



F-5 Parking Brake Assembly

Installation Kit and Technical Data



COC Aerospace - Proprietary and Confidential Company Information



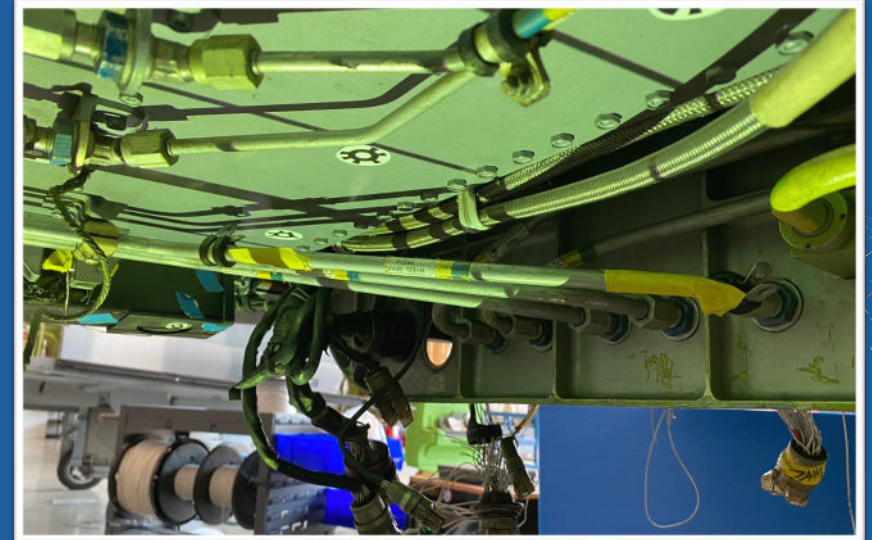
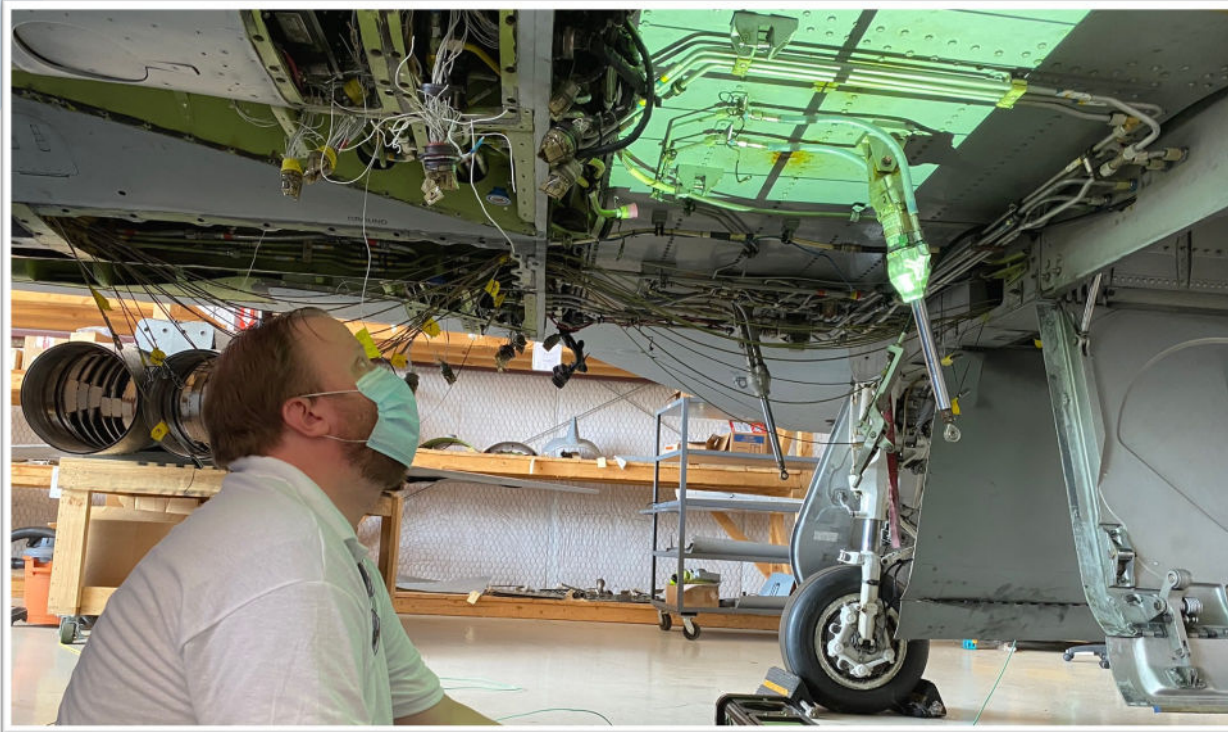
COC's Parking Brake:

- ✈️ **COC provides integrated Parking Brake System.**
- ✈️ **Parking Brake Kit comes fully assembled, ready to install in the LH Speed Brake Housing of F-5 & F-5E aircraft.**



