

Price,  
quality, service  
and a client-focused approach  
is what makes PCF different.

Our custom solutions:

Forming Fabric Cleaners • Dryer Fabric Cleaners • Press Felt Cleaners • Passivation Systems • Tail Cutters • Maintenance & Repairs

PCF Maintenance bv / PCF Asia bv

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## Company history and products

PCF Maintenance bv was founded in 2008 as a maintenance and service company for the paper-, board and tissue industry.

Now, 10 years later, PCF Maintenance bv/PCF Asia bv is a leading designer and producer of cleaning and cutting equipment for the paper-, board-, tissue- and non-woven industry.

PCF Maintenance bv/PCF Asia bv is a professional organization, staffed by highly motivated people with a high level of expertise and a great deal of experience.

We are working on an international level for various leading companies. Price, quality, service and a client-focused approach is what makes the difference between PCF Maintenance bv/PCF Asia bv and other competitors.

Our main products are:

### **PCF FF Cleaner (Forming Fabric Cleaner)**

Continuous forming fabric cleaning equipment over the full fabric width by HP water and LP air.

### **PCF PF Cleaner (Press Felt Cleaner)**

Continuous press felt cleaning equipment over the full length by LP water and compressed air, with or without moisture and permeability measuring.

### **PCF DF Cleaner (Dryer Fabric Cleaner)**

Continuous and discontinuous dryer fabric cleaning equipment over the full dryer fabric width by HP water and compressed air.

### **PCF Cutting equipment**

- PCF Tail cutter wet section
- PCF Tail and deckle cutter wet section
- PCF Tail cutter dry with fixed knife
- PCF Tail cutter dry with rotating knife
- PCF Tail cutter dry with HP water (up to 2500 bar)

### **Passivation System**

Online surface treatment by chemical apply.

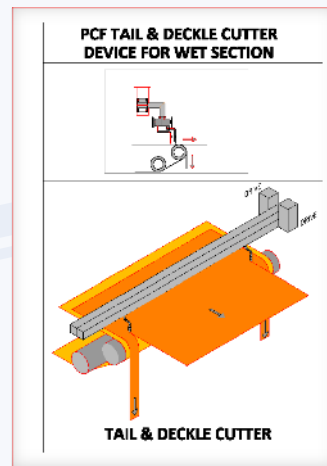
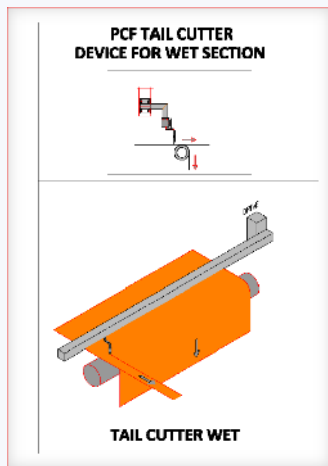
All equipment have been well exported to India, China, Thailand, South Africa, South America, Middle East, Indonesia, Australia and Europe.

Our Philosophy is based on a long term relationship with our clients, built on mutual trust and confidence.

With over 25 years of professional experience we intend to provide service of high quality built upon following concepts:

- Competitive prices
- Superior customer service
- Timely and efficient delivery

## Tail Cutter / Tail & Deckle Cutter, for wet section



- Traverse beam(s) constructed in material stainless steel AISI316
- Tail Cutter is designed with one needle jet nozzle
- Tail & Deckle Cutter is designed with two needle jet nozzles  
Tail & Deckle Cutter nozzles can be adjusted independently
- Available in the following operation designs:
  - Manual operation by hand wheel
  - Automatic operation by non-contact sensor switches
  - Fully automatic operation by PLC control
- Water pressure: 4 - 6 bar
- In order to prevent build-up of dirt, the design includes an air curtain surrounding the nozzles
- The mill water supply can be used, no extra pump is required
- Nozzle angle adjustable

