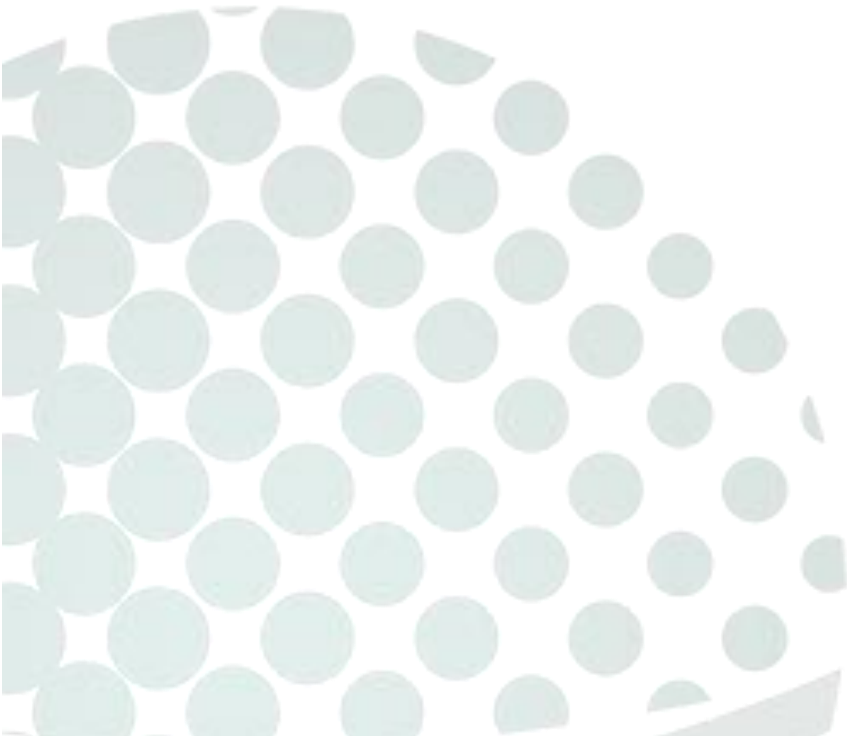




TXH TOTAL EXHAUST HOOD

Installation and Operations Manual



DFMZ
DESIGN FILTRATION MICROZONE

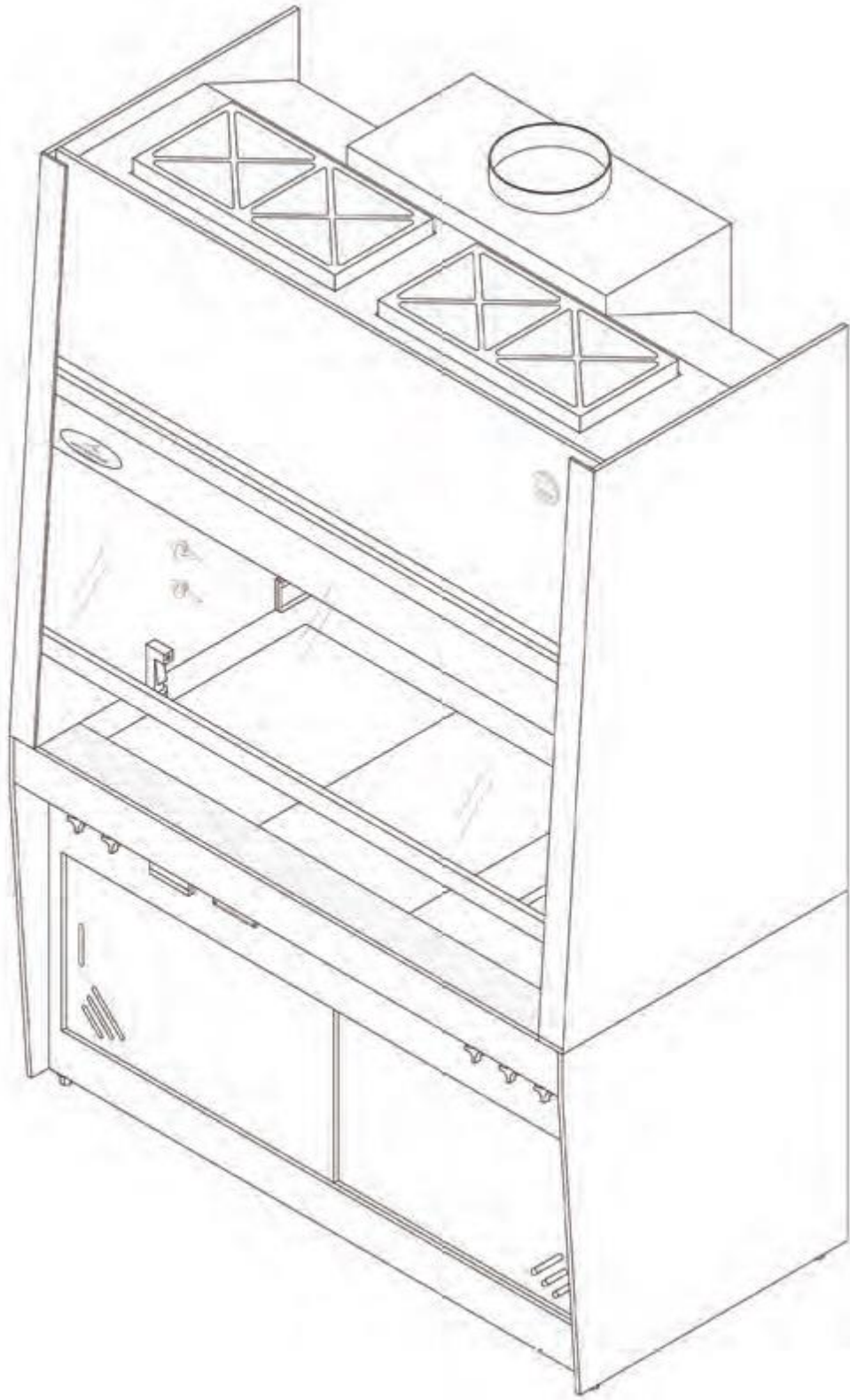


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Thank you for purchasing our Total Exhaust Hood, with proper care and maintenance your hood will provide you with many years of trouble free performance. Please read instructions carefully before installing and operating your Total Exhaust Hood.

WARNING: TO REDUCE RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS PLEASE REVIEW THE FOLLOWING PRECAUTIONS.

- Do not expose your Total Exhaust Hood to rain or moisture.
- Always disconnect the Total Exhaust Hood from power supply when servicing, moving parts may cause serious injury.
- Always disconnect while grasping the plug, not the cord.
- Do not expose Total Exhaust Hood to gaseous or explosive vapors. Motors normally spark and may ignite fumes.
- Do not block airflow to top or back of unit, allow at least 5" above unit
- Do not modify the plug of your hood if it will not fit in your duplex outlet. Have a proper outlet installed by a qualified electrician.
- Use only specified replacement parts recommended by Design Filtration Microzone.
- Use this equipment only in the manner intended by Design Filtration Microzone.

1. SHIPPING AND UN-CRATING

