Parason Disc Filter (PDF)

- Introduction
- Working Principle
- Disc Filter Assembly
- Disc Filter In Combination With Hot Dispersion
- Technical Data
- Spare Parts
- DCS Automation

designing for a better tomorrow
INTRODUCTION

Optimized solutions from Parason, enhances the capacity and filtrate quality by reducing fresh water consumption, save heat energy by closing water circuit of the dewatering process. All Parason and conventional disc filters can be upgraded to these new high-quality products.

The new generation of dewatering from Parason
Parason’s continuous R&D activities emphasis on supporting customers by offering higher capacities as well as higher energy efficiency equipment to get sustainable production. We are dedicated to find the tailor-made solution to fit customer’s process requirement. You can rely on our world class manufacturing facility and highly equipped R&D department with high qualified experts to provide you latest technology.

Efficient and low-cost dewatering
To ensure efficient dewatering capacity, Parason has developed a Parason disc filter offering superior filtrate qualities by reducing fresh water consumption. As a result of these benefits, operating costs, fresh water consumption and fiber loss can be reduced. The loud on the ETP/WTP is reduced drastically.

LOCAL SUPPORT  REPAIRS & UPGRADES  TRAINING  OEM SPARE PARTS
We Cannot spell success without you...

The appreciation letters received by our prestigious clients are the power boosters for our evergrowing services. Thankful to the Banwari Paper Mills Ltd. for sharing such valuable feedback.

Parason Disc Filter Offers

→ Optimized solutions to fit customer’s process requirements
→ Better mat formation with superior filtrate quality
→ High throughput while maintaining a smallest area possible
→ Energy efficient & at the same time reduces fresh water consumption
→ Easy and fast filter bag replacement
→ User friendly mounting of filter segment which minimize maintenance effort
Parason has developed Parason Disc Filter with focus on three key issues:
- Process solutions - Thickening and Fiber recovery
- Mechanical Strengths
- Environmental impact
- Deaeration
- Reduced ETP load

**Principle Operation**

→ The pulp mat starts to form under gravity, ensuring optimum dewatering characteristics.

→ As the filtrate channel passes a bridge in the filtrate valve, the filtrate is diverted to the clear filtrate outlet which is connected to the barometric leg. For Fibre Recovery Save All application the filtrate is diverted to clear filtrate and super clear filtrate outlet.

→ The line of sectors emerging from the suspension is drained and the pulp mat dewatered.

→ A bridge in the valve shuts off the channel from vacuum.

→ Water or air jets strip the pulp mat from the sectors on the rising side of the discs.

→ The filter cloth is cleaned by oscillating showers.
## COMPLETE SOLUTIONS

<table>
<thead>
<tr>
<th>Capacity</th>
<th>Outlet consistency</th>
</tr>
</thead>
<tbody>
<tr>
<td>By optimising the deaeration of the inlet flow between each disc, the air content in the pulp suspension is kept to a minimum.</td>
<td>As the internal volumes of the pulp disc sectors are smaller, they empty quickly when they leave the suspension and drying of the pulp mat is carried out while giving a longer thickening time.</td>
</tr>
<tr>
<td>By reducing the internal volumes of the disc sectors to the optimum, they drain quickly during the drying of the pulp mat, which allows higher rpm of the disc.</td>
<td>By this new unique design of the filtrate valve, with separate air removal, a high and stable vacuum is achieved.</td>
</tr>
<tr>
<td>By the new unique design of the filtrate valve with separate removal, a high and stable vacuum is achieved.</td>
<td>Outlet consistency 8-12% depending on applications</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Filtrate Quality</th>
<th>Centre Shaft</th>
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<tbody>
<tr>
<td>By optimising the distribution of the inlet pulp flow along the whole length of the disc filter with a stationary baffle, ensures uniform pulp consistency.</td>
<td>By the new unique design of the center shaft with full visibility during welding of the internal flow channels, the centre shaft is welded in a safe it is extremely strong and can stand for high mechanical forces.</td>
</tr>
<tr>
<td>mg/l</td>
<td>This design gives a long life time of the centre shaft</td>
</tr>
<tr>
<td>With smaller internal volumes in the disc sectors, a smaller volume to unclear filtrate is carried over from the cloudy filtrate to the clear filtrate.</td>
<td></td>
</tr>
<tr>
<td>By designing each centre shaft flow channel according to the application and current flow, it is possible to create the best process results with good filtrate clarity.</td>
<td></td>
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</table>
**DISC FILTER ASSEMBLY**