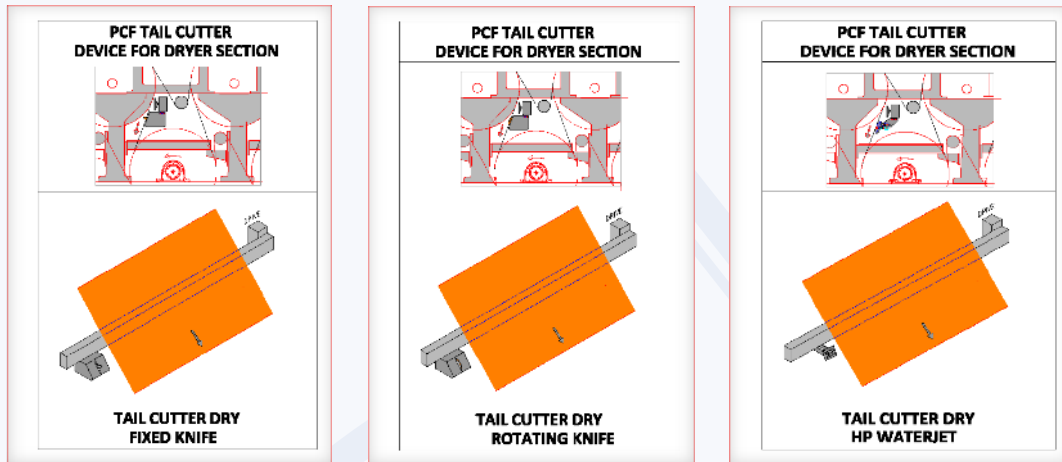


*PCF Tail Cutter for wet section in operation*



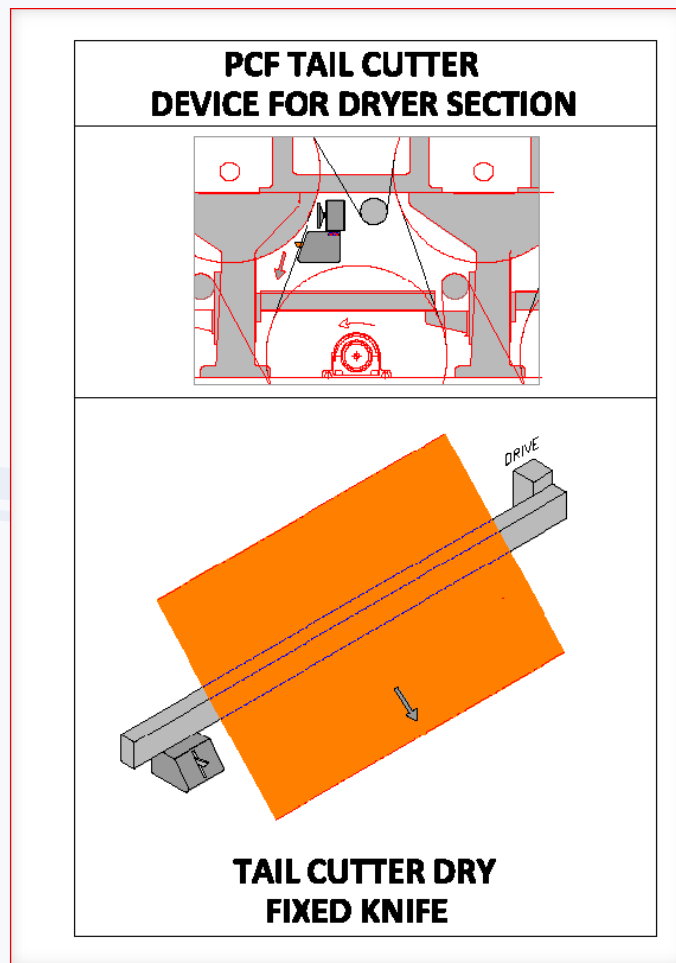
*PCF Tail & Deckle Cutter for wet section in operation*

## Tail Cutters for dryer section



- The PCF Tail Cutter for dryer section is available in the following designs:
  - Tail Cutter with fixed knife
  - Tail Cutter with rotating knife
  - Tail Cutter with HP water needle jets
  - Tail & Deckle Cutter with HP water needle jets
- Traverse beam(s) constructed in material stainless steel AISI316
- Available in the following operation designs:
  - Manual operation by hand wheel
  - Automatic operation by non-contact sensor switches
  - Fully automatic operation by PLC control

