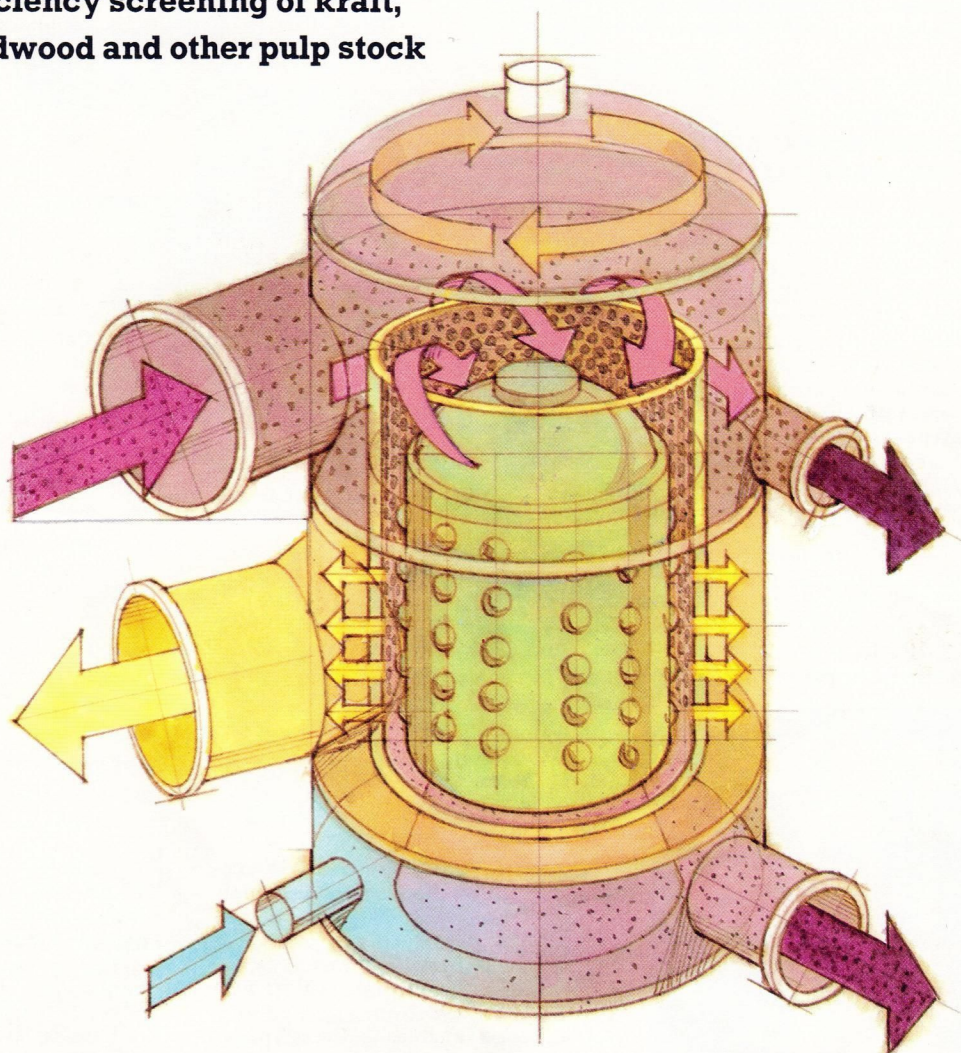


# The Centrisorter<sup>®</sup> Pressure Screen

*Rec. 9/9/85*

For high efficiency screening of kraft,  
TMP, groundwood and other pulp stock



**BIRD**

The best credentials  
on paper.



The Centrisorter Pressure Screen is the first pressurized screen developed for use on groundwood, kraft and other pulp. It also has wide application in screening high consistency stock in the paper mill. The Centrisorter Screen operates at higher consistency and with higher efficiency than conventional screens. It has been tested and sold for primary and rejects use on news and roto grade grinder groundwood, refiner groundwood, bleached and unbleached kraft, and on waste stocks.

The Centrisorter Screen achieves screen efficiencies as high as 97%, producing better accepts without dilution. It operates at accepts consistencies up to 4% or more, and can cut normal decker requirements to less than half. The screen also makes possible completely pressurized, pump-through operation thereby reducing both pump and piping needs. By combining a unique screening principle with many of the proven mechanical features of the widely known Bird Centriscreen® Pressure Screen, the Centrisorter Screen provides a truly revolutionary approach to fine pulp screening and to high-consistency screening in paper mills.

