





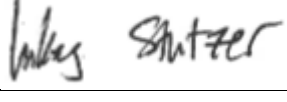

MAINTENANCE MANUAL

ICA and II

STC number:
ST02078AK-A

Référence document :

MM-STC-018

Révision	Date	Subject	Status	Signature du responsable conception
IR	21 Feb. 2018	Initial Revision		
A	18 Jun. 2018	Updates to installation section based on structural test results		
B	26 Jun. 2018	Minor updates per ACO comments		
C	27 Jun. 2018	Additional detail per ACO		
D	06 July 2018	Removed paragraph in section 1 which described provisions for checking straightness of fuselage.		

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1 GENERAL

This manual defines the installation and maintenance procedures for the BERINGER Alaskan Landing Gear on PA-18 type Aircraft. In addition to the information in this document, use common sense.

1.1 *Approved Model List*

Aircraft eligible for this installation are as listed on the AML associated with the STC.

1.2 *Weight and Balance*

The Beringer ALG weighs 36.4 LBS. The aircraft mechanic should make the appropriate weight and balance changes to the aircraft.

1.3 *Tools*

Tools necessary for installation

1. Wrenches and/or sockets (3/8", 7/16", 1/2", 9/16", 19mm or 3/4")
2. Mallet
3. Needle nose pliers
4. Torque wrench
5. Grease gun
6. High pressure pump and gauge (provided with kit)

1.4 *Cleaning*

The aluminum parts are anodized to provide corrosion protection. This thin coating does not protect against cleaning agents with any acidity or agents with alkalinity greater than 9. These type of agents may damage or remove the protective anodizing. For cleaning the brake parts we recommend using only soap and water.

1.5 *Torque*

Unless otherwise specified, all fasteners should be torqued per AC 43.13-2B Acceptable Methods-Aircraft Alterations.

1.6 *Reference Documents*

Unless otherwise specified, all install instructions, maintenance manuals, approval documents, etc., mentioned in this writing refer to the listed text or the most current FAA approved revision.



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1.7 Limitations

Skis as defined on the type certificate data sheet are not eligible for installation with the Beringer ALG.

When configured with the 1.5” axle as defined in section 2.5.1 below, must use one of the following wheel and brake kits:

Alaskan Bushwheel part number: ABI-199-62 or ABI-199-62A

Cleveland part number: 199-62 or 199-62A

When configured with the Beringer tapered axle as defined in section 2.5.2 below, must use Beringer wheel RF-15.2 with brake EA-003.2N as defined by ETSO authorization EASA.21O.10063244 and install per the associated user manual UM-ETSO-008.

Tire options are not changed with this STC and remain as defined on the type certificate data sheet and as allowed by 6” wheel installations. Other tires may be installed using separate approval as deemed compatible by the installer.