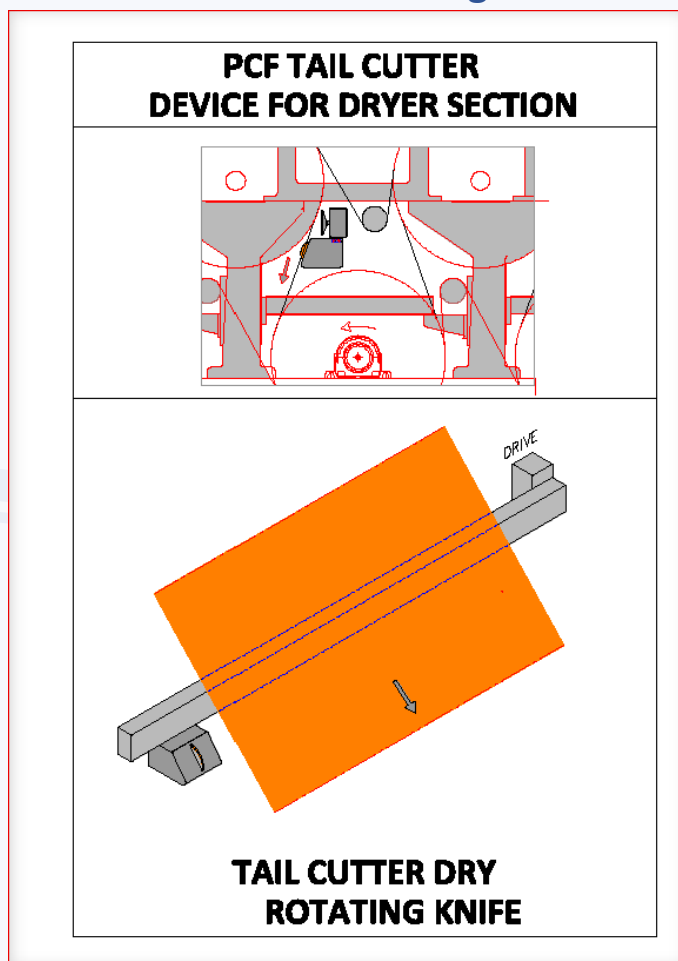
## Tail Cutter with fixed knife



- Fixed knife is made of hardened steel
- Heat resistant pneumatic cylinder, for movement of the knife in and out of the paper
- Fixed knife is encased in a protective guide hood:
  - Constructed in material stainless steel AISI304
  - An equal cut is assured by means of a vacuum pipe affixed to the knife hood, which sucks the paper sheet parallel against the hood
- Application:
  - Grammage: up to 2000gr/m<sup>2</sup>
  - Speed: 300m/min
  - PM width: up to 3000mm



