

# SERVICE BULLETIN No. 292 79 2230

Version: A

Date: 9 November 2021

First issue

Modification

Recurring action

One-off action

Applicable from:  
"JANUARY 2022"

**Subject:**  
Oil system - Improvement of the oil pump sealing.  
Modification TU 230.

APPLICABLE ENGINE / VARIANT(S)	EFFECTIVITY CODE	MAINTENANCE LEVEL	CONDITION OF APPLICATION	OPERATIONAL EFFECT
ARRIEL 2 B, B1, B1A, C, C-PM, C1, C2, C2-CG, D, E, H, N, S1, S2	2-C-2	1, 2, 3	Application upon customer request	Removal/installation of the oil pump
		4	Application if replacement (discard) of the cover or bottom of the pump	

This SB must be done in full compliance with manufacturer instructions. Refer to the Effectivity Code found in the table above.

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§1.GENERAL

§2.LEVEL 1, 2

§3.LEVEL 3

§4.LEVEL 4

§5.CERTIFICATES

**1. GENERAL**

**1.1. Background**

**1.1.1. Context**

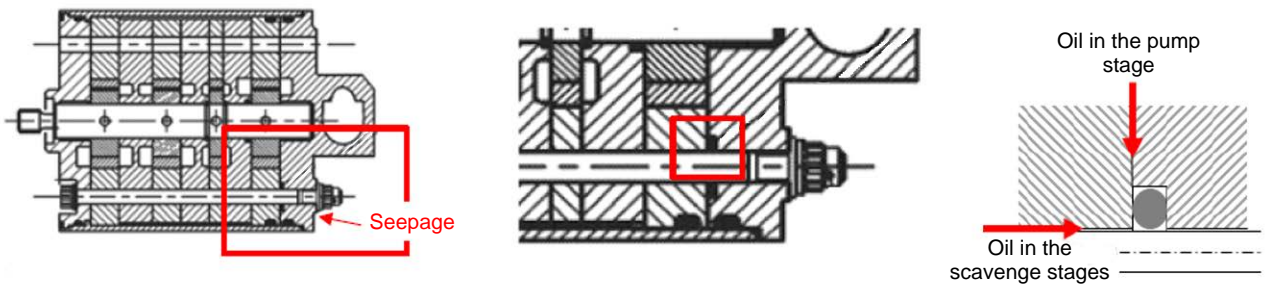
An integrator customer found oil seepage coming from the ARRIEL 2 oil pumps.

**1.1.2. Analysis**

The seal on the calibrated screws of the oil pumps is in an axial sealing configuration.

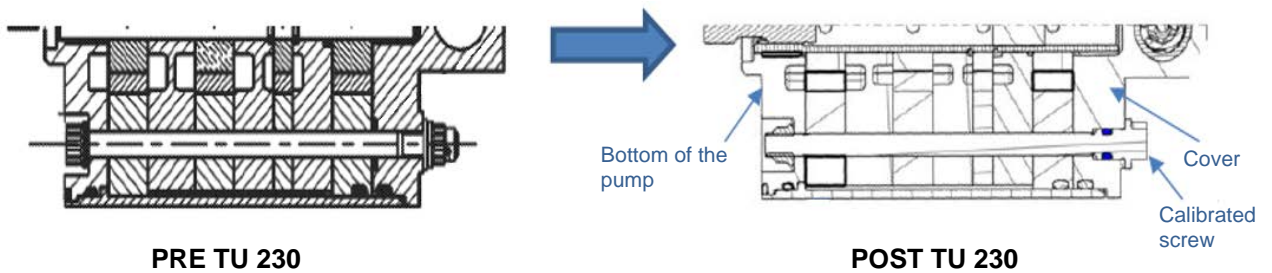
This seal elongates radial sealing when this seal is positioned on the calibrated screw.

Tests showed that it is possible that this elongation is not sufficient and that it can cause oil seepage.

