



***FLFS-Flex Laminar Flow Station
Unpacking, Set-up & Operation Instructions***

1. Uncrating the FLFS Unit

1.1. Unscrew the (1) removable crate top and (1) crate panel marked "FRONT – OPEN THIS SIDE" then set them off to the side. Carefully unload the loose items (if any) packed above and underneath the bench-top. Unscrew and remove the (2) 2" x 4" blocks with foam that hold the bench down in the crate. Unlock the swivel casters for the bench and slide it out of the crate. It is heavy so be sure to have help with this.

2. Setting Up the FLFS Station

2.1. Locate and position the system where it is to be used, near an electrical outlet. If electrical outlet(s) are not present, you will need to install them to tie the system in and set it up for operation.

2.1.1. ***VERY IMPORTANT – be sure to bring all components inside the room or space where it is to be used prior to assembly. The Flex Laminar Flow System may be too large or tall to get through a regular doorway after it is assembled!***

2.2. Install the (2) uprights



2.2.1. a. b. If the ceiling height in the room is 95" (7'-11") or higher, clamp a block to the back of the (2) rear legs 17" (+/- 1/16") down from the top of the work surface to the top of the block (see picture 2.2.1.a), which will allow for a 6" airspace above the HFFU (HEPA Fan Filter Unit) prefilter (pic 2.2.1.b) and a clear height of 44" between the top of the work surface and the underside of the HFFU. If the ceiling height in the room is less than 95" (7'-11"), or if you prefer to have the clearance between the HFFU and the work surface to be less than 44", lower the block accordingly; e.g. if the ceiling is 90" high – or 5" less than 95" - then lower the block by 5", or to 22" from the work surface to insure adequate airflow into the HFFU prefilter. There must be at least 4" clearance above the HFFU prefilter, 6" is preferable.



- 2.2.2. a.  b.  Loosen the (2) bolts with strut nuts at each of the (2) legs so there is ½" between the leg and strut nuts (see pic 2.2.2.a.)

2.2.3. Orient the strut nuts vertically to insert into the open side of the upright struts (see pic 2.2.2.b.)

2.2.4. Gently sit the uprights on top of the wooden block and slide over the strut nuts (see picture 2.2.1.a & 2.2.2.a above)



- 2.2.5. a.  b.  By hand, turn the bolts clockwise so that the strut nuts rotate clockwise to engage both sides of the upright (see picture 2.2.5.a & 2.2.5.b). Once the strut nut is properly oriented and engaging the upright strut on both sides, tighten securely with a ratchet or wrench.

2.2.5.1. It is very important that the strut nut fully engages the uprights/struts to insure structural integrity of the system and to avoid potential injury. The ceiling structure for the LFS carries the weight of the HFFU-Hepa Fan Filter Unit, light, ceiling grid and ceiling panels so be careful to follow this step carefully.



- 2.2.6.  Install the reinforcing U-clamp kit at the bottom of each upright for units over 60" long and/or with more than a single 2'x4' HFFU
- 2.2.6.1. slide (1) white U-clamp onto the bench frame so it wraps around the very bottom of the upright and the bench leg
- 2.2.6.2. insert (1) ¼"-20 x 4 ½" SS hex bolt through the holes in the U-clamp then install the SS washer and ¼"-20 hex nut
- 2.2.6.3. tighten firmly

2.2.6.4. repeat at the other upright/leg

2.2.7.



2.2.8. The uprights/struts should be 54" on center for a 60" long bench, or 66" on center for a 72" long bench and must be parallel at the bottom and at the top. Loosen slightly and adjust as needed to make parallel; then re-tighten securely.

2.2.9. Remove the clamps with blocks after uprights are secured.

2.3. Install the power strip with mounting rail over the work surface

2.3.1. Loosen the bolt with strut nut at each end of the (1) power strip mounting rail so there is 1/2" between the rail and strut nuts

