

General Description

The Series 412 vertical flow clean benches, Mini Environments, are specifically designed to create a freestanding ultra clean mini environment. These clean benches, mini environments, are available in a variety of sizes and styles engineered to provide excellent solutions for many air filtration applications. The systems may vary from vertical flow benches with open interiors to exhausting clean benches with wet process, to recirculating temperature control class 1 systems.

Clean benches can be used in conjunction with cleanrooms to create clean zones or that can be used in lieu of or to supplement a cleanroom. Often times in larger cleanrooms there are a few "critical clean" area. It is sometimes more cost effective to build a low class cleanroom and supplement it with clean benches than it is to create a higher class cleanroom, especially when over 60% of a typical cleanroom floor space is area where clean manufacturing or storage does not occur.

General Design

The Series 412 vertical laminar flow clean benches consist of three basic components: The upper cabinet module houses the prefilters, HEPA or ULPA main filters, blower motors and lights. There is a lower support frame which is removable for easy shipment and moving. There are various options for the support frame, depending upon the application of the bench. The third major component is the lower work surface module which may be as simple as a

flat table or as complex as a bench containing tanks, heated etch baths, gooseneck faucets, drains and other options. This modular design allows the clean bench to be easily shipped and assembled. Most sizes have been designed to fit thru standard doors and hallways. See the attached drawing and chart for sizes on your specific model. There are a number of mode options that may be ordered depending where the air is to be directed or exhausted.

Features

Upper Cabinet Module

The upper cabinet construction is of welded 16 Gage cold rolled steel that is finish ground to remove all sharp edges and painted with baked white enamel. This module houses the blower, motor, HEPA or ULPA filter, fluorescent lights, on/off switches, circuit breakers and electrical junction box.

Standard height of the upper cabinet is 30 inches. Its length and depth will depend upon the size and style of unit. Standard widths are 2-1/2 inches over nominal 3, 4, 5, 6, 8, 10 foot widths with interior depths of 30, 36, 42 and 54 inches (interior table or working space). The overall cabinet width, depth and height will depend on the style of support frame and mode of operation.

Final Filters: HEPA Or ULPA

The standard HEPA Final Filter is 99.99% efficient on particles 0.3 micron and larger. Most models have a final HEPA filter with an aluminum frame, white painted metal face guard and mini pleated filter media. Filters are removable through the front panel access. Optional ULPA filters, 99.999% on particles 0.12 micron, are available.

Negative Pressure Plenum for Final Filters: HEPA Or ULPA

The Series 412 utilizes flexible ducting connected from the blower to the HEPA filter. This ducting system provides negative pressure in the interior of the upper blower cabinet. The negative internal pressure is created by the blower drawing (sucking) air into the cabinet through the prefilters. The differential pressure drop across the prefilters creates the internal negative pressure. The entire interior of the upper cabinet, including the area that surrounds the HEPA filter, metal supply plenum and flexible ducting, is also under negative pressure; thus preventing any gasket

Series 412



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seal leaks from entering the work area. If a gasket leak does occur, the negative pressure area would “draw” the leaked air back to the blower where it is then ducted back to the HEPA filter and preventing the contamination from reaching the work area.

The flex duct system consists of a metal plenum that is clamped over the HEPA filter and held in place by a threaded rod and leaf spring. A flex duct attaches between the metal supply plenum and blower for vibration isolation. To replace the HEPA filter, loosen and remove the flex duct from the blower, loosen the fastener from the threaded rod and remove the leaf spring. Remove the metal supply plenum and lift out the HEPA filter. To replace the HEPA filter, reverse the process. (See attached chart showing cabinet dimension and filter size.)

Prefilter

The cabinet has a large prefilter area to keep the filtering efficiency high and minimize the pressure drop across the prefilters. The prefilters are housed on the top of the unit as standard but can be field relocated to the front or rear of the unit, if desired (see Note #1). The prefilters are a commonly available 20x25x1 disposable style that are interchangeable in size with prefilters of higher efficiency. The higher efficiency prefilters can be ordered with the unit or upgraded with the first prefilter change. Higher capacity (2 in. and 4 in. thick) prefilters can be installed on the top of the unit.

