
(Sling Aircraft (Pty) Ltd. considers compliance with all Service Bulletins mandatory)

RELEASE DATE:	14/06/2024
EFFECTIVE DATE:	08/07/2024
SUBJECT:	Inspection and possible replacement instructions of the Sling 4 TSi seatbelt shoulder guide anchor bolts.
MODELS AFFECTED:	All Sling 4 TSi aircraft, up to (and including) SN 584.
COMPLIANCE TIME:	Next MPI (Mandatory Periodic Inspection) or annual inspection, whichever comes first.
LABOUR TIME:	45 minutes

1. DESCRIPTION AND PURPOSE:

This service bulletin provides inspection and possible replacement instructions for the Sling 4 TSi seatbelt shoulder guide anchor bolts. The dog points of the shoulder bolts, used to mount the shoulder strap guide, may also cause interference issues on certain aircraft, which hinders correct installation of the bolts into their mounting locations.

Compliance with this service bulletin is mandatory and should be performed at the aircraft's next MPI (mandatory periodic inspection) or annual inspection, whichever comes first. Alternatively, this service bulletin may be carried out by the kit builder immediately. The purpose of the Service Bulletin is to ensure that the seat belt shoulder strap is correctly, reliably and sufficiently strongly attached to the canopy pillar so that it would provide sufficient restraining force in the event of an accident.

1.1. MASS DATA:

N/A

1.2. ELECTRICAL LOAD DATA:

N/A

1.3. SOFTWARE MODIFICATIONS:

N/A

1.4. REFERENCES:

- a) DC-KAI-003-X-F – Sling 4 TSi Fuselage Construction Manual
- b) DC-MAM-001-X-F – Sling 4 TSi Maintenance Manual

1.5. PUBLICATIONS AFFECTED:

- a) DC-KAI-003-X-F – Sling 4 TSi Fuselage Construction Manual
 - Seatbelt anchor point installation instructions have been updated to include the instructions as set out in this service bulletin.

2. MATERIAL INFORMATION:

2.1. PARTS AND CONSUMABLES LIST:

Canopy 1 SB kit:

- a) 2 x SE-MSB-002-X-X-0 – Seatbelt shoulder bolt
- b) 2 x SE-BSH-005-X-X-0 – Seatbelt shoulder bolt spacer (canopy 1)

Canopy 2 SB kit:

- a) 2 x SE-MSB-002-X-X-0 – Seatbelt shoulder bolt
- b) 2 x SE-BSH-004-X-X-0 – Seatbelt shoulder bolt spacer (canopy 2)

2.2. TOOLS REQUIRED:

- a) 9/16 Spanner/socket and ratchet
- b) Dremel
- c) Vacuum cleaner
- d) Marker pen
- e) M11x1.25 bottoming tap
- f) Torque wrench (capable of up to 30 Nm (22 ft.lb))
- g) Loctite 243 (medium strength), or an equivalent

2.3. MATERIAL RESPONSIBILITY:

Sling Aircraft (Pty) Ltd will provide the required hardware listed in Section 2.1 for all aircraft subject to the Service Bulletin.

2.4. LABOUR RESPONSIBILITY:

Sling Aircraft AMO 1264 (Johannesburg, South Africa) is available to perform the required work on all aircraft delivered to its premises. The aircraft may be flown to an aircraft maintenance organisation for the work to be carried out. Person(s) implementing the work are required to follow instructions set out below and refer to the supplementary documentation listed in Section 1.4 as needed. Sling Aircraft cannot accept any responsibility for the quality of work performed in implementing this Service Bulletin, if the work is not performed by Sling Aircraft AMO 1264 (Johannesburg, South Africa).

All work carried out on the aircraft with respect to this Service Bulletin (Service Bulletin 26) may be performed by the kit builder. Refer to the legal requirements of the governing aviation authority of the country where the actions, as detailed by this Service Bulletin, are to be carried out. Sling Aircraft will cover the installation costs of aircraft under warranty. Sling Aircraft is not responsible for costs related to shipping, downtime, loss of income, etc.

2.5. COMPANY SUPPORT INFORMATION:

To request Service Bulletin kits, please use the following contact details:
sales@slingaircraft.com.

Make use of the following contact details for any related technical queries:
airworthiness@slingaircraft.com or technical@slingaircraft.com.

3. INSTRUCTIONS:

The following sections detail the relevant inspections needed to ensure the correct installation of the seatbelt anchor points, as well as the required actions to rectify the installation should it not be complaint.