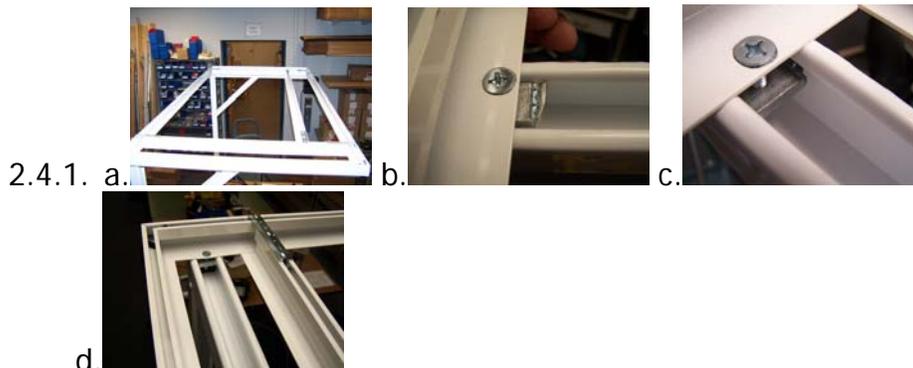
2.3.2. Orient the power strip with mounting rail so that the power cord and switch on the power strip are to the left as viewed from the front of the bench

2.3.3. Insert the strut nuts into the open side of the uprights from the front of the bench

2.3.4. By hand, snug the bolts so that there is about 2.5" between the underside of the mounting rail and the top of the work surface and make sure it is level and parallel with the work surface. Make sure the strut nuts engage the struts at both sides as in step 2.2.5. above.

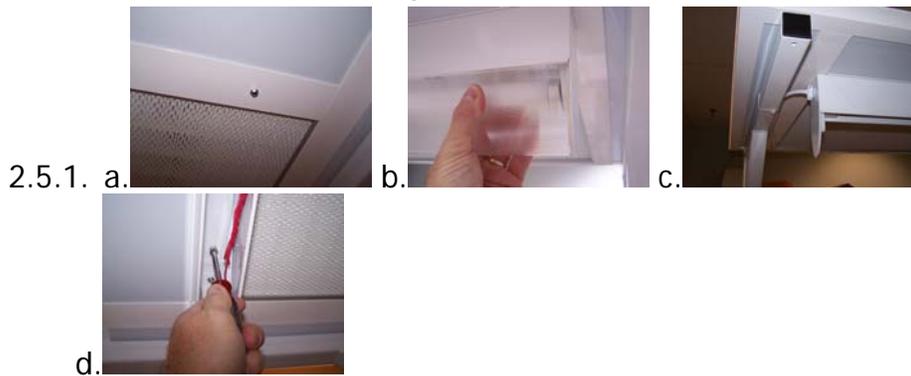
2.3.5. Tighten the bolts with a ratchet / wrench

2.4. Secure ceiling frame atop uprights with horizontal support



2.4.2. Place the pre-made ceiling frame atop the uprights with horizontal support, oriented so that the 24-1/2" x 48-1/2" opening for the HFFU (Hepa Fan Filter Unit) is toward the back of the unit (see pic 2.4.1.a)

- 2.4.3. with the strut nuts loose on the ¼-20x1" flat head Phillips screws (supplied); insert the strut nuts into the horizontal supports (see pic 2.4.1.b)
 - 2.4.4. rotate strut nuts to engage strut (see pic 2.4.1.c) and tighten securely while maintaining the 54" o.c. (on center) dimension at the uprights at front and back of the ceiling frame. This will insure a nice parallel appearance as well as keep the ceiling frame square.
 - 2.4.5. Install the black plastic end plugs for the horizontal strut, if you removed them during the ceiling installation.
 - 2.4.6. Install (optional) gasket at the ceiling (gasket included) frame before installing white plastic ceiling panels and HFFU.
- 2.5. Install the 48" fluorescent light fixture and bulb



- 2.5.1. a. Remove the (2) #8 x ½" hex head TEK (self drilling) SM (sheet metal) screws from the underside of the 2" ceiling tee (pic 2.5.1.a)
 - 2.5.1. b. Remove the plastic lens from the light fixture and set aside (pic 2.5.1.b)
 - 2.5.1. c. Remove the white metal cover with (2) screws from the light fixture
 - 2.5.1. d. Orient light fixture up under the 2" ceiling tee so that the cord is to the left when viewed from the front (pic 2.5.1.c)
 - 2.5.2. Screw the light fixture to the 2" tee, re-using the #8 x ½" Tek screws (pic 2.5.1.d) and the holes already in the ceiling tee.
 - 2.5.3. Re-install the white metal cover
 - 2.5.4. Install the 48" fluorescent light bulb (supplied)
 - 2.5.5. Install plastic lens cover
- 2.6. Install HFFU-Hepa Fan Filter Unit
- 2.6.1. Make sure the bench height adjustment is at its lowest setting. If not, turn the large black handle at the right end of the bench all the way counter-clockwise to lower the bench.
 - 2.6.2. If you installed the (optional) gasket, peel the release liner paper off of the gasketing in the largest ceiling opening where the HFFU is to be installed