Photogrammetry

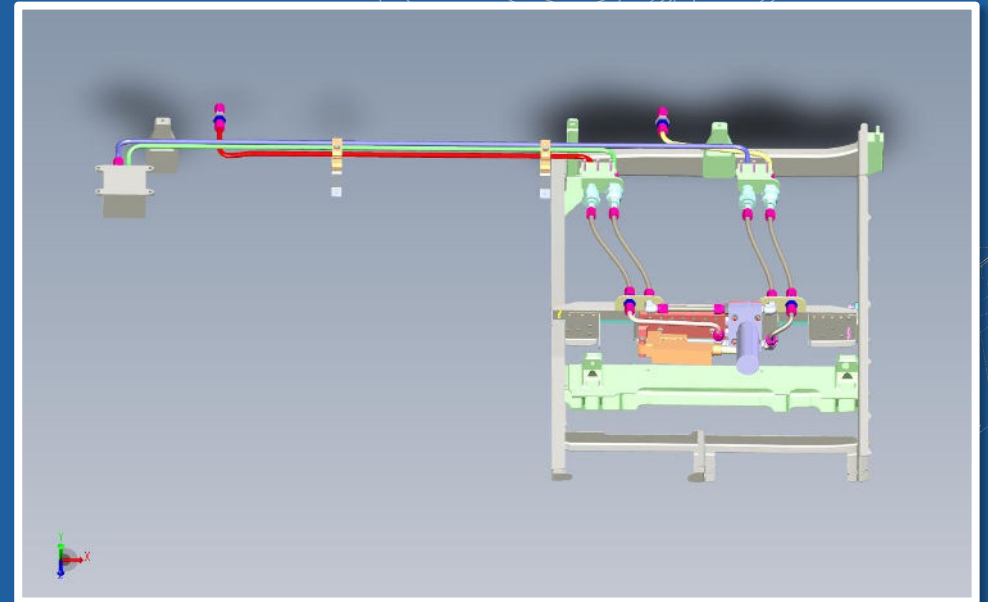
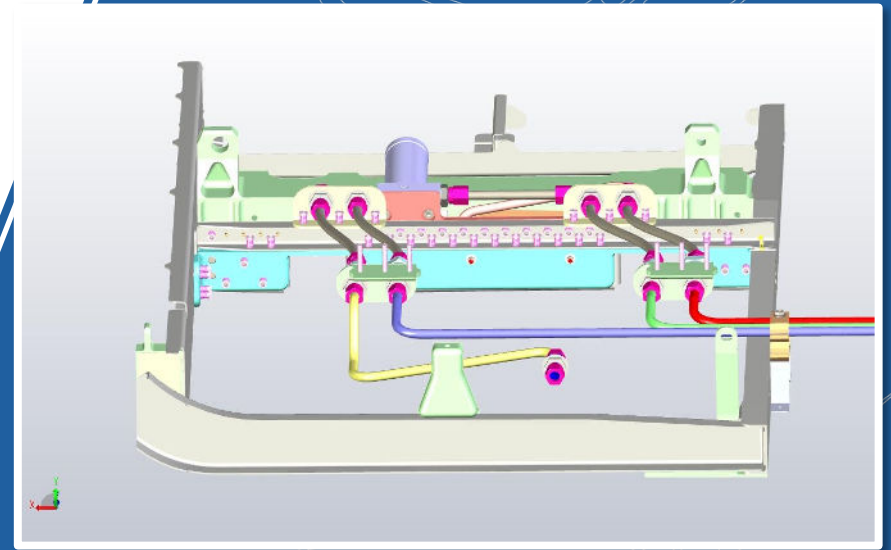
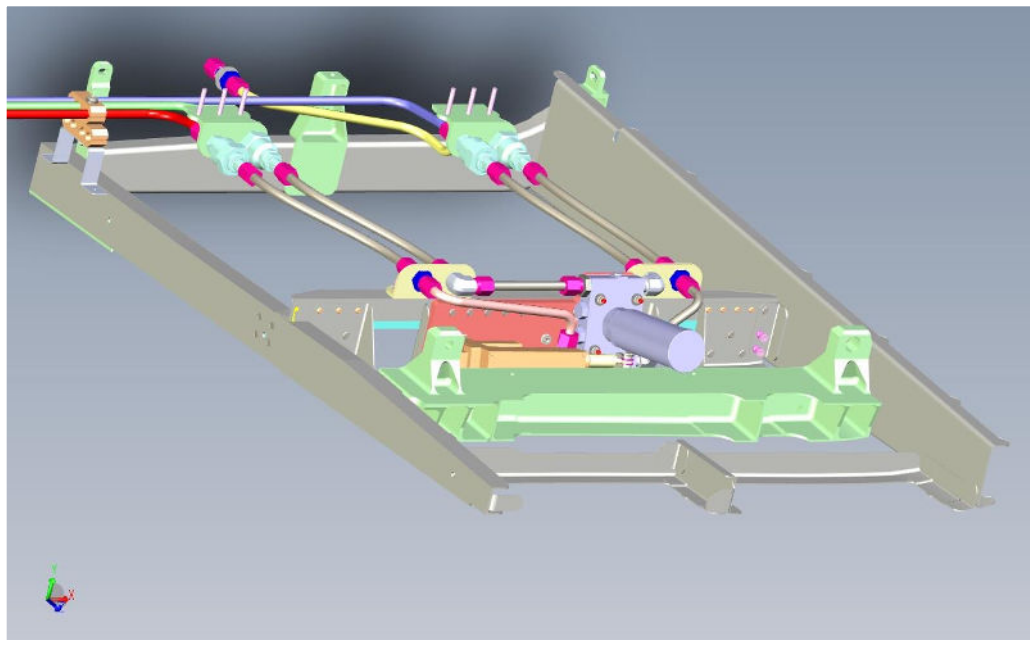
 COC scan under the wing of the aircraft where speed brake is located using technologies like photogrammetry.



