

**Pinellas County Resource Recovery Facility
Minor Modification to Permit No. 1030117-007-AC**

June 2010



1715 North Westshore Boulevard, Suite 875
Tampa, Florida 33607
tel: 813 281-2900
fax: 813 288-8787

RECEIVED

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BUREAU OF
AIR REGULATION

June 28, 2010

Mr. Jeffery F. Koerner, P.E., Administrator
Florida Department of Environmental Protection
New Source Review Section
Bob Martinez Center
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Subject: Minor Modification to Permit No. 1030117-007-AC
Pinellas County Resource Recovery Facility
Facility ID No. 1030117

Dear Mr. Koerner:

On behalf of Pinellas County, CDM is requesting a minor modification to permit No. 1030117-007-AC for the Pinellas County Resource Recovery Facility (Facility). The minor permit modification includes the installation of a bag house for improved ventilation and fugitive dust control in the Residue Storage and Processing Building (RSPB).

Residue Storage and Processing Building (Emission Unit 005)

As part of the Facility Improvement Projects (FIP), the former Ash Storage and Processing Building (ASPB) and material recovery system (MRS) were demolished and replaced in its entirety with the new Residue Storage and Processing Building (RSPB). The new RSPB is located in the same area as the former ASPB, but is significantly smaller in size. A relatively simple materials processing system was installed to separate out the +5-inch material and recover ferrous metal and non-ferrous metals from the residue stream.

The County did not originally propose installing a baghouse for this facility. However, based upon the design of the ventilation system, the County decided to install a new baghouse to meet the ventilation requirements of the mechanical building code. The County advised the Department in a letter, dated August 8, 2008, that a baghouse would be included with the proposed ventilation system and that the existing Title V permit would be modified accordingly as part of the Title V permit renewal application, which was submitted to the Department on April 1, 2010.

The baghouse was designed to meet the mechanical code requirements and control the fugitive dust emissions in the RSPB. The baghouse was designed to meet a 0.015 gr/acf emission limit at 14,000 acfm. The baghouse specified to meet this operating condition is a



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June 28, 2010
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Donaldson Torit Model No. 225MBWS8. The FDEP long form application for the permit is included in **Attachment A**. The baghouse technical data including catalogue sheets, general arrangement drawings and O&M manual of the baghouse are included in **Attachment B**.

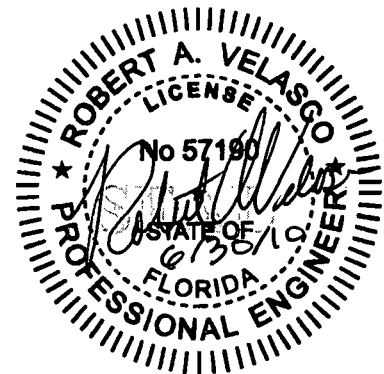
The visual emissions from the RSPB baghouse were initially tested on September 30, 2008 following startup by AeroMet Engineering, Inc. in accordance with Conditions B.31, C.11 and C.13 in Title V Permit No. 1030117-006-AV. The test results showed the baghouse passed the visual emissions standards. The emission test results are included in **Attachment C**.

Please contact Bill Crellin or Robert Velasco at (813) 281-2900, if you have any questions.

Sincerely,

William R. Crellin, Jr., P.E.
Project Manager
Camp Dresser & McKee Inc.

- cc: FDEP (2 copies)
Bob Hauser P.E. – Pinellas County (no attachments)
Kelsi Oswald – Pinellas County
Tommy Murphy – Veolia ES (no attachments)
Chris Neu – Veolia ES (no attachments)
Becky Macionski, P.E. – Veolia ES (no attachments)
Dan Strobridge QEP – CDM (no attachments)
Rob Velasco P.E. – CDM
File



Robert A. Velasco, P.E., BCEE
License No. 57190
Camp, Dresser McKee, Inc.
1715 N. West shore Blvd, Suite 875
Tampa, FL 33607
Tel: (813) 262-8868
Cert. of Auth. #EB 0000020

The seal certifies the engineering information included herein provides reasonable assurance of meeting the applicable requirements of the Air Construction Permit/Title V permit renewal application. The seal does not certify or attest to the accuracy of work prepared by others.



ATTACHMENT A
Permit Application



Department of Environmental Protection

Division of Air Resource Management

APPLICATION FOR AIR PERMIT - LONG FORM

I. APPLICATION INFORMATION

Air Construction Permit – Use this form to apply for an air construction permit:

- For any required purpose at a facility operating under a federally enforceable state air operation permit (FESOP) or Title V air operation permit;
- For a proposed project subject to prevention of significant deterioration (PSD) review, nonattainment new source review, or maximum achievable control technology (MACT);
- To assume a restriction on the potential emissions of one or more pollutants to escape a requirement such as PSD review, nonattainment new source review, MACT, or Title V; or
- To establish, revise, or renew a plantwide applicability limit (PAL).

Air Operation Permit – Use this form to apply for:

- An initial federally enforceable state air operation permit (FESOP); or
- An initial, revised, or renewal Title V air operation permit.

To ensure accuracy, please see form instructions.

Identification of Facility

| | |
|--|--|
| 1. Facility Owner/Company Name: Pinellas County Board of County Commissioners | |
| 2. Site Name: Pinellas County Resource Recovery Facility | |
| 3. Facility Identification Number: 1030117 | |
| 4. Facility Location... Street Address or Other Locator: 3001 110 th Avenue North City: St. Petersburg County: Pinellas Zip Code: 33716 | |
| 5. Relocatable Facility? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 6. Existing Title V Permitted Facility? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |

Application Contact

| | |
|---|--|
| 1. Application Contact Name: Robert A. Velasco, P.E., BCEE | |
| 2. Application Contact Mailing Address... Organization/Firm: CDM Street Address: 1715 N. Westshore Boulevard, Suite 875 City: Tampa State: Florida Zip Code: 33607 | |
| 3. Application Contact Telephone Numbers... Telephone: (813) 262 - 8868 ext. Fax: (813) 288 - 8787 | |
| 4. Application Contact E-mail Address: velascora@cdm.com | |

Application Processing Information (DEP Use)

| | |
|------------------------------------|-----------------------------------|
| 1. Date of Receipt of Application: | 3. PSD Number (if applicable): |
| 2. Project Number(s): | 4. Siting Number (if applicable): |

APPLICATION INFORMATION

Purpose of Application

This application for air permit is being submitted to obtain: (Check one)

Air Construction Permit

- Air construction permit.
- Air construction permit to establish, revise, or renew a plantwide applicability limit (PAL).
- Air construction permit to establish, revise, or renew a plantwide applicability limit (PAL), and separate air construction permit to authorize construction or modification of one or more emissions units covered by the PAL.

Air Operation Permit

- Initial Title V air operation permit.
- Title V air operation permit revision.
- Title V air operation permit renewal.
- Initial federally enforceable state air operation permit (FESOP) where professional engineer (PE) certification is required.
- Initial federally enforceable state air operation permit (FESOP) where professional engineer (PE) certification is not required.

Air Construction Permit and Revised/Renewal Title V Air Operation Permit (Concurrent Processing)

- Air construction permit and Title V permit revision, incorporating the proposed project.
- Air construction permit and Title V permit renewal, incorporating the proposed project.

Note: By checking one of the above two boxes, you, the applicant, are requesting concurrent processing pursuant to Rule 62-213.405, F.A.C. In such case, you must also check the following box:

- I hereby request that the department waive the processing time requirements of the air construction permit to accommodate the processing time frames of the Title V air operation permit.

Application Comment

This submittal is being prepared by CDM, on the behalf of the Owner, Pinellas County, FL in response to the installation a new baghouse for the ventilation system in the new RSPB.

APPLICATION INFORMATION

Scope of Application

| Emissions Unit ID Number | Description of Emissions Unit | Air Permit Type | Air Permit Processing Fee |
|---|---|--------------------------------|--|
| 005 | New baghouse unit to control particulate matter in the new RSPB. | ACM1 | N/A |
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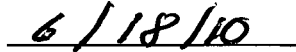
Application Processing Fee

Check one: Attached - Amount: \$ _____ Not Applicable

APPLICATION INFORMATION

Owner/Authorized Representative Statement

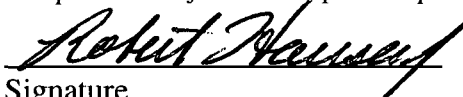
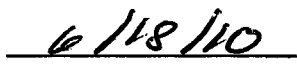
Complete if applying for an air construction permit or an initial FESOP.

| |
|--|
| 1. Owner/Authorized Representative Name: Kelsi Oswald |
| 2. Owner/Authorized Representative Mailing Address: Organization/Firm: Pinellas County Utilities, Solid Waste Street Address: 3095 114 th Avenue N. City: St. Petersburg State: Florida Zip Code: 33716 |
| 3. Owner/Authorized Representative Telephone Numbers... Telephone: (727) 464-7514 ext. Fax: () - |
| 4. Owner/Authorized Representative E-mail Address: koswald@co.pinellas.fl.us |
| 5. Owner/Authorized Representative Statement: <i>I, the undersigned, am the owner or authorized representative of the corporation, partnership, or other legal entity submitting this air permit application. To the best of my knowledge, the statements made in this application are true, accurate and complete, and any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department.</i>  Signature  Date |

APPLICATION INFORMATION

Application Responsible Official Certification

Complete if applying for an initial, revised, or renewal Title V air operation permit or concurrent processing of an air construction permit and revised or renewal Title V air operation permit. If there are multiple responsible officials, the "application responsible official" need not be the "primary responsible official."

| |
|---|
| 1. Application Responsible Official Name: Robert Hauser P.E. |
| 2. Application Responsible Official Qualification (Check one or more of the following options, as applicable): <input type="checkbox"/> For a corporation, the president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such 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 under Chapter 62-213, F.A.C. <input type="checkbox"/> For a partnership or sole proprietorship, a general partner or the proprietor, respectively. <input checked="" type="checkbox"/> For a municipality, county, state, federal, or other public agency, either a principal executive officer or ranking elected official. <input type="checkbox"/> The designated representative at an Acid Rain source, CAIR source, or Hg Budget source. |
| 3. Application Responsible Official Mailing Address... Organization/Firm: Pinellas County Department of Solid Waste Management Street Address: 3095 114 th Avenue North City: St. Petersburg State: Florida Zip Code: 33716 |
| 4. Application Responsible Official Telephone Numbers... Telephone: (727) 464 - 7500 ext. Fax: () - |
| 5. Application Responsible Official E-mail Address: rhauser@pinellascounty.org |
| 6. Application Responsible Official Certification: <p><i>I, the undersigned, am a responsible official of the Title V source addressed in this air permit application. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. The air pollutant emissions units and air pollution control equipment described in this application will be operated and maintained so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof and all other applicable requirements identified in this application to which the Title V source is subject. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department, and I will promptly notify the department upon sale or legal transfer of the facility or any permitted emissions unit. Finally, I certify that the facility and each emissions unit are in compliance with all applicable requirements to which they are subject, except as identified in compliance plan(s) submitted with this application.</i></p> <p> Signature</p> <p> Date</p> |

APPLICATION INFORMATION

Professional Engineer Certification

| |
|---|
| 1. Professional Engineer Name: Robert A. Velasco P.E., BCEE Registration Number: 57190 |
| 2. Professional Engineer Mailing Address... Organization/Firm: CDM Street Address: 1715 N. Westshore Boulevard, Suite 875 City: Tampa State: Florida Zip Code: 33607 |
| 3. Professional Engineer Telephone Numbers... Telephone: (813) 262 - 8868 ext. Fax: (813) 288 - 8787 |
| 4. Professional Engineer E-mail Address: <u>velascora@cdm.com</u> |
| 5. Professional Engineer Statement: <i>I, the undersigned, hereby certify, except as particularly noted herein*, that:</i> <i>(1) To the best of my knowledge, there is reasonable assurance that the air pollutant emissions unit(s) and the air pollution control equipment described in this application for air permit, when properly operated and maintained, will comply with all applicable standards for control of air pollutant emissions found in the Florida Statutes and rules of the Department of Environmental Protection; and</i> <i>(2) To the best of my knowledge, any emission estimates reported or relied on in this application are true, accurate, and complete and are either based upon reasonable techniques available for calculating emissions or, for emission estimates of hazardous air pollutants not regulated for an emissions unit addressed in this application, based solely upon the materials, information and calculations submitted with this application.</i> <i>(3) If the purpose of this application is to obtain a Title V air operation permit (check here <input checked="" type="checkbox"/>, if so), I further certify that each emissions unit described in this application for air permit, when properly operated and maintained, will comply with the applicable requirements identified in this application to which the unit is subject, except those emissions units for which a compliance plan and schedule is submitted with this application.</i> <i>(4) If the purpose of this application is to obtain an air construction permit (check here <input type="checkbox"/>, if so) or concurrently process and obtain an air construction permit and a Title V air operation permit revision or renewal for one or more proposed new or modified emissions units (check here <input checked="" type="checkbox"/>, if so), I further certify that the engineering features of each such emissions unit described in this application have been designed or examined by me or individuals under my direct supervision and found to be in conformity with sound engineering principles applicable to the control of emissions of the air pollutants characterized in this application.</i> <i>(5) If the purpose of this application is to obtain an initial air operation permit or operation permit revision or renewal for one or more newly constructed or modified emissions units (check here <input type="checkbox"/>, if so), I further certify that, with the exception of any changes detailed as part of this application, each such emissions unit has been constructed or modified in substantial accordance with the information given in the corresponding application for air construction permit and with all provisions contained in such permit.</i> _____ Signature (seal) _____ Date 6/18/10 |

* Attach any exceptions to the certification statement. → See seal page on cover letter.

II. FACILITY INFORMATION

A. GENERAL FACILITY INFORMATION

Facility Location and Type

| | | | |
|--|------------------------------------|--|-----------------------------|
| 1. Facility UTM Coordinates... Zone 17 East (km) 335.27 North (km) 3084.31 | | 2. Facility Latitude/Longitude... Latitude (DD/MM/SS) 27/52/24.5964 N Longitude (DD/MM/SS) 82/40/24.0522 W | |
| 3. Governmental Facility Code: (3) Source owned or operated by the County | 4. Facility Status Code: Active | 5. Facility Major Group SIC Code: (49) Electric, Gas and Sanitary Services | 6. Facility SIC(s): 4953 |
| 7. Facility Comment : Latitude/longitude confirmed using GPS. | | | |

Facility Contact

| |
|--|
| 1. Facility Contact Name: Rebecca Macionski, Environmental Manager |
| 2. Facility Contact Mailing Address... Organization/Firm: Veolia ES Pinellas, Inc. Street Address: 3001 110 th Avenue North <div style="display: flex; justify-content: space-between; margin-top: 10px;"> City: St. Petersburg State: Florida Zip Code: 33716 </div> |
| 3. Facility Contact Telephone Numbers: Telephone: (727) 572 - 9163 ext. 50 Fax: () - |
| 4. Facility Contact E-mail Address: rebecca.macionski@veoliaes.com |

Facility Primary Responsible Official

Complete if an "application responsible official" is identified in Section I that is not the facility "primary responsible official."

| |
|---|
| 1. Facility Primary Responsible Official Name: Robert Hauser, Director |
| 2. Facility Primary Responsible Official Mailing Address... Organization/Firm: Pinellas County Department of Solid Waste Management Street Address: 3905 114 th Avenue North <div style="display: flex; justify-content: space-between; margin-top: 10px;"> City: St. Petersburg State: Florida Zip Code: 33716 </div> |
| 3. Facility Primary Responsible Official Telephone Numbers... Telephone: (727) 464 - 7500 ext. Fax: (727) 464 - 7713 |
| 4. Facility Primary Responsible Official E-mail Address: rhauser@pinellascounty.org |

FACILITY INFORMATION

Facility Regulatory Classifications

Check all that would apply *following* completion of all projects and implementation of all other changes proposed in this application for air permit. Refer to instructions to distinguish between a “major source” and a “synthetic minor source.”

| | |
|--|----------------------------------|
| 1. <input type="checkbox"/> Small Business Stationary Source | <input type="checkbox"/> Unknown |
| 2. <input type="checkbox"/> Synthetic Non-Title V Source | |
| 3. <input checked="" type="checkbox"/> Title V Source | |
| 4. <input checked="" type="checkbox"/> Major Source of Air Pollutants, Other than Hazardous Air Pollutants (HAPs) | |
| 5. <input type="checkbox"/> Synthetic Minor Source of Air Pollutants, Other than HAPs | |
| 6. <input checked="" type="checkbox"/> Major Source of Hazardous Air Pollutants (HAPs) | |
| 7. <input type="checkbox"/> Synthetic Minor Source of HAPs | |
| 8. <input type="checkbox"/> One or More Emissions Units Subject to NSPS (40 CFR Part 60) | |
| 9. <input checked="" type="checkbox"/> One or More Emissions Units Subject to Emission Guidelines (40 CFR Part 60) | |
| 10. <input checked="" type="checkbox"/> One or More Emissions Units Subject to NESHAP (40 CFR Part 61 or Part 63) | |
| 11. <input type="checkbox"/> Title V Source Solely by EPA Designation (40 CFR 70.3(a)(5)) | |
| 12. Facility Regulatory Classifications Comment: | |

FACILITY INFORMATION

List of Pollutants Emitted by Facility

| 1. Pollutant Emitted | 2. Pollutant Classification | 3. Emissions Cap [Y or N]? |
|----------------------|--|----------------------------|
| HAPS | (A) ACTUAL OR POTENTIAL EMISSIONS ARE ABOVE THE APPLICABLE MAJOR SOURCE THRESHOLDS | N |
| PM10 | (A) ACTUAL OR POTENTIAL EMISSIONS ARE ABOVE THE APPLICABLE MAJOR SOURCE THRESHOLDS | N |
| NO _x | (A) ACTUAL OR POTENTIAL EMISSIONS ARE ABOVE THE APPLICABLE MAJOR SOURCE THRESHOLDS | N |
| CO | (A) ACTUAL OR POTENTIAL EMISSIONS ARE ABOVE THE APPLICABLE MAJOR SOURCE THRESHOLDS | N |
| PM | (A) ACTUAL OR POTENTIAL EMISSIONS ARE ABOVE THE APPLICABLE MAJOR SOURCE THRESHOLDS | N |
| SO ₂ | (A) ACTUAL OR POTENTIAL EMISSIONS ARE ABOVE THE APPLICABLE MAJOR SOURCE THRESHOLDS | N |
| FL | (B) ACTUAL OR POTENTIAL EMISSIONS ARE BELOW ALL APPLICABLE MAJOR SOURCE THRESHOLDS | N |
| H021 | (B) ACTUAL OR POTENTIAL EMISSIONS ARE BELOW ALL APPLICABLE MAJOR SOURCE THRESHOLDS | N |
| NH3 | (B) ACTUAL OR POTENTIAL EMISSIONS ARE BELOW ALL APPLICABLE MAJOR SOURCE THRESHOLDS | N |
| D/F | (B) ACTUAL OR POTENTIAL EMISSIONS ARE BELOW ALL APPLICABLE MAJOR SOURCE THRESHOLDS | N |
| NMOC | (B) ACTUAL OR POTENTIAL EMISSIONS ARE BELOW ALL APPLICABLE MAJOR SOURCE THRESHOLDS | N |
| H027 | (B) ACTUAL OR POTENTIAL EMISSIONS ARE BELOW ALL APPLICABLE MAJOR SOURCE THRESHOLDS | N |
| H106 | (B) ACTUAL OR POTENTIAL EMISSIONS ARE BELOW ALL APPLICABLE MAJOR SOURCE THRESHOLDS | N |

FACILITY INFORMATION

| | | |
|------|--|---|
| H114 | (B) ACTUAL OR POTENTIAL EMISSIONS ARE BELOW ALL APPLICABLE MAJOR SOURCE THRESHOLDS | N |
| VOC | (B) ACTUAL OR POTENTIAL EMISSIONS ARE BELOW ALL APPLICABLE MAJOR SOURCE THRESHOLDS | N |
| PB | (B) ACTUAL OR POTENTIAL EMISSIONS ARE BELOW ALL APPLICABLE MAJOR SOURCE THRESHOLDS | N |
| H2S | (C) CLASS IS UNKNOWN | N |
| H186 | (C) CLASS IS UNKNOWN | N |
| H184 | (C) CLASS IS UNKNOWN | N |
| H176 | (C) CLASS IS UNKNOWN | N |
| H169 | (C) CLASS IS UNKNOWN | N |
| H167 | (C) CLASS IS UNKNOWN | N |
| H128 | (C) CLASS IS UNKNOWN | N |
| H120 | (C) CLASS IS UNKNOWN | N |
| H104 | (C) CLASS IS UNKNOWN | N |
| H085 | (C) CLASS IS UNKNOWN | N |
| H009 | (C) CLASS IS UNKNOWN | N |
| H133 | (C) CLASS IS UNKNOWN | N |
| H046 | (C) CLASS IS UNKNOWN | N |
| H015 | (C) CLASS IS UNKNOWN | N |

FACILITY INFORMATION

B. EMISSIONS CAPS

Facility-Wide or Multi-Unit Emissions Caps

| 1. Pollutant Subject to Emissions Cap | 2. Facility-Wide Cap [Y or N]? (all units) | 3. Emissions Unit ID's Under Cap (if not all units) | 4. Hourly Cap (lb/hr) | 5. Annual Cap (ton/yr) | 6. Basis for Emissions Cap |
|---|--|---|-----------------------|------------------------|----------------------------|
| H2S | N | No EUs included in the cap | | | |
| H009 | N | No EUs included in the cap | | | |
| H021 | N | No EUs included in the cap | | | |
| H085 | N | No EUs included in the cap | | | |
| H104 | N | No EUs included in the cap | | | |
| H120 | N | No EUs included in the cap | | | |
| H128 | N | No EUs included in the cap | | | |
| H167 | N | No EUs included in the cap | | | |
| H169 | N | No EUs included in the cap | | | |
| H176 | N | No EUs included in the cap | | | |
| H184 | N | No EUs included in the cap | | | |
| H186 | N | No EUs included in the cap | | | |
| 7. Facility-Wide or Multi-Unit Emissions Cap Comment: | | | | | |

FACILITY INFORMATION

C. FACILITY ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

| |
|---|
| 1. Facility Plot Plan: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date: <u>4/1/2010</u> |
| 2. Process Flow Diagram(s): (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date: <u>4/1/2010</u> |
| 3. Precautions to Prevent Emissions of Unconfined Particulate Matter: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date: <u>4/1/2010</u> |

Additional Requirements for Air Construction Permit Applications

| |
|--|
| 1. Area Map Showing Facility Location: <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable (existing permitted facility) |
| 2. Description of Proposed Construction, Modification, or Plantwide Applicability Limit (PAL): <input type="checkbox"/> Attached, Document ID: _____ |
| 3. Rule Applicability Analysis: <input type="checkbox"/> Attached, Document ID: _____ |
| 4. List of Exempt Emissions Units: <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable (no exempt units at facility) |
| 5. Fugitive Emissions Identification: <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable |
| 6. Air Quality Analysis (Rule 62-212.400(7), F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable |
| 7. Source Impact Analysis (Rule 62-212.400(5), F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable |
| 8. Air Quality Impact since 1977 (Rule 62-212.400(4)(e), F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable |
| 9. Additional Impact Analyses (Rules 62-212.400(8) and 62-212.500(4)(e), F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable |
| 10. Alternative Analysis Requirement (Rule 62-212.500(4)(g), F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable |

FACILITY INFORMATION

C. FACILITY ADDITIONAL INFORMATION (CONTINUED)

Additional Requirements for FESOP Applications

- | |
|---|
| 1. List of Exempt Emissions Units: <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable (no exempt units at facility) |
|---|

Additional Requirements for Title V Air Operation Permit Applications

- | |
|--|
| 1. List of Insignificant Activities: (Required for initial/renewal applications only) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable (revision application) |
| 2. Identification of Applicable Requirements: (Required for initial/renewal applications, and for revision applications if this information would be changed as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable (revision application with no change in applicable requirements) |
| 3. Compliance Report and Plan: (Required for all initial/revision/renewal applications) <input type="checkbox"/> Attached, Document ID: _____ Note: A compliance plan must be submitted for each emissions unit that is not in compliance with all applicable requirements at the time of application and/or at any time during application processing. The department must be notified of any changes in compliance status during application processing. |
| 4. List of Equipment/Activities Regulated under Title VI: (If applicable, required for initial/renewal applications only) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Equipment/Activities Onsite but Not Required to be Individually Listed <input type="checkbox"/> Not Applicable |
| 5. Verification of Risk Management Plan Submission to EPA: (If applicable, required for initial/renewal applications only) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable |
| 6. Requested Changes to Current Title V Air Operation Permit: <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable |

FACILITY INFORMATION

C. FACILITY ADDITIONAL INFORMATION (CONTINUED)

Additional Requirements for Facilities Subject to Acid Rain, CAIR, or Hg Budget Program

1. Acid Rain Program Forms:

Acid Rain Part Application (DEP Form No. 62-210.900(1)(a)):

Attached, Document ID: _____ Previously Submitted, Date: _____

Not Applicable (not an Acid Rain source)

Phase II NO_x Averaging Plan (DEP Form No. 62-210.900(1)(a)1.):

Attached, Document ID: _____ Previously Submitted, Date: _____

Not Applicable

New Unit Exemption (DEP Form No. 62-210.900(1)(a)2.):

Attached, Document ID: _____ Previously Submitted, Date: _____

Not Applicable

2. CAIR Part (DEP Form No. 62-210.900(1)(b)):

Attached, Document ID: _____ Previously Submitted, Date: _____

Not Applicable (not a CAIR source)

3. Hg Budget Part (DEP Form No. 62-210.900(1)(c)):

Attached, Document ID: _____ Previously Submitted, Date: _____

Not Applicable (not a Hg Budget unit)

Additional Requirements Comment

All above additional requirements were previously submitted with the Title V renewal application on 4/1/2010.

EMISSIONS UNIT INFORMATION

Section [1] of [1]

III. EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Application - For Title V air operation permitting only, emissions units are classified as regulated, unregulated, or insignificant. If this is an application for an initial, revised or renewal Title V air operation permit, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each regulated and unregulated emissions unit addressed in this application. Some of the subsections comprising the Emissions Unit Information Section of the form are optional for unregulated emissions units. Each such subsection is appropriately marked. Insignificant emissions units are required to be listed at Section II, Subsection C.

Air Construction Permit or FESOP Application - For air construction permitting or federally enforceable state air operation permitting, emissions units are classified as either subject to air permitting or exempt from air permitting. The concept of an "unregulated emissions unit" does not apply. If this is an application for an air construction permit or FESOP, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit subject to air permitting addressed in this application for air permit. Emissions units exempt from air permitting are required to be listed at Section II, Subsection C.

Air Construction Permit and Revised/Renewal Title V Air Operation Permit Application - Where this application is used to apply for both an air construction permit and a revised or renewal Title V air operation permit, each emissions unit is classified as either subject to air permitting or exempt from air permitting for air construction permitting purposes, and as regulated, unregulated, or insignificant for Title V air operation permitting purposes. A separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit addressed in this application that is subject to air construction permitting and for each such emissions unit that is a regulated or unregulated unit for purposes of Title V permitting. (An emissions unit may be exempt from air construction permitting but still be classified as an unregulated unit for Title V purposes.) Emissions units classified as insignificant for Title V purposes are required to be listed at Section II, Subsection C.

If submitting the application form in hard copy, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application must be indicated in the space provided at the top of each page.

EMISSIONS UNIT INFORMATION

Section [1] of [1]

A. GENERAL EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Emissions Unit Classification

1. Regulated or Unregulated Emissions Unit? (Check one, if applying for an initial, revised or renewal Title V air operation permit. Skip this item if applying for an air construction permit or FESOP only.)

The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.

The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

Emissions Unit Description and Status

1. Type of Emissions Unit Addressed in this Section: (Check one)

This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).

This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.

This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

2. Description of Emissions Unit Addressed in this Section:

New baghouse unit to control particulate matter in the new RSPB.

3. Emissions Unit Identification Number:

4. Emissions Unit Status Code:
C

5. Commence Construction Date:

6. Initial Startup Date:

7. Emissions Unit Major Group SIC Code:
49

8. Federal Program Applicability: (Check all that apply)

Acid Rain Unit

CAIR Unit

Hg Budget Unit

9. Package Unit: Pulse Jet Baghouse

Manufacturer: Donaldson Torit

Model Number: 225MBWS8

10. Generator Nameplate Rating: Not applicable

11. Emissions Unit Comment:

EMISSIONS UNIT INFORMATION

Section [1] of [1]

Emissions Unit Control Equipment/Method: Control fugitive dust in the RSPB.

1. Control Equipment/Method Description:

The air pollution control system consists of duct system, an ID fan, baghouse, vent stack and miscellaneous support steel.

2. Control Device or Method Code: Pulse Jet Type Baghouse

EMISSIONS UNIT INFORMATION

Section [1] of [1]

B. EMISSIONS UNIT CAPACITY INFORMATION

(Optional for unregulated emissions units.)

