



# Saudi Cyprus Foundries Ltd.,



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**Steel castings Manufacturing unit..**

# OVERVIEW

- SCF is a leading steel foundry located in the Jeddah, KSA
- A growing annual capacity of 6,000 Tons
- Specialists in engineered-to-order castings for O&G, Energy, Engineering & Mining
- Our wide spectrum of grades include: carbon and low alloy steels, stainless steels, duplex, super duplex steels and high Nickel alloys
- Castings produced from 20 Kg (44 lbs.) to 1250 Kgs (2,750 lbs.) net weight in both rough and fully machined condition
- SCF lead times are short to most parts of the world
- Industry needed accreditations, approvals.
- We respond to changing industry demands by making speedy investments in the latest technologies
- ISO9001:2015; ISO14001:2015 & ISO 45001:2018 certified by TUV-Nord

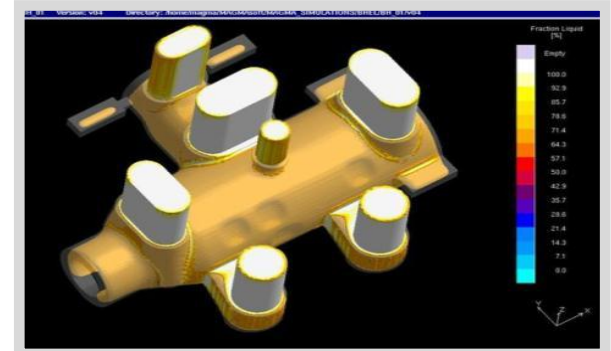
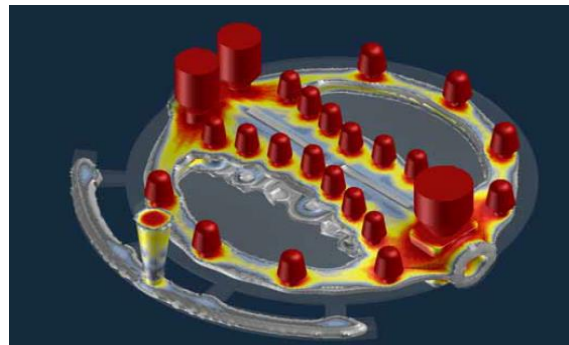
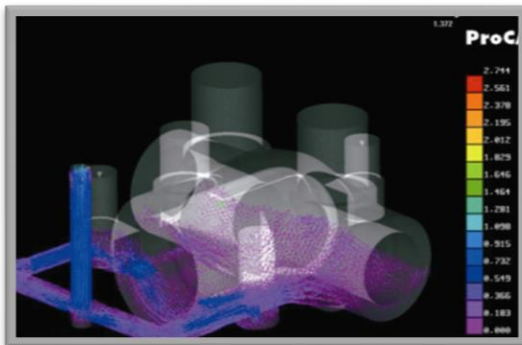
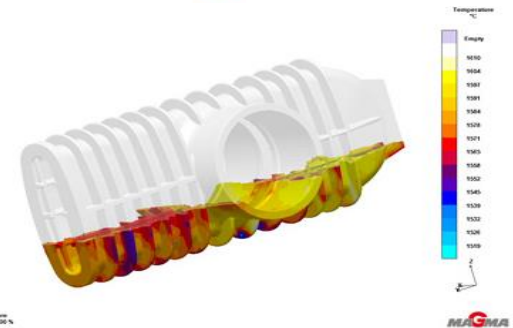
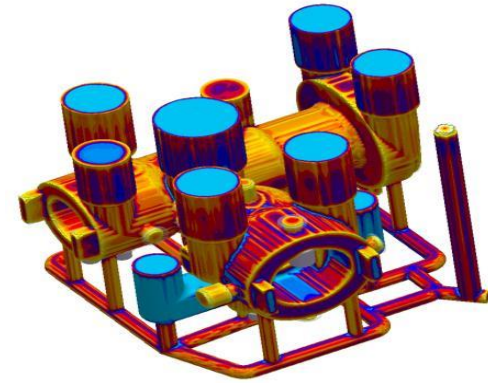


**“Commit Right, Deliver Right”**



# ENGINEERING

- SCF uses sophisticated computer aided design applications...
  - Pro Engineer
  - Solid Works
- Our team of Engineers help
  - Predict performance
  - Detect potential defects
- Magma filling & solidification software is used to enhance the quality of castings
- Successfully leveraged our design capabilities to execute critical projects in challenging material grades
- Expertise in **reverse Engineering** for the components development from used / worn out castings



Sophisticated casting design capabilities...





# PATTERN MAKING & STORAGE

- In-house pattern design manufacturing
- Equipped with 3axis-CNC Flexicam machine
- SCF is enabled with 3D modeling capabilities
- We use high quality plywood for long life & to minimize deformation
- We store customer patterns properly;
- SCF has established a sizeable pattern mounting workforce
- We adapt customer patterns for production at SCF



In house pattern design & manufacturing...





# MOULDING

- Mould size 1.8 m (L) x 1.6 m (W) x 1.2 m (H)
- Molding lines are automatic and favors high volume continuous production, 10-12 moulds / hour.
- Plants are equipped with heavy duty cranes for the movement of molten metal
- Alkaline phenolic chemical bonding process used for molding
- Up to 1.2 MT net weight castings
- SCF uses silica sand along with chromite sand at the surface of the mould to:
  - Impart superior quality
  - Better surface finish to the castings
- Equipped with Mechanical sand reclamation unit to boost casting quality and enable cost-efficient production by recycling of sand



High volume continuous production....