COC Parking Brake Hydraulic Schematic

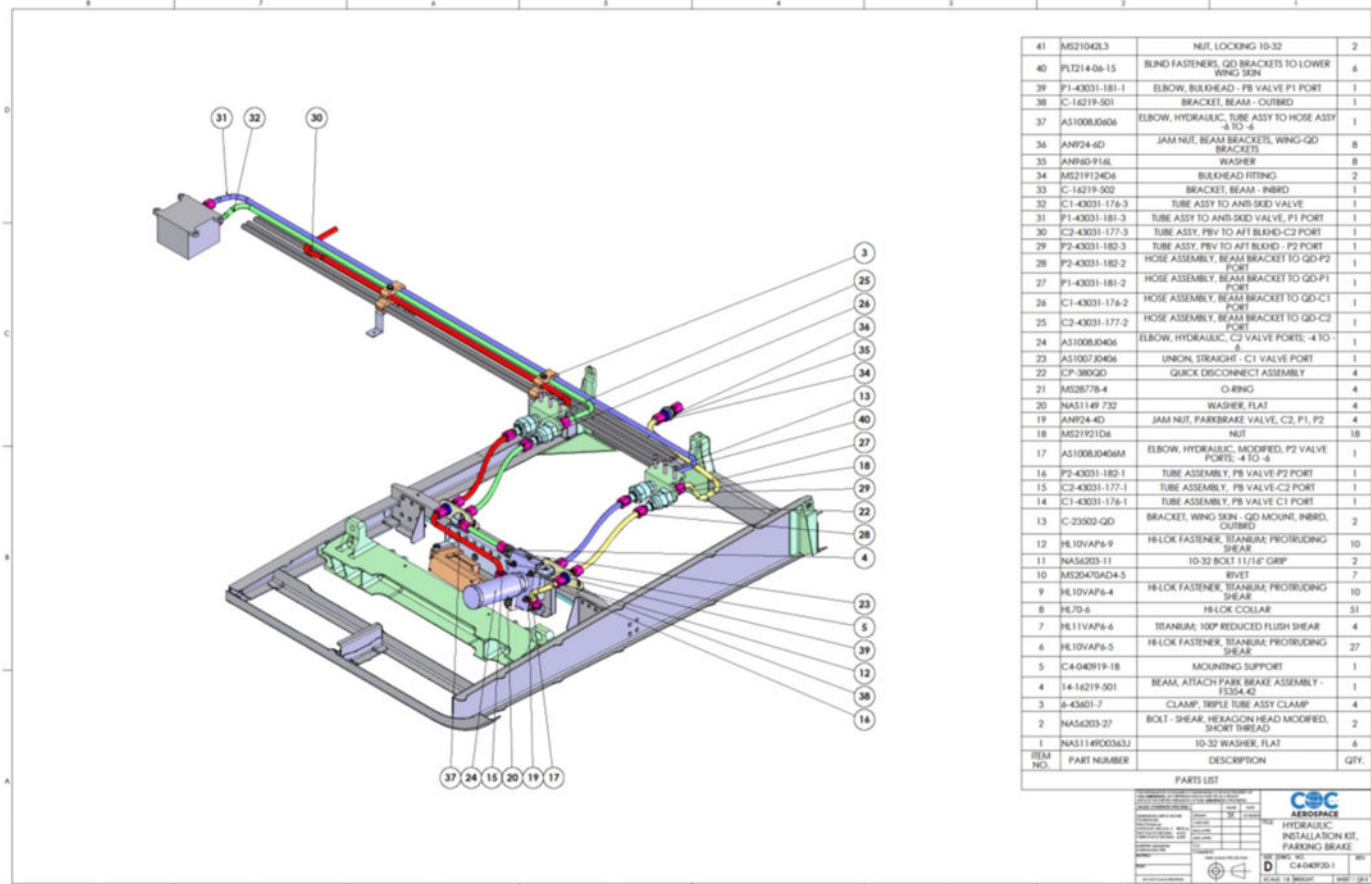


COC's F-5 Parking Brake is a complete 'ready to install' assembly. The hydraulic system was developed in 3D CAD by scanning the aircraft where COC holds $\pm 0.002''$, NIST calibrated



COC Parking Brake Illustrated Parts Bulletin

The COC Parking Brake comes with the Installation Manual and the detailed the IPB

