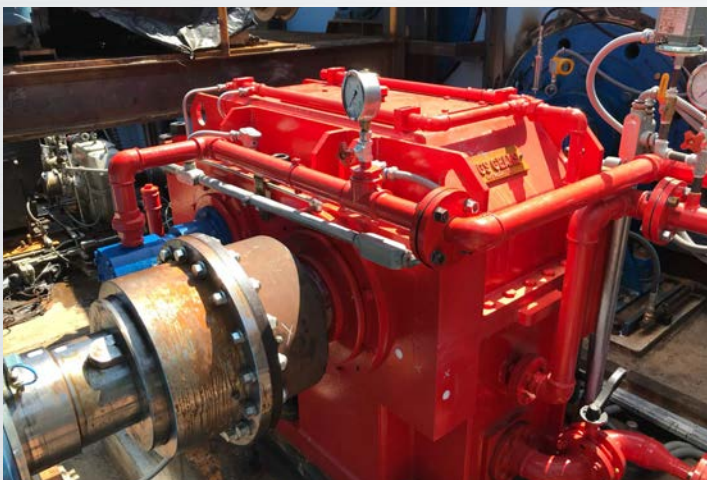


SPECIAL MANUFACTURING OF 6700 HP SHREDDER GEARBOX

MGS has played a significant role in driving advancements in power transmission equipment within the Latin American sugar market. The company has been actively involved in the design and manufacturing of numerous specialized gearboxes specifically tailored for sugarcane preparation in various sugar mills. This valuable participation has allowed MGS to contribute to the enhancement of operational efficiency and productivity in the industry.

In 2017, at Ingenio Santa Ana, which was commencing its 48th sugarcane harvest since 1969, a notable success story unfolded. ABS had the opportunity to collaborate closely with engineers from the sugar mill itself, undertaking the development, installation, and extended trial operation of the MGS PSB1-560 1021 gearbox. This gearbox was meticulously designed to transmit a power of 6700 Hp featuring an AGMA service factor of 3 and a gear ratio of 1.25. The manufacturing took place at the state-of-the-art facilities of MGS GEARS SPA, situated in Rho, Italy.



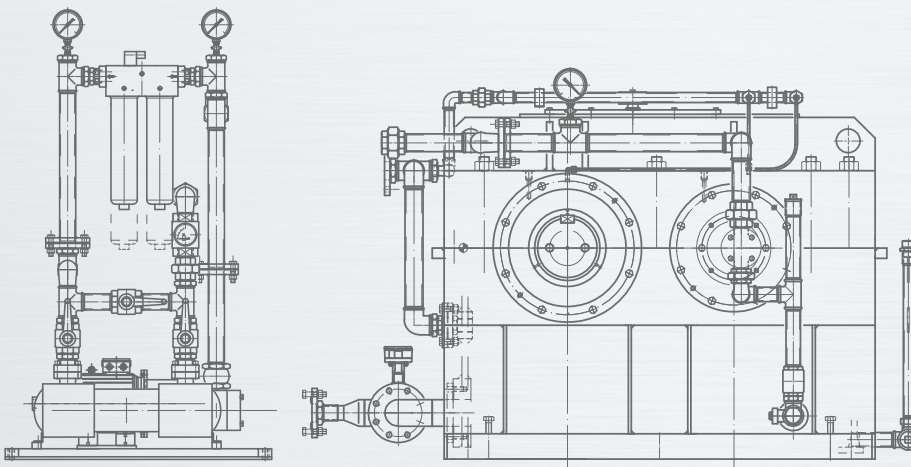
Technical Paper

The gearbox plays a crucial role in the drive system of a Maxcell hammer shredder, produced by Dedini, which boasts an impressive configuration of 176 hammers and the capacity to shred up to 20,000 tons of sugarcane per day. It seamlessly receives motion from a three-phase induction motor, equipped with slip rings, delivering a power rating of 6700 Hp and operating at a synchronous rotation frequency of 900 rpm. The gearbox itself is a parallel reducer featuring a bi-helical gear stage, constructed using cutting-edge technology. It incorporates hardened steel and precision-ground teeth, meticulously manufactured to meet tolerances 3 and 4 in accordance with ISO standards.

The gear synthesis of this gearbox, with carefully selected backlash and module, allows for proper tuning with the driven machine, ensuring optimal operation in the extreme application for which it was designed. Additionally, the gearbox is equipped with a factory-mounted electronic system for measuring the temperature of each bearing, capable of issuing alarm signals and triggering shutdown. The lubrication system includes a flow meter, and the main mechanical pump has an electric backup pump. In addition, there is a signal indicating the cleanliness status of the filters and an internal oil level (added by the customer). This complete system is ready to be connected to the customer's Automation system through a standard 4-20 mA signal.

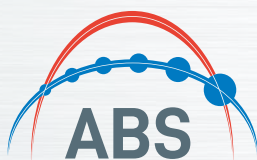
“The MGS Gearbox of the shredder at TA has worked perfectly during the 7 harvest seasons it has been in operation. The tooth settlement after this time is excellent. But the best part has been the technical support from ABS; it has truly been of a very high level. Therefore, I believe that we have not only purchased equipment but also gained a trusted provider.”