Note #1: On the mode E, ER and R clean benches, or when the counterweighted sliding front window is ordered, the prefilters can only be

located on the top of the unit. Consult factory for specific details.

Electrical

The standard cabinet has a 120V, single phase, 3-wire electrical system. All units are wired to the National Electrical Code. Selected units are available with optional UL labeling, which must be specifically requested and will be quoted as a line item. Consult the factory for further details on UL listed cabinets. The UL label on the clean bench needs to be specifically ordered.

The electrical junction box is on the rear of the unit. Selected units can be provided with a power cord.

The blower motor has a variable solid state speed controller. Belt drive blowers (optional) use variable pitch pulleys for speed control. UL listed units have a multi speed tap for blower speed adjustment.

The upper cabinet contains the motor, light on/off switches, circuit breaker thermal protection and main cabinet power disconnect switch.

Motor/Blower

The system utilizes a PSC direct drive motor with a dynamically balanced blower wheel. This assembly is double vibration isolated from cabinet to provide excellent vibration control. The motor itself is vibration isolated from the blower by multiple shear rubber isolation mounts. The blower/motor assembly is again vibration isolated from the cabinet by a second set of shear rubber vibration isolation mounts. The flex duct connection between the blower and metal filter supply plenum also serves to further reduce vibration.

Each cabinet has a blower/motor

assembly sized for reserve capacity to ensure a long HEPA filter life. A motor speed control mounted on the side of the blower can be adjusted to compensate for extra pressure drop caused by loading or contamination build-up on the HEPA filter surface.

Fluorescent Lighting

White fluorescent lamps will provide approximately 90 foot candle illumination 6 inches above a 36-inch work surface. An on/off switch is provided for lamp control.

The standard unit has T12 lamps. Selected units are available with T8 lamps and energy saving electronic ballast, however, they are not available in all sizes. T8 lamps must specifically ordered. Consult factory for details. (See chart for the number of lamps and lamp type in the selected unit.)

Front Laminar Flow Shield and Window Options

- ❖ 6-inch flexible laminar flow guide is standard
- ❖ Ergonomic hinged front face shield
- ❖ Counterweighted vertical sliding front window
- ❖ Safety glass upgrade for hinged or sliding front window

The 6-inch front laminar flow guides, face shields, ergonomic hinged face shield or counterweighted sliding windows are designed to isolate and contain the “clean air” within the bench from outside contamination. The type of front shield used can be dependent on the style of bench and the exterior environment.

The 6-inch laminar flow guide helps air develop “laminar flow” in much

the same way that a water nozzle on a hose. The shield is short and flexible so it typically does not interfere with work in the bench. This shield is installed on the shear edge of the HEPA/ULPA filter. It works in conjunction with the end shields which are also located on the shear edge of the filter. As the air comes out of HEPA/ULPA filter the air has some surface turbulence caused by the configuration of the pleats of the filter. It takes a few inches for the airflow to develop into smooth laminar flow similar to a water nozzle on a fire hose. Once the air flow leaves the front guide (it still has the side end panels guides the flow will move downward about 12 to 18 inches before there is significant deterioration of the laminar flow. As the air is flowing downward it is also flowing out of the clean bench because it is confined on the back and sides. This outflow helps prevent contamination from entering the critical work space.

The standard distance between the table top and underside of the top filter cabinet is 28 inches with a 36-inch table top height. When the this height changes either by lowering the table height or making the support "C" frame taller this face shield becomes even more important and is recommended to increase the length of this guide.

Items are placed within the work area or the operators work inside the bench they can cause turbulence and disrupt the airflow. This turbulence can cause air currents within the bench that would allow outside air to be drawn into the bench because of the energy created by the turbulence.