It should be noted that the Sling 4 TSi canopy has been revised on newer aircraft. This means there are two variants of canopy in circulation, that have slightly different installation instructions for the seatbelt anchor bolts. The following section provides instructions on how to identify the canopy, and the applicable inspection instructions.

Section 3.1. details the inspection to see which canopy and door set has been supplied.

Section 3.2. details the initial inspection should the seatbelt shoulder guide be installed already.

Section 3.3. details the installation instructions for the shoulder guide bolts of canopy 1.

Section 3.4. details the installation instructions for the shoulder guide bolts of canopy 2.

3.1. Canopy identification:

There are two variants of the sling 4 TSi canopy in circulation. These can be easily identified by inspecting the hinges of the doors you received with your canopy. Refer to Figure 1 and Figure 2 below on how to identify the respective canopies.



Figure 1: Canopy 1

Canopy 1 has door hinges that are bonded into the door. These hinges get bolted to the canopy, as seen in Figure 1.



Figure 2: Canopy 2

Canopy 2 has door hinges that are bolted to the door. These hinges also get bolted to the canopy. Once installed the hinges get a composite cover, as seen in Figure 2.

Once the canopy has been identified please request the corresponding service bulletin kit for the canopy. Refer to the installation instructions in Section 3.3 for canopy 1, and Section 3.4 for canopy 2.

3.2. Initial bolt inspection:

This section details the initial inspection required to ensure the bolt retaining the shoulder strap guide is installed correctly. If the seatbelt has not yet been installed into the aircraft, skip the remainder of the instructions in this Section, and continue to Section 3.2.

Step 1: Remove the shoulder guide cover, to expose the bolt.



Figure 3: removal of the shoulder guide cover

Step 2: Ensure the bolt and spacer are installed correctly, the spacer should fit flush with the composite canopy. The shoulder of the bolt presses up against the spacer (this can be seen in Figure 4 and when tightened compresses the spacer to the canopy). The correct installation can be seen in Figure 4, the incorrect installation can be seen in Figure 5. If the issues shown in Figure 5 are present in the installation, the bolt may not be screwed in all the way. **Do not** force the bolt into the hole, there may be debris on the nut's thread which need to be removed using a thread tap. This will be explained in Sections 3.3 and 3.4. It is also possible that the dog point of the bolt may be pressing up on the composite behind the nut. The bolts supplied with the service bulletin kits have this tip removed and will not cause interference.

The bolt is fully tightened such that the bottom of the shoulder sits against the spacer, and that the spacer sits flush with and compressed against the canopy inside skin.

Note: This is only applicable to Canopy 2 configurations. Canopy 1 configurations will require the composite to be removed such that the spacer will locate onto the nut installed beneath these layers.

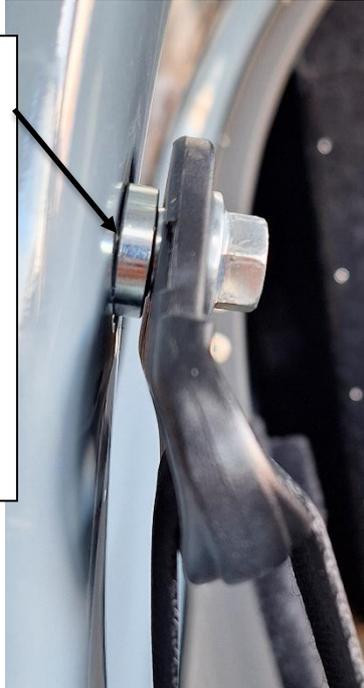
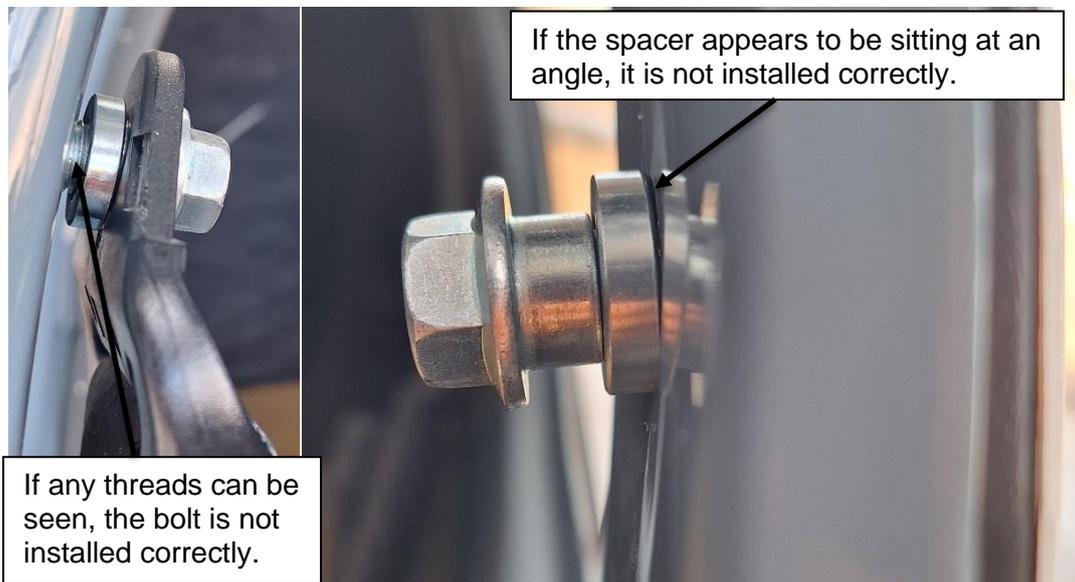


