



**1-26E Hydraulic Brake Kit
Installation Instructions
(Install In Accordance With Drawing 26250)**

1. For ease of installation, remove wings, canopy, and aft canopy deck from fuselage
2. Raise and support fuselage with main wheel off the ground
3. Remove the hardware attaching main wheel/tire to airframe (save hardware for reinstallation)
4. Remove wheel/tire from airframe
5. Remove the hardware that retains the 26219-001 brake shoe assembly to the fuselage at aft end of the wheel housing (save hardware for reinstallation)
6. Remove the hardware that attaches the forward end of the 26219-001 brake shoe assembly to the 26149-001 brake support assembly (the hardware will not be reused) (shown in 26250 sheet 4)
7. Remove the 26219-001 brake shoe assembly from the aircraft (it will not be reused)
8. Reinstall the hardware, removed in step #5, to fill the holes in the nutplates (shown in 26250 sheet 4)
 - a. Alternatively, remove the nutplates and fill holes with sealant (shown in 26250 sheet 4)
9. Disconnect the 26161-009 cable assembly from the 26149-001 brake support assembly (the hardware will not be reused) (shown in 26250 sheet 4)
10. Disconnect the 26161-009 cable assembly from the 26199-001 torque tube assembly (the hardware will not be reused)
11. Remove the 26161-009 cable assembly from the aircraft (it will not be reused)
12. Remove the 26149-001 brake support assembly from the aircraft (the brake support and hardware will not be reused) (shown in 26250 sheet 4)
13. Remove (2) 26069-023 bearing blocks (they will not be reused) (shown in 26250 sheet 4)
14. Use (2) 85985K18 lock hole plugs, with sealant, to fill the holes where the 26149-001 brake support assembly was (shown in 26250 sheet 4)
15. Fill the (8) rivet holes for the bearing blocks with sealant (shown in 26250 sheet 4)
16. On the left side of the aircraft, remove (2) rivets from the wheel cover (as shown in 26250 sheet 4)
17. Drill & ream the (2) rivet holes to 0.188"-0.190" diameter (shown in 26250 sheet 4)
18. Disassemble the wheel/tire/axle:
 - a. Release air from tire and remove valve core from stem (keep valve core for reinstallation)
 - b. Disassemble rim and 26240-001 axle assembly from tire ((1) bolt will not be reused; the rest of the hardware will be reinstalled)
 - c. Remove (2) flanged bearings from the 26240-001 axle assembly to inspect/service
19. Reassemble wheel/tire/axle:
 - a. Assemble the tire/tube onto the rim halves so that the valve stem is toward the right side of the ship