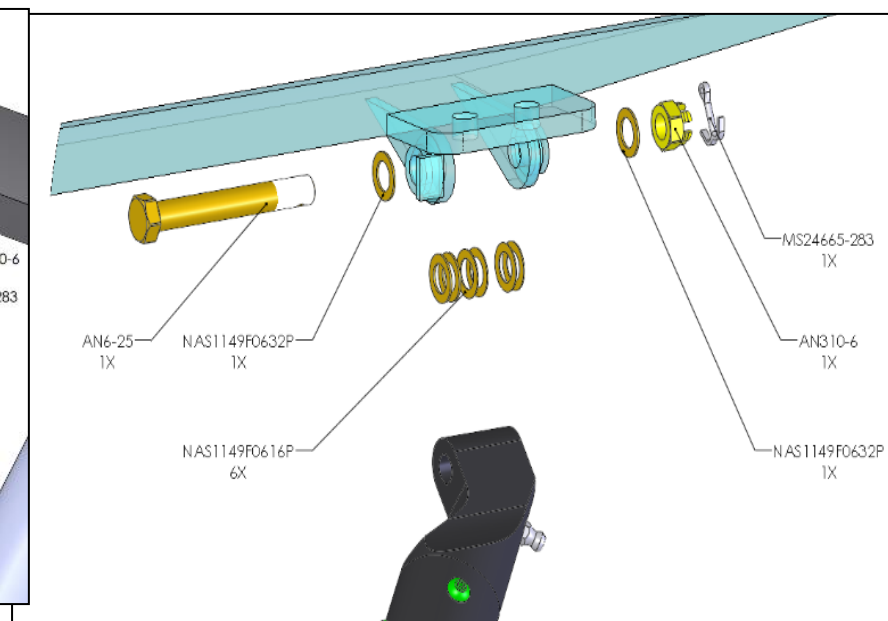
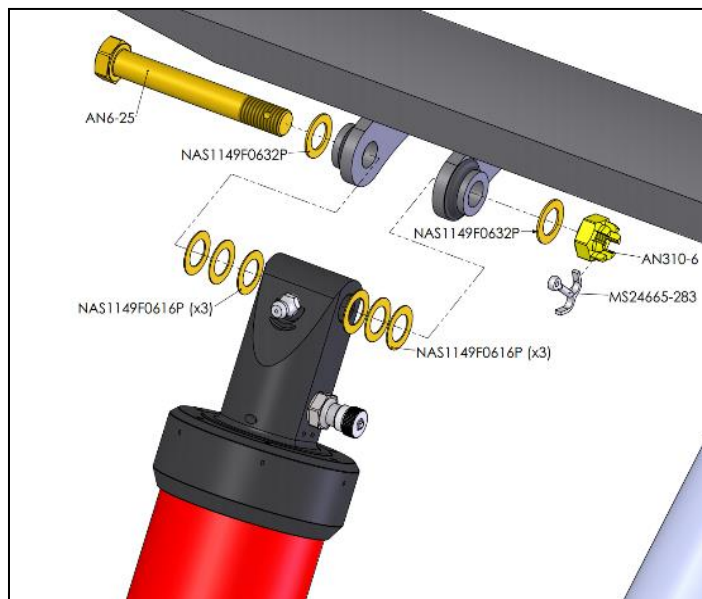
2 REMOVAL and INSTALLATION

2.1 Remove Original Landing Gear

Lift the aircraft so that both wheels are suspended.
Remove the original landing gear per the manufacturer's instructions. The cabane vee should not be removed.

