

PRESENTATION ON

INVESTMENT & PRECISION CASTINGS LTD

NARI ROAD, BHAVNAGAR, GUJARAT, INDIA 364 006



SINCE : 1975

INTRODUCTION

- Investment & Precision Castings Ltd (IPCL) was promoted by the Tamboli Family.
- IPCL was the first Investment Casting Foundry in Gujarat formed way back in 1975. There was then only one other small Investment Casting Foundry in the entire country.
- IPCL is today a technology leader in the industry, handling the widest range of material specifications
(In Ferrous specifications-Carbon Steels, Low alloy Steels, Case hardening Steels, Austenitic Stainless Steels, Martensitic Stainless Steel, Duplex Stainless Steels, Cast Iron and Ductile Iron (SG Iron),
In Non-Ferrous specifications-Pure Copper and Copper Alloys, Aluminum Alloys, Nickel base Alloys and Cobalt base Alloys) and piece weights ranging from a few grams to 200 kg. per piece.

LOCATION

Registered Office & Works:

**NARI ROAD,
BHAVNAGAR,
GUJARAT,
INDIA 364 006**



CONTACTS

**Contact person : Mr. Piyush Tamboli
CHAIRMAN & MANAGING DIRECTOR**

**Telephone : (91) (278) 2523300 To 304
Fax : (91) (278) 2523500 To 502**

**Email : direct1@ipcl.in
Website : www.ipcl.in**



SINCE : 1975

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☐ CONTACTS

- Domestic & Export Marketing

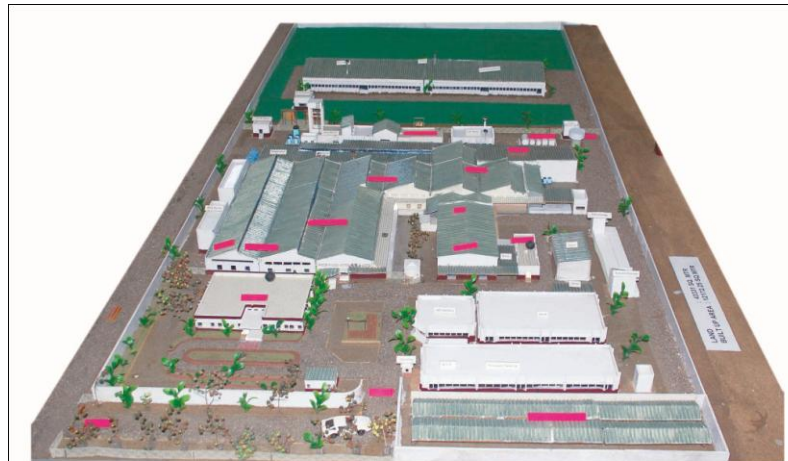
Contact person : Mr. Suraj Andharia
MANAGER MARKETING

Telephone : (91) (278) 2523300 To 304

Direct Line : (91) (278) 6543258

Fax : (91) (278) 2523500 To 502

Email : marketing@ipcl.in (domestic)
: marketing2@ipcl.in (domestic)
: export@ipcl.in (export)



SINCE : 1975

VISION

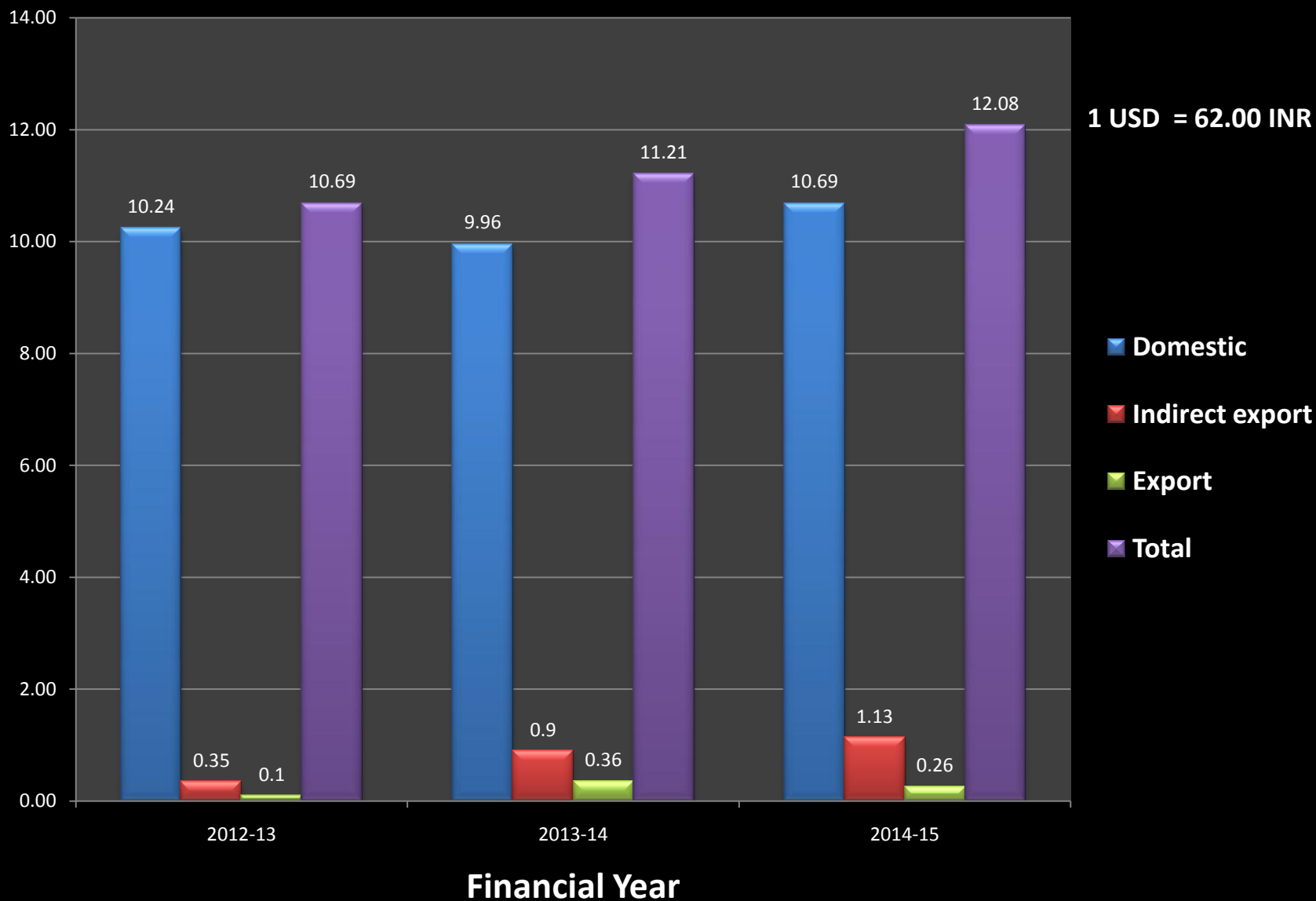
- Maintain technology leadership in India in manufacturing fully machined, near net-shape castings and sub-assemblies with special focus on Global Automotive Industry.



