



**Instructions for Continued
Airworthiness**

Project Reference
STC-011

ICA-STC-011







REV. 02

Instructions for Continued Airworthiness and Installation Instructions

for BERINGER wheels and brakes on
LAK 17 A aircraft

Document Reference(*)
ICA-STC-011

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STC-011

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(*) I.a.w. the numbering system defined in the APDOA manual.

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1 LOG OF REVISIONS

Rev. No	Rev. date	Description
00	12.01.15	Initial edition
01	03.07.17	Update of new wheel P/N
02	19 Oct. 2021	Administrative change: MM-STC-011 becomes ICA-STC-011. New maintenance document structure and addition of SensAIR system as an option.

2 INTRODUCTION

2.1 Purpose of the document

This manual gives removal and installation instructions of BERINGER wheels and brake system STC on the LAK 17 A aircraft and guide you toward BERINGER maintenance system for continued airworthiness instructions.

NOTE: These BERINGER products have been fully tested and certified on the aircraft.

NOTE: Wheels and brake assemblies are TSO C26/ETSO C26 approved, for detailed maintenance and overhaul procedures, please refer to the Servicing Manuals of BERINGER, in §6.

CAUTION: Substitution of parts by other than originally certified parts may cause failure of brake system. BERINGER quality process assures that replacement parts are produced and controlled with the same quality level as originally certified.

2.2 Applicable Certification Requirements

- CS-22
- FAR part 23

2.3 Effectivity

Type: LAK

Models: LAK 17 A, LAK 17AT, LAK 17 B FES

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3 GENERAL

3.1 Components list

This STC scope includes Main wheels, brakes (master cylinder, caliper, lines...) and axles as replacement parts to original equipment. All the assemblies are listed in NP-STC-011, at the last revision.

For the assembly detailed composition to piece part, refer to the BERINGER Illustrated Part Catalogues (IPC) that are available in the maintenance documents MM-00-001, sorted per product family, see §6.

In option, BERINGER pressure measurement device is available for this STC:

Assembly / Product Name	BERINGER Reference number
5" wheel SensAIR (option)	TP-005

3.2 Weight and Balance

BERINGER Assembly Name	Weight (Kg)	Weight (Lbs)
Main wheel and brake	2.431	5.359

(Weight is given without the tire and per wheel)

Refer to local regulation requirements to determine if mass and balance must be updated.

3.3 Tires

Wheel	Size	Type	Ply	Pressure max (loaded)
Main	5.00-5	Tubeless	8	72 PSI

3.4 Torque

All torques for BERINGER product assembly are specified in the installation instructions in this document or in the maintenance working cards.

