



Missouri Department of Natural Resources  
Missouri Air Conservation Commission  
Air Pollution Control Program

**PERMIT BOOK**

**PERMIT  
TO  
CONSTRUCT  
PERMIT BY RULE**

Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to construct and operate the air contaminant source(s) described below, in accordance with the laws, rules, and conditions set forth here in.

**Construction Permit Number: 042011 - 002**

**Project Number: 2011-03-048**

**Installation ID: 145-0044**

**Installation Name and Address**

Premier Turbines  
3551 Doniphan Drive  
Neosho, MO 64850  
Newton County

**Parent Company's Name and Address**

Dallas Airmotive, Inc.  
900 Nolan Drive, Suite 100  
Grapevine, TX 76051

**Installation Description:**

Typical small paint spray booth (5' X 5' X 5') with dry filters rated at an arrestance efficiency of 98.65%. VOC PTE is 1.4 tons/year. Emissions of all HAP combined are less than 1 ton/year.

APR 14 2011

Effective Date

  
Director or Designee  
Department of Natural Resources

STANDARD CONDITIONS:

Permission to construct may be revoked if you fail to begin construction or modification within two years from the effective date of this permit. Permittee should notify the Air Pollution Control Program if construction or modification is not started within two years after the effective date of this permit, or if construction or modification is suspended for one year or more.

**You will be in violation of 10 CSR 10-6.060 and 10 CSR 10-6.062 if you fail to adhere to the specifications and conditions listed in your permit by rule application and this permit.**

Specifically, all air contaminant control devices shall be operated and maintained as specified in the application, associated plans and specifications.

You must notify the Department of Natural Resources Regional office responsible for the area within which the equipment is located within 15 days after the actual start up of this air contaminant source.

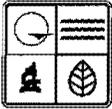
A copy of this permit and permit notification shall be kept at the installation address and shall be made available to Department of Natural Resources' personnel upon request.

You may appeal this permit or any of the listed special conditions as provided in RSMo 643.075. If you choose to appeal, the Air Pollution Control Program must receive your written declaration within 30 days of receipt of this permit.

If you choose not to appeal, this certificate, the project review, and your application and associated correspondence constitutes your permit to construct. The permit allows you to construct and operate your air contaminant sources(s), but in no way relieves you of your obligation to comply with all applicable provisions of the Missouri Air Conservation Law, regulations of the Missouri Department of Natural Resources and other applicable federal, state and local laws and ordinances.

The Air Pollution Control Program invites your questions regarding this air pollution permit. Please contact the Permit Section, Initial Source Review Unit at (573) 751-4817. If you prefer to write, please address your correspondence to the Air Pollution Control Program, P.O. Box 176, Jefferson City, Missouri 65102-0176, attention: Initial Review Unit.

145-0044



STATE OF MISSOURI  
 DEPARTMENT OF NATURAL RESOURCES  
 P.O. BOX 176, JEFFERSON CITY, MO 65102-0176  
**APPLICATION FOR AUTHORITY TO CONSTRUCT  
 PERMIT BY RULE NOTIFICATION  
 SURFACE COATING OPERATIONS**

APCP USE ONLY	
CHECK NO. <b>526759</b>	CHECK RECEIVED (MM/DD/YY) <b>3-17-11</b>
CHECK AMOUNT \$ <b>700.00</b>	CHECK DATE (MM/DD/YY) <b>3-8-11</b>
PROJECT NO. <b>2011-05048</b>	PERMIT NO.

**SECTION A: GENERAL NOTIFICATION INFORMATION – ALL NOTIFICATIONS MUST BE ACCOMPANIED BY A \$700 FEE.**

**SECTION A-1: GENERAL INSTALLATION INFORMATION**

1. INSTALLATION NAME <b>Premier Turbines</b>		2. FIPS	2. PLAN T NO.
3. INSTALLATION STREET ADDRESS <b>3551 Doniphan Drive</b>			
4. INSTALLATION MAILING ADDRESS <b>Same</b>			
5. CITY <b>Neosho</b>		STATE <b>MO</b>	ZIP CODE <b>64850</b>
6. COUNTY NAME <b>Newton</b>	7. 1/4, of 1/4, of SECTION TOWNSHIP RANGE Sections 2, 3 10 & 11, Range 32W, Township 24N		
9. PARENT COMPANY <b>Dallas Airmotive, Inc.</b>			
10. PARENT COMPANY MAILING ADDRESS <b>900 Nolen Drive Suite 100</b>			
11. CITY <b>Grapevine</b>		STATE <b>TX</b>	ZIP CODE <b>76051</b>
12. INSTALLATION CONTACT PERSON <b>Sommer Showen</b>		13. CONTACT PERSON'S TITLE <b>HSE Coordinator</b>	
14. CONTACT PERSON'S MAILING ADDRESS <b>3551 Doniphan Drive, Neosho, MO 64850</b>			
15. INSTALLATION CONTACT TELEPHONE NO. <b>417-455-7726</b>		16. INSTALLATION CONTACT FAX NO. <b>417-455-7750</b>	
17. INSTALLATION CONTACT E-MAIL ADDRESS <b>Sommer.Showen@premierturbines.com</b>			
18. PROJECTED DATE TO COMMENCE CONSTRUCTION <b>March 15, 2011</b>		19. PROJECT DATE OF OPERATION STARTUP <b>April 15, 2011</b>	

RECEIVED  
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 AIR POLLUTION  
 CONTROL PSM

**SECTION A-2: INSTALLATION DESCRIPTION**

20.  
 Typical small paint spray booth (5' X 5' X 5') with dry filters rated at an arrestance efficiency of 98.65%. VOC PTE is 1.4 tons/year. Emissions of all HAP combined are less than 1 ton/year.

**SECTION A-3: CERTIFICATION STATEMENT**

I certify that I have personally examined and am familiar with the information in this application and believe that the information submitted is accurate and complete. I am aware that making a false statement or misrepresentation in this application is grounds for denying or revoking this permit.

21. SIGNATURE OF RESPONSIBLE OFFICIAL 		22. DATE <b>3/10/11</b>
23. TYPE OR PRINT NAME OF RESPONSIBLE OFFICIAL <b>Mark Knight</b>		24. RESPONSIBLE OFFICIAL'S TELEPHONE NUMBER <b>417-455-7808</b>
25. TITLE OF RESPONSIBLE OFFICIAL <b>Director of Operations</b>		

**SECTION B: SPECIAL CONDITIONS FOR PRINTING OPERATIONS**

Construction and operation of this new air pollution source is subject to the special conditions listed below. These special conditions are based on the authority granted to the Missouri Air Pollution Control Program by the Missouri Air Conservation Law (specifically RSMo. 643.075) and by the Missouri Rules listed in Title 10, Division 10 of the Code of State Regulations (specifically 10 CSR 10-6.062 "Construction Permits by Rule").

Please indicate by marking the appropriate box as to whether or not the emission source complies with the rule listed in the applicable emission limit or standard. If any of the applicable emission source boxes are checked no, your source is not eligible for a printing operation permit by rule.

**This Permit By Rule applies only to Surface Coating Operations constructed after Oct. 31, 2003.**

SPECIAL CONDITION	EMISSION SOURCE COMPLIES?	APPLICABLE EMISSION LIMIT OR STANDARD	METHOD OF COMPLIANCE
10 CSR 10-6.062(3)(B)3.A.	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	Metalizing, spraying molten metal onto a surface to form a coating, is not permitted under this permit-by-rule. The use of coatings that contain metallic pigments is permitted.	Proper work practice.
10 CSR 10-6.062(3)(B)3.B.	<input type="checkbox"/> YES <input type="checkbox"/> NO	All facilities shall implement good housekeeping procedures to minimize fugitive emissions, including all spills, which shall be cleaned up immediately. The booth or work area exhaust fans shall be operating when cleaning spray guns and other equipment. All new and used coatings and solvents shall be stored in closed containers. All waste coatings and solvents shall be removed from the site by an authorized disposal service or disposed of at a permitted on-site waste management facility.	To ensure proper work practices the operator shall provide and maintain suitable, easily read, permanent markings on all coatings and solvents containers.
10 CSR 10-6.062(3)(B)3.C.	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	Drying and curing ovens shall either be electric or meet the following conditions: The maximum heat input to any oven must not exceed forty (40) million British thermal units (Btu's) per hour. Heat shall be provided by the combustion of one of the following: natural gas, liquid petroleum gas, fuel gas containing no more than twenty (20) grains of total sulfur compounds (calculated as sulfur) per one hundred (100) dry standard cubic feet, or number 2 fuel oil with not more than three tenths percent (0.3%) sulfur by weight.	Proper work practice.
10 CSR 10-6.062(3)(B)3.D.	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<p>Emissions shall be calculated using a material balance that assumes that all VOC's and hazardous air pollutants in the paints and solvents used are directly emitted to the atmosphere. The total uncontrolled emissions from the coating materials (as applied) and cleanup solvents shall not exceed the following for all operations: Forty (40) tons per twelve (12)-month period, rolled monthly, of VOC's for all surface coating operations on the property.</p> <p>A sum of twenty-five (25) tons per twelve (12)-month period, rolled monthly, of all hazardous air pollutants for all surface coating operations on the property.</p> <p>Each individual hazardous air pollutant shall not exceed the emission threshold levels established in 10 CSR 10-6.060(12)(J), rolled monthly.</p>	<p>Determined through proper record keeping. Worksheets A, B, and C (or equivalent) shall be used to demonstrate compliance with this condition. These records shall be maintained for not less than five (5) years, and they shall be immediately available to any Missouri Department of Natural Resources personnel upon request. The operator shall report to the Air Pollution Control.</p> <p>Program's Enforcement Section, P.O. Box 176, Jefferson City, Missouri 65102, no later than ten (10) days after the end of the month during which these conditions are exceeded.</p>

**SECTION B: SPECIAL CONDITIONS FOR PRINTING OPERATION (CONTINUED)**

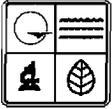
SPECIAL CONDITION	EMISSION SOURCE COMPLIES?	APPLICABLE EMISSION LIMIT OR STANDARD	METHOD OF COMPLIANCE
10 CSR 10-6.062(3)(B)3.E.	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<p>The surface coating operations shall be performed indoors, in a booth or in an enclosed work area. The booth shall be designed to meet a minimum face velocity at the intake opening of each booth or work area of one hundred feet (100') per minute. Emissions shall be exhausted through elevated stacks that extend at least one and one-half (1 1/2) times the building height above ground level. All stacks shall discharge vertically. There shall be no obstructions, such as rain caps, unless such services are designed to automatically open when booths are operated.</p>	Proper work practice.
10 CSR 10-6.062(3)(B)3.F.	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<p>For spraying operations, emissions of particulate matter must be controlled using either a water wash system or a dry filter system with a ninety-five percent (95%) removal efficiency as documented by the manufacturer. The face velocity at the filter shall not exceed two hundred fifty feet (250') per minute or that specified by the filter manufacturer, whichever is less. Filters shall be replaced according to the manufacturer's schedule or whenever the pressure drop across the filter no longer meets the manufacturer's recommendation.</p>	Proper work practice.
10 CSR 10-6.062(3)(B)3.G.	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<p>Coating operations shall be conducted at least fifty feet (50') from the property line and at least two hundred fifty feet (250') from any recreational area, residence, or other structure not occupied or used solely by the owner of the property upon which the facility is located.</p>	Proper work practice.
10 CSR 10-6.062(3)(B)3.H.	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<p>The facility shall not be located in an ozone non-attainment area.</p>	Proper work practice.
10 CSR 10-6.062(3)(B)3.I.	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<p>Record keeping. The operator shall maintain the following records and reports: All material safety data sheets for all coating materials and solvents. A monthly report indicating the days the surface coating operation was in operation and the total tons emitted during the month, and the calculation showing compliance with the rolling average emission limits of sub paragraphs 10 CSR 10-6.062(3)(B)3.d.</p> <p>A set of example calculations showing the method of data reduction including units, conversion factors, assumptions, and the basis of assumptions.</p> <p>These reports and records shall be immediately available for inspection at the installation.</p>	<p>Determined through proper record keeping. Worksheets A, B, and C (or equivalent) shall be used to demonstrate compliance with this condition. These records shall be maintained for not less than five (5) years, and they shall be immediately available to any Missouri Department of Natural Resources personnel upon request.</p> <p>The operator shall report to the Air Pollution Control Program's Enforcement Section, P.O. Box 176, Jefferson City, Missouri 65102, no later than ten (1) days after the end of the month during which these conditions are exceeded.</p>

**SECTION C: OTHER POTENTIALLY APPLICABLE REQUIREMENTS**

This section is intended to identify regulations that may apply to this installation. There may be others not listed that apply. To determine rule applicability and specific standards please consult the appropriate sections in the Code of Federal Regulations (CFR) and Code of State Regulations (CSR) for the full text of the applicable requirements. Please note: this permit allows you to construct and operate your air contaminant source(s), but in no way relieves you of your obligation to comply with all applicable provisions of the Missouri Air Conservation Law, regulations of the Missouri Department of Natural Resources, and other applicable federal, state, and local laws and ordinances.

