

TITLE

HYDRAULIC POWER - STAINLESS STEEL TUBE ASSEMBLY INSTALLATION

EFFECTIVITY

MODEL	SERIAL NUMBERS
525A (CJ2)	-0001 thru -0244
525A (CJ2+)	-0300 and On

NOTE: If the marketing designation for your airplane does not appear in the EFFECTIVITY section, this service document does not apply to your airplane.

NOTE: SB525A-32-11 *Landing Gear - Brake Hydraulic And Pneumatic Tube Improvement* must be accomplished prior to or in conjunction with this service bulletin.

NOTE: Cessna-owned or Cessna-authorized Citation Service Centers are the only facilities that can complete this service bulletin.

REASON

Operating the airplane in certain environmental conditions can cause premature corrosion on the hydraulic tube assemblies located in the flap wells.

DESCRIPTION

This service bulletin provides parts and instructions to replace the aluminum hydraulic tube assemblies located in the flap wells with stainless steel tube assemblies.

COMPLIANCE

OPTIONAL. This service bulletin can be accomplished at the discretion of the owner.

A service bulletin published by Cessna Aircraft Company may be recorded as "completed" in an aircraft log only when the following requirements are satisfied:

- 1) The mechanic must complete all of the instructions in the service bulletin, including the intent therein.
- 2) The mechanic must correctly use and install all applicable parts supplied with the service bulletin kit. Only with written authorization from Cessna Aircraft Company can substitute parts or rebuilt parts be used to replace new parts.
- 3) The mechanic or airplane owner must use the technical data in the service bulletin only as approved and published.
- 4) The mechanic or airplane owner must apply the information in the service bulletin only to aircraft serial numbers identified in the "Effectivity" section of the bulletin.
- 5) The mechanic or airplane owner must use maintenance practices that are identified as acceptable standard practices in the aviation industry and governmental regulations.

No individual or corporate organization other than Cessna Aircraft Company is authorized to make or apply any changes to a Cessna-issued service bulletin, service letter, or flight manual supplement without prior written consent from Cessna Aircraft Company.

Cessna Aircraft Company is not responsible for the quality of maintenance performed to comply with this document, unless the maintenance is accomplished at a Cessna-owned Citation Service Center.

FLIGHT CREW OPERATIONS

No Changes

APPROVAL

Cessna received FAA approval for the technical data in this publication that changes the airplane type design.

This information is an amendment to the applicable maintenance manual.

MANPOWER**WORK PHASE**

Modification

MAN-HOURS

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MATERIAL - Cost and Availability

PART NUMBER	AVAILABILITY	COST
SB525A29-07-0	*	*
SB525A29-07-1	*	*

* Refer to the Manpower, Material - Cost and Availability, and Warranty sections in the attached *Service Bulletin Supplemental Data* sheet.

CONSUMABLE MATERIAL

In addition to the above kit(s), you must use the consumable materials that follow, or their equivalent, to complete this service bulletin.

NAME	NUMBER	MANUFACTURER	USE
Conical Seal	651-525-9004	Cessna Service Parts & Programs 7121 Southwest Boulevard Wichita, KS 67215	To repair leaking fittings.
Conical Seal	651-525-9006	Cessna Service Parts & Programs 7121 Southwest Boulevard Wichita, KS 67215	To repair leaking fittings.

CHANGE IN WEIGHT AND BALANCE

KITS	WEIGHT CHANGE	RESULTANT MOMENT	MOMENT/100
SB525A-29-07-0	+4.32 pounds	+1330.87 inch-pounds	+13.31 inch-pounds
SB525A-29-07-1	Negligible	Negligible	Negligible

REFERENCES

Cessna Model 525A Maintenance Manual

NOTE: To install stainless steel hydraulic lines on your airplane, you must get the engineering documents that follow. You must use the most recent revision and all of the applicable drawing change notices (DCN) for each engineering document.

