


Aircraft Design Certification GmbH Reichensteinstr.48 69151 Neckargemünd		Engine mass ballast	Doc-Nr: ADxC-73-SB-029 Issue: B Date: 17.10.2023 Change Nr.: ADxC-73-DC-105
Service Bulletin Bristell B23			

Amendments

Issue	Reason	Date
A	First Issue	09.02.2023
B	removal of inspection option, SB classification changed to "Alert"	17.10.2023

<p>Engine mass ballast</p> <p>Removal or Change of ballast attached to engine</p> <p><i>Note: this service bulleting also replaces ADxC-73-SB-020.A</i></p>
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0 General

0.1 ATA Code


ATA 72 ENGINE – ballast attached at engine

0.2 Effectivity

All serial numbers of Bristell B23 TCDS EASA.A.642 model with Rotax 912 engine and design change ADxC-73-DC-005 (mass ballast) installed.

Excluded are all airplanes:

- with factory installed design change ADxC-73-DC-061 (with or without ADxC-73-DC-092), refer to Appendix of aircraft form 52;
- retrofitted ADxC-73-DC-061 (terminating action of ADxC-73-SB-020.A) OR ADxC-73-DC-092 (terminating action of ADxC-73-SB-029.A).

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1 Planning information

1.1 Reason

Insufficient or loss of attachment bolt torque can lead to excessive wear on attachment bolt shaft and cracks of attachment lugs due to resulting pounding vibration. This, if undetected over long period of time, could lead to partial or total loss of attachment. On one occurrence this did lead to inflight loss of the engine ballast mass. Refer to visualization in section 4.

1.2 Safety Intent

The safety intent is to prevent the unsafe condition.
The unsafe condition is potential loss of the engine ballast in flight imposing risk to third parties on ground or FOD on runway.

1.3 Configuration Description

B23 airplanes with ballast at engine; design change ADxC-73-DC-005 installed. This change as such is optional and limited to B23 with Rotax 912 engine. It enables more loading flexibility within the otherwise approved and unchanged weight and balance envelope. Identification of this change being installed is by checking for the ballast mass installed at the forward bottom side of the engine block. Aircraft documentation shall also record the installation in Appendix to Form 52.

1.4 Compliance

If criteria in Section 0 is met

- Service bulletin must be accomplished
- This SB could be made mandatory by an EASA AD.
- This SB is mandatory as per EASA AD
- Service bulletin recommended to be accomplished to prevent significant operational disruptions
- Service bulletin to introduce improvements
- Service bulletin for convenience or option


Compliance time is within the next 5 flight hours or 5 flight cycles whichever comes first:

Option 1) Remove the ballast and update aircraft weight and balance. (caution: suitable loading of aircraft affected).

OR

Option 2) Upgrade by installation of Design Change ADxC-73-DC-061 with ADxC-73-DC-092

Note: once option 1 is chosen and performed, option 2 might still be performed at a later stage.

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1.5 Approval statement

The technical content of this document is approved under the authority of the DOA ref. EASA. 21J.411.

1.6 Concurrent publications

Service Bulletin ADxC-73-SB-020.B
Earlier Service Bulletin ADxC-73-SB-020.A is cancelled - the bolt/washer combination listed therein is no longer available.

1.7 Manpower

Approx. 2 hours are required to accomplish this SB.

1.8 Weight and Balance

The mass of the ballast is 8kg located at 0.2m aft of the datum.
Depending on option used the latest W&B record of the aircraft needs to be corrected by these values.

1.9 Electrical load data N/A

n/a

1.10 Software modification N/A

n/a

1.11 Referenced documentation

Basic configuration:
ADxC-73-DC-005 (with ADxC-73-DC-007) prior service bulletin:

71B200200N issue B (or C)	Ballast Installation
71B200201N issue B (or C)	Ballast
M10x20 DIN933 ZN 8.8	Bolt (2ea) with d 2mm head hole drilled

Terminating action configuration Option 1:
/nil/

Terminating action configuration Option 2:
ADxC-73-DC-061 (with ADxC-73-DC-092):


71B200200N issue D	Ballast Installation
71B200201N issue D (OR E**)	Ballast
71B200206N issue A (OR B*)	Ballast Bolt (2ea)
71B200208N issue A (OR B*)	Washer (2ea)

** Installations having reworked the ballast to 71B200201N issue D status as defined in ADxC-73-SB-020.A or ADxC-73-SB-029.A remain acceptable.

