



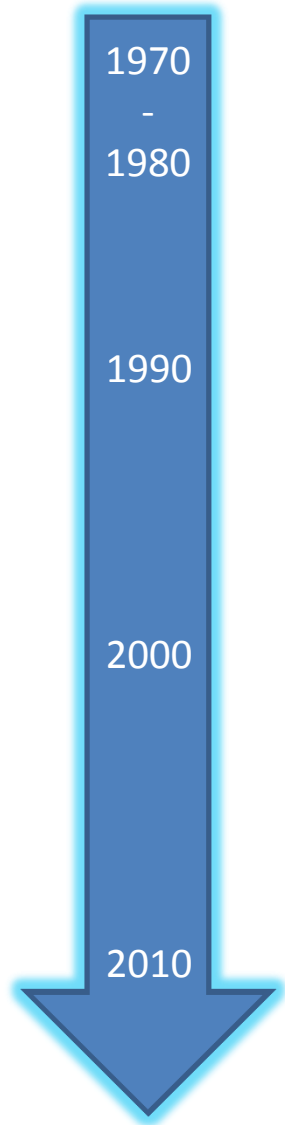
www.chunji.co.kr

since 1974

CHUNJI CORPORATION

The name *CHUNJI* was taken from the name of a crater lake
on Mountain *Baek-Du*, the highest mountain in Korea

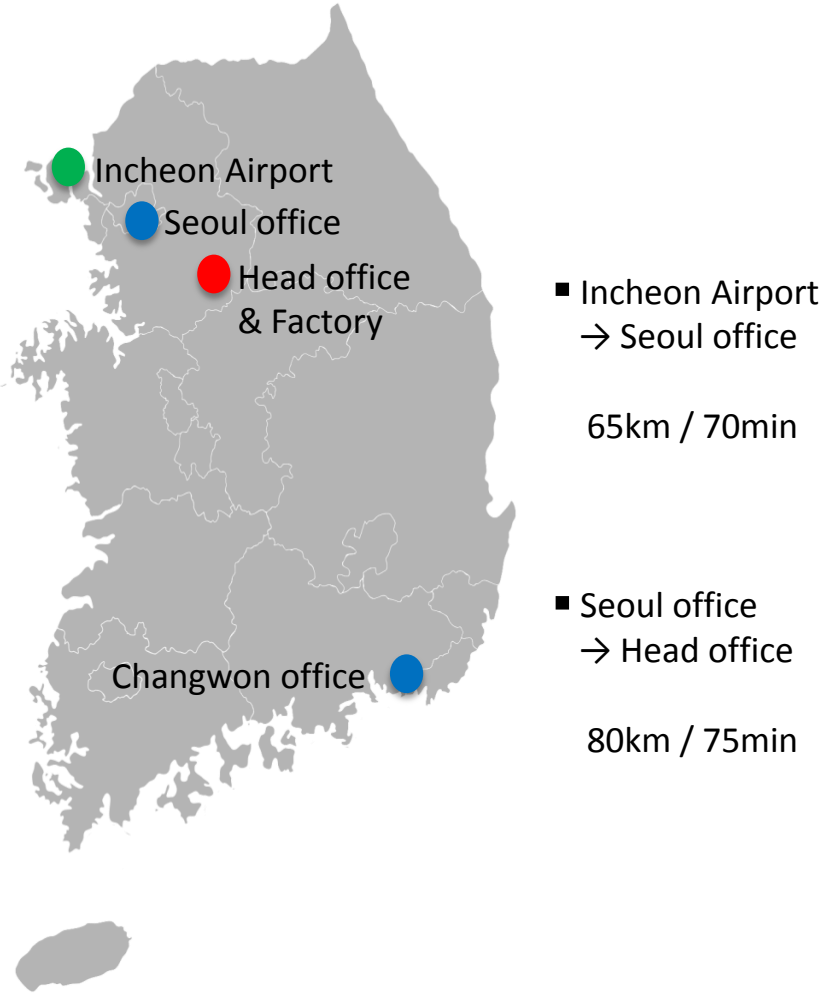
Company history



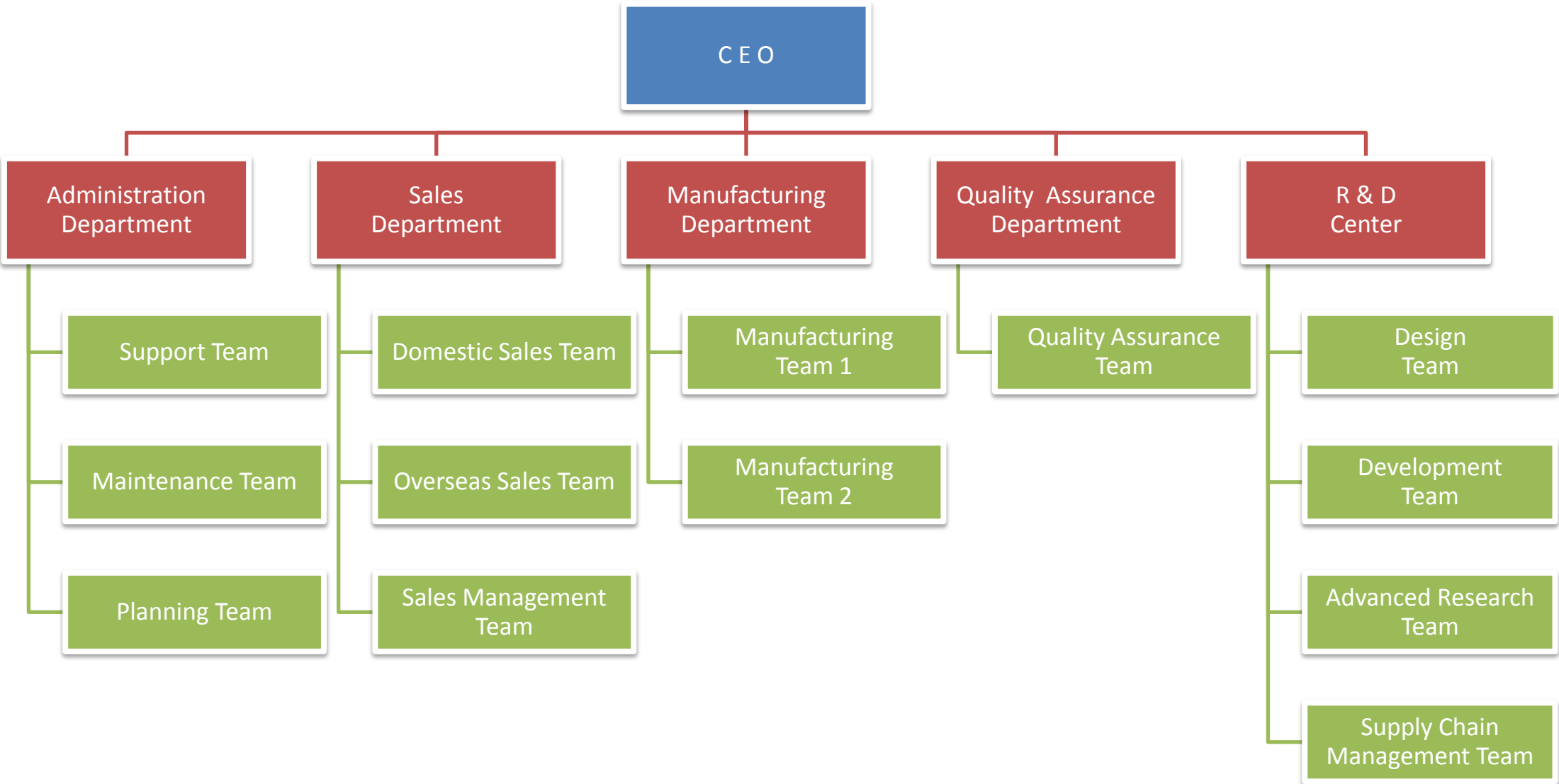
Oct. 1974	Foundation of Investment Casting Plant
May. 1978	Appointment as approved Supplier for Military components
Jul. 1988	Appointment as 1 st grade Quality Plant
Mar. 1991	Acquisition of AD 2000 by TÜV
Nov. 1992	Operating of R&D Center
Mar. 1993	Appointment as approved Supplier by Korean Nuclear Fuel Company
Jul. 1999	Acquisition of ISO 9002 by TÜV
Nov. 2000	Acquisition of Boeing DI 9000
Jun. 2001	Appointment as approved Supplier by Korean Aerospace Institute
Nov. 2003	Acquisition of AS 9100 / ISO 9001
Jun. 2007	Relocation of Head office & Factory (Seoul → Yeosu)
Oct. 2011	Acquisition of 7 Vessel Class Certificate
Jul. 2012	Acquisition of TS 16949 / ISO 14001
Apr. 2013	Acquisition of SQ (Supplier Quality) Certificate by Hyundai-Kia Motors
Sep. 2017	Operating of 2nd Vacuum Casting Facility

