



COMMITTED TO

# QUALITY

**Hi**Tech  
HI-TECH MACHINERY





# ABOUT US

Established in 2007, Hi-Tech Machinery provides heavy engineering solutions and maintenance support to various industry sectors.

Our core competency lies in:

**Design and development, manufacturing, repair, reclamation, reconditioning of import substitute and OEM equipment.**

**Precision machining of critical spares of turbines and boilers.**

**Fabrication of heavy equipment for steel, cement, power, mining and various other industries.**

With our strong design and engineering capabilities and profound industry experience, we provide high quality and cost competitive products with quick turn-around time.

Over the years, Hi-Tech has become synonymous with uncompromising commitment to quality and delivery, and has emerged as one of the leading manufacturers in the industry.

Our state-of-the-art facility equipped with cutting-edge technology is strategically located in Central India - MIDC Butibori, Nagpur, which is well-connected by road, rail and air.

## MISSION

To deliver high quality, world-class and cost-competitive products and unmatched services.

To go the 'extra mile' and 'exceed' clients' expectations.

To partner with clients and add value to their projects by looking at the big picture.

## VISION

To emerge as a company with a global outlook and be a most preferred partner for heavy engineering companies.

In turn, contribute towards development and growth of our nation.

Our mission drives us to achieve excellence and guides us towards realizing our vision.



# OUR VALUES

Our five core values form the foundation and guidelines on which Hi-Tech employees perform their everyday work. In an ever-changing world, the core values of Hi-Tech are constant.



## 1. Client Centricity

Our clients are at the centre of our business philosophy. We work with our clients in an open and collaborative way to build lasting relationships.



## 2. Accountability

We follow best practices in the business. We are committed to deliver what the clients need in terms of value, quality and satisfaction.



## 3. Reliability

We maintain transparency and open communication with our clients.

We deliver on our promises consistently and continuously.



## 4. Quality

We maintain highest quality standards and adhere to stringent norms and regulations.

We never compromise on quality. Our esteemed clients can vouch for it.



## 5. Safety

We believe safety preventive is fundamental to operational excellence. We focus on preventative safety practices and provide a healthy work environment.

“ Our five values are at the heart of everything we do; they guide our decisions and behaviours. ”

# FACILITIES AT HI-TECH

3.5 Meter DIA, Height 2 meter  
Vertical lathe machine.

CNC Lathe 3 Meter between Centre

80 mm Horizontal boring machine.

Heavy duty lathe, length 4 meter.

Gear Hobbing Machine

Hydraulic shaper stroke 1000 mm.

Heavy duty drill machine 40mm.

Hydraulic Press machine 500 ton

Plate bending upto 60mm

MIG Welding machine

Plasma Spray Metalising

EOT Crane 15 M.T. & 5 M.T.

NDT testing facilities with  
qualified staff

VMC Machine Hartford Make table  
size 500 mm x 1000 mm

125 mm Horizontal boring machine.

Heavy duty lathe, length 7 meter.

Heavy duty lathe, length 5.5 meter.

Cylindrical Grinding machine, length 2 meter

Heavy duty drill machine 75mm.

Small duty lathes

Hydraulic Press machine 100 ton

Plasma cutting machine

Inverter based rectifier welding machines

Dynamic Balancing Machine

DRO installed on required machines

Quality control with calibrated measuring  
instruments



# PRODUCT PROFILE

## THERMAL POWER PLANT SPARES (Manufacturing)

### COAL MILL SPARES

Airport & Vane Wheel Assembly for XRP Mills

Bowl Hub for XRP Mills

Labyrinth Seal Assembly for XRP Mills

Journal Assembly Without Grinding Rollers for XRP Mills

Upper Journal Housing for XRP Mills

Lower Bearing Housing for XRP Mills

Spiral Bevel & Helical Gears for Coal Mill Gearbox for 8.5E & BBD Mills for XRP Mills