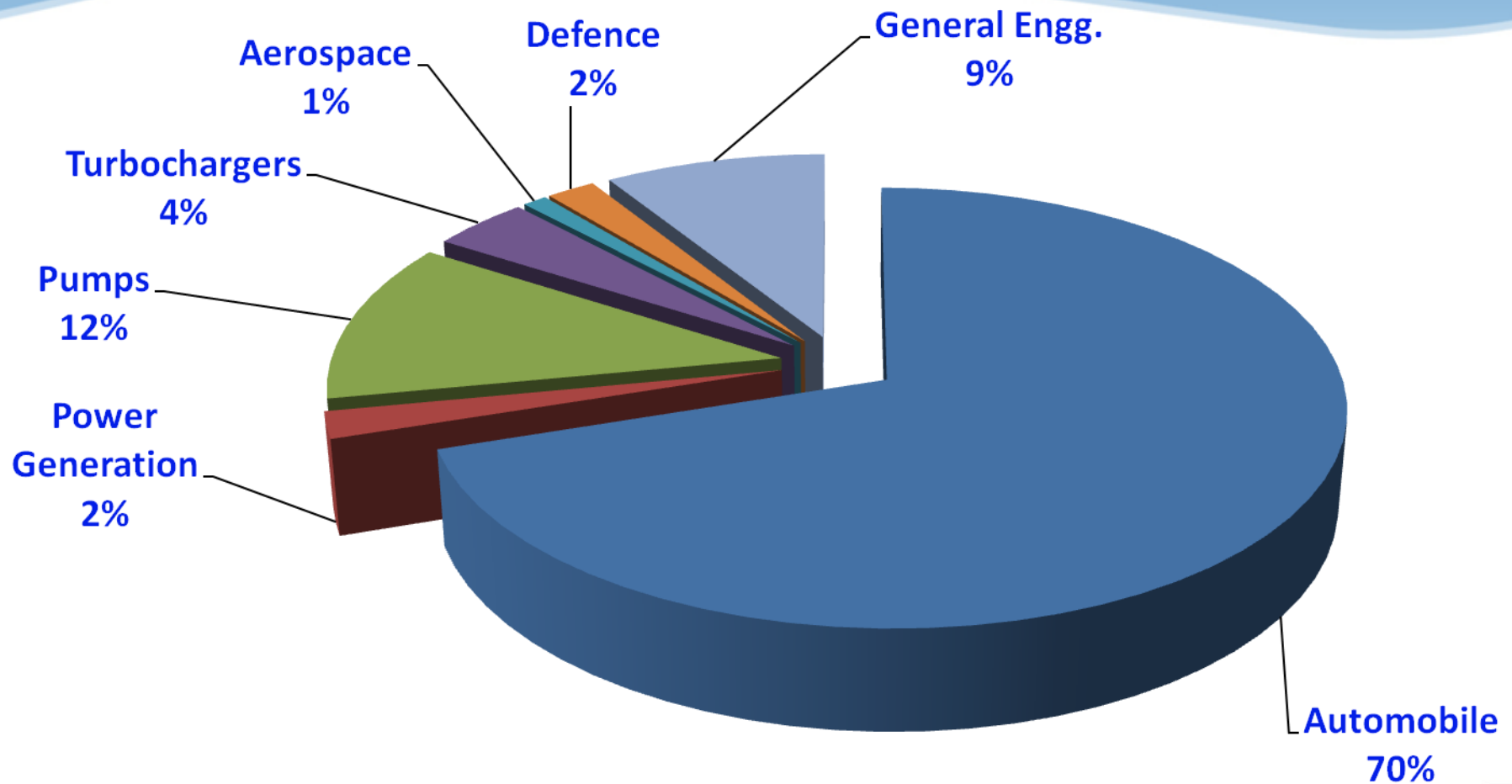
Financial Results – Total Turnover

1 USD = 62.00 INR

Million (USD)



Industry-wise sales



Early days Technical Collaborations / Tie-Ups

◆ 1977 to 1982 :-

Obtained Technical Know-how
Licence from M/s. Arwood
Corporation Inc., USA

◆ 1983 to 1988 :-

Obtained Technical Know-how
Licence from M/s. Zollern,
Germany

◆ 1987 to 1995 :-

Obtained Technical Know-how
From M/s. Associated Foundries
Engineering Co.Ltd., Japan.