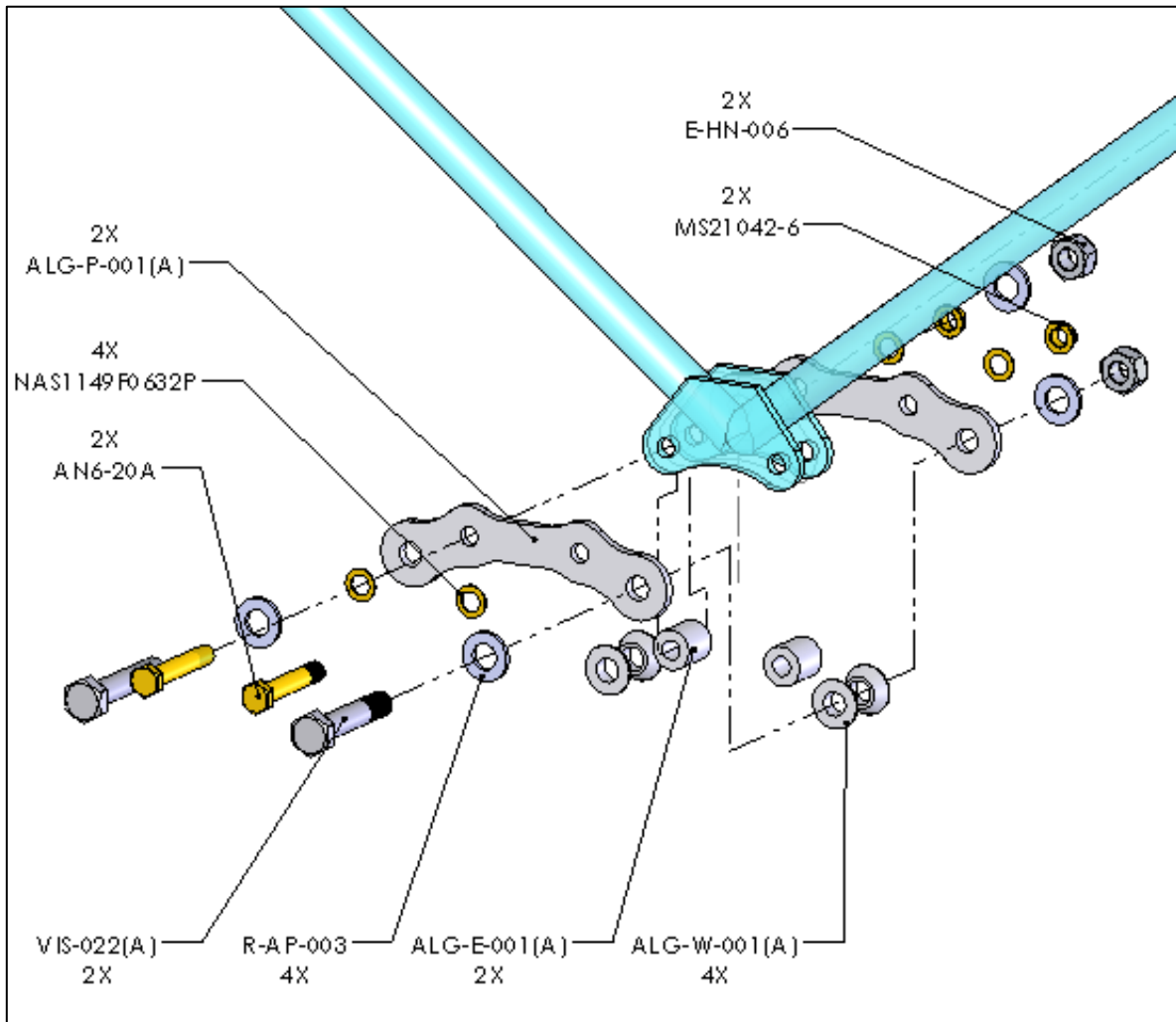
2.2 Installation of One Side

1. Locate the either the left or the right landing gear assembly: LG-T-006L or LG-T-006R.
2. Use the hardware included to install to the aircraft as shown in the two images below. Use or adjust washers as necessary.
3. Torque the AN5-15A fastener circled in the adjacent picture.
4. Apply grease using the grease fittings (4Places)
5. The picture to the right shows what the installation should look like at this point.
6. Repeat steps 1-4 for the opposite side.



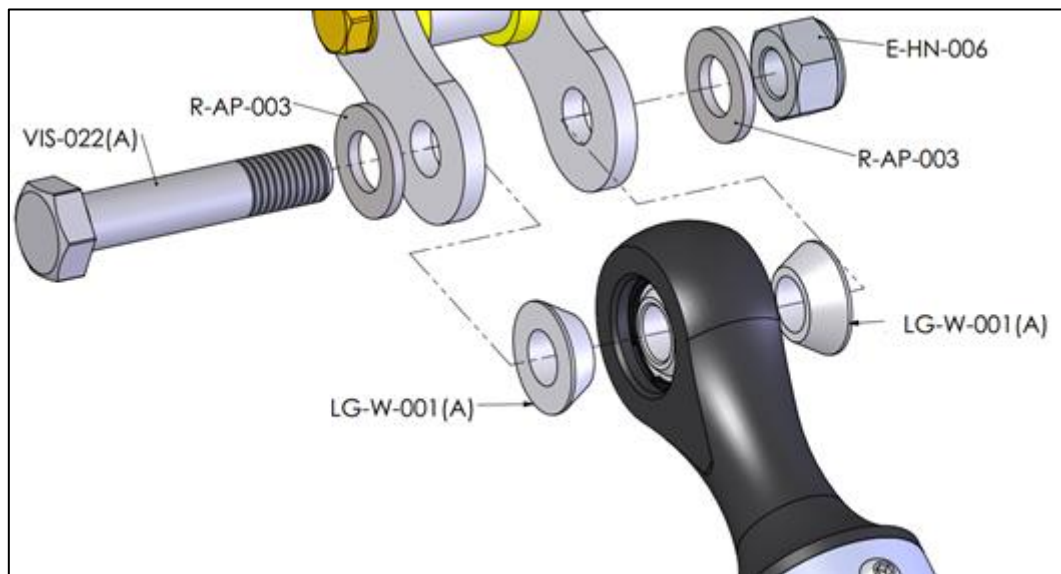
2.3 Installation of Cabane Plate Assembly

1. Connect the cabane plate assembly to the existing cabane vee as shown in the image below.
Do not tighten VIS-022, this will be done in the next step.