Emissions Unit Operating Capacity and Schedule

| |
|--|
| 1. Maximum Process or Throughput Rate: 14,000 acfm |
| 2. Maximum Production Rate: Not applicable |
| 3. Maximum Heat Input Rate: Not applicable |
| 4. Maximum Incineration Rate: Not applicable |
| 5. Requested Maximum Operating Schedule: 24 hrs per day |
| 6. Operating Capacity/Schedule Comment: The above information is for a baghouse dust collection system. |

EMISSIONS UNIT INFORMATION

Section [1] of [1]

C. EMISSION POINT (STACK/VENT) INFORMATION**(Optional for unregulated emissions units.)****Emission Point Description and Type**

| | | | |
|---|--|---|--|
| 1. Identification of Point on Plot Plan or Flow Diagram: see attached | | 2. Emission Point Type Code: 1 | |
| 3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking: | | | |
| 4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common: | | | |
| 5. Discharge Type Code: R | | 6. Stack Height: 16 feet | |
| | | 7. Exit Diameter: N/A | |
| 8. Exit Temperature: Ambient temperature | | 9. Actual Volumetric Flow Rate: N/A | |
| | | 10. Water Vapor: N/A | |
| 11. Maximum Dry Standard Flow Rate: N/A | | 12. Nonstack Emission Point Height: 18-inches | |
| 13. Emission Point UTM Coordinates... N/A Zone: East (km): North (km): | | 14. Emission Point Latitude/Longitude... N/A Latitude (DD/MM/SS) Longitude (DD/MM/SS) | |
| 15. Emission Point Comment: The emission point will be installed through a building roof vent. | | | |

EMISSIONS UNIT INFORMATION

Section [1] of [1]

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 1 of 1

| | | |
|--|--|--|
| 1. Segment Description (Process/Fuel Type): Residual Solids Processing Building (RSPB) | | |
| 2. Source Classification Code (SCC): 30510199 | | 3. SCC Units: Tons transferred or handled |
| 4. Maximum Hourly Rate: 112 TPH | 5. Maximum Annual Rate: ≈90,000 TPY | 6. Estimated Annual Activity Factor: N/A |
| 7. Maximum % Sulfur: N/A | 8. Maximum % Ash: ≈97% | 9. Million Btu per SCC Unit: N/A |
| 10. Segment Comment: N/A | | |

Segment Description and Rate: Segment __ of __

| | | |
|---|-------------------------|--------------------------------------|
| 1. Segment Description (Process/Fuel Type): | | |
| 2. Source Classification Code (SCC): | | 3. SCC Units: |
| 4. Maximum Hourly Rate: | 5. Maximum Annual Rate: | 6. Estimated Annual Activity Factor: |
| 7. Maximum % Sulfur: | 8. Maximum % Ash: | 9. Million Btu per SCC Unit: |
| 10. Segment Comment: | | |

EMISSIONS UNIT INFORMATION

Section [] of []

D. SEGMENT (PROCESS/FUEL) INFORMATION (CONTINUED)

Segment Description and Rate: Segment __ of __

| | | |
|---|-------------------------|--------------------------------------|
| 1. Segment Description (Process/Fuel Type): | | |
| 2. Source Classification Code (SCC): | | 3. SCC Units: |
| 4. Maximum Hourly Rate: | 5. Maximum Annual Rate: | 6. Estimated Annual Activity Factor: |
| 7. Maximum % Sulfur: | 8. Maximum % Ash: | 9. Million Btu per SCC Unit: |
| 10. Segment Comment: | | |

Segment Description and Rate: Segment __ of __

| | | |
|---|-------------------------|--------------------------------------|
| 1. Segment Description (Process/Fuel Type): | | |
| 2. Source Classification Code (SCC): | | 3. SCC Units: |
| 4. Maximum Hourly Rate: | 5. Maximum Annual Rate: | 6. Estimated Annual Activity Factor: |
| 7. Maximum % Sulfur: | 8. Maximum % Ash: | 9. Million Btu per SCC Unit: |
| 10. Segment Comment: | | |

EMISSIONS UNIT INFORMATION

Section [1] of [1]

E. EMISSIONS UNIT POLLUTANTS

List of Pollutants Emitted by Emissions Unit

| 1. Pollutant Emitted | 2. Primary Control Device Code | 3. Secondary Control Device Code | 4. Pollutant Regulatory Code |
|----------------------|--------------------------------|----------------------------------|------------------------------|
| PM | 018 | | EL |
| | | | |
| | | | |
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**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS**

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

| | | | |
|--|--|---|--|
| 1. Pollutant Emitted: PM <i>0.015 lb/dscf</i> | | 2. Total Percent Efficiency of Control: >99.9% | |
| 3. Potential Emissions: <i>1.2 lb/hour</i> | | 4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | |
| 5. Range of Estimated Fugitive Emissions (as applicable): Not applicable | | | |
| 6. Emission Factor: Not applicable Reference: | | 7. Emissions Method Code: 0 | |
| 8.a. Baseline Actual Emissions (if required): Not applicable | | 8.b. Baseline 24-month Period: From: To: | |
| 9.a. Projected Actual Emissions (if required): Not applicable | | 9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years | |
| 10. Calculation of Emissions: $\frac{0.015 \text{ gr}}{\text{dscf}} \times \frac{14,000 \text{ dscf}}{\text{min}} \times \frac{60 \text{ min}}{\text{hr}} \times \frac{1 \text{ lb}}{7,000 \text{ gr}} \approx \frac{1.8 \text{ lb}}{\text{hr}}$ $\frac{1.8 \text{ lb}}{\text{hr}} \times \frac{4.38 \text{ tons / yr}}{\text{lb / hr}} \approx \frac{7.9 \text{ tons}}{\text{yr}} \text{ (max)}$ | | | |
| 11. Potential, Fugitive, and Actual Emissions Comment: The potential emissions are based on estimated emission rate 0.015 gr/dscf. | | | |

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -
 ALLOWABLE EMISSIONS**

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions __ of __

| | |
|---|--|
| 1. Basis for Allowable Emissions Code: | 2. Future Effective Date of Allowable Emissions: |
| 3. Allowable Emissions and Units: | 4. Equivalent Allowable Emissions: |
| 5. Method of Compliance: USEPA Method 9 | |
| 6. Allowable Emissions Comment (Description of Operating Method): | |

Allowable Emissions Allowable Emissions __ of __

| | |
|---|--|
| 1. Basis for Allowable Emissions Code: | 2. Future Effective Date of Allowable Emissions: |
| 3. Allowable Emissions and Units: | 4. Equivalent Allowable Emissions: lb/hour tons/year |
| 5. Method of Compliance: | |
| 6. Allowable Emissions Comment (Description of Operating Method): | |

Allowable Emissions Allowable Emissions __ of __

| | |
|---|--|
| 1. Basis for Allowable Emissions Code: | 2. Future Effective Date of Allowable Emissions: |
| 3. Allowable Emissions and Units: | 4. Equivalent Allowable Emissions: lb/hour tons/year |
| 5. Method of Compliance: | |
| 6. Allowable Emissions Comment (Description of Operating Method): | |

EMISSIONS UNIT INFORMATION

Section [1] of [1]

G. VISIBLE EMISSIONS INFORMATION

Complete Subsection G if this emissions unit is or would be subject to a unit-specific visible emissions limitation.

Visible Emissions Limitation: Visible Emissions Limitation 1 of 1

| | |
|--|--|
| 1. Visible Emissions Subtype: VE5 | 2. Basis for Allowable Opacity: <input checked="" type="checkbox"/> Rule <input type="checkbox"/> Other |
| 3. Allowable Opacity: Normal Conditions: 5 % Maximum Period of Excess Opacity Allowed: | Exceptional Conditions: % min/hour |
| 4. Method of Compliance: USEPA Method 9, USEPA Method 22 annually | |
| 5. Visible Emissions Comment: Due to the expense and complexity of conducting a stack test on a minor source of particulate matter, the applicant requests a visible emission limitation not to exceed an opacity of 5% in lieu of a particulate stack test under Rule 62-296.711, F.A.C. | |

Visible Emissions Limitation: Visible Emissions Limitation __ of __

| | |
|--|---|
| 1. Visible Emissions Subtype: | 2. Basis for Allowable Opacity: <input type="checkbox"/> Rule <input type="checkbox"/> Other |
| 3. Allowable Opacity: Normal Conditions: % Maximum Period of Excess Opacity Allowed: | Exceptional Conditions: % min/hour |
| 4. Method of Compliance: | |
| 5. Visible Emissions Comment: | |

EMISSIONS UNIT INFORMATION

Section [1] of [1]

H. CONTINUOUS MONITOR INFORMATION

Complete Subsection H if this emissions unit is or would be subject to continuous monitoring.

Continuous Monitoring System: Continuous Monitor 1 of 1

| | |
|--|--|
| 1. Parameter Code: | 2. Pollutant(s): |
| 3. CMS Requirement: | <input type="checkbox"/> Rule <input type="checkbox"/> Other |
| 4. Monitor Information... Manufacturer: Model Number: Serial Number: | |
| 5. Installation Date: | 6. Performance Specification Test Date: |
| 7. Continuous Monitor Comment: Section H is not applicable | |

Continuous Monitoring System: Continuous Monitor ___ of ___

| | |
|--|--|
| 1. Parameter Code: | 2. Pollutant(s): |
| 3. CMS Requirement: | <input type="checkbox"/> Rule <input type="checkbox"/> Other |
| 4. Monitor Information... Manufacturer: Model Number: Serial Number: | |
| 5. Installation Date: | 6. Performance Specification Test Date: |
| 7. Continuous Monitor Comment: | |

EMISSIONS UNIT INFORMATION

Section [] of []

H. CONTINUOUS MONITOR INFORMATION (CONTINUED)

Continuous Monitoring System: Continuous Monitor ___ of ___

| | |
|---|--|
| 1. Parameter Code: | 2. Pollutant(s): |
| 3. CMS Requirement: | <input type="checkbox"/> Rule <input type="checkbox"/> Other |
| 4. Monitor Information... Manufacturer: Model Number: | Serial Number: |
| 5. Installation Date: | 6. Performance Specification Test Date: |
| 7. Continuous Monitor Comment: | |

Continuous Monitoring System: Continuous Monitor ___ of ___

| | |
|---|--|
| 1. Parameter Code: | 2. Pollutant(s): |
| 3. CMS Requirement: | <input type="checkbox"/> Rule <input type="checkbox"/> Other |
| 4. Monitor Information... Manufacturer: Model Number: | Serial Number: |
| 5. Installation Date: | 6. Performance Specification Test Date: |
| 7. Continuous Monitor Comment: | |

EMISSIONS UNIT INFORMATION

Section [1] of [1]

I. EMISSIONS UNIT ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

| |
|--|
| 1. Process Flow Diagram: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input checked="" type="checkbox"/> Attached, Document ID: <u>see attached</u> <input type="checkbox"/> Previously Submitted, Date _____ |
| 2. Fuel Analysis or Specification: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input checked="" type="checkbox"/> Attached, Document ID: <u>see attached</u> <input type="checkbox"/> Previously Submitted, Date <u>N/A</u> |
| 3. Detailed Description of Control Equipment: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input checked="" type="checkbox"/> Attached, Document ID: <u>see attached</u> <input type="checkbox"/> Previously Submitted, Date _____ |
| 4. Procedures for Startup and Shutdown: (Required for all operation permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input checked="" type="checkbox"/> Attached, Document ID: <u>see attached</u> <input type="checkbox"/> Previously Submitted, Date _____ <input type="checkbox"/> Not Applicable (construction application) |
| 5. Operation and Maintenance Plan: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input checked="" type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date _____ <input type="checkbox"/> Not Applicable |
| 6. Compliance Demonstration Reports/Records: <input type="checkbox"/> Attached, Document ID: _____ Test Date(s)/Pollutant(s) Tested: _____ _____ <input type="checkbox"/> Previously Submitted, Date: _____ Test Date(s)/Pollutant(s) Tested: _____ _____ <input type="checkbox"/> To be Submitted, Date (if known): _____ Test Date(s)/Pollutant(s) Tested: _____ _____ <input checked="" type="checkbox"/> Not Applicable Note: For FESOP applications, all required compliance demonstration records/reports must be submitted at the time of application. For Title V air operation permit applications, all required compliance demonstration reports/records must be submitted at the time of application, or a compliance plan must be submitted at the time of application. |

7. Other Information Required by Rule or Statute:

Attached, Document ID: _____

Not Applicable

EMISSIONS UNIT INFORMATION

Section [1] of [1]

I. EMISSIONS UNIT ADDITIONAL INFORMATION (CONTINUED)

Additional Requirements for Air Construction Permit Applications

| |
|--|
| 1. Control Technology Review and Analysis (Rules 62-212.400(10) and 62-212.500(7), F.A.C.; 40 CFR 63.43(d) and (e)): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable |
| 2. Good Engineering Practice Stack Height Analysis (Rules 62-212.400(4)(d) and 62-212.500(4)(f), F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable |
| 3. Description of Stack Sampling Facilities: (Required for proposed new stack sampling facilities only) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable |

Additional Requirements for Title V Air Operation Permit Applications

| |
|--|
| 1. Identification of Applicable Requirements: <input type="checkbox"/> Attached, Document ID: _____ |
| 2. Compliance Assurance Monitoring: <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable |
| 3. Alternative Methods of Operation: <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable |
| 4. Alternative Modes of Operation (Emissions Trading): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable |

Additional Requirements Comment

ATTACHMENT B
Baghouse Technical Data

Catalogue Sheets

Donaldson[®]
Torit[®]

**MODULAR BAGHOUSE
DUST COLLECTORS**



COMPACT, MODULAR DESIGN

The enhanced Donaldson® Torit® Modular Baghouse (MB) delivers reliable, efficient, continuous-duty, pulse-jet operation. The MB advantage is found in the breakthrough technology of Dura-Life™ filter bags. Dura-Life bags offer longer bag life and reduced emissions. The MB provides reliable service with easy maintenance. Computer designed inlets and deflector plates, coupled with maximized bag spacing, result in optimal airflow with minimal abrasion. Advanced valves, providing 50% more cleaning air, result in a more efficient operation. Over the life of the collector, no other baghouse can provide this much value.

THE MB OFFERS:

- **High body inlet models allow higher air-to-media ratios on lighter dusts**
- **Square models help minimize ducting and accessory costs**
- **Dura-Life "Twice the Life" Filter Bags**
- **Clean air bag access for easier bag service**
- **Welded design increases durability**
- **Integral fan option reduces space requirements**
- **Tool-free installation of filter bags and cages**
- **10-year warranty**

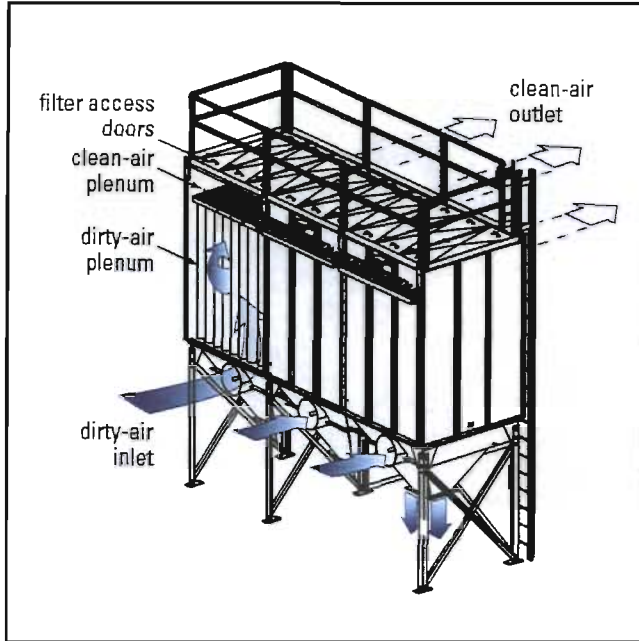
**Superior Performance
with
Dura-Life™
"Twice the Life"
Filter Bags**



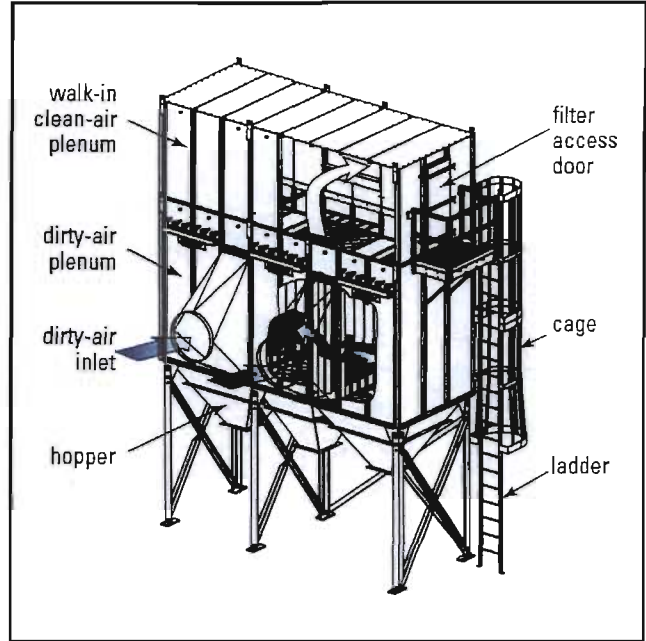
405MBW10

OPERATIONS & FEATURES

MBT Normal Operation



MBW High Inlet Normal Operation



BAGHOUSE OPERATIONS THAT WORK

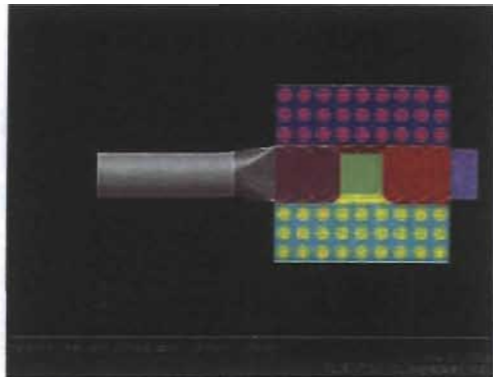
The Modular Baghouse collector comes in two models: the MBT allows walk-on, top access to the bags (clean-air side) of the collector. This configuration is ideal for indoor or tight budget applications. The MBW offers a walk-in clean-air plenum, so bags can be replaced in any kind of outdoor weather.

The MB has two inlet configurations; the most common configuration allows the dirty-air to enter through the hopper inlet located under the filter bags. The dirty air hits a deflector at the end of the

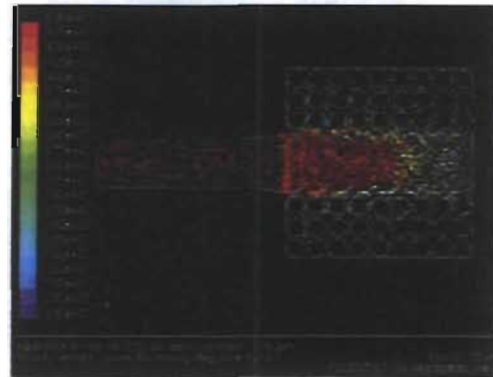
inlet, which causes heavy particulate to fall directly into the hopper. This reduces the amount of dust that comes in contact with the bags resulting in longer bag life and lower pressure drop. For applications with light and fibrous dust, a high body inlet is available that reduces upward air velocities allowing the dust to properly fall into the hopper after the bags have been pulsed.

ENGINEERED FOR RELIABLE PERFORMANCE

Modular Baghouses are a reflection of Donaldson Torit's commitment to technical research and development. Sophisticated FLUENT®* computer airflow analysis has been used to assure the Modular Baghouse provides a uniform airflow resulting in reduced bag abrasion, longer bag life and lower maintenance costs.



Top view of Modular Baghouse with high inlet without airflow.



Top view of Modular Baghouse with high inlet showing FLUENT Computer Analysis of airflow.

FLUENT computer airflow analysis shows that the baffles in the MB high inlet deflect and reduce dust particle velocities and then properly distribute them throughout the collector for effective filtration with minimum bag and collector wear.

DUMPSTER DISCHARGE FOR HEAVY DUST LOADING

For applications with heavy dust loading, the MB has an easy to use Dumpster Discharge. This option provides either a two or three cubic yard self-dumping dumpster that can be hauled away with the use of a forklift. The dumpster comes with a lid that seals the system so that no rotary valve is required. The lid is lifted off of the dumpster via a mechanical lift, which is included with the package.



* FLUENT is a registered trademark of Fluent, Inc.

PROVEN PERFORMANCE ON HUNDREDS OF APPLICATIONS



405MBW10
at a foundry



324MBWS10
at a shingle manufacturing facility
collecting sand



54MBTH8
at a cabinet shop on wood dust,
from cutting, moulding and sanding



162MBT8
on wood dust



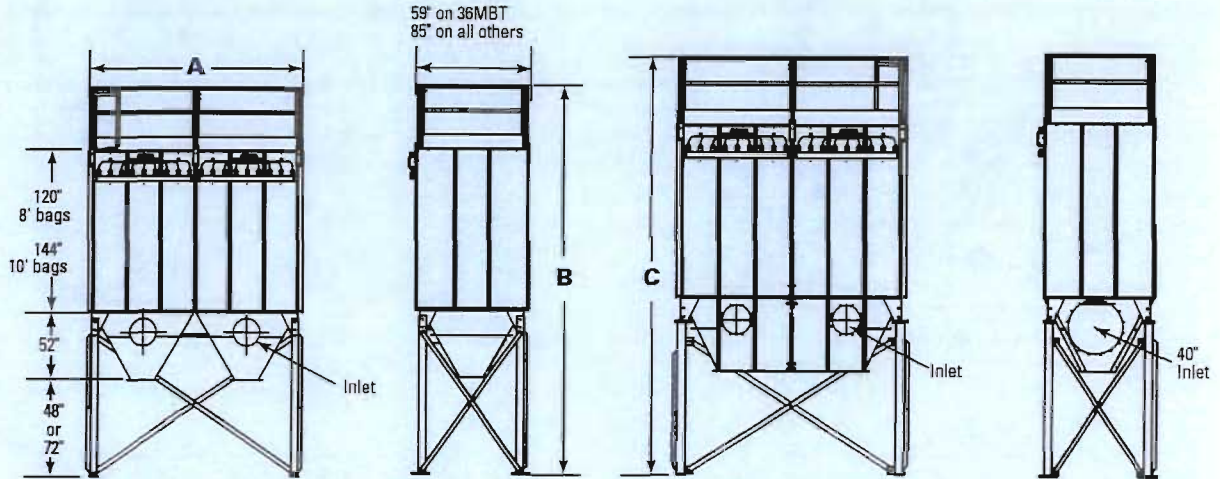
324MBWS10
at a glass manufacturing facility



405MBT8
at a brick manufacturing facility

DIMENSIONS & SPECIFICATIONS

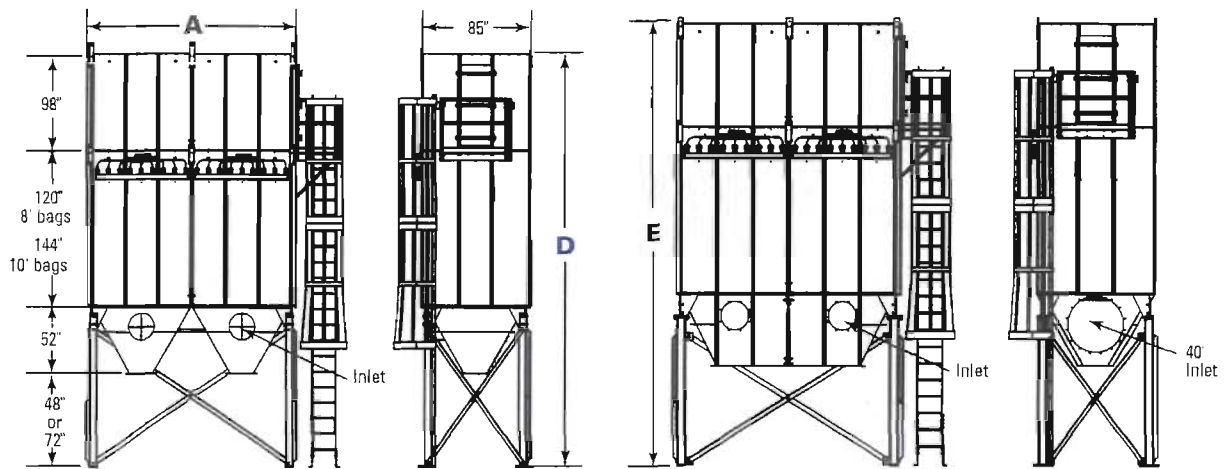
MODEL 162MBT8 SHOWN



MBT with Pyramid Hopper

MBT with Optional Trough Hopper
72-inch Clearance Leg

MODEL 162MBW8 SHOWN

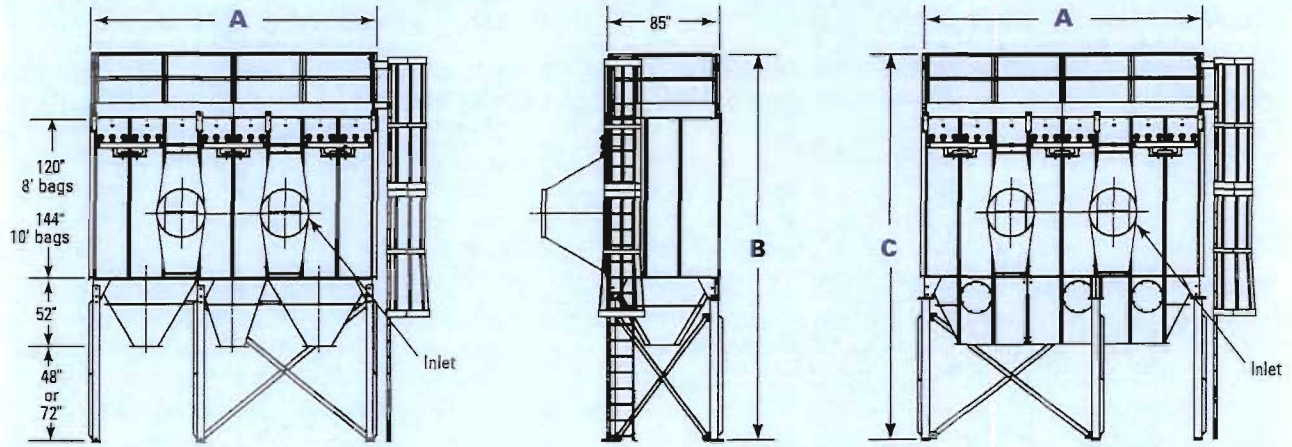


MBW with Pyramid Hopper

MBW with Trough Hopper
72-inch Clearance Leg

DIMENSIONS & SPECIFICATIONS

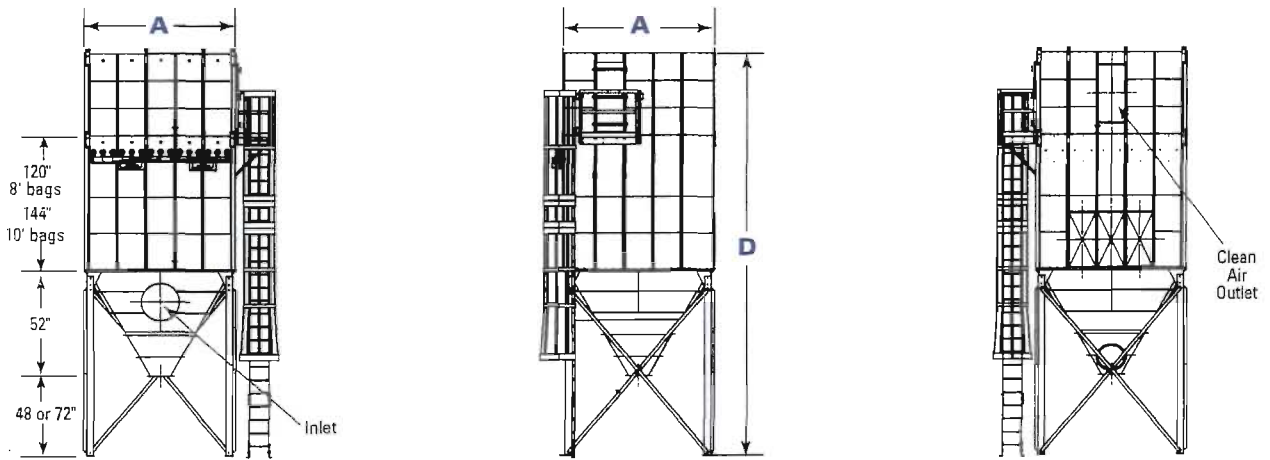
MODEL 162MBTH8 (Modular Baghouse High Inlet) SHOWN



MBTH with Pyramid Hopper

MBTH with Trough Hopper

MODEL 162MBWS8 (Modular Baghouse Square) SHOWN



MBWS with Pyramid Hopper

MBWS with Pyramid Hopper Side View

MBWS with Pyramid Hopper Rear View

DIMENSIONS & SPECIFICATIONS

| Model | Nominal Airflow Range* (cfm) | Cloth Area (ft ²) | No. of Bags | No. of Valves | Shipping Weight | |
|---------------|------------------------------|-------------------------------|-------------|---------------|-----------------|-----------|
| | | | | | MBT (lbs) | MBW (lbs) |
| 36 MBT5 | 1,150 - 2,880 | 288 | 36 | 6 | 2500 | - |
| 36 MBT6 | 1,380 - 3,450 | 345 | 36 | 6 | 2850 | - |
| 36 MBT8 | 1,840 - 4,600 | 460 | 36 | 6 | 3200 | - |
| 54 MBT6 | 2,070 - 5,180 | 518 | 54 | 6 | 3800 | - |
| 54 MBT8 | 2,760 - 6,910 | 691 | 54 | 6 | 4200 | - |
| 54 MBT10 | 3,460 - 8,660 | 866 | 54 | 6 | 5000 | - |
| 54 MBT(W)H8 | 2,760 - 8,290 | 691 | 54 | 6 | 5890 | 6870 |
| 54 MBT(W)H10 | 3,460 - 10,390 | 866 | 54 | 6 | 6565 | 7710 |
| 81 MBT(W)8 | 4,150 - 10,390 | 1039 | 81 | 9 | 3900 | 6100 |
| 81 MBT(W)10 | 5,190 - 12,990 | 1299 | 81 | 9 | 5509 | 7222 |
| 81 MBT(W)H8 | 4,150 - 12,460 | 1039 | 81 | 9 | 7085 | 8145 |
| 81 MBT(W)H10 | 5,190 - 15,580 | 1299 | 81 | 9 | 7690 | 9172 |
| 108 MBT(W)8 | 5,530 - 13,830 | 1383 | 108 | 12 | 6800 | 7800 |
| 108 MBT(W)10 | 6,920 - 17,300 | 1730 | 108 | 12 | 7700 | 9000 |
| 108 MBT(W)H8 | 5,530 - 16,590 | 1383 | 108 | 12 | 8480** | 9555** |
| 108 MBT(W)H10 | 6,920 - 20,760 | 1730 | 108 | 12 | 9320** | 10,580** |
| 144 MBWS8 | 7,380 - 18,450 | 1845 | 144 | 12 | - | 10,088 |
| 144 MBWS10 | 9,220 - 23,070 | 2307 | 144 | 12 | - | 10,559 |
| 162 MBT(W)8 | 8,310 - 20,780 | 2078 | 162 | 18 | 6600 | 9500 |
| 162 MBT(W)10 | 10,390 - 25,980 | 2598 | 162 | 18 | 9131 | 11,087 |
| 162 MBT(W)H8 | 8,310 - 24,930 | 2078 | 162 | 18 | 12,538 | 13,672 |
| 162 MBT(W)H10 | 10,390 - 31,170 | 2598 | 162 | 18 | 13,725 | 15,302 |
| 189 MBT(W)H8 | 9,690 - 29,070 | 2423 | 189 | 21 | 13,532 | 14,565 |
| 189 MBT(W)H10 | 12,110 - 36,340 | 3029 | 189 | 21 | 14,910 | 16,508 |
| → 225 MBWS8 | 11,530 - 28,840 | 2884 | 225 | 15 | - | 14,460 |
| 225 MBWS10 | 14,420 - 36,060 | 3606 | 225 | 15 | - | 15,481 |
| 243 MBT(W)8 | 12,460 - 31,170 | 3117 | 243 | 27 | 8400 | 12,800 |
| 243 MBT(W)10 | 15,580 - 38,970 | 3897 | 243 | 27 | 12,605 | 14,687 |
| 297 MBT(W)H8 | 15,230 - 45,960 | 3808 | 297 | 33 | 20,173 | 21,390 |
| 297 MBT(W)H10 | 19,040 - 57,120 | 4760 | 297 | 33 | 21,924 | 24,172 |
| 324 MBT(W)8 | 16,620 - 41,560 | 4156 | 324 | 36 | 11,600 | 16,800 |
| 324 MBT(W)10 | 20,780 - 51,960 | 5196 | 324 | 36 | 16,034 | 19,467 |
| 324 MBT(W)H8 | 16,620 - 49,870 | 4156 | 324 | 36 | 21,570 | 21,755 |
| 324 MBT(W)H10 | 20,780 - 62,352 | 5196 | 324 | 36 | 23,215 | 25,495 |
| 324 MBWS8 | 16,620 - 41,560 | 4156 | 324 | 36 | - | 20,076 |
| 324 MBWS10 | 20,780 - 51,960 | 5196 | 324 | 36 | - | 20,154 |
| 405 MBT(W)8 | 20,780 - 51,950 | 5195 | 405 | 45 | 14,500 | 20,800 |
| 405 MBT(W)10 | 25,980 - 64,950 | 6495 | 405 | 45 | 19,201 | 23,985 |

* Based on clean filters.

