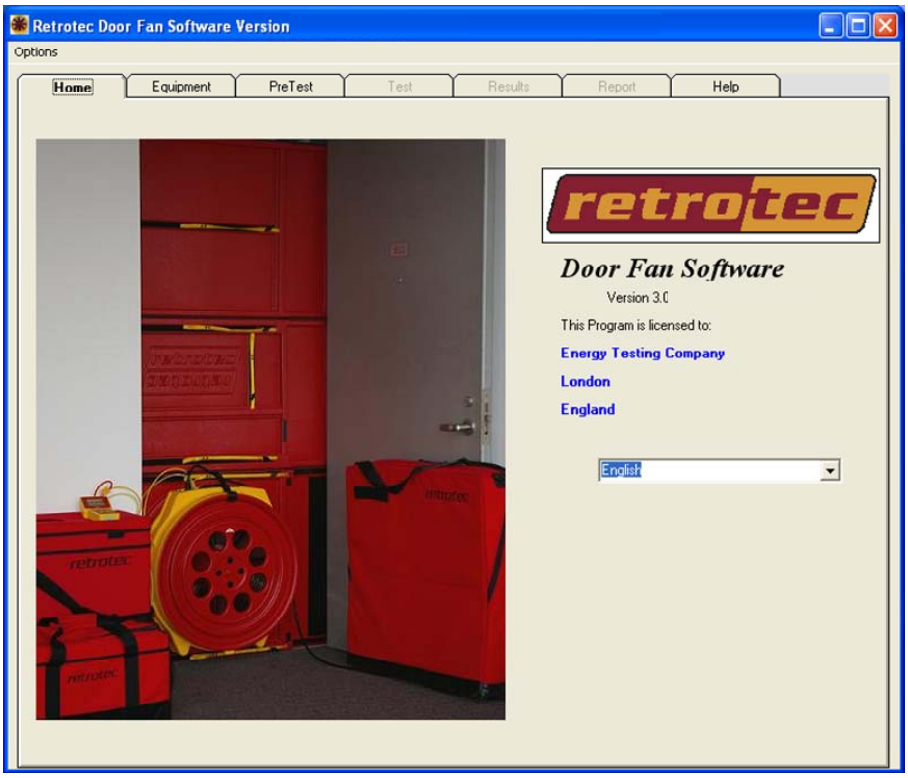
Door Fan 3.0
Software User's Manual



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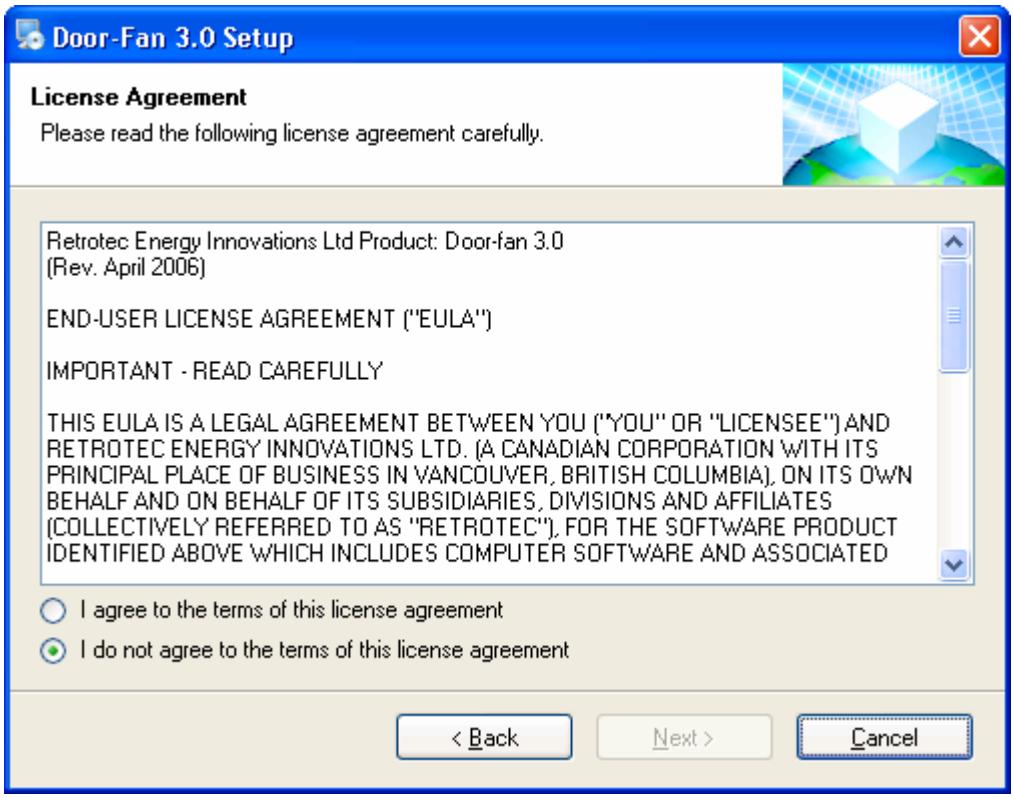
1 Software Installation

It is recommended that you use Windows XP with Service pack 2 installed.

Door Fan 3.0 is constantly under development and new features are being continuously added. Released versions of the software can be downloaded from our website at http://www.retrotec.com/products/software/door_fan_30

Download the latest version and run the executable file. You must accept the license agreement before you can install the software.



Once the software is installed you can access it by going to Start -> Programs -> Retrotec Programs -> *Door Fan 3.0* or you can use the Desktop Icon if you chose to create one on your desktop.

2 Using a DM-2A with Door Fan 3.0

Door Fan 3.0 can be used stand alone or can be completely integrated with your fan system by using Retrotec DM-2A Digital Gauges.

Note: The following procedure must be repeated for every USB port on your computer.

