



**ALWAYS
INSPIRING**

FOUNDRY & HEAVY STEEL FABRICATION

Commitment for Better Tomorrow

BEC Foundry & Fabrication



**Solution for Railways,
Mining & Aggregate Industries**

Engineering the Future

Message from Managing Director

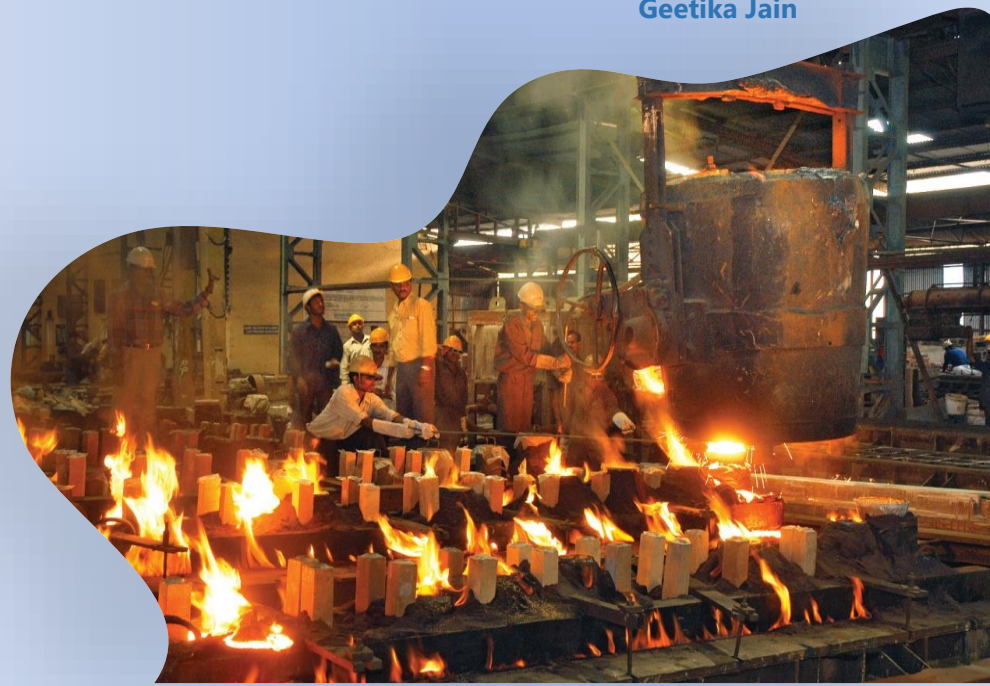
BEC Foundry & Fabrication is committed to excellence in Quality and Delivery of Quality Castings Equipment, Machined Parts through dedication and competence. We at BEC have prime objectives towards Ethical and Professional Business practices and enjoy total Customer Trust. Riding on the trust vested by our Customers, the Company has been steadily growing and widening its product range. We have identified Export as a powerful tool to strengthen our technological talents and heighten competitiveness.

The economic growth in India has opened up big challenges for the Team like a steady increase in Output, growing needs for the best in Quality, and speedy product development. It offers new opportunities to compete, succeed and lead. This rapid growth has only reinforced BEC's resolve and its inherent ability to meet customer satisfaction. The future of BEC is bright with the expertise, BEC has gained over the years, it firmly believes in the repetition of exponential growth and continual improvements with fast-paced technological advancement in the years to come.

Our Code of Conduct guides our actions and decisions as individuals and as a Company. I expect each of us to personally commit to doing what is right, regardless of the impact on a specific transaction or short-term working relationship.

We secure business based on honest competition which contributes to the success of our company and our clients. We compete in full compliance with all applicable laws and regulations. We support worldwide efforts to combat financial corruption and financial crime.

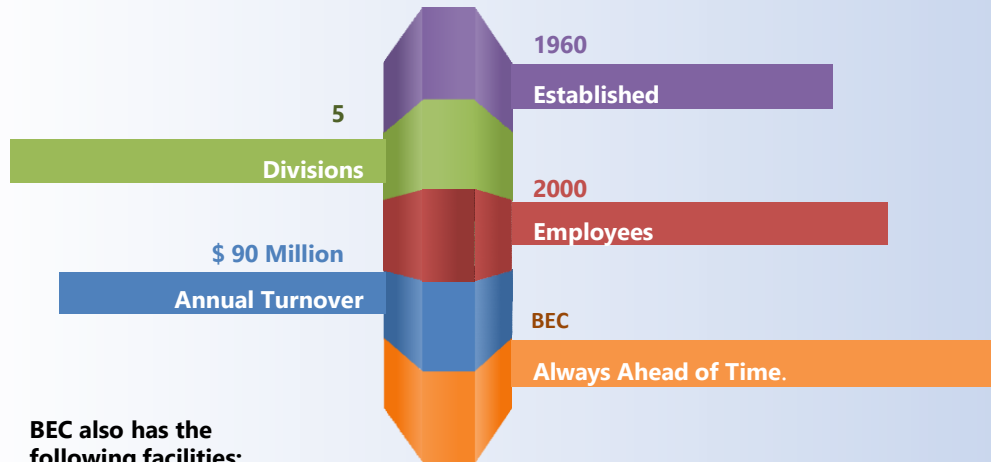
Geetika Jain



BEC - Group Companies

	Foundry & Fabrication Division Integrated Foundry & Fabrication Facility	
	Project Division EPC & Turnkey Projects	
	Engineering Division Manufacturing of Engineering Equipment's	
	Fertilizer Division Manufacturer's of SSP Pesticides & Plant Regulator	
	Food Division Food & Dairy Processing cum Packaging Plant	

Certified with ISO 9001:2015, ISO 14001:2004 and OHSAS 18001:2007



BEC also has the following facilities:

Heavy Engineering Division - BEC has diversified into the production of Locomotive Shell and other Components for Electric Locomotives for Indian Railways and other Countries. It is an outstanding name well-known for fabrication of Heavy Engineering and for other industrial core sectors.

Steel Foundry - BEC Steel Foundry has a State-of-the-Art three facility set up in URLA & Raipur. The Foundry has earned the distinction of Quality Assurance Certificate (M-1003) from AAR (Association of American Railroads), making it the only Foundry in India qualified to export railway castings.

BEC Group is amongst India's leading Engineering conglomerates operating in the core industrial sectors of Railway, Mines, Mineral, and Metals, Heavy Engineering, Steel Plant, Cement Plant, Power Plant, Fertilizer, Infrastructure, Defence, Non-Ferrous, Shipping, and EPC. It has three Manufacturing Units in Bhilai and Raipur in the central part of India.

BEC is perceived as a resourceful group that acts as a complete one-stop destination for the entire track requirement of the railway. We are proud to be associated with Indian Railways, one of the largest state-owned railway networks in the world, and also export to different developed and under-developed countries producing superior products that enhance rail journeys at every stage.

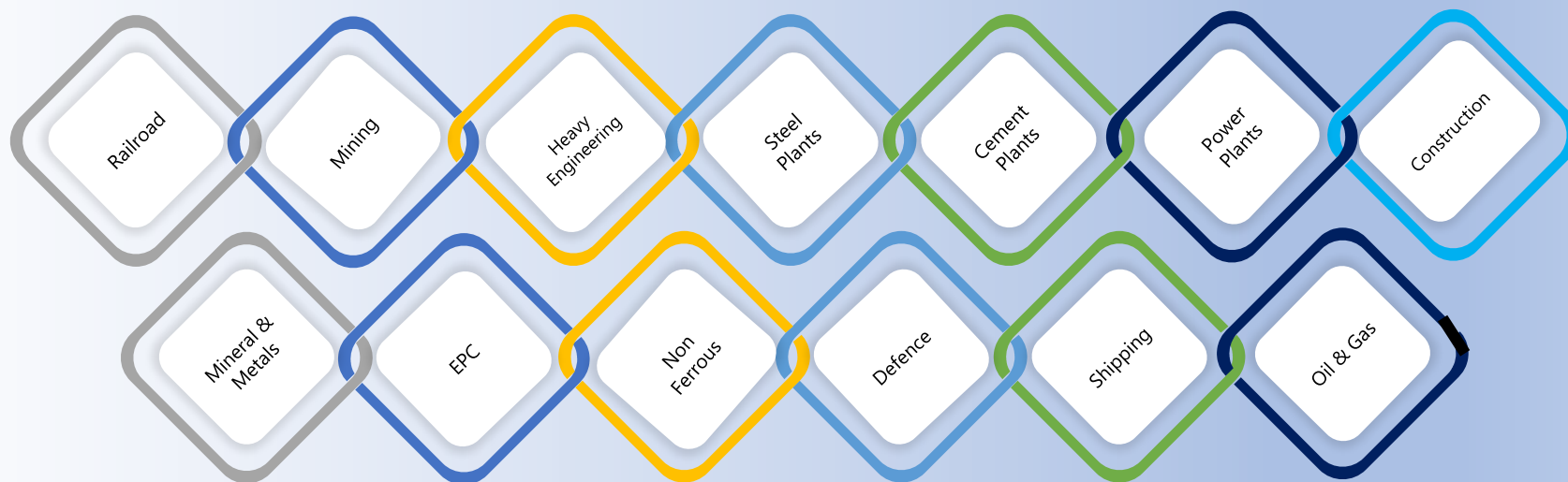
Besides featuring quality material, and providing experienced and reliable services, BEC satisfies the highest requirement with regard to innovation cost-effectiveness, and performance. Quality and complete customer satisfaction are our core values and we strive to live by them. These values give BEC an edge and are viewed as a great source of convenience by clients. Supplementing BEC's expertise is a wealth of International experience. Its association with international clients has further strengthened its position as a leader in providing world-class services, technical solutions, and products to its customers throughout the world.

Our objective of Customer Satisfaction is through innovation and an effective quality management system which is a continuous process. We ensure quality as the hallmark in our every activity and process. Our efforts in the field of quality management have been well recognized as per International standards.

Getting repeated orders from these customers further reflects our quality, ethics, and commitments.

