



DIVERSI-TECH inc.

# ***DOWNDRAFT*** ***TABLES***



## **DD 2x4 Model** **OWNERS MANUAL**

Revised: November 2003

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## UPON ARRIVAL

- Uncrate unit

### Verify that:

- Table is well intact
- 2 table surface grates have been supplied
- 2 spark baffle trays have been supplied

Note: If table appears to have been damaged during shipping, please advise your transport company immediately

## COMPRESSED AIR CONNECTION

- Supply 80-90 psi of dry compressed air to the bulkhead bushing on the side of the unit.
- Quick disconnects and or other connections are to be supplied by end user.
- Installation of an air dryer is recommended. Moisture in your air line can damage filter.

## ELECTRICAL CONNECTION

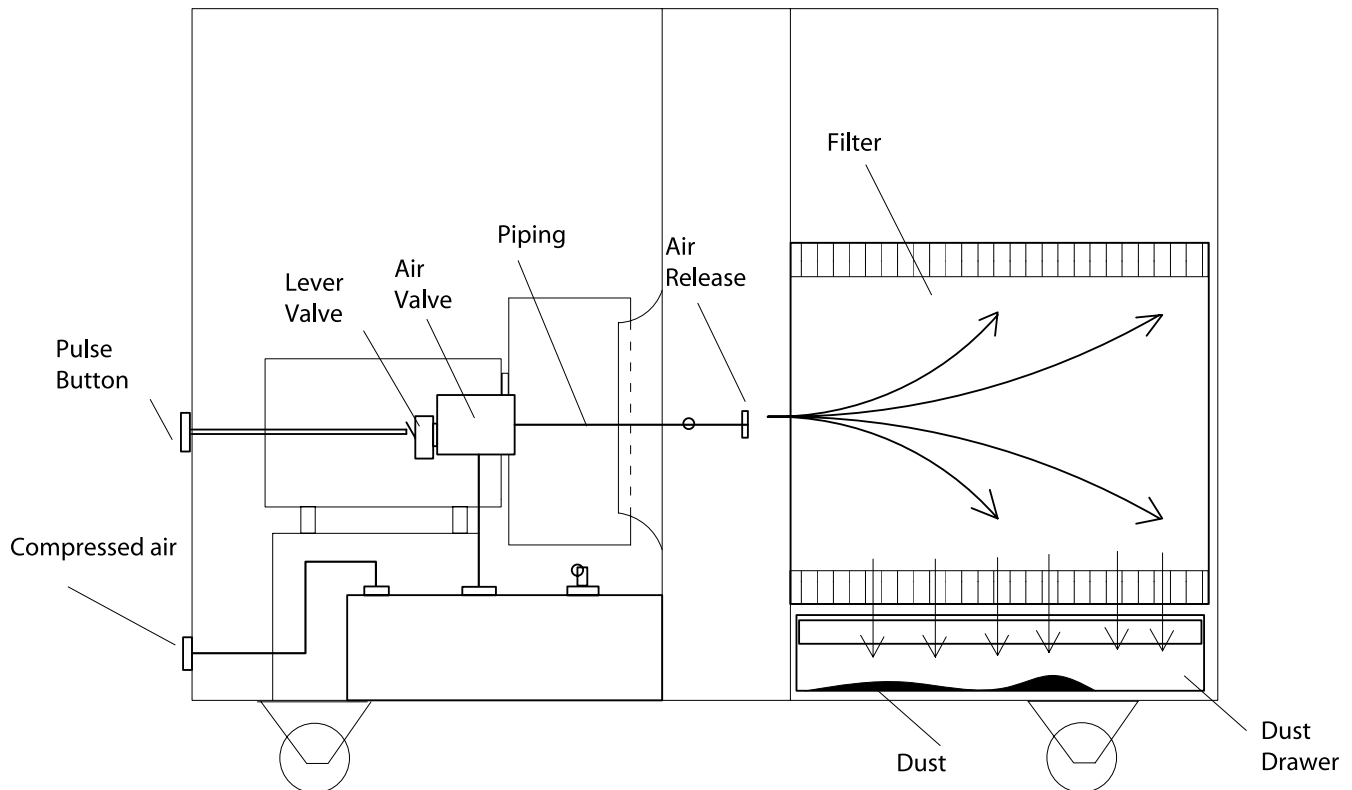
- Supply voltage to the starter. The three leads must be connected to L1, L2, & L3.
- The ground must also be connected.
- Consult WIRING DIAGRAM (page 8)