### **CENTRISORTER PRESSURE SCREEN EXTENDS ITS BENEFITS INTO WIDER AREAS OF PULP AND PAPER MAKING**

Coincident with the development of the Centrisorter Screen for pulp, there has been a trend toward high consistency processing in the paper mill. This has also coincided with increased use of secondary fibers for many grades.

While the Bird Centriscreen unit has firmly established itself as the standard centrifugal pressure screen for lower forming consistencies, the Centrisorter Screen has taken over the screening function at higher consistencies.

Centrisorter Screens are now widely used in mills processing secondary fiber. Among these are mills with de-ink systems for recycling over-

issue news and excess publication stock. There are also advanced screening systems with Centrisorter Screens in series employing both slotted and drilled screen cylinders, plus sophisticated cleaning, deflaking and reject screening devices.

Increased volume of secondary fibers has brought renewed interest in slotted screen plates. Round holes are effective in removing shive-like debris typical of virgin fibers. Slots are better adapted to removing short, choppy, cubical debris which is more typical of reprocessed secondary fibers. Slots also are better adapted to removing many types of plastic debris found increasingly in waste furnish.

Today, Centrisorter Screens are operating successfully with holes ranging in size from .045" to .125" and with slots ranging from .010" to .022".

### **Cylinder Mold, Formers, and Head-box Screening**

The Centrisorter Screen has also met the challenge of high consistency headbox, cylinder vat and former screening. The success of the Centrisorter Screen in these assignments has enabled a number of mills—especially board mills—to move their processing to a higher and more economical consistency level.

**Fractionation** In linerboard mills, the Centrisorter Screen has proven highly efficient as a fractionating screen, permitting a single cook of a very high-yield pulp by screening out the necessary quantity of the highest quality pulp for use as top liner. The complete, low-yield cooking line normally used for producing top liner stock can be eliminated.

Fractionation, of course, is also possible with other pulps—such as the production of various grades of groundwood from the same initial stock—and in secondary fiber stock preparation.

Paper mill fractionation is also achievable with this unit, resulting in selective furnish refining and great energy savings.

### **Advantages**

1. Operates at pressure up to 75 psi.
2. Discharges accepted stock at consistencies of 3% or higher.
3. Delivers superior quality and screening efficiency with accepts consistencies as high as you can feed your washers or deckers.
4. Operates with reject pressure only slightly less than inlet pressure to permit refining or deflaking at screen pressure.
5. Permits installation at almost any location or level for the best screen room layout.
6. Saves building costs when Centrisorters can be installed under instead of ahead of the deckers.
7. Requires the least floor space per ton of stock screened.
8. Simplifies installation—no special foundation needed.
9. Reduces pump and piping needs.
10. Eliminates open flumes; makes for a cleaner screen room; saves on housekeeping.
11. Eliminates air entrainment and the cost of defoamers.
12. Cuts heat losses.
13. Operates with accept efficiency superior to other screens. Can be used with perforations several sizes smaller than existing centrifugal screens.
14. Can be equipped with slotted plate for effective removal of cubical debris.
15. Permits operation by remote-manual, automatic or computer control.
16. Withstands system upsets in consistency, flow rate or cooking quality.
17. Energy efficient—operates at lowest HPD/Ton levels.