Excellence in Manufacturing

Market Segments



Our offering includes:

- Engineering Analysis & Product Part Development
- Tooling & Fixturing Design – Manufacturing
- Manufacturing Solutions: Foundry – Fabrication – Machining – Assembly
- Testing & Prototyping
- Advanced Facilities for Design & Development
- Supervision of Installation and Commissioning
- After Sales - Services

Owing to the priority to serve flawless quality products, various stringent quality tests are conducted.

We are committed to:

- Supply of quality products on time.
- Effective utilization of resources.
- Integrity in operations
- Continual improvement of processes and systems.
- To improve the quality is an endless process at BEC, we always welcome Customer's suggestion to work as a team with our customers to improve the quality.



Delivering and our Growth Strategy

Mission



Our mission is to build our name as an organization synonymous unparalleled in quality, price, delivery and accountability. BEC continually invests in new technologies and quality driven programs. We intend to venture into the market by manufacturing world-class products for engineering industries to the complete satisfaction of our customers.

Corporate Philosophy



It is our aim as a company to establish a comprehensive environment of trust and growth that is recognized by its customers, business partners and society for its technologically innovative products, services, engineering design, financial sustainability and fulfilled employees with a zeal for continual improvement.

Sustainability



We continue to focus on sustainable business activities providing products and services that make sustainable contributions to our people and planet.



BEC is committed to social causes and their development. Our Corporate Citizenship commitments are anchored in our core values, and our code of Business Ethics and ultimately reflects in the actions of our people. We work to make a sustainable, measurable difference to the communities in which we work and live.

The Company takes a comprehensive approach to corporate social responsibility that aligns with its enduring values and maximized the positive change that employees can influence around the world. The Company will strive to operate the business with the highest standards of corporate social responsibility.

Vision



BEC family is committed to strengthen its growth for its engineered products and to provide value added products and services for its customers on a global platform through quality conscious, business excellences, innovation and technology up-gradation.

Employees



BEC workforce comprises of qualified professionals having undaunted commitment towards total quality management and our strength lies in standardization of class products.

Environment



In its pursuit of “Providing world class products”. BEC is committed to the protection of the Environment in all aspects of its operations. To conserve the environment, we shall Be committed to continual improvement through reduction and prevention of wastes; pollution of air, water and land contamination; and consumption of natural resources.

CSR



CSR
Corporate
Social
Responsibility

BEC is committed towards social causes and their development. Our Corporate Citizenship commitments are anchored in our core values, our code of Business Ethics and ultimately reflects in the actions of our people. We work to make a sustainable, measurable difference to the communities in which we work and live.

The Company takes a comprehensive approach to corporate social responsibility that aligns with its enduring values and maximized the positive change that employees can influence around the world. The Company will strive to operate the business with the highest standards of corporate social responsibility.

Leading Solution in Rolling Stock



Passenger Coach
Locomotives
Wagons
EMUs, MEMU & DEMU
Metro

Railways

Global initiatives

Growth with Technology Partnership



Countries	Technology & Partnership
USA	<ul style="list-style-type: none"> For Track Crossings since 1999 Technology co-operation Weldable Crossing Locomotive parts for EMD Locos since 2002
USA	<ul style="list-style-type: none"> In development of Coupling system for Rolling Stock since 2018
USA	<ul style="list-style-type: none"> For Tri-Axle & Two-Axle Bogie Frames since 2008
USA	<ul style="list-style-type: none"> Fabricated Crankcase & Locomotive Bogie Frame
Korea	<ul style="list-style-type: none"> Manufacturing of Metro Bogie Frames for DMRC-India
Japan	<ul style="list-style-type: none"> For manufacturing of Cast-House Machines for High Capacity Blast Furnace since 2015.
Ukraine	<ul style="list-style-type: none"> For setting of the Technological Coke-Making machine & Coke Dry Quenching Plants in India since 2004
Russia	<ul style="list-style-type: none"> Tyre dismounting and mounting machine for OTR tyres

1980: Rolling Stock

- Freight Car Bogie Frames
- Freight Car Couplers & DG
- Cast Components

1990: Track

- Cast manganese Crossings
- Turnouts

2000: Export & Import Substitution

- Export Freight Car Bogies to Ukraine, Kenya & Locomotive Bogie to the USA
- Export of Frogs & Inserts to PRS
- Cast Bogie Frames for Diesel & E – Loco to IR
- Special Couplers for Freight Car

2010 – Till Date: Expansion, Diversification, Collaboration & Value Added Products

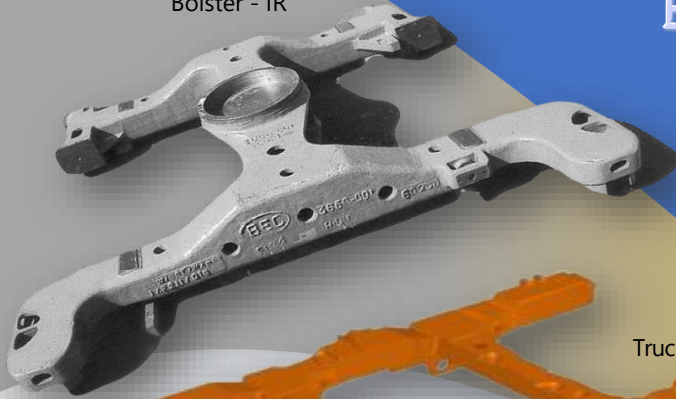
- From Cast Based to Fabrication based Product export for Rolling Stock
- Increase in volume of export of frogs & insert to PRS
- Technical Collaboration, Supplier Purchase agreement & Long term agreement with OEMs globally in Rolling Stock & Track Items

BEC association with Railways
Its glorious journey since 1980

Cast Bogie Frames

Bolster for E-Loco & D-Loco

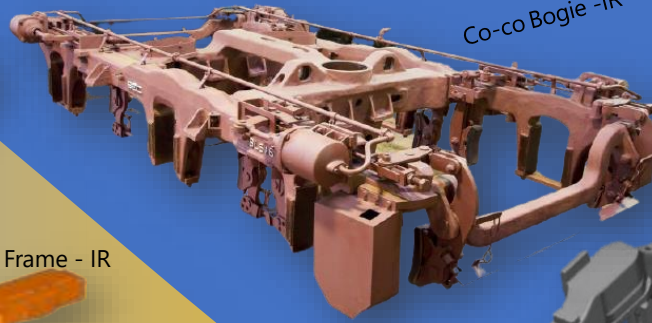
Bolster - IR



Truck Frame - IR



Co-co Bogie -IR



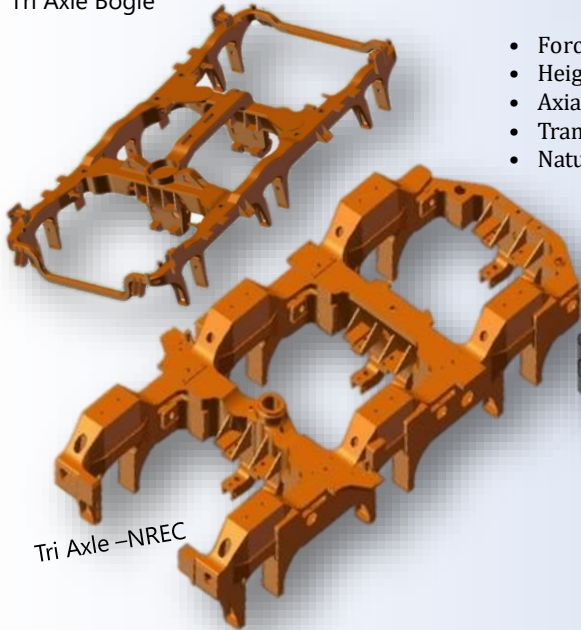
Flexi-Coil



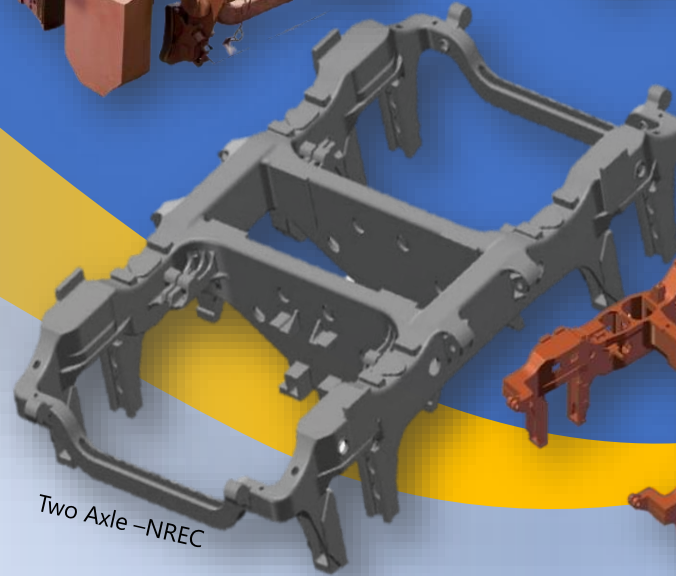
Features of our bogie test press include:

- Force and displacement
- Height under load
- Axial rigidity
- Transversal rigidity
- Natural axle deviation under load

