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## SERVICE BULLETIN

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**Modification**



**Recurring action**



**One-off action**



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**No.**

**292 73 2082**

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**ARRIEL 2 B - B1 - C - C-PM - C1 - C2 - C2-CG - S1**

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**Subject: Adjusted HMU. New method for sizing and matching up the HP/LP pump bearings and pinions.**

**Application of modification TU 82A.**

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Date on which this SB becomes effective and must systematically be complied with, according to the conditions of application.

This is the date all resources (parts, tools, documentation, etc.) required for this procedure are available.

**Applicable from JANUARY 2003**

If resources (parts, tools, documentation, etc.) are available any earlier, the SB may be applied prior to the effectivity date.

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**Version: D**

**Reason for update:**

**Merger of SB No. 292 73 2082 and SB No. 292 73 2082M.**

# SERVICE BULLETIN

## 1. Compliance

### A. Application

The manufacturer recommends this modification be incorporated as defined in this Service Bulletin.

Validity	Code
ARRIEL 2 B - B1 ARRIEL 2 C - C-PM - C1 - C2 - C2-CG ARRIEL 2 S1	3

#### Conditions of application for engines in service

**(1) Application at the operator's site or at a Safran Helicopter Engines-approved Maintenance Center**

Upon customer request or following depletion of stock.

**(2) Application at a Safran Helicopter Engines-approved Repair Center**

Following depletion of stock.

### B. Purpose

To simplify the manufacturing process.

### C. Description (see Figure)

This modification consists of completely revising the method for sizing and matching up the pump pinions and bearings.

### D. Approval

- ARRIEL 2 B - B1 - C - C1 - C2 - S1 variants:  
The technical content of this document is approved under the authority of the DOA (Design Organisation Approval) ref. EASA.21J.070.
- ARRIEL 2 C-PM - C2-CG variants:  
The technical information given in this document is approved by Safran Helicopter Engines.

### E. Manpower

**(1) At the operator's site or at a Safran Helicopter Engines-approved Maintenance Center**

**(a) Personnel:** 1 mechanic.

**(b) Time required:** 1 man-hour.

**(2) At a Safran Helicopter Engines-approved Repair Center**

**(a) Personnel** of approved Repair Center.

**(b) Time** determined by the Repair Center as being appropriate for this level of intervention.

### F. Material

Refer to paragraph 3.

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### G. Tooling

- (1) **At the operator's site or at a Safran Helicopter Engines-approved Maintenance Center**  
Mechanic's standard tooling.
- (2) **At a Safran Helicopter Engines-approved Repair Center**  
Refer to the ARRIEL 2 Overhaul Manual and/or the applicable ARRIEL 2 Component Maintenance Manual.

### H. Weight and balance

Not applicable.

### I. References

- (1) ARRIEL 2 B Maintenance Manual..... Ref. X 292 M5 450 2.
- (2) ARRIEL 2 B1 Maintenance Manual..... Ref. X 292 N5 450 2.
- (3) ARRIEL 2 C Maintenance Manual..... Ref. X 292 M1 450 2.
- (4) ARRIEL 2 C-PM Maintenance Manual..... Ref. X 292 P1 450 2.
- (5) ARRIEL 2 C1 Maintenance Manual..... Ref. X 292 N4 450 2.
- (6) ARRIEL 2 C2 Maintenance Manual..... Ref. X 292 N6 450 2.
- (7) ARRIEL 2 C2-CG Maintenance Manual..... Ref. X 292 P8 450 2.
- (8) ARRIEL 2 S1 Maintenance Manual..... Ref. X 292 L0 301 2.
- (9) ARRIEL 2 Overhaul Manual..... Ref. X 292 R1 500 2.
- (10) ARRIEL 2 B Component Maintenance Manual..... Ref. X 73-23-03 2.
- (11) ARRIEL 2 B1 Component Maintenance Manual..... Ref. X 73-23-05 2.
- (12) ARRIEL 2 C - C-PM Component Maintenance Manual..... Ref. X 73-23-04 2.
- (13) ARRIEL 2 C1 Component Maintenance Manual..... Ref. X 73-23-13 2.
- (14) ARRIEL 2 C2 - C2-CG Component Maintenance Manual..... Ref. X 73-23-08 2.
- (15) ARRIEL 2 S1 Component Maintenance Manual..... Ref. X 73-23-01 2.