DOCUMENT NUMBER	TITLE
6398018	Aircraft Mod - Hydraulic System

PUBLICATIONS AFFECTED

Cessna Model 525A Illustrated Parts Catalog

ACCOMPLISHMENT INSTRUCTIONS

1. Lift the airplane with jacks. (Refer to the Model 525A Maintenance Manual, Chapter 7, Lifting - Maintenance Practices.)
2. Apply external electrical power.
3. Connect a hydraulic ground power cart.
 - A. Adjust the hydraulic ground power cart to deliver 1,500 PSI and 6 gallons per minute flow rate.
4. Measure the landing gear and flap extension and retraction times.

NOTE: Do not perform Step 4 if the aluminum hydraulic line integrity is compromised.

- A. Make sure that the landing gear extends in less than 5 seconds and retracts in 5 seconds +1.0 or -1.0 second.
- B. Make sure that the flaps extend and retract within the times listed below:

Direction	Detent Position	Time in seconds	Tolerance in seconds
Extend	0° to 35°	12.5	+2.0, -2.0
Extend	35° to 60°	1.5	+0.5, -0.5
Retract	60° to 35°	5.5	+1.0, -1.0
Retract	35° to 0°	9.0	+1.0, -1.0

5. Make sure that the 35° flap position switch was not moved.
 - A. Move the flap handle to a position between the 35° detent and 60° detent.
 - B. Make sure that the flap move to 38° +1.0° or -1.0°.
 - C. Adjust the 35° flap position switch if necessary. (Refer to the Model 525A Maintenance Manual, Chapter 27, Flap System - Adjustment/Test.)
6. Extend the flaps to 60°.
7. Make sure that the landing gear is extended.
8. Disconnect the hydraulic ground power cart.
9. Prepare the airplane for maintenance.
 - A. Make sure that all switches are in the OFF/NORM position.
 - B. Disconnect electrical power from the airplane.
 - (1) Disconnect the airplane battery.

- (2) Disconnect external electrical power.
 - C. Attach maintenance warning tags to the battery and external power receptacle that have "**DO NOT CONNECT ELECTRICAL POWER - MAINTENANCE IN PROGRESS**" written on them.
10. Disengage the BRAKE SYSTEM circuit breaker on the left circuit breaker panel.
 11. Remove the access panels that follow: (Refer to the Model 525A Maintenance Manual, Chapter 6, Access Plates and Panels Identification - Description and Operation.)
 - 192B
 - 512DB
 - 522AB
 - 612DB
 - 622AB
 12. Depressurize the hydraulic system.

WARNING: The landing gear may release from the up and locked position if the landing gear emergency release cable is moved. The emergency gear release may be inadvertently moved when removing and installing the hydraulic lines. Accidental landing gear extension can be avoided if the landing gear is down and locked before the hydraulic lines are removed and installed.

13. Remove and discard the aluminum tube assemblies from the left wheel well, right wheel well, left flap well, and right flap well. (Refer to Cessna Engineering Drawing 6398018-5.)

NOTE: Record the position of each tube assembly where they pass through the clamp locations.

NOTE: Take pictures or map the routing of the hydraulic tubes to make installation easier.

WARNING: The landing gear may release from the up and locked position if the landing gear emergency release cable is moved. The emergency gear release may be inadvertently moved when removing and installing the hydraulic lines. Accidental landing gear extension can be avoided if the landing gear is down and locked before the hydraulic lines are removed and installed.

14. (Airplanes -0001 thru -0084.) Remove and discard the aluminum tube assemblies from the aft dry bay. (Refer to Cessna Engineering Drawing 6398018-5.)
15. Install the stainless steel tube assemblies in the left flap well. (Refer to Cessna Engineering Drawing 6398018-5.) (Refer to the Model 525A Maintenance Manual, Chapter 20, Tubing, Hose and Fittings - Maintenance Practices.)

- A. Record the position of the flap and speed brake hoses.

NOTE: The position of the hoses is important after they have taken a certain shape or set. The hoses could fail prematurely if they are removed and installed in a different position that opposes their shape or set. The shape or set can be affected by rotating the end fittings to a different position. Make sure that the hoses are installed in the same position as when they were removed.