Your Total Exhaust Hood normally is shipped in two sections; smaller units may come fully assembled. Units should be stored in heated conditions of between 4 °C (40 °F) and 32 °C (90 °F) to avoid undue structural fatigue and damage.

Each unit is factory tested for airflows and filter leaks prior to shipping. On occasion damage can occur during the transportation of your new Total Exhaust Hood. Carefully remove the crating from your hood and inspect for damage that may have been caused and report it immediately to your transportation company.

All shipments are F.O.B. Design Filtration Inc. You must file a claim directly with the freight carrier. Design Filtration Inc. and its dealers are not responsible for shipping damages.

2. INSTALLATION

Once in location it is recommended that your hood be re-tested for airflows and leaks by an independent testing organization with technicians trained in the evaluation and maintenance of HEPA filtered equipment. Always use safe lifting guidelines when installing your hood on a base frame or existing work bench.

Do not use a lift truck when moving your Total Exhaust Hood. Leave your hood on the shipping skid until it is in its final installation location. Never lift from the centre of the hood. Allow hood to acclimatize to room temperature, before installation.

WARNING:

ALLOW 24 HRS FOR HOOD TO ACCLIMATIZE BEFORE INSTALLATION, TO PREVENT DAMAGE TO HOOD.

WARNING:

ALWAYS LIFT FROM THE OUTSIDE EDGES OF HOOD TO PREVENT DAMAGE.

