

RANS

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Airworthiness Directive: 141
Date: January 24, 2022
Subject: S-21 and S-21LS Nose Gear Strut
Compliance: Mandatory
Models Affected: S-21, S-21LS Outbound model with TRIKE landing gear

After many hours of rough field work, we have discovered the need to upgrade the pinning bolt and clamp on the tricycle landing gear options on the RANS S-21 Outbound. The upper pinning bolt can shear and allow the nose gear to rotate during taxi or landing roll-out when side-load becomes present, allowing the propeller to strike the surface. The current U bolt clamp is being superseded with a more robust clamp that will require tightening to a specific torque and checked during condition inspections.

Please follow the instructions provided to ensure your safety in this matter.

Compliance:

If your RANS S-21/S-21LS aircraft is a TRIKE

Instructions:

Follow the below instructions if you are already operational. For planes in progress, follow the manual and use the larger bits, reamer and bolts in place of the .25" high tolerance bolt. And replace U clamp with the new version provided. If you nose gear leg socket does not have the vertical slot, please read below for instructions on cutting the slot.

1. Set park brake and secure the tail so the nose gear is lifted a couple of inches off the ground.
2. Remove cowlings
3. Check security of the lower U clamp. This needs to be tight so the gear leg will not shift during drilling and reaming.
4. Remove the 1/4" bolt and drill and ream to fit the provided high tolerance 3/8" bolt.

5. If a slot is not present at the end of the nose gear socket: Remove nose gear strut. Mark on the top and bottom and center punch 1 1/2" from the bottom edge. Drill 1/4" then using a thin blade (.125") cut off disc, slot to the drilled holes. See photo below.
6. Remove burrs and touch up cut areas with primer/paint.
7. Install the 3/8" bolt and torque to 200-250 inch pounds.
8. Remove the existing U clamp and re-install using the second saddle and the (2) AN4-23A bolts. Position the clamp assembly so the bolts are horizontal allowing the clamp to squeeze the end of the nose gear socket. Torque to 80-100 inch pounds.
9. Check all bolts for proper torque every condition inspection.

Hardware will be provided at no cost to the original owners who received the S-21 kits between 2018-Feb 2022. Drill bits and reamers will need to be self-sourced through a source of your choice.

Parts Needed:

1	Clamp Block	KPNG0104	(RANS supplied)
2	1/4" Bolt	AN4-23A	(RANS supplied)
2	1/4" Tensile Nut	AN365-428A	(RANS supplied)
1	3/8" Bolt	NAS6606-25	(RANS supplied)
1	3/8" Tensile Nut	AN365-624A	(RANS supplied)
1	3/8" washer thick	AN 960-616	(RANS supplied)
1	3/8" washer thin	AN960-616L	(RANS supplied)
1	Drill Bit	.3125" OD (5/16")	(Builder supplied)
1	Drill Bit	"U" (.368")	(Builder supplied)
1	Reamer	.374"OD	(Builder supplied)



Thank you for your attention to this matter. Hopefully, we have not inconvenienced you to any great degree. Fly safe.