



# INTRODUCTION

Nitin Alloys Global Ltd. was started in February 1998, near Silvassa, The Union Territory of Dadra & Nagar Haveli, 150kms away from Mumbai. We manufacture all grades of Heat, Wear & Corrosion Resistant Steels by Centrifugal, Sand Casting, Shell Molding & Investment Casting methods. Nitin Alloys Global Ltd. is ISO 9001 :2008 certified by M/s. Bureau Veritas and AD 2000 Merkblatt WO (PED) by TUV Rheinland for supplying high pressure equipments. We cater to the ever increasing demand of steel castings from 5gm to 2 metric tons single piece on a global level.

## PROFILE

Kedia Group entered the arena of the foundry industry in the year 1964, with the formation of Nitin Castings Ltd., a group company, with centralized facilities located at Thane, an eastern suburb 32 kms away from the financial capital of India, Mumbai.

Nitin made rapid strides to achieve full recognition in manufacturing high quality alloy steel castings, comparable with those which were being imported from various developed countries and gained acknowledgment and acceptance for import substitution in several core sector industries of national importance. 1974 was to be another landmark year in the history of Nitin. The company entered into a technical collaboration with M/s Schmidt + Clemens of Germany, and imported advanced technology for the manufacturing of various cast products. The technology absorption & update went on till 1989, when the technical collaboration ended making Nitin a fully independent company to expand its horizons and meet the increasing demand of castings Nitin Alloy Global Limited was started in Silvassa.

A large and highly skilled workforce manning its manufacturing and quality control facilities and with a national and global network of service points, Nitin is fully geared to meet the entire range of requirements of castings for various industries like Cement, Steel, Power, Oil & Gas and other major Engineering Industries in India and abroad.

During the year 2006-07, Nitin further expanded its manufacturing activities. Nitin Alloys Global Ltd. was expanded to manufacture Manganese Steel, Low Alloy Steel, Chromium Steels and so on besides the existing grades of Heat, Corrosion & Wear Resistance Alloys. The manufacturing capacity, after this expansion is 3,000 Tones Per Annum. The expanded facility has State Of the Art brand new Centrifugal, Static Casting and Shell Molding manufacturing plant with Machining, Fabrication and all kinds of finishing and testing facilities to give fully machined products to its customers in ready to fit condition.

2014 was another landmark year as a 300 MT/year Investment Casting Plant was set up to cater to Valve & Pumps, Defence, Surgical, Marine, Automotive, Aerospace and General Engineering sectors. This made Nitin Alloys Global Ltd. one of the few foundries in the world having Centrifugal, Static, Shell Molding and Investment Castings facilities under one roof.

# MISSION STATEMENT

***"To gain international recognition for Quality Products, Cost Leadership, Product Innovation and Customer Satisfaction."***

## PROCESS

### CENTRIFUGAL CASTINGS

Centrifugal Casting is the ideal process to make cylindrical shapes which is difficult to be produced by other process. By introducing molten metal into a high speed spinning metallic mold, enabling sound metal to solidify into a cylindrical shape under high centrifugal force.

### CENTRIFUGAL CASTING METHOD

#### Horizontal Process

Outside Diameter: 90 mm to 850mm

Length: upto 5.00meters

Minimum Wall Thickness: 8 mm

#### Vertical Process

Outside Diameter: 1200mm

Height: 1000mm

### STATIC CASTINGS

Nitin specializes in manufacturing of Steel castings for various Heat, Corrosion and Wear Resistance applications. Castings are made by box less 2 part Sand Machine Molding Process & Shell Molding Process. We have one 5 MT and one 10 MT molding machine imported from Omega Machinery, UK. The system is capable of reclaiming up to 85% sand through a mechanical attrition unit. We also have 5 vertical injection shell molding machines to manufacture low weight sand castings demanding close unmachined dimensional tolerances and good surface finish.

