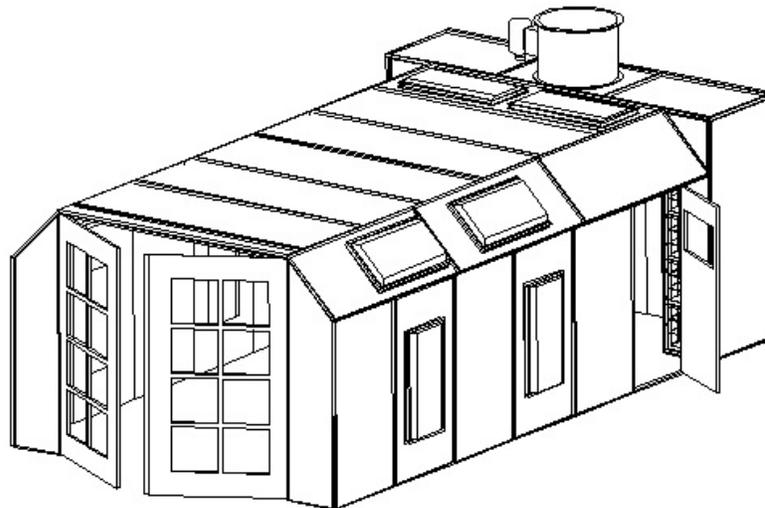




## INSTALLATION & MAINTENANCE MANUAL

### SPRAY PAINT BOOTH



For questions or problems related to your new spray booth, call our Customer service Department at 1-800-451-2425. Please have the ID number available when you call.

#### **NOTE:**

**State and local codes vary widely. All paint spray booths, exhaust ducting, light fixtures, and electrical connections, etc., should be installed to conform to the code that has jurisdiction for your location.**



## **LETTER OF COMPLIANCE**

The paint spray booths manufactured by Standard Tools / Tools USA are designed for code approval. Each booth is fabricated from 18 gauge-galvanized steel, throughout, to extend normal life expectancy by five times. The galvanized classification of G-90 Zinc Rating is 1.25 ounces per square foot. (ASTM) A527LFQ. The booth is supplied in kit form and assembled on site.

All models are manufactured from materials that meet the standards of the *National Board of Fire Underwriters* for spray booths, as recommended by the *2000 National Fire Protection Association* (NFPA33) requirements

### **EXHAUST FAN**

The fan is equipped with a non-sparking blade that is driven by belts enclosed in a motor duct. The fan meets the *AMCA* testing requirements and bears the *AMCA* seal. The location of the belts provides maximum protection from the air stream. The motor duct is located outside of the duct area, and air velocity over the face of the booth has a minimum of 100 LFPM.

### **ELECTRIC MOTOR**

The motor conforms to *National Electric Manufacturers Association* ratings A and B and is *UL Rated* (reference E47479). The motor is also *CSA* rated (reference LR6153).

### **LIGHTS**

The lights are *UL* approved (reference C118408) and are mounted and serviced from the outside of the booth. The lights are separated by 0.25" tempered glass, sealed from the inside to insure a vapor proof seal.

### **WINDOWS**

The windows are 0.25" tempered glass, sealed from the inside to insure a vapor proof seal.

William B. Turner  
President



**PLEASE READ CAREFULLY**

National Fire Codes require a fire protection system be installed in the paint spray area. Please refer to NFPA-33 Chapter 7 for more information.

Standard Tools does not supply fire protection systems due to the wide variations of State and local codes. We recommend that you contact a licensed fire protection system provider in your area for this equipment. If you have any further questions or require additional assistance in procuring this equipment, please feel free to contact Standard Tools. You may also want to contact your local city or county government offices or the local fire marshal.



## Note Regarding UL Listings

All electrical components supplied with the booth are UL approved and the booth design meets OSHA and NFPA 33 requirements.

Most concerns by the local authorities having jurisdiction over the inspections of typical spray booth installations arise out of the Code of Federal Regulations (CFR) 29, section 1910.303 which states that, "Conductors and equipment required or permitted by this sub-part shall be acceptable only if approved" by a nationally recognized testing laboratory. The assumption made is that a paint spray booth is "equipment" under the code. Equipment is defined in section 1910.399 as "A general term including material, fittings, devices, appliances, fixtures, apparatus, and the like, used as part of, or in connection with, an electrical installation.

Section 1910.107 of the code defines a paint spray booth as a "power-ventilated structure provided to enclose or accommodate a spraying operation..." There is a significant substantive difference between "equipment" and "structure" which is made up in part of "equipment." While section 1910.107 goes into great detail as to the minimum requirements for a spraying "structure", at no point does the Section require that a paint booth "structure" be "approved."

UL approval is seldom done for assemblies of components such as paint booths, especially custom designed. This is standard practice for a wide range of industries. UL listed components may be used throughout an assembly, but the assembly as such is not UL listed.