Screw Conveyor Assembly with Ribbon sets for BBD Mills

Coal Mill Separator Body with Top for XRP Mills

Scraper Assembly for XRP/HP/L&T Mills

Mill Side Liners for XRP/HP Mills

Coal Feeder Chute for XRP Mills

Worm Gear Hub for XRP Mills

Vertical Shaft for XRP Mills

Trunion Shaft for XRP Mills

Lower Journal Housing for XRP Mills

Upper Bearing Housing for XRP Mills

Lower Skirt for XRP Mills

Main Mill Reducer Gearbox for BBD Coal Mills

Mill Bottom for XRP Mills

Scraper Body for XRP Mills

Inner Cone for XRP Mills

Clamping Ring for XRP Mills

Air Seal Ring Inner & Outer for XRP Mills

Air Inlet Ring, Scraper assembly, lower housing, densveyor system, seal wear ring, hub skirt, bowl hub cover & middle housing spares for MVM 32 L&T make 660MW Mills

## COAL HANDLING PLANT SPARES

Crusher Rotor Assembly for secondary crusher Including Crusher Rotor Shaft, End Disc, Suspension Arms, Suspension Bars, Brass Plug etc.

Cage Frame Assembly for secondary crusher Including Screen plate, breaker Plate, Kick Off plate.

Screen plate for Rotary Breaker.

Support Roller for Rotary Breaker.

Drive & Driven Sprocket, Bearing Housing for Rotary Breaker.

Feed end and discharge end spiders for Primary Crusher

Tie Beam for Rotary Breaker

Stacker Reclaimer Spares like bucket, drive bogie assembly etc.

Wagon tippler spares including Rack and pinion, liners etc.

Apron feeder spares like pan, Drive & Driven shaft etc.

Vibrating grizzly feeder spares like eccentric shaft, bearing cover grizzly screen plate etc.

Conveyor gearbox and its critical internal gear spares.

Paddle feeder spares like blades etc.

Side Arm Charger Spares like Pusher Arm, Pusher Head etc.

## CW & CCW PUMP (TURBINE SIDE) SPARES

Impeller

Guide Piece

Bowl, Bell Mouth

Shafts & Sleeves

CT Fan Gearbox Spares

Machining of Turbine Diaphragms for IP & HP, Sealing Ring, IP/HP Cone Valve

## ASH HANDLING PLANT SPARES

Various Pump Spares such as Inlet, HP, Ash Slurry, Clear Water, Raw water such as Bowl, Impeller, Shaft, Sleeves etc.

Clinker Grinder Spare

ESP & Rotary Feeder Spares

Dust Conditioner Shaft.



# **REPAIR/RECLAMATION & REFURBISHMENT OF SPARES**

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In-situ repair of lower & upper bowl hub with fitment of bowl protection sleeve (Patent) for XRP 903 and above mills.

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Seperator/ Scrapper Body for XRP 763/803 Coal Mills.

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Worm Gear Hub/ Bowl Hub for XRP 763/803 Coal Mill.

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Rotary Mill Seperator for MVM 32R (660 MW) L&T make Coal Mills.

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Air Inlet Ring for MVM 32R (660 MW) L&T make Coal Mills.

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Bowl & Bowl Hub for XRP 803 ½ HP Coal Mills.

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ID Fan Shaft for 210 MW unit.

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Gear Box assembly Greaves make for 8.5E Coal Mill.

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Re-babbiting and machining of bearing housing of ID fan.

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CW/ACW Pump spares (Bell mouth, Bowl, Impellers)

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HP Pump/ Raw water pump spares

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Rotary Feeder for AHP

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Rotor Crusher Assembly for CHP

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Feed end and discharge end spider for rotary breaker.

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Lower journal/ Upper journal bearing housing for BHEL make XRP 763/803/1003/1043 Coal Mills.

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Vertical Shaft for XRP 763/803 Coal Mill.

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Densveyor for MVM 32R (660 MW) L&T make Coal Mills.

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Reblading of PA Fan/ ID Fan Impeller with shaft for 210MW unit.

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Coal feeder Chute

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IGV assembly for ID Fan.

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Yoke and spider assembly for 8.5E Coal Mill.

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CT fan drive shaft for cooling tower for 210 MW unit.

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Vacuum Pump spares.

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Ash handling spares (Inner casing, outer casing, impellers etc.) for 210/250/500 MW units.

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Clinker Grinder for AHP

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Gearbox internals and Casing reconditioning.