** Two pyramid hoppers. Single outlet hopper also available.

DIMENSIONS & SPECIFICATIONS

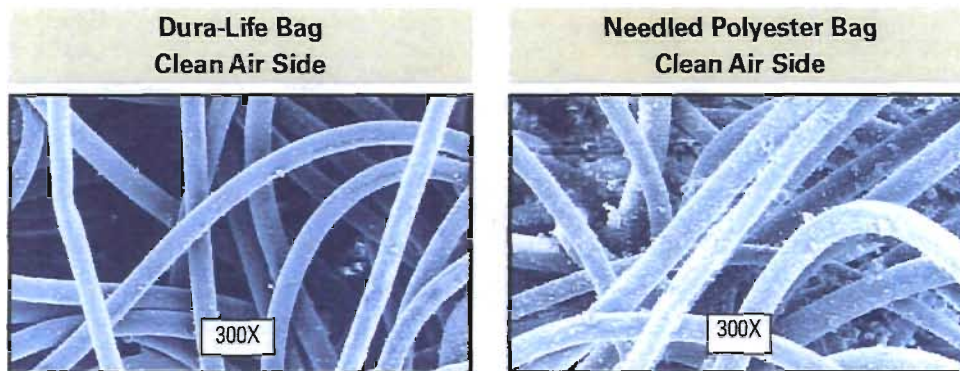
| Model | A | B | | C | D | | E |
|---------------|---------|---------------|---------------|-------|---------------|---------------|-------|
| | MBT/MBW | MBT 48-in. | MBT 72-in. | MBT | MBW 48-in. | MBW 72-in. | MBW |
| 36 MBT5 | 57.5 | 209.7 | - | - | - | - | - |
| 36 MBT6 | 57.5 | 221.7 | - | - | - | - | - |
| 36 MBT8 | 57.5 | 245.7 | - | - | - | - | - |
| 54 MBT6 | 57.5 | 244.2 | - | - | - | - | - |
| 54 MBT8 | 57.5 | 268.2 | - | - | - | - | - |
| 54 MBT10 | 57.5 | 292.2 | - | - | - | - | - |
| 54 MBT(W)H8 | 85.0 | 268.1 | 292.1 | - | 294.1 | 318.1 | - |
| 54 MBT(W)H10 | 85.0 | 292.1 | 316.1 | - | 342.1 | 366.1 | - |
| 81 MBT(W)8 | 85.0 | 268.2 | 292.2 | - | 294.1 | 318.1 | - |
| 81 MBT(W)10 | 85.0 | 292.2 | 316.2 | - | 342.1 | 366.1 | - |
| 81 MBT(W)H8 | 111.0 | 290.8 | 314.8 | - | 316.7 | 340.7 | - |
| 81 MBT(W)H10 | 111.0 | 314.8 | 338.8 | - | 364.7 | 388.7 | - |
| 108 MBT(W)8 | 111.0 | 290.8 | 314.8 | - | 316.7 | 340.7 | - |
| 108 MBT(W)10 | 111.0 | 314.8 | 338.8 | - | 364.7 | 388.7 | - |
| 108 MBT(W)H8 | 137.0 | 268.2* | 292.2* | - | 294.1 | 318.1 | - |
| 108 MBT(W)H10 | 137.0 | 292.2* | 316.2* | - | 342.1 | 366.1 | - |
| 144 MBWS8 | 111.0 | - | - | - | 316.6 | 340.6 | - |
| 144 MBWS10 | 111.0 | - | - | - | 364.6 | 388.6 | - |
| 162 MBT(W)8 | 163.0 | 268.2 | 292.2 | 292.3 | 294.1 | 318.1 | 318.4 |
| 162 MBT(W)10 | 163.0 | 292.2 | 316.2 | 316.2 | 342.1 | 366.1 | 366.1 |
| 162 MBT(W)H8 | 215.0 | 268.3 | 292.3 | 292.3 | 294.1 | 318.1 | 318.1 |
| 162 MBT(W)H10 | 215.0 | 292.3 | 316.3 | 316.3 | 342.1 | 366.1 | 366.1 |
| 189 MBT(W)H8 | 241.0 | 268.2 | 292.2 | 292.3 | 294.1 | 318.1 | 318.1 |
| 189 MBT(W)H10 | 241.0 | 292.2 | 316.2 | 316.2 | 342.1 | 366.1 | 366.1 |
| → 225 MBWS8 | 137.0 | - | - | - | 339.1 | 363.1 | - |
| 225 MBWS10 | 137.0 | - | - | - | 387.1 | 411.1 | - |
| 243 MBT(W)8 | 241.0 | 268.2 | 292.2 | 292.2 | 294.1 | 318.1 | 318.1 |
| 243 MBT(W)10 | 241.0 | 292.2 | 316.2 | 316.2 | 342.1 | 366.1 | 366.1 |
| 297 MBT(W)H8 | 371.0 | 268.3 | 292.3 | 292.3 | 294.1 | 318.1 | 318.1 |
| 297 MBT(W)H10 | 371.0 | 292.3 | 316.3 | 316.3 | 342.1 | 366.1 | 366.1 |
| 324 MBT(W)8 | 319.0 | 268.2 | 292.2 | 292.2 | 294.1 | 318.1 | 318.1 |
| 324 MBT(W)10 | 319.0 | 292.2 | 316.2 | 316.2 | 342.1 | 366.1 | 366.1 |
| 324 MBT(W)H8 | 395.5 | 268.1 | 292.1 | 292.1 | 294.1 | 318.1 | 318.1 |
| 324 MBT(W)H10 | 395.5 | 292.1 | 316.1 | 316.1 | 342.1 | 366.1 | 366.1 |
| 324 MBWS8 | 163.0 | - | - | - | 320.6 | 344.6 | - |
| 324 MBWS10 | 163.0 | - | - | - | 417.3 | 441.3 | - |
| 405 MBT(W)8 | 397.0 | 268.2 | 292.2 | 292.2 | 294.1 | 318.1 | 318.1 |
| 405 MBT(W)10 | 397.0 | 292.2 | 316.2 | 316.2 | 342.1 | 366.1 | 366.1 |

* Two pyramid hoppers. Single outlet hopper also available.

DURA-LIFE™ FILTER BAG BREAKTHROUGH TECHNOLOGY

STANDARD IN ALL DONALDSON TORIT MB BAGHOUSE COLLECTORS

Standard 16 oz. polyester bags are produced with a needling process that creates larger pores where dust can embed into the fabric, inhibiting cleaning and reducing bag life. Dura-Life bags are engineered with a unique hydroentanglement process that uses water to blend the fibers. This process provides a more uniform material with smaller pores, better surface loading, and better cleaning. These advantages provide twice the operating life before bags need to be replaced due to pressure drop. Longer life from Dura-Life bags lowers maintenance and operating costs and raises baghouse dust collection to a whole new level.



These photos were taken with a scanning electron microscope of bag media used in a collector that was filtering fly ash. The bags were removed after 2,700 hours of use. Air-to-media ratio was 4.5 to 1. Pressure drop was 6 in. on polyester bags and 2 in. on Dura-Life.

DURA-LIFE BAGS PROVIDE BIG BENEFITS

Dura-Life technology provides better surface loading and better pulse cleaning, resulting in:

- Two to three times longer bag life
- Energy savings due to lower pressure drop
- Reduced replacement bag costs due to fewer bag changeouts
- Reduced maintenance and operating costs due to fewer bag changeouts
- 30% fewer emissions based on EPA tests



STANDARD FEATURES & AVAILABLE OPTIONS

| Collector Design | Std | Opt | Hopper Design | Std | Opt |
|--|-----|-----|---|-----|-----|
| Clean Air Plenum with Top-Bag Removal | X | | 60° Pyramid Hoppers | X | |
| Heavy-Duty Ribbed Housing Construction | X | | Inlets with Deflector | X | |
| All-Welded, Carbon Steel Design - 12 Gauge Minimum | X | | Trough Hopper with Multiple or Single Inlets | X | |
| Heavy-Duty 10-Gauge Tubesheet | X | | Hopper Access Covers | X | |
| Filter Cleaning System | X | | Inlet Transitions | | X |
| Service Railing with Kickplate per OSHA Specs (MBT) | X | | Pyramid Hopper Cover with Flood Valve | | X |
| Bottom Bag Removal | | X | Hopper Discharge | | |
| High Temperature Construction | | X | Slide Gate Pack | | X |
| Stainless Steel Construction | | X | 55-Gallon Drum Pack | | X |
| Direct Drive Fans | | X | Dumpster Discharge with Dumpster | | X |
| Power Pack Transition for TBI Fans | | X | AN Rotary Valves and Transitions | | X |
| Chamber and Exhaust Silencers | | X | Support Structure | | |
| Damper Pack | | X | 48" Clearance Leg Pack (pyramid hoppers) | X | |
| Service Platform (MBW) | | X | Stub Legs (trough hopper) | X | |
| Bags & Cages | | | 72" Clearance Leg Pack | | X |
| Dura-Life Twice the Life Polyester Felt Snap-In Bags | X | | 48" Clearance Ladder Pack | | X |
| Galvanized Bag Cages | X | | 72" Clearance Ladder Pack (with cages) | | X |
| Variety of Bag Media Options | | X | Electrical Controls, Gauges and Enclosures | | |
| Articulated Cages | | X | Solenoid Valves in NEMA 4 Enclosure | X | |
| Paint System | | | Magnehelic®* Gauge | X | |
| Prime Coated Interior | X | | Control Timer in NEMA 4 Enclosure | X | |
| Blue Exterior Finish Coating Meets 250-Hour Salt Spray Corrosion Protection Test | X | | Solenoid Enclosure in NEMA 7 or 9 | | X |
| Hostile Environment Paint | | X | Photohelic®** Gauge | | X |
| Custom Colors | | X | Delta P Control Panel | | X |
| | | | Safety Features | | |
| | | | Sprinkler Access Ports | X | |
| | | | Sprinkler Pack Assembly (wet or dry) | | X |
| | | | Explosion Vents | | X |
| | | | Warranty | | |
| | | | 10-Year Warranty | | X |

U.S. Patent 7,015,158

* Magnehelic and Photohelic are registered trademarks of Dwyer Instruments, Inc.

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Donaldson
Torit



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- 100's of filter media formulations

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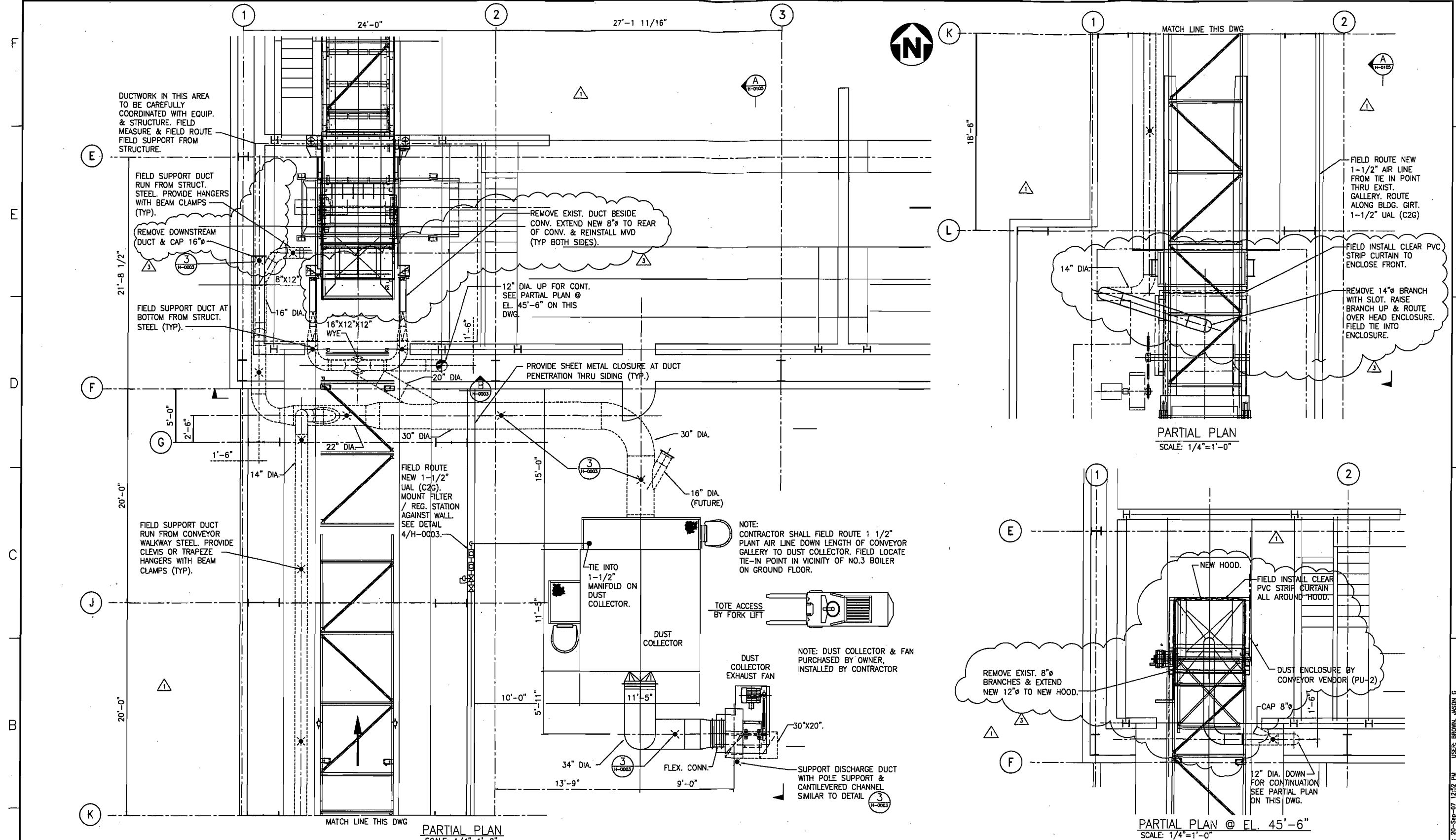
Tel 800-365-1331 (USA)
Tel 800-343-3639 (within Mexico)

donaldsontorit@donaldson.com
donaldsontorit.com

Modular Baghouse (04/10)

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General Arrangement Drawings



PARTIAL PLAN
SCALE: 1/4"=1'-0"

PARTIAL PLAN
SCALE: 1/4"=1'-0"

PARTIAL PLAN @ EL. 45'-6"
SCALE: 1/4"=1'-0"

| REV | DATE | DESCRIPTION | BY | CHK | APP | APP | APP | APP | APP | REV | DESCRIPTION | DRN | CHK | APP | APP | APP | APP | APP | APP | REF | NUMBER | TITLE | REFERENCES |
|-----|---------|--------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|--------|-------|------------|
| 3 | 24FEB02 | DUCTWORK MODIFICATIONS | WED | SWM | TSH | | | | | | | | | | | | | | | | | | |
| 2 | 18NOV02 | CONSTRUCTION RECORD | WED | SWM | TSH | | | | | | | | | | | | | | | | | | |
| 1 | 18NOV02 | ISSUED FOR CONSTRUCTION | WED | SWM | WED | TSH | | | | | | | | | | | | | | | | | |
| 0 | 25APR02 | ISSUED FOR CONSTRUCTION | DBB | SWM | WED | TSH | | | | | | | | | | | | | | | | | |
| A | 04APR02 | ISSUED FOR CLIENT REVIEW | DBB | | | | | | | | | | | | | | | | | | | | |

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STAMP/SEAL

amec

1979 LAKESIDE PARKWAY
SUITE 500
TUCKER, GEORGIA 30084

FLORIDA COA NO.: 8379

WILLIAM E. DUNN
No. 64157
LICENSEE
STATE OF FLORIDA
PROFESSIONAL ENGINEER

| | | | |
|--------------|--------------|--|-------------|
| APPROVED FOR | | CLIENT PROJECT MGR. DEPARTMENT MGR. PROJECT MGR. | |
| PROJECT NO. | ACTIVITY NO. | BY | DATE |
| 155730 | | DSN | DBB 02APR02 |
| SCALE | PACKAGE CODE | DRN | DBB 02APR02 |
| AS NOTED | | CHK | WED 26APR02 |

VEOLIA ENVIRONMENTAL SERVICES

PINELLAS COUNTY WTE FACILITY
PINELLAS COUNTY, FLORIDA

amec

MECHANICAL
HVAC PLAN
RSP BUILDING
DUST COLLECTION

| | |
|-----------------|------|
| CLIENT DWG. NO. | REV. |
| D-00-H-0104 | 3 |

PLOTTER: 10-Sep-07 12:52 PM USER: BROWN, JASON G

MECHANICAL/PLUMBING SPECIFICATIONS

GENERAL

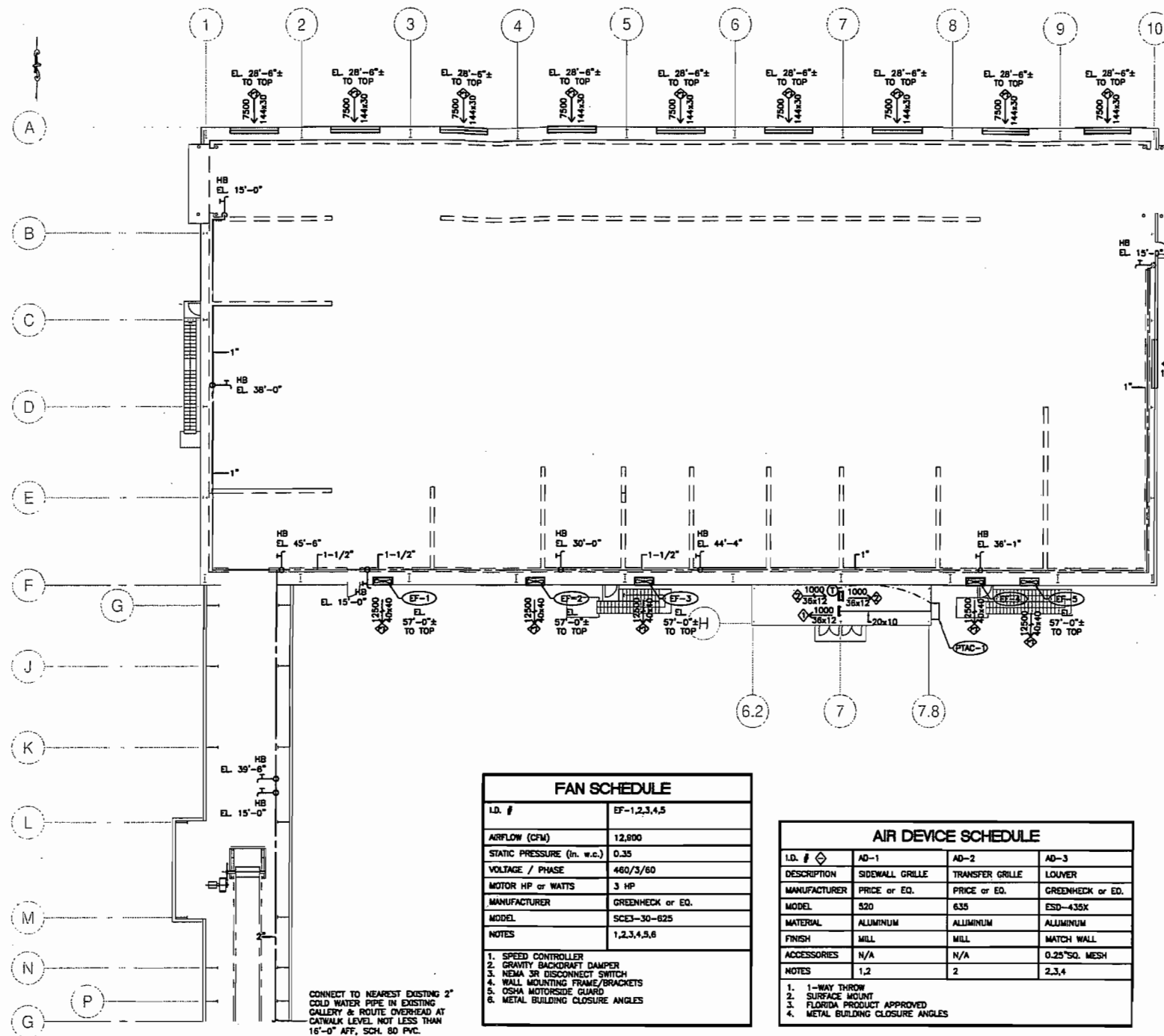
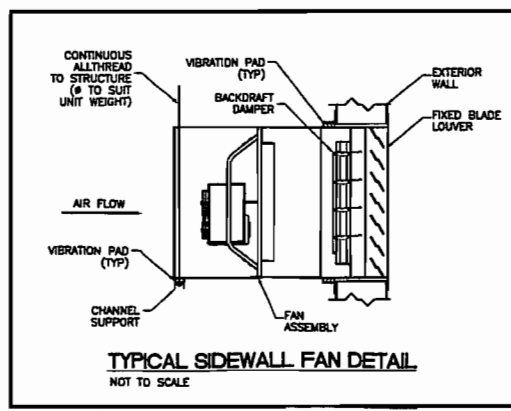
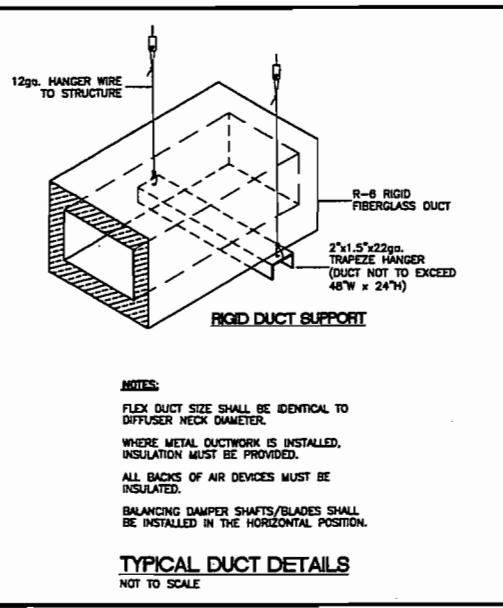
1. THE CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, EQUIPMENT, TOOLS, ETC. TO INSTALL A FULLY OPERATIONAL HVAC SYSTEM AS SHOWN ON THE DRAWINGS. THE CONTRACTOR SHALL BECOME FAMILIAR WITH THE SITE PRIOR TO SUBMITTING BIDS AND/OR BEGINNING CONSTRUCTION TO EVALUATE ANY SPECIAL REQUIREMENTS. NO EXTRAS WILL BE ALLOWED FOR FAILURE TO PROPERLY IDENTIFY ANY SITE OR BUILDING SPECIFIC CONFLICTS.
2. THE FOLLOWING IS A NAME TYPE SPECIFICATION AND ALL MATERIALS & EQUIPMENT NAMED AND/OR SPECIFIED ARE INTENDED TO ESTABLISH A STANDARD OF MATERIALS, QUALITY OF WORK AND REQUIREMENTS TO WHICH THE CONTRACTOR SHALL ADHERE AND IS NOT INTENDED TO LIMIT COMPETITION. ALTERNATES SHALL BE SUBMITTED TO THE ARCHITECT/ENGINEER FOR APPROVAL PRIOR TO SUBMITTING BIDS.
3. PROVIDE SUBMITTALS FOR EQUIPMENT, AIR DEVICES, INSULATION, DUCT ACCESSORIES, DUCT SPECIALTIES, PIPING, FIXTURES, AND SCHEDULED ACCESSORIES AS LISTED PRIOR TO PURCHASING MATERIALS.
4. PROVIDE A WRITTEN GUARANTEE WHICH COVERS ALL MATERIALS AND INSTALLATIONS OF THIS PROJECT. THE GUARANTEE SHALL EXTEND FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE OF THE WORK.

AIR DISTRIBUTION/INSULATION

1. CONTRACTOR SHALL PROVIDE FIBROUS DUCT BOARD IN STRICT COMPLIANCE WITH SMACNA FIBROUS DUCT CONSTRUCTION STANDARDS AND MANUFACTURER'S RECOMMENDATIONS. DUCT BOARD TO BE EQUAL TO JOHNS MANVILLE WITH R-VALUE OF 6.5 AT 75 DEG. F AND NRC OF 0.85. ALL DUCTS SHALL BE LOCATED IN COOPERATION WITH THE OTHER TRADES TO CLEAR LIGHTS, PIPES, PLUMBING, ETC. CONTRACTOR SHALL NOTIFY THE CONSULTANT OF ANY CONFLICTS THAT REQUIRE DESIGN CHANGES PRIOR TO BEGINNING WORK.
2. IN GENERAL, DUCT SIZES SHOWN ARE CLEAR INSIDE DIMENSIONS AND CHANGES IN DIRECTION AND SHAPE SHALL BE KEPT TO THE MINIMUM. TURNS SHALL BE MADE WITH SQUARE ELBOWS WITH JOHNS MANVILLE SUPERFRAME TURNING VANES.
3. SEALANTS USED ON DUCT SYSTEMS SHALL HAVE A FLAME SPREAD RATING OF NOT MORE THAN 25 AND A SMOKE DEVELOPMENT CLASSIFICATION OF NOT MORE THAN 50 OR AS PER LATEST BUILDING CODE REQUIREMENTS. ALL SEAMS, JOINTS, CORNERS, ETC. ARE TO BE SEALED TO MAKE DUCT COMPLETELY AIR TIGHT.
4. ALL SEAMS, JOINTS, CORNERS, ETC. SHALL BE SEALED WITH FASSON UL181A-P/181B-FX. ANY INTERIOR GLASS TEARS ARE TO BE REPAIRED WITH SUPERSEAL EDGE TREATMENT, SUPERSEAL DUCT BUTTER, OR SUPERSEAL HV.
5. ANY FACING TEARS ARE TO BE SEALED WITH AN APPROVED UL 181A CLOSURE.
6. IN GENERAL, DUCT SIZES SHOWN ARE CLEAR INSIDE DIMENSIONS AND CHANGES IN DIRECTION AND SHAPE SHALL BE KEPT TO THE MINIMUM. TURNS SHALL BE MADE WITH SMOOTH RADIUS ELLS OR SQUARE ELBOWS WITH TURNING VANES.
7. DURING INSTALLATION, THE OPEN ENDS OF DUCTS SHALL BE PROTECTED TO PREVENT DEBRIS AND DIRT FROM ENTERING.
8. THE POSITION OF ALL OUTLETS SHOWN ON THE DRAWINGS ARE APPROXIMATE AND THIS TRADE SHALL CHECK THE LOCATION OF ALL AIR DEVICES WITH THE ARCHITECT AND MAKE SUCH ADJUSTMENTS IN POSITION AS ARE NECESSARY TO CONFORM WITH ARCHITECTURAL FEATURES, OUTLETS, FIXTURES, ETC. REQUIRED BY OTHER TRADES WITHOUT EXTRA CHARGE.
9. INSTALL ALL DIFFUSERS, GRILLES AND REGISTERS COMPLETE WITH ACCESSORIES AS DETAILED ON THE DRAWINGS AND IN STRICT COMPLIANCE WITH MANUFACTURER'S RECOMMENDATIONS. AIR DEVICE BORDERS, FRAMES, ETC. TO MATCH TYPE OF CEILING INSTALLED.
10. INSTALL DURO DYNE GRIP-LOCK DURELON DUCT CONNECTORS TO SUIT SYSTEM PRESSURE BETWEEN DUCTWORK AND ALL FAN EQUIPMENT ON BOTH SIDES TO ISOLATE ALL FAN EQUIPMENT.
11. AIR FILTERS SHALL BE STANDARD SIZE AND NOT LESS THAN 1" THICK (30% EFFICIENT) INSTALLED IN A FILTER RACK.
12. PROVIDE CONDENSATE DRAINS FROM ALL AIR HANDLING DRAIN PANS SIZED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. DRAIN SHALL TERMINATE AT APPROVED LOCATION. DRAIN SHALL BE INSULATED WITH 1" INSULATION FOR THE ENTIRE LENGTH OF INTERIOR DRAIN PIPE.

