Be sure to read this manual thoroughly before using the instrument. Please keep this manual as a service reference.
## Component List

### Standard:

<table>
<thead>
<tr>
<th>ITEM</th>
<th>Model</th>
<th>QTY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duct Air Leakage Tester (main unit)</td>
<td>6900</td>
<td>1</td>
</tr>
<tr>
<td>Flow Grid</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Low flow nozzle</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Ø6 Silicone tube (white)</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Duct connection hose</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Power cord</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Container</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Ø 6 Silicon tube (blue)</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Ø 6 Silicon tube (red)</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Ø 100 adjustable over lock straps</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Calibration certificate</td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

### Optional Extras:

<table>
<thead>
<tr>
<th>ITEM</th>
<th>Model</th>
<th>QTY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smoke pellet kits</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dust proof cover</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Symbols for warning mentioned in this manual are defined below:

Symbols classifications

⚠️ **Danger: To Prevent Serious Injury or Death**

Warnings in this classification indicate a danger that may result in serious injury or death if not observed.

⚠️ **Caution: To Prevent Damage to the Product**

Warnings in this classification indicate a risk of damage to the product that may void the product warranty if not observed.

Description of Symbols

⚠️ This symbol indicates a condition that requires caution (including danger). The subject of each caution is illustrated inside the triangle.

🚫 This symbol indicates a prohibition. Do not take the prohibited action shown inside or near this symbol.

● This symbol indicates a mandatory action. A specific action is given near the symbol.

<table>
<thead>
<tr>
<th>![WARNING]</th>
</tr>
</thead>
<tbody>
<tr>
<td>🚫 Never bring the fabric hood near flammable gas or heat source.</td>
</tr>
<tr>
<td>Heat forbidden</td>
</tr>
<tr>
<td>🚫 Do not disassembly or refit the instrument.</td>
</tr>
<tr>
<td>Disassembly prohibition</td>
</tr>
<tr>
<td>⚠️ Use properly under the instruction manual.</td>
</tr>
<tr>
<td>Using properly</td>
</tr>
<tr>
<td>🚫 If abnormal smells, noises or smoke occur, or if liquid enters the instrument, pull out the AC adapter and remove the batteries immediately. Then send it to the maintenance Dept. of KANOMAX for after service.</td>
</tr>
<tr>
<td>Using properly</td>
</tr>
<tr>
<td>🚫 Do not expose the fabric hood, base and the instrument to water or rain.</td>
</tr>
<tr>
<td>Forbidden</td>
</tr>
</tbody>
</table>
### CAUTION

<table>
<thead>
<tr>
<th>Using properly</th>
<th>Forbidden</th>
</tr>
</thead>
<tbody>
<tr>
<td>○ Always unplug when the instrument not in use.</td>
<td>○ Do not use or leave the instrument in a high temperature, high humidity or dusty environment. Do not leave the instrument under direct sunlight.</td>
</tr>
<tr>
<td>··· Failure to do so may cause an electric shock, a fire or circuit damage.</td>
<td>··· Otherwise, the instrument may not function properly out of the specified operating conditions or the inside components damaged.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Forbidden</th>
</tr>
</thead>
<tbody>
<tr>
<td>○ Never dropping the unit or place heavy objects on it</td>
</tr>
<tr>
<td>··· It may cause damage or malfunction to the instrument</td>
</tr>
</tbody>
</table>
1. Introduction ........................................................................................................................................................ 6
  1.1. Product features ........................................................................................................................................... 6
  1.2. Main Specifications ...................................................................................................................................... 7
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1. Introduction

Duct Air Leakage Tester is mainly used for HVAC duct air leakage testing. Testing can be in sections and the overall pipeline after whole system installation to make the HVAC system effective and avoiding energy waste. Model 6900 can judge the whether the duct seal is qualified based on and compliant with the corresponding accreditation standard. Touch screen with LCD color display and friendly Man-machine interface will make operation convenient and easier.