Workforce & Place of business

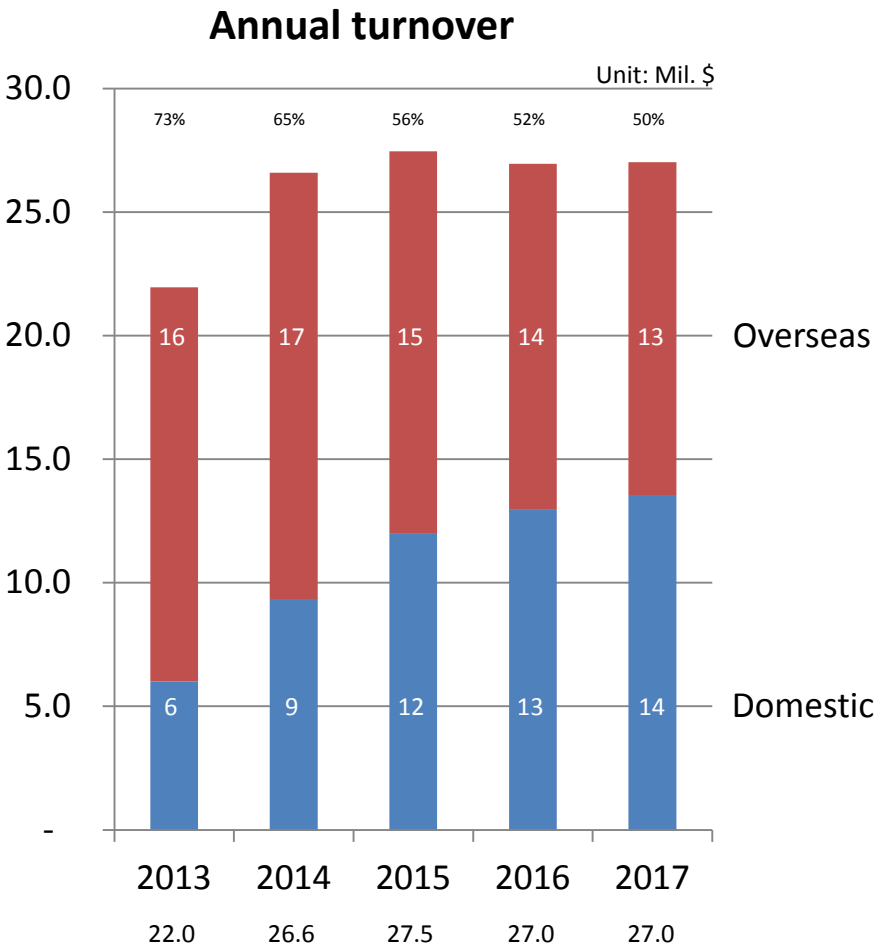
EMPLOYEES	Administration	Production	TOTAL
Administration	12	-	12
Sales	13	-	13
Manufacturing	15	110	125
Quality Assurance	7	10	17
R & D	10	5	15
TOTAL	57	125	182



Organization chart



Annual turnover & Production capacity



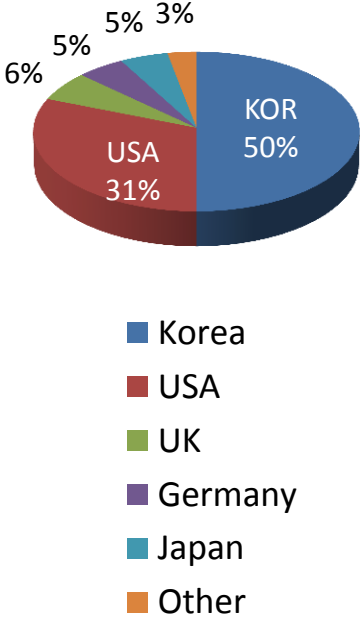
Capacity	Investment Casting : 13.500 molds per month (120 t) Tooling production : 50 EA per month
Lead time for mass production	Casting: 30 days / Casting + Machining: 40 days
Lead time for tooling and initial product	Casting: 45 days / Casting + Machining: 60 days

Warranty and Responsibility: according to agreements

Policy for defective products: free of charge replacement

- ※ Stagnation of turnover since 2015 due to economic recession of the oil/gas industry, which is one of our main supply field
 - Expansion to various supply fields, such as Automotive part or Aerospace industry
- ※ Increase of domestic turnover since 2014 due to entry of automotive part market

Customers & Supply region



Available materials



Austenite Stainless steels (304, 305, 306, 316)

Martensite Stainless steels

PPT Hardening Stainless steels (15-5PH, 17-4PH)

Carbon & Low Alloy steels

Nickel & Cobalt base Alloys (Air melt)

Nickel & Cobalt base Super alloys (for Vacuum alloy)

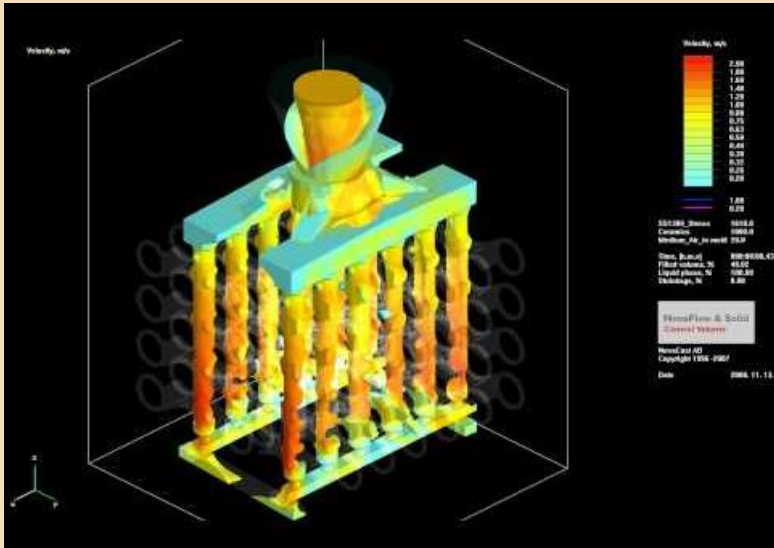
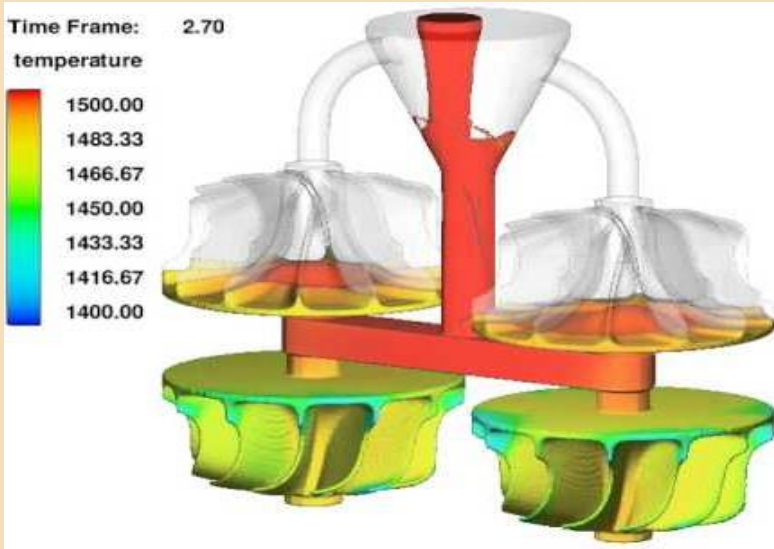
Heat-resistance Alloys