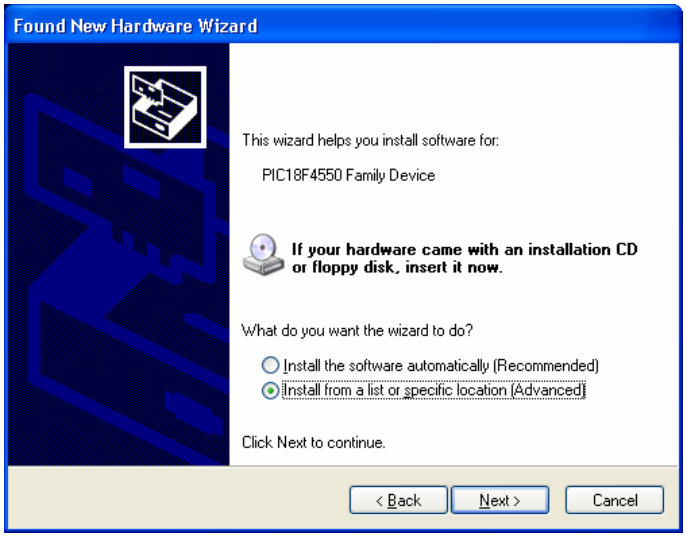
2.1 Installing the DM-2A Drivers on Your USB Ports

Connect your DM-2A to your PC using a standard USB Cable. The following window should appear.

Select No, not this time and press [Next] to proceed with manual identification of the location of the DM-2 drivers

2.2 Identifying where the DM-2 Drivers are Located

Windows does not know where the DM-2 drivers are located. You must remind Windows where the drivers are located for each USB port.



During the software installation, the DM-2 drivers are copied into the USB sub-folder in the folder in which you installed the Door Fan 3.0 software.

By default this location is C:\Program Files\Retrotec\DM2 Drivers\USB\

If presented with the option, decline the automatic installation and instead, choose to install from a specific location.

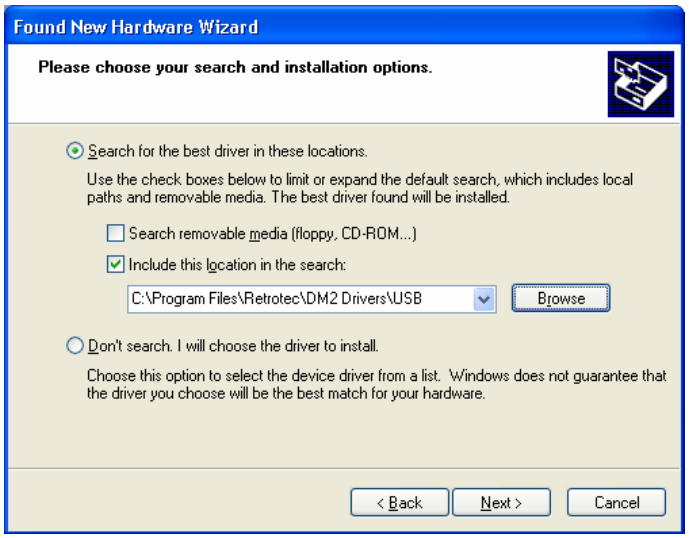
Press [Next] to proceed.

When asked where to search for the drivers, select to only search in the provided folder, and then [Browse] to the USB sub-folder of the folder in which you installed Door Fan 3.0

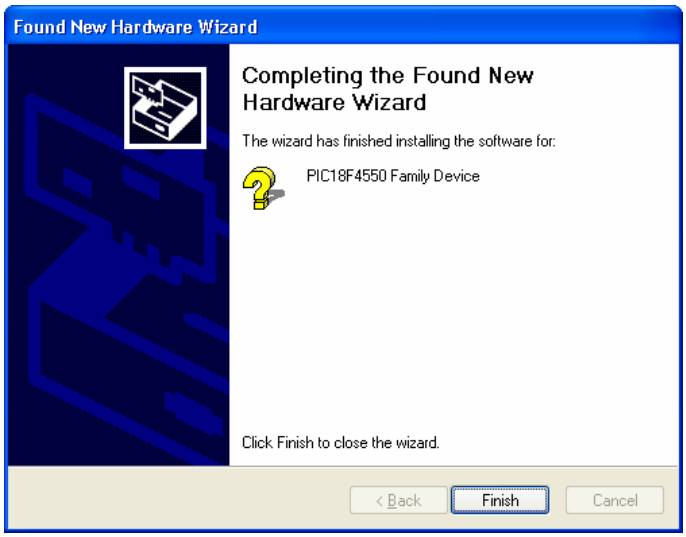
This would typically be

C:\Program Files\Retrotec\DM2 Drivers\USB\

Press [Next] to proceed.



2.3 Completing the DM-2 Driver Installation



If Windows successfully finds and installs the DM-2 driver, this message box will appear.

Once the installation has completed, press [Next] to finish the installation

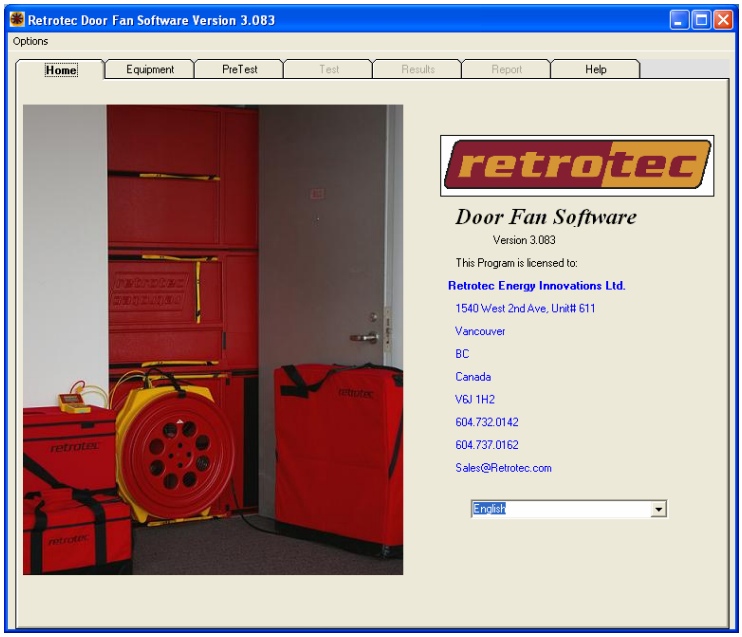
Once you have located the drivers and installed them, you will be ready to use Door Fan 3.0 in conjunction with your DM-2A Digital Gauge.