2.4 Installation of the Traction Leg

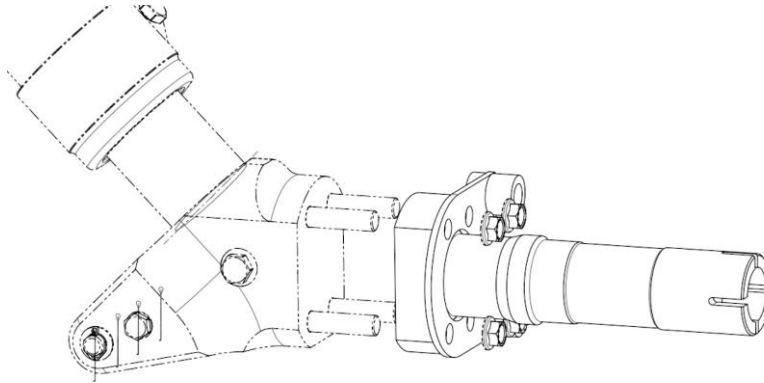
1. Connect the traction leg to the cabane plate assembly with the 2 conical spacers LG-W-001 on each side of the ball joint oriented as shown in the picture below.
2. Torque the bolt, VIS-022, to 62 ft-lbs (84 N.m).
3. The picture to the right shows what the installation should look like at this point.
4. Repeat step 1-2 for the opposite side.



2.5 Installation of Axle

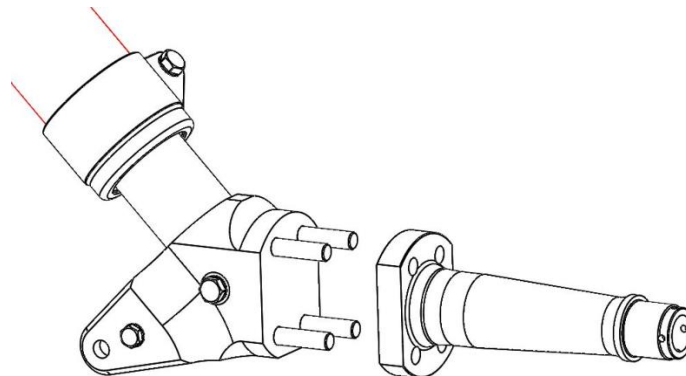
2.5.1 Axle type 1" 1/2 axle (with ABI or Cleveland wheels and brakes):

1. Only the following wheel and brake kits can be installed with this axle:
Alaskan Bushwheels part number: ABI-199-62 or ABI-199-62A
Cleveland part number: 199-62 or 199-62A
2. Install the axle, anchor plate, and brake caliper together onto the studs as shown in the picture below(caliper not shown in picture).
3. Torque the MS21042-6 nuts.
4. New axle nuts should be used each time the axle is removed for servicing or replacement.
5. Repeat steps 1-4 for the opposite side.



2.5.2 Axle type BERINGER Tapered Axle (with BERINGER wheel and brake assembly) :

1. Mount the axle onto the studs as shown in the picture below.
2. Torque the MS21042-6 nuts.
3. New axle nuts should be used each time the axle is removed for servicing or replacement.
4. Repeat steps 1-2 for the opposite side.
5. Install Beringer wheel RF-15.2 with brake EA-003.2N as defined by ETSO authorization EASA.210.10063244 and per the associated user manual UM-ETSO-008.



3 Shock Pressure

1. Use only a high-pressure shock pump. The aircraft must be lifted so that the landing gear is unloaded.
2. Thread the fitting of the pump onto the valve on the shock.
3. Inflate the shock to 270 Psi (18 bar)
4. Disconnect the pump
5. Set the aircraft on the ground and record the distance of extension of each chrome tube at the aircraft weight for future reference.

Note:

Do not reduce air pressure with the shock weighted. Oil can potentially be forced out of the valve.



Do not adjust pressure on a bench. The gear must be relatively vertical and unloaded during pressure adjustments or oil can potentially be forced out of the valve.



4 Conditioning Procedure

The conditioning procedure consists of 20 normal landings and associated taxi operations. After this is completed, lift the plane and re-inflate the shock to 270psi per section 3 above if necessary.



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5 Continued Airworthiness

5.1 100hr and Annual

Grease all grease fittings.