# MELTING

## MELTING CAPABILITIES

- 1 x 2200 kgs Inductotherm coreless Induction furnace
- 1 x 1200 kgs Inductotherm coreless Induction furnace
- Duplex, Super duplex, high Nickel alloy capabilities & Exotic material capabilities
- Advanced calibration techniques including laser thermometry.
- We develop exotic steel grade materials with requisite chemical compositions for critical applications



Consistent melting expertise...



# MELTING – GRADE CAPABILITIES

## CARBON STEEL

ASTM A 216	WCB, WCC
ASTM A 352	LCB, LCC
EN SEW 685	1.1138
DIN EN 10213	1.0619, 1.5419, 1.6220

## LOW ALLOY STEEL

ASTM A 148	90-60
ASTM A 217	WC1, WC6, WC9, C5, C12, C12A, CA15
ASTM A 352	LC1, LC3, CA6NM
ASTM A 487	1A, 1B, 1C, 4A, 4C, 4D, CA6NM
DIN EN 10213	1.7357, 1.7379, 1.7365, 1.7706

## STAINLESS STEEL

ASTM A 351	CF3, CF8, CF8C, CF3M, CF8M, CN7M, CF10, CG3M, CG8M, CN3MN, CK3MCuN, CT15C
ASTM A 743	CF3, CF8, CF8C, CF3M, CF8M
DIN EN 10213	1.4308, 1.4408, 1.4409, 1.4552, 1.4581, 1.4309

## DUPLEX / SUPER DUPLEX STAINLESS STEEL

ASTM A 995/ 890	CD4MCuN (1B), CD3MN (4A), CE3MN ( 5A), CD3MWCuN (6A)
DIN EN 10213	1.4517, 1.4470, 1.4469

## NICKEL ALLOYS

ASTM A 494	M35-1, CY 40, CW6MC, CU5MCuC
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Consistent melting expertise...





# HEAT TREATMENT

- Heat treatment capabilities includes PLC controlled Electric furnaces for:
  - Normalization
  - Homogenization
  - Annealing
  - Hardening
  - Stress relieving
  - Tempering
  - Quenching
- **Furnaces of loading capacities;**
- 3 T & Size 3.5m (L) \* 1.2 m (W) x 1 m (H)
- 10 T & Size 4.5m (L) \* 2.5 m (W) x 1.8 m (H)
- Quench tank with a capacity of up to 100 m<sup>3</sup> and having water cooling and agitation systems
- SCF specializes in processing of Low Alloy Steel grades



Fully Automatic heat treatment operations...



# NDT

- SCF provides a one stop solution for all NDT services:
  - Magnetic particle inspection (MPI)
  - Dye penetrant testing (DPT)
  - Ultrasonic testing (UT)
  - Radiographic testing (RT)  
(Co 60-145ci & Ir192 150Ci sources)
- NDT Examiner with **Level III** in ASNT & EN ISO 9712 Qualification
- NDT Operators qualified to ANSI Level 2 for RT, UT, VT, MPI, & DP
- CSWIP 3.1 Welding Inspector
- In house Radiography Certified Officer (RSO)
- Magna flux 6000Amp Magnetic particle Multidirectional HWDC inspection units
  - Wet & dry inspection techniques
- Ultrasonic examination by DAC & DGS methods

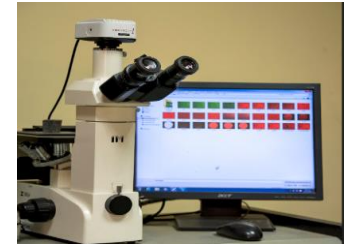


Adapting to industry demands...



# LAB TESTING

- Complete metallurgical sample preparation & evaluation equipment
- Comprehensive mechanical properties testing.
- Metallurgical examination of microstructures, gas content, impact properties to measure & improve upon mechanical (toughness) and corrosion resistance properties
- SCF is equipped to do all chemical and mechanical testing for most specifications needed in the industry
- Positive Material Identification
- Industry approvals & accreditations
- 3rd party inspection coordination



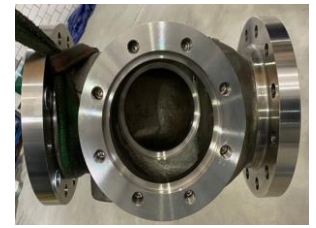
State of the art lab testing facilities...





