



THE DSI SANDWICH BELT HIGH ANGLE CONVEYOR

A NO COST SOLUTION TO YOUR BLOWLINE PROBLEMS

Blowlines are a common means for elevating screened chips to the digester. Blowlines have a low initial cost but very high recurring costs including:

- **High power cost**, more than 20 times the useful elevating power.
- **Reduced pulp yield**, typically 5% to 10%, due to chip damage from the extreme turbulence.
- **Digester feed plugging, that results in mill shut down.** This is due to chip damage that creates an excess of pins and fines.
- **High wear and maintenance cost.** High wear and replacements occur at blow line turns and at blower blades.

THE SANDWICH BELT ADVANTAGE

DSI Sandwich belt high angle conveyors utilize all conventional conveyor hardware and equipment subject to the same rules of design. As a result, DSI Sandwich conveyors have the same operating characteristics as conventional conveyors, that is, low cost and high availability.

Advantages of DSI Sandwich high angle conveyors include:

- **Low power/energy requirements**, only 10% of the typical blowline.
- **No degradation of wood chips.**
- **Use of all conventional conveyor components, including smooth surfaced rubber belts that can be continuously scraped clean.**
- **High reliability** which ensures uninterrupted mill operation.
- **Low maintenance costs.** The sandwich conveyor system has low wear exposure. The conventional components and equipment are technically and commercially mature having proven long life and low cost.



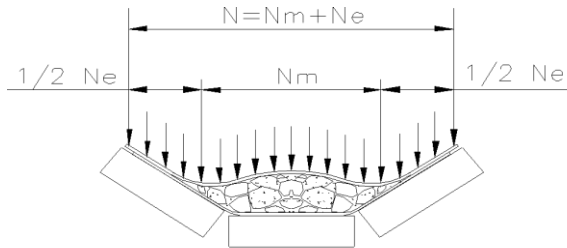
Chips discharge gently and cleanly from the conveyor.



Wood chips enter the mouth of the sandwich conveyor.



A radial hugging pressure is induced by the inherent belt tension along the engineered curved profile. The radial pressure naturally spreads evenly onto the conveyed material developing its internal friction. The material is held firmly yet gently in the sandwich from entrance to discharge at any high angle to 90 degrees vertical.



A NO COST PROPOSITION TO REPLACE YOUR BLOWLINE

Study of the substantial savings realized by replacing a screened chip blowline with a Sandwich belt high angle conveyor system reveals a short payback period and the proposition that a blowline replacement could be leased and paid for with the savings. After the leasing period, upon full payment, the mill will take ownership of the conveyor and will keep the savings in reduced operating and maintenance cost for the long life of the system.

Cost benefit of replacing blowline with DSI Sandwich Conveyor

DSI Sandwich replaces blowline: Elevating chips to digester
Design parameters 80 HP DSI Sandwich
 Replacing: 700 HP blowline

Capital Costs for DSI Sandwich

1. Initial cost of DSI Sandwich system	
a. Engineering and supply of DSI Sandwich	\$387,000
b. Additional field equipment	\$39,000
2. Demolition of blowline, mods to plant	\$20,000
3. Civil and foundations	\$30,000
4. Installation and startup of DSI Sandwich	\$127,000
5. Lost production due to plant shutdown	Installed during annual shutdown

Total Capital Cost for DSI Sandwich System **\$603,000**

Savings with the DSI Sandwich

1. Power savings: 620 HP @ \$300/HP-yr	\$15,500/month
2. Operating savings	No difference/month
3. Maintenance savings	\$645/month
4. Chip quality preservation	\$8,726/month
5. Savings in improved plant availability	\$6,545/month

Monthly savings with the DSI Sandwich **\$31,416/month**

Savings applied to pay for DSI Sandwich **\$30,000/month**
 For a period of 22.1 months
 At an interest rate of 10%

TAKE THE NO COST CHALLENGE AT YOUR MILL

DSI Sandwich replaces blowline: Elevating chips to digester
Design parameters _____ HP DSI Sandwich
 Replacing: _____ HP blowline

Capital Costs for DSI Sandwich

1. Initial cost of snake system	
a. Engineering and supply of DSI Sandwich	\$ _____
b. Additional field equipment	_____
2. Demolition of blowline, mods to plant	_____
3. Civil and foundations	_____
4. Installation and startup of DSI Sandwich	_____
5. Lost production due to plant shutdown	_____

Total Capital Cost for DSI Sandwich System **\$ _____**

Savings with the DSI Sandwich

1. Power savings: _____ HP @ \$300/HP-yr	\$ _____	/month
2. Operating savings	_____	/month
3. Maintenance savings	_____	/month
4. Chip quality preservation	_____	/month
5. Savings in improved plant availability	_____	/month

Monthly savings with the DSI Sandwich **\$ _____ /month**

Savings applied to pay for DSI Sandwich **\$ _____ /month**
 For a period of _____ months
 At an interest rate of _____ %

NOW CALL DOS SANTOS INTERNATIONAL