Note: You must complete this procedure for each USB port on your computer.

3 Installing the Software License

The downloadable software is a demonstration version with a 30-day demo software license.

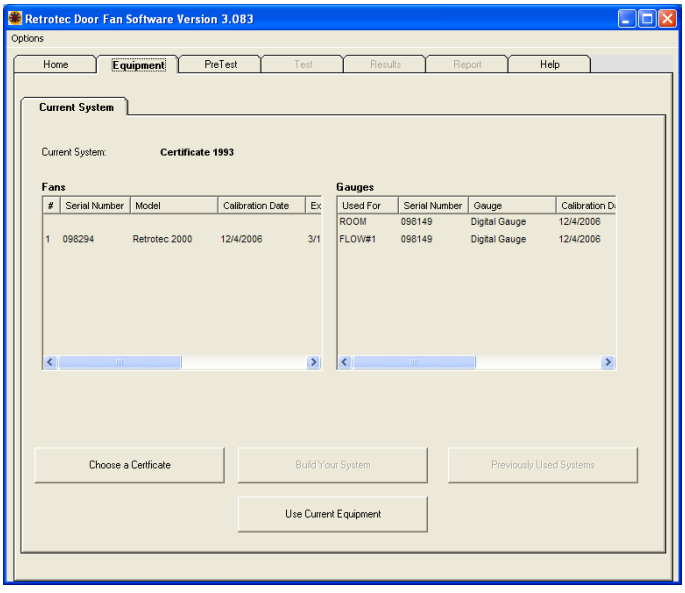
In order to completely license the software and install your specific door fan hardware into the software, a Software Certificate must be installed. This Software certificate contains your license information and the calibration information for your door fan and gauge hardware.

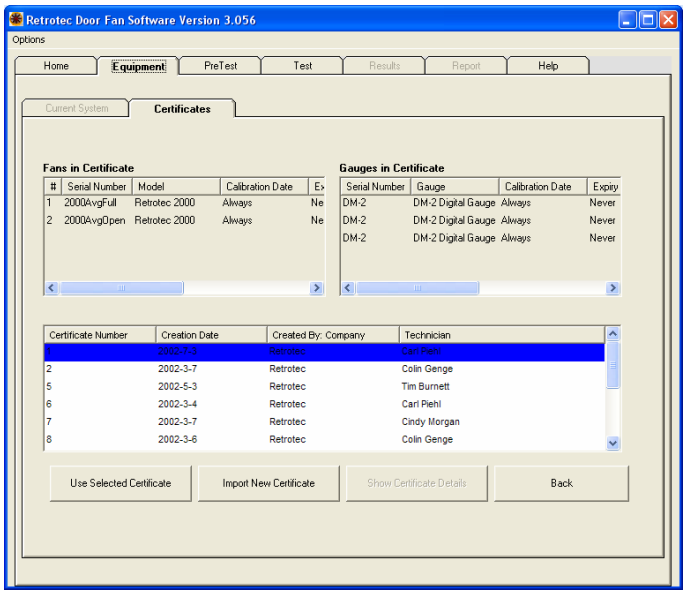


3.1 Importing your Certificate

The software license comes in the form of an encoded .txt file, either on a floppy disk or via E-mail when the software is purchased.

From the Equipment tab click [Choose a Certificate]

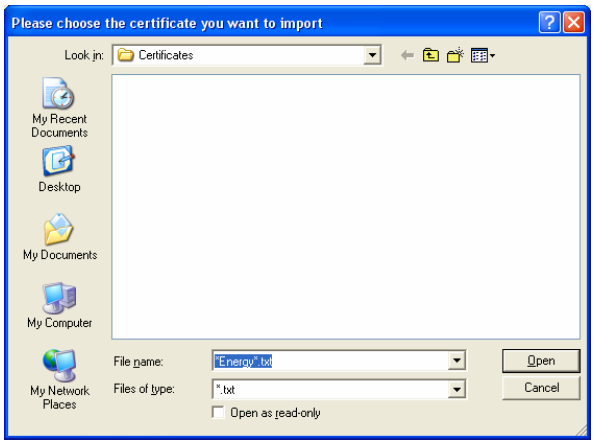




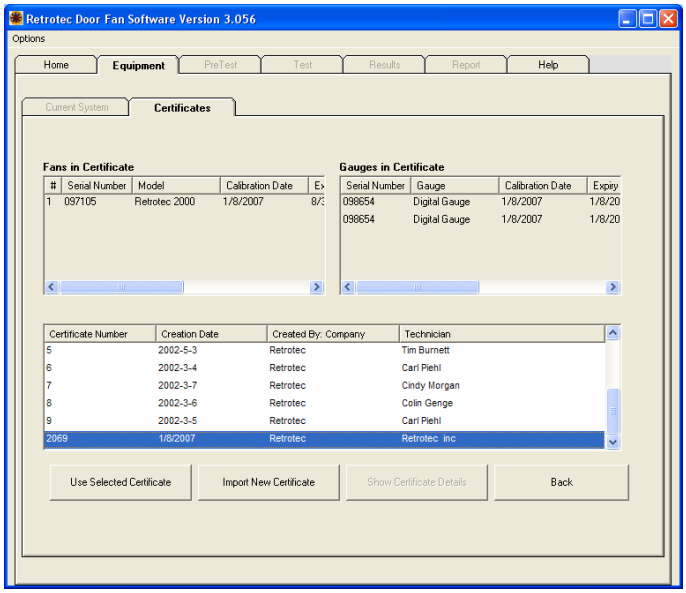
Next, select [Import New Certificate]. If you received a disk from Retrotec containing your license insert it now and select the .txt file on the disk.