Recognitions

and

Awards

- We have the following Quality Systems Certification from RWTUV, Germany:

ISO/TS 16949	: 2009
ISO 9001	: 2008
EN 9100	: 2009
ISO 14001	: 2004
BS OHSAS 18001	: 2007
AD 2000-Merkblatt W0	
PED 97/23/EC	



- We are a “Self Certified / DOL Vendor” to Suzuki Powertain India Ltd and Mahindra & Mahindra Ltd.
- “IPCL is the first Investment Casting Company, who has been awarded with “TYPE APPROVAL CERTIFICATION” by Centre for Military Airworthiness & Certification (CEMILAC), DRDO, Ministry of Defence, Government of India, for supply of Aluminium Castings, to be fitted on Light Combat Aircraft.”
- Casting Contest Award-2014 For Outstanding Leadership In Demonstrating The Benefits Of The Investment Casting Process By Investment Casting Institute, USA



SINCE : 1975



F-07-11

**सेना उड़नयोग्यता और प्रमाणीकरण केंद्र
CENTRE FOR MILITARY AIRWORTHINESS & CERTIFICATION**

IS/ISO: 9001:2008

रक्षा अनुसंधान तथा विकास संगठन
DEFENCE R&D ORGANISATION
भारत सरकार, रक्षा मंत्रालय
GOVERNMENT OF INDIA
MINISTRY OF DEFENCE
मारतहल्ली कालोनी पोस्ट, बेंगलुरु
MARATHAHALLI COLONY P.O.,
BENGALURU - 560 037.

वर्ग अनुमोदन सं. 1517 का नवीकरण/Renewal of Type Approval No. 1517

**विषय/Sub: एलसीए हेतु एल्यूमिनियम अलॉय एएल-356ए इन्वेस्टमेंट कास्टिंग्स
(पेडेस्टल यूनिट और गिंबल बॉक्स)/**

**Aluminium Alloy Al – 356A Investment Castings
(Pedestal Unit & Gimbal Box) for LCA**

यह घोषित किया जाता है कि मेसर्स इन्वेस्टमेंट एंड प्रिसिशन कास्टिंग्स लिमिटेड, गुजरात-364 006 द्वारा विकसित और उत्पादित, "एल सी ए हेतु एल्यूमिनियम अलॉय एएल-356ए इन्वेस्टमेंट कास्टिंग्स (पेडेस्टल यूनिट और गिंबल बॉक्स)" को संदर्भ सं. सेमिलैक/5070/टीए-1517, दिनांक 28 सितंबर 2010, द्वारा वर्ग अनुमोदन सं. 1517 जारी किया गया था और जो कि 31 दिसंबर 2015 तक वैध है।

This is to state that the "Aluminium Alloy Al – 356A Investment Castings (Pedestal Unit & Gimbal Box) for LCA, developed and manufactured by M/s. Investment and Precision Castings Limited, Gujarat – 364 006 was issued with Type Approval No. 1517 vide Ref. No. CEMILAC/5070/TA-1517, dated: 28th Sept 2010 which is valid upto 31st December 2015.

यह प्रमाणित किया जाता है कि इस वर्ग अनुमोदन का नवीकरण 01 जनवरी 2016 से संतोषजनक निष्पादन फीडबैक के आधार पर किया जाता है तथा 31 दिसंबर 2021 तक वैध है बशर्ते इसे स्थगित, निरस्त या रद्द नहीं किया जाता। विक्रेता को इस वर्ग अनुमोदन की अवधि समाप्त होने के तीन महीने पहले ही अनुवर्ती नवीकरण के लिए निष्पादन फीडबैक, उत्पादित मात्रा, अगर कोई अस्वीकरण है तो उसे और उसके कारण को सम्मिलित करते हुए सभी संलग्न दस्तावेजों के साथ आर.सी.एम.ए (मेटिरियल्स), हैदराबाद – 500 058, से अनुरोध करना होगा। वर्ग अनुमोदन पत्र में अनुबद्ध अन्य सभी शर्तें वही रहेंगी।

This is to certify that this Type Approval is hereby renewed w.e.f 01st January 2016 based on the satisfactory performance feedback and is valid up to 31st December 2021 unless otherwise, suspended or cancelled or revoked. For subsequent renewal, the vendor shall request RCMA (Materials), Hyderabad – 500 058, three months before the expiry of Type Approval, with all relevant documents including performance feedback, quantity produced & rejections, if any, and its cause. All other terms & conditions stipulated in the Type Approval Certificate remain unaltered.

