PARASON

Worldclass Refining & Deflaking Technology

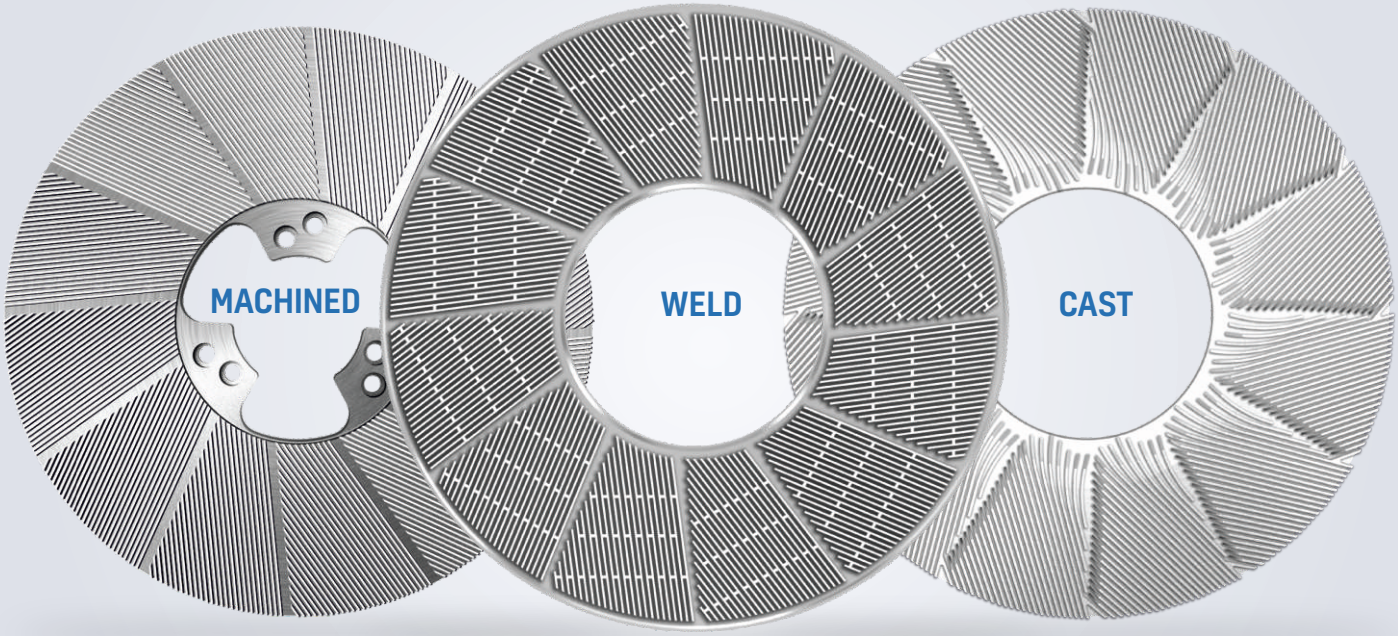
Fibrillation and Deflaking

More than 10,000

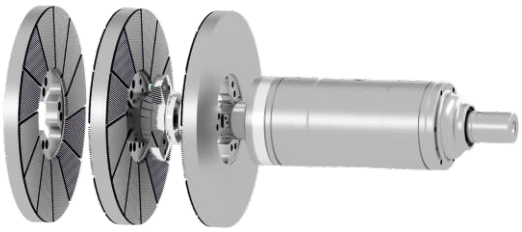
Installations across the world

www.parason.com

Engineered Trust

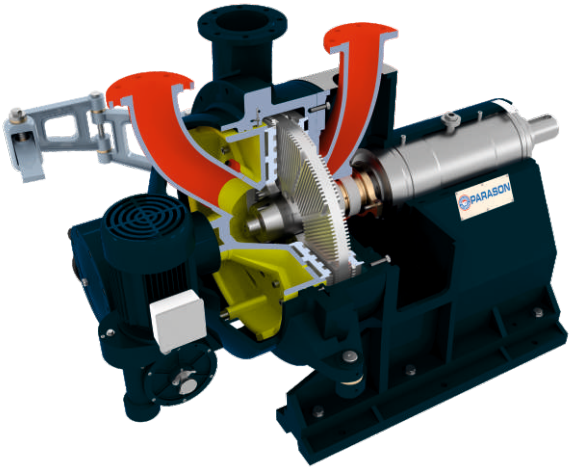


PARASON TRI DISC REFINER

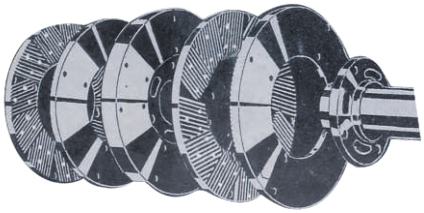


PARASON TDR

- → Rotor 60% lighter
- → 180% larger opening
- → No bolting on surface
- → Large refining area
- → Saves energy by min. 20%
- → Low cost per tonne