Figure 4: Correct bolt installation.



If any threads can be seen, the bolt is not installed correctly.

If the spacer appears to be sitting at an angle, it is not installed correctly.

Figure 5: Incorrect bolt installation

- Step 3: In addition to the bolt and spacer being seated correctly, the dimensions of spacer should also be checked. Use a vernier calliper to check the diameter of the spacer. The correct spacer is 20 mm in diameter. If the spacer is 16 mm in diameter it is the wrong size. The 16 mm spacer is too long and will result in the bolt not being screwed in all the way.
- Step 4: If the bolt has been installed correctly with the correct spacer, the aircraft is seen to be compliant, and this must be logged in the aircraft airframe logbook. If the bolt installation is not compliant, refer to Sections 3.3 and 3.4.

3.3. Canopy 1 shoulder bolt installation instructions

This section details inspection and installation instructions applicable to canopy 1 only. Refer to the following steps to perform the required actions. In order to be concise, only one side of the aircraft will be mentioned, however, the steps must be repeated for the opposite side of the aircraft to what is depicted in the following steps. The bolt and spacer to be installed must be the approved hardware, which is listed in Section 2.1.

- Step 1: Due to the manufacturing process, there is a potential for contaminants to be present on the thread of the hole that the shoulder bolt of the seatbelt screws into. Due to this, the threads need to be inspected, and are to be free and clear of any debris (such as weld splatter, paint, resin etc.). These will be present on both the left- and right-hand side of the cockpit. Figure 6 shows the location of the hole on left side of the cockpit.

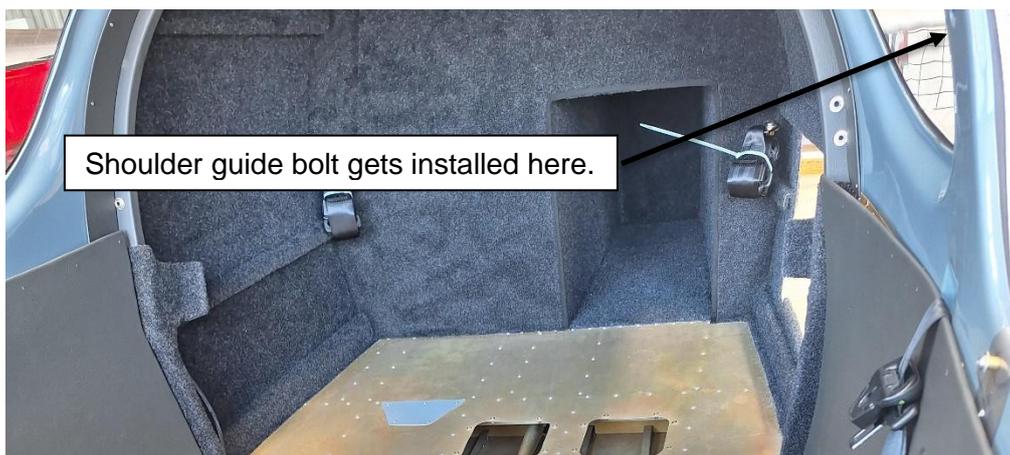


Figure 6: Seatbelt shoulder bolt installation location



Figure 7: Threads to be inspected and tapped.

- Step 2: If there is debris present on the thread of the hole, an M11 tap must be used to clean the threads of the hole.
- Step 3: Once the holes have been tapped, the threads must be reinspected to ensure they are free of debris.
- Step 4: Once the holes are free of debris, install just the shoulder bolt and spacer as depicted in Figure 8.

