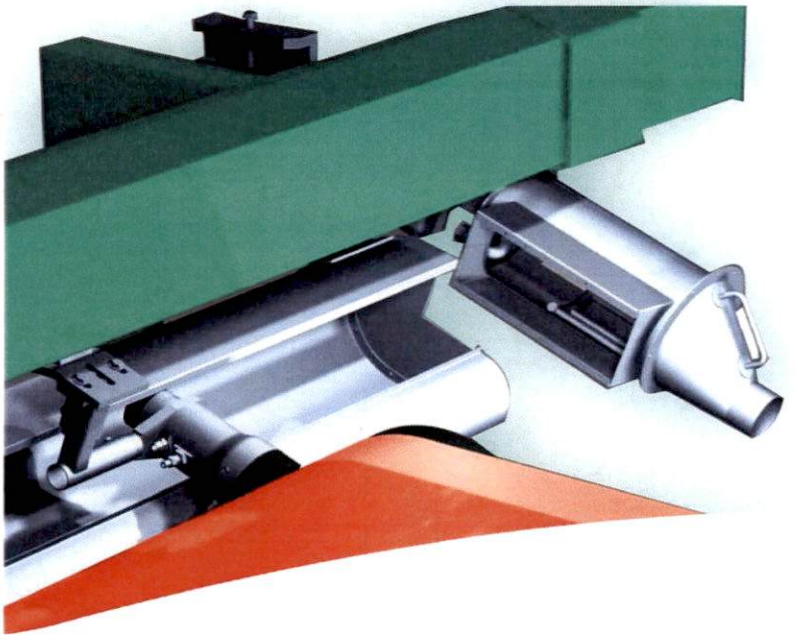
OPTICLEANER DRY TECHNICAL SPECIFICATION

METSO PAPER OPTICLEANER DRY



PRODUCT DESCRIPTION

The OptiCleaner Dry is a continuous cleaner for dryer fabrics equipped with high-pressure water jets, which operates during production. The OptiCleaner Dry cleans the fabric against the felt roll from the paper side with high-pressure water nozzles traversing across the machine width. The equipment keeps fabric permeability at the desired level and significantly improves the permeability of old already plugged fabrics. Additionally, the OptiCleaner Dry enables low water consumption for fabric cleaning. The equipment consists of a traversing beam with a nozzle and a cleaning head sealed with an air curtain. The construction of the OptiCleaner Dry is illustrated in the figure below.

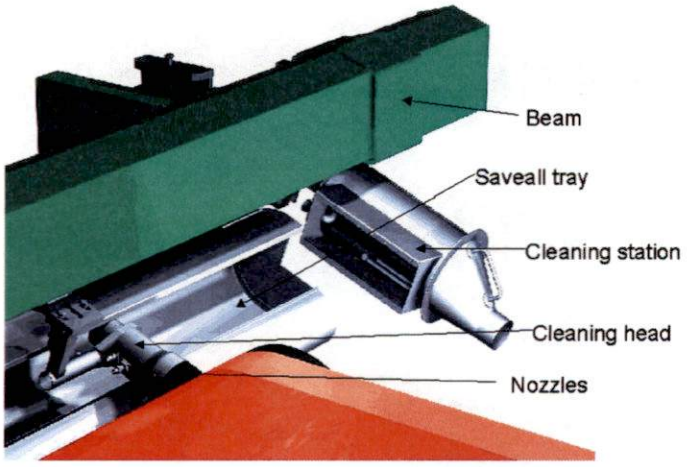


Figure 1. OptiCleaner Dry - Dryer fabric cleaning device.

FUNCTIONAL DESCRIPTION

The operating principle of the OptiCleaner Dry is based on a high-pressure water jets that removes fibers and dirt particles from the dryer fabric. For achieving the optimal cleaning performance, water pressure can be adjusted and it is also possible to supply steam to the front edge of the cleaning head to maximize the cleaning result. Mist and dirt are removed by means of a vacuum and an air curtain directly into a saveall, which is equipped with a connection to a drainage system.

The speed of the nozzle carriage can be adjusted by a separate frequency converter and the required cleaning pressure is produced with a separate high pressure pump unit. The cleaning head is washed after a set period in a cleaning station located outside the fabric area.