* 71B200206N and 71B200208N must have same issue. Mixed issue A and B is not permissible.

1.12 Other publications effected

Earlier Service Bulletin ADxC-73-SB-020.A is cancelled - the bolt/washer combination listed therein is no longer available.

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2 Material information

2.1 Material- cost – availability

For material cost and availability for Option 2 contact BRM Aero.

2.2 Company support information

Affected publications and parts can be ordered from

BRM AERO, s.r.o.

Address: Letecká 255 686 04 Kunovice Czech Republic

Phone: + 420 773 984 338

E-mail 1: info@brmaero.com

E-mail 2: aero.brm@gmail.com

Web: <http://www.brmaero.com>

Affected documentation can be downloaded from

<https://www.bristell.com/technical-documentation/>

For the latter login credentials must be ordered form BRM Aero, s.r.o.

2.3 Material requirements per aircraft

For option 1

- nil -

For option 2

71B200206N issue B Ballast bolt (2ea)

71B200208N issue B washer (2ea)


71B200201N issue E Ballast (1ea)

2.4 Rework parts

n/a

2.5 Special tooling

n/a

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3 Accomplishment/Instructions

3.1 Option 1, removal

- Remove engine cowling
- If ballast 71B200201N issue B or C is installed, remove ballast.
 - *Acceptable ballast issue D (reworked) or E (factory new) can be identified by presence of load transmitting elements between lug eye and body (ref. Figure 1), Issue D (reworked) has straps all around the ballast body, Issue E (factory new) has lug patches.*
 - *Not acceptable Issue B or C do not feature this (ref. Figure 4)*
- Reinstall cowling.

3.2 Option 2, upgrade

- Remove engine cowling
- If ballast 71B200201N issue B or C is installed, remove ballast.
- Before installation of new ballast 71B200201N issue E:
 - check 71B200206N issue B Ballast bolt for unthreaded shaft length of 6 mm
 - check 71B200208N issue B washer for thickness of 3 mm
- Install factory new 71B200201N issue E Ballast using bolts PN 71B200206N issue B and 71B200208N issue B washer (2ea) according to installation drawing 71B200200N issue D; Torque attachment bolts to 26-32 Nm
- Perform engine run up according AFM, perform minimum 5 rapid RPM changes idle to max RPM. Shut down aircraft according AFM.
- Recheck torque of bolts PN 71B200206N issue B after cool down.
- Apply safety wire.
- Reinstall cowling.

3.3 Finalization

- Update aircraft weight and balance with values stated in section 1.8 as required.
- Make appropriate entry of accomplishment of terminating action in aircraft logbook and life cycle documentation.