सं./No. : सेमिलैक/ CEMILAC/5070/टी.ए/TA- 1517/1R

दिनांक/Date : 23 Sept 2015

फैक्स सं./Fax No: 080-25230856

(गंतायत गौड़ वै. जी /G. Gouda, Sc. 'G')

स्थानामन्त मुख्य कार्यपालक(उड़नयोग्यता)/
Offg.Chief Executive (Airworthiness)



OUTSTANDING PERFORMANCE AWARD – 2009
PRESENTED TO
INVESTMENT & PRECISION CASTINGS LTD
BY
MAHINDRA & MAHINDRA LTD,
FARM EQUIPMENT SECTOR

HV TRANSMISSIONS LTD

A **TATA** ENTERPRISE

CERTIFICATE OF APPRECIATION



We recognise M/s. *Investment & Precision Castings Ltd*
for their outstanding performance and valuable contribution towards
..... *New products development* during the year 2010 - 11.

Date: 30th April 2011


CEO - HVAL & HVTL



**OUTSTANDING PERFORMANCE AWARD – 2010-11
(2ND RUNNER UP IN NEW PRODUCT DEVELOPMENT)**

PRESENTED TO

INVESTMENT & PRECISION CASTINGS LTD

BY

**H V TRANSMISSION LTD
(A TATA ENTERPRISE)**



SINCE : 1975

Certificate of Appreciation

*In honor of your outstanding performance and dedication
during the year 2011-12, we gladly present this to*

M/s Investment & Precision Castings Ltd
for excellence in
Quality.

Date : 5th May 2012

G. S. Jaiswal
CEO
TML DRIVELINES LIMITED

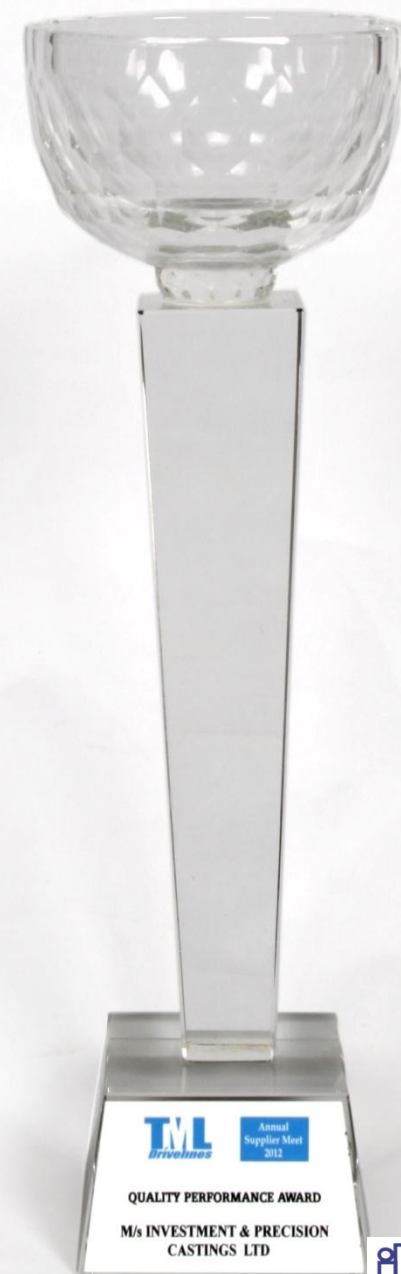
**OUTSTANDING PERFORMANCE AWARD – 2011-12
(Excellence in Quality)**

PRESENTED TO

INVESTMENT & PRECISION CASTINGS LTD

BY

**TML DRIVELINES LIMITED
(A TATA ENTERPRISE)**



Certificate of Appreciation

This certificate is presented to

INVESTMENT & PRECISION CASTING LTD

(Vendor code - 191036)

for sustained efforts in achieving

Quality PPM < 120 in FY 12

We appreciate your commitment and dedication towards
success and business results



India Supply Management

CERTIFICATE OF APPRECIATION FOR FY 12

For Achieving Quality PPM < 120

PRESENTED TO

INVESTMENT & PRECISION CASTINGS LTD

BY

JOHN DEERE



SINCE : 1975



BEST PRODUCT QUALITY-2014
PRESENTED TO
INVESTMENT & PRECISION CASTINGS LTD
BY
ABB TURBOCHARGING



**CASTING CONTEST AWARD-2014 FOR OUTSTANDING LEADERSHIP IN
DEMONSTRATING THE BENEFITS OF THE INVESTMENT CASTING PROCESS
PRESENTED TO
INVESTMENT & PRECISION CASTINGS LTD
BY
INVESTMENT CASTING INSTITUTE, USA**



