
SERVICE BULLETIN

| | | |
|--|---|---|
| Modification <input checked="" type="checkbox"/> | Recurring action <input type="checkbox"/> | One-off action <input type="checkbox"/> |
|--|---|---|



No.**292 72 2212**

ARRIEL 2 B - B1 - B1A - C - C-PM - C1 - C2 - C2-CG - D - E - H - N - S1 - S2

Subject: Module M02 (Axial compressor). Replacement of front and rear axial bearings.**Application of modification TU 212.**

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 AUGUST 2018 |
|------------------------------------|

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

Version: D**Reason for update:****Modification to the application code.**

SERVICE BULLETIN

1. GENERAL

1.1. Purpose

The purpose of modification TU 212 is to increase the robustness of the rear axial bearing on the ARRIEL 2 compressor module to make the bearing more damage-resistant in service and to subsequently reduce the number of modules that are removed after chip detection.

1.2. Reason

Analyses of M02's removed from ARRIEL 2 engines after chip detection, predominantly showed flaking from the rear axial bearing by the shoulders of the inner and outer rings.

1.3. Description (see Figure 1)

Modification TU 212 mainly increases the shoulder height of the inner and outer rings of the bearing which should reduce flaking.

In the interests of commonality, the current front axial bearing will also be replaced with one that is dimensionally identical to the modified rear axial bearing.

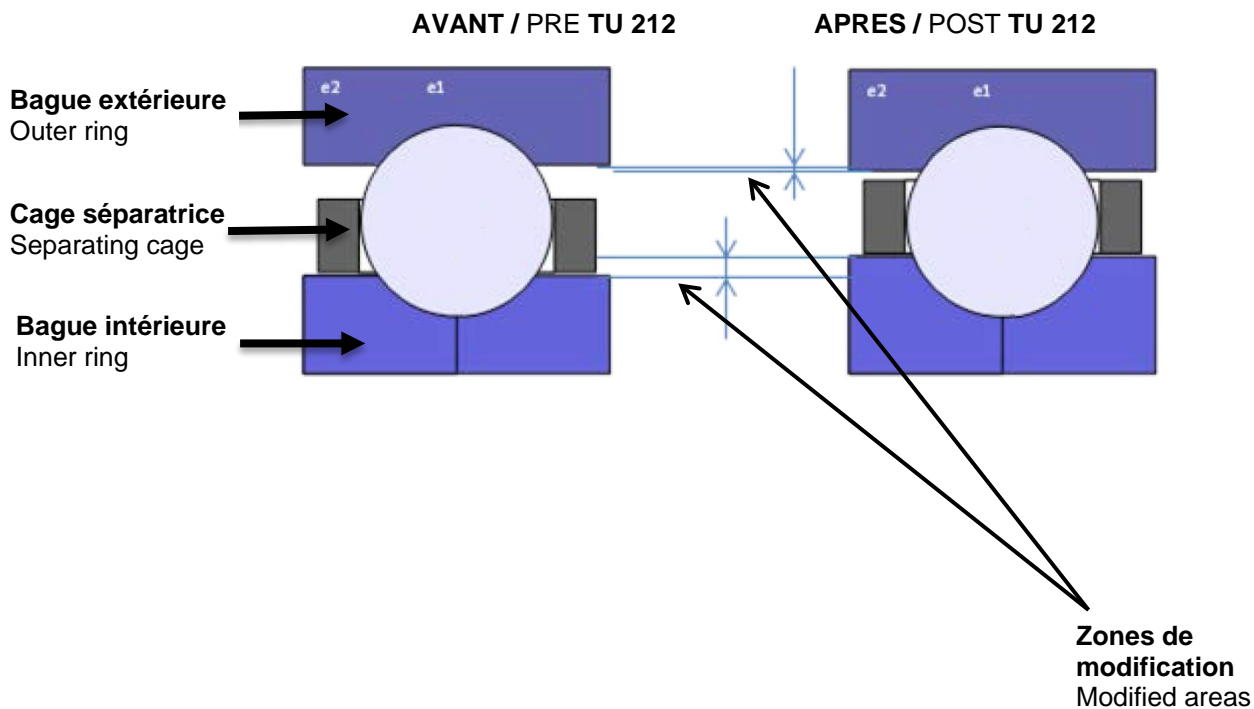


Figure 1

SERVICE BULLETIN

1.4. Approval

- ARRIEL 2 B - B1 - B1A - C - C1 - C2 - D - E - H - N - S1 - S2 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 contained in this document has been approved by Safran Helicopter Engines.