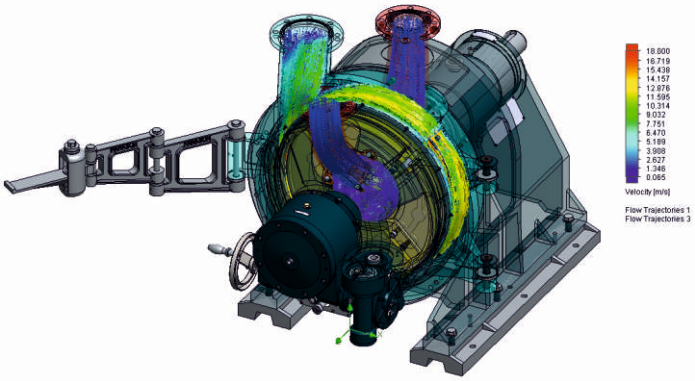


Newly Developed Tangential Refiner

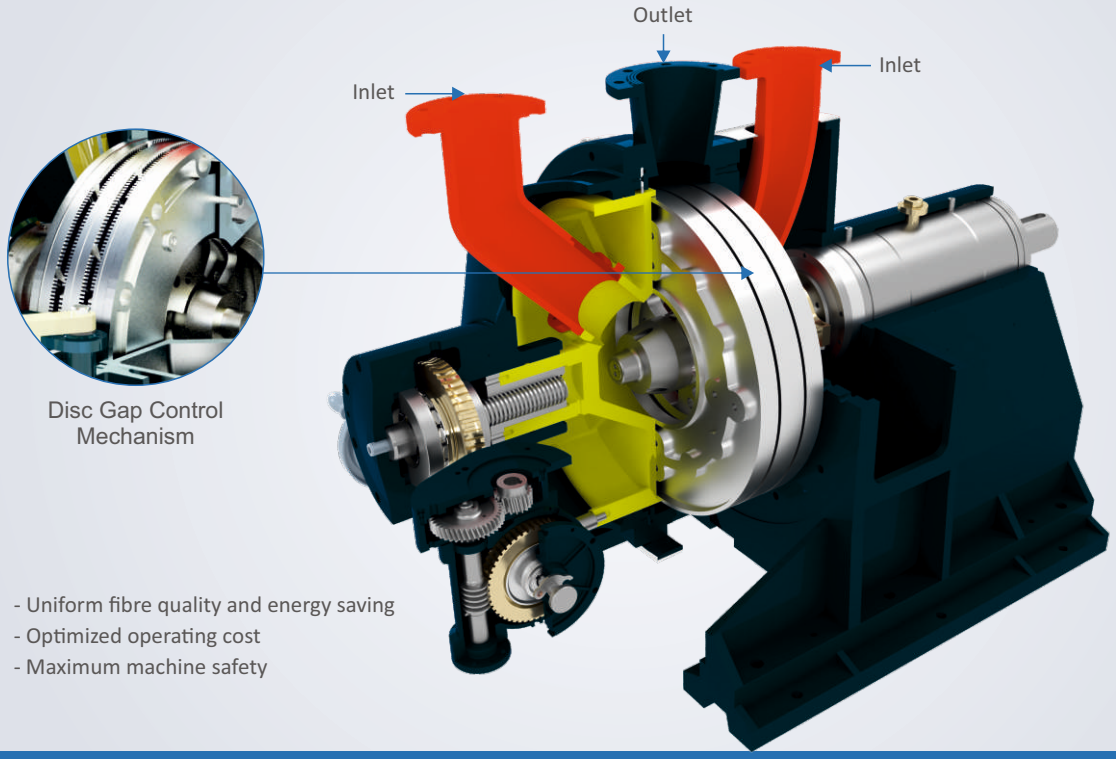


CONVENTIONAL DDR

- → Heavy rotor, Poor life
- → Bolts on bar surface-reduced refining area
- → On run breakages occur
- → Higher energy consumption
- → More down time for plate change



Results of Flow simulation performed
using latest computational fluid dynamics software



- Uniform fibre quality and energy saving
- Optimized operating cost
- Maximum machine safety

IMPORTANCE OF REFINING

→ Refining: “Fibrillation/delamination of fibres using compressive & shear forces.”

→ Refining is a heart of papermaking and only irreversible process that physically modifies fibre structure using mechanical energy.

KEY FEATURES

→ Wide range of metallurgies developed for industry needs

→ Various patterns & bar designs available

→ Custom designed plates are developed in shortest time on CNC

→ Continuous development of new cost-effective material and designs

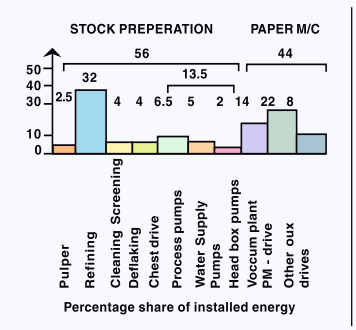
PARASON – The Prime source for Refiners & Refiner Plates

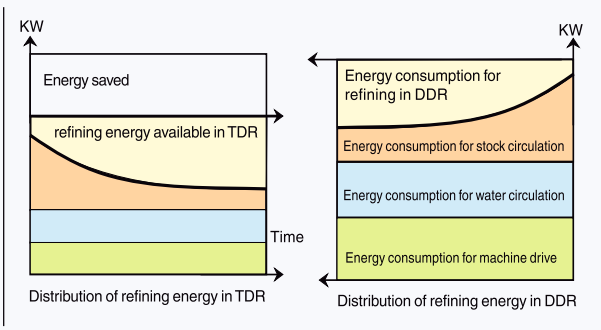
Compact, sturdy, latest mechanism, and most importantly, the refiner plates bar designed to suit specific applications are the special features of Parason TDR. TDR is the result of ACCUMULATED PRECISION making this machine unique in the paper world. Parason Refiners have more than 2000 installations within 15 years and this is a direct indicator of its supreme performance.

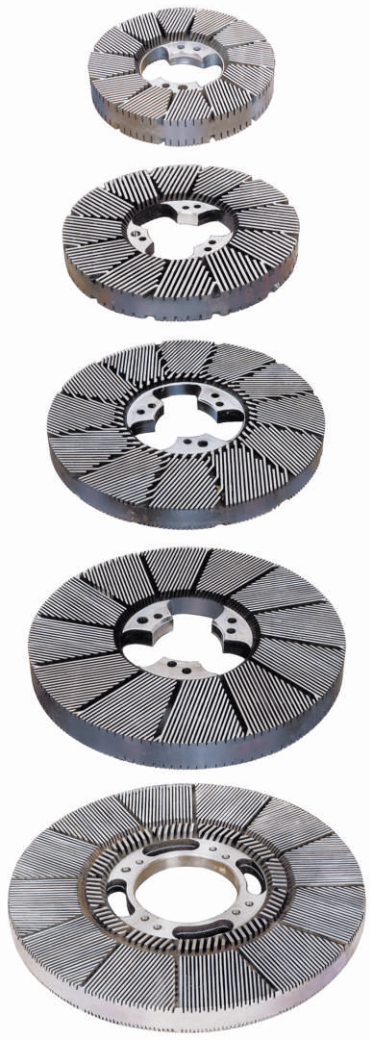
FURTHER SPECIFICATIONS OF REFINERS

The inclusion of splined shaft technology in Parason TDR permits rotor movement with longer force resulting in uniform floating conditions under stock pressure of 1-2 kg/cm.