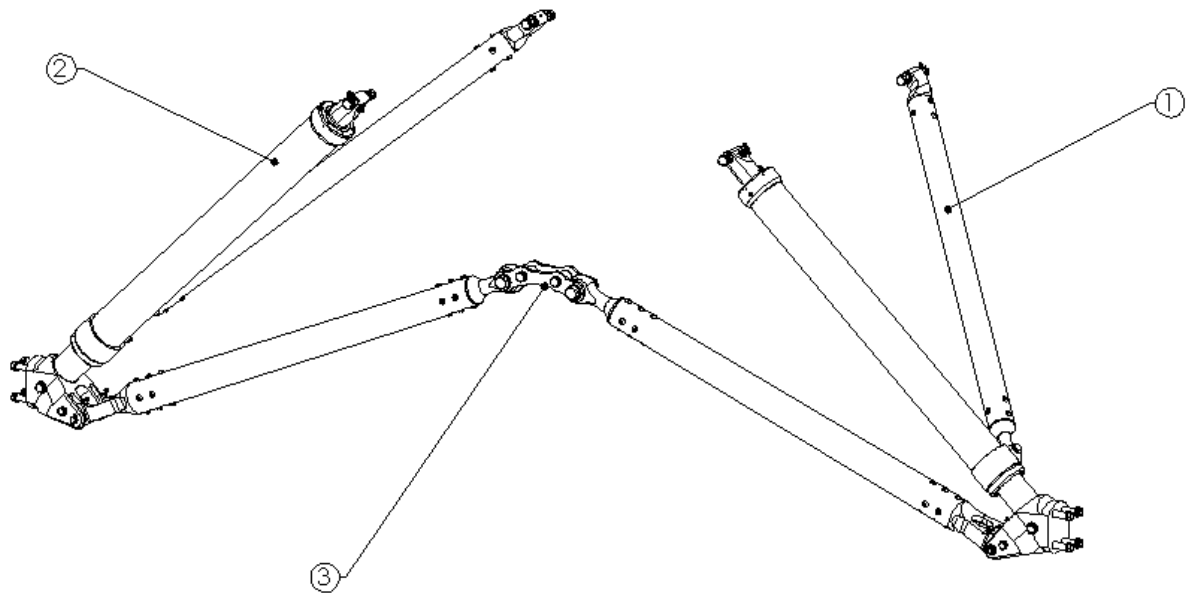
Check shock absorber chrome tube for any marks, scratches and corrosion pitting. Contact the manufacturer if any defects are found.

Check shock absorber for leaks.

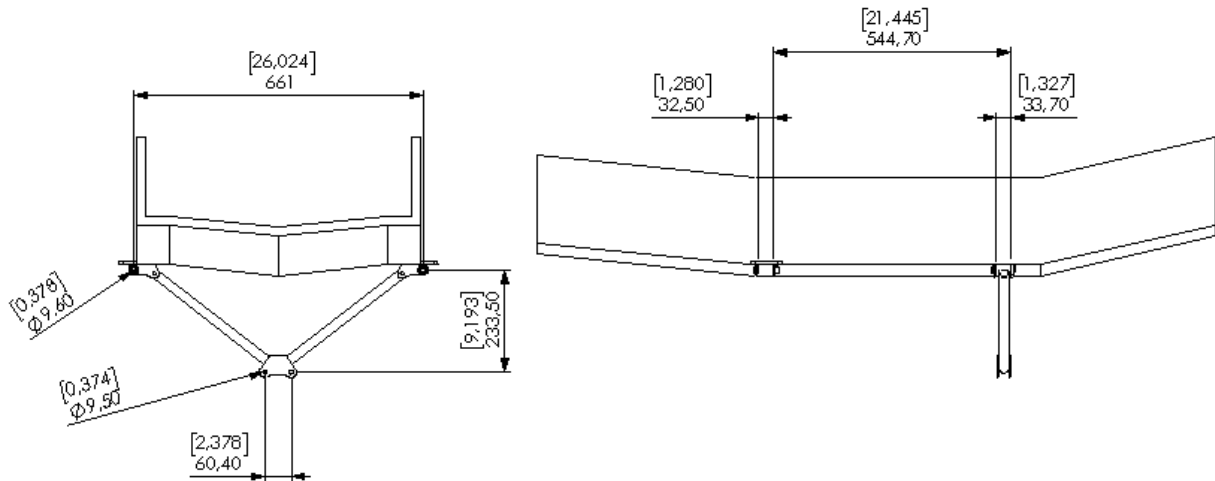
Inspect fasteners for and the corresponding attach points for excessive play. If found, check if the fittings are ovalled. Ovalled fittings will require replacement of the component or bushing if applicable.