1.1. Product features

- Duct air leakage testing under positive or negative flow.
- Wide air flow testing range, two measuring tools ensure the test accuracy.
- Accreditation result will determine whether the duct sealing qualified.
- Real time display the leakage, testing pressure, temperature and atmosphere.
- 1000 groups data storage, review and delete.
- 4.7 inches LCD touch screen for easy operation.
- Simple construction and convenient installation.
1.2. Main Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>DALT 6900</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Flow</td>
<td></td>
</tr>
<tr>
<td>Ranges</td>
<td>Flow Grid: 21 to 377 CFM (36 to 640 m3/h)</td>
</tr>
<tr>
<td></td>
<td>Nozzle: 2 to 21 CFM (4 to 36 m3/h)</td>
</tr>
<tr>
<td>Accuracy</td>
<td>2.5 % of Reading ± 0.06 CFM (0.1 m3/h)</td>
</tr>
<tr>
<td>Resolution</td>
<td>0.01 CFM (0.01 m3/h)</td>
</tr>
<tr>
<td>Pressure</td>
<td>± 10 in.wg (± 2500 Pa)</td>
</tr>
<tr>
<td>Ranges</td>
<td>2 to 21 CFM (4 to 36 m3/h)</td>
</tr>
<tr>
<td>Accuracy</td>
<td>1% of Reading ± 0.004 in.wg (1 Pa)</td>
</tr>
<tr>
<td>Resolution</td>
<td>0.001 in.wg (0.1 Pa)</td>
</tr>
<tr>
<td>Temperature</td>
<td>32 to 140 °F (0 to 60 °C)</td>
</tr>
<tr>
<td>Ranges</td>
<td>±1 °F (0.5 °C)</td>
</tr>
<tr>
<td>Accuracy</td>
<td>±1 °F (0.5 °C)</td>
</tr>
<tr>
<td>Resolution</td>
<td>±0.1 °F (0.1 °C)</td>
</tr>
<tr>
<td>Absolute Pressure</td>
<td>20.6 to 38.3 in.Hg (70 to 130kPa)</td>
</tr>
<tr>
<td>Ranges</td>
<td>2% of Reading</td>
</tr>
<tr>
<td>Accuracy</td>
<td>2% of Reading</td>
</tr>
<tr>
<td>Resolution</td>
<td>0.1 in.Hg (0.1 kPa)</td>
</tr>
<tr>
<td>Power Source</td>
<td>DALT 6900-0E, 110-120V, 1 Phase, 50/60Hz, 16A</td>
</tr>
<tr>
<td></td>
<td>DALT 6900-1E, 220-240V, 1 Phase, 50/60Hz, 10A</td>
</tr>
<tr>
<td>Weight</td>
<td>Approx. 75kg</td>
</tr>
<tr>
<td>Dimensions</td>
<td>W21 x D20 x H47 inches (54 x 50 x 120 mm)</td>
</tr>
<tr>
<td>Data logging</td>
<td>Up to 1000 measurements</td>
</tr>
</tbody>
</table>
2. Outlook & Structure

2.1. Construction

2.2. Controller structure
3. Installation and Assembling

According to the testing air flow range, nozzles or Matrix will be optional as the testing tool. And it’s applicable to both air blower system and exhaust system of the air conditioning ducts. Generally speaking, take nozzle as the tool for low flow test and take matrix as the tool for the High flow test.

3.1. Testing duct connection

Preparation before testing:

(1) Refer to Appendix 1, Leakage testing standard for a confirmation of required testing, such as:
   - Leakage standard to be followed;
   - Air tightness / leakage class to be achieved;
   - Testing pressure.

(2) Temporarily seal all the openings of the ductwork except one, which will be connected to the duct leakage tester. Calculate the area of testing duct surface to ensure it’s available and within the input range.

Connect the testing duct to the Tester:

(1) Position the DALT 6900 unit as close to the remaining opening in the ductwork as possible to minimize the flexible tubing needed. Minimize bends in the flexible tubing to reduce the pressure loss, giving the best performance.

(2) Fit one end of the flexi-tube with adapter spigot to the 6900. Make an air-tight seal using one of the over lock straps and lever-locking cam provided. Connect the other end with flange to the testing duct required. User need to install and connection with proper way according to the practical situation.

(3) If the static pressure tapping on the testing duct, connect the static tube as the tapping or drill a Φ6mm hole in the duct and insert the static tube into the duct. Seal around the hole. Connect the other end of the static tube to the Controller cabinet.
3.2. High-flow testing

High-flow testing takes Matrix grid as the tool for Duct leakage flow measuring. Connect the matrix grid tool to the fan outlet, tight locking the cam lock to ensure proper fit. Connect the flow grid pressure tap to the Differential pressure flow port of the controller cabinet. And same color hose-tap connection please.