DO NOT USE FORK LIFT ON CENTER OF HOOD.

Your Total Exhaust Hood is shipped to you in four pieces. To start, locate the base frame as close to the final area as possible, allowing enough space for the head section and personnel to move freely around the front or back.

Place the wood blocks supplied, angled across the corners of the work surface, as shown in Figure 2.1. Raise the head section keeping as straight as possible. Move head section over base, and gently lower on the wood pieces, avoiding damage to fingers. Lifting one end at a time remove wood spacers and lower to base section, aligning connection screws as shown.

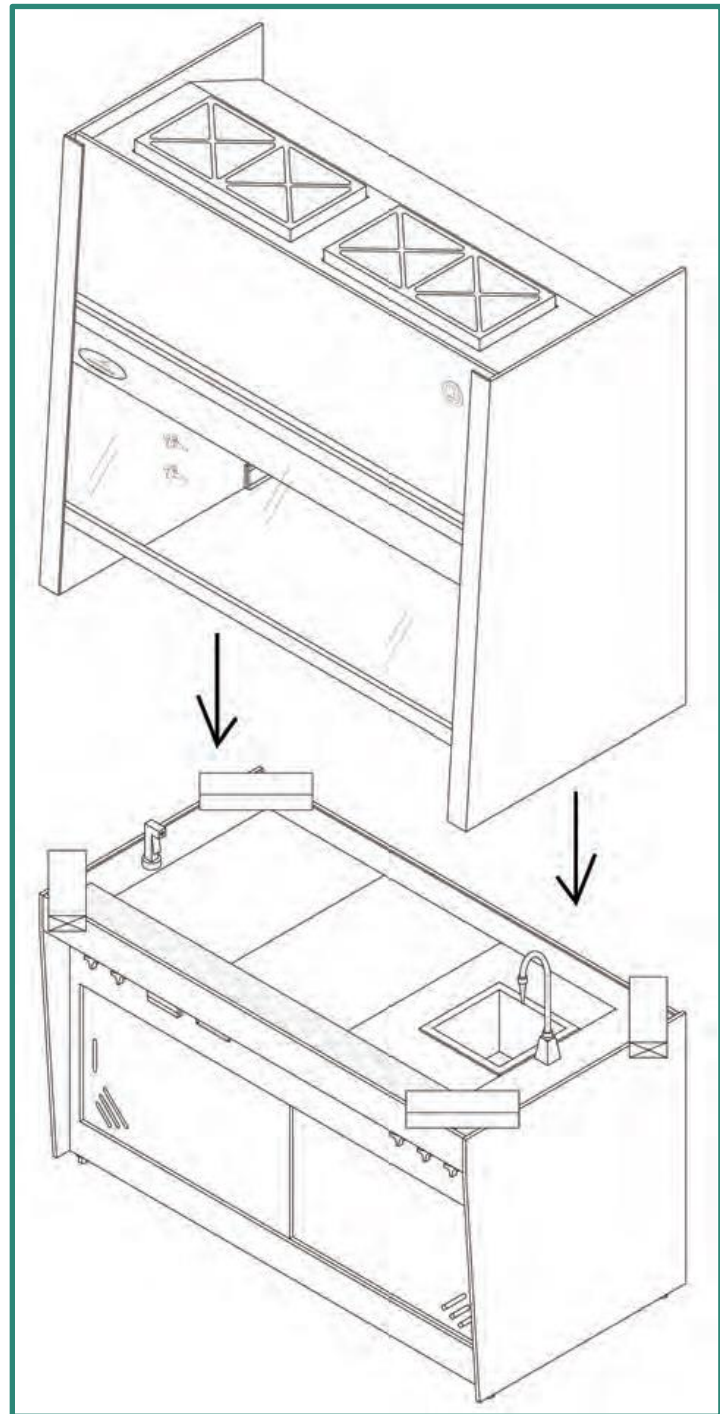


Figure 2.1

Lift rear plenum and align with pre-drilled holes, see Figure 2.2. Insert all of the screws before tightening them. Connect plastic tubing to fitting on transition. Supply fans will not run unless tubing is connected.

