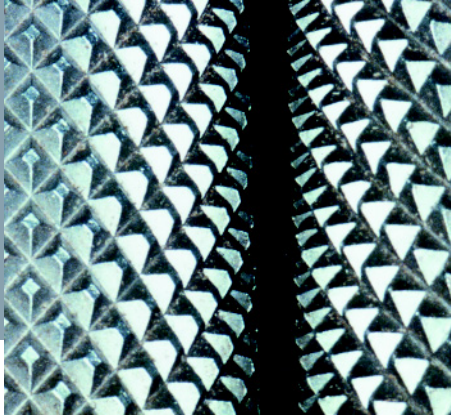




DiamondRoll™  
Thickness Screen





# DiamondRoll™ Thickness Screen

## Superior Performance

Chip Thickness Screening is based on the ability of a screen to selectively remove only those chips that are too thick for the pulping process. Many screens have been used in an attempt to achieve this separation, and none has succeeded like the **DiamondRoll™\* Thickness Screen!**

The principle of operation of this unique screen lies in the use of solid shafts, or rolls. These rolls move and agitate a mat of chips as they are fed from the infeed of the screen, letting the smallest chips pass between the shafts first. Gradually the larger chips are concentrated on the surface of the rolls, until they are finally discharged off the end. In the nip between the rolls is a gap of free space that lets the acceptable chips fall through. The distance in this gap is what makes all the difference!

For most pulping processes a maximum allowable chip thickness is between 8 and 10 mm. This means

that chips larger than 8 mm must be sorted out of the mass of chips that make the feedstock for the pulping process, and treated separately to

make them acceptable. Chips between 2 mm and 8 mm are generally considered to be “good” chips, or Accepts, but larger chips result in high levels of knotter rejects in the pulp mill, and reduce pulping efficiency. Accurately separating these large chips is critically important to the economic success of the pulping process.



*\*U.S. and worldwide patents: 0,328,067; 4,903,845; 5,012,933; 619,245; 5,058,751; 1,333,897; 2,036,571; 89,082; 1,751,322; P68,916,664.8; 5,109,988*



## Superior Engineering

### VIRO Makes the Difference!

What makes this screen so special? Variable InterRoll Opening (VIRO) technology! The ability to set the distance between the shafts to virtually any opening needed is a feature unique to the DiamondRoll Thickness screen. The drive system, slotted side frame, bearing block supports, and machined DiamondRoll shafts all fit together in one seamless system of strength, selectivity, and performance. No other screen matches it in terms of efficiency or performance!

Shaft spacing is adjusted by changing shims between bearing blocks in the side frame of the screen. The bearing blocks for each shaft run in a slot cut into the frame, separated by these "shim" spacers.

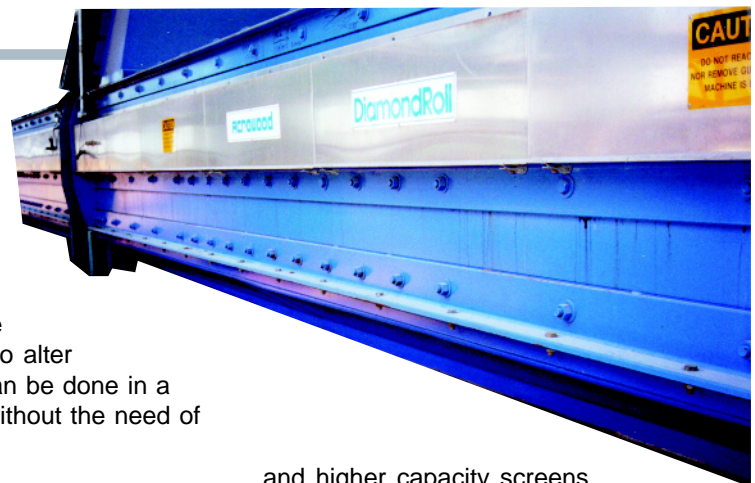
Using spacers between the blocks sets the spacing between the rolls. If a larger opening is needed, additional

shims can be added. If the rolls need to come closer together, a thinner shim is used. In either case it is a simple and quick matter to alter the screen, and can be done in a few short hours, without the need of special tools.

