

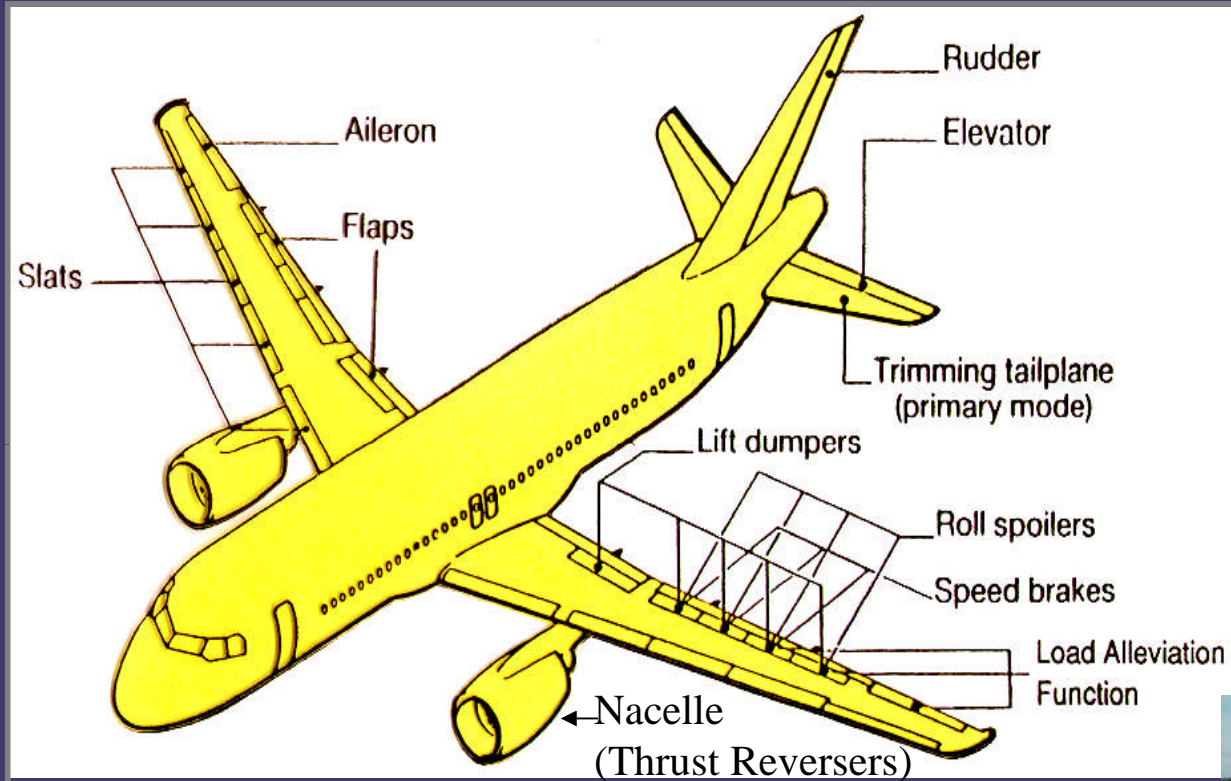


**Geoff Armstrong**  
**Chief Engineer**  
**Materials, Processes and Technology**  
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- **Global company in Aircraft Systems and Equipment**
  - **\$9 billion sales**
  - **Landing Gear**
  - **Wheels & Brakes**
  - **Evacuation systems**
  - **Fuel control and management systems**
  - **Ice detection and removal**
- **Actuation Systems**
  - **Flight Control Systems and Landing Gear**
  - **\$950M business 45% UK, 45% France, 10%USA**
  - **Formerly Lucas Aerospace**