### CASTING CAPABILITY

Casting Weight: 0.5 kgs - 2 metric tons





# INVESTMENT CASTINGS

In this process the parts can be made to suit its function, without the need to compromise to meet manufacturing limitations. Wax patterns are made which are injected into metallic dies by a press. These wax patterns are covered with ceramics which is baked. The cavity thus formed is replaced by molten metal. Draft angles and split lines are not required and problems in producing undercuts, helical forms and blind recesses can be largely ignored.

## The investment casting process has following advantages

- Ease in manufacturing complex and intricate parts.
- Reduces machining allowance or eliminates.
- Superior surface finish.
- Close dimensional tolerances.
- Reduces processing cost on tools and equipments.
- Can replace multi part assemblies with a lighter stronger components

# FACILITIES

## Foundry

- Medium frequency induction melting furnaces each of capacity from 50 kgs to 1500 kgs-7
- Horizontal Centrifugal Casting Machines - 2
- Vertical Centrifugal Casting Machines - 1
- Omega Mechanised Resin Boxless Molding System - 2
- Heat Treatment furnaces with Quenching Facility – 2
- Shell Molding Machines - 5
- 48" double table shot blasting machine – 1
- 72 inch Hanger Type Shot Blasting Machine- 1
- Shell Core Making Machine - 5
- Various pneumatic and electrical grinders for finishing activities
- Horizontal & Vertical Wax Injection Press - 2

## Machine Shop

- Horizontal Lathes - 7
- Shaping Machine - 3
- Planer Machines - 1
- Radial Drilling Machines - 2
- Milling Machines - 4
- Planomiller - 1

## Quality Control Facility

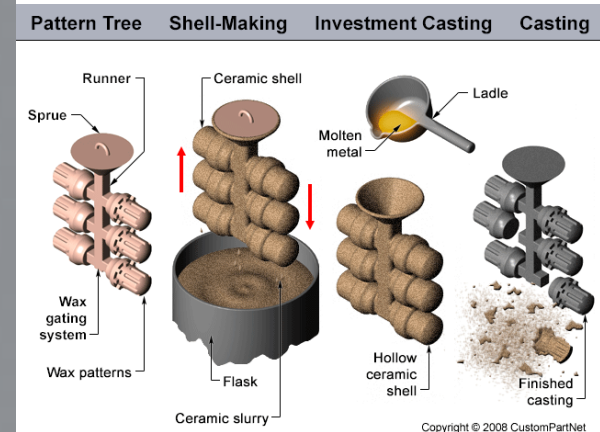
- Vacuum emission spectrometer
- Gamma ray radiography unit
- Metallurgical Microscope with Camera attachment
- Tensile Testing Machine
- Room and Elevated temperature Tensile Testing Machine
- Dye penetration testing unit
- Ultrasonic testing unit
- Brinell hardness testing machine
- Impact testing machine
- Sand testing lab
- Pneumatic And Hydraulic Testing Facility
- Hydraulic Pressure Testing Equipment, capacity up to 400 kg/cm<sup>2</sup> etc.
- Portable Digital Hardness Tester
- PMI (Positive material identification)

## Fabrication Shop

Our fabrication shop is fully equipped for welding of all kinds of alloys as per customer requirements and specific WPS standards. Our welders are qualified and skilled to perform Argon as well as TIG Welding. The welding procedures are followed as per International Standards.

## Ancillaries

We have apart from our own machine shop, developed dedicated ancillaries for all kinds of cast products for finish machining. The Ancillaries are equipped with all kinds of Special Purpose Machines (SPM's)



# INDUSTRIES WE SERVE

- Steel Plants
- Oil and Gas
- Chemical Plants
- Sponge Iron
- Cement Plants
- Furnace/HT Plants
- Power Plants
- Food Industry
- Decanter Industry
- Paper Mills
- Pumps & Valves
- Surgical Instruments
- Earth Moving
- Seamless Pipe
- General Engineering
- Defence
- Heavy Engineering
- RTJ Gasket

## CLIENTELLE

### STEEL PLANTS

- Steel Authority of India Ltd.
- Tata Steel
- Bhushan Steel
- Essar Steel
- Jindal Steel & Power
- JSW Steel
- National Steel
- Arcelor Mittal