TESTING & BALANCING

1. PROVIDE COMFORT TESTING ADJUSTING & BALANCING (TAB) OF ALL SUPPLY AND RETURN AIR SYSTEMS.
2. THE TAB SHALL COMPLETELY TEST, MEASURE AND ADJUST THE AIR SYSTEMS TO DELIVER THE STATED AIR QUANTITIES SHOWN ON THE DRAWINGS.



CONNECT TO NEAREST EXISTING 2" COLD WATER PIPE IN EXISTING GALLERY & ROUTE OVERHEAD AT CATWALK LEVEL. NOT LESS THAN 15'-0" AFF. SCH. 80 PVC.

FAN SCHEDULE

| I.D. # | EF-1,2,3,4,5 |
|----------------------------|------------------|
| AIRFLOW (CFM) | 12,000 |
| STATIC PRESSURE (in. w.c.) | 0.35 |
| VOLTAGE / PHASE | 460/3/60 |
| MOTOR HP or WATTS | 3 HP |
| MANUFACTURER | GREENHECK or EQ. |
| MODEL | SC23-30-825 |
| NOTES | 1,2,3,4,5,6 |

1. SPEED CONTROLLER
2. GRAVITY BACKDRAFT DAMPER
3. NEMA 3R DISCONNECT SWITCH
4. WALL MOUNTING FRAME/BRACKETS
5. OSHA MOTORSIDE GUARD
6. METAL BUILDING CLOSURE ANGLES

AIR DEVICE SCHEDULE

| I.D. # | AD-1 | AD-2 | AD-3 |
|--------------|-----------------|-----------------|------------------|
| DESCRIPTION | SIDEWALL GRILLE | TRANSFER GRILLE | LOUVER |
| MANUFACTURER | PRICE or EQ. | PRICE or EQ. | GREENHECK or EQ. |
| MODEL | 520 | 635 | ESD-435X |
| MATERIAL | ALUMINUM | ALUMINUM | ALUMINUM |
| FINISH | MILL | MILL | MATCH WALL |
| ACCESSORIES | N/A | N/A | 0.25" SQ. MESH |
| NOTES | 1,2 | 2 | 2,3,4 |

1. 1-WAY THROW
2. SURFACE MOUNT
3. FLORIDA PRODUCT APPROVED
4. METAL BUILDING CLOSURE ANGLES

LEGEND

| | |
|-------|---|
| PTAC | PACKAGED TERMINAL AIR CONDITIONING UNIT |
| HB | HOSE BIBB |
| EF | EXHAUST FAN |
| — | COLD WATER PIPE |
| ⊕ | THERMOSTAT |
| ⊕ | AIR DEVICE I.D. |
| 250 | CUBIC FEET PER MINUTE |
| 20x12 | DIFFUSER/GRILLE NECK SIZE |
| ⊕ | RETURN AIR OR EXHAUST AIR DEVICE |
| ⊕ | SUPPLY AIR DEVICE |

GENERAL NOTES

1. THIS DESIGN MEETS OR EXCEEDS THE REQUIREMENTS OF THE 2004 FLORIDA BUILDING CODE w/2006 SUPPLEMENTS AND ALL WORK SHALL CONFORM TO SAME.
2. THIS DRAWING IS GENERALLY DIAGNOSTIC AND IS NOT TO BE SCALED. EACH TRADE MUST COORDINATE WORK WITH MECHANICAL, PLUMBING, ELECTRICAL, FIRE PROTECTION AND ARCHITECTURAL SYSTEMS TO AVOID CONFLICT AND DELAYS.
3. THE BUILDING SECTION(S) SHOWN ARE FOR GUIDANCE ONLY AND MAY NOT ACCURATELY DEPICT LOCATIONS OF ALL WALLS, DOORS, BEAMS, TRUSSES, ETC. THIS TRADE SHALL VERIFY ACTUAL CONSTRUCTION FEATURES PRIOR TO BEGINNING WORK.

PTAC UNIT SCHEDULE

| I.D. # | PTAC-1 |
|----------------------------|-----------------|
| LOCATION | ELEC. RM. |
| NOMINAL TONNAGE | 2.5 |
| TOT. COOLING CAP. (MBH) | 33.6 |
| SENS. COOLING CAP. (MBH) | 22.6 |
| TOT. HEATING CAP. (MBH) | N/A |
| SUPPLY AIR (CFM) | 1000 |
| OUTSIDE AIR (CFM) | 0 |
| EXTERNAL STATIC (in. w.c.) | 0.25 |
| OUTSIDE AMBIENT (deg. F) | 95 |
| EXT. AIR TEMP. (deg. F) | 80db/67wb |
| SEER | 13.00 |
| ELECTRIC HEAT (kW/STAGES) | N/A |
| VOLTAGE | SEE ELEC. DWGS. |
| MIN. CIRCUIT AMPS | 7.5 |
| MAX. FUSE SIZE AMPS | 15 |
| MANUFACTURER | MARVAR or EQ. |
| MODEL | AVP-30AC-000 |
| NOTES | 1,2,3,4,5,6 |

1. WALL SLEEVE & EXTERIOR GRILLE
2. FACTORY INSTALLED DISCONNECTS
3. RETURN GRILLE
4. 1" x 30% FILTERS
5. DOUBLE WALL INSULATED CONSTRUCTION
6. HERESITE COOL COATINGS (EVP. & COND.)
7. STAINLESS STEEL COIL CASINGS

PLUMBING FIXTURE SCHEDULE

| I.D. # | NAME | DESCRIPTION |
|--------|-----------|--|
| HB | HOSE BIBB | WOODFORD MODEL #24P OR EQUAL, BRONZE INTERIOR PARTS, 3/4" CONNECTION, VACUUM BREAKER, REMOVABLE KEY HANDLE |

NOTE: INSTALL FIXTURES IN ACCORDANCE W/ MANUFACTURER'S RECOMMENDATIONS

The Walter Fedy Group, Inc.
ENGINEERS AND PROJECT MANAGERS
101 N. MAIN ST., STE. 221 - LAKELAND, FL 33805
PHONE (882) 882-9488 FAX (882) 882-5422
CERTIFICATE OF AUTHORIZATION #79002
ROBERT C. COPE, P.E. FL #20002

RRT DESIGN & CONSTRUCTION
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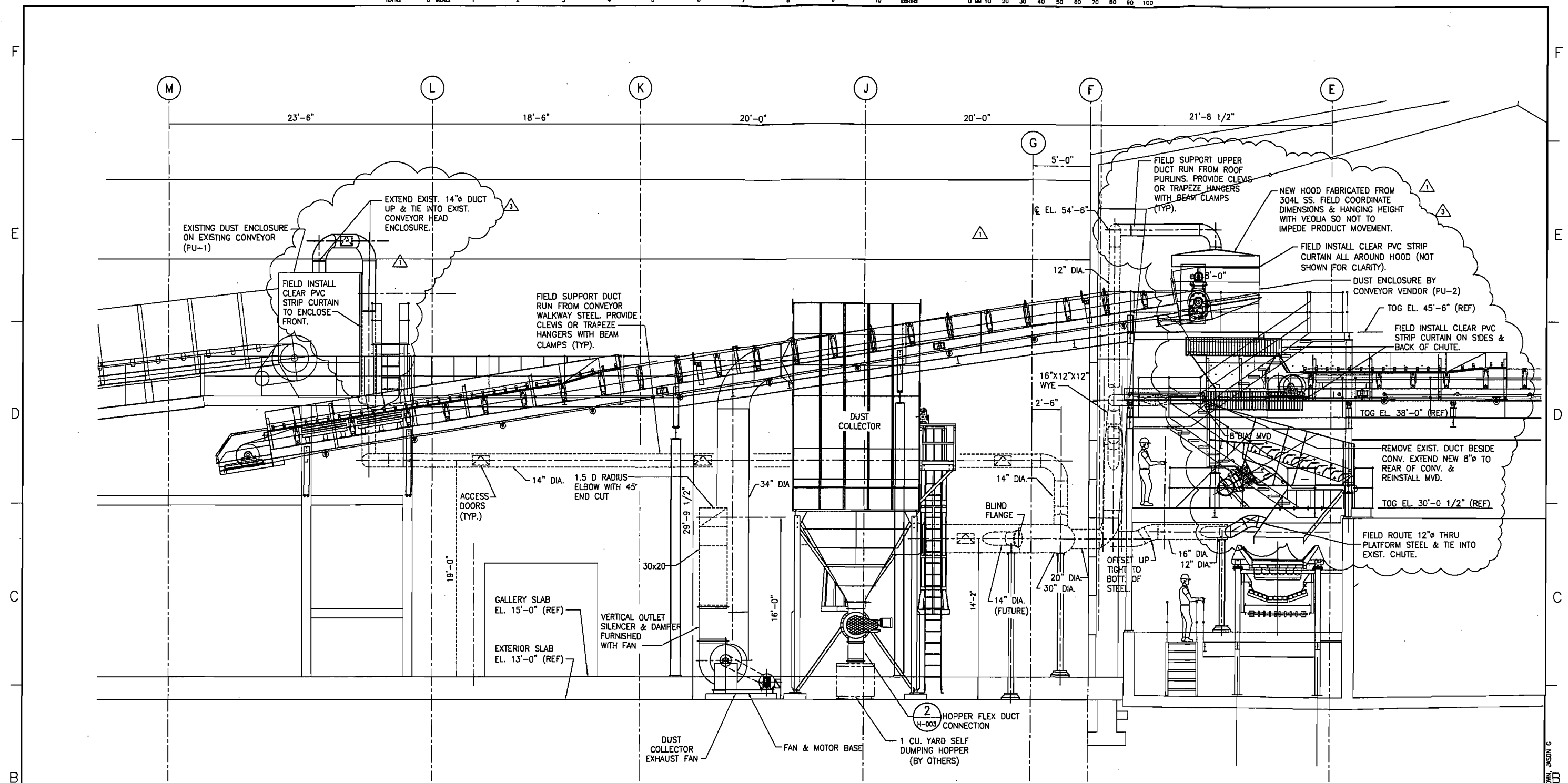
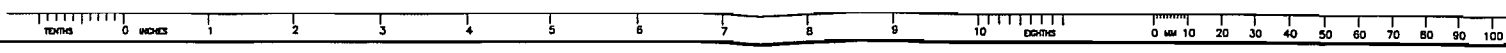
PINELLAS COUNTY RRF
FLORIDA
VEOLIA ES WASTE-TO-ENERGY, INC.

HVAC & PLUMBING LAYOUTS

| REV | DESCRIPTION | DATE BY: DSK | BY | DATE | PROJ. No: 595-002 | SCALE: 1/16"=1'-0" |
|-----|-------------|--------------|----------|----------|---------------------|--------------------|
| | | | CC | 11-27-07 | | |
| | | | CHECKED | | DWG. NO. MP-1 | |
| | | | DESIGNED | | CAD FILE: | |
| | | | APPROVED | | SHEET SIZE: D-24x36 | REV |

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ENGINEERING • ARCHITECTURE • CONSTRUCTION
123 4th St. #400
New York, NY 10017



SECTION A
1/4"=1'-0"

| REV | DATE | DESCRIPTION | DRN | CHK | APP | APP | APP | APP | APP | REV | DATE | DESCRIPTION | DRN | CHK | APP | APP | APP | APP | APP |
|-----|---------|--------------------------|-----|-----|-----|-----|-----|-----|-----|-----|------|-------------|-----|-----|-----|-----|-----|-----|-----|
| 3 | 24FEB09 | DUCTWORK MODIFICATIONS | WED | SWM | TSH | | | | | | | | | | | | | | |
| 2 | 07JAN08 | CONSTRUCTION RECORD | WED | SWM | TSH | | | | | | | | | | | | | | |
| 1 | 15MAY08 | ISSUED FOR CONSTRUCTION | WED | SWM | WED | TSH | | | | | | | | | | | | | |
| 0 | 28APR08 | ISSUED FOR CONSTRUCTION | DBB | SWM | WED | TSH | | | | | | | | | | | | | |
| A | 04APR08 | ISSUED FOR CLIENT REVIEW | DBB | | | | | | | | | | | | | | | | |

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SUITE 500
TUCKER, GEORGIA 30084
FLORIDA CDA NO.: 8379

WILLIAM E. DUNK
LICENSED PROFESSIONAL ENGINEER
STATE OF FLORIDA
NO. 94187

| | | | |
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| APPROVED FOR | CLIENT PROJECT MGR. | DEPARTMENT MGR. | PROJECT MGR. |
| PROJECT NO. | ACTIVITY NO. | BY | DATE |
| 155730 | | DBB | 02APR08 |
| SCALE | PACKAGE CODE | DRN | DBB |
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VEOLIA ENVIRONMENTAL SERVICES
PINELLAS COUNTY WTE FACILITY
PINELLAS COUNTY, FLORIDA

amec

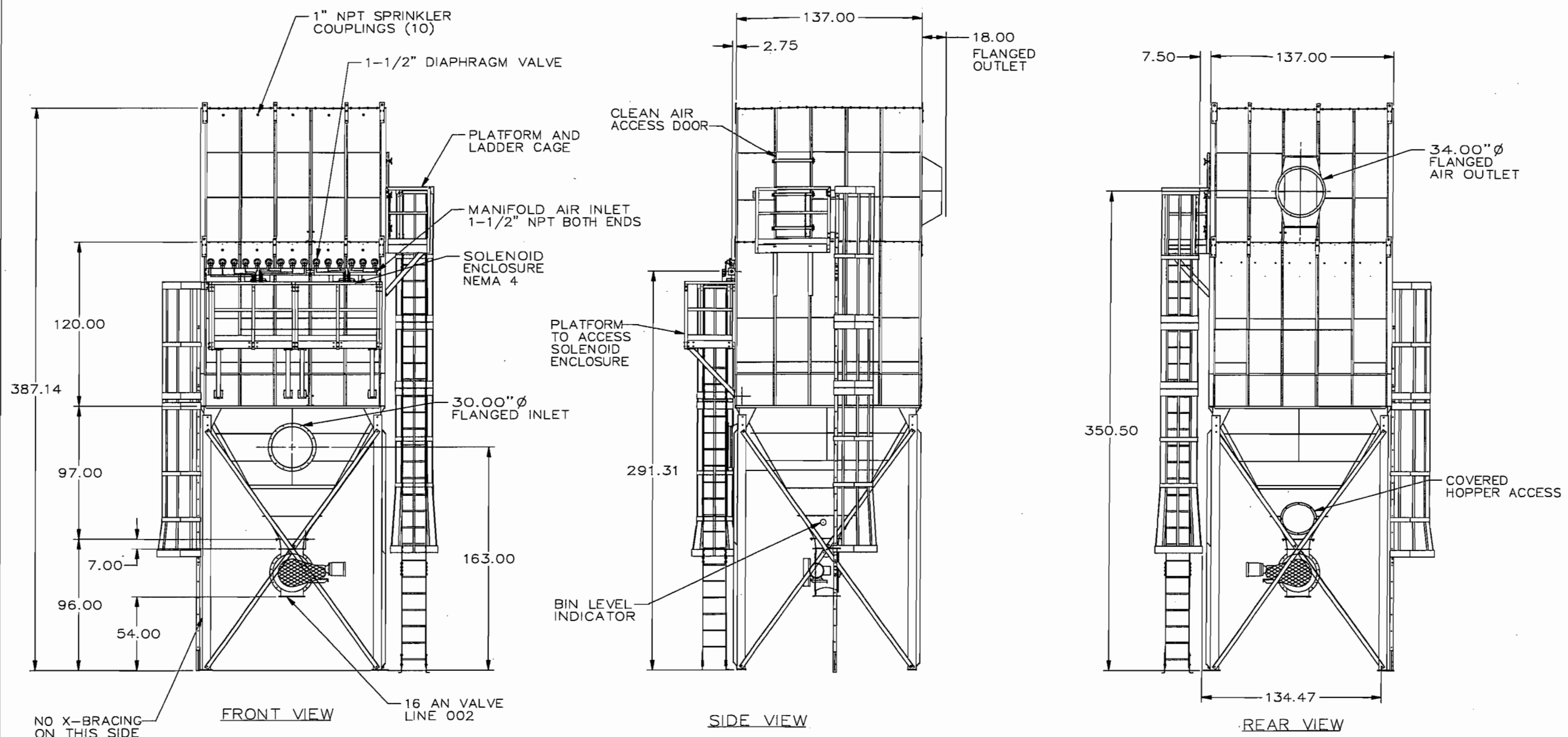
MECHANICAL
HVAC SECTION
RSP BUILDING
DUST COLLECTION

| | |
|-----------------|------|
| CLIENT DWG. NO. | REV. |
| D-00-H-0105 | 3 |

PLOTTER: 20-Sep-07 12:52 PM USER: BROWN, JASON G

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| | | | |
|---------|------|-----------------------|----------------------|
| DWG NO. | 1 | | |
| REV | ZONE | REVISION DESCRIPTION | APPROVAL/DATE |
| 1 | | RELEASE TO PRODUCTION | G.C. APR 15, 2008 |



SPECIFICATIONS FOR 225MBWS8

NO. OF FILTER BAGS: 225
 FILTER BAG DIM'S: 6.125 DIA X 96" LG
 ACTUAL FILTER AREA: 2884 SQ FT
 FILTER MEDIA: DURA-LIFE
 NO. OF VALVES: 15
 WIND LOAD RATING: 130 MPH, EXPOSURE C PER IBC 2003
 SEISMIC RATING: SPECTRAL ACCEL., S=1.5 & S₁=0.6, SITE CLASS D PER IBC 2003
 HOUSING RATING: ±20" H₂O
 P RED: 0.34 BAR
 COMPRESSED AIR REQUIRED: 90-100 PSI
 AIR CONSUMPTION: 1.77 SCF @ 90 PSI/PULSE
 REMOTE MOUNTED TIMER: 120 VAC 50-60 HZ NEMA 4
 CONSTRUCTION: 12 GA MILD STEEL
 FINISH: INTERIOR AND EXTERIOR SURFACE TO BE, MACROPOXY 646
 OPERATING TEMPERATURE: 150 F MAX
 APPROXIMATE WEIGHT: 17000 LBS

NOTES:

1. USE SPREADER BARS TO LIFT COLLECTOR HOUSING OR ASSEMBLED COLLECTOR. CLEVIS CONNECTORS NOT HOOKS, MUST BE USED ON LIFTING SLINGS. ALL COLLECTOR LIFT EYES MUST BE USED WHEN LIFTING THE COLLECTOR OR ASSEMBLED COLLECTOR.
2. SEE SHEET 2 FOR HOPPER FLANGE/ANCHOR BOLT PLAN AND OUTLET DETAILS.
3. CONTROL BOX ON LINE 003 TO SHIP LOOSE.
4. 316L STAINLESS STEEL NAMEPLATE SHIPS LOOSE.

VEOLIA E S PINELLA

| | | | |
|------------------------|----------------------------|---|--------------------------------|
| MATERIAL | RELEASE NO. | TITLE | 225MBWS8 DUST COLLECTOR SQUARE |
| REFERENCE | DATE | NUMBER | IG2624200A |
| PREVIOUS DRAWING NO. | DATE | SCALE | NONE |
| DO NOT SCALE | UNLESS OTHERWISE SPECIFIED | 2 PL ± | 3 PL ± |
| APVD | DATE | SECTIONAL SIZE | OUTLINE SIZE |
| DATE | DATE | DESIGN CONTROL | 62 |
| THIRD ANGLE PROJECTION | DATE | DWG LOCATION | 51 |
| | | REVISION | 1 |
| | | VERSION | 7 |
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O & M Manual

Donaldson
Torit[®]

**Installation,
Operation, and
Service Information**



Throughout this manual statements indicating precautions necessary to avoid equipment failure are referenced in a **Note**. Statements indicating potential hazards that could result in *personal injury or property damage* are referenced in a **Caution!** box.

Installation and Operation Manual

Walk-In Access Modular Baghouse

Hopper Inlet Models:

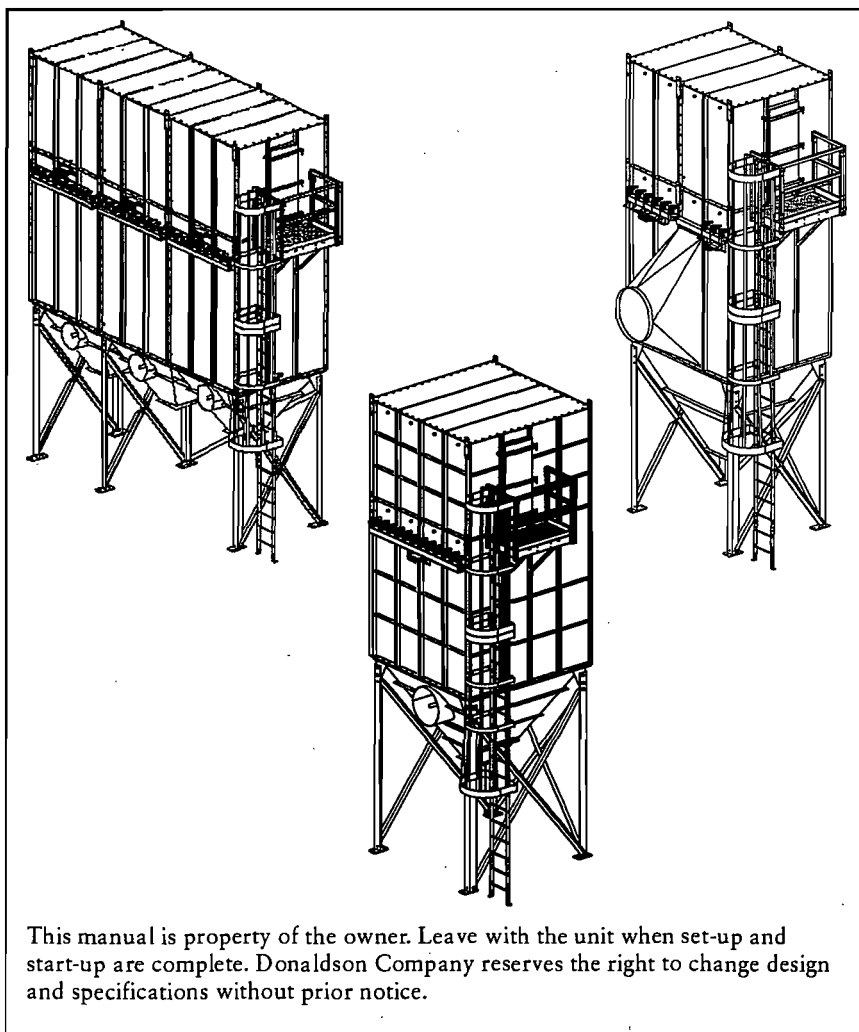
81MBW8, 108MBW8, 162MBW8, 243MBW8, 324MBW8, 405MBW8,
81MBW10, 108MBW10, 162MBW10, 243MBW10, 324MBW10, and
405MBW10

High Inlet Models:

54MBWH8, 54MBWH10, 81MBWH8, 81MBWH10, 108MBWH8,
108MBWH10, 162MBWH8, 162MBWH10, 189MBWH8, 189MBWH10,
297MBWH8, 297MBWH10, 324MBWH8, and 324MBWH10

Square Models:

144MBWS8, 144MBWS10, 225MBWS8, 225MBWS10, 324MBWS8, and
324MBWS10



This manual is property of the owner. Leave with the unit when set-up and start-up are complete. Donaldson Company reserves the right to change design and specifications without prior notice.

IOM 7547801
Revision 6



Caution!

Application of Dust Control Equipment

- **WARNING** – Improper operation of a dust control system may contribute to conditions in the work area or facility that could result in severe personal injury and product or property damage. Check that all collection equipment is properly selected and sized for the intended use.
- Combustible materials such as buffing lint, paper, wood, aluminum or steel dust, weld fume, or flammable solvents represent fire or explosion hazards. Use special care when selecting and operating all dust or fume collection equipment when combustible materials are present to protect workers and property from damage due to fire and/or explosion. Consult and comply with National and Local Codes relating to fire or explosion and all other appropriate codes when determining the location and operation of dust or fume collection equipment.
- When combustible materials are present, consult with an installer of fire extinguishing systems familiar with these types of fire hazards and local fire codes for recommendations and installation of fire extinguishing and explosion protection systems. Donaldson dust collection equipment is not equipped with fire extinguishing or explosion protection systems unless specifically ordered.
- **DO NOT** allow sparks, cigarettes or other burning objects to enter the hood or duct of any dust or fume control equipment as these may initiate a fire or explosion.
- For optimum collector performance, use only Donaldson replacement parts.
- Donaldson equipment is not designed to support auxiliary equipment. This includes, but is not limited to, rotary air locks, fans, screw conveyors, etc. All auxiliary equipment must be adequately supported to prevent severe personal injury and/or property damage.
- Make certain all dust collection equipment is installed properly and maintained in proper operating condition. Do not cover and/or paint over labels.

ATTENTION!

Follow safe work practices during installation and use of all dust, fume and mist collection equipment.

Portions of dust, fume and mist collection equipment, including the clean- and dirty-air plenums may be considered “OSHA Permit Required, Confined Spaces.”

The code of Federal Regulations 29 CFR Section 1910.146 OSHA Regulations, controls the entry of confined spaces. Methods of determining acceptable entry conditions vary depending on the application and type of material collected. In some cases, a visual inspection of airborne material in the collector may be sufficient. In other cases, chemical tests may be necessary to ensure safe entry and occupancy. Refer to this regulation to determine if the application requires a permit program. A copy of OSHA Regulations can be obtained from a local OSHA office or by writing the Superintendent of Documents, US Government Printing Office, Washington, DC 20402, or by phone at 202-783-3238.

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This manual contains specific precautionary statements relative to worker safety. Read thoroughly and comply as directed. Discuss the use and application of this equipment with a Donaldson representative. Instruct all personnel on safe use and maintenance procedures.

Data Sheet

Model Number _____ Serial Number _____

Ship Date _____ Installation Date _____

Customer Name _____

 Address _____

 Filter Type _____

 Accessories _____

 Other _____

Description

The Modular Baghouse, Model MBW, is a continuous-duty, modular collector with bag-style filters. Used to collect airborne dust and particulate, the simple, reliable design efficiently handles low and high volumes of dust. Continuous-duty means the filters are pulse-cleaned in sequence, one set at a time without turning the unit off. Standard MBW sizes range from 54 to 405 filter bags, 8 or 10 feet in length. Units feature quick-disconnect blowpipes, round snap-in filter bags, and quick release cages with polyethylene venturis.

The Modular Baghouse is available in two styles — MBT and MBW, except for the 36 model, which is available as an MBT style only. Model MBT allows walk-on, top-access filter bag removal, and Model MBW features a walk-in clean-air plenum. Hopper inlets are standard, except on the high inlet models, in which the inlet section(s) is positioned adjacent to the filters. All models allow filter bag service from the clean-air side of the unit.

Purpose and Intended Use

The Modular Baghouse is widely used in material conveying, weigh stations, mixing tanks, bin vents, material grinding, and packaging operations. The MB is commonly used in the chemical, foundry, mineral, food, wood, agriculture, industrial, and pharmaceutical industries and with custom modifications, it is suitable for high-temperature applications.

- The MB is sized for applications between 1,152 and 62,500 cfm.
- Standard filter-bags are 10.5-oz Dura-Life™ felt or optional medias are available.
- Operations involving high temperature, high humidity, or chemicals may require special attention and possible custom collector modifications.



CAUTION!

- Misuse or modification of this equipment may result in personal injury.
- Do not misuse or modify.



WARNING!

- Combustible materials such as buffing lint, paper, wood, aluminum or steel dust, weld fume, and flammable solvents represent fire or explosion hazards.
- Use special care when selecting and operating all collection equipment when combustible materials are present to protect workers and property from damage due to fire and/or explosion.
- Consult and comply with all National and Local Codes relating to fire or explosion, and all other appropriate codes when determining the location and operation of dust collection equipment.
- Donaldson equipment is *not* equipped with fire extinguishing or explosion protection systems unless specifically ordered.