**Note: If on start-up table seems to be lacking performance, the motor likely is running in the reverse direction – reversing any two leads will reverse motor rotation.**

## CLEANING SYSTEM

- The unit is equipped with a manually operated reverse pulse cleaning system. By pressing the “pulse” button on the side of the table, compressed air is released into the filter – dislodging dust and smoke.
- A solenoid-operated air valve discharges a large blast of air through the filter cartridge, dislodging particles embedded in the filter media.
- The microprocessor is set on manual mode for on & off line pulsing as often as needed, depending on the user’s application. (Off line pulsing only for aluminum applications).
- Pulse Duration: For optimal performance, it is recommended for the user to push the pulse button and immediately release it. User must allow the air tank to fill before pressing the button again. Pulsing sequences should be performed 3 to 5 times a day, with 3 pulse repetitions each sequence for light to medium duty applications.

Note: Neglecting to pulse your filter regularly will reduce filter life.



## START UP

- Once the electrical & pneumatic connections are made, unit is ready for start up. Keep the starter lid off and attach an amp probe to either one of the lines.
- Cover two-thirds of the table with rigid cardboard or metal sheet.
- Turn the unit on and verify that the amperage does not exceed the motor nameplate FLA. (Usually 20 Amps)
- With two-thirds of the table closed verify the suction. If the unit does not seem to be drawing air and does not seem to be blowing air out the discharge side, the blower is probably turning in reverse rotation. (Reverse the two lead wires).
- Verify that the thermal overload setting is also at the FLA of the nameplate.
- Once the unit has been turned off allow for 30 seconds of downtime. Make sure compressed air is hooked up. Press the pulse button to activate the cleaning system. The action should send out a blast of air to the filter. Wait about 15 seconds for the air tank to fill up, then pulse again to check that pulse is operating normally.
- Prior to operating, the unit should run freely for 10-15 minutes.
- The spark baffle trays supplied with the table should be filled with water (1/4" high is sufficient) for heavy duty applications (except aluminum applications).
- To avoid evaporation, anti-freeze or windshield washer fluid can be mixed with the water. Use approx. one cup of washer fluid to every pan.
- Table is now ready for operation.

## **MAINTENANCE:**

### **Cellulose Filter Cartridge (Standard):**

The filters pulsing system is a successful way to clean the filter. Filter life is increased if system is pulsed regularly according to usage. Over a period of time, a visual inspection or a decrease in air flow may indicate that the filter be removed from the table for manual cleaning.

#### **To manual clean the filter outside the table:**

- Decompress the filter by removing the jam nut centered on the filter door. (door is on right side as seen when positioned in front of the table)
- Remove the five aluminum knobs from the corners of the filter door panel.
- Gently remove panel, exposing the filter cartridge.
- Remove Cartridge. The cartridge should then be held at its horizontal position so as to be tapped for removal of debris. This procedure may be done directly over a waste bag for easy disposal.
- Blow compressed air through the cartridge in the reverse direction of air flow. This should be done at the exterior of the shop (room) or in a well-ventilated area.
- Several factors should be considered before cleaning is attempted. Cleaning should be carried out on water-soluble materials only. Hydrocarbons may not be removable. The use of solvents may attack certain components of the filter, thus consultation of the manufacturer is required. Do not attempt to clean filters containing hazardous materials, be aware that all sewage and waste ordinances have been followed. The filter is of paper-pleat material, do not attempt to wash the filters.
- Do not wet or clean the cartridge with any liquid, as it may cause the forming of unwanted blockage on the filter media. The cartridge may be weakened causing perforations to the media and ultimately damage of the blower.
- The cartridge needs to be replaced periodically. The filter life can range from 6 to 18 months depending on many factors ranging from type of application, density, particle size, humidity, oil, etc...

### **Dust Drawer:**

- The dust drawer should be emptied periodically. Perform visual inspections during the first few weeks of operation to determine proper dumping cycle.
- Periodically inspect the gasket to ensure proper sealing. Replace if needed.