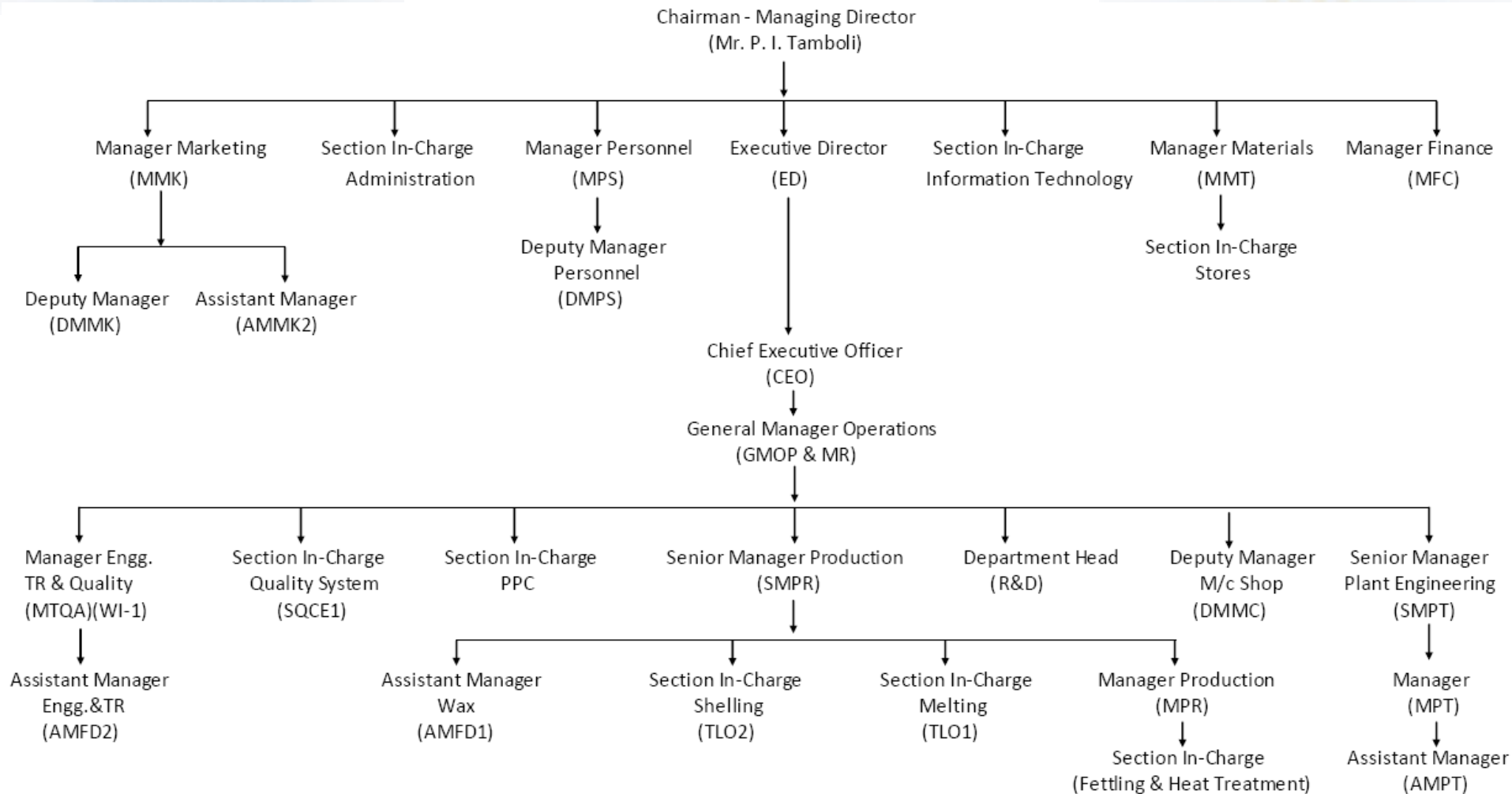
SAME GOLD MEDAL AWARD 2014
PRESENTED TO
INVESTMENT & PRECISION CASTINGS LTD
BY
SOCIETY OF AEROSPACE MANUFACTURING ENGINEERS

Electric Power Availability

- Sanctioned Power - 2800KVA.
- We have a guaranteed power supply of 1920 KVA for 24 hours.
- Back up power - 3 Nos. of D.G. Sets, each 320 KVA – Total 960 KVA.
- We have two Wind Turbine Generator (Suzlon) of 1.25 MW each.



ORGANIZATION CHART



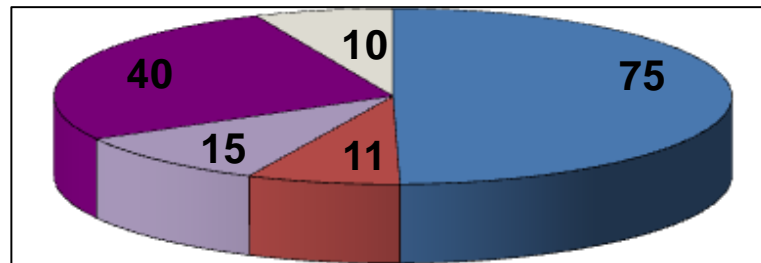
Manpower

Staff : 151 Nos.

Workmen : 600 Nos.

Total No. of Employees : 751 Nos.

Staff



■ Manufacturing

■ Engineering & Technology

■ Quality

■ Administration & Commercial

■ Maintenance & Project



SINCE : 1975

Quality Policy



IPCL is committed to the quality of its products and services and has defined its policy as:

- To establish, maintain & continually improve an effective Quality, Health, Safety & Environmental Management System to ensure and demonstrate that castings supplied meet customer requirements and also comply with all relevant Environmental, Health & Safety laws and regulations and other requirements.**
- To continually improve manufacturing and process capabilities to enhance quality of castings.**
- Keep upgrading technology, improve costs and increase safety of employees in processes.**
- Promote prevention of pollution, work related injuries and illness and protection of natural resources to continually improve the quality of its conservative activities, safety and health performance.**



SINCE : 1975

Design Capabilities

- Our Engineering Department does design for Tooling & methoding for manufacturing of castings. (Software used AutoCAD, Solid Works etc.)

- IPCL outsources tool making activities.