If you received the license via email; save the attachment to a location of your choice on your hard drive

The following screen will prompt you to browse for the .txt file. Once located, highlight the .txt file and click [Open]



3.2 Using your Software Certificate



Once your certificate has been successfully imported, it will appear on the certificates page, on the list of all available certificates.

You are now ready to use the equipment provided on your certificate.

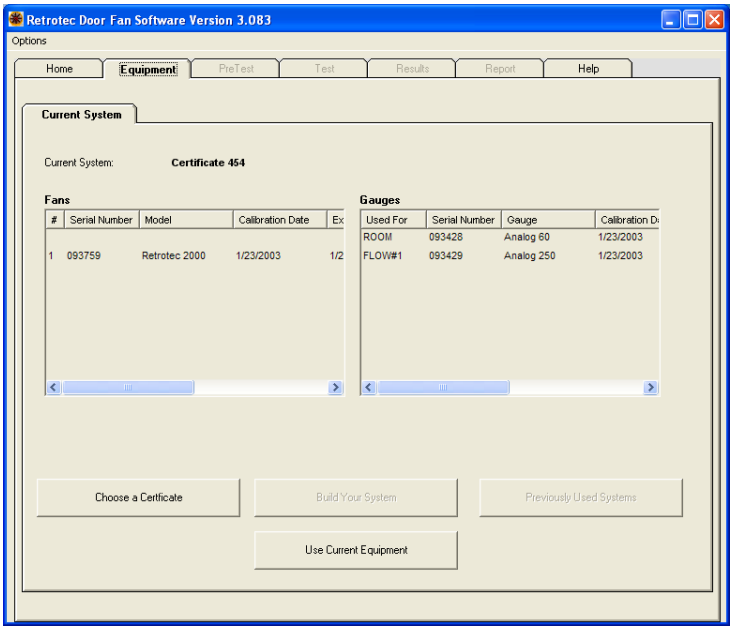
Use the Mouse, Keyboard and Scroll Bar to navigate through the list to your certificate.

Click on your certificate and then click [Use Selected Certificate].

This will return you to the Current System tab.

3.3 Viewing Your Current System

The Current System tab shows you the details of the equipment that will be used for all new tests. It shows you the fans and gauges in your system and shows you which gauges are to be used for which measurements.



For example in the picture to the right, Certificate 454 has been selected.

It shows that the system is composed of one Retrotec 2000 series fan with serial # 093759, one 60 Pa analog gauge with serial # 093428 and one 250 Pa analog gauge with serial # 093429.

It also shows that 093428, the 60 Pa analog gauge is to be used for room pressure measurements and that 093429, the 250 Pa analog gauge is to be used for measuring flow pressure from Fan #1 in your system.

Note: You must ALWAYS select the [Use Current Equipment] button if you change Certificates.

4 PreTest Building setup

The next step in performing a test will take you to the PreTest Tab. From this tab you will set up your Group / Customer, Building and Zone. If you choose, you may also change your equipment from this tab. To do so, select [Change Equipment].

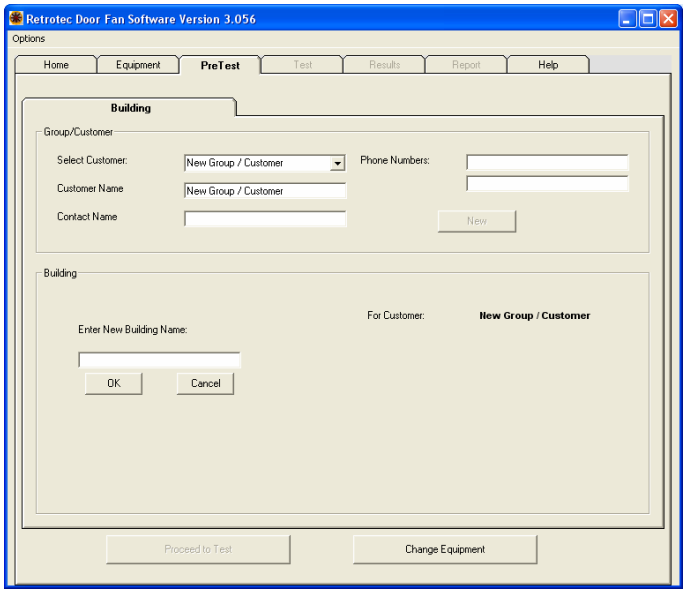
4.1 Group/Customer Setup

Start by selecting the [New} button, name your Group / Customer and select [OK].

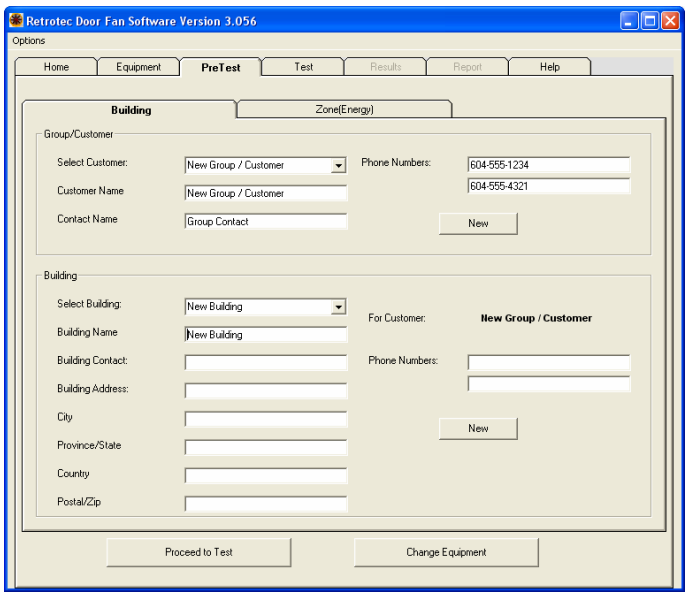
Enter the Contact information for your Group / Customer.