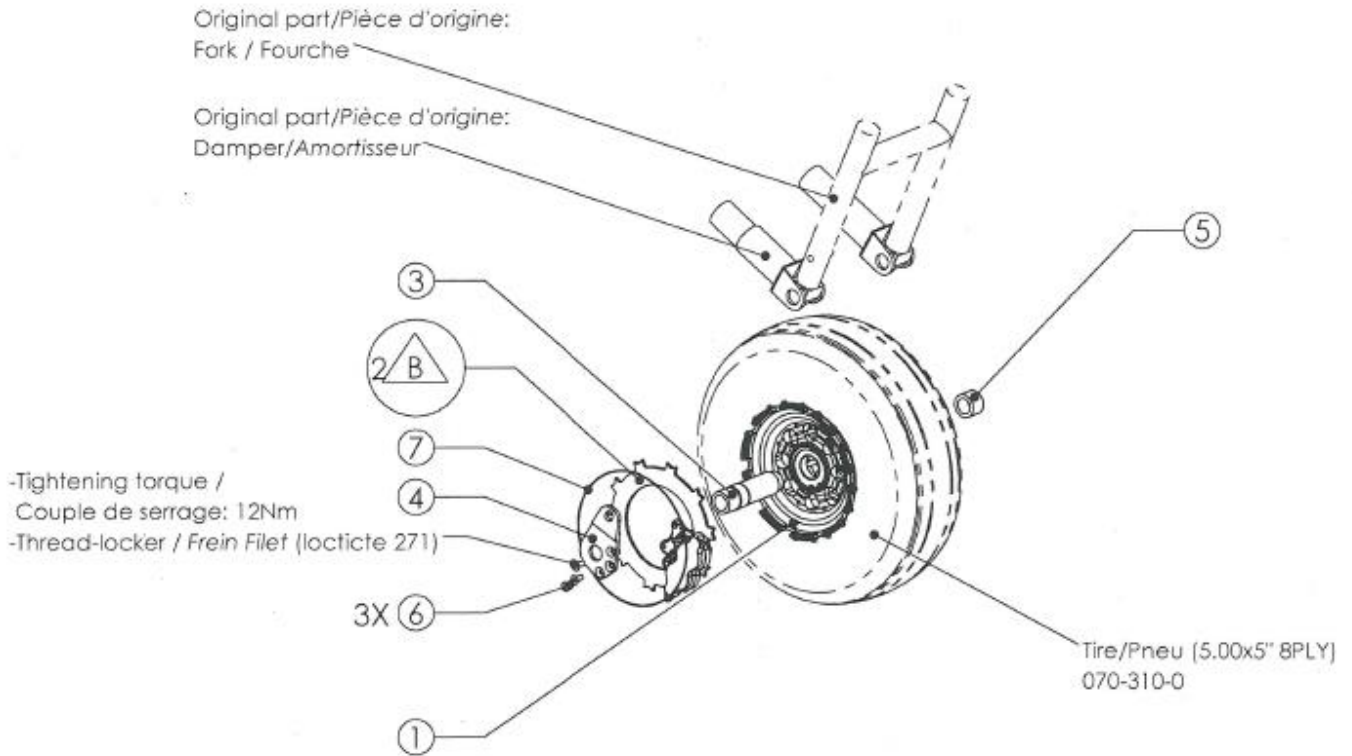
For interface parts with aircraft, unless otherwise specified by BERINGER, all fasteners should be torqued as per Aircraft Manual.

3.5 Standard product and tools

- Tire lubricant : Tire lubricant or liquid soap
- Hydraulic fluid : DOT 4
- Tire mounting tool: Refer to MM-02-002.
- Torque wrench
- Paint marker
- Bearing grease

4 REMOVAL AND INSTALLATION

4.1 Wheel and brake



7	ZPA02	Safety Wire/Fil a freiner	1
6	V-FHC-008	M6-16 (Q12.9) Screw/Vis	3
5	AV-LAK-003	LAK-17A & LAK-17AT 5.00x5" Std_Bearing Spacer / Entretoise Rlt	1
4	AV-LAK-002	LAK-17A & LAK-17AT 5.00x5" Std_Caliper Plate / Platine Etrier	1
3	AV-HPH-003	HPH 5.00x5" Std_Sleeve / Axe	1
2	EA-006E	2P27-6-3.2 (T1 M6 DOT4) Brake Caliper / Etrier de frein	1
1	RF-019	5.00x5" Std (25-30) Main Wheel Assy/ Roue Freinée	1
REP	PART NUMBER	DESCRIPTION	QTY.
AV-LAK-020			

Remove the old system:

- wheel and brake
- axle
- brake lines or cable
- brake lever

NOTE: The axle bolt is not changed and remains the same.