- We have long business relationship with highly experienced and knowledgeable tool makers for dies and tooling using CNC machines. They have capability to produce directly from 3D models. Tools are designed using software like IDEAS, PRO-E, MASTER CAM etc.



● Core Making

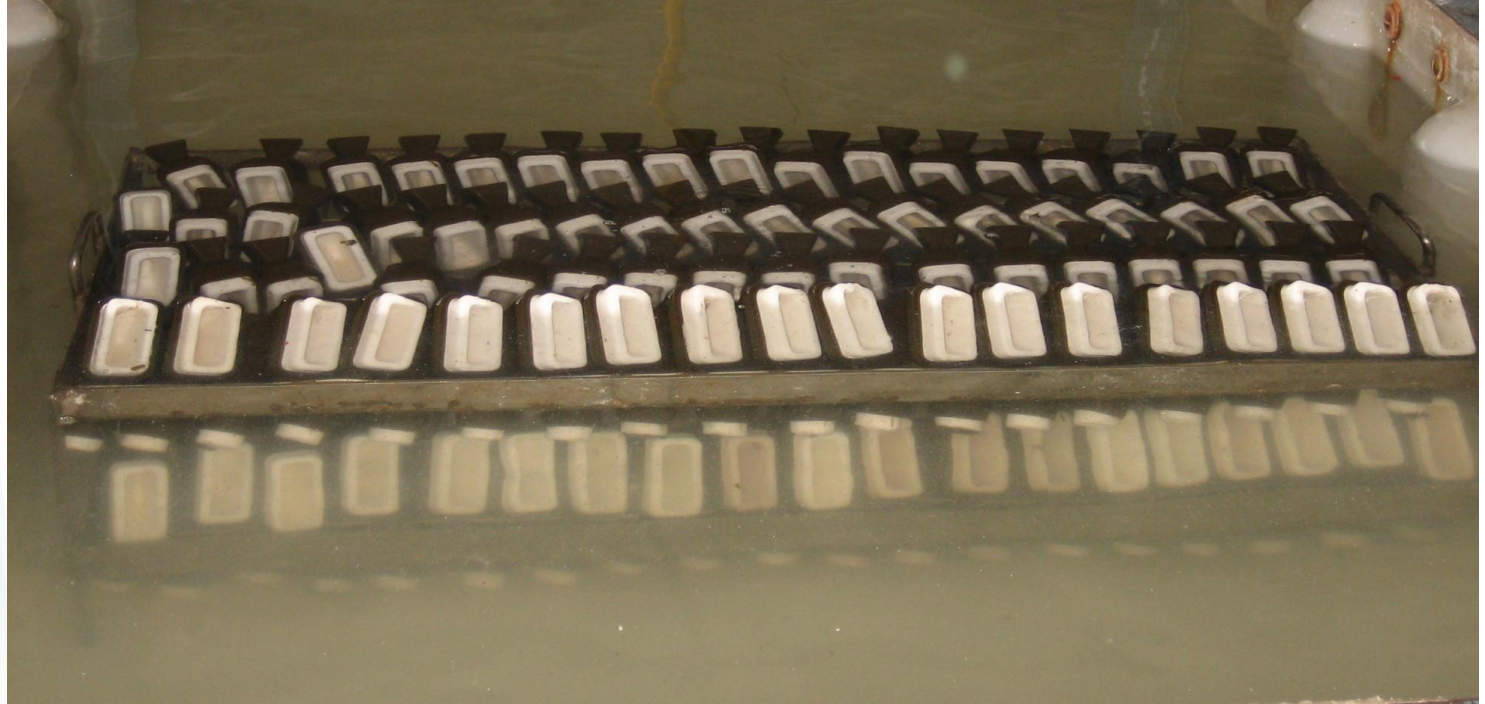
Facilities

In house facility available for manufacturing of Soluble and Injected Ceramic Cores
We use them to create hollow portions in Castings



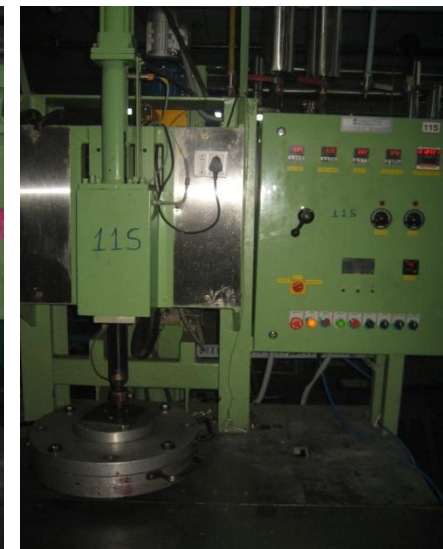
Leaching of Wax Patterns to extract Soluble Cores

Facilities



Wax Injection Presses

Facilities



XX	No. of Presses			
XX	Auto	Semi	Manual	Total
Pattern Injection	26	6	3	35
Auxiliary	5	0	1	6
Ceramic Core	0	1	0	1
Extrusion Press for Runner	0	0	3	3



Facilities

● In house facility to produce ceramic and soluble cores for making hollow castings.