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Drive & Driven sprocket for rotary breaker.

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# OUR GROUNDBREAKING INNOVATION

## First in India, On Site Air-Coal Leakage Solutions

We are the only company in India to invent, design, develop, and execute an innovative, patented solution for preventing air-coal leakage from the sealing portion of the bowl hub in XRP coal mills.

Our cutting-edge In-Situ Reconditioning of Bowl Hub Sealing Portion involves the fitment of a Wear-Resistant Bowl Protection Sleeve at the site without dismantling the bowl hub from the coal mill. This advanced method has been developed using a unique and proprietary technique, for which a patent has been applied.

## WHAT MAKES OUR APPROACH UNIQUE?

Our innovative process effectively seals the XRP bowl mills, preventing the leakage of the air-coal mixture into the atmosphere. This is achieved by maintaining the desired gap between the labyrinth seals and the bowl hub. The process involves the following precise steps:

- ◆ Undercutting
- ◆ Metal Filling
- ◆ Pre-Heating
- ◆ Machining
- ◆ Surface Finishing
- ◆ Fitment of a High Wear-Resistant Bowl Protection Sleeve

This method, performed entirely on-site using specialized equipment (SPM), eliminates the need to dismantle the bowl hub. As a result, our solution significantly enhances operational efficiency while minimizing downtime.



INITIAL PICTURES OF BOWL HUB

### Addressing Key Issues

Due to the formation of a deep groove on the bowl's outer circumference, the gap between the labyrinth seal and the bowl hub increases, leading to higher leakage of coal dust mixed with hot air. Additionally, trapped coal particles between the bowl and the labyrinth seal accelerate the wear and tear of the bowl sealing portion.

To address this leakage issue, we developed a specialized technique to fix the leakage and repair the existing bowl hub sealing portion. This is achieved through an in-situ machining process combined with the fitment of a high wear-resistant bowl protection sleeve, performed directly on-site without dismantling the bowl hub from the coal mill.





**Undercut and uniform the Upper and lower portion of Bowl hub sealing portion Using spm mechanism.**

## **In-Situ Machining: Precision Repairs On-Site**

In-situ machining is the process of performing machining operations directly at the site, eliminating the need to dismantle or transport equipment or machinery. This specialized technique is designed to repair or modify large, immobile components that would otherwise be challenging to move to a workshop.

For bowl hub sealing portions, the machining process begins by rotating the bowl at a controlled speed (RPM). The depth of the cut and feed inputs are manually adjusted using specialized equipment (SPM). The machining focuses exclusively on the damaged, uneven sealing portion of the bowl hub, creating an even, deep “C-shaped” groove on both the upper and lower sealing portions.

The lower sealing portion is prepared for the fitment of a high wear-resistant bowl protection sleeve, while the upper sealing portion undergoes welding for reinforcement. Once the machining process is completed, additional operations such as undercutting, drilling, and tapping are performed on the machined areas at predefined pitches and locations along the bowl hub's circumference.



**WELDING BUILD UP AT BOWL SEALING PORTION**

## **Restoration of Upper Sealing Portion in Bowl Hub**

The upper sealing portion of the bowl hub is located within the scrapper body of the coal mill, making the fitment of a high wear-resistant bowl protection sleeve impractical due to space constraints. To address this, we developed a specialized technique to restore the original size and dimensions of the bowl hub through the following steps:

**1. Removal:** Removal of the old, damaged labyrinth seal.

**2. Cleaning:** Cleaning the upper sealing portion of the bowl hub.

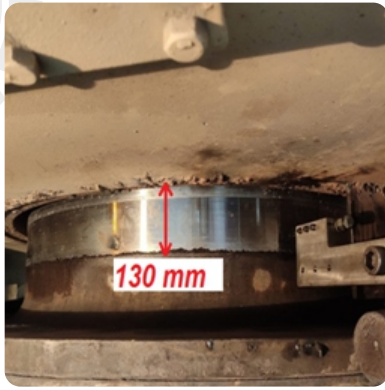
**3. Undercutting:** Undercutting the damaged upper sealing portion of the bowl hub using an SPM machine until the base material of the bowl hub is fully exposed.

