



Static Clean International

MCS-LFS Medical Cleaning Station with Laminar Flow System Option Unpacking, Set-up & Operation Instructions

1. Uncrating the MBDCS 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.
- 1.2. The top hood is bubble wrapped and lowered to rest on the work surface and bottom hood assembly to eliminate possible damage during shipping. Loosen the silver lock-lever handle located to the right side and back end of the top hood, which is currently oriented at the 5:00 o’clock (locked) position, counter-clockwise past the 12:00 o’clock position. Loosen the small black knob at the nose (front) of the hood, which secures the front clear plastic air baffle. Grab the now loosened black knob at the nose of the hood and gently lift it up while turning the black hand-wheel atop the vertical height adjustment column clockwise to raise the hood a few inches.
- 1.3. Carefully remove the stretch wrap and bubble wrap from the top hood assembly. **DO NOT USE A KNIFE OR SHARP OBJECT TO CUT PACKAGING MATERIALS FROM THE HOOD. A SCRATCH IN THE STAINLESS STEEL IS NOT EASILY REMOVED OR REPAIRED.**
- 1.4. Open the lower front access door of the VQM5003 dust collector (may ship in separate crate) and remove the instruction manuals and accessories that have been placed in dust drawer for shipping before plugging the system in for operation. Save these instructions for your records.

LFS-Laminar Flow System Option Setup Instructions

Because the system that includes the LFS over the work surface could cost more to ship fully assembled and would be more susceptible to damage, we pre-assemble it then knock it down somewhat and pack into the shipping crate to keep the crate dimensions smaller. As a result, it does require some re-assembly. To setup the system follow these steps:

VERY IMPORTANT – BE SURE TO BRING ALL COMPONENTS INSIDE THE ROOM OR SPACE WHERE IT IS TO BE USED PRIOR TO ASSEMBLY. THE LAMINAR FLOW SYSTEM WILL USUALLY BE TOO LARGE AND/OR TALL TO FIT THROUGH A REGULAR DOORWAY AFTER IT IS ASSEMBLED!

2. Install the (2) uprights



- 2.1. Measure 17" (+/- 1/16") down from the top of the work surface at the back of the (2) rear legs; mark both legs with a pencil line; align the top of a small wooden block to each line then firmly clamp to each leg (see picture).

2.1.1. NOTE: Increasing this dimension will result in the Laminar Flow System ceiling being lower and closer to the work surface.



- 2.2. Loosen the (2) bolts with strut-nuts at each of the (2) legs so there is 1/2" between the leg and the backside of the strut-nuts as shown



- 2.3. Orient the strut-nuts vertically to insert into the open side of the upright struts (see pics); gently sit the uprights on top of the wooden block and over the strut-nuts. By hand, turn the bolts clockwise so that the strut-nuts rotate 90 degrees and engage both sides of the upright (see pics). Once the strut-nuts are properly oriented and engaging the upright struts on both sides, tighten securely with a 9/16" socket or wrench.

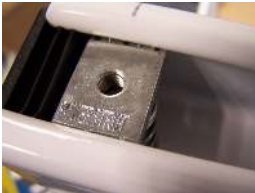
2.3.1. WARNING - IT IS VERY IMPORTANT THAT ALL STRUT-NUTS FULLY ENGAGE THE UPRIGHTS/STRUTS TO INSURE STRUCTURAL INTEGRITY OF THE SYSTEM AND TO AVOID POTENTIAL INJURY. THE UPRIGHTS CARRY THE WEIGHT OF THE CEILING, HFFU (HEPA FAN FILTER UNIT) AND LIGHT SO BE CAREFUL TO FOLLOW THIS STEP CAREFULLY.

- 2.4. The uprights/struts should be parallel to within 1/8" at the top and bottom. Loosen slightly and adjust as needed to make parallel; then re-tighten securely before proceeding.

3. Install the (1) white metal ceiling-pan onto the horizontal rails at the top of the uprights



- 3.1. Insert (1) $\frac{1}{4}$ -20 strut-nut with spring (provided) into each end of both horizontal rails at a total of (4) locations. Rotate the strut-nut clock-wise 90 degrees so the grooves in the nut seat into the edge of the horizontal rail, fully engaging the rail.



- 3.2. Adjust/slide each strut-nut so that the center of the strut-nut is 1" from the end cap and 30" on-center to the other strut-nut in that same rail. The spring will allow you to easily move the strut-nut and keep it in place, which will be critical in the next steps.



- 3.3. Carefully place the white metal ceiling-pan onto the horizontal rails at the top of the uprights, flush with the black plastic end caps in the rails and so that the (4) thru-holes in the ceiling-pan align with the strut-nuts in the rails. Be sure the ceiling-pan is oriented so that the 22 $\frac{1}{2}$ " x 46 $\frac{1}{2}$ " opening for the HFFU (Hepa Fan Filter Unit) is at the back and the light is at the front of the system.