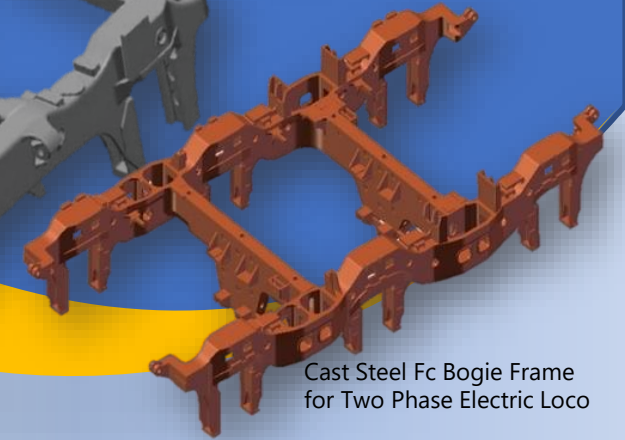
Tri Axle Bogie



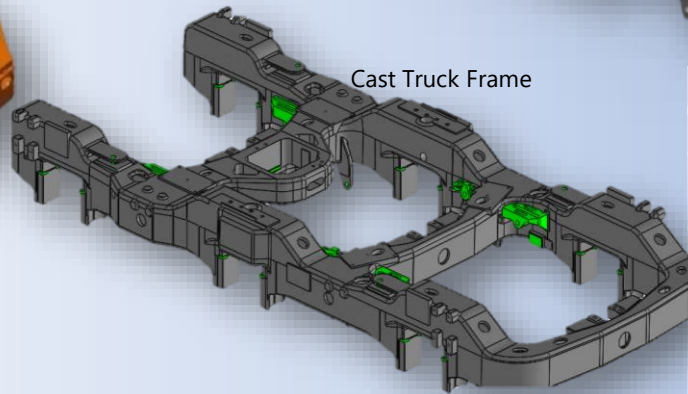
Two Axle -NREC



Cast Steel Fc Bogie Frame for Two Phase Electric Loco



Cast Truck Frame



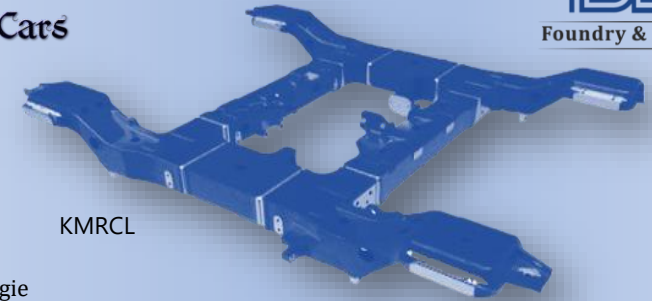
Tri Axle -NREC

S No	Type of Truck Frame	Customer	Qty
1.	Cast Truck Frame	Indian Railways	1700
2.	Cast Steel Fc Bogie Frame for Two Phase Electric Loco	Indian Railways	120
3.	Cast Steel Tri-axle Co-Co Bogie Frame	Indian Railways	750
4.	Cast Steel Two & Three Axle Bogie Frame	NRE- USA	250
Total			2820

Versions of Fabricated Bogie Frames for Diesel & Electric Locomotive, Passenger Coach & Metro Cars

**Complete Shell and Bogie Assembly for
Railway Coaches (LHB, DEMU & Metro)**

HTSC – FAB2 – Bogie



KMRCL

ATHS – Bogie

S. No.	Description of Bogie	Usage	Customer
01	HTSC – FAB2 – Bogie Fabricated	Diesel Locomotive	Indian Railways
02	ATHS – Bogie Fabricated	Diesel Locomotive	Indian Railways
03	LHB – Bogie Fabricated	Passenger Car's	Indian Railways
04	WDG3A – Bogie Fabricated	Diesel Locomotive	Indian Railways
05	KMRCL – Bogie Fabricated	Metro Car's	Indian Railways
06	DMRC – Bogie Fabricated	Metro Car's	HRC
07	GFC – Bogie Fabricated	Diesel Locomotive	North America

LHB - Bogie

DMRC – Bogie

GFC – Bogie

Truck Frame

WDG3A – Bogie

**Complete Shell & Bogie Assembly for Railway Coaches
(LHB, DEMU & METRO)**

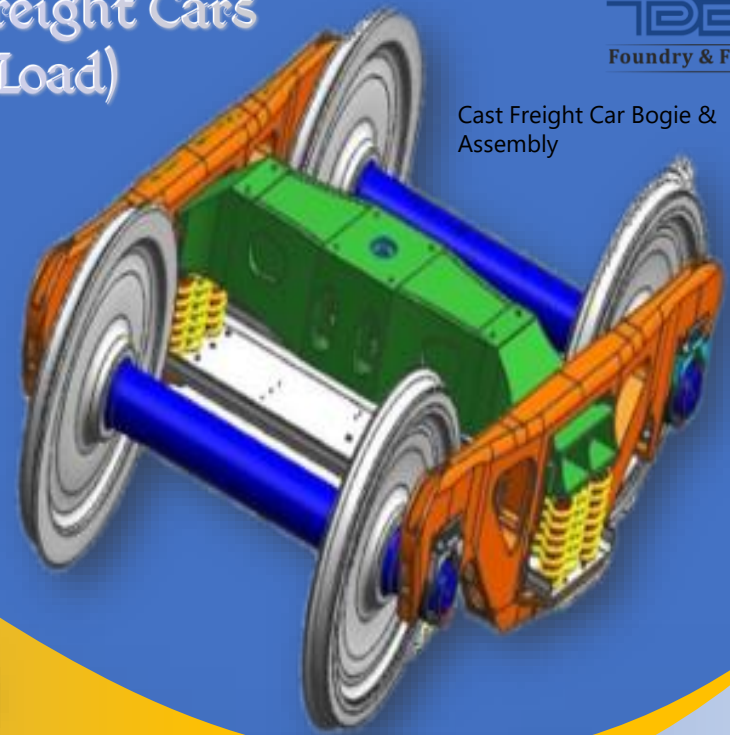
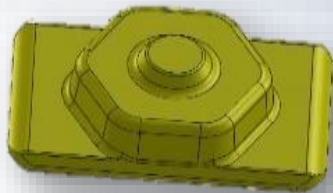
Cast Bogie Frames for Freight Cars (up to 25 Ton Axle Load)

Steel & Alloy Cast Parts in machined conditions for Rolling Stock.

Cast Freight Car Bogie & Assembly

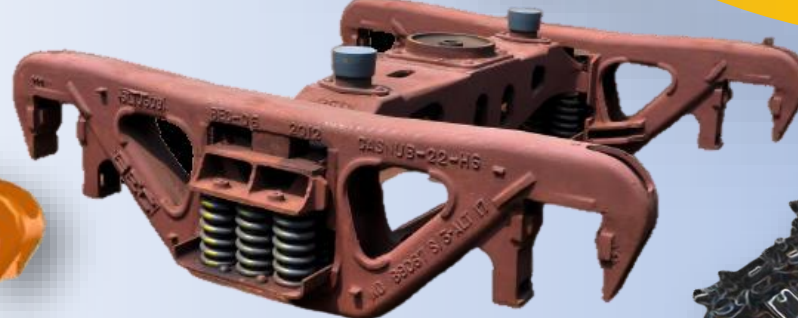
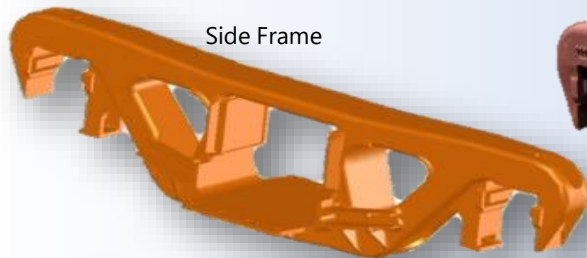


Bolster

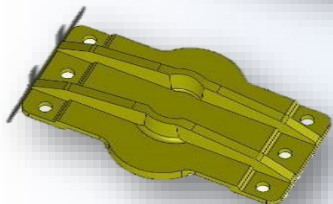


Casub

Side Frame



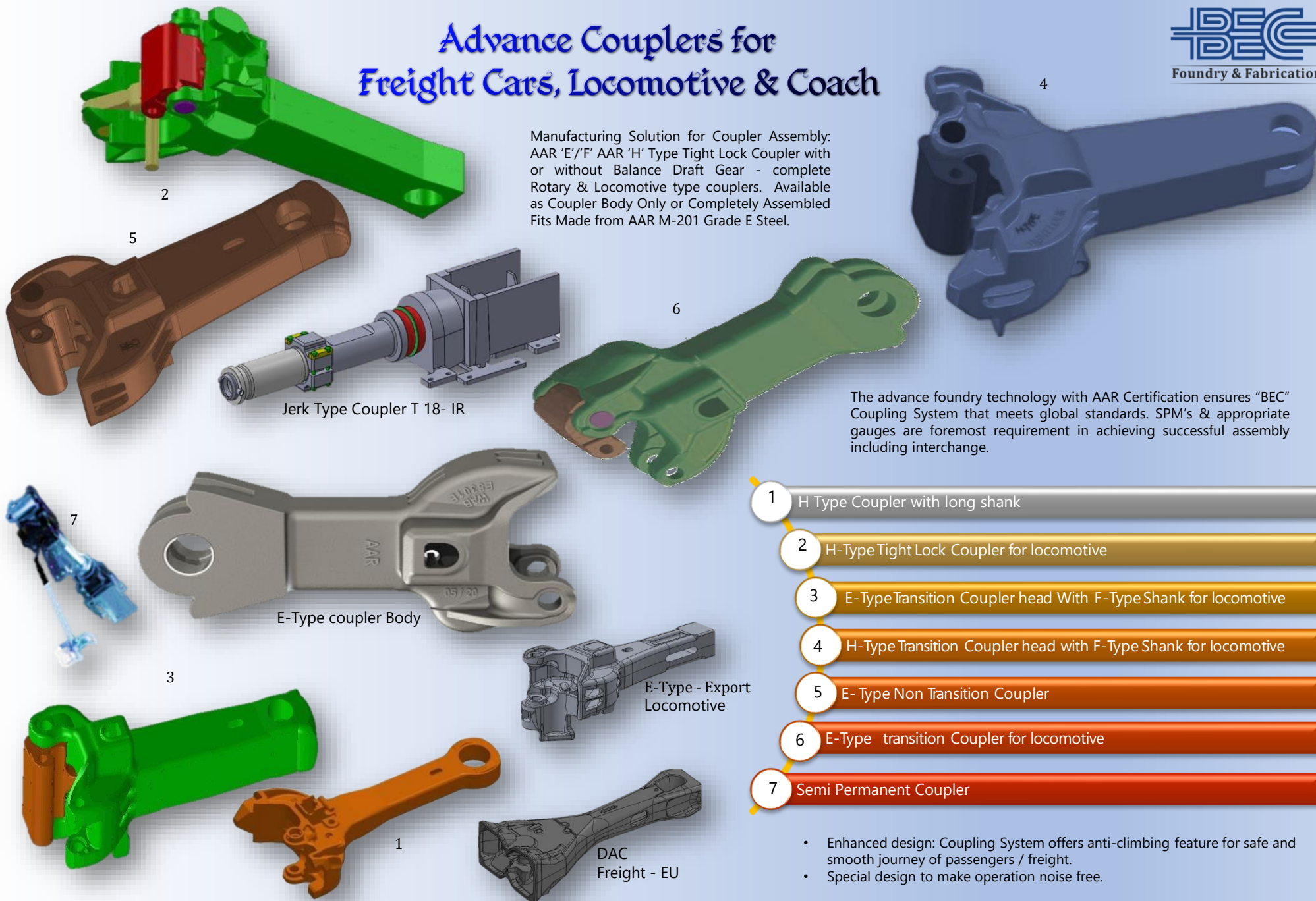
Bogie Bolster



Supplied 25K Freight Car Bogie Frames to IR, Ukraine & Kenya

Advance Couplers for Freight Cars, Locomotive & Coach

Manufacturing Solution for Coupler Assembly:
AAR 'E'/'F' AAR 'H' Type Tight Lock Coupler with
or without Balance Draft Gear - complete
Rotary & Locomotive type couplers. Available
as Coupler Body Only or Completely Assembled
Fits Made from AAR M-201 Grade E Steel.