- B. Cessna offers the suggestions that follow to help make the installation easier.
 - Follow the tube routing on the Cessna Engineering Drawing 6398018-5.
 - Install the 6327012-43 (Gear Extend), 6327012-45 (Gear Retract), and 6327012-61 (LH Brake) Tube Assemblies first.
 - When installing the stainless steel lines it may be necessary to start inserting the stainless steel lines in the flap well through an additional rib(s) either inboard or outboard of the final location.
 - Install the stainless steel tube assemblies from inboard to outboard.
 - Use 651-525-9004 and 651-525-9006 Conical Seals to repair any leaks instead of exceeding the torque specification.
- C. Torque all tube assembly fittings. (Refer to the Model 525A Maintenance Manual, Chapter 20, Tubing, Hose, and Fluid Fittings - Maintenance Practices.)

WARNING: The landing gear may release from the up and locked position if the landing gear emergency release cable is moved. The emergency gear release may be inadvertently moved when removing and installing the hydraulic lines. Accidental landing gear extension can be avoided if the landing gear is down and locked before the hydraulic lines are removed and installed.

16. Install the stainless steel tube assemblies in the right flap well. (Refer to Cessna Engineering Drawing 6398018-5.) (Refer to the Model 525A Maintenance Manual, Chapter 20, Tubing, Hose and Fittings - Maintenance Practices.)
 - A. Record the position of the flap and speed brake hoses.

NOTE: The position of the hoses is important after they have taken a certain shape or set. The hoses could fail prematurely if they are removed and installed in a different position that opposes their shape or set. The shape or set can be affected by rotating the end fittings to a different position. Make sure that the hoses are installed in the same position as when they were removed.
 - B. Cessna offers the suggestions that follow to help make the installation easier.
 - Follow the tube routing on the Cessna Engineering Drawing 6398018-5.
 - Install the 6327012-44 (Gear Extend), 6327012-46 (Gear Retract), and 6327012-62 (RH Brake) Tube Assemblies first.
 - When installing the stainless steel lines it may be necessary to start inserting the stainless steel lines in the flap well through an additional rib(s) either inboard or outboard of the final location.
 - Install the stainless steel tube assemblies from outboard to inboard.
 - Use 651-525-9004 and 651-525-9006 Conical Seals to repair any leaks instead of exceeding the torque specification.
 - C. Torque all tube assembly fittings. (Refer to the Model 525A Maintenance Manual, Chapter 20, Tubing, Hose, and Fluid Fittings - Maintenance Practices.)

WARNING: The landing gear may release from the up and locked position if the landing gear emergency release cable is moved. The emergency gear release may be inadvertently moved when removing and installing the hydraulic lines. Accidental landing gear extension can be avoided if the landing gear is down and locked before the hydraulic lines are removed and installed.

17. Install the stainless steel tube assemblies in the left wheel well. (Refer to Cessna Engineering Drawing 6398018-5.) (Refer to the Model 525A Maintenance Manual, Chapter 20, Tubing, Hose and Fittings - Maintenance Practices.)
 - A. Torque all tube assembly fittings. (Refer to the Model 525A Maintenance Manual, Chapter 20, Tubing, Hose, and Fluid Fittings - Maintenance Practices.)
18. Install the stainless steel tube assemblies in the right wheel well. (Refer to Cessna Engineering Drawing 6398018-5.) (Refer to the Model 525A Maintenance Manual, Chapter 20, Tubing, Hose and Fittings - Maintenance Practices.)
 - A. Torque all tube assembly fittings. (Refer to the Model 525A Maintenance Manual, Chapter 20, Tubing, Hose, and Fluid Fittings - Maintenance Practices.)
19. (Airplanes -0001 thru -0084.) Install the aluminum tube assemblies in the aft dry bay. (Refer to Cessna Engineering Drawing 6398018-5.)
20. Install the kept clamps and fittings.
21. Make sure that the tube assemblies are properly clamped.
22. Make sure that the tube assemblies and hoses are in the correct positions and orientations. (Refer to Cessna Engineering Drawing 6398018-5.)
23. Make sure that the tube assemblies and hoses will not kink, twist, or pinch when the components are extended or retracted. (Refer to the Model 525A Maintenance Manual, Chapter 20, Tubing, Hose and Fittings - Maintenance Practices.)