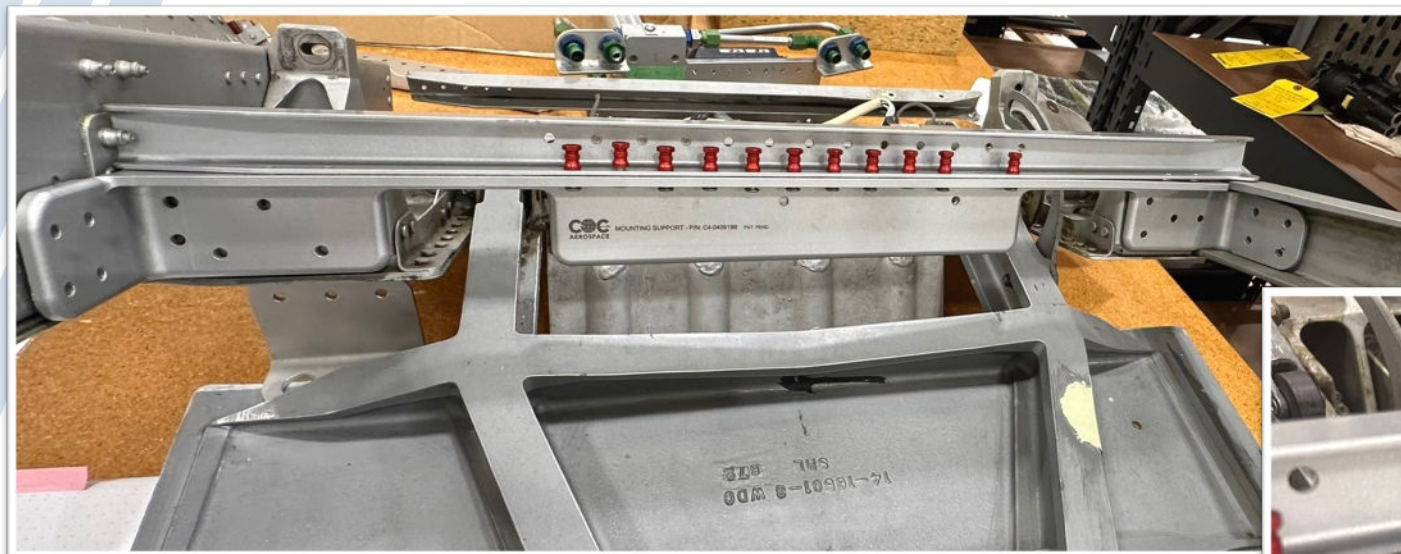


ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
41	MS21042L3	NUT, LOCKING 10-32	2
40	PL3214-06-15	BUND FASTENERS, QD BRACKETS TO LOWER WING SKIN	6
39	P1-43031-181-1	ELBOW, BULKHEAD - PB VALVE P1 PORT	1
38	C-16219-501	BRACKET, BEAM - OUBRD	1
37	AS1008J0406	ELBOW, HYDRAULIC, TUBE ASSY TO HOSE ASSY - 4 TO -6	1
36	AN924-6D	JAM NUT, BEAM BRACKET, WING-QD BRACKETS	8
35	AN940-916L	WASHER	8
34	MS219124D4	BULKHEAD FITTING	2
33	C-16219-502	BRACKET, BEAM - INBRD	1
32	C1-43031-176-3	TUBE ASSY TO ANB-SKD VALVE	1
31	P1-43031-181-3	TUBE ASSY TO ANB-SKD VALVE, P1 PORT	1
30	C2-43031-177-3	TUBE ASSY, PBV TO AFT BLEED-C2 PORT	1
29	P2-43031-182-3	TUBE ASSY, PBV TO AFT BLEED - P2 PORT	1
28	P2-43031-182-2	HOSE ASSEMBLY, BEAM BRACKET TO QD-P2 PORT	1
27	P1-43031-181-2	HOSE ASSEMBLY, BEAM BRACKET TO QD-P1 PORT	1
26	C1-43031-176-2	HOSE ASSEMBLY, BEAM BRACKET TO QD-C1 PORT	1
25	C2-43031-177-2	HOSE ASSEMBLY, BEAM BRACKET TO QD-C2 PORT	1
24	AS1008J0406	ELBOW, HYDRAULIC, C2 VALVE PORTS, -4 TO -6	1
23	AS1007204D6	UNION, STRAIGHT, C1 VALVE PORT	1
22	CP-380GQ	QUICK DISCONNECT ASSEMBLY	4
21	MS2878-4	O-RING	4
20	NAS1149-732	WASHER, FLAT	4
19	AN924-4D	JAM NUT, PARKBRAKE VALVE, C2, P1, P2	4
18	MS21921D6	NUT	18
17	AS1008J0406M	ELBOW, HYDRAULIC, MODIFIED, P2 VALVE PORTS, -4 TO -6	1
16	P2-43031-182-1	TUBE ASSEMBLY, PB VALVE-P2 PORT	1
15	C2-43031-177-1	TUBE ASSEMBLY, PB VALVE-C2 PORT	1
14	C1-43031-176-1	TUBE ASSEMBLY, PB VALVE C1 PORT	1
13	C-23502-QD	BRACKET, WING SKIN - QD MOUNT, INBRD, OUBRD	2
12	HL10VAF6-9	HEX LOCK FASTENER, TITANIUM, PROTRUDING SHEAR	10
11	NAS6203-11	10-32 BOLT 1 1/16" GRP	2
10	MS20470AD4-5	RIVET	7
9	HL10VAF6-4	HEX LOCK FASTENER, TITANIUM, PROTRUDING SHEAR	10
8	HL7D-6	HEX LOCK COLLAR	51
7	HL11VAF6-6	TITANIUM, 100% REDUCED FLUSH SHEAR	4
6	HL10VAF6-5	HEX LOCK FASTENER, TITANIUM, PROTRUDING SHEAR	27
5	C4-040919-1B	MOUNTING SUPPORT	1
4	14-16219-501	BEAM, ATTACH PARK BRAKE ASSEMBLY - FSS4-42	1
3	A-43601-7	CLAMP, TRIPLE TUBE ASSY CLAMP	4
2	NAS6203-27	BOLT - SHEAR, HEXAGON HEAD MODIFIED, SHORT THREAD	2
1	NAS1149D363J	10-32 WASHER, FLAT	6

