



foundry & specialized heat treatment



to engineer solutions that shape the future

## company overview

Blue Light Industry, a subsidiary of UAE based engineering conglomerate Trinity Holdings, is a leading provider of engineered sand castings, specialized heat treatment and supporting machining services.

For over 20 years, Blue Light has been offering one-stop solutions from pattern making to final machining to diverse industries. The foundry houses CNC pattern shop, PLC controlled automated sand mixer, multiple induction melting furnaces and a metallurgical laboratory to offer a variety of industrial castings.

Blue Light offers an extensive range of specialized heat treatment services, including gas carburising hardening, CNC induction hardening, liquid nitriding, TRIBOX, gas nitriding and various stress relieving and other conventional heat treatment processes.

The company's unique ability to complete small one-off jobs as well as larger production runs allows it to cater to the challenging requirements of customers.







## quality focus

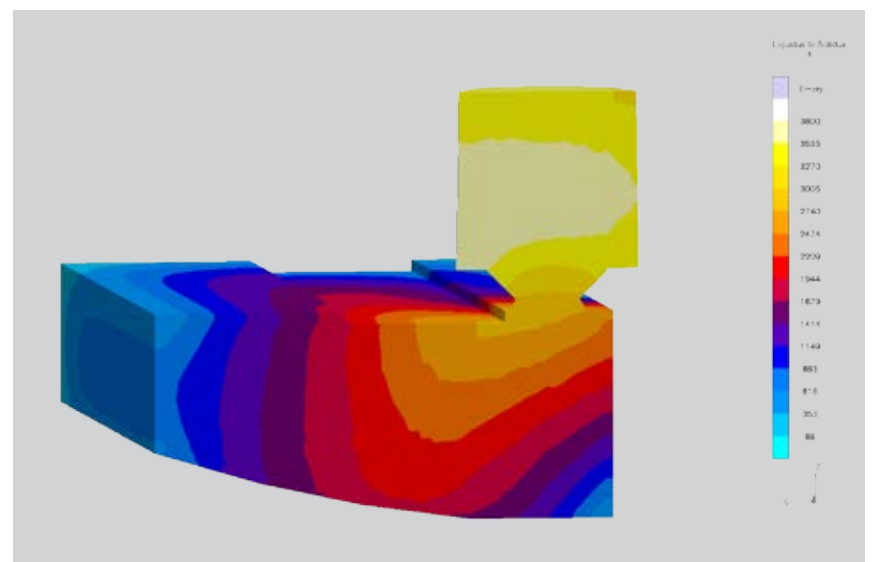
International certifications to the credit of Blue Light endorse its commitment to high standards. The foundry is ISO certified and is fully equipped to comply with a range of international standards.

Blue Light is committed and strives to provide a safe, healthy and environmentally responsible workplace. By adopting effective and sustainable practices, Blue Light has been able to minimize the impact of its operations on the environment and the community in which it operates.

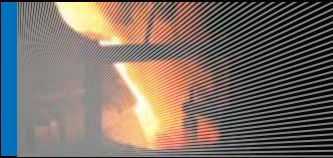
### ISO 9001: 2015



## casting solidification simulation



Simulation techniques are used for analyzing and optimizing the casting processes. Blue Light ensures that solidification and design parameters are met prior to casting.



## foundry

Blue Light foundry has grown into a self-sustained unit producing sand cast products for diverse industrial applications. It produces sand castings in cast iron, carbon steel, alloy steel, stainless steel and high chrome steel.



CNC Pattern Machine



Moulding Line

### Production capabilities

#### Pattern Shop

- In-house pattern designing
- CNC machines

#### Moulding Shop

- Alpha set process
- Semi automated moulding line with Omega mixer

#### Melting Shop

- 6 Induction furnaces (150kg, 300kg, 500kg, 1t, 1.5t, 2.5t )
- 2 Induction push out furnaces (50kg, 150kg)
- 4 Crucible pit furnaces (2x80kg, 2x180kg)