When turbulence within the bench becomes a concern, a face shield is often installed onto the bench. The ergonomic hinged acrylic face shield is typically installed to create a 12-inch opening on the front of the working area. The face shield guides the laminar flow down closer to the table top and vents the air out of the cabinet through a smaller front opening. The smaller front opening creates a higher exit velocity that reduces the chance of inflow contamination.

In addition to improved airflow and higher pressurization of the work area, the ergonomic hinged front window provides a physical barrier between the operator and the interior clean area. The ergonomic hinged front window is recessed 5 inches at the top and slopes out towards the front edge of the table. This 5-inch recess allows the operator to lean forward and work in a more natural, ergonomic position while their arms are below the window. The window prevents them from leaning too far

into the work area causing the blockage of the down flow air, creating turbulence and the introduction of unwanted contamination into the work area.

Airflow

The airflow for the unit is factory set at an average filter face velocity of approximately 90 FPM. This velocity is maintained by adjusting blower speed as the filter pressure increases over time in use.

Sound Level

The cabinets are designed for quiet operation. The typical sound level is approximately 65 dbA. Larger size units and those with multiple blowers may be slightly higher. The sound levels are measured with ambient of 55 dbA. The sound level of your particular unit may vary depending on the size of the unit, surrounding room size and acoustics.

Cabinet Support Frames

The upper cabinet can be supported in a variety of ways depending on the application. The most common are "C", "CR", "T", KD, and SP frames. Each type of frame is designed for a different type of application. Please consult the factory for additional options.



“C” Frame: The “C” frame is constructed with 2x4 tubular steel that is welded, finished ground and painted with a white baked enamel finish. The front of the “C” frame is open to allow multiple cabinets to be set side by side for a continuous work area. Each frame is furnished with 4 adjustable leg leveling glides.

The frame has a removable clear acrylic panel located on each end of the frame. These panels are installed on the shear edge of the laminar airflow to create a smooth, non-turbulent end boundary for the clean work space. If the units are set side by side with the clear end panels removed, work may be easily passed from one station to the next.

The rear of the support frame is enclosed by a solid back panel that is available in a variety of materials. The standard is white vinyl covered steel, however, options include painted steel, stainless steel, white polypropylene or clear acrylic.

Various cabinet options can be installed into this basic support frame. These include built-in solid, perforated or wire table top, exhaust plenum or a 95% air recirculation system.

“CR” Frame (C frame with reinforcing post): The “CR” frame is the same as the “C” frame except for extra vertical reinforcing supports. These vertical supports may be required on some larger systems with heavier top cabinets. The vertical support may be mounted midway back on the frame or on the front edge depending on the “mode” of the cabinet.

“T” Frame: The “T” frame is designed to allow access to both the front and rear of the clean bench and to have an open side. The typical

application would be such as bench assembly of small parts where multiple clean benches are placed side by side with operators sitting at both the front and rear of the clean bench. With the side plex removed and the open sides of the “T” frame parts can easily be slid from one bench to another, without having to take out of the clean bench area. By working from both sides of the bench you can double the amount of assemblers working per clean bench, reducing the capital cost, per employee and concerning floor space.

The table tops on the “T” Series frames can be extended to accommodate a larger (deeper) work surface with a smaller upper filter cabinet. The “T” series of clean bench can achieve class 100 cleanliness the extended table options are most often used in applications that do not require critical Class 100 condition. Depending on the application and the length of the table extension, recommended to have a modified face shield. Consult the factory for details.

The “T” frame system when used in a row of benches are designed to have the vertical support “T” frames share the upper filter cabinets reducing the cost and the bulk of the support frame. It is important to know the assembled configuration to provide the correct combination of supports and table tops.

“KDFP” Frame (Knock down frame): The 4 post support frame is made up of four 2 x 2 tubular steel legs that bolt onto the outer ends of the top cabinet. The Plexiglas end panels mount on the inside surface of the 2x2 tubular steel legs. The bolt-on legs and back panel ship knocked down, allowing a smaller and more

compact shipping package.