### **Spark Baffle Trays:**

- Spark baffle trays can be used dry, with water or sand depending on the table's application. Once a week a visual inspection should be done and trays emptied.
- Sludge may form upon contact of dirt and dust and should be removed before hardening. Removal of sludge may be performed with a spatula, and then the pans can be hosed down.
- Handle any contaminants present in the tray similarly to water or sludge. Pressure wash with hot water & detergent if needed.

Note: Use of water in the spark baffle tray is not suitable for all applications.

## **MAINTENANCE CLEANING SCHEDULE**

### **Daily Procedure:**

- Particles and stray material at the surface should be blown in to the table towards the filter using compressed air.
- If metal mesh prefilters are being used, reverse their direction prior to blowing out into the table.
- If a rubber mat is being used, it will need to be swept clean with a small broom, directing the particles into the table.

### **Weekly Maintenance:**

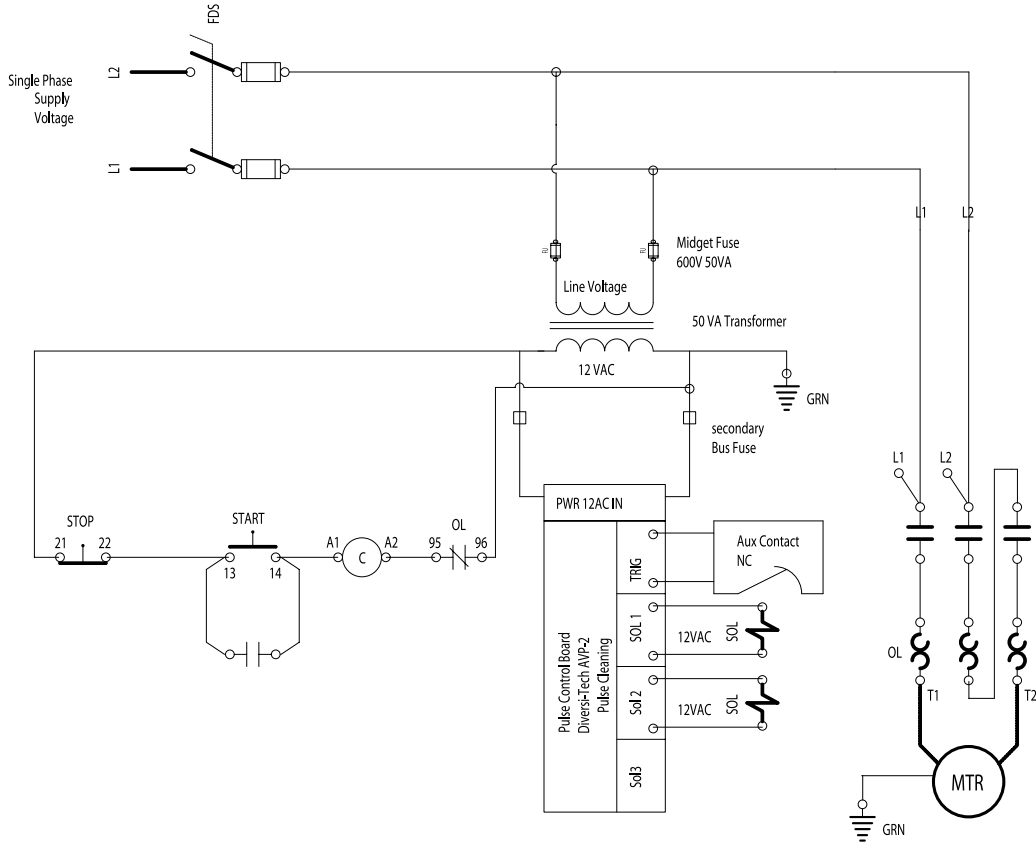
- Metal mesh filters should be pulled out and either blown out with air (or washed) depending on how dirty they have become. Similar maintenance is required for spark baffle trays.
- With the metal mesh prefilters out, the table housing should be swept clean.
- The dust drawer should be emptied. A visual inspection will allow you to determine the dumping cycle.