Existing Group / Customers are available from the drop down menu.

Now you can move onto setting up your Building



4.2 Building Setup



Just as you did above, enter your building name and the contact information.

*Only the building name is required to continue, but we suggest completing all the contact information for your reporting purposes.

Existing Buildings are available from the drop down menu.

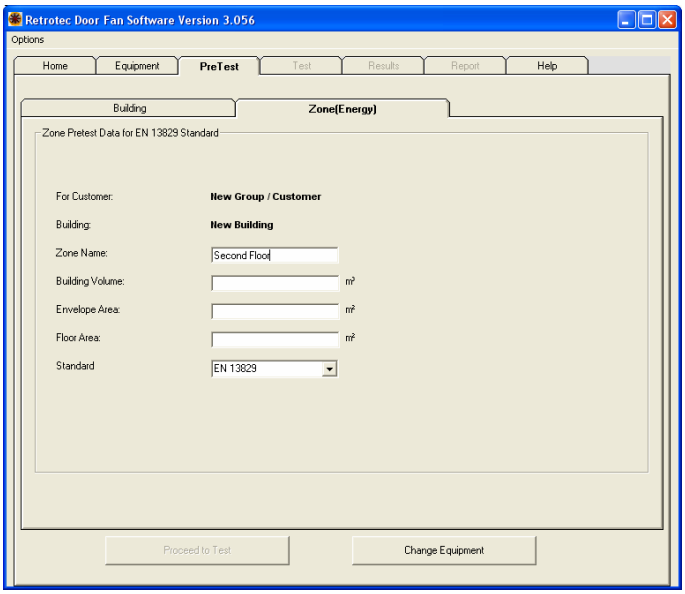
4.3 Zone Setup

A Zone can be a single room, or a series of rooms. For example, you may be testing the second floor of a house; therefore your zone would be “Second Floor”

First, Name your zone, then enter the Volume, envelope area and Floor Area.

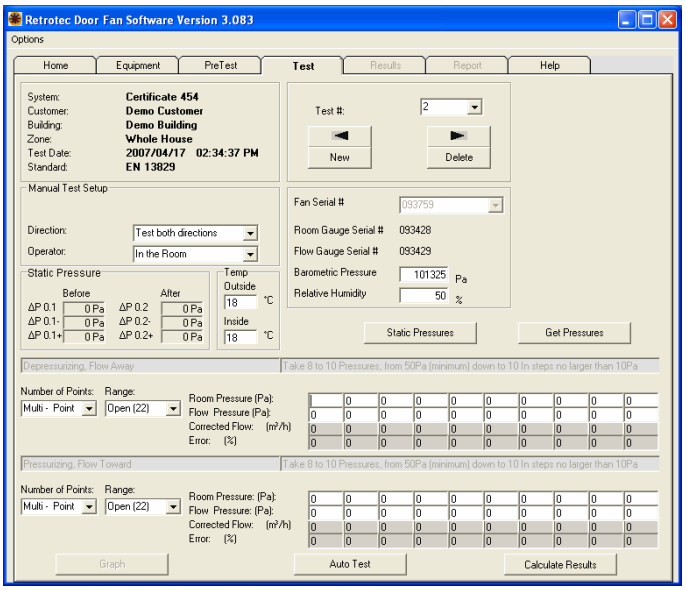
Next select your standard. You can choose either EN13829 or ATTMA: TS-1

Once you have completed the Zone setup, Select [Proceed to Test]



5 Conducting a Manual Test

There are 2 ways to perform a test with Door Fan 3.0, Manual Test and Auto Test. You may conduct any number of tests on a particular building and *Door Fan 3.0* will keep track of each test. Saved tests are accessible by the drop down menu or by using the arrow keys. The test screen is where all of the information about the test conditions will be recorded. On the top left side of this screen you will see the details of your system. Confirm that the system, customer and enclosure are correct.



The first set of information required by *Door Fan 3.0* is the Setup and Room conditions.

The user is guided though this required information by selecting from the pull-down menus and entering the static pressure and temperature information directly.

5.1 Direction

Using the pull-down menu, choose which direction(s) you plan to test. Normally both directions will be tested to eliminate errors in leakage area that can come from duct leakage, stack effect or wind.

"Pressurizing" is when the fan is blowing into the enclosure.
"Depressurizing" is when the fan is blowing out of the enclosure.

Both EN13829 and ATTMA: TS-1 encourage testing in both directions.

5.2 Operator

From the pull-down menu, select whether the operator is "in the room" or "out of the room" depending on where the operator is standing during the test. When the operator is outside the room, the red room pressure pickup tube goes inside the room. When the operator is in the room, the red room pressure pickup tube goes outside the room.

5.3 Static Pressure

For both EN13829 and ATTMA: TS-1 static pressure must be observed for at least 30 seconds and a number of average values must be calculated. On the Manual Test page, selecting the [Static Pressures] button takes you to a sub-page where up to 10 static pressure observations can be recorded. As observations are entered, Door Fan 3.0 will automatically calculate the averages.

If you are connected to a Retrotec DM-2 or DM-2A digital gauge, the [Get Pressure] button will retrieve each static pressure observation digitally from the gauge.