**4. Material Build-Up:** Building up the material using a uni-alloy machinable welding electrode with hardness greater than the base material of the bowl hub.

**5. Restoration:** After the material build-up at the sealing portion, the upper sealing portion of the bowl hub is machined using an SPM and a customized design fixture to restore the original diameter of the bowl hub.

**6. Surface Finishing:** A final surface finishing process is then carried out to achieve a mirror-like finish on the labyrinth seal matching area using a specially designed additional attachment.

**7. Completion:** Lastly, the new labyrinth seal is assembled to complete the restoration process.



**FINAL MACHINING TO ACHIEVE MIRROR FINISH**

## ADVANTAGES OF IN-SITU MACHINING OF BOWL HUB

- ◆ Minimizes Downtime
- ◆ Minimise Generation Loss
- ◆ Cost-Effective Solution
- ◆ Reduce Maintenance Cycle
- ◆ Preserves Component Integrity
- ◆ Increased Safety

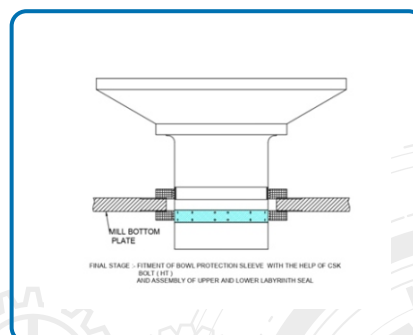
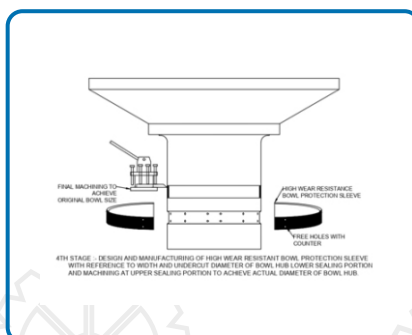
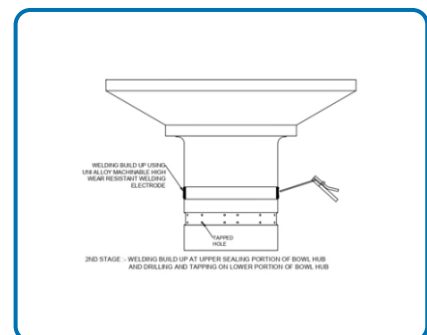
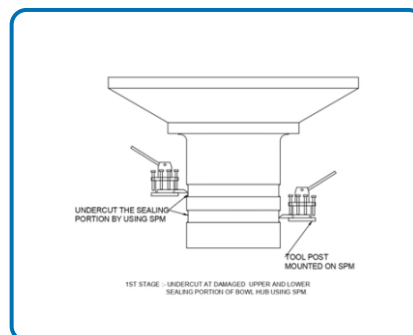
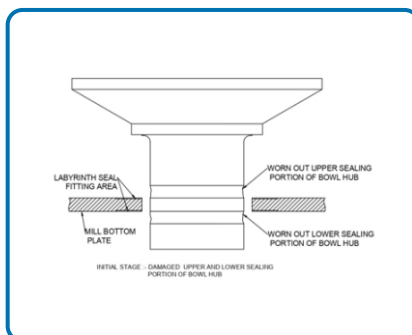
## Benefits of High Wear-Resistant Bowl Protection Sleeve

The primary objective of designing, manufacturing, and fitting the high wear-resistant bowl protection sleeve is to minimize the wear rate between the sealing portion of the hub and the labyrinth seal. The bowl protection sleeve has a surface hardness greater than the base material of the bowl hub.

Another important feature is that the bowl protection sleeve is a replaceable part. Over time, if the sleeve gets damaged, it can be easily replaced with a new one, as it is fitted to the bowl hub using HT bolts and welding.