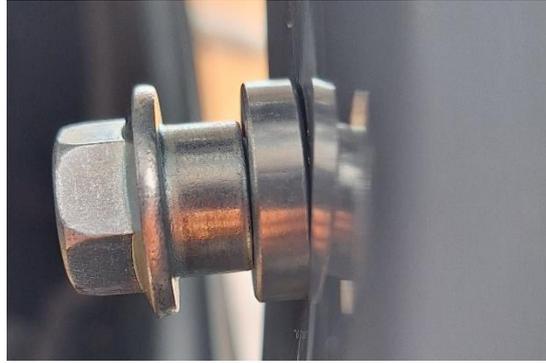


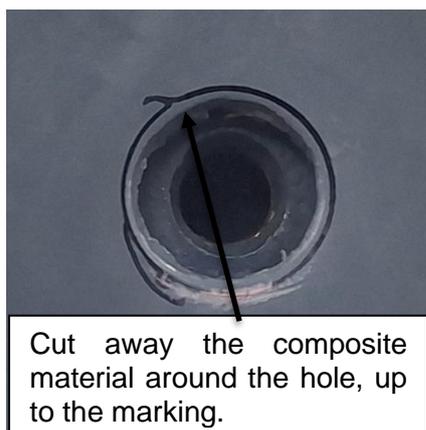
Figure 8: Shoulder bolt and spacer installation.

Step 5: After the bolt and spacer have been installed, use a permanent marker and draw a line around the spacer, as seen in Figure 9.



Figure 9

Step 6: Remove the bolt and spacer and use a Dremel or a file to sand away the composite up to the marking, that was made around the spacer. This hole should now be wide enough for the spacer to pass through the composite and sit flush on the mounting plate that is bonded into the canopy.



Cut away the composite material around the hole, up to the marking.

Figure 10

Step 7: Once the cutout has been widened, install the bolt, spacer and shoulder anchor guide of the seatbelt as seen in Figure 11. Ensure that the spacer fits through the cutout and is able to locate on the mounting plate that is bonded into the canopy. Loctite 243, or an equivalent, should be used on the bolt thread to ensure it does not unscrew on its own. Torque the bolt to 20 Nm.

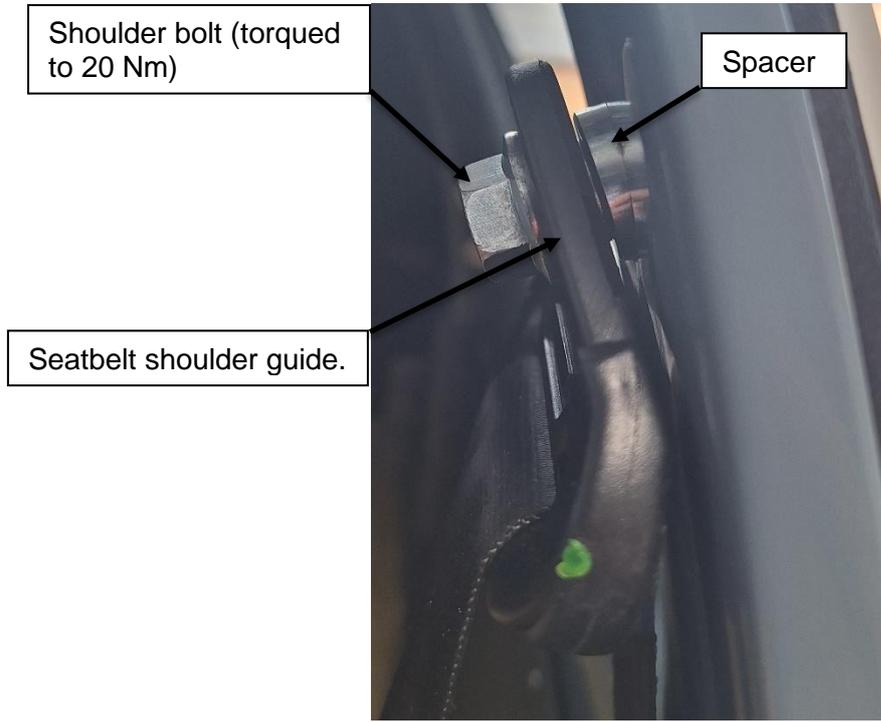


Figure 11: Seatbelt shoulder guide installation

Step 8: Install the seatbelt shoulder guide cover.



