

	REGISTRO RECORD			REVISÃO REVISION	0
CODIGO CODE IAS-RG-0223	FICHA DE SERVIÇOS Service Sheet			PAGINA PAGE	1/5
NÚMERO NUMBER FS.0739	OS	MODELO Model AILERON ACTUATOR	PN 2-43160-5 2-43160-6 2-43160-501 a -508	SN	

IDENTIFICAÇÃO / IDENTIFICATION

TÍTULO TITLE	FICHA DE REGISTRO DE TESTES TEST RECORD SHEET
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PUBLICAÇÃO PUBLICATION TECHNICAL MANUAL OVERHAUL INSTRUCTIONS	REFERÊNCIA REFERENCE T.O 9H2-4-111-3	TLN TLN001737	DATA DATE REVISÃO 11 DE 15/02/2015
		PN	CONJUNTO MAIOR MAIN PART SN

§-7.2 TEST PROCEDURE

7.2.1 – Initial Procedure

ITEM <i>Item</i>	PROCEDIMENTOS /TOLERÂNCIAS <i>Procedures/Serviceable limits</i>	Condição <i>Condition</i>	Data <i>Date</i>	Executante <i>Performed by</i>
a	Connect aileron actuator to test equipment as shown in Figure 7-1 .			
b	With both flight control and utility return ports open to metering valve, apply hydraulic pressure to both flight control and utility pressure ports. Bleed all air from actuator by moving servovalve lever (14, Figure 3-1 and Figure 7-2) back and forth.			

7.2.1 – Proof Pressure Check

a	With flight control return port open to metering valve, apply hydraulic pressure to flight control pressure port; bleed all air from actuator by moving servovalve lever (14) back and forth.			
b	Use metering valve in return line to reduce flow until 4500 psi is indicated at flight control pressure port; flow shall not be completely stopped.			
c	Move servovalve lever (14) to one extreme position and hold for at least 2 minutes; there shall be no evidence of external leakage, permanent deformation, or damage.			
d	Reduce hydraulic pressure to zero and operate servovalve lever (14) back and forth several times.			
e	With flight control return port open to metering valve, apply hydraulic pressure again to flight control pressure port. Use metering valve to reduce flow and obtain an indication of 4500 psi at flight control pressure port; flow shall not be completely stopped.			
f	Move servovalve lever (14) to extreme position opposite to that used in step c and hold for at least 2 minutes; there shall be no evidence of external leakage, permanent deformation, or damage.			

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ITEM Item	PROCEDIMENTOS /TOLERÂNCIAS Procedures/Serviceable limits	Condição Condition	Data Date	Executante Performed by
g	Shut off pressure to flight control pressure port; with utility return port open to metering valve, apply hydraulic pressure to utility pressure port; bleed all air from actuator by moving servovalve lever (14) back and forth.			
h	Use metering valve in return line to reduce flow until 4500 psi is indicated at utility pressure port; flow shall not be completely stopped.			
i	Move servovalve lever (14) to one extreme position and hold for at least 2 minutes; there shall be no evidence of external leakage, permanent deformation, or damage.			
j	Reduce hydraulic pressure to zero, and operate servovalve lever (14) several times.			
k	With utility return port open to metering valve, apply hydraulic pressure to utility pressure port again. Use metering valve to reduce flow until 4500 psi is indicated at utility pressure port; flow shall not be completely stopped.			
l	Move servovalve lever (14) to extreme position opposite to that used in step i and hold for at least 2 minutes; there shall be no evidence of external leakage, permanent deformation, or damage.			
m	Reduce hydraulic pressure to zero and shut off both selector valves in return lines. Bleed both cylinders free of air, then apply 1500 psi simultaneously to both flight control and utility pressure ports for at least 2 minutes; there shall be no evidence of external leakage, permanent deformation, or damage.			
n	Reduce hydraulic pressure to 5 to 10 psi and hold for at least 2 minutes; there shall be no evidence of external leakage, permanent deformation, or damage.			

7.2.3 – Proof Pressure Check

NOTE	In the mechanical neutral position, the servovalve distributes reduced pressure to both sides of each cylinder but with a slight opposite pressure differential in each cylinder, so that one piston is forced to extend and the other to retract. This preloading of the cylinders against one another is designed to eliminate backlash at the aileron surfaces. In all other positions, the servovalve moves both pistons in the same direction.			
a	Apply 3000 psi hydraulic pressure to both pressure ports simultaneously while moving servovalve lever is at mechanical neutral, one piston will extend while the other piston retracts, and the two pistons will remain bottomed at opposite ends of their cylinders. Mark mechanical neutral position of lever with grease pencil or other similar means.			

