



1-26, A, B, C Hydraulic Brake Kit

Installation Instructions

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 AN6-66 bolt, AN310-6 nut, AN960-616 washer, and AN380-3-4 cotter pin attaching main wheel/tire to airframe (save hardware for reinstallation)
4. Remove wheel/tire from airframe
5. Remove the (2) AN3-5A bolts and (2) AN365-1032 nuts that retain the 26203-001 brake band assembly to the fuselage at aft end of wheel housing (save hardware for reinstallation)
6. Remove the AN210-2 pulley, used by the 26129-001A brake cable assembly, by removing the AN3-5 bolt, AN310-3 nut, and AN380-2-2 cotter pin securing it (pulley and hardware will not be reused)
7. Disconnect the 26129-001A brake cable assembly from the 26104-010A weld assembly (shown in 26248-003 bell crank sub-assembly) by removing the AN3-5 bolt, AN960-10 washer, AN310-3 nut, and AN380-2-2 cotter pin (hardware will not be reused)
8. Remove the 26203-001 brake band assembly and 26129-001A brake cable assembly by routing the brake cable through the open slot in the wheel well (the brake band assembly and brake cable assembly will not be reused)
9. Reinstall the (2) AN3-5A bolts and (2) AN365-1032 nuts that were removed in step #5 to secure the wheel cover to the fuselage
10. Remove the STD1A119-001A pulley bracket assembly, that held the AN210-2 pulley, by removing an AN3-5 bolt, AN960-10 washer, AN310-3 nut, and AN380-2-2 cotter pin (pulley bracket and hardware will not be reused)
11. Remove 26117-002A cable assembly from the 26104-010A horn assembly by removing the AN3-5 bolt, AN960-10 washer, AN310-3 nut, and AN380-2-2 cotter pin (save hardware for reinstallation)
12. Remove the hardware that retains the 26104-008 sleeve, mark the sleeve for proper orientation upon reinstallation, then remove the sleeve and set the sleeve and hardware aside for reinstallation
13. Slide the 26104-010A horn assembly off the post and remove from aircraft for pusher arm installation
14. Install the 26243-021 pusher arm (shown in 26248-003 bell crank sub-assembly) as follows:
 - a. Place the 26243-021 pusher arm on the short 26104-004 horn so that the existing hole in the horn lines up with the hole closest to the squared end on the pusher arm
 - b. Put an NAS1303-6 bolt (NAS1303-7, AN960-10, & AN960-10L alt.) in the lined up holes and then install an AN960-10 washer and MS21042-3 nut
 - c. Using an AN3-7 bolt, AN310-3 nut, AN960-10 washer, and AN380-2-2 cotter pin; install (2) 36110-051 links, one on each side of the pusher arm, in the hole furthest from the squared end of the pusher arm



- i. Note: head of bolt must be toward the forward side of the aircraft
 - d. Rotate the pusher arm so that the middle hole in the pusher arm is approximately on the center of the horn and that the links can be rotated without interference from weld
 - e. Clamp the pusher arm in place, then drill/ream 0.188"-0.190" diameter hole into horn through the hole in the pusher arm
 - f. Install NAS1303-6 bolt, AN960-10 washer, and MS21042-3 nut into new hole
15. Install an AN823-4D elbow into the master cylinder using fuel lube or equivalent
 - a. Note: The elbow should be turned toward the aft end of the aircraft when the master cylinder is installed (shown in 26248-001 hydraulic brake installation)
16. Connect the bottom end of the 33218-005 master cylinder to the 35110-051 links (installed in step #14c) using an AN3-7 bolt, AN960-10 washer, AN310-3 nut, and AN380-2-2 cotter pin
17. Rework 26212-001 wheel cover (shown in 26248-005 wheel sub-assembly) as follows:
 - a. Add 11/16" (0.69" diameter) hole for brake hose on aft end of wheel cover on left hand side of aircraft (see 26248-005 wheel sub-assembly for dimensions)
 - b. Add 0.40" x 1.19" slot in wheel cover for torque plate on the left front side of aircraft (see 26248-005 wheel sub-assembly for dimensions)
 - c. Patch original hole for brake band pulley on the front side of the wheel cover by fabricating an aluminum plate and installing it with (4) MS20470A4 rivets or equivalent. As an alternate, use (2) layers of aluminum tape on each side of the wheel cover
18. Install the 26248-003 bell crank sub-assembly, with the 26243-021 pusher arm and 33218-005 master cylinder toward the front of the fuselage, onto the post it was removed from in step #13
19. Install the 26104-008 sleeve and hardware removed in step #12 to secure the bell crank sub-assembly
20. Reattach the 26117-002A cable assembly to the 26104-010A horn assembly using the hardware removed in step #11
21. Drill & line ream 0.250"-0.251" diameter hole through the 26019-001 carry-through plate assembly (location shown in 26248-001 hydraulic brake installation)
22. Install an AN43B-15 eyebolt, AN960-416 washer, AN310-4 nut, and AN380-2-2 cotter pin into the hole in the wing carry-through plate (do not torque)
 - a. Note: eyebolt must be able to be rotated with finger pressure
23. Connect the top end of the master cylinder to the eyebolt located on the wing carry-through plate using an AN3-7A bolt, AN960-10 washer, and AN365-1032 nut
 - a. Note: The AN823-4D elbow should be toward the right side of the aircraft
24. Attach an end of the 26243-039 brake line to the AN823-4D elbow in the master cylinder with fuel lube or equivalent
25. Slide the AN931-5-9 grommet onto the open end of the 26243-039 brake line and push it toward the master cylinder
 - a. Note: grommet may have been already installed on brake line during manufacturing
26. Feed the 26243-039 brake line through the 11/16" (0.69" diameter) hole in the wheel cover



