

正道公司簡介



IATF 16949
ISO14001

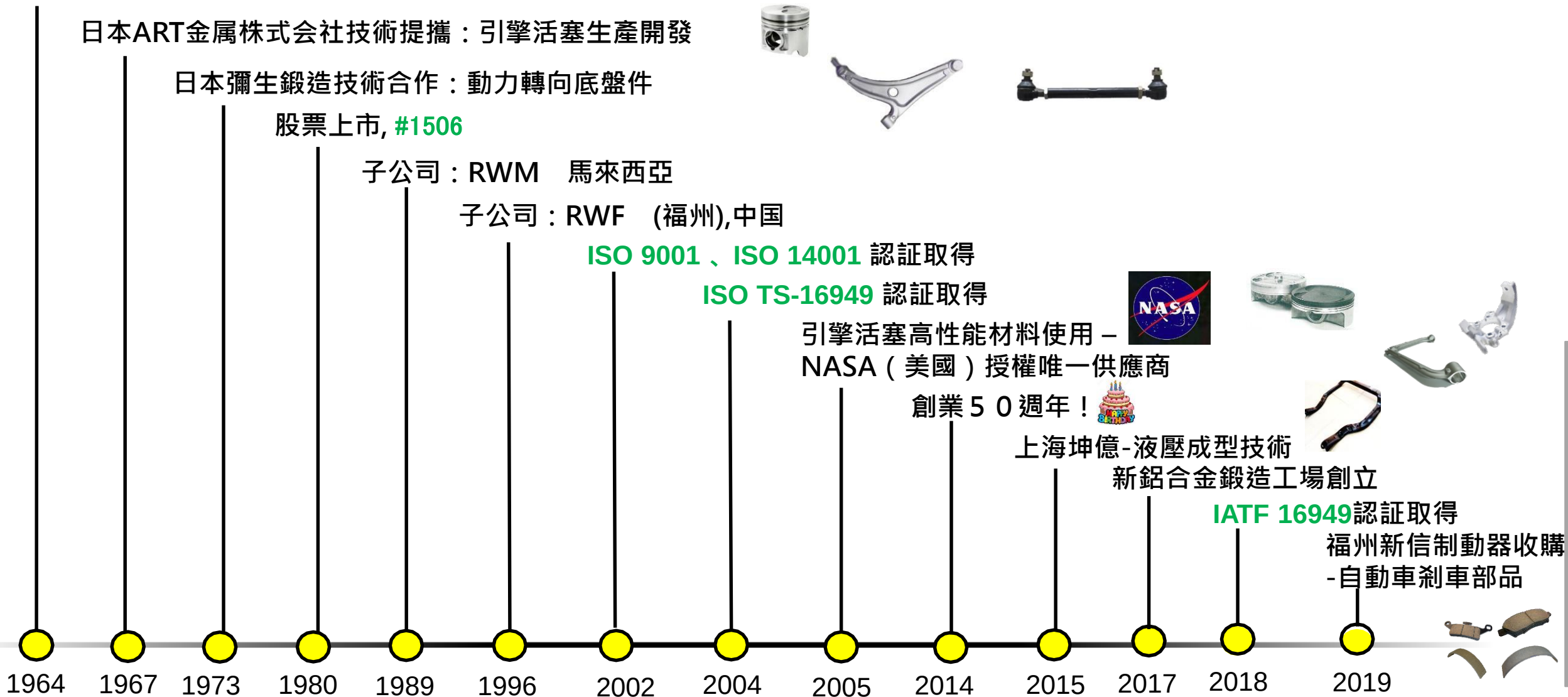


Version: 2019

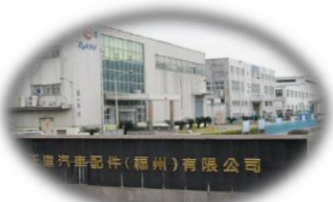
發展與沿革



設立於台灣台南



一、公司概況—子公司分工



福州, 大陸

- 製程 :加工與組立
- 主要產品 :活塞、連桿、轉向系統零件



福州, 大陸

- 剎車系統零件
- 摩擦材



吉隆坡,馬來西亞

- 製程 :重力鑄造與加工
- 主要產品 :活塞、鋁合金鑄件



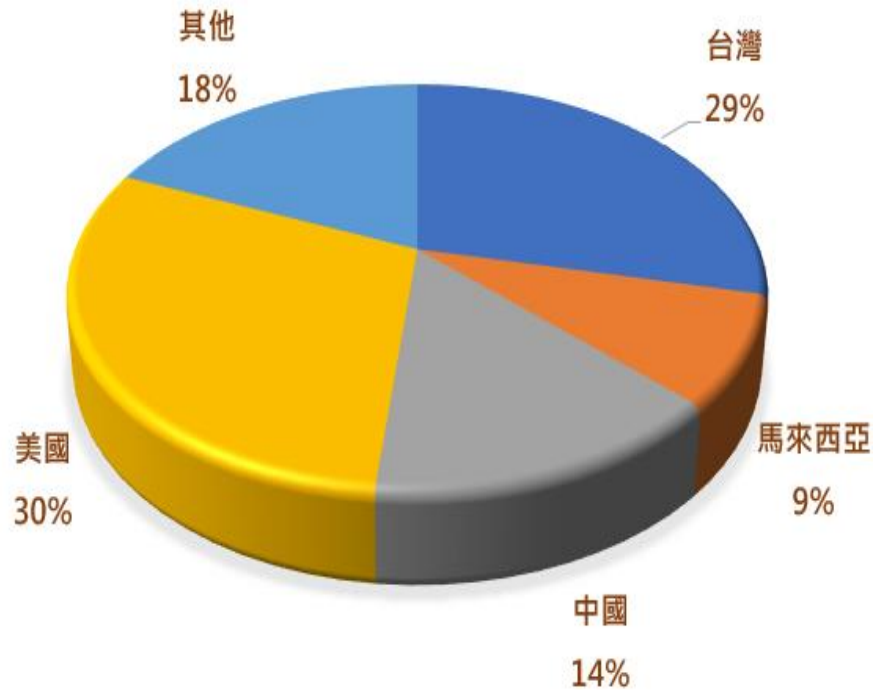
台南,台灣

- 製程 :重力鑄造、鍛造、加工與組立
- 主要產品 :
活塞、連杆、轉向系統零件、鋁鑄件、鋁鍛件、平衡軸

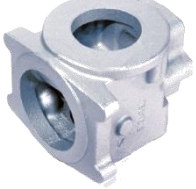
一、公司概况—市場分佈

正道公司的市場分佈以北美、大陸及臺灣為主要地區。

2020市場分佈



一、公司概况—產品應用

應 用	發動機	轉向系統	底盤與懸吊	冷凍 & 空調	工業用
材 質	鋁、鋼	鋁、鋼	鋁、鋼	鋁、鑄鐵	鋁
製 程	鑄造、鍛造	鑄造、鍛造	鑄造、鍛造、THF	鑄造	鑄造、鍛造
產 品	piston  C/R  balance shaft  engine mount  nozzle bracket  manifold 	ball joint  link  tie rod  tie rod  link  valve housing  pinion housing 	subframe  knuckle  control arm  control arm  suspension arm  knuckle 	cylinder head  oil sump  throttle valve  pump cover  cam rotor  manifold 	actuator housing  flange  housing  housing  pump housing  pump housing 