# MACHINING-HBM

- **CNC Horizontal Boring Machine suitable for machining of Facing, Milling, boring, Drilling & Tapping.**
- Control System Fanuc 31iB
- Ram Type
- Spindle Dia 130mm, Taper BT 50
- Table size 1800 x 1600mm,
- Table Travel X-axis 2000mm
- Headstock travel Y-axis 2000mm
- Column Travel Z-axis 1300mm
- Spindle Travel W-axis 700mm
- Max weight of work piece 5000kgs
- 40nos of Automatic Tool Changer
- D'Andrea Face head
- Universal head attachments
- Linear scale (X,Y,Z-axis)
- Built in Coil Type chip conveyor
- Complete Splash Guard
- Coolant thru the spindle : Interface (30 Bar)

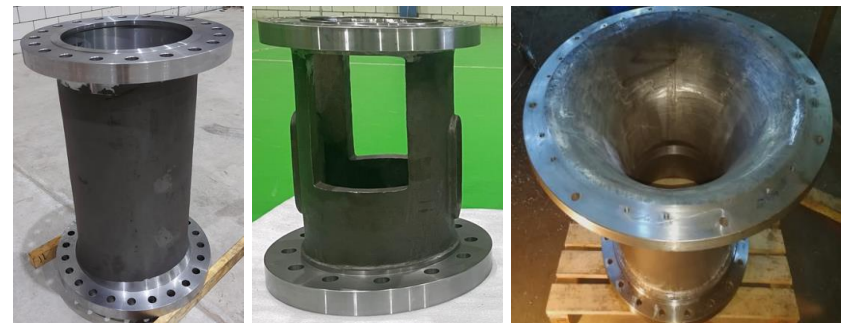


**Robust in-house machining capabilities...**



# MACHINING-VTC

- **CNC Vertical Turning Center suitable for machining of Turning, Milling, Threading, drilling & Grinding operations in single setting**
- Control System Fanuc 31iB
- Double column
- Ram Type ( Size 240x240mm)
- Spindle tool shank BT50
- Table Diameter 1250mm
- Max Swing Diameter 1600mm
- Max Cutting height 1300 mm
- Horizontal travel X-axis Left 200mm/Right 970mm
- Vertical travel Z Axis 900mm
- Cf Axis rotation 0.001° Min & 360° Max
- Max weight of work piece 8000kgs
- Coolant thru the spindle : Interface (30 Bar)
- 16 Automatic Tool Changer
- Linear scale (X,Z-axis)



**Robust in-house machining capabilities...**



# Hydro Testing

- Hydro testing upto 700bar
- Air pressure test upto 6bar
- HMI (Make : Proface), Size :7"
- Connected to Lap top for graph.
- Both Auto & Manual Mode of operations
- Auto cut of Safety relief Valve
- Digital Air bubble counter
- Filling Pump (38LPM)
- Drain Pump (38 LPM)
- Emergency Stop.



Hydro & Pneumatic testing capabilities...