Installation of the new system:

Wheel and tire are already mounted and tested

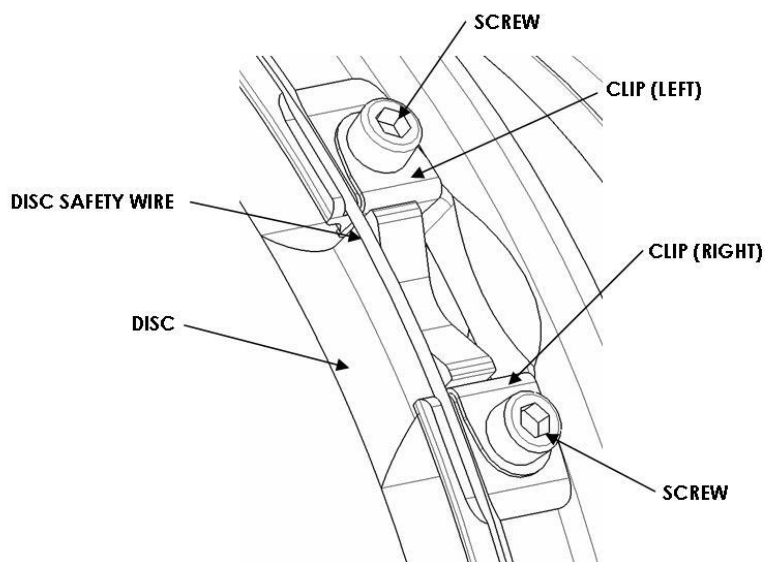
- a) Insert the wheel axle AV-HPH-003 inside the wheel
- b) Insert the disc into the caliper: do not disassemble the caliper
- c) Place the disc and caliper into the wheel, locate the caliper plate onto the axle.
- d) Present the entire assembly in the landing gear fork
- e) Insert the bearing spacer AV-LAK-003 and then insert the axle bolt
- f) Place the washer and nut, torque tighten to the appropriate torque

NOTE: Check that the caliper is not moving
Check that the wheel has no axial play

- g) Place the safety wire all around the disc and twist it on 8mm.

CAUTION: The safety wire must be in place to prevent the disc from going out the slots

NOTE: Check that the wheel is turning freely by hand





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4.1 SensAIR installation

SensAIR system is an optional device located inside the tire, around the rim.

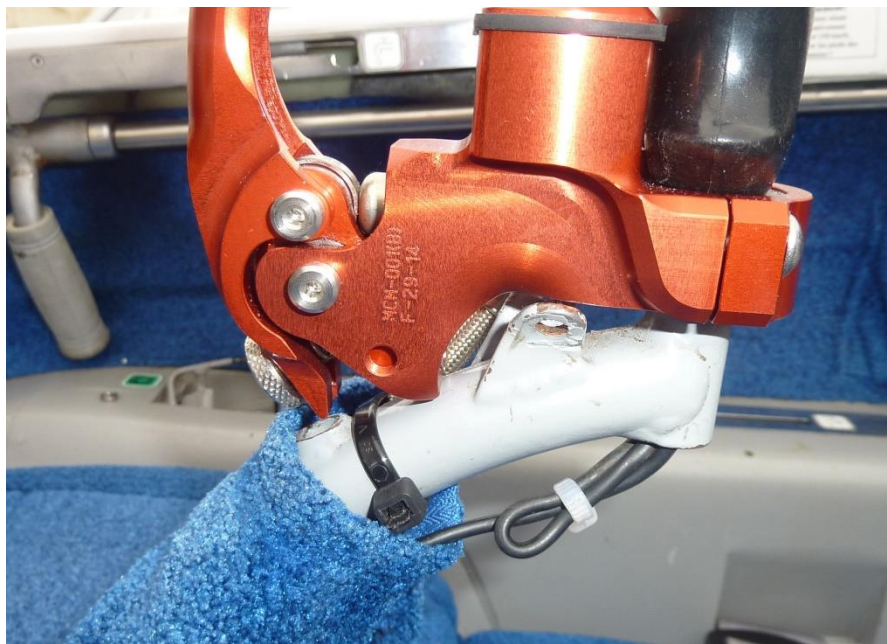
Refer to SM-08 document to get installation procedure, available on BERINGER Website.