一、公司概況—主要客戶

Automotive OE - China

China

Jatco **JTEKT**



東南汽車



长安汽车
CHANGAN



上汽通用五菱
SGMW



北京汽车



CHERY



江淮汽车

MAGNA **nexteer**
AUTOMOTIVE

Automotive OE - Taiwan : Japan : Malaysia

Tier I



HAITEC



Nissan



中華汽車
(Mitsubishi)

ISUZU



PERODUA



Gestamp

TRW

KYB



YANMAR

DENSO



Yasunaga

Industrial & Recreational Vehicles

2 & 3 wheels

IR **Ingersoll Rand**



GREAT PLAINS INDUSTRIES



HICOM-HONDA



KYMCO



EMERSON



TEXTRON
OFF ROAD



POLARIS
INDUSTRIES INC.



adiva

gogoro



SYM

PLUG
POWER



VAT
PASSION. PRECISION. PURITY.



Atlas Copco

鋁重鑄工業控制閥



EMERSON – Industrial automation &
solution provider

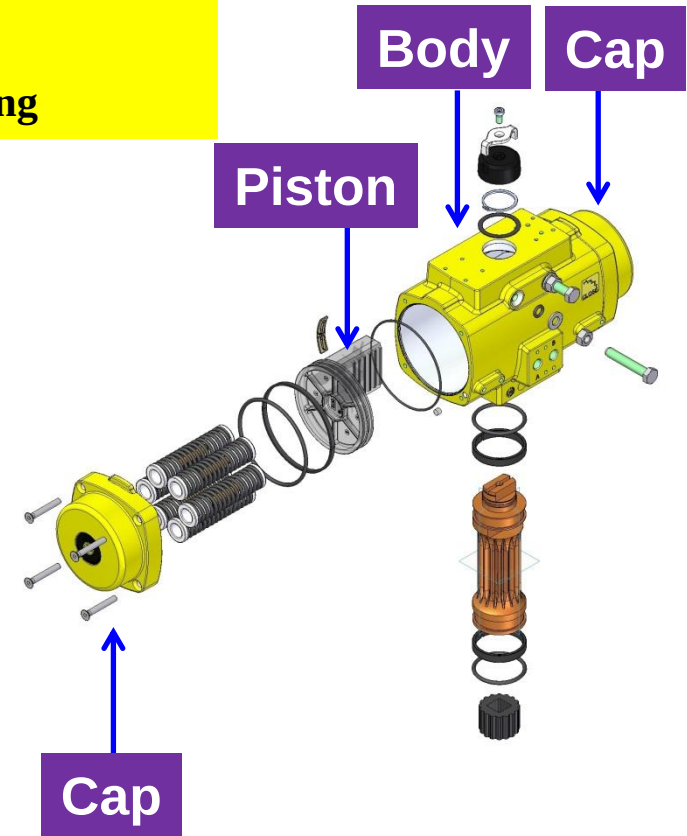
Revenue : $\geq$ US\$10B

RW: Valve body 、Cap & Piston

Raw part: 15 KG. Max. Leaking 、Anodizing & Painting



Structure



鋁重鑄壓縮機產品



THERMO KING – Largest compressor unit provider

RW is the golden awarded supplier .