If you are using another gauge, observations must be keyed in manually.

5.4 Temperature

Enter an estimate here of the temperature both inside and outside of the enclosure. An estimate within 10ºF/5ºC is adequate.

5.5 Barometric Pressure

Enter an estimate here of the barometric pressure in Pa (note: standard barometric pressure at sea level is 101325Pa = 1013.25mBar).

5.6 Relative Humidity

Enter an estimate here of the Relative Humidity. If you are unsure, the software defaults to 50%.

5.7 Test Section

Following the Environmental Data section is the Test Results section. The section is broken up into two areas, “Flow Toward the Operator” and “Flow Away from the Operator”. One or both of these sections will be enabled depending on the selection from the “Direction” pull-down.

5.8 Number of Points

Door Fan 3.0 supports both single-point and multi-point tests. Whether a single or multi-point test is required is determined by the standard being tested to. Door Fan 3.0 defaults to these conditions automatically the first time it is started. These defaults can be modified by the user and will become the default the next time the software is started.

5.9 Range Selection

During testing you will vary fan ranges in order to achieve a room pressure within the indicated range. The room pressure must be within this specified range to be in conformance with the procedure. If you can’t achieve this pressure, use a larger range, seal up the room or use more fans.

If the speed of the fan is too low for accurate results, *Door Fan 3.0* will display a LOW error and you will have to switch to a smaller range, or you will have to stop the test.

5.10 Room Pressure

This value is the static pressure difference between inside the enclosure and outside the enclosure while the door fan(s) is running. To take the measurement, one pressure probe is open at the gauge and the other is taken through the red tube, which is positioned on the other side of the doorway. Regardless whether the user is inside or outside the enclosure, the red tube is always on the side of the doorway opposite the operator.

5.11 Flow Pressure

This value is the measure of the pressure difference across the inlet of the blower and is translated into flow by the computer (or it can be looked up in a table supplied by the door fan manufacturer). The certificate of calibration defines the exact pressure to flow relationship. In general, the flow pressure must always be much greater than the room pressure. *Door Fan 3.0* will warn the operator when this flow pressure gets too low in which case; a more restrictive range is required.

5.12 Corrected Flow

This value comes from the calibration curves on the certificate. First, gauge readings are corrected by Door Fan 3.0 (based on the gauge calibrations), then, flow is calculated using the flow formulae on the certificate. The resultant flow is then corrected for temperature or density according to the standard you are testing to.

5.13 Error %

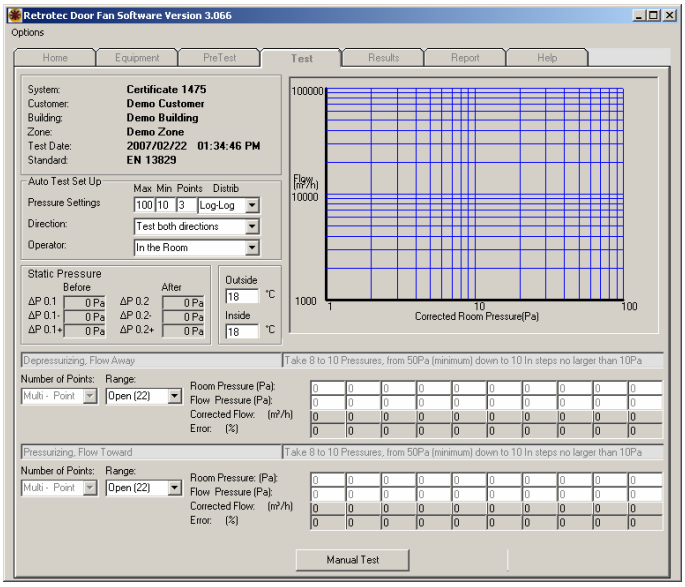
This value only applies to multipoint tests. The resultant value must be 6% or less for the test to be acceptable.

5.14 Calculate Results

Once you have entered the required room and flow pressures, you can calculate your results. When this button is selected, your results will be displayed on the “results” and “reports” tabs. Please see Chapter 7 Results or Chapter 8 Reports for additional information.

6 Conducting an Auto Test

To Use the Auto Test function of door Fan 3.0 you must have a DM-2A and it must be connected to your computers USB port. Follow steps 4.1 to 4.3 to setup your Group/Customer, Building and Zone Setup.



From the test tab, select the [Auto Test] button.

If the auto test button is unavailable, shut down Door Fan 3.0 and ensure that your DM2 is connected to your computer via the supplied USB cable and that the DM-2 drivers have been installed. Please see *2.1 to 2.3* for instructions on installing your DM-2 Driver.

6.1 Pressure Settings

Select the maximum and minimum pressures and how many points you would like to test. The maximum and minimum pressure and the number of points depends on the standard you are testing to.

Both EN13829 and ATTMA: TS-1 recommend testing up to 100Pa.

Choose the distribution method of the points, either Logarithmic or Linear.

Since Pressure and Flow are a logarithmic relationship, distributing the points logarithmically will produce consistent spacing and a more accurate representation of the leakage characteristics of the room.

Distributing the points linearly will more heavily weight the higher pressures over the lower pressures.

6.2 Direction

Using the pull-down menu, choose which direction(s) you plan to test. Normally both directions will be tested to eliminate errors in leakage area that can come from duct leakage, stack effect or wind.