● Shelling process by Robots (ABB Robots- **2nos.**), and Shell Building Equipments



● Dewaxing Boilerclaves (**3nos.**)

● Air-melt Induction Melting Furnaces (**4nos.-400kg, 1no.-500kg, 1no.-300kg & 1no.-50kg**)



Facilities- Roll-over Induction Melting Furnace

Vacuum Castings

- ◆ Crucible Capacity : 25 Kg.
- ◆ Materials to Melt : Carbon Steels, Stainless Steels, Nickel Base Alloys, Cobalt Base Alloys, Pure Copper-Copper Alloys, Aluminum Alloys



Facilities- Vacuum Castings

Vacuum Induction Melting Furnace (CONSARC, UK) to be installed

- ◆ Furnace : Twin Chamber
- ◆ Crucible Capacity : 25 Kg.
- ◆ Mould size : 600 mm (Dia.)
- ◆ Materials to Melt : Nickel Base Alloys, Cobalt Base Alloys and Stainless Steel



Heat Treatment Furnaces/ Equipments



- Hardening & Tempering
- Case Hardening & Tempering
- Re-carburising
- Annealing
- Normalising
- Solutionising
- Sursulf Surface hardening
- Induction Hardening (**Machines-8nos.**)



➤ Fettling & Finishing including shot Blasting & Abrasive Blasting (**In house, fully dedicated vendors-28nos.**)

Type of F/c.	Capacity (kg.)	No. of F/c	Control
Pit Type Gas Carburizing	200	6	SCADA
	100	8	SCADA
Pit Type Muffle	200	2	SCADA
Box Type Muffle	60	3	SCADA
	100	3	SCADA
Tempering	30	1	SCADA
	100	5	SCADA
	200	3	SCADA
Sursulf (Salt bath)	100	1	SCADA
	Total	32	



Machining:

- 17 machining vendors equipped with conventional & CNC machines , all ISO-9001 certified by RWTUV.
- A fully equipped CNC Machine Shop with modern machines and quality control equipments.

Type of M/c.	Make	X	Y	Z	No. of M/c.
VMC	Hass (Super Mili Mini)	406	305	254	1
	BFW (BMV-45)	600	450	500	5
	BFW (BMV-60)	1050	600	600	1
	Jyoti (PX-20 Rapid)	510	510	510	7
Total					14
Turning Center	Jyoti (DX-150)	Center Height-75mm			1
	Jyoti (DX-200)	Center Height-100mm			1
	Jyoti (DX-250)	Center Height-125mm			1
	Jyoti (DX-500)	Center Height-250mm			1
Total					4
Total CNCs					18



Vertical Machining Center



Turning Center

VALUE ADDED PROCESSES

IPCL possess the strength to give its customers value added services through these processes like:-

- ◆ Electroplating (Outsourced)
- ◆ Electro polishing, Buffing, Powder coating (outsourced)
- ◆ Hard chrome plating (outsourced)
- ◆ Pickling & Passivation, etc.
- ◆ Geomet coating (outsourced)



Facilities for Input Materials Testing

■ Wax:

- ◆ Ash Content Test : Muffle Furnace (1000°C)
- ◆ Congealing Point Test : Thermometer (0-110°C)
- ◆ Penetration Test : Penitrometer
- ◆ Linear Contraction
& Volumetric Sink Test : Vernier Caliper, Micrometer Screw

■ Shelling Materials (Sand, Flour, Silica, Stucco etc.):

- ◆ Loss on Ignition Test : Crucible & Muffle Furnace (1000°C)
- ◆ Viscosity : Zhan Cup, Stop Watch, Viscometer
- ◆ Shell Strength Test : Shell Strength Machine
(Modulus of Rupture)
- ◆ Sieve Analysis Test : Sieve Shaker
- ◆ pH Test : pH Meter
- ◆ Shell Permeability Test : Mercury Manometer, N₂ Cylinder

■ Steel Scrap:

- ◆ Chemical Composition : Spectrometer, Radiation Detection Test



QUALITY CONTROL:

Our Quality Control Department is equipped with the following instruments:

- ◆ Spectrometer (Make : Spectromaxx) - **2 nos.**
- ◆ Co-ordinate Measuring Machines (CMM)
(Make : Carl Zeiss) - **500x500x500mm**
- ◆ Profile projector (Make : Dynascan)
- ◆ Metallurgical microscope with Image Analyzer
(Make : Carl Zeiss Axiovert A1 MAT)

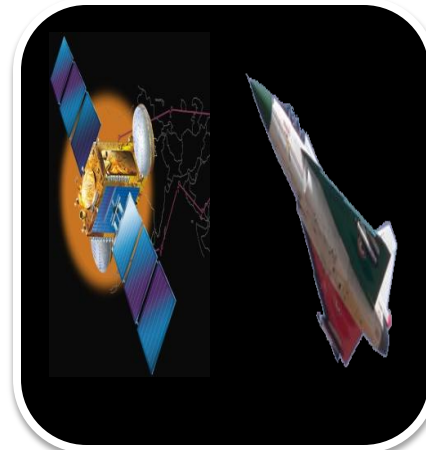
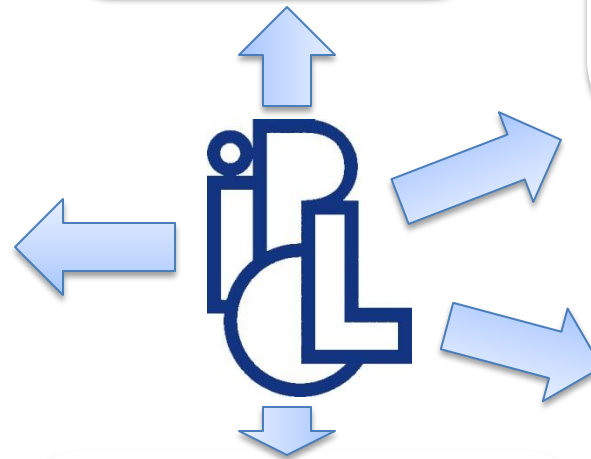