27. Cycle the spoiler/brake control to make sure there are no interferences between installed brake components and airframe. Cycle aileron to insure that the 26112-001 aileron transfer tube clears the master cylinder throughout travel.
 - a. Note: contact K&L Soaring for corrective action in the event of any interference.
28. Rework the wheel/tire assembly (shown in 26248-005 wheel sub-assembly) as follows:
 - a. Release air from tire and remove valve core from stem (keep valve core for reinstallation)
 - b. Disassemble wheel halves and 26202-001 axle assembly from tire/tube by removing (8) AN5-6A bolts, (8) AN365-524 nuts, (7) 93852A102 washers, and (1) AN960-516 washer (save (7) bolts, (8) nuts, & all washers for reinstallation)
 - c. Remove (2) flanged bearings from the 26202-001 axle assembly to inspect/service
 - d. Rework 26202-001 per 26248-005 wheel sub-assembly
 - i. Note: If using K&L Soaring axle exchange program this step may be skipped
29. Reassemble wheel/tire/axle (shown in 26248-005 wheel sub-assembly) as follows:
 - a. 26202-009 axle assembly flange is to be located so that it is trapped between the (2) wheel halves (shown in 26248 section B-B) with the longer end of the axle on the opposite side of the tire from the valve stem.
 - b. Install the AN5-12A bolt, 35247-009 bushing, (2) 93852A102 washers, and AN365-524 nut, opposite the valve stem, with the head of the bolt and bushing toward the longer end of the axle
 - c. Install the AN960-516 washer, along with AN5-6A bolt and AN365-524 nut, next to the valve stem
 - d. Install the remaining hardware in the wheel per 26248-005 wheel sub-assembly
 - e. Torque nuts to 165-185in.lbs. and inflate tire to 35psi.
 - f. Reinstall wheel bearings into 26202-009 axle assembly
30. Assemble 26243-031 torque plate assembly onto 26247-001 brake caliper assembly (shown in 26248-005 wheel sub-assembly) using (2) AN525-10R6 screws with Loctite #263 or equivalent.
31. Install AN823-4D elbow into 26247-001 brake caliper assembly using fuel lube or equivalent with the elbow turned slightly inboard
32. 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
33. Connect the 26243-039 brake line to the AN823-4D elbow on 26247-001 brake caliper using fuel lube or equivalent
34. Slide the 26243-009 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)
35. Bleed the brake system as follows:
 - a. 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
 - b. Rotate the caliper so that the bleed valve is up



- c. 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
 - d. Pump brake fluid into the caliper until there are no more air bubbles coming out of the master cylinder
 - e. 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
 - f. Cycle the spoiler/brake control to allow the brake fluid level in the master cylinder to neutralize
 - i. Note: brake fluid may leak out of the master cylinder during this process
36. Remove 26243-009 brake disk from in between the brake pads
- a. Note: make sure the spoiler/brake control is not moved until the installation is complete
37. Slide 26243-009 brake disk assembly onto the longer end of the 26202-009 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 26248 view A-A)
38. Mount the brake caliper/torque plate assembly onto the 26243-009 brake disk assembly so that the brake pads are on either side of the brake disk and that the hole in the torque plate, with the spacer, is lined up with the hole in the axle assembly (shown in 26248-005 wheel sub-assembly)
39. Install the wheel/brake assembly into the aircraft as follows:
- a. While holding the wheel/brake assembly so that the caliper is toward the left side of the aircraft, slide the torque plate arm into the 0.40" x 1.19" slot in the front of the wheel cover
 - b. Finish sliding the wheel/brake assembly into the aircraft so that the holes in the axle and torque plate line up with the holes in the frame
 - c. Re-install the AN6-66 bolt, AN310-6 nut, and AN960-616 washer removed in step #3 and safety with AN380-3-4 cotter pin
40. Working from inside aircraft, locate and drill 0.25" diameter hole through fuselage cross tube (26001-086) centered in line with hole of 26243-031 torque plate assembly and 0.06" inboard of the torque plate (shown in 26248-001 hydraulic brake installation)
41. Install AN43B-14 eyebolt using sealant, with (2) AN960-416 washers under the head, through the hole drilled in step #40. Secure with an AN960-416 washer and an AN365-428 nut on lower side of aircraft
42. Attach the 26243-031 torque plate arm to the AN43B-14 eyebolt with an AN3-6A bolt, AN365-1032 nut, and AN960-10 washer
43. Install 26243-037 chafe tube onto 26001-076 tube and place it so that the brake line will not rub on the tube (shown in 26248 view D-D)
44. Use the provided 8" zip-tie to secure the brake line to the chafe tube (shown in 26248 view D-D)
45. The fuselage can now be lowered so the main wheel is on the ground
46. Install wings on the fuselage and connect both spoiler cables to the 26104-010A weld assembly
47. Check spoiler rigging for a minimum opening of 75° with spoiler control pulled firmly aft



- a. Note: Adjusting clevis on master cylinder can change how far the spoilers open
48. 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
49. Calculate and record weight and balance change in accordance with form I-4609RB
 - a. The 1-26A, B, C hydraulic brake kit adds 3lbs. at station 80.50
 - 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
50. 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 spoiler handle, lengthen the clevis on the master cylinder
 - c. To have the brake system activate later with the pulling of the spoiler handle, shorten the clevis on the master cylinder
 - i. Note: When adjusting master cylinder, make sure the top spoilers still open a minimum of 75°