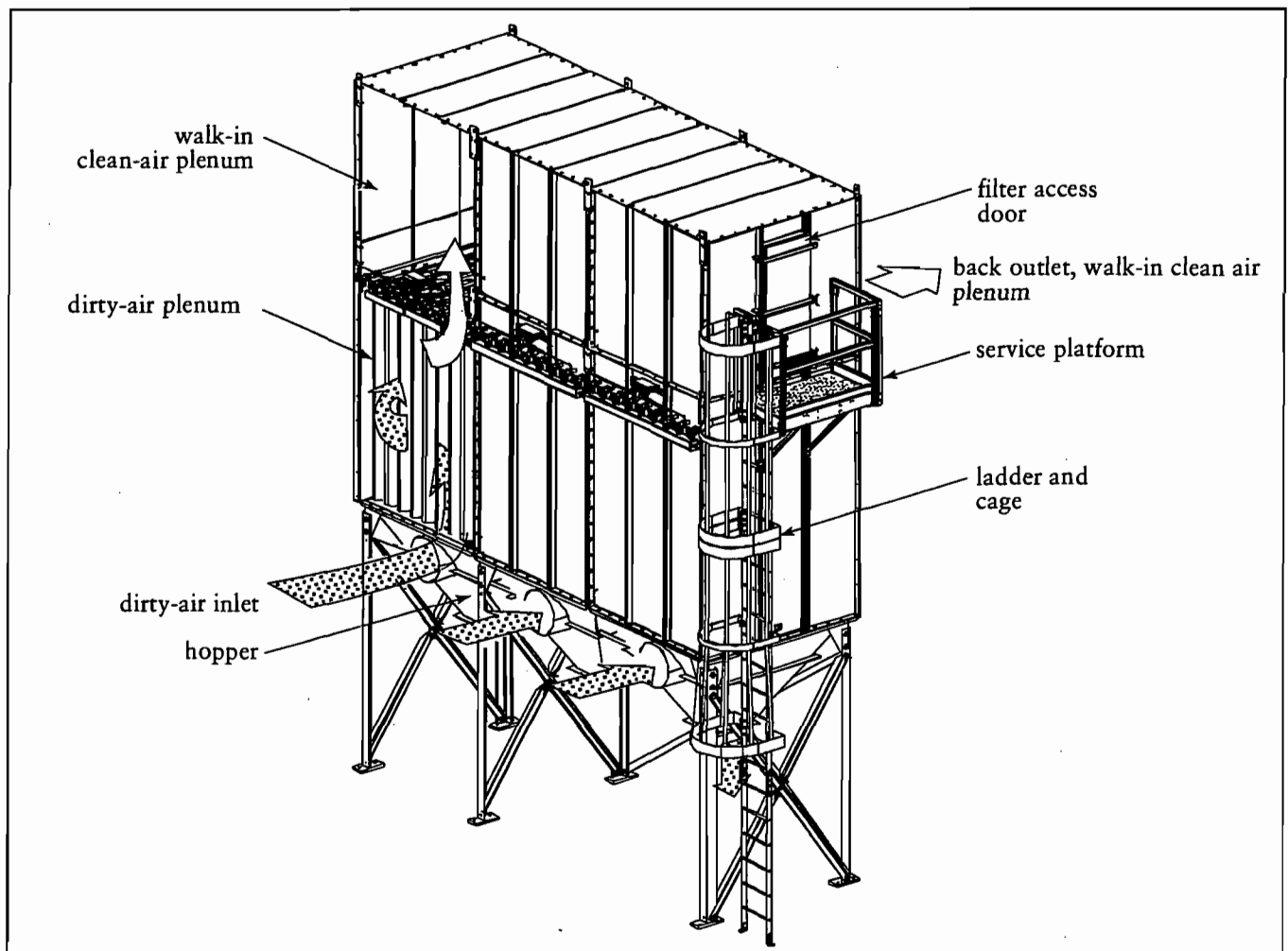
Operation

During normal operation, for a unit with hopper inlet(s), dust-laden air enters the unit through the hopper inlet located under the filter bags. Airflow is directed 90° upward to the dirty-air plenum. The energy loss from the 90° turn and reduced velocity in the hopper causes heavier particulate to fall directly into the hopper. An inlet baffle evenly distributes the dust-laden air around the filter bags.

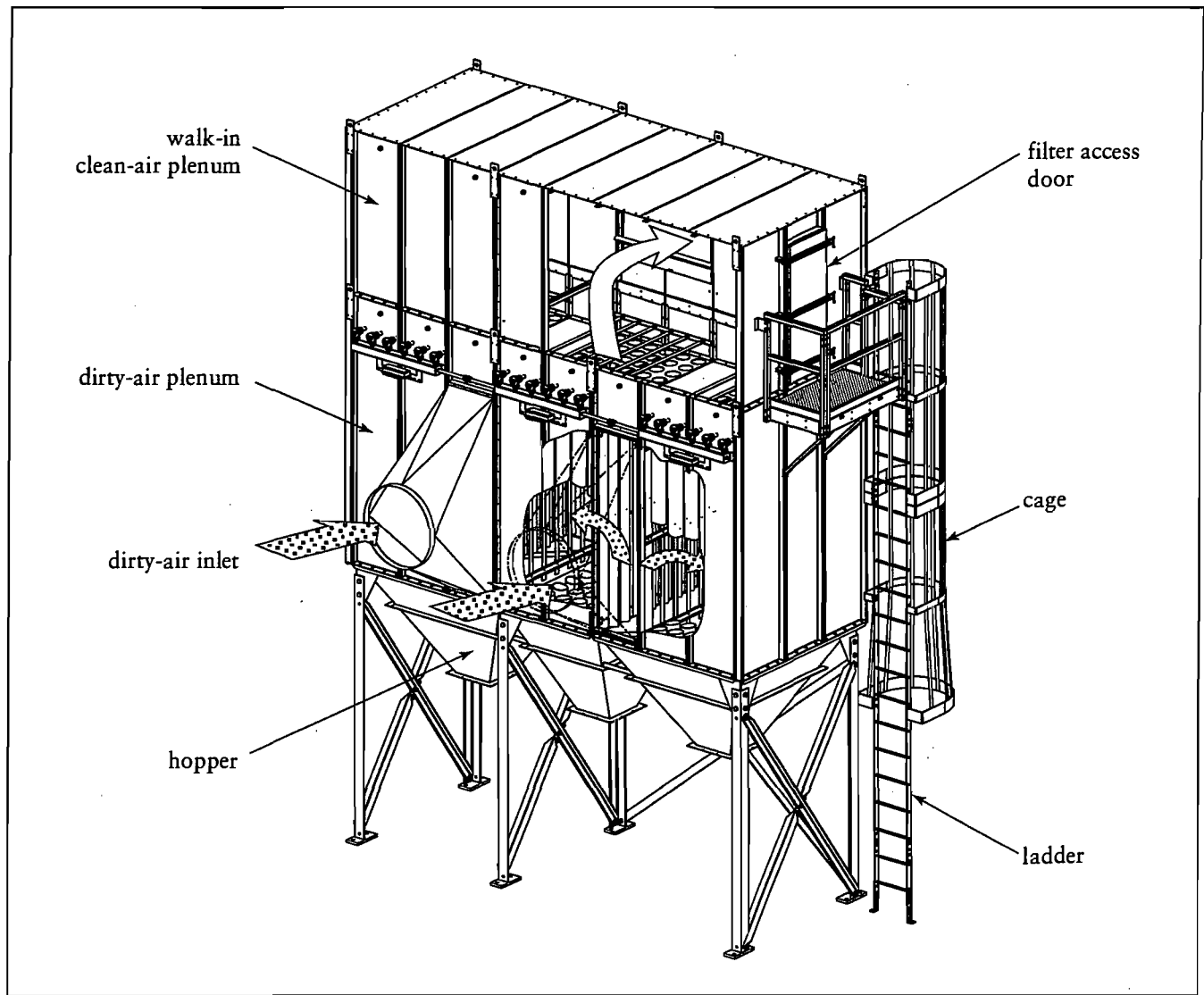
During normal operation, for a high inlet unit, dust-laden air enters the high inlet section next to the filter bags. The airflow must turn 90° to pass through the filter bag section. The energy loss from turning and the reduced velocity in the inlet section causes the heavier dust particles to drop directly into the hopper below. Standard inlet baffles help to evenly distribute the dust-laden air around the filter bags.

Dust collects on the outside of each filter bag forming a dust-cake that increases filtering efficiency. Clean, filtered air passes through the filter bag to the clean-air plenum and discharges through the clean-air outlet.

The filter bags are pulse-cleaned automatically and sequentially, one set at a time. A timer energizes a solenoid valve causing the corresponding diaphragm valve to send a pulse of compressed air into the blowpipe. The high-pressure compressed air is forced through the center of the filter bags causing the collected dust to fall into the hopper where it is discharged into drums, a screw conveyor, or rotary valves.



Unit Operation, 243MBW8 with Hopper Inlet



Unit Operation, 162MBWH8 with High Inlet

Inspection on Arrival

1. Inspect unit on delivery.
2. Report any damage to the delivery carrier.
3. Request a written inspection report from the Claims Inspector to substantiate claim.
4. File claims with the delivery carrier.
5. Compare unit received with description of product ordered.
6. Report incomplete shipments to the delivery carrier and your Donaldson representative.
7. Remove crates and shipping straps. Remove loose components and accessory packages before lifting unit from truck.

Installation Codes and Procedures



CAUTION!

OSHA may have requirements regarding recirculating filtered air in your facility. Consult with the appropriate local authorities to ensure compliance with all codes regarding recirculating filtered air.

1. Safe and efficient operation of the unit depends on proper installation.
2. Authorities with jurisdiction should be consulted before installing to verify local codes and installation procedures. In the absence of such codes, install unit according to the National Electric Code, NFPA No. 70-latest edition.
3. A qualified installation and service agent must complete installation and service of this equipment.
4. All shipping materials, including shipping covers, must be removed from the unit prior to, or during unit installation.

Note: Failure to remove shipping materials from the unit will compromise unit performance.

Installation

Site Selection

1. The unit can be located on a reinforced concrete foundation or rooftop.
2. Wind, seismic zone, and other live-load conditions must be considered when selecting the location.
3. Provide clearance from heat sources and interference with utilities when selecting the location.

Unit Location



CAUTION!

Units with explosion vents must be positioned to provide unobstructed discharge or severe personal injury and/or property damage may ensue.

1. When hazardous conditions or materials are present, consult with local authorities for the proper location of the collector.
2. Foundation or roof support must be sized to accommodate the entire weight of the unit, plus the weight of the collected material, piping, and ductwork.
3. Prepare the foundation in the selected location. Install anchor bolts to extend a minimum of 1 3/4-inches above foundation.
4. For hopper inlet units, locate the collector to ensure the shortest and straightest inlet- and outlet-duct length. Provide easy access to electrical and compressed-air connections for routine maintenance.

For high inlet units, locate the collector to ensure the inlet-duct is straight for at least five diameters in front of the collector. Outlet-ducts should be short and straight. Provide easy access to electrical and compressed-air connections for routine maintenance.



CAUTION!

Donaldson equipment is not designed to support site-installed ducts, interconnecting piping, or electrical services. All ducts, piping, or electrical services supplied by others must be adequately supported to prevent severe personal injury and/or property damage.

Electrical Wiring

1. All electrical wiring and connections, including electrical grounding, should be made in accordance with the National Electric Code, NFPA No. 70-latest edition.
2. Check local ordinances for additional requirements that apply.
3. The appropriate wiring schematic and electrical rating must be used. See unit's rating plate for required voltage.
4. If the unit is not furnished with a factory-mounted disconnect, an electric disconnect switch having adequate amp capacity shall be installed in accordance with Part J, Article 430 of the National Electrical Code, NFPA No. 70-latest edition. Check unit's rating plate for voltage and amperage ratings.
5. Refer to the wiring diagram for the number of wires required for main power wiring and remote wiring.



CAUTION!

- Electrical installation must be performed by a qualified electrician and comply with all applicable national and local codes.
- Turn power off and lock out electrical power sources before performing installation, service, or maintenance work.
- Do not install in classified hazardous atmospheres without an enclosure rated for the application.

Rigging Instructions

Suggested Tools & Equipment

| | |
|------------------------|-----------------|
| Clevis Pins and Clamps | Lifting Slings |
| Crane or Forklift | Pipe Sealant |
| Drift Pins | Pipe Wrenches |
| Drill and Drill Bits | Screwdrivers |
| End Wrenches | Socket Wrenches |
| Large Crescent Wrench | Spreader Bars |

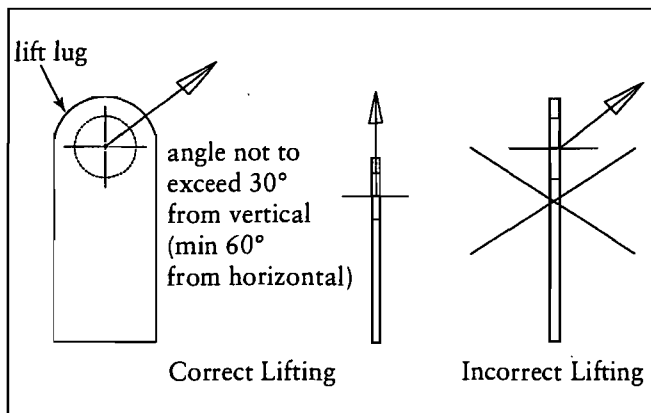


CAUTION!

- Failure to lift the collector correctly can result in severe personal injury or property damage.
- Use appropriate lifting equipment and adopt all safety precautions needed for moving and handling the equipment.

Hoisting Information

1. Use all lifting points provided.
2. Use clevis connectors, *not hooks*, on lifting slings.
3. Use spreader bars to prevent damage to unit's casing.
4. Check the Specification Control drawing for weight and dimensions of the unit, subassemblies, and components to ensure adequate crane capacity.
5. Allow only qualified crane operators to lift the equipment.
6. Refer to applicable OSHA regulations and local codes when using cranes, forklifts, and other lifting equipment.
7. Lift unit and accessories separately, and assemble after unit is in place.
8. Use drift pins to align holes in section flanges during assembly.



Lifting Point Orientation

Standard Equipment

Standard equipment consists of subassemblies, leg sets, pyramid or trough hoppers, filter housing, walk-in clean air plenum, ladder and cage, filter bags, filter cages, and blowpipes.

Field Assembly

Field assembly of subassemblies may be required due to truck capacity, crane capacity, or specific customer requirements. A detailed instruction drawing, shipped with each assembly, provides specific assembly and/or lifting instructions.



CAUTION!

- Failure to lift the collector correctly can result in severe personal injury or property damage.
- Use appropriate lifting equipment and adopt all safety precautions needed for moving and handling the equipment.

Hopper and Leg Assembly

1. Lift the hopper using a crane.
2. Stand each leg on its pad in position under hopper.
3. Use drift pins to align holes in the hopper gusset with holes in the legs.
4. Secure legs to hopper using bolts, washers, and nuts provided. *Do not tighten hardware at this time. Do not remove crane.*
5. Position and bolt the inside angles of the cross brace in place using the hardware provided. *Do not tighten hardware at this time.*
6. Position and bolt the outside angles of the cross brace in place using the hardware provided. *Do not tighten hardware at this time.*
7. Bolt inside and outside cross braces together where they form an X. *Do not tighten hardware at this time.*
8. Repeat steps six, seven, and eight for all brace locations. *Do not tighten hardware at this time.*
9. For complete leg assembly instructions, refer to instructions shipped with the leg pack.
10. Install anchor bolts to extend a minimum of 1 3/4-in above foundation.

Note: Tighten leg hardware and mark leg-pad holes on foundation. Lift the hopper and leg assembly and install HVA adhesive anchors as described on the Specification Control Drawing.

11. Lift the hopper and leg assembly and lower *slowly* to the anchor bolts.
12. Level the hopper at the top flange using steel shims if necessary. Secure leg pads to anchor bolts with the appropriate customer-supplied fasteners and nuts.
13. Tighten all hardware on the gussets, cross braces, and anchor bolts. Recheck level and adjust as necessary.
14. Remove crane.



CAUTION!

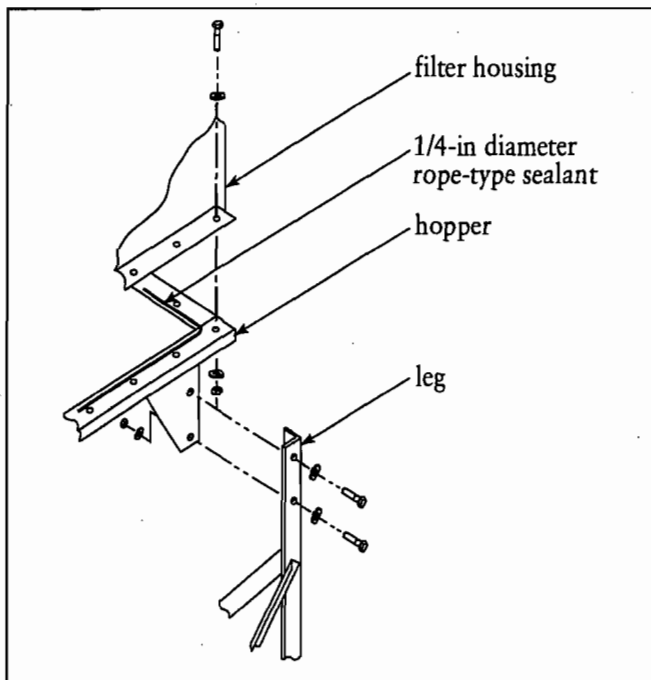
Tighten all leg and cross brace hardware before removing crane to prevent personal injury or property damage.

Trough Hopper with Stub Legs

1. Trough hoppers have stub legs that can be attached to a structure supplied by others. The structure must be capable of supporting the entire weight of the unit, plus the weight of the collected material and auxiliary equipment. Wind, seismic, and other live loads must be considered.
2. Using a crane, lift hopper and position over the mounting structure. Align holes in stub legs with holes in the mounting structure and fasten securely.

Filter Housing to Hopper Assembly

1. Apply 1/4-in diameter rope-type sealant toward the inside edge of the bolt pattern on the hopper's top flange.
2. Using a crane, lift the filter housing section and lower slowly. Use drift pins to align the filter housing flange holes with the hopper flange holes. Do not disturb the sealant.
3. Secure flanges using the hardware provided.
4. Remove crane.



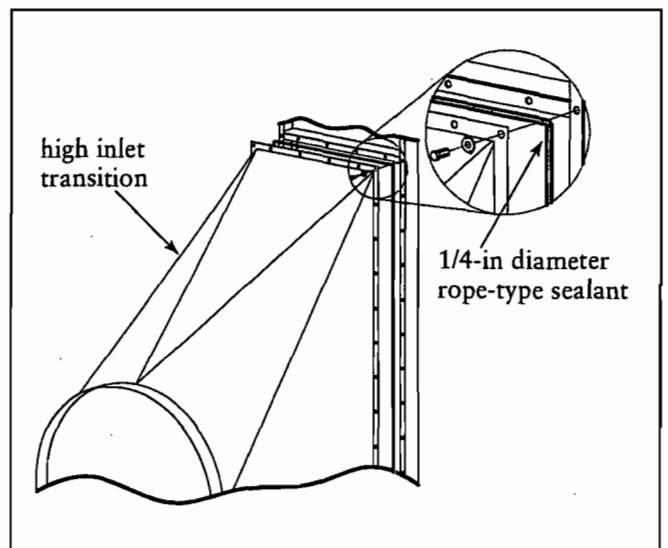
Filter Housing to Hopper Assembly

High Inlet Transition Installation, High Inlets Only

The inlet transition is an important component of the high inlet design. It is designed to ensure that airflow enters the collector at the proper velocity and flow distribution.

Note: Proper inlet design is encouraged for the high inlet(s) to ensure proper airflow distribution and velocity. A minimum of five diameters of straight duct is recommended prior to the inlet transition.

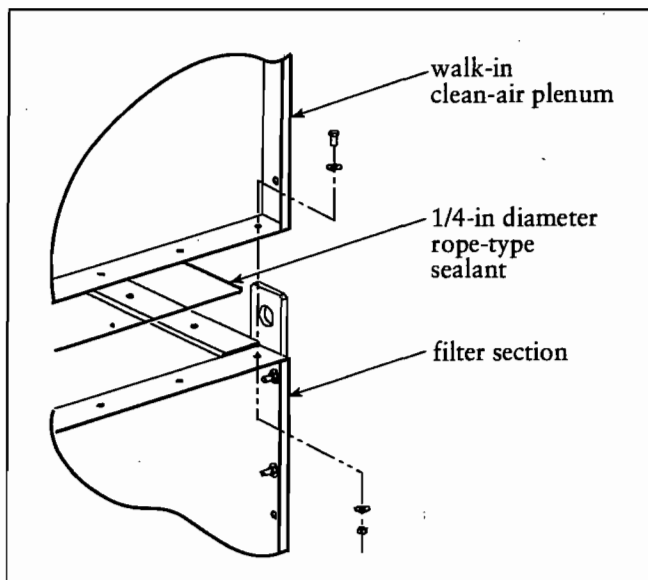
1. Fasten the high inlet transition to the high inlet flange on the collector using the fasteners, sealant, and instructions provided with the transition.



High Inlet Transition Installation

Walk-In Clean-Air Plenum

1. Apply 1/4-in diameter rope-type sealant toward the inside edge of the bolt pattern on the filter housing's top flange.
2. Using a crane, lift the walk-in clean-air plenum into position over the filter housing.
3. Use drift pins to align the holes in the clean-air plenum flange with the holes in the filter housing flange being careful not to disturb the sealant.
4. Fasten securely using the hardware provided.



Clean-Air Plenum to Filter Housing Assembly

Optional Service Platform

1. Using a crane, lift the service platform into position at the filter access door. Use drift pins to align the holes in the service platform with the mounting flange holes.
2. Fasten securely using the hardware provided. See appropriate installation drawing for hardware and locations. *Do not remove crane.*
3. Align and secure the two knee braces from the platform to the filter housing using all hardware supplied. *Tighten all hardware securely.*
4. Remove crane.



CAUTION!

- Do not install the platform and ladder until the filter housing and hopper assembly is securely fastened.
- Do not lift the collector using any portion of the handrail.

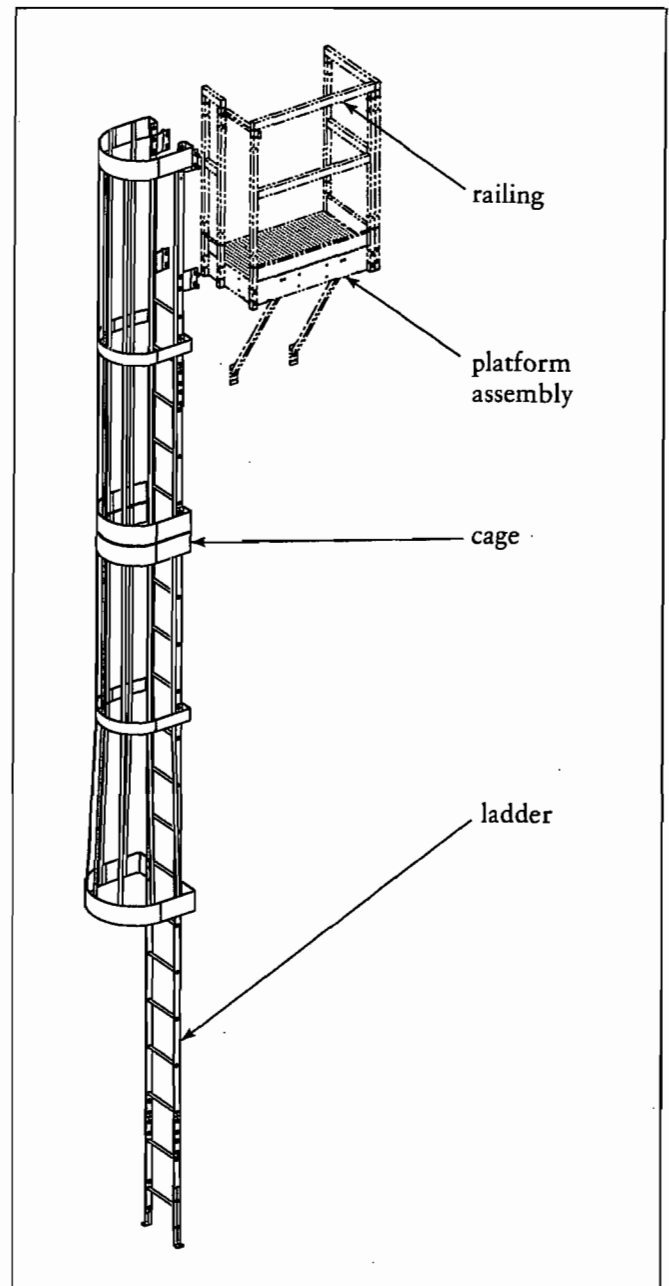
Ladder and Optional Cage Installation

**CAUTION!**

- Do not install the platform and ladder until the filter housing and hopper assembly is securely fastened.
- Do not lift the collector using any portion of the handrail.

Note: Not all ladders require cages.

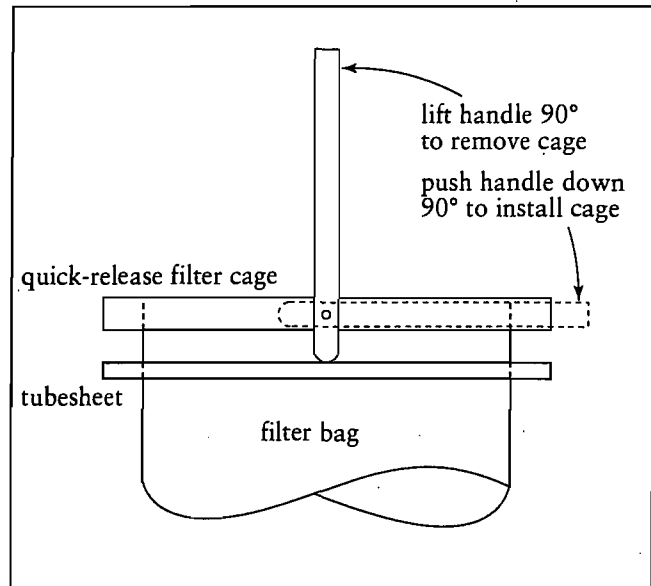
1. Assemble the ladder on the ground following the instructions provided with the ladder. Tighten all hardware securely.
2. Attach the crane's lifting slings to the top four ladder rungs.
3. Lift the assembled ladder into position, align holes, and secure ladder to the collector using the hardware provided.
4. Position braces following the assembly drawing provided with the ladder.
5. Secure bottom of ladder to the ground using anchor bolts.
6. Tighten all hardware.
7. Remove crane.



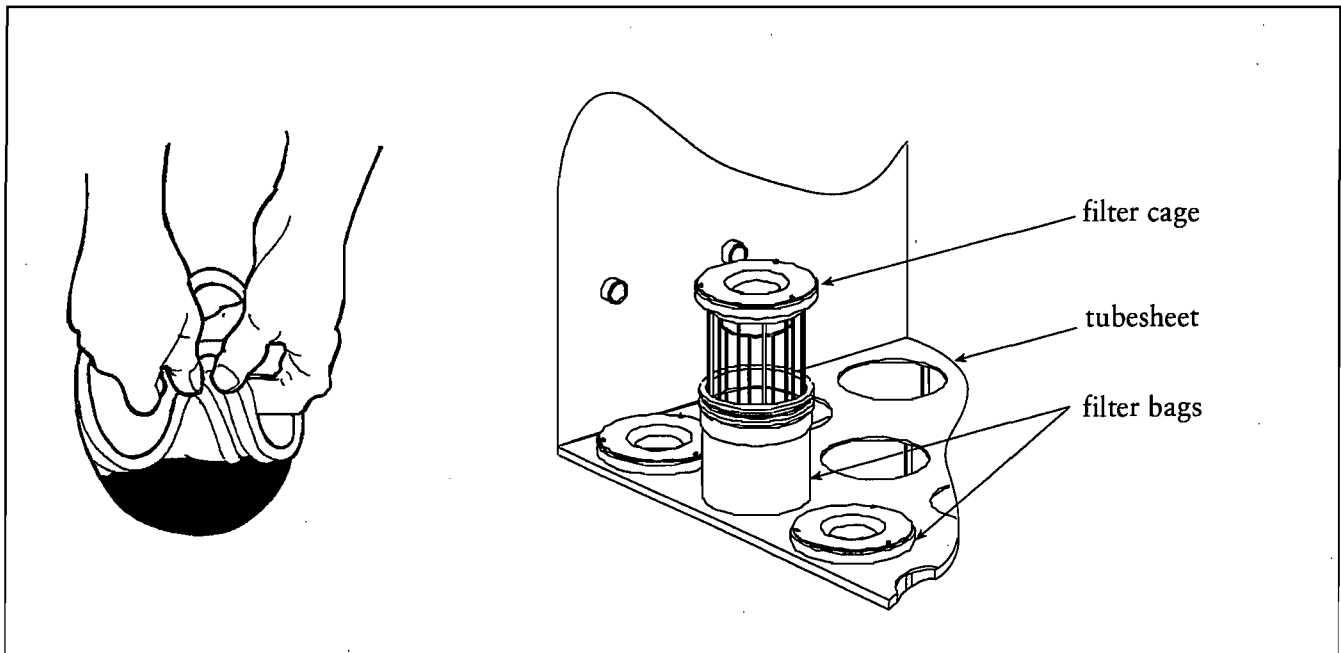
Ladder Installation

Filter Bag Installation

1. Open the clean-air plenum access door located on top of the unit.
2. Snap the filter bag into the filter hole on the tubesheet. Center the bag-collar groove in the tubesheet hole.
3. Check that the quick-release cage handle is in the horizontal position and insert the cage into the filter bag until the cage collar is flush with the tubesheet.
4. Repeat steps 2 and 3 until all filter bags and cages are installed.