The advance foundry technology with AAR Certification ensures "BEC" Coupling System that meets global standards. SPM's & appropriate gauges are foremost requirement in achieving successful assembly including interchange.

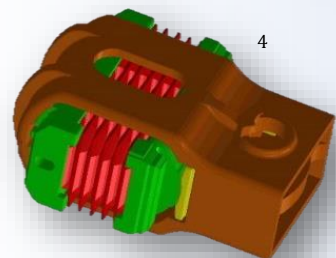
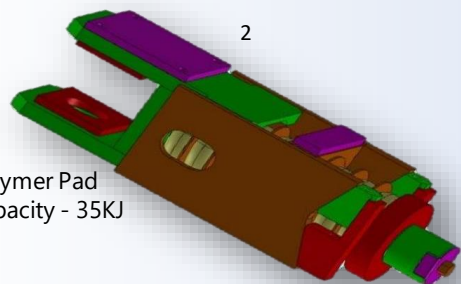
- Enhanced design: Coupling System offers anti-climbing feature for safe and smooth journey of passengers / freight.
- Special design to make operation noise free.

High Capacity Draft Gear for Freight Cars, Locomotive and Coach



Manufacturing Solution for Draft Gear for Freight & Passenger Coach, Main Coupler Components & Replacement Parts: Knuckle, Yoke.

❖ Polymer Pad
❖ Capacity - 35KJ



Natural Rubber Pad
Capacity - 36KJ



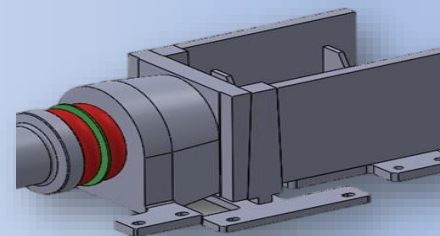
Natural Rubber Pad
Capacity - 68KJ



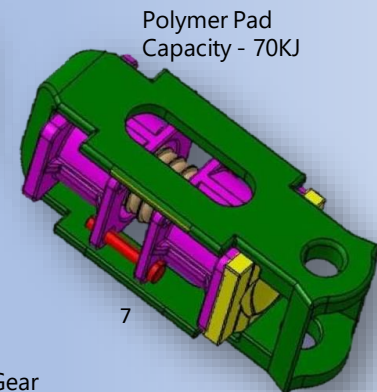
Natural Rubber Pad
Capacity - 61KJ



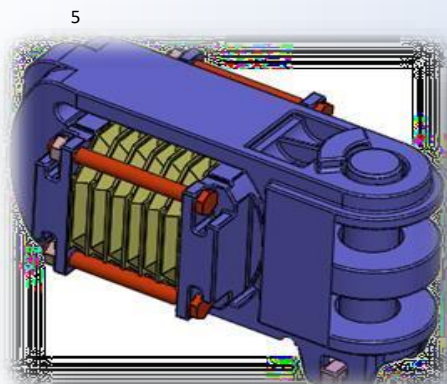
Freight & Locomotive - IR
49-BD



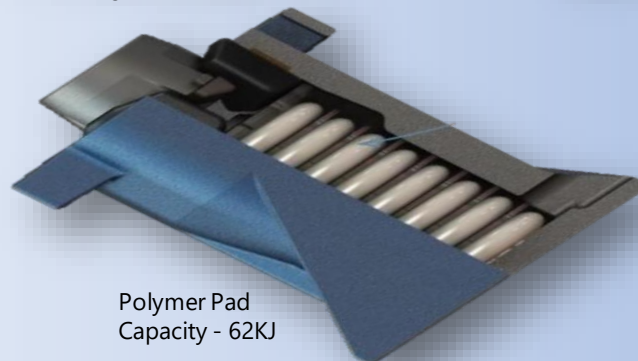
Jerk Free Draft Gear
T - 18 - IR



Polymer Pad
Capacity - 70KJ



❖ Natural Rubber Pad
❖ Capacity - 38KJ



Polymer Pad
Capacity - 62KJ



Soft Draft Gear
Locomotive - IR

- 1 WD -71- BD-15-Draft Gear For Freight Rail Car
- 2 Balanced Draft Gear For Passenger Coach
- 3 Friction Draft Gear For Freight Rail Car
- 4 Mac Draft Gear For Locomotive
- 5 Pack Draft Gear For Locomotive
- 6 RF-361 Draft Gear For Freight Rail Car
- 7 Soft Draft Gear For Passenger Locomotive
- 8 Semi-Automatic Draft Gear for Locomotive

Track Crossings for Indian Railways & US Railroad with more than 95 variants



Cast Mn-Steel Crossings
For 52 Kg & 60 Kg Acute &
Obtuse Crossings

Cast Mn-Steel Bridge Joints,
Weldable Crossings, Scissors &
Diamond Crossings, EDH on
Crossings

Welding Process:

SMAW
SAW
FCAW
GMAW

Advanced Welding Techniques:

SAW - Twin/Tandem/2G /,NG
GTAW - Semi-Auto/Mechanised

Exposure on Various Metallurgy:

Carbon Steel

Welding Procedures:

ASME Section IX
ISO15614
IBR
IS

Cast Mn-Steel
Frogs & Inserts

Installation of
Crossings

Technical Capabilities

- Weldable & Conventional Crossings
– up to 6,700 mm length (Explosion depth
hardening curved & straight-line)
- Metro Rail Track Crossings
- Heavy Haul Track Crossings
- Diamond Crossings
- Scissor Crossings

Machining of Rails

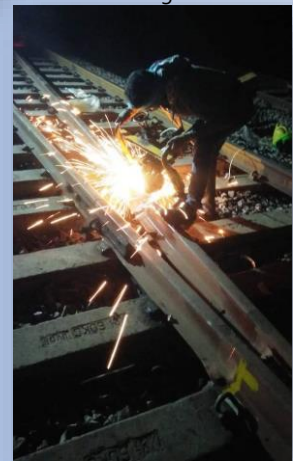
- Symmetrical,
- Asymmetrical
- All Steel Grades

Total: 95 Variants

Railway Export –

- 12 types
- Frogs – 25 types.
- Inserts – 26 types.
- Spring Frogs – 04 types
- Universal Crossings – 02 Types

Insert: 30	Frogs: 41	I-Beam: 7	Mono Block: 2	CMS: 14	W-CMS: 2
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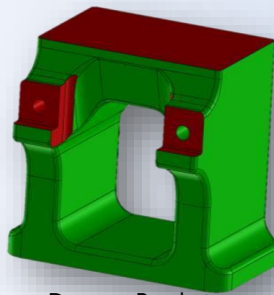