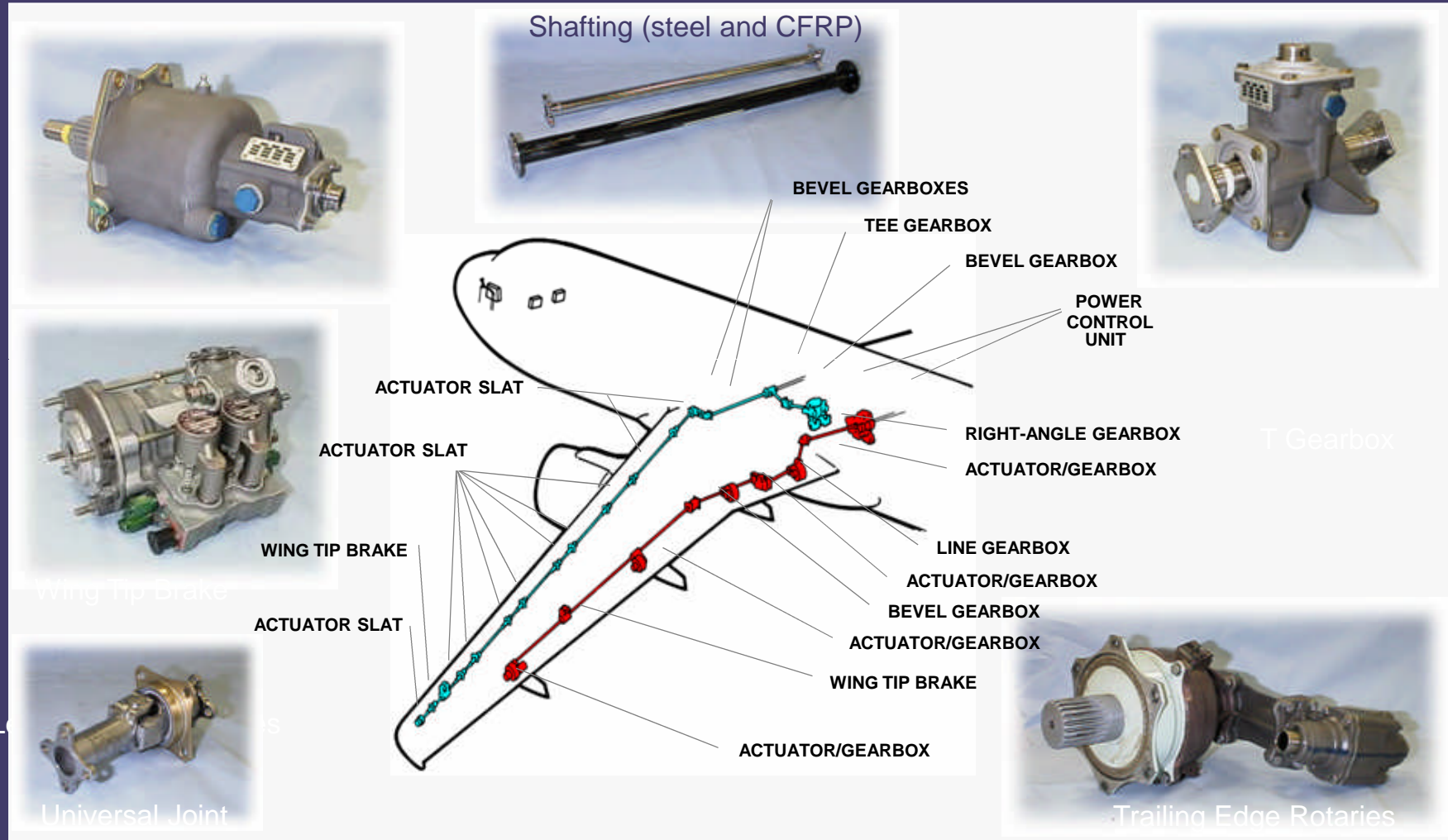






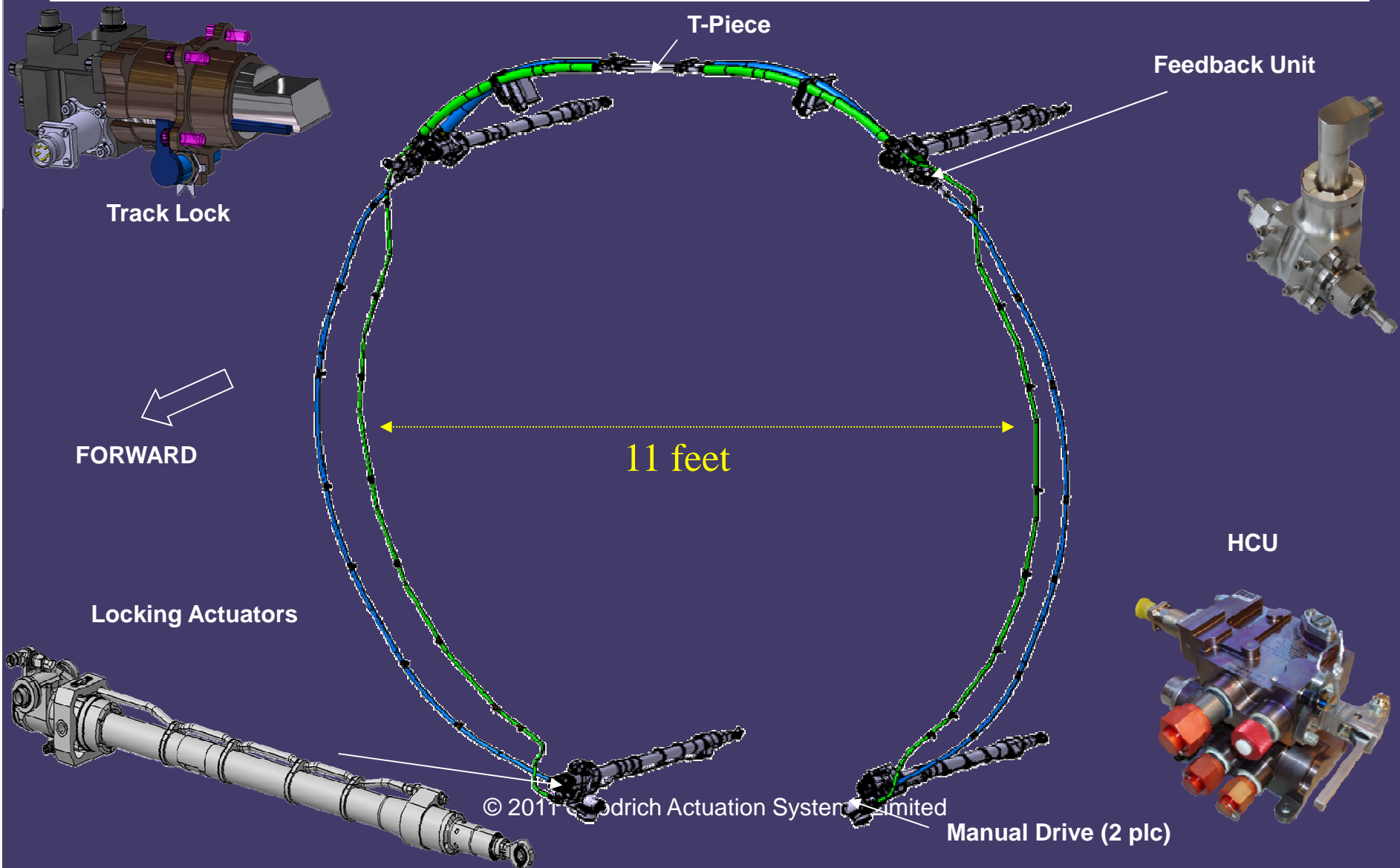
**Mechanisms to open doors in the fuselage, lower or raise the landing gear and provide steering to the front wheels**