The use of unique and high technology of centrifugally casted martensitic stainless steel shaft sleeves offers maintenance-free working for years.







EXCLUSIVE FEATURES

Splined Shaft

Splined shaft technology has enabled to reduce weight of shaft assembly. PARASON TDR is manufactured with splined shaft to achieve easy movement flotation of rotor. Uniform wear of discs on both faces

Automation System

Special feature to operate refiner with full auto control mechanism with SP (Set Point) feature saves power with uniform refining

A unique Schenck Germany Analyzer to Analyze

- Spectrum of frequency
- Tracking
- Transfer
- Balancing
- Alignment
- Bearing Vibration
- Bearing Condition
- Shaft Vibration
- Shaft Vibration Sumac
- Temperature
- Sound
- Axial Position
- Process Parameter
- Oscilloscope
- Ultramodern Technology
- Analysis of Overall Evaluation

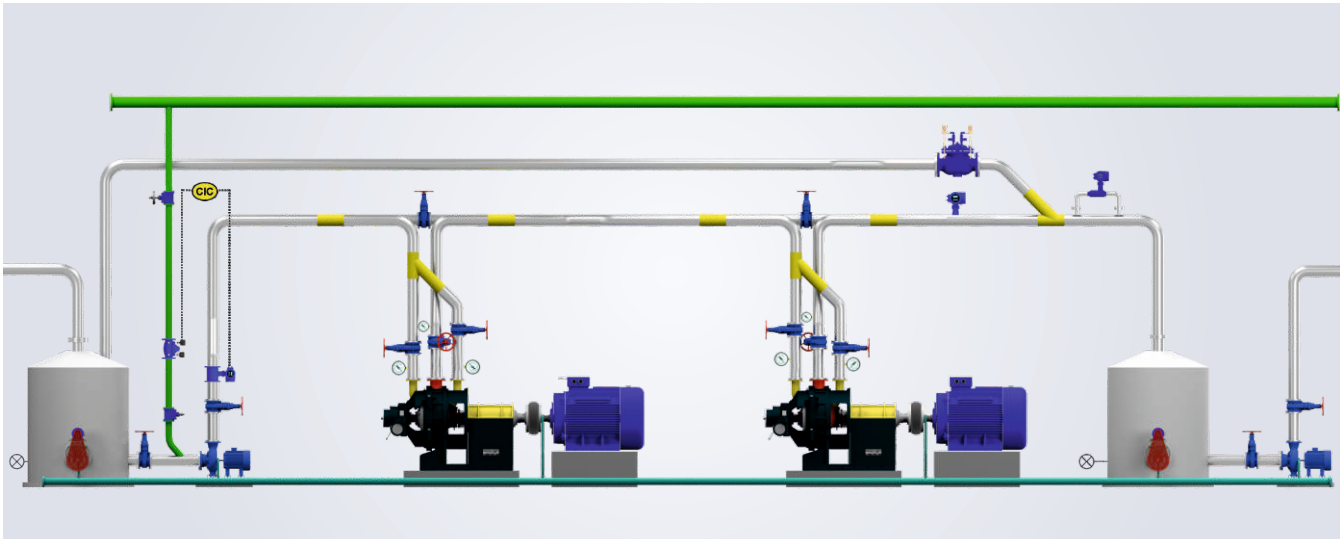
Oil Bath

This is the only system that provides positive lubrication to the bearings. The continuous feeding of oil ensures soft, smooth, trouble-free, & vibration less operations of the PARASON Refiner

EXCLUSIVE FEATURES :

- → Replace gear coupling by tyre coupling
- → Sturdy and speedy operation
- → Consumes less power
- → Virtually maintenance free operation
- → Uniform wear of plates on both faces is achieved

P&I Diagram of Tri Disc Refiner



OVERVIEW OF REFINING AT PARASON

Why to Refine:

To get

→ Higher Burst Index (BI) / Burst Factor (BF)
→ Higher Tensile Strength i.e. Breaking Length (BL)
→ Increased Ply Bond strength

To have

→ Improved Bulk properties
→ Excellent Formation of Fibre mat
→ Enhanced Surface smoothness

At PARASON, using our high end refining technology we strive to develop the fibre structure according to your needs so that you can have all the desired properties in your products.

How we do it?

→ By offering unique bar designs for varies kind of furnish
→ By using our wide range of refiner fillings you can have anywhere from high cutting action to high fibrillation refining whichever suits your requirements
→ High intensity extreme refining of fibres
→ Low intensity gentle fibre development
→ Precise energy transfer to pulp
→ Discs and tackles with wide range of metallurgy as per industry needs and requirements
→ We offer refiner fillings in all types i.e.
A) Machined, B) Weld and C) Cast to meet your needs

Fiber structure **before** refining

Fiber structure **after** refining

Achievements:

Centralised Refining with the concept of centralised refining PARASON took over some major projects which resulted in 26% to 30% reduction in specific power required for refining.