#### Laboratory

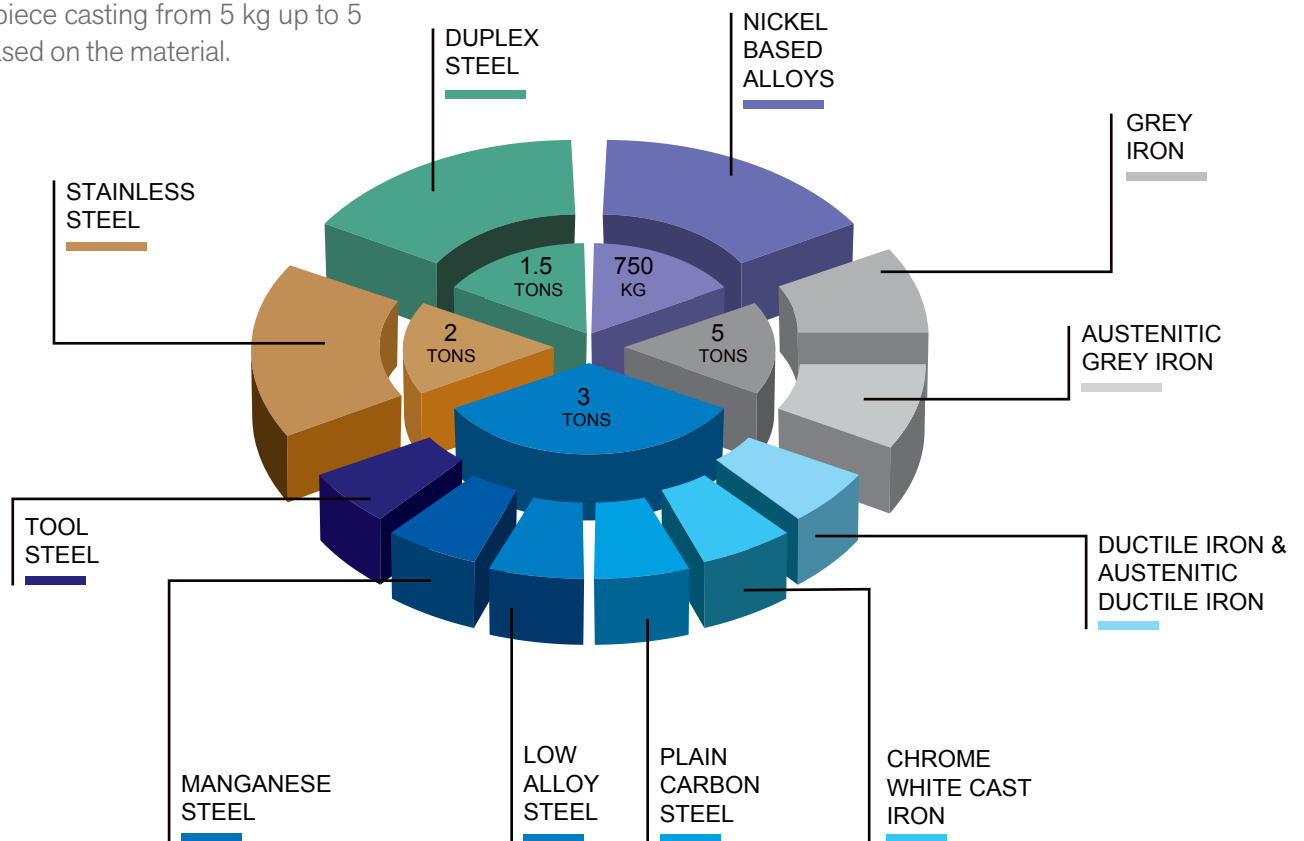
- Spectrometer
- UTM
- Impact testing
- Hardness testing - conventional, portable & micro hardness
- Sand test equipment
- Metallurgical microstructure analysis

#### NDT

- MPI, DP, UT
- RT - outsourced

## casting capacity (grade wise)

The foundry is capable of producing single piece casting from 5 kg up to 5 tons based on the material.



## machining

### Capabilities & Capacities

- conventional & cnc machining
- turn lathes up to 9m long
- floor boring up to 22m
- horizontal/vertical boring
- radial drilling
- facing lathes up to 4m dia
- cylindrical grinding up to 8m
- surface grinding
- EDM - spark erosion & wire cut
- milling
- hobbing, gear shaping
- hydraulic press





A graphic showing a cross-section of a material with a blue-to-red gradient, representing heat treatment. The text 'heat treatment' is overlaid on a blue background.