Duplex and Super Duplex

Cast tool steels

Aluminum alloys (356, A356, A357, A201)

Design program



Program

Model

CAD

Auto CAD 2015 (2D)

CAM

Top Solid CAM (Ver. 10.0)

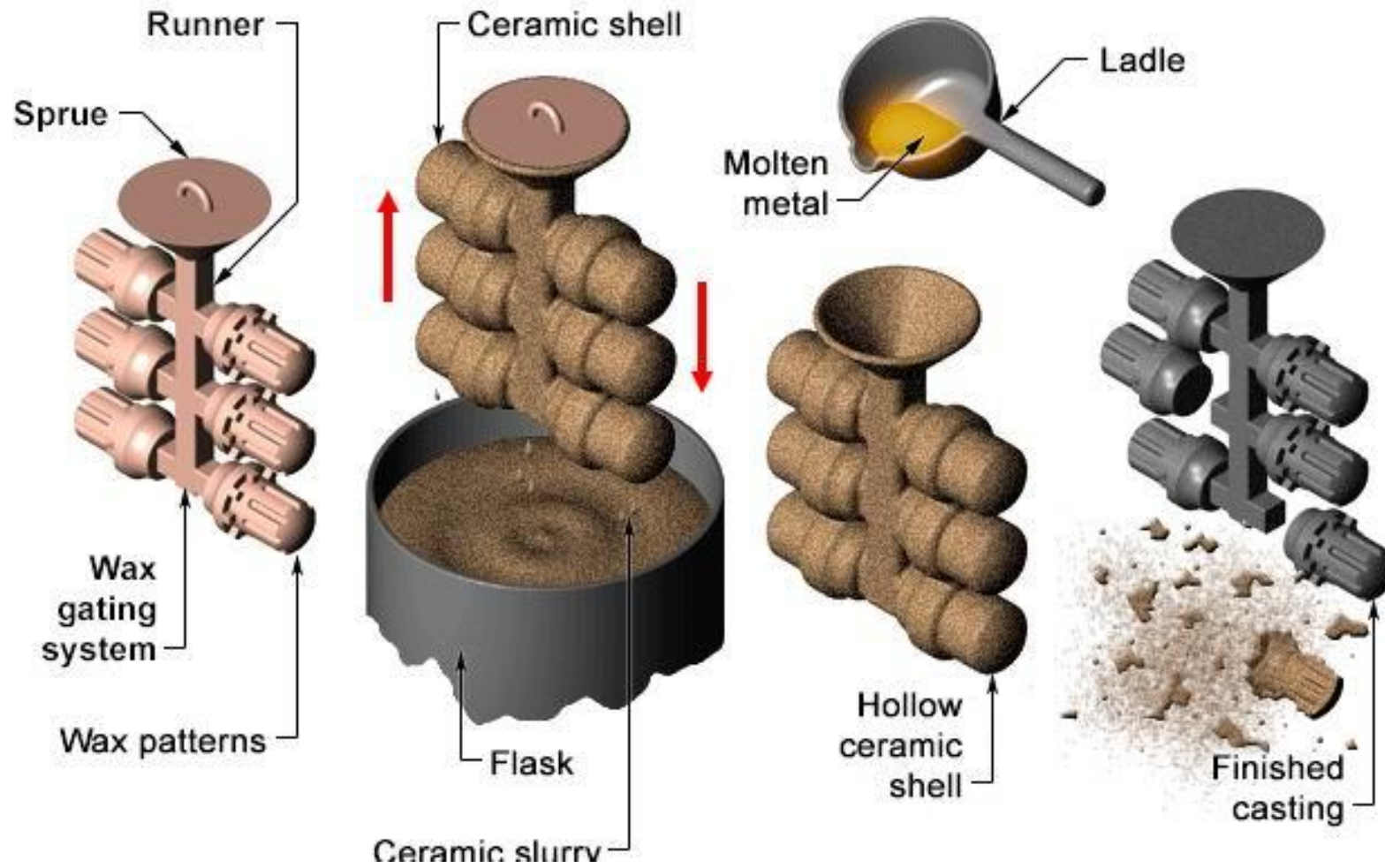
UG

NX 10 (3D)

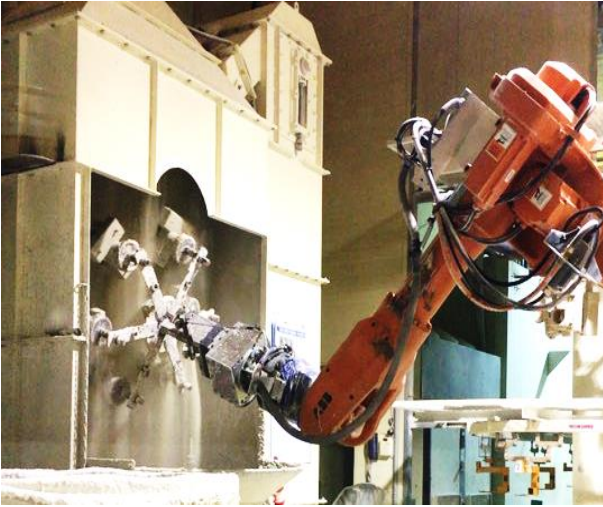
Simulation

Procast

Manufacturing method (Lost wax Method)



Manufacturing facilities



Wax injection machine (Auto, Manual, Extruder, C type)

Robot shell system incl. automatic conveyor

Boiler clave for dewaxing

Wax purification equipment for wax reuse

High frequency melting furnace

Pre-heat furnace

Vacuum casting facility (No.1 & No.2)

Centrifugal vacuum casting

Knock out, Hanger blast, Water jet machine for shell removal

Hydraulic press machine for straightening

Sand, Glas blast equipment

Machining Center (CNC, MCT, Lathe, Drill, Milling)