REGULATION OR CONSTRUCTION PERMIT REFERENCE	APPLICABLE EMISSION LIMIT OR STANDARD	METHOD OF COMPLIANCE
10 CSR 10-2.100, 10-3.030, or 10-4.090, 10-5.070 Open Burning Restrictions	Shall not conduct, cause, permit or allow a salvage operation, the disposal of trade wastes or burning of refuse by open burning.	Any person intending to engage in open burning shall submit a request to the Director.
10 CSR 10-2.070, 10-3.090 or 10-4.070, Restriction of Emission of Odors	No person may cause, permit or allow the emission of odorous matter in concentrations and frequencies or for durations that odor can be perceived when air is diluted to 1:7 volumes of odorous to odor-free air for 2 separate trails not less than 15 minutes apart within 1 hour.	No odor violations noted, if and when scentometer readings are taken.
10 CSR 10-5.160 Control of Odors in the Ambient Air	No person shall emit odorous matter as to cause objectionable odors unless within the limits established by this rule.	No odor violations noted, if and when scentometer readings are taken.
10 CSR 10-6.065, Operating Permits	The permittee shall comply with all applicable requirements identified in the operating permit (OP); file for timely renewal of this OP; and retain a copy of the OP on-site and make available to any MDNR personnel upon request.	The permittee shall submit an annual compliance certification in accordance with the regulation. The permittee shall maintain a current equipment list on-site with the date of installation of the equipment.
10 CSR 10-6.110, Submission of Emission Data, Emission Fees and Process Information	Submission of Emission Inventory Questionnaire (EIQ) and emission fees by frequency noted in 10 CSR 10-6.110.	The permittee shall complete and submit an EIQ in accordance with 10 CSR 10-6.110.
10 CSR 10-6.050, Start-up, Shutdown and Malfunction Conditions	Shall not commence construction or modification of any installation subject to this rule; begin operation after construction or modification; or begin operation of any installation which has been shut down longer than 5 years without first obtaining a permit.	In the event of a malfunction, which results in excess emissions that exceed 1 hour, the permittee shall implement corrective action and submit reports.
10 CSR 10-5.530, Control of Volatile Organic Compound Emissions From Wood Furniture Manufacturing Operations	The owner or operator shall limit VOC emissions from finishing operations by complying with requirements found in 10 CSR 10-5.530(3).	Proper work practice, and maintenance of records as required by the rule.
10 CSR 10-2.210, and 10-5.300 Control of Emissions From Solvent Metal Cleaning	No person shall cause or allow solvent metal cleaning or degreasing operations without adhering to the operations procedures in the rule, following the use recommendations by the equipment manufacturer, without minimum operator and supervisor training, and the equipment must conform to the specifications established in the rule.	Proper work practice, and maintenance of records as required by the rule.

<b>SECTION C: OTHER POTENTIALLY APPLICABLE REQUIREMENT (CONTINUED)</b>		
<b>REGULATION OR CONSTRUCTION PERMIT REFERENCE</b>	<b>APPLICABLE EMISSION LIMIT OR STANDARD</b>	<b>METHOD OF COMPLIANCE</b>
10 CSR 10-2.215 and 10 CSR 10-5.455 Control of Emissions from Solvent Cleanup Operations	Any person performing certain industrial cleaning involving the use of a VOC solvent shall demonstrate a thirty percent (30%) reduction in plant-wide industrial VOC cleaning solvent emissions by May 1, 2003 (10-2.215) or May 31, 2003 (10-5.455). The emission reduction shall be based on an average of the summation of the emissions in 1997 and 1998 (10-2.215) or by a representative year 1990 or 1995 (10-5.445).	Proper work practice, and maintenance of records as required by the rule.
10 CSR 10-2.230, 10-5.330, Control of Emissions From Industrial Surface Coating Operations	No person shall emit any VOC from any surface coating operation in excess of amounts listed in tables 10 CSR 10-2.230(4) and 10-5.330(4).	Proper work practice, and maintenance of records as required by the rule.
10 CSR 10-6.070 New Source Performance Regulations	The following federal NSPS standards may apply: (EE) Surface Coating of Metal Furniture, (MM) Automobile and Light Duty Truck Surface Coating Operations, (SS) Industrial Surface Coating: Large Appliances, (TT) Metal Coil Surface Coating, (WW) Beverage Can Surface Coating Industry, (FFF) Flexible Vinyl and Urethane Coating and Printing, (TTT) Industrial Surface Coating: Surface Coating of Plastic Parts for Business Machines.	As required by regulations.
10 CSR 10-6.075 Maximum Achievable Control Technology Regulations	The following federal MACT standards may apply: (JJ) National Emission Standards for Wood Furniture Manufacturing Operation, (KKKK) Metal Can Surface Coating, (MMMM) Miscellaneous Metal Parts and Products Surface Coating, (NNNN) Large Appliance Surface Coating, (PPPP) Plastic Parts Surface Coating, (QQQQ) Wood Building Products Surface Coating, (RRRR) Metal Furniture Surface Coating, and (SSSS) Metal Coil Surface Coating.	As required by regulations.



STATE OF MISSOURI  
DEPARTMENT OF NATURAL RESOURCES  
**APPLICATION FOR AUTHORITY TO CONSTRUCT  
PERMIT BY RULE NOTIFICATION  
SURFACE COATING OPERATIONS**

**INSTRUCTIONS**

By submitting your notification, you are accepting all conditions and terms stated in this form. If you find the special conditions listed in Section B unacceptable, you may choose to submit a construction permit application and undergo a case-by-case review. Please refer to the following line-by-line instructions to complete the notification.

**The notification, along with the \$700.00 fee, should be mailed to:** Air Pollution Control Program, Permit-By-Rule P.O. Box 176, Jefferson City, Missouri 65102. You must also retain a copy of the notification at the installation and make it immediately available to any inspector. Once the fee and notifications have been mailed or hand-delivered, you are free to begin construction of your project under the special conditions that you have accepted. The Air Pollution Control Program will send you a letter acknowledging receipt of your notification with a permit number and a project number for agency tracking purposes. It is suggested that the attached record-keeping forms be used as a tool for the purpose of demonstrating your permit-by-rule compliance at inspections.

A copy of this electronic package may be obtained from the Department of Natural Resources' Division of Environmental Quality Web site at <http://www.dnr.mo.gov/forms/index.html>. If you have any questions about the notification form or the permit-by-rule notification procedure, please feel free to contact the Permit Section at (573) 751-4817.

**NOTIFICATION FORM INSTRUCTIONS**

- 1.) **Installation Name:** Enter the official company name and/or plant designation for the installation that is making the permit-by-rule notification.
- 2.) **FIPS Number:** Enter the official FIPS Number (3-digit code) which corresponds to the county name for the county in which the installation is located. Please refer to <http://www.itl.nist.gov/fipspubs/co-codes/mo.txt> for a listing. The FIPS number in combination with the Plant Number provides the identification/tracking information for the installation in the State/Federal databases.
- 3.) **Plant Number:** Enter the official Plant Number that has been assigned to the installation by the respective State or Local Agencies. If you do not know your plant number, please leave blank.
- 4.) **Installation Street Address:** Enter the street address of the physical location of installation.
- 5.) **Installation Mailing Address:** Enter the mailing address if that address is different from the street address.
- 6.) **City, State and Zip Code:** Enter the City, State and Zip Code of the physical location of the installation.
- 7.) **County:** Enter the county in which the installation is located.
- 8.) **Section, Township, Range:** Enter the appropriate information on the Section, Township and Range in which the installation is located.
- 9.) **Parent Company:** Complete this block if this installation is totally or partially owned by another company.
- 10.) **Parent Company Mailing Address:** Complete this block if this installation is totally or partially owned by another company.
- 11.) **Parent Company City, State and Zip Code:** Complete this block if this installation is totally or partially owned by another company.
- 12.) **Installation Contact Person:** Enter the name of the person who is most familiar with the operations of the installation and who can answer any questions regarding information about the installation.
- 13.) **Contact Person's Title:** Enter the title of the contact person.
- 14.) **Contact Person's Mailing Address:** Enter the mailing address for the Contact Person.
- 15.) **Installation Contact Person's Telephone Number:** Enter the Contact Person's telephone number.
- 16.) **Installation Contact Person's Fax Number:** Enter the Contact Person's fax number.
- 17.) **Installation Contact Person's e-mail Address:** Enter the Contact Person's e-mail address.
- 18.) **Projected Date to Commence Construction:** Enter the date you intend to commence construction of your installation.
- 19.) **Projected Date of Operation Startup:** Enter the date you plan to begin operation with the installation.
- 20.) **Installation Description:** Enter the general product manufactured, the material handled by your installation and principal activity that is performed at this installation.
- 21.) **Signature of Responsible Official:** Enter the signature of the installation's official, certifying that the notification is accurate and complete. Notifications without a signed certification are not considered complete. (A responsible official is: The president, secretary, treasurer or vice-president of a corporation in charge of a principal business function, or any other person who performs similar policy and decision-making functions for the corporation or a duly authorization representative of this person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit and either-a) The facilities employ more than 250 person or have a gross annual sales or expenditures exceeding twenty-five million dollars (in second quarter 1980 dollars); or b) The delegation of authority to his representative is approved in advance by the permitting authority.) A general partner in a partnership or the proprietor in a sole proprietorship. Either a principal executive officer or ranking elected officials in a municipality, state, federal, or other public agency. For the purpose of this part, a principal executive officer of a federal agency includes the chief executive officer having responsibility for the operations of a principal geographic unit of the agency; or The designated representative of an affected source insofar as actions, standards, requirements or prohibitions under Title IV of the Clean Air Act or the regulations promulgated under the Act are concerned or the designated representative for any purposes under Part 70.
- 22.) **Date:** Enter the date that the Signature of the Responsible Official was obtained.
- 23.) **Type or Print Name of Responsible Official:** Type or print the name of the Responsible Official signing in item 21.
- 24.) **Responsible Official's Telephone Number:** Enter the telephone number where the Responsible Official may be contacted who signed in item 21.
- 25.) **Title of Responsible Official:** Enter the official title of the Responsible Official from item 21.



**PREMIER TURBINES - NEOSHO, MISSOURI - NEW PAINT BOOTH EMISSIONS**

Material Used	Amount of Material Used (gallons per year)	Density (lbs/gal)	VOC Content (lbs/gal)	VOC Emissions (Tons)
Alseal 518	50	13.76	0	0.00
C-1178-66 Catalyst	150	7.53	3.48	0.26
1-Coat EMS	150	8.23	4.59	0.34
MIL-DIL-Type I	565	11.99	0.48	0.14
MIL-DIL-Type II	565	8.99	0.42	0.12
Glyptal	95	10.3	4.25	0.20
Molydag 254N	50	11.18	4.95	0.12
MIL-R-30433 Blue Resin	50	8.79	0.07	0.00
Thinner	65	6.76	6.76	0.22

Total Potential  
VOC/year with no  
controls 1.41

# SPECIFICATIONS



## Ultra Media

### SYNTHETIC FILTER MEDIA PADS AND BLANKETS

#### 1. Scope

This specification covers synthetic media that is a component of paint booth systems. The media can be utilized in paint overspray, sanding dust, oil mist or adhesive overspray collection.