6 Illustrated Parts

6.1 Complete BERINGER Alaskan Landing Gear Assembly

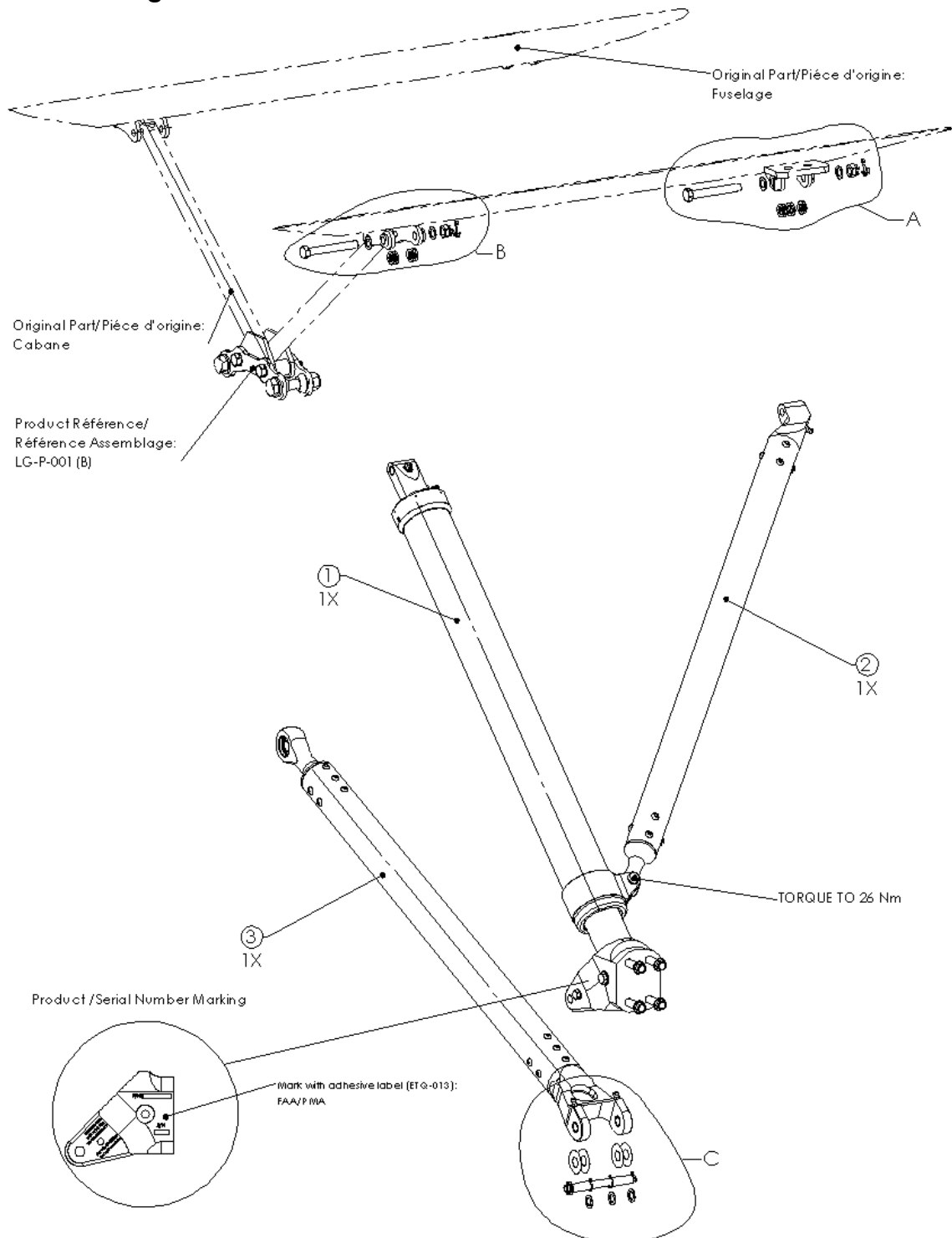


PA-18 FUSELAGE ATTACH POINTS SHOWN FOR REFERENCE ONLY



3	LG-P-001(8)	CUB_Cabane Plate Assy / Ensemble Platine cabane	1
2	LG-T-006R(8)	CUB_right Landing Gear / Train Droit	1
1	LG-T-006L(8)	CUB_left Landing Gear /Train gauche	1
REP	PART NUMBER	DESCRIPTION	QTY