Vacuum casting



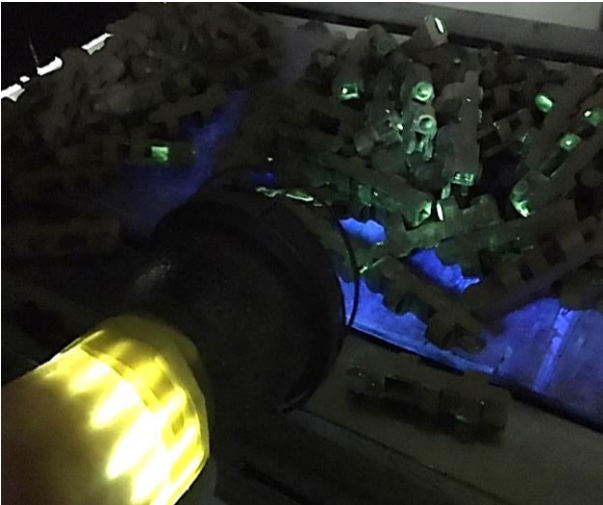
Manufacturer	CONSARC (USA)
Casting system	2 Chamber system (Melting & Mold)
Max Temperature	1.650°
System Capacity	75Kg
Mold Dimensions (mm)	Dia: Ø600 / Height: 700
Production Capacity	400 molds/month (7.5t/month)



- IGT (Industrial Gas Turbine)
- Inconel 738LC, Mar-M 247, Inconel 939, Hastelloy X
 - Turbine blade, Turbine vane, Ring segment, Shroud block

- Turbo charger (for Vessel, Automobile)
- Inconel 713LC, Inconel 718
 - Turbine wheel, Turbine blade

Inspection & Testing equipment



Hardness tester (Brinell, Rockwell, Shore, Vickers)

Tensile tester

Impact tester (Charpy)

Fatigue tester

Microscope (Optical, Electron)

Spectrometric analyzer

Fluorescent Penetrant Inspection

Magnetic tester

Radiological tester

Ultrasonic tester

3D Measuring equipment

Profile projector

Certificates

ISO 9001 & AS 9100



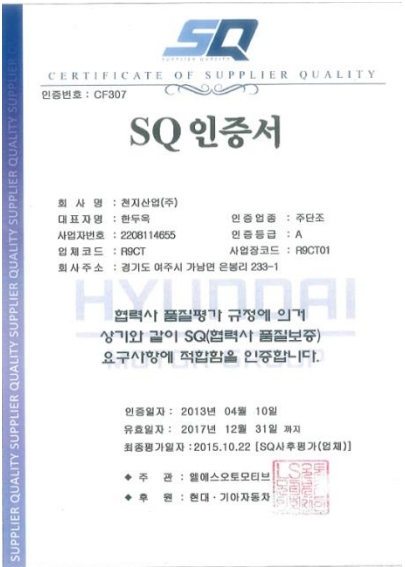
AD 2000



TS 16949



SQ (Hyundai Kia Motors)



ISO 14001



Product information & Supply field



Industrial plant

- Flange, Housing
- Cage, Vee ball, Bracket, Body
- Impeller

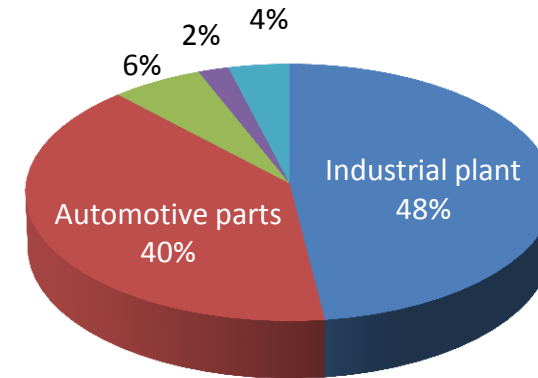
Automotive parts

- Turbo charger
- Exhaust Gas Recirculation
- Gasoline Direct Injection

Defense

Aerospace

Nuclear power plant



- Industrial plant
- Automotive parts
- Defense
- Nuclear power plant
- Other



Transmitter Parts

- Flange, Adapter, Amp Dai



AI Parts

- GPTTS Housing

- Housing Electro Optical System

Industrial plant 2/3 (Cage, Vee ball, Bracket, Body)

1" to 8" Cages



Material CB7Cu-1, CF3M, CF8M
Duplex(4A)
Super Duplex(6A)
Stellite 6(R30006)
WC9

1" to 12" Vee Balls



Material CG8M, CF3M, CF8M
Stellite 6(R30006)
CW2M(Hastelloy)

1" to 8" Attenuator



Material CG8M, CF8M
CK3MCuN

Module Base, Housing,
Terminal Box, Cover, Bracket



Material CF8M

1" to 2" Body



Material CF3M

0.5" to 4" Body



Material CF3, CF8, CF3M, CF8M
WCB
M35-1 (Monel)
CD3MCu

1" to 2" Bonnet



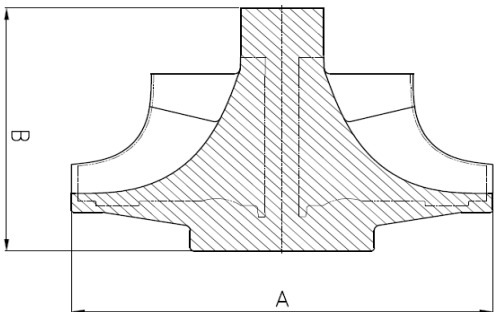
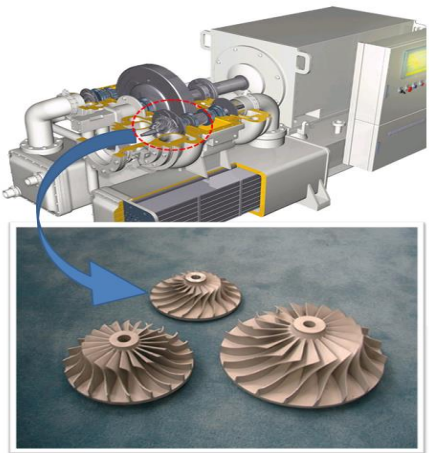
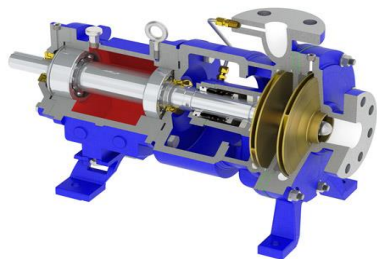
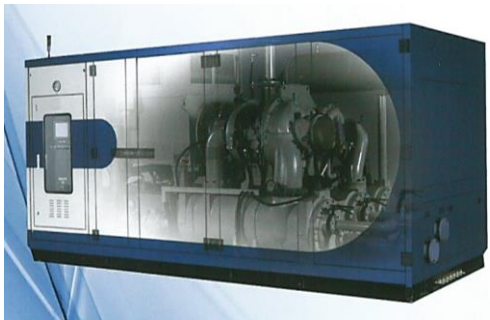
Material CF8M

1" to 8" Seat Ring



Material Stellite 6 (R30006)
CF8M, CA15

Industrial plant 3/3 (Impeller)



