

ENG23LA031

POWERPLANTS

Group Chair's Factual Report - Attachment # 1

ESN 60A467, Fuel Nozzle B-Nut and Flange Bolt Torque Measurements

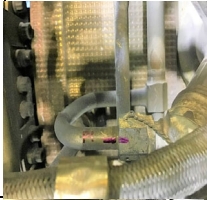
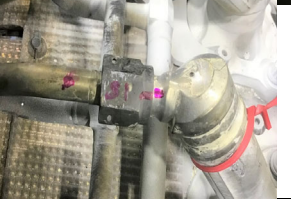
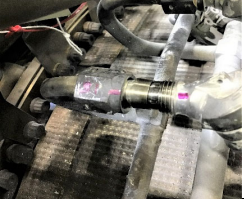
January 7, 2025

FUEL SYSTEM B-NUTS

- a) Mark a line across the B-nut to the fitting and take picture of the line. (Reference AMM task 73-11-05-000-801.
- b) Cut the safety cable.
- c) Record break away torque for each B-nut. Do not loosen the B-nut beyond necessary for recording breakaway torque.
- d) Retorque the B-nut to the required torque (between 262 and 308 lbf.in (2.96 and 3.48 m.daN)). Take a picture of and note any offset relative to that before the breakaway and retorque.
- e) Loosen the B-nut and inspect the mating surfaces to ensure no dents/nicks/scratches.
- f) Perform above steps on all B-nut fuel connections to ensure that all potential leak sources have been identified and corrected.

NOTE

- Pictures of each Fuel nozzles B-nuts controlled should be provided (before breakaway torque measurement/after B-nut retorque)
- Breakaway torques measured for all the Fuel Nozzles should be reported. See template example below.
- Inspection results of the mating surfaces for all the Fuel Nozzles should be provided (pictures and report of any finding)

Fuel Nozzle		Line Marking	Before breakaway torque measurement	After B-nut retorque	B-Nut Mating surface
EXAMPLE	B-NUT 1		220		
	B-NUT 2		220		

Fuel Nozzle		Line Marking	Before breakaway torque measurement	After B-nut retorque	B-Nut Mating surface
N°1	B-NUT 1		305		
	B-NUT 2		407		

FUEL SYSTEM B-NUTS

N°2	B-NUT 1		355		
	B-NUT 2		319		
N°3	B-NUT 1		307		
	B-NUT 2		341		
N°4	B-NUT 1		359		
	B-NUT 2		300		
N°5	B-NUT 1		260		
	B-NUT 2		296		

FUEL SYSTEM B-NUTS

N°6	B-NUT 1		284		
	B-NUT 2		303		
N°7	B-NUT 1		376		
	B-NUT 2		309		
N°8	B-NUT 1		265		
	B-NUT 2		299		
N°9	B-NUT 1		321		
	B-NUT 2		349		

FUEL SYSTEM B-NUTS

N°10	B-NUT 1		304		
	B-NUT 2		237		
N°11	B-NUT 1		262		
	B-NUT 2		249		
N°12	B-NUT 1		236		
	B-NUT 2		231		
N°13	B-NUT 1		338		
	B-NUT 2		332		

FUEL SYSTEM B-NUTS

N°14	B-NUT 1		343		
	B-NUT 2		356		
N°15	B-NUT 1		341		
	B-NUT 2		319		
N°16	B-NUT 1		366		
	B-NUT 2		441		
N°17	B-NUT 1		402		
	B-NUT 2		0		

