2141 ICON Way, Vacaville, CA 95688 - Tel: 707.564.4000 – www.iconaircraft.com

SERVICE BULLETIN

SB-032420-A

ID NUMBER & REVISION:	SB-032420-A
SUBJECT:	Recurring Inspection of Nose Landing Gear (NLG) Actuator Rigging and NLG Actuator Stop Switches
RELEASE DATE:	6/4/2020
EFFECTIVE DATE:	6/8/2020
SUPERSEDES NOTICE:	N/A
AIRCRAFT AFFECTED:	**MAKE & MODEL:** ICON A5 **SERIAL NUMBERS:** ALL
REQUIRED ACTION:	Recurring Inspection of the NLG actuator rigging, and NLG actuator stop switches
TIME OF COMPLIANCE:	ASN 00001 – 00122 Within 25 hours of issuance, then recurring each 100 hr or annual condition inspection (whichever comes first) after initial inspection is completed ASN 123 and subsequent - Recurring every 100 hr or annual condition inspection (whichever comes first).
REVISION HISTORY:	**A** Initial Release

LEVEL OF CERTIFICATION REQUIRED (any level checked can perform task):	☐	Pilot/Owner	☒	A & P
	☒	LSA Repairman – Inspection	☐	Certified Repair Station
	☒	LSA Repairman – Maintenance	☒	Manufacturer

PURPOSE:

ICON Aircraft has received service reports of the Nose Landing Gear (NLG) collapsing during ground operations while performing high power runups or taxiing, along with reports of incorrect landing gear indications in flight. ICON has determined that the cause of these incidents is the degradation (or failure) of the NLG actuator stop switch, which can be a result of inadvertent switch damage, poor performance of the switch, or long-term degradation of the switch itself. There has also been several cases of NLG collapses following inadvertent retraction of the landing gear handle with weight on the wheels. If for any reason the NLG is retracted with weight on wheels, the NLG actuator should be replaced since internal damage to the actuator has likely occurred. This bulletin will detail a recurring inspection of the NLG actuator rigging and NLG actuator stop switches.

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SERVICE BULLETIN

SB-032420-A

ASSEMBLIES AND PARTS:

PART NUMBER	DESCRIPTION	QUANTITY	ALTERNATE	
			PART NUMBER	DESCRIPTION
ICA013161	Nose Landing Gear Actuator	1	ICA013071	NLG Actuator
TY24MX	Cable-Tie, Nylon 6-6, 30LB, 5.50,	1	N/A	N/A

Special Tools:

1) ITL001714 REV B (For Aircraft Serial Numbers (ASN) 00001-00011 and 00013-00020 only)
2) NLG Rigging pin 0.1885-.1875 in. diameter (for ASN 00012, 00021 and subsequent)
3) NLG go-no-go checking pin 0.163-.164 in. diameter (for ASN 00012, 00021 and subsequent)
4) Electrical Multimeter with resistance function

INSTRUCTIONS:

Preparation:

1) Remove the main landing gear 15A fuse from the overhead console. Save this fuse as it will be reinserted after the test is complete.
2) In accordance with latest release of maintenance manual, remove right hand Instrument panel top to gain access to the NLG actuator connector. This may require removal of the ty-rap that secures the connector the NLG box.
3) Fold the wings of the aircraft, this will move the center of gravity aft such that it will be easier to lift the nose up and down during the NLG rigging checks.
4) Connect battery charger to the charging terminals following the procedure in ICON A5 Maintenance Manual (ICA000833) Section 6.5.3.2. This will keep the battery charged during NLG cycles.
5) Have a foam block or equivalent nearby that can be placed under the aircraft on the keel aft of the NLG wheel well that will allow the nose wheel of the aircraft to have approximately 1 in or more of clearance from the ground. This block will need to be removed numerous times during the procedure to place weight on the NLG. An alternative option is to tip the aircraft lightly onto its tail tiedown lug gently using a towel or cardboard scrap as protection.

Checking the resistance of the NLG stop switches

1) Ensure the landing gear switch is down.
2) Turn on master power and ensure that the landing gear position indicator indicates that he landing gear is down.
3) Turn master power off.
4) Disconnect the NLG actuator 8 pin connector shown in Figure 1.