6.3 Operator

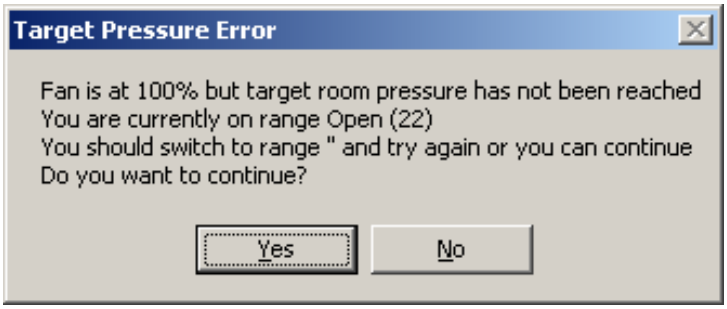
From the pull-down menu, select whether the operator is “in the room” or “out of the room” depending on where the operator is standing during the test. When the operator is outside the room, the red room pressure pickup tube goes inside the room.

6.4 Temperature

Enter an estimate here of the temperature both inside and outside of the enclosure. An estimate within 10ºF/5ºC is adequate

6.5 Range Selection

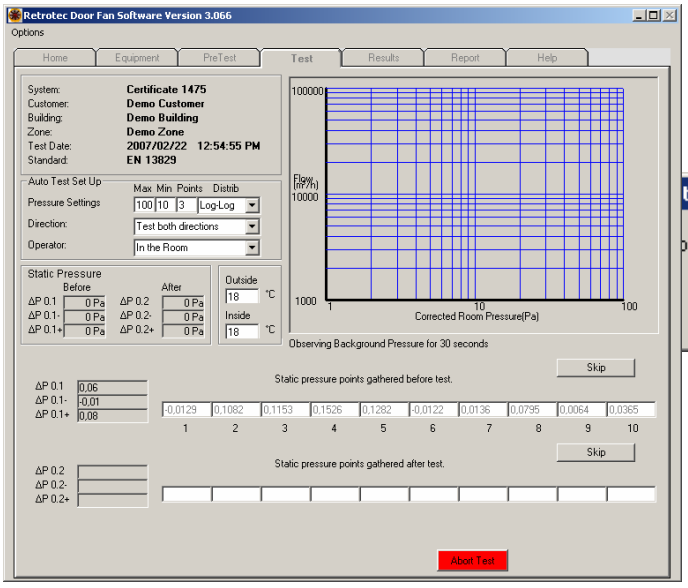
Before testing you will select a fan range on which to conduct your entire test. The room pressure must be within this specified range to be in conformance with the procedure. If you can’t achieve this pressure, use a higher range, seal up the room or use more blowers. If the required pressure cannot be achieved *Door Fan 3.0* will display the following warning.



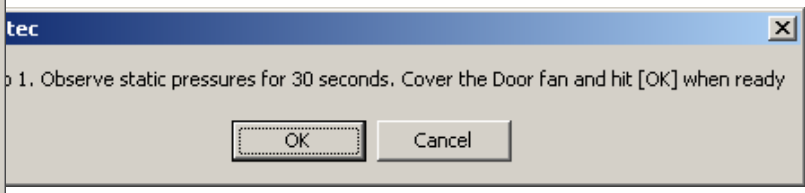
6.6 Starting the Auto Test

Once you have completed the above steps, you are ready to begin the auto test. To begin the auto test, select the {Start} button.

6.7 Auto Static Pressure



Unlike a manual test, Door Fan 3.0 will take your static pressure readings automatically.



Once you have selected {Start}, the following screen will appear. Cover your door fan and select {OK}

Door Fan 3.0 will now observe the static pressure for 30 seconds.

You can see the static pressure being updated every 3 seconds.

Once the static pressure readings are complete the following screen will prompt you to uncover your door fan. Once you have uncovered the fan select {OK}

6.8 Monitoring Auto Test

Although you may start auto test and simply walk away from your fan, it's recommended that you monitor the auto test process.

6.9 Completing Auto test

Once Auto Test is completed, Door fan 3.0 will take you back to the manual test Screen. Note that the information from auto test is now carried over to the manual test tab and is saved as any other test. You may now review the results from the results tab X.X and run reports from the Reports tab X.X.

7 Results

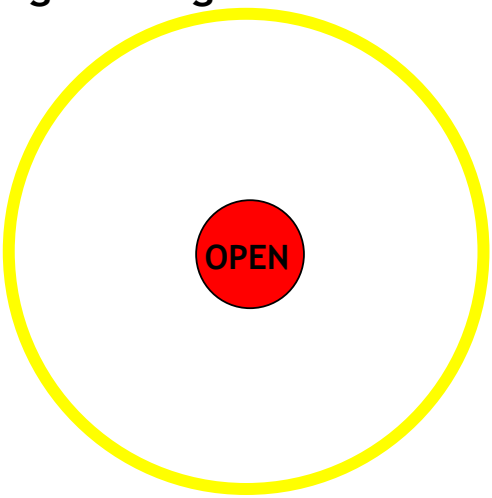
8 Reports

9 Range Selection

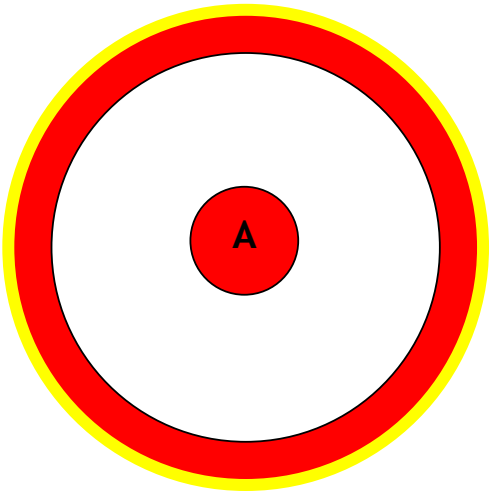
The general rule regarding range selection is that at every reading the Flow Pressure should be at least 5 Pa greater than the corresponding Room/House Pressure. For example, if the Room/House Pressure is 25 Pa, the Flow Pressure should be at 30 or higher.