Our Services:

A. Refiner Equipment Audit
B. Refining Process Optimization
C. Maintenance and Overhauling of Refiner

Features:

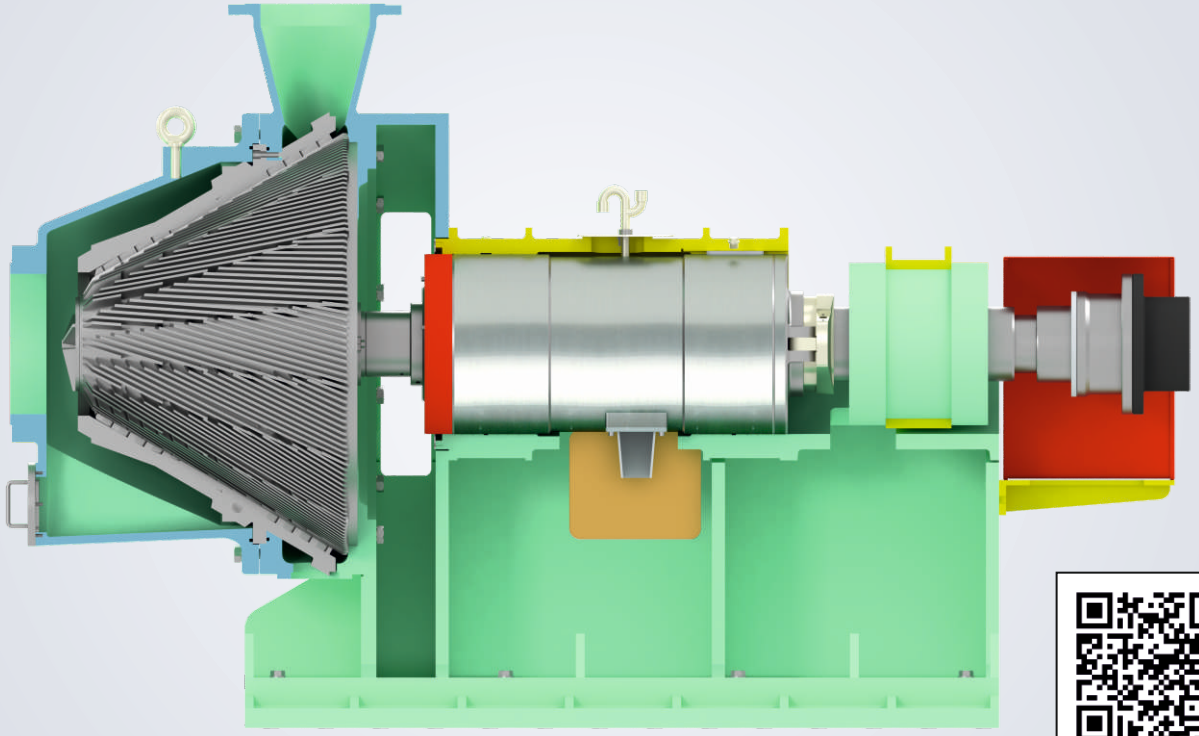
→ Unique and customized bar design for each kind of furnish and it's varies combinations
→ Refiner fillings for wood based pulp, non-woody fibres as well as chip refining.
→ Short changeover times to reduce the downtime of refining process
→ Refiner fillings available in all types with wide range of metallurgy as per industry needs

TECHNICAL DATA

Model		*TDR-13	TDR-17	TDR-21	TDR-24	TDR-26	TDR-30	TDR-34	TDR-38	TDR-42
Hydraulic Capacity	TPD	10-15	15-45	20-70	40-140	80-140	80-200	120-250	140-400	140-400
Motor Rating	kW	30-60	100-150	200-300	350-450	500-550	600-650	900-1200	900-1200	900-1200

*TDR-13 in is plain shaft model, with geared coupling.

- Throughput depends on pulp grade, consistency & specified technological properties. Hydraulically attainable maximum throughputs are substantially higher. Upon request data will be indicated after our engineers have studied our requirements.
- Due to constant research and development specifications are subject to change.



PARASON CONFINER

PARASON – The Prime source

Refining is the backbone in the stock preparation stage as well as paper making. Hence every paper mill is trying to adopt the latest technology in refining. PARASON CONFINER is a modified conical refiner designed to enhance the bonding ability of fibres with a minimized freeness drop and minimum decrease of fibre length with low energy consumption and easy maintenance.

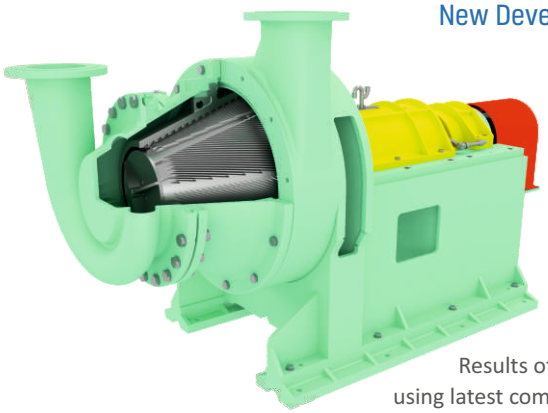
Parason Confiner Fillings

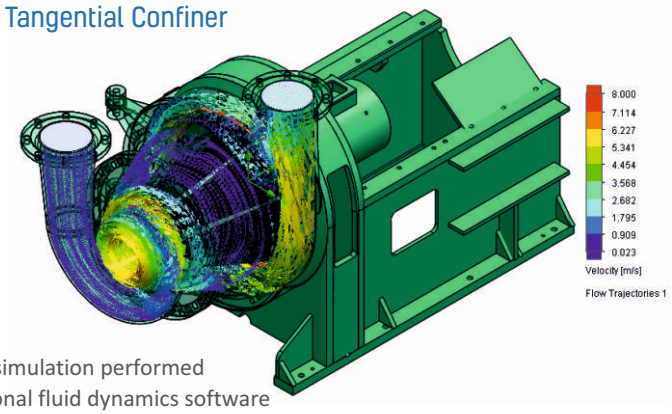
- → Different patterns available in conical type
- → Patterns manufactured on high precision
- → Confiner tackles manufactured in Alloy Steel with excellent workmanship
- → Low-intensity refining, uniform refining, best fiber development at lower power consumption
- → Confiner tackles manufactures in casted as well as welded design
- → Compact construction reduces floor space requirements
- → Exceptionally low no-load power consumption rises the effective power

A Novel Introduction to Technology

- → Vortec centrifugal flow
- → Stable gap, Uniform refining
- → No-load power consumption
- → Low-intensity refining
- → Easier dewatering and drying
- → 4-axis patterns generation
- → Cantilever construction
- → Foreign material arrester
- → Higher bearing life
- → Strong and robust construction

