

**Corporate Presentation** March 2016



Our Vision Is ...

# ... To Exceed Customer Expectations, Globally

SAL GROUP (www.sigma-asl.com)

• SPS

Waterworks Company for Valve & Fitting solutions

• SAL

**E Sigma**ASL

Automotive product solutions for passenger cars, commercial vehicle, agriculture, construction & industrial equipment

- ✓ SAL : Global SCM
- ✓ SMS : OEM Manufacturing & Logistics (<u>www.sms-korea.co.kr</u>)



## **Company History**

- **1994**: **ASL (Automotive Supply Limited)** established by Tony Elliott in UK
- **1998**: Began supply to **Eaton Europe** (UK, France and Poland)
- **1999** : SAL (Sigma ASL Limited) born by partnership with Sigma corporation in USA
- 2000: Began supply to Eaton Truck, USA
- 2005: Began supply to Eaton Clutch, USA
- **2007:** Commencement of **Eaton supercharger** projects Established manufacturing facility in Korea **SMS**
- 2009: Acquisition of TS-16949 certificate SMS & SAL Korea
- **2010**: Began supply of **Hybrid Motor & Clutch HSG** to Eaton Truck
- **2013**: Began supply of **Oil pump** to Eaton Truck SMS
- **2014**: New projects awarded from **Eaton Cooper and Akebono Brake**
- **2015**: Joined Eaton's new supercharger projects (GM LT4 and JAG V6)

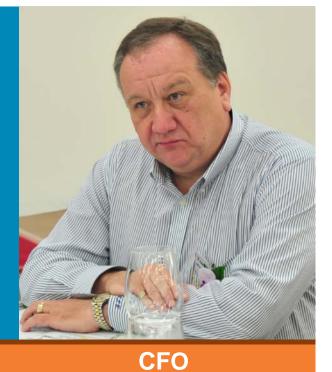
# **E Sigma**ASL

#### **Leadership Members**

"We strive to provide our customers with a long term service which adds maximum value at least cost."

"We enjoy challenge and act with creativity and initiative for the benefit of our partners and ourselves."