COC AEROSPACE
 HYDRAULIC
 INSTALLATION KIT
 PARKING BRAKE
 C4-040917-501
 DATE 12/2023

	MODEL Northrop F-5 Aircraft	SUBJECT F-5 Parking Brake Installation Manual	PAGE NO. --- of ---	Property of COC Aerospace Inc. Proprietary and Confidential Company Information Patent Pending	
	DATE 15 June 2023	REPORT NO. C4-040917-501			

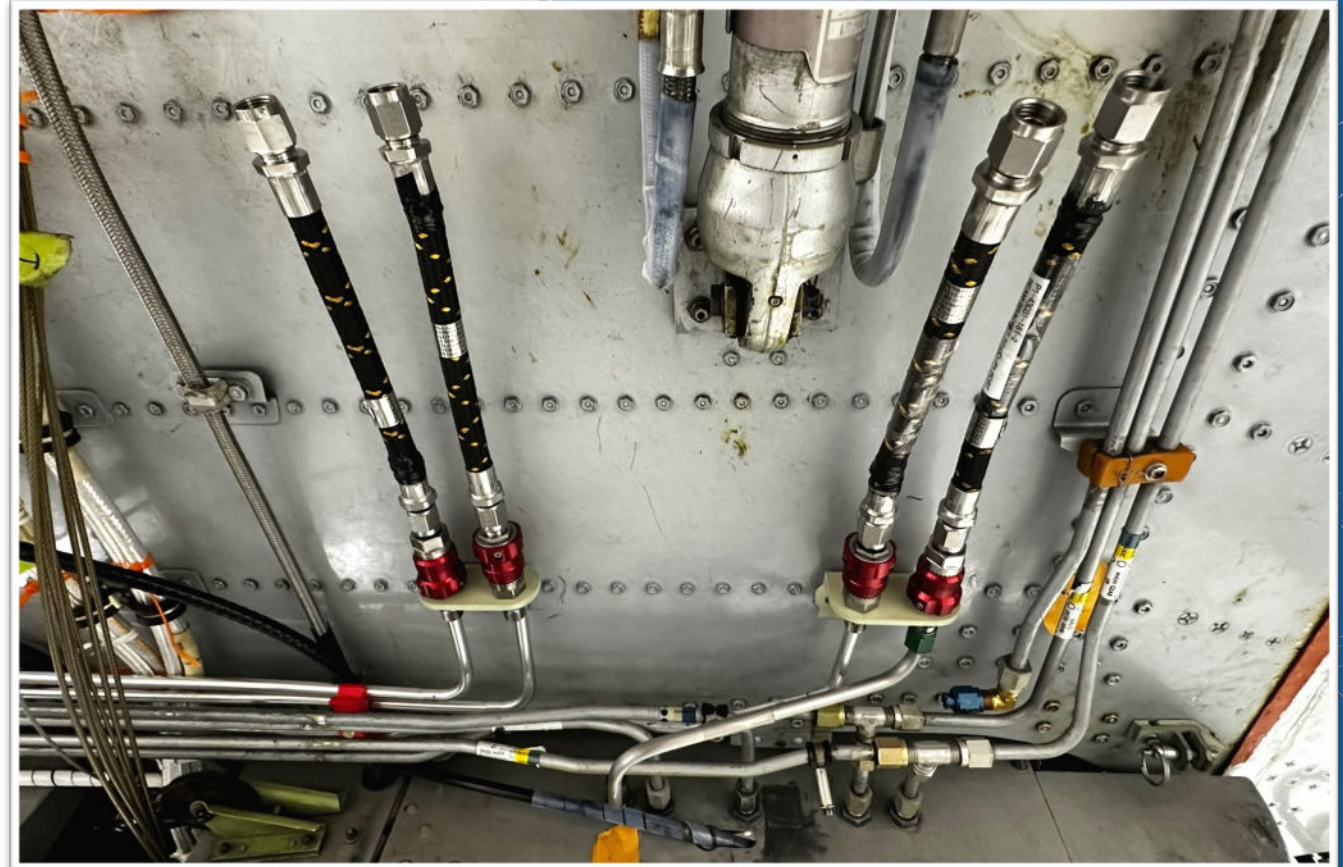
COC Park Brake comes with replacement for cross beam 14-16219-5 including sheet metal angle 14-16219-11 which is used to secure the access door.



Parking Brake with hose assemblies attached



Hose assemblies attach to the park brake valve assembly with self sealing Quick Disconnect (QDs) that install on to the lower wing skin. This allows the speed brake housing to be easily removed and replaced for servicing.