### **Bi-Weekly to Monthly:**

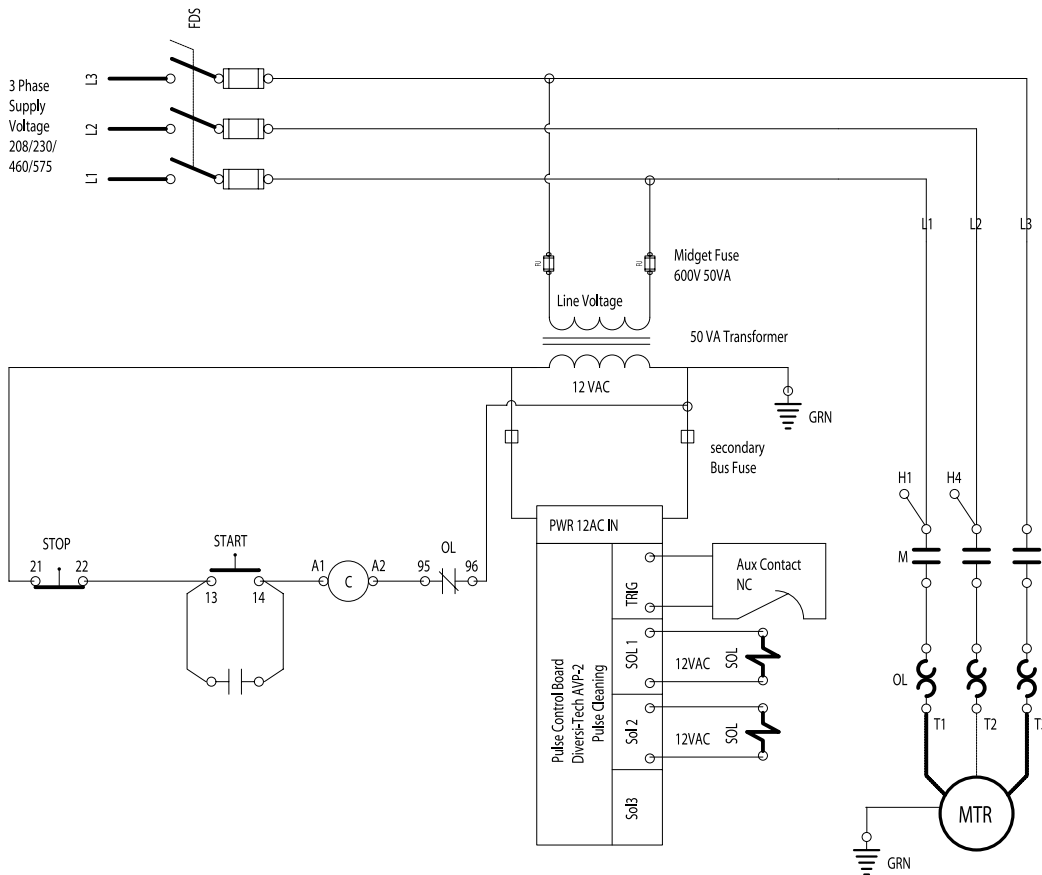
- Inspection of cartridge required. Follow procedure as outlined in standard maintenance for the polyester filter.
- Manually cleaning the filters may be required depending on type of application and hours of usage.
- Filter cartridge life will range from 6 to 18 months depending on application and hours of usage. Eventually, even after manual maintenance the blower will not be capable of drawing air through the cartridge due to excessive static build up. A new cartridge will be required. (see replacements parts list for part number).
- Verify that motor is well in tact, bolts are firm, and the motor base is secured. With the machine off, manually turn the wheel to ensure no marks are seen. The wheel should not have a wobbling effect. If the machine exerts a burning smell, it is most probably due the fact that the blower wheel is slightly touching the inlet cone. A minor adjustment may have to be made by a qualified technician.
- Safety Valve: Test the safety valve (on air tank) by pulling on the spring tensioned ring. A short spurt of air will be heard and will confirm that it is functioning properly.