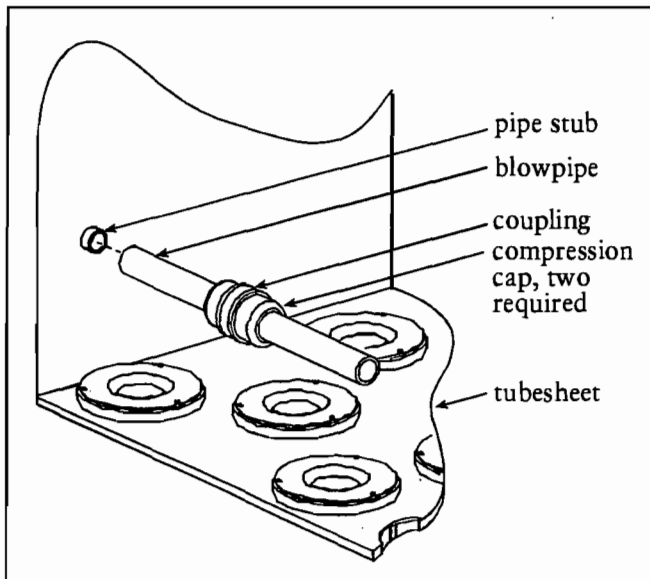
Quick-Release Cage Installation



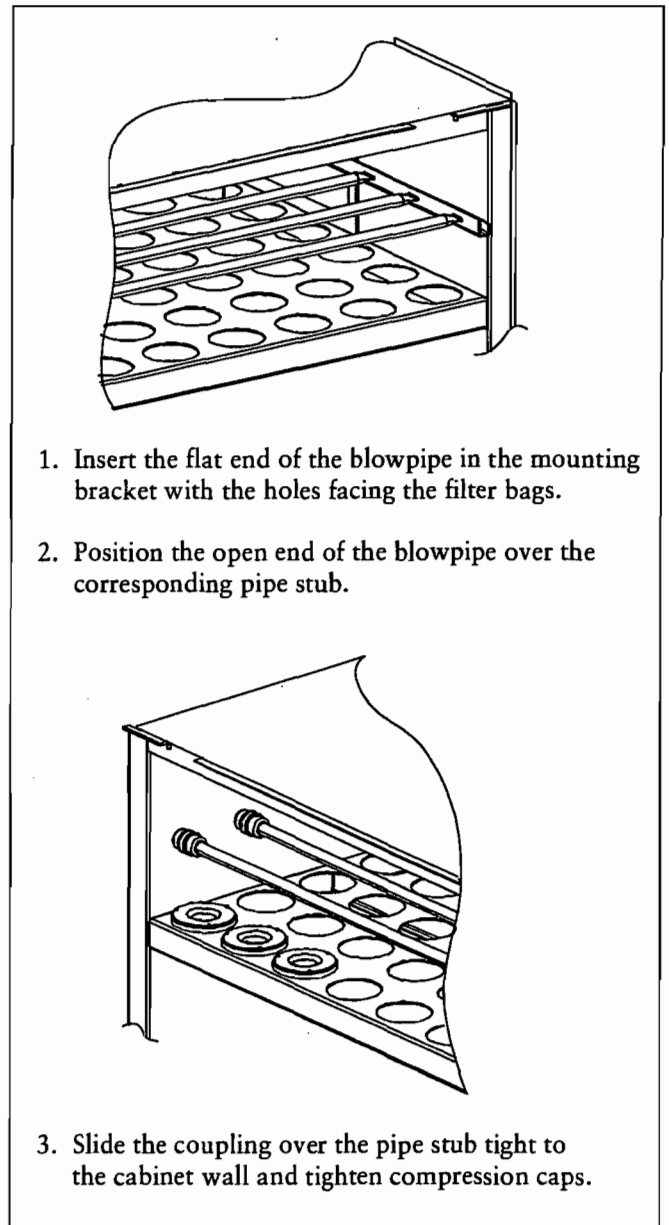
Filter Bag Installation

Blowpipe Installation

1. Slide the pipe coupling on the blowpipe.
2. Insert the flat end of the blowpipe into the mounting bracket on the inside of the collector with the blowpipe holes down.
3. Position the open end of the blowpipe against the corresponding pipe stub.
4. Slide the coupling over the pipe stub until it touches the cabinet wall.
5. Tighten both coupling compression caps with a pipe wrench.
6. Reverse sequence to remove.



Blowpipe Installation



Blowpipe Installation Details

Compressed Air Installation



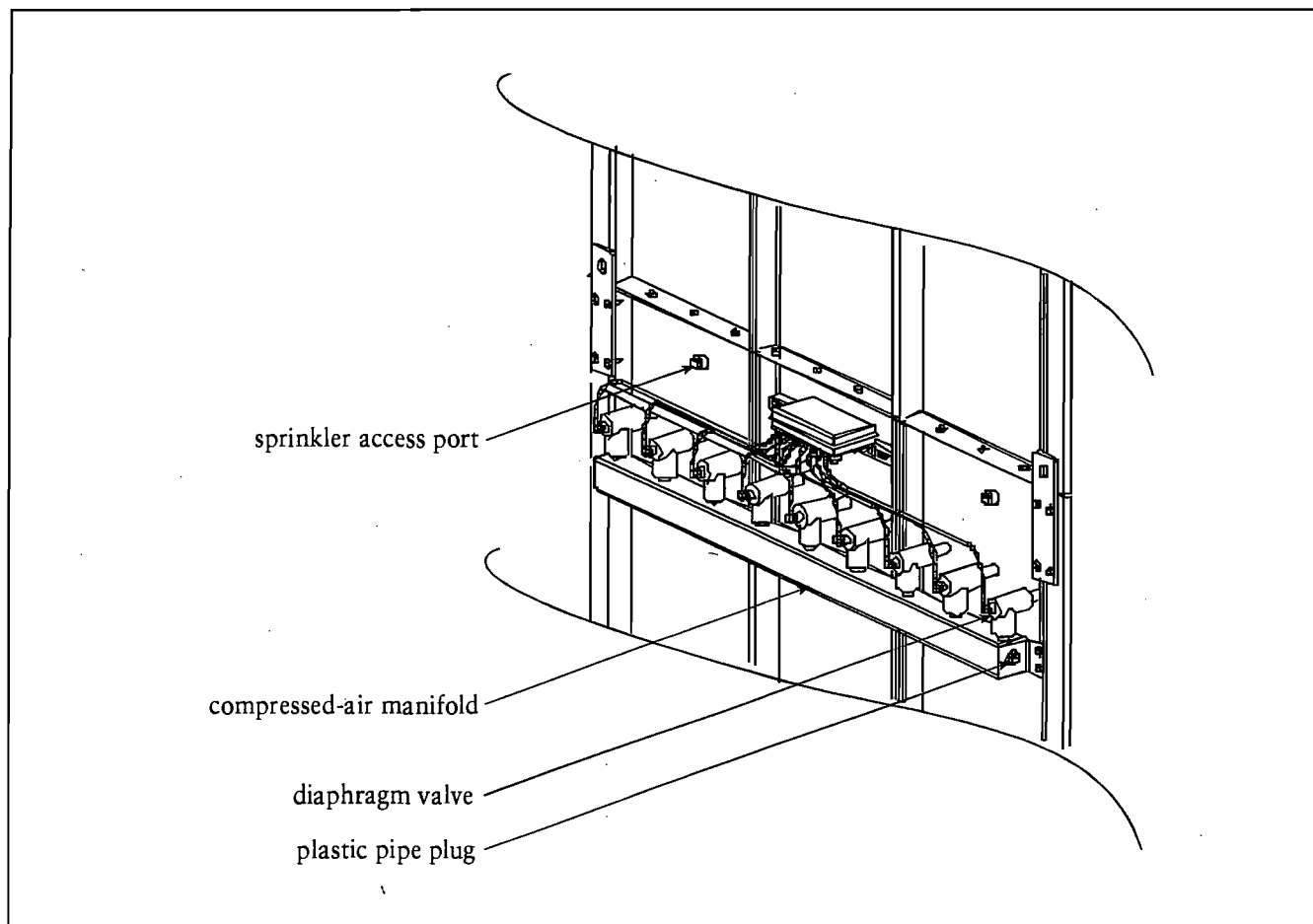
CAUTION!

Turn compressed-air supply OFF and bleed lines before performing service or maintenance work. Sudden release of compressed air may result in severe personal injury or property damage.

Note: The compressed-air supply must be oil and moisture free. Contamination in the compressed air used to clean filter bags will result in poor cleaning, cleaning valve failure or poor collector performance. Purge compressed-air lines to remove debris before connecting to the unit's compressed-air manifold.

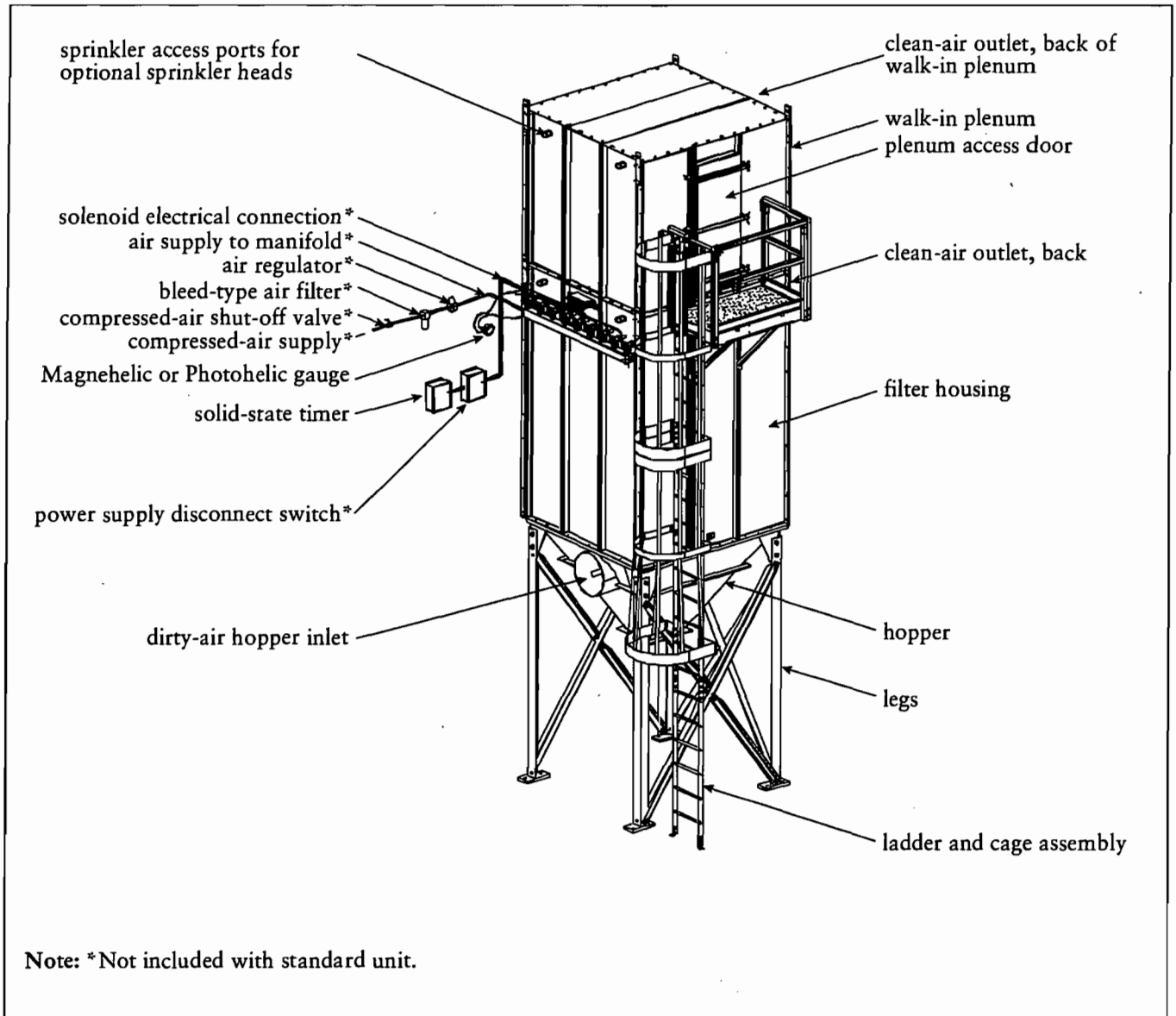
1. Remove the plastic pipe plug from the unit's air manifold and connect the compressed-air supply line. Use thread-sealing tape or pipe sealant on all compressed-air connections.
2. Install a customer-supplied shut-off valve, bleed-type regulator with gauge, filter, and automatic condensate valve in the compressed-air supply line.

Note: All compressed-air components must be sized to meet the maximum system requirements of 1.77 cu ft/pulse at 90-psi supply pressure.
Do not increase supply pressure above 100-psi. Component damage can result.



Compressed-Air Manifold

Typical Installation



Compressed Air and Component Connections (81MBW8 shown)

Optional Equipment

Transition and Rotary Valve

The 7-inch tall transition is designed to connect a standard hopper and a rotary valve which is used as an airlock in dust control applications. The airlock provides an air seal between the valve's inlet and outlet while allowing dust or material to pass through. Comparatively, the airlock works along the same line as a revolving door on a building — an air seal is maintained while people are allowed to pass through.

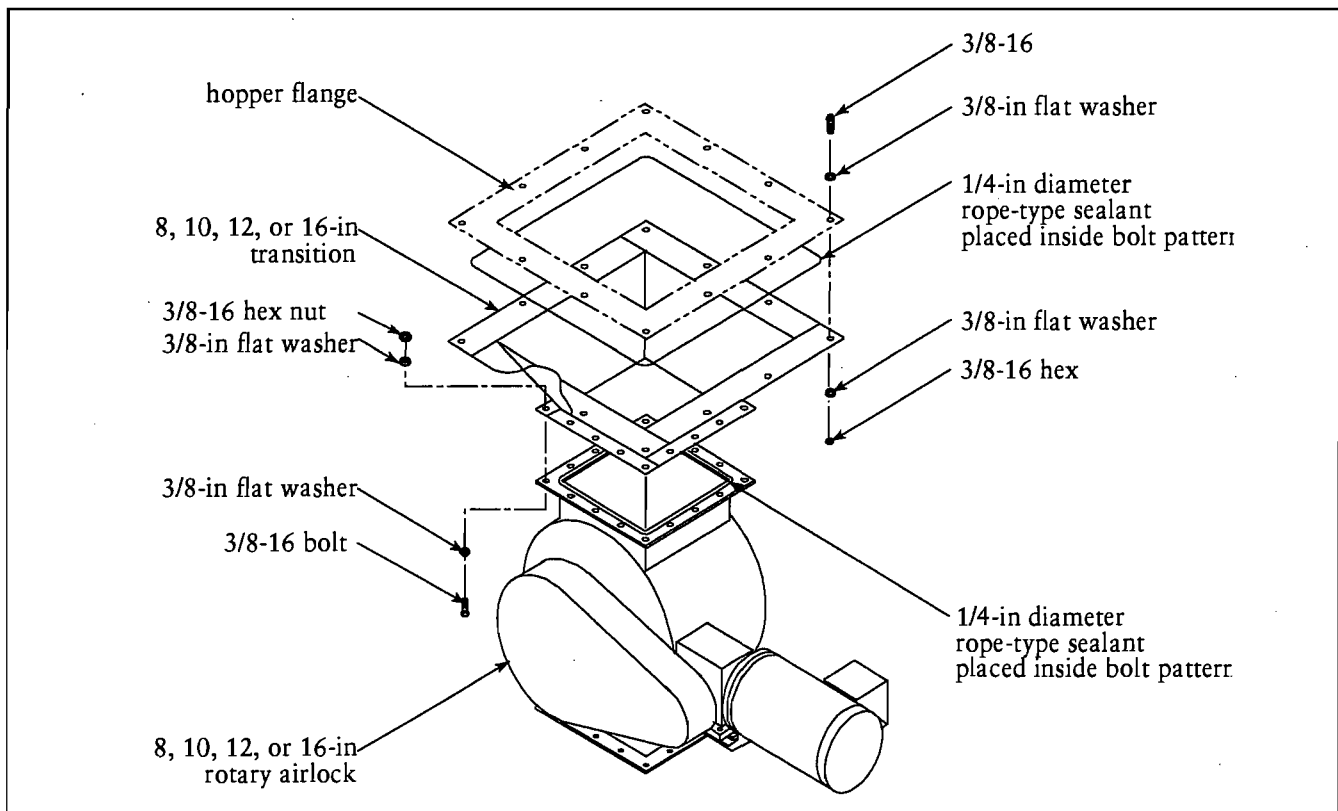
The valve allows a specific amount of material to pass per revolution, depending on the size and speed of the valve. Standard sizes include 8, 10, 12, and 16-in inlets.



CAUTION!

Transitions are not intended or capable of supporting the weight of the airlock. Provide adequate support to prevent personal injury and damage to airlock or collector.

1. Place 1/4-in diameter rope-type sealant to the inside of the transition's bolt pattern.
2. Use 3/8-16 bolts, washers, and hex nuts to fasten transition to hopper.
3. Determine the proper position required for the rotary airlock. Allow clearance for electrical connections and future maintenance.
4. Place 1/4-in diameter rope-type sealant toward the inside-edge of the airlock's top flange.
5. Fasten the airlock to the transition flange using 3/8-16 bolts, washers, and hex nuts.
6. Electrical connections must be made by a qualified electrician. Refer to the motor's nameplate for voltage, amp rating, cycle, and wiring sequence.



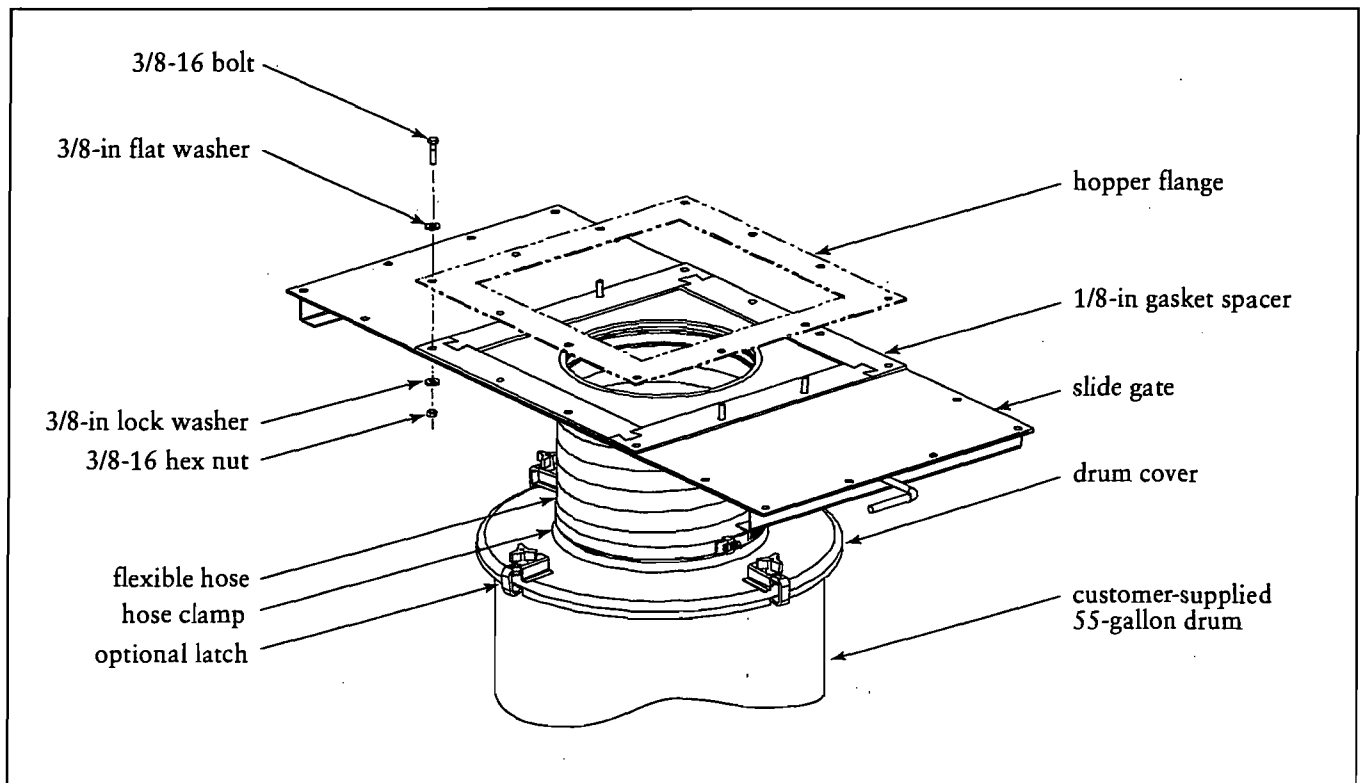
Transition and Rotary Valve Assembly

55-Gallon Drum Pack

The drum pack is designed to fit a customer-supplied, standard 55-gallon drum and provides easy access for dust removal and disposal. A flexible hose connects the drum cover and slide gate, or drum cover and adapter. Placing a pallet under the drum allows heavier product to be moved quickly using a forklift or pallet jack. If a pallet is used, the length of flexible hose may need to be shortened.

With Slide Gate

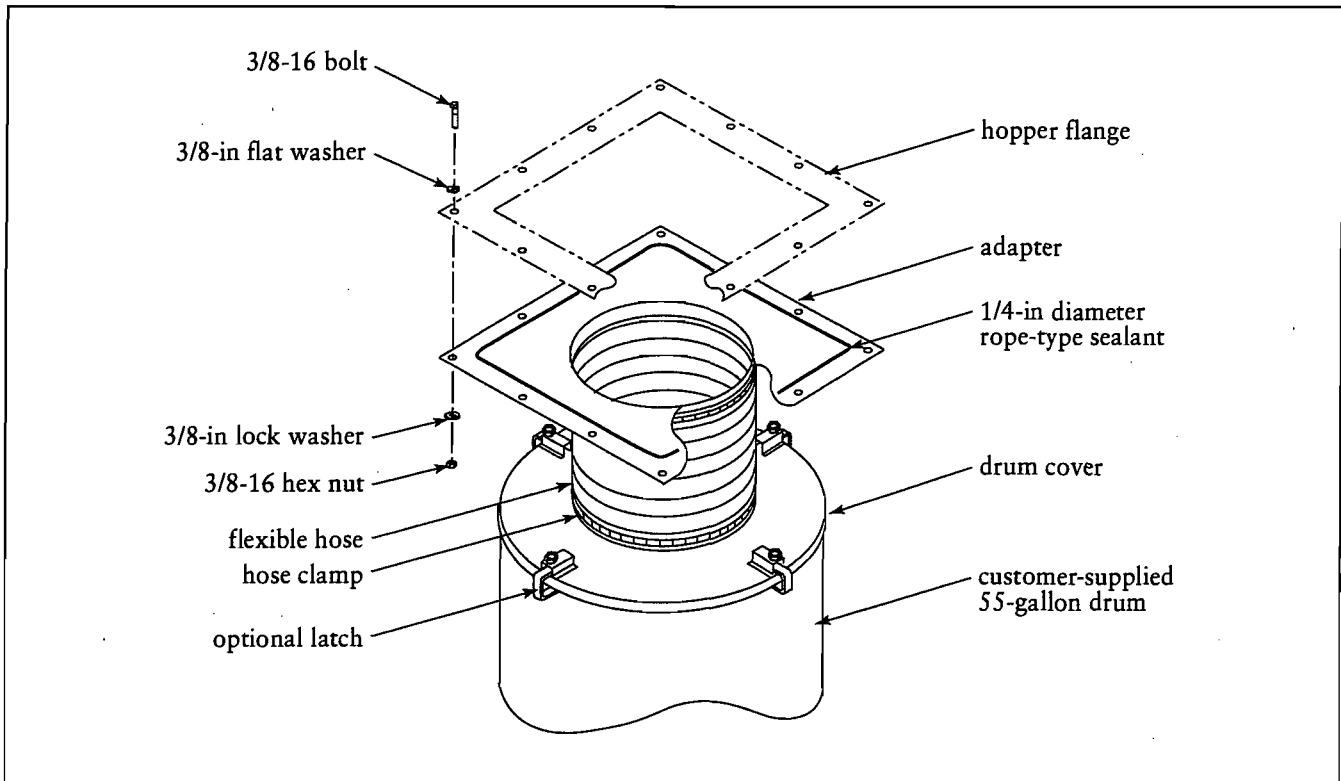
1. Place the 1/8-in gasket spacer between the hopper flange and slide gate as shown.
2. Attach the drum pack and slide gate to the hopper flange using 3/8-16 bolts, washers, and hex nuts.
3. Attach the drum cover to the 55-gallon drum.
4. Use latches to secure the cover to the drum, if equipped.
5. Connect the flexible hose between the drum cover and slide gate. Secure with hose clamps.



55-Gallon Drum Pack with Slide Gate

Without Slide Gate

1. Place the 1/4-in diameter rope-type sealant between the hopper flange and the adapter as shown.
2. Attach the adapter to the hopper flange using 3/8-16 bolts, washers, and hex nuts.
3. Attach the drum cover to the 55-gallon drum.
4. Use latches to secure the cover to the drum, if equipped.
5. Connect the flexible hose between the drum cover and the adapter. Secure with hose clamps.



55-Gallon Drum Pack without Slide Gate

Magnehelic Gauge

The Magnehelic is a differential pressure gauge used to measure the pressure difference between the clean- and dirty-air plenums and provides a visual display of filter change requirements. The high-pressure tap is located in the dirty-air plenum and the low-pressure tap is located in the clean-air plenum.

1. Choose a convenient, accessible location on or near the unit for mounting that provides the best visual advantage.

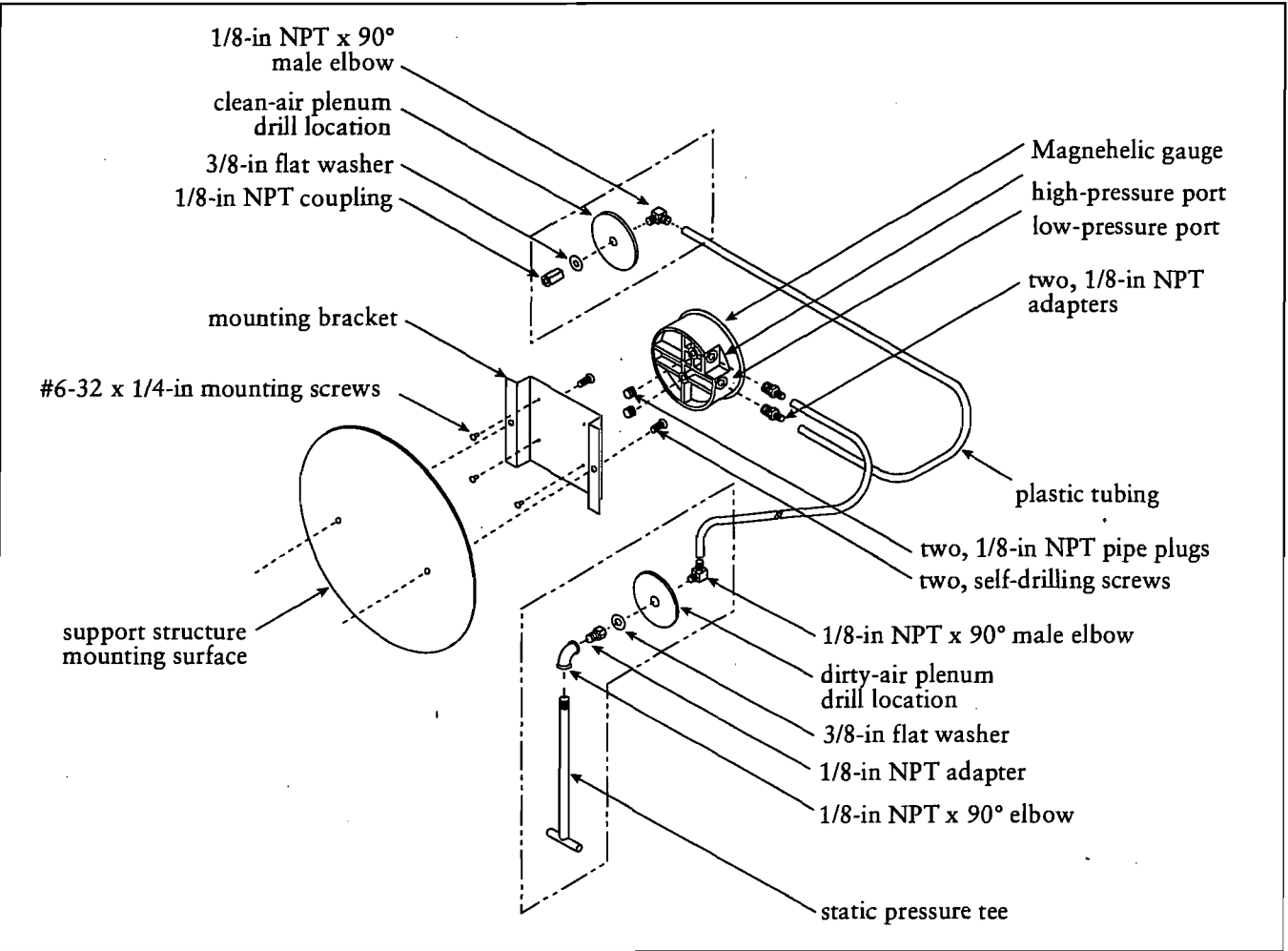
If unit is equipped with factory-installed pressure taps, skip to Step 5.

2. Before drilling, place a piece of noncombustible cloth over the filter opening in the clean-air plenum to protect the filter bags from drilling chips.

3. Place a piece of wood behind the drill location in the dirty-air plenum to protect the filter bags from damage by the drill bit.

4. Mount the pressure tap hardware on the clean-air plenum panel. Mount the pressure tap with the tee inside the dirty-air plenum.

5. Plug the pressure ports on the back of the gauge using two, 1/8-in NPT pipe plugs supplied. Install two, 1/8-in NPT male adapters supplied with the gauge into the high- and low-pressure ports on the side of the gauge. Attach the mounting bracket using three, #6-32 x 1/4-in screws supplied.



Magnehelic Gauge Installation

6. Mount the gauge and bracket assembly to the supporting structure using two self-drilling screws.
7. Thirty-five feet of plastic tubing is supplied and must be cut in two sections. Connect one section of tubing from the gauge's high-pressure port to the pressure fitting located in the dirty-air plenum. Connect remaining tubing from the gauge's low-pressure port to the fitting in the clean-air plenum. Additional tubing can be ordered from your representative.
8. Carefully remove the cloth protecting the filter bags. Close access doors and tighten securely by hand.
9. Zero and maintain the gauge as directed in the manufacturer's Operating and Maintenance Instructions provided.