- b. Slide the shorter end of the axle through the rim halves so that the axle plate is attached to the left side of the rim, with the longer end of the axle toward the left side of the ship and the shorter end toward the right side of the ship (shown in 26250 section C-C)
 - c. Install the hardware to attach the rim halves together based on the 26250-007 wheel sub-assembly
 - i. Note: heads of bolts and bushing should be toward the longer end of the axle
 - d. Torque bolts to 165-185in.lbs. and inflate tire to 35psi.
 - e. Reinstall wheel bearings into 26240-001 axle assembly
20. Slide the 35247-001 brake disk assembly onto the longer end of the 26240-001 axle assembly with the brake disk toward the outside of the wheel/tire and the brake disk guide plate keyed on the 35247-009 bushing (shown in 26250 view B-B)
21. Place the wheel/brake disk assembly between the support plates in the aircraft and line up the holes in the axle with the holes in the support plates
- a. Note: the brake disk should be toward the left side of the aircraft
22. Slide the axle bolt through the support plates and axle to secure the wheel temporarily
- a. Note: no need to install washer and nut on axle bolt at this time
23. Install an AN823-4D elbow into 26247-001 brake caliper assembly using fuel lube or equivalent (shown in 26250-007 wheel sub-assembly)
24. Assemble the 26243-003 plate onto the 26247-001 brake caliper using (2) AN4H-17A bolts and (2) AN960-416L washers (shown in 26250-007 wheel sub-assembly)
25. Torque the (2) AN4H-15A brake pad bolts to 75-80 in.lbs. (dry) then safety wire bolt heads with MS20995C-32 stainless steel safety wire (shown in 26250-007 wheel sub-assembly)
26. Mount the brake caliper/torque plate assembly onto the 35247-001 brake disk assembly, so that the brake pads are on either side of the brake disk, with the caliper toward the aft of the ship (shown in 26250 sheets 4 & 5)
27. Position the brake caliper/torque plate so that the caliper can function properly without interference and the torque plate is approximately vertical (shown in 26250 sheet 4)
28. Mark the hole locations on the torque plate through the (2) holes that the rivets were removed from in step #16 (shown in 26250 sheet 4)
29. Remove the brake caliper/torque plate and drill & ream the (2) marks to 0.188"-0.190" diameter
30. Remove the wheel/brake disk from the aircraft and set aside for later reinstallation
31. Reinstall the brake caliper/torque plate into the aircraft, lining up the (2) recently drilled holes with the holes in the ship
32. Temporarily install (2) AN3-7A bolts, (4) AN960-10 washers, and (2) AN365-1032 nuts into the torque plate to hold the brake caliper and torque plate from moving
33. Back-drill the top hole in the torque plate through the wheel well (shown in 26250 sheet 4)
34. Line ream the hole to 0.188"-0.190" diameter (shown in 26250 sheet 4)
35. Remove the caliper/torque plate and set it aside for later reinstallation



36. Drill a 11/16" (0.69" diameter) hole in the wheel cover approximately as shown in 26250-001 hydraulic brake installation
37. Disconnect the 26551-001 dive brake handle push rod or 26198-001 push rod assembly (depending on what type of dive brake handle the ship has) from the 26199-001 torque tube assembly (save the hardware for reinstallation)
38. To increase accessibility to the 26199-005 horn on the 26199-001 torque tube assembly, rotate the torque tube so that the horn is up vertically
39. To ease installation of the 26243-017 pusher plate, trim the 26156-015 horn (as shown in the 26250-003 torque tube sub-assembly) as close to the torque tube as possible without nicking the tube
40. Cut out the drill template for the 26243-017 pusher plate from the second page of the kit list
41. Use spray adhesive, or equivalent, to stick the template to the inboard side of the 26199-005 horn with proper orientation
42. Drill through the marks on the template with a #30 (0.129" diameter) drill
43. Celco the 26243-017 pusher plate to the inboard side of the 26156-001 horn so that the pusher plate is going aft when the 26199-005 horn is down in its original orientation (shown in 26250-003 torque tube sub-assembly)
44. Drill & line ream one of the holes through the pusher arm and horn to 0.188"-0.190" diameter
45. Install an AN3-12A bolt, AN960-10 washer, and AN365-1032 nut in the previously drilled/reamed hole
46. Drill & line ream the remaining hole through the pusher arm and horn to 0.188"-0.190" diameter
47. Install an AN3-12A bolt, AN960-10 washer, and AN365-1032 nut in the 26243-017 pusher plate so that it is secured to the 26199-001 torque tube assembly (shown in 26250-003 torque tube sub-assembly)
48. The 26199-001 torque tube assembly can be rotated back down to its original orientation
49. Locate the 26243-019 channel on the aircraft per the 26250-001 hydraulic brake installation
 - a. Note: remove any foam or sealer on the longeron where the channel will be located
50. Securely clamp the 26243-019 channel to the aircraft based on step #49
51. Using the (2) holes on each end of the 26243-019 channel as a guide, drill through the longeron
 - a. Note: it is advised to use a drill bushing to keep the drill straight as it goes through the longeron
52. Once all (4) holes have a pilot hole into the longeron, drill through the channel and longeron using a #14 (0.182" diameter) drill
 - a. Note: it is advised to use a drill bushing to keep the drill straight as it goes through the longeron
53. Ream the previously drilled holes to 0.188"-0.190" diameter; put a 3/16" celco in each hole as it is reamed
54. Once all the holes have been reamed, remove the 26243-019 channel from the aircraft
55. Locate the 26243-013 & 26243-014 angles on the 26243-019 channel per the 26250-005 channel sub-assembly
56. Celco the angles to the channel, then drill & ream the (4) holes in the angles to 0.188"-0.190" diameter
57. Install (2) AN3-3A bolts, (2) AN365-1032 nuts, and (2) AN960-10 washers in the 26243-014 angle (shown in 26250-005 channel sub-assembly)