One slight complication arises: when conducting a Multi-Reading test, your highest reading (i.e. 50 Pa Room/House Pressure) must start with a Flow Pressure that is close to double the Room/House Pressure (i.e. if your first Room/House Pressure reading is at 50 Pa, the corresponding Flow Pressure must be approximately 90 - 100 Pa.). If this does not occur, you will likely find that you "run out" of Flow Pressure near the end of the test, since the Flow Pressure drops at a faster rate than the Room/House Pressure.

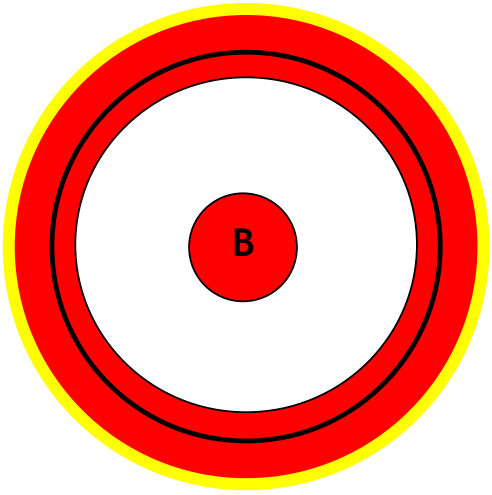
Range Configurations for the Retrotec 2200 Automatic Fan



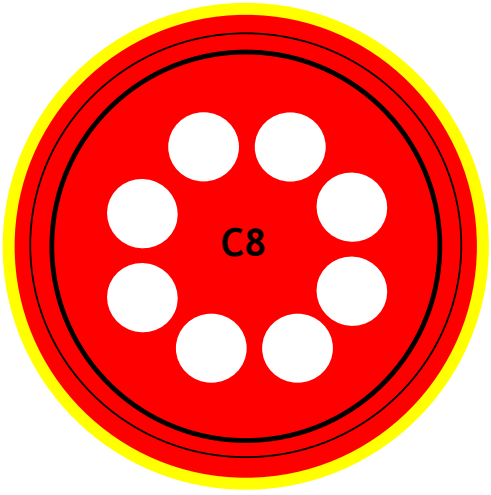
Open Range has no covers over fan inlet



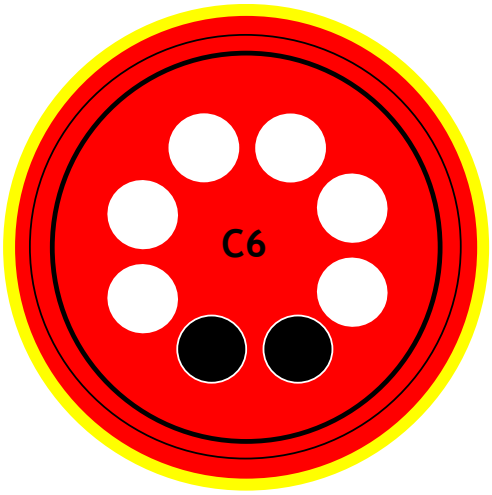
Range A has 1 ring installed



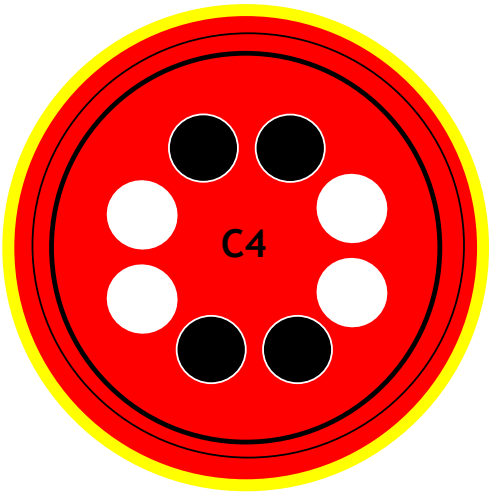
Range B has 2 rings installed



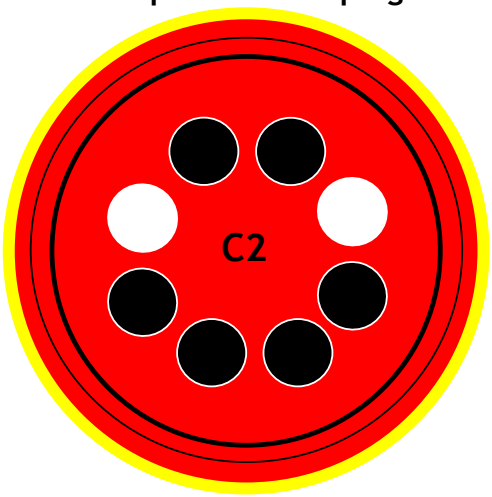
Range C8 has 2 rings installed + 8 hole plate



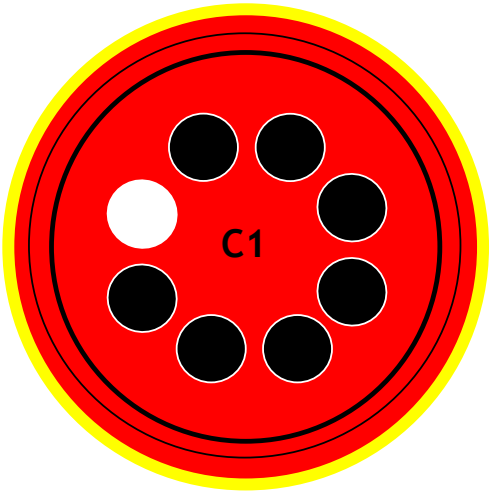
Optional Range available 2007
Range C6 has 2 rings installed + 8 hole plate with 2 plugs



Range C4 has 2 rings installed + 8 hole plate with 4 plugs



Range C2 has 2 rings installed + 8 hole plate with 6 plugs



Range C1 has 2 rings installed + 8 hole plate with 7 plugs

10 Troubleshooting