### J. Other publications concerned

- (1) ARRIEL 2 B Spare Parts Catalogue..... Ref. X 292 M5 700 2.
- (2) ARRIEL 2 B1 Spare Parts Catalogue..... Ref. X 292 N5 700 2.
- (3) ARRIEL 2 C Spare Parts Catalogue..... Ref. X 292 M1 700 2.
- (4) ARRIEL 2 C-PM Spare Parts Catalogue..... Ref. X 292 P1 700 2.
- (5) ARRIEL 2 C1 Spare Parts Catalogue..... Ref. X 292 N4 700 2.
- (6) ARRIEL 2 C2 Spare Parts Catalogue..... Ref. X 292 N6 700 2.
- (7) ARRIEL 2 C2-CG Spare Parts Catalogue..... Ref. X 292 P8 700 2.
- (8) ARRIEL 2 S1 Spare Parts Catalogue..... Ref. X 292 L0 700 2.
- (9) ARRIEL 2 B Illustrated Parts Catalogue..... Ref. X 292 M5 600 2.
- (10) ARRIEL 2 B1 Illustrated Parts Catalogue..... Ref. X 292 N5 600 2.
- (11) ARRIEL 2 C Illustrated Parts Catalogue..... Ref. X 292 M1 600 2.
- (12) ARRIEL 2 C-PM Illustrated Parts Catalogue..... Ref. X 292 P1 600 2.
- (13) ARRIEL 2 C1 Illustrated Parts Catalogue..... Ref. X 292 N4 600 2.
- (14) ARRIEL 2 C2 Illustrated Parts Catalogue..... Ref. X 292 N6 600 2.
- (15) ARRIEL 2 C2-CG Illustrated Parts Catalogue..... Ref. X 292 P8 600 2.
- (16) ARRIEL 2 S1 Illustrated Parts Catalogue..... Ref. X 292 L0 600 2.

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### 2. Instructions to be incorporated

#### A. Implementation

This modification may be incorporated without removing the engine from the helicopter.

**(1) At the operator's site or at a Safran Helicopter Engines-approved Maintenance Center**

Replace adjusted HMU.

**(2) At a Safran Helicopter Engines-approved Repair Center**

Replace bearings/pinions assembly.

#### B. Operating instructions

**(1) At the operator's site or at a Safran Helicopter Engines-approved Maintenance Center**

**(a)** Remove PRE TU 82A adjusted HMU: refer to the applicable ARRIEL 2 Maintenance Manual, task 73-23-00-900-801.

**(b)** Return adjusted HMU, along with its updated log card, to a Safran Helicopter Engines-approved Repair Center.

**(c)** Install a POST TU 82A adjusted HMU: refer to the applicable ARRIEL 2 Maintenance Manual, task 73-23-00-900-801.

**(2) At a Safran Helicopter Engines-approved Repair Center**

Refer to the ARRIEL 2 Overhaul Manual and/or the applicable ARRIEL 2 Component Maintenance Manual.

Modification can be incorporated during type B repair per applicable ARRIEL 2 Component Maintenance Manual.

#### C. Reconditioning and checks

**(1) At the operator's site or at a Safran Helicopter Engines-approved Maintenance Center**

Do a ground run check: refer to the applicable ARRIEL 2 Maintenance Manual, task 71-02-13-280-801.

**(2) At a Safran Helicopter Engines-approved Repair Center**

Refer to the ARRIEL 2 Overhaul Manual.

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### D. Identification

#### (1) At the operator's site or at a Safran Helicopter Engines-approved Maintenance Center

- (a) Update the log card of the removed adjusted HMU and the log card of the installed adjusted HMU.
- (b) Record the adjusted HMU replacement in the engine log book and integrate the log card of the new equipment.
- (c) Record the application of this SB in section "E".
- (d) Update, if necessary, the availability status in the adjusted HMU log card and in section "E".
- (e) Notify Safran Helicopter Engines that the adjusted HMU has been replaced by returning the fully completed compliance certificate (Appendix 1 of this Service Bulletin).

#### (2) At a Safran Helicopter Engines-approved Repair Center

- (a) Create a new log card for the adjusted HMU and record the application of this SB on the log card.
- (b) Modify the P/N of the adjusted HMU.
- (c) Record the P/N change for the adjusted HMU in section « C » of engine log book.
- (d) Update, if necessary, the availability status in the adjusted HMU log card and in section "E".
- (e) Notify Safran Helicopter Engines that this SB has been applied by returning the fully completed compliance certificate (Appendix 2 of this Service Bulletin).

### E. Routine maintenance

Not applicable.

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### 3. Material information

#### A. Basic information

The parts list required for the incorporation of this Service Bulletin is for one engine.