Optional removal of the back panel allows easy interior access from both the front and rear of the clean bench. Some applications when the back panel is removed will require larger support legs to prevent side sway. This is typically only required for seismic areas

Multiple units may be put end to end, forming a continuous line. The units can be made with a common set of support posts between two adjoining top cabinets. This option should be specified as it requires an additional set of support leg mounting holes, however, the units are field convertible to this configuration. This is an ideal system for export because of the small shipping package and ease of assembly. The sharing of support frames is an option and must be specifically quoted to avoid field modifications

“KDAF” Frame (Knock down frame): The two-end support sections have an “A” shape welded end support section. There is a front and rear vertical support post with an upper and lower cross tube. The Plexiglas end panels mount in shear with the edge of the HEPA filter for improved airflow and mount to the inside surface of the side support frame. The back panel screws to the rear of the side frame supports. The end support sections and back panel knock down for a smaller more compact shipping package.

The unit can be furnished with a built in table top or free standing table.

Note: the inside clear width between the side supports is 2 inches less than the even foot. Please take this into account if you are sliding an

existing table or piece of equipment into the bench.

“SP” Frame (Straddle post): The straddle post frame can be made with an extended support leg frame that will allow mounting over a machine. Consult the factory for details on your application.

Seismic Floor Supports: Clean Air Products can provide seismic floor mounting angles, support, or threaded hanger supports on its equipment. Consult the factory for specific details on your individual equipment.

Cabinet Operation (Modes)

Note: The options listed below may be the most common for that “Mode” type. There is a more complete listing of options at the end of this section.

Mode “O” (Open Base)

The Mode “O” or open base upper cabinet is mounted on the a support frame with an open area below. This allows a space where a separate vibration isolated table may be located within the work space.

The standard Mode “O” is furnished with a top cabinet that contains: 120 VAC, 60 Hz blower motor assembly, 99.99% efficient HEPA filter, white fluorescent lights, white vinyl covered steel back panel, clear acrylic end panels and “C” style support frame.

Common options available with either the “C”, “CR” frame or “KD” frame are hinged or counterweighted sliding window, Series 61 Formica table, Series 62 stainless steel table or Series 64 perforated stainless steel stand alone tables.

The inside width of the support frame is about 1-1/2 inches under the even foot. IE 6-foot cabinet would be 70-1/2 inches between the floor

supports and 70 inches between the end panels. If tables or other type of work station is being used inside the bench that are even feet in length IE 72 inches, Clean Air Products can adjust the height if the end panels so that it will stop above the height of the table.

Mode “WO” (Wash Out)

The Mode “WO” (Wash Out) has a built-in table top. The clean HEPA filtered air flows down from the upper filter cabinet onto the work area providing a Class 100 or Class 10 working environment. The air exits (washes out) from the front of the cabinet preventing outside contamination from entering the hood.

The standard Mode “WO” is furnished with a top cabinet that contains: 120 VAC, 60 Hz blower motor assembly, 99.99% efficient HEPA filter, white fluorescent lights, white vinyl covered steel back panel, clear acrylic end panels, white laminate table top, and “C” style support frame. Optional table tops are available in colored laminate, static dissipative laminate stainless steel and liquid tight recessed center stainless steel. Support frame options “C”, “CR” “T” and “KD”

Other common options are a lower storage cabinet, hinged front window or counterweighted sliding front window.

Note: The storage cabinet can be recessed to allow knee clearance for operations that require sitting.

Mode “WT” (Wash Thru)

The Mode “WT” has a built in perforated stainless steel perforated table top. The airflow on this model flows down from the HEPA filter and

thru the perforated table top. This creates a more true vertical laminar airflow within the work area.

Common options include either a hinged or counterweighted sliding front window and the stainless steel back panel.