To get an assembly listed, a complete assembly would need to be furnished for testing by UL Laboratories. For custom-built equipment, this is not workable because two units would need to be built, one for testing and one for the customer.

Other industries that do the same, in addition to paint booths, are the industrial equipment manufacturers, commercial construction, residential construction, and many others.

As an example, in all buildings are electrical panels. The enclosure is UL listed, as are the breakers, lights, switches, etc. UL did not test that particular configuration and therefore the electrical system is not UL approved. This is acceptable practice. Phone systems and LAN wiring are other examples.

If I may be of further assistance, please advise.

Michael W. Bowles  
Mech. Engr. (Standard Tool and Equipment)



## **I. INTRODUCTION**

Paint spray booths are used to confine and remove overspray and fumes from the area in which spray painting is performed. They are available in many different sizes (width, depth and height) and in many different types, depending upon the amount and kind of material to be sprayed and the method of application.

You have purchased a Dry Type Spray Booth with Arrestor Exhaust, which is designed for use during intermittent or limited production spraying in locations where exhausted air must be clean. It operates by drawing contaminated air through replaceable filters (arrestor pads) which prevent overspray residue escaping to the atmosphere. All booths with arrestor exhausts are supplied with a draft gauge (manometer).

Your spray booth is constructed of self supporting 18 gauge sheet steel sectional panels and is furnished with all necessary assembly hardware and instructions. It is constructed of non-combustible materials and is built to meet the requirements of the National Board of Fire Underwriters, the National Fire Protection Association's Standards Number 33 and NFPA's National Electric Code. It also meets or exceeds OSHA requirements as well as most of the code requirements of local and state fire and health regulations. It is the responsibility of the user to install the equipment in accordance with current local regulations.

## **II. OPERATING PRECAUTIONS**

The following precautions should always be observed during operation of paint spray booths:

1. On dry type paint spray booths with arrestor exhaust:
  - A. Do not use this type of booth when applying a spray material known to be highly susceptible to spontaneous heating and ignition.
  - B. Do not use arrestor pads alternately for different types of coating materials where the combination of materials may be conducive to spontaneous combustion.

- C. Do not permit fluid to collect in the flexible plastic connecting loop in the back of the draft gauge as this could cause a serious reading error. If the draft gauge is subjected to an overpressure, check to ensure that fluid has not passed into the loop
2. On all paint spray booths:
- A. Do not carry on spray operations near operations emitting sparks or other hazardous operations.
  - B. When spraying metal bearing protective coatings, a noticeable proportion of very fine, lightweight flakes of metal will be carried with the air through the booth and ventilation system to the outside of the building.
  - C. To hinder rust of the spray booth and to facilitate cleaning of overspray, one of the several commercial coatings available should be applied to areas where overspray will be deposited. Some are plastic coating, which may be brushed or sprayed and later stripped off in sheets; some are semi-permanent Teflon coating. Common grease and paper is also used but is not recommended as it presents a fire hazard
  - D. Keep the air velocity through the booth constant. If the paint formula or spraying operation is changed from that for which the booth was originally purchased, more or less air movement may be present than even the law requires. Also, with more than one booth installed, room air currents may be troublesome. The result, in addition to the heating and air conditioning problems, is that fast-moving air currents across the face opening of the booths often result in the starving of one booth to the benefit of an adjacent booth with a better draft and the pulling of paint overspray from the starved booth out into the general room area.
  - E. To keep specks of direct dust and lint off the surface being painted;
    - 1. Wear starched overalls during spraying operations.
    - 2. Strain spray material using a metal mesh filter, not a cheese-cloth or similar strainer.
    - 3. Keep area surrounding booth, as well as booth itself clean.
    - 4. Keep spray equipment clean.

### **III. ASSEMBLY INSTRUCTIONS**

- 1. Booth placement
  - A. Check the selected area for ample clearance. Remove any obstructions which may interfere with the exhaust fan and stack, personnel access

door or the vehicle entry / exit doors. A minimum of three feet clearance is recommended about the booth's perimeter. Six feet or more from the nearest wall is preferred to allow smoother airflow through the booth. Be sure to provide ample clearance between booth and building walls or other obstruction for access to light fixtures.

- B. Check ceiling height for ample clearance. Check exhaust outlet location with the roof or wall to avoid obstructions in the line of the exhaust pipe.
- C. The floor surface of the booth and the operator's working area must be of non-combustible material and of such construction so as to facilitate the safe cleaning and removal of residues. It must also be able to support the weight of the booth, in-process material, and the operator.
- D. Carefully examine floor to be sure it is level. Many problems are caused by uneven floors; not allowing proper alignment of panels, supports, doors, etc. If the floor is not level, some type of shim must be used to level the booth. After erection of your booth, use mortar fill where shim exceeds 3/8-inch thickness.
- E. Using chalk, mark the outside wall dimensions of the spray booth. These dimensions are shown on the layout drawing supplied with this instruction package.