SERVICE BULLETIN

SB-032420-A

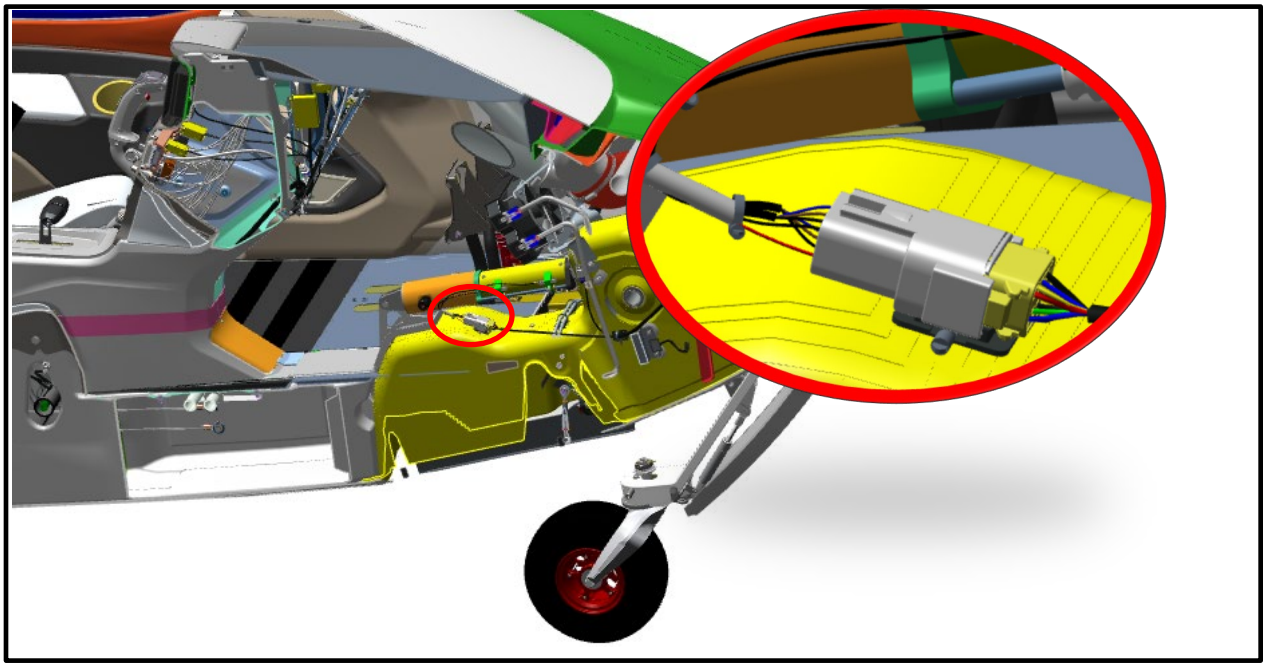


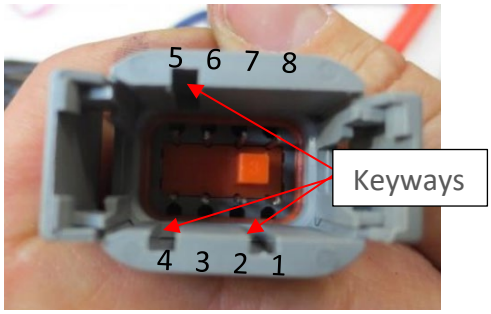
Figure 1: NLG electrical connector

5) On the NLG actuator side of the connector the pins are labeled 1-8 as shown below.
6) Using a multimeter set to resistance, measure resistance between the following pins and record the value:

Note: It is important that the meter not be set to just an audible continuity setting- a resistance reading in Ohm, Kilo Ohm, or Mega Ohm range is required

Table 1: Resistance Measurement of the NLG Stop Switches

Between Pins	Value if NLG is down	Measured Value
2 & 3	Overload / Open	
3 & 4	< 1 Ohm	
2 & 4	Overload / Open	
5 & 6	Overload / Open	
6 & 7	< 1 Ohm	
5 & 7	Overload / Open	



7) The resistance value of the above list of pins should be either **Overload/Open** or **less than 1 ohm.** If you get a value above 1 Ohm during any of the resistance checks then stop- the stop switch is bad and the actuator needs to be removed from service and sent to ICON for repairs.
8) After completing stop switch resistance checks, reconnect the NLG actuator connector and re-secure the connector to the ty-block using a TY24MX ty-rap. The landing gear should be swung to confirm satisfactory actuation after reconnecting this connector.

Nose Landing Gear Rigging Check (Aircraft Serial Numbers 00001-00011 and 00013-00020)

1) With normal resting aircraft weight on the NLG check:
    a. Hold ITL001714 in position, referencing tool off of drag link wrist pin head and bellcrank body. Verify drag link is fully in the "in tolerance" window. If in tolerance, move to step 2.
    b. If **not,** the nose landing gear needs to be re-rigged to the "nominal range" using ITL001714 Rev B and rigging procedure section below.
2) Lift the aircraft nose enough to slide a block or equivalent under the keel to allow the nose wheel to be approximately 1" or greater off the ground. An alternative option is to tip the aircraft lightly onto its tail tiedown lug gently using a towel or cardboard scrap as protection.
3) Ensure the 15 amp Main landing gear fuse is removed.
4) Turn the Master switch on.
5) Move the landing gear handle to the up position allow the NLG to move to the full up position and stop.