### CEMENT PLANTS

- Holcim (ACC – AMBUJA)
- Ultratech Cement
- Heidelberg Cement a Ltd.
- Lafarge
- B.K. Birla Company
- India Cements
- Jaypee Cement
- Shree Cement

### ORIGINAL EQUIPMENT MANUFACTURERS (OEM'S)

- KHD Humboldt Wedag
- IKN Engineering
- ThyssenKrupp
- Walchandnagar Industries
- Promac Engineering
- Chanderpur Cement Works

### FURNACE / HT PLANTS

- Bharat Earth Movers Ltd. (BEML)
- Vulcan Engrs.Ltd.
- Hypertherm Technologies Pvt.Ltd.
- Wesman Engineers
- Bharat Heavy Electricals Ltd. (BHEL)
- LOI Wesman Therm Process
- Tenova Hypertherm
- Wellman Wacoma

### CHEMICAL / PUMPS & VALVES

- L & T Mc'neill
- Hindustan Dorr Oliver (HDOL)
- Jyoti Ltd.
- Mechcem Engineers





# PRODUCT WE MAKE

## VALVES

- Balls for ball valves ● Seat Rings ● Cages
- Hydrant Valves ● Strainer
- Valve Bodies, Bonnets, Yokes For Gate Valve, Discs For Gate Valve, Globe Valve, Valve Bodies & Discs For Butterfly Valves.

## PUMP INDUSTRY

- Casings – Small, Big ● Impellers – Open, Close
- Stuffing Box – Small, Big ● Bushes
- Sleeves ● Rotar Ball Diffuser – Small, Big

## CEMENT PLANTS

- Immersion Tubes / Dip Tubes
- Grate Plates – CFG / RFT, Conventional, Shoe Plates, Omega, & Stepped Grate Plates
- Tip Casting Blocks / Sectors For Kiln Inlet & Outlet
- Hammers, Diaphragms Liners For Cement, Coal, Ball Mills and Bull Ring Segments.
- Bimetallic Rollers
- Flaps, Diaphragm Plates

## STEEL PLANTS

- Grate Bars ● Tip Casting Blocks ● Chain Links
- Upper & Lower Side Walls ● Screen Size Rollers
- Side Plates ● Locking Clits
- Press Boards / Side Boards / Stripper Plate

## OTHERS

- Parts of Earth Moving Equipments in Low Alloy Steels
- Rings for metallic RTJ Gaskets
- Trays, Anchors, Pedestial Door Frames, Walking Beams for Furnaces.
- Lift cylinders for tyre machinery
- Liners for Slurry Pumps, Compressors
- Suction rolls and Refining Plates for paper industry

# OUR EXPERTISE FOR HEAT AND CORROSION RESISTANT APPLICATIONS

## RESEARCH AND DEVELOPMENT

Developing special alloy steels for high temperature and corrosive atmospheres with special micro-alloying elements to improve life of the product. Nitin Alloys Global Ltd. has introduced modified alloys of IS 4522 equivalents to give longer life resulting in longer replacement times of HRCS spare parts. These alloys include:

DIP TUBES/IMMERSION TUBES	INLET & OUTLET SECTOR TIP CASTINGS	COOLER GRATE PLATES
NA Durable – IS 4522 Grade 7 Equivalent Working Temperature – 700 c – 900 c  NA Tough – IS 4522 Grade 9 Equivalent Working Temperature – 900 c – 1100 c	NA Extra – IS 4522 Grade 9 Equivalent Inlet – Working Temp – 1100 c – 1300 c Outlet – Working Temp – 1000 c – 1100 c	NA Strong – IS 4522 Grade 7 Equivalent Working Temperature - < 800 c  NA Strength – IS 4522 Grade 9 Equivalent Working Temperature – 800 c – 1050 c  NA Extreme – IS 4522 Grade 11 Equivalent Working Temperature – 1000 c – 1150 c





## PRODUCT DESIGN

Our design engineers are experienced and based on working conditions redesign with latest software's like Ansys, Solidworks, Pro Engineering. Some of the work we have done for the cement industries is as below

## GRATE PLATE

Redesigning of Grate Plates for better efficiency,  
easy installation and better life in existing coolers  
of any make.