1.5. Conditions of application

The conditions of application for this SB are specified in:

- Chapter §2 for application at the operator's site or at a Maintenance Center qualified for level 1, 2.
- Chapter §3 for application at a Maintenance Center qualified for level 3.
- Chapter §4 for application at a Safran Helicopter Engines-approved Repair Center.

1.6. Definition

Not applicable.

1.7. Update history

| VERSION | CAUSE FOR UPDATING |
|---------|---|
| B | <ul style="list-style-type: none"> - Modification to the application code. - Addition of ARRIEL 2 H variant. - Extension to ARRIEL 2 C-PM and ARRIEL 2 C2-CG variants. |
| C | Modification to the application code. |
| D | Modification to the application code. |

END of section §1

“General”

SERVICE BULLETIN

2. APPLICATION AT THE OPERATOR'S SITE OR AT A MAINTENANCE CENTER QUALIFIED FOR LEVEL 1, 2

2.1. Required actions

Replace the PRE TU 212 module M02 with a POST TU 212 module M02.

2.2. Effectivity and compliance times

| ENGINE/VARIANT | EFFECTIVITY CODE | CONDITIONS OF APPLICATION FOR ENGINES IN SERVICE |
|-----------------------|------------------|--|
| ARRIEL 2 B - B1 - B1A | 2-B | Application upon customer request. |
| ARRIEL 2 C - C1 - C2 | | |
| ARRIEL 2 C-PM | | |
| ARRIEL 2 C2-CG | | |
| ARRIEL 2 D | | |
| ARRIEL 2 H | | |
| ARRIEL 2 N | | |
| ARRIEL 2 S1 - S2 | | |
| ARRIEL 2 E | 2-A-3 | |

This SB must be applied with strict conformity to the manufacturer's conditions of application according to the effectivity code given in the table above.

2.3. Accomplishment instructions

2.3.1. Implementation

Application of this SB necessitates removing the engine.

2.3.2. Operating instructions

2.3.2.1. Remove the PRE TU 212 module M02: refer to the applicable ARRIEL 2 Maintenance Manual, task 72-00-32-900-801.

2.3.2.2. Install a POST TU 212 module M02: refer to the applicable ARRIEL 2 Maintenance Manual, task 72-00-32-900-801.

2.3.3. Reconditioning and checks

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

2.3.4. Identification

2.3.4.1. Update the log card of the installed module M02 and the log card of the removed module M02.

2.3.4.2. Record the replacement of module M02 in section "B" of the engine log book and integrate the log card of the installed module M02.

2.3.4.3. Record the application of this SB in section "D" of the current engine log book and in section "E" of the unique engine log book.

Note: Update the availability status if necessary.

2.3.4.4. Send the removed module M02, along with its log card, to a Safran Helicopter Engines-approved Repair Center.

2.3.4.5. Tell Safran Helicopter Engines that module M02 has been replaced by sending back the fully-completed compliance certificate (Appendix 2.1 of this SB).

2.3.5. Scheduled maintenance

No changes to the scheduled maintenance.

SERVICE BULLETIN

2.4. Material information

2.4.1. Basic information

The parts list required for this SB is for one engine.

2.4.2. List of parts

POST TU 212 module M02.

2.4.3. 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

2.5. Manpower

- Personnel: 1 mechanic.
- Time required: 12 man hours (removal and installation of module M02).

2.6. Tooling and/or products

- Mechanic's standard tooling.
- Removal and installation tool of module M02. Refer to the applicable ARRIEL 2 Maintenance Manual, task 72-00-32-900-801.

2.7. Weight and balance

Not applicable.

SERVICE BULLETIN

2.8. Referenced documents

| Document | Engine | Reference |
|---------------------------|-----------------------|----------------|
| Maintenance Manual (MM) | ARRIEL 2 B | X 292 M5 450 2 |
| | ARRIEL 2 B1 | X 292 N5 450 2 |
| | ARRIEL 2 B1A | X 292 P4 450 2 |
| | ARRIEL 2 C | X 292 M1 450 2 |
| | ARRIEL 2 C-PM | X 292 P1 450 2 |
| | ARRIEL 2 C1 | X 292 N4 450 2 |
| | ARRIEL 2 C2 | X 292 N6 450 2 |
| | ARRIEL 2 C2-CG | X 292 P8 450 2 |
| | ARRIEL 2 D | X 292 R1 450 2 |
| | ARRIEL 2 E | X 292 R2 300 2 |
| | ARRIEL 2 H | X 292 2H 450 2 |
| | ARRIEL 2 N | X 292 N2 450 2 |
| | ARRIEL 2 S1 | X 292 L0 301 2 |
| | ARRIEL 2 S2 | X 292 P5 451 2 |
| Spare Parts Catalog (SPC) | ARRIEL 2 B | X 292 M5 700 2 |
| | ARRIEL 2 B1 | X 292 N5 700 2 |
| | ARRIEL 2 B1A | X 292 P4 700 2 |
| | ARRIEL 2 C | X 292 M1 700 2 |
| | ARRIEL 2 C-PM | X 292 P1 700 2 |
| | ARRIEL 2 C1 | X 292 N4 700 2 |
| | ARRIEL 2 C2 | X 292 N6 700 2 |
| | ARRIEL 2 C2-CG | X 292 P8 700 2 |
| | ARRIEL 2 D | X 292 R1 700 2 |
| | ARRIEL 2 E | X 292 R2 700 2 |
| | ARRIEL 2 H | X 292 2H 700 2 |
| | ARRIEL 2 N | X 292 N2 700 2 |
| | ARRIEL 2 S1 | X 292 L0 700 2 |
| | ARRIEL 2 S2 | X 292 P5 700 2 |