New Developed Tangential Confiner





Results of Flow simulation performed
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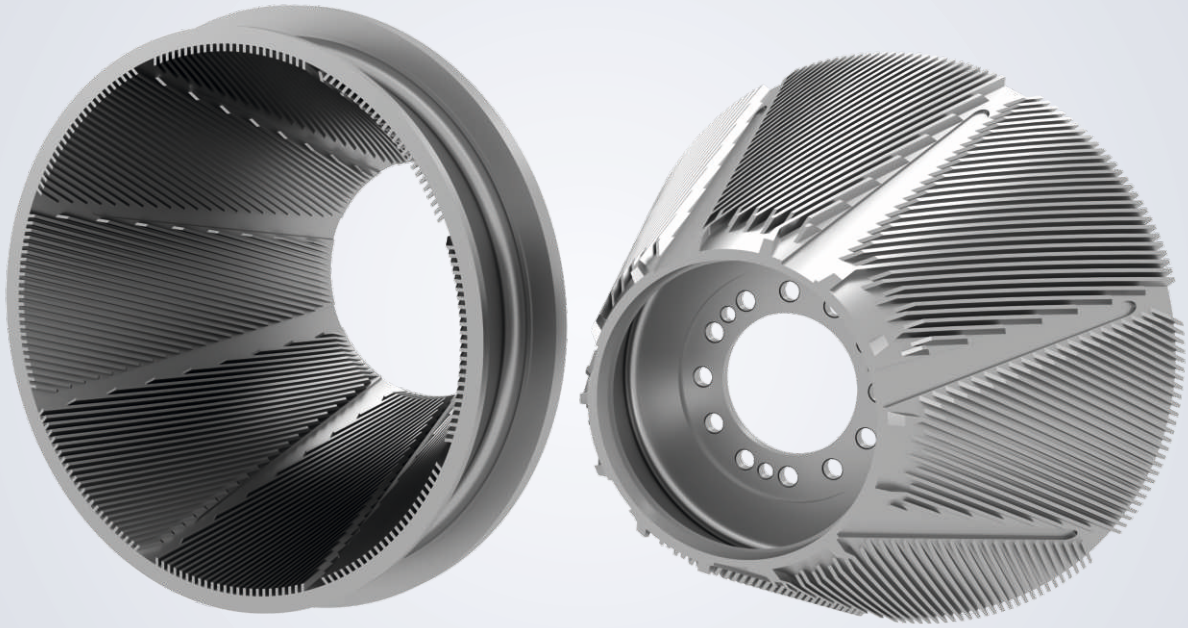
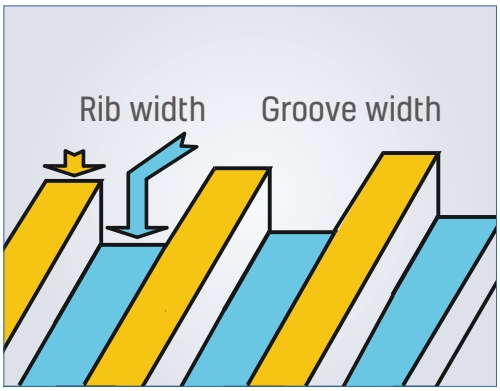


CONFINER TACKLE

Gentle Fibre Treatment

Geometry of the Parason Confiner is quite different from the conventional Double Disc Refiner. The fibre development (treatment) depends on-

- → Amount of the fibres between refiner bars
- → Stability of the gap clearance
- → Greater the amount of fibres on bar, gentle will be the fibre treatment
- → Higher amount of the fibres on the bar results in better stability of the gap clearance, better fibre development, and lower energy consumption

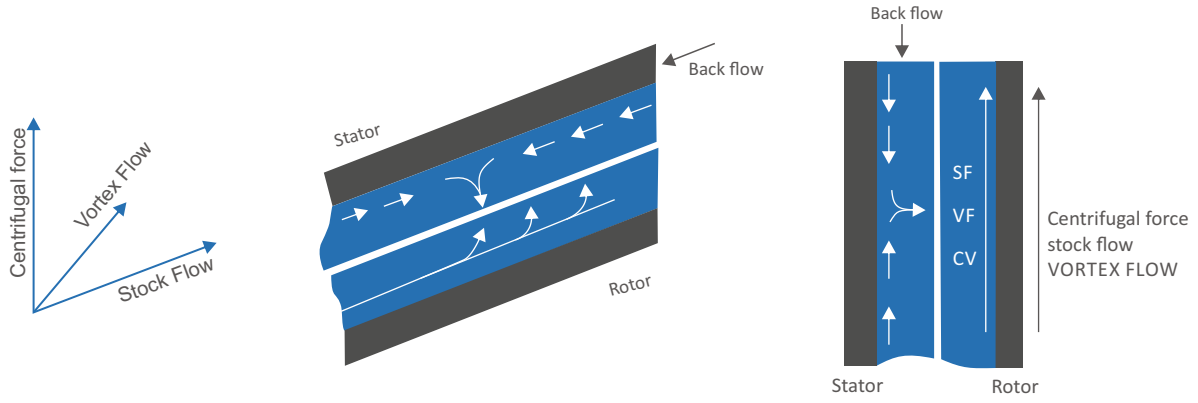


Designing Factors

- → Assurance of correct fibre retention time and development of desired fibre properties due to the short shadow cone angle and large refining surface area
- → Easiest filling charge due to cantilever design
- → Loading/Unloading with hydraulic power pack system for fully auto control operation
- → Stable operations and accurate gap control provide stable loading
- → Fast loading/unloading and slow loading/unloading modes of operation
- → Compact construction reduces floor space requirements
- → Exceptionally low/no-load power consumption rises the effective power