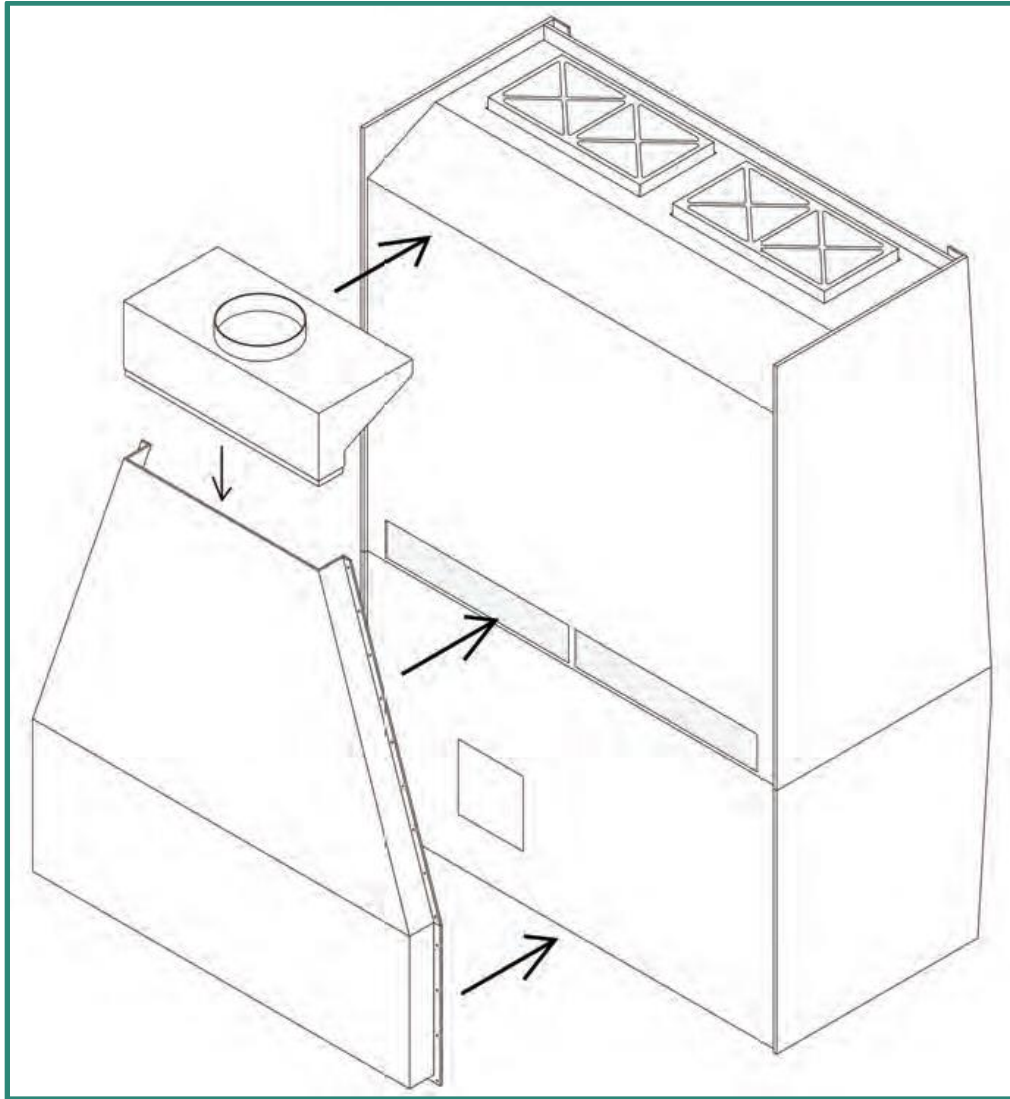


Figure 2.2

3. PRE-FILTER

Your Total Exhaust Hood is equipped with disposable pre-filters, which are manufactured from a bonded synthetic media set into a moisture resistant beverage board. Pleated pre-filters carry an efficiency rating of MERV 7 (Minimum Efficiency Reporting Value). The filters also provide an Average Atmospheric Dust Spot Efficiency of 25-30% to ASHRAE Test Standard 52.1.

4. PRE-FILTER MAINTENANCE

Please check your pre-filters on a monthly basis and change as necessary. To change your pre-filter simply remove old pre-filters and replace with new pre-filters. No tools are required

5. HEPA FILTER

Your Total Exhaust Hood features a 5.88" deep wood frame filter with a separator-less type media to provide excellent even airflows. The wet laid glass media is set into the frame with a urethane seal. Efficiency is 99.99% at 0.3-micron particle size and larger. HEPA filters cannot be cleaned and must be replaced when necessary, consult factory for replacement filters.