SERVICE BULLETIN

Objet : Attestation de remplacement du module M02 par application du SB n° 292 72 2212 (TU 212).

Subject: Compliance certificate for replacement of module M02 through application of SB No. 292 72 2212 (TU 212).

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 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

| 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 | | | | | | |
| Module M02 déposé AVANT TU 212 Removed PRE TU 212 module M02 | | | | | | |
| Module M02 posé APRES TU 212 Installed POST TU 212 module M02 | | | | | | |

* **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 le module identifié ci-dessus a été installé selon les directives de ce SB.

I certify that the above-mentioned module 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 2.1 / APPENDIX 2.1

END of section §2

“Application at the operator’s site or at a Maintenance Center qualified for level 1, 2”

SERVICE BULLETIN

3. APPLICATION AT A MAINTENANCE CENTER QUALIFIED FOR LEVEL 3

Refer to the paragraphs that apply to Maintenance Centers, given in chapter 2.

END of section §3

“Application at a Maintenance Center qualified for level 3”

SERVICE BULLETIN

4. APPLICATION AT A SAFRAN HELICOPTER ENGINES-APPROVED REPAIR CENTER

4.1. Required actions

Replace the PRE TU 212 front and rear axial bearings of module M02 with POST TU 212 front and rear axial bearings.

4.2. Effectivity and compliance times

| ENGINE/VARIANT | EFFECTIVITY CODE | CONDITIONS OF APPLICATION FOR ENGINES IN SERVICE |
|-----------------------|------------------|---|
| ARRIEL 2 B - B1 - B1A | 2-B | Application during overhaul or if replacement of the front or rear axial bearing of the compressor module. |
| ARRIEL 2 C - C1 - C2 | | |
| ARRIEL 2 C-PM | | |
| ARRIEL 2 C2-CG | | |
| ARRIEL 2 D | | |
| ARRIEL 2 H | | |
| ARRIEL 2 N | | |
| ARRIEL 2 S1 - S2 | | |
| ARRIEL 2 E | 2-A-3 | Application upon first return to an approved Repair Center, if the repair/overhaul being performed provides access to the front or rear axial bearing of the compressor module. |

This SB must be applied with strict conformity to the manufacturer's conditions of application according to the effectivity code given in the table above.

4.3. Accomplishment instructions

4.3.1. Implementation

Not applicable.

4.3.2. Operating instructions

Refer to the ARRIEL 2 Overhaul Manual.

4.3.3. Reconditioning and checks

Refer to the ARRIEL 2 Overhaul Manual.

4.3.4. Identification

4.3.4.1. Record the application of the SB on the module M02 log card.

Note: Update the availability status if necessary.

4.3.4.2. Tell Safran Helicopter Engines that this SB has been applied by sending back the fully-completed compliance certificate (Appendix 4.1).

4.3.5. Scheduled maintenance

No changes to the scheduled maintenance.

SERVICE BULLETIN

4.4. Material information

4.4.1. Basic information

The parts list required for this SB is for one engine.

4.4.2. List of parts

| New Part Number | Key | Qty | Description / Item | Old Part Number | Key | Qty |
|---|-----|-----|---------------------------------------|--|-----|-----|
| ARRIEL 2 B - B1 - B1A - C - C-PM - C1 - S1 | | | | | | |
| 9 609 00 075 2 | A | 2 | Front axial bearing (72-32-10-01-210) | 9 609 00 048 6 | C | 2 |
| | | | Rear axial bearing (72-32-10-01-430) | | | |
| ARRIEL 2 C2 - C2-CG - D - E - H - N - S2 | | | | | | |
| 9 609 00 075 2 | A | 2 | Front axial bearing (72-32-10-01-210) | 9 609 00 048 6 or 9 609 00 065 2 | C | 1 |
| | | | Rear axial bearing (72-32-10-01-430) | 9 609 00 048 6 or 9 609 00 065 2 | | |

Key

| | |
|---|---------------------------------------|
| A | Part incorporated by the modification |
| C | Part deleted by the modification |

4.4.3. 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

4.5. Manpower

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

4.6. Tooling and/or products

Refer to the ARRIEL 2 Overhaul Manual.