Metso Paper advises to use rolls with a cover in positions where the high pressure fabric cleaning is done. Metso Paper also recommends not to use Teflon coated fabrics or fabrics with Teflon containing fibers together with high- pressure cleaning devices.

LIST OF EQUIPMENT

Component	Quantity
Traversing beam - includes nozzle carriage and operating motor - electric motor: 230/400V, 50Hz, Bauer, 0.08 HP - energy chain, transmission chain - nozzles: (0.006/ 0.008/ 0.010/ 0.012)in 2175-4350 PSI (1-6 pcs, typically 2 pcs of size 0.008 in) - water consumption 0.026-0.26 gal/min/nozzle - frequency converter: ABB, 380 VAC	1 pc 1 pc 1 pc 4 pcs / size 1 pc
Cleaning head - air pressure 75-130 PSI - air consumption 53 CFM - steam pressure 20-36 PSI - steam consumption 2.1 lbs/hr @ 36 PSI	1 pc
Saveall tray - full machine width - equipped with flushing water	1 pc
Cleaning station - cleaning time (2 steps): 5-10s/step - water pressure 45-145 PSI (min-max) - water consumption 32 gal/min at 45 PSI includes flushing water	1 pc
High-pressure pump unit (Piston Type) - includes underlaying - suitable for feeding 1 to 15 cleaners - flow max. 1.6 gal/min/15 cleaners - electric motor: ABB 4 kW (IEC) 5 hp (NEMA) - frequency converter: ABB ACS 400, 460 VAC - pressure switch: Trafag - pressure transmitter: Trafag NA600 - water requirements: 15-150 PSI, filtration 10micron included in the delivery, 25 micron prefiltration is demanded. Water recommendations: 1. condensate water - cooling unit: included in the delivery in case the feed water temperature exceeds 63°C. The customer is to inform Metso's if cooling unit is needed.	1 pc 1 pc 1 pc 1 pc 1 pc 0 pcs
Control system - combined water and pneumatic box - local control box	1 pcs 1 pc 1 pc
Brackets Sets	1 pc

MATERIALS

Component	Material
Traversing beam	Stainless steel (EN 1.4432/ AISI 316)
Nozzle carriage	Stainless steel (EN 1.4432/ AISI 316)
Nozzle	Sapphire
Cleaning head	Stainless steel (EN 1.4432/ AISI 316)
High pressure water hose connector	Stainless steel (EN 1.4432/ AISI 316)
Air hose connector	Stainless steel (EN 1.4432/ AISI 316)
Transmission chain	Steel (EN 1.4301/ AISI 304)
Chain sprocket	Stainless steel (EN 1.4432/ AISI 316)
Energy chain	Steel (EN 1.4301/ AISI 304)
Water- and pneumatic box	Stainless steel (EN 1.4301/ AISI 304)
Local control box	Stainless steel (EN 1.4301/ AISI 304)
Brackets	Mild Steel

AUXILIARY EQUIPMENT

Walkways

In case the beam of the OptiCleaner Dry is installed partly outside the hood for ease the service of the beam and the cleaning head during machine operation, the customer is responsible for any modifications required for walkways, air ducts and hood walls.

Engineering outside the delivery limits

The delivery includes the layout engineering and installation drawings for the OptiCleaner Dry and also the general layout engineering (but no detailed engineering) for the following modifications in the surroundings if needed:

-hood frames, position/size of openings in the hood
-dryer fabric length
-walkways

Relocation of existing parts

Relocation of any existing equipment is the customer's responsibility. Any additional rolls required are not included in the delivery and will be provided by the customer.

Steam system option

The control valve for the steam valve is included in the delivery. The valve is ready-fitted in the pneumatic box.

The customer is responsible for following steam system modifications:

-piping from the supply point to the valve and the beam
-condensate removal
-steam valve

AUTOMATION

Pneumatic system

Pneumatic components and valves necessary for the operation of the equipment are included in the delivery either installed in a separate stainless box or as separate components.

Water system

Water system components necessary for the operation of the equipment are included in the delivery either installed in a separate stainless steel box or as a separate components.

