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CAA approval ref: DAI/9970/19

BCAR A8-1 & A8-9 (F1)

ref : SB 160 CG bolt issue 1

**SERVICE BULLETIN NUMBER 160**

Issue 1.

**TITLE** Wing keel CG location bolt and keel clamp.  
**CLASSIFICATION** PSA Ltd have classified this bulletin as compulsory.  
**COMPLIANCE** **Compulsory** - Daily inspection items before flight.  
**Strongly recommended** – fitting of backup keel clamp.  
**APPLICABILITY** GT450

## 1 INTRODUCTION

An accident to a GT450 was probably caused by the 6mm keel roll bearing CG cap head bolt (part 13 in fig. 2) coming out, allowing the roll bearing, hang bracket and control frame top to move back causing a severe pitch-up.

## 2 ACTION

The additional daily inspection check items in pages 4 and 5 below must be included in the operator's manual to specifically inspect that the CG bolt is present and secure before flight.

The roll bracket assembly must be inspected to ensure it moves freely on the roll bearing and that the bearing is not loose on the keel. Nylon roll bearings can swell with moisture over the years, causing friction which puts more stress on the CG bolt and keel hole. If the hang bracket cannot be rotated easily by hand, the roll bearing part 4 in fig 2, must be replaced. Genuine replacement roll bearings part ZMP-094 are made from Acetal (bright white colour) which is not so affected.

If the roll bearing has been stiff, the condition of the hole in the keel must be inspected for wear and cracks. Cracks up to 2mm long may be recovered by bushing the hole in accordance with standard repair scheme M139.

If not already fitted, it is strongly recommended to fit the longer CG bolt, item 13, part no. FCM6-80 with securing M6 T type nyloc nut, item 10, part no. FNM6-NT.

It is also strongly recommended to fit the backup keel clamp part no. PSA-08-1 to the keel, 3-5mm behind the roll bearing, with the clamp bolts FCM6-50 horizontal. Ensure the keel is degreased and apply Loctite 648 to the keel and clamp mating surfaces. Apply Loctite 222 to the M6 socket bolt heads and torque to 10NM.

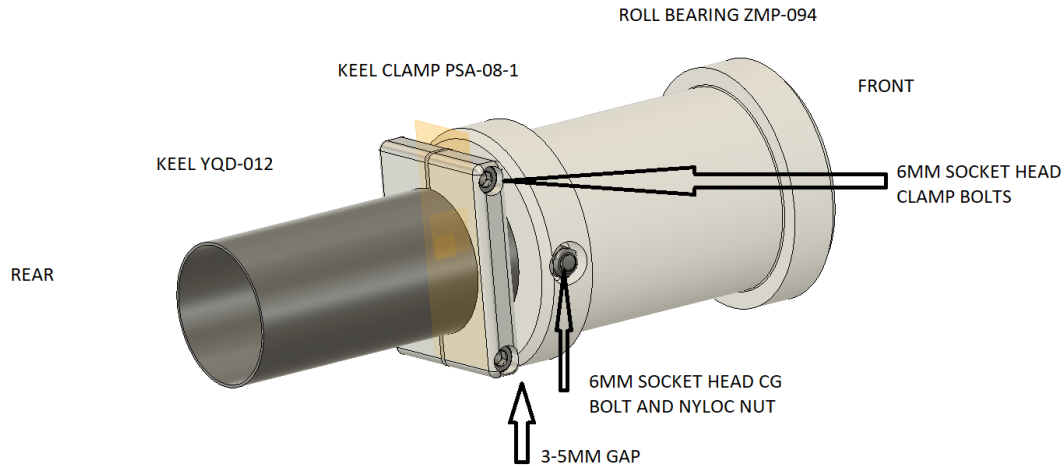
Check freedom of movement of the hang bracket on the roll bearing after fitting.

