

SERVICE BULLETIN No. 292 72 2234

Version: A

Date: 23 September 2024

First issue

Modification

Periodical action

One-off action

Applicable from:
"DECEMBER
2024"

Subject:
Module M01 - Draining of the magnetic seal assembly installed on the starter gear on the starter-generator side.
Modification TU 234.

APPLICABLE ENGINE / VARIANT(S)	EFFECTIVITY CODE	MAINTENANCE LEVEL	CONDITION OF APPLICATION	EFFECT ON OPERATION
ARRIEL 2 D, E	2-A-3	1, 2, 3	Application upon customer request	Removal/installation of the starter-generator adapter and installation of the general drain pipe
		4	Application upon first return to an approved Repair Center, if the repair/overhaul gives access to the starter gear	

Apply this SB in full compliance with the manufacturer's instructions.
Refer to the effectivity code above.

1. GENERAL

1.1. Background

1.1.1. Context

ARRIEL 2 D and E operators found cases of oil seepage/leak on the magnetic seal assembly installed on the starter gear on the side of the starter-generator power drive of the accessory gearbox module (Figure 1). Thus, oil can flow on the engine and possibly on the engine compartment deck. Some operators cannot accept this situation.

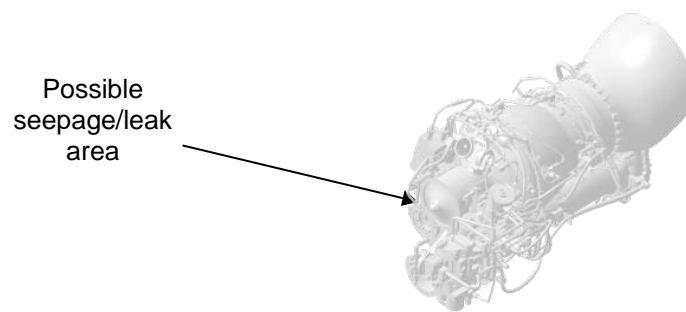


Figure 1

1.1.2. Analysis

The designer-supplier of the magnetic seal assemblies states that, because of the design, it is not unusual to find seepages/leaks. As these dynamic seals ensure a face-contact sealing, they must be lubricated in their contact area (mainly to prevent a rapid deterioration of the seal). The hydrodynamic oil film thus formed can cause seepages/leaks due to the nominal operation of the magnetic seal assembly. The seepage/leak criterion for these seals permitted by Safran Helicopter Engines during the engine/module acceptance test is max. 0.25 cm³/hr. To prevent possible leaks on the engine or on the engine compartment deck, Safran Helicopter Engines developed solutions to drain these possible seepages/leaks.

1.1.3. Solution

Modification TU 234 introduces a draining of the possible oil leaks of the magnetic seal assembly installed on the starter gear on the side of the starter-generator power drive on ARRIEL 2 D and E engines.

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§1.GENERAL

§2.LEVEL 1, 2

§3.LEVEL 3

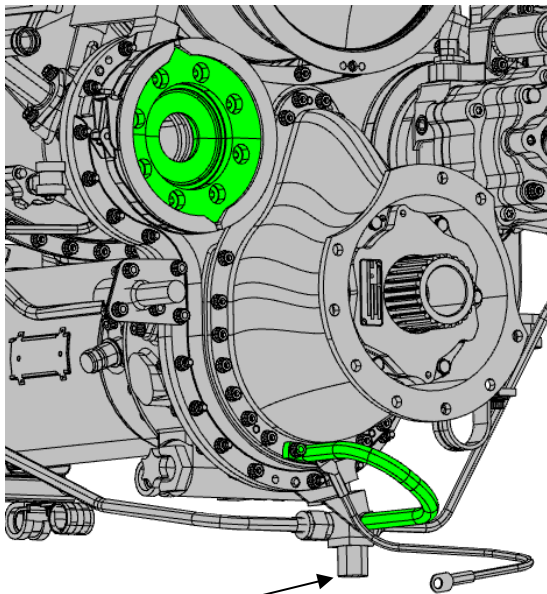
§4.LEVEL 4

§5.CERTIFICATES

On ARRIEL 2 D, modification TU 234 (see figure 2):