Mode “E” (Exhausting) and “ER” (Exhaust/Recirculating)

The Mode E or exhaust cabinet has a work area table top with a liquid tight air exhaust plenum below. The table top is constructed of a solid center section with a front and rear exhaust grill. The cabinet is designed to prevent fumes from leaving the cabinet while maintaining a Class 100 or Class 10 working environment within the hood.

The airflow direction within the clean bench is as follows: Clean air flows down from the HEPA filter onto the work space creating an ultra clean working environment. The front exhaust grill draws room air into the 8 to 10-inch opening and down into the plenum. This provides an “air curtain” interface between the room air and clean interior environment. The rear exhaust grill draws the clean filtered air from the hood. The “ER” or



Series 412 Vertical Flow Clean Bench

Technical Data continued

Exhaust/Recirculating mode operates the same as the mode "E" except that a portion of the air is recirculated back to the blower where it is refiltered by the HEPA filter.

The front exhaust connects to the cabinet exhaust duct located on the rear of the cabinet. The cabinet duct connects directly to the exhaust plenum at a point below the table top and flows upward along the rear and terminates approximately 2 inches above the top cabinet. The Mode "E" and "ER" require either hinged or counterweighted sliding window options.

Most applications prefer the exhaust blower to be at the point of discharge to maintain negative exhaust duct pressure, so an exhaust blower is not included with the unit.

Selected models have been air flow tested to fume containment test #ASHRA 11-1985. The test units were equipped with hinged or counterweighted sliding windows with 12-inch work openings.

The interior work area can be made of stainless steel, white polypropylene or fire retardant white polypropylene.

Storage Cabinets, Lower

Storage cabinets can be provided below tabletop on the Mode WO or below the exhaust plenum on the Mode E and ER. Note: Storage cabinets on the Mode WT are typically not used because they would block the airflow going thru the table.

The lower storage cabinet can be recesses back 12 inches to allow knee clearance for someone sitting at the table.

Drawers

Drawers can be installed below the

table. Drawers are nominal 3 inches, 6 inches and 12 inches deep. They can be configured as singles or in stacks and depths can be mixed. See drawer specification sheet for additional detail.

All-Polypropylene Lower Support Frame

The all-Polypropylene lower support frame option removes the metal support frame and replaces it with an all Polypropylene support stand. The unit is available with or without the lower storage cabinet. The lower support frame can be made with the standard with which is 2-1/2 inches over the even foot (74-1/2 inches on a 6-foot bench with 70-inch clear working area) or the wide support frame which is 12-1/2 inches over the even foot or 84-1/2 inches wide outside with a 70-inch inside working area. The extra width is to allow controls and valves to be mounted on the sides rather than on the front of the unit.

Note: With the all polypropylene lower support frame, the side are a welded integral part of the lower support assembly. You are not able to remove the side shields as is available with the metal "C" support frame. If the benches are to be lined up side by side and have items passes to the side, an access hole must be ordered.

All-Polypropylene Lower Support and Filter Cabinet Shell

This unit has the all polypropylene lower support frame combined with an all poly propylene upper filter cabinet shell. With this the light is mounted exterior and mounted inside

a polypropylene light shield, Teflon coated blower wheel, plastic blower housing. There is a minimum of exposed metal on the unit.

Common options include: hinged window, counterweighted sliding front window, lower storage cabinet, Stainless Steel or Polypropylene interior, sinks, goosenecks, hand sprayers and N₂ guns.

Optional Accessories

- ❖ Minihelic gauge — 0-2 inch differential pressure
- ❖ Gold fluorescent lamp sleeves
- ❖ Special cabinet colors
- ❖ Flow-thru style lamp diffuser grill
- ❖ Top mounted electrical junction box
- ❖ Prefilter location from top to front.
- ❖ Power cord — 8 ft., 3 wire — available for units under 20 amps
- ❖ Suspended ceiling vs. support frame — (4) threaded hanger holes
- ❖ Gooseneck — Polypropylene, PVC or PVDF for city or DI water
- ❖ Sink for tanks — white or natural polypropylene, teflon or stainless steel
- ❖ Hand sprayers — Teflon for DI water
- ❖ Hand sprayers — Teflon for N₂.
- ❖ Pneumatic and tank drains valves
- ❖ Additional electrical receptacle
- ❖ Etch tank
- ❖ Cascade tank
- ❖ DI water loop
- ❖ Plenum drain
- ❖ Wiring/blower assembly for hazardous materials/areas.
- ❖ Other types of process tanks available but not listed.
- ❖ Timers
- ❖ Controllers
- ❖ Hot plates