Photohelic Gauge

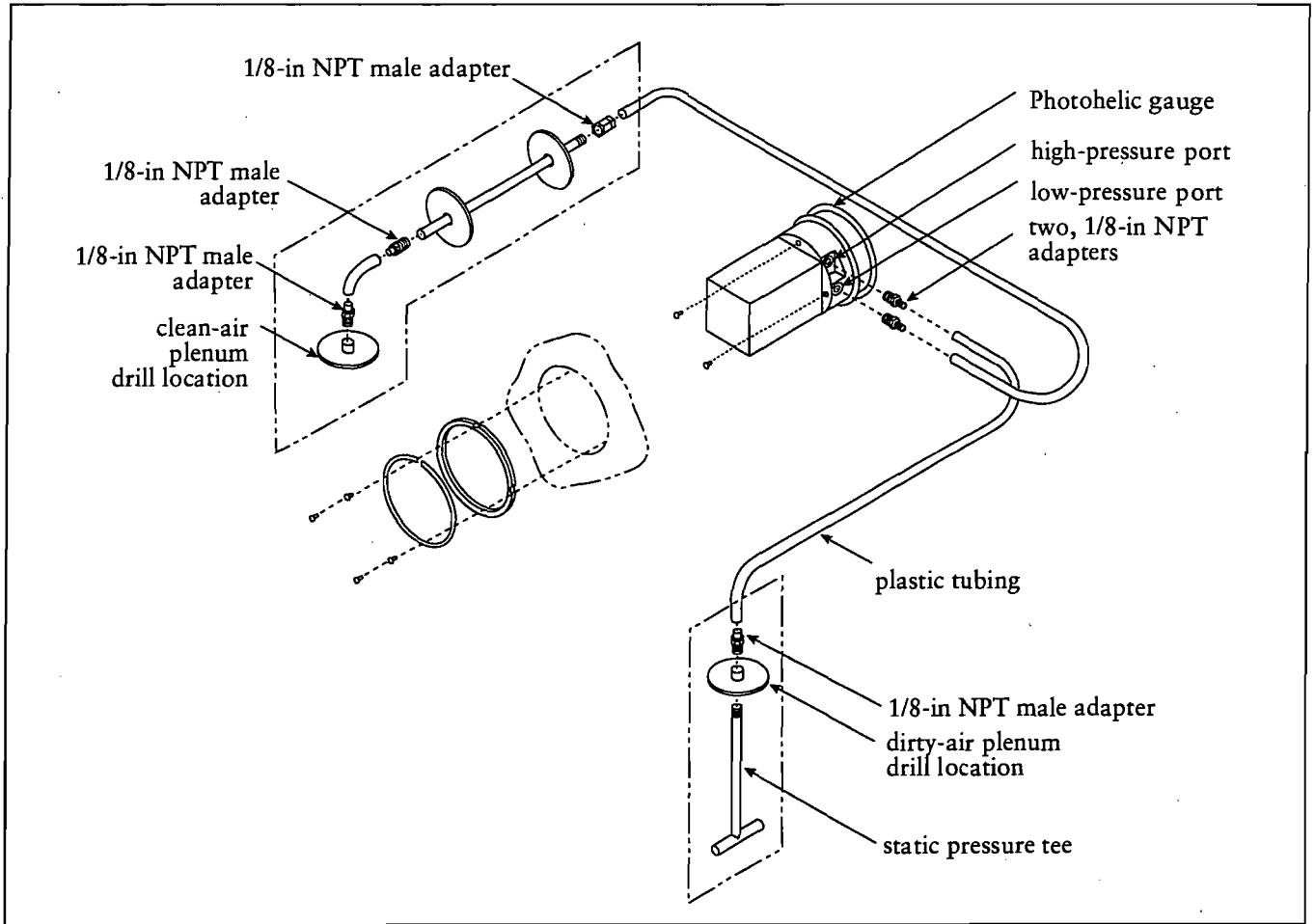
The Photohelic combines the functions of a differential pressure gauge and a pressure-based switch. The gauge function measures the pressure difference between the clean- and dirty-air plenums and provides a visual display of filter condition. The high-pressure tap is located in the dirty-air plenum and a low-pressure tap is located in the clean-air plenum. The pressure-based switch function provides high-pressure ON and low-pressure OFF control of the filter cleaning system.



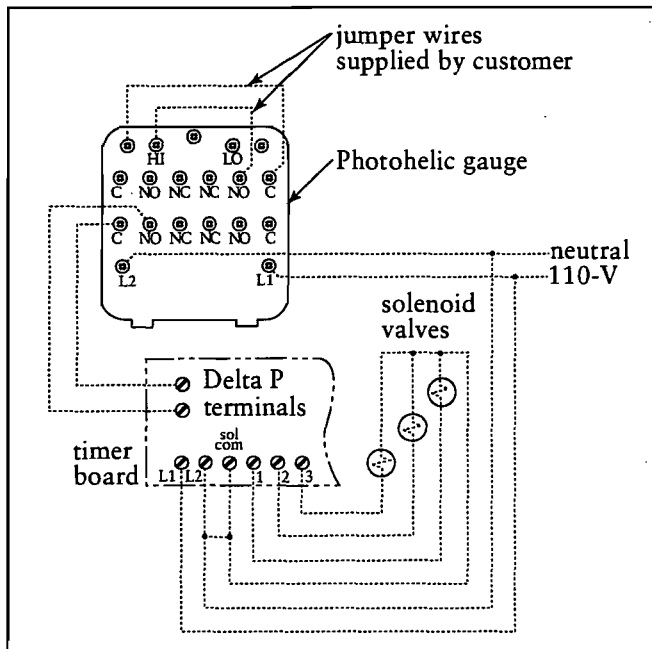
WARNING!

- Electrical installation must be performed by a qualified electrician and comply with all applicable national and local codes.
- Turn power OFF during installation or maintenance.
- Do not install in classified hazardous atmospheres without an enclosure rated for the application.

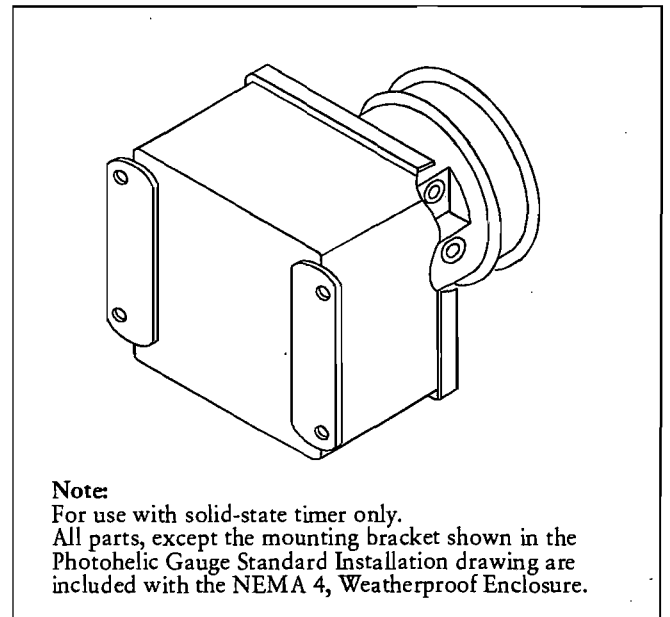
1. Choose a convenient, accessible location near the unit that provides the best visual advantage.
2. Mount the gauge to the remote panel or door using the mounting ring, retaining ring, and four #6-32 x 1 1/4-in screws. Do not tighten screws. Connect two 1/8-in NPT x 1/4-in OD male adapters to the gauge's high- and low-pressure ports. Align the adapters to the 2.375-in hole in the right-hand side of the mounting bracket. Tighten screws.
3. On the back of the gauge, remove four #6-32 x 5/16-in screws and plastic enclosure. Set aside. Add two jumper wires supplied by customer. Remove the jumper from the pressure switch located on the timer board, if equipped. Using the 3/4-in conduit opening, wire the gauge as shown. Reassemble and fasten the enclosure securely.
4. Thirty-five feet of plastic tubing is supplied and must be cut in two sections. Connect one section of tubing from the gauge's high-pressure port to the pressure fitting located in the dirty-air plenum. Connect remaining tubing from the gauge's low-pressure port to the fitting in the clean-air plenum. Additional tubing can be ordered from your representative.
5. Zero and maintain the gauge as directed in the manufacturer's Operating and Maintenance Instructions provided.
6. To install the Photohelic Gauge mounted in a NEMA 4, Weatherproof Enclosure, follow Steps 4 and 5.



Photohelic Gauge, Remote Panel or Door Installation



Photohelic Gauge Wiring Diagram



Photohelic Gauge in Optional NEMA 4 Weatherproof Enclosure

Delta P Control

Description

The Delta P Control monitors the differential pressure between the clean and dirty air plenums, providing a visual display of the filter condition. When combined with a pulse timer, it controls the pressure drop by turning the cleaning mechanism On and Off at the chosen limits. There are three (3) set points: High Pressure On, Low Pressure Off, and Alarm. The first two, High Pressure On and Low Pressure Off, control the filter cleaning system. The third, Alarm, provides a relay output to activate an external alarm supplied by others.

Operation

Normal

The Delta P Control monitors the pressure in the clean and dirty air plenums while the unit is running. The blower draws air through the filters, creating a pressure drop. The Delta P control measures the pressure drop and provides a visual display in inches water gauge or metric (SI) units.

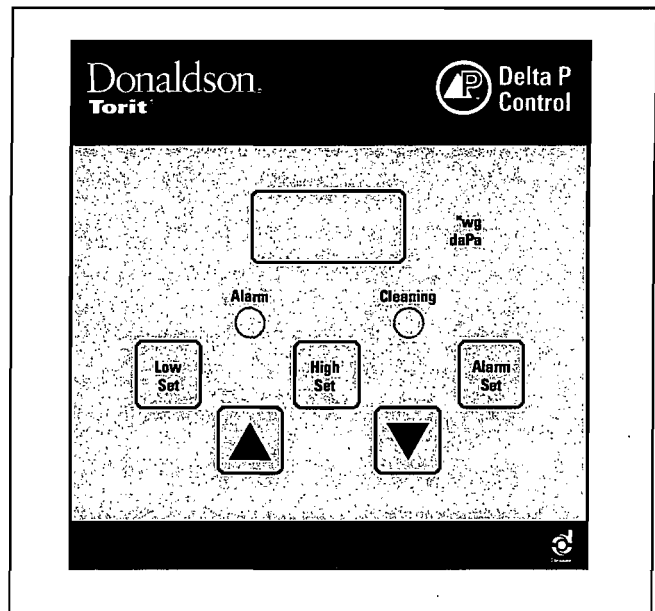
Filter Cleaning

When the pressure drop across the filter bags reach the control's High setpoint, the control closes an output relay allowing a timer to trigger the cleaning valves sequentially. When the control senses that the pressure drop has decreased to the Low setpoint, the relay opens and the cleaning cycle stops. This sequence continues as long as the collector is in use, maintaining the pressure drop within a narrow range.

Alarm

The alarm setpoint is set to a higher setting than used to start the filter cleaning cycle. It indicates situations when the cleaning system cannot reduce the pressure drop due to cleaning system failure, lack of compressed air, or the end of the filter's useful life. There is a time delay prior to setting the alarm to prevent nuisance trips. The Delta P Control also provides an input connection for a remote alarm reset.

For complete information, see the most current version of the Delta P Installation, Operation, and Maintenance manual, IOM 7546301.



Delta P Control Display

Delta P Plus Control

Description

The Delta P Plus Control monitors the differential pressure between the clean and dirty air plenums, providing a visual display of the filter condition. When combined with a pulse timer, it controls the pressure drop by turning the cleaning mechanism On and Off at the chosen limits. There are three (3) set points: High Pressure Drop On, Low Pressure Drop Off, and Alarm. The first two, High Pressure Drop On and Low Pressure Drop Off, control the filter cleaning system. The third, Alarm, provides a relay output to activate an external alarm supplied by others.

The user can program the Delta P Plus Control to pulse while the collector is running, to maintain a relatively constant pressure drop across the filters, pulse only after the collector is shut down (after-shift cleaning), or a combination of both, cleaning while running as well as end of the shift.

Operation

Normal

The Delta P Plus Control monitors the pressure on both sides of the tubesheet while the unit is running. The blower draws air through the filters, creating a pressure drop. The Delta P Plus Control measures the pressure drop and provides a visual display in inches water gauge or metric (SI) units.

Filter Cleaning

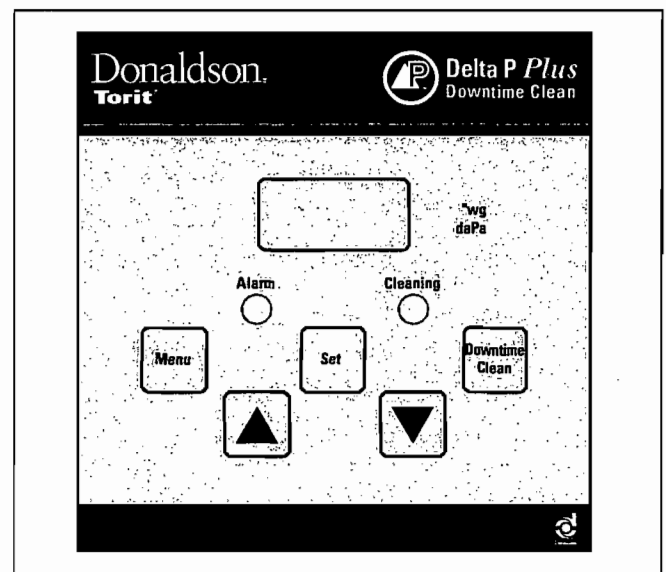
The Delta P Plus Control offers three filter cleaning options.

1. Differential Pressure Cleaning (DFF) - When the pressure drop across the filters reaches the control's High setpoint, the control closes an output relay allowing a sequential timer to trigger the cleaning valves. When the control senses that the pressure drop has decreased to the Low setpoint, the relay opens and the cleaning cycle stops. This sequence continues as long as the collector is in use, maintaining the pressure drop within a narrow range.
2. Down Time Cleaning (DTC) - The Delta P Plus Control monitors the collection system. It watches for the blower to start, the pressure drop to exceed the Low setpoint, and then for the pressure drop to approach zero. After the blower has come to a stop, the Delta P Plus engages the cleaning mechanism for a pre-selected time.
3. Combined Differential and Down Time Cleaning (ALL) - The Delta P Plus Control combines the two functions described above; maintaining the pressure drop in a narrow band and down time cleaning the filters when the collector is shut down. The down time cleaning function can be toggled On or Off from the keyboard.

Alarm

The alarm setpoint is set to a higher setting than used to start the filter cleaning cycle. It indicates situations when the cleaning system cannot reduce the pressure drop due to cleaning system failure, lack of compressed air, or the end of the filter's useful life. There is a time delay prior to setting the alarm to prevent nuisance trips. The Delta P Plus Control also provides an input connection for a remote alarm reset.

For complete information, see the most current version of the Delta P Plus Installation, Operation, and Maintenance manual, IOM AD3425201.



Delta P Plus Control Display

Solid-State Timer Installation

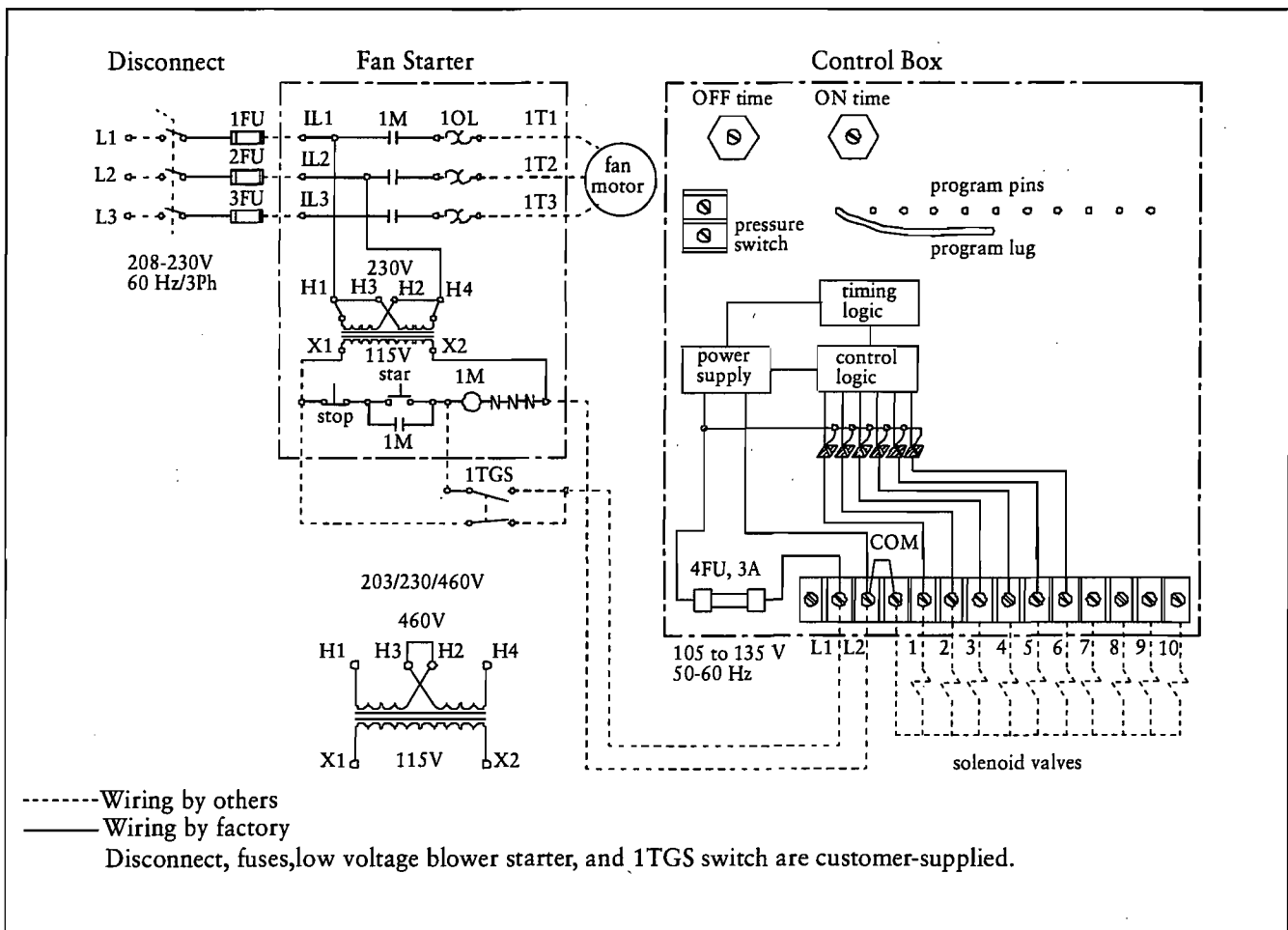
The solid-state timer is an electronic timer used to control the filter cleaning system. Available options include 10, 20, or 32-pin solenoid valve control.

Note: The solid-state timer requires a 105 to 135-Volt customer-supplied power supply.

Do not mount the solid-state timer on the unit. Mechanical vibration can damage the control.

1. Using the wiring diagram supplied, wire the blower motor, blower-motor starter, solid-state timer, and solenoid valves. Use appropriate wire gauge for rated amp load as specified by local codes.

2. Plug the program lug into the pin that corresponds with the number of solenoid valves controlled.
3. With power supply ON, check the operation of the solenoid valves. The valves should open and close sequentially at factory set 10-second intervals.
4. If a Photohelic gauge or similar device is used to control the solid-state timer and the jumper on the pressure switch portion of the timer is removed, the solenoid valves pulse only when the differential pressure reaches the high-pressure setpoint. The valves continue to pulse until the low-pressure setpoint is reached.



Solid-State Timer Wiring Diagram

Solenoid Connection

The unit is equipped with 115-V solenoid valves that control the pulse-cleaning valves, which clean the filter bags.

One of three types of solenoid enclosures, the weatherproof NEMA 4 with 3D2 solenoids, the explosion proof NEMA 7 with 5D2 solenoids, or the explosion proof NEMA 9 with 5D2 solenoids, is mounted near or on the unit's compressed-air manifold.

Wire the solenoids to the solid-state timer following the wiring diagram supplied with the unit. Filter life and cleaning operation will be affected if not wired correctly.

Timer and Solenoid Specifications

Power to the solid-state timer is supplied to Terminals L1 and L2, which operate in parallel with the blower starter's low-voltage coil. On blower start-up, power is supplied to the timer and the preset OFF time is initiated. At the end of the OFF time, the timer energizes the corresponding solenoid valve to provide the ON time cleaning pulse for one diaphragm valve and then steps to the next until all filter bags have been cleaned.

To pulse when the blower is OFF, install a toggle switch as shown on the Solid-State Timer Wiring Diagram. When the toggle switch is ON, the timer receives power and energizes the solenoid valves' pulse-cleaning operation even though the blower is turned OFF.

Input

105-135V/50-60Hz/1Ph

Output Solenoids

The load is carried and turned ON and OFF by the 200 watt maximum-load-per-output solid-state switch.

Pulse ON Time

Factory set at 100-milliseconds, or 1/10-second.

Note: *Do not* adjust pulse ON time unless the proper test equipment is available. Too much or too little ON time can cause shortened filter bag life.

Pulse OFF Time

Factory set at 10-seconds, adjustable from 1.5-sec minimum to maximum 30-seconds.

Operating Temperature Range

-20° F to 130° F

Transient Voltage Protection

50 kW transient volts for 20-millisecond duration once every 20 seconds, 1% duty cycle.

Solenoid Valves

115-V at 19.7 watts each

Compressed-Air

Set compressed-air supply at 90-psig. The timer is factory set to clean one filter bag or set of filter bags every 10-seconds.

Note: *Do not* set compressed-air pressure above 100-psig. Component damage will occur.



CAUTION!

- Electrical installation must be performed by a qualified electrician and comply with all applicable national and local codes.
- Turn power off and lock out electrical power sources before performing installation, service, or maintenance work.
- Do not install in classified hazardous atmospheres without an enclosure rated for the application.

Sprinkler Installation



CAUTION!

Sprinkler systems place a large quantity of water in the dust collector when activated. Provide adequate drainage to remove water. Excess water weight can collapse the leg structure causing personal injury or property damage.

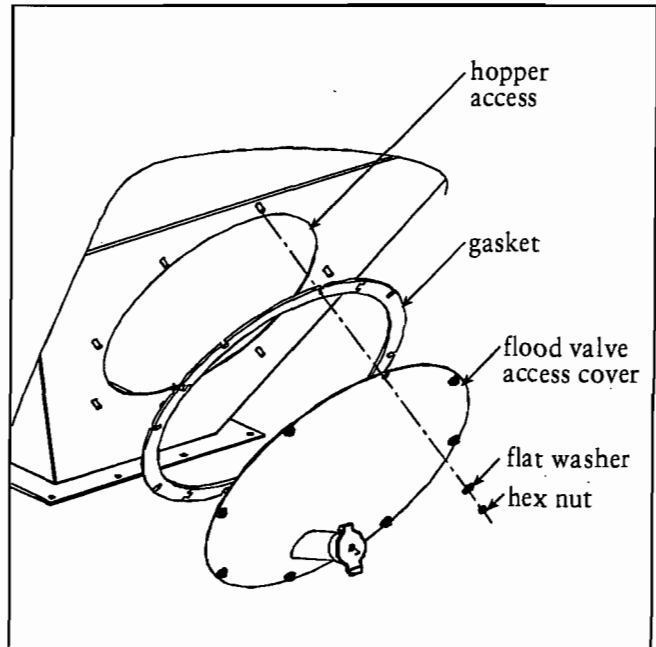
Optional fire control sprinklers are available for all models operating under negative pressure. Torit-supplied sprinklers require a minimum of 15-psig water pressure to each module. The volume of water discharged per sprinkler head is 17 gallons per minute.

Note: Consult with local authorities when installing fire control systems on dust collection equipment.

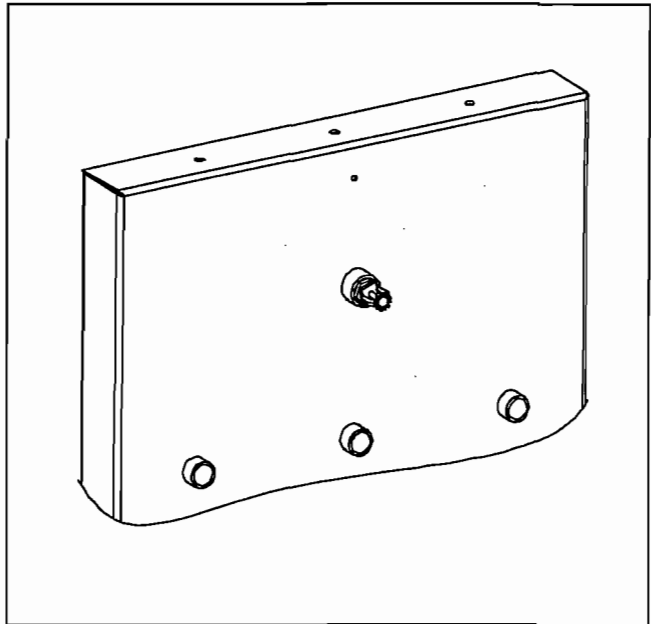
1. Remove or open the filter access doors to access the sprinkler taps located in the clean-air plenum.
2. Apply pipe sealant to the threads of the pipe reducer located on the sprinkler assembly.
3. Thread sprinkler assembly onto the 1-in diameter sprinkler tap.
4. Tighten securely.
5. Install flood valves on the hopper access openings to relieve water build up in the hoppers.

Flood Valve Installation

1. Remove the hopper access cover and set aside.
2. Align holes in flood valve access cover with holes in hopper and secure using the flat washers and hex nuts removed in Step 1.
3. Tighten all hardware securely.



Flood Valve Installation

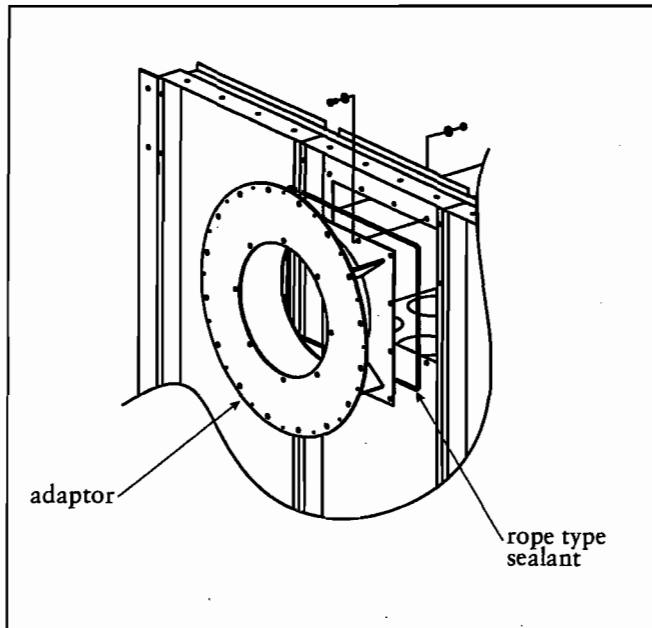


Sprinkler Installation

Side Mount Power Pack Adaptor

The side mount power pack adaptor is available for the 81MBW8, 10, 108MBW8, 10, 162MBW8 and the high inlet models 54MBWH8, 10, and 81MBWH8. The power pack adaptor allows a TBI3-30 HP blower to be mounted directly to the modular baghouse outlet on the rear of the collector housing. It is not designed to be mounted on the outlet of the walk-in plenum. Field assembly of the side mount power pack adaptor is required. This allows the adaptor to be assembled to the outlet location of the customer's choosing.

1. Remove the collector outlet cover.
2. Fasten the adaptor to the collector outlet using the hardware and sealant provided.
3. Mount the blower to the adaptor following the instructions supplied with the blower power pack.



Side Power Adaptor

Preliminary Start-Up

1. Check all electrical connections for tightness and contact.
2. Check for and remove all loose items in or near the inlet and outlet of the unit.
3. Check that all remote controls are wired into the control system and all service switches are in the OFF position.
4. Check that all optional accessories are installed properly and secured.
5. Check that hopper discharge is open and the storage container is sealed, if equipped.
6. Turn power ON at source.
7. Turn the compressed-air supply ON. Adjust pressure regulator for 90-psi.
8. Turn the fan motor ON then OFF to check for proper rotation by referencing the rotation arrow located on the motor's mounting plate.

To reverse rotation, single-phase power supply:

Follow manufacturer's instructions on the motor's nameplate.

To reverse rotation, three-phase power supply:

Turn electrical power OFF at source and switch any two leads on the output-side of the fan-motor starter.

9. Adjust the blower/fan for proper airflow by adjusting the volume control damper on the blower/fan discharge, if equipped.

Note: Excess airflow can shorten filter bag life, cause electrical system failure, and blower motor failure.

Start-Up

1. Turn compressed-air supply ON. Adjust regulator to 90-psi.
2. Turn blower fan motor ON.



CAUTION!

Stay clear of fan inlet and outlet. Rotating machinery can cause severe personal injury.

3. Adjust airflow using the airflow control damper, if equipped.

Service Information

Operational Checklist

1. Monitor overall performance of the collector.
2. Monitor exhaust.
3. Monitor pressure drop across filter bags.
4. Monitor dust disposal.

Check Weekly

1. Pressure drop ranging from 1 to 6-in wg is typical but higher values may occur with optional filter bags.
2. Compressed-air supply pressure between 90 and 100-psi at manifold.

Check Quarterly

1. Proper solenoid and diaphragm valve operation.
2. Door seals for condition and contact. Replace or adjust as necessary.
3. Check that the clean-air plenum is free of dust accumulation. If dust is present, check the surrounding filter bags for tears or loose seals. Shining a flashlight down the center of the filter bag will reveal leaking filter bags.

Filter Bag Removal

1. Turn power to unit OFF.
2. Shut off and bleed compressed air-supply.



CAUTION!

Turn compressed-air supply OFF and bleed lines before performing service work. Sudden release of compressed air may result in severe personal injury or property damage.

3. Open the access door and remove blowpipes. See Blowpipe Installation on Page 32.



CAUTION!

Properly secure the open access door. Failure to secure the door may result in door closure when personnel are inside the dust collection equipment's walk-in clean air plenum.

4. Lift the quick-release cage handle and pull the filter cage from the bag and set aside.
5. Grasp the filter bag collar firmly on the seamed side and pull away from the tubesheet.



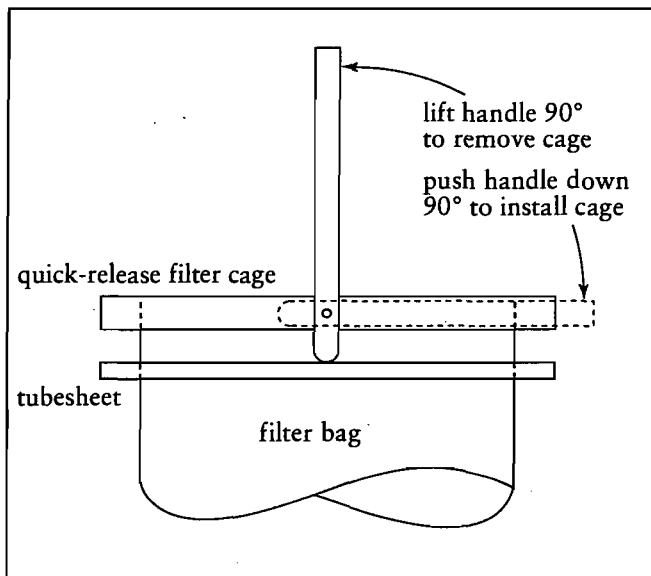
CAUTION!