EAU: $\geq 300,000$

100% helium leak test ($<1 \times 10^{-5}$ cc/s)

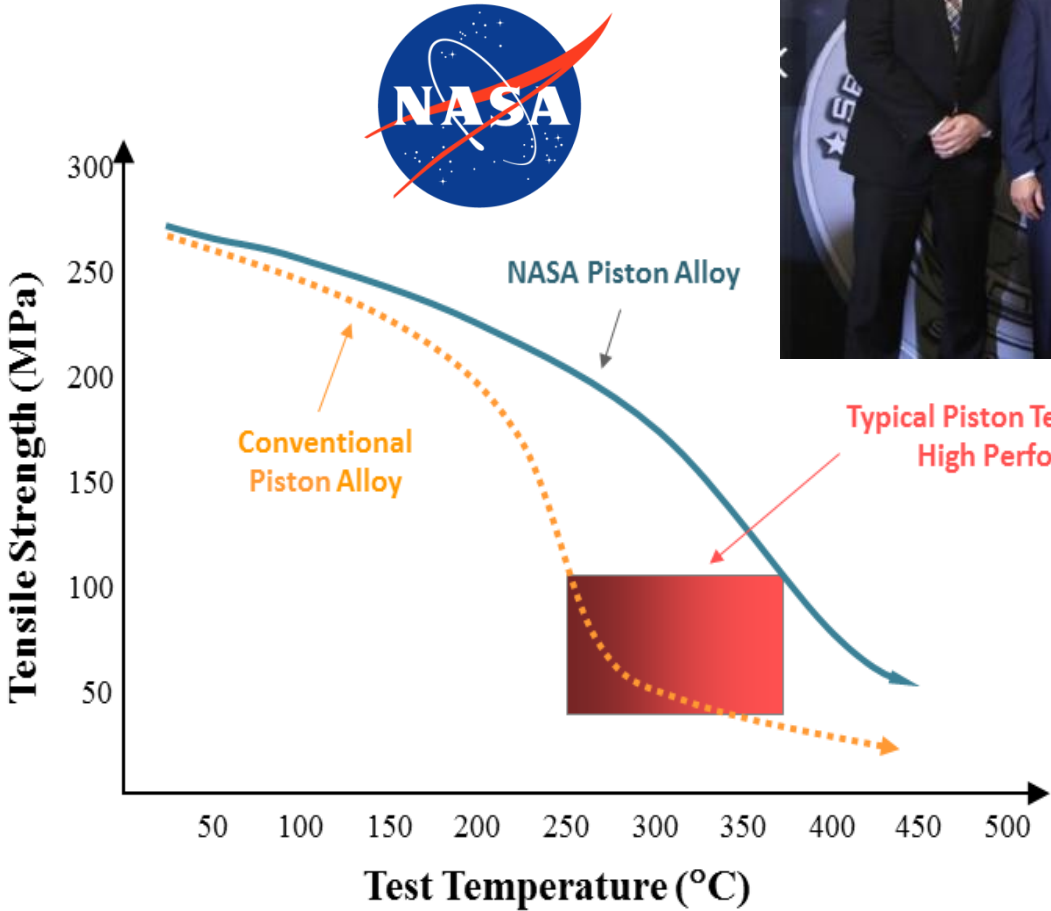


NASA 高性能合金活塞

Engine Parts Solution



Colorado Springs - 34th Space
NASA398



Pistons
NASA 388
NASA 398

High Performance NASA
Alloy Pistons

鋁鍛

Our facilities are aimed at large aluminum suspension parts for light weight vehicles.

Aluminum Forging Processes

- 切斷
- 預熱
- 滾壓
- 粗鍛&精鍛
- 切邊
- T4 & T6熱處理
- 振動研磨
- 噴砂
- 酸洗
- 螢檢



Max. Forged Size:
Rough: 107,526mm²
Fine: 80,645mm²



機械加工

- CNC Lathes & CNC Machine Centers
- highly trained technicians
- Abundant experiences in the design of fixture and cutter