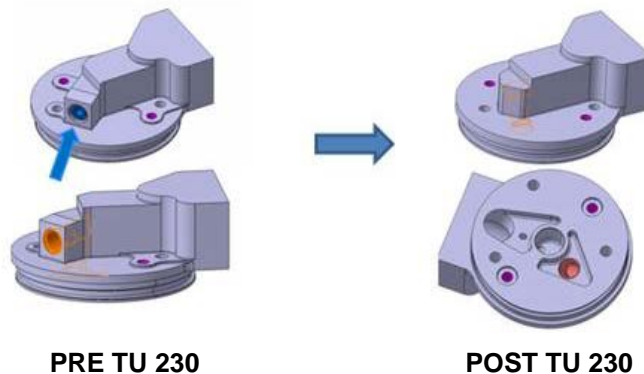


**1.1.3. Solution**

Modification TU 230 is a change in the sealing design of the calibrated screws, as the seal groove housing is now on the screw. The cover and the bottom of the pump are fitted as necessary.



In addition, the cover is changed and then a plug is no more necessary (and this prevents possible seepage).



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§1.GENERAL

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**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

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§5.CERTIFICATES

**2. PROCEDURE DONE AT THE OPERATOR'S SITE OR AT A MAINTENANCE CENTER APPROVED FOR LEVEL 1, 2**

 Refer to the [compliance certificate in chapter 5.1](#)
**2.1. Manpower**

- Personnel: 1 mechanic.
- Necessary time: 1 man-hour (removal/installation of the oil pump).

**2.2. Tooling and/or materials**

Mechanic's standard tooling.

**2.3. Material information**
**2.3.1. Basic information**

The parts list, necessary for this SB, is for one engine.

**2.3.2. List of parts**

2.3.2.1. Parts necessary for this SB

New Part Number	Key	Qty	Description* / Item	Old Part Number	Key	Qty
<b>ARRIEL 2 B, B1, B1A</b>						
0 292 12 101 0	A'	1	Oil pump Item 79-24-00-01-010	0 292 12 507 0 0 292 12 514 0	F	1
<b>ARRIEL 2 D</b>						
0 292 12 101 0	A'	1	Oil pump Item 79-24-00-01-010	0 292 12 514 0	F	1
<b>ARRIEL 2 C, C-PM, C1, C2, C2-CG, S1, S2</b>						
0 292 12 100 0	A'	1	Oil pump Item 79-24-00-01-010	0 292 12 506 0 0 292 12 513 0	F	1
0 292 12 102 0	A'	1	Oil pump Item 79-24-00-01-010	0 292 12 512 0 0 292 12 515 0	F	1
<b>ARRIEL 2 E, H, N</b>						
0 292 12 100 0	A'	1	Oil pump Item 79-24-00-01-010	0 292 12 513 0	F	1
0 292 12 102 0	A'	1	Oil pump Item 79-24-00-01-010	0 292 12 515 0	F	1

\* Please tell us if you would like pricing information.

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

Key

A'	Part got after application of this modification as a retrofit
F	Part changed at the manufacturer's site or at a Safran Helicopter Engines-approved Repair Center

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§1.GENERAL

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§5.CERTIFICATES

- 2.3.2.2. Parts necessary for the application of the maintenance tasks referred to in this SB  
Refer to the applicable ARRIEL 2 Maintenance Manual or Spare Parts Catalog.

**2.3.3. Supply conditions**

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

**2.4. Necessary procedures**

Replacement of the PRE TU 230 oil pump with a POST TU 230 oil pump, 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 to do this SB.

**2.6.2. Operating instructions**

- 2.6.2.1. Remove the PRE TU 230 oil pump: Refer to the applicable ARRIEL 2 Maintenance Manual, task 79-24-00-900-801.
- 2.6.2.2. Send back the PRE TU 230 oil pump to a Safran Helicopter Engines-approved Repair Center.
- 2.6.2.3. Install a POST TU 230 oil pump: Refer to the applicable ARRIEL 2 Maintenance Manual, task 79-24-00-900-801.