4.2 Master Cylinder

Remove the old system

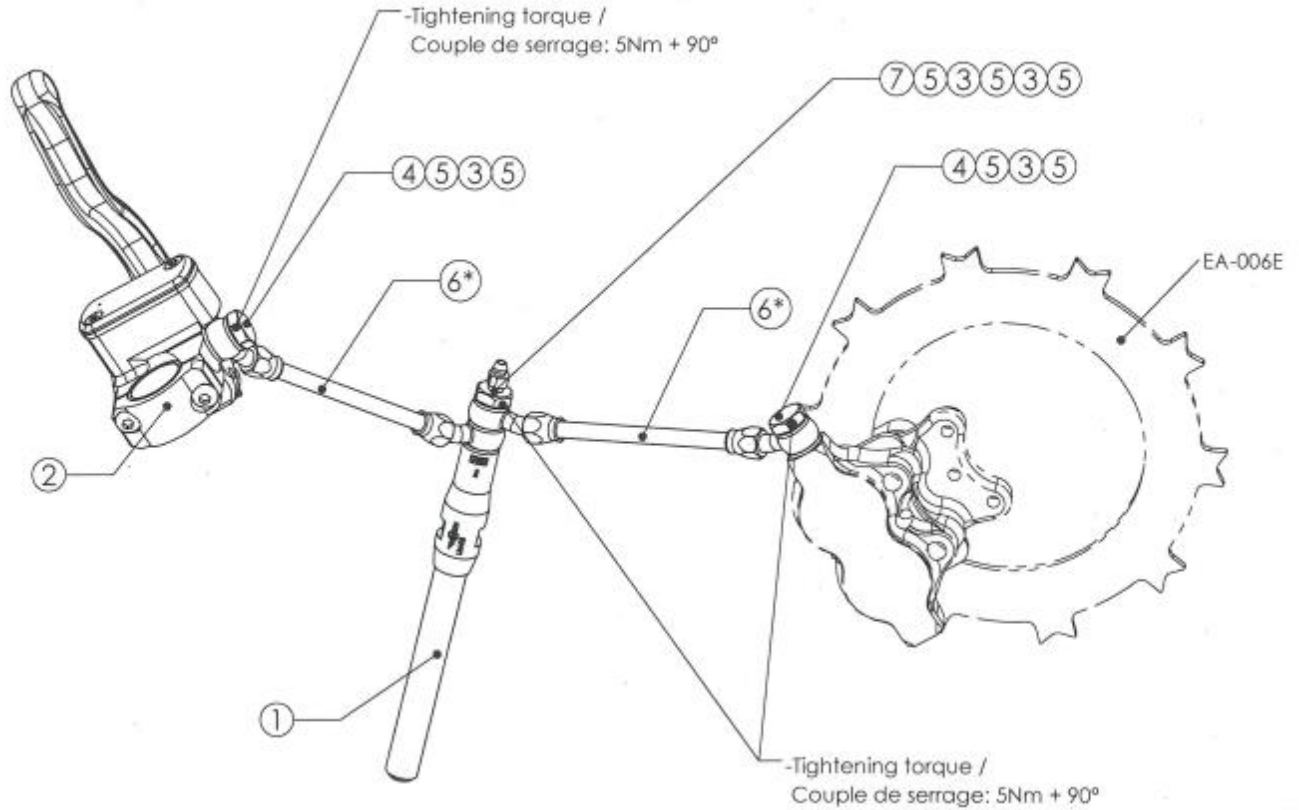
- Fix the master cylinder on the stick, use the aluminium spacer
- Position the master cylinder as on the picture next.
- Shorten the plastic grip by around 2cm to shape it around the master cylinder.
- Torque the 2 screws to 5 N.m