6.2 Left Landing Gear





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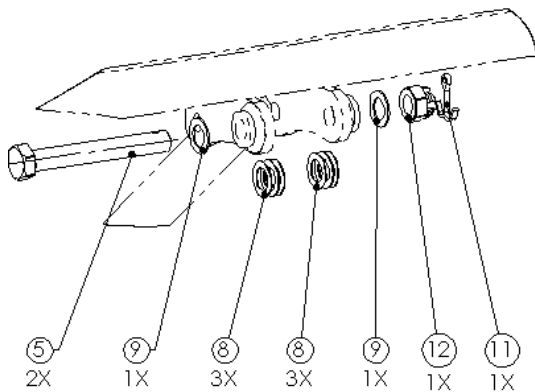
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6.3 Left Landing Gear continued...

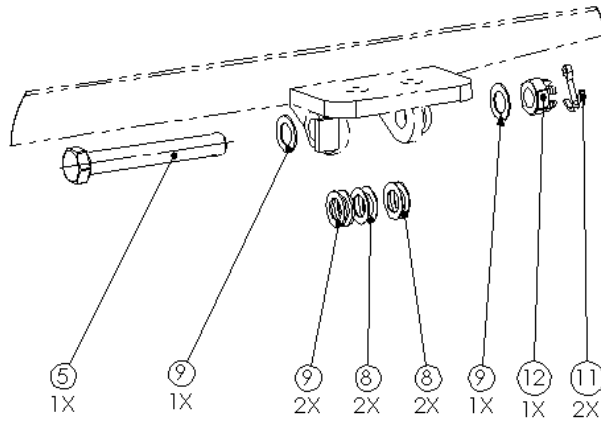
SHOCK BOLT ASSY/VISSERIES AMORTISSEUR

DÉTAIL B
ECHELLE/SCALE 2 : 5



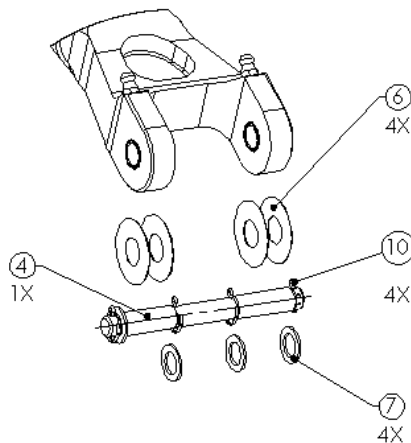
STIFFENER BOLT ASSY/VISSERIES BILETTE

DÉTAIL A
ECHELLE/SCALE 2 : 5



TRACTION LEG BOLT ASSY/VISSERIES JAMBE DE TRACTION

DÉTAIL C
ECHELLE/SCALE 2 : 5



12	AN310-6	Castle Nut/ Ecrou à creneaux AN6	2
11	M524665-283	Cotter Pin / Goupille fendue Ø2.38x19.05	2
10	L-V-007	Cotter pin/ Goupille fendue 2x20	4
9	NAS1149F0632P	Washer/Rondelle AN6 Std	6
8	NAS1149F0616P	Washer/Rondelle AN6 fine	10
7	R-C-L-008	Washer/Rondelle 10.1x16x1	4
6	R-C-L-007	Washer / Rondelle 12.2x29x0.2	4
5	AN6-25	AN6 Axe bolt/vis	2
4	ALG-A-001(B)	Axis / Axe compas 10	1
3	LG-J-010(B)	CU8_Traction leg / Jambe de traction	1
2	LG-B-001(A)	CU8_Trailing Gear Leg/ Bielle Arrière	1
1	LG-A-001(B)	CU8_Shock Assy/Amortisseur	1
REP	PART NUMBER	DESCRIPTION	QTY.

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7 TROUBLESHOOTING

This paragraph provides information necessary to identify, diagnose and correct potential problems which may occur with the Beringer Alaskan Landing Gear.

TROUBLE	PROBABLE CAUSE	CORRECTION
Excessive oil leak on the shock absorber	Chrome tube is damaged	Replacement or repair by manufacturer
	Seals are worn	Replacement or repair by manufacturer
Fasteners have excessive play	Under torqued fasteners	Inspect and re-torque fasteners per the instructions in this document.
Shock absorber losing pressure	Valve core leak	Manufacturer replacement of valve core.
	Change of environmental conditions	Inflate the shock to 270 PSI.
	Un-noticed oil leak. If continually needing to add air to maintain 270psi, contact manufacturer.	Replacement or repair by manufacturer.