58. Install (2) AN525-10R8 screws, (2) AN960-10 washers, and (2) AN365-1032 nuts in the 26243-013 angle (shown in 26250-005 channel sub-assembly)
59. Drill & line ream the remaining hole in each angle to 0.188"-0.190" diameter (shown in 26250-005 channel sub-assembly)
60. Locate the 35919-001 placard on the 26243-019 channel approximately as shown in the 26250-005 channel sub-assembly
61. Locate both of the 35908-013 straps per the 26250-005 channel sub-assembly
 - a. Note: it is optional to bond the straps to the channel using 3M 1300L or equivalent
62. Fit the (4) 35908-007 rubber edges so that when the Velcro straps are used, they will set on the rubber edge and not the metal of the channel (shown in 26250-005 channel sub-assembly)
63. Apply commercial sealer to the longeron where the 26250-005 channel sub-assembly will be located and apply sealer to the hardware that will hold the channel so that the longeron will be sealed from corrosion
64. Attach the 26250-005 channel sub-assembly to the holes that were reamed in step #53 using (4) AN3-14A bolts, (8) AN 960-10 washers, and (4) AN365-1032 nuts
 - a. Note: the slot for the shoulder harness lug should be toward the front of the aircraft
65. Using 3M 1300L or equivalent, bond the 35908-005 foam liner on the side of the channel without the angles (as shown in 26250-001 hydraulic brake installation)
66. Using 3M 1300L or equivalent, bond the 26243-029 foam liner on the side of the channel with the angles (as shown in the 26250-001 hydraulic brake installation)
67. Install an AN823-4D elbow into the 33218-005 master cylinder using fuel lube or equivalent
 - a. Note: The elbow should be turned down toward the bottom of the aircraft when the master cylinder is installed (shown in 26250-001 hydraulic brake installation)
68. Attach an end of the 26243-039 brake line to the AN823-4D elbow in the 26247-001 brake caliper using fuel lube or equivalent
69. Slide the AN931-5-9 grommet onto the open end of the 26243-039 brake line
 - a. Note: grommet may have been already installed on brake line during manufacturing
70. Feed the brake line up through the 11/16" (0.69" diameter) hole in the wheel cover
71. Attach the remaining end of the brake line to the elbow in the master cylinder using fuel lube or equivalent
72. Remove the brake disk from the wheel/axle
73. Slide the 35247-001 brake disk in between the brake pads on the 26247-001 brake caliper (orientation does not matter at this point, this is just to help bleed the brake system)
74. Bleed the brake system as follows: **(Must Use MIL-H-5606 Hydraulic Fluid or Equivalent)**
 - a. Temporarily affix the master cylinder so that it is above the brake caliper and in the correct orientation
 - b. Attach a commercial 1/8" pipe-to-hose fitting to the top of the 33218-005 master cylinder with a hose leading to a container to collect brake fluid