**2.6.3. Reconditioning and checks**

Refer to the applicable ARRIEL 2 Maintenance Manual, task 05-50-00-200-801 or task 05-50-00-200-001 according to the variant.

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§1.GENERAL

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**2.6.4. Identification**

Refer to the following Guides for instructions on how to record this SB in the engine log book:

- Guide U441 or U015 if the paper engine log book is the official record for equipment that is subject to this SB.
- Guide U797 if the electronic engine log book is the official record for equipment that is subject to this SB.

For the paper engine log book:

- 2.6.4.1. Record the replacement of the oil pump in section "C" of the engine log book.
- 2.6.4.2. Record the application of this SB in section "E" of the "current" engine log book or in section "A" of the "unique" engine log book.
- 2.6.4.3. Send back the fully-completed [compliance certificate in chapter 5.1](#) to tell Safran Helicopter Engines that the oil pump was replaced.

For the electronic engine log book:

Refer to Guide U797 (chapter Activities: SB / MODIFICATIONS).

**2.7. Weight and balance**

Not applicable.

**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

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§4. LEVEL 4

§5.CERTIFICATES

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**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 that pertain to Maintenance Centers approved for Level 1, 2 given in [§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”**

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§1.GENERAL

§2. LEVEL 1, 2

§3. LEVEL 3

**§4. LEVEL 4**

§5.CERTIFICATES

**4. PROCEDURE DONE AT A REPAIR CENTER APPROVED FOR LEVEL 4**

 Refer to the [compliance certificate in chapter 5.1](#) or [compliance certificate in chapter 5.2](#)
**4.1. Manpower**

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

**4.2. Tooling and/or materials**

Refer to the ARRIEL 2 Overhaul Manual and Component Maintenance Manual No. X 79 24 08 2 or No. X 79 24 01 2, refer to the applicable oil pump P/N.

**4.3. Material information**
**4.3.1. Basic information**

The parts list, necessary for this SB, is for one engine.

**4.3.2. List of parts**

New Part Number	Key	Qty	Description / Item	Old Part Number	Key	Qty
<b>ARRIEL 2 B, B1, B1A</b>						
0 292 12 101 0	A'	1	Oil pump Item 79-24-00-01-010	0 292 12 507 0 0 292 12 514 0	F	1
0 292 12 099 0	A	1	. Pump bottom assembly Item 79-24-08-01-550	0 292 12 747 0	C	1
0 292 12 093 0	A	1	. Pump cover assembly Item 79-24-08-01-160	0 292 12 751 0 0 292 12 805 0	C	1
0 292 12 098 0	A	2	. Calibrated screw Item 79-24-08-01-250	0 292 12 023 0 0 292 12 069 0	C	2
9 794 81 004 0	A	2	. Preformed packing Item 79-24-08-01-060	9 794 41 004 5	C	2
			. Washer Item 79-24-08-01-020	9 975 05 002 4	C	2
			. Adhesive	9 677 08 151 7	C	1
<b>ARRIEL 2 D</b>						
0 292 12 101 0	A'	1	Oil pump Item 79-24-00-01-010	0 292 12 514 0	F	1
0 292 12 099 0	A	1	. Pump bottom assembly Item 79-24-08-01-550	0 292 12 747 0	C	1
0 292 12 093 0	A	1	. Pump cover assembly Item 79-24-08-01-160	0 292 12 805 0	C	1
0 292 12 098 0	A	2	. Calibrated screw Item 79-24-08-01-250	0 292 12 023 0 0 292 12 069 0	C	2
9 794 81 004 0	A	2	. Preformed packing Item 79-24-08-01-060	9 794 41 004 5	C	2
			. Washer Item 79-24-08-01-020	9 975 05 002 4	C	2
			. Adhesive	9 677 08 151 7	C	1