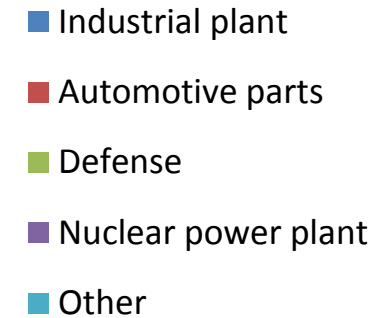
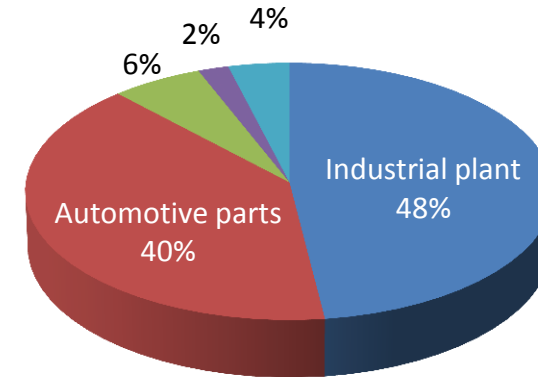
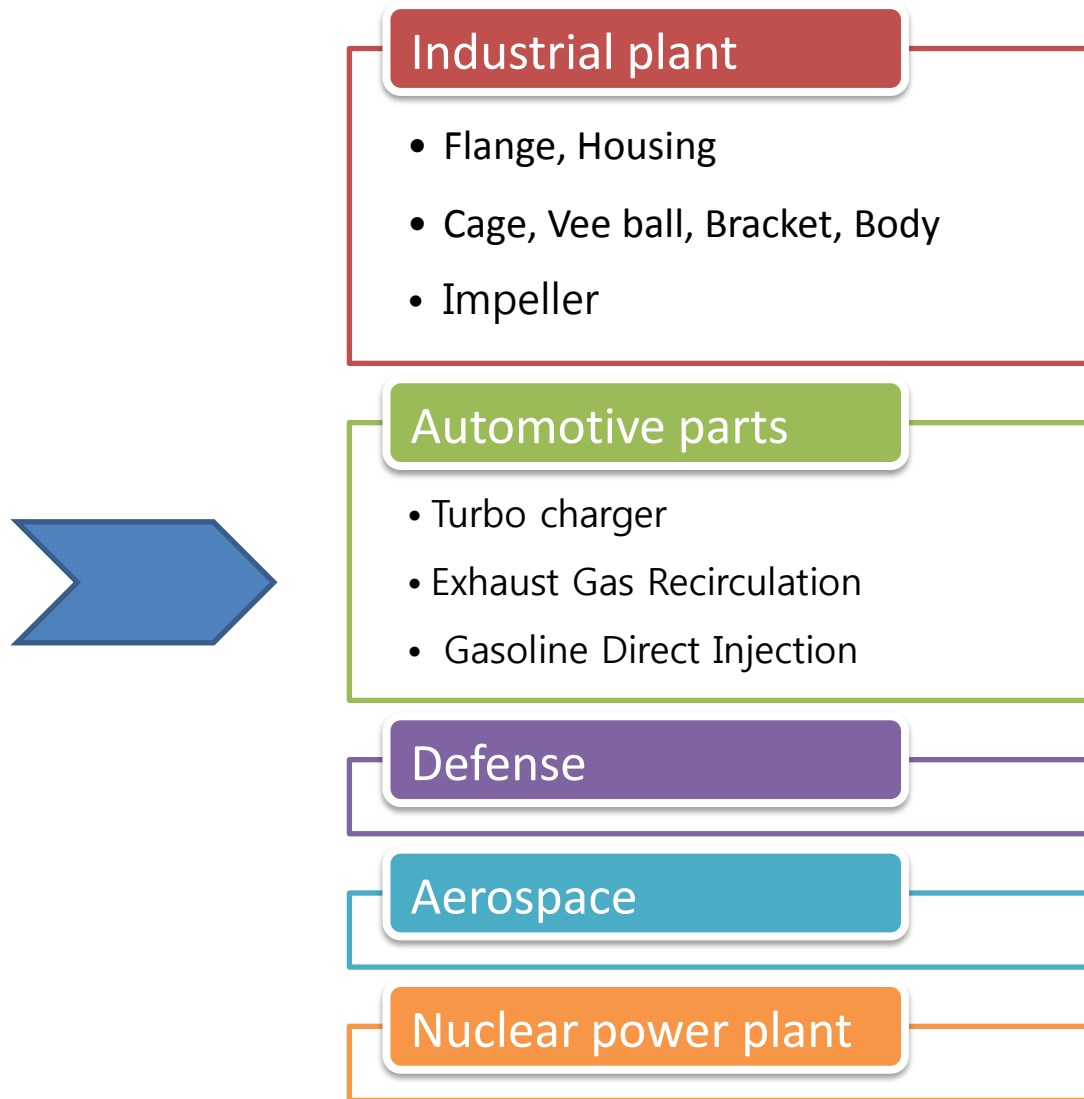
Impeller for Pump

Unit : mm	Dim.A	Dim. B	Dim. C	Dim. D	Weight
	Φ150	max 450	7.0 - 10.0	over 5.0	max 80kg
	Φ151 - 200			over 7.0	
	Φ201 - 300			over 9.0	
	Φ301 - 400	max 250	10.0 - 20.0	over 12.0	
	Φ401 - 500			over 15.0	
	Φ501 - 800			over 20.0	

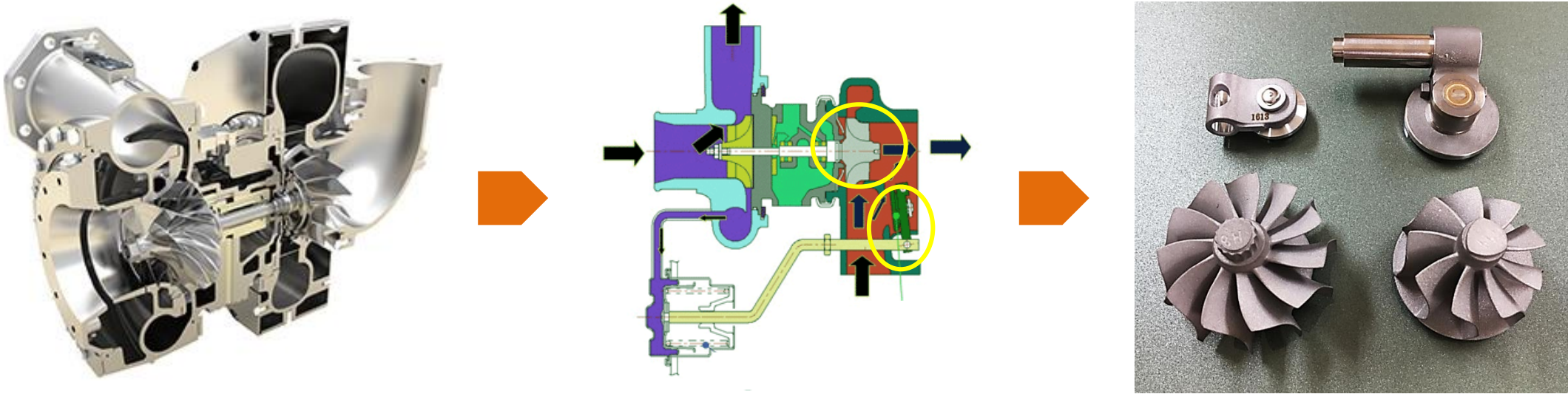
Impeller for Turbo compressor

Unit : mm	Dim. A	Dim. B	Weight
Maximum allowance	Φ600 max	350 max	80kg max

Product information & Supply field



Turbine wheel and Waste gate valve assembly for Turbo charger



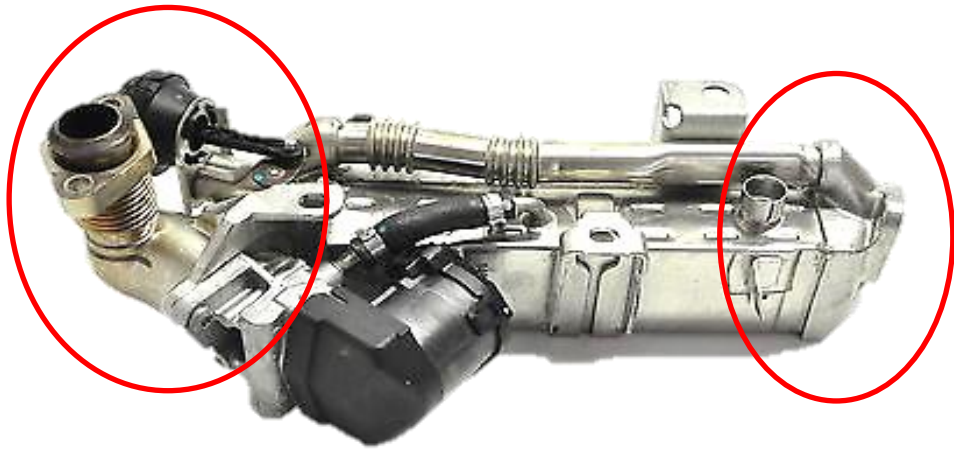
OEM : Hyundai Motors, Kia Motors, Honda, Mc Laren

Material : Inconel 713C, HK30, DIN 1.4957 etc.