4 Axis CNC Machining center for Mfg. fillings of various applications

ADVANTAGES OF CONFINER FOR PAPER MAKING

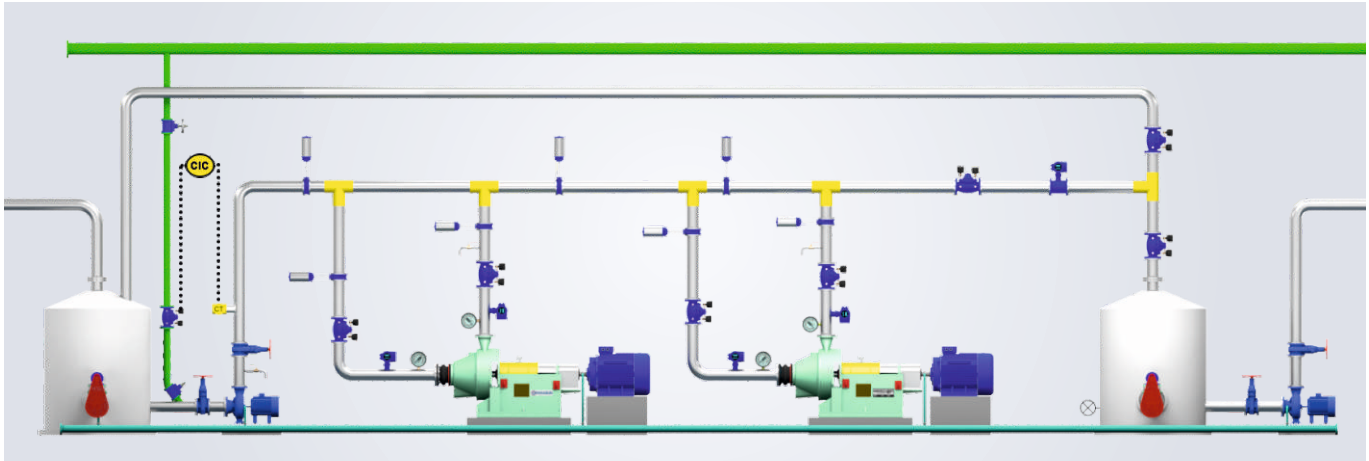


Parason Confiner Vs. Disc Confiner

More fibres on edges | More fibrillation | Even loading

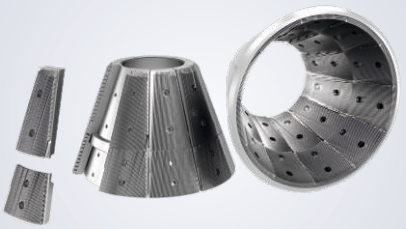
- → Improved paper quality due to uniform fibre treatment and excellent fibre development
- → Higher paper production and better strength properties due to easier dewatering and drying in paper machines
- → Better retention of fibres and fines
- → Lower energy consumption
- → Minimum process downtime as easy maintenance and quicker change of fillings

P&I Diagram of Parason Confiner

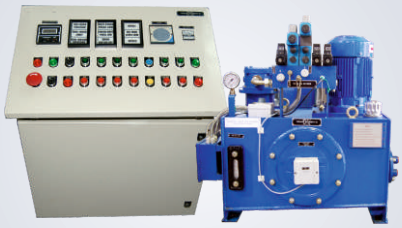


GENERAL DIMENSIONS

Type	Rib Width	Groove Width	P - Parason
Microbar	1.2	1.9	MB - Extra Low Intensity Refining
Welded	1.6	2.5	SW - Low Intensity Refining
PYW	1.2	1.9	SW - Low Intensity Refining
PXW	1.6	2.5	SW - Low Intensity Refining
PSF	2.0	3.0	SF – Short Fiber Fine
PSM	2.5	3.5	SM- Short Fiber Medium
PSC	3.0	4.0	SC – Short Fiber Coarse
PLF	4.0	5.0	LF – Long Fiber Fine
PLM	4.5	6.0	LM – Long Fiber Medium
PLC	5.5	7.0	LC – Long Fiber Coarse
PLF	4.0	3.0	FS – Trimming Medium
PLM	8.0	5.0	TC – Trimming Coarse
PTM	3.0	7.0	Tm – Trimming Medium
PTC	4.5	8.5	TC – Trimming coarse
PMX	3.5	5	MX – Mixed Fiber



Confiner Fillings



Automation System

TECHNICAL DATA

Model		CR-25	CR-35	CR-45	CR-60	CR-75	CR-100
Capacity	TPD	10-15	20-50	50-100	80-350	10-500	120-750
Operating Consistency	%	4-6	4-6	4-6	4-6	4-6	4-6
Power rating	HP	25-60	90-150	150-300	350-650	500-1000	800-2000
Refiner RPM	RPM	960	960	960	750-960	600-750	600-750
Inlet stock pressure	Kg/cm2	2	2	2	2	2	2

MANUFACTURING FEATURES

Main Body	Cast Iron and stress relieved
Refining chamber	S.S.304
Shafts	Precisely ground finished shafts made in SAE-8620 forging case carburized and hardened
Parts in contacting stock	Stainless steel casting grade SS-304
Gland system	Stainless steel grade SS-304 gland sealing with cooling system
Coupling	Gear coupling with long slide crowned teeth induction hardened
Bearing	Standard make
Adjustment of Tackle	By manual or through hydraulic power pack (optional) operated control system
Power Saving System	Optional
Auto Control System	Optional

*Throughput depends on pulp grade, consistency & specified technological properties.

- Hydraulically attainable maximum throughputs are substantially higher.
  Upon request, data will be indicated after our engineers have studied our requirements.
- Due to constant research and development specifications are subject to change.

CONICAL DEFLAKER 3 STEPS

The construction of the rotor and stator is conical. Therefore, we get more area for deflaking in this type of Deflaker as compared to other deflakers.

Working Principle

Due to the smaller diameter of the rotor, this equipment is more power efficient as compared to the other equipment having similar functions. The deflaking action takes place in 3 steps.

There is lesser damage to the fibre (i.e. less shortening & more fibrillation). The 3 step design ensures more retention time to the fibre while deflaking (as compared to teeth or hole type). There is consistent deflaking due to online gap adjustment with respect to the current drawn. The life of the fillings is longer.