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New Part Number	Key	Qty	Description / Item	Old Part Number	Key	Qty
<b>ARRIEL 2 C, C-PM, C1, C2, C2-CG, S1, S2</b>						
0 292 12 100 0	A'	1	Oil pump Item 79-24-00-01-010	0 292 12 506 0 0 292 12 513 0	F	1
0 292 12 099 0	A	1	. Pump bottom assembly Item 79-24-01-01-550	0 292 12 747 0	C	1
0 292 12 093 0	A	1	. Pump cover assembly Item 79-24-01-01-160	0 292 12 751 0 0 292 12 805 0	C	1
0 292 12 098 0	A	2	. Calibrated screw Item 79-24-01-01-250	0 292 12 023 0 0 292 12 069 0	C	2
9 794 81 004 0	A	2	. Preformed packing Item 79-24-01-01-060	9 794 41 004 5	C	2
			. Washer Item 79-24-01-01-020	9 975 05 002 4	C	2
			. Adhesive	9 677 08 151 7	C	1
0 292 12 102 0	A'	1	Oil pump Item 79-24-00-01-010	0 292 12 512 0 0 292 12 515 0	F	1
0 292 12 099 0	A	1	. Pump bottom assembly Item 79-24-01-01-550	0 292 12 747 0	C	1
0 292 12 093 0	A	1	. Pump cover assembly Item 79-24-01-01-160	0 292 12 751 0 0 292 12 805 0	C	1
0 292 12 098 0	A	2	. Calibrated screw Item 79-24-01-01-250	0 292 12 023 0 0 292 12 069 0	C	2
9 794 81 004 0	A	2	. Preformed packing Item 79-24-01-01-060	9 794 41 004 5	C	2
			. Washer Item 79-24-01-01-020	9 975 05 002 4	C	2
			. Adhesive	9 677 08 151 7	C	1

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New Part Number	Key	Qty	Description / Item	Old Part Number	Key	Qty
<b>ARRIEL 2 E, H, N</b>						
0 292 12 100 0	A'	1	Oil pump Item 79-24-00-01-010	0 292 12 513 0	F	1
0 292 12 099 0	A	1	. Pump bottom assembly Item 79-24-01-01-550	0 292 12 747 0	C	1
0 292 12 093 0	A	1	. Pump cover assembly Item 79-24-01-01-160	0 292 12 805 0	C	1
0 292 12 098 0	A	2	. Calibrated screw Item 79-24-01-01-250	0 292 12 023 0 0 292 12 069 0	C	2
9 794 81 004 0	A	2	. Preformed packing Item 79-24-01-01-060	9 794 41 004 5	C	2
			. Washer Item 79-24-01-01-020	9 975 05 002 4	C	2
			. Adhesive	9 677 08 151 7	C	1
0 292 12 102 0	A'	1	Oil pump Item 79-24-00-01-010	0 292 12 515 0	F	1
0 292 12 099 0	A	1	. Pump bottom assembly Item 79-24-01-01-550	0 292 12 747 0	C	1
0 292 12 093 0	A	1	. Pump cover assembly Item 79-24-01-01-160	0 292 12 805 0	C	1
0 292 12 098 0	A	2	. Calibrated screw Item 79-24-01-01-250	0 292 12 023 0 0 292 12 069 0	C	2
9 794 81 004 0	A	2	. Preformed packing Item 79-24-01-01-060	9 794 41 004 5	C	2
			. Washer Item 79-24-01-01-020	9 975 05 002 4	C	2
			. Adhesive	9 677 08 151 7	C	1

**Key**

A	Part included by this modification
A'	Part got after application of this modification as a retrofit
C	Part deleted by this modification
F	Part changed at the manufacturer's site or at a Safran Helicopter Engines-approved Repair Center

**4.3.3. Supply conditions**

Order supplies 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

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**4.4. Necessary procedures**
**4.4.1. On a complete engine**

Replacement of the PRE TU 230 oil pump with a POST TU 230 oil pump, refer to paragraph 4.6.2.1.