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ITEM Item	PROCEDIMENTOS /TOLERÂNCIAS Procedures/Serviceable limits	Condição Condition	Data Date	Executante Performed by
b	Line up hole in stop screw (10) with slotted hole in servovalve lever (14), and insert shank end of No 42 (0.0935 inch diameter) drill thru the holes.			
c	Loosen nuts (6), adjust position of stop screw (10) so that servovalve lever (14) is in mechanical neutral position and tighten nuts (6) against lug of manifold (36). Pistons shall bottom against opposite ends of their cylinders and remain there. If piston movement is other than this, loosen nuts (6) and readjust stop screw (10); repeat procedure until correct adjustment is obtained.			
d	DELETED			

7.2.4 – Lever Travel Check

a	Remove drill from holes in stop screw and lever.			
b	Test range of movement of lever (14).			
c	Reduce hydraulic pressure to zero			
d	Measure angular travel of servovalve lever (14); lever shall have angular travel of at least 5 degrees 20 minutes to each side of mechanical neutral position.			

7.2.5 – Internal Leakage Check

a	Open flight control return port selector valve to graduated cylinder and apply a hydraulic pressure of 3000 psi to flight control pressure port.			
b	Move servovalve lever (14) to one extreme position and hold for 3 minutes, using graduated cylinder to collect fluid leaking from flight control return port. During third minute, leakage shall not exceed 110 cc/min.			
c	Move servovalve lever (14) to opposite extreme position and hold for 3 minutes; collect leakage at flight control return port. Leakage during third minute shall not exceed 110 cc/min.			
d	Reduce pressure to flight control pressure port to zero; open utility return port selector valve to graduated cylinder and apply 3000 psi to utility pressure port.			
e	Move servovalve lever (14) to one extreme position and hold for 3 minutes, collecting fluid leaking from utility return port in graduated cylinder. During third minute, leakage shall not exceed 110 cc/min.			
f	Move servovalve lever (14) to opposite extreme position and hold for 3 minutes; collect leakage at utility return port. Leakage during third minute shall not exceed 110 cc/min.			

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7.2.6 – Servo Valve Breakout and Full Travel Force Check

ITEM Item	PROCEDIMENTOS /TOLERÂNCIAS Procedures/Serviceable limits	Condição Condition	Data Date	Executante Performed by
a	With both flight control and utility return ports open, simultaneously apply 3000 psi hydraulic pressure to flight control and utility pressure ports. Insert spring tester, part number DPP5, in control rod connecting hole in servo valve lever (14).			
b	With servo valve in neutral position, apply pull on lever with spring tester; breakaway force shall not exceed 0.5 pound. Return servo valve to neutral and repeat test with pull exerted in opposite direction. If breakaway force exceeds maximum limits, reinspect and replace parts as necessary to bring breakaway force within limits.			
c	Return servo valve to neutral position. Apply pull on lever with spring tester until servo valve travels to end of its stroke; force required shall not exceed 1.3 pounds. Return servo valve to neutral position and repeat test with pull exerted in opposite direction. If force required to achieve full servo valve travel exceeds maximum limits, reinspect and replace parts as necessary to bring force within limits.			

7.2.7 – Piston Breakaway Check

a	Reduce hydraulic pressure to zero and manually move both pistons so piston heads are approximately in middle of cylinders			
b	With both flight control and utility return ports open to metering valve, hold servo valve lever (14) at one extreme position and simultaneously apply 10 psi to both flight control and utility pressure ports. Both pistons shall move their full travel to bottomed position with no evidence of hesitation or binding.			
c	Move and hold servo valve lever (14) in opposite extreme position; both pistons must travel full length of cylinders to bottomed position at opposite end with no evidence of hesitation or binding			

7.2.8 – Intersystem Leakage Check

a	With utility return port selector valve open to graduated cylinder, apply 1500 psi hydraulic pressure to flight control return port. After a 2-minute wait, measure leakage thru utility return port for at least 1 minute; leakage shall not exceed 10 cc/min.			
b	With flight control return port selector valve open to graduated cylinder, apply 1500 psi hydraulic pressure to utility return port. After a 2 minute wait, measure leakage thru flight control return port for at least 1 minute; leakage shall not exceed 10 cc/min.			