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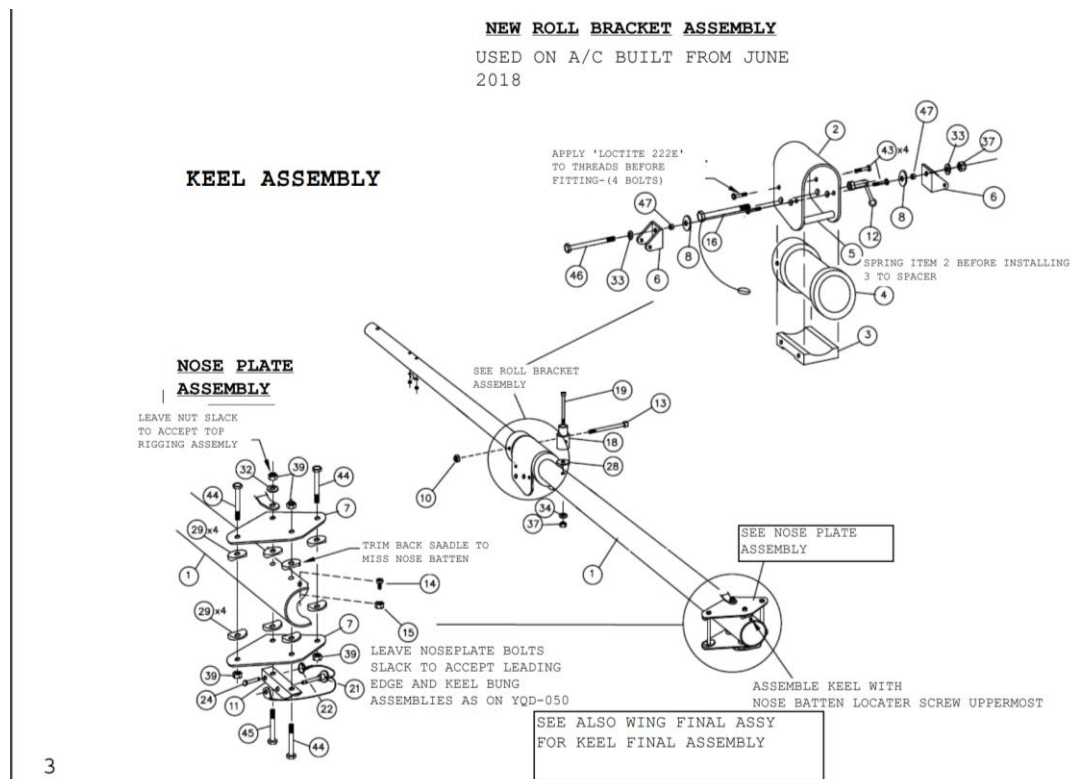
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**Figure 1 GT450 keel clamp modification PSA-08**



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**Figure 2 Keel assembly showing the CG bolt item 13.**

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### 3 Documentation

The attached pages 36 (inspection when rigging for flight) and 38 (inspection checklist) must be appended to the operator's handbook.

If any parts have been changed, including fitting of the keel clamp, the work must be signed in the logbook and a duplicate inspection by a suitably qualified person carried out.


This includes inspection of the sail retention and rear rigging if these items have been disturbed.


### 4 Continued Airworthiness

The roll bracket assembly must be inspected as in 2 above, as part of each Permit to Fly revalidation inspection.

Issued by: **W.G.Brooks**

Checked by: **Graham Slater**

Approved		Date
		29/11/23

Checked		e
15/12/23		

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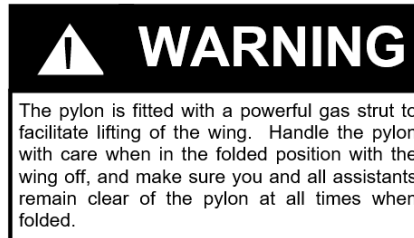
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19. Push fully home the undersurface ribs so that the curved aluminium section is facing rearwards and downwards. Fit the single elastic to each undersurface rib rear.
20. Proceed to the rear of the wing and tension the overcentre lever in the rear top rigging.
21. Inspect the hang point area for security of all fasteners including the M6 cap head bolt which secures the plastic roll bearing to the wing keel. Check that the hang bracket can move freely in rotation about the keel axis.

### 5.3. PREPARING THE TRIKE

1. Rigging the trike is the relatively simple operation of lowering and raising the pylon whilst connecting the trike to the wing.
2. To erect the trike from the folded state, the pylon should be raised and locked by means of the overcentre catch.