#### 2. Construction

##### Media

The media is 100% dual stage polyester fiber. The media shall be white on the air entering side and have a dense needled purple layer on the air leaving side. No halogen, ammonium sulfate or ammonium phosphate shall be used in this media.

#### 3. Size Availability

The media shall be available in pre-cut pads, blankets and bulk rolls.

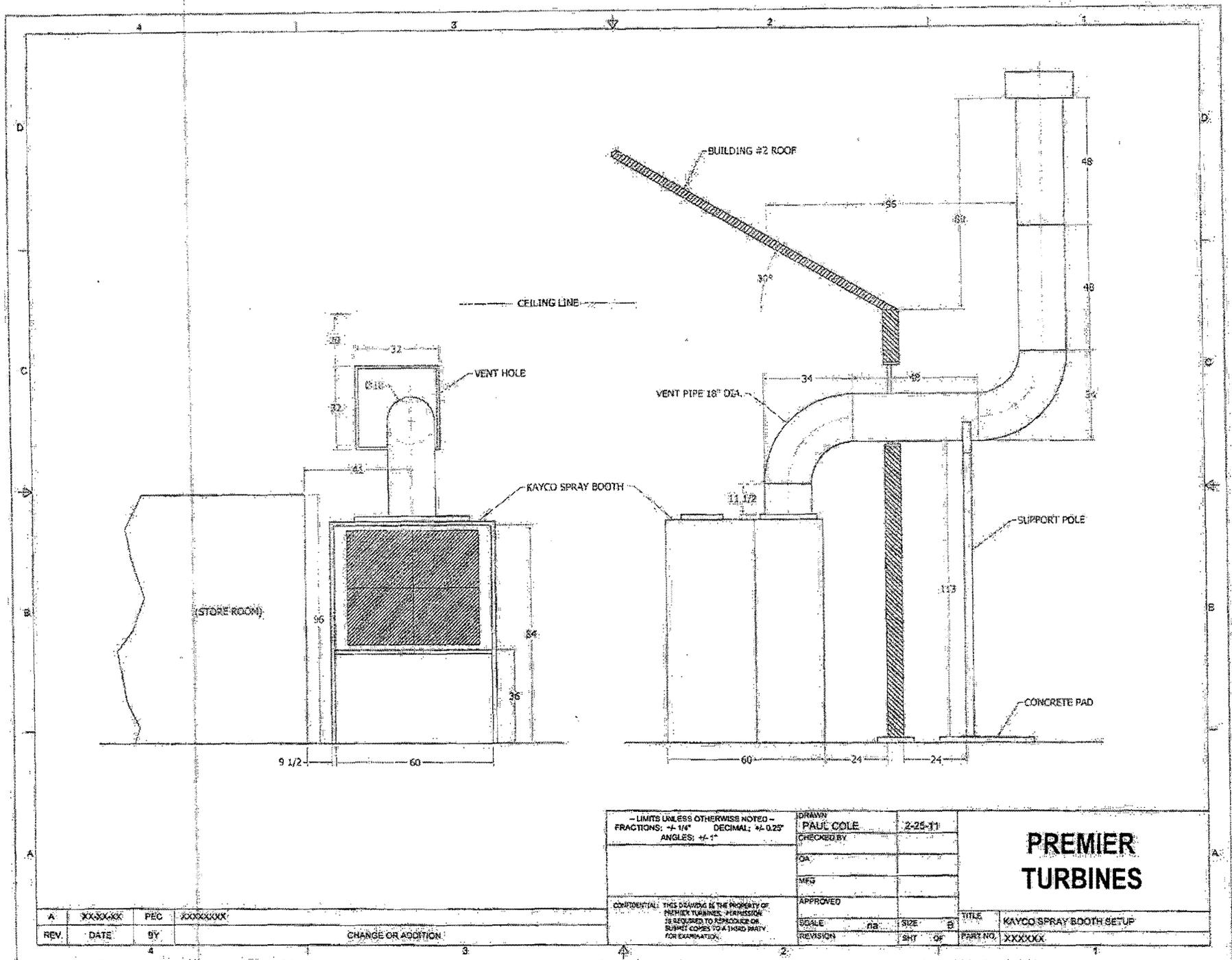
#### 4. Performance

The media shall meet the following minimum performance requirements for paint removal, based on using high solids bake enamel. Performance shall be representative of all sizes offered.

<b>Nominal Size</b>	<b>20 x 20</b>
Rated Face Velocity (FPM)	150
Initial Resistance (In W.G.)	.06
Final Resistance (In W.G.)	1.0
Average Paint Overspray Removal Efficiency	99.6%
Paint Holding Capacity	11.1 Pounds

#### 5. UL Classification

The media shall be classified by Underwriters Laboratories, Inc. Class 2 per UL Standard 900.



— LIMITS UNLESS OTHERWISE NOTED —  
 FRACTIONS:  $\pm 1/4"$  DECIMAL:  $\pm 0.25"$   
 ANGLES:  $\pm 1"$

DRAWN PAUL COLE 2-25-11  
 CHECKED BY

QA  
 MFG

APPROVED

SCALE: AS SHOWN SIZE: B  
 REVISION: SHY OF PART NO.

# PREMIER TURBINES

TITLE: KAYCO SPRAY BOOTH SETUP  
 PART NO. XXXXXX

A	XX-3069K	PEC	XXXXXXKXK
REV.	DATE	BY	

CHANGE OR ADDITION

CONFIDENTIAL: THIS DRAWING IS THE PROPERTY OF PREMIER TURBINES. PERMISSION IS REQUIRED TO REPRODUCE OR SUBMIT COPIES TO A THIRD PARTY FOR EXAMINATION.

# Instructions – Parts List



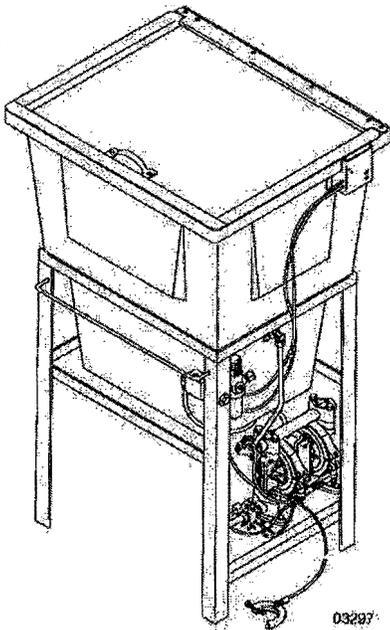
## PRO-WASH™ Gun Washer 308393H

With Husky™ 307 Pump

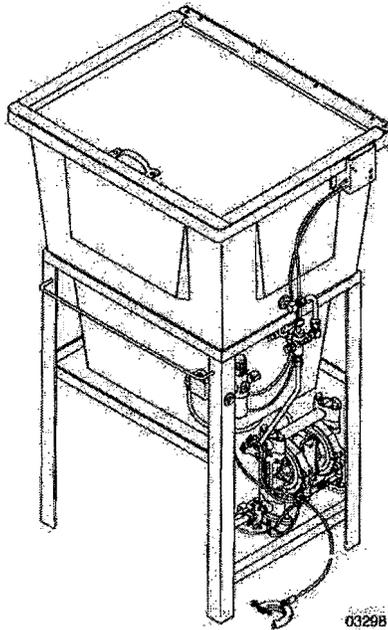
100 psi (0.7 MPa, 7 bar) Maximum Working Pressure



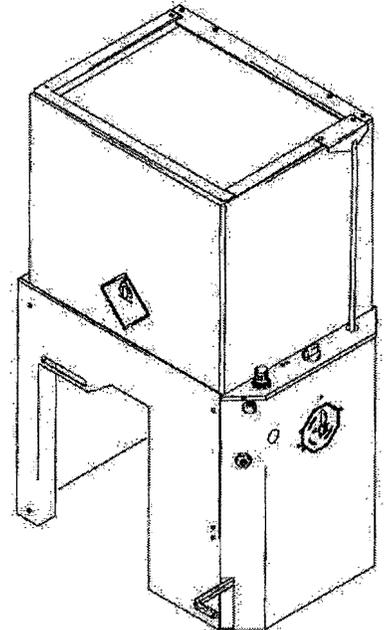
**Read warnings and instructions.**  
See page 2 for **List of Models** and page 5 for  
**Gun Washer Descriptions.**



**Model 112634**



**Model 112635**



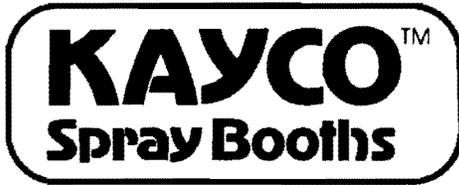
**Model 117438**

**KAYCO SPRAY BOOTHS, INC.  
P.O. BOX 487 – 135 INDUSTRIAL BLVD.  
LA VERNIA, TX 78121**

**Phone 830-779-2051  
Fax 830-779-1034  
Toll Free 800-529-2640**

**[www.kaycospraybooths.com](http://www.kaycospraybooths.com)**

**E-mail – [kayco@kaycospraybooths.com](mailto:kayco@kaycospraybooths.com)**



P.O Box 487  
La Vernia, TX 78121  
(830)779-2051 ~ Fax (830)7791034  
1-800-529-2640  
[www.kaycospraybooths.com](http://www.kaycospraybooths.com)

### **WARRANTY**

**Kayco warrants all products manufactured by Kayco against defects in materials and workmanship for a period of one (1) year from date of delivery. Kayco does not warrant installation work done by other than Kayco personnel. Those products not manufactured by Kayco such as fans, electrical motors, etc. but are included in an installation are covered under separate warranties by the respective manufacturers. No other warranty is expressed or implied.**

### **VOLTAGES**

**All light fixture; automatically sense the incoming voltage and select; either 120 or 277.**

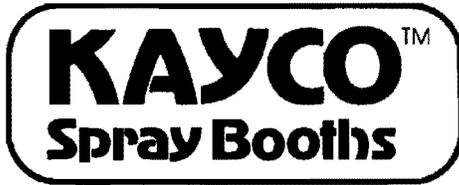
**All motor; are 230 volt, 60 cycle, 3 phase. Single phase motor; can be supplied at an additional cost.**

### **PROPER USE OF SPRAY BOOTHS**

**Many customer; purchase a spray booth and expect their paint job; to be perfect. The primary purpose of a spray booth is; to provide a clean and safe environment for the painting operation. Proper procedures, maintenance and housekeeping are essential for a clean paint job. These factor; cannot be controlled by the paint booth manufacturer therefore Kayco Spray Booth; Inc. does not guarantee a dirt free job. The cleanliness; of a paint job is; directly related to the effort; of the painter before the paint job is; started.**

### **CODES**

**All Kayco Spray Booth; Inc. booth; are manufactured in accordance with NFPA 33 and OSHA 1910 codes. Electrical, plumbing, and fire suppression system; (not included) must also conform to these regulations.**



P.O Box 487  
La Vernia, TX 78121  
(830)779-2051 ~ Fax (830)7791034  
1-800-529-2640  
[www.kaycospraybooths.com](http://www.kaycospraybooths.com)

## BOOTH COMPLIANCE INFORMATION

The following information is in reference to the construction and code compliance of the products that we manufacture.

All Kayco Spray Booths products are designed and manufactured in accordance with the following codes:

NFPA 33 2003 edition, Standards for Spray Application Using Flammable or Combustible Materials.  
NFPA 91, Standard for Exhaust Systems  
NFPA 101 2003 Edition, Life Safety Code  
NFPA 1 2003 Edition, Uniform Fire Code  
OSHA 1910.107 CFR 29, Standards for General Industry  
International Fire Code 2000 Edition, Section 1504 Spray Finishing  
Uniform Fire Code 2000 Edition, Article 45 Application of Flammable Finishes  
International Building Code 2003 Edition, Section 416 Application of Flammable Finishes  
Texas Commission on Environmental Quality (TCEQ)

All electrical components are either UL and/or ETL certified. Motors and light fixtures are approved for their intended use and are listed accordingly. All electrical motors are NEMA rated and EPACT efficient.