16 lines – 活塞

16 lines – 鋁加工

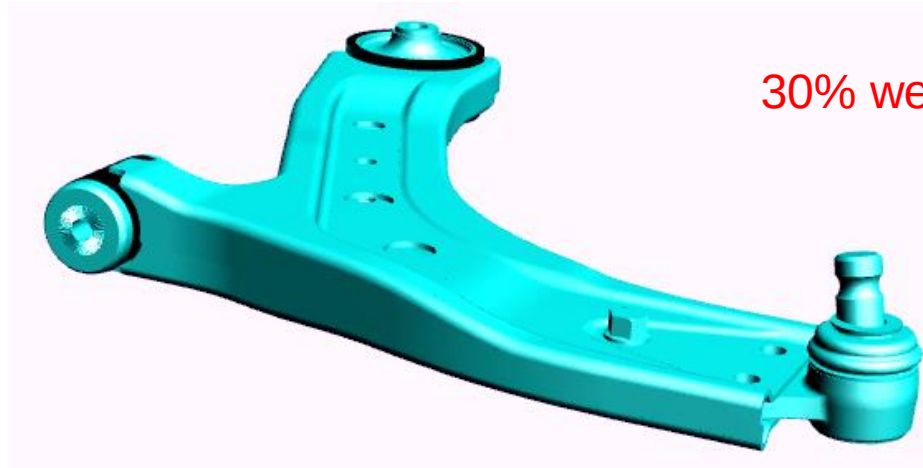
10 lines – 鐵加工



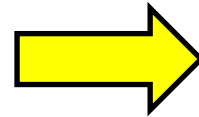
輕量化案例分析

Low Arm Material : 鋼 → 鋁

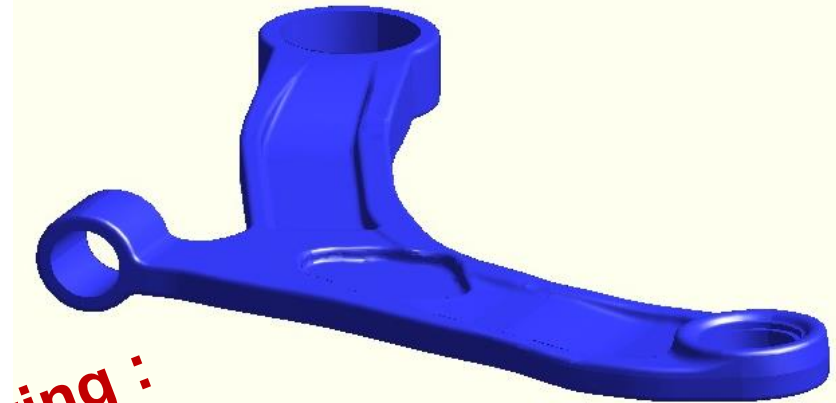
Before : Metal Stamping, 3.2kg



30% weight reduced

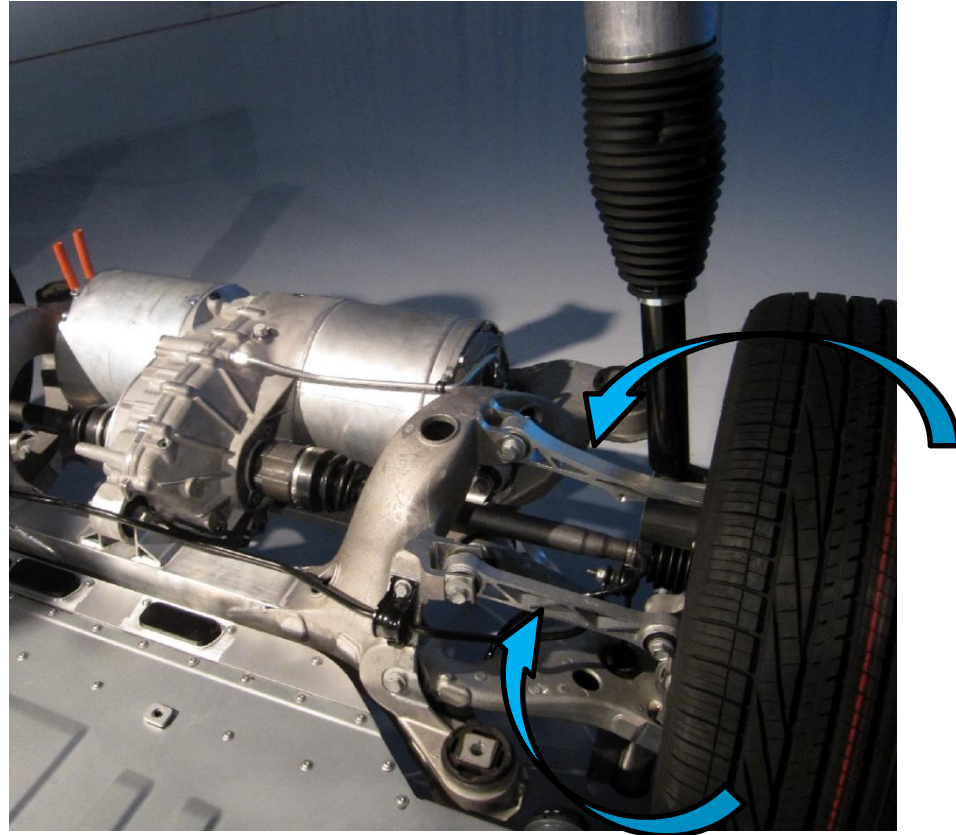
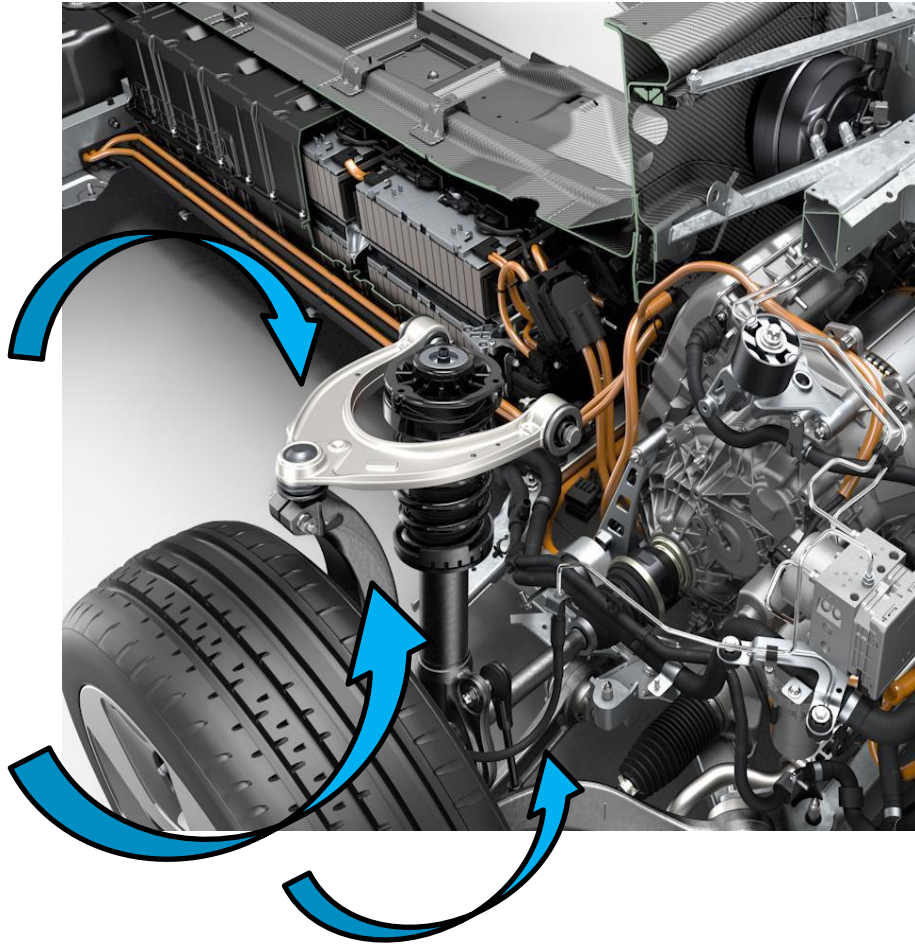