# Products developed



**“Commit Right, Deliver Right”**





# Products developed



**“Commit Right, Deliver Right”**





# Products developed

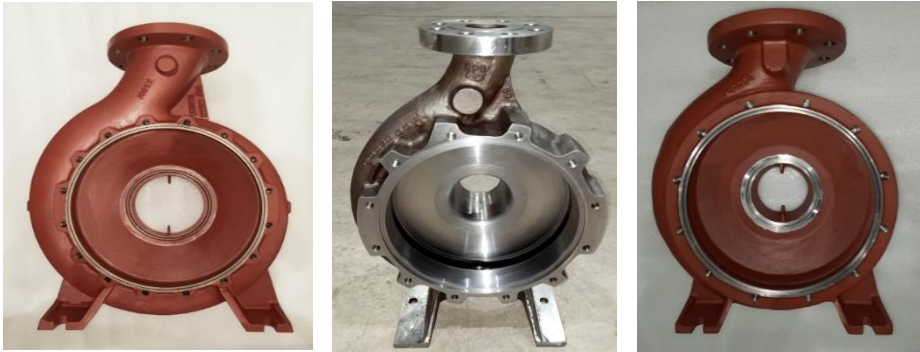


**“Commit Right, Deliver Right”**





# Products developed



**“Commit Right, Deliver Right”**



# Products developed



**“Commit Right, Deliver Right”**

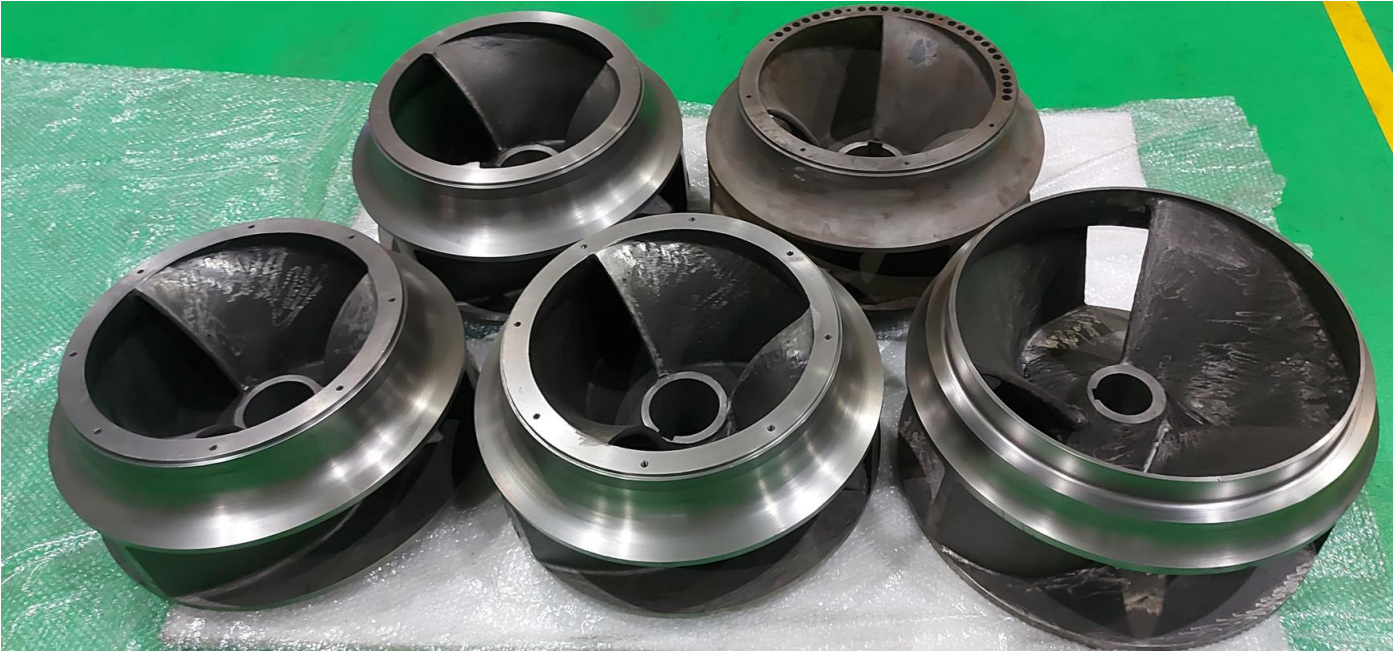








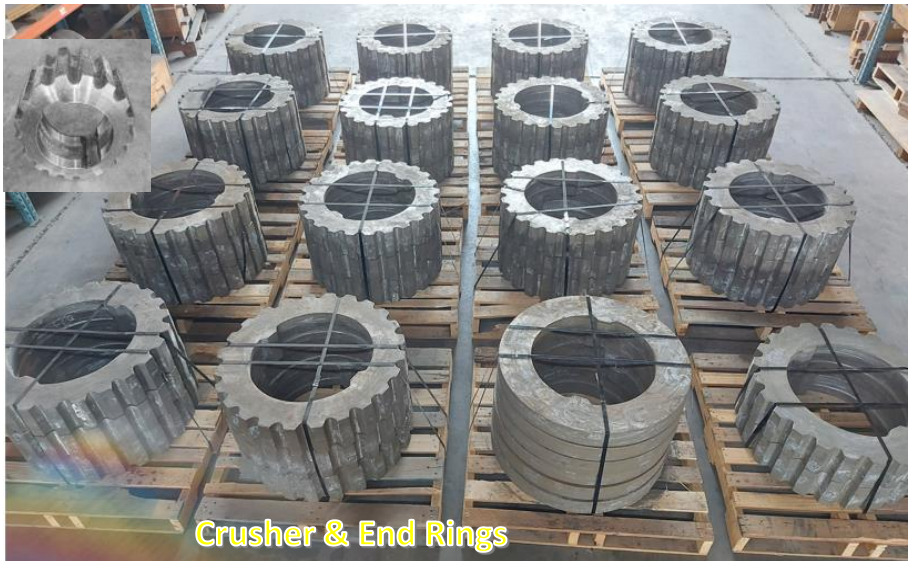
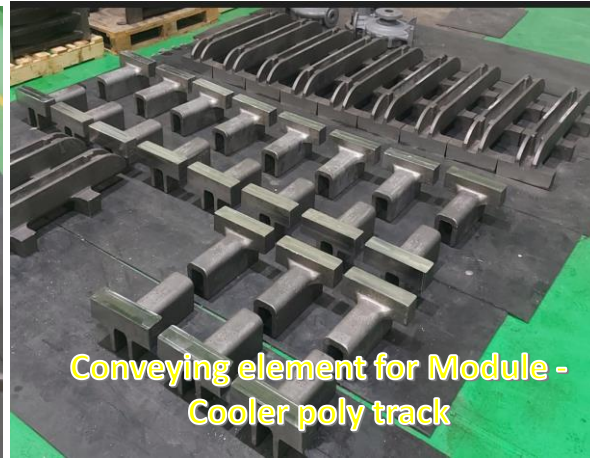
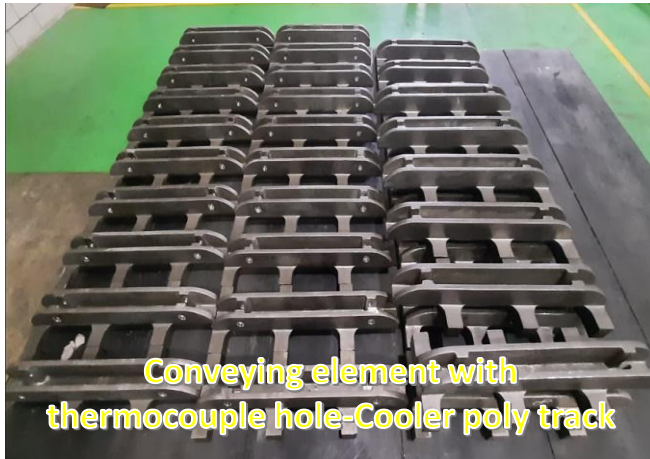
# Products developed