## TIP CASTINGS AND SECTORS & DIP TUBES

Improving the design of Tip Castings and Immersion Tubes for ease of assembly at site and longer life. The necessary fixtures and tools for the same are available with us. We perform complete match-up assembly with match-making at our works before dispatch for faster installation.

## READY TO USE PARTS

Having all facilities, we are in a position to supply ready to use parts as per customer requirements. We are one-stop shop for Alloys Selection, Component Design & Analysis and manufacturing of Ready to use Components.

## REVAMPING

We have site engineers who travel continuously all over the world in helping erection and commissioning of our castings. Existing design of our components is done with cost efficiency and better efficiency in life. Common designs are made for many parts helping interchangeability and reducing inventory cost.



# MANUFACTURING RANGE

	Sand Castings	Shell Castings	Centrifugal Castings	Investment Castings
Size	2.5 m x 2.5 m max	600 mm x 800 mm max	855 Od max, L 5m single piece max	300 mm length max
Weight in kg / pc	1 kg -2000 kg	0.3 kg – 50 kg	50 kg -2000 kg	5 gm to 100 kg

## Comparison Of Various Casting Manufacturing Processes

Process	Surface Finish as cast	Dimensional Tolerances as cast	Manufacturing Constraints	Cost of Manufacturing	Quality & consistency in quality	Lead Time
Sand Castings	Good 12.2 to 25 Microns	Good +/- 2 mm	No limitations Weight: 1 Kg. to 2000 Kgs.	Low	Good	Low
Shell Molding	Very Good 3.2 to 6.3 Microns	Very Good +/- 1 mm	Maximum Piece Size: 600 x 700 mm Weight: 500 gm to 50 Kgs.	Medium	Very Good	High
Investment Castings	Excellent 1.6 to 3.2 Microns	Excellent +/- 0.5 mm	Very intricate and complex shape parts can be produced Weight : 5 gm to 100 Kgs.	High	Excellent	Medium





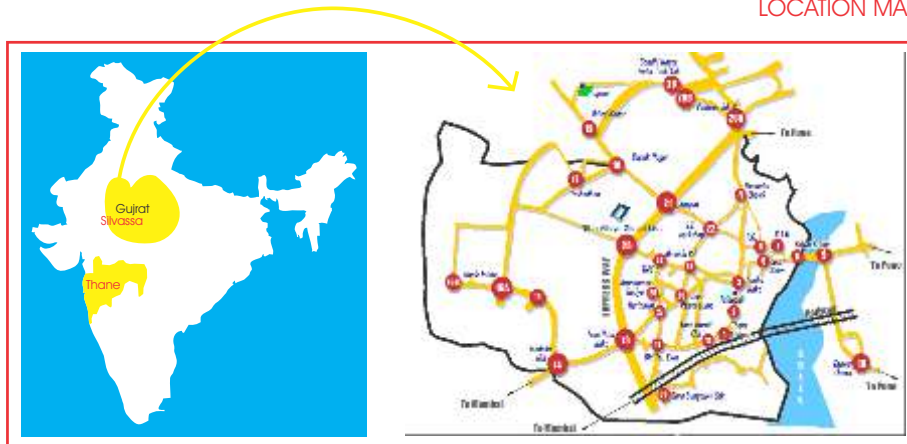
# HISTORICAL ACHIEVEMENTS OF NITIN

- Only company in India to produce heat and corrosion resistant grades by horizontal centrifugal process up to 800 mm and vertical centrifugal process up to 1200mm.
- First company in India to supply cobalt based castings -UMCO 50,51 & Super Alloy 22-H.
- First company in India to manufacture centrifugally cast tubes in single length of 5m.
- First company in India to get registered with M/s Engineers India Limited for supply of grades like ASTM A 560, 50 Cr-50Ni-Cb for refineries and petrochemicals.
- First company in India to manufacture HRCS components for cement plants then as a import substitute.





## LOCATION MAP



## CORPORATE OFFICE

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