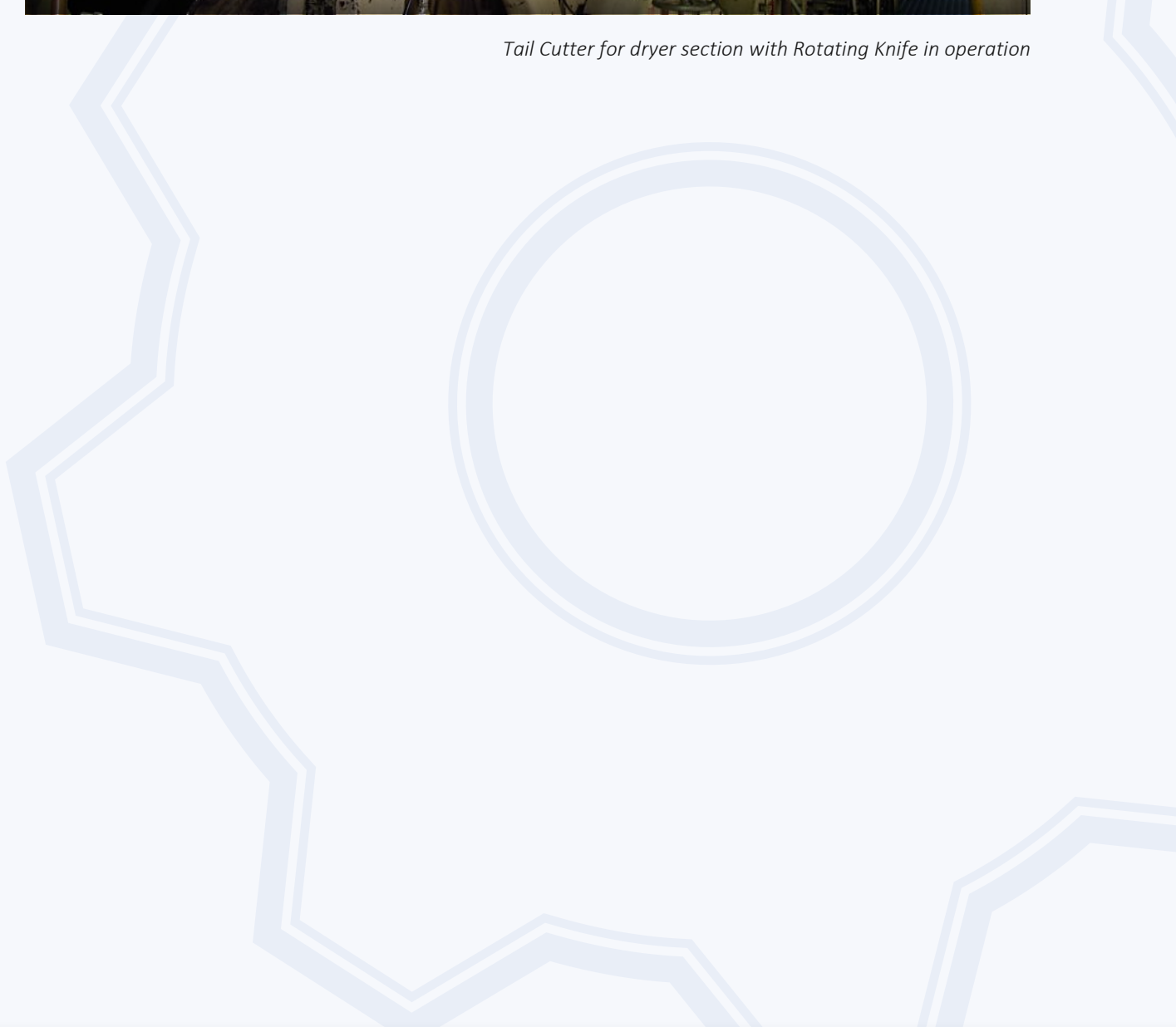
## Tail Cutter with rotating knife



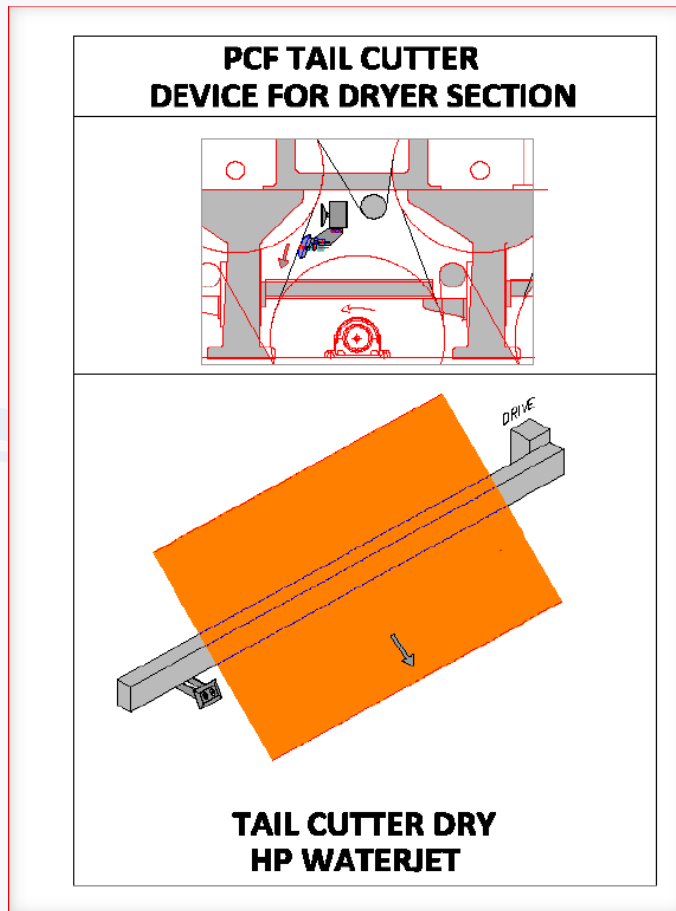
- The rotating knife is made of hardened steel
- Heat resistant pneumatic cylinder, for movement of knife in and out of the paper
- Rotating knife can be driven by air motor or electrical motor
- Rotating knife is encased in a protective guide hood:
  - Constructed in material stainless steel AISI304
  - An equal cut is assured by means of a vacuum pipe affixed to the knife hood, which sucks the paper sheet parallel against the hood
- Application:
  - Grammage: up to 2000gr/m<sup>2</sup>
  - Speed: 2000m/min
  - PM width: up to 12000mm