#### B. List of parts

(1) At the operator's site or at a Safran Helicopter Engines-approved Maintenance Center

New Part Number	Key	Qty	Description * / Item	Old Part Number	Key	Qty
<b>ARRIEL 2 B</b>						
0 292 85 841 0	A	1	Adjusted HMU (73-23-00-01-010)	0 292 85 846 0	F	1
<b>ARRIEL 2 B1</b>						
0 292 85 845 0	A	1	Adjusted HMU (73-23-00-01-010)	0 292 85 850 0	F	1
<b>ARRIEL 2 C - C-PM</b>						
0 292 85 842 0	A	1	Adjusted HMU (73-23-00-01-010)	0 292 85 847 0	F	1
<b>ARRIEL 2 C1</b>						
0 292 85 844 0	A	1	Adjusted HMU (73-23-00-01-010)	0 292 85 849 0	F	1
<b>ARRIEL 2 C2 - C2-CG</b>						
0 292 86 863 0	A	1	Adjusted HMU (73-23-00-01-010)	0 292 86 835 0	F	1
<b>ARRIEL 2 S1</b>						
0 292 85 843 0	A	1	Adjusted HMU (73-23-00-01-010)	0 292 85 848 0	F	1

\* Prices available upon request.

(2) At a Safran Helicopter Engines-approved Repair Center

New Part Number	Key	Qty	Description	Old Part Number	Key	Qty
<b>ARRIEL 2 B - B1 - C - C-PM - C1 - S1</b>						
0 319 91 780 0	A	1	Bearings/pinions matching	0 319 91 768 0	C	1
<b>ARRIEL 2 C2 - C2-CG</b>						
0 292 91 758 0	A	1	Bearings/pinions matching	0 292 91 747 0	C	1

#### Key

A - Part incorporated by this modification.

C - Part deleted by this modification.

F - Part that can be modified at the manufacturer's site or at a Safran Helicopter Engines-approved Repair Center.

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### **C. Supply conditions**

Order supplies as needed from:

Your local Safran Helicopter Engines Support Center

or

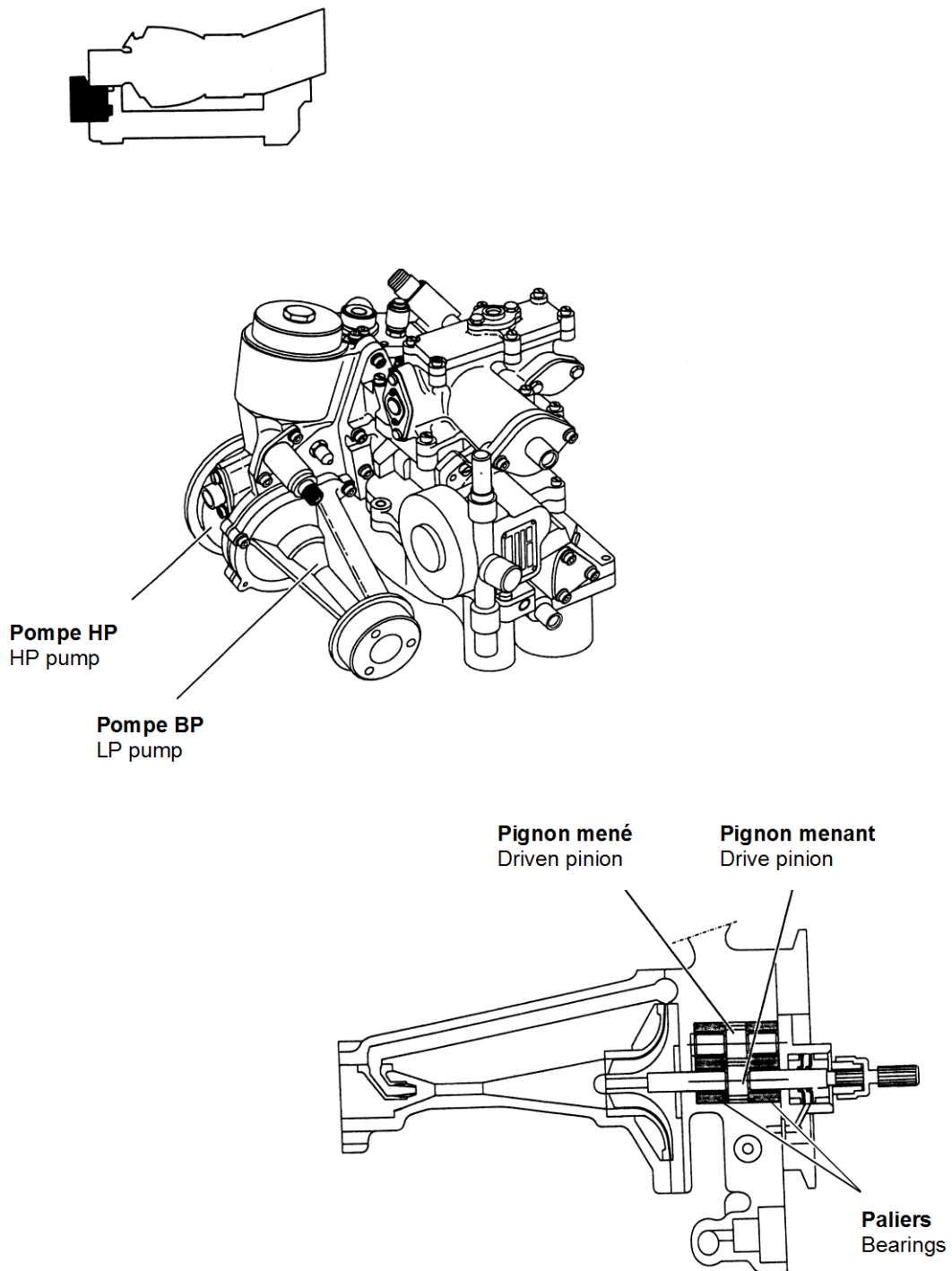
SAFRAN HELICOPTER ENGINES

Direction Support et Service

Département Commercial

40220 TARNOS - France

# SERVICE BULLETIN



**FIGURE**



## SERVICE BULLETIN

**Objet : Attestation de remplacement de l'ensemble pompes HP/BP doseur réglé par application du SB n° 292 73 2082 (TU 82A).**

**Subject: Compliance certificate for replacement of adjusted HMU through application of the SB No. 292 73 2082 (TU 82A)**

**Important / Important notice:**

**Après application des instructions spécifiées dans ce SB, veuillez compléter la présente attestation et la retourner par courrier ou courriel à :**

After application of the instructions specified in this SB, please mail or email the fully-completed 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)

Information concernant le matériel / Equipment information						
Utilisateur Customer				N° Appareil Aircraft S/N		
	N/S - S/N	Réf. - P/N	TSN*	TSO*	CSN*	CSO*
Moteur Engine						
Ensemble pompes HP/BP doseur réglé déposé AVANT TU 82A Removed PRE TU 82A adjusted HMU						
Ensemble pompes HP/BP doseur réglé installé APRES TU 82A Installed POST TU 82A adjusted HMU						

\* **TSN = Time Since New** (Heures depuis neuf)  
**CSN = Cycles Since New** (Cycles depuis neuf)

**TSO = Time Since Overhaul** (Heures depuis RG)  
**CSO = Cycles Since Overhaul** (Cycles depuis RG)

**Opération faite par / Work done by:**

**Je certifie que l'ensemble pompes HP/BP doseur réglé identifié ci-dessus a été installé selon les directives de ce SB.**

I certify that the above mentioned adjusted HMU has been installed according to the directives given in this SB.

Date [JJ/MMMM (en lettre)/AAAA ou/or DD/MMMM (letter)/YYYY]	Nom / Name	Fonction / Job title

**Signature :**

**ANNEXE 1 / APPENDIX 1**

## SERVICE BULLETIN

**Objet : Attestation d'application du SB n° 292 73 2082 (TU 82A)**

**Subject: SB No. 292 73 2082 compliance certificate (TU 82A).**

**Important / Important notice:**

**Après application des instructions spécifiées dans ce SB, veuillez compléter la présente attestation et la retourner par courrier ou courriel à :**

After application of the instructions specified in this SB please mail or email the fully-completed 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)

Information concernant le matériel / Equipment information						
Utilisateur Customer				N° Appareil Aircraft S/N		
	N/S - S/N	Réf. - P/N	TSN*	TSO*	CSN*	CSO*
Moteur Engine						
Ensemble pompes HP/BP doseur réglé AVANT TU 82A PRE TU 82A adjusted HMU						
Ensemble pompes HP/BP doseur réglé APRES TU 82A POST TU 82A adjusted HMU						

\* **TSN** = Time Since New (Heures depuis neuf)  
**CSN** = Cycles Since New (Cycles depuis neuf)

**TSO** = Time Since Overhaul (Heures depuis RG)  
**CSO** = Cycles Since Overhaul (Cycles depuis RG)

**Opération faite par / Work done by:**

**Je certifie que l'ensemble pompes HP/BP doseur réglé identifié ci-dessus a été modifié selon les directives de ce SB.**

I certify that the above mentioned adjusted HMU has been modified according to the directives given in this SB.

Date [JJ/MMMM (en lettre)/AAAA ou/or DD/MMMM (letter)/YYYY]	Nom / Name	Fonction / Job title

**Signature :**

**ANNEXE 2 / APPENDIX 2**