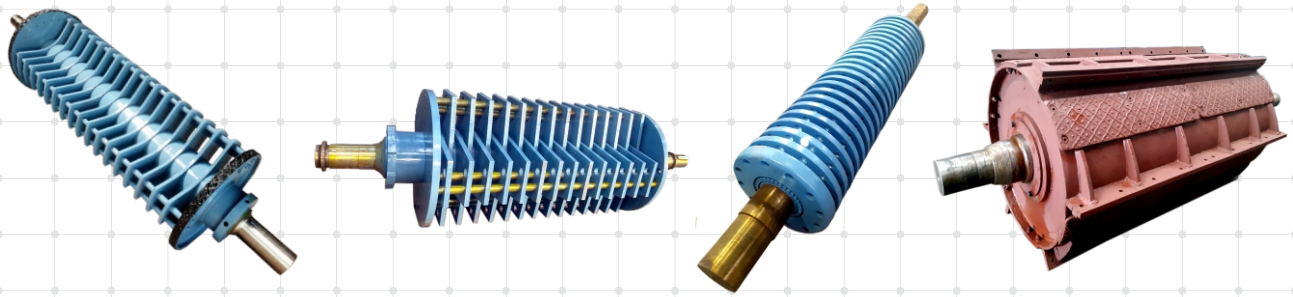
Due to space constraints at the site, the sleeve is designed in multiple segments to facilitate easy manufacturing, transportation, and installation at the bowl hub sealing portion.

## SHORT SUMMARY





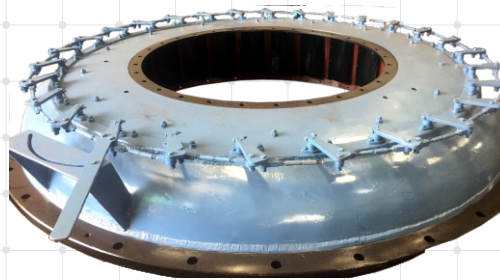
# MANUFACTURING



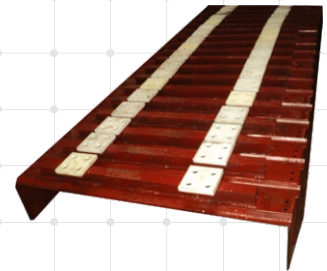
**Various types of Crusher Rotor Assembly**



**Tie Rods**



**Separator Top for  
XRP-803 Coal Mill.**



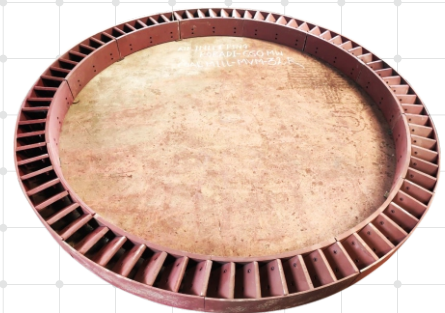
**Pan for  
Apron Feeder**



**Airport/Vane Wheel  
Assembly for Coal Mill**



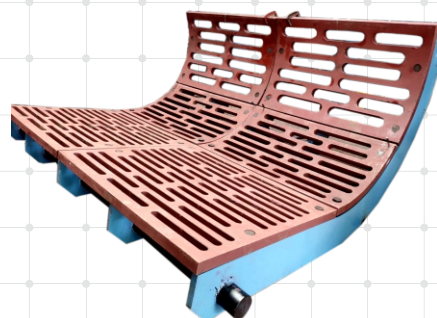
**Screw Conveyor in  
Hardox 400 Material.**



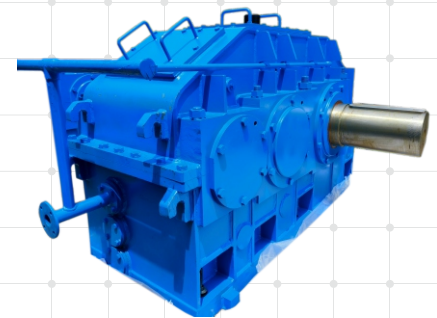
**Air Inlet Ring for L&T make  
MVM 32 Coal Mill**