3.3.1. IMPORTANT: THE CEILING-PAN IS HEAVY. TO AVOID INJURY, BE SURE YOU HAVE HELP LIFTING THE PAN ONTO THE RAILS. PLACE THE CEILING-PAN ONTO THE RAILS TO AVOID SCRATCHING THE PAINT FINISH. DO NOT SLIDE IT ONTO THE RAILS!!!



- 3.4. Insert (1) $\frac{1}{4}$ -20 x $\frac{3}{4}$ " SS (stainless steel) Hex-bolt through (1) $\frac{1}{4}$ " x $\frac{5}{8}$ " OD SS washer (provided), through the ceiling-pan and into the strut-nut and finger tighten. You may need to manipulate the uprights and/or strut-nuts a bit to get the bolts to align properly with the strut-nuts to avoid cross-threading them. Repeat at the (3) remaining holes in the ceiling-pan. Check to make sure the edges of the ceiling-pan are flush with the black plastic end caps at the rails. Tighten all (4) hex-bolts with a $\frac{7}{16}$ " socket wrench.



4. Remove the plastic lens from the light fixture and set aside (see pic above); Install the 48" fluorescent light bulb (supplied) and reinstall the lens



place (2) temporary 2" x 4" shims (blocks), a few inches long, on the work surface just inside the left and right uprights; place the (1) power-strip with mounting-rail on top of the blocks with the red power (rocker) switch to the right; loosen the (2) strut-nuts on the mounting-rail and insert into the upright at each end, rotate 90 degrees to fully engage the uprights and tighten with a 9/16" socket as shown. Remove the 2" x 4" shims.

6. Install HFFU (Hepa Fan Filter Unit)

6.1. Make sure the bench height adjustment is at its lowest setting. If not, turn the large black hand-crank handle at the right end of the bench all the way counter-clockwise to lower the bench.

6.2. Peel the release liner paper off of the gasket in the ceiling-pan opening where the HFFU is to be installed



- 6.3. Very carefully, and with the help of at least one other person, lay the HFFU into the opening in the ceiling-pan so that the power cord is to the left as viewed from the front.

6.3.1. IMPORTANT NOTE: DO NOT SLIDE THE HFFU INTO THE OPENING AS IT WILL TEAR THE GASKET. IT MUST BE PLACED DOWN INTO THE OPENING TO ACHIEVE A GOOD SEAL INTO THE GASKET.

7. Neaten and dress the power cords



- 7.1. Route the white power cord for the light along the Inside of the horizontal rail then pair up with the cord from the HFFU at the top back of the upright as shown, securing to the sticky-backed anchors on the upright with white tie-wraps (supplied) as shown



- 7.2. plug the power cord for the HFFU & light into the 1st & 2nd outlet at the left end of the power-strip; plug the (2) power supplies for static bars into the 3rd & 4th outlet; plug the dust collector into the last or 2nd-to-last outlet at the right end of the power-strip as shown. Remove and discard **all** temporary masking tape labels.



- 7.3. Loop the excess white cord neatly into the hollow back of the electrical power-strip mounting-rail, tying as needed with white tie-wraps and anchors (supplied) as shown

8. Install the clear surround curtains



- 8.1. Align the (2) curtain weld-creases with the outside corners at the back of the ceiling-pan and press the (Velcro-like) dual-lock on the curtain into the mating dual-lock on the ceiling-pan just enough to hold the curtain in place. The wire from the HFFU will need to pass through (between) the dual-lock (see 3rd pic above)

- 8.2. Work the left and right end flaps of the curtain onto the ceiling-pan, adjusting alignment as needed. Loosen and restick the curtain into the dual-lock until the seams align well with the back corners of the ceiling-pan and the front edges of the left and right curtain flaps align well with the front corners of the ceiling-pan.



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8.3. Firmly press the dual-lock in place along its entire length to secure the curtain into place and achieve a good seal (see pic above)



8.4. Install the fascia curtain panel (not included with all systems) at the front of the ceiling-pan using the same method. Overlay the 1” x 1” square ‘button’ on the fascia side panel return flaps over each side panel of the larger curtain and mark out the button area on the side curtain. Carefully cut away the button area (as shown) from both side curtains with a scissors, then restick the side panels and (2) fascia return panel buttons to the dual lock to finish the fascia panel installation.

9. Power up the system

9.1. turn on each component plugged into the power-strip individually; e.g.

