

Doncasters Exhausts



DONCASTERS

Doncasters Bramah, located in Sheffield, has a proven 25+ year history of producing exhaust systems for the commercial, defence and helicopter markets. Every part of the process is manufactured internally with no external suppliers required. We have experience of high volume/ value projects for some of the world's leading aerospace organisations including, Airbus, Boeing, Leonardo, Rolls-Royce, SAFRAN and UTC Aerospace Systems.

A proven history...

Airbus Programs

- Airbus A320ceo / CFM56-7
- Airbus A320neo / Leap 1A/1C
- Airbus A320ceo / PW1100G
- Boeing 737 / CFM56-7
- Leonardo AW101

Turnkey Production Work Cells

- Hydrobulge and hot formed skins
- Circumferential and longitudinal welding
- Vacuum heat treatment
- Chemical processing
- Machined flanges
- Gemcor riveting
- Finger seal coating

Airbus Supply chain

- Tier 1 supplier on A380 super plastic formed (SPF) track cans

Lead time

- The manufacturing production lead time for a typical commercial aircraft single aisle exhaust is typically 10 days from receipt of material.

Exhausts supplied to Airbus, Rolls-Royce, Leonardo, SAFRAN and UTC.

AIRBUS



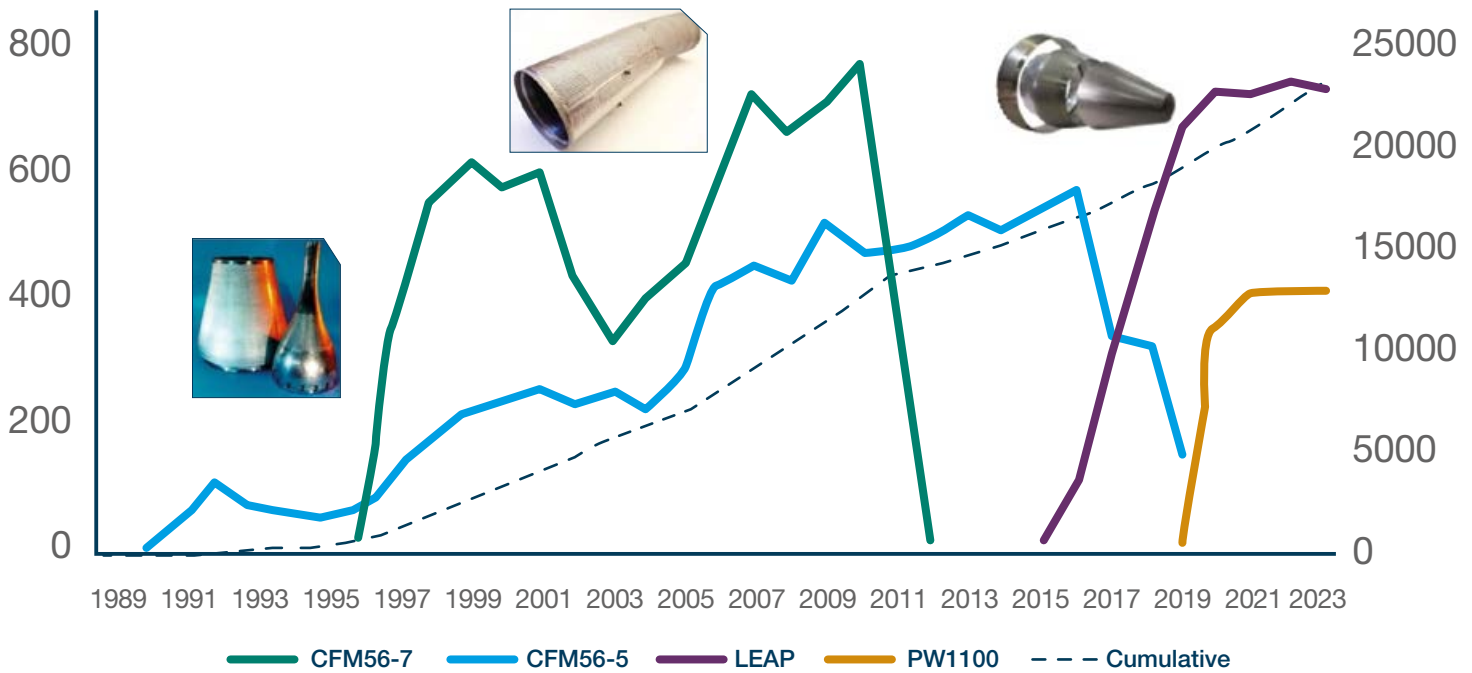
SAFRAN
AEROSPACE · DEFENCE · SECURITY

LEONARDO

UTC Aerospace Systems

A History of Performance, Cost and Delivery

>17,000 Single Aisle Exhausts produced to date



Exhaust Manufacture commences in Sheffield (CFM56-5 & EH101)

CFM56-7 exhaust manufacture commences

Boeing Preferred Supplied Status

CFM56 Supplier of the Year

Minimum 50% share won on PW1100

LEAP 1A & 1C first deliveries on time & zero concessions

Accreditations



Latest Scorecards

SAFRAN On time delivery OTD monthly

100%

UTC Aerospace Systems 6 month OTD

100%



Capability

Engine Ring Machining In-house

- Maximum component size – Diameter 1500mm
- Multiple and dedicated fixture storage adjacent to machine cell
- Semi-auto loading and quick location systems
- Offline tool setting and storage