Annual quantity : 200,000 ~ 400,000 pcs

SOP date: June 2016

By-pass block and Flange outlet for EGR valve (EGR: Exhaust Gas Recirculation)



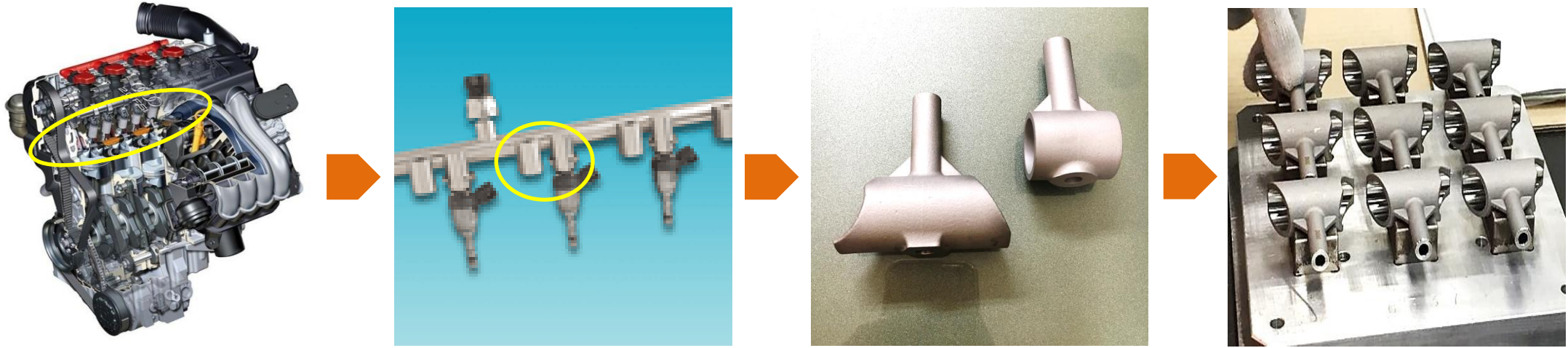
OEM : BMW

Material : CF8

Annual quantity : 150,000 ~ 250,000 pcs

SOP date: January 2014

Casting Bracket for GDI rail



OEM : Volkswagen, Audi, Porsche

Material : CF8

Annual quantity : 680,000 ~ 960,000 pcs

SOP date: June 2014

Product information & Supply field

Industrial plant

- Flange, Housing
- Cage, Vee ball, Bracket, Body
- Impeller

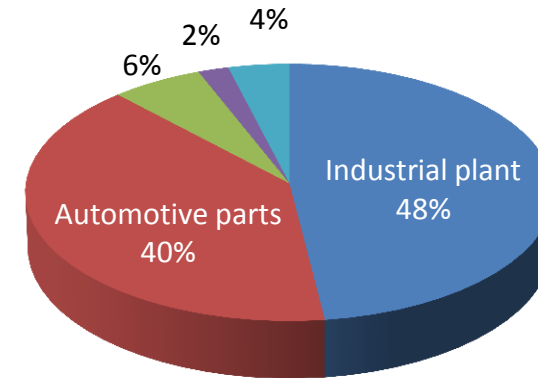
Automotive parts

- Turbo charger
- Exhaust Gas Recirculation
- Gasoline Direct Injection

Defense

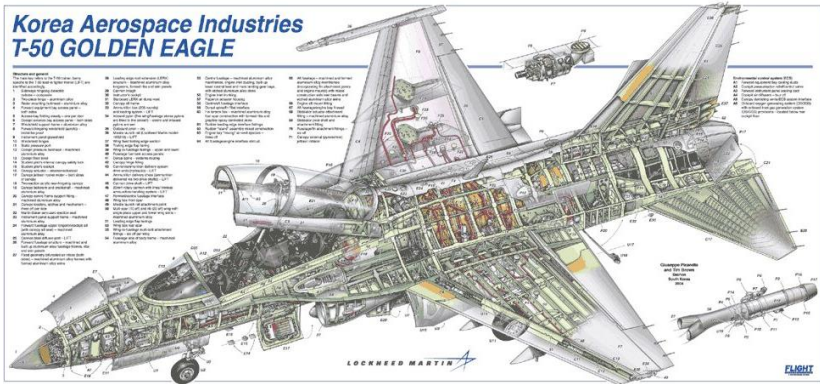
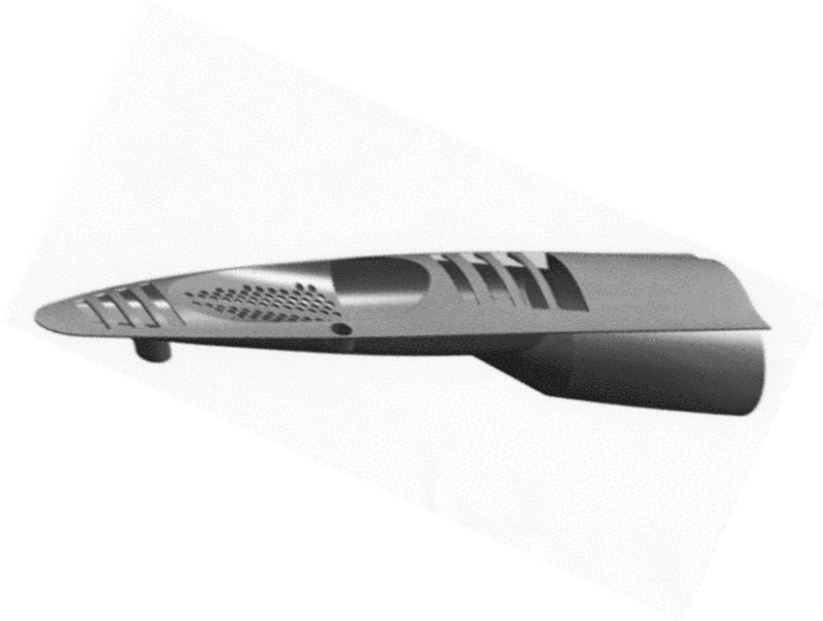
Aerospace