**Noted:** Hard push cam lock arms at the same time when locking the cam lock.

1. **Duct testing under Positive pressure:** Connect the flexible tubing to the outlet side of the flow grid pressure tap then tight lock.

2. **Duct testing under Negative pressure:** Connect the flexible tubing to the flow inlet side of the Fan then tight lock.
3.3. Low-flow testing

Low-flow testing takes nozzles as the tool for Duct leakage flow measuring. Install the low-flow nozzles to the blower outlet, tight locking the cam lock adaptor. Connect the pressure tap of the nozzle to the Differential pressure flow port of the controller cabinet. And same color hose-tap connection please.

1. Duct testing under Positive pressure: Connect the flexible tubing to the flow outlet side of the nozzle then tight lock.
2. Duct testing under Negative pressure: Connect the flexible tubing to the flow inlet side of the Fan then tight lock.
4. Operating Instructions

4.1. Power On

1. **Power source**: AC power supply with a Transient protector is for DALT 6900. Before turning on for start measuring, check and ensure the correct and securely connection behind the controller cabinet.

2. **Turn On for start measuring**: Power the controller on by plugging in the power cord. Press Power On of the Controller for start measuring.

3. Application menus

<table>
<thead>
<tr>
<th>Application</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accreditation</td>
<td>Application items in “Accreditation”: set the Accreditation Standard for Duct leakage testing, Testing as steps according to the set standard and save testing data as request.</td>
</tr>
<tr>
<td>Measure</td>
<td>Application items in “Measure”: airflow, pressure, temperature and atmosphere.</td>
</tr>
<tr>
<td>Setting</td>
<td>Application items in “Setting”: date, time, testing mode, unit and other parameters’ setting.</td>
</tr>
<tr>
<td>My Data</td>
<td>Application options in “My Data”: browsing data or deleting data.</td>
</tr>
<tr>
<td>USB</td>
<td>Application of “USB”: Output the data record to U disk.</td>
</tr>
<tr>
<td>About</td>
<td>Application of “About”: introduce the fundamental performance parameters.</td>
</tr>
</tbody>
</table>

4.2. “Accreditation” menu

In Accreditation Menu, application items include select Flow device, Leakage testing standard, Air tightness class and input Duct Surface Area and testing time for a requested static pressure in duct. Duct accreditation should be under the request static pressure. And the accreditation result can be stored after testing or re-start
the testing.

Click “Accreditation” to access the Application menu.

Select the Flow Device.

Click NEXT for Testing standard selection

Click NEXT for Air Tightness class selection

Click NEXT for adjusting static pressure in duct.

Press “START” for motor start running
Switch “Fan speed control” for adjusting the static pressure in duct

Duct Air Leakage Tester Operation Manual Ver.1
Real-time displaying the static pressure in duct.

6. Press [START] and Adjust the Static Pressure

2.000 inH2O

When pressure statically, click NEXT for starting test.

Click NEXT for testing begin

Click [START] for testing begin

Click [SAVE] for data saving.

Through after the setting time, output display the testing result.

NOTE: After the Measurement, please press “STOP” button of “Blower Control” to stop the Blower.
4.3 “Measure” menu

Measure items include: airflow, static pressure, temperature and atmosphere.

Click “Measure” to access the Application menu.

Select the Flow Device

1. Select the Flow Device
   - Flow Grid
   - Nozzle

Press NEXT to enter the selected

When pressure is adjusted to the request, click for start Airflow testing.

Press START for motor start running
Switch “Fan speed control” for adjusting the static pressure in Duct

Press "STOP" for Fan stop running.
4.4 “Setting” menu

In “Setting” menu, application items include: Date, Time, STD/ACT, Temperature, Atmosphere, Air flow and Static pressure as shown below.

1. Date setting
### 4.5 “My Data” menu

1. Press ↓ or ↑ for page turning browsing.

<table>
<thead>
<tr>
<th>Tool: Flow</th>
<th>Standard: US</th>
<th>Class: 24</th>
<th>Limit: 0.377579 cfm/ft²</th>
<th>Area: 245.5 ft²</th>
<th>Time: 120 sec</th>
<th>Pass</th>
<th>70.2 ℉</th>
<th>29.9 inHg</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016/03/07</td>
<td>13:32:54</td>
<td>0.274985</td>
<td>67.51 cfm</td>
<td>2.008 inH2O</td>
<td>001/0010</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. Click the serial No. on upper right corner for data reviewing.

