Heavy Duty CANE SHREDDER
SD 15..,18..,21.., series

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Heavy Duty Sugar Cane SHREDDER

TYPE
Swing hammer type Shredder with adjustable gap and exchangeable grid bars assembly complete with safety device, heavy duty hammers and discs rotor.

DESIGN
Two designs, 5- and 6- grid bars are available as standard supply. The number of grid bars influences crushing efficiency as well as capacity.

![5 - GRID BARS DESIGN](image1)

![6 - GRID BARS DESIGN](image2)

HOUSING
High strength steel plates according to EN S355 J2 G3 or JR+N is standard material for shredder housing, fabrication by MAG welding, spray arc with mixed shielding gas Ar/CO₂.
A door provided at the front side of the housing allows to access the rotor for replacement of worn out or broken hammers.
Self aligning spherical roller bearing housings are on machined seatings provided at the lower half of the housing.
Inlet is at the top section allowing vertical entry of cane while exit is an opening at the bottom part.

GRID FRAME and BARS
A rigid fabricated frame made of EN S355 J2 G3 steel plates is hinged at the top of the housing while the lower part is equipped with shear pins as safety device for to reduce the damage when there occurs serious shock load in the crushing chamber, for example an entering of steel or stone pieces.
Grid frame is adjustable via adjusting screws for setting of gap between bars and hammers.
Grid bars are changeable parts, fixed in positions by bolts.
The maintenance friendly design offers time saving on repairing as well as replacement of serious damaged bars.

ROTOR
A heavy and rigid rotor assembly consisting of precision machined steel shaft, discs and spacers.
Shaft is made of forged low alloy steel, quality 42 CrMo 4 equivalent to the American AISI 4140.
Discs and Spacers are made of high strength steel to EN S355 J2 G3 mounted on the shaft and held rigidly in position by a shaft lock nut. Each disc is drilled with holes for to allow the inserting of pivot bars which hold on swing hammers.
Pivot bars can be either stainless steel or low alloy steel.
To prolong the lifetime of discs, hardfacing by arc welding is offered as optional. Three alternatives are available for discs, first is plain precision machined discs, second is disc with CAP hardfacing and the third is CAP and SIDE hardfacing.

The standard supply is plain disc which is manufactured by precision machining of steel plates. Cap hardfacing discs offer longer lifetime than plain discs while cap and side hardfacing proofs to be the longest lifetime against wear which is mainly caused by sand and soil contaminated in canes.

**HAMMERS**

Experiencing in fighting against tear and wear more than 16 years it is proved today that breakage of hammer as well as wear at hammer eye are eliminated. Only the lifetime of hammer corner which is still under developing.

Carbon steel is today’s material made for hammers.

However wear at crushing corner is still a challenge, specially at the condition of sand and soil in high content.

Technology has been developing for years at Allied-Tek is by welding with hardfacing alloys.

Different alloys, different process as well as different in the design of welds offer different results.

Technology developed at Allied-Tek is designated as, HX 01,02,03,........and today, .09 is the latest.

In order to avoid unbalancing from operation the finished hammer is controlled by weight at a tolerance of 20 gm.

**PIVOT BARS**

Stainless steel to AISI 431 is the priority choice.

Experience proofs to be better than other material as far as wear and tear are concerned.

**SAFETY DEVICE**

Shear pins inserted at the adjustable screws of grid frame are safety device for to avoid serious damage when there happens hard or solid materials like stone or steel entering the shredder. When shear pins are activated the grid frame moves back causing fully opened of which new shear pins shall have to be replaced before restarting the operation.

**CANE INLET**

Wear plate by arc welding of carbide alloy is applied on the area above the first grid bar. Wear plate is exchangeable.
## SHREDDER SIZES

### Series 15..

<table>
<thead>
<tr>
<th>Model</th>
<th>Tip Dia x Inlet Width (mm)</th>
<th>Capacity (TCD)</th>
<th>Power (kW)</th>
<th>Hammers (rows x nos.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SD 1514</td>
<td>1,530 x 1,434</td>
<td>2,500 - 4,000</td>
<td>500 - 800</td>
<td>8 x 7 = 56</td>
</tr>
<tr>
<td>SD 1516</td>
<td>1,530 x 1,634</td>
<td>4,000 - 5,500</td>
<td>800 - 1,100</td>
<td>8 x 9 = 64</td>
</tr>
<tr>
<td>SD 1518</td>
<td>1,530 x 1,834</td>
<td>5,500 - 7,000</td>
<td>1,100 - 1,400</td>
<td>8 x 9 = 72</td>
</tr>
</tbody>
</table>