After : 6061 AL Forged, 2.2kg



Cost saving :
12%+

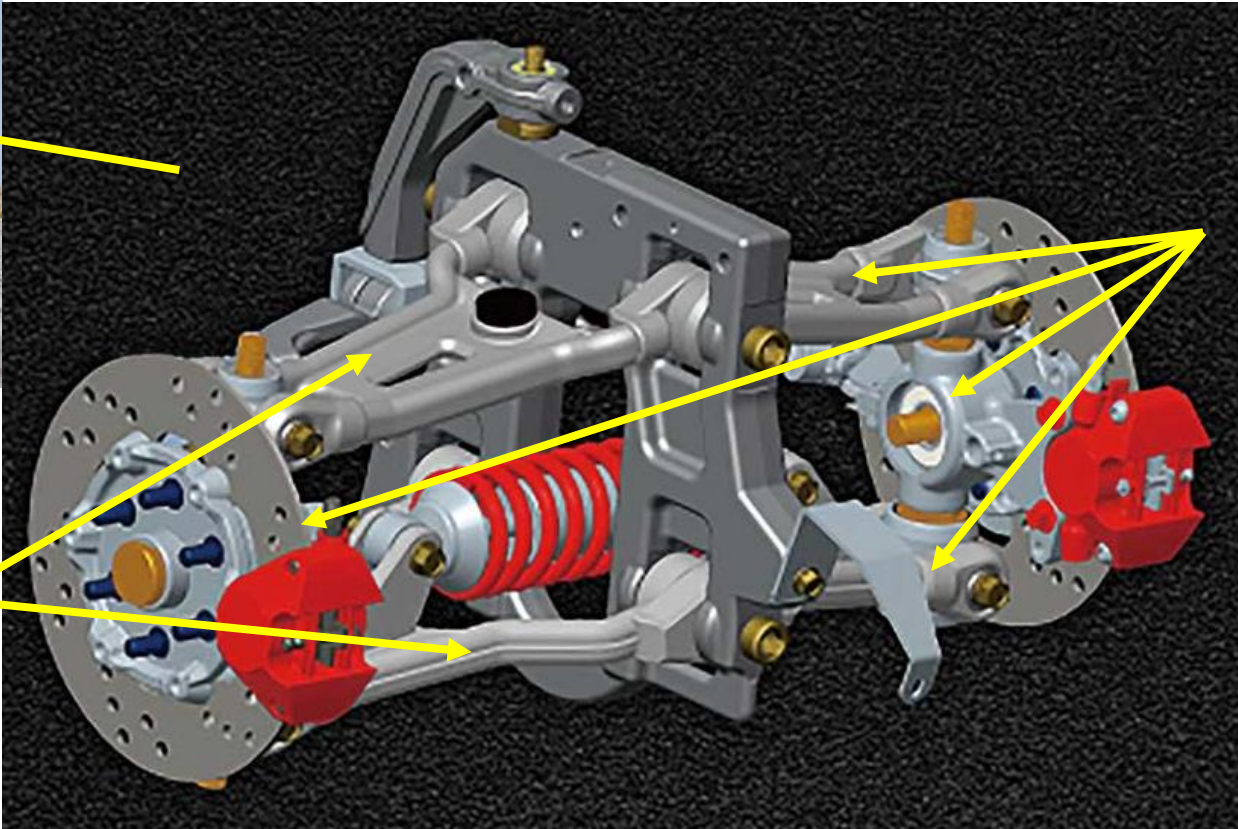
鋁鍛底盤件



鋁鍛3輪競速車



Driving Mechanism
AL Forged



車用底盤



Ball Joint



Stabilizer Link



Steering Tie Rod



Link & Control Arm



剎車來令



剎車—— Dyno功率測試



Link 2000



Link 3900



SNT

實驗室



QRQC forum



Precision instrument



Precision instrument



Integrated endurance test

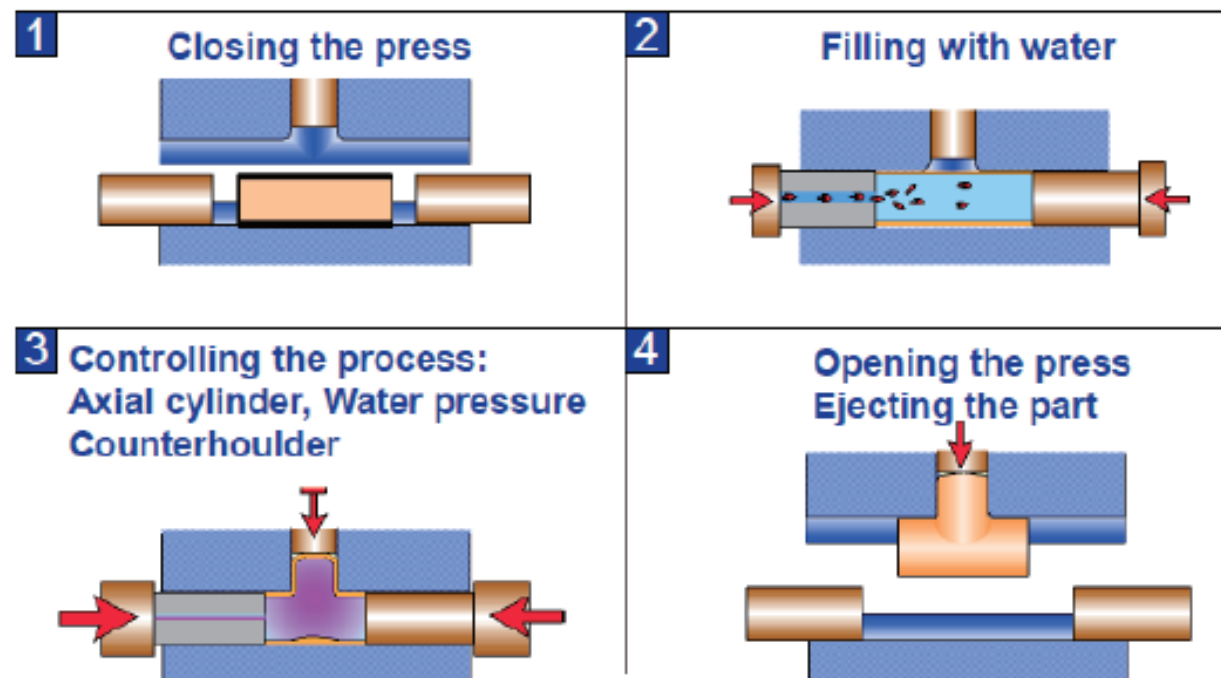
二、工程開發能力 — 核心競爭力

- 鍛造，鋁鑄與精密加工都是我們的核心技術，由於整合了以TS16949為基礎的完整品質控制系統因此也是我們的核心競爭力
- 加上我們新增的管件液壓成形技術, 正道更有能力為更多的顧客提供完善的產品服務