**4.4.2. On an oil pump**

Replacement of the bottom, cover, calibrated screws and preformed packing of the pump, refer to paragraph 4.6.2.2.

**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**

4.6.2.1. Complete engine: Refer to the ARRIEL 2 Overhaul Manual and Component Maintenance Manual No. X 79 24 08 2 or No. X 79 24 01 2, refer to the applicable oil pump P/N.

4.6.2.2. Oil pump: Refer to the Component Maintenance Manual No. X 79 24 08 2 or No. X 79 24 01 2, refer to the applicable oil pump P/N.

**4.6.3. Reconditioning and checks**

Refer to the ARRIEL 2 Overhaul Manual and Component Maintenance Manual No. X 79 24 08 2 or No. X 79 24 01 2, refer to the applicable oil pump P/N.

**4.6.4. Identification**

Refer to the following Guides for instructions on how to record this SB in the engine log book:

- Guide U441 or U015 if the paper engine log book is the official record for equipment that is subject to this SB.
- Guide U797 if the electronic engine log book is the official record for equipment that is subject to this SB.

For the paper engine log book:

**4.6.4.1. On a complete engine**

4.6.4.1.1. Record the replacement of the oil pump in section "C" of the engine log book.

4.6.4.1.2. Record the application of this SB in section "A" of the "unique" engine log book.

4.6.4.1.3. Send back the fully-completed [compliance certificate in chapter 5.1](#) to tell Safran Helicopter Engines that the oil pump was replaced.

**4.6.4.2. On an oil pump**

4.6.4.2.1. Record the application of this SB in section "A" of the "unique" engine log book.

4.6.4.2.2. Send back the fully-completed [compliance certificate in chapter 5.2](#) to tell Safran Helicopter Engines that this SB was done.

For the electronic engine log book:

Refer to Guide U797 (chapter Activities: SB / MODIFICATIONS).

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**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 for replacement of the oil pump through application of SB No. 292 79 2230 (TU 230) - LEVEL 1, 2, 3, 4**

**Important:**

After application of the instructions given in this SB, please mail or email the fully-completed compliance certificate to:

**SAFRAN HELICOPTER ENGINES**  
 Equipe Administration Base installée / Fleet Data Administrator Team, BP 25  
 40220 TARNOS - France  
 Email: [data-fleet.fr.she@safrangroup.com](mailto:data-fleet.fr.she@safrangroup.com)

Equipment information						
Customer				Aircraft S/N		
	S/N	P/N	TSN*	TSO*	CSN*	CSO*
Engine						
PRE TU 230 removed oil pump						
POST TU 230 installed oil pump						

\* TSN = Time Since New  
 CSN = Cycles Since New

TSO = Time Since Overhaul  
 CSO = Cycles Since Overhaul

<b>Work done by:</b>	
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I certify that the above-mentioned oil pump has been installed according to the instructions given in this SB.

Date [DD/MMMM (letter)/YYYY]	Name	Job title

<b>Signature:</b>	
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§2. LEVEL 1, 2

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**5.2- Compliance certificate of SB No. 292 79 2230 (TU 230) - LEVEL 4**

**Important:**

After application of the instructions given in this SB, please mail or email the fully-completed compliance certificate to:

**SAFRAN HELICOPTER ENGINES**  
 Equipe Administration Base installée / Fleet Data Administrator Team, BP 5  
 40220 TARNOS - France  
 Email: [data-fleet.fr.she@safrangroup.com](mailto:data-fleet.fr.she@safrangroup.com)

Equipment information						
Customer					Aircraft S/N	
	S/N	P/N	TSN*	TSO*	CSN*	CSO*
Engine						
Modified oil pump						

\* TSN = Time Since New  
 CSN = Cycles Since New

TSO = Time Since Overhaul  
 CSO = Cycles Since Overhaul

<b>Work done by:</b>	
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I certify that the above-mentioned oil pump has been modified according to the instructions given in this SB.

Date [DD/MMMM (letter)/YYYY]	Name	Job title

<b>Signature:</b>	
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