6. ULPA FILTER

The optional ULPA filter is rated 99.9995% at 0.12-micron particle size and larger. Other features as per HEPA filter. ULPA filters cannot be cleaned and must be replaced when necessary.

7. CHANGING HEPA/ULPA FILTERS

Before beginning to change your HEPA Filter, disconnect your hood from power source. Carefully remove front access panel to reveal interior compartment.

Loosen threaded rods at front and rear of fan filter module. Unscrew and remove polypropylene front locating bar. Remove ¼-20 nuts from rear clamping mechanism. Unplug fan power cords from electrical outlet. Carefully slide fan filter module from housing (this may require two people.) Remove aluminum foil tape and separate the filter from motor housing. See Figure 7.1.

Carefully remove the new HEPA filter from crate. Using aluminum foil tape (do not use duct tape) complete at least 3 layers of tape joining the fan housing to the filter. Apply a thin layer of vacuum grease to gasket before re-installing the filter. Carefully lift and place filter back into the hood making sure the HEPA filter is not damaged. When tightening threaded rods, do not over tighten as these are only used to hold filter housing in place.

Once entire unit is re-assembled it must be tested and certified by a qualified certification company.

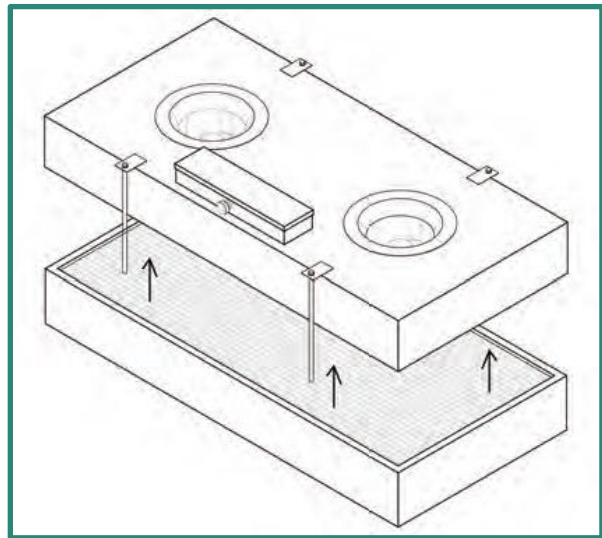


Figure 7.1

8. CHANGING THE FLUORESCENT LIGHT

Carefully remove the screws on the lens cover, remove the bulb and install new bulb with same type and color as original supplied. Some new units have LED lighting.

9. SPEED CONTROL

The speed control (SCR) controls the supply filtration only and is located in the top right-hand corner of the unit. It should only be adjusted by a qualified service technician. See Section 14 for full certification protocol.

10. EXHAUST SYSTEM SAFETY PRESSURE SWITCH

This switch is located inside the head section and is connected to the exhaust collar via tubing. In the case of total or partial exhaust failure, this switch will turn off the supply fans and an alarm condition will sound. This can be silenced, but a red light will always be visible. This will ensure no possibly hazardous air will be blown out of the containment work zone. Supply fans will not run unless tubing is connected. Typical exhaust static pressure ranges from 0.65 to 0.8" at this point.

11. MODEL NUMBER

The model number is located on the front panel in the lower right hand corner. The serial number and electrical information is also included on this label. Refer to these numbers when contacting the manufacturer.

12. MOTOR/ELECTRICAL

The Total Exhaust Hood uses 115-volt, 124-watt energy efficient motorized impellers to provide excellent airflow distribution, quieter noise levels and low heat loads. Standard on your Total Exhaust Hood is a FT2 type CSA approved 3-prong electrical cord. Always unplug your hood when servicing.

13. CHANGING SASH WINDOW CABLES

Should the event of a sash cable replacement be required lift the window as high as possible and support with two wooden studs cut to length. Remove the interior side panels (LHS and RHS), remove the old cable and support the weight with a temporary 2" high stand (this will compensate for stretching of the cable later). Attach new c" dia. polypropylene rope, with a rating of at least 45lbs, to window end first. Thread through pulleys and secure around weight eyelet with cable as tight as possible. Always change both ropes at the same time. Consult factory for full rope specifications.