- ❖ Gas cocks
- ❖ Flow meters
- ❖ Ultrasonic cleaners
- ❖ Plenum flushing system
- ❖ Alarms

Specifications

Meets requirements of the National Electrical Codes.

The unit is ready for operation and certified to meet or exceed Class 100 conditions of Federal Standard 209E after the upper cabinet is attached to the lower support frame. The two components are packed separately.

Operation manual and test reports are provided with shipment.

Support Structure

The "C" frame is constructed of welded 2x4 cold rolled tubular steel that has a white baked enamel finish.

The "KD" frame is constructed of four 2x2 cold rolled steel tubular members that receive a white baked enamel finish.

Table Top, Exhaust Plenum, Back Panel and Exhaust Duct

- ___ Stainless steel Type 304 #4 finish
- ___ White Polypropylene
- ___ White Fire Retardant Polypropylene
- ___ Others

The table top and exhaust grills are removable, exposing the exhaust plenum. The plenum is liquid tight and slopes to the plenum drain. The exhaust duct slopes into the exhaust plenum which includes a volume control damper.

Work Area End Panels

Attached to the interior end support frame and terminating approximately

30.0 inches from base of end support frame.

- ___ Clear acrylic (standard)
- ___ 304 Stainless steel (optional)
- ___ White polypropylene (optional)
- ___ Cold rolled steel with white baked enamel (optional)
- ___ Other

Front Viewing Windows

Attached to front of air supply module.

- ___ 6.0 in. Flex clear polished vinyl (standard)
- ___ 12.0 in. Fixed clear acrylic (optional)
- ___ 12.0 in. Hinged clear acrylic (optional)
- ___ Counterweight sliding front window clear acrylic (optional)

Interior Work Area Dimensions (Standard)

- Depth in inches** (front to rear)
- T30 Series = 30.0
 - T36 Series = 36.0
 - T42 Series = 42.0

Width in inches (end to end)

- Nominal 3 ft. = 34
- Nominal 4 ft. = 46
- Nominal 5 ft. = 58
- Nominal 6 ft. = 70
- Nominal 7 ft. = 82
- Nominal 8 ft. = 94
- Nominal 9 ft. = 106
- Nominal 10 ft. = 118

Height will depend upon the height of the table or bench top from the floor. The height from the floor to the bottom of the upper cabinet module is 64.0 inches with the standard frame. The standard bench top height is 36.0 inches.

Overall Dimensions (Standard)

Height: 94.0 inches, floor to top of upper cabinet module.

NOTE: Allow a minimum of 1.25 inches over the top of the unit for airflow and servicing of the prefilters.

Depth in inches (front to rear)

- T30 Series = 34 front to rear
- T36 Series = 40 front to rear
- T42 Series = 46 front to rear

Note: Counterweight sliding front window increases the overall depth by 1.5 inches. Mode "ER" increases overall depth by 2 inches.