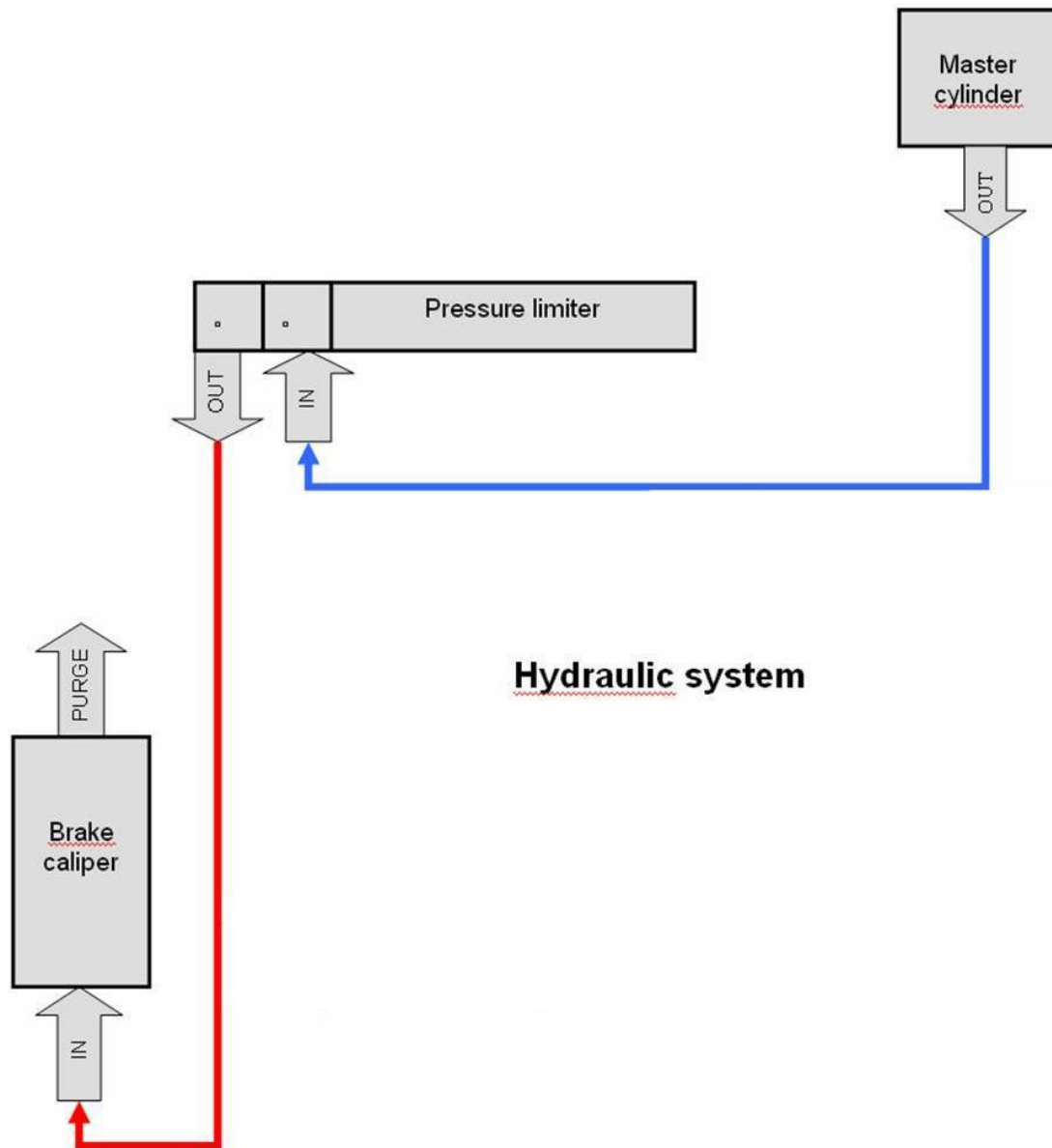
- Check carefully that the lever is not touching anything when moving the stick in all positions

NOTE: The lever of master cylinder can be adjusted in distance with the thumbwheel at the lowest point of the master cylinder

4.3 Pressure limiter – Brake lines



7	HYD-046P	Dual Banjo Bolt With bleed / Vis Banjo Double Avec Purge	1
6	HYD-032	Stainless steel brake hose/Durite tressée non gainée	-
5	HYD-005B	Copper Seal/ Joint cuivre	7
4	HYD-003P	M10x1_Banjo Bolt/ Vis Banjo	2
3	HYD-002OP	Steel fitting 20° /Banjo 20° Acier	4
2	MM-001E	Hand Master Brake Cylinder/ Maitre Cylindre de Manche	1
1	LM-003E	35 Bars (DOT 4)_Pressure limiter / Limiteur	1
REP	PART NUMBER	DESCRIPTION	QTY.