3. Through Delete range settings for deleting selected data.

4. Exit. Click ← for Exiting the data browsing interface.
4.6 “USB” menu

The data record can be output by USB disk.

When insert USB disk to USB connector, it will be found by the system and all the saved data will be output.

NOTE: if too many file in USB disk, the time of output will be long. Please clean up the USB disk before data output.

4.7 “About” menu

Click “About” for entering the introduction menu, describing the main parameters of the instrument.
## 5. Error and Troubleshooting

<table>
<thead>
<tr>
<th>No.</th>
<th>Symptom</th>
<th>Possible causes</th>
<th>Corrective action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Controller start failure</td>
<td>Power connect failure</td>
<td>Check the power source and connecting wire</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Internal circuit problem</td>
<td>Connect with manufacturer</td>
</tr>
<tr>
<td>2</td>
<td>Fan motor will not run</td>
<td>Power phase shortage</td>
<td>Check the power supply</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Motor controller line is not connected or poor connect.</td>
<td>Check the Motor Control line on the back of Controller</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Motor controller failure</td>
<td>Restart Controller. Or connect with manufacturer</td>
</tr>
<tr>
<td>3</td>
<td>Touch screen failure</td>
<td>External disturbances</td>
<td>Check around, away from the possible external disturbances, re-start the Controller.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Capacitive touch screen only recognizes finger touch</td>
<td>Finger touch directly</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Touch screen failure</td>
<td>Connect with manufacturer</td>
</tr>
<tr>
<td>4</td>
<td>Temperature display wrong</td>
<td>Temperature line is not connected or poor connect.</td>
<td>Check and well connect the temperature line.</td>
</tr>
<tr>
<td>5</td>
<td>Air flow range displayed wrong</td>
<td>Testing tool set wrong matching with the fixed one.</td>
<td>Re-set the testing tool or re-install the matching testing tool.</td>
</tr>
<tr>
<td>6</td>
<td>USB data exporting failure</td>
<td>USB disk failure.</td>
<td>The available USB disk should be: support USB2.0 protocol and FAT file format.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>After plug-in USB disk, data exporting available only once</td>
<td>USB disk unplug then back plug in for data exporting again.</td>
</tr>
</tbody>
</table>
6 Warranty and Service

6.1. Product Warranty

The limited warranty set forth below is given by KANOMAX GROUP COMPANIES with respect to the KANOMAX brand Duct Air Leakage Tester and other accessories (hereafter referred to as “PRODUCT”) purchased directly from KANOMAX GROUP COMPANIES or from an authorized distributor.

Your PRODUCT, when delivered to you in new condition in its original container, is warranted against defects in materials or workmanship as follows: for a period of two (2) year from the date of original purchase, defective parts or a defective PRODUCT returned to KANOMAX GROUP COMPANIES, as applicable, and proven to be defective upon inspection, will be exchanged for a new or comparable rebuilt parts, or a refurbished PRODUCT as determined by KANOMAX GROUP COMPANIES. Warranty for such replacements shall not extend the original warranty period of the defective PRODUCT.

This limited warranty covers all defects encountered in normal use of the PRODUCT, and does not apply in the following cases:

(1) Use of parts or supplies other than the PRODUCT sold by KANOMAX GROUP COMPANIES, which cause damage to the PRODUCT or cause abnormally frequent service calls or service problems.

(2) If any PRODUCT has its serial number or date altered or removed.

(3) Loss of damage to the PRODUCT due to abuse, mishandling, alternation, improper packaging by the owner, accident, natural disaster, electrical current fluctuations, failure to follow operation, maintenance or environmental instructions prescribed in the PRODUCT’s operation manual provided by KANOMAX GROUP COMPANIES, or service performed by other than KANOMAX GROUP COMPANIES.