Width in inches: (end to end)

- 3 ft. = 38.5
- 4 ft. = 50.5
- 5 ft. = 62.5
- 6 ft. = 74.5
- 7 ft. = 84.5
- 8 ft. = 98.5
- 9 ft. = 110.5
- 10 ft. = 122.5



Series 412 Vertical Flow Clean Bench

Technical Data continued

Filter Size and Electrical information

Model	HEPA Filter	Prefilter	Blower	Motor	Lamp	Electrical	
3T30	(1) 24x36x3	(1) 20x25x1	(1) DD-10-6	(1) 1/2HP PSC	(2)	120V/10/60HZ	9.4 amp
4T30	(1) 24x48x3	(1) 20x25x1	(1) DD-10-6	(1) 1/2HP PSC	(2)	120V/10/60HZ	9.4 amp
5T30	(2) 24x30x3	(2) 20x25x1	(1) DD-10-8	(1) 1/2HP PSC	(2)	120V/10/60HZ	9.4 amp
6T30	(1) 24x72x3	(3) 20x25x1	(1) DD-10-8	(1) 1/2HP PSC	(2)	120V/10/60HZ	9.4 amp
8T30	(2) 24x48x3	(3) 25x25x1	(2) DD-10-6	(2) 1/2HP PSC	(2)	120V/10/60HZ	17.4 amp
10T30	(2) 24x60x3	(5) 20x25x1	(2) DD-10-8	(2) 1/2HP PSC	(2)	120V/10/60HZ	17.4 amp
3T36	(1) 30x36x3	(1) 20x25x1	(1) DD-10-6	(1) 1/2HP PSC	(2)	120V/10/60HZ	9.4 amp
4T36	(1) 30x48x3	(1) 20x25x1	(1) DD-10-8	(1) 1/2HP PSC	(2)	120V/10/60HZ	9.4 amp
5T36	(1) 30x60x3	(2) 20x25x1	(1) DD-10-8	(1) 1/2HP PSC	(2)	120V/10/60HZ	9.4 amp
6T36	(1) 30x72x3	(2) 20x25x1	(1) DD-10-8	(1) 3/4HP PSC	(2)	120V/10/60HZ	12.4 amp
8T36	(2) 30x48x3	(3) 25x25x1	(2) DD-10-8	(2) 1/2HP PSC	(2)	120V/10/60HZ	17.4 amp
10T36	(2) 30x60x3	(4) 20x25x1	(2) DD-10-8	(2) 3/4HP PSC	(2)	120V/10/60HZ	23.4 amp
3T42	(1) 36x36x3	(1) 20x20x1	(1) DD-10-6	(1) 1/2HP PSC	(4)	120V/10/60HZ	10.8 amp
4T42	(1) 36x48x3	(2) 20x25x1	(1) DD-10-8	(1) 1/2HP PSC	(4)	120V/10/60HZ	10.8 amp
5T42	(2) 36x30x3	(2) 20x20x1	(1) DD-10-8	(1) 3/4HP PSC	(4)	120V/10/60HZ	13.8 amp
6T42	(2) 36x36x3	(3) 20x25x1	(2) DD-10-6	(2) 1/2HP PSC	(4)	120V/10/60HZ	18.8 amp
8T42	(2) 36x48x3	(3) 25x25x1	(2) DD-10-8	(2) 3/4HP PSC	(4)	120V/10/60HZ	24.8 amp
10T42	(2) 36x60x3	(4) 20x25x1	(2) DD-10-8	(2) 3/4HP PSC	(4)	120V/10/60HZ	24.8 amp

Estimated Weights for Standard Benches

3T30 = 440 lb.	6T30 = 590 lb.
3T36 = 570 lb.	6T36 = 750 lb.
3T42 = 700 lb.	6T42 = 910 lb.
4T30 = 490 lb.	8T30 = 765 lb.
4T36 = 630 lb.	8T36 = 920 lb.
4T42 = 790 lb.	8T42 = 1100 lb.
5T30 = 540 lb.	10T30 = 940 lb.
5T36 = 690 lb.	10T36 = 1040 lb.
5T42 = 840 lb.	10T42 = 1240 lb.

Standard units shipped F.O.B. factory by padded van.

Upper cabinet module and support frame assemblies are shipped on separate skids. (Assembly is required)

Equipment specifications, dimensions and upgrades are subject to change without notice. Consult the factory for details.

Specifications subject to change. Please contact factory for details.

Clean Air
PRODUCTS

Solutions Built to Your Specifications.

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