- a) Remove old brake lines and cables
- b) Increase the holes diameter to 8mm for the new lines and place the brake line in the same place as the original cable.
- c) Make the two brake lines to the appropriate length as per the hydraulic fitting assembly procedure. Refer to the BERINGER procedure: MM-00-002 Hydraulic lines available within BERINGER maintenance document, see §6.
- d) Place the brake lines and torque tighten the banjo bolts to 5Nm + 90° (44in.lbs + 90°). Do not twist the brake lines
- e) Use the plastic clamps to fix the brake lines
- f) Fix the pressure limiter with plastic clamps to the cables in the back of the fuselage

WARNING: A wrong positioning of brake lines may block the controls, make sure that all is positioned and fixed properly with no interferences with the controls.

- g) Fill the system from the caliper with brake fluid **DOT4** and only **DOT4** (yellow color used in cars or motorbikes). All other type of fluid is forbidden.

CAUTION: Using another fluid will damage the seals.

If red or green mineral oil has been used, all the parts must be sent back to Beringer to replace the seals

NOTE: To bleed the system properly it is recommended to use a bleeder pump.
Do not try to fill the reservoir and pump, it will not work. Use a bleeder pump or a syringe and push from the caliper.

- h) Place the bleeder down as per the picture below:



5 INITIAL USE

BERINGER brakes need to be bled and conditioned prior to use.

For procedure instructions, refer to the following manuals available on BERINGER website:

- BRAKE BLEEDING procedure MM-00-003
- BRAKE CONDITIONING procedure MM-01-002

Completing the procedure conforms the brakes to the STC requirements. However, note that the brake performance will continue to improve during the first few hours of use.

6 INSTRUCTIONS FOR CONTINUED AIRWORTHINESS

All instructions for continued airworthiness are provided through the Servicing Manuals (SM) and Maintenance Manual (MM) of BERINGER.

- The Servicing Manuals (SM) sums-up the parts replacement scheme, the maintenance intervals, troubleshooting and the Maintenance Working Cards to be used for each BERINGER assembly.
- The Maintenance Manual (MM) describes each maintenance step for all BERINGER products.

Refer to the maintenance guide **SM-00** for **general guidance**.

The SM breakdown structure is as follows:

Servicing Manual Reference	Product Type	Product Reference
SM-01	Brake Assembly	EA-xxx
SM-02	Nose/Tail wheel	RA-xxx
SM-02	Main wheel	RF-xxx
SM-03	Control-stick Master-Cylinders	MM-xxx
SM-03	Longitudinal Master-Cylinders	MP-xxx
SM-04	Parking Brake	FP-xxx
SM-05	Brake Pressure regulator	RE-xxx
SM-06	Brake Pressure limiter	LM-xxx
SM-07	Shock Wheel	LL-xxx
SM-08	SensAIR device	TP-xxx
SM-09	Tyre 5x2.00-3.7 & 6x2.00-3.7	PAR-xxx
SM-10	Carbon Fairing	CR-xxx

All documents are all available on:



BERINGER website: www.beringer-aero.com/Support
Go to Support section.

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7 ASSOCIATED DOCUMENTS

Document reference	Document title
NP-STC-011	Part Nomenclature
MM-00-002	Hydraulic lines procedure
MM-00-003	BRAKE BLEEDING procedure
MM-01-002	BRAKE CONDITIONING procedure
SM-00	BERINGER PRODUCTS MAINTENANCE GUIDE
SM-02	Wheels Servicing Manual

Refer to the latest revision.