

INTRODUCTION

In any Cane Sugar Factory Mill Section - and obviously the Mills - are most important Station because of the fact that -

1. Mills Consume about 40 % Power consumed by the entire Power Consumption of the Factory.
2. Mills influence the sugar production or the bagging of the sugar
3. Mills also are responsible for losses on account of -
 - a. Sugar loss in bagasse (on account of higher bagasse moisture)
 - b. Loss on account of Re-absorption and
 - c. Loss due to inefficient or low extraction efficiency
4. Further Mill station influences the factor of bagasse moisture and bagasse saving, which in turn influences Boiler efficiency in general and co-generation in particular.
5. If not provided for at the time of initial installation, Mill station expansion generally requires total replacement of the existing Mills and calls for heavy write offs and new capital costs.

With the co-generation emerging as most important and profit oriented factor, bagasse saving and bagasse moisture become vitally important and critical factors, which are necessarily delivered by the Mills. In an effort to improve the efficiency of the Boiler to produce better quality steam of higher temperature and pressure, it is very important to supply the Boilers with good quality of fuel i.e. a drier bagasse of higher calorific value. Such better quality of bagasse consequently saves the consumption of bagasse and deliver more power generation capacity. In addition, the drier bagasse means more sweet water is being extracted from the bagasse, which results in improved RME and higher bagging of sugar.

Lately in fast developing countries like India, any source of energy is a very valuable asset. Various factories in India have already set up Cogeneration plants to make more profits by exporting the excess power to the grid and many more are planning for same. In this scenario, the amount of bagasse saved directly results in extra profits made by the factory. The factories which already have their Cogeneration plants can operate the Cogeneration equipment for a longer period due to saved bagasse resulting in added profits and the factories which have not yet installed Cogeneration plants can make added profits by selling the saved bagasse.

Therefore, any Mill which can deliver drier bagasse will definitely be a very important asset to a Sugar Factory - existing or new.

Ulka CMR Mill can proudly boast of having the ability to deliver extra profitability by way of lower power consumption as well as substantially reduced bagasse moisture. A single Ulka Mill installed as a last Mill in any existing conventional Mill Stations delivers the much desired low bagasse moisture. The Sugar Industry is now endowed with a unique Mill which delivers higher efficiency while consuming lower

Power. It is no wonder that during a short period of about 8 years over 70 references are boasted by Ulka Mills out of which more than 25 mills installed as last mill.

Following are the pre installation and post installation readings of few of our esteemed customers –

EID PARRY (INDIA) LTD., PETTVAITHALAI.

We replaced the existing Last Mill of 30”x60” with GRPF by our 36”x72” mill Ulka CMR Mill,

- Following are few of the important performance parameters in concern with the performance of the earlier last mill prior to the installation of Ulka CMR mill,

Performance parameters	08/09/ 2012	09/08/ 2012	29/05/ 2012	30/05/ 2012
Crushing	2872 TCD	2729 TCD	3465 TCD	3384 TCD
Bagasse Moisture	51.53%	51.45%	51.04%	51.17%
Bagasse % Pol	2.01	2.09	2.02	2.02
Imbibition % fibre	204.91	216.58	234.74	237.09
RME	94.48	94.82	94.97	94.83

- Following are few of the important performance parameters in concern with the performance of the last mill after the installation of Ulka CMR mill as Last Mill,

Performance parameters	21/01/2013	22/01/2013	23/01/2013
Crushing	3363 TCD	3351 TCD	3182 TCD
Bagasse Moisture	47.62%	47.40%	47.10%
Bagasse % Pol	1.87	1.87	1.79
Imbibition % fibre	225.85	217.07	237.44
RME	96.02	96.09	96.27

KISANVEER SAHAKARI SAKHAR KARKHANA, BHUINJ, MAHARASHTRA.

They had an existing tandem of FCB – KCP make 33"x66", four numbers conventional mills. The Factory wished to increase its existing capacity of 4000 TCD to 5000 plus TCD.

To achieve the said objective we installed a Ulka CMR mill of 40"x80" as zero mill (first mill) in season 2010 – 11.

Looking at the magnificent performance of the zero mill this factory which had already planned to install Cogeneration plant in next season, wished to improve the performance of the mill Station.

To achieve the desired goal of reduced baggase moisture we installed a 40"x80" Ulka CMR mill by replacing existing last mill in 2011 - 12. The higher size Last mill was installed on existing foundations only by carrying out few modifications to existing foundations. This saved the considerable high investment cost of the Factory. **"Reduced bagasse moisture is a well proven and accomplished performance parameter of Ulka CMR mill, installed as last mill"**.

Following table shows the improvement of the Mill performance after installing Ulka CMR mill as zero (first) mill and last mill,

Performance parameters	2008 – 09	2012 – 13
Crushing	567650 tonnes	643850 tonnes
Added water % fibre	177.89	193.70
R M E	95.94	96.46
Crushing rate per day excluding stoppages	4490 tns	4831 tns
Bagasse Moisture %	50 to 51	47 to 48

SAKTHI SUGARS LIMITED, SAKTHINAGAR, TAMILNADU.

In one of the recent seminars of Sugar Technologists Association of India, in a Gold Medal winning Article and Presentation they have proudly confirmed that this factory's profitability has gone up by more than Rs. 6.0 Crores (Rs.60.0 Millions or US \$ 1.2 Million per year).

Shakti Sugars Limited have two milling tandems of six mills each, of size 30" X 60", conventional Mills - A and - B. The Factory wished to increase its crushing capacity from 6000 TCD to 7500 TCD - ultimate. Thus, Factory opted to replace all the Under Feed Rollers with Ulka Single Roller Toothed Roller Feeder (TRF) system for the existing mills to increase the capacity and also installed a new Ulka CMR mill, 33" X 66" in both the tandems, as Last mill to reduce bagasse moisture. For A Tandem even the First Mill was replaced by Ulka CMR Mill of 33" X 66" for improved performance.

In a Gold Medal winning Article presented in the 9th Joint Convention of STAI and SISSTA, **M/s Sakthi Sugars have proudly recorded that after the above modifications, they have been earning additional profit of upto Rs. 8.0 Crores per season.**

Performance comparison after commissioning of ULKA CMR Mills:-

Description	2005 – 06	2006–07*	2007-08**	2008 – 09	2009 – 10
Cane Crushing	2165138	2235769	1700372	1383611	787250
Pol % Bagasse	2.09	1.97	1.97	1.89	1.9
Imbibition % fibre	260.99	244.08	273.08	268.54	292.47
Fibre % Cane	12.67	13.56	13.61	13.32	12.98
R. M. E.	94.86	95.33	95.58	95.84	95.70
Bagasse Moisture	52.47	50.97	50.27	48.49	47.47
Min. Pol % Bagasse achieved	2.00	1.78	1.67	1.67	1.67
Milling Loss	0.6	0.59	0.59	0.54	0.52
Recovery Gain	*	0.01	0.01	0.06	0.08
Primary Extraction	67-68	67-68	77-79	77-79	77-79

*Both the Last mills were commissioned during 1st week of April 2007.

** A Tandem I and II 30" X 60" mills 2 Nos. were replaced with 1 No. 33" X66" CMR Mill during the 2nd week of February 2008.

ULKA

Conclusion: The substantial improvement in the performance of the First and Last Mills and subsequently the performance of the entire mill house is can clearly be seen to have been improved by installing ULKA CMR Mill.

- The bagasse moisture is reduced by three to four units.
- RME is increased by around one unit.
- Increase in crushing capacity.
- Reduced bagasse % Pol.
- Enhancement in crushing rate.