



CASE STUDY OF SUGAR MILL MASTER/ BULL GEAR

CUSTOMER :SADASHIVRAO MANDLIK KAGAL TALUKA SAHAKARI SAKHAR KARKHANA LIMITED.
DATE : 06-10-2020
REPAIRED BY : EXCEL CRAFT PVT LTD - WELDING DIVISION, BENGALURU



COMPANY PROFILE

SADASHIVRAO MANDLIK KAGAL TALUKA SAHAKARI SAKHAR KARKHANA LIMITED



Sadashivrao Dadoba Mandlik (7 October 1934 – 10 March 2015) was a member of the 15th Lok Sabha of India from Kolhapur. He was a member of the Nationalist Congress Party (NCP) political party.

India is known to be the origin of sugar and sugarcane. Indian mythology carries legends supporting the claim. India is the second largest producer of sugarcane next to Brazil. Presently, about 4 million hectares of land is under sugarcane with an average yield of 70 tones per hectare. India is the single largest producer of sugar including traditional cane sugar sweeteners.

EXCEL CRAFT PVT LTD-WELDING DIVISION



Excel Craft (P) Ltd, -Welding Division,

has set up the most modern facilities in Bommasandra, Bengaluru and it is a part of **Excel Craft (P) Ltd,**

with its head quarter in Mumbai, which has got several interest in various industries.

Senior experts in the field of manufacturing and marketing of welding consumable with several years of experience are associated with the organization.

We also specializes for manufacturing of welding consumable for steel plant, Thermal power station, Sugar, Cement, Forging and construction equipment



SUGAR MILL MASTER GEAR

ABOUT MASTER/ BULL GEAR:-

Master Gears are large diameter gears that area between 2000mm to 4000mm in diameter & upto 36 Modulres. Generally made in Cast iron or Cast Steel.

The Pinioon which are smaller in diameter run with Master gear effectively giving the speed reduction required to drive the rollers in the Mill.



Photo :01- View of a Master Gear



PROBLEM STATEMENT



Photo:02 - Lifting the Gear



Photo:03 - Cracked area of the Gear

REASON FOR CRACKING: There are multiple reasons for Cracking which includes the Jerk Load, Uneven Bear of Pinion, & also due to Base Metal.



METALLURGY OF THE MASTER GEAR



Photo:04- Sugar Mill Master Gear

COMPONENT :SUGAR MILL MASTER GEAR WHEEL.
MATERIAL : RIM- IS2708Gr3 BHN 201-255 / HUB-IS1030Gr / ARMS- IS2062Gr B.
COMPOSITION : C 0.38, Si 0.6, Mn 1.2, S 0.05, P 0.05.
WEIGHT OF GEAR : 130 Ton.
PRODUCTS USED : EXCL BOND 066, EXCEL BOND 086, .



PROCEDURE FOLLOWED TO CARRY OUT THE JOB



Photo:05 - Removed the crack by Gouging Method

■ GOUGING PROCESS:-

- Gouging is the method used to remove the
- All cracks were marked and strategy was made to open cracks by gouging.
- Gouging of the cracked area and open the same by another 40% in order to remove the fatigue and uneven material.

■ GRINDING PROCESS:-

Grinding is done on gouged area to remove the metal spatter.



WELDING PROCESS



- Before starting the welding process, the welding area is heated with the gas cutter in order to remove the oil & grease over the surface.
- In Welding process we have used two types Electrodes, Excel Bond 066 & Excel Bond 086.

Photo: 06 -Doing a Welding on Gouged area



THANK YOU FROM THE TEAM EXCEL
CRAFT