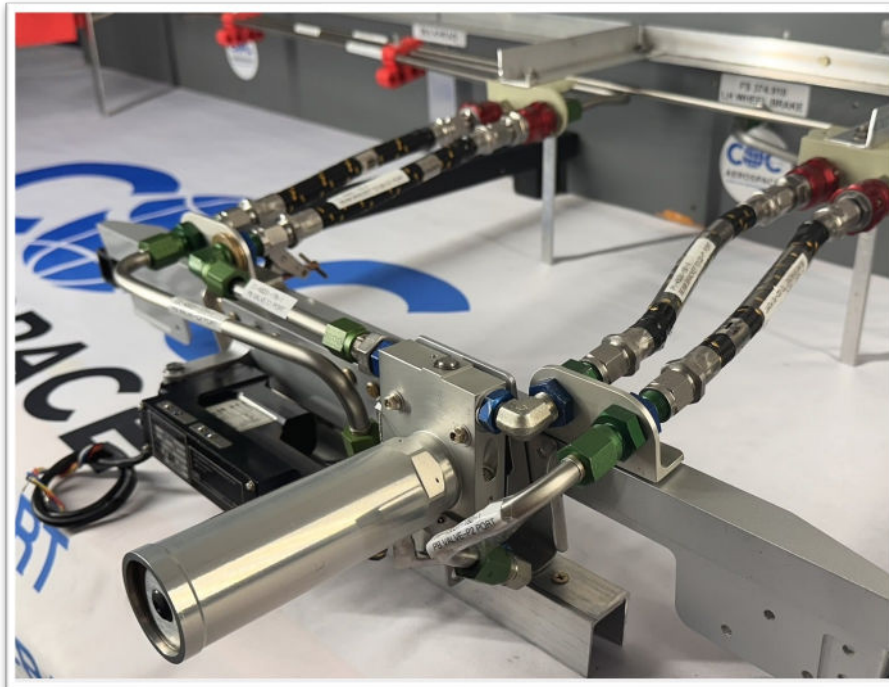
Self-Sealing Quick Disconnect Couplings are 'reversed' to ensure hose assemblies are connected correctly



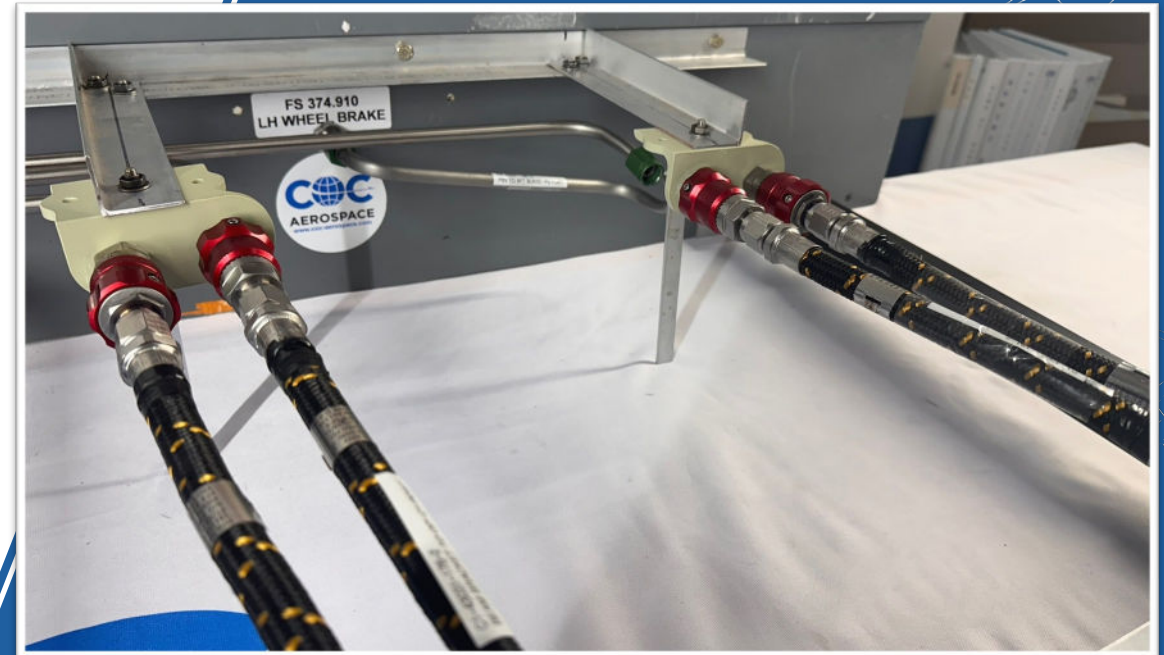
All of the hardware, fasteners and component parts are included with COC's Parking Brake



Hose assemblies attach with the self sealing quick disconnect 'QDs' that attach to the lower wing skin.