## 2. Hints for Ease of Installation

- A. Recommended tools: chalk line, 3/8 inch screw gun with 3/8 hex socket, extension cord, 2 c-clamps, level, rubber hammer, drill and 1/4 inch masonry bit (to install concrete anchors), 2 8-foot ladders and caulk gun.
- B. Begin the erection of your new booth at the outside corner of the exhaust chamber spray paint area.
- C. All panels are installed to provide a flush interior face with all flanges to the exterior.
- D. The assembly drawing shows the personnel door on the right side of the booth. However, the booth is designed so that the door can be placed on the left side as well by switching panels.

Note: This instruction package includes an exploded isometric drawing showing the relationship of each panel or part to the others. A listing of all component panels is provided on this drawing and should be used in

addition to the packing list when uncrating to identify all components provided by Standard Tools and Equipment.

### 3. Installation Instructions

- A. Unpack all components and stack all parts of the same size together. Each component is identifiable by the size and description as shown on the Assembly Sequence drawings, the assembly drawing, and the parts list. Check to ensure that all spray booth components are at hand.
- B. Study all the drawings and instructions thoroughly before beginning assembly. Each component is shown on the Assembly Sequence and on the assembly drawing. This will aid in determining where the various components are to be installed during assembly.
- C. Assemble the booth starting with the exhaust chamber section. Note: It is very important to stay on the chalk outline during the assembly process.
- D. Install TEK screws (self-drilling  $\frac{1}{4}$  x  $\frac{3}{4}$  hex head screws) approximately 12 inches apart and near corners.
- E. Seal all panel joints with caulk after the booth has been completely erected. Tighten all bolts and secure the booth to floor. Seal all seams from the interior of the booth.
- F. Mount exhaust unit and motor. Ensure that there are no obstructions in the exhaust unit that would damage it. Make certain that electrical connections have been made properly and that direction of rotation is as indicated.
- G. Installing exhaust piping. Where more than 25 feet of piping is required, the static pressure is increased so that air flow may be hindered when using the standard exhaust unit recommended for this booth. Where a ducting arrangement of an unusual nature is employed or where two or more elbows are used, a similar condition may exist. Therefore, if either of these situations arise, contact your local distributor or the manufacturer for recommendations.
- H. Installing lighting fixtures. Wire adequate electrical supply to lighting fixtures, to electric motor of exhaust unit, etc. Use flexible conduit to wire light fixtures. This will allow changing of fluorescent bulbs to be easier.

- I. Installing filters (see Details XV & XVI, except for ECF-1000 – see DETAILS XVII - XXI):
  1. Intake filters are 20”x 20” square with a support frame and are installed in the intake filter grid with the tacky surface (green side) facing the booth interior.
  2. Exhaust filters are 20”x 20” square and are installed in the exhaust filter grid using two filter support rods.
  3. Intake and exhaust filters for ECF-1000 are blanket filters.
- J. Installing Manometer (draft gauge). Install the manometer in accordance with the manometer manufacturer’s installation instructions and the attached drawing (GENERAL INSTRUCTIONS-MANOMETER).
- K. Draft gauge setting:
  4. Calibrate the draft gauge with exhaust unit running. Note the height of the oil column (in inches of water) on the draft gauge. Mark this point with a piece of tape to indicate the pressure with clean arrestor pads
  5. Take pieces of cardboard and partially cover the arrestor pads in checkerboard fashion to simulate clogged filters. Add sufficient pieces of cardboard until the surface velocity drops to the minimum allowable 100 feet per minute (air speed measured by a velometer). Note the reading on the draft gauge and mark with tape. This is point (pressure) at which to change the arrestor pads
  6. Upon removal of all cardboard, the pressure should return to its original point on the draft gauge marked with tape.
  7. The paint spray booth is now ready for operation.

#### **IV. MAINTENANCE**

The frequency of the following maintenance checks depends on the amount and kind of materials being sprayed. Under all circumstances, however, these checks should be made at regular intervals to reduce fire hazards, to maintain the efficiency of the booth, to prevent freshly painted objects from becoming blemished and to hinder rust of the booth.

1. Daily or when overspray accumulates – remove the overspray and coating from the booth interior, operator's floor area, baffles, fan and exhaust piping. Use a non-ferrous, non-sparking scraper to eliminate any possibilities of igniting combustible material. Do not allow overspray to accumulate, presenting a fire hazard. Do not leave piles of paint sweepings in the booth.
2. When overspray accumulates, remove exhaust unit blade and clean
3. Check belt tension on exhaust unit periodically. Bearing in fan and motor may wear unnecessarily when belts are too tight.
4. Replace filters as needed.