**“Commit Right, Deliver Right”**



# Products developed

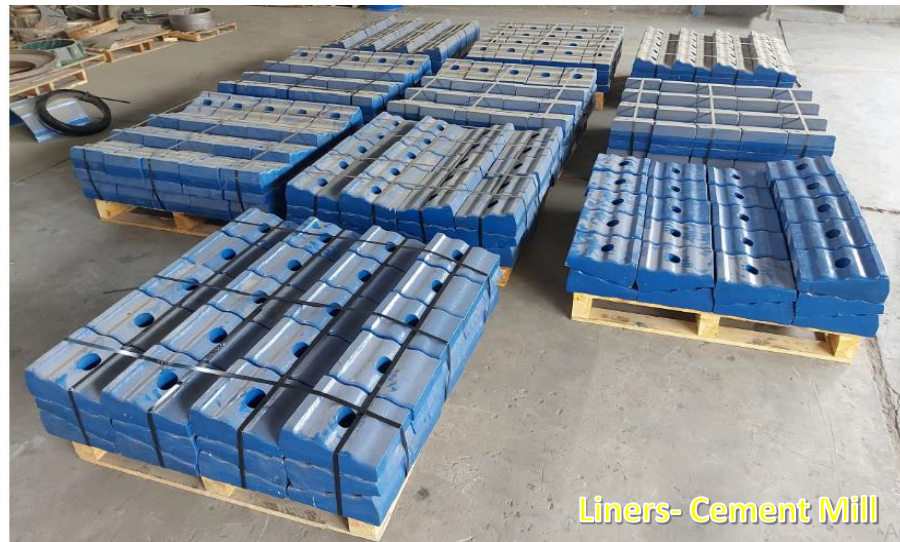
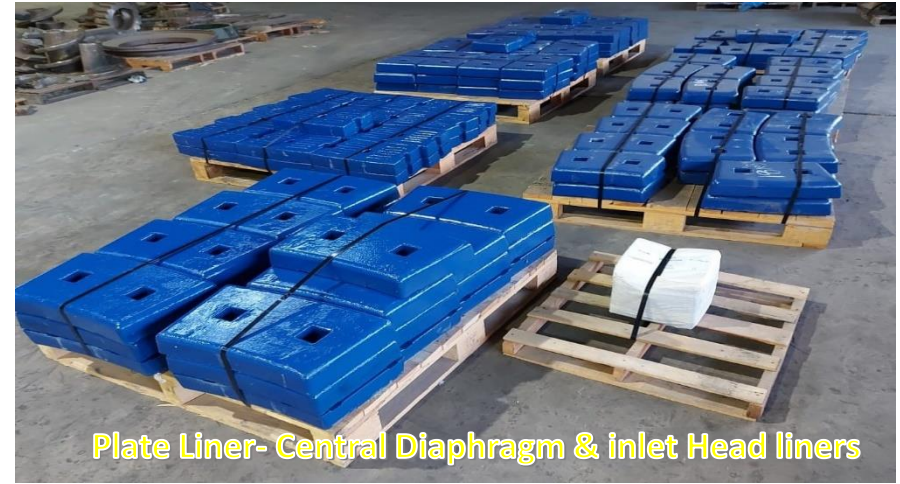