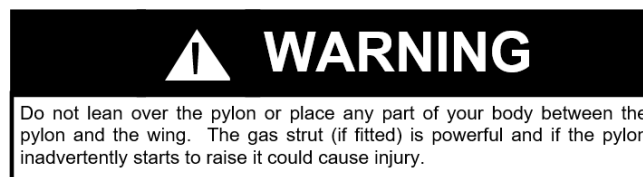
Fit the front strut and ensure that the upper and lower securing pins and rings are fitted correctly. Now is a good time to inspect the interior of the trike including the engine mounts and fuel lines. Depress the drain valve on the underside of the fuel tank and drain off a little fuel into a container. Check for discolouration due to contamination and for water present in the fuel. If in doubt, drain off all contaminated fuel and replace it.

3. To convert the tandem seat for solo operation, it is merely necessary to secure the rear seat belt buckle and to tighten the straps so that there is no slack.

### 5.4. CONNECTING THE WING TO THE TRIKE

For the first few times that you rig your aircraft, ensure that the weather is calm or you have an experienced helper to take charge if the wind starts to take control from you. It is much better to be set up on grass rather than hard standing, both to avoid damage and wear to the wing and scraped knuckles as you lift the wing from the ground. Ensure that the ground is level, clear of clutter, wing bags, tools, twigs and inspect the ground for holes or any other obstacles that may trip you. While rigging the aircraft, it is important to carry out continual checks to ensure correct assembly. It is important that the pilot/operator carries out these inspections to ensure that the aircraft will be fit to fly.

1. Fit the nose extension (rigging tool) to the wing and position the wing on its control frame and nose extension facing into wind.
2. Line up the trike behind and facing the wing, but at least ten feet away to give clearance for the wing to be raised onto its control frame.
3. Remove the two safety rings and pins at the lower end of the front strut. Release the over centre lock and then lift its lugs out of engagement and lay it aside, lay the front seat back rest down by rotating forward, lay the rear seat cushion down to expose the slot in the rear seat and lower the pylon by pulling firmly down on the inner front strut tube to overcome the resistance of the optional rigging gas strut where fitted. Remove the top front strut pin and lay the front strut on the ground, ensuring that it is not likely to cause a tripping hazard.



Release the trike brake and roll the trike forward with the front wheel rolling through the A frame and over the

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WING	Pre-flight	Every 50 hrs	Annually /100 hrs	Other
HANG BRACKET: check set screws, check holes for wear		Inspect		
ROLL BEARING: socket head bolt to keel present and secure	check	Inspect		
SAIL: check for damage and wear		Inspect		
SAIL: Betts test for UV damage. (1.2mm needle 1000 grams)			Inspect	
BATTEN ELASTICS: check security and tensions	Inspect	Inspect		
BATTEN ELASTICS: Replace every 200 hours				Service
BATTENS: check profiles, inspect/lubricate adjusters			Inspect	
ALL CABLES: check for damage, corrosion, elongation of thimbles		Inspect		
TENSIONER CABLE & STUD: check	Inspect	Inspect		
NOSE PLATE: check plates for wear & damage	Inspect	Inspect		
NOSE PLATE: Check fasteners for wear			Inspect	
ALL WING TUBES: visual check for damage & bends		Inspect		
BASE BAR: check for fatigue cracks around holes, dents & bends	Inspect		Inspect	
UPRIGHTS, Control bar and fittings: straightness, security, damage	Inspect	Inspect		
LIFT STRUTS and fittings on cross boom and control frame	Inspect		Inspect	
Washout rod settings				500 hours/ 4 years
TIP FINS: Security, damage esp. at mounts		Inspect		
X SPAR JOINTS: check centre pivot, check leading edge/x spar fasteners for wear		Inspect		
WING VISUAL CHECK: a complete and thorough check should be carried out annually by a competent inspector. The wing should then be check flown.			Inspect	
<b>COMPLETE WING STRIP: after any accident damage however caused or after NOT MORE THAN 500hrs/4 years (in normal use). A second inspection by an approved inspector must be carried out and a check flight by an approved check pilot before return to service.</b>				500 hours/ 4 years