Tony Elliott The SAL Group



#### COO (SAL)

## COO (SPS)

#### Shang Kim



Paul Hancock

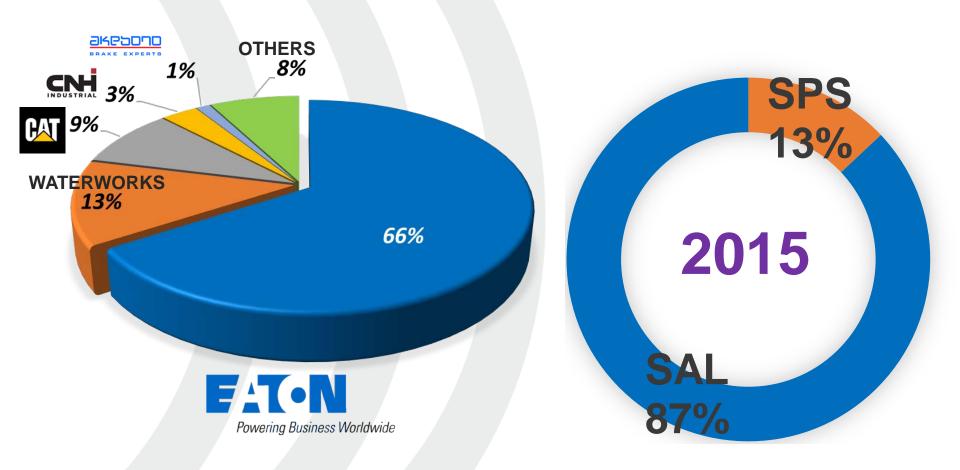


**Nick Goldstone** 



**E Sigma**ASL

### **SAL Group Sales In 2015**





## **GENERAL INFORMATION**



www.sigma-asl.com



#### **Our Global Reach**



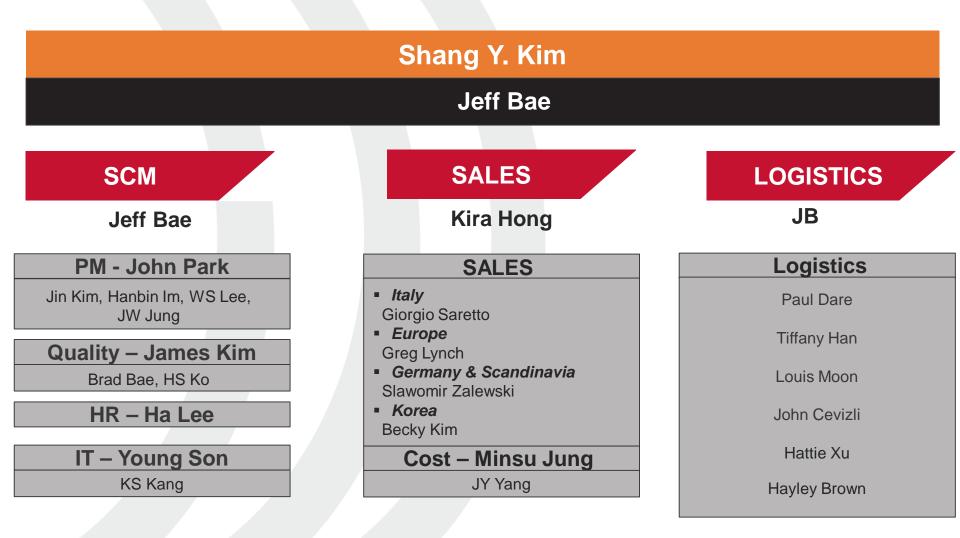
#### SAL HQ & Warehouse Sigma house

39-41 Progress Road Leigh-on-Sea, Essex SS9 5PR, UK



SAL Manufacturing Facility Busan(SMS) Sigma Manufacturing Solutions Busan Korea

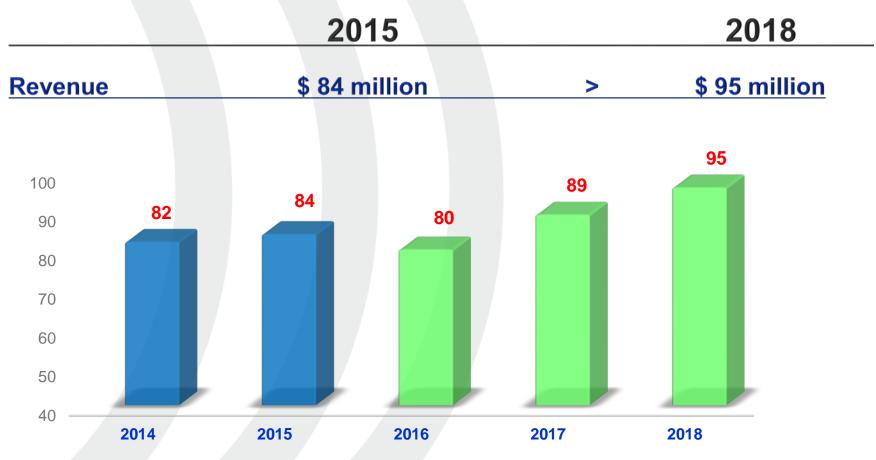
### Organization





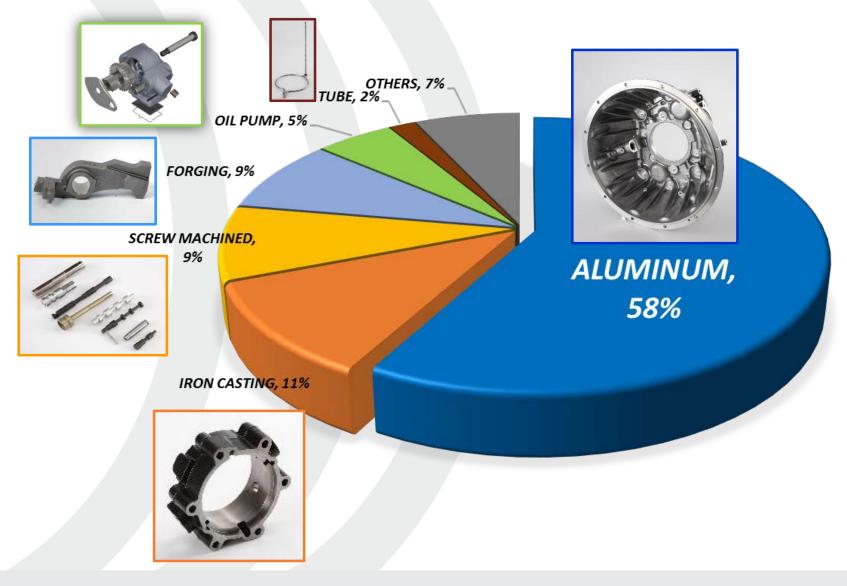
### **Delivering Solid Growth**

#### SAL 3 Year Sales Transformation





#### **Commodity Breakdown**





### **Our Strategic Focus**

- Continued Expansion in developing new customers
- Continued technology & service Innovation
- Integration of solutions for greater operational efficiency and client satisfaction





#### **PRODUCTION & ENGINEERING CAPABILITY**

- SAL are able to offer effective total solutions to complex global sourcing & Supply Chain Management issues
- SAL has her own manufacturing and logistics plant, SMS, where production of components and warehousing / shipping are conducted
- SAL manages sub-suppliers who have a wide range of production capacity
- SAL provides various engineering service to the customers in collaboration with SMS, 3<sup>rd</sup> party lab and sub-suppliers

www.sigma-asl.com



## **SAL Production Capability**

#### **Product manufacturing**

- Machining Horizontal/Vertical MCT, CNC etc.
- Outsourced material Casting & forging etc.
- Assembly, welding, brazing & test etc.
- Proto, Mock-up & Mule sample etc.
- Export packaging etc.

#### SAL offers a full machining capability for all our OEM customers





## **SAL Production Capability**

#### Logistics

- Scheduling & Material flow
- Warehousing
- Efficient stock control
- Customs clearance service
- SAL offers a complete and professional bespoke logistics service









## **SAL Production Capability**

#### **Post Process**

- Surface treatment per CQI 11
- Anodizing, Zinc plating, Phosphating etc.
- E-coating & Powder coating etc.
- Heat treatment per CQI 9
- Carbonitriding, Carburizing, Nitriding, Induction hardening etc.
- NT, QT, annealing etc.