**“Commit Right, Deliver Right”**





# Products developed



**“Commit Right, Deliver Right”**

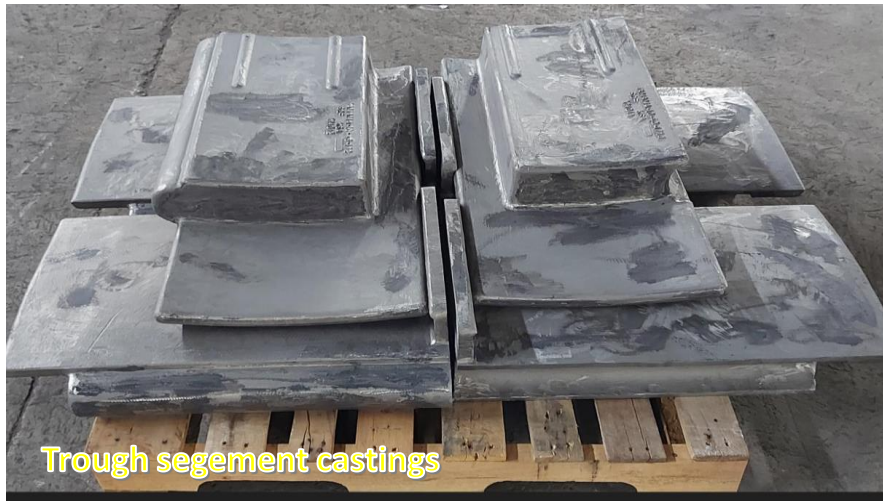




# Products developed



Tip casting with Castables



Trough segment castings



Dip Tube castings

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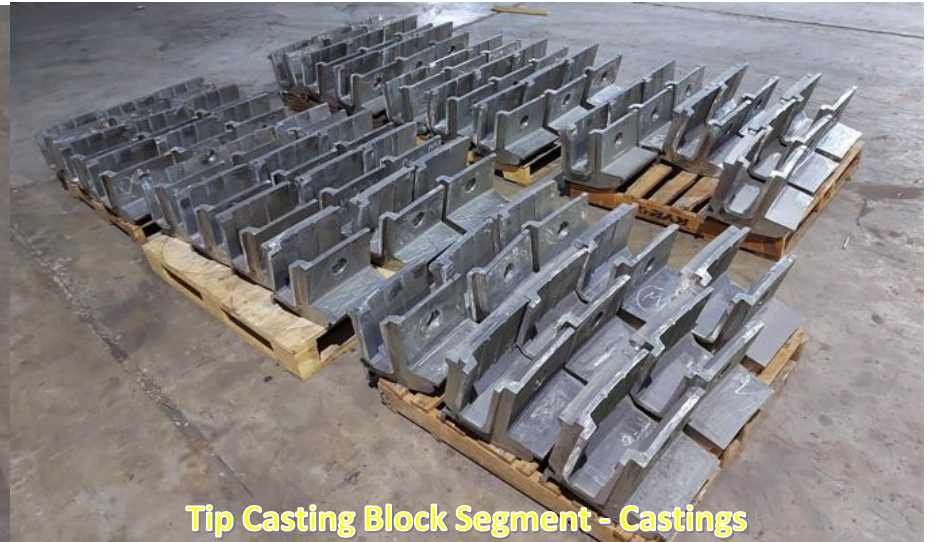




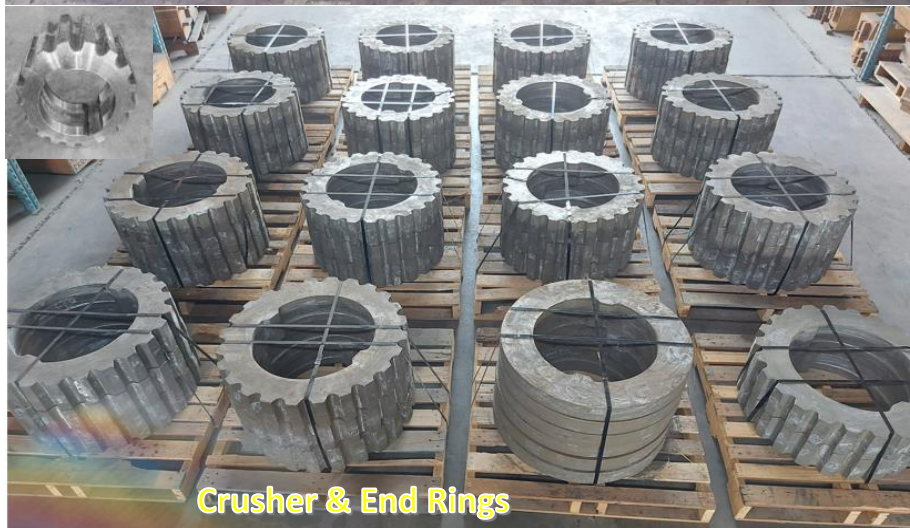
# Products developed



Protective Segments Outlet for Cylinder Kiln



Tip Casting Block Segment - Castings



Crusher & End Rings



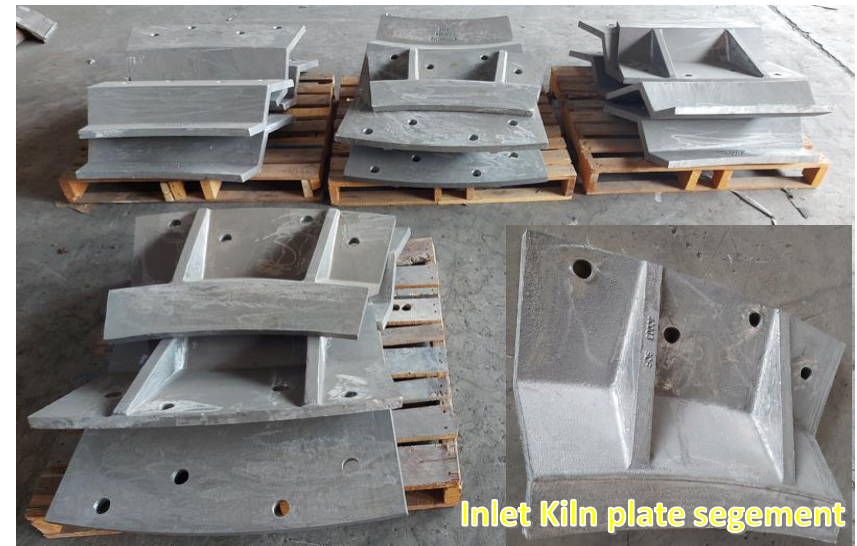
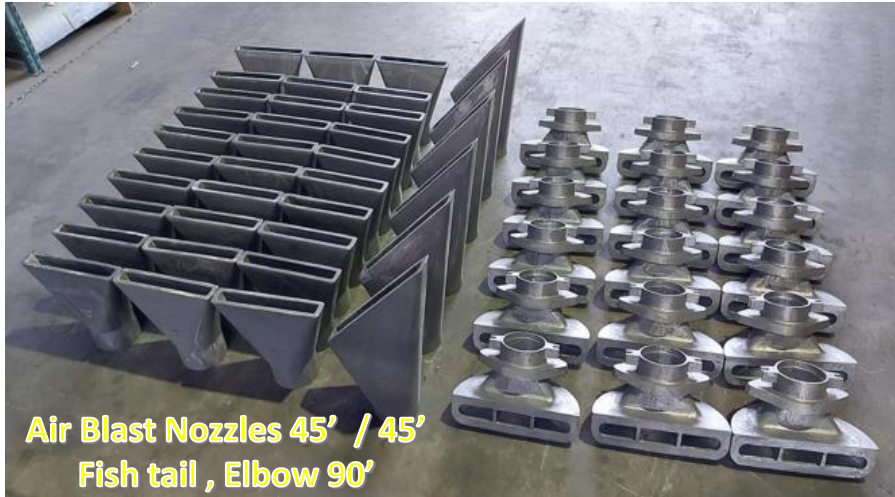
Tip Casting Block Segment – Assembled at SCF