FUEL SYSTEM B-NUTS

N°18	B-NUT 1		172		
	B-NUT 2		0		
N°19	B-NUT 1		n/a		
	B-NUT 2		n/a		

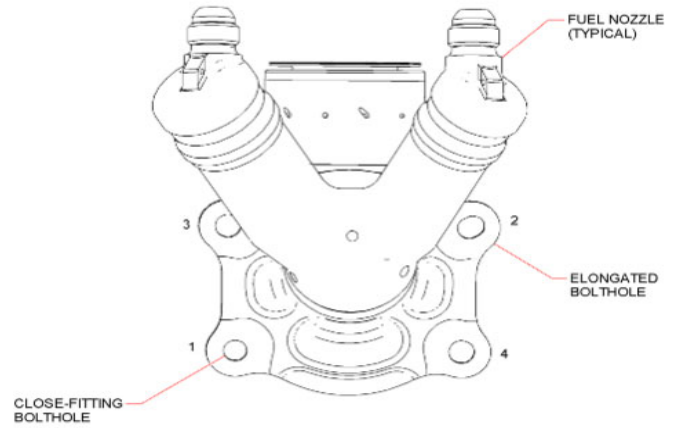
FUEL SYSTEM BOLTS & GASKET

For any 4 bolt flange connections, record the break away torque on each of the 4 bolts. Remove and inspect the gasket seal for any damage to the seal. Install a new seal and reconnect the flange. Task 73-11-05-000-801 can be used for the Removal of the Fuel Nozzles to access the seals.

NOTE

- Flange condition and breakaway torques measured for all the Fuel Nozzles 4 bolts connections should be reported
- After removal and inspection, to report gasket seal condition and any damage if existing

Fuel Nozzle		Breakaway torque reading (LBF-INCH)	condition	Gasket seal condition
N°1	Bolt 1	232	OVER INSTALLATION TORQUE LIMIT	SATISFACTORY
	Bolt 2	40	OVER INSTALLATION TORQUE LIMIT	
	Bolt 3	194	OVER INSTALLATION TORQUE LIMIT	
	Bolt 4	353	OVER INSTALLATION TORQUE LIMIT	
N°2	Bolt 1	62*	OVER INSTALLATION TORQUE LIMIT	SATISFACTORY
	Bolt 2	386	OVER INSTALLATION TORQUE LIMIT	
	Bolt 3	336	OVER INSTALLATION TORQUE LIMIT	
	Bolt 4	440	OVER INSTALLATION TORQUE LIMIT	
N°3	Bolt 1	411	OVER INSTALLATION TORQUE LIMIT	SATISFACTORY
	Bolt 2	303	OVER INSTALLATION TORQUE LIMIT	
	Bolt 3	345	OVER INSTALLATION TORQUE LIMIT	
	Bolt 4	329	OVER INSTALLATION TORQUE LIMIT	
N°4	Bolt 1	459	OVER INSTALLATION TORQUE LIMIT	SATISFACTORY
	Bolt 2	92*	OVER INSTALLATION TORQUE LIMIT	
	Bolt 3	94*	OVER INSTALLATION TORQUE LIMIT	
	Bolt 4	324	OVER INSTALLATION TORQUE LIMIT	



FUEL SYSTEM BOLTS & GASKET

N°5	Bolt 1	401	OVER INSTALLATION TORQUE LIMIT	SATISFACTORY
	Bolt 2	329	OVER INSTALLATION TORQUE LIMIT	
	Bolt 3	392	OVER INSTALLATION TORQUE LIMIT	
	Bolt 4	391	OVER INSTALLATION TORQUE LIMIT	
N°6	Bolt 1	328	OVER INSTALLATION TORQUE LIMIT	SATISFACTORY
	Bolt 2	417	OVER INSTALLATION TORQUE LIMIT	
	Bolt 3	495	OVER INSTALLATION TORQUE LIMIT	
	Bolt 4	399	OVER INSTALLATION TORQUE LIMIT	
N°7	Bolt 1	336	OVER INSTALLATION TORQUE LIMIT	SATISFACTORY
	Bolt 2	264	OVER INSTALLATION TORQUE LIMIT	
	Bolt 3	448	OVER INSTALLATION TORQUE LIMIT	
	Bolt 4	337	OVER INSTALLATION TORQUE LIMIT	
N°8	Bolt 1	390	OVER INSTALLATION TORQUE LIMIT	SATISFACTORY
	Bolt 2	401	OVER INSTALLATION TORQUE LIMIT	
	Bolt 3	400	OVER INSTALLATION TORQUE LIMIT	
	Bolt 4	345	OVER INSTALLATION TORQUE LIMIT	
N°9	Bolt 1	278	OVER INSTALLATION TORQUE LIMIT	SATISFACTORY
	Bolt 2	366	OVER INSTALLATION TORQUE LIMIT	
	Bolt 3	302	OVER INSTALLATION TORQUE LIMIT	
	Bolt 4	339	OVER INSTALLATION TORQUE LIMIT	