9.1.1. the (TSN75, TSN70 or other) power supplies for the static bars, which are mounted to the underside of the work surface

9.1.2. the HFFU in the ceiling-pan over the work surface

9.1.3. the model VQM5003(H) single phase dust collector

9.2. Plug the power cord from the power-strip into a wall receptacle that is properly grounded and wired per local electrical codes and specs. Be sure the mains voltage matches that of the system; i.e. either 115V, 60Hz, single phase or a 230V, 50/60Hz, single-phase; 15-amp (minimum). Turn the power-strip lighted switch “on” to energize all items plugged into it.

9.3. Adjust the fan speed at the HFFU via the solid-state speed controller dial on the left side of the HFFU. We recommend setting to medium-high speed initially, then adjust as needed

9.3.1. Note; some HFFU models have a “soft start” feature which can take up to 60 seconds to reach full speed.

9.4. follow section 10 below for remaining setup



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MBDCS Setup Instructions

10. Installing the MBDCS Station (with or without LFS)

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

10.1.1. VERY IMPORTANT – BE SURE TO BRING ALL COMPONENTS INSIDE THE ROOM OR SPACE WHERE IT IS TO BE USED PRIOR TO ASSEMBLY. THE LAMINAR FLOW SYSTEM WILL USUALLY BE TOO LARGE AND/OR TALL TO FIT THROUGH A REGULAR DOORWAY AFTER IT IS ASSEMBLED!

10.2. Plumb CDA (clean, dry compressed air) to each compressed air filter / regulator included with the system. We include (1) 3/8" push-in tube fitting for easy hook-up at each compressed air filter / regulator secured to the back of the dust collector or to a mounting plate beneath the work surface. You can remove the push-in tube fitting and plumb directly into the 3/8" NPTF female input port of each filter / regulator if you prefer. Make sure that each filter / regulator valve is in the "closed/off" position.

10.2.1. **IMPORTANT NOTE:** If the system has (2) compressed air filter / regulators be sure to use a primary supply air line with a 3/8" (min) ID (inside diameter), splitting to (2) 1/4" (min) ID air lines which connect to each of the (2) compressed air filter / regulators to assure adequate flow to the system. If the system includes (1) compressed air filter / regulator, a 1/4" (min) ID air line will suffice. All Supply lines leading up to the system must be of equal or larger ID size to avoid a 'bottle-neck' situation that can starve the system for air flow.

10.3. Plug the power cord from the power-strip into a wall receptacle that is properly grounded and wired per local electrical codes and specs. Be sure the mains voltage matches that of the system; i.e. either 115V, 60Hz, single phase or a 230V, 50/60Hz, single-phase; 15-amp (minimum). Turn the power-strip lighted switch "on" to energize all items plugged into it.

10.4. Adjust the height of the bench for comfort by turning the black hand-crank located at the front, right corner of the bench. The bench can be adjusted from its lowest setting of 37 1/2" up to 49 1/2". Turning the hand-crank clockwise will raise the bench; counter-clockwise will lower it.

10.4.1. VERY IMPORTANT; IF THE SYSTEM INCLUDES THE LAMINAR FLOW SYSTEM OPTION, BE SURE TO WATCH THE VERY TOP OF THE UNIT FOR CLEARANCE TO AVOID DAMAGING THE CEILING AND/OR THE UNIT. THERE MUST BE AT LEAST 4" (102MM) TO 6" (152MM) OF CLEARANCE ABOVE THE HFFU PREFILTER TO ALLOW ADEQUATE AIRFLOW INTO THE FAN MODULE.