Open Light Fixture – Manufactured by LDPI, Inc. Model # 390229  
UL Approved 1598  
Issue Number E-5455

Vapor Tight Fixtures –Manufactured by LDPI, Inc. Model # 390440  
ETL listed, Canada listed ETL-C  
UL Approved  
Class I, Division II, Groups A, B, C & D  
Class II, Division II, Groups F & G

## **Compliance to Applicable Codes**

**All Kayco spray booths are manufactured in accordance to NFPA 33 and OSHA 1910 codes.**

- **Booths are constructed of 18 gauge G90 galvanized steel.**
  - **The interior surfaces are smooth and continuous to prevent build up of residue.**
  - **The booth is illuminated through ¼” clear tempered safety glass.**
  - **Light fixtures that are located within 3’ of an opening are rated as Class I Division II.**
  - **The fan is designed with motor and belts out of the air stream.**
  - **The fan uses a non-sparking aluminum blade.**
  - **Air movement is designed to be at least 100 FPM.**
  - **All electrical components are UL approved.**
  - **Booths are furnished with a Draft Gauge.**
- 
- **Electrical, plumbing, and sprinklers (not included) must also conform to NFPA 33 and OSHA 1910 codes.**

# **WARNING**

**CAUTION – Hazard of electrical shock. Disconnect all power sources before opening electrical panel.**

**NOTICE – All field wiring must comply with local codes, or in the absence of local codes, the national electrical code.**

**NOTICE – Local fire or building codes may require fire protection. Check with local inspection authorities for requirements.**

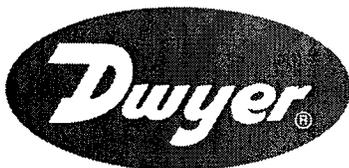
**NOTICE – Remove propane systems from vehicles prior to moving into booth.**

## **IF BOOTH IS EQUIPPED WITH HEAT:**

**WARNING – Do not enter booth during the bake cycle.**

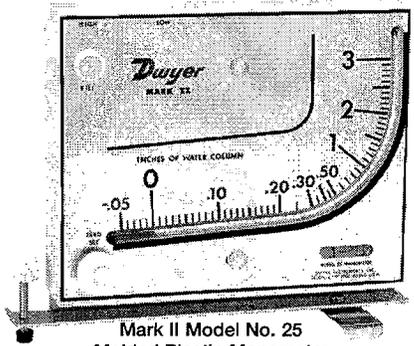
**WARNING – If the odor of gas is present, do not turn on any electrical switches. Contact local gas supplier.**

**FOR YOUR SAFETY – Do not store or use gasoline or other flammable vapors or liquids in the vicinity of the heater.**

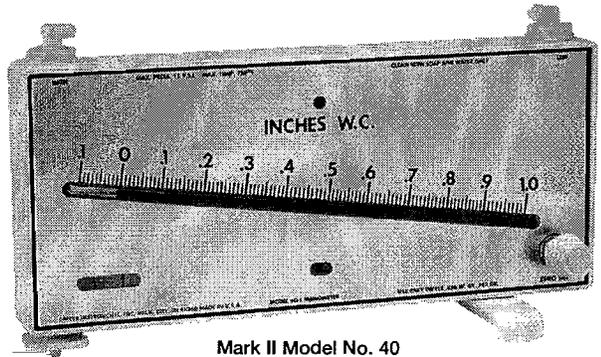


# Mark II Molded Plastic Air Filter Gages

Compact, Economy Priced Molded Plastic Gages Accurate To  $\pm 3\%$  Of Full Scale



Mark II Model No. 25  
Molded Plastic Manometer  
With optional A-612 Portable Stand



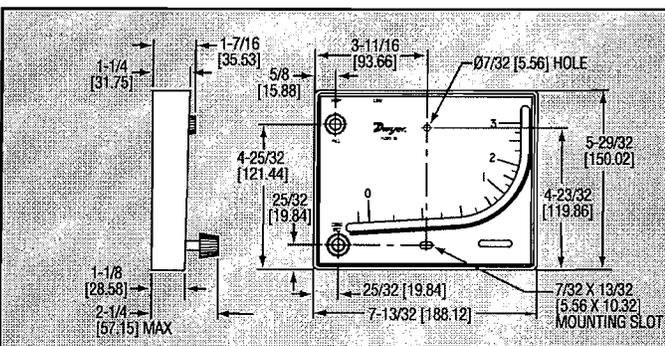
Mark II Model No. 40  
Molded Plastic Manometer

Dwyer Mark II molded air filter gages are of the inclined and inclined-vertical types. The curved inclined-vertical tube of the Model 25 gage provides higher ranges with more easily read increments at low readings. The Model 40 inclined gage provides linear calibration and excellent resolution throughout its range. When ordered with the Model A-606 AF Kit the Model 40 is ideally suited for stationary air filter gage applications. The Model 25 is excellent for general purpose work and for higher anticipated filter resistances. Both gages are capable of measurements above and below atmospheric as well as differential pressure measurements.

**Construction** — Mark II air filter gages are economically priced, compact and available in both stationary and portable configurations. Portable stand is standard on Model 40, available as optional A-612 stand for Model 25. Construction is simple with virtually indestructible molded white styrene acrylonitrile housing, indicating tube and fluid wells, molded ABS knobs and zero adjust plunger, shock mounted glass level vial and leak proof "O" ring seals. Moderate overpressures are accommodated by an overflow tank incorporated in the Model 25. Greater protection is provided by float operated overflow traps in the Model 40. Scales are lithograph printed on aluminum and epoxy coated.

**Installation** — For normal stationary installations, simply mount the gage on any vertical surface with the two mounting screws provided. A built-in spirit level simplifies leveling before mounting screws are tightened. Fill the reservoir, adjust fluid level to zero, connect the tubing, and the gage is ready for operation.

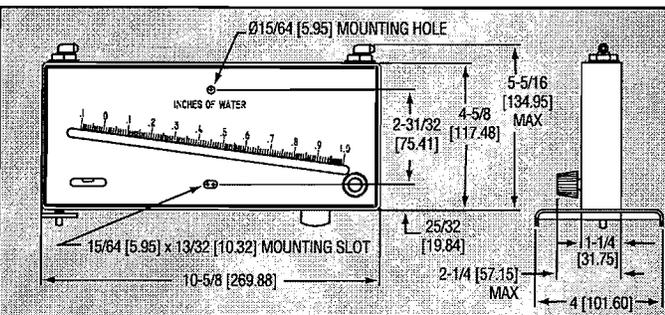
**Accessories** — Included with each Mark II air filter gage are two tubing connectors for  $\frac{1}{8}$ " pipe or sheet metal ducts, two mounting screws,  $\frac{1}{2}$  oz. bottle of indicating fluid, red and green pointer flags and complete instructions. The Model 25 includes 8' of flexible double column plastic tubing. The Model 40 includes two 4  $\frac{1}{2}$ ' lengths of clear plastic tubing and is equipped with rapid shut-off connectors. The optional Model A-606 AF Kit (for use with the Model 40 only) contains two static pressure tips with integral compression fittings, two 5' lengths of aluminum tubing and two slip-fit gage compression fittings which can be easily removed to zero the gage.



**STOCKED MODELS**

Model	Range	Fluid Used
25	0-3 in. w.c.	Red oil, .826 s.g.
26	0-7 in. w.c.	Blue oil, 1.91 s.g.
MM-80	0-80mm w.c.	Red oil, .826 s.g.
MM-180	0-180mm w.c.	Blue oil, 1.91 s.g.
M-700Pa	10-0-700 Pa	Red oil, .826 s.g.

A-612 Portable Stand



**STOCKED MODELS**

Model	Range	Fluid Used
40-1	1-0-1.0 in. w.c.	Red oil, .826 s.g.
40-25mm	0-26mm w.c.	Red oil, .826 s.g.
10-0-250 Pa	10-0-250 Pa	Red oil, .826 s.g.
41-2	2-0-2.4 in. w.c.	Blue oil, 1.91 s.g.
41-60mm	0-60mm w.c.	Blue oil, 1.91 s.g.
41-600 Pa	20-0-600 Pa	Blue oil, 1.91 s.g.

A-606 Air Filter Kit

**SUGGESTED SPECIFICATIONS**

An air filter gage for measuring the resistance to air flow through the filters shall be installed: one for each bank of filters. The air filter gage shall be one-piece molded plastic construction, manometer type, with epoxy coated aluminum scale, inclined-vertical indicat-

ing tube and built-in spirit level. Red and green signal flags to mark dirty and clean filter indications shall also be provided. Gage shall be Dwyer Instruments, Inc. Mark II Catalog No. \_\_\_ reading to \_\_\_ inches of water.

Please read and save these instructions. Read carefully before attempting to assemble, install, operate or maintain the product described. Protect yourself and others by observing all safety information. Failure to comply with instructions could result in personal injury and/or property damage! Retain instructions for future reference.

# Dayton® Tubeaxial Fans

## Description

Dayton tubeaxial fans are designed to operate in any position and utilizes precision balanced spark resistant aluminum fan blades. Fans can also be used in industrial ventilation systems handling temperatures up to a maximum of 200°F.

Motor, drive belts, and self-aligning sealed ball bearings are isolated from air stream so that contaminated air or vapors can be exhausted without damage to drive or motor. Use in atmospheres corrosive to aluminum is not recommended as damage to fan blade may result.

## Certified Rating for Air and Sound



Dayton Electric Mfg. Co. certifies that the tubeaxial fans shown herein are licensed to bear the AMCA Seal. The air performance shown is based on tests performed in accordance with AMCA Standard 210, "Laboratory Methods of Testing Fans for Rating" and rated in accordance with AMCA Publication 211, "Certified Rating Program - Air Performance."

The sound performance shown is based on tests performed in accordance with AMCA Standard 300, "Reverberant Room Method for Sound Testing of Fans." The sound power level ratings shown are in decibels referred to 10<sup>-12</sup> Watts. The

A-weighted sound levels shown are for Installation Type B: Free Inlet, Ducted Outlet. Sound levels shown do not include the effects of end reflection.

