B787 Fuel Pump Technical Update - F202

Stuart Tucker Product Support & Technical Services Manager
Billy Walker Technical Support Team Leader
Aftermarket FMC

Powering Business Worldwide

© 2016 Eaton. All Rights Reserved.

Agenda

Boeing 787 Fuel system background

Boost Pump P/ N 39-0001-1400

Powering Business Worldwide

© 2016 Eaton. All Rights Reserved.

Fuel system - equipment

Fuel system equipment

4	Boost Pumps & 4 - Housings
2	Override Pumps & - 2 Housings
1	APU Pump & 1 - Housing
2	Fuel Scavenge Jet Pumps
2	Water Scavenge Jet Pumps
7	Check Valves
1	Cross-feed Valve
2	Defuel Valves
2	Jettison Valves
2	Manifold Drain Valves
2	Bypass Valves
7	Pressure Switches
2	Refuel Adaptors
11	Remote Valves
18	Valve Actuators

Powering Business Worldwide

© 2016 Eaton. All Rights Reserved.

NGS system - equipment

NGS system equipment

3	Remote valves
5	Check valves
3	Actuators
6	Drain valves
3	Vent float valves
2	Flame arresters
1	Cross prevention vent valve
10	Vent drain valves

The NGS system equipment forms part of a system which supplies Nitrogen Enriched Air to the fuel tanks to prevent explosions

EATON
Powering Business Worldwide

© 2016 Eaton. All Rights Reserved.

Issue/Application

- **Platform:**
  - Boeing 787-8
- **Aircraft problem/impact:**
  - Pump Inoperative
- **Description of problem**
  - In- Service failures
- **Identify assembly/part number:**
  - Fuel Boost Pump 39-0001-1400
- **Consequence(s)**
  - Pump replacement requirements

Powering Business Worldwide

© 2016 Eaton. All Rights Reserved.

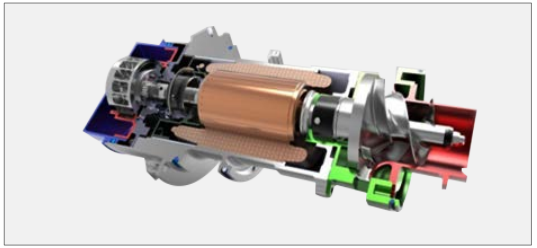
787 In-service issues – boost pump

Issue

Failure of Stator Windings on in-service aircraft

- Initial determination – damage to Stator Winding insulation during assembly resulting in weakened electrical resistance causing electrical short circuit
- Manufacturing process change implemented to address possible insulation damage during assembly
- Part number roll from -1300 to -1400 identifying process change
- Fleet retrofit of all 1300 pumps – Complete

Issue diminished but was not resolved



Powering Business Worldwide

© 2016 Eaton. All Rights Reserved.

787 In-service issues – boost pump

Status

No discernable pattern has been identified for field failures; hours, cycles, engine type, location, flight profile

- Eaton has concluded it's power interrupt testing and was unable to replicate the failure seen on in service aircraft
- Additional improvements in stator winding to enhance insulation
  - Trickle impregnation of insulating varnish
  - Grade 3 wire (thicker insulation)
  - Coil separators (increases insulation between coils)

Powering Business Worldwide

© 2016 Eaton. All Rights Reserved.

787 In-service issues – boost pump

Status

Trickle Impregnation of varnish insulation on Stator Windings

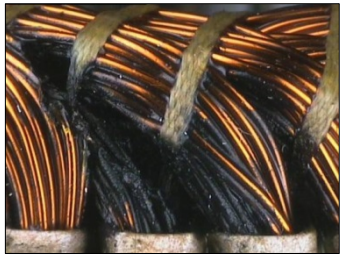
- Complete - serial number 01888 first part with this build improvement. Aircraft delivery May 2015 (Line 268)

Grade 3 wire & coil separators

- In process – first production parts Aug 2016

Service Bulletin planned to introduce improvements to existing 1400 boost pumps

- Implementation will result in part number roll to -1500
- CMM under revision – submitted for FAA approval through Boeing
- Implementation under warranty on an attrition basis



Powering Business Worldwide

© 2016 Eaton. All Rights Reserved.

Questions/Comments

Powering Business Worldwide

© 2016 Eaton. All Rights Reserved.


EATON
Powering Business Worldwide