Components of Rolling Stocks for Indian Railways and Exports

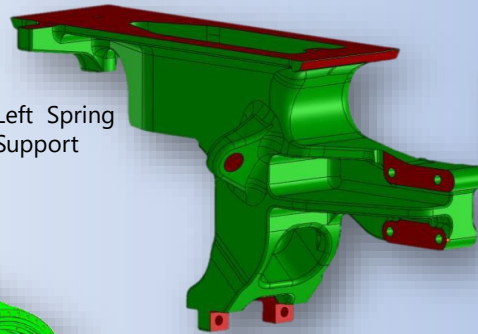
Knuckle



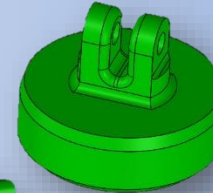
Damper Bracket



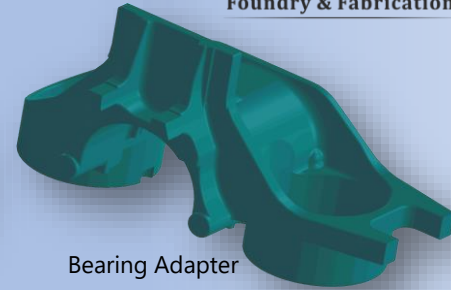
Left Spring Support



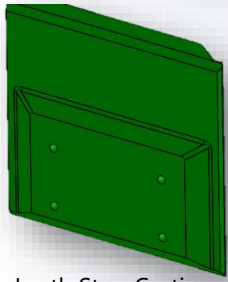
Pilot Casting



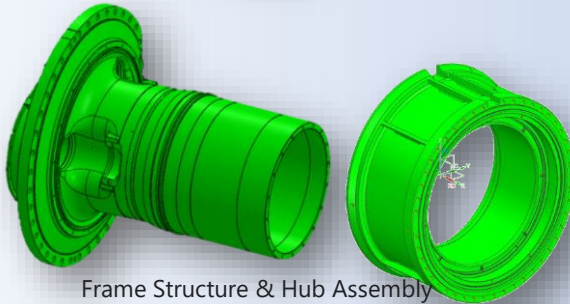
Bearing Adapter



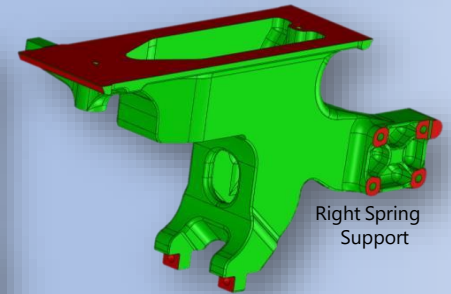
Leath Stop Casting



Frame Structure & Hub Assembly



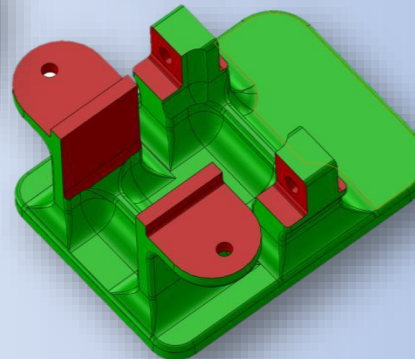
Right Spring Support



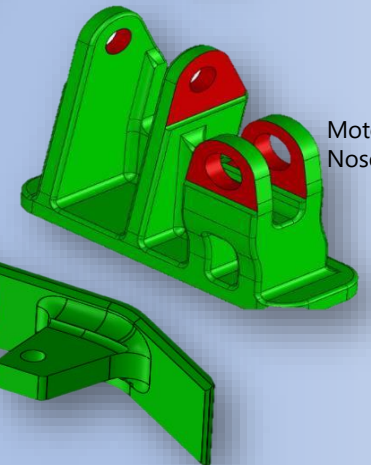
Yoke



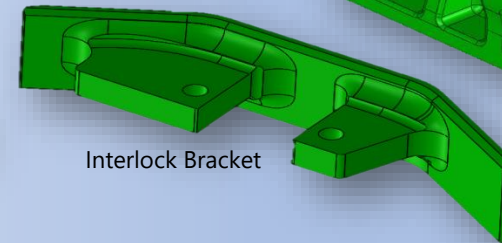
Primaryseat with rod Bracket



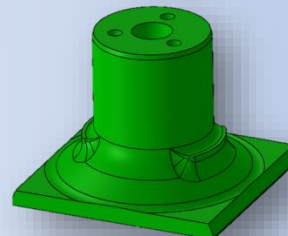
Motor Rod & Nose bracket



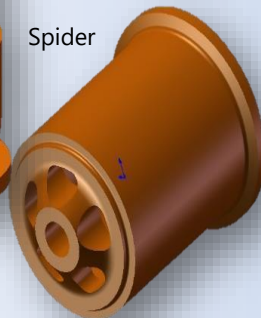
Interlock Bracket



Pivot Pin



Spider



Striker



Draw Bar



Critical parts for Rail Rolling Stock



Crankcase

Fabricated Crankcase & Engine Block for 16, 12, 8 Cylinder Power Pack

Manufacture and supply of a Shell assembly for Locomotive including Under-Frame, Side Wall & Roof etc. typically constitutes of fabrication of the various parts, assembly, finish painting. Right from raw material procurement up to dispatch, every piece undergoes 6 stringent quality checks by the customer.

- This comprises of the side panels of the locomotive fabricated out of special corrosion resistant 6mm thick steel plates. The critical part in manufacturing this item is to maintain the straightness within tolerance levels.
- Roof Assembly comprises of four parts namely Roof over Cab end No 1, Roof over cab end No 2, Transformer Roof & BR Roof. We ensure not only perfect integration of the four parts of the roof but also perfect fitment of the roof over the side panels. Ease in fitment of various components such as pantographs, insulators etc. on top of the roof also need to be considered.

BEC is amongst the few manufacturer and suppliers globally to manufacture fabricated Crankcase & Engine blocks. 5 – Axes machining, tandem SAW welding and precision measurement which brings out cost savings of approximately 66(43%) for Diesel, Locomotives & other modes of transportation. A dedicated production line is set – up to meet the global technical requirement.

- CrankCase & Engine Block for 2 – Stroke & 4 – Stroke Engines up to 16 Cylinders.
- Oil Pan
- Base Frame.



Infrastructural inputs like Special Purpose Portal Milling Machine, Angular Boring Machine, and Coordinate Measuring Machine are provided to ensure accuracy of machining and achieving desired production rate. Equally important is being taken care of the tolerances of a few hundredths of a millimetre by our engineers using their extensive skills and experience.



CrankCase under Marking

Tooling & Fixtures



Inside Box Weld Station



V-Set Up Weld Station



Outside Auto Weld Station



Weld Manipulator Station



Squirrel Cage



Inside Auto Weld Station



Top Deck Assembly Station



Retainer Cluster Assembly Station



Locating Pilot Air Box Station



END Plate Sub Assembly Station



MFM to Spacer Fixture



Rolling CrankCase Station

Our state-of-art Infrastructural inputs ensure accuracy of machining and achieving desired production rate and durability and efficient performance at its user end. We are firm believers in investing in the latest technology and the constant upgradation of the same, meeting International Standard. BEC possesses a rich, multi-decade experience in the Manufacturing of critical railway and other core sector components.

In Mining Since 1990

We have been a leading manufacturer of Mining Equipment in the Indian market for over three decades. Mining Equipment has a robust quality policy in place at all of our facilities meeting stipulated and stringent quality standards. We work closely with our customers to provide options that add value and can be adapted to your specific requirements. Quality, reliability, and innovative technologies ensure that mining operations are safe, time, and cost-efficient at all times – even under the toughest of conditions.

BEC can produce durable components that the mining industry needs to extract materials and minerals. Our technicians use in-house precision machining equipment to produce components. Additionally, our highly skilled welders carry multiple certifications to comply with safety requirements and deliver parts according to your project specifications. Then, components go through a rigorous inspection process to make sure they are functional and safe. We are a full-service manufacturer and complete all stages of the production process in our facility.



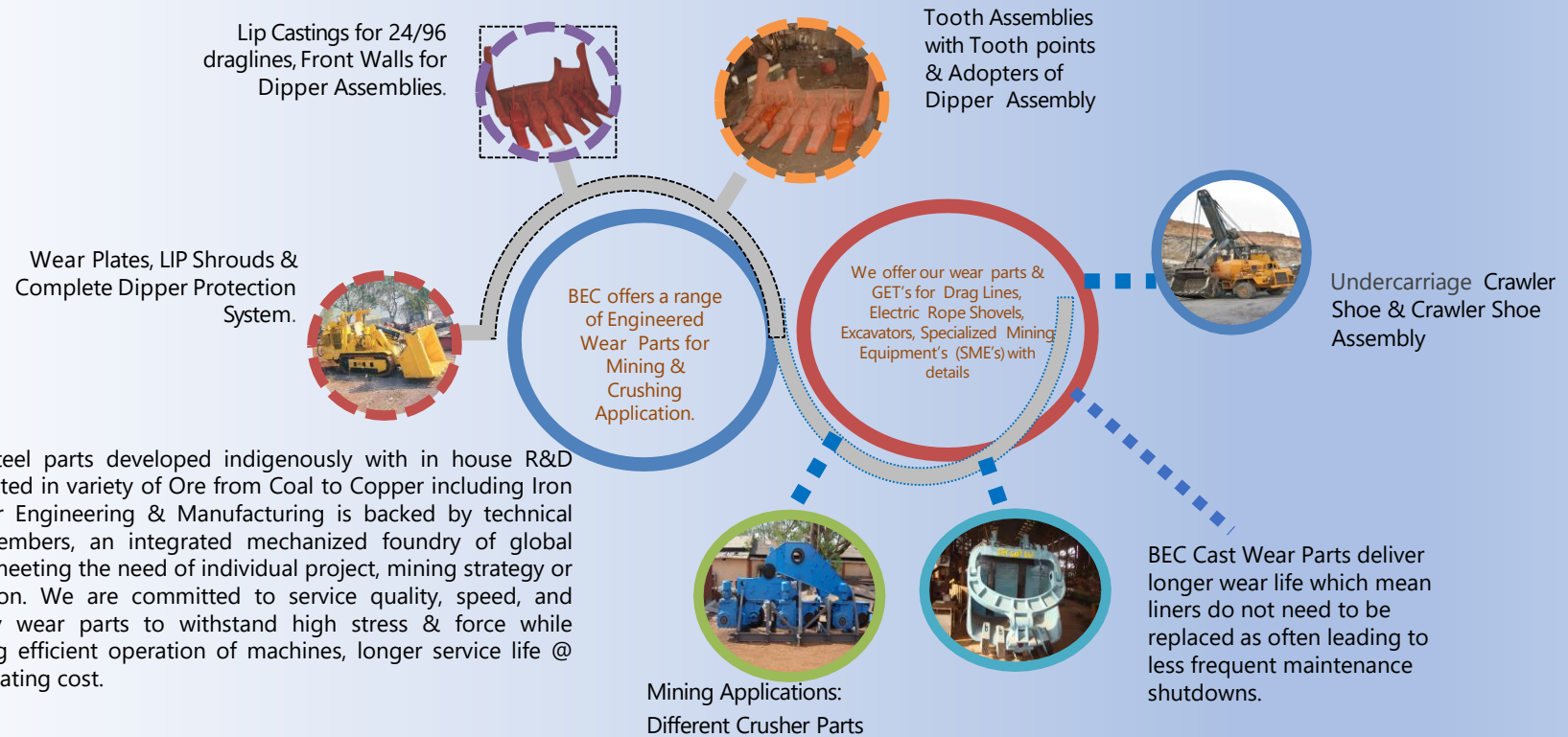
Mining Product Range

Cast Wear Parts & GET's	
Bucket Assembly for Excavators, Shovels, Loader, Reclaimers up to 20M3 Capacity	
Bucket Management Solution: Rehab, Refurbishment	
Crawler Shoes for Shovels & Excavators	
Lip Castings for Dragline	
Coal Crushers: Feeder Breaker	
Technological Structural and assemblies for MHE	
New Initiatives: Tire dismantling Device (U/D)	

BEC supplies complete cast solutions from design to delivery used in the mining industry with the right specifications and durability. BEC Wear Package Solution for Mining & Aggregate industries ensures complete inter-changeability with assured performance. We can manufacture surface and underground mining components with durable materials, proper build and lasting finish. Our precise components are reliable in mining environment conditions. You can count on us for quality control in every casting, fabrication and machining process.