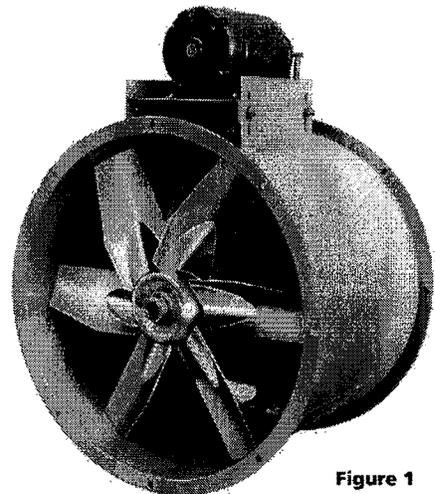


Figure 1

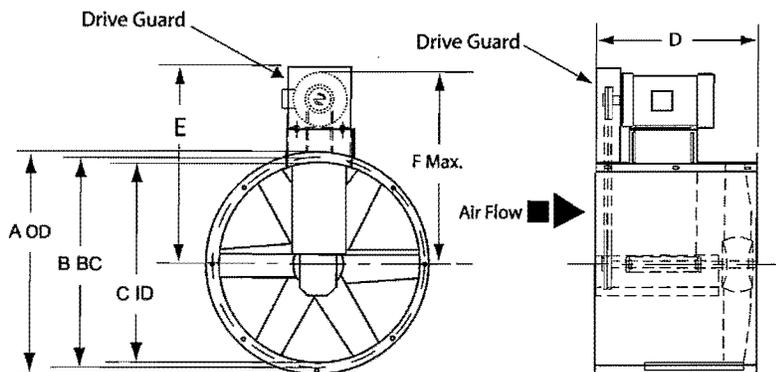


Figure 2

## Dimensions

Model	A	B	C	D	E	F	Shaft Diameter
3C411B	27"	25 <sup>3</sup> / <sub>4</sub> "	24 <sup>5</sup> / <sub>16</sub> "	18"	23 <sup>13</sup> / <sub>16</sub> "	24"	1"
3C412B	33 <sup>3</sup> / <sub>8</sub>	32 <sup>1</sup> / <sub>4</sub>	30 <sup>1</sup> / <sub>2</sub>	24	29 <sup>13</sup> / <sub>16</sub>	29	1 <sup>1</sup> / <sub>16</sub>
3C413B	37 <sup>3</sup> / <sub>4</sub>	36 <sup>1</sup> / <sub>4</sub>	34 <sup>1</sup> / <sub>2</sub>	29	31 <sup>1</sup> / <sub>8</sub>	31	1 <sup>1</sup> / <sub>16</sub>
3C414B	39 <sup>3</sup> / <sub>4</sub>	38 <sup>1</sup> / <sub>4</sub>	36 <sup>1</sup> / <sub>2</sub>	29	32 <sup>15</sup> / <sub>16</sub>	32	1 <sup>1</sup> / <sub>16</sub>
3C415D	45 <sup>3</sup> / <sub>4</sub>	44 <sup>1</sup> / <sub>4</sub>	42 <sup>1</sup> / <sub>2</sub>	32	35 <sup>3</sup> / <sub>4</sub>	37	1 <sup>1</sup> / <sub>16</sub>
3C416D	51 <sup>1</sup> / <sub>4</sub>	50 <sup>1</sup> / <sub>4</sub>	48 <sup>1</sup> / <sub>2</sub>	36	38 <sup>13</sup> / <sub>16</sub>	42	1 <sup>1</sup> / <sub>16</sub>
4C659B	14 <sup>1</sup> / <sub>16</sub>	13 <sup>1</sup> / <sub>2</sub>	12 <sup>5</sup> / <sub>8</sub>	12	12 <sup>1</sup> / <sub>16</sub>	17	<sup>5</sup> / <sub>8</sub>
4C660B	18 <sup>3</sup> / <sub>4</sub>	17 <sup>1</sup> / <sub>2</sub>	16 <sup>7</sup> / <sub>10</sub>	16 <sup>1</sup> / <sub>2</sub>	19 <sup>1</sup> / <sub>16</sub>	19	<sup>7</sup> / <sub>8</sub>
4C661B	21 <sup>1</sup> / <sub>8</sub>	19 <sup>3</sup> / <sub>8</sub>	18 <sup>1</sup> / <sub>2</sub>	16 <sup>1</sup> / <sub>2</sub>	20 <sup>1</sup> / <sub>2</sub>	20 <sup>1</sup> / <sub>2</sub>	<sup>7</sup> / <sub>8</sub>

## Unpacking

When unpacking, consider the following:

1. Double groove fan pulley with malleable split taper bushing is assembled on fan.
2. Motor, motor pulley, and belts packed separately when fan is ordered complete.
3. Remove jackscrews from plastic bag attached to motor mounting base for use in assembly. **NOTE:** Not using the jackscrews may shorten bearing life.

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# Dayton® Tubeaxial Fans

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## Specifications

Model	Drive Requirements †					Grooves
	Motor HP	Fan RPM	Motor Sheave Belt Pitch Diameter	RMA* Belt	Fan Sheave Belt Pitch Diameter	
3C411B	1	1312	3.4-A	A48	4.5-A	2
	1½	1468	3.8-A	A48	4.5-A	2
	2	1688	4.4-A	A50	4.5-A	2
	3	1910	5.0-A	A53	4.5-A	2
3C412B	1½	1030	3.4-A	A55	5.8-A	2
	2	1146	3.8-A	A55	5.8-A	2
	3	1320	4.4-A	A60	5.8-A	2
	5	1551	5.2-A	A60	5.8-A	2
3C413B	2	936	3.4-A	A60	6.4-A	2
	3	1074	3.8-A	A64	6.4-A	2
	5	1251	4.6-A	A66	6.4-A	2
3C414B	2	837	3.8-A	A66	8.0-A	2
	3	964	4.4-A	A71	8.0-A	2
	5	1133	5.2-A	A71	8.0-A	2
3C415D	3	746	3.2-A	A71	7.6-A	2
	5	880	3.8-A	A75	7.6-A	2
	7½	1013	4.4-A	A75	7.6-A	2
3C416D	10	1147	5.0-A	A75	7.6-A	2
	5	731	4.4-A	A85	10.6-A	2
	7½	827	5.0-A	A90	10.6-A	2
4C659B	10	891	5.4-A	A90	10.6-A	2
	1/3	2090	2.3-A	3L280	2.0-A	2
	1/2	2253	2.6-A	3L290	2.0-A	2
4C660B	3/4	2877	3.2-A	3L300	2.0-A	2
	1/3	1570	1.5-A	A31	2.0-A	1
	1/2	1800	2.1-A	A31	2.0-A	1
	3/4	2221	2.6-A	A33	2.0-A	1
4C661B	1	2547	3.0-A	A33	2.0-A	1
	1/3	1375	2.1-A	A38	3.0-A	1
	1/2	1487	2.6-A	A38	3.0-A	1
	3/4	1719	3.0-A	A38	3.0-A	1
	1	1988	3.5-A	A38	3.0-A	1
	1½	2255	4.0-A	A38	3.0-A	1

(†) Drive requirements show minimum Motor HP required. Other drives may be used, provided they meet the Fan RPM stated above and have adequate load carrying capacity.

(\*) Rubber Manufacturer's Association.

## General Safety Information

1. Follow all local electrical and safety codes, as well as the National Electrical Code (NEC) and the Occupational Safety and Health Act (OSHA) in the United States.
2. Motor must be securely and adequately grounded. This can be accomplished by wiring with a grounded, metal-clad raceway system by using a separate ground wire connected to the bare metal of the motor frame, or other suitable means.
3. Always disconnect power source before working on or near a motor or its connected load. If the power disconnect point is out-of-sight, lock it in the open position and tag to prevent unexpected application of power.
4. All moving parts should be guarded.
5. Be careful when touching the exterior of an operating motor - it may be hot enough to be painful or cause injury. With modern motors this condition is normal if rated at normal load and voltage - modern motors are built to operate at higher temperatures.
6. Make certain that the power source conforms to the requirements of your equipment.
7. Wiping or cleaning rags and other flammable waste materials must be placed in a tightly closed metal container and disposed of later in the proper fashion.
8. When cleaning electrical or electronic equipment, always use an approved cleaning agent such as dry cleaning solvent.

**⚠ CAUTION** *This fan has rotating parts. Exercise applicable safety precautions during its handling, assembly, operation and maintenance. Disconnect power before handling, assembling, operating or maintaining. If disconnect means is out of sight, lock it in the open position to prevent unexpected starts.*

**⚠ WARNING** *Install and operate the fan so that the air surrounding the fan at any time must be free of flammable gases, vapors or liquids, combustible dust or ignitable fibers or flyings.*

**⚠ WARNING** *If the fan is used to move air containing flammable gases, vapors or liquids, combustible dust or ignitable fibers or flyings, the fan must be energized before those hazardous substances are introduced into the airstream.*

# Models 3C411B thru 3C414B, 3C415D, 3C416D and 4C659B thru 4C661B

## Performance

Model	Blade Dia.	CFM and Sound Power LwA Decibels at Static Pressure Shown							Fan RPM	Motor HP	Max. BHP*
		Free Air	1/8" S.P.	1/4" S.P.	1/2" S.P.	3/4" S.P.	1" S.P.	1 1/4" S.P.			
4C659B	12"	1767	1667	1561	—	—	—	—	2090	1/3	0.24
		84	83	82	—	—	—	—			
		1904	1812	1719	1429	—	—	—	2253	1/2	0.31
		86	85	84	83	—	—	—			
		2432	2360	2287	2126	1905	—	—	2877	3/4	0.60
		92	92	91	91	90	—				
4C660B	16"	2379	2152	1820	779	—	—	—	1570	1/3	0.25
		84	84	86	86	—	—	—			
		2727	2530	2288	1335	711	—	—	1800	1/2	0.41
		86	86	87	87	87	—	—			
		3365	3205	3045	2576	1685	1103	—	2221	3/4	0.69
		91	91	92	93	93	93	—			
		3859	3720	3580	3238	2744	1892	1355	2547	1	1.00
		95	95	96	96	97	97	97			
4C661B	18"	3230	2976	2680	1254	—	—	—	1375	1/3	0.34
		85	84	86	86	—	—	—			
		3494	3261	2997	2192	794	—	—	1487	1/2	0.48
		85	85	26	88	88	—	—			
		4039	3841	3624	3112	1850	923	—	1719	3/4	0.72
		87	87	87	93	91	91	—			
		4671	4504	4321	3914	3421	2163	—	1988	1	0.91
		90	90	90	93	95	95	—			
		5298	5152	4994	4660	3803	3803	2705	2255	1 1/2	1.29
		94	93	93	95	98	98	98			
3C411B	24"	7085	6742	5484	5484	3164	—	—	1312	1	0.98
		89	88	92	92	92	—	—			
		7925	7626	6562	6562	5634	2914	—	1468	1 1/2	1.38
		92	90	93	93	95	95	—			
		9112	8856	7983	7983	7290	6445	—	1688	2	1.98
		96	96	97	97	98	98	—			
		10310	10084	9845	9332	8769	8143	7398	1910	3	2.77
		99	98	98	98	98	98	98			
3C412B	30"	10955	10415	9815	8395	—	—	—	1030	1 1/2	1.40
		90	89	89	92	—	—	—			
		12190	11710	11180	9990	8485	—	—	1146	2	1.90
		93	94	94	94	96	—	—			
		14040	13630	13180	12220	11105	9740	—	1320	3	2.91
		97	96	96	96	98	99	—			
		16495	16150	15785	14995	14145	13190	12125	1551	5	4.72
		102	101	100	100	100	101	104			
3C413B	34"	14430	13760	13020	11285	7155	—	—	936	2	1.83
		94	92	92	95	96	—	—			
		16560	15985	15350	13965	12305	7750	—	1074	3	2.78
		100	100	99	99	101	103	—			
		19290	18800	18280	17150	15880	14445	12180	1251	5	4.36
		102	103	101	101	101	103	104			

**▲ WARNING** Do not operate the fan below the minimum flow shown in the performance table. It is mandatory to provide adequate makeup air for the fan.

(\*) BHP does not include drive losses.

**NOTE:** LwA Sound Power Levels are shown. Contact your representative or various engineering documents if other ratings such as 8 octave band dBA levels, dBA or some levels, are required.

# Dayton® Tubeaxial Fans

## Performance (Continued)

Model	Blade Dia.	CFM and Sound Power LwA Decibels at Static Pressure Shown									
		Free Air	1/8" S.P.	1/4" S.P.	1/2" S.P.	3/4" S.P.	1" S.P.	1 1/4" S.P.	Fan RPM	Motor HP	Max. BHP
3C414B	36"	15255	14455	13570	11430	—	—	—	837	2	1.82
		92	90	90	94	—	—	—	—	—	—
		17570	16890	16135	14450	12345	—	—	964	3	2.79
		98	98	97	98	100	—	—	—	—	—
		20650	20080	19460	18135	16605	14825	—	1133	5	4.53
3C415D	42"	100	101	100	99	100	102	—	—	—	—
		21465	20430	19275	16565	—	—	—	746	3	2.76
		91	91	92	95	—	—	—	—	—	—
		25320	24460	23505	21435	18965	—	—	880	5	4.53
		98	98	98	99	100	—	—	—	—	—
3C416D	48"	29150	28410	27610	25900	23960	21775	18120	1013	7 1/2	6.88
		100	101	101	102	103	104	103	—	—	—
		33005	32355	31670	30185	28620	26850	24920	1147	10	9.98
		104	104	104	105	106	107	107	—	—	—
		31260	30070	28745	25810	22170	—	—	731	5	5.00
3C416D	48"	100	99	98	98	100	—	—	—	—	—
		35365	34325	33185	30750	27900	24390	—	827	7 1/2	7.25
		102	102	102	101	101	102	—	—	—	—
		38100	37140	36105	33885	31380	28550	24060	891	10	9.04
		105	104	104	104	103	104	105	—	—	—

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## Assembly

- Before assembling the fan, check to be sure that all fasteners are tightly secured, particularly the fan blade and shaft.
  - Rotate the fan blade by hand to make sure it does not strike the fan housing. If it does strike it, remove the bearing cover and loosen the four bolts on the opposite side of the bearing stand. Two of these bolts are inside the belt tunnel. This will allow realignment of the shaft and fan blade in the fan housing.
  - All bolts should then be secured and the fan blade turned by hand to confirm the alignment.
- Insert the 1/2" x 6" jackscrews into the motor base. Attach motor pulley on motor shaft and mount motor.
  - To install belts on fan shaft pulley, first remove bearing cover (see Figure 5, Ref. No. 12) to gain access to belt tunnel. Install belts loosely over fan and motor pulleys.
  - Check pulley alignment and adjust the belt tension using the motor base jackscrews. Motor base should be level after installation. To achieve proper belt tension, belt should depress its width when pressed firmly inward midway between the pulleys.