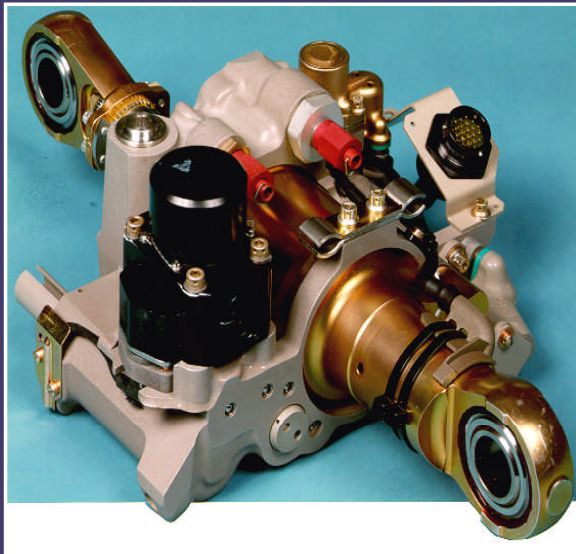
# GOODRICH

## B787 Thrust Reverser



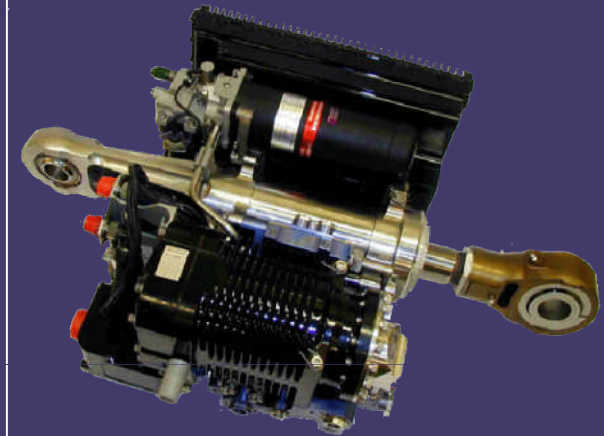


## Hydraulic Flight Control Actuators



**Design for:**  
Fatigue, wear,  
corrosion  
strength, conductivity

Environment  
weight, cost

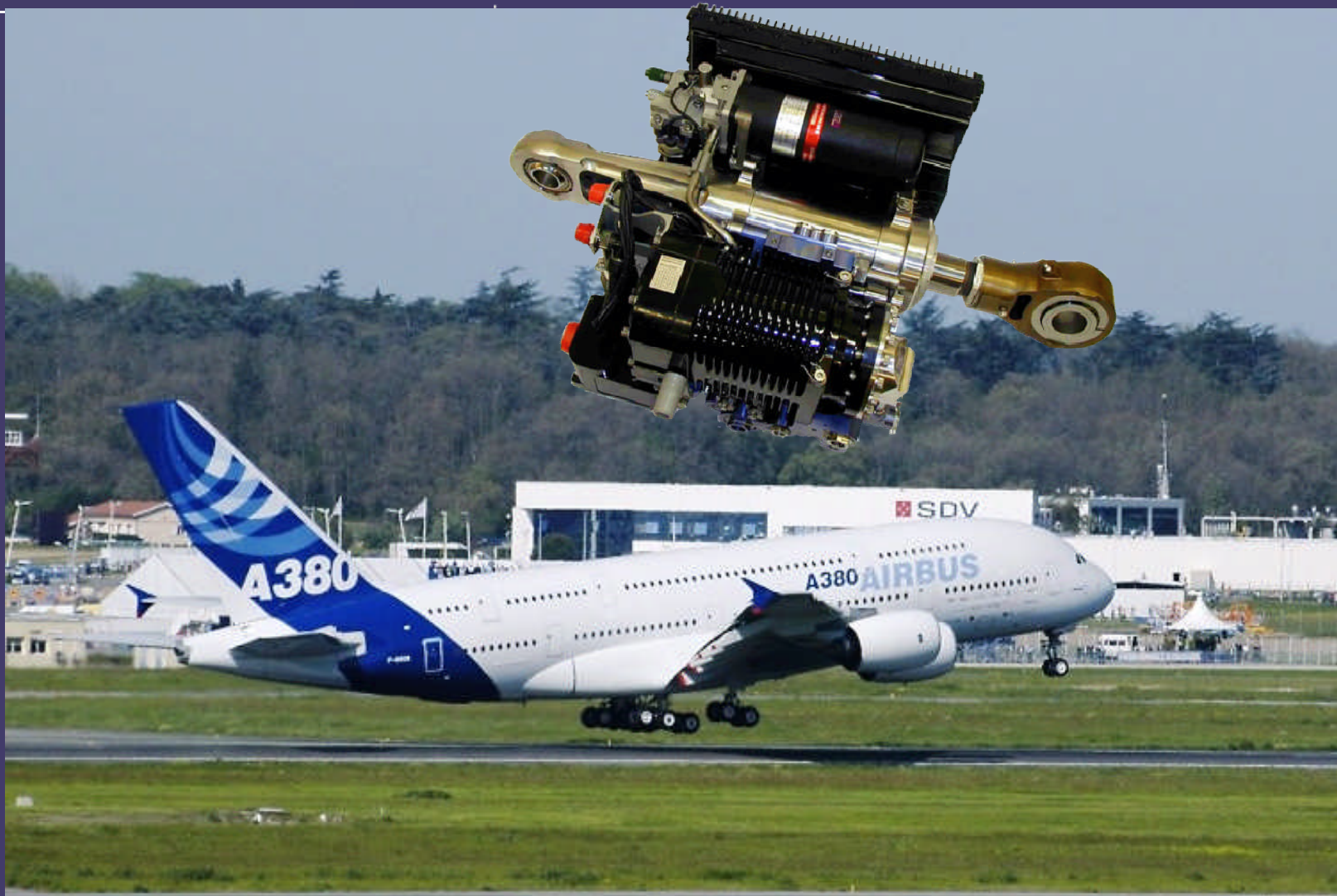


Aluminium and titanium alloys, stainless steel, bronze, elastomers, composites, magnets, polymers..... anodising, electroplating, plasma spraying, PVD, many heat treatments, soldering, welding.....



# GOODRICH

## A380 - flies with electric powered flight controls



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- **Responsible for all aspects of materials engineering**
  - **Materials selection**
  - **Heat treatment and coatings**
  - **Design data**
  - **R&D for new materials and treatments**
  - **Failure investigations (test & service)**
  - **Specifications & standards**
- **12 Materials Scientists at the 3 engineering locations supporting 180 design and 75 test engineers**

### At the desk, in the team

- Researching information on new materials
- Developing new materials and treatments
- Materials selection for new designs
- Calculations for design
- Writing specifications
- Report writing & review

### In the laboratory/factory

- Testing
  - Strength
  - Fatigue
  - Wear
  - Corrosion
- Failure investigations
- Manufacturing investigations
- Set up and control new processes

**Travel to Customers, Suppliers, Conferences**

**Career development – leadership, responsibility, management .....**