Cast Wear Parts for Mining Industry



These Steel parts developed indigenously with in house R&D while tested in variety of Ore from Coal to Copper including Iron Ore. Our Engineering & Manufacturing is backed by technical team members, an integrated mechanized foundry of global repute, meeting the need of individual project, mining strategy or application. We are committed to service quality, speed, and reliability wear parts to withstand high stress & force while providing efficient operation of machines, longer service life @ low operating cost.

BEC has established itself as a quality Mining component manufacturer. We take utmost care

- Increase efficiency of the lining equipment.
- Eliminate unwanted shutdown.
- Reduce maintenance costs.
- Increased flow ability of materials
- Savings in cost/ton of material handled.
- Reduction in fines generation, degradation, and noise pollution.

We strongly believe in providing total customer satisfaction through excellence in our products and process development.

Mining & Mineral



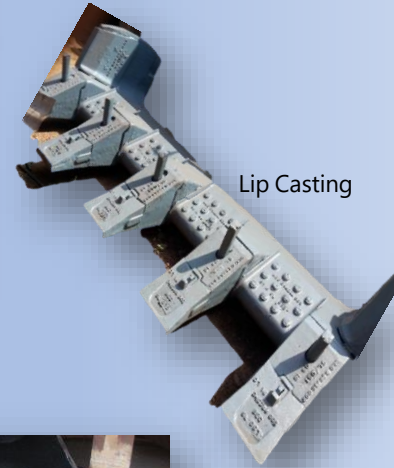
Track Pad -70-inch-Crawler-Shoe Pad



Track Pad - 70 Inch CrawlerChain Assembly



Dipper Front Wall



Lip Casting



Shovel Bucket Assembly

Dipper Front Wall



Cast Sprockets

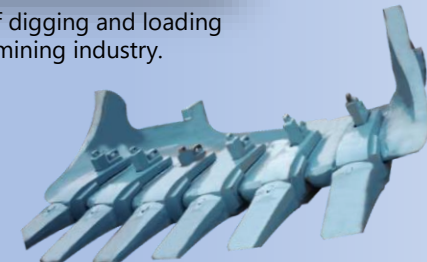


Lip Casting

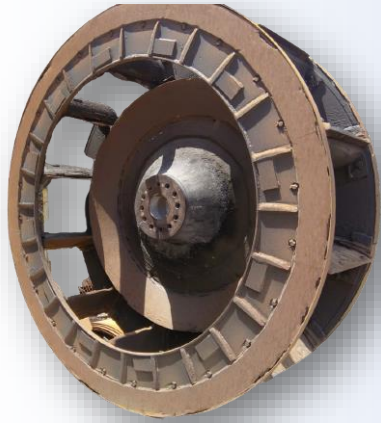


Lip Casting with centre shrouds system for more efficient production & superior reliability.

Front Dipper Wall made of Manganese Steel using quality raw material designed with an exceptional balance of digging and loading performance offered by us are well known for their quality and durability and is being appreciated in the mining industry.



Mining Equipments



Bucket Wheel

BEC is one of the leading suppliers of manganese wear castings and fabricated wear parts for mining equipment that are used in mineral and aggregate industry that include buckets, shovels, teeth, dragline parts, grinding mill liners, crawler shoes and wear plates etc. As an ISO certified company, BEC follow strict QA and QC programs that are in place at many levels to ensure quality.



Technological Structural and assemblies for MHE



Mine & Mineral Stacker Reclaimer



Bucket Assembly



Feeder Breaker



Dragline Bucket Assembly



Replacement Parts for Ore Crushers

<p>1</p> <p>Our Mechanized foundry integrated with engineering office & captive machine shops are best suitable to meet your regular requirements for specific operational needs & interchangeability.</p>	<p>2</p> <p>We are global leaders in supplying the best quality manganese steel castings. Our Manganese Steel Wear Parts for Aggregate & Mining Crushers is best in its segment & the offering includes:</p>	<p>3</p> <ul style="list-style-type: none"> • Mantle Liners for the gyratory crushers • Bowl & Mantle Liners for the Cone Crushers • Movable & Stationary Crushing Plates for the Jaw Crushers • Supplying Crusher Liners OEM's supplied plants includes Metso, Nordberg, Sandvik etc. 	<p>4</p> <p>We also work closely with the Users department in mining & crushing industry to develop best "Wear parts solutions" to achieve larger working hours without compromising on interchange & quality performance</p>
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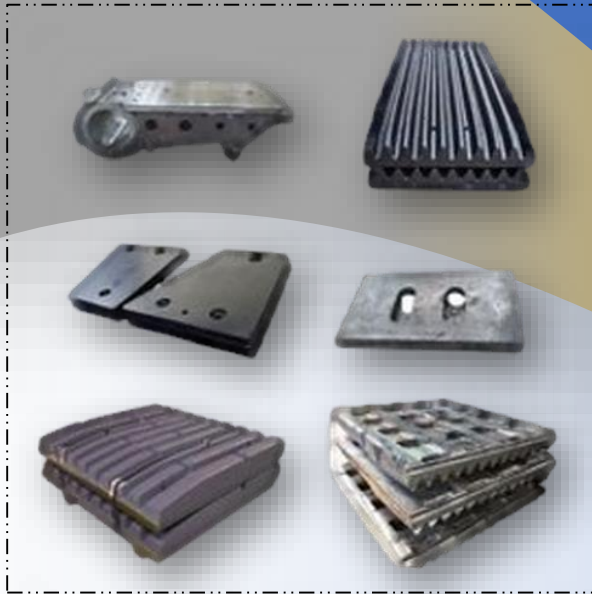
BEC is one of the leading manufacturer of specialized 'critical to operate' products for the mining and Mineral industry. We are confident in the high quality of the parts that we supply so that we can sell our components with very small margins to keep customers costs to a minimum ensuring our customer's satisfaction and to maintain excellent relationships.

We, the manufacturer of ferrous castings, especially Steel, Stainless Steel & Nickel Based Alloys, are committed to enhance customer satisfaction by complying to the requirement of QMS and Continually improve it, meeting the International Standard.

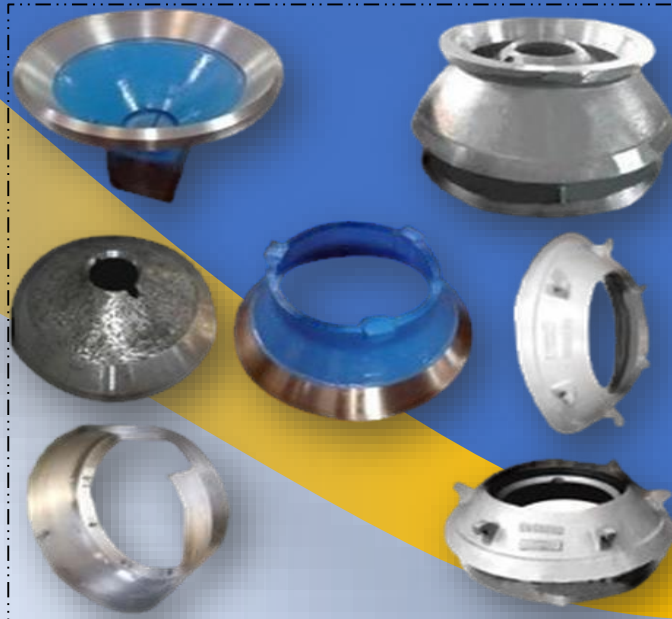
Some of the tests include are as follows :

- Raw material like scrap, Ferro alloys, sand etc.
- Chemistry of all heats
- Dimensional inspection of casting right from pattern stage through first sample to final stage inspection before dispatch.

Crusher Spare Parts



Jaw Crusher parts



Cone Crusher Parts



Hammer Crusher Parts



Crusher Roller



Grate Bar for Hammer Crusher Parts



Impact Crusher Parts

Mining & Mineral Crusher Parts

We provide CRUSHING & BULK-MATERIAL HANDLING solutions with primary machines.

BEC is a renowned Manufacturer of the widest range of Aggregate and minerals processing equipment mostly focusing on Crushing and Material Handling Equipments covering a vast spectrum in Mining & Construction Equipment field. We manufacture casting components like shovel bucket teeth, crusher hammer, liners, bucket lip etc.

Our Mining products and spare parts provide you maximum value in terms of performance, quality, safety and flexibility. We will help you to meet your production targets in smarter, faster and more efficient ways. We offer product support and Spare Parts for all the equipment supplied by us.

BEC manufacture wear resistant, replaceable Crusher parts for Jaw Crusher, Cone Crusher, Gyratory Crusher and Impactors. Our crusher components are designed to hold up under tough conditions and confident in the longevity of our components because we focus on excellence during every step of the process.



Bowl Liner



Mantle Liner



Upper Mantle



Bell and Hopper for Mini Blast Furnace



Top Charging Equipment

- General Yard Solutions
- Port Handling
- Mines
- Bucket Solutions

- Collaboration for Sensor-based Dry Mineral Sorting.
- We have multiple technology partners with whom we associate with for Turnkey System / equipment supply projects.
- Our aim is to satisfy needs of spares for mining industries for their Mining & Crushing Operations; Dragging & Excavation; Ore Handling, Refining & Smelting Operation.



Upper Mantle

Proven Design, Reliable Components

Bucket Management System



Bucket Management System is an important Initiative for "Bhilai Engineering Corporation Limited. As a proven source for the Rope Shovel & Excavator Buckets for Indian Mining Industry BEC also undertake "Repair & Maintenance of Buckets built with high proficiency by using high-grade raw material and advanced technology.

Our products are best suitable for Mining & minerals without compromising on interchange & quality performance. Our qualified technical team shall study your wear part requirements in offering the most appropriate solutions for specific applications & geographical conditions.

Our extensive know-how integrated with the latest simulation technology, choosing the best chemistry with the application of advanced foundry & process technology develops wear parts to achieve larger service hours while in operation.