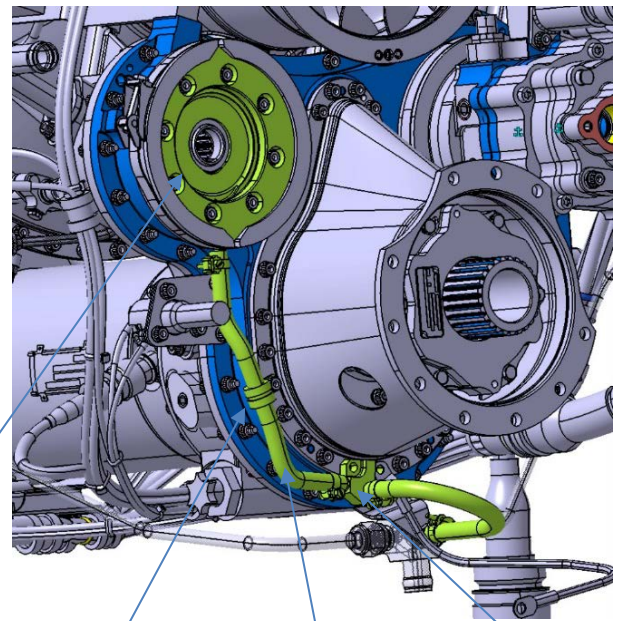
- changes the starter-generator adapter to collect the oil
- adds a clamp and a general-drain flexible pipe to route the oil to the drain flange
- changes the drain flange to install the new pipe.

PRE MODIFICATION



Airframe drain collector

POST MODIFICATION



Starter-generator adapter

General drain pipe

Drain flange

Clamp

Figure 2 - ARRIEL 2 D

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§1.GENERAL

§2.LEVEL 1, 2

§3.LEVEL 3

§4.LEVEL 4

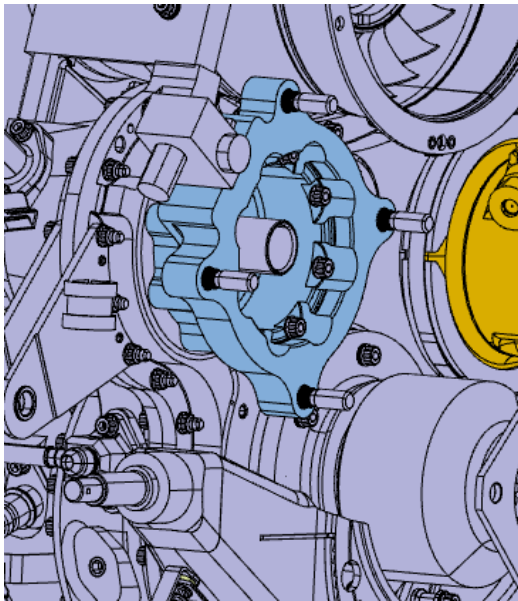
§5.CERTIFICATES

On ARRIEL 2 E, modification TU 234 (see figure 3):

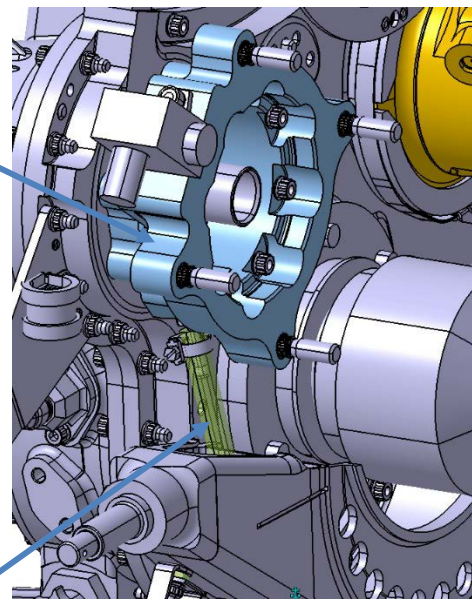
- changes the starter-generator adapter to collect the oil
- adds a general-drain flexible pipe to route the oil to the front support.

PRE MODIFICATION

POST MODIFICATION



Starter-generator adapter



General drain pipe

Figure 3 - ARRIEL 2 E

As possible seepages/leaks cannot be detected visually at the level of the starter-generator power drive after application of TU 234, the Troubleshooting Manual was updated accordingly.

1.2. Approval

The technical content of this document is approved under the authority of the DOA (Design Organisation Approval) ref. EASA.21J.070.

1.3. Summary of updates

Not applicable.

End of Section §1

“General”

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§1.GENERAL	§2.LEVEL 1, 2	§3.LEVEL 3	§4.LEVEL 4	§5.CERTIFICATES
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2. PROCEDURE DONE AT THE OPERATOR’S SITE OR AT A MAINTENANCE CENTER APPROVED FOR LEVEL 1, 2

2.1. Manpower

- Personnel: 1 mechanic.
- Time: 4 man - hours.