- c. Rotate the caliper so that the bleed valve is up
 - d. Use a pressure bleeder to force brake fluid from the bleed valve, down through the caliper, and up to the master cylinder
 - i. Note: if you do not have a professional pressure bleeder system, a cheap manual-pump oil can, with a tube will work
 - e. Pump brake fluid into the caliper until there are no more air bubbles coming out of the master cylinder
 - f. Close the bleed valve on the brake caliper and remove the fitting/hose from the top of the master cylinder and replace the stop cap
75. Remove the 35247-001 brake disk from in between the brake pads
- a. Note: make sure the spoiler/brake control is not moved until the installation is complete
76. Install (2) 36110-051 links, one on each side of the 26243-017 pusher arm, with an AN3-7 bolt, (2) AN960-10 washers, AN310-3 nut, and AN380-2-2 cotter pin
- a. Note: (1) of the washers is to be placed between the link and the pusher arm on the inboard side (shown in 26250 view A-A)
77. Maneuver the top of the 33218-005 master cylinder through the aft hole in the 26243-019 channel and line up the holes in the master cylinder's clevis with the holes in the 26243-013/-014 angles (shown in 26250-001 hydraulic brake installation)
78. Attach the master cylinder to the angles using an AN3-11 bolt, (3) AN960-10 washers, and AN310-3 nut
- a. Note: do not safety at this point
79. Place the bottom of the 33218-005 master cylinder between the 36110-051 links and secure with an AN3-7 bolt, AN960-10 washer, and AN310-3 nut (shown in 26250-001 hydraulic brake installation)
- a. Note: do not safety at this point
80. Reinstall the 35247-001 brake disk onto the wheel/axle (refer to step #20)
81. Install the wheel/brake disk into the aircraft (refer to step #21)
82. Install the 26242-001 axle bolt, AN365-624 nut, and (2) AN960-616 washers removed in step #3
83. Install the brake caliper/torque plate assembly onto the brake disk (refer to step #26)
84. Use (2) AN3-7A bolts, (1) AN3-6A bolt, (5) AN960-10 washers, and (3) AN365-1032 nuts to secure the caliper/torque plate to the aircraft (shown in 26250 sheet 4)
85. Reconnect the 26551-001 push rod, or the 26198-001 push rod, to the 26199-001 torque tube assembly
- a. Note: do not safety at this point
86. Cycle the spoiler/brake control to allow the brake fluid level in the master cylinder to neutralize
- a. Note: brake fluid may leak out of the master cylinder during this process
87. The fuselage can now be lowered to have the main wheel on the ground
88. Install wings on the fuselage
89. Check top dive brakes for a minimum opening of 80° with dive brake/brake control pulled firmly aft
- a. Note: adjusting clevis on master cylinder can change how far the dive brakes open



90. Ground check proper brake operation by pulling on aircraft with brake engaged
 - a. Note: if the brake system does not function properly, you may have to bleed the brake system again to remove any trapped air
91. If everything is functioning properly, remove the wings and support the fuselage again
92. Install the AN931-5-9 grommet into the 11/16" (0.69" diameter) hole in the wheel cover
93. Safety the master cylinder and dive brake/brake push rod
94. Trim the rear canopy deck angle as follows:
 - a. Locate where the rear canopy will be in relation to the shoulder harness tray and mark the location on the rear canopy
 - b. Add approximately 0.75" fore and aft of the marks in order to have plenty of clearance around the tray
 - c. Leave approximately 0.38" flange on the rear canopy deck in order to maintain rigidity
 - d. Trim the rear canopy deck angles
95. Calculate and record weight and balance change in accordance with form I-4609RB
 - a. The 1-26E hydraulic brake kit adds 3 lbs. at station 82.50
 - b. Note: this is assuming your ship has a full weight and balance previously done
 - c. If not, follow these steps:
 - i. Go to www.klsoaring.com
 - ii. On the left hand side, under main menu, click downloads
 - iii. Under glider documents, click weight & balance sheets
 - iv. Scroll down until you find 1-26 weight & balance sheet
 - v. Left click on it and it should open a .pdf that you can print out
96. Flight test the brake system
 - a. Make sure the flight controls are connected and working properly, and the aircraft has been inspected for flight worthiness
 - b. To have the brake system activate sooner with the pulling of the dive brake handle, lengthen the clevis on the master cylinder
 - c. To have the brake system activate later with the pulling of the dive brake handle, shorten the clevis on the master cylinder

Note: When adjusting master cylinder, make sure the top dive brakes still open a minimum of 80°