4.7. Weight and balance

Not applicable.

SERVICE BULLETIN

4.8. Referenced documents

| Document | Engine | Reference |
|---------------------------------|-----------------------|----------------|
| Overhaul Manual (OM) | ARRIEL 2 | X 292 R1 500 2 |
| Illustrated Parts Catalog (IPC) | ARRIEL 2 B | X 292 M5 600 2 |
| | ARRIEL 2 B1 | X 292 N5 600 2 |
| | ARRIEL 2 B1A | X 292 P4 600 2 |
| | ARRIEL 2 C | X 292 M1 600 2 |
| | ARRIEL 2 C-PM | X 292 P1 600 2 |
| | ARRIEL 2 C1 | X 292 N4 600 2 |
| | ARRIEL 2 C2 | X 292 N6 600 2 |
| | ARRIEL 2 C2-CG | X 292 P8 600 2 |
| | ARRIEL 2 D | X 292 R1 600 2 |
| | ARRIEL 2 E | X 292 R2 600 2 |
| | ARRIEL 2 H | X 292 2H 600 2 |
| | ARRIEL 2 N | X 292 N2 600 2 |
| | ARRIEL 2 S1 | X 292 L0 600 2 |
| | ARRIEL 2 S2 | X 292 P5 600 2 |

SERVICE BULLETIN

Objet : Attestation d'application du SB n° 292 72 2212 (TU 212).

Subject: SB No. 292 72 2212 compliance certificate (TU 212).

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 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

| 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 | | | | | | |
| Module M02 modifié Modified module M02 | | | | | | |
| Roulement axial avant AVANT TU 212 déposé Removed PRE TU 212 front axial bearing | | | | | | |
| Roulement axial avant APRES TU 212 installé Installed POST TU 212 front axial bearing | | | | | | |
| Roulement axial arrière AVANT TU 212 déposé Removed PRE TU 212 rear axial bearing | | | | | | |
| Roulement axial arrière APRES TU 212 installé Installed POST TU 212 rear axial bearing | | | | | | |

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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 le moteur identifié ci-dessus a été modifié selon les directives de ce SB.

I certify that the above-mentioned engine 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 |
|--|------------|----------------------|
| | | |

ANNEXE 4.1 / APPENDIX 4.1

Signature :

END of section §4

“Application at a Safran Helicopter Engines-approved Repair Center”

SERVICE BULLETIN

Objet : Attestation de remplacement du module M02 par application du SB n° 292 72 2212 (TU 212).

Subject: Compliance certificate for replacement of module M02 through application of SB No. 292 72 2212 (TU 212).

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 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

| 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 | | | | | | |
| Module M02 déposé AVANT TU 212 Removed PRE TU 212 module M02 | | | | | | |
| Module M02 posé APRES TU 212 Installed POST TU 212 module M02 | | | | | | |

* **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 le module identifié ci-dessus a été installé selon les directives de ce SB.

I certify that the above-mentioned module 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 2.1 / APPENDIX 2.1

END of section §2

“Application at the operator’s site or at a Maintenance Center qualified for level 1, 2”

SERVICE BULLETIN

Objet : Attestation d'application du SB n° 292 72 2212 (TU 212).

Subject: SB No. 292 72 2212 compliance certificate (TU 212).

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 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

| 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 | | | | | | |
| Module M02 modifié Modified module M02 | | | | | | |
| Roulement axial avant AVANT TU 212 déposé Removed PRE TU 212 front axial bearing | | | | | | |
| Roulement axial avant APRES TU 212 installé Installed POST TU 212 front axial bearing | | | | | | |
| Roulement axial arrière AVANT TU 212 déposé Removed PRE TU 212 rear axial bearing | | | | | | |
| Roulement axial arrière APRES TU 212 installé Installed POST TU 212 rear axial bearing | | | | | | |

* **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 le moteur identifié ci-dessus a été modifié selon les directives de ce SB.

I certify that the above-mentioned engine 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 |
|--|------------|----------------------|
| | | |

ANNEXE 4.1 / APPENDIX 4.1

Signature :

END of section §4

“Application at a Safran Helicopter Engines-approved Repair Center”