Nuclear power plant

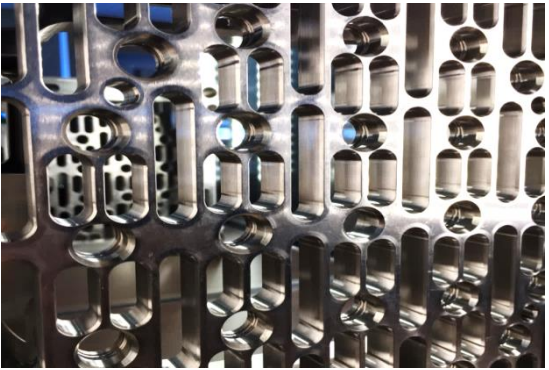
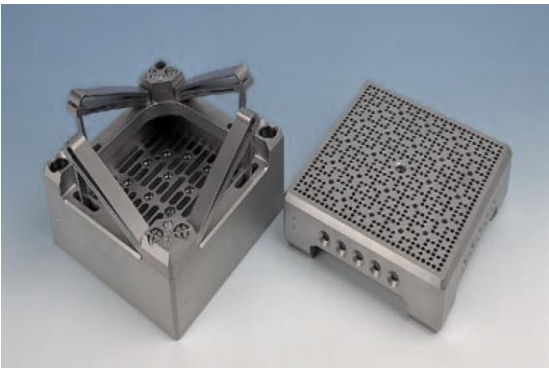
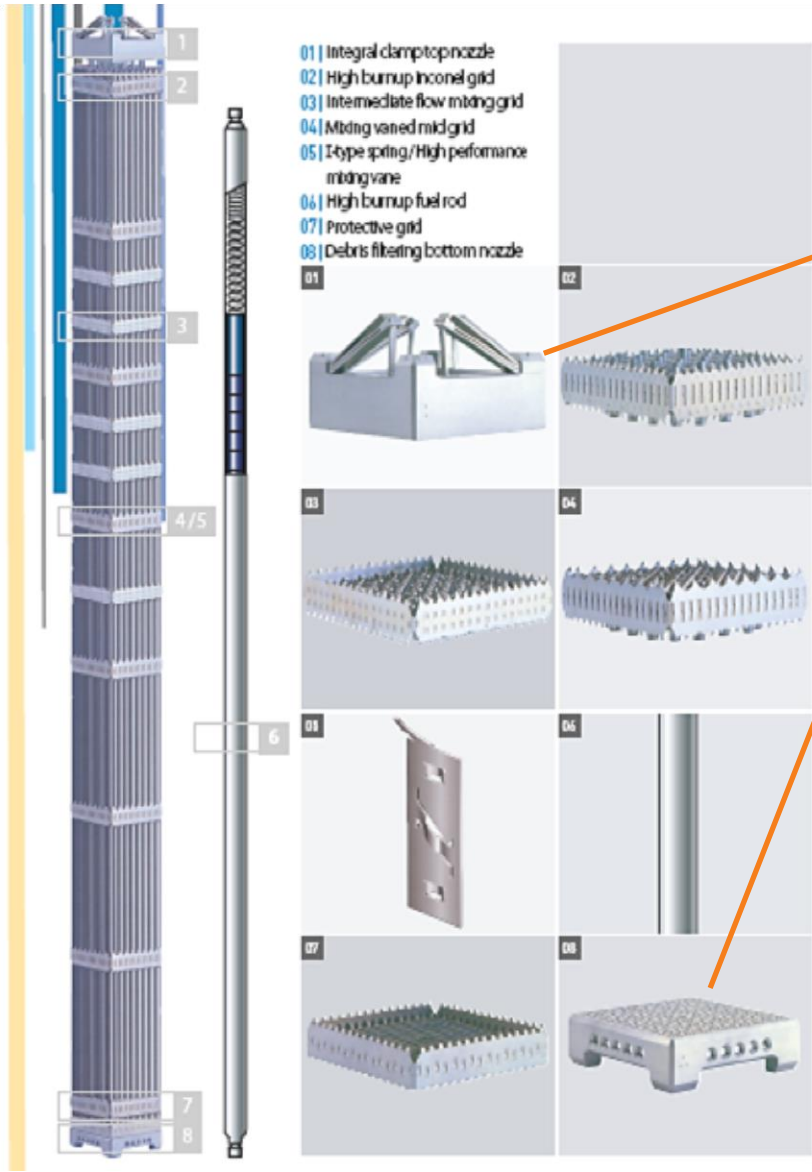
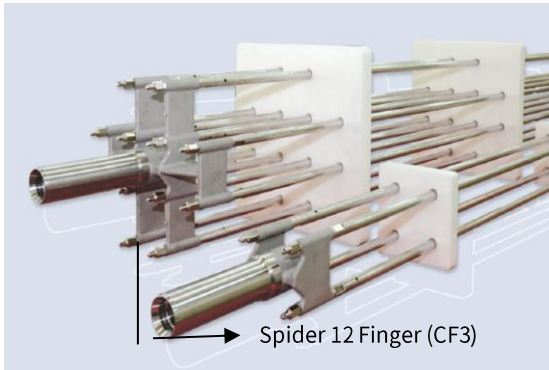


- Industrial plant
- Automotive parts
- Defense
- Nuclear power plant
- Other

Structure parts for Combat plane (T-50 Golden Eagle)



Nuclear power plant

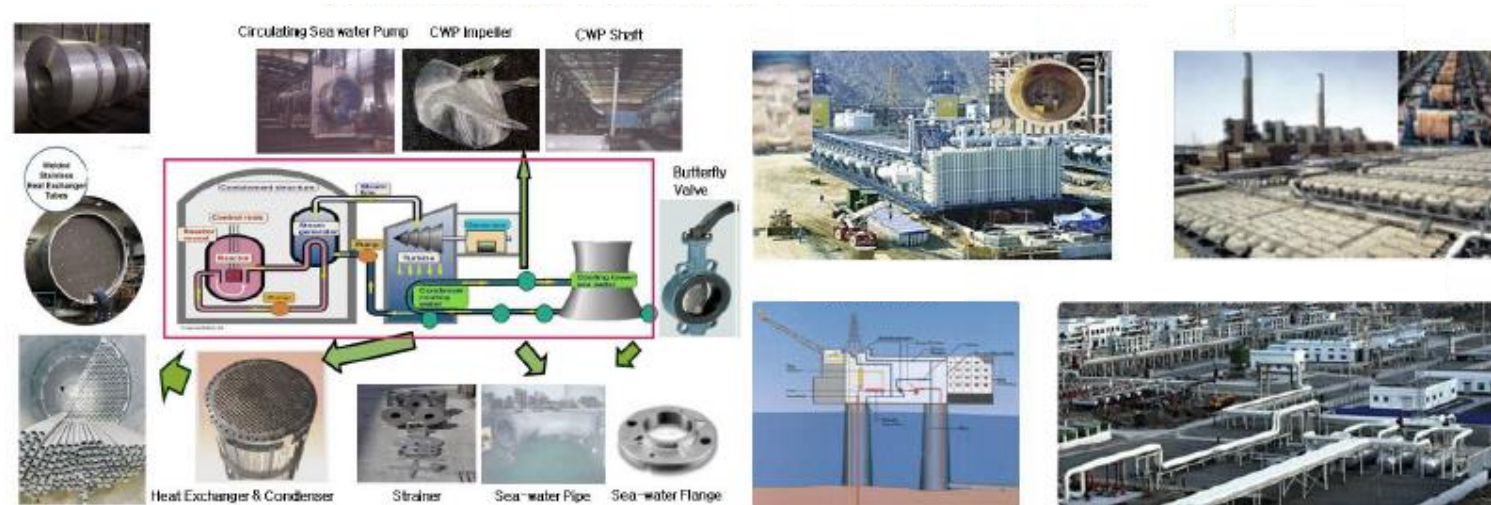


- Top Nozzle Casting(CF3)
- Bottom Nozzle Casting(CF3)

PREN 50 grade high corrosion-resistance casting/forging steel material & Process technology

Main institute	Korean Institute of Machinery & Material R&D Center (KIMS)
Participants	Chunji Corporation , Korean Institute of Industrial Technology, 4 universities, 2 Casting and Forging companies
Project period	01.06.2012 - 30.11.2015 (42 months)
Project scale	KRW 3,7 Million