Figure 12: Seatbelt shoulder guide cover

3.4. Canopy 2 shoulder bolt installation instructions

This section details inspection and installation instructions applicable to canopy 2 only. Refer to the following steps to perform the required actions. In order to be concise, only one side of the aircraft will be mentioned, however, the steps must be repeated for the opposite side of the aircraft to what is depicted in the following steps. The bolt and spacer to be installed must be the approved hardware, which is listed in Section 2.1.

- Step 1: Due to the manufacturing process, there is a potential for contaminants to be present on the thread of the hole that the shoulder bolt of the seatbelt screws into. Due to this, the threads need to be inspected, and are to be free and clear of any debris (such as weld splatter, paint, resin etc.). These will be present on both the left- and right-hand side of the cockpit. Figure 13 shows the location of the hole on left side of the cockpit.



Figure 13: Seatbelt shoulder bolt installation location



Figure 14: Threads to be inspected and tapped.

- Step 2: If there is debris present on the thread of the hole, an M11 tap must be used to clean the threads of the hole.
- Step 3: Once the holes have been tapped, the threads must be reinspected to ensure they are free of debris.

Step 4: Install the bolt, spacer and shoulder anchor guide of the seatbelt as seen in Figure 15. Loctite 243, or an equivalent, should be used on the bolt thread to ensure it does not unscrew on its own. Torque the bolt to 20 Nm.

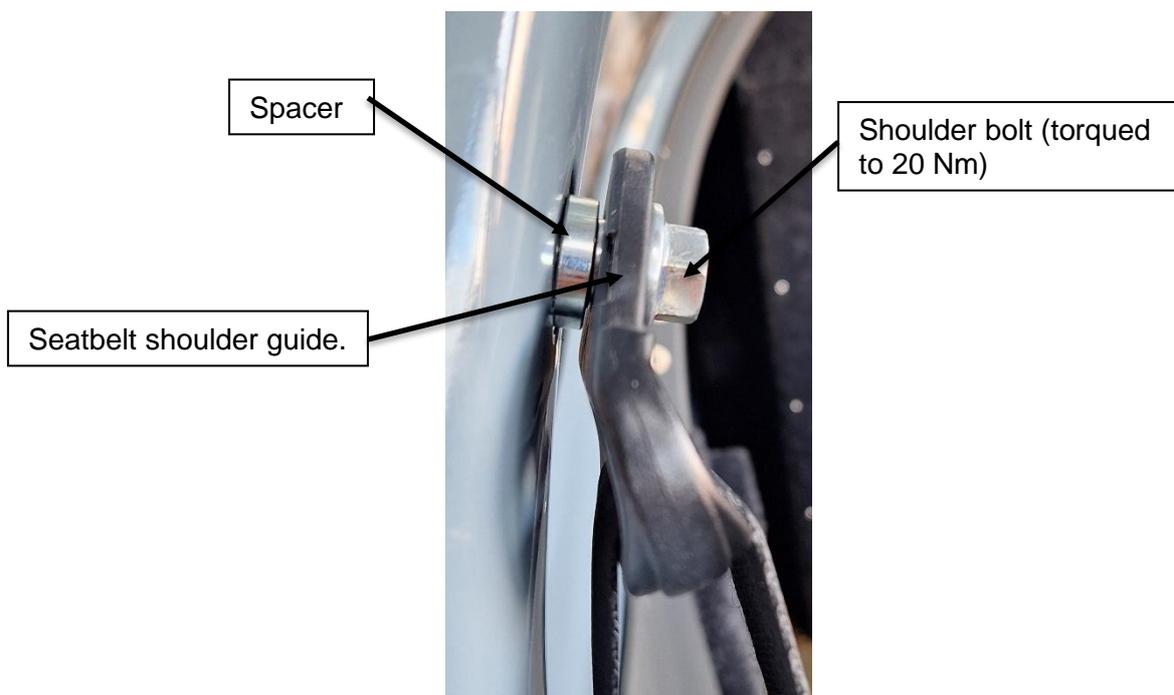


Figure 15: Seatbelt shoulder guide installation

Step 5: Install the seatbelt shoulder guide cover.



Figure 16: Seatbelt shoulder guide cover

Once the actions detailed in this service bulletin have been carried out, the aircraft's compliance with this service bulletin must be documented in the aircraft's airframe logbook.

Signed on this the 11th day of June 2024

A handwritten signature in black ink that reads "JAL Pitman". The signature is written in a cursive style with a large, looped initial "J".

ACCOUNTABLE MANAGER
MR JAMES PITMAN