NO IMPLIED WARRANTY, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, APPLIES TO THE PRODUCT AFTER THE APPLICABLE PERIOD OF THE EXPRESS LIMITED WARRANTY STATED ABOVE, AND NO OTHER EXPRESS WARRANTY OR GUARANTY, EXCEPT AS MENTIONED ABOVE, GIVEN BY ANY PERSON OR ENTITY WITH RESPECT TO THE PRODUCT SHALL BIND KANOMAX GROUP COMPANIES. KANOMAX GROUP COMPANIES SHALL NOT BE LIABLE FOR LOSS OF STORAGE CHARGES, LOSS OR CORRUPTION OF DATA, OR ANY OTHER SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES CAUSED BY THE USE OR MISUSE OF, OR INABILITY TO USE, THE PRODUCT, REGARDLESS OF THE LEGAL THEORY ON WHICH THE CLAIM IS BASED, AND EVEN IF KANOMAX GROUP COMPANIES HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. IN NO EVENT SHALL RECOVERY OF ANY KIND AGAINST KANOMAX GROUP COMPANIES BE GREATER IN AMOUNT THAN THE PURCHASE PRICE OF THE PRODUCT SOLD BY KANOMAX GROUP COMPANIES AND CAUSING THE ALLEGED DAMAGE. WITHOUT LIMITING THE FOREGOING, THE OWNER ASSUMES ALL RISK AND LIABILITY FOR LOSS, DAMAGE OF, OR INJURY TO THE OWNER AND THE OWNER’S PROPERTY AND TO OTHERS AND THEIR PROPERTY ARISING OUT OF USE OR MISUSE OF, OR INABILITY TO USE, THE PRODUCT NOT CAUSED DIRECTLY BY THE NEGLIGENCE OF KANOMAX GROUP COMPANIES. THIS LIMITED WARRANTY SHALL NOT EXTEND TO ANYONE OTHER THAN THE ORIGINAL PURCHASER OF THE PRODUCT, OR THE PERSON FOR WHOM IT WAS PURCHASED AS A GIFT, AND STATES THE PURCHASER’S EXCLUSIVE REMEDY.

6.2. After service

◆ When you have a problem with your instrument, please check out the “Common Trouble Shooting” section first.

◆ If that does not help, please contact your local distributor, or contacts on the last page.
During the warranty period, we will repair at no charge a product that proves to be defective due to material or workmanship under normal use. All return shipping charges are the responsibility of the customer.

Repair after warranty expiration:
Upon request, we will repair the instrument at the customer’s expense, if the instrument’s performance is found to be recoverable by providing the repair.

Replacement parts are available for a minimum period of five (5) years after termination of production. This storage period of replacement parts is considered as the period during which we can provide repair service. For further information, please contact your local distributor, or contacts on the last page.

When making an inquiry, please provide the following information:

| * PRODUCT NAME | ----------- |
| * Model No.     | ----------- |
| * Serial No.    | ----------- |
| * Description of the problem: | ----------- |
| * Data of Purchase: Day, Month, and Year | |
## Appendix 1: Leakage Testing Standards

<table>
<thead>
<tr>
<th>No.</th>
<th>Standard</th>
<th>County</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>BS EN 1507:2006</td>
<td>EU</td>
<td>Ventilation for buildings—Sheet metal air ducts with rectangular section—Requirements for strength and leakage.</td>
</tr>
<tr>
<td>3</td>
<td>DW/143</td>
<td>EU</td>
<td>HVAC—A practical guide to Ductwork leakage testing.</td>
</tr>
<tr>
<td>4</td>
<td>Eurovent 2/2</td>
<td>EU</td>
<td>Air leakage rate in sheet metal air distribution systems.</td>
</tr>
<tr>
<td>6</td>
<td>GB50243</td>
<td>GB</td>
<td>Quality acceptance regulation of Ventilation and Air conditioning work</td>
</tr>
</tbody>
</table>

### 1. EU Standards

**EN12237**

<table>
<thead>
<tr>
<th>Air Tightness Class</th>
<th>Air Leakage Limit (fmax) m³/s/m²</th>
<th>Static Pressure Limit (ps) Pa</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Negative</td>
</tr>
<tr>
<td>A</td>
<td>$\frac{0.027 \times P_{t}^{0.65}}{1000}$</td>
<td>500</td>
</tr>
<tr>
<td>B</td>
<td>$\frac{0.009 \times P_{t}^{0.65}}{1000}$</td>
<td>750</td>
</tr>
<tr>
<td>C</td>
<td>$\frac{0.003 \times P_{t}^{0.65}}{1000}$</td>
<td>750</td>
</tr>
<tr>
<td>D</td>
<td>$\frac{0.001 \times P_{t}^{0.65}}{1000}$</td>
<td>750</td>
</tr>
</tbody>
</table>