Application & Salient Features

- → More output due to more deflaking area
- → Power consumption is less as compared to other type of deflakers
- → No-load power is also less as compared to other types of deflakers
- → Better quality of pulp is generated
- → Efficient in breaking flakes in the pulp

Main Specifications:

Motor RPM = 1500

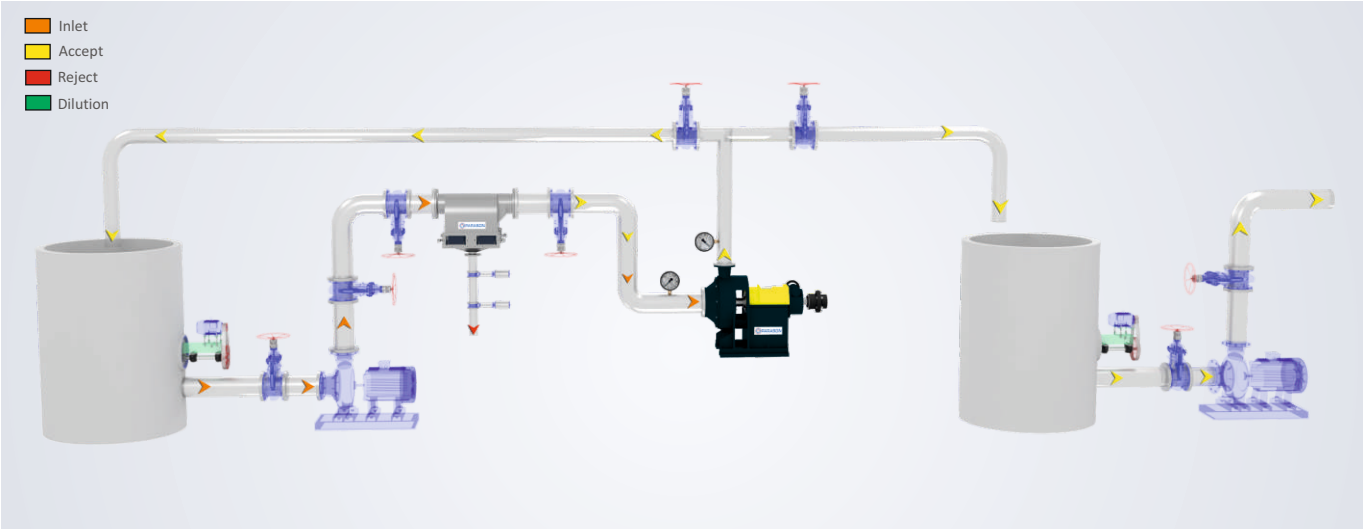
TOOTHED	25	35	45
TPD	10-40	40-70	70-120
Power (Kw)	75-110	90-200	250-270

HOLE TYPE DEFLAKERS

Working Principle

Parason Tri-Disc Deflaker is a high-speed deflaker, primarily used for deflaking market pulp and various kinds of brokes to obtain high-quality products with better strength characteristics. Parason Tri-Disc Deflaker fibre bundles and flakes are completely deflaked into individual fibres by hydro-dynamic shock waves created with high-quality deflaker discs that rotate at a speed of 1500 to 3000 RPM.

The freeness of the stock is slightly increased; however, deflaking contributes to the uniformity of sheets and substantially improves its strength & formation.



Main Specifications:

Motor RPM = 1500

TDD HOLE	300	450	600
TPD	10-40	40-110	70-120
Power (kw)	55-75	75-110	250-270

RING TYPE DEFLAKER

Working Principle

The pulp stock introduced centrally into the deflaker passes through the gap between the rotor and stator and teeth of each ring towards the outlet. Due to the unique & Tri-disc system, the disc rotating at high speed creates strong turbulence between hydro-dynamic stock waves & the fibre bundles and flakes, while passing through the gap between teeth of rotor and stator, and releases the bonds between individual fibres under the impact of high-frequency waves and frictions.

Depending on the furnished and required differing efficiency, the outer most ring size is selected and the gap between rotor and stator is adjusted by shims.

Application & Salient Features

- → The fillings design is very precise with simplicity in manufacturing
- → The fillings are manufactured with all over the machined surface which gives better deflaking effect on the fibre
- → The gap between stator and rotor discs is constant. Hence, avoiding the clashing of stator and rotor discs inspite of the fluctuations in the flow and pressure of the pulp

Main Specifications:

Motor RPM = 1500

TDD RING	300	450	600
TPD	10-40	40-70	70-120
Power (Kw)	75-110	90-200	250-315

TRAPMAGNI

Application & Salient Features

- → Sturdy, fabricated stainless steel construction
- → Large permanent magnet for more contact area hence improved removal efficiency
- → For 6 " - One magnet & for 8" & 12" - Two magnets
- → Well shaped body assets other non magnetic tramps for gravity.
- → Periodic cleaning mark easy through cleaning door and tramp drain:
- → Provision of tray over the concealed magnet for fast cleaning.
- → Auto arrangements give excellent results.

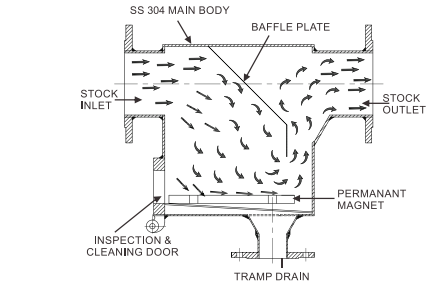
Size

- → Trapmagni 6 - 50 TPD
- → Trapmagni 8 - 80 TPD
- → Trapmagni 12 - 140 TPD

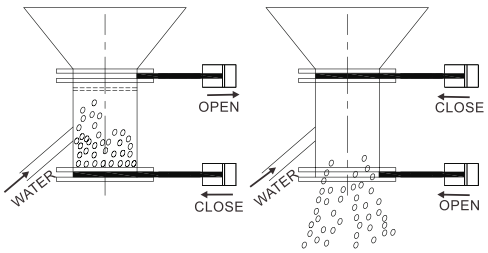
Main Features

- → Main body is SS-304
- → No moving parts
- → No flush water
- → No energy consumption
- → Maintenance free
- → Easy installation
- → Upto 6 bar operating pressure
- → 1 year guarantee

* Above products are patented design registry, copyright, trademark.
* Due to constant research and development specifications are subject to change