### Series 18..

<table>
<thead>
<tr>
<th>Model</th>
<th>Tip Dia x Inlet Width (mm)</th>
<th>Capacity (TCD)</th>
<th>Power (kW)</th>
<th>Hammers (rows x nos.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SD 1816</td>
<td>1,830 x 1,632</td>
<td>6,000 - 7,500</td>
<td>1,600 - 2,000</td>
<td>8 x 8 = 64</td>
</tr>
<tr>
<td>SD 1818</td>
<td>1,830 x 1,832</td>
<td>7,500 - 9,500</td>
<td>2,000 - 2,500</td>
<td>8 x 9 = 72</td>
</tr>
<tr>
<td>SD 1820</td>
<td>1,830 x 2,042</td>
<td>9,500 - 12,000</td>
<td>2,500 - 3,200</td>
<td>8 x 10 = 80</td>
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<tr>
<td>SD 1822</td>
<td>1,830 x 2,242</td>
<td>12,000 - 15,000</td>
<td>3,200 - 4,000</td>
<td>8 x 11 = 88</td>
</tr>
<tr>
<td>SD 1824</td>
<td>1,830 x 2,442</td>
<td>15,000 - 19,000</td>
<td>4,000 - 5,000</td>
<td>8 x 12 = 96</td>
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<tr>
<td>SD 1826</td>
<td>1,830 x 2,642</td>
<td>19,000 - 24,000</td>
<td>5,000 - 6,300</td>
<td>8 x 13 = 104</td>
</tr>
</tbody>
</table>

### Series 21..

<table>
<thead>
<tr>
<th>Model</th>
<th>Tip Dia x Inlet Width (mm)</th>
<th>Capacity (TCD)</th>
<th>Power (kW)</th>
<th>Hammers (rows x nos.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SD 2126</td>
<td>2,130 x 2,642</td>
<td>24,000 - 28,000</td>
<td>7,300 - 8,500</td>
<td>12 x 13 = 156</td>
</tr>
</tbody>
</table>

## References

- **1994** Pranburi Sugar Industry  
  Thailand  
  1510 x 2200  
  1500 kW  
  8000 TCD
- **1996** Mitr Phu Viang Sugar  
  Thailand  
  1830 x 2300  
  6500 HP  
  14500 TCD
- **1997** Guangxi Chongzuo East Asia Sugar  
  China  
  1830 x 2300  
  4500 HP  
  12000 TCD
- **1998** Mitr Phu Viang Sugar  
  Thailand  
  1830 x 2300  
  4500 HP  
  14500 TCD
- **2000** Sold via BanPong Sugar  
  Philippines  
  1120 x 1890  
  - kW  
  1800 TCD
- **2001** E-Saan Sugar Industry  
  Thailand  
  1830 x 2400  
  5000 HP  
  12000 TCD
- **2002** N.Y. Sugar  
  Thailand  
  1830 x 1590  
  2000 HP  
  6000 TCD
- **2002** N.Y. Sugar  
  Thailand  
  1830 x 2150  
  4000 HP  
  12000 TCD
- **2003** Mitr Kalasin Sugar  
  Thailand  
  1830 x 2530  
  6500 HP  
  21000 TCD
- **2003** Chonburi Sugar & Trading  
  Thailand  
  1800 x 2114  
  5000 HP  
  11000 TCD
- **2004** T. N. Sugar  
  Thailand  
  1830 x 2700  
  8000 HP  
  17000 TCD
- **2005** Kaset Phol Sugar  
  Thailand  
  1830 x 1700  
  3000 HP  
  8000 TCD
- **2005** Kaset Phol Sugar  
  Thailand  
  1830 x 1700  
  3000 HP  
  8000 TCD
- **2007** Mitr Phol Sugar  
  Thailand  
  1830 x 2242  
  6000 HP  
  17000 TCD
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