2.2. Tools / Parts

Mechanic's standard tools.

2.3. Parts information

2.3.1. Basic information

The list of parts is given for one engine.

2.3.2. List of parts

2.3.2.1. Parts for application of this SB

New Part Number	Key	Qty	Description* / Item	Old Part Number	Key	Qty
ARRIEL 2 D						
0 292 10 166 0	A	1	Starter-generator adapter (72-61-00-01-350)	0 292 10 201 0	C	1
0 292 10 164 0	A	1	Drain flange (72-61-00-01-010)	0 301 02 027 0	C	1
0 292 10 180 0	A	1	General drain pipe (72-61-00-01-450)			
9 562 81 126 0	A	1	Clamp (72-61-00-01-480)			
ARRIEL 2 E						
0 292 10 159 0	A	1	Starter-generator adapter (72-61-00-01-350)	0 292 10 149 0	C	1
0 292 10 165 0	A	1	General drain pipe (72-61-00-01-450)			

* Prices are given upon request.

A full list of the old item part numbers above is given in the Spare Parts Catalog.

Key

A	Part included by this SB
C	Part deleted by this SB

2.3.2.2. Parts for application of the maintenance tasks referred to in this SB

Refer to the applicable ARRIEL 2 Maintenance Manual or Spare Parts Catalog.

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§1.GENERAL

§2.LEVEL 1, 2

§3.LEVEL 3

§4.LEVEL 4

§5.CERTIFICATES

2.3.3. Supply conditions

Order supplies as needed from:
 Your local Safran Helicopter Engines Support Center
 or
 SAFRAN HELICOPTER ENGINES
 Direction Support et Service
 Département Commercial
 40220 TARNOS - France

2.4. Procedures

- ARRIEL 2 D variant
 Replacement of the PRE TU 234 starter-generator adapter and drain flange with POST TU 234 starter-generator adapter and drain flange, and installation of the general drain pipe, refer to paragraph 2.6.
- ARRIEL 2 E variant
 Replacement of the PRE TU 234 starter-generator adapter with a POST TU 234 starter-generator adapter, and installation of the general drain pipe, refer to paragraph 2.6.

2.5. Block diagram for this SB

Not applicable.

2.6. Instructions on how to do the procedure

2.6.1. Implementation

Removal of the engine is not necessary for this SB.

2.6.2. Operating instructions

Refer to the applicable ARRIEL 2 Maintenance Manual.

2.6.3. Reconditioning and checks

Refer to the applicable ARRIEL 2 Maintenance Manual, task 05-50-00-200-801.

2.6.4. Identification

Refer to the Guides U441 and U015 for instructions on how to record the engine log book and the log cards.

- 2.6.4.1. Record the application of this SB on the log card of module M01 and in section E.
- 2.6.4.2. Update the availability status on the module log card and in section E.
- 2.6.4.3. Send back the fully-completed compliance certificate, links to the digital document

EngineLife Customer Portal: [Certificate 5.1 SB 292 72 2234 EN A](#) or



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§1.GENERAL

§2.LEVEL 1, 2

§3.LEVEL 3

§4.LEVEL 4

§5.CERTIFICATES

2.7. Weight and balance

Not applicable.

2.8. Trouble shooting

Refer to the applicable ARRIEL 2 Maintenance Manual.

End of Section §2**“Procedure done at the operator’s site or at a Maintenance Center approved for Level 1, 2”**

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§1.GENERAL

§2. LEVEL 1, 2

§3. LEVEL 3

§4. LEVEL 4

§5.CERTIFICATES

3. PROCEDURE DONE AT A MAINTENANCE CENTER APPROVED FOR LEVEL 3 OR AT THE OPERATOR'S SITE BY A MAINTENANCE CENTER APPROVED FOR LEVEL 3

Refer to the paragraphs of section [§2](#) related to the Maintenance Centers approved for Level 1, 2.

End of section §3

“Procedure done AT a maintenance center approved for level 3 OR AT THE OPERATOR'S SITE BY a Maintenance Center approved for Level 3”

SERVICE BULLETIN No. 292 72 2234

§1.GENERAL	§2. LEVEL 1, 2	§3. LEVEL 3	§4. LEVEL 4	§5.CERTIFICATES
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4. PROCEDURE DONE AT A REPAIR CENTER APPROVED FOR LEVEL 4

4.1. Manpower

- Personnel of approved Repair Center.
- Time calculated by the Repair Center for this level of intervention.