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# Products developed



**“Commit Right, Deliver Right”**





# Products developed



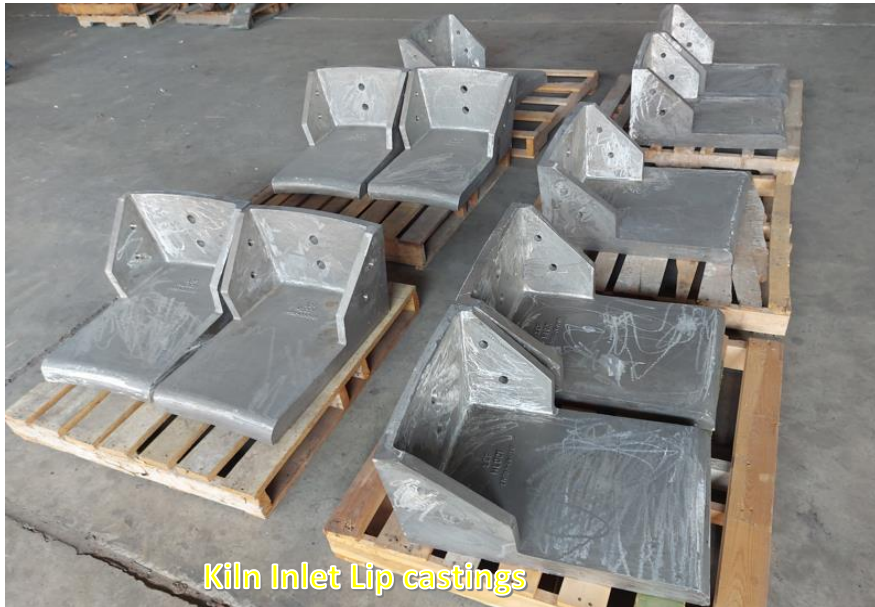
Plate, Shielding (Sinoma)



Kiln Inlet Guard Plate



Plate, Trough (Smoke Chamber Sector plates) / Tongue Plate



Kiln Inlet Lip castings



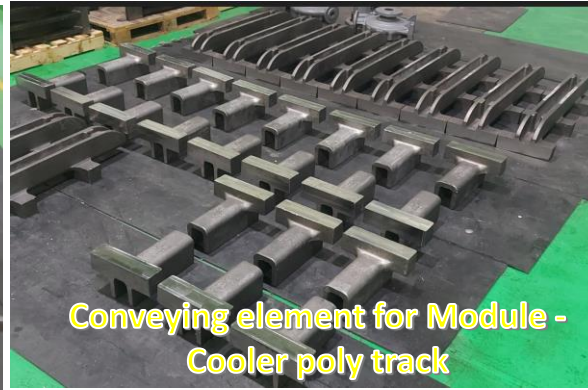
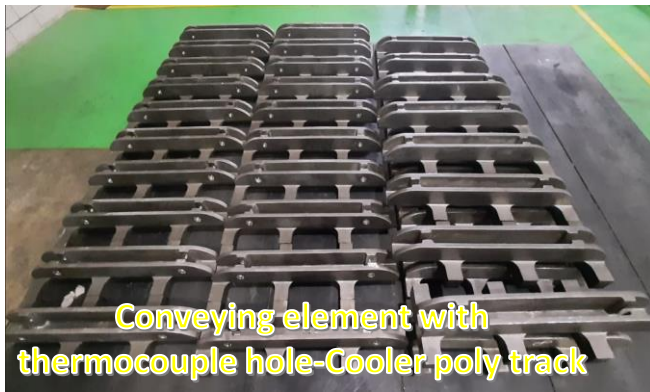
Kiln Inlet Lip castings Assembly at SCF.

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# Products developed



“Commit Right, Deliver Right”





# Products developed



Mulden Plate for Grate 1 - Cooler



Mulden Plate (Right) for Grate 2 & 3 - Cooler



Grate Plate (Hot Zone) for Grate Cooler



Grate Plate (Cold Zone) for Grate Cooler



Narrowing Plate With Hole



Narrowing Plate Without Hole



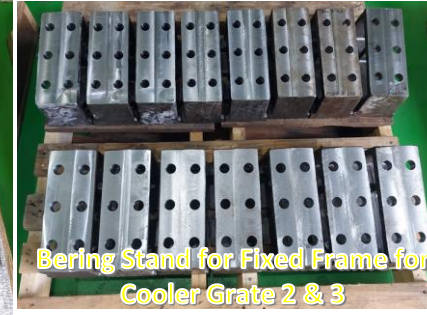
Tyres with Flanges



Tyres without Flanges



Wedge Support for Tire



Bering Stand for Fixed Frame for Cooler Grate 2 & 3



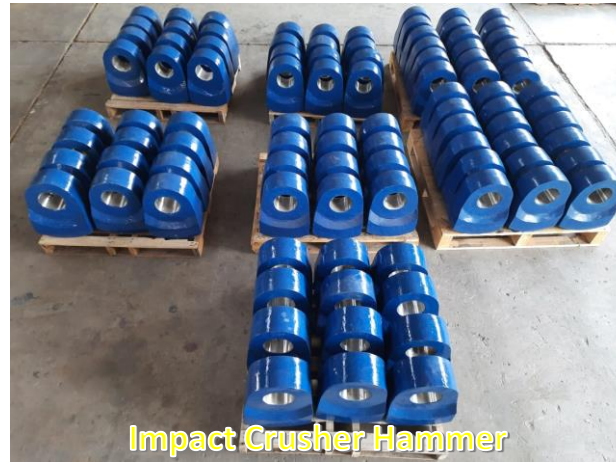
Sealing Strip Middle-Right / Left for Cooler