- Recheck belt tension after first 48 hours of operation, and regularly thereafter, depending on frequency of operation.
- Assemble drive guard (see Figure 5, Ref. No. 19). Drive guard is secured to the motor base through the support brackets with jackscrew and jackscrew nut (Ref. No. 17). The drive guard end is attached to the housing flange with the bolt, flatwasher, and nut provided.

## Installation

- The fan should be securely mounted in a rigid framework. (See Figure 3 for possible mounting arrangements).
- Before initial operation of the fan, tighten set screws according to Table 1.
- Install remaining auxiliary components (motor starter, shutter, intake guard, etc.).
- Before installing, check all fasteners for tightness; particularly the set screws holding the propeller and bearings to the shaft (See Procedure for Tightening of Set Screws).

**▲WARNING** *If the fan is located less than seven feet above the floor, guarding is required in accordance with OSHA (Occupational Safety and Health Act) requirements.*

- Connect power to the motor, using an approved wiring method, (Motor terminal connection data is provided on the motor nameplate or on the motor terminal box cover plate. Use adequate size wire for all branch and feeder runs).
- Momentarily energize circuit to be sure that fan rotation is same as shown on nameplate. If it is not, see motor nameplate.

**▲WARNING** *A lockable disconnect switch should be located near the fan so power can be positively disconnected while servicing the unit. The fan tube and motor must be electrically grounded to suitable electrical ground such as a grounded water pipe, or properly grounded metallic raceway or ground wire system.*

- Unit is ready for operation.

**IMPORTANT:** Before activating the fan, double-check to ensure that there are no obstructions (framing, studs, shutters, etc.) which would interfere with fan blade operation.

## Maintenance

**▲WARNING** *Make certain that the power source is disconnected before attempting to service or disassemble any components. If the power disconnect is out-of-sight, lock it in the open position and tag to prevent application of power.*

# Models 3C411B thru 3C414B, 3C415D, 3C416D, and 4C659B thru 4C661B

ENGLISH

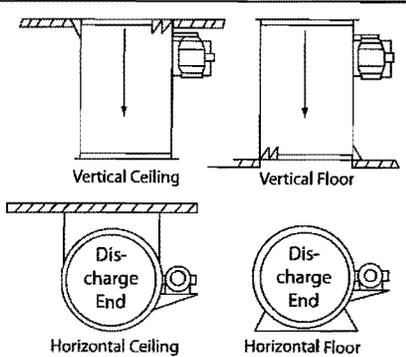


Figure 3

### Maintenance (Continued)

#### BELT DRIVES

Belt tension should be checked after first 48 hours of operation and regularly thereafter depending on frequency of operation.

1. Belt should depress its width when pressed firmly inward at midway point between the pulleys. Too much tension will damage bearings. Belts should be tight enough to prevent slippage.
2. When replacing worn belts, replace both belts with a new matched pair. Replace the motor pulley if a "shoulder" is worn in groove.

**▲ WARNING** Do not operate fan at speeds higher than shown on fan nameplate. When replacing drive pulleys, replace with pulleys of same pitch diameter. Do not replace fan pulley with one smaller or larger in diameter. The pulley ratios are set so that the motor will not be overloaded.

#### CLEANING

When checking for proper belt tension, it is advisable to clean the propeller blades at this time. This will remove any accumulated dirt which could cause unbalance and have an adverse affect on air flow.

**▲ WARNING** Disconnect power before cleaning. If disconnect means is out of sight, lock it in the open position to prevent unexpected starts.

Periodically remove any accumulation of flammable dust, fibers and flyings from the following surfaces: motor and belt(s), the inner surface of the belt well, the shaft and bearings,

the inner surface of the shaftbearing compartment, and all inner surfaces of the fan exposed to the airstream, including the propeller.

#### SHAFT BEARINGS

Bearings are prelubricated and sealed and do not require relubrication. Should shaft bearings require replacement, replace with bearings equal to original equipment, using the following procedure:

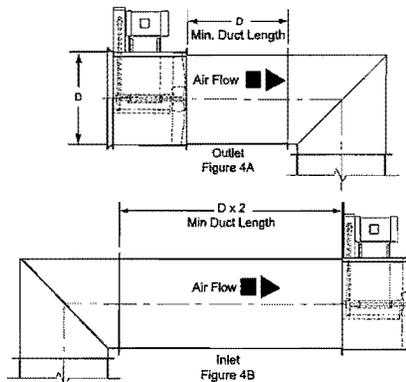


Figure 4 - Duct elbows (Inlet and Outlet) Recommendations

Note: D equals fan blade diameter

**▲ CAUTION** Before proceeding to replace bearings be sure the fan blade is securely held in position with ropes or slings to prevent its dropping. This is especially important if fan is mounted vertically.

1. Remove outer bearing cover.
2. Unbolt the upper half of die formed housing and install new bearings into neoprene rings removed from outer race of old bearings.
3. Check correct position of fan blade in housing and position new bearings in die formed recess and tighten setscrews.
4. Replace die formed bearing cap and reinstall four holding bolts.

NOTE: If locking collar type bearings are used, collar must first be positioned against inner race on bearing nearest fan blade and turned in direction of fan blade rotation with drift pin and hammer until it locks. Locking collars must be on inboard (facing) sides of bearings. Secure bearing to shaft with setscrew. Lock and secure other bearing to the shaft in similar fashion.

#### SET SCREW TIGHTENING SCHEDULE

1. After 500 operating hours or three months, whichever comes first, tighten set screws to the full recommended torque.
2. At least once a year, tighten set screws to the full recommended torque.

#### PROCEDURE FOR TIGHTENING SET SCREWS IN BEARINGS AND HUBS

##### One Set Screw Application

Using a torque wrench, tighten the set screw to the torque recommended in Table 1.

##### Two Set Screw Application

1. Using a torque wrench, tighten one set screw to half of the torque recommended in Table 1.
2. Tighten the second set screw to the full recommended torque.
3. Tighten the first set screw to the full recommended torque.

Table 1. Recommended Tightening Torque for Set Screws

Set Screw Diameter	Torque (in-lbs)
#10	35
1/4	80
5/16	126
3/8	240
7/16	384
1/2	744
9/16	1080
5/8	1500
3/4	2580
7/8	3600
1	5400

#### FAN BLADE

1. Weld gaps in the blade have been incorporated to prevent condensation from accumulating within the blades.

2. To replace fan blade remove the roll pin in front of the hub by driving out with a drift pin.

NOTE: 4C659B, 4C660B & 4C661B have keyway and setscrew only.

3. Remove the two setscrews in rear of hub.
4. When reinstalling fan blade, first insert the roll pin, then fasten the rear hub setscrews.

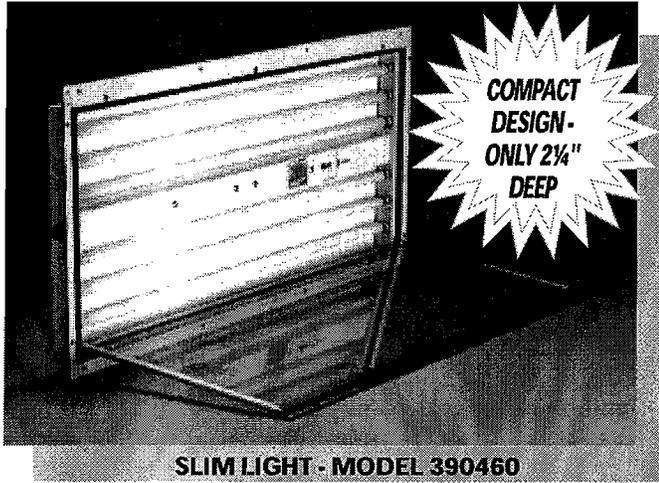
**LIGHTING NOTE:**

**ALL Lighting Fixtures use energy efficient T8 light bulbs and are standard for 120 volt.**

**The recommended bulbs are LDPI part # 3114.**

**The Phillips part # is F32T8/TL850 Alto.**

**The bulbs are 32 watt, 5000K/T8, 2950 Lumens, CRI 86**



**COMPACT DESIGN - ONLY 2 1/4" DEEP**

**SLIM LIGHT - MODEL 390460**

**3, 4 AND 5 FT. MODELS • 2, 4 AND 6 LAMP FLUORESCENT LIGHTING FOR HAZARDOUS LOCATIONS**



### Fixture Features



- ETL listed.
- Canada listed ETL-C.
- Class I, Division 2, Groups A, B, C & D.
- Class II, Division 2, Groups F & G.
- Listed for wet or damp locations.
- Listed for locations having deposits of readily combustible paint residues.
- Compact design (2 1/4" fixture depth) allows for mounting in an **insulated panel**.
- 20 gauge steel construction, coupled with a white baked enamel finish, creates a durable highly reflective fixture.
- Clear tempered safety glass hinged door panel ensures a durable long lasting seal against vapor, dust & moisture.
- For paint spray booth applications.
- Spring loaded lamp holders to reduce shock and vibration.
- Features a T-8 Electronic Ballast for greater energy savings.
- Panel mount design provides a simple but efficient means of installation.
- Front/inside access for easy relamping.
- Features an interlock switch to be wired in such a way as to disable paint spray equipment when front access door panel is opened.
- **Meets NFPA-33 requirements for inside access.**