24. Engage the BRAKE SYSTEM circuit breaker on the left circuit breaker panel.
25. Apply external electrical power.
26. Connect a hydraulic ground power cart.
27. Do the landing gear pneumatic brake system functional check. (Refer to the Model 525A Maintenance Manual, Chapter 32, Emergency Brake System Components - Inspection/Check.)
28. Do the emergency landing gear extension test. (Refer to the Model 525A Maintenance Manual, Chapter 32, Landing Gear Extension and Retraction - Adjustment/Test.)

CAUTION: Do not fully retract flaps until you can make sure that the flap extend lines are not leaking. If the flaps are fully retracted with the flap extend lines leaking you will not be able to extend the flaps. The flap actuator will lock the flaps in the retracted position and the flap actuator may not receive enough hydraulic pressure to unlock if the flap extend lines are leaking. There is no access to tighten fittings or manual unlock the flap actuator when the flaps are fully retracted.

29. Bleed the hydraulic system. (Refer to the Model 525A Maintenance Manual, Chapter 12, Hydraulic System Reservoir - Servicing.)

NOTE: Complete the bleeding task before timing the extension and retraction times.

- A. Install inclinometers on the flaps.
- B. Make sure that the landing gear extends in less than 5 seconds and retracts in 5 seconds +1.0 or -1.0 second.
- C. Make sure that the flaps extend and retract within the times listed below:

Direction	Detent Position	Time in seconds	Tolerance in seconds
Extend	0° to 35°	12.5	+2.0, -2.0
Extend	35° to 60°	1.5	+0.5, -0.5
Retract	60° to 35°	5.5	+1.0, -1.0
Retract	35° to 0°	9.0	+1.0, -1.0

- D. Make sure that the 35° flap position switch was not moved.
 - (1) Move the flap handle to a position between the 35° detent and 60° detent.
 - (2) Make sure that the flap move to 38° +1.0° or -1.0°.
 - (3) Adjust the 35° flap position switch if necessary. (Refer to the Model 525A Maintenance Manual, Chapter 27, Flap System - Adjustment/Test.)
30. Make sure that there are no leaks at the connections for the installed hydraulic tube assemblies.
31. Make sure that the tube assemblies and hoses are not damaged.
32. Make sure that the landing gear and brake pneumatic bottle is properly serviced. (Refer to the Model 525A Maintenance Manual, Chapter 12, Landing Gear and Brake Pneumatic System - Servicing.)
33. Remove the hydraulic ground power cart.
34. Remove external electrical power.
35. Lower the airplane and remove the jacks. (Refer to the Model 525A Maintenance Manual, Chapter 7, Lifting - Maintenance Practices.)
36. Install the access panels that were removed to complete this service bulletin. (Refer to the Model 525A Maintenance Manual, Chapter 6, Access Plates and Panels Identification - Description and Operation.)

37. Record that this service bulletin has been completed.
- A. Complete a Maintenance Transaction Report.
 - B. Put a copy of the completed Maintenance Transaction Report in the airplane logbook.
 - C. Send a copy of the completed Maintenance Transaction Report to CESCO at the following address: CESCO C/O, Camp Systems International, 8200 East 34th Street North, Building 1600 Suite 1607, Wichita, KS 67226.

MATERIAL INFORMATION

Order the kit below to install this modification.

NEW P/N	QUAN-TITY	KEY WORD	OLD P/N	INSTRUCTIONS/ DISPOSITION
SB525A-29-07-0	1	Kit , consisting of the following parts:		
6327011-19	1	Tube Assembly	6327500-31	Discard
6327011-20	1	Tube Assembly	6327500-32	Discard
6327011-37	1	Tube Assembly	63270500-47 or 6327017-31	Discard
6327011-38	1	Tube Assembly	63270500-48 or 6327017-32	Discard
6327011-45	1	Tube Assembly	6317014-15	Discard
6327011-46	1	Tube Assembly	6317014-16	Discard
6327011-49	1	Tube Assembly	6317013-41 or 6317213-25	Discard
6327011-50	1	Tube Assembly	6317013-42 or 6317213-26	Discard
6327011-57	1	Tube Assembly	6327500-19	Discard
6327011-58	1	Tube Assembly	6327500-20	Discard
6327012-1	1	Tube Assembly	6327017-9	Discard
6327012-2	1	Tube Assembly	6327017-10	Discard
6327012-5	1	Tube Assembly	6327017-17	Discard
6327012-6	1	Tube Assembly	6327017-18	Discard
6327012-13	1	Tube Assembly	6392016-9 or 6327016-33	Discard
6327012-14	1	Tube Assembly	6392016-10 or 6327016-34	Discard
6327012-15	1	Tube Assembly	6327016-21	Discard
6327012-16	1	Tube Assembly	6327016-22	Discard
6327012-37	1	Tube Assembly	6317015-31	Discard
6327012-38	1	Tube Assembly	6317015-32	Discard