**Lower Skirt for BHEL  
make XRP Coal Mill**



**Breaker Plate, Screen Plate, Cage  
Frame Assembly for L&T make Crusher**

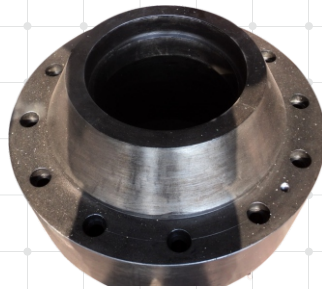


**Coal Mill Main Reducer Gearbox  
for BBD-4772 Coal Mill**

# MANUFACTURING



Complete Pump Assembly for  
Ash Water Recovery Pump



Lower Journal Housing for  
BHEL make XRP Coal Mill



CW Pump Impeller & Impeller  
Guide Piece



Gearbox Spares for  
Conveyor Gearbox for CHP



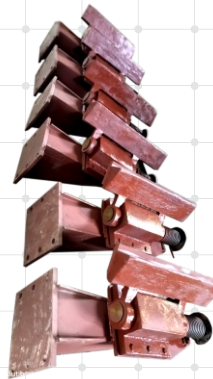
Journal Head for Coal Mill



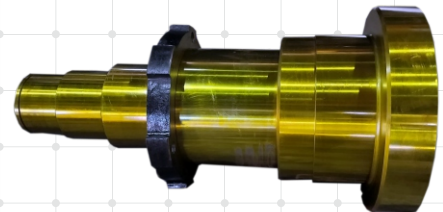
Labyrinth Seal for BHEL  
make XRP 1043 Coal Mill



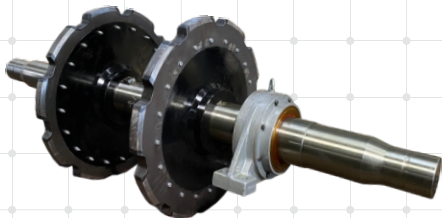
Output Gear Wheel with Shaft  
for 8.5E Coal Mill Gearbox



Scraper Assembly for BHEL  
make HP-1103 Coal Mill



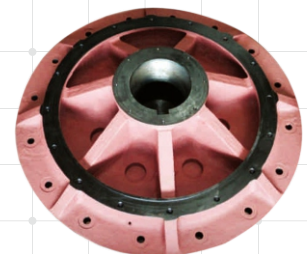
Vertical Shaft for BHEL  
make HP Coal Mill



Chain Drive Sprocket  
Assembly



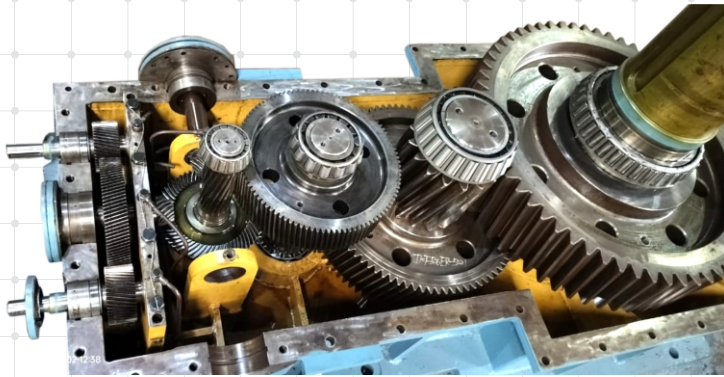
Scraper body for BHEL  
make XRP-763 Coal Mill



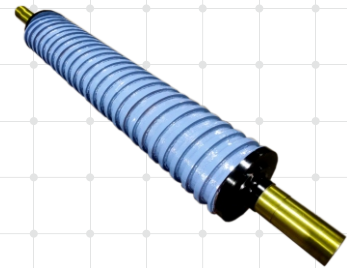
Bowl Hub for BHEL  
make XRP-763 Coal Mill



# RECONDITIONING / REFURBISHING



Various types of APH Gearbox



Wobbler Shaft



Bowl & Bowl Hub for  
BHEL make XRP-803 1/2  
HP Coal Mill



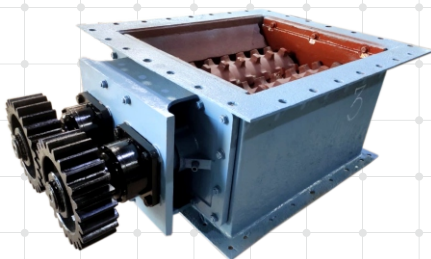
Rebabbiting of White  
Metal Bearing



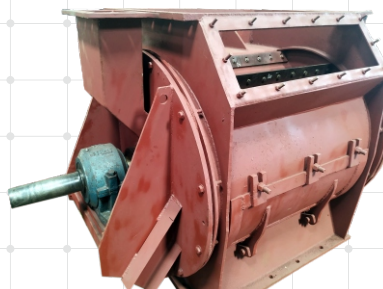
Separator Body for BHEL  
make XRP-763 Coal Mill