核心競爭力



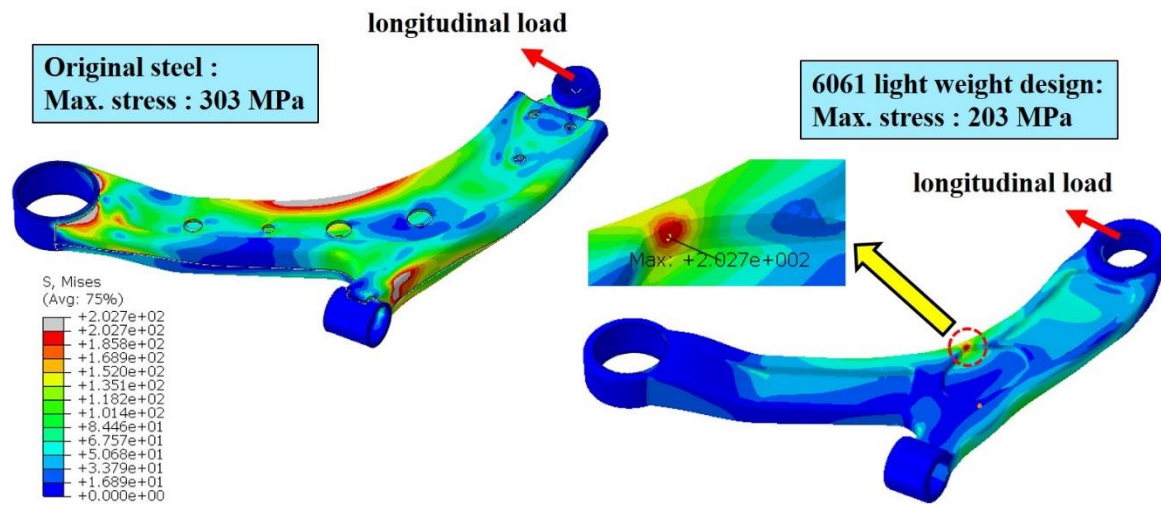
液壓成形技術



二、工程開發能力 — 輕量化

經由整合在鋁合金材料的經驗，設計製造能力與FEA分析，我們有能力對應顧客的需求提出將材料從鋼鐵改成鋁合金的設計方案及驗證以達到減重的目的。

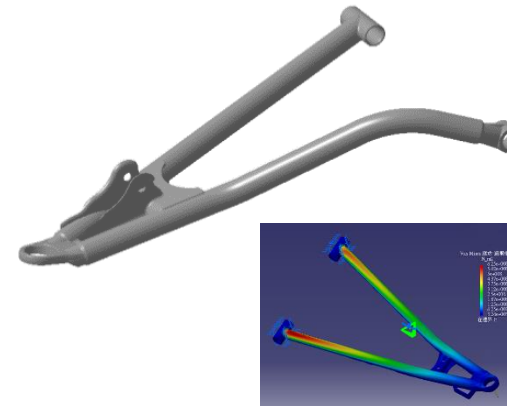
Case Study 1 -- Lower Control Arm



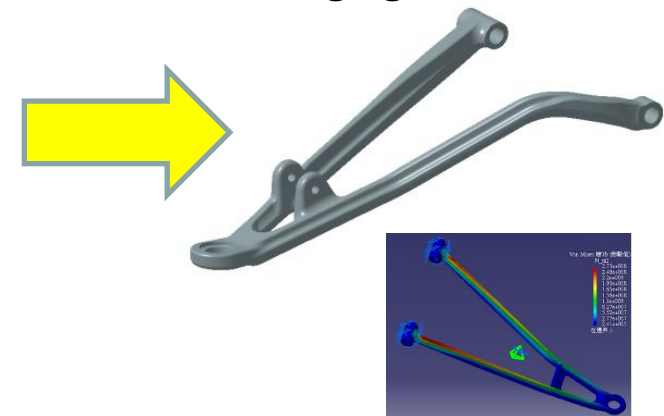
- 由鋼衝壓件改為鋁鍛件
- 重量從 3.2 降為 2.2 KG

Case Study 2 -- Lower Control Arm

Steel tube fabrication



Al forging



- 由鋼管件改為鋁鍛件
- 重量減輕 23%

二、工程開發能力 — 新產品開發流程



三、品質保證 – 主要檢驗設備

700mm*700mm*600mm, Model: Mitsutoyo Crysta-Apex C



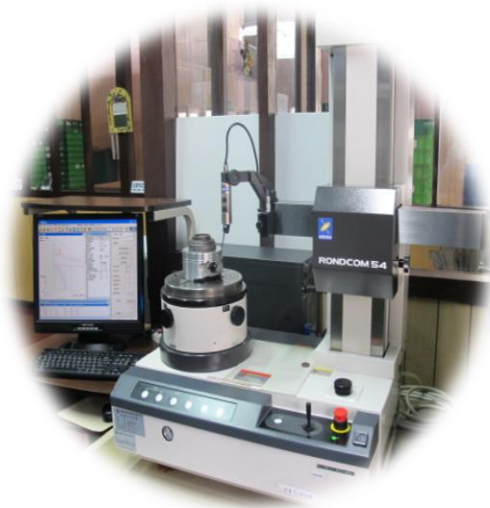
X-Ray



CMM



Spectrometer



Vickers Hardness Tester



非破壞檢測

- Blanks are tested in various ways to validate mold design and manufacturing process
- Testing runs according the manufacturing method and material:

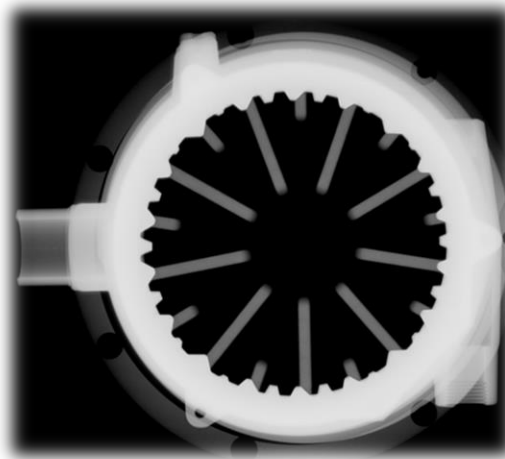
鋁鍛

Fluorescent liquid penetrant testing for crack detection



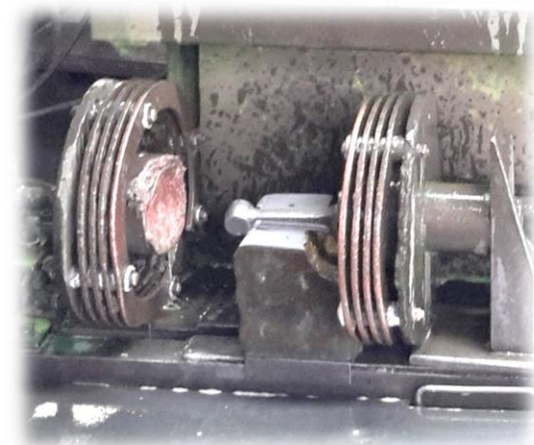
鋁鑄

X-ray analysis for internal porosity and structural integrity



鋼鍛

Magnetic particle inspection for grain flow dynamics



三、品質保證 – 球頭與橫拉杆耐久測試設備

4 軸耐久測試機



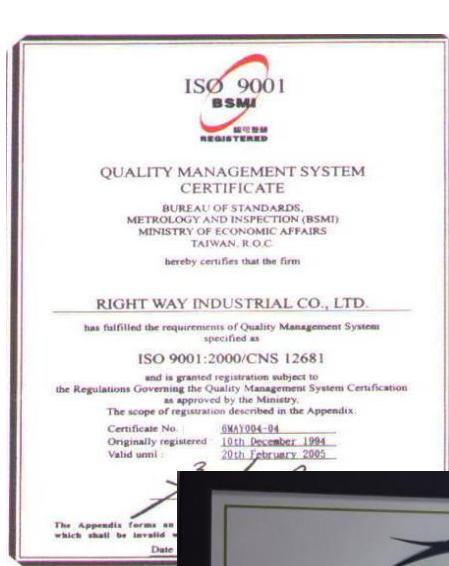
Room temp. mud water spray durability (swing, rotary motion)
High and low temperature muddy water spray durability (oscillation and rotation) High and low temperature mud spray durability

Durability (swing, rotary motion)
Swing frequency: 0.5~6Hz
stepless adjustable Swing
angle: $0 \sim \pm 30^\circ$
Rotation angle: $0 \sim \pm 60^\circ$
Rotation frequency: 0~6Hz
stepless adjustable
Temperature: $-40 - +85^\circ \text{C}$