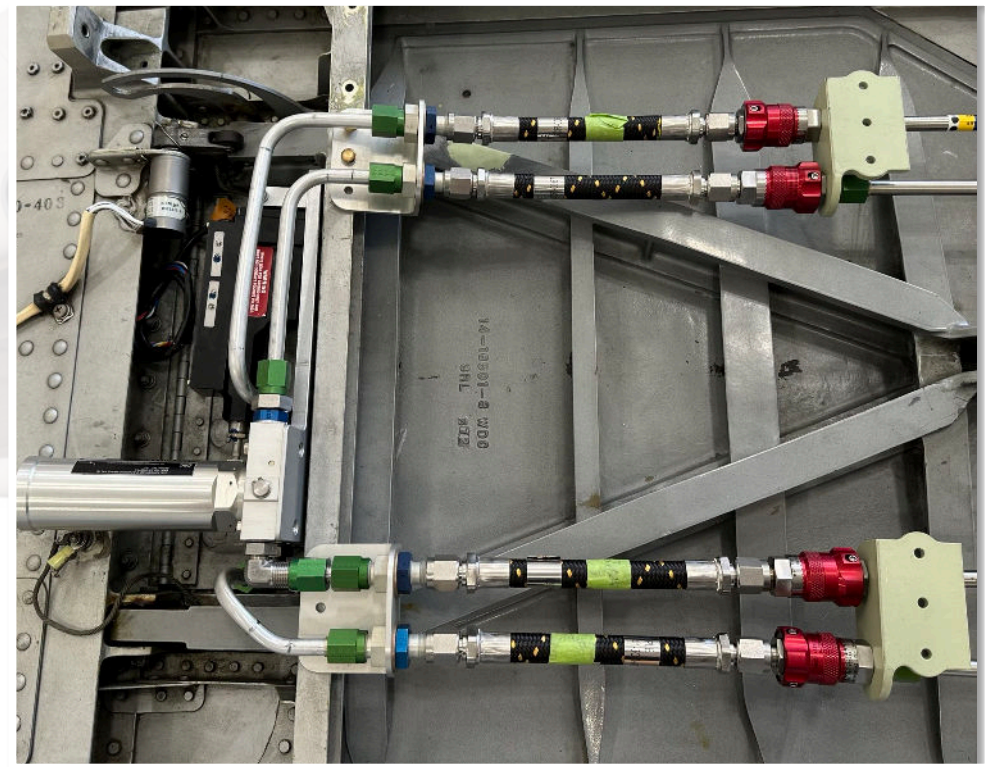
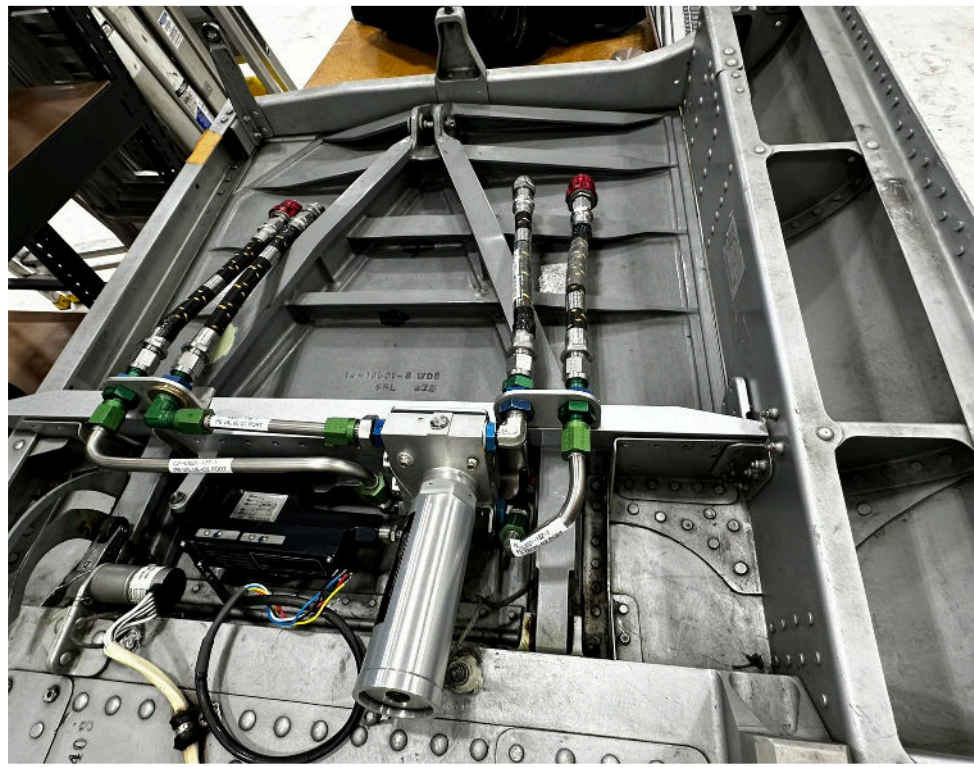
No special tools or equipment are needed.



COC Park Brake Installation into Speed Brake



COC installs the Park Brake into speed brake housing. It is accessible through access door, PN 14-16214-3, The components are accessible through this door for ease of maintenance.



COC Park Brake Instal on Speed Brake



The COC F-5 Parking Brake Assembly installs into the speed brake housing that it maintains the clearances required. COC designed the installation so the existing components remain unchanged, or they are replaced by identical components.

COC assembly includes HL10VAZ6 rated at 95,000 psi shear and fasteners with NAS1351C3 stainless cap bolts rated at 1,600 LBF, HT 180,000 KSI and MS21043-3 CRES-A286 aerospace lock nuts; axial strength 2,460 with operating temperature of max 800 Degrees Fahrenheit.



COC Parking Brake Assembly does not impact the primary structure classification of the Speed Brake Assembly.



COC produces a newly manufactured cross beam so that mounting plate and mounting support, which are new, are attached to a new beam. This eliminates installing the new COC F-5 Parking Brake components to older components.



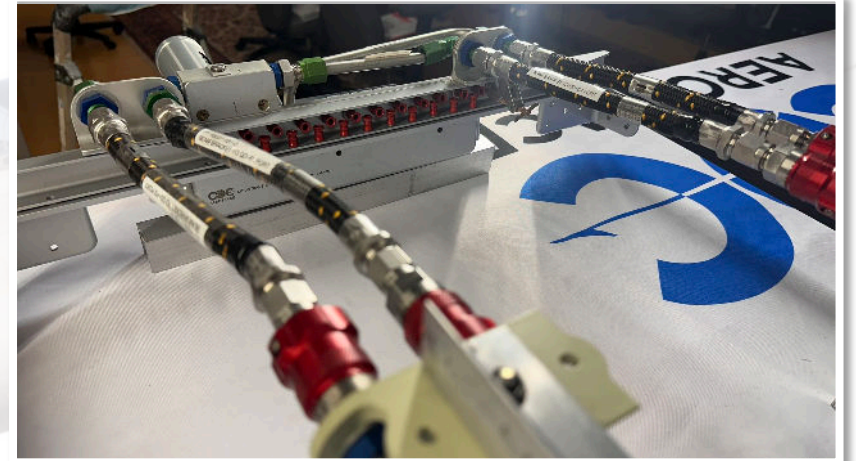
'Best Practices' are followed from 01-F-5AAA SRM in the design and implementation. All of the original design of the speed brake remains. (please refer to the Parking Brake Structural Analysis Report)