High corrosion-resistance alloy material required industry fields

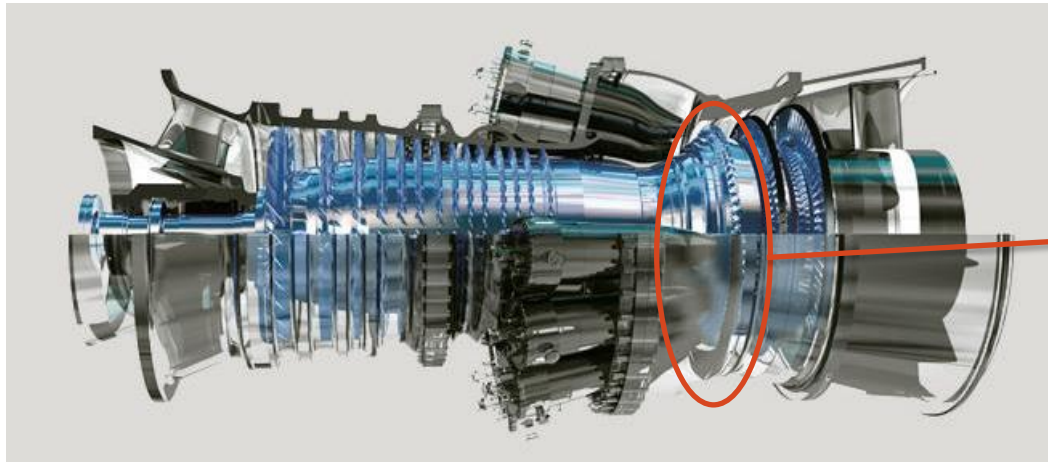


Main parts of Nuclear power plant Sea water system

Sea water desalination, Main parts of Offshore plant

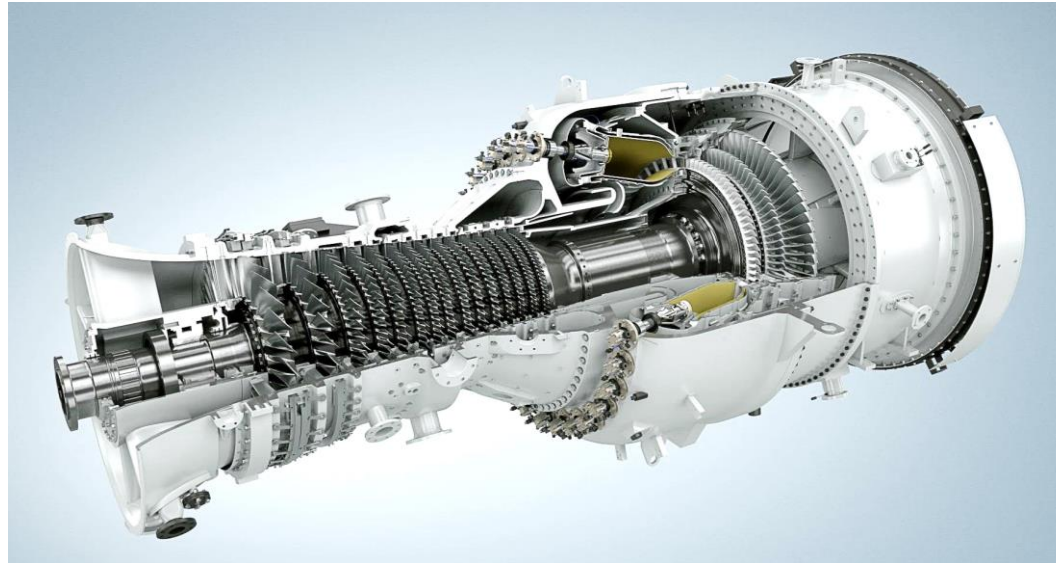
Development of Gas turbine parts with Super alloy for Single crystal casting (J Class / TIT : 1.600°)

Main institute	Chunji Corporation
Participants	Sewon Hardfacing, Korean Institute of Machinery & Material R&D Center (KIMS), Korean Institute of Ceramic Engineering and Technology (KICET), National Institute for Material Science (NIMS/Japan), Kookmin University, Changwon University
Project period	01.11.2012 - 31.10.2019 (7 years)
Project scale	KRW 10,4 Billion



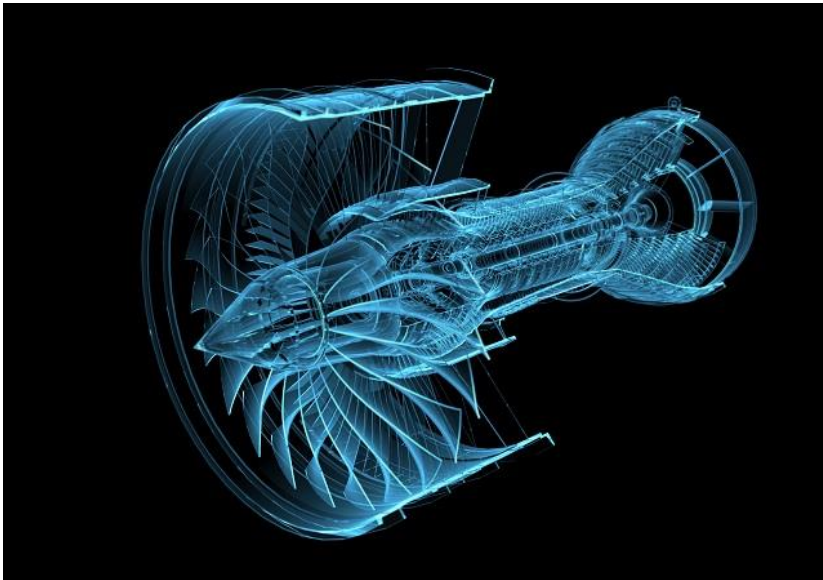
Manufacturing technology for large size power system of high-temperature Gas turbine parts

Main institute	Domestic casting company
Participants	Chunji Corporation , Doosan Heavy Industry, 3 Casting companies
Project period	01.07.2013 - 31.05.2018 (5 years)
Project scale	USD 3,6 Million



Localization of 1100° grade Gas Turbine (W501D5) 3rd stage Vane

Main institute	Chunji Corporation
Participants	-
Project period	01.11.2013 - 31.10.2016 (3 years)
Project scale	USD 0,5 Million



Strength of Chunji Corporation

1) Quality proven management

- ISO 9001/AS 9100, TS 16949, ISO 14001, AD 2000, etc.
- Quality & Environmental management system (especially for Automotive and Aerospace)
- High intensity self-inspection system through 8 sections (Destructive test & PT, RT, MT, etc)

2) Competitive price

- Chunji provides high quality products, on-time delivery, customized service on competitive price
- Securement of certain price for the growth of service quality and customer satisfaction
- Chunji not only strive hard to reduce the production cost through process simplification and line automation, but also does it utmost effort to increase the supply of high technology parts for Aerospace or Medical industry

3) Wide experience & Endless effort

- Developed 18.000 items for 40 years in the Investment casting industry
 - Continuous productivity improvement through R&D for materials, casting method and tooling
-

Thank you for your attention

WEB www.chunji.co.kr
E-MAIL sales@chunji.co.kr

HEAD OFFICE 1022 Gyeongchung-Daero, Ganam-Eup,
Yeoju-Si, Gyeonggi-Do, Republic of Korea
T +82-31-882-9800
F +82-31-881-6611

SEOUL OFFICE Cheongwon Building (4F), 746-15 Banpo-Dong,
Seocho-Gu, Seoul, Republic of Korea
T +82-2-3446-8161
F +82-2-3446-8133