### Machine Basics

Each DiamondRoll roll starts out as a solid alloy steel shaft. It is machined to a precisely specified diameter, cut with the diamond pattern, has the chambered shaft end added at the end, and is finished with a journal on each end to mate with the specially designed housing and bearing. The entire surface is hard chromed for long service life.

The drive is a loop chain design using lube-free chain and special sprockets. This highly efficient design makes it possible to keep the drive simple and maintenance free, yet drive the longer



and higher capacity screens needed by mills today.

The side frames are steel plate with aluminum drive enclosures. Dust covers are provided. Screens are shipped either fully assembled, or they can easily be assembled in place to save on installation costs.

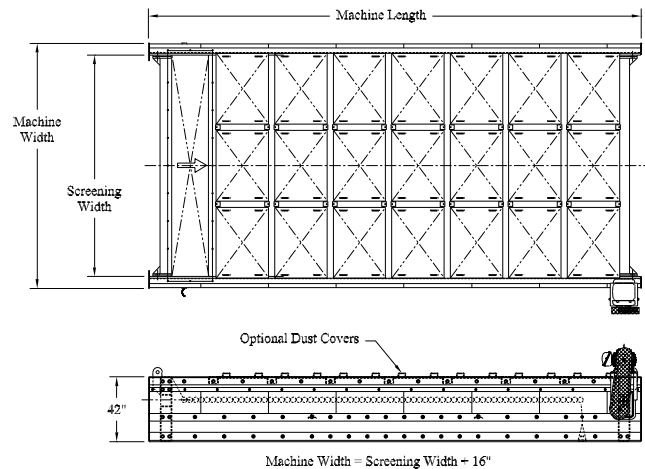
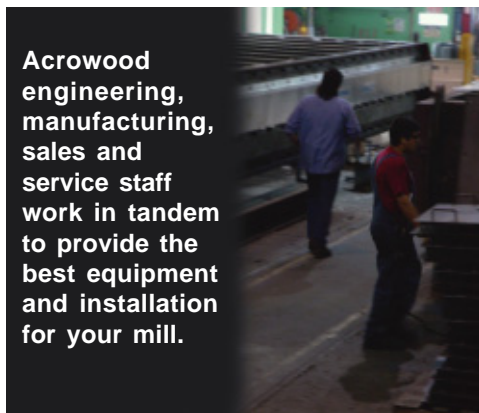
### Integrated Scalping Screen

It is possible to include a scalping screen section after the thickness screening section. The shafts used here are typically cut with a deeper knurl pattern, and set 20 to 30 mm apart. This section rejects large strings, knots, and cards present in the chip flow, protecting the overthick chip processing equipment that follows.

# Specifications: DiamondRoll™ Thickness Screen

# of Rolls	Screening Width									Screen Length
	60"	72"	84"	96"	108"	120"	132"	144"	156"	
40	19,000 - 10	21,000 - 10	23,000 - 15	25,000 - 15	-	-	-	-	-	
50	22,000 - 15	24,500 - 15	27,000 - 15	29,500 - 15	32,000 - 15	-	-	-	-	
60	26,000 - 15	28,500 - 15	31,000 - 15	33,500 - 15	36,500 - 15	39,000 - 15	42,500 - 20	44,500 - 20	47,500 - 20	32,000 - 15
70	-	32,500 - 15	35,500 - 15	38,500 - 15	41,500 - 20	44,500 - 20	47,500 - 20	50,500 - 20	53,500 - 20	32,000 - 15
80	-	-	39,500 - 15	42,750 - 20	46,000 - 20	49,250 - 20	52,500 - 20	56,000 - 20	59,500 - 20	32,000 - 15
90	-	-	-	47,500 - 20	51,250 - 20	55,000 - 20	58,500 - 20	62,250 - 20	66,250 - 25	32,000 - 15
100	-	-	-	52,000 - 20	56,000 - 20	60,000 - 20	64,000 - 20	68,000 - 25	72,000 - 25	32,000 - 15
100	-	-	-	-	-	65,750 - 25	70,250 - 25	74,500 - 25	79,750 - 25	32,000 - 15

The above table lists machine weight in pounds and recommended motor sizes.



“ We are a 100% sawmill residual mill, so chip quality is important to us. We rely on the DiamondRoll Thickness Screen to prevent overthick chips from getting into the digester. It has done a great job. ”

- Pulp Mill Superintendent

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