* Class D ductwork is only for special apparatus

### 2. EU Standards

**EN1507**

<table>
<thead>
<tr>
<th>Air Tightness Class</th>
<th>Air Leakage Limit (fmax) m³/s/m²</th>
<th>Static Pressure Limit (ps) Pa</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Negative</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>A</td>
<td>$\frac{0.027 \times P_{t}^{0.65}}{1000}$</td>
<td>200</td>
</tr>
<tr>
<td>B</td>
<td>$\frac{0.009 \times P_{t}^{0.65}}{1000}$</td>
<td>500</td>
</tr>
</tbody>
</table>
3. EU Standards  Dw/143

<table>
<thead>
<tr>
<th>Duct Pressure Class</th>
<th>Static Pressure Limit</th>
<th>Maximum Air Velocity</th>
<th>Air leakage limits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Positive Pa</td>
<td>Negative Pa</td>
<td></td>
</tr>
<tr>
<td>Low-pressure – Class A</td>
<td>500</td>
<td>500</td>
<td>10</td>
</tr>
<tr>
<td>Medium pressure – Class B</td>
<td>1000</td>
<td>750</td>
<td>20</td>
</tr>
<tr>
<td>High pressure – Class C</td>
<td>2000</td>
<td>750</td>
<td>40</td>
</tr>
</tbody>
</table>

4. EU Standards  Eurovent 2/2

<table>
<thead>
<tr>
<th>Air Tightness Class</th>
<th>Air leakage limit (fmax) m³/s/m²</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>(\frac{0.027 \times P_l^{0.65}}{1000})</td>
</tr>
<tr>
<td>B</td>
<td>(\frac{0.009 \times P_l^{0.65}}{1000})</td>
</tr>
<tr>
<td>C</td>
<td>(\frac{0.003 \times P_l^{0.65}}{1000})</td>
</tr>
</tbody>
</table>

5. US Standards  SMACNA

<table>
<thead>
<tr>
<th>Duct Class</th>
<th>1/2-, 1-, 2-inwg</th>
<th>3-inwg</th>
<th>4-, 6-, 10-inwg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seal Class</td>
<td>C</td>
<td>B</td>
<td>A</td>
</tr>
<tr>
<td>Sealing Applicable</td>
<td>Transverse Joints Only</td>
<td>Transverse Joints and Seams</td>
<td>Joints, Seams and All Wall Penetrations</td>
</tr>
<tr>
<td>Leakage Class</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rectangular Metal</td>
<td>24</td>
<td>12</td>
<td>6</td>
</tr>
<tr>
<td>Round Metal</td>
<td>12</td>
<td>6</td>
<td>3</td>
</tr>
</tbody>
</table>

Maximum air leakage is then defined as
\[ F = C_L P_l^{0.65} \]

- \(F\) = Maximum air leakage (cfm/100 ft²)
- \(C_L\) = Leakage class
- \(P_l\) = Pressure (inwg)
6. GB Standard GB50243

<table>
<thead>
<tr>
<th>Rectangle Duct pressure class</th>
<th>Maximum Leakage m³/h/m²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low-pressure system</td>
<td>0.1056 × P⁰.⁶⁵</td>
</tr>
<tr>
<td>Medium pressure system</td>
<td>0.0352 × P⁰.⁶⁵</td>
</tr>
<tr>
<td>High pressure system</td>
<td>0.0117 × P⁰.⁶⁵</td>
</tr>
</tbody>
</table>

P -- Working pressure (Pa) of the Duct system.

1. The allowable air leakage for the Round Metal Duct of low pressure and medium pressure, composite material duct and Illegal orchid form of nonmetallic duct should be 50% of the regulated leakage value of the rectangle duct.

2. The allowable air leakage of brick concrete duct should be no more than 1.5 times regulated leakage value of the rectangle duct.

3. Ventilation dedusting with low temperature air supply system should be according to and comply with the standard for Medium pressure system; 1-5 class air cleaning system should be according to and comply with the standard for High pressure system.
Appendix2 Fan Performance Graph
Appendix 3 Installation Instruction

How to Find Leaks
1. Look - at blanks, access openings and difficult joints.
2. Listen - with test rig running, leaks should be audible.
3. Feel – running your hand (particularly if wet) over joints can help locate leaks.
4. Soap and Water – paint over joints and look for bubbles.
5. Smoke Pellet – placed inside ductwork (obtain permission for use).
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