*Tail Cutter for dryer section with Rotating Knife in operation*



## Tail Cutter with HP water needle jet / Tail & Deckle Cutter with HP water needle jets



- Nozzles are made in material stainless steel AISI304 with ruby inserts
- High pressure water nozzles ensure a sharp and equal cut
- Nozzles are encased in a protective guide hood
- A sharp and equal cut is assured by means of a vacuum pipe affixed to the guide hood, which sucks the paper sheet parallel against the hood
- The system can operate with water pressure up to 2500 bar
- Application:
  - Grammage: up to 500gr/m<sup>2</sup>
  - Speed: 2000m/min
  - PM width: up to 12000mm
- Tail & Deckle Cutter with HP water needle jets:
  - Identical design, but with two separate nozzles instead of one.



*PCF Tail & Deckle Cutter for dry section, with HP water needle jets in operation*

## Forming Fabric Cleaner



- Forming Fabric Cleaners can be installed in top or bottom position of the forming section, or on both positions
- Constructed in material stainless steel AISI316
- Brackets for FF Cleaner in top position include cantilever construction
- Forming Fabric Cleaners are provided with needle jet nozzles:
  - Number of nozzles dependent on fabric width and machine speed
  - Nozzle orifice: typically 0.3mm
  - Stainless steel AISI316 nozzle body, with sapphire insert and filter
- Cleaning unit is equipped with fixed needle jet nozzles, air pipe and silicon strip around the entire unit for mist free operation.

### The Forming Fabric Cleaner has numerous advantages over oscillating showers:

- Absolute equal cleaning performance over the entire fabric width
- No nozzle overlap
- No stripes in the forming fabric
- Fabric lifetime is increased, saving fabric costs
- Significantly reduced electricity and water consumption
- Reduced sheet breaks
- 100% mist free operation
- Nozzle check during production is possible

The Forming Fabric Cleaner saves water compared to oscillating showers:

HP Oscillating shower	PCF Forming Fabric Cleaner
Forming fabric width: 7000mm	Forming fabric width: 7000mm
Nozzle count: 70 pieces	Nozzle count: 10 pieces
Nozzle orifice: 1.0mm	Nozzle orifice: 0.3mm
Water pressure: 30 bar	Water pressure: 50 bar
Water consumption: 70 x 2.7 ltr/ min = 189 ltr / min	Water consumption: 10 x 0.45 ltr/min = 4,5 ltr / min

Total decreased water consumption:  
189 ltr/min – 4.5 ltr/min = 184.5 ltr/min

Total decreased water consumption per year:  
184.5 ltr/min x 60 min x 24 hours x 360 days = **95.645m<sup>3</sup> saved per year**



*PCF Forming Fabric Cleaner in operation*

## Press Felt Cleaner



- Press Felt Cleaners can be installed in the press section, in front of the vacuum boxes.
- Constructed in material stainless steel AISI316
- Press Felt Cleaners are equipped with needle jet nozzles, installed in one unit:
  - Number of nozzles dependent on fabric width and machine speed
  - Nozzle orifice: typically 0.8mm
  - Stainless steel AISI316 nozzle body, with sapphire insert and filter