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4 Appendix

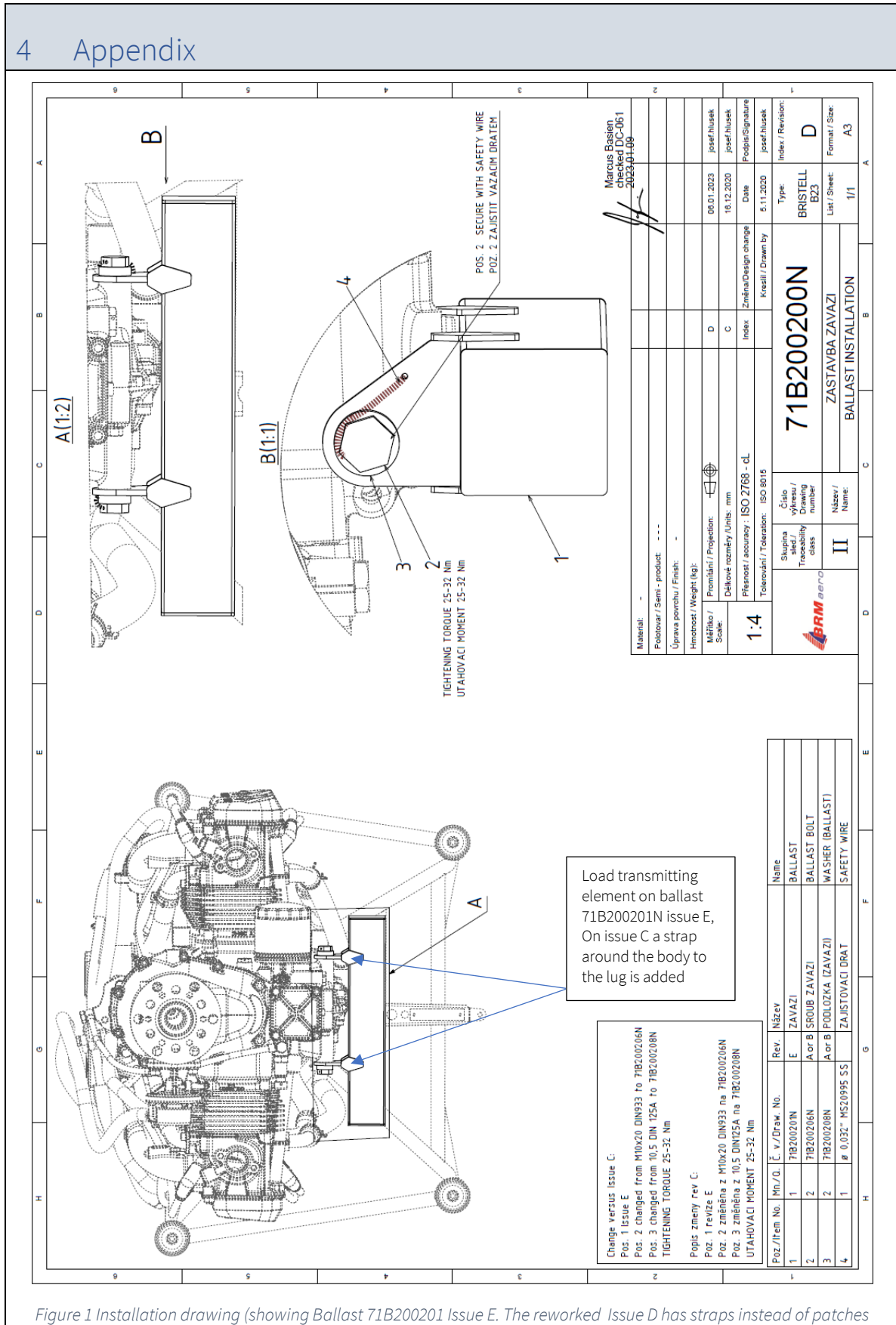


Figure 1 Installation drawing (showing Ballast 71B200201 Issue E. The reworked Issue D has straps instead of patches

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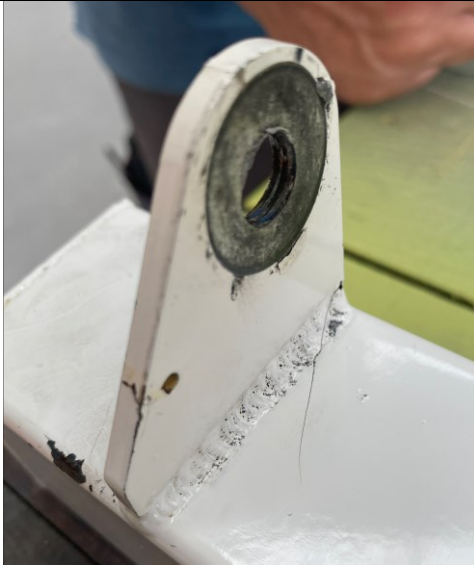


Figure 2 Cracks found on ballast lug



Figure 3 Bolts showing wear on thread

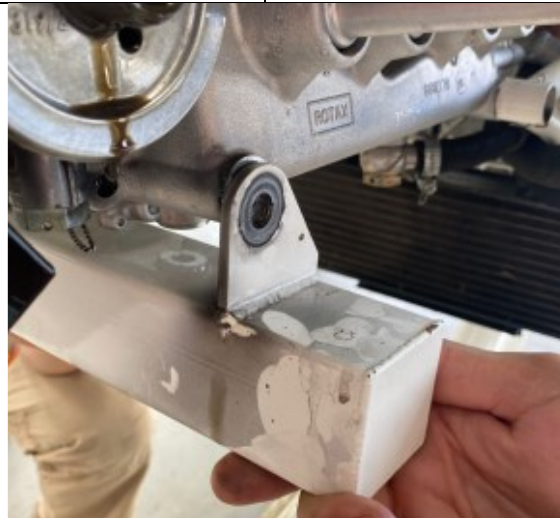


Figure 4 Grey dust on ballast indicating wear on bolt/thread/attachment); ballast 71B200201N issue C shown



Figure 5 Remaining lugs after loss of ballast