### **THE CENTRISORTER SCREEN ROTOR**

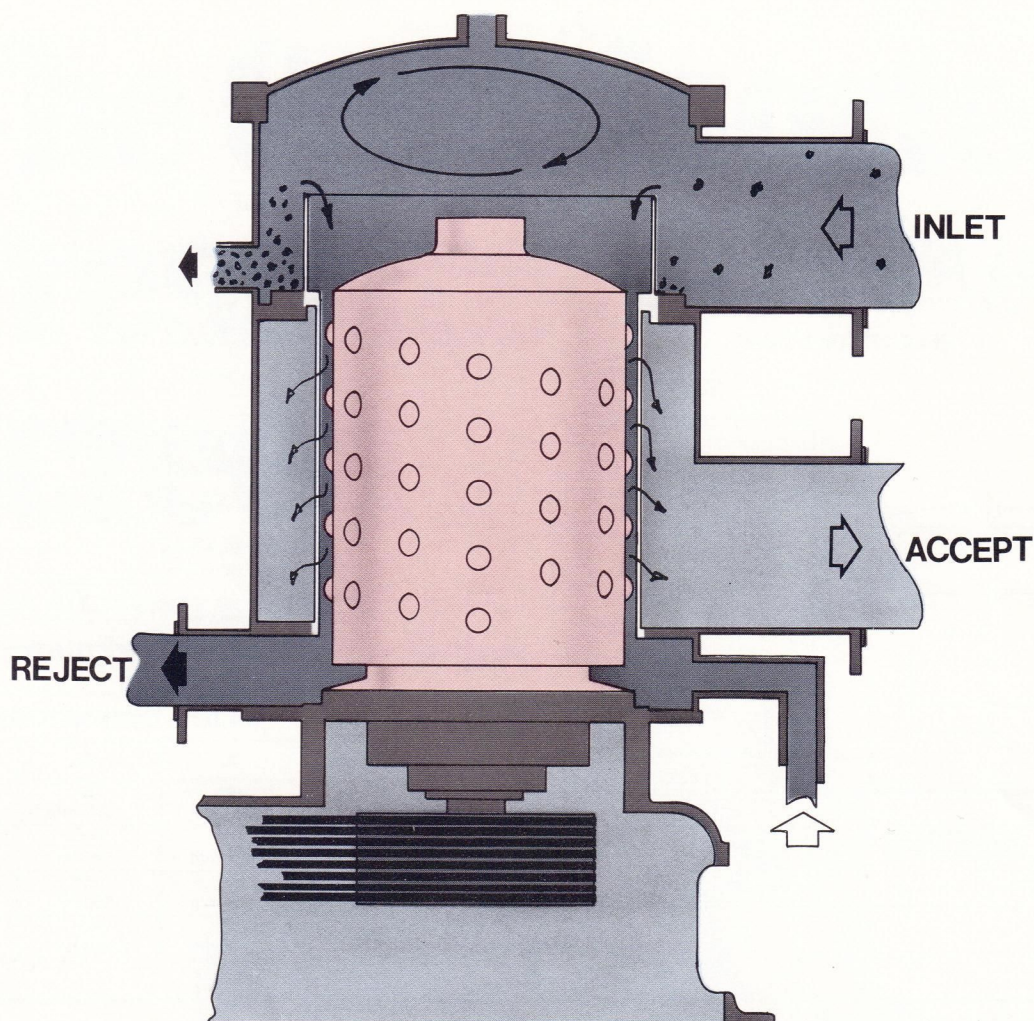
#### **Heart of a Unique Screening Principle**

Heart of the Centrisorter Screen is a rotor of unique configuration. Operating at high speed, it imparts a high frequency pulsation to the pulp which fluidizes or homogenizes it into an easily screened suspension. This pulsating action enables the screen plate to make a sharp separation of debris from acceptable fibers.

There are two major rotor designs—one specifically designed for use with slotted screen plates, and one for drilled screen plates.

The surface of each rotor is continuous with no breaks or edges on which pulp can hang up or form strings. Both types of rotor use solid bumps to minimize wear on rough furnishes.





## HOW IT WORKS

Pulp is pumped into the Centrisorter Screen through the inlet into a circumferential trough where heavy rejects material is immediately trapped. Free of tramp material, the pulp then flows over an inlet baffle and into the screening chamber between the rotor and the screen plate.

The rotor fluidizes the pulp to keep the fibers well separated and suspended for screening. To a large degree, the rotor controls the screening efficiency, capacity, rejects rate, and pressure drop. Accepts pass through the screen plate by hydraulic action while the rejects material flows into the rejects gutter.

Only Bird offers a choice of rotor design—either one for use with slotted screen plates or one

for use with drilled screen plates—depending on your production requirements. Since hole size, consistency, type of stock can vary widely, a Bird Application Engineer should be consulted for final selection.

**Operation & Service** Hundreds of world-wide installations have proven the high degree of reliability and minimum maintenance requirements of the machine.

For maximum convenience in servicing, the rotor, shaft, bearings, seals and bearing housing can be removed as a unit assembly in the larger machines.

**Easy, Convenient Installation** Compact design permits a number of Centrisorter Screens to be installed side-by-side in a minimum

of floor space. Because of pressurized operation, the installation can be made at almost any convenient location or level.