11. Setting up the MBDCS Station for operation



- 11.1. Determine the height, or thickness, of the part to be cleaned using the MBDCS system. **Adjust the height of the upper hood assembly to be at least ¼”, but not more than ½” above the highest surface of the part to be cleaned.** Loosen the silver lock-lever handle located to the right side and back end of the top hood, which is currently oriented at the 5:00 o’clock (locked) position, counter-clockwise past the 12:00 o’clock position. Loosen the small black knob at the nose (front) of the hood, which secures the front clear plastic air baffle. Grab the now loosened black knob at the nose of the hood and gently lift it up while turning the black hand-wheel atop the vertical height adjustment column clockwise to raise the hood, or counter-clockwise to lower the hood as needed. Tighten the silver lock-lever at the rear of the hood, then snug the black knob at the front clear baffle to complete the height adjustment.
- 11.1.1. Note; If needed, the lock-lever handle can be re-oriented by pulling the lock-lever directly toward you while pushing on the black button socket head with your thumb, disengaging the lock-lever from the grooves in the bolt and allowing it to be freely rotated. Rotate the lock-lever to the desired position and release. The internal spring will draw the lock-lever into the grooves on the bolt to re-engage it.
- 11.2. Turn the switch to the model TSN75power supply for static bar(s) to the “on” position. You will hear a faint buzzing sound coming from the static bars, which is normal.
- 11.3. Turn the switch to the VQM5003(H) Dust collector to the “on” position. You will hear the collector motor and suction being generated at the top and bottom hood vacuum slot(s).
- 11.3.1. VERY IMPORTANT NOTE: the collector motor can, on a rare occasion, rotate backwards depending on the phasing of power coming into your facility. The magnehelic gage should read between 0.5” to 1.0” of water column (static pressure) when the unit is turned on and you should hear and feel very good airflow at the vacuum slots of both hoods. If the gage reads near zero, it sounds too quiet and/or you don’t feel good flow at the hoods, the motor may be spinning backwards. Turn the unit off, unplug it and refer to directions in the collector manual and/or the wiring diagram on the internal collector motor for instructions on how to change the wiring on the motor junction box to reverse the motor direction. Call for assistance if needed.**
- 11.4. Turn the red valve to the compressed air filtration system(s), located on the back of the VQM5003(H) collector or on a mounting plate beneath the work surface, to the “on” position. Turn the adjustment knobs on the top of the compressed air filtration system(s) until the desired air pressure is displayed in the pressure gage. You will hear compressed air coming from the stainless steel air tubes located along both sides of the hood vacuum slot(s). We recommend setting the air pressure between 8 to 15psi for the initial cleaning of parts.
- 11.5. You are now ready to feed parts through the cleaning zone of the MBDCS station.
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12. Operation of the MBDCS Station

12.1. Pass a part at a controlled rate of speed from either right to left, or left to right, through the cleaning zone – between the upper and lower vacuum hoods with static bars and stainless steel compressed air tubes. If possible, orient the part inverted, with the open side down-facing, so that gravity will aid in cleaning the part(s), assisting contaminants into the vacuum slot. Be sure that the part is centered on the vacuum slot of the hood from front to back to insure all of the surface area of the part is exposed to the ionization, compressed air blow-off and vacuum suction for best results. It should take approx. 2 full seconds to pass most parts through the cleaning zone of the MBDCS Station. More time may be needed for extremely long parts – i.e. long packaging trays or long catheters/cards.

IMPORTANT NOTE: It is strongly recommended that one end of the station is established as the “pre-clean” end and the other as the “post-clean” end so that contaminants are kept to one end of the system to minimize recontamination of parts after cleaning them.

12.2. Separately adjust the air pressure at the filter / regulators to the top & bottom air tubes as needed until optimal results are achieved without wasting energy. The standard MBDCS filter/regulator has a 3 – 30 (max) psi range and gage.

12.3. Difficult (to clean) parts with nooks & crannies, deeper/taller packaging trays and/or parts may require additional pressure and/or vacuum to the top hood to overcome gravity and to promote suspension and capture of particulates by top vacuum hood. You can adjust the pressure to the top air tubes independent from the bottom air tubes via the separate (from the bottom hood) filter/regulator. You can also divert suction from the bottom hood to the top hood by damping down the slide-gate valve to the bottom hood on the right side of the dust collector. The more you close the slide-gate, the more you will reduce vacuum flow to the bottom hood while increasing (diverting) flow to the top hood.

12.4. Clean the work surface frequently using a lint-free IPA (Isopropyl Alcohol) wiper, especially the pre-clean side of the surface, for best results

12.5. Clean and service the model BR2200 Static Bars and model VQM5003 Dust Collector periodically to maintain optimal performance. See separate IOM-Installation, Operation & Maintenance manuals for the static bars and dust collector that were included with this system.

12.6. Keep all documentation provided with this system for future reference.



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13. Troubleshooting

- Problem = too much suction at the hood vacuum slot(s)
- Solution = you can install a 3” slide-gate valve (included and shipped loose in the dust drawer of the collector) at each of the inlet ports of the model VQM5003(H) collector. This will allow you to damper down the airflow to the hood(s) to give you control over the suction. In most cases, it is not necessary to utilize the slide-gate valve(s); even they are included with the system.
- Problem = No air pressure at air tubes
- Solution = make sure the valve at the compressed air filtration system(s) is in the “on” position; adjust the knob at the filter / regulator(s) clockwise to allow air flow through to the air tubes.

Notes:

- Refer to the VQM5003 collector manual, included with the system, for maintenance instructions and definitions for magnehelic gage readings
 - See separate IOM-Installation, Operation & Maintenance manuals for the static bars, power supplies (for static bars) and dust collector that were included with this system.
 - Call Static Clean International, Inc. for information and pricing for a “contact cleaning” hand roller system for fast, efficient cleaning of the work surface and all flat surfaces with loose contaminants.
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