> **Note:** The landing gear position indication will still show in transit during this test since the main landing gear is still down. This is normal for this inspection.

6) Move the landing gear handle down, allow the NLG to come full down and stop.
7) Lift the aircraft nose enough to remove the block or equivalent from under the keel or if resting on the tail tie down lug allow the aircraft back down and allow weight back on to the nose wheel. Push down on the nose to preload the landing gear then release.

> **Note:** It's important to preload the nose briefly by pushing down with approximately 25 lb. of weight (push down with hands) enough to visibly flex the nose landing gear leg.

8) Check the NLG rigging using the ITL001714 REV B tool
   a. If drag link falls within the “in tolerance” range, repeat Steps 2-8 an additional 24 times for a total of 25 times.
   b. **If not,** and nose landing gear as not been re-rigged in step 1, rig the NLG actuator to the “nominal range” using ITL001714 Rev B and ICON A5 Maintenance Manual revision C4 Section 14.7.2.9 and repeat steps 2-8 of this section, 24 additional times.
   c. If at any time the NLG has been re-rigged once during this process and the drag link falls outside the “in tolerance” range during the 25 NLG cycles, the actuator stop switch is not functioning correctly and needs to be replaced. Remove the NLG actuator and send back to ICON for repairs.

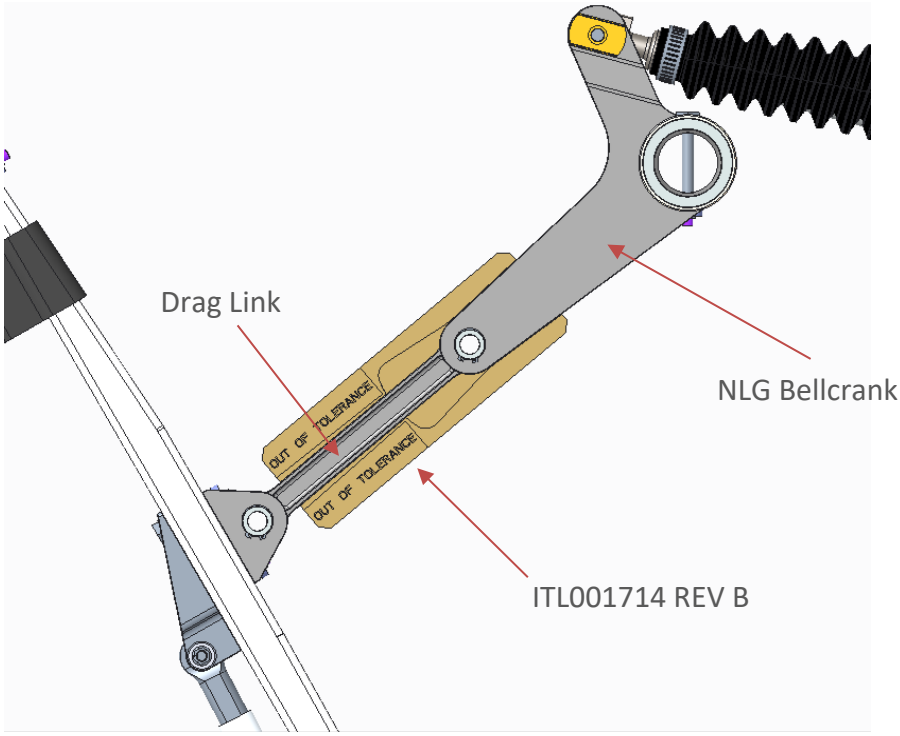


Figure 2: ITL001714 Rev B indexed on NLG bellcrank showing the drag link within the “in tolerance” range.