#### SAL offers various post process per customer's demand

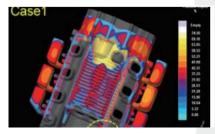


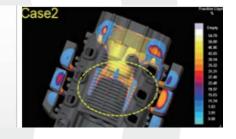


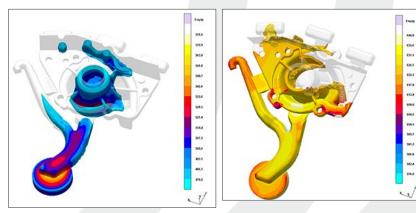
## **SAL Engineering Capability**

#### **Casting flow analysis**

- Simulation
- Strategic collaboration with MAGMA



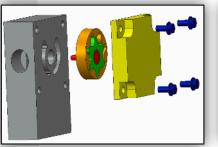




#### 3D CAD

• Capable program

Pro-E









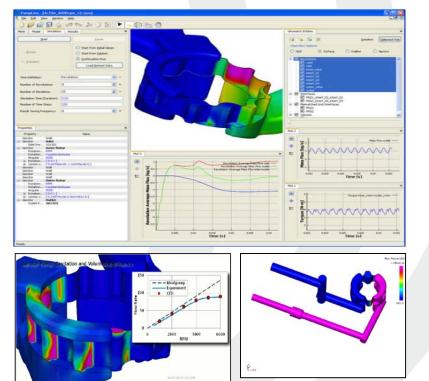


## **SAL Engineering Capability**

#### **Oil Pump**

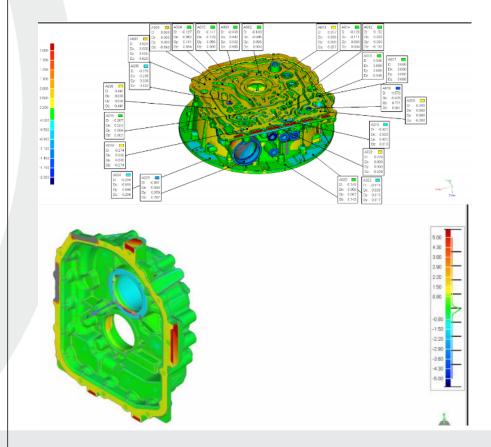
- Fluid dynamic analysis
- Capable program Simerics etc.
- Pump design
- Rotor Co-design with 3<sup>rd</sup> party
- Others designed by SMS

**E Sigma**ASL



#### 3D Scanning

• 3D laser scanning



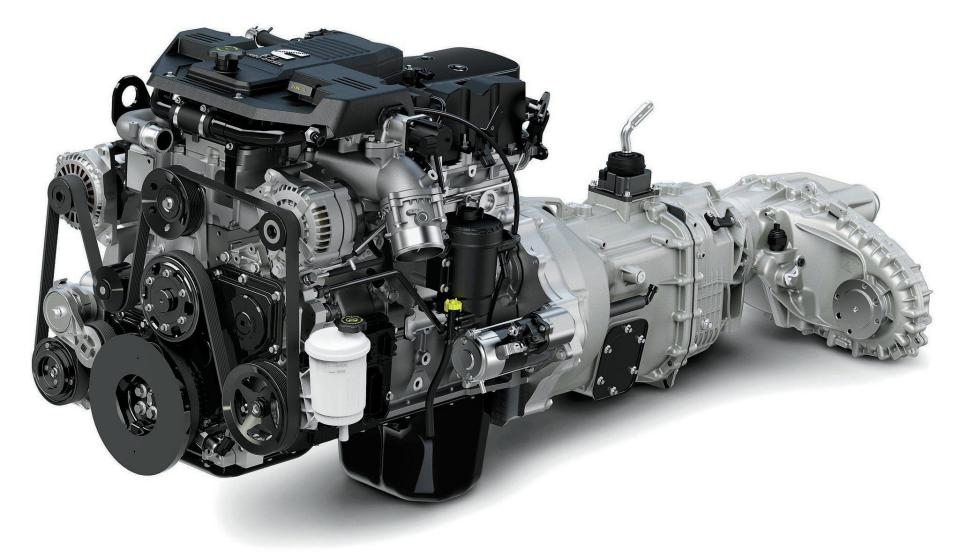
#### **PRODUCTS RANGE**

- SAL provides various components to customer in collaboration with SMS & sub-suppliers

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### **Products – Engine/Transmission Part**





## **Engine Part**

Air management system • Intake manifold A356-T6 Air management system
Supercharger housing A356-T6