# WIRING DIAGRAM

## SINGLE PHASE

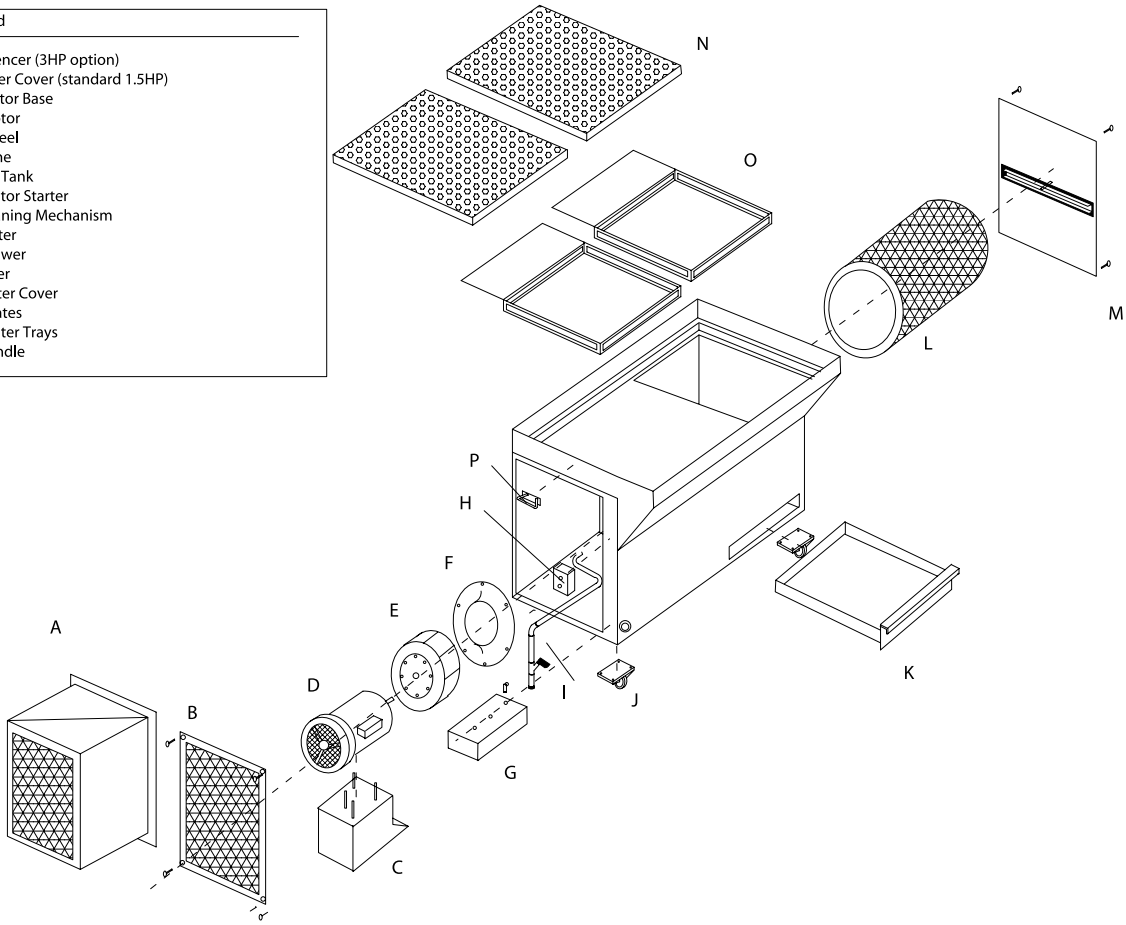


## 3 PHASE

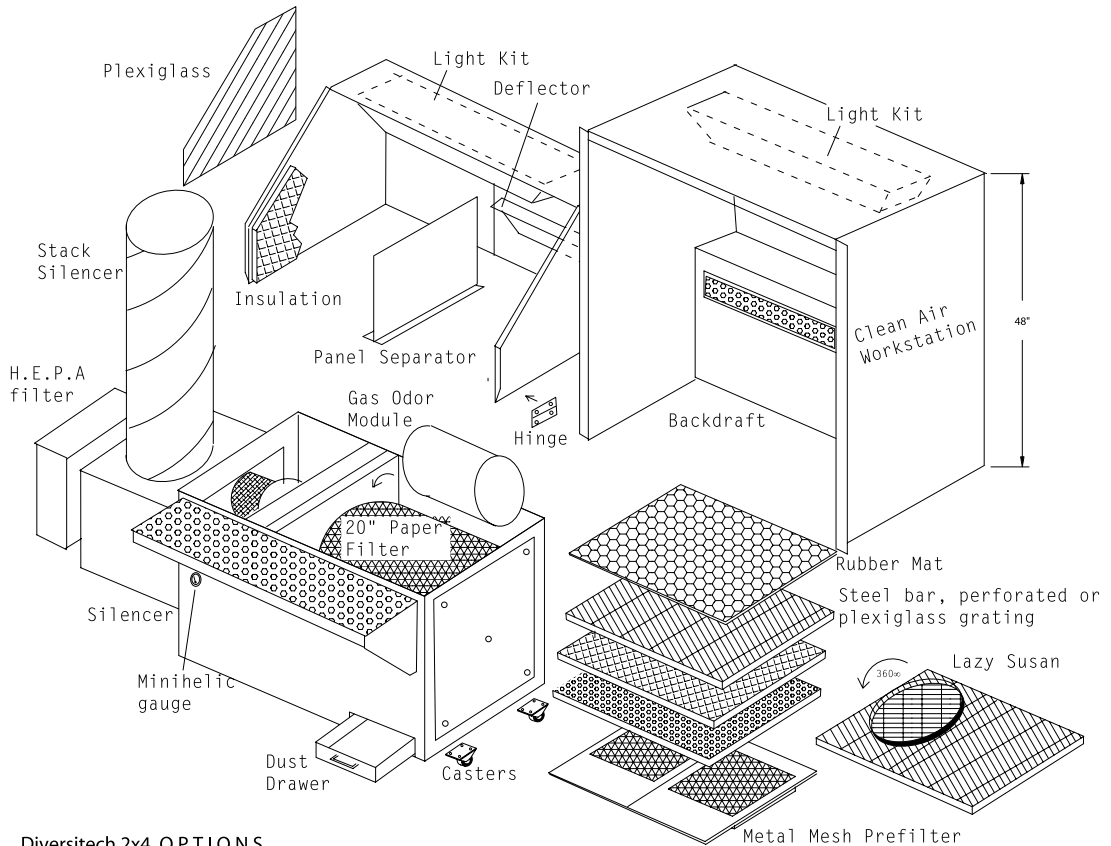


# EXPLODED VIEW (STANDARD UNIT)

- Legend
- A Silencer (3HP option)
  - B Filter Cover (standard 1.5HP)
  - C Motor Base (standard 1.5HP)
  - D Motor
  - E Wheel
  - F Cone
  - G Air Tank
  - H Motor Starter
  - I Cleaning Mechanism
  - J Caster
  - K Drawer
  - L Filter
  - M Filter Cover
  - N Grates
  - O Water Trays
  - P Handle



# OPTIONS - EXPLODED VIEW



## TECHNICAL INFO FOR 2X4 DOWNDRAFT TABLE

### BASIC:

Model #:	2x4
Cleaning Method:	Manually operated pulse cleaning system
Air Flow (CFM):	1500c.f.m @4" H20
Face Velocity (FPM):	190 fpm
Operating Temperature:	70°F.± ambient

### FAN:

Motor H.P./voltage:	1.5HP, 120/220v/1/60, T.E.F.C. (3HP 3/60 Model Available)
Blower Model:	11" BI Flat-Blade Wheel&Cone (14" for 3HP)
Capacity:	1500cfm @ 4"h20

### OPTIONAL:

HIGH STATIC 2600CFM@4"H20, 3HP

### FILTER:

Qty:	1
Cartridge Dimensions:	12.25 inner dia 17-5/8" outer dia. x 20" (L)
Material:	Cellulose (80% paper, 20% polyester)
Efficiency:	99.5% @ 0.5 micron
Maximum Operating Temp:	275°F
Cartridge removal service:	side access
Inlet:	top baffle trays
Filtration area/ cartridge:	225 sq. ft.
Discharge:	Left Side of Table

### SPARK ARRESTANCE FEATURE:

1. Metal mesh prefilters (optional)
2. Spark trap: water tray (std)
3. Spark trap: cartridge semi-circle baffle (std)
4. Fire retardant cartridge (std)
5. Baffle for elimination of dust re-entrainment (std)