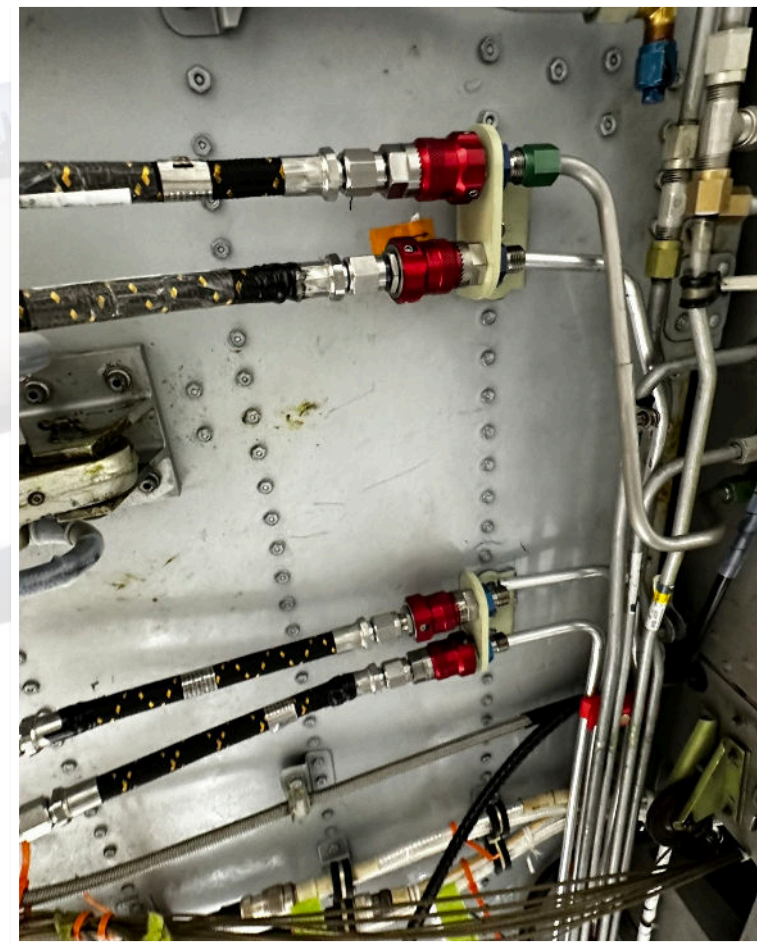
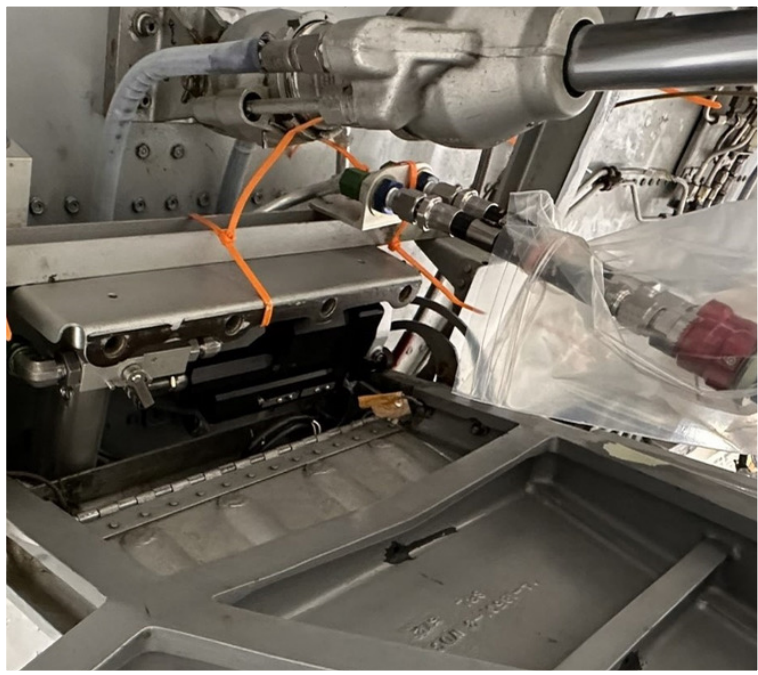
FEA Analysis performed at 9g is more than adequate for determining loads, deflection, and structural security of installation.



COC provides all the hardware required to install the Parking Brake Assembly. Product comes complete, ready for installation.



COC Park Brake Installed





THANK YOU



The COC F-5 Team - www.coc-aerospace.com



EXPERIENCE - OVER 5 DECADES YEARS SUPPORTING LEGACY AIRCRAFT
CUSTOMER SERVICE - OVER 50 YEARS SUPPORTING THE SAME CUSTOMERS
TRUST - ABOVE ALL, WE ALWAYS DO THE RIGHT THING



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