- Use proper safety and protective equipment when removing contaminants and filter bags.
- Dirty filter bags may be heavier than they appear.
- Use care when removing filter bags to avoid personal injury.

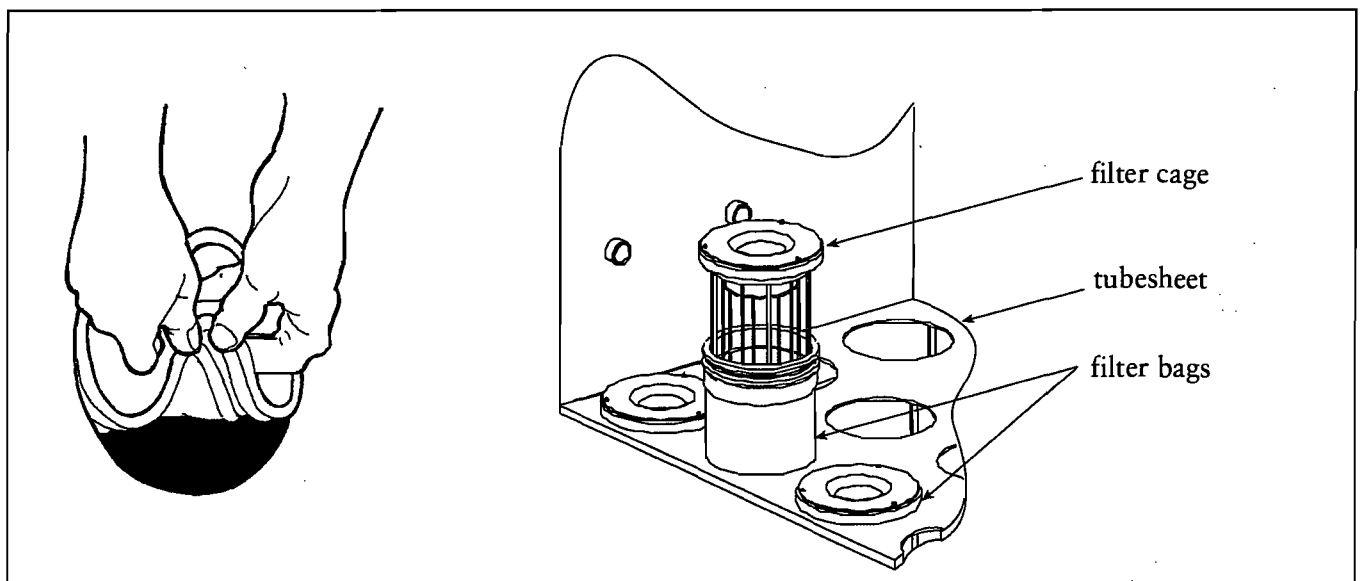
6. Push the filter bag down through the tubesheet carefully.
7. Remove filter bags from hopper and dispose of properly.

Filter Bag Installation

1. Snap the filter bag into the tubesheet filter hole. Center the filter bag-collar groove in the tubesheet hole.
2. Check that the quick-release cage handle is in the horizontal position and insert the cage into the filter bag until the cage collar is flush with the tubesheet.
3. Install blowpipes. See Blowpipe Installation on Page 32.



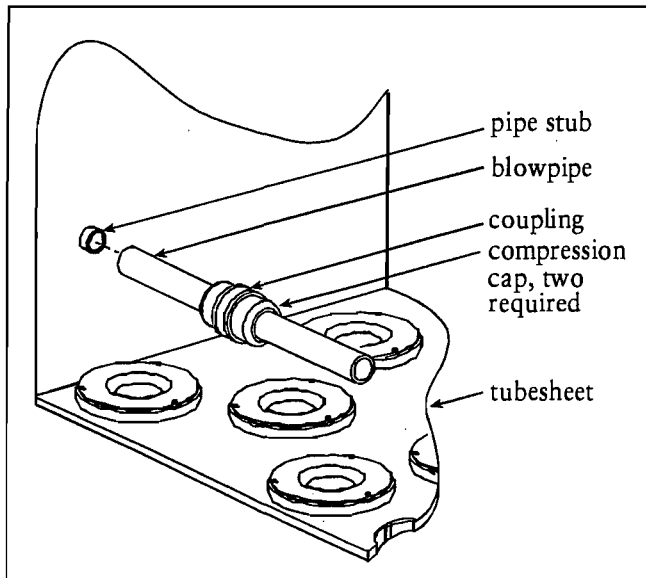
Quick-Release Cage Installation



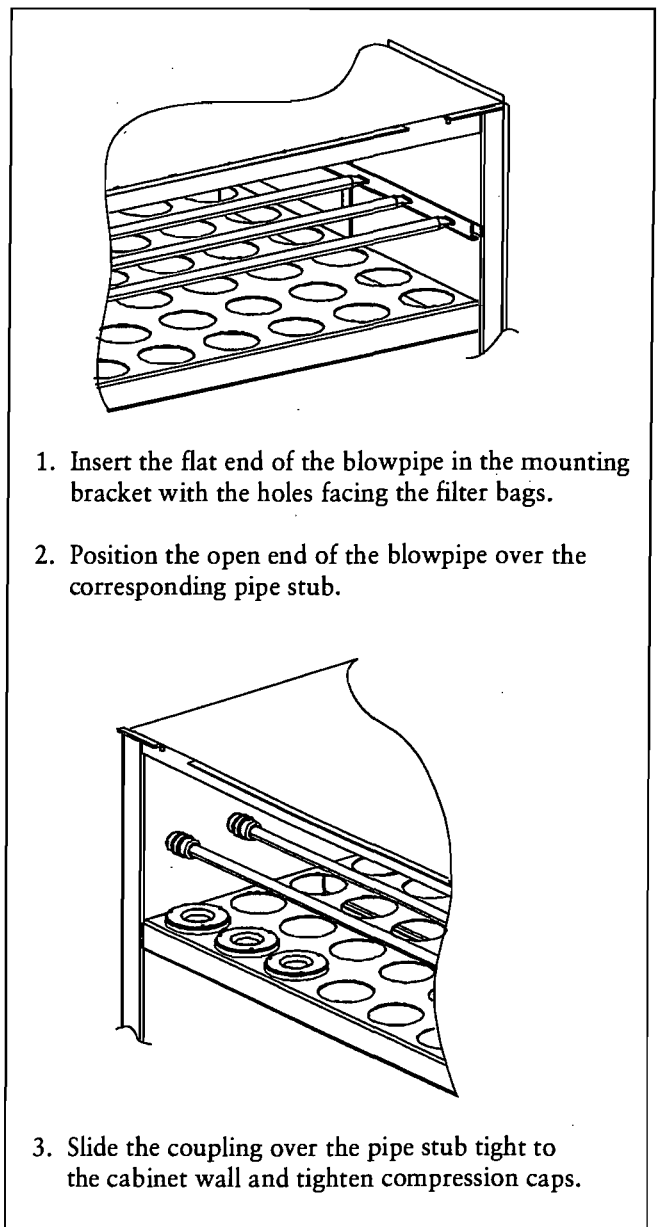
Filter Bag Installation

Blowpipe Installation

1. Slide the pipe coupling on the blowpipe.
2. Insert the flat end of the blowpipe into the mounting bracket on the inside of the collector with the blowpipe holes down.
3. Position the open end of the blowpipe against the corresponding pipe stub.
4. Slide the coupling over the pipe stub until it touches the cabinet wall.
5. Tighten both coupling compression caps with a pipe wrench.
6. Reverse sequence to remove.



Blowpipe Installation



Blowpipe Installation Details

Compressed Air Components



CAUTION!

Turn compressed-air supply OFF and bleed lines before performing service work. Sudden release of compressed air may result in severe personal injury or property damage.

1. Periodically check the compressed air components and replace compressed-air filters.
2. Drain moisture following the manufacturer's instructions.
3. With the compressed-air supply ON, check the cleaning valves, solenoid valves, and tubing for leaks. Replace as necessary.

Dust Disposal

1. Turn unit OFF and empty dust container as necessary to minimize dust in the hopper.
2. If the optional 55-gallon drum attachment is used, empty when drum is 2/3 full.
3. If optional slide gate is used, close gate before servicing drum.
4. Reinstall drum and open gate.

Explosion Relief Vents

Note: Standard explosion vents are intended for outdoor installations only.



CAUTION!

- Personal injury or property damage can result from material discharge during venting.
- The material discharged from an enclosure during the venting of an explosion should be directed safely to an outside location.
- The risk of damage or injury can be minimized or avoided by locating vented equipment outside buildings and away from normally occupied areas.

Note: Remove all shipping materials, including covers, from the explosion relief vents prior to installation. Failure to remove shipping covers will seriously compromise explosion vent operation.

- Explosion relief vents must be safely directed outdoors away from personnel, buildings, property, offices, walkways, and catwalks to reduce risk of damage to property and personal injury. Explosion venting calculations are based on formulas from NFPA-68, 1998 for outdoor applications only, with no duct or obstructions on the explosion vent panel.
- Explosion vents are suitable for negative or positive pressure installations ± 20 "wg.
- Contact Donaldson for assistance in calculating safe and specific venting requirements for Torit equipment.

Explosion Vent Replacement

1. Turn power to unit OFF.
2. Shut off and bleed compressed-air supply.



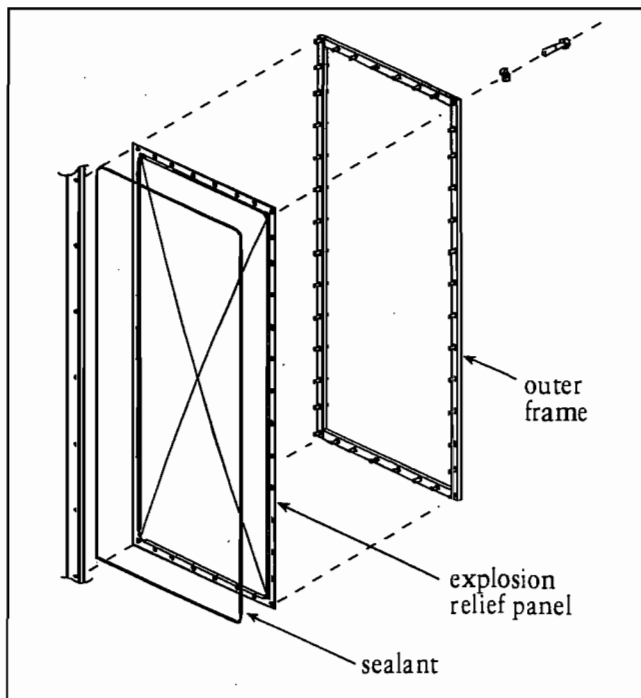
CAUTION!

Turn compressed-air supply OFF and bleed lines before performing service work. Sudden release of compressed air may result in severe personal injury or property damage.

3. Loosen panel frame bolts.
4. Remove the outer frame and set aside.
5. Pry the explosion relief panel from the inner frame, being careful to avoid sharp edges. Dispose of properly.
6. Install new explosion relief panel on the inner frame using sealant, bolts, and the outer frame.

Note: Handle explosion relief panels with extreme care. Do not bend, flex, scratch, dent, or otherwise damage the assembly.

Do not use the explosion relief panel as a temporary work surface for hand tools. Premature failure may occur.



Explosion Vent Panel Replacement

Troubleshooting

| Problem | Probable Cause | Remedy |
|---|---|--|
| Blower fan and motor do not start | Improper motor wire size | Rewire using the correct wire gauge as specified by national and local codes. |
| | Not wired correctly | Check and correct motor wiring for supply voltage. See motor manufacturer's wiring diagram. Follow wiring diagram and the National Electric Code. |
| | Unit not wired for available voltage | Correct wiring for proper supply voltage. |
| | Input circuit down | Check power supply to motor circuit on all leads. |
| Blower fan and motor start, but do not stay running | Electrical supply circuit down | Check power supply circuit for proper voltage. Check for fuse or circuit breaker fault. Replace as necessary. |
| | Incorrect motor starter installed | Check for proper motor starter and replace if necessary. |
| | Access doors are open or not closed tight | Close and tighten access doors. See Filter Bag Installation. |
| | Hopper discharge open | Install slide gate or drum cover arrangement on hopper discharge. See 55-Gallon Drum Pack. |
| | Blower fan damper control not adjusted properly | Check airflow in duct. Adjust damper control until proper airflow is achieved and the blower-motor's amp draw is within the manufacturer's rated amps. |
| Clean-air outlet discharging dust | Electrical circuit overload | Check that the power supply circuit has sufficient power to run all equipment. |
| | Filter bags not installed correctly | See Filter Bag Installation. |
| | Torn or damaged filter bags | Inspect filter bags using a flashlight. Replace as necessary. Use only genuine Donaldson replacement parts. See Filter Bag Installation. |
| | Access cover(s) loose | Tighten access doors securely. See Filter Bag Installation. |
| Insufficient airflow | Fan rotation backwards | Proper fan rotation is clockwise when looking down at the blower motor. See Preliminary Start-Up. |

Troubleshooting, continued

| Problem | Probable Cause | Remedy |
|--------------------------------|---|--|
| Insufficient airflow continued | Access doors open or not closed tight | Check that all access doors are in place and secured. Check that the hopper discharge opening is sealed and that optional attachments are installed correctly. See 55-Gallon Drum Pack. |
| | Fan exhaust area restricted | Check fan exhaust area for obstructions. Remove material or debris. Adjust damper flow control. |
| | Blowpipes not installed correctly | Check that blowpipes are installed with the holes facing down and centered over the filter bags. See Blowpipe Installation. |
| | Filter bags need replacement | Remove and replace using genuine Donaldson replacement filters. See Filter Bag Installation. |
| | Lack of compressed air | Check that a minimum of 90-psig is available. See Compressed Air Installation. |
| | Pulse cleaning not energized | Use a voltmeter to check supply voltage to the timer board. Check and replace the fuse on the timer board if necessary. See Solid-State Timer Installation. |
| | Dust storage area overfilled or plugged | Clean out dust storage area. See Dust Disposal. |
| | Pulse valves leaking compressed air | Lock out all electrical power to the unit and bleed the compressed air supply. Check for debris, valve wear, or diaphragm failure by removing the diaphragm cover on the pulse valves. Check for solenoid leaks or damage. If pulse valves or solenoid valves and tubing are damaged, replace. |
| | Solid-State Timer failure | Using a voltmeter, check supply voltage to the timer board. Check and replace the fuse on the timer board if necessary. If the fuse is good and input power is present, but output voltage to the solenoid valves is not, replace the timer board. See Solid-State Timer Installation. |
| | Solid-State Timer out of adjustment | See Solid-State Timer and Solid-State Timer Wiring Diagram. |

| Problem | Probable Cause | Remedy |
|--|---|--|
| No display on the Delta P control | No power to the control | Use a voltmeter to check for voltage at Terminal TB1. |
| | Fuse blown | Check the fuse in the F1 fuse tower. Replace if necessary. |
| Display on Delta P control does not read zero when at rest | Out of calibration | Disconnect pressure tubing. See Delta P Control. |
| | With collector discharging outside, differential pressure is present from indoor to outdoor | Recalibrate with the pressure tubing attached as described in the Delta P Control section. |
| Delta P control ON, but cleaning system does not start | Not wired to the timing board correctly | Connect the pressure switch on the timer board to Terminals 7 and 8 on TB3. |
| | Faulty relay | Using a multimeter, test relay for proper closure. Replace if necessary. |
| | Pressure tubing disconnected, ruptured, or plugged | Check tubing for kinks, breaks, contamination, or loose connections. |
| Pulse-cleaning never stops | Pressure switch terminals on the timer board jumpered | Remove jumper wire on solid-state timer board before wiring to the Delta P control. |
| | Pressure switch not wired to the timer board correctly | Connect the pressure switch on the timer board to Terminals 7 and 8 on TB3. |
| | High or low setpoint not adjusted for system conditions | Adjust setpoints to current conditions. |
| | Pressure tubing disconnected, ruptured, or plugged | Check tubing for kinks, breaks, contamination, or loose connections. |
| Alarm light is ON | Alarm setpoint too low | Adjust to a higher value. |
| | Excess pressure drop | Check cleaning system and compressed-air supply. Replace filter cartridges if filters do not clean down. |
| | Pressure tubing disconnected, ruptured or plugged | Check tubing for breaks, contamination, or loose connections. |
| Delta P arrow keys do not work | Improper operation | Press and hold one of the three setpoint keys to use arrow keys. |
| | Programming keys disabled | Remove the Program Disable jumper from Terminals 3 and 4 on TB2. |

Troubleshooting, continued

| Problem | Probable Cause | Remedy |
|---|-------------------------|--|
| Cleaning light is ON, but cleaning system not functioning | Improper wiring | Check wiring between the Delta P Control and the timer board, and between the timer board and solenoid valve coils. |
| | Defective solenoids | Check all solenoid coils for proper operation. |
| | No compressed air | Check that the compressed air supply is ON and that the shut-off valve is OPEN. See Compressed Air Installation. |
| | Timer board not powered | Check power ON light on timer board's LED display. If not illuminated, check the supply voltage to the timer board. Check the fuse on the timer board. Replace if necessary. |
| | Timer board defective | If LED is illuminated, observe the output display. Install a temporary jumper across the pressure switch terminals. Output levels should flash in sequence. Check output using a multimeter set to 150-Volt AC range. Measure from SOL COM to a solenoid output. The needle will deflect when LED flashes for that output if voltage is present. If LED's do not flash, or if no voltage is present at output terminals during flash, replace the board. |

Limited Warranty

Donaldson® warrants to the original purchaser that the major structural components of the goods will be free from defects in materials and workmanship for ten (10) years from the date of shipment, if properly installed, maintained and operated under normal conditions. Donaldson warrants all other Donaldson built components and accessories including Donaldson Airlocks, TBI Fans, TRB Fans, Fume Collector products and Donaldson built Afterfilter housings for twelve (12) months from date of shipment. Donaldson warrants Donaldson built filter elements to be free from defects in materials and workmanship for eighteen (18) months from date of shipment. Donaldson does not warrant against damages due to corrosion, abrasion, normal wear and tear, product modification, or product misapplication. Donaldson also makes no warranty whatsoever as to any goods manufactured or supplied by others including electric motors, fans and control components. After Donaldson has been given adequate opportunity to remedy any defects in material or workmanship, Donaldson retains the sole option to accept return of the goods, with freight paid by the purchaser, and to refund the purchase price for the goods after confirming the goods are returned undamaged and in usable condition. Such a refund will be in the full extent of Donaldson's liability. Donaldson shall not be liable for any other costs, expenses or damages whether direct, indirect, special, incidental, consequential or otherwise. The terms of this warranty may be modified only by a special warranty document signed by a Director, General Manager or Vice President of Donaldson. Failure to use genuine Donaldson replacement parts may void this warranty. **THERE EXIST NO OTHER REPRESENTATIONS, WARRANTIES OR GUARANTEES EXCEPT AS STATED IN THIS PARAGRAPH AND ALL OTHER WARRANTIES INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, WHETHER EXPRESS OR IMPLIED ARE HEREBY EXPRESSLY EXCLUDED AND DISCLAIMED.**

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For genuine Donaldson Torit replacement filters and parts, call the Parts Express Line

800-365-1331 USA
800-343-3639 within Mexico

www.donaldsontorit.com

For faster service, have unit's model and serial number, part number, description, and quantity available.



Donaldson
Filtration Solutions

Donaldson Company, Inc.
Industrial Air Filtration
P.O. Box 1299
Minneapolis, MN 55440-1299
dustmktg@mail.donaldson.com

Donaldson Company, Inc. is the leading designer and manufacturer of dust, mist, and fume collection equipment used to control industrial-air pollutants. Our equipment is designed to help reduce occupational hazards, lengthen machine life, reduce in-plant maintenance requirements, and improve product quality.

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IOM 7547801, Revision 6

Printed in USA
October 2005

ATTACHMENT C
Emission Test Results



**WASTE-TO-ENERGY
NORTH AMERICA**

October 21, 2008

Mr. Max Grondahl
Florida Department of Environmental Protection
Division of Air Resource Management
Southwest District
13051 North Telecom Parkway
Temple Terrace, FL 33637-0926

Mr. Max Grondahl
Florida Department of Environmental Protection
Division of Air Resource Management
Southwest District
13051 North Telecom Parkway
Temple Terrace, FL 33637-0926

Ref: Pinellas County Resource Recovery Facility
Refuse-to-Waste Facility Permit # 1030117-007-AC
Notification to Conduct Compliance Test For New Baghouse at RSPB

Dear Mr. Grondahl:

On September 30th, 2008 the visual emission tests were completed for the RSPB baghouse (Method 9) and the ash systems (including the 5 ventilation vents at the RSPB - Method 22) per the protocol that was submitted to the FDEP. During the test no visual emissions were noted.

When Permit #: 1030117-006-AV is renewed in 2010 it is our intent to change EU005 to reflect the new bag house and 5 ventilation fans at the RSPB. These visual emission tests complete the initial compliance test for the RSPB, which was based on Condition B.31 and C.11 & 13 of Permit #:1030117-006-AV.

If you have any questions or concerns please feel free to give me a call at my office phone (727) 572-9163 (x 14), or at my cell phone (727) 735-4546.

Sincerely,

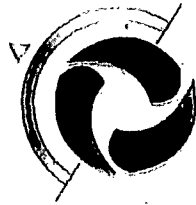
A handwritten signature in black ink, appearing to read "Steve Reinhart".

Steve Reinhart
Environmental Manager

CC: Danielle Henry, FDEP
Christopher Neu; Veolia ES
Ken Li, Veolia ES
Anetha Lue; Veolia ES
Jayver Luque; Veolia ES
Kelsi Oswald; Pinellas County Solid Waste
Central File - FDEP Notification

Veolia ES Pinellas, Inc.
3001 110th Avenue N.
St. Petersburg, Florida 33716
tel: 727-572-9163
www.VeoliaES.com

A small, handwritten mark or signature in the bottom right corner of the page.



Aeromet
Engineering, Inc.
Solutions for a Changing Environment

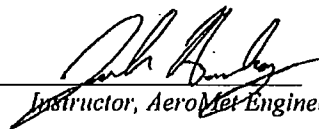
Certification of Visible Opacity Reading

Stephen Reinhart

qualified to conduct EPA Method 9 Tests for visible opacity in accordance with the methods established for such qualification in 40 CFR Part 60 Appendix A on August 5, 2008

Date: 8/5/08

Signature: _____


Instructor, Aeromet Engineering

Certificate expires: 05/05/09



Aeromet
Engineering, Inc.
Solutions for a Changing Environment

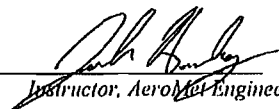
Certification of Lecture Attendance

Stephen J. Reinhart

*In accordance with Florida DEP Rule 62-297.320, the aforementioned attended a
visible emissions observer lecture training course
on July 15, 2008.*

Date: 7/15/08

Signature: _____


Instructor, Aeromet Engineering

Certificate expires: 7/15/11



Method 5
Visible Emissions Observations Form

| | | | | | | | | | | | | | |
|---|--|------------------------------------|-----|--|----|----------------------------|--|---------|-----|--|----|------|----|
| SOURCE NAME ZSPB Brixham | | OBSERVATION DATE 9-30-07 | | | | START TIME 10:00 | | | | STOP TIME 11:00 | | | |
| ADDRESS Veolia ES Pinellas, Inc. | | SEC | MIN | 0 | 15 | 30 | 45 | MIN | SEC | 0 | 15 | 30 | 45 |
| 3001-110th Ave N | | 1 | 0 | - | - | - | - | 31 | 10 | - | - | - | - |
| CITY St. Petersburg | STATE FL | 2 | 0 | - | - | - | - | 32 | 0 | - | - | - | - |
| ZIP 33716 | SOURCE ID NUMBER | 3 | 0 | - | - | - | - | 33 | 0 | - | - | - | - |
| PHONE | | 4 | 0 | - | - | - | - | 34 | 0 | - | - | - | - |
| PROCESS EQUIPMENT | OPERATING MODE | 5 | 0 | - | - | - | - | 35 | 0 | - | - | - | - |
| CONTROL EQUIPMENT | OPERATING MODE | 6 | 0 | - | - | - | - | 36 | 0 | - | - | - | - |
| DESCRIBE EMISSION POINT START | | 7 | 0 | - | - | - | - | 37 | 0 | - | - | - | - |
| HEIGHT ABOVE GROUND LEVEL | HEIGHT RELATIVE TO OBSERVER START STOP | 8 | 0 | - | - | - | - | 38 | 0 | - | - | - | - |
| DISTANCE FROM OBSERVER START STOP | DIRECTION FROM OBSERVER START STOP | 9 | 0 | - | - | - | - | 39 | 0 | - | - | - | - |
| DESCRIBE EMISSIONS START STOP | | 10 | 0 | - | - | - | - | 40 | 0 | - | - | - | - |
| EMISSION COLOR START STOP | PLUME TYPE: CONTINUOUS <input type="checkbox"/> FUGITIVE <input type="checkbox"/> INTERMITTENT <input type="checkbox"/> | 11 | 0 | - | - | - | - | 41 | 0 | - | - | - | - |
| WATER DROPLETS PRESENT: NO <input type="checkbox"/> YES <input type="checkbox"/> | IF WATER DROPLET PLUME: ATTACHED <input type="checkbox"/> DETACHED <input type="checkbox"/> | 12 | 0 | - | - | - | - | 42 | 0 | - | - | - | - |
| POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED START STOP | | 13 | 0 | - | - | - | - | 43 | 0 | - | - | - | - |
| DESCRIBE BACKGROUND START STOP | | 14 | 0 | - | - | - | - | 44 | 0 | - | - | - | - |
| BACKGROUND COLOR START STOP | SKY CONDITIONS START STOP | 15 | 0 | - | - | - | - | 45 | 0 | - | - | - | - |
| WIND SPEED START STOP | WIND DIRECTION START STOP | 16 | 0 | - | - | - | - | 46 | 0 | - | - | - | - |
| AMBIENT TEMP START STOP | WET BULB TEMP RH, percent | 17 | 0 | - | - | - | - | 47 | 0 | - | - | - | - |
| <p>Source Layout Sketch</p> <p>Draw North Arrow</p> <p>Emission Point:</p> <p>Sun Location Line</p> <p>140°</p> <p>Observers Position</p> <p>Sun Wind Plume and Stack</p> | 18 | 0 | - | - | - | - | - | 48 | 0 | - | - | - | - |
| | 19 | 0 | - | - | - | - | - | 49 | 0 | - | - | - | - |
| | 20 | 0 | - | - | - | - | - | 50 | 0 | - | - | - | - |
| | 21 | 0 | - | - | - | - | - | 51 | 0 | - | - | - | - |
| | 22 | 0 | - | - | - | - | - | 52 | 0 | - | - | - | - |
| | 23 | 0 | - | - | - | - | - | 53 | 0 | - | - | - | - |
| | 24 | 0 | - | - | - | - | - | 54 | 0 | - | - | - | - |
| | 25 | 0 | - | - | - | - | - | 55 | 0 | - | - | - | - |
| | 26 | 0 | - | - | - | - | - | 56 | 0 | - | - | - | - |
| | 27 | 0 | - | - | - | - | - | 57 | 0 | - | - | - | - |
| 28 | 0 | - | - | - | - | - | 58 | 0 | - | - | - | - | |
| 29 | 0 | - | - | - | - | - | 59 | 0 | - | - | - | - | |
| 30 | 0 | - | - | - | - | - | 60 | 0 | - | - | - | - | |
| AVERAGE OPACITY FOR HIGHEST PERIOD | | NUMBER OF READINGS ABOVE % WERE | | RANGE OF OPACITY READINGS | | MINIMUM | | MAXIMUM | | OBSERVER'S NAME (PRINT) Stephen J. Reinert | | | |
| OBSERVER'S SIGNATURE <i>Stephen J. Reinert</i> | | DATE 9/30/07 | | ORGANIZATION Veolia ES Pinellas, Inc | | | I HAVE RECEIVED A COPY OF THESE OPACITY OBSERVATIONS | | | CERTIFIED BY: | | DATE | |
| SIGNATURE <i>SJR</i> | | DATE | | VERIFIED BY: | | | DATE | | | TITLE | | | |

Veolia ES Pinellas, Inc.
3001 110th Avenue N.
St. Petersburg, Florida 33716
tel: 727-572-9163
www.VeoliaES.com



| FUGITIVE OR SMOKE EMISSION INSPECTION OUTSIDE LOCATION - METHOD 22 | | | |
|---|-----------------------|--|-----------------------------------|
| Company | Veolia ES Pinellas | Observer | Stephen T. Zanbot |
| Location | Process Building/RSPB | Affiliation | |
| Company Rep. | | Date | 9-30-08 |
| Sky Conditions | | Wind Direction | Calm |
| Precipitation | — | Wind Speed | 0 |
| Industry | | Process Unit | |
| Sketch Process Unit: Indicate observer position relative to source; indicate potential emission points and/or actual emission points. | | | |
| Location 1 | Location 2 | Location 3 | Location 4 |
| | Galley Belt CI | SDAs Bighouse | |
| OBSERVATIONS | | | |
| Location | Clock Time | Observation Period Duration (min:sec) | Actual Emission Time (min:sec) |
| Location 1: Start | No Emissions | 1:50 | |
| Location 1: Stop | | 2:15 | 1:00 |
| Location 2: Start | No Emissions | 2:30 | |
| Location 2: Stop | | 3:00 | 1:00 |
| Location 3: Start | No Emissions | 3:45 | |
| Location 3: Stop | | 4:45 | 1:00 |
| Location 4: Start | | | |
| Location 4: Stop | | | |
| Location 5: Start | | | |
| Location 5: Stop | | | |
| Total Sample Time: | | 3 hours | |
| Total Emission Time: | | 0 | |
| Emission Frequency: | | 0 | |
| (Total Emission Time/Total Sample Time) x 100% | | | |