# Air Management System

Air management system

Air duct
A356-T6, A333-F

Air management system

EGR duct

A356-T6





## **Engine Part**

Lubrication systemOil pumpA356-T6Sintered Ge-Rotor



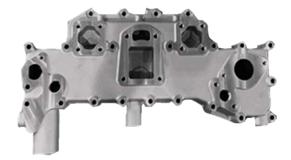


# Lubrication System & Covers





Cover & Case CW Cover A356-T6





Housing & CaseClutch housing(FAS)A356-T6



Housing & CaseClutch housingA383 HPDC



# TM Housing & Case

Housing & Case • Main case A356-T6



Housing & CaseHybrid motor housing A356-T6





Lubrication system
 Oil pump(FAS)
 Grey iron casting
 Sintered Ge-rotor



Lubrication system



# Oil Pump & Yoke

Gear shifting

Shift Yoke

Steel forging
Welding



Gear shifting

Yoke bar

Steel turning





Screw Machined

Shaft Pinion / Sleeve Valve
 Steel turning

Screw Machined • Pin hub Ass'y / Drain Plug Steel turning





# Screw Machined





Cover & Others

Bearing cover(FAS)
Grey iron



Cover & Others Cylinder cover(FAS) A356-T6

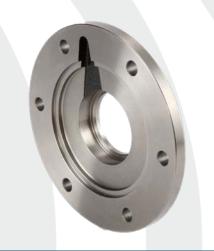
# Cover & Others

Cover & OthersFine blanking partsSheet metal

Cover & OthersHydraulic & Air tubesSheet metal



Cover & Others Bearing cover Grey iron



Cover & OthersShift BlockDuctile Iron



# Cover & Others

Cover & Others

Adjust Ring
Grey Iron





#### **Products – Brake Part**

Drum Brake Disk Brake





#### **Brake Part**

Drum BrakeSupport, PlateDuctile Iron, Zn Plating





# Brake system

Disk Brake Piston Stainless Steel





## SAL QUALITY

- SAL obtained TS16949 & ISO 14001
- TS 16949 is compulsory for all SAL's sub-suppliers to be partner
- SAL conducted a special control for safety characteristics

www.sigma-asl.com



### Quality

11110-00-0

#### Various quality control equipment

Sec.

#### Certificates



King Kanas Foundation for Quality

Examples Term Initial Regionation Date Evaluation Term Construction Resident EAC  IIEAD OFFICE & FACTORY : 20, Missimander-in Tiblec-gil: Cangas-gil: Salar, Kanas (2 picda: 48748) - SAL XORE: 15, Dunoptawic-origil: Tangasin-gal, Securi, Kanas (2 picda: 04280)

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#### Certificate of ISO 14001



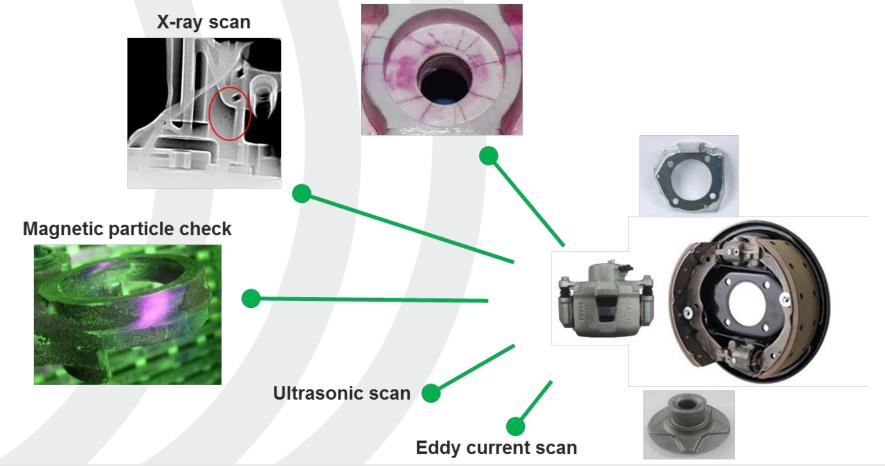
Certificate of ISO 9001 & TS 16949



### Quality

#### Special Control of safety characteristics – Non destructive test

#### Dye penetration check





#### Contact

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