### Special Application

**Pulp Thickening**
To get outlet consistency of 8-12% with clear and cloudy filtrates.

**Fiber Recovery**
For handling paper machine back water and recovering valuable fibers, with excellent quality of cloudy, clear and super clear filtrates.

**Broke System**
For thickening application of Broke in large mills.

**Refurbishing**
Expertise in rebuilding and refurbishing disc filters of other manufactures.

### Process Parameters

- Inlet consistency 0.7 to 1.1%
- Outlet consistency 8 to 12%

### Application

- Newsprint
- Writing and Printing paper
- Kraft
- Duplex Board

### Capacity

- Ranging from 40 to 400 TPD
DISC FILTER IN COMBINATION WITH HOT DISPERSION

- Thickening up to 12% Consistency
- Least fiber loss
- Lesser PPM in filtrate
- Higher Capacity
- Higher Thickening
- Efficient deareation
- Slow RPM less maintenance, more production

EFFECT OF DISPERSION ON PAPER QUALITY
RIGHT SEGMENT FOR ANY REQUIREMENT

WAVE PDF SEGMENT
Looking at throughput of equipment which is directly proportional to the area of filtrate, Parason offers the same size disc filter sector with more filtrate area due to wave design of segment. More filtrate area gives more throughput with minimum maintenance and running cost.

New design of PDF segment for Excellent stability and higher capacity

Benefits with Wave PDF segment
→ Minimum Maintenance and running costs
→ Higher service life of PDF segment service
→ Superior filtrate quality
→ Reduction of fresh water consumption due to close water circuit
→ No need for filter bags replacement in is called as Bag less PDF

BUMP SEGMENT
Parason Disc Filter also offers the Bump segment. The integration of the segment bag with bump design offers the additional suction area and uniform matt formation. This extends the life and reduces the maintenance cost.

Excellent running times due to an Efficient bump segment design

Benefits with Bump Segment
→ Undisturbed uniform mat formation
→ Faster knock-off and better cleaning due to point contact
→ Reduced maintenance cost
→ Solution for any make or model
→ Due to the unique design of bump, the water gets drained downwards only without damaging opposite matt formation

New design for outstanding stability and capacity Flowing filter discs

High production capacity with lower maintenance costs

Wave Segment Sector Construction

Bump Segment Sector Construction
DISC FILTER WITH HOPPER

There are two options available for discharge of thickened pulp

**Repulper**
- Repulper gives uniform transportation when consistency high
- Thickened pulp can directly fed to disperser unit
- Direction of pulp feed can be changed as per requirement

**HOPPER**
- Only Hopper can be provided if capacity of PDF is not too big
- Thickened pulp can directly drop into chest
- Less maintenance is required as there are no wear and moving parts
- No power is required as pulp is dropped in chest by gravity
- Reduced cost as compared to Repulper option

Right option can be selected as per location and process requirement. Please consult Parason experts to get the right option in your mill. Parason continuously works on various options to suit the customer requirement.
Parason disc filter service solutions Benefit from tailor-made products and services as a result of process knowledge at first hand

HCDF Segment  Wave Segment  Filter Bag  Sector Frame
TECHNICAL DATA

Thickening Series 3.7

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<tr>
<th>Product Type</th>
<th>No. of Discs</th>
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<th>B [m]</th>
<th>C [m]</th>
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<td>4.77</td>
<td>4.97</td>
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Thickening Series 5.2

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<td>8.20</td>
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Note: Due to constant upgradation technical data are subject to change without notice
Parason Disc Filter are Compatible to **PLC** or **DCS** as per customer requirement

**the refining people**

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