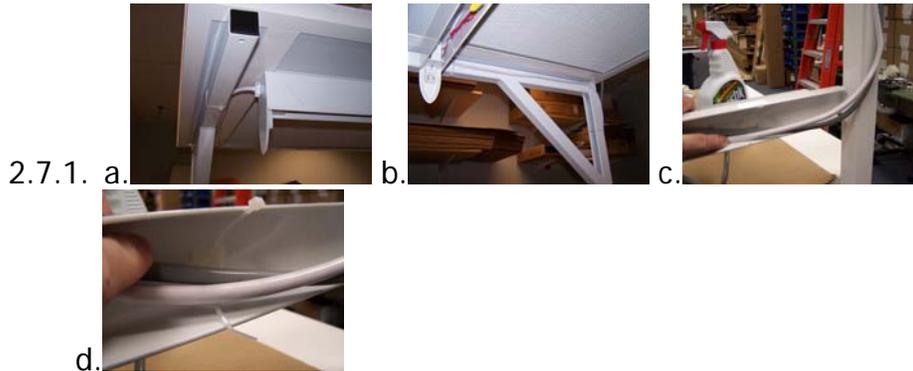


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2.6.3. Very carefully, and with the help of at least one other person, lay the HFFU into the opening in the ceiling so that the power cord is to the left as viewed from the front. Do not slide the unit into the opening as it will tear the gasketing. It must be placed down into the opening.

2.6.3.1. Important Note; use caution when handling the HEPA Fan Filter Unit; do not puncture the HEPA Filter.

2.7. Neaten and dress the power cords



2.7.1. a. Route the power cord for the HFFU and light along the uprights, bringing around to the back of the upright on the left side of the bench, securing intermittently with the 14" long white tie wraps provided (see pics 2.7.1.a & 2.7.1.b above)

2.7.2. Plug the power cords from the HFFU and light into the electrical power strip above the work surface. Make sure the power strip switch is in the off (down) position.

2.7.3. Loop excess cord into the hollow back of the electrical strip mounting rail and secure with small 4" tie wraps and tie wrap peel-and-stick anchors provided (see pic's 2.7.1.c & 2.7.1.d)

2.8. Install white plastic ceiling panels

2.8.1. peel off release paper liner from ceiling gasket (if installed)

2.8.2. remove clear masking from one side only at all ceiling panels supplied.

2.8.3. Insert panels into ceiling grid with unmasked face down-facing and center in the overall opening before pressing into adhesive gasket

2.8.3.1. Note: the top side of each panel will stay fresh due to masking so that it can be removed at a later date and flipped over to refresh the appearance of the ceiling panels

2.9. Install the clear 3 side-surround antistatic curtain at the back and 2 ends



2.9.1. a.

b.

c.

2.9.2. Align the curtain's formed heat-creases (2) with the outside corners at the back of the ceiling frame and press the dual-lock on the curtain into the dual-lock on the ceiling frame just enough to hold the curtain in place. The wire from the HFFU will need to pass through (behind) the curtain and ceiling frame (pic 2.9.1.c) in order to plug it into the power strip inside the hood.

2.9.3. Work the remaining (2) end flaps of the curtain onto the ceiling frame, adjusting alignment as needed.

2.9.4. Firmly press the dual-lock in place along the entire length of the back and (2) ends to secure the curtain into place (pic 2.9.1.b)

2.9.5. Install fascia curtain panel (not included with all systems) at front of ceiling using same method.

2.10. Power up the system

2.10.1. turn on each component plugged into the power strip individually; e.g. the HFFU in the ceiling over the work surface & the light over the work surface

2.10.2. plug the power cord from the power strip into the proper single phase electrical outlet and turn the lighted switch "on" to energize all items plugged into it.

2.10.3. adjust the fan speed at the HFFU to the desired speed via the solid state speed control switch near the top of the HEPA Fan Filter Unit.

2.10.3.1. Note; some HFFU models have a "soft start" feature, which can take up to 60 seconds to reach full speed.

You are ready to begin using the FLFS. Good Luck!!