Testing Facilities Capabilities

- **Magnetic Particle Testing Machine & Facilities for Dye Penetrant Testing**
- **Micro Vickers Hardness Tester (Fully Automatic) (Make:Shimadzu)**
- **Hardness Testing Machines**
- **Universal Testing Machine**
- **Impact Testing Machine**
- **Leakage Testing**
- **Radiography facility (outsourced)**



Customer Base and products



Automobiles And Farm Equipments



Products supplied :-

Engine & Transmission Parts

Clutch Parts

Rocker Arms



**Automobiles
EGR Cooler/
Emission
System
Parts**

 **BorgWarner**

Valeo

MAHLE

**TENNECO**

Products supplied :-

Coolant Connections

Flanges, Elbows

Diffusers

Gas Tank



SINCE : 1975

Products supplied

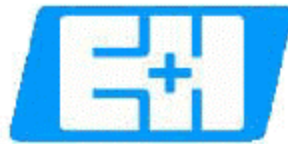
Pumps



Impellers

Diffusers

Industrial Automation



Endress+Hauser

Body for flow
Meters

Turbochargers



Nozzle rings

Inducers



Material Handling Equipments



Products supplied

Spring clip,
Suspension Plate,
Closing Element,
Rope Wedge

Earthmoving Machinery



Engine Parts

Aerospace



Electronics Corporation of India Limited

A Govt. of India (Dept. of Atomic Energy) Enterprise

Gimble Box and Pedestal



Structural Castings for
Satellite Launch Vehicle



SINCE : 1975

Power Generation

Customers



Products supplied

Turbine Blades

Copper Lugs

Defense



Pistol body

Rifle Parts



SINCE : 1975

Other Industries catered

- ✿ Air-conditioning & Refrigeration
- ✿ Locomotives
- ✿ Sewing Machines
- ✿ Hydraulic/Pneumatic
- ✿ Material Handling Equipment, etc.

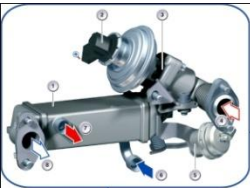




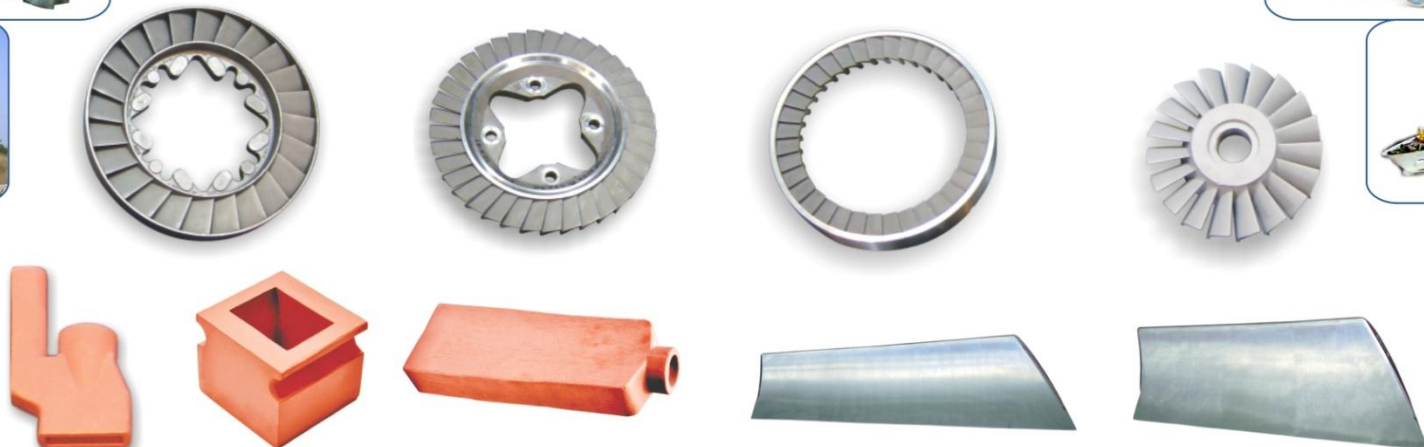
Automotive Components



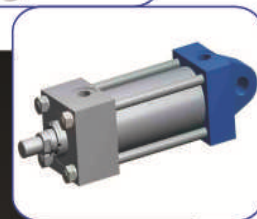
Connectors for Exhaust Gas Recirculation (EGR) Coolers



Blades & Nozzle Rings for Power Generation & Turbo Chargers



Components for General Engineering





164 Kg Impeller in semi-finished condition



1.8 meter Blade

Pistol Body, Rifle Parts for Defence



Capacity plan

Existing capacity of Plant-1	- 1500.00 Tons
Space & Buildings are ready of Plant-2	- <u>1000.00 Tons</u>
Total capacity	- 2500.00 Tons

Currently operating the capacity@1000tons per annum.

Buildings are ready, Machineries can be installed whenever necessary.



THANK YOU