Trumpf Laser Cutting and Welding

- 6-Axis CNC Laser
- Integrated weld capability
- Dual-bed set up configuration
- Rotary Table configuration
- Capability to accommodate sizes up to 2000mm x 4000mm

Heat Treatment

- Vacuum and air heat treatment of a wide range of materials
- Computer controlled programming
- Risk mitigation BCP process in place
- Full NADCAP heat treat accreditation
- Delegated authority for data card approval
- Capability to accommodate components with dimensions up to 1500mm diameter, 1800mm height

Hydrobulge

- Profile tolerance plus or minus 1.0mm
- Hydrobulge and laser - throat and exit diameter capability plus or minus 0.035mm

Testing Laboratory

- Full laboratory
- Full range of mechanical and metallurgical testing
- On site works chemist
- Delegated authority for data card approval
- X-ray facilities for components up to 2000mm
- FPI facilities for complete exhaust working size range



Commercial Engine Exhaust Production Cells

- Forming and Welding of Titanium and Inconel (625 & 718 grades)

Customer and Third Party Approvals

Customer/ Third Party	Scope (abbreviated)
LRQA	BS EN ISO 9001:2015 AS9100 Rev. D
BSI	ISO 14001:2004
LRQA	BS OHSAS 18001:2007
PRI (NADCAP)	AS7108 for Chemical Processing
PRI (NADCAP)	AS7114 for NDT
PRI (NADCAP)	AC7101/4 & AS7102 for Heat Treating
PRI (NADCAP)	AS7110 for Welding
PRI (NADCAP)	AS7003 NC machining
UTAS	Welding, laser cutting, heat treatment, super plastic forming, degreasing, etching, FPI, X-ray
Safran Nacelles	Welding, laser cutting, heat treatment, degreasing, FPI, X-ray
UTAS Certified Quality Clinic	Fully certified Quality Clinic Process
Airbus	Welding, laser cutting, heat treatment, super plastic forming, degreasing, etching, FPI, X-ray

Chemical Processing – Etch/Clean/Mill/Degrease

- Weight reduction chemical milling
- Full NADCAP Chemical Processing approval

Tooling Expertise and Experience

- A320neo & C919 tool design
- Test and manufacture
- Proven techniques and test plans, on time delivery.



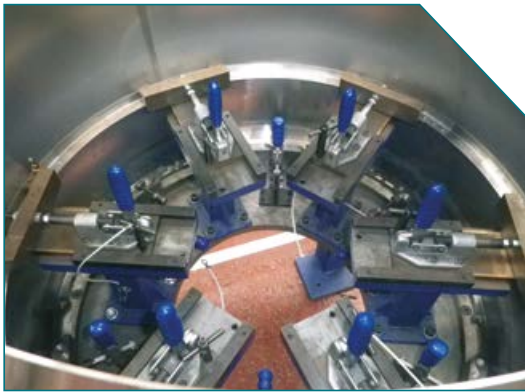
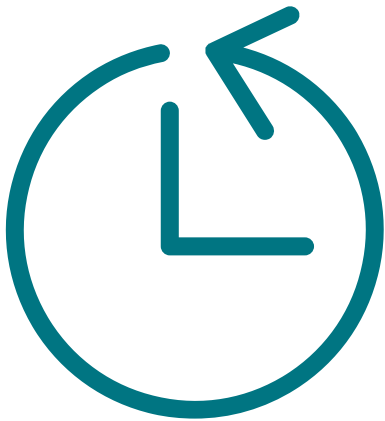
Gemcor 2017 investment

NPDI

A proven NPDI capability and production management method allows the company to offer a proficient, volume exhaust supply chain solution.

Exhaust Production

Key Milestones



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DONCASTERS

- 1983** Westland Helicopter exhaust manufacture commenced.
- 1989** Goodrich CFM56 manufacture commenced at Sheffield.
- 1994** Boeing 737 manufacture commenced at Sheffield.
- 2002** Boeing preferred supplier status granted.
- 2007** Goodrich Thank You Award – Airbus single aisle rate readiness achieved.
- 2007** JSF Roll Post Duct and 3 BSM development (24 sets).
- 2008** Goodrich Thank You Award – Airbus 4,000 CFM56 delivery milestone.
- 2009** 20 Year Goodrich supplier milestone.
- 2010/11** 100% OTIF. Full rate, 2 value streams 27 exhaust units per week.
- 2010** JSF LRIP 2 plan achieved RPD.
Goodrich Aero Supplier Conference – Bramah Award for Outstanding Performance & Commitment to Excel in Management, Delivery, Quality, Operations and Customer Service.
- 2011** Goodrich CFM56 milestone delivery presentation held at Bramah.
- 2012** Commence the development of A320neo/C919 exhaust with Aircelle.
- 2013** 20 Year Agusta Westland supply milestone – AW101/EH101 Exh & APU.
- 2013** C919 First delivery on time Dec 2013.
- 2013** A320neo first deliverable made on time Jan 2014.
- 2014** UTAS Supplier Gold Programme commenced.
- 2015** UTAS Quality Clinic.
- 2016/17** A320neo Ramp up – CFM max rate.
- 2018** GTF Exhaust Award