Units manufactured after 2013 utilise coated stainless steel cables. Consult factory for replacement parts.

14. TESTING & CERTIFICATION

- a. Supply HEPA or ULPA Filter leak test
Filter(s) should be leak tested prior to airflow balancing in accordance with IES-RP-CC-CC002.4. Please note some units are installed with optional PTFE filters and only particle counting can be performed.
- b. Supply air velocity
Adjusting the airflow will affect the operation of your hood due to the critical balance required. Remove front snap cap located on the front panel to access the speed control. Use a flat headed screwdriver to adjust speed, turning clockwise to increase speed. After adjustment of the speed control, airflows should be checked to ensure it is within the specified range as outlined in chart and the plate on the front of the unit. Refer to IES standard IES-RP-CC-002.4.
- c. Hand intake volume
Once the supply air velocity has been set, use a direct inflow measure device to measure the inflow volume. Ensure all closure panels are sealed prior to recording test results. Recorded intake airflow should be checked to ensure it is within the specified range as outlined in chart and the plate on the front of the unit. Exhaust fans may or may not need to be adjusted at this stage to obtain inward velocity of 100-110 fpm. (Some units may have reduced intake flows. Refer to NSFF.3.3.2 for direct inflow measurement methods.)
- d. Total exhaust volume
To obtain the total exhaust volume, add the calculated supply volume to the recorded hand intake volume, plus allow for vented base cabinet.

See Section 16 for airflow direction drawing.

Consult factory for any other questions.

15. SPECIFICATIONS & DIMENSIONS

TXH SERIES OF VERTICAL FULL EXHAUST WORKSTATIONS										TECHNICAL INFORMATION	
NOV 2015											
Model Number	PHYSICAL DATA			WORK ZONE DIMENSIONS			EXHAUST COLLAR		SHIPPING WEIGHT		
	Width (mm)	Depth (mm)	Height (mm)	Width (mm)	Depth (mm)	Height (mm)	IN	IN	LBS	KG	
TXH - 4	52" (1,321)	36.5" (927)	93" (2,362)	46.4" (1,179)	31" (787)	36" (914)	10"	10"	n/a	n/a	
TXH - 5	64" (1,626)	36.5" (927)	93" (2,362)	58.4" (1,483)	31" (787)	36" (914)	10"	10"	n/a	n/a	
TXH - 6	76" (1,930)	36.5" (927)	93" (2,362)	70.4" (1,788)	31" (787)	36" (914)	10"	10"	n/a	n/a	
TXH - 8	96" (2,438)	36.5" (927)	93" (2,362)	90.4" (2,296)	31" (787)	36" (914)	12"	12"	n/a	n/a	
PERFORMANCE											
Model Number	10" HAND INTAKE (Intake Velocity Range 100-110 fpm)		BASE VENT CFM (M ³ /hr)	DOWNFLOW * (Downflow Velocity Range 55-65 fpm)		TOTAL AIR EXHAUST CFM					
	CFM	(M ³ /hr)		CFM	(M ³ /hr)	CFM	(M ³ /hr)				
TXH - 4	322 - 354	(547 - 602)	40	68	425 - 502	(723 - 853)	787 - 896	(1338 - 1523)	* Downflow is measured at 6" below the diffuser plate ** Static pressure at exhaust collar approximately 0.70" w.g.		
TXH - 5	405 - 446	(689 - 758)	50	85	535 - 632	(910 - 1074)	990 - 1128	(1683 - 1918)			
TXH - 6	489 - 538	(831 - 915)	60	102	645 - 762	(1097 - 1295)	1194 - 1360	(2030 - 2312)			
TXH - 8	628 - 690	(1068 - 1173)	80	136	828 - 979	(1408 - 1664)	1536 - 1749	(2611 - 2973)			
SERVICE REQUIREMENTS											
Model Number	ELECTRICAL (Duplex Outlets are Additional)		WATER / GASSES & OTHER ACCESSORIES		REPLACEMENT PARTS HEPA Filter		Pleated Pre-filters		Lamp		
	TXH - 4	115 V 2.7 Amps 60 HZ			24" x 48" x 6"		(2) - 12" x 24" x 2"	(2) - 24" T8 Tube			
TXH - 5	115 V 3.8 Amps 60 HZ				24" x 60" x 6"		(2) - 12" x 24" x 2"	(2) - 36" T8 Tube			
TXH - 6	115 V 3.8 Amps 60 HZ				24" x 72" x 6"		(3) - 12" x 24" x 2"	(2) - 48" T8 Tube			
TXH - 8	115 V 5.8 Amps 60 HZ				(2) - 24" x 44" x 6"		(4) - 12" x 24" x 2"	(4) - 36" T8 Tube			