SERVICE BULLETIN

SB-032420-A

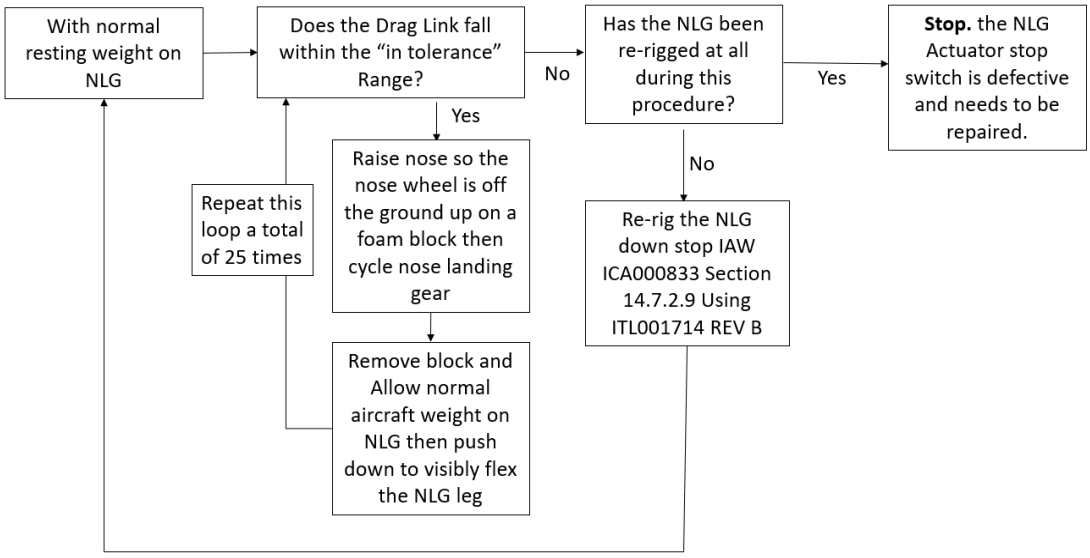


Figure 4: Summarized flow chart of the NLG rigging test procedure using ITL001714 REV B

Nose Landing Gear Rigging Check (Aircraft Serial Numbers 00012, 00021 and subsequent)

1) With normal resting aircraft weight on the NLG check:
   a. If a .163 in rig pin can be inserted into the NLG rigging hole (figure 2), move to step 2 of this section.
   b. If **not,** the nose landing gear needs to be re-rigged using a .1885-.1875 rigging pin in accordance with the ICON A5 Maintenance Manual Revision C4 Section 14.7.2.10
2) Lift the aircraft nose enough to slide a block or equivalent under the keel to allow the nose wheel to be approximately 1" or greater off the ground.
3) Ensure the 15 amp Main landing gear fuse is removed.
4) Turn the Master switch on.
5) Move the landing gear handle to the up position allow the NLG to move to the full up position and stop.

> **Note:** The landing gear position indication will still show in transit during this test since the main landing gear is still down. This is normal for this inspection.

6) Move the land gear handle down allow the NLG to come full down and stop.
7) Lift the aircraft nose enough to remove the block or equivalent from under the keel and allow weight back on to the nose wheel. Push down on the nose to preload the landing gear then release.

Note: It is important to preload the nose briefly by pushing down with approximately 25 lb. of weight (push down with hands) enough to visibly flex the nose landing gear leg.

8) Check the NLG rigging using the .163 in rig pin
   a. If a .163 in rig pin can be installed into the NLG rigging hole, repeat Steps 2-8 of this section an additional 24 times for a total of 25 times.
   b. **If not,** and nose landing gear as not been re-rigged in step 1, rig the NLG actuator using a .1885-.1875 rigging pin in accordance with the ICON A5 Maintenance Manual revision C4 Section 14.7.2.10 and repeat steps 2-8 of this section, 24 additional times.

If at any time the NLG has been re-rigged once during this process and .163 in. rig pin is unable to be inserted during the 25 NLG cycles, the actuator stop switch is not functioning correctly and needs to be replaced. Remove the NLG actuator and send back to ICON for repairs.