A separate pump unit shall be mounted in the basement or on the machine floor outside the hood.

Any modifications to the existing water system or the existing fabric conditioners are not included in the delivery. The customer is responsible for:

-low- and high pressure piping
-saveall drainage & service station drainage

Electric system

Frequency converters manufactured by ABB are included in the delivery. The pump unit's frequency converter is ready assembled in a control box. The traversing beam control box will be installed beside the beam.

Control components are included in the delivery. Control components for service use are installed in a separate box beside the beam. Other control components are delivered as separate items.

Machine controls

The following is included in the delivery:

-functional description
-model circuit diagram
-model electric circuit diagrams

Model diagrams do not determine the machine control system I/O- or cross connection data nor the connection data of boxes or equipment not included in the delivery.

The purchaser attends to the engineering of the machine control system and operator displays. The purchaser also designs and implements the controls in their control system on the basis of the above basic data and creates the final documents.

The start-up of the control system is the customer's responsibility. The supplier will assist at the start-up.

SPARE PARTS

Spare parts, which are included in the delivery are listed in the table below.

Component	Quantity
HP water hose	1 pc
HP valve	1 pc
Pump gasket	1 pc
Mechanical spare parts	1 set
Nozzles (0.006/ 0.008/ 0.010)in	2 pcs / size

Recommended spare parts, which are not included in the delivery are listed in the table below.

Component	Quantity
Pump without a motor	1 pc
HP valves, switches, gauges, transmitters for the HP pump	1 set
Nozzles	1 set
Water-, air- and steam hoses	1 set
Mechanical spare parts	1 set

INSTALLATION SUPERVISING, TRAINING AND START-UP

Supervision of installation

Supervision of the installation is not included to this scope.

Training

Operational and maintenance training for the paper mill personnel is not included to this scope.

SAFETY

Equipment

The equipment, automation and documentation included in the delivery are in compliance with the EU machine directive and respective national safety regulations. Metso will deliver the applicable CE certificates

Installation Environment

The modifications or additions to the paper machine or its auxiliary equipment required for reasons of safety are not included in this delivery if they are outside the delivery limits. Safety measures must be taken before putting the new equipment into use.

DOCUMENTATION AND STANDARDS

Documentation Included In The Delivery

The delivery includes customer drawings and separate machine manuals for the new equipment.

Drawings

The certified CAD drawings are delivered in electronic format. Automation drawings created with AutoCad are delivered in DXF format. Mechanical drawings created with CATIA are delivered as vectors in DXF format (PLOTDXF).

Other certified drawings are delivered as paper copies (3 sets).

The drawings are created in compliance with Metso Paper standards.

Drawings necessary for spare parts orders, maintenance and training are delivered to the customer.

Bills of Material

The bills of material for the drawings are delivered in electronic format as Excel 5.0 files.

Machine Manuals

The machine manuals are delivered in electronic PDF 3.0 format. The brochures included in the manuals are provided in their original language. Brochures produced by Metso Paper are delivered in PDF 3.0 format. Brochures produced by companies other than Metso Paper are delivered in the available format.

Machine and Device Cards

Machine and device cards are not included in the delivery.
Documentation Language

The language of the project documents (working drawings, project correspondence etc.) is English.

The final customer drawings and Machine Manuals will be delivered in English.

PAINTING SPECIFICATION

Metso Paper's painting specification is applied to the delivery.

DELIVERY STANDARDS

Metso Paper's delivery standards are applied to the delivery.

STANDARD COMPONENTS

The standard components included in the delivery are supplied according to Metso Paper's standards.

PIPING STANDARDS

The pipes included in the delivery are supplied according to Metso Paper's standards.

DELIVERY LIMITS

Mechanical delivery limits

-Drainage connection on the other gable of the saveall tray
-Water connection of HP power unit
-Water, air and steam connections on traversing beam
-Water connections of cleaning station and saveall tray
-Water and air connections at control box

Piping delivery limits

Piping work is not included in the delivery. All piping for LP/HP water, air, steam and discharges will be supplied by the customer. At the joint the customer is responsible for joints of piping and hoses.