**MODELS 300, 400 & 500 - SLIM LIGHT**

	Description	No. of Ballasts	Hub Size (Inches)	Voltage	Catalog Number
<b>300 SERIES</b>	<b>Two Lamp Three Ft. Fixture</b> 25 Watt, Instant Start, T8 Electronic F25T8, Med. Bi-Pin, 265mA, 36"	1	(2) 1/2 NPT	120V/60HZ 277V/60HZ 347V/60HZ	390320120-1752* 390320277-1745 390320347-3276
	<b>Four Lamp Three Ft. Fixture</b> 25 Watt, Instant Start, T8 Electronic F25T8, Med. Bi-Pin, 265mA, 36"	1	(2) 1/2 NPT	120V/60HZ 277V/60HZ 347V/60HZ	390340120-1768* 390340277-2000 390340347-3125
	<b>Six Lamp Three Ft. Fixture</b> 25 Watt, Instant Start, T8 Electronic F25T8, Med. Bi-Pin, 265mA, 36"	2	(2) 1/2 NPT	120V/60HZ 277V/60HZ 347V/60HZ	390360120-1768 390360277-2000 390360347-3125
<b>400 SERIES</b>	<b>Two Lamp Four Ft. Fixture</b> 32 Watt, Instant Start, T-8 Electronic F32T8, Med. Bi-Pin, 265 mA, 48"	1	(2) 1/2 NPT	120V/60HZ 277V/60HZ 347V/60HZ	390420120-1752* 390420277-1745 390420347-3276
		1	(2) 1/2 NPT	120V/60HZ 277V/60HZ	390420120-1744 390420277-1766
	<b>Four Lamp Four Ft. Fixture</b> 32 Watt, Instant Start, T-8 Electronic F32T8, Med. Bi-Pin, 265 mA, 48"	1	(2) 1/2 NPT	120V/60HZ 277V/60HZ 347V/60HZ	390440120-1768* 390440277-2000* 390440347-3125
		2	(2) 1/2 NPT	120V/60HZ 277V/60HZ	390440120-1744 390440277-1766
	<b>Six Lamp Four Ft. Fixture</b> 32 Watt, Instant Start, T-8 Electronic F32T8, Med. Bi-Pin, 265 mA, 48"	2	(2) 1/2 NPT	120V/60HZ 277V/60HZ 347V/60HZ	390460120-1768* 390460277-2000 390460347-3125
		2	(2) 1/2 NPT	120V/60HZ 277V/60HZ	390460120-3124 390460277-3277
<b>500 SERIES</b>	<b>Two Lamp Five Ft. Fixture</b> 40 Watt, Instant Start, T8 Electronic F40T8, Med. Bi-Pin, 265 mA, 60"	1	(2) 1/2 NPT	120V/60HZ 277V/60HZ	390520120-3209 390520277-3210
	<b>Four Lamp Five Ft. Fixture</b> 40 Watt, Instant Start, T8 Electronic F40T8, Med. Bi-Pin, 265 mA, 60"	2	(2) 1/2 NPT	120V/60HZ 277V/60HZ	390540120-3209* 390540277-3210
	<b>Six Lamp Five Ft. Fixture</b> 40 Watt, Instant Start, T8 Electronic F40T8, Med. Bi-Pin, 265 mA, 60"	2	(2) 1/2 NPT	120V/60HZ 277V/60HZ	390560120-3209 390560277-3210

(Multiple voltages available, consult factory)

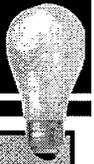
**LAMPS SOLD SEPARATELY**

\*Standard fixture. (Others may require longer lead time)

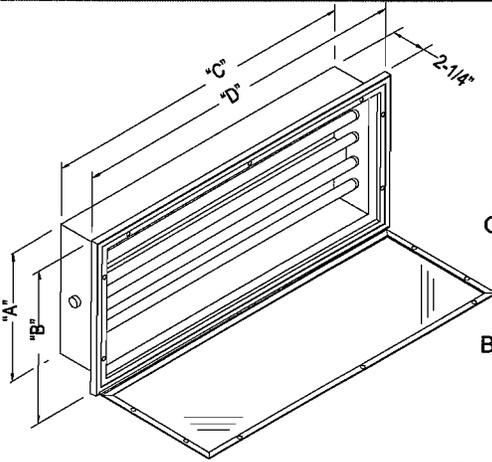


# SERIES 300, 400 & 500

# PANEL MOUNT

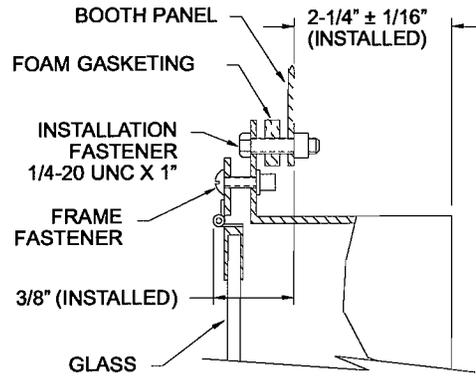
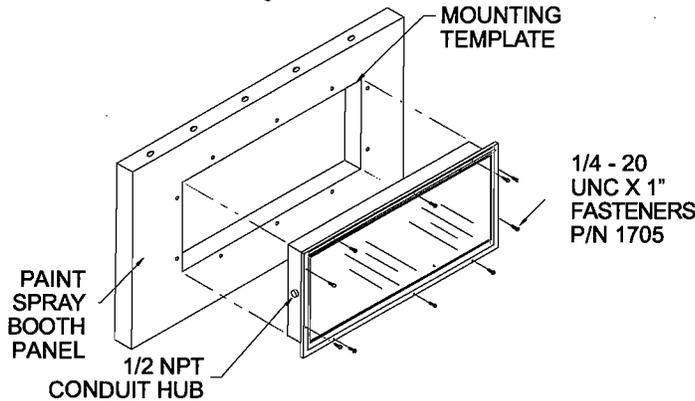


## FIXTURE AND INSTALLATION DIMENSIONS

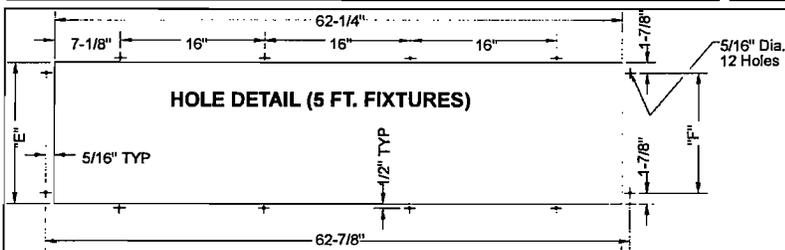
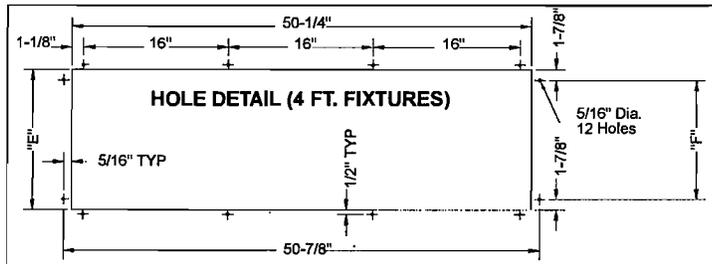
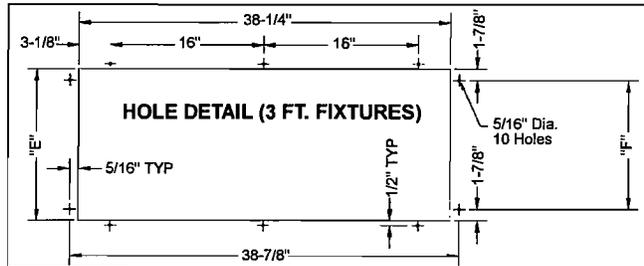


NOTE:  
LIGHT  
FIXTURE'S  
GLASS FRAME  
EXTENDS 3/8"  
INTO BOOTH  
WHEN  
MOUNTED IN  
BOOTH PANEL.

TYPE	MODEL	"A"	"B"	"C"	"D"
3 FT. 2 LAMP INSIDE ACCESS	390320	9-1/2"	13"	38"	39-7/8"
3 FT. 4 LAMP INSIDE ACCESS	390340	14-1/2"	18"	38"	39-7/8"
3 FT. 6 LAMP INSIDE ACCESS	390360	19-1/2"	23"	38"	39-7/8"
4 FT. 2 LAMP INSIDE ACCESS	390420	9-1/2"	13"	50"	51-7/8"
4 FT. 4 LAMP INSIDE ACCESS	390440	14-1/2"	18"	50"	51-7/8"
4 FT. 6 LAMP INSIDE ACCESS	390460	19-1/2"	23"	50"	51-7/8"
5 FT. 2 LAMP INSIDE ACCESS	390520	9-1/2"	13"	62"	63-7/8"
5 FT. 4 LAMP INSIDE ACCESS	390540	14-1/2"	18"	62"	63-7/8"
5 FT. 6 LAMP INSIDE ACCESS	390560	19-1/2"	23"	62"	63-7/8"



**MOUNTING DETAIL**



### IMPORTANT:

Normally open magnetic switches are intended to be used to trigger a relay which disables the paint system. Because of the small capacity of the switch, a solid state relay is recommended. It may be desired by others to utilize a separate power supply to segregate the relay from lighting power supply. **The magnetic switch is rated for 10 watts (resistive) at a maximum of 300 VAC.**

\*The magnetic switch is **NOT** designed to directly control light operation.

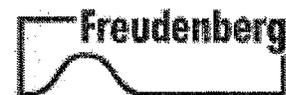
**CAUTION: OVERLOADING THE SWITCH CIRCUITS WILL CAUSE SWITCH FAILURE. LDPI RECOMMENDS HAVING A CERTIFIED ELECTRICIAN/ENGINEER REVIEW CIRCUIT LOADS TO INSURE THAT OVERLOADING OF SWITCH DOES NOT OCCUR.**

### HOLE DETAIL DIMENSIONS

Type	"E"	"F"
2 Lamp Fixture.....	10-3/4"	7"
4 Lamp Fixture.....	15-3/4"	12"
6 Lamp Fixture.....	20-3/4"	17"

LDPI® is a registered trademark of LDPI, Inc.

**MODELS 300, 400 & 500 SLIM LIGHTS**

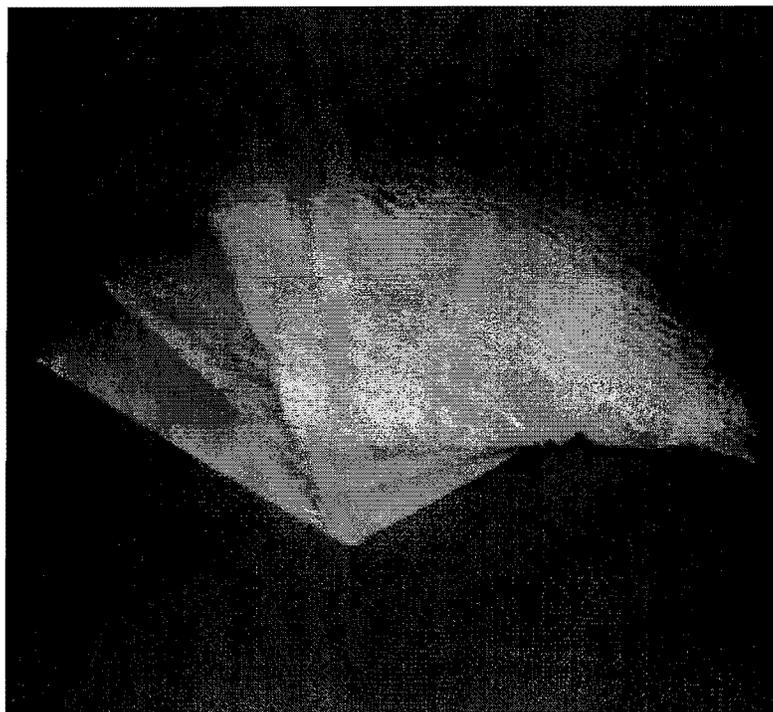


## 300, 400 & 500 Series F/G Paint Arrestor / Exhaust Filters Pads

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Viledon offers paint overspray arrestor pads composed of a layer of spun glass fibers with a thin glass fiber backing for use in crossdraft exhaust applications requiring efficiency at a low cost. Available in three weights, the glass fiber filters are designed to trap overspray paint particles and prevent them from building up on exhaust fans and ducts.

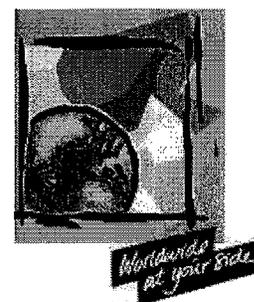
- ▶ The 300 Series filter was developed for outstanding efficiency where urethane, epoxy, lacquer and wet materials are used in the paint booth. It is available in two sizes. The white spun glass fiber media weight is 14 grams per square foot.
- ▶ The 400 Series performs very well in paint booths where baked finishes, epoxy, and air-dry enamels are the predominately used paint materials. It is available in four sizes. The green & white spun glass fiber media weight is 16 grams per square foot.
- ▶ Viledon's 500 series was designed for the versatile paint booth operator that requires a booth capable of handling all paint types. This filter delivers a high efficiency whatever the paint material. It is available in two sizes. The green & white spun glass fiber media weight is 18 grams per square foot.
- ▶ Viledon also offers the 600 series paint arrestor holding grids for use with these glass fiber pads.
- ▶ Viledon's development team is continually creating new products to serve emerging markets and meet changing specifications.