4.2. Tools / Parts

Refer to the ARRIEL 2 Overhaul Manual.

4.3. Parts information

4.3.1. Basic information

The list of parts is given for one engine.

4.3.2. List of parts

New Part Number	Key	Qty	Description / Item	Old Part Number	Key	Qty
ARRIEL 2 D						
0 292 10 166 0	A	1	Starter-generator adapter (72-61-00-01-350)	0 292 10 201 0	C	1
0 292 10 164 0	A	1	Drain flange (72-61-00-01-010)	0 301 02 027 0	C	1
0 292 10 180 0	A	1	General drain pipe (72-61-00-01-450)			
9 562 81 126 0	A	1	Clamp (72-61-00-01-480)			
ARRIEL 2 E						
0 292 10 159 0	A	1	Starter-generator adapter (72-61-00-01-350)	0 292 10 149 0	C	1
0 292 10 165 0	A	1	General drain pipe (72-61-00-01-450)			

Key

A	Part included by this SB
C	Part deleted by this SB

4.3.3. Supply conditions

Order supplies as needed from:
 Your local Safran Helicopter Engines Support Center
 or
 SAFRAN HELICOPTER ENGINES
 Direction Support et Service
 Département Commercial
 40220 TARNOS - France

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§1.GENERAL

§2. LEVEL 1, 2

§3. LEVEL 3

§4. LEVEL 4

§5.CERTIFICATES

4.4. Procedures

- **ARRIEL 2 D variant**
Replacement of the PRE TU 234 starter-generator adapter and drain flange with POST TU 234 starter-generator adapter and drain flange, and installation of the general drain pipe, refer to paragraph 4.6.
- **ARRIEL 2 E variant**
Replacement of the PRE TU 234 starter-generator adapter with a POST TU 234 starter-generator adapter, and installation of the general drain pipe, refer to paragraph 4.6.

4.5. Block diagram for this SB

Not applicable.

4.6. Instructions on how to do the procedure

4.6.1. Implementation

Not applicable.

4.6.2. Operating instructions

Refer to the ARRIEL 2 Overhaul Manual.

4.6.3. Reconditioning and checks

Refer to the ARRIEL 2 Overhaul Manual.

4.6.4. Identification

Refer to the Guides U441 and U015 for instructions on how to record the engine log book and the log cards.

4.6.4.1. Record the application of this SB on the log card of the module M01.

4.6.4.2. Send back the fully-completed compliance certificate, links to the digital document

EngineLife Customer Portal: [Certificate 5.1_SB_292_72_2234_EN_A](#) or



4.7. Weight and balance

Not applicable.

End of Section §4

“Procedure done at a Repair Center approved for Level 4”

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§1.GENERAL

§2. LEVEL 1, 2

§3. LEVEL 3

§4. LEVEL 4

§5.CERTIFICATES

5.1- Compliance certificate of SB No. 292 72 2234 (TU 234) - LEVEL 1, 2, 3, 4

Important:

Fill in the compliance certificate after application of the instructions given in this SB.

Mail or email it to:

SAFRAN HELICOPTER ENGINES
 Equipe Administration Base installée / Fleet Data Administrator Team, BP 25
 40220 TARNOS - France

Email: data-fleet.fr.she@safrangroup.com

Equipment information					
Customer			Aircraft S/N		
	S/N	P/N	TSN*	CSN HP*	CSN PT*
Engine					
Modified module M01					

* TSN = Time Since New
 CSN = Cycles Since New

I certify that the above-modified module M01 has been modified according to this SB.

Date [DD/MMMM (letter)/YYYY]	
Comments	

SERVICE BULLETIN No. 292 72 2234

§1.GENERAL

§2. LEVEL 1, 2

§3. LEVEL 3

§4. LEVEL 4

§5.CERTIFICATES

5.1- Compliance certificate of SB No. 292 72 2234 (TU 234) - LEVEL 1, 2, 3, 4

Important:

Fill in the compliance certificate after application of the instructions given in this SB.

Mail or email it to:

SAFRAN HELICOPTER ENGINES
 Equipe Administration Base installée / Fleet Data Administrator Team, BP 25
 40220 TARNOS - France

Email: data-fleet.fr.she@safrangroup.com

Equipment information					
Customer			Aircraft S/N		
	S/N	P/N	TSN*	CSN HP*	CSN PT*
Engine					
Modified module M01					

* TSN = Time Since New
 CSN = Cycles Since New

I certify that the above-modified module M01 has been modified according to this SB.

Date [DD/MMMM (letter)/YYYY]	
Comments	