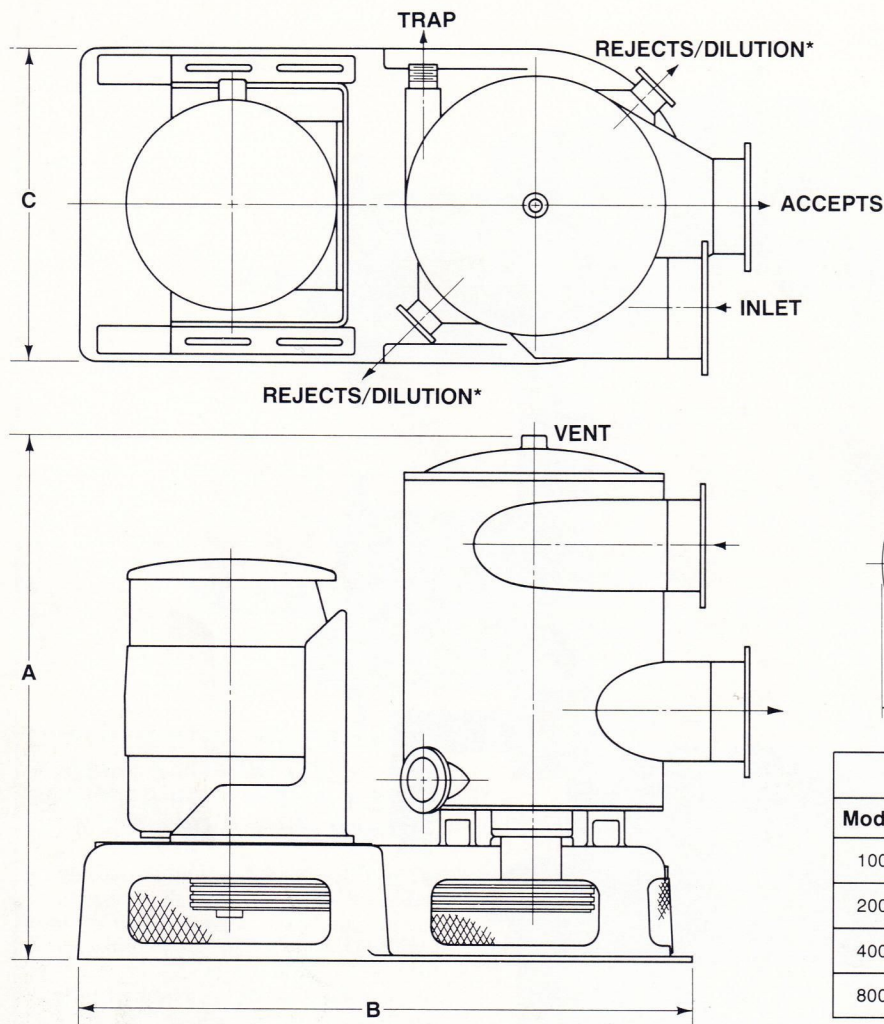
Models 200, 400 and 800 may be ordered with piping connections in a selection of standard configurations for piping convenience.

**Rejects Handling** Material rejected by the screen plate flows into a rejects gutter where it is removed through a connection of substantial size. Because of the concentrating effect of the screen, reject consistencies are ideal for direct flow through a Bird Grubbens Labyrinth® Deflaker or through refiners. Provision for diluting the rejects with white water is supplied but diluting is not normally required.



# MODELS 200, 400 & 800

# MODEL 100



## MAJOR DIMENSIONS

Model	A	B	C
100	48" 1,220 mm	54" 1,370 mm	32" 815 mm
200	48" 1,220 mm	60" 1,520 mm	30" 760 mm
400	64" 1,630 mm	73" 1,850 mm	38" 965 mm
800	89" 2,260 mm	96" 2,440 mm	54" 1,370 mm

\*Dilution or rejects, as necessary.

## PIPE CONNECTIONS

Model	Inlet	Accept	Reject	Dilution	Trap	Vent
100	6" 150 mm	6" 150 mm	3" 75 mm	2" 50 mm	3" 75 mm	1" F*
200	8" 200 mm	8" 200 mm	4" 100 mm	2" 50 mm	3" 75 mm	1" F*
400	10" 255 mm	10" 255 mm	6" 150 mm	6" 150 mm	3" 75 mm	1½" F*
800	14" 355 mm	14" 355 mm	6" 150 mm	6" 150 mm	4" 100 mm	1½" F*

\*U.S. Pipe Thread.

## CAPACITIES, POWER, CONSUMPTION, OPERATING WEIGHTS

Models	HP	Capacity	Operating Weights
100	40 h.p. 30 kw	1500 gpm 5700 l/m	1,800 lbs. 815 kg.
200	60 h.p. 45 kw	2000 gpm 7600 l/m	3,000 lbs. 1,360 kg.
400	100 h.p. 75 kw	4000 gpm 15,200 l/m	5,400 lbs. 2,450 kg.
800	200 h.p. 150 kw	8000 gpm 30,300 l/m	12,000 lbs. 5,445 kg.

Bird makes a complete line of pulp and paper equipment for stock preparation systems and paper machine systems; also solids-liquid separating equipment for lime mud dewatering, waste treatment, and processing applications.

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**No one knows more about energy-efficient pulp screening.**

**BIRD**