Cross sectional view



Online auto-control mechanism with a fiber recovery system

Technical Specifications:

PGT Model	6	8	10	12
TPD	50	80	150	200

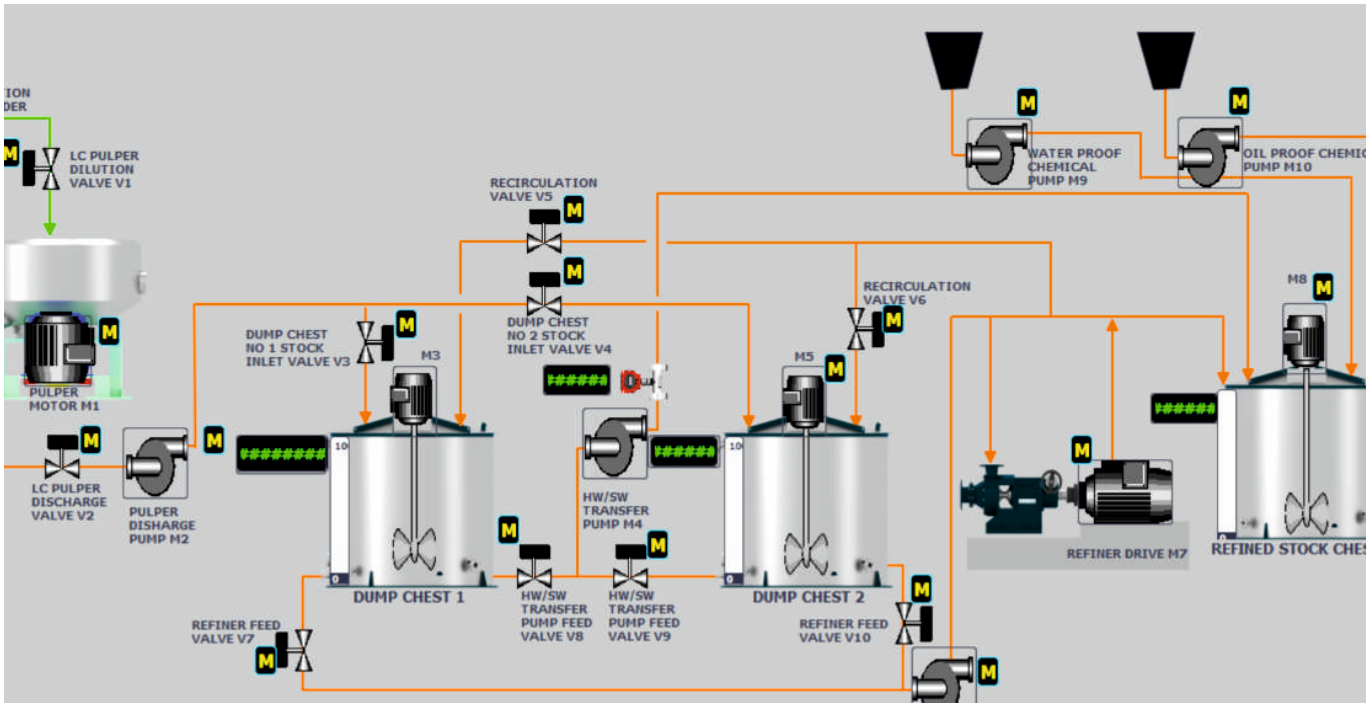
DATA SHEET

Customer: _____ **Date:** _____

Sr. No.	Process Parameter	Observation	Observation
1	Furnish		
2	Consistency		
3	pH		
4	Pump Kw		
5	Pump LPM ------- (m^3/hr)		
6	Refiner Size		
7	Location Stock /M/c		
8	No. of Refiners		
9	Refiner modes :- Series / Parallel		
10	Single Pass/ Multi Pass		
11	Inlet °SR		
12	Delta °SR		
13	Inlet Pressure (kg/cm^2)		
14	Outlet Pressure(kg/cm^2)		
15	Inlet Temp °C		
16	Outlet Temp °C		
17	Operating Hrs /day		
18	T/put(T/Hrs)		
19	Flow rate -Kg/Sec		
20	Connected Kw		
21	Connected Voltage		
22	Motor RPM		
23	Refiner RPM		
24	Dirn of Rotation:- CW / Anti CW		
25	Mode :- Pumping /Hold Back		
26	No Load:- (AMP)		
27	No Load :-(PF)		
28	No Load:- (Kw)		
29	Operating Load (AMP)		
30	Operating Load (PF)		
31	Operating Load:- (kw)		
32	Net KW		
33	KWH/ T		
34	Sp Power kwh/T/°SR		
35	PA No		
36	Pattern		
37	CEL:- Km/rev		
38	SEL:- J/m		
39	'N' Factor:-Km/Kg.....Observed		
40	Requried		

Data Collected By:- Sign:-

AUTOMATION SOLUTIONS FOR PULP & PAPER



Parason has installed more than 405+ Pulp line in India & abroad. Parason has pleasure to introduce Automation division and are committed to serve Pulp and Paper industry.

We are offering complete line of automation services. Parasons product-lines are being equipped with PLC control panel as standard, with option of DCS interfacing to achieve automated sequences for operation, start-ups and shutdowns. The logics are designed by well experienced team and include safety interlocks, event & alarm lists, fault handling routines and Diagnosis features. The Hardware is field proven, state of the art.

Parason offers:

- → Automation System design, selection and supply.
- → Field instrumentation selection and supply.
- → Pneumatic and Hydraulics design and supply.
- → Services of Erection & Commissioning, Optimization.
- → Electrical Interfacing with Drives, MCC etc.
- → Instrument Networking, interface with Mill ERP through OPC for regular reporting and mobile alert etc.

Automation Advantages by Parason:

- → Increased production.
- → Uniform product quality.
- → Lower breakdowns, down time.
- → Quick Diagnosis of problems.
- → Early recovery from plant upsets.
- → Viable and Early Return Of Investment.

DCS

PLC

Field Instruments

PARASON

Engineered Trust

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Aurangabad (MH), India - - 431006

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Web: www.parason.com

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