FUEL SYSTEM BOLTS & GASKET

N°10	Bolt 1	378	OVER INSTALLATION TORQUE LIMIT	SATISFACTORY
	Bolt 2	359	OVER INSTALLATION TORQUE LIMIT	
	Bolt 3	370	OVER INSTALLATION TORQUE LIMIT	
	Bolt 4	265	OVER INSTALLATION TORQUE LIMIT	
N°11	Bolt 1	285	OVER INSTALLATION TORQUE LIMIT	SATISFACTORY
	Bolt 2	319	OVER INSTALLATION TORQUE LIMIT	
	Bolt 3	78*	OVER INSTALLATION TORQUE LIMIT	
	Bolt 4	383	OVER INSTALLATION TORQUE LIMIT	
N°12	Bolt 1	328	OVER INSTALLATION TORQUE LIMIT	SATISFACTORY
	Bolt 2	239	OVER INSTALLATION TORQUE LIMIT	
	Bolt 3	315	OVER INSTALLATION TORQUE LIMIT	
	Bolt 4	267	OVER INSTALLATION TORQUE LIMIT	
N°13	Bolt 1	107	OVER INSTALLATION TORQUE LIMIT	SATISFACTORY
	Bolt 2	269	OVER INSTALLATION TORQUE LIMIT	
	Bolt 3	340	OVER INSTALLATION TORQUE LIMIT	
	Bolt 4	343	OVER INSTALLATION TORQUE LIMIT	
N°14	Bolt 1	420	OVER INSTALLATION TORQUE LIMIT	SATISFACTORY
	Bolt 2	301	OVER INSTALLATION TORQUE LIMIT	
	Bolt 3	402	OVER INSTALLATION TORQUE LIMIT	
	Bolt 4	452	OVER INSTALLATION TORQUE LIMIT	

FUEL SYSTEM BOLTS & GASKET

N°15	Bolt 1	340*	OVER INSTALLATION TORQUE LIMIT	SATISFACTORY
	Bolt 2	380*	OVER INSTALLATION TORQUE LIMIT	
	Bolt 3	337	OVER INSTALLATION TORQUE LIMIT	
	Bolt 4	376*	OVER INSTALLATION TORQUE LIMIT	
N°16	Bolt 1	372	OVER INSTALLATION TORQUE LIMIT	SATISFACTORY
	Bolt 2	452	OVER INSTALLATION TORQUE LIMIT	
	Bolt 3	422	OVER INSTALLATION TORQUE LIMIT	
	Bolt 4	364	OVER INSTALLATION TORQUE LIMIT	
N°17	Bolt 1	405	OVER INSTALLATION TORQUE LIMIT	SATISFACTORY
	Bolt 2	397	OVER INSTALLATION TORQUE LIMIT	
	Bolt 3	428	OVER INSTALLATION TORQUE LIMIT	
	Bolt 4	526	OVER INSTALLATION TORQUE LIMIT	
N°18	Bolt 1	385	OVER INSTALLATION TORQUE LIMIT	SATISFACTORY
	Bolt 2	334	OVER INSTALLATION TORQUE LIMIT	
	Bolt 3	277	OVER INSTALLATION TORQUE LIMIT	
	Bolt 4	302	OVER INSTALLATION TORQUE LIMIT	
N°19	Bolt 1	n/a	OVER INSTALLATION TORQUE LIMIT	SATISFACTORY
	Bolt 2	n/a	OVER INSTALLATION TORQUE LIMIT	
	Bolt 3	n/a	OVER INSTALLATION TORQUE LIMIT	
	Bolt 4	n/a	OVER INSTALLATION TORQUE LIMIT	