The used Buckets are rehabilitate @ our integrated facilities wherein the GET's life expectancy is studied & replaced with appropriate solutions & all mechanisms are repaired/replaced to meet the assured guaranteed hours while put in operation without compromising on equipment performance.

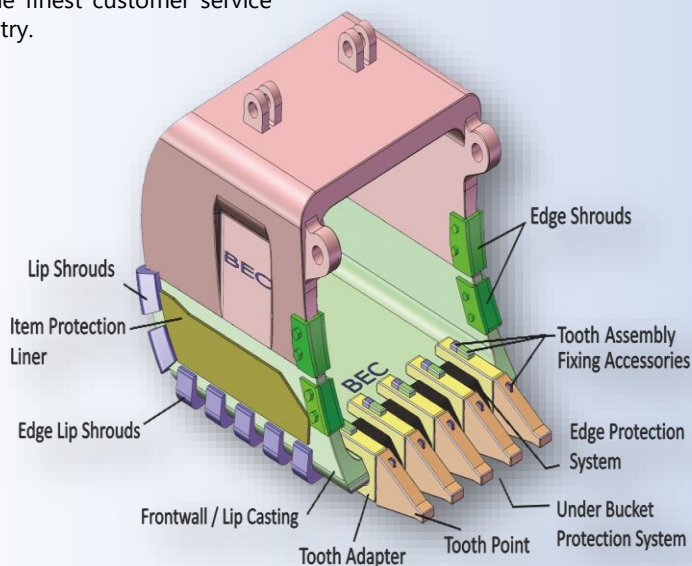
- Made to fit, reduced downtime, and ease of replacement – Precise fitting for less wear and tear on equipment.
- Quick deliveries –Crusher wear parts for major Cone Crushers, Gyratory Crushers, Jaw Crushers, Impact Crushers, and Roll Crushers.



10 Cu. Mtr.
Shovel Bucket



BEC products for Mining and Mineral Processing are innovatively engineered using unique state-of-the-art wear technology to provide high wear and extended lifetime. The technical professionals of the BEC team believe in this simple formula: give customers products they want at a fair price, deliver those parts fast, and give the finest customer service in the industry.



An innovative initiative for Mining Industry



Heavy Machined Mining Castings

Bucket : We offer complete design, manufacturing and maintenance for Bucket solutions to Excavators & Shovels (Range 3cu.mt. to 30cu.mt),

Dragline & Rope Shovel (Electric Bucket), Hydraulic Excavator (10cu.mt. to 20cu.mt) as per Customer's requirement

Crushing & Breaking : Our Feeder Breakers work up-to 500 TPH capacity, reducing size down to -200/ -100.

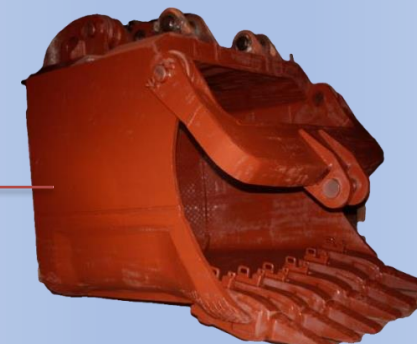
Bulk Material Handling : We offer complete Turnkey manufacturing solutions to OEMs for Bulk Material Handling machines like Stacker / Reclaimer, Ship Loaders / Unloaders, Bridge Reclaimer, Wagon Tippers etc.

Excavator Bucket

Dragline Bucket

Electric Rope Shovel
Bucket

Loader Bucket



Others Core Industrial Sectors

Heavy Engineering Fabrication



**Ship Loader 1200 TPH Capacity
commissioned at Abu Dhabi**



Towers in finished condition coming
out of 32 MT Paint Booth



Generator End Shield



Big Bell Hopper

Fabrication Shop is equipped with:

- Corimpex Machine (Advance Welding Technology – For Beam welding – Maxi. Width Flange 1000 mm, Maximum Height 2000mm, Plate thickness 63 mm that is about 1000 Kg per meter).
- Column Boom Welding Machines (to handle circumferential welding up to 4500 mm dia Shells).
- Plate Bending Machine (80 mm thick & 2500 mm wide plate).
- Painting Booth is 32 meters long x 6-meter width x 8 meters height – 2 Booths with Humidity Control facility.
- Grit Blasting Booth is 32 meters long x 6-meter width x 8 meters height & 22 x 4.5 x 5
- Metalizing Booth is 32 meters long x 6-meter width x 8 meters height.
- Closed Sheds – 3 Sheds (13 x 12 x 325 meters, 15 x 10 x 300 meters, 24 x 12 x 325 meter).
- Open Bay for Large fabrication with 2 Gantry Cranes of 25 Ton Each: 24 x 12 300 meter.
- Pug Cutting, Drilling, Grinding and SAW Machines.
- CNC Machine (Messer & ProArc -3500 mm wide, 40000 mm Length and maximum thickness 220 mm).



Hot Metal Ladle Car



Box Columns



Storage-Tank-Fabrication



Handle exotic materials like SS, Manganese and Alloy Steels in addition to Carbon Steel.

Infrastructure

An integrated manufacturing shop: Casting, Fabrication, Machining, Assembly & Testing under one roof.

Materials & Applications:

- Carbon Steels
- Manganese Steel
- Alloy Steel
- Stainless Steel
- Heat Resistance Castings for elevated temperatures

Highly skilled & dedicated workforce along with development team in job during development & manufacture of wear package in every possible way to improve the equipment performance, save the valuable time, money and raise the equipment efficiency levels.

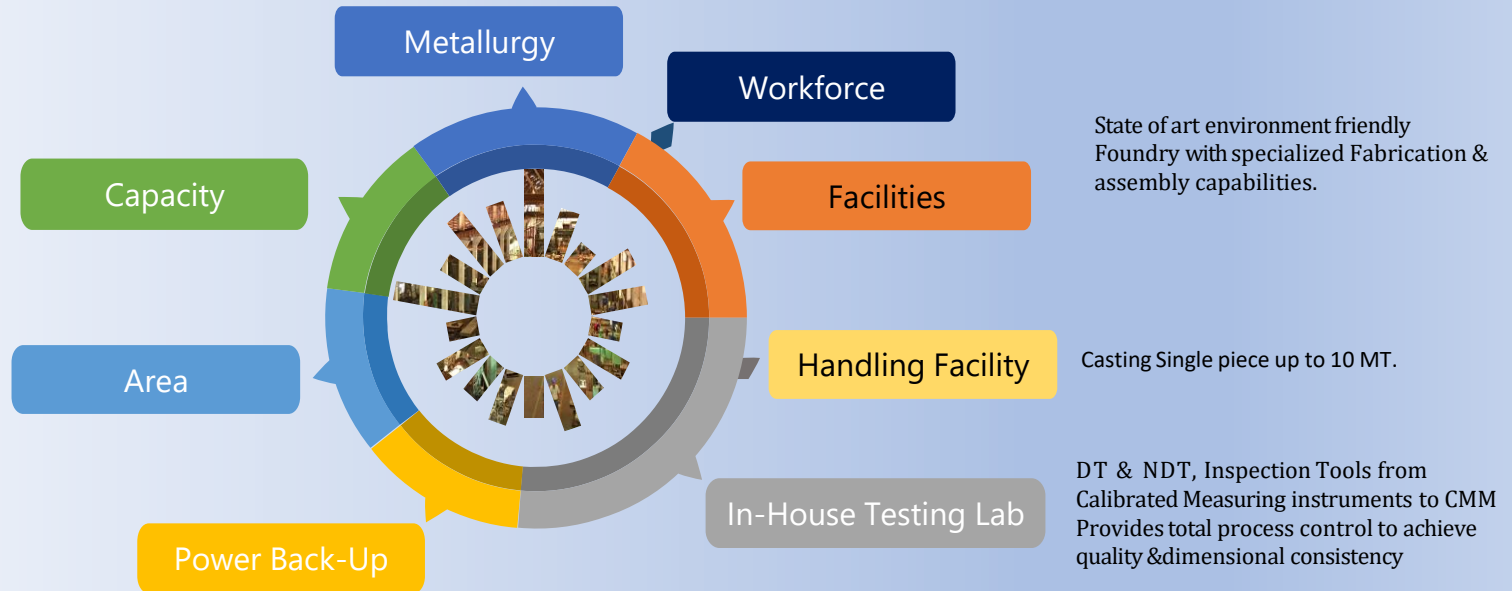
Manufacturing Excellence:

Foundry : 12000 MT
Fabrication : 10000 MT

The facility extending over 26 acres, with excellent road, rail, and air and port connectivity.

Area:

Foundry : 1,50,000 Sq. Mt
Fabrication : 81,868 Sq. Mt.
Machine Shop : 15,228 Sq. Mt.



Power Back up/Generator

500 KVA – 3 Nos. & 320 KVA 1 No.
For 100% Power back up to run uninterrupted Manufacturing.

Infrastructure has always been a backbone of our Company which allows us to produce qualitative products in conformity with international quality standards and current market trends.

Our state-of-art Infrastructural inputs ensure accuracy of Machining and achieving desired production rate and durability and efficient performance at its user end. Facility houses superior production and testing facilities, inclusive of a research and development centre. The unit is capable of manufacturing crucial equipment of high quality and is a market leader across all its product offerings. This further ensures involvement of proficient human resource and technology advancement. We are firm believers in investing in the latest technology and the constant upgradation of the same, meeting International Standard.





NC Milling Machines



Integrated Flash Butt
Welding Facilities

Full-fledged modern
Machine Shop with CNC
Equipments, Hydraulic
Press, Portable CMM &
Tool pre-setter.

Infrastructural inputs like special purpose portal milling machine, angular boring machine, and Coordinate Measuring Machine are provided to ensure accuracy of machining and achieving desired production rate. Equally important is being taken care of the tolerances of a few hundredths of a millimetre by our engineers using their extensive skills and experience.



BEC is fully equipped with
Machining technology
including 5-Axis CNC Plano
Millers & Coordinate
Measuring Machine (CMM)
for the measurement of
Bogie Frames.