Gear box for Coal Mill



Clinker Grinder for AHP



Rotary Air Lock



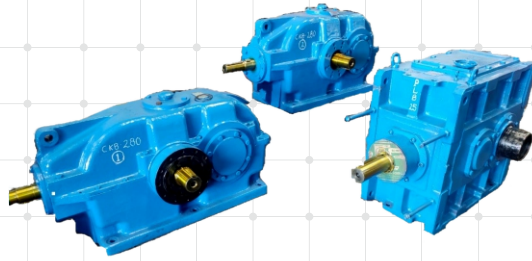
CW Pump Impeller



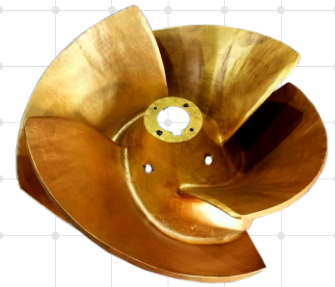
# RECONDITIONING / REFURBISHING



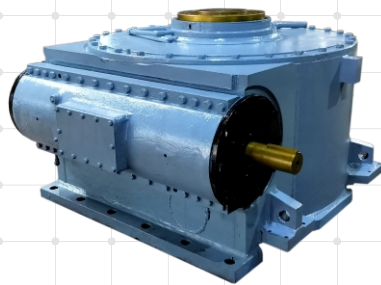
Coal Feeder Chute



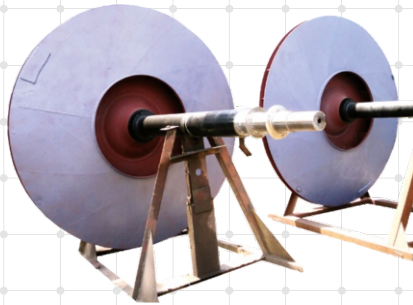
Conveyor & Stacker Reclaimer  
Gearbox for CHP



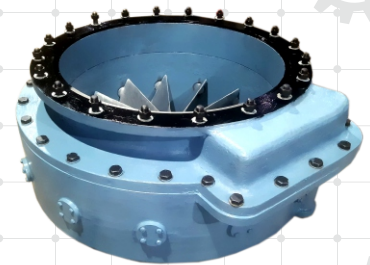
CW Pump Impeller  
(Bronze Grade)



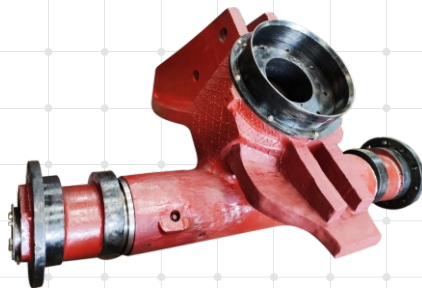
Gearbox for HP Coal Mill



PA Fan Impellers



Inlet Guide Vane Assembly  
Motorized (German Design)  
for River Water Pump



Journal Head Assembly for  
Bhel make XRP 1043 Coal Mill



Reblading of ID Fan Impeller



Vacuum Pump

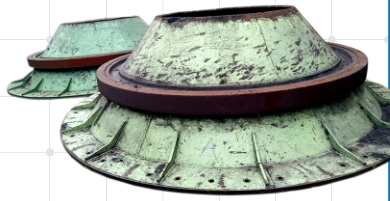


Vertical Cooling Water  
Sump Pump

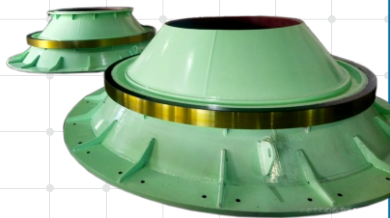


Vertical Pump  
Assembly for  
Water Pump

# BEFORE - AFTER RECONDITIONING / REFURBISHING



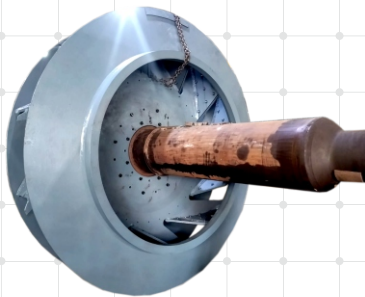
**BEFORE / Discharge & Feed End Spider for Rotary Breaker**