16. AIRFLOW DIRECTION

When the Total Exhaust Hood is operating, the fans draw lab air into the hood from the top, through the pre-filter and the HEPA/ULPA filter, and then push the cleaned air down to the work surface. Figure 15.1 shows the direction of airflow in the hood.

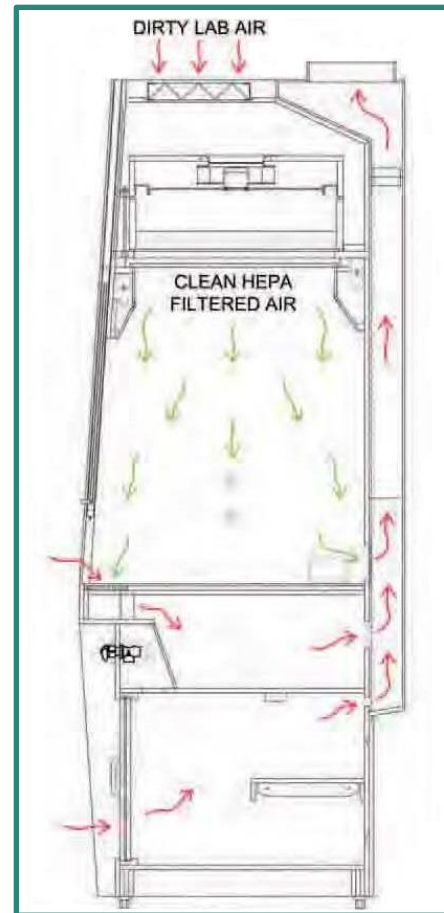


Figure 15.1

17. REPLACEMENT PARTS

Part	Order Number
Pre-filters nominal 12" x 24 x 2"	10PR0100
EBM 220 motor	17MI0006
Motor capacitor	17MC0006 (8mf)
Speed Control	17SW0057
TXH-4 HEPA Filter Bead pleat	10HE0373
TXH-5 HEPA Filter Bead pleat	10HE0383
TXH-6 HEPA Filter Bead pleat	10HE0392
TXH-8 HEPA Filter Bead pleat, (quantity 2)	10HE0373
TXH-4 ULPA Filter Bead pleat	10HE0377
TXH-5 ULPA Filter Bead pleat	Please consult factory for part
TXH-6 ULPA Filter Bead pleat	Please consult factory for part
TXH-8 ULPA Filter Bead pleat, (quantity 2)	10HE0377
For rope replacement consult factory	
For all plumbing components consult factory for full listings	

18. WARRANTY

Design Filtration Microzone warrants the equipment to be free of defects in materials and workmanship from the date of invoice. The Total Exhaust Hood shall be warranted against defects for a period of three years. Any units or parts found to be defective during this period will be replaced or repaired at our discretion. The buyer agrees to assume all transportation charges prepaid for return of unit to factory for repair. Design Filtration Microzone will not accept charges for removal or re-installation.

Design Filtration Microzone will not accept any returned items without prior written consent. Design Filtration Microzone is not responsible for repair or replacement by misuse or abuse by incorrect operating procedures of its equipment. Pre-filters and carbon filters carry no warranty against loading. UV and Fluorescent lights carry no warranty. Any modifications or changes made to equipment by customer without written consent of Design Filtration Microzone will void the warranty.

Model number and serial number located on your Total Exhaust Hood must be provided to verify invoice date. Failure to provide will void warranty.

FOR FURTHER INFORMATION, PLEASE CONTACT US DIRECTLY.

Design Filtration Microzone Inc., 86 Harry Douglas Drive, Ottawa, ON. K2S 2C7
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info@dfmzgroup.com