*“Setting the Standard in Quality,  
Performance, and Service”*

**viledon®**

Viledon® is a registered trademark of  
the Freudenberg Group



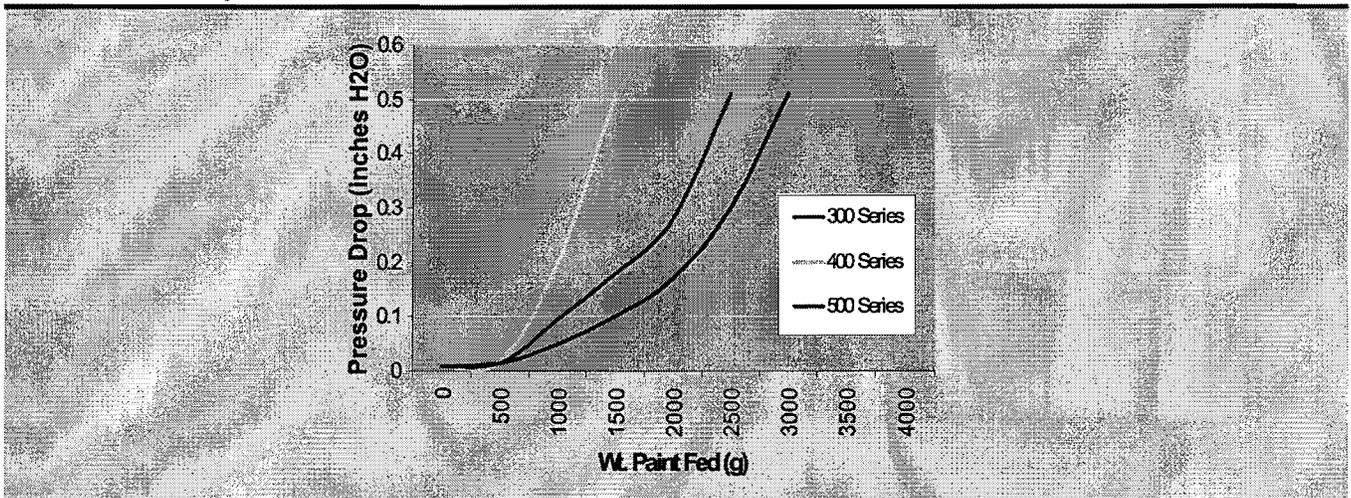


## Technical Data\*

Performance	Unit	300 Series Pad	400 Series Pad	500 Series Pad
Average Arrestance Efficiency	%	98.65	98.66	98.90

\*Test Paint: Quick Air-Dry Solvent-based Alkyd Enamel (S.W; F77R14); Paint Feed Rate (Wt) 122 gr/min, (Vol) 130 cc/min; Paint Atomization Technology - conventional air at 40psi. Testing data per LMS Technologies, Inc.

## Pressure Drop



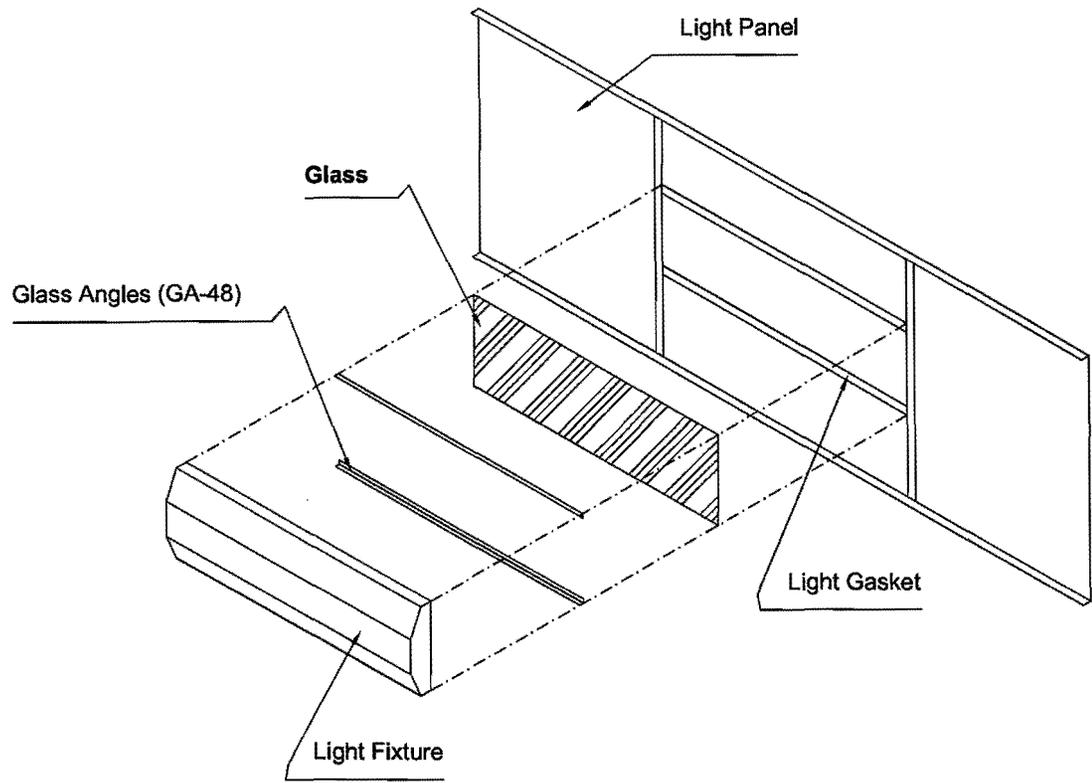
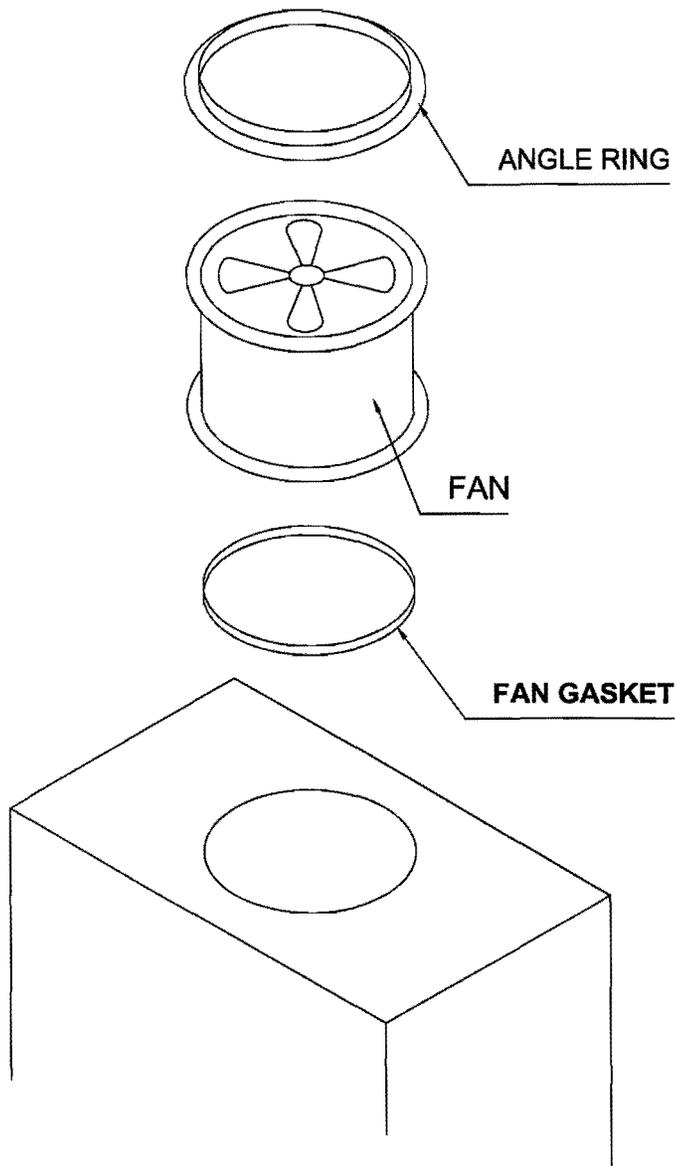
## Sizes & Accessories

Series 300		Series 500	
300-300	20" x 20" 50/CS	500-500	20" x 25" 50/CS
300-301	20" x 25" 50/CS	500-501	20" x 25" 50/CS
Series 400		Accessories - Series 600 Paint Arrestor Grid	
400-400	20" x 20" 50/CS	600-600	20" x 20" 10/CS
400-401	20" x 25" 50/CS	600-601	20" x 25" 10/CS
400-402	14" x 20" 50/CS		
400-403	14" x 29" 50/CS		



Freudenberg Nonwovens L.P.  
 Filtration Division  
 2975 Pembroke Road  
 Hopkinsville, KY 42240  
 Tel: 1-800-542-2804  
 Fax: 1-270-886-5878





## Maintaining Your Booth

It's been said that a spraybooth is a wonderful thing. If neglected, however, that wonderful thing can cause more paint problems than it was designed to prevent. Sticking with a routine maintenance schedule not only ensures better, faster workflow, but also helps your spraybooth live a longer, healthier life.

Consider the following checklist when creating a routine maintenance schedule:

- *Filters - You must change them.*

No matter what kind of booth you buy, air enters and exits your booth through filters, gradually clogging them with dirt, dust and overspray. Not only are clogged filters a risk to overall refinish quality, but they're also a fire hazard, a hazardous waste and ignitable under certain conditions.

Take the time to set up and adhere to a replacement schedule based on either calendar date or usage time. Some filters require attention more often than others, so check with your supplier for recommendations. Be sure to keep to the filter-change schedule, pay attention to both ceiling and floor filters, and always use the filters/arrestors recommended by the manufacturer - not those ineffective, single-stage furnace filters.

To assist in your quest for clean filters, you might also make it a habit to check the booth's pressure daily with a manometer, which will indicate when the intake filters are overloaded. Some booths even have a pressure switch that shuts off the air supply and exhaust fan when the intake filter is clogged. Note: *When checking booth pressure with a manometer, daily readings should be similar to past readings.*

- *Fans - Check for gunk.*

As you well know, fans help flow the air through the filters to create booth pressure. They also accumulate gunk. Because dirty blades can lead to imbalance, vibration and possible bearing wear, clean your booth fans on a regular basis.

If your exhaust fan wobbles from overspray built upon the blades, take care of it before it does more serious damage to the unit. Also, be sure to oil the exhaust-fan pulley and motor bearings regularly and, as a safety precaution, always shut off the main exhaust-fan switch or power supply before oiling.

- *The Painters - The paint job is only as clean as its painter.*

While sometimes overlooked, personal cleanliness is vital to a quality finish. Never enter the booth wearing dirty clothes or shoes - the dirt can easily jump off you and onto the finish. Be certain clothing and gloves are clean before entering the booth.

- *Air Hoses - Check and clean these daily - inside and out.*

Dirt that accumulates on hoses has the potential of falling onto fresh paint. Hoses also can become filled with moisture, dirt, etc., which will severely hamper your spraying and damage your paint job.

- *The booth itself - Wipe it down for each and every job.*

Keep the entire booth free of dirt and overspray by wiping down the floor and walls before or after every job. Check with your booth manufacturer to see what cleaning agents should and shouldn't be used because some painted interior walls can be damaged by some cleansers.

*Tip: It's also a good idea to wet the spraybooth floor before every job. Doing so will keep the dust and dirt factor low. Just be careful not to slip.*

An easy way to keep inside booth walls clean is to coat them with a strippable, spray-on coating. When the overspray becomes too thick, just strip the walls and recoat.

Also, clean up scraps, masking paper, rags and so forth.

- *Leaks - Check for them regularly.*

Dirt can get inside the booth through cracks and seams, so make it a point to periodically check for them and to caulk all places where dirt might enter, including the seams of the filter system and the lighting.

- *Lighting - Replace weak or burned-out bulbs.*

A painter who can't see properly can't paint properly.

Article printed from Body Shop Business.