- Orlando Pinzón, Compañía Agrícola Santa Ana



TECHNICAL DATA

Model:	MGS PSB1-560 1021
Power (Hp)	6700
Input (rpm)	900
Output (rpm)	720
Ratio	1.25
SF AGMA	3
Nominal torque (lb-in)	587000



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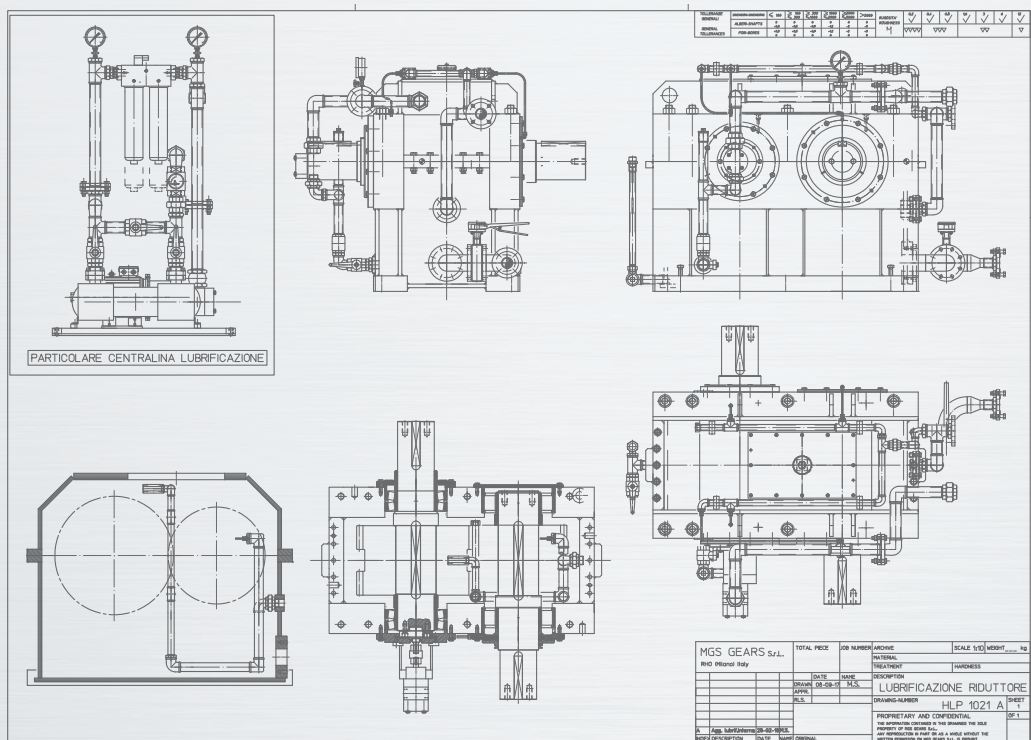
The gearbox plays a crucial role in the drive system of a Maxcell hammer shredder, produced by Dedini, which boasts an impressive configuration of 176 hammers and the capacity to shred up to 20,000 tons of sugarcane per day. It seamlessly receives motion from a three-phase induction motor, equipped with slip rings, delivering a power rating of 4,996 kW and operating at a synchronous rotation frequency of 900 rpm. The gearbox itself is a parallel reducer featuring a bi-helical gear stage, constructed using cutting-edge technology. It incorporates hardened steel and precision-ground teeth, meticulously manufactured to meet tolerances 3 and 4 in accordance with ISO standards.

The gearbox currently operates with an RMS vibration amplitude level below 0.5 mm. Its robust construction enables it to function with minimal vibration in a machine characterized by strong impacts and highly variable power consumption with the load.

The gear synthesis of this gearbox, with carefully selected backlash and module, allows for proper tuning with the driven machine, ensuring optimal operation in the extreme application for which it was designed. Additionally, the gearbox is equipped with a factory-mounted electronic system for measuring the temperature of each bearing, capable of issuing alarm signals and triggering shutdown. The lubrication system includes a flow meter, and the main mechanical pump has an electric backup pump. In addition, there is a signal indicating the cleanliness status of the filters and an internal oil level (added by the customer). This complete system is ready to be connected to the customer's Automation system through a standard 4-20 mA signal.

The result of all the above is the excellent performance of the gearbox demonstrated during seven sugarcane crops. The satisfaction of our customers is our main motivation to continue fulfilling our commitment to the excellence of our equipment. Orlando Pinzón comments:

"The MGS Gear gearbox of the shredder at TA has performed well during the 7th harvest seasons it has been operating. The tooth settlement after this time is excellent, and overall, the equipment's performance has been very good. But the best thing we have experienced during these 7 years has been the support from the factory through ABS, the response regarding assembly, operation, maintenance, etc., has been of a very high standard. Therefore, I believe that we not only purchased a piece of equipment but also gained support from the gearbox manufacturer."



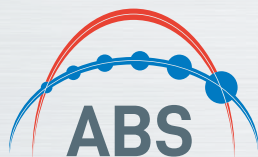
Technical drawing of a gearbox with various views and a technical specifications table.

PRODOTTORE	PRODOTTORE	C	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
ABBONDANCE	ABBONDANCE	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ABBONDANCE	ABBONDANCE	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ABBONDANCE	ABBONDANCE	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1

PARTICOLARE CENTRALINA LUBRIFICAZIONE

TOTAL PRICE	JOB NUMBER	ARCHIVE	SCALE	SIZE	WEIGHT	UNIT
MGS GEARS S.p.A.						kg
IND. Pinzoni Italy						
	DATE	VERSION	DESCRIPTION			
	DATE	VERSION	DESCRIPTION			
	DATE	VERSION	DESCRIPTION			
	DATE	VERSION	DESCRIPTION			
	DATE	VERSION	DESCRIPTION			
	DATE	VERSION	DESCRIPTION			

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