More than 50 Machine's NC & CNC Driven



CNC VISION WIDE M/C

Model: HF-6235

Make TAIWAN

Technical Specification:

TL-6200MM,TW-3500MM,Z-TRAVEL-1200MM

Machine Shop at a Glance

Foundry, Fabrication & Machined Intricated Facilities



Moulding Shop



Foundry Shop



Machine Shop



Quenching of Castings



Nicholas Correa FPV-50



Heavy floor type CNC Milling Machine
(TOS - KURIM)



CNC-Double Column Millers Make DROOP
B. BEIN



Cast Bogie Under Machining



Handling of Molten Metal



Pouring of Molten Metal



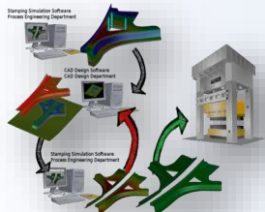
Liquid Molten Metal



Arc Furnace

We have multiple technology partners with whom we associate with for turnkey system/equipment supply projects. BEC is also the preferred manufacturing base for global machine suppliers and market leader across all its product offerings.

Best Engineering Designing & Simulation in-house Facility



Thoroughly all designs are tested in computer simulations so that changes can be made before an actual prototype is even manufactured. Our test press is accurate.

A AUTOCAD

Design & Engineering:

- In house Magma Software for Pouring Simulation
- Pro-Engineering for Methoding Leveraging Engineering Capability to enhance productivity eliminating needless process & reducing re-work.

BEC use powerful tools in design development and detailed occupant simulation to meet all safety, weight and comfort, performance requirements of all our equipment's designs to achieve the optimal balance of durability, acoustics, assembly and performance. These are the leading solutions for performing dynamic simulations on the impact of metallic and composite structures. These software design benefit from an optimal robustness, impact, and transmission efficiency.

MAGMA

Committed to Casting Excellence

We have 3D modeler "SOLID WORKS" which facilitates pattern design. Other than modeling software we also are fully equipped with the Solidification Simulation package "Magma Soft" through which we can check sample casting up to NDT quality Level – I, before producing it in the shop floor.

PLM Software
SIEMENS
NX

3D **SW**
SOLIDWORKS

- Minimization of forces, accelerations and wear
- Calculation of optimized contract, transition and layout geometries
- Simulation with dynamics multi-body dynamic tool NUCARES & SEM analysis
- Validation in field tests.
- Optimization of casting with simulation tools.



Production Facilities

Production Facilities:

Hand Molding: (Semi-Automatic):

Continuous Sand Mixer (20 T / hr. and 30 T/hr.) and Compaction Table
Sand Mixers (5T / hr.) – 3 Mixers. : for Core Making

Machine Molding:

- Kunkel Wagner Jolt, Squeeze with Rollover. Bed Size : 3.2 m x 1.2 m.
- ARPA – 900 Jolt, Squeeze molding machine. Bed Size : 110 cm x 90 cm

Other Facilities:

- Fully Equipped with Machine Shop
- Fully Equipped Grinding and Gauging Shop
- Weldable Crossing Plant
- Dedicated Assembly Area
- Complete Testing Facilities
- We are having No-Bake Sand System with an Alpha set and a CO2 sand system for Core Making Process.
- Full-fledged and well- advance equipped in-house fettling process to ensure a short lead time and reliable quality.



Handling Facilities:

Foundry Shop is well equipped with Material Handling facilities for the movement of produce based on operations such as Melting, Molding, Fettling, Heat Treatment, Raw Material, etc.

EOT Cranes	: 5 – 25 Tons
Radio Remote Control EOT Cranes	: 5 – 8 Tons
Ground Transfer Trolleys	: 30 Tons – 3 Nos.
Semi Gantry Cranes	: 5 Tons
Jib Cranes	: 4 tons
Mono rail Cranes	: 2 – 4 Tons
Fork Lifters for water quenching	: 2 Furnaces

The equipment supplied from the division is pre-assembled with drives, trial-tested & match marks are provided for ease. Heavy mobile cranes with up to 250 tons capacity offer good handling & assembly facilities for the shops.

- CNC Plasma Plate Cutting
- CNC Hydraulic Press
- High quality Welding System: TIG, SMAW, SAW
- GMAW, Mechanised welding lines, Certified ASME, IBR & AWS Welders
- Boom & Column Welding
- Oil & gas Fired Heat Treatment Furnace with 60 MT loading capacity.
- Central Paint shop with Shot-Blasting facilities.



Assembly

Fabrication,
Machining &
Assembly of
Bogie Frames
For Metro &
Passenger
Coaches



Heat Treatment Facilities

Quenching, Tempering, Normalizing, And Annealing Steel

For Heat Treatment, we have a Battery of Gas Fired and Oil Furnaces having capacities mentioned below with the arrangement of Automatic Multipoint Temperature recording of various Zones of each Furnace, with the facility for Water Quenching and Rapid Quenching.

Type	Capacity	Size	Remarks
Oil Fired	60 Tons	8.0 x 6.3 x 3.7m	With Water Quenching facility
Gas Fired	25 Tons	6.6 x 4.2 x 2.0m	With Water Quenching facility
Gas Fired	16 Tons	8.5 x 2.2 x 1.0m	With Rapid Quenching facility
Electric	5 Tons	3.0 x 3.0 x 1.5m	For Tempering
Induction	2 Tons	3.0 x 3.0 x 1.5 m	For Handling
Gas Fired	16 Tons	8.2 x 2 x 2m	With Water Quenching Facility



Gas Fired Program Controlled Heat Treatment Furnaces with air circulation facilities for Tempering/ Stress / Relieving.

The Liquid Metal is produced by using Three Phase Electric Arc Furnace and Induction Furnace:

Direct Arc Furnace: Furnace Capacity 10.5 & 7.5 Tons
Induction Furnace: Furnace Capacity 2 Tons

Heat treatment is an important step toward guaranteeing the mechanical properties of steel castings. In BEC, we have a battery of Gas fired and Oil furnaces having capacities as per mentioned here with an arrangement of automatic multipoint temperature recording of various zones of each Furnace. We also have facilities for Water Quenching and Rapid Quenching. Our extensive experience in Heat Treatment processes and other special process ensures meeting the desired dimensional and metallurgical specifications of the component, thereby delivering the best-in-class products to our customers, globally.



Safety & Certifications

BEC as technological leader, is dedicated to maintaining the optimum customer benefit and upholding the highest principles of quality, environment and safety.

- High compliance with Quality & Safety Norms
- Internal Quality Checks assisted by Bureau Veritas
- Highly team workforce & fully qualified welders with regular
- Training Activities
- Strong safety monitoring & controls
- Environment-friendly work practices
- Quality Management System
- Strong safety monitoring & control and Environment-friendly work practices
 - ISO 9001:2015
 - ABS Certified
 - AAR certified
 - RDSO class "A" approved foundry
 - Approved with OEMs in Railways



ASSOCIATION OF
AMERICAN RAILROADS



ABS

Quality Standards

Performance: To exceed customer expectation in regards to quality, delivery & Cost.

Integrity: To maintain highest level of Integrity to our customers and for our industry.

Improvement: To maximize Productivity & Efficiency of all business activities through a program of Continuous Improvement.



Quality Management

We pursue quality in all aspects of our business – manufacturing, process control, product design, application and most importantly, in our people. One of the main pillars of our strength is the rigorous quality control of all our products and services by implementing "QTM"

Test methods use state of the art analytical equipments and are often specifically designed for each and every product. Along the entire process i.e. from purchasing to transportation, strict quality checks ensure that our customers get the exact quality they require.

Integrated Quality Management Facility

BEC has long made it a priority to reduce its environmental impact. At our facilities, we are constantly seeking new ways to recycle and reduce energy consumption.



Complete metallurgical/chemical lab with Spectrometer, Microscope, Volumetric analysis

Complete Destructive testing lab for UTS, Impact, Hardness etc.

Complete NDT lab for RT (Cobalt t-60 & IR-92), UT, MPI, DPT testing.

Hydro testing Facility up to 500 Kg / CM2

Testing Lab Certified by Lloyds

Calibrated Inspection Tools & Instruments including CMM



Material Quality :

- Sand Testing Facility
- Physical &
- & equipments for process & geometrical conformance.
- Chemical analysis with spectrograph
- Micrograph & macrograph facilities
- Calibrated plant
- Mechanical Testing facility
- Non-Destructive Testing – X-ray, RT, (Cobalt – 60 & IR – 92), UTI, MPI, DPT Testing
- US, Magnetic Method
- NDT BARC Level I & II certified Staff.



Quality Engineering

High compliance to Quality & Safety Norms & Continual improvement through proven methodologies and techniques

Internal Quality Checks assisted by Bureau VERITAS & Quality Control disciplines & risk assessment

QMS Audit model that delivers structured programs across business processes and supplier management systems

Defined regime for inspection, witnessing Strong safety monitoring & controls and Integrated quality Management System

A Quality Management Plan that ensures the delivery of consistent and repeatable high-quality fabricated products



Cobalt

Our testing facilities include:

- State-of-the-art calibration facilities and standard room, including Automatic 3D CMM and other facilities selected on principles of MSA
- Fully-equipped testing laboratories to carry out detailed examination of friction material and rubber chemicals and metallurgy of ferrous and nonferrous materials
- A modern, full scale dynamometer for testing of friction material products in simulated working conditions of rolling stock
- Culture of process design and control to achieve zero defect and Six Sigma objectives
- Complete range of inspection, measuring and testing equipment for destructive and non-destructive inspection and analysis of products including components, sub-assemblies, assemblies and system solutions.

BEC has implemented and keeps updated a quality assurance system that complies with the requirements of the international standard ISO. 9001 Our quality objectives are focused on customer satisfaction and comply to national and International standard.



Spectrometer

BEC has a mind –set of long-term partnership with our Customers both locally and Globally. Our highly skilled Technical Staffs focus on producing quality products and are compliant to the Customer's specification for our Customers in accordance to International quality norms. Before the delivery, our quality inspectors on varied parameters to ensure its defect free nature. BEC has invested by our defect free nature. BEC has invested in precise Inspection Machines to ensure product quality is always achieved.



Foundry & Fabrication

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● Technical Collaboration

● Global Supplies