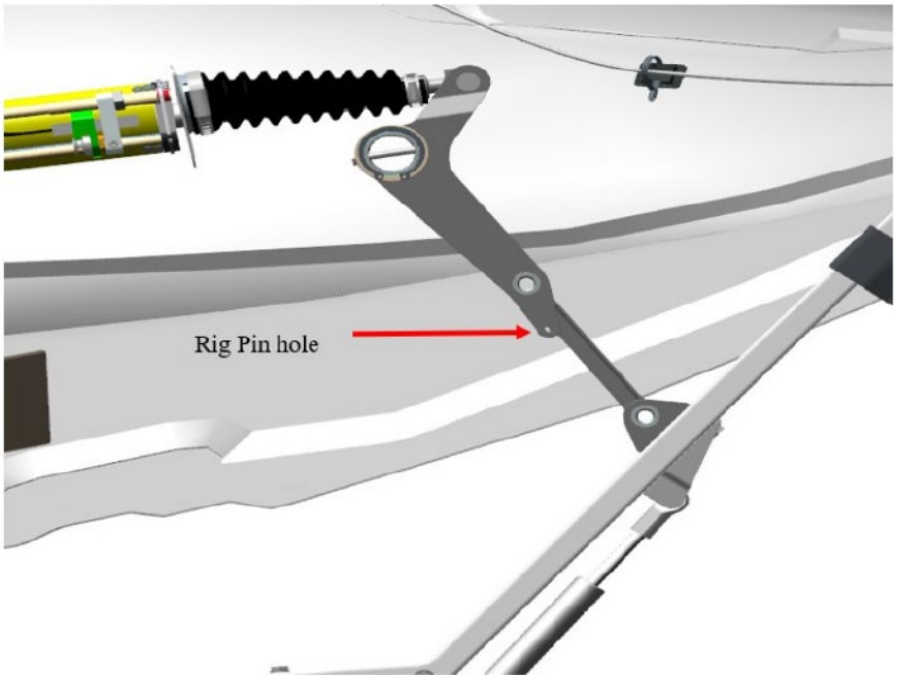


Figure 4: Location of the NLG rig pin hole.

SERVICE BULLETIN

SB-032420-A

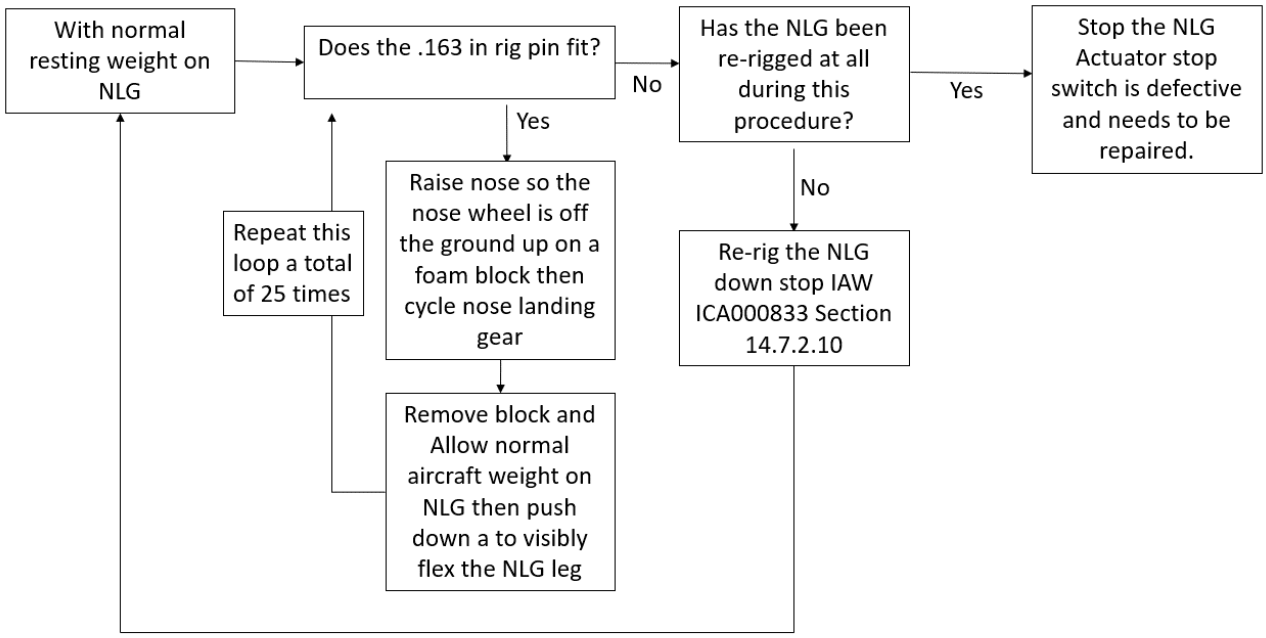


Figure 5: Summarized flow chart of the NLG rigging test procedure using a rig pin.

Make the following logbook entry:

"The corrective action of Service Bulletin SB-032420-A (Recurring Inspection of the Nose Landing Gear Actuator Rigging and NLG actuator stop switch inspection) has been complied with (ref. FAA Exemption 10829B)".

If you have questions, comments, or concerns about this Service Bulletin and/or if you are no longer owner/operator of this aircraft, please forward this information to the present owner/operator and notify ICON Aircraft at:

ICON Aircraft
2141 ICON Way
Vacaville, CA 95688
(855) FLY-ICON or (707) 564-4000
support@iconaircraft.com

Please include the aircraft registration number, serial number, your name, and if known the contact information of the new owner/operator.