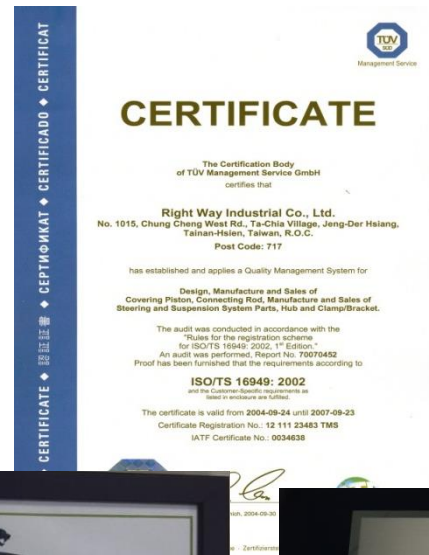


三、品質保證 – 認證與客戶肯定

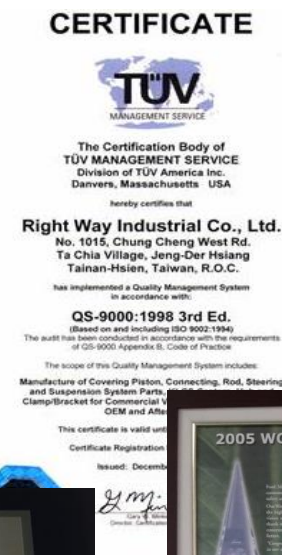
ISO 9001



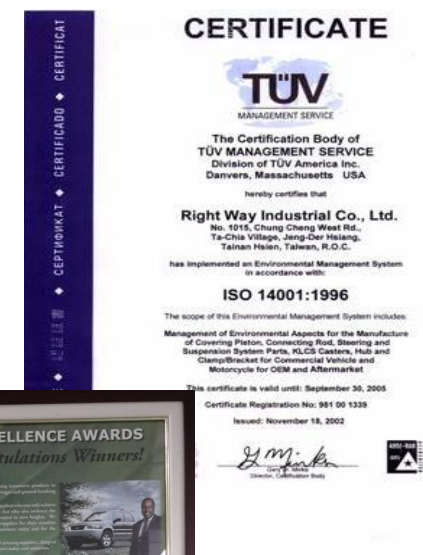
IATF 16949



QS 9000



ISO 14001



Arctic Cat
Zero Defect Status



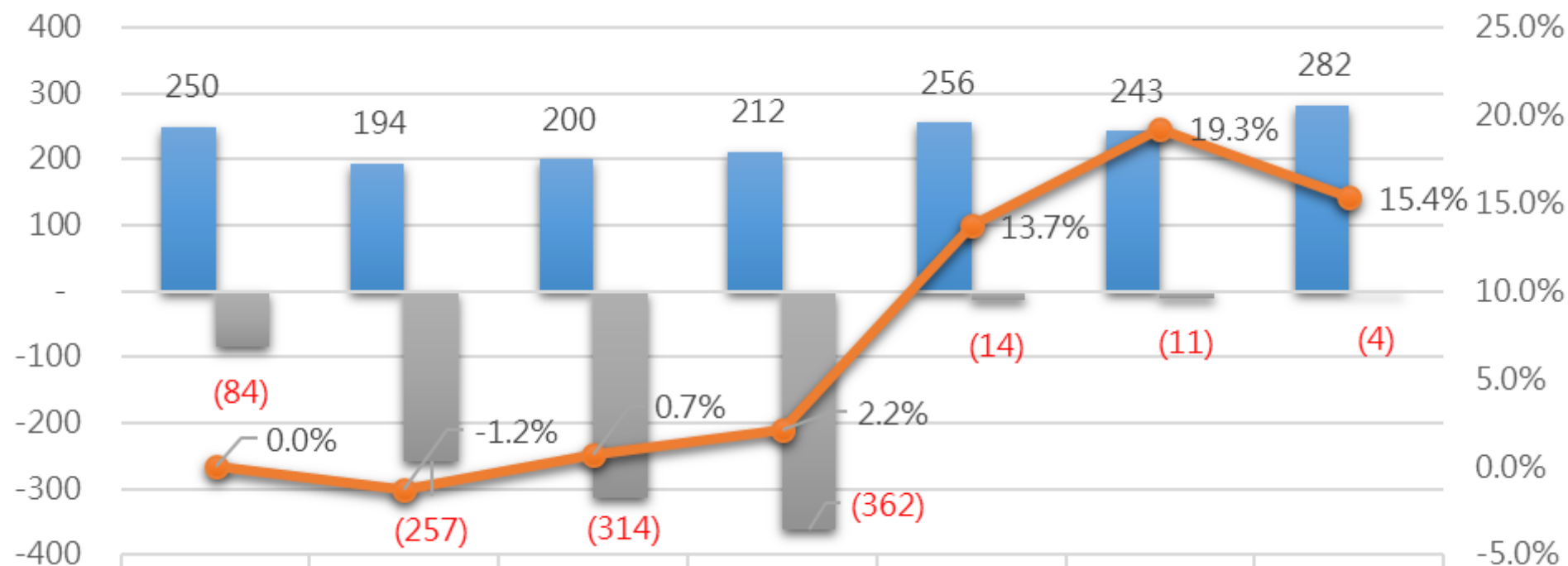
BRP
Supplier Quality Award



Ford
World Excellence Award

四、近期營運概況

單位:NT\$M;%



	2020Q1	2020Q2	2020Q3	2020Q4	2021Q1	2021Q2	2021Q3
Revenue	250	194	200	212	256	243	282
Profit Before Tax	(84)	(257)	(314)	(362)	(14)	(11)	(4)
Gross Margin	0.0%	-1.2%	0.7%	2.2%	13.7%	19.3%	15.4%

Thank You!



行在正道，攜手共創新格局