NEW P/N	QUAN- TITY	KEY WORD	OLD P/N	INSTRUCTIONS/ DISPOSITION
6327012-41	1	Tube Assembly	6317015-69	Discard
6327012-42	1	Tube Assembly	6317015-70	Discard
6327012-43	1	Tube Assembly	6327015-26	Discard
6327012-44	1	Tube Assembly	6317015-20 or 6317015-73	Discard
6327012-45	1	Tube Assembly	6317015-39	Discard
6327012-46	1	Tube Assembly	6317015-21	Discard
6327012-47	1	Tube Assembly	6317015-35	Discard
6327012-48	1	Tube Assembly	6317015-36	Discard
6327012-49	4	Tube Assembly	6317015-67	Discard
6327012-51	1	Tube Assembly	6327016-23	Discard
6327012-52	1	Tube Assembly	6727016-24	Discard
6327012-53	1	Tube Assembly	6392016-11 or 6327016-29	Discard
6327012-54	1	Tube Assembly	6392016-12 or 6327016-30	Discard
6327012-55	1	Tube Assembly	6327017-11 or 6327017-33	Discard
6327012-56	1	Tube Assembly	632701712 or 6327017-34	Discard
6327012-57	1	Tube Assembly	6327017-19	Discard
6327012-58	1	Tube Assembly	6327019-20	Discard
6327012-59	1	Tube Assembly	6392016-7 or 6327016-31	Discard
6327012-60	1	Tube Assembly	6392016-8 or 6327016-32	Discard
6327012-61	1	Tube Assembly	6317013-55	Discard
6327012-62	1	Tube Assembly	6317013-56	Discard
6327012-63	1	Tube Assembly	6317014-9 or 6317014-59	Discard
6327012-64	1	Tube Assembly	6317014-10 or 6317014-60	Discard
6327012-65	1	Tube Assembly	6317013-67 or 6317013-81	Discard
6327012-66	1	Tube Assembly	6317014-68 or 6317013-82	Discard
6327012-67	1	Tube Assembly	6317014-23	Discard
6327012-68	1	Tube Assembly	6317014-24	Discard
SB525A-29-07	1	Instructions		

(Airplanes -0001 thru -0084.) Order the kit that follows in addition to the SB525A-29-07-0 Kit.

NEW P/N	QUAN- TITY	KEY WORD	OLD P/N	INSTRUCTIONS/ DISPOSITION
SB525A-29-07-1	1	Kit , consisting of the following parts:		
6317015-72	1	Tube Assembly	6317015-18	Discard
6317015-74	1	Tube Assembly	6317015-22	Discard
6317015-75	1	Tube Assembly	6317015-38	Discard

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MANPOWER

WORK PHASE	MAN-HOURS
Modification	As Necessary

MATERIAL - Cost and Availability

PART NUMBER	AVAILABILITY	COST
SB525A-29-07-0	*	*
SB525A-29-07-1	*	*

* Please contact Cessna Service Parts & Programs for current cost and availability of parts listed in this service bulletin. Phone at 1-800-835-4000 (Domestic) or 1-316-517-7542 (International). Send Email to: citationparts@cessna.textron.com or telefax at 1-316-517-7711.

Based on availability and lead times, parts may require advanced scheduling.

In cases where the required part(s) are available as *exchange*, order the exchange part and, upon completion, expedite the return of the removed core to avoid return penalties. Contact the Cessna Service Parts & Programs Sales Desk for availability of exchange parts.