### CABINET:

Weight:	280 lbs.
Work Surface Dimensions:	24"x48" (Table Height: 39")
Material:	Black steel
Thickness:	Reinforced 14 gauge
Color:	Dark Grey
Paint Finish:	primer & finish (powder coat)
Surface preparation:	cleaned and brushed

### CARTRIDGE CLEANING SYSTEM:

Type:	Reverse Pulse
Control:	Manually activated self-cleaning
CFM required per module:	0.4 ft3 / pulse.
Compressed air pressure:	80 - 100 p.s.i.g.
Air properties:	clean, dry without oil/ water

### COMPRESSED AIR TANK:

Quantity,size:	1 per table, 6" x 6" x 10" long
Location:	Internal blower compartment

### PORTABILITY:

Type:	2 swivel, 2 locking castors & table bar handle
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## TABLE OPTIONS & REPLACEMENT PARTS

### OPTIONS

Part No.	Description
O-2X4-SBW	Side and Back Walls
O-2X4-SBWH	Hinged Side Walls
O-2X4-GA	Gas Adsorption Module (25lbs carbon)
O-2X4-CW	Clean Air Workstation Enclosure
O-2X4-RM	Rubber Mat
O-2X4-MM	Metal Mesh Prefilters
O-2X4-FG	Fiberglass Grate
O-2X4-AG	Aluminum Grate
O-2X4-SG	Steel Flat Bar Grate
O-2X4-HF	HEPA filter and frame
O-2X4-MH	Minihelic Gauge
O-2X4-LK	Dust-Proof Light Kit (order with O-2X4-SBW)
O-2X4-SB	100% Polyester Spun-Bond filter 100sq. ft.

### REPLACEMENT PARTS

Part No.	Description
S-2X4-0001	1.5HP Motor 120/220/1/60
S-2X4-0002	20" Paper-Pleated Filter Cartridge
S-2X4-0003	20" Polyester Spun Bond Cartridge
S-2X4-0004	Metal Mesh Prefilter (without Frame)
S-2X4-0005	Motor Starter w/ Auxiliary Contact
S-2X4-0006	1.5HP BI Blower Wheel
S-2X4-0007	Step Down Transformer
S-2X4-0008	Solenoid Valve 12VAC
S-2x4-0009	Castors (Set of 4)
S-2X4-0010	55 lbs Bag of Activated Carbon
S-2X4-0011	10 Spare Paint Arrestor Filters
S-2X4-0012	Paint Arrestor Filter Frame
S-2X4-0013	3hp Motor Starter
S-2X4-0014	3hp Blower Wheel

## **WARRANTY**

Effective immediately, the following policy will apply to all equipment.

### **LIMITED EQUIPMENT WARRANTY**

All Diversi-Tech units are warranted to be free from defects in material and workmanship for a period of two years from the date of purchase. Diversi-Tech Inc. will repair or replace, at our option, any defective parts returned to the manufacturer's plant in Montreal - Quebec freight prepaid- which fail during the warranty period. This warranty is limited to replacement parts and labor ONLY, subject to on site or in house evaluation of defective materials and does not apply to any personal liability or property loss that occurs due to the use or installation of this equipment.

### **FREIGHT CLAIMS**

All Diversi-Tech units are sold ex-plant, Montreal, Qc., Canada. Therefore, it is the user's responsibility to file any freight claims for obvious or concealed damages which developed in transit from Montreal to your location or when drop shipped.

### **RETURN MATERIAL POLICY**

1. Prior to the return of material, for whatever reason, a return manufacturing authorization number (RMA#) is required from the Diversi-Tech production control department. This procedure is necessary for proper control and handling of returned materials. Fax us or call to obtain the RMA.
2. All material must be returned prepaid. Credit will be given for returns for warranty repair or replacement. Freight collect shipments will not be accepted. It is the shipper's responsibility to insure that material being returned to Diversi-Tech is adequately packaged for shipment to preclude damages.

Diversi-Tech Inc.

590 Orly, Dorval, Québec H9P 1E9

Telephone: (514) 631-7300

Fax: (514) 631-9480

Toll Free: 1 800 361-3733

info@diversitechdowndraft.com