### The Press Felt Cleaner has numerous advantages over oscillating showers:

- Reduced water consumption
- Absolute equal cleaning performance over the entire fabric width
- No nozzle overlap
- No stripes in the press felt
- Press felt lifetime is increased, saving replacement costs
- Significantly reduced electricity and chemical consumption
- Optimized press felt water permeability and moisture cross profile
- Increased press felt dewater capacity
- Nozzle check during production is possible
- Reduction of paper breaks

The Press Felt Cleaner saves water compared to oscillating showers:

LP Oscillating shower	PCF Press Felt Cleaner
Press felt width: 7000mm	Press felt width: 7000mm
Nozzle count: 70 pieces	Nozzle count: 13 pieces
Nozzle orifice: 0.8mm	Nozzle orifice: 0.8mm
Water pressure: 20 bar	Water pressure: 25 bar
Water consumption: <b>70 x 1.3 ltr/ min = 91 ltr / min</b>	Water consumption: <b>13 x 1.5 ltr/min = 19.5 ltr / min</b>

Total decreased water consumption:

91 ltr/min – 19.5 ltr/min = 71.5 ltr / min

Total decreased water consumption per year:

71.5 ltr/min x 60 min x 24 hours x 360 days = **37.065 m<sup>3</sup> saved per year**



*Cleaning with oscillating showers results in stripes on the press felt*



*The PCF Press Felt Cleaner does not leave any stripes*



## Press Felt Cleaner with Moisture and Permeability measurement



- The Press Felt Cleaner can be delivered with an optional moisture and permeability measurement unit
- The installation can simultaneously clean the press felt and determine the relative humidity and water permeability of the felt by means of a moisture sensor
- The sensor is integrated into the cleaning unit, providing measurements for the full press felt width during normal traversing operation
- All measured values are stored in data blocks, are subsequently processed and can be used for felt cleaning optimization
- Increased safety; no manual measurements required during production
- Extended life of the press felt
- Increased PM speed possible
- Optimal uniform press felt cleaning
- Optimal moisture profile

## Passivation System



*Passivation Nozzle*

- 
- The Passivation System projects aerosol silicone fluid through a custom-designed combined air/fluid nozzle as a preventive cleaning solution
  - A dosing pump delivers 5 to 15 ml/min to the nozzle; a small amount of air is added to turn the fluid to aerosol
  - The desired distribution is provided by the traversing unit
  - Constructed of stainless steel AISI304

### **The Passivation System has the following advantages:**

- Passivation considerably reduces surface contamination on dryer fabrics, dryer cylinders and guide rolls within the dryer section
- Improved sheet quality and overall paper production
- Reduced sheet breaks
- Reduced cleaning works
- Reduced solvent use, increasing safety
- Lubrication for doctor blades, increasing blade lifetime

The silicone fluid used in the Passivation System complies with European regulations applying to paper/board materials intended for food contact, and can be used safely for food packaging.



*Passivation fluid tank, with dosing pump*



*Custom-designed passivation nozzle*

## Dryer Fabric Cleaner



- Dryer Fabric Cleaners can be installed in the dryer section, for continuous/discontinuous cleaning of the dryer fabric
- The Dryer Fabric Cleaner uses HP water, air and a vacuum pipe for continuous and discontinuous cleaning
- Constructed in material stainless steel AISI304
- For best cleaning results, the Dryer Fabric Cleaner should be installed against a dryer roll
- A stainless steel save-all, covered by a silicon strip, discharges all contamination to the Cleaner park position, preventing water and/or dust from being reflected onto the dryer fabric
- The Dryer Fabric Cleaner can be used with needle jet (bronze) or flat spray (hardened stainless steel) nozzles, rated up to 700 bar water pressure
- Nozzles are installed in a movable header, making nozzle exchange much easier
- The Teflon cleaning head does not damage the dryer fabric

### The Dryer Fabric Cleaner has the following advantages:

- Increased CFM value
- Less contaminants on rolls, increased paper quality and less sheet breaks
- Reducing cleaning shutdowns and cleaning time, increasing production efficiency
- Increased dryer fabric lifetime