## heat treatment

Blue Light provides a variety of heat treatment services for components of different shapes and sizes.

### Various heat treatment processes:

- normalizing
- annealing
- stress relieving
- hardening
- tempering
- induction hardening
- gas nitriding
- tribox
- gas carburizing
- liquid nitriding

## gas nitriding

Gas nitriding is a case hardening process which involves enriching ferrous parts surface with nitrogen at relatively low temperature which results in a part with increased wear and corrosion resistance, increased surface hardness and fatigue strength.

## induction hardening

This hardening is carried out using a CNC controlled scanner. Induction hardening provides wear resistance to components manufactured from various alloys. Blue Light has the capacity to induction harden sheaves, pulleys or gears up to 2m diameter and shafts up to 2m in length.

## tribox/liquid nitriding

Tribox is a specialized heat treatment process for oilfield components that operate for extended periods of time in corrosive environments. The process, which is equivalent to quench, polish, quench (QPQ), provides enhanced corrosion resistance, wear resistance and anti-galling properties.

We also carry out liquid nitriding process which is widely used for enhancing performance of oil field components and other general engineering parts.

## carburizing

Blue Light has the equipment and techniques to carry out pack carburizing and gas carburizing to harden steel and alloy steel components. The process produces a thin carbon enriched layer of material penetrating into the component surface. This layer is subsequently heat-treated by either quenching, induction hardening or flame hardening resulting in a surface with high hardness and wear resistance.



Induction Hardening



Tribox Treated Components



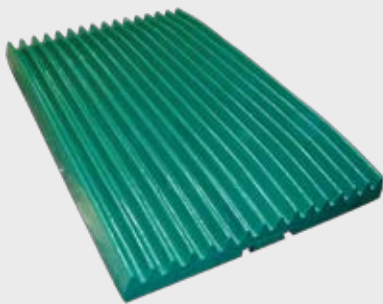
industries  
served



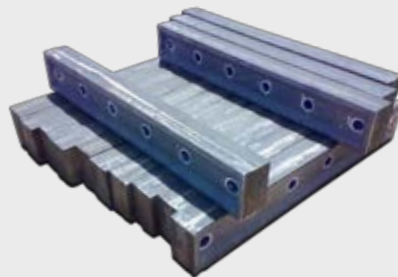
cement, quarry  
& construction



VRM Roller



Jaw Plate

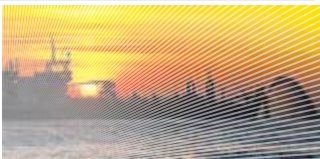


Hammer



Mantle

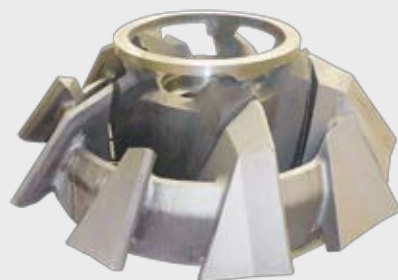
industries  
served



marine &  
dredging



Dredging Impeller



Dredging Cutter Head



Water Chamber



Y Liner

to engineer

[www.trinityholdings.com](http://www.trinityholdings.com)



industry  
served



oil & gas

Induction Hardened  
Sheave as per API 8C



Heat Treated Latch Mandrels



Tribiox Coated Components



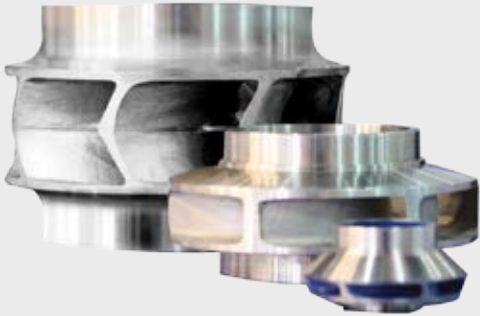
Nitrided Downhole Tools



Valves Bodies



Induction Hardened Gear



Impellers



Split Pump Casing (Super Duplex SS)



Bell Mouth



Diffuser Bowl



Shroud



Pump Casing



industry  
served



general  
engineering



Ball Joint



Bonnets



Feed Screw



Grate Plate



Vacuum Pump Bodies





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