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# Products developed



“Commit Right, Deliver Right”

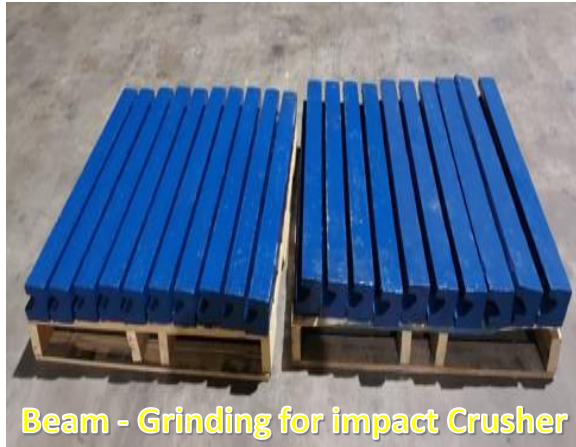




# Products developed



**Beam - Grinding for impact Crusher**



**Beam - Grinding for impact Crusher**



**Beam - Grinding for impact Crusher**



**Crusher liner for Mammut 56/75**



**Blow Bar**



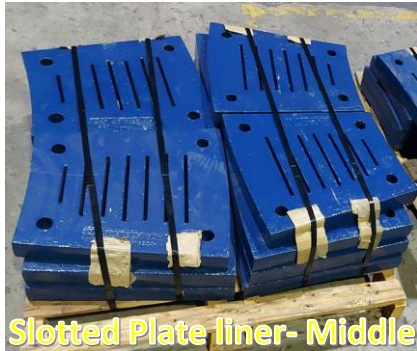
**Blow Bar**

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# Products developed

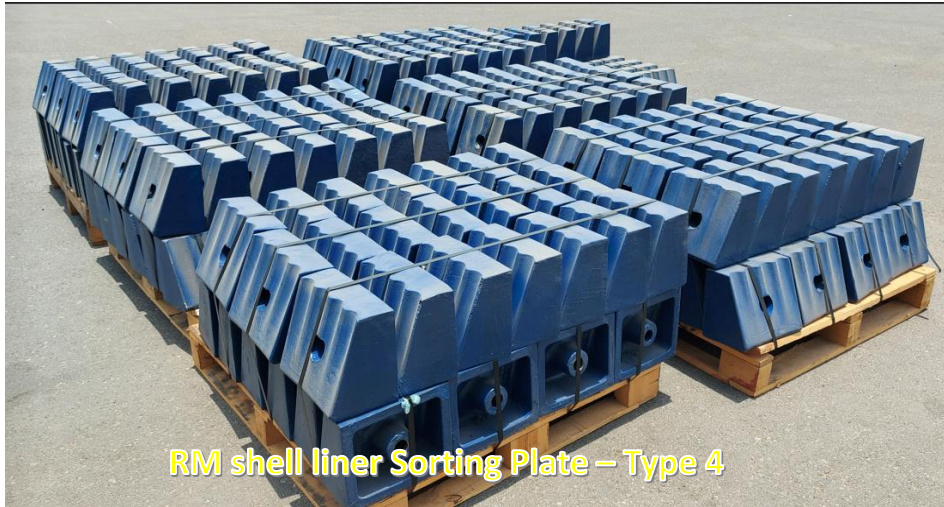


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# Products developed



RM shell liner Sorting Plate – Type 4



Feed head liner



RM shell liner Sorting Plate – Type 2



RM shell liner Lifting Plate – Type 1

**“Commit Right, Deliver Right”**





# Products developed

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**“Commit Right, Deliver Right”**





# Products developed

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**Grate Bars**

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# Products developed



Valve Flap Plate



Grinding Roller Stop



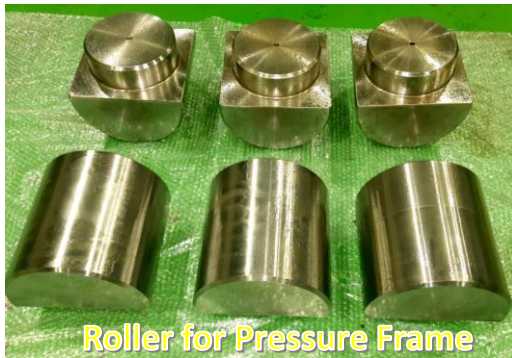
Segments-Brink Retaining Ring



Nose Protection for all Bar Grates



Bar Grate side sealing plate



Roller for Pressure Frame



Collar Bush for Kiln Thrust Roller



Modified Trough Segment Middle - Right-Left

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# Products developed- FASTERNS



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# PRODUCTS DEVELOPED