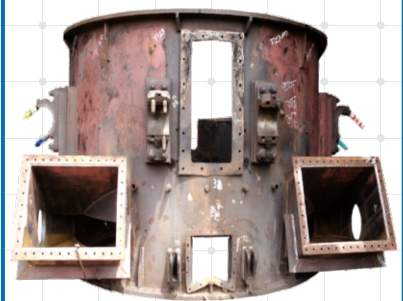
**AFTER / Discharge & Feed End Spider for Rotary Breaker**



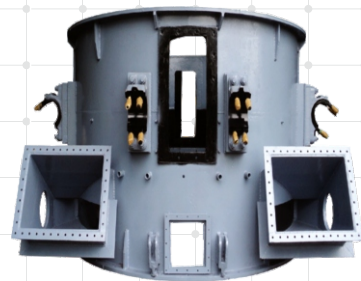
**BEFORE / ID Fan Impeller**



**AFTER / ID Fan Impeller**



**BEFORE / Separator Body**



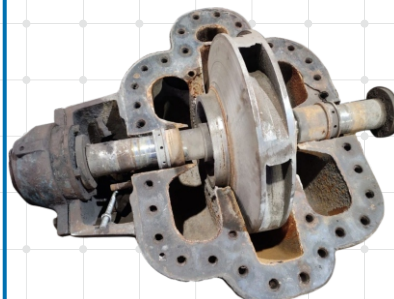
**AFTER / Separator Body**



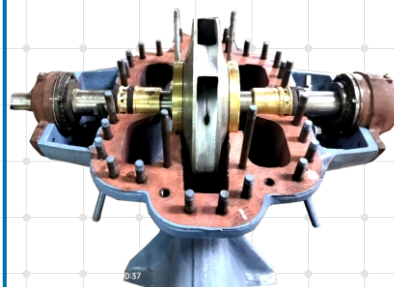
**BEFORE / Separator Rotor**



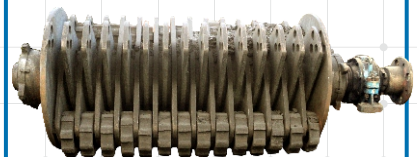
**AFTER / Separator Rotor**



**BEFORE / HP Pump**



**AFTER / HP Pump**



**BEFORE / Crusher Rotor Assembly**



**AFTER / Crusher Rotor Assembly**

# WHY CHOOSE HI-TECH

There are many facets that give us edge over the competition.

Here are few of them:



## Hi-Tech Manufacturing Facility

We have strategically located, excellent manufacturing facility with machineries equipped with leading and cutting-edge technology.



## Best Quality

We deliver highest quality products, exceed clients' expectation and ensure customer satisfaction.



## Cost-Effective Products

While maintaining highest quality, we ensure that our products are cost-effective.



## Quick Turnaround Time

We follow a diligent work plan and well-planned schedule. Our innovative and technically sound engineers with perfect combination of experience and expertise deliver on time, every time.



## Excellent Team

We have motivated and committed team with highly efficient organizational structure. Our Dedicated Team for each speciality such as Design, Development, Re-engineering, Manufacturing, Testing, etc. works efficiently on complex & intricate products.



## Customer Service

We provide after sales service on site for our manufactured/reconditioned products. We also provide draftsman on site for critical items drawing development during shutdown at short notice.



# OUR ESTEEMED CLIENTELE

## POWER SECTOR



GE POWER



## CEMENT SECTOR